APPENDIX E

Supportive Reports:
Data Collection Programs

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1.0 INTRODUCTION

1.1 Data Collection Programs

As described in Appendix D, the current operating condition of the Dresden Nuclear Station (DNS) is the result of a lengthy development process that began with Unit 1 coming online in 1960, continued with the addition of Unit 2 in 1970 and Unit 3 in 1971, and concluded in 1981 with regulatory approval of the current operating scenario (i.e., closed-cycle operation 1 October through 14 June and indirect open-cycle operation 15 June through 30 September). Studies to assess potential impacts associated with the current operation of DNS on the biota of the Illinois River were initiated in 1968 by Exelon's predecessor, Commonwealth Edison Company (ComEd), prior to Units 2 and 3 becoming operational (Battelle 1968; Bio-Test 1969). Since 1968, study scopes have varied in terms of the study elements included placement and number of sampling locations and sampling frequency. However, studies to assess potential impacts associated with the DNS discharge have included three to four years of Units 2 and 3 pre-operational surveys and multiple operational investigations over the past 46 years. The earliest studies considered a wide scope of potential biological effects. Many of the initial concerns have been resolved and recent efforts have focused on the well-being of fish and benthic macroinvertebrate communities near the DNS discharge. Initial studies conducted since the approval of the current mode of operation (i.e., after 1981) were developed in cooperation with the Illinois Environmental Protection Agency (IEPA) and Illinois Department of Natural Resources (IDNR). In more recent years of study (i.e., 1994-2014), the emphasis on fish and benthic macroinvertebrates reflects the continued belief that if any long-term impacts should occur, these components of the biota are most likely to exhibit detectable changes that are representative of the entire aquatic community.

Reports from the most recent years of study are incorporated as Appendix B (Biothermal Assessment), Appendix F (DNS Aquatic Monitoring 2013), Appendix G (DNS Aquatic Monitoring 2014), and Appendix H (DNS Mussel Survey 2014). The following presents a summary of data collection programs conducted in the vicinity of DNS.

2.0 HYDROGRAPHIC

Hydrographic data have been utilized in the operation of DNS as well as in studies conducted to evaluate effects of DNS on the biota of the Des Plaines, Kankakee, and Illinois Rivers. Hydrographic data are available from multiple sources in the vicinity of DNS including data collected directly by DNS at the intake and discharge. Although an abundance of data are available, the type and historical period of record varies among sources.

The primary sources of both historic and current data include the United States Geological Survey (USGS) and United States Army Corps of Engineers (ACOE). The closest USGS gage stations to DNS include five on the Des Plaines, Du Page, Kankakee, and Illinois Rivers (USGS 2014):

Gage Number	Name	Period of Daily Statistics
05537980	Des Plaines River at Route 53	2005-Present
05540500	Du Page River at Shorewood	1940-Present
05527500	Kankakee River near Wilmington	1914-Present
412320088154101	Kankakee River at Dresden Inflow	2012-Present
05543010	Illinois River at Seneca	2012-Present

Depending on the station, data for stage and/or discharge, as well as select parameters such as temperature and velocity are available. The USGS gage stations near Wilmington, at Dresden Inflow, and at Seneca are currently operated in cooperation with Exelon.

An additional source for hydrographic data in the vicinity of DNS is the USACE (USACE 2014). These data include stage information associated with navigational control structures upstream and downstream of DNS.

3.0 TEMPERATURE

Numerous thermal studies have been conducted at the DNS beginning before Units 2 and 3 began operation in 1970 and 1971, respectively. Hydrothermal data have been collected for a variety of purposes including planning, characterization, monitoring, and to assess potential effects on the biological communities of the Illinois River downstream of the DNS discharge. The most relevant thermal studies include:

1) 1968 – Battelle Northwest (Battelle) developed a test simulation of the temperature of the Illinois River and prediction of the effects of Dresden Unit 2 and Dresden Unit 3 reactors (Battelle 1968).

2) 1968 – Industrial Bio-Test Laboratories, Inc. (Bio-Test) conducted a hydrothermal study to estimate the magnitude of temperature increase associated with the addition of Dresden Units 2 and 3 and to recommend measures to ensure that thermal effects would not harm aquatic life (Bio-Test 1969). Additional data as well as operational collections were made from 1970 to 1975 (Bio-Test 1970, 1972, 1973, 1975, and 1976).

3) 1968 to Present – Temperature measurements at various sampling locations in the vicinity of DNS have been a component of nearly all biological studies performed over the past 46 years.

4) 1970 to 1975 – Bio-Test collected additional data to support the initial 1968 study.

5) 1976 – Massachusetts Institute of Technology developed the Dresden Station Simulation Model (DSSM) to provide an analytic ability to examine the possible consequences of design modifications or cooling system management strategies intended to mitigate the consequences of thermal performance deficiencies (ComEd 1980).

6) 1976 – NUS Corporation modified the DSSM to conduct hydrological and hydrothermal analyses using meteorological and DNS operating data to assess the biological impact of the proposed DNS operation (ComEd 1980).

7) 1993 – Remote Sensing Services conducted infrared imagery surveys of the Upper Illinois Waterway (UIW), including lower Dresden Pool near DNS, to characterize surface thermal plumes and identify potential refugia for fishes and other aquatic organisms (ComEd 1993).

8) 1992 to 1993 – The Iowa Institute of Hydraulic Research (IIHR) conducted hydrologic and thermal regime studies throughout the UIW, including lower Dresden Pool, using a one-dimensional thermal-hydrodynamic CHARIMA model (ComEd 1996).

9) 2013 to 2014 – EA Engineering, Science & Technology Inc., PBC (EA) performed a thermal plume mapping and modeling study for DNS to examine the existing end of discharge canal permit condition, established in 1981, and alternative plume configurations during indirect-open cycle operations 15 June to 30 September. The model was used to execute additional hydrothermal scenarios in support of the biological effects analysis for the DNS 316(a) Demonstration (Appendix B).

    - Surface and vertical thermal plume mapping surveys were conducted upstream, within, and downstream of the immediate DNS discharge influence during July and August 2013 as well as September 2014;

    - A bathymetric survey of the DNS study area was completed in November 2013;

    - A three-dimensional hydrothermal model was developed that utilized Danish Hydraulics Institute's state-of-art, three-dimensional Mike3 modeling framework;

    - The model domain included upstream portions of both the Des Plaines and Kankakee Rivers and extended downstream to the Dresden Island Lock and Dam, which resulted in a model grid consisting of 1,530 cells and 12 vertical layers; and

    - Physical parameters incorporated by the model included bathymetry, intake/discharge configurations, model boundary conditions, DNS operating data, and meteorology.

Measurements associated with the initial studies listed above were baseline investigations used to evaluate the additions of Units 2 and 3 as well as for annual monitoring. The 1976 studies addressed the operational change as proposed in the 1980 DNS 316(a) Demonstration (ComEd 1980). Later studies (1980's to present) were conducted to characterize the thermal regime near DNS and monitor effects on the biological communities within the receiving waters. The final investigation was conducted in conjunction with the collection of biological data to examine alternative thermal limits, the distribution of thermal conditions, and the effects of those alternative conditions on the aquatic community for the current DNS 316(a) Demonstration.

4.0 NUTRIENT DATA

Phosphorus and nitrogen are the elements most often associated with nutrient richness. In general, wastewater treatment plant discharges as well as urban and agricultural nonpoint source inputs are major sources of nitrogen and phosphorus. In particular, agricultural watersheds contributing high concentrations of sediment are especially important because phosphorus is commonly bound to sediment particles.

Nutrient enrichment and impairment of the Illinois River basin is well documented. According to the IEPA and the Illinois Department of Agriculture (IDOA), point source loadings of both nitrogen and phosphorus in the Illinois River basin are higher than all other major watersheds in the state (IEPA and IDOA 2014). Since 1970, IEPA has been evaluating nutrient inputs and monitoring the effects associated with elevated nutrient levels in Illinois through direct measurement, collaborative studies, and reporting requirements. Both total nitrogen and total phosphorus are listed as causes of impairment in the Des Plaines River (see Appendix A).

Power plants, including DNS, are not significant sources of nutrients. As such, specific studies to examine nutrients in relation to DNS have not been conducted.

5.0 AQUATIC HABITAT

In 1992, an aquatic habitat survey was conducted throughout the UIW downstream to below the Dresden Island Lock and Dam. The objective of the study was to characterize aquatic habitat in the various study segments (ComEd 1996). Habitats within the UIW were initially classified on a broad scale by mesohabitat type. Mesohabitats provide a convenient way of characterizing the kinds and amount of habitat and formed the basis of a separate effort to describe habitat quality in the UIW. In 1993 and 1994, habitat quality at individual fish and benthic macroinvertebrate sampling locations on the UIW was assessed using the Qualitative Habitat Evaluation Index (QHEI) to determine the extent that habitat is limiting the aquatic biota of the UIW.

In order to evaluate aquatic habitat changes that may have occurred in the Des Plaines, Kankakee, and Illinois Rivers since the mid-1990s, a habitat assessment in the vicinity of DNS was performed in 2014 (Appendix G). QHEIs were completed at all electrofishing locations during early July and early September. These data were supplemented with substrate characterization data collected during the 2014 mussel survey (Appendix H).

6.0 PHYTOPLANKTON AND PERIPHYTON COMMUNITIES

Phytoplankton and periphyton samples were collected near the Dresden Station, generally on a quarterly basis during the period of 1968 through 1977, 1981, 1991, and 1993 (Bio-Test 1969, 1970, 1972, 1973, 1975, and 1976; Nalco 1976; Hazelton 1979b; Ecological Analysts 1982; ComEd 1996). During the 1968 to 1977 studies, samples were collected at a variable number of locations upstream and downstream of the DNS discharge canal in the Des Plaines, Kankakee, and Illinois Rivers. In addition to river monitoring, samples were collected from the DNS cooling pond during 1972-1973 and from the DNS discharge canal during 1977. The phytoplankton sampling in 1981 was conducted to describe the changes in the algal assemblages as they passed from the Des Plaines and Kankakee Rivers, through DNS and the cooling ponds under indirect open cycle. In contrast to earlier investigations that concentrated on DNS, the phytoplankton and periphyton surveys performed in 1991 and 1993 were conducted throughout the UIW and its tributaries. However, samples were collected from several stations upstream of DNS and downstream of the Dresden Island Lock and Dam.

For the 1968 to 1981 studies, composite samples were collected using a grab sampler for phytoplankton while periphyton samples were collected by scraping natural or artificial substrates. The samples were analyzed to community composition and abundance (density). Shannon-Weaver diversity and evenness were calculated along with temporal and spatial comparisons to assess the phytoplankton assemblage. In addition, from 1970 to 1977 and 1981, chlorophyll production was assessed. Likewise, the 1991 and 1993 studies analyzed composite samples to determine community composition, density, and chlorophyll concentration. Analysis of the 1991 and 1993 results included Shannon-Weaver diversity and similarity along with trichromatic chlorophyll and spatial retention time comparisons.

The 1968 to 1977 sampling was conducted in the Des Plaines, Kankakee, and Illinois Rivers primarily for pre-operational assessment of DNS Units 2 and 3 as well as operational monitoring purposes. In addition, results from 1972 through 1974 were utilized in the development of the 1980 DNS 316(a) Demonstration (ComEd 1980). The intention of the 1981 program was to sample the same water mass as it moved from one sampling point to the next within the DNS cooling system. In contrast, the 1991 and 1993 studies were conducted with a broader scope of the entire UIW. The objectives were to assess the algal community system-wide, evaluate the effects of various power generating stations along the waterway, and characterize the importance of tributary inputs to the algal community of the UIW (ComEd 1996).

7.0 ZOOPLANKTON

Limited zooplankton sampling was conducted near DNS during indirect open-cycle operation from 1972 to 1975 and 1981 (Bio-Test 1973, 1975, and 1976; Nalco 1976; Ecological Analysts 1982). Zooplankton studies were conducted to document and characterize the spatial and temporal distribution of the community in the Des Plaines, Kankakee, and Illinois Rivers. Replicate samples were collected quarterly using a towed net at four to seven locations upstream in the Des Plaines and Kankakee Rivers as well as downstream of the DNS discharge to the Illinois River. Results of these surveys were compared spatially and temporally in terms of community composition, taxa richness, and density.

8.0 BENTHOS

8.1 Benthic Macroinvertebrates

Benthic macroinvertebrate surveys in the vicinity of DNS have been conducted periodically between 1968 and 2014 (Bio-Test 1969, 1970, 1972; Hazelton 1977; Ecological Analysts 1982; ComEd 1996; EA 2000, 2002, 2003, 2004, 2005, 2006, 2007a, 2008, 2010, 2012; Appendix F; Appendix G). The studies have been conducted primarily to characterize the benthic community composition, statistically analyze temporal and/or spatial differences, and examine these results in respect to potential effects related to the DNS discharge.

Although study objectives may have been similar, the scope and methods used to assess the benthic community in the vicinity of DNS have varied. In 1968 to 1971, benthic collections were made using a Ponar dredge during a single sampling event, at 10 to 49 locations in the lower Des Plaines and Kankakee Rivers to the confluence of the Vermillion River with the Illinois River near LaSalle, Illinois. The study approach changed during the 1972 to 1977 period when sampling was conducted quarterly, the number of locations was reduced to between three and five, and the primary sampling device was a multi-barrel core sampler. Hester-Dendy (HD) artificial substrate samplers were added to the study during the period from 1974 to 1977 but were excluded in 1981.

In 1993, benthic macroinvertebrate sampling was completed at 30 locations in the UIW, including six stations near DNS. Sampling was conducted in a variety of different habitat types using HD artificial substrate samplers and Ponar dredge.

Benthic macroinvertebrate surveys completed during 1999 were conducted in support of a provisional variance granted by IEPA. Sampling was conducted biweekly in August, once in mid-September and biweekly in October. Replicate Ponar samples were collected at six locations in the Des Plaines, Kankakee, and Illinois Rivers, upstream and downstream of Dresden Island Lock and Dam.

Between 2001 and 2014, benthic community surveys have been completed during 11 of 14 years with few changes to the study scope. In each of these study years, the benthic community in the vicinity of DNS has been evaluated at six locations in the Des Plaines, Kankakee, and Illinois Rivers, upstream and downstream of Dresden Island Lock and Dam. Sampling has been conducted using a combination of Ponar and HD artificial substrate samplers.

8.2 Mussels

Information on the native freshwater mussel fauna near DNS is sparse. Past surveys in the Des Plaines River watershed, Kankakee River, and Illinois River downstream of Dresden Island Lock and Dam were all conducted outside the area useful for assessing the results relative to the potential effects of the DNS discharge (INHS 2013, 2012; ESI 2003; Sietman 2001). Limited data have been reported as part of benthic macroinvertebrate monitoring in the study area (Appendix A, Section 7.2.3) but these collections have been largely incidental and provide little information beyond native freshwater mussel presence.

Given the limited amount of information, Exelon commissioned a survey of the mussel community upstream and downstream of the DNS discharge in 2014 (Appendix H). The objectives of the survey were to characterize the freshwater mussel community and evaluate the community relative to DNS operations. The 2014 mussel survey area included approximately 2,300 meters of the Illinois River including approximately 400 meters upstream of the DNS discharge to the Dresden Island Lock and Dam and from below the lock and dam to Little Dresden Island. Semi-quantitative sampling was conducted along 30 transects with qualitative sampling in between transects. In addition, substrate was visually examined and composition estimated.

9.0 MACROPHYTES

As an important habitat component of a functional aquatic ecosystem, submerged and emergent aquatic plants historically flourished in the Illinois Waterway. However, much of the vegetation disappeared from the Illinois River and its bottomland lakes by the 1960s. Sedimentation and turbidity associated with navigation coupled with fluctuating water levels had a significant effect on the aquatic vegetation by reducing light penetration and by creating unstable substrates (Bellrose et al. 1977). In the late 1970s, limited growth of more tolerant submerged aquatic plants was reported (Havera et al. 1980). In the early 1980s, a resurgence in the aquatic vegetation at certain locations in the Dresden Pool prompted aquatic vegetation and general habitat quality studies in the lower Des Plaines River, upstream of the confluence with the Kankakee River (Sparks et al. 1986, Tazik and Sparks 1987, Tazik 1988, Tazik and Sobaski 1992). During these studies, low altitude aerial photographs of the study area were taken, aquatic vegetation was mapped, specimens were collected for identification, and biomass was measured.

An aquatic macrophyte study in the UIW was conducted from 1992 through 1995 to investigate the physical chemical, and biological factors that may limit establishment and/or growth of these communities (ComEd 1996). The investigations resulted in the identification of 34 distinct aquatic macrophyte taxa, most of which are common and relatively pollution tolerant. While no aquatic vegetation was found immediately above or below the Dresden Island Lock and Dam (presumably due to highly erosive habitats in that area caused by river traffic), other areas upstream of the Dam in Dresden Pool contain several habitats conducive to macrophyte growth. In fact, over 85 percent of the vegetation observed in the 53-mile study reach was located in Dresden Pool, including such habitats as tailwaters, side channels, tributary deltas, and slough areas that are removed or protected from the impacts of barge/boat traffic on the UIW. Vegetation coverage in these habitats varied annually, but generally ranged from 10 to 30 percent. Results from this study and previous studies indicated that the resident aquatic macrophyte community in Dresden Pool remained relatively stable over a 10-year period (ComEd 1996).

Since the mid-2000s, EA field crews have observed increasing macrophyte production throughout Dresden Pool. Given the change in habitat, additional observations were made during the 2013 and 2014 thermal plume, fish, and mussel surveys. This information combined with recent aerial photography and substrate data were used to generally describe the current aquatic habitat types in the vicinity of DNS (Appendix A; Appendix G).

10.0 FISHERY

10.1 River Studies

Monitoring of the fishery near DNS has been conducted most years since 1971 (Nalco 1978; ComEd 1980; EA 1992; Appendix F; Appendix G). Initially, the 1971 to 1973 fish investigations were restricted to seining quarterly at locations in the Kankakee River upstream of the DNS intake and Illinois River upstream and downstream of the DNS discharge (Bio-Test 1972, 1973, and 1975). The objective of these early studies was to characterize the fish community composition in the study area. In 1974, timed AC electrofishing became the primary gear type and the number of sampling locations was increased to include the Des Plaines River and additional locations in the Illinois River downstream of the DNS discharge (Bio-Test 1976). With increased complexity of the monitoring program, the assessment also expanded to include diet analysis and assessment of individual fish physical condition as well as calculation of catch per effort and body condition. In addition, the study objectives changed from basic compositional comparisons to spatial and temporal assessments of the fish community relative to operations of DNS. The river monitoring program remained relatively consistent from 1974 until 1979 when sampling locations downstream of Dresden Island Lock and Dam were added to the program (Ecological Analysts Inc. 1980).

From 1980 to 1994, the river fish monitoring program evolved into its present general scope (EA 1995; Appendix F; Appendix G). Additional analyses such as spatial and temporal statistical comparisons and Index of Well-Being (IWBmod) calculations were incorporated (EA 1993) and electrofishing was adjusted from timed sampling to sampling based on distance (EA 1995). Although sampling frequency, locations, and secondary gear types varied, the river fish monitoring scope and objectives have been generally similar for the past 40 years.

10.2 Dresden Cooling Pond Studies

The DNS cooling pond was filled in fall 1971 and became fully operational in spring 1972 (ComEd 1980). Adult and juvenile fish within the DNS cooling pond were evaluated during three studies between 1972 and 1978. Sampling was conducted periodically between July 1972 and April 1973, during one week in fall 1975, and in May, August, and November 1978 (Hazelton 1979a). Each of the three studies consisted of AC electrofishing at multiple locations throughout the sub-divided cooling pond. In addition, gill netting was used during both the 1972-1973 and 1975 studies while seining and trawling were elements included during the 1975 study. Collectively, the three studies were conducted to characterize the fishery over time and provide guidance for management objectives.

11.0 ICHTHYOPLANKTON

Ichthyoplankton surveys were conducted in the Kankakee and Des Plaines Rivers in and near the DNS intake canals during 1976 and 1977 to estimate the percentage of the ichthyoplankton drift that was entrained under actual operating conditions (Equitable Environmental Health 1977; Nalco 1978). In addition, ichthyoplankton was sampled in the DNS discharge canal below the cooling pond spillway in 1978 to estimate escapement from the cooling pond (Hazleton 1979a). During each of these studies, ichthyoplankton drift was sampled using stationary or towed plankton nets.

In spring and summer of 1993 and 1994, an ichthyoplankton study of the UIW was conducted to determine what portion of the fish community in the Illinois River drainage was using the UIW as a spawning or nursery area as well as when and where use occurred (ComEd 1996). All sampling near DNS was conducted in the Des Plaines River. Exploratory sampling was done in 1993 using towed nets. After analysis of the 1993 data was completed, it was decided that a multihabitat approach with separate gear types was necessary to meet the objectives of the study. As such, benthic pumping, dipnetting, stationary netting, light trapping, seining, and vegetation sampling were added to the study design.

A two-year entrainment and ichthyoplankton study conducted at DNS from April through August 2005 and 2006 assessed the ichthyoplankton community at risk in the Kankakee River in front of the DNS intake canal and in the DNS intake and discharge canals (EA 2007b). Sampling in all areas was conducted with towed or stationary nets depending on flow conditions.

12.0 IMPINGEMENT

Historical impingement data for DNS were collected from 1976 through 1978 and from 1981-1986 to estimate fish escapement from the DNS cooling pond and intake impingement. The 1976 through 1978 impingement studies were conducted once or twice a week, for 24-hour periods, April through November. For the 1981-1986 impingement monitoring study, sampling was conducted twice each week, during months that the station operated under indirect open cycle mode (15 June – 30 September). Impingement studies during closed cycle operation were not required.

Exelon elected to conduct new impingement studies in 2005-2007 to provide current information to address the now remanded §316(b) Phase II rule. The study was conducted generally on a biweekly schedule (every two weeks) from 12 April 2005 through 30 March 2007 (EA 2007c). The schedule yielded 26 sampling events each study year of which eight were collected during indirect open cycle operation (15 June through 30 September) and 18 during closed cycle operation (1 October through 14 June). The study focused on impingement of fish and select shellfish species.

For all studies, impinged shellfish and fish were separated from the debris, identified, counted, weighed in grams (g) and total length (TL) measured in millimeters (mm). Tabular results were prepared that provided the number and weight of each taxon collected during each 24-hr impingement sampling event. These daily results were used to calculate impingement estimates (based on actual circulating water (CW) flow data), which when summed, yielded annual impingement estimates by species. The species-specific impingement estimates, both by number and by weight, were calculated using the following formula:

$$\text{Biweekly Estimate} = \frac{\begin{array}{c}\text{Number or Weight (Biomass)}\\ \text{Collected}\end{array}}{\text{CW Volume Sampled}} \times \text{Biweekly CW Volume}$$

The number and biomass extrapolations were converted to number/biomass impinged per million gallons of CW use. These catch-per-effort (CPE) data were then multiplied by the biweekly CW flows to yield estimates of the number and biomass of impinged organisms at DNS.

13.0 REFERENCES

Battelle Northwest. 1968. A test simulation of the temperature of the Illinois River and a prediction of the effects of Dresden II and Dresden III reactors. AEC Research & Development Report, BNWL-728. Richland, WA.

Bellrose, F.C., R.E. Sparks, F.L. Paveglio, Jr., D.W. Steffeck, R.C. Thomas, and R.A. Weaver. 1977. Fish and Wildlife Habitat Changes Resulting from the Construction of a Nine-foot Navigation Channel in the Illinois Waterway from LaGrange Lock and Dam Upstream to Lockport Lock and Dam. Prepared by the Illinois Natural History Survey Havana Research Laboratory for the Department of the Army, Chicago District, Corps of Engineers.

Commonwealth Edison Company (ComEd). 1977. Dresden generating station cooling water intake impact report. Commonwealth Edison Company, Chicago, IL.

_______________. 1980. 316 (a)-410 (c) Demonstration for the Dresden Nuclear Generating Station, Chicago, IL.

_______________. 1993. Interim report: aerial survey of surface temperatures using infrared scanning techniques, summer 1993, Chicago, IL.

_______________. 1996. Final Report: Aquatic ecological study of the Upper Illinois Waterway, Chicago, IL.

EA Engineering, Science, and Technology, Inc. (EA). 1992. Main report: compilations and annotation of physical, chemical, and biological data pertaining to the Chicago Sanitary and Ship Canal, lower Des Plaines River, and upper Illinois River, 1980-1991. Commonwealth Edison Company, Chicago, IL.

_______________. 1994. The Upper Illinois Waterway study, 1993 fisheries investigation, RM 270.2-323.2. Prepared for Commonwealth Edison Company, Chicago, IL.

_______________. 1995. The Upper Illinois Waterway study, 1994 fisheries investigation, RM 270.2-323.4. Prepared for Commonwealth Edison Company, Chicago, IL.

_______________. 2000. Dresden Station aquatic monitoring, 1999, RM 266.0-274.4. Prepared for Commonwealth Edison Company, Chicago, IL.

_______________. 2002. Dresden Station aquatic monitoring, 2001, Upper Illinois Waterway, RM 270.5-273.4. Prepared for Exelon Generation Company, Dresden Generating Station, Morris, IL.

_______________. 2003. Dresden Station aquatic monitoring, 2002, Upper Illinois Waterway, RM 270.5-273.4. Prepared for Exelon Nuclear, Dresden Generating Station, Morris, IL.

_______________. 2004. Dresden Station aquatic monitoring, 2003, Upper Illinois Waterway, RM 270.5-273.4. Prepared for Exelon Nuclear, Dresden Generating Station, Morris, IL.

______________. 2005. Dresden Station aquatic monitoring, 2004, Upper Illinois Waterway, RM 270.5-273.4. Prepared for Exelon Nuclear, Dresden Generating Station, Morris, IL.

______________. 2006. Dresden Station aquatic monitoring, 2005, Upper Illinois Waterway, RM 270.5-273.4. Prepared for Exelon Nuclear, Dresden Generating Station, Morris, IL.

______________. 2007a. Dresden Station aquatic monitoring, 2006, Upper Illinois Waterway, RM 270.5-273.4. Prepared for Exelon Nuclear, Dresden Generating Station, Morris, IL.

______________. 2007b. Entrainment Characterization Study, 2005 – 2006, Dresden Station. Prepared for Exelon Nuclear, Warrenville, IL.

_____________. 2007c. Impingement Mortality Characterization Study, 2005 – 2007, Dresden Station. Prepared for Exelon Nuclear, Warrenville, IL.

______________. 2008. Dresden Station aquatic monitoring, 2007, Upper Illinois Waterway, RM 270.5-273.4. Prepared for Exelon Nuclear, Dresden Generating Station, Morris, IL.

______________. 2010. Dresden Station aquatic monitoring, 2008, Upper Illinois Waterway, RM 270.5-273.4. Prepared for Exelon Nuclear, Dresden Generating Station, Morris, IL.

______________. 2012. Dresden Station aquatic monitoring, 2011, Upper Illinois Waterway, RM 270.5-273.4. Prepared for Exelon Nuclear, Dresden Generating Station, Morris, IL.

Ecological Analysts, Inc. 1980. Dresden Station aquatic monitoring, 1979. Prepared for Commonwealth Edison Company, Chicago, IL.

______________. 1982. Dresden 1981 environmental program. Prepared for Commonwealth Edison Company, Chicago, IL.

Ecological Specialists, Inc. (ESI). 2003. Unionid mussel survey of the Kankakee River at two proposed water intake sites for the City of Joliet, Illinois. Prepared for EA Engineering, Science, and Technology, Inc., Deerfield, IL.

Equitable Environmental Health, Inc. 1977. A five-month study of fish eggs and. larvae· of the Kankakee and Des Plaines rivers in the vicinity of Dresden Station. Prepared for Commonwealth Edison Company, Chicago, IL.

Hazleton Environmental Sciences Corporation (Hazelton). 1979a. Fisheries studies at Dresden Station, 1978. Prepared for Commonwealth Edison Company, Chicago, IL.

______________. 1979b. Environmental studies of the Des Plaines, Kankakee, and Illinois Rivers near the Dresden Station, January through December, 1977. Prepared for Commonwealth Edison Company, Chicago, IL.

Havera, S.P., F.C. Bellrose, H.K. Archer, F.L. Paveglio, Jr., D.W. Steffeck, K.S. Lubinski, R.E. Sparks, W.U. Brigham, L. Coutant, S. Waite, and D. McCormick. 1980. Projected effects of increased diversion of Lake Michigan water on the environment of the Illinois

River valley. Report to the Chicago District, U.S. Army Corps of Engineers. Ill. Nat. Hist. Surv., Champaign, IL.

Illinois Environmental Protection Agency and Illinois Department of Agriculture. 2014. Illinois Nutrient Loss Reduction Strategy, Draft for Public Comment, Springfield, IL.

Industrial Bio-Test Laboratories, Inc. (Bio-Test). 1969. A practical approach to the preservation of the aquatic environment: the effects of discharge of condenser water into the Illinois River. Prepared for Commonwealth Edison Company, Chicago, IL.

_______________. 1970. Preoperational environmental monitoring (thermal) of the Illinois Rivers near Dresden Nuclear Power Station, July 1969 – June 1970. Prepared for Commonwealth Edison Company, Chicago, IL.

_______________. 1972. Environmental monitoring (thermal) of the Des Plaines, Kankakee, and Illinois Rivers near Dresden Nuclear Power Station, July 1970 – December 1971. Prepared for Commonwealth Edison Company, Chicago, IL.

_______________. 1973. Environmental monitoring (thermal) of the Des Plaines, Kankakee, and Illinois Rivers near Dresden Nuclear Power Station, January – December 1972. Prepared for Commonwealth Edison Company, Chicago, IL.

_______________. 1975. Environmental monitoring (thermal) of the Des Plaines, Kankakee, and Illinois Rivers near Dresden Nuclear Power Station, January 1972 – December 1973. Prepared for Commonwealth Edison Company, Chicago, IL.

_______________. 1976. Environmental monitoring (thermal) of the Des Plaines, Kankakee, and Illinois Rivers near the Dresden Station, January – December 1974. Prepared for Commonwealth Edison Company, Chicago, IL.

Illinois Natural History Survey (INHS). 2013. Freshwater mussels of the Illinois River tributaries: Upper, Middle, and Lower drainages. Illinois Natural History Survey, Champaign, IL.

_______________. 2012. Freshwater mussels of the Des Plaines River and Lake Michigan tributaries in Illinois. Illinois Natural History Survey, Champaign, IL.

Nalco Environmental Sciences (Nalco). 1978. Fisheries studies at Dresden Station 1971-1978. Prepared for Commonwealth Edison Company, Chicago, IL.

_______________. 1976. Environmental monitoring (thermal) of the Des Plaines, Kankakee, and Illinois Rivers near the Dresden Station, January – December 1975. Prepared for Commonwealth Edison Company, Chicago, IL.

Sietman, B.E., S.D. Whitney, D.E. Kelner, K.D. Blodgett, and H.L. Dunn. 2001. Post-extirpation recovery of the freshwater mussel (Bivalvia: Unionidae) fauna in the upper Illinois River. Journal of Freshwater Ecology 16:273-281.

Sparks, R.E., P.P. Tazik, K.D. Blodgett, G.L. Warren, and M.J. Wetzel. 1986. Des Plaines River Long-Term Monitoring Program. Phase I. Aq. Biol. Tech. Rep. 1986(6). Ill. Nat. Hist. Surv., Champaign, IL.

Tazik, P.P. 1988. Des Plaines River Long-Term Monitoring Program. Phase III. Aq. Biol. Tech. Rep. 1988(5). Ill. Nat. Hist. Surv., Champaign, IL.

Tazik, P.P. and R.E. Sparks. 1987. Des Plaines River Long-Term Monitoring Program. Phase II. Aq. Biol. Tech. Rep. 1987(4). Ill. Nat. Hist. Surv., Champaign, IL.

Tazik, P.P. and S.T. Sobaski. 1992. Des Plaines River Long-Term Monitoring Program: Vegetation Analysis and Habitat Characterization. Aq. Ecol. Tech. Rep. 92/1. Ill. Nat. Hist. Surv., Champaign, IL.

United States Army Corps of Engineers (USACE). 2014. Rivergages.com, water levels of rivers and lakes. http://www2.mvr.usace.army.mil/WaterControl/new/layout.cfm.

United State Geological Survey (USGS). 2014. USGS Current Water Data for Illinois. http://waterdata.usgs.gov/il.

APPENDIX F

Supportive Reports:
Dresden Nuclear Station Aquatic Monitoring 2013 Upper Illinois Waterway River Mile 270.5 – 273.4

DRESDEN NUCLEAR STATION

AQUATIC MONITORING 2013
UPPER ILLINOIS WATERWAY
RIVER MILE 270.5-273.4

Prepared for:

Exelon Nuclear

Dresden Generating Station

6500 North Dresden Road

Morris, Illinois 60450

Prepared by:

EA Engineering, Science, and Technology

444 Lake Cook Road, Suite 18

Deerfield, Illinois 60015

DRESDEN NUCLEAR STATION

AQUATIC MONITORING 2013

UPPER ILLINOIS WATERWAY

RIVER MILE 270.5-273.4

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DEFINITIONS

Analysis of Variance (ANOVA) - This useful statistical tool helps the user to identify sources of variability from one or more potential sources, such as locations, months, or years, by partitioning the total variance in the data into components assignable to specific sources. The analysis of variance looks at the statistical differences between the averages (means) of different groups of data. When the statistical significance of the differences of means can be assessed, then a more accurate comparison can be made between groups. In an ANOVA analysis, the relationship between measurements of the mean and the variance or "random error" of each group provides the information needed to determine if the difference between the two is significant.

Benthos - Collective term for aquatic organisms living in or on the bottom substrates and large enough to be seen with the naked eye. Used in this report to refer to benthic macroinvertebrates **-** animals without backbones of a size large enough to be seen by the unaided eye, and which can be retained by a U.S. Standard No. 30 strainer (28 openings per inch, 0.595-mm openings). Benthic macroinvertebrates help maintain the health of the water ecosystem by eating bacteria, dead and decaying plants, and animals, and are a source of food for other organisms. USEPA indicates that benthic macroinvertebrates make good indicators of watershed health because they live in the water for all or most of their life, stay in areas suitable for their survival, are relatively easy to collect, differ in their tolerance to the amount and types of pollution, often live for more than one year, have limited mobility, and are integrators of environmental condition. See Macroinvertebrates.

Catch per Effort (CPE) - A common method fisheries biologists use to compare the relative abundance of fish between one area and another, where the only common link is the method used to catch the fish. CPE is the catch of fish in numbers or weight taken by a defined effort. CPE can be applied to a number of situations, including the number of fish captured divided by the amount of time it took to catch the fish (fish per hour), number of fish captured divided by distance electrofished (fish per kilometer), the number of seine hauls made to catch fish (fish per seine haul), weight of fish taken per hour of trawling (weight per hour) and number of fish taken by overnight gillnet sets (number per gill-net night). CPE is also termed catch per unit effort, catch rate, or fishing success.

DELT Anomalies - DELT anomalies (Deformities, Erosions, Lesions, and Tumors) are a subset of external anomalies. A complete description is included in Section 2.3.1. An external anomaly on fish is defined as the presence of externally visible skin or just under the skin disorders, and is expressed as percent of affected fish among all fish processed. It provides an indication of the physical condition of fish monitored at each sampling site. Biosurvey results collected by Ohio EPA show a high frequency of DELT anomalies to be an accurate indication of pollution stress usually caused by multiple sub lethal stresses as the result of degraded water quality (e.g. often a combination of toxic impacts combined with marginal DO concentrations). There also appears to be a positive relationship between sites containing chemically contaminated sediments *(e.g.* metals, PAHs) and very high percent occurrence of DELT anomalies in combination with very low Index of Biotic Integrity (IBI) and Modified Index of Well-Being scores (IWBmod). See IBI and IWBmod.

Electrofishing - a fish collection technique that employs an electric current to attract (DC current) or temporarily stun (AC current) fish enabling them to be captured so they can be weighed and measured. A boat-mounted AC electrofishing system consists of a boat to carry the complete system, a gas-fueled generator to produce the electric current, a control box, a safety system that allows the boat driver and/or the individual collecting fish from the front of the boat to disrupt the current flow to the electrodes, and electrodes to conduct the current to the water. Dip nets are used to retrieve fish that have been stunned. Electrofishing is a useful sampling technique because it provides a good indication of which species are present in a waterway. It is an efficient capture method that can be used on most streams to obtain reliable fish population information, length-weight relationships, and age and growth. Electrofishing equipment tends to collect larger fish more easily than smaller fish but adjustments can be made to voltage and amperage to reduce size selectivity. Electrofishing efficiency is affected by stream conductivity, temperature, depth, and transparency (clarity) of water. Each condition must be considered to ensure reliable fish collection and relative population abundance estimates. This technique can be more efficient than other methods of sample collection but is often used in conjunction with seining and/or gill netting.

Entrainment - The incorporation of any life stages of fish and shellfish with intake water flow entering and passing through a cooling water intake structure including the traveling screens and into a cooling water system. Fish eggs and larvae as well as other small organisms are susceptible to entrainment.

EPT Taxa - USEPA uses the presence and abundance of pollution-sensitive benthic invertebrates, primarily aquatic insects, as indicators of stream water quality. Pollution-sensitive insect species typically include EPT taxa. This refers to members of the insect groups Ephemeroptera (mayflies), Plecoptera (stoneflies), and Trichoptera (caddisflies). See Taxa. The relatively low tolerance for pollutants and other poor water quality conditions (low dissolved oxygen and turbidity) characteristic of most members of these three insect groups is well documented. A stream is considered healthy if a good distribution of these pollution-sensitive insects is found. When there is an imbalance in the insect community (i.e., more pollution-tolerant species [or individuals] than intolerant species), the stream system could be stressed by an excess of loading from organic wastes, sediments, nutrients, metals, etc. EPT taxa usually dominate gravel and cobble habitats in good quality rivers and streams.

Gear - Refers to equipment used for obtaining samples or measuring of things such as fish, benthos, sediment, and water samples. Examples of gear are seines, electrofishing equipment, Hester Dendy artificial substrate samplers, Ponar grab samplers and dissolved oxygen meters.

Hester Dendy (HD) Artificial Substrate **Sampler -** this sampling gear provides an artificial substrate for benthic macroinvertebrate organisms to colonize. They are used where the substrate (rock) will not allow grab samplers or there is an interest in data from locations above the bottom substrate. The HD multiple-plate substrate sampler mimics substrates by providing cover and narrow openings, such as found under, between rocks, under, or in leaves or woody debris. The hardboard plates are stacked on top of each other and divided by spacers. The plates have smooth surfaces on each side, are fastened together with a long eyebolt, and can easily be disassembled for specimen examination. A good collection of insect larva and other organisms can be attracted when the sampler is left in place for four or more weeks. After the samplers are recovered, the insects that have colonized the surfaces are counted and identified. Since the surface area of the plates is known, the multiple-plate samplers yield quantitative results.

Impingement - The entrapment of any life stages of fish and shellfish on the outer part of an intake structure or against screening devices during periods of intake water withdrawal. Organisms that are too large to pass through the traveling screens are impinged.

Index or multimetric index - a numeric combination of scores derived from biological measures called metrics. A metric is a characteristic of the animals and/or plants from a particular region that changes in some predictable way with increased human influence and can therefore be scored according to conditions.

Index of Biotic Integrity Metric (IBI) - A method of looking at the quality of water and stream habitat using fish survey data. Usually, the total number of organisms and the number of different species present are determined. An IBI typically includes 10-12 biological metrics based on fish composition and the abundance and condition of fish. Each metric is scored against criteria developed from appropriate regional reference sites. Individual metrics might differ in their relative sensitivity to various levels of biological condition. Points are assigned to metrics like the type of species (those that prefer clean environments getting a higher score), the number of each species found in a sample (higher scores for high numbers) and the number of different species found in certain groups (e.g., the number of sucker species, with higher scores for greater diversity within each group). The IBI can provide a consistent theoretical framework for analyzing fish community data.

Index of Well Being (IWB) - This is a composite index that combines several parameters to help assess the health of a community. The four parameters that comprise the IWB are (1) fish density (number), (2) fish biomass (weight), (3) Shannon-Wiener Index of Diversity based on numbers of fish, and (4) Shannon-Wiener Index of Diversity based on weight of fish. See Modified Index of Well Being.

Macroinvertebrate - An invertebrate animal (i.e., without a backbone) large enough to be seen without magnification. Major groups of invertebrates include sponges, hydroids, flatworms, bryozoans, segmented worms, leeches, crayfish, insects, snails, and mussels. The life cycle of a macroinvertebrate goes from egg to adult form and they can undergo either complete or incomplete metamorphosis. Complete metamorphosis has four stages:

egg, larvae, pupa, and adult. Organisms, which undergo complete metamorphosis, include true flies, beetles, and caddisflies. Many of these organisms are aquatic during the egg and larval stages, but not in the adult stage. Incomplete metamorphosis has three stages: egg, nymph, and adult. Organisms that undergo incomplete metamorphosis include stoneflies, mayflies, dragonflies, and true bugs.

Modified Index of Well Being (IWBmod) - Ohio EPA modified the IWB index by excluding weight and number of 13 common pollution-tolerant fish species, although these taxa are included in the fish diversity calculations. This makes the index more sensitive to a wider array of environmental disturbances, particularly those that result in shifts in community composition without large reductions in species richness, numbers, and/or biomass. This modification eliminates the "undesired" effect caused by a high abundance of tolerant species like common carp (which clearly is the case in the Upper Illinois Waterway), but retains their "desired" influence on the diversity indices

Ponar Sampler - This sampler is used to collect samples of benthic macroinvertebrates in the bottom substrate. The Ponar grab (or dredge) sampler consists of two opposing semi-circular jaws that are normally held open by a trigger mechanism. It is called a grab sampler because of the manner in which it obtains samples. The sampler is lowered to the bottom where contact with the bottom sets off the trigger and a strong spring snaps the jaws shut trapping a sample of the bottom inside. A fine screen covers the top of the jaws so that the trapped material will not wash out as the sampler is retrieved. The grab sampler provides a means to obtain a somewhat quantitative and undisturbed sample of the bottom material. The Ponar sampler is a commonly used sampler that is very versatile for both soft and hard bottoms such as sand, gravel, and clay. Samples retrieved from the sampler are preserved and returned to the laboratory for analysis.

Relative Weight (W*r*) - This is a condition index that quantifies fish condition (i.e., how much does a fish weigh for its length). In making an assessment of a fish population, it is of interest to know if fish are growing poorly or losing weight. Lack of food, poor water quality, poor water temperatures (too hot or too cold), or disease can cause stress that results in poor growth. While growth may be difficult to measure, condition or plumpness of fish is easy to measure and indicates if fish are under stress. Relative weight is the ratio of the actual weight of a fish to what a rapidly growing healthy fish of the same length should weigh, called standard weight (W*s*) that are published in the scientific literature**.** Fish with high relative weights are plump while those with low relative weights are thin. A W*r* range of 90-100 is a typical objective for most fish species. When mean W*r* values are well below 100 for a size group, problems may exist in food and feeding relationships.

Secchi disk - This sampling gear provides a means of determining the limit of water transparency (clarity) that is based on contrast. The upper surface of the Secchi disk is divided into four equal quadrants that are alternately black and white. An eyebolt is located at the center of the disk on the upper side so that a line can be tied to the disk. The disk, which has a 6-inch radius, is lowered into the water from a boat or dock. A weight is attached to the underside of the disk so that it will sink below the surface. This line is marked in inches or centimeters making it possible to determine the depth at which the Secchi disk disappears from sight as it is lowered into the water. It is lowered into the water until it can no longer be seen and then lifted back up until it can be seen again. Averaging the two depths gives the clarity of the water; Secchi measurements are made in the shade with the sun to back of the observer to make an accurate and reproducible reading. Higher Secchi readings mean more rope was let out before the disk disappeared from sight and indicates clearer water. Lower readings indicate turbid or colored water. Clear water lets light penetrate more deeply into the lake than murky water. This light allows photosynthesis to occur and oxygen to be produced. The rule of thumb is that light can penetrate to a depth of about 2-3 times the Secchi disk depth. Clarity is affected by algae, soil particles, and other materials suspended in the water.

Seining - The process of using a seine net to sample fish in ponds or streams. A seine net has fine mesh netting attached to a sturdy stake or pole at each end. The netting is equipped with an upper float line and a lower weighted line to keep the net in a vertical position when stretched horizontally and dragged through shallow waters. Seining is usually a two-person task, as most seines are wider than they are long; similar in some respects to a tennis net, though much smaller in width. The technique involves pulling the seine along the bottom in shallow waters where many types of small and young fish are found. This is almost always accomplished by walking or wading. Seines are highly effective even though they do not immediately capture the fish. Instead, the nets are pulled in one direction over a good distance, causing the fish to attempt to swim against it. The seine is then pulled into shore and the seine is raised upward and the sample is collected.

Specific Conductance - Conductivity or specific conductance is the measure of the water's ability to conduct an electric current. Conductivity depends upon the number of ions or charged particles (total dissolved salts) in the water. Conductivity is reported in micromhos per centimeter (µmhos/cm) which has been recently renamed as microSiemans per centimeter (µS/cm) at 25°C. Distilled or deionized water has very few dissolved ions and so has low conductivity. Low conductivity (less than 50 µS/cm) makes it difficult to use electrofishing to stun fish for monitoring. Conductivity determinations can be useful in aquatic studies because they provide an estimate of dissolved particles in the water. Low specific conductance values are characteristic of low nutrient waters. High specific conductance values are observed in waters rich in dissolved minerals and organics where plant nutrients (fertilizer) are in greater abundance. Very high values are good indicators of possible pollution sites. For instance, industrial discharges, road salt, and failing septic tanks can raise conductivity. Lakes and rivers vary in conductivity based on the geology of an area. Water bodies underlain by granite have lower conductivity than those areas of clay soils. Conductivity in rivers in the United States range from 50 to 1,500 µS/cm.

Taxa - A category, at any level, in a system for classifying plants or animals. Biologists classify life into a widely accepted hierarchical system that reflects evolutionary relationships among organisms. From top to bottom, the main categories or *taxa*, of living things are kingdom, phylum (for animals) or division (for plants and fungi), class, order, family, genus, species. Humans, for example, are classified as follows: Animalia *(Kingdom)*, Chordata *(Phylum)*, Mammalia *(Class)*, Primates *(Order)*, Hominidae *(Family)*, Homo *(Genus)*, sapiens *(Species)*. These last two designations, together referred to as the Latin binomial, are used to identify an organism and distinguish it from any other.

Transparency - Transparency of water relates to the depth that light will penetrate water. This parameter is routinely estimated by the depth at which an observer can no longer see a Secchi disk. Higher water transparency or clarity is an aid to retrieval of fish that have been collected by electrofishing. On a broader level, the transmission of light into a body of water is extremely important since the sun is the primary source of energy for all biological phenomena. Light is necessary for photosynthesis, a process that produces oxygen and food for consumers. It is common practice for biologists to consider the depth of the euphotic zone (the upper layers of a body of water into which sufficient light penetrates to permit growth of green plants) to be roughly three times the limit of visibility.

Tukey's Test - is a statistical test generally used in conjunction with an ANOVA to find which means are significantly different from one another. The test compares the means of every treatment to the means of every other treatment, and identifies where the difference between two means is greater than the standard error would be expected to allow.

Voucher Specimens - Voucher specimens are representative samples of each species. The purpose of a voucher collection is to set aside a representative collection of the taxa identified from the study. This set can be verified by a fisheries expert, and can be used to check future identifications.

EXECUTIVE SUMMARY

Biological sampling was conducted in 2013 at eleven locations in the Upper Illinois Waterway (UIW) and lower Kankakee River in the vicinity of the Dresden Nuclear Station (DNS). The fish community was assessed at 10 locations and the macroinvertebrate benthic (benthos) community was evaluated at six locations. Fish sampling was conducted three times: once in July, August, and September. In addition to the base fisheries program that emphasized fish distribution and abundance, fish were examined to assess fish condition and the incidence of disease or anomalies. Benthos was sampled at six locations in late August using a Ponar grab sampler and with Hester Dendy artificial substrate samplers (HDs) that were deployed in mid-July and retrieved in late August. Physicochemical measurements were made during each electrofishing collection.

The DNS study area extends from just upstream of the confluence of the Kankakee and Des Plaines Rivers to one mile downstream of the Dresden Island Lock and Dam (RMs 270.5-273.4). For the purpose of discussion and interpretation, the study area was divided into two segments: Dresden Pool (near DNS upstream of the Dresden Island Lock and Dam), and Downstream of the Dresden Island Lock and Dam (Marseilles Pool of the Illinois River). The Dresden Pool locations were further divided into areas upstream and downstream of DNS.

Fish

During the 2013 DNS long-term fish monitoring program (Dresden Pool and Downstream of Dresden Island Lock and Dam segments combined), 3,708 fish were collected representing 50 species and one hybrid. Numerically, the combined catch was dominated by spotfin shiner (24.8 percent), bluegill (14.0 percent), gizzard shad (11.5 percent), and bluntnose minnow (8.7 percent). Eleven other species contributed 1.0 to 6.1 percent of total catch including bullhead minnow, brook silverside, green sunfish, smallmouth bass, and largemouth bass. Collectively, the 15 most abundant species accounted for 91percent of the numerical catch. By weight, the combined catch was dominated by gizzard shad (25.7 percent), channel catfish (13.8 percent), common carp (13.0 percent), and largemouth bass (9.2 percent). Thirteen species accounted for 96 percent of the biomass collected in 2013 (Table F-3).

Thirty-four specimens of the state-endangered pallid shiner were collected (all in Dresden Pool), compared to three to 151 pallid shiner collected since 2007. Catches were low in 2011 (10) and 2013 (34) likely reflecting the reduced sampling effort compared to prior studies. In addition to pallid shiner, two specimens of the state-threatened banded killifish were also collected in Dresden Pool. 2013 marks the first time banded killifish has been collected as part of the DNS fish monitoring program. No other state or federal listed fish species were collected during the July through September 2013program.

Round goby, an accidentally introduced nuisance species was collected for the eighth year of the DNS monitoring program. Three to 77 round goby were collected annually since 2003. Asian (silver or bighead) carp were not collected in 2013. In 2008, a silver carp was collected for the first time during this program downstream of the Dresden Island Lock and Dam. As has been the case since 1993, exotic species (e.g., threadfin shad, round goby, silver carp, western mosquitofish, and common carp) were excluded from the spatial and inter-year analyses of catch-per-unit-effort (CPE), modified Index of Well-Being (IWBmod), and species richness parameters because of the confounding influence they can exert on catch rates (numbers) and biomass (weight).

Dresden Pool

Water temperatures during the 2013 monitoring ranged from 19.4 to 33.0°C in Dresden Pool near DNS. Mean temperatures during the study period ranged from 25.8°C in the Kankakee River to 30.6°C in DNS's discharge canal. Mean temperatures within the discharge canal were 0.3 to 2.7°C higher than at all other locations except at Kankakee River Location 503, which had a mean temperature 4.8 °C lower than the mean discharge canal temperature. The mean 2013 Dresden Pool summertime (i.e., 15 July through September) water temperature (28.9°C) was higher than most recent years.

During individual trips, temperatures in Dresden Pool downstream of the discharge were consistently warmer than water temperatures upstream. Downstream mean water temperatures were warmest in July (32.9°C) and coolest in September (26.7°C). For all trips combined (July-September), the mean upstream temperature (27.4°C) was 3.0°C cooler than downstream (30.4°C).

Dissolved oxygen (DO) concentrations were consistently above the General Use minimum standards (effective 28 January 2008) of 5 ppm at any time from March through July and 3.5 ppm at any time from August through February. Specific conductance values were typically higher at the Des Plaines River locations compared to the Kankakee River locations. Mean transparency (i.e., Secchi disk depth) values were similar among locations, ranging from 69 to 110 cm.

Sampling in Dresden Pool near DNS during 2013 yielded 2,746 native fish representing 45 species and one hybrid (Table F-5). Numerically dominant species (gears combined) were spotfin shiner (18.9 percent), bluegill (16.4 percent), gizzard shad (15.1 percent), and bluntnose minnow (10.9 percent). Other species that comprised four percent or more of the catch by number were bullhead minnow, brook silverside, blackstripe topminnow, and largemouth bass (Table F-5). Collectively, 14 species accounted for 92.4 percent of the total catch.

During July and August 2013 when ambient river temperatures are typically highest and discharge temperatures are at their maximum, there were no significant differences in the electrofishing catch parameters (CPE for native species, IWBmod scores, or native species richness) in Dresden Pool upstream and downstream of DNS.

CPE and native species richness in 2013 for the Dresden Pool segment were not significantly different from those calculated for the previous years. The 1994 CPE was significantly lower than all other years except 1995. In 2013, under Ohio EPA's classification of IWBmod scores, the fishery in the Dresden Pool segment would be considered fair, as it has been during most study years. Seining data generally corroborated the trends of the electrofishing data.

The condition of fish collected in the Dresden Pool during 2013 was assessed using relative weights (*Wr*). In the Dresden Pool segment, inter-year comparisons of mean *Wr* were made for gizzard shad, channel catfish, green sunfish, bluegill, smallmouth bass, and largemouth bass. For the past 16 study years, significant differences between years have been occasionally observed for some of those species. For green sunfish and bluegill, significant differences were due most often to the extent in which *Wr* values exceeded 100. In many cases, there were no significant differences among years and *Wr* for channel catfish, green sunfish, bluegill, and largemouth bass always exceeded 95. Based on relative weight, condition of these species was good in 2013.

Fish collected from Dresden Pool in 2013 were examined for external DELT anomalies (deformities, erosions, lesions, and tumors), which are the group of anomalies most relevant for this study because a clear relationship has been established between the incidence (percentage) of DELT anomalies and water quality. DELT anomalies were observed on 2.4 percent of the catch within the Dresden Pool study area. Fin erosion was present on over 90 percent of the fish with DELT anomalies in 2013. In general, bottom feeders (e.g., suckers, freshwater drum, common carp, and catfishes) exhibited the highest DELT anomaly affliction rates. The summer 2013 DELT affliction rate of 2.8 was the highest observed since 2004 when the affliction rate was 5.8. Inter-year comparisons of DELT anomaly affliction rates during the summertime periods revealed that affliction rates remain elevated in Dresden Pool. With three exceptions, affliction rates have been consistently near two percent during the past 12 years. Ohio EPA (1987) uses percent DELT anomalies as an IBI (Index of Biotic Integrity) metric. Based on the incidence rates, Dresden Pool was in the poorest category through 1998. Since 1998, and except for 2000 and 2004 when DELT incidence rate was in the poor category, fish collected from the Dresden Pool have been in the fair category for DELT anomalies.

Downstream Dresden Island Lock and Dam

Water temperatures during the routine monitoring program at the two electroshocking locations downstream of the Dresden Island Lock and Dam ranged from 23.8 to 32.6°C. The warmest temperature occurred during July. Both locations downstream of the Dresden Island Lock and Dam had similar mean water temperatures (28.7 and 29.3°C) during the 2013 study. Annual summertime (i.e., 15 June through September) water temperatures downstream of the Dresden Island Lock and Dam averaged 25.7 to 29.6°C. The 2013 mean (29.0°C) was the fifth highest to date. The mean summertime water temperature downstream of the Dresden Island Lock and Dam was lowest in 1994.

Surface or mid-depth dissolved oxygen (DO) concentrations ranged from 7.2 to 8.1 ppm during the 2013 sampling period. DO concentrations were consistently above the General Use minimum standards of 5 ppm at any time from March through July and 3.5 ppm at any time from August through February. Mean DO values were similar between the two locations (7.8 and 7.6

ppm).

The combined electrofishing CPE (number caught per km), relative abundance, and species richness for native fish species from the two locations downstream of Dresden Island Lock and Dam were compared between two seasonal periods. Twenty-five species were collected in July/August and 19 species in September. CPE increased from 90 in July/August to 147 in September. Mean native species richness (13) was the same for each period.

For the segment downstream of Dresden Island Lock and Dam, CPE (fish per km), mean IWBmod, and mean native species richness were not significantly different among years for the 15 June through August period. The fishery downstream of the Dam during the mid-June through August period has been considered fair under Ohio EPA's classification of IWBmod scores during all 14 years compared.

Inter-year comparisons of mean *Wr* values for the segment below the Dresden Island Lock and Dam were made for smallmouth buffalo, channel catfish, green sunfish, bluegill, smallmouth bass, largemouth bass, and freshwater drum. The values indicated that all species except smallmouth buffalo were in average or better than average condition. *Wr* values for smallmouth buffalo has been consistently sub-optimal, which suggest that there have been health, food availability, and/or feeding relationship issues for this species in the study area.

DELT anomalies were observed on 4.0 percent of the catch and fin erosion accounted for all of the DELT anomalies observed. As in the Dresden Pool segment, bottom feeders such as common carp, smallmouth buffalo, golden redhorse, shorthead redhorse, and channel catfish typically had the highest DELT anomaly affliction rates in the area downstream of the Dresden Island Lock and Dam. Affliction rates downstream of Dresden Island Lock and Dam in 2013 were the seventh highest in the 14 years studied. Similar rates were observed in 1995 and 2006. Overall, annual DELT affliction rates were widely variable ranging from 2.4 in 2007 to 8.2 in 1999. Based on Ohio EPA’s (1987) scoring system, DELT scores within this segment were in the poor category all years except 2007 when the DELT incidence of 2.4 percent was in the fair range.

Benthos

Macroinvertebrate data collected by Ponar grab and Hester Dendy artificial substrate samplers indicate that a poor benthic community exists in both Dresden Pool and in the Illinois River downstream of the Dresden Island Lock and Dam. The fauna at all locations in the DNS study area was dominated by tolerant or facultative taxa. The Ponar samples indicated that the highly tolerant Oligochaeta (worms) dominated at most locations. With a few exceptions, intolerant groups such as Ephemeroptera (mayflies) and Trichoptera (caddisflies) generally were not well represented and when present were generally collected in relatively low numbers. The number of EPT taxa was lower than would be expected for a waterway of this size. As expected, HD samples typically had higher total taxa richness, higher EPT taxa richness, and a more even distribution of abundance among the taxa, than did Ponar samples from the same locations.

No significant upstream/downstream differences were observed in total density (all taxa), densities of Oligochaeta, Chironomidae, and Pelecypoda, and taxa richness in the Ponar samples. Comparisons among the 11 years of Ponar data from Dresden Pool showed there were no significant differences in the mean densities of Ephemeroptera for areas combined or the two areas individually. In addition, no significant annual differences were observed among the upstream densities of Chironomidae and taxa richness. Total density (all taxa) and Oligochaeta densities upstream of DNS were statistically similar among all years except 2008 when the lowest density was recorded. Downstream of the Station, total density, Oligochaeta density, Chironomidae density, and taxa richness were statistically similar except between years with the lowest and highest densities.

Results from the 2013 HDs, showed that the relative abundance of Chironomidae and Oligochaeta was higher upstream of DNS, whereas Trichoptera relative abundance was higher downstream of DNS. Ephemeroptera was a minor component upstream and downstream of DNS. As was observed for Chironomidae relative abundance, Chironomidae densities were higher upstream of the Station than downstream of the Station; however, the opposite was the case for Oligochaeta. The total number of taxa was higher upstream of DNS while the number of EPT taxa was similar between areas. Mean Ephemeroptera densities among years were not significantly different. In addition, the 2013 results were statistically similar to the majority of study years for all parameters. However, there were some inter-year significant differences in mean densities for all taxa, Oligochaeta, Chironomidae, and Trichoptera. These annual differences could be the result of a number of factors including natural annual variation, stream flow conditions, food availability, predator abundance, and legacy pollutants.

The more pollution tolerant taxa typically observed in the Dresden Pool Ponar samples such as *Nanocladius distinctus*, *Dicrotendipes simpsoni*, and *Glyptotendipes* were typically absent from the Ponar samples downstream of the Dresden Island Lock and Dam, but were present in the HD samplers. The variability observed in this area and the lack of relationship to trends observed upstream are likely artifacts of the unstable conditions below the Dam and to the substantial differences in habitat between the Dresden Pool and the area downstream of the Dam.

1.0 INTRODUCTION

Biological and physicochemical monitoring was conducted during the period July through September 2013 in the Dresden Pool of the Upper Illinois Waterway (UIW), both upstream and downstream of DNS, and in Marseilles Pool downstream of Dresden Island Lock and Dam. Cooling water for DNS is withdrawn from a location near the confluence of the Kankakee and Des Plaines Rivers, whereas the facility's discharge is located on the Illinois River. Withdrawn water, after passing through the generating facility and a series of canals, is pumped into a cooling reservoir (pond). After circulating through the cooling reservoir, water exits over a spillway and, depending upon the time of year, is recirculated back to the DNS (closed cycle operation) or discharged to the Illinois River (indirect open cycle). DNS operates in indirect cycle (once through the reservoir) mode from June 15 through September 30 each year and operates in closed cycle mode from October 1 through June 14. Under emergencies, the cooling reservoir can be bypassed and DNS can operate in open cycle mode.

The 2013 monitoring program was comprised of two primary elements.

- Continuation of the long-term fish monitoring program and associated physicochemical measurements, which was last conducted in 2011.

- Continuation of the benthic macroinvertebrate (benthos) monitoring program that began in 1999 and was last conducted in 2011.

The objectives of the 2013 Dresden program were to:

- Determine the current species composition and relative abundance of fish within the study area.
- Determine current spatial trends regarding the composition, distribution, and abundance compared to historical trends.
- Determine current spatial patterns of fish condition and health in the study area compared to historical trends.
- Determine current taxa richness, density, and relative abundance of benthos within the study area compared to historical trends.

Historical data comparisons in this report are found in monitoring reports conducted from 1994 through 2011(EA Reports: 1995, 1996a, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2010, and 2012).

EA Engineering, Science, and Technology (EA) was contracted by Exelon Nuclear to perform these studies.

2.0 METHODS

As in prior studies, fish surveys were conducted at eight locations along 2.9 miles of the Upper Illinois Waterway (RM 270.5-RM 273.4) and two locations in the Kankakee River. DNS is located within this stretch at RM 272.3 (Figure F-1). The difference between the 2011 and 2013 fish sampling programs and previous programs was that three surveys were conducted in 2011 and 2013 (once in July, August, and September) compared to the eight surveys conducted from May through September prior to 2011. As in those earlier studies, the benthic macroinvertebrate community (benthos) was sampled at six locations with artificial substrate samplers (Hester Dendy samplers) that were deployed in early-July and retrieved in mid-August, concurrent with Ponar grab sampler collections.

2.1 DESCRIPTION OF SAMPLING GEAR

2.1.1 Electrofishing

Electrofishing was conducted at eight locations (Locations 501, 502, 503, 506, 507A, 510, 512, and 515) using a boat-mounted electrofishing system energized by a 230-volt, 5,000-watt three-phase AC generator. Each electrofishing zone was 500 m long, except at Location 506 (DNS discharge canal), which was 310 m long. Electrofishing was conducted in a downstream direction at seven of the eight locations. The discharge canal (Location 506) was sampled by a combination of upstream and downstream electrofishing runs due to the very fast current within that zone. Electrofishing began no earlier than 0.5 hours after sunrise and finished no later than 0.5 hours before sunset. The sampling crew consisted of a driver and a dip netter. Both individuals had long-handled dip nets for catching stunned fish. The electrofishing program has been conducted in the same manner since 2001.

2.1.2 Seining

Seining was conducted at seven locations (Locations 501, 502, 503, 507, 509, 512, and 515) using a straight seine that was 25 ft (7.6 m) long by 6 ft (1.8 m) deep with 3/16-inch (4.8 mm) Ace mesh. The sampling distance depended on the seinable area available at each location and to the extent possible, was kept constant during each sampling period. If electrofishing and seining were conducted in the same area on the same day, seining was conducted first and at least one hour elapsed before electrofishing was conducted. Sampling areas were consistent with those of previous years. The seining program has been conducted in the same manner since 2001.

2.1.3 Benthos

Benthos sampling was conducted at six locations (501A, 502, 509, 510, 512, and 515) using HD samplers and a Ponar dredge sampler. Each modified HD sampler consisted of eight 3x3-inch plates constructed from 1/8 inch tempered hardboard and twelve 1/8-inch plastic spacers. The plates and spacers were arranged on a 1/4-inch eyebolt so that each sampler had three 1/8-inch spaces, three 1/4-inch spaces, and one 3/8-inch space between the plates. The total surface area of a single sampler, excluding the eyebolt, was 1.01 square feet. Each sample consisted of five

HDs suspended approximately 30-50 cm below the water surface. Duplicate HD sets were deployed at each location as a contingency against loss and/or vandalism of the HD samplers. HD samplers were set in early-July and remained in place for a six-week colonization period. Retrieval of the HDs was accomplished by enclosing the samplers in a fine-mesh sweep-net and then carefully lifting the sampler array and net to the surface. The HDs were disassembled from the array, placed into a single labeled container, and preserved with 10percent formalin.

Two Ponar grab samples were collected at each location using a full-sized (9x9-inch) Ponar dredge sampler. The two samples served as replicates. The Ponar samples were collected when the HD artificial substrates were retrieved in mid-August. Each sample was sieved in the field using an U.S. Standard No. 35 (500 µm) mesh sieve and preserved. Substrate materials were examined qualitatively to determine substrate characteristics and percent composition.

2.2 DESCRIPTION OF SAMPLING LOCATIONS

Of the eleven locations sampled in 2013, two were in the lower Des Plaines River; two in the Kankakee River and seven locations in the Illinois River; five above the Dresden Island Lock and Dam (Dresden Pool of the Illinois River) and two below the Dam (Marseilles Pool).

Location 501A -- Near Mouth of Lower Des Plaines River (RM 273.4) -- Main Channel Border

This location was established for the collection of benthos samples, which were collected just downstream of Bayhill Marina's dock. Artificial substrates were deployed off the channel buoy and the Bayhill Marina dock.

Location 501 -- Mouth of Lower Des Plaines River (RM 273.0) -- Main Channel Border

The 500 meter electroshocking zone began just upstream of a small point and extended upstream to a point 300 m downstream of the I&M spillway. Seining was conducted approximately 100 m downstream of the I&M spillway.

Location 502 -- Mouth of Kankakee River (RM 0.6) -- Tributary Mouth

The 500 m electrofishing zone was located immediately upstream of the DNS intake canal along the left descending bank. Seining was conducted along shore approximately 200 m upstream of the intake canal. Benthos samples were collected near the duck blinds located within the electrofishing zone.

Location 503 -- Kankakee River (RM 2.7) - Main Channel Border

Electrofishing began 840 m upstream of County Line Bridge along the left bank and continued downstream 500 m ending approximately 50 m upstream of a group of homes located just upstream of the bridge. Seining was conducted approximately 130 m upstream of the start of the electrofishing zone along the left bank opposite the upstream end of an island.

Location 506 -- Dresden Nuclear Station Discharge Canal (RM 272.1) -- Thermally Enhanced – Main Channel Border

Electrofishing consisted of sampling each side of the canal twice, which yielded a total distance of 310 m. Because of excessive depth, seining was not conducted at this location.

Location 507 -- South Shore Illinois River (RM 271.9) -- Thermally Enhanced – Main Channel Border

Seining was conducted along the south bank ~120 m downstream of DNS's discharge canal. Electrofishing was not conducted at this location.

Location 507A -- South Shore Illinois River (RM 271.9) -- Thermally Enhanced -- Main Channel Border

Electrofishing began at the embedded barge just downstream of the DNS discharge and extended downstream for 500 m along the left bank. The entire zone was shallow (maximum depth ~ 0.5 m) and sampling was conducted 5 to 30 m from the bank.

Location 509 -- South Shore Illinois River (RM 271.6) -- Thermally Enhanced -- Main Channel Border

Seining was conducted along the bank near the first docking cell upstream of Dresden Island Lock and Dam. Benthos samples were also collected near the first docking cell. Electrofishing was not conducted at this location.

Location 510 -- North Shore Illinois River (RM 272.1) -- Thermally Enhanced – Main Channel Border

Electrofishing began directly across the river from the DNS discharge canal and extended downstream for 500 m. Seining was not conducted at this location. Ponar samples were collected at the downstream end of this zone, while the artificial substrates were deployed off the second docking cell upstream of Dresden Island Dam.

Location 512 -- Dresden Island Lock and Dam (RM 271.3) -- Tailwater

Electrofishing was conducted along both banks at this location, which is downstream of the Dam. Sampling was conducted along the north bank of Big Dresden Island, beginning at a pile of boulders adjacent to the fast tailwater current and continued downstream to the tip of the island: a distance of 340 m. An additional 160 m was sampled along the right (north) bank of the Illinois River, approximately 300 m downstream of the Dam and ending opposite the midpoint of Little Dresden Island. Seining was conducted near the tip of Big Dresden Island along the north bank. Benthos samples were collected near the green channel marker buoy at the downstream end of Big Dresden Island.

Location 515 -- South Shore Illinois River (RM 270.5) -- Downstream of Dresden Island Lock and Dam -- Main Channel Border

Electrofishing began approximately 50 m downstream of the railroad bridge and extended downstream along the left bank for 500 m, ending at Reichold Chemical's discharge. Seining was conducted and benthos samples were collected along the left bank approximately 100 m upstream of the railroad bridge.

2.3 SAMPLE PROCESSING

2.3.1 Fish

All fish were counted and identified to the lowest practical taxonomic level, usually species. For each location and gear, a maximum of 30 specimens of each species collected were measured for total length (mm) and weighed (g). If over 30 individuals of a species were collected at any location, then 30 representative individuals were measured and weighed. The remaining individuals of that species were counted and a group (batch) weight recorded. Cyprinids (minnows, excluding all carp species, goldfish, and their hybrids) were identified, counted, and batch weighed. All fish were maintained in water immediately after collection and held for processing. After processing, they were returned to the river. All fish not processed in the field were preserved in formalin, labeled, and returned to the laboratory for processing. In the laboratory, fish were processed in the same manner as in the field.

A voucher collection of unusual or taxonomically difficult species was compiled. Threatened or endangered species (IESPB 2011) were **not** included in the voucher collection.

All fish encountered were examined for external anomalies. External anomalies were classified as DELT (Deformities, Erosions, Lesions, and Tumors; Ohio EPA 1987, 1989) anomalies, parasites, or "other" abnormalities. The following is an overview of DELT anomalies and their causes in freshwater fishes (Ohio EPA 1989):

1) *Deformities* - These anomalies can affect the head, spine, fins, and have a variety of causes including toxic chemicals, viruses, bacteria (e.g., *Mycobacterium* sp.), and protozoan parasites (e.g., *Myxosoma cerebalis*).

2) *Eroded fins* - These are the result of chronic disease principally caused by flexibacteria invading the fins causing a necrosis of the tissue (Post 1983). Necrosis of the fins may also be caused by gryodactylids, a small trematode parasite. For this study, fin erosion was separated into three categories: slight erosion -<1/3 of fin eroded; moderate erosion - 1/3 -2/3 of fin eroded, and severe erosion ->2/3 of fin eroded

3) *Lesions and Ulcers* - These appear as open sores or exposed tissue and can be caused by viral (e.g., *Lymphocystis* sp.) or bacterial (e.g., *Flexibacter columnaris, Aeromonas* spp., *Vibrio* sp.) infections.

4) *Tumors* - Tumors result from the loss of carefully regulated cellular proliferative growth

in tissue and are generally referred to as neoplasia. In wild fish populations tumors can be the result of exposure to toxic chemicals. Baumann et al. (1987) identified polynuclear aromatic hydrocarbons (PAHs) as the cause of hepatic tumors in brown bullheads in the Black River (Ohio). Viral infections (e.g., Lymphocystis) can also cause tumors. Parasites (e.g., *Glugea anomala* and *Ceratomyxa shasta*; Post 1983) may cause tumor-like masses, but are not considered tumors. Parasite masses can be squeezed and broken between the thumb and forefinger whereas true tumors are firm and not easily broken.

Only those anomalies visible to the naked eye were recorded. The exact counts of anomalies present (e.g., the number of tumors or lesions per fish) were not recorded. An external anomaly is defined as the presence of externally visible skin or subcutaneous disorders, and is expressed as percent of affected fish among all fish processed (Ohio EPA 1989).

2.3.2 Benthos

The benthos samples were analyzed in the laboratory utilizing procedures outlined in EA's Macroinvertebrate Quality Control and Procedures Manual. Prior to analysis, each sample was rinsed on an U.S. No. 35-mesh sieve to remove preservative. The sample material was sorted, a small portion at a time, under a dissecting microscope at 10X magnification. Sorted macroinvertebrates were separated into the following groups: Oligochaeta, Chironomidae, and other taxa. Specimens were preserved in 70 percent alcohol. All macroinvertebrates were identified to the lowest practical taxon using the latest taxonomic keys. Oligochaetes and Chironomids were mounted on glass slides using CMC-10 mounting media prior to examination under a compound binocular microscope at 40-1,000X magnifications.

2.4 PHYSICOCHEMICAL MEASUREMENTS

Dissolved oxygen (DO) concentrations and water temperatures were measured at the surface, at subsequent one-meter depth intervals, and at the bottom at each electroshocking sampling location, but only at mid-depth where the water was one meter or less in depth. Measurements were recorded each day at those locations where electrofishing was conducted. Near-surface specific conductance measurements were also taken at each electrofishing location during each sampling event. Instruments used to measure temperature were checked against a calibrated thermometer. Instruments used to measure DO were calibrated before each measurement. In addition, immediately before each sampling day, they were checked against the Winkler method as specified in *Standard Methods for the Examination of Water and Wastewater* (current edition). The conductivity meter was also checked against a standard before each electrofishing sampling day. Percent oxygen saturation was determined from the relationship between dissolved oxygen in the water and water temperature. Transparency was measured using a Secchi disk. Exhibit A provides physicochemical data.

2.5 DATA HANDLING AND ANALYSIS

2.5.1 Fish

Field and laboratory data were entered on forms compatible for computer entry following serialization, diga-coding, and QA/QC checks. Data were managed in a SAS format (Release 8.02) to provide flexibility in reporting study results.

Data from electrofishing were reported as number, catch-per-unit-effort (CPE, number per km), and percent abundance for each species. Data were segregated by location, study segment, and sampling period. Data obtained by seining were reported as number, CPE (number per haul), and percent abundance for each species by location, study segment, and sampling period. Summaries of the catch data for each gear type were prepared for combined dates. Total number of fish, total number of species, CPE, and percent abundance were included in the summaries. For the total species counts, hybrids were not counted and genus level identifications (e.g., unidentified *Moxostoma*) were counted as a “species” only when no species of that genus were collected.

Measurement of the distance electrofished during each pass allowed the use of the Index of Well-Being (IWB) that was developed by Gammon (1976) and uses the number, weight, and diversity of fishes to assess the health of the community. The IWB was calculated according to the formula:

$$IWB = 0.5 \ln N + 0.5 \ln B + d(no.) + d(wt.)$$

where: N = Number of fish collected per km.
B = Biomass (in kg) of fish per km.
d(no.) = Shannon diversity index based on numbers.
d(wt.) = Shannon diversity index based on weight.
If B was less than 1 kg, then B was always assigned a value of 1 kg to prevent negative IWB or IWBmod values.

The IWB is regularly used in the Midwest and has been shown to work reasonably well even outside the Midwest (Hughes and Gammon 1987). It was developed for use on large midwestern rivers such as the Wabash and Ohio rivers so its use on the UIW is appropriate. In addition, Ohio incorporates IWB criteria into its State water quality standards.

A version of the IWB that was modified by Ohio EPA (IWBmod) was used, which makes the index more sensitive to a wider array of environmental disturbances, particularly those that result in shifts in community composition without large reductions in species richness, numbers, and/or biomass (Ohio EPA 1987). That modification calls for the exclusion of 13 highly tolerant species, all hybrids, and all exotic species from the number and weight calculations. However, these taxa are included in the two Shannon index calculations. This modification eliminates the “undesired” effect caused by a high abundance of tolerant species (which clearly is the case in the UIW), but retains their “desired” influence on the Shannon diversity indices. Ohio EPA has also found that examining the difference between the IWB and IWBmod can be of value; in that an increasing difference between IWBmod and IWB is a direct indication of the influence of tolerant species, which in turn is correlated with a loss of integrity in the fish community (Ohio EPA 1987).

The 13 species considered by the Ohio EPA as highly tolerant are central mudminnow, common carp, goldfish, golden shiner, bluntnose minnow, fathead minnow, blacknose dace, creek chub, white sucker, yellow bullhead, brown bullhead, eastern banded killifish, and green sunfish. In addition to these 13 species, the following exotics and hybrids collected from the DNS study area were excluded during calculation of the IWBmod: threadfin shad, western mosquitofish, hybrid sunfish (*Lepomis* hybrid), and round goby. Our classification of exotic species for the UIW is discussed in greater detail in Section 3.1.

Fish condition was evaluated using the relative weight (*Wr*) index (Wege and Anderson 1978). This index represents a refinement of the relative condition factor concept and allows for inter-population comparisons by making the standard weight-length regression species-specific rather than population-specific. Relative weight was calculated as:

$$Wr = W/Ws \times 100$$

Where W is the measured weight, W*s* is the standard weight and *Wr* is the length-specific standard weight predicted by a weight-length regression constructed to represent the species as a whole. Length-specific standard weight functions are in the form:

$$\log_{10} Ws = a + (b \times \log_{10} \text{total length})$$

where *a* (intercept) and *b* (slope) ideally account for genetically determined shape characteristics of a species and yield *Wr* values of 100 at particular times of the year for fish that have been well fed (Anderson and Gutreuter 1983).

Intercept, slope, and minimum length values for the *Ws* equation have been published for 34 species and one hybrid known from the UIW (Bister et al. 2000; Anderson and Neumann 1996; Murphy et al. 1991) (Table F-1). Minimum lengths are established because the accuracy in weighing fish decreases markedly for smaller individuals, and minimum lengths represent the length at which the variance to mean ratio for $\log_{10}$ sharply increases (Murphy et al. 1991).

Analysis of variance (ANOVA) and Tukey's Studentized Range Test were used to statistically test for spatial and inter-year differences in CPE, IWBmod, species richness, and *Wr* values. Before each data set was statistically evaluated using these methods, they were analyzed to determine whether the data were normally distributed. If data were not normally distributed, they were transformed using Log (Y+1).

2.5.2 Benthos

Due to inherent differences between the river upstream and downstream of Dresden Island Lock and Dam, the benthic data were segregated spatially into two areas: Dresden Pool (Locations 501A, 502, 509, and 510) and downstream of Dresden Island Lock and Dam (Locations 512 and 515). In addition, spatial comparisons were restricted to the Dresden Pool upstream versus downstream of DNS in order to facilitate interpretation and discussion of data regarding potential thermal effects. Ponar data from 1999, 2001-2008, 2011, and 2013 were compared for Dresden Pool locations upstream and downstream of DNS. The HD samples collected in August 2013 were compared with

HD data from 2001-2008, and 2011. HD samples were not collected in 1999.

Spatial and temporal comparisons were made using density (number of organisms per square meter; # per m2), relative abundance (percentage), number of Ephemeroptera+Plecoptera+Trichoptera (EPT) taxa, and total taxa richness. In addition, an ANOVA was used to statistically compare taxa richness, total density, Oligochaeta (aquatic worm) density, Chironomidae (midge) density, and Ephemeroptera (mayfly) density among sample areas and periods in Dresden Pool.

3.0 FISH RESULTS AND DISCUSSION

3.1 SPECIES COMPOSITION AND ABUNDANCE

3.1.1 Overview

From July through September 2013, a total of 45 gear efforts (24 electrofishing and 21 seining) were expended at eight locations within the study area (Dresden Pool and downstream of Dresden Island Lock and Dam) as part of the long-term fish monitoring program for the DNS. These efforts produced 3,708 fish representing 50 species and one hybrid (Tables F-2 and F-3). Numerically, the combined catch was dominated by spotfin shiner (24.8 percent), bluegill (14.0 percent), gizzard shad (11.5 percent), and bluntnose minnow (8.7 percent). Eleven other species contributed 1.0 to 6.1 percent of total catch including bullhead minnow, brook silverside, green sunfish, smallmouth bass, and largemouth bass. Collectively, the 15 most abundant species accounted for 91 percent of the numerical catch. Conversely, 28 species/taxa were represented by 10 or fewer individuals. By weight, the combined catch was dominated by gizzard shad (25.7 percent), channel catfish (13.8 percent), common carp (13.0 percent), and largemouth bass (9.2 percent). Thirteen species accounted for 96 percent of the biomass collected in 2013 (Table F-3).

Thirty-four specimens of the state-endangered pallid shiner were collected from the Dresden Pool, compared to three in 2007, 152 in 2008, 10 in 2011. Pallid shiner catches have generally increased in recent years. Two specimens of the state-threatened banded killifish were also collected in Dresden Pool. 2013 marks the first time banded killifish has been collected as part of the DNS fish monitoring program. No other state or federal listed fish species (IESPB 2011) were collected during the July through September 2013 program.

Three round goby, an accidentally introduced nuisance species, were collected for the eighth year during the DNS monitoring program. Previous catches of round goby ranged from 10 in 2006 to 77 in 2008. No Asian (silver or bighead) carp were collected in 2013. In 2008, a silver carp was collected downstream of the Dresden Island Lock and Dam for the first time during this program. In 2010, the Monitoring and Rapid Response Group (MRRWG) began a program to sample and remove Asian carp. Using electrofishing gear and various nets 70 bighead carp and 248 silver carp were collected in 2013 from the Dresden/Marseilles Pools (MRRWG 2014).

Fifty species were collected from the study area in 2013 (Table F-2). Diversity was highest in the minnow, sucker, and sunfish families. Species richness in the study area can be attributed to its location at the confluence of two major rivers, as well as periodic contributions to the study area of fish from the species-rich Kankakee River.

Complete summaries of fish data by survey and for surveys combined are provided in Exhibit B and a raw data listing is provided in Exhibit C.

3.1.2 Comparisons Upstream and Downstream of Dresden Island Lock and Dam

Habitat upstream and downstream of the Dresden Island Lock and Dam is generally different. The area above the Dam is more lentic (lake-like) than the area below the Dam, which is more riverine. Upstream of the Dam, there are more shallow water areas, patches of rubble, macrophytes, and silt/detritus substrates predominate except in the Kankakee River. The study area below the Dam has swifter currents and the banks are steeper than most areas upstream of the Dam, with more sand and gravel in the bottom sediments.

The physicochemical characteristics of the two areas are also different. Water quality in the Illinois River upstream of the Dam is influenced by differences in water quality between the lower Des Plaines and Kankakee Rivers, flow, the degree of mixing between these rivers, as well as the thermal discharge from DNS. These factors tend to produce variable conditions among sample locations upstream of the Dam. The area downstream of the Dam exhibits more uniform physicochemical characteristics among sample locations primarily due to the thorough mixing of water as it flows over the Dam. Despite distinct habitat differences, the fish communities in the two areas are generally similar.

3.1.3 Exotic Taxa

Six exotic taxa (as defined by Ohio EPA 1987, 1989; Page et al. 1992; Smith 1979) were collected within the DNS study area in 2013: threadfin shad, common carp, golden shiner, western mosquitofish, *Lepomis* hybrid, and round goby. Collectively, these exotic taxa accounted for 3.5 percent of the total catch (Table F-3).

Exotic species often thrive at the expense of native fishes because ecological checks and balances (e.g., predators, diseases, and parasites) that normally keep populations in equilibrium are lacking or greatly reduced for exotics. Thus, exotics have a considerable propensity for population explosions (e.g., alewife [in Lake Michigan], common carp, and zebra mussels). Although some exotics (e.g., salmonids) may be considered "good" and others "not so good" (e.g., common carp, round goby, and zebra mussels), several facts are clear:

- Exotics usually expand their populations at the expense of native species (Smith 1979; Becker 1983).

- The lack of normal checks and balances means that trends in the numerical abundance of exotics often do not follow expected patterns (e.g., exotics may increase in abundance under poor water quality conditions, whereas most native species decline when water quality is poor) (Karr 1986;

Ohio EPA 1987, 1989).

- The presence of exotics, often in high numbers, confounds data analysis and can result in misleading or erroneous conclusions concerning the "quality" of the area (Ohio EPA 1987, 1989, Lyons 1992, Emery et al. 2003).

- It is the policy of some resource agencies and professional societies (e.g., American Fisheries Society) to encourage biodiversity of native species and slow down or even reverse the spread and introduction of exotics.

For the reasons listed above, we tabulated the occurrence and distribution of exotic species in the previous section, but will exclude them from subsequent spatial, temporal, and inter-year analyses presented in the following sections. Thus, following Ohio EPA (1987, 1989) and Lyons (1992), exotic species are excluded from species richness and other calculations. For the purposes of this report, exotic species are all fishes not native to some portion of Illinois. Thus, even though red shiner is not native to the Upper Illinois Waterway (UIW), we do not classify it as an exotic because it originally was native to western and southern Illinois, and its occurrence in the UIW is part of a natural eastward expansion of its range. However, western mosquitofish and redear sunfish are treated as exotics because their natural distributions in Illinois are limited to the southern third of the state (Smith 1979). Their occurrence in northern Illinois is the result of stockings rather than natural expansions of their ranges. The western mosquitofish was stocked for mosquito control.

We believe it is inappropriate to subjectively classify some exotics as good and some as bad, therefore, the exotic taxa listed above are excluded. Our listing of these taxa as exotics is consistent with lists of exotics developed in Illinois (Page et al. 1992), Ohio (Ohio EPA 1987, 1989), and Wisconsin (Lyons 1992). Except for common carp and more recently threadfin shad and round goby, exotics are usually rare in the DNS study area. Although it would be true that including the other exotics would not appreciably affect variables such as catch rate, species richness, biomass, their exclusion is warranted to maintain a consistent approach as to how exotics are treated as part of our analysis. Numerous researchers (Karr et al. 1986, Ohio EPA 1987; 1989b, Lyons 1992) recommend that exotics be excluded because including them can lead to erroneous conclusions because of greatly inflated catch statistics. Data for exotic taxa are provided in Exhibit C.

3.2 DRESDEN POOL

3.2.1 Study Area

The DNS is located at River Mile 273 at the junction of the lower Des Plaines and Kankakee rivers (Figure 1). These two rivers form the Illinois River (lower Dresden Pool). The station's cooling water intake is situated on the Kankakee River from which the greatest percentage of cooling water is drawn. Under low flow conditions, a small percentage of cooling water is drawn from the lower Des Plaines River. The percentage varies depending on flow in each of the rivers. The station's discharge is located along the south shoreline of lower Dresden Pool. Because of temperature and water quality differences between the Kankakee and lower Des Plaines Rivers, the characteristics of lower Dresden Pool are typically a mix of the two river systems, the Kankakee River on the south side and the lower Des Plaines River on the north side of the Illinois River. However, substantial mixing does not occur until the water flows over the Dresden Island Dam.

The Dresden Pool study area encompasses the lower reaches of the Des Plaines River (Locations 501 and 501A), the Kankakee River (Locations 502 and 503), and the lower Dresden Pool of the Illinois River (Locations 506, 507, 507A, 509, and 510) (Figure 1). Locations in Dresden Pool were established in the lower portion of the Units 2/3 discharge canal (Location 506), and downstream from the station's discharge (Locations 507, 507A, 509, and 510). A detailed description of each location is provided in Section 2.2.

3.2.2 Physicochemical Measurements

Physicochemical data by location, depth, and sampling period are provided in Exhibit A. Surface or mid-depth water temperatures during the long-term fish monitoring program ranged from 19.4 to 33.0°C at the six electrofishing locations in Dresden Pool near Dresden Station (Table F-4). Mean temperatures during the study period ranged from 25.8°C (Kankakee River, Location 503) to 30.6°C (DNS's discharge canal, Location 506). Mean temperatures within the discharge canal were 0.3 to 2.7°C higher than at all other locations except at Kankakee River Location 503, which had a mean temperature 4.8 °C lower than the mean discharge canal temperature.

During individual trips, water temperatures in Dresden Pool downstream of the discharge were consistently warmer than water temperatures upstream (Table F-4 and Exhibit A). Downstream mean water temperatures were warmest in July (32.9°C) and coolest in September (26.7°C). For all trips combined (July-September), the mean upstream temperature was 3.0°C cooler than downstream (Table F-4).

The mean 2013 Dresden Pool summertime[1] water temperature (28.9°C) was slightly above average and the fifth highest observed since 1994 [2].

Upstream Dresden Dam

2013	28.9
2011	29.0
2008	26.5
2007	27.9
2006	27.3
2005	29.3
2004	27.6
2003	27.9
2002	28.4
2001	27.2
2000	27.8
1999	29.8
1998	29.3
1997	27.6
1995	28.5

Surface or mid-depth dissolved oxygen (DO) concentrations ranged from 6.9 to 12.4 ppm (Table F-4 and Exhibit A). DO concentrations were above the General Use minimum standards that became effective 28 January 2008 and state 5 ppm at any time from March through July and 3.5 ppm at any time from August through February. The minimum and maximum concentrations

[1] July through September in 2011 and 2013; June 15 through September the other years

[2] All temperature data are from the same or adjacent sampling locations

occurred at Illinois River Location 510 and Kankakee River Location 502, respectively. There was limited seasonal variation in mean DO concentrations that ranged from 8.6 to 9.0 ppm. Spatially, mean DO was highest at Kankakee River Location 502 (10.6 ppm). Mean DO values at the other five locations ranged from 7.9 to 9.1 ppm. Mean dissolved oxygen during the 2013 July through September period in Dresden Pool were lower downstream of the DNS discharge. For all trips combined, the mean upstream DO was 1.4 ppm higher than the downstream mean (Table F-4). Spatial and temporal patterns of mean percent saturation values were similar to those discussed for DO (Table F-4 and Exhibit A).

Specific conductance values ranged from 623 to 946 µS/cm (Table F-4 and Exhibit A). Seasonally, mean values were similar among the three surveys. Spatially, annual mean conductivity values were lowest in the Kankakee River at Locations 503 (639 µS/cm) and highest in the Des Plaines River at Location 501 (876 µS/cm). Lower means at Locations 502 and 503 reflect the lower conductivity of the Kankakee River. For all trips combined, mean conductivity was lower upstream (744 µS/cm) than downstream (797 µS/cm) of the DNS discharge. Based on conductivity, the electrofishing gear was adjusted to provide output at about 220 volts at five amps or greater.

Transparency (Secchi disk) readings ranged from 47 to 151 cm (Table F-4 and Exhibit A). Mean values ranged from 66 cm at Location 503 to 110 cm at Location 501. The other locations had similar mean readings ranging from 69 to 89 cm. Among trips, mean values were lowest in July (66 cm) and highest in September (100 cm). Transparency was similar upstream and downstream of the Dresden discharge (Table F-4). Water clarity was adequate for the field crew to observe and retrieve fish stunned by the electrofishing gear throughout the 2013 program.

3.2.3 Species Composition and Abundance of Native Species

Sampling in Dresden Pool near DNS during 2013 yielded 2,746 native fish representing 45 species and one hybrid (Table F-5). Numerically dominant species (gears combined) were spotfin shiner (18.9 percent), bluegill (16.4 percent), gizzard shad (15.1 percent), and bluntnose minnow (10.9 percent). Other species that comprised four percent or more of the catch by number were bullhead minnow, brook silverside, blackstripe topminnow, and largemouth bass (Table F-5). Collectively, 14 species accounted for 92.4 percent of the total catch. Dominant taxa in terms of biomass were gizzard shad (34.5 percent), channel catfish (13.0 percent), largemouth bass (11.5 percent), flathead catfish (8.1 percent), and smallmouth buffalo (8.1 percent).

Electrofishing produced 1,768 fish and seining produced 978 fish (Table F-5). Gizzard shad, bluegill, spotfin shiner, and bluntnose minnow were the four most dominant species in the electrofishing samples, whereas spotfin shiner, bluntnose minnow, blackstripe topminnow, and bullhead minnow were the most dominant species in the seine samples.

Electrofishing produced 38 species and seining 27 species. Of the 45 species in the combined catch, 26 were collected either by electrofishing or seining. Twenty-one species were collected by both sampling methods. Spotfin shiner, bluntnose minnow, bullhead minnow, brook silverside, and bluegill were the only species collected in relatively large numbers (>45 specimens) with both sampling methods (Table F-5).

Thirty-four pallid shiners, which are listed as endangered by the State of Illinois, were collected by electrofishing (29) and seining (5) in the Dresden pool area in August and September (Exhibit B). As has been the case in past studies of Dresden Pool, Kankakee River Location 503 has been the usual location to collect pallid shiners. In recent years, pallid shiners have also been collected in lower numbers at other downstream locations, but were collected only at Locations 502 and 503 in 2013.

In addition to pallid shiner, two specimens of the state-threatened banded killifish were also collected during September seining at Location 501 in Dresden Pool (Exhibit B). These collections mark the first time banded killifish has been collected as part of the DNS fish monitoring program.

3.2.4 Spatial and Temporal Comparisons of Community Level Parameters

3.2.4.1 Electrofishing

To aid in the assessment of the hydrological and temperature conditions during the 2013 study period, electrofishing catch-per-unit-effort (CPE), IWBmod, and species richness values for Dresden Pool locations upstream and downstream of DNS were compared for all trips combined and two seasonal periods, July and August trips combined (typically the warmest period) and the September trip. Exhibit D provides a summary of IWB and IWBmod by sample date and sample location.

Thirty-eight native species were collected from the Dresden Pool by electrofishing as part of the 2013 monitoring study, 35 species upstream and 25 species downstream of DNS (Table F-6). Eight of the 13 species comprising at least one percent of the total upstream catch also comprised at least one percent of the downstream totals. Gizzard shad was the dominant species upstream followed by (in order) bluegill, spotfin shiner, brook silverside, bluntnose minnow, bullhead minnow, and largemouth bass. Bluegill was the most abundant species downstream followed by largemouth bass, bluntnose minnow, gizzard shad, green sunfish, spotfin shiner, and Northern sunfish. All of the state-listed pallid shiners collected by electrofishing were collected upstream of the Station (Table F-6).

The 2013 CPE for native fish (trips combined) was 253.1 fish per km above the DNS discharge versus 160.1 per km below DNS (Table F-7). Mean IWBmod was 7.2 above and 6.8 below DNS and the mean upstream native species richness was 13 versus 10 downstream for all trips combined (Table F-7). The upstream/downstream differences in CPE, IWBmod, and native species richness were statistically ($P>0.05$) similar.

From June 15 through September 30 the facility operates in a cooling mode referred to as indirect open cycle (cooling water is circulated through the reservoir before being discharged to the Illinois River). The July/August collections occur during a period of typically higher air temperatures, whereas the September collections occur during somewhat cooler temperatures.

Table F-8 presents Dresden Pool catch data upstream and downstream of DNS for the two seasonal groups: July/August, and September. In each of the two periods, 12 and nine native species, respectively, were collected in Dresden Pool upstream of DNS that were not collected downstream of the facility. However, with three exceptions, these species were represented by only one to seven individuals. The exceptions include brook silverside and logperch in July/August and pallid shiner in September. Conversely, during each of the periods, four to five native species were collected in Dresden Pool downstream of DNS that were not collected upstream of it. These species were represented by only one to nine individuals (Table F-8). There were no significant upstream/downstream differences for CPE, IWBmod, or native species richness for the two periods (Table F-7).

In July/August, typically the period of highest air temperatures and high power demand, the number of native species upstream of the discharge was 31 compared to 23 downstream (Table F-8). During this period, 12 species were collected exclusively upstream of the discharge while five species were collected exclusively downstream of DNS. The mean native species richness upstream of DNS was 14 compared to 10 species downstream (Table F-7). The native fish CPE for July/August in Dresden Pool averaged 211.7 fish per km above DNS and 127.5 per km downstream of the Station (Table F-7). Mean IWBmod values for July/ August were 7.4 upstream and 6.8 downstream of the Station (Table F-7).

Electrofishing catch rates, relative abundance, and total species were also compared between the two seasonal groups for all Dresden Pool locations combined (Table F-9). Thirty-five species were collected in July/August and 27 species in September. Between the two periods, CPE was higher in September. Catch rates of 19 species were higher in September, notably CPEs of gizzard shad, most minnow species, green sunfish, and bluegill (Table F-9). Redhorse CPE was low overall with higher catch rates in September for shorthead redhorse (5.7 per km). Smallmouth bass and largemouth catch rates were similar between the two seasonal groups (Table F-9). CPEs for all native fish, IWBmod scores, and mean native species richness were not statistically ($P>0.05$) different between sampling periods (Table F-10).

In summary, during July/August when the river temperature was highest and discharge temperatures are typically at their maximum, there were no significant differences upstream and downstream of DNS for the native species CPE, IWBmod scores, or native species richness in Dresden Pool. Better habitat quality in the Kankakee River compared to the other sampling locations in the study area contributed to the higher native species richness values upstream of DNS.

3.2.4.2 Seining

Statistical testing was not applied to the seine data because of the qualitative nature of the collection method. Therefore, intra-year comparisons of spatial data were confined to compositional and mean native species richness results. The seine catch rate (number of native fish per seine haul) in 2013 for all trips combined was 84.2 upstream versus 36.7 downstream of the DNS discharge (Table F-11). For all trips combined, 22 species were collected upstream and 17 species downstream of the Station. Although several species were abundant in both segments, spotfin shiner was the numerically dominant species upstream whereas bluntnose minnow, spotfin shiner, and bluegill were dominant downstream of the discharge. Other abundant species upstream of the discharge were bluntnose minnow, bullhead minnow, blackstripe topminnow, and brook silverside (Table F-11). Downstream of the discharge, emerald shiner, sand shiner, spotfin shiner, bluntnose minnow, bullhead minnow, blackstripe topminnow, brook silverside, bluegill, and largemouth bass contributed >1.0 percent of the seine catch.

The number of native fish per haul (CPE) was somewhat higher upstream of DNS during the July/August sample period and much higher upstream in September (Table F-11). In July/August, the seining catch both upstream and downstream of DNS was dominated by spotfin shiner and bluntnose minnow that collectively accounted for 60 to 67 percent of the total catch (Table F-11). Bullhead minnow accounted for 17.9 percent of the upstream catch compared to 1.9 percent downstream while bluegill was more abundant downstream.

September seine catches and species richness were higher upstream than downstream of DNS (Table F-11). Spotfin shiner and blackstripe topminnow were dominant upstream in September whereas bluntnose minnow and bluegill were the dominant species downstream.

Mean native species richness (all trips combined) downstream of DNS during the past 16 study years has been similar to or slightly higher than at the upstream locations:

	Upstream Dresden Discharge	Downstream Dresden Discharge
2013	6.0	5.0
2011	4.0	6.0
2008	5.3	7.0
2007	7.8	8.1
2006	6.5	8.4
2005	7.2	8.1
2004	7.5	8.8
2003	8.8	9.7
2002	5.3	5.5
2001	5.1	7.0
2000	4.9	4.3
1999	3.7	3.7
1998	3.7	3.6
1997	4.3	5.5
1995	3.9	6.3
1994	6.5	5.8

CPE, relative abundance, and mean number of species collected by seining were compared between the two seasonal periods for all Dresden Pool locations combined (Table F-12). CPE for total fish was two times higher in September (99.6) than in July/August (48.0). Higher catches in September primarily reflect seasonally high catches of spotfin shiner, blackstripe topminnow, and bluegill.

3.2.5 Inter-Year Comparisons of Community Level Parameters

Electrofishing data for the 15 June through August survey period were compiled and compared among results from 16 years of monitoring to assess potential impacts on the fish community related to thermal conditions. Data were compared data from the same or similar locations (501/419A, 502, 506, 507A, and 510) excluding the seine data. Historical data collected from 1994-2000 for Location 503 (Kankakee River) are not available, therefore the 2001-2013 data sets used for the inter-year electrofishing comparisons excluded those data.

Gizzard shad was either the most abundant or the second most abundant species collected during the 16-year monitoring period (Table F-13). Catch rates ranged from 11.9 fish per km in 1994 to 61.6 per km in 2003. The 2013 CPE (27.3) was below the long-term average of 41.2 gizzard shad per km and was exceeded in all but five years. Emerald shiner or bluegill CPE was higher than the gizzard shad CPE in 1997, 2000, 2002, and 2013.

Catch rates of many commonly collected species were lower in 2013 than in prior years, as was the case in 2011 when sampling effort was also reduced to three surveys compared to eight surveys prior to 2011. The 2013 catch rates of 47 species were below the 16-year average. Species with above average CPEs included spotfin shiner, river carpsucker, quillback, flathead catfish, rock bass, bluegill, and largemouth bass. Green sunfish and bluegill CPE varied widely over the 16-year study with rates that ranged from less than two fish per km in 1994 to more than 50 fish per km in 2003 for both species (Table F-13). The 2013 rates for both species were above average.

Catch rates of smallmouth bass and largemouth bass were less variable than the sunfish CPEs. Smallmouth bass CPE ranged from 2.9 to 11.1 fish per km and averaged 4.9. The 2013 CPE (3.9) was below the 16-year average. Catch rates of largemouth bass ranged from 2.6 to 14.7 fish per km and averaged 7.6 fish per km. The 2011 and 2013 CPEs were the highest recorded and were nearly twice the long-term average despite the reduced effort during those two years (Table F-13).

Five redhorse species were collected during the 1994-2013 study period. Their catch rates ranged from 1.3 to 19.3 fish per km and averaged 5.9 fish per km. The 2011 and 2013 CPEs were below the long-term average. Golden redhorse was the most abundant redhorse species. It accounted for 78 percent of the redhorse collected over the 16-year study with CPEs that ranged from 0.2 to 12.4 fish per km. The golden redhorse CPE in 2011 and 2013 was 2.8 and 0.9 fish per km, respectively. Other redhorse catch rates, except for shorthead redhorse in 1995, have been consistently low.

Total catch rates of native species were similar among most years ranging from 47.8 to 299.0 fish per km and averaged 150.1 fish per km. The 2011(126.2) and 2013 (141.1) total CPEs were somewhat below the long-term average. Total CPE of native species in 1994 was significantly ($P<0.01$) lower compared to all years except 1995, whereas the 2011 and 2013 CPEs were statistically similar to all years except 1994 (Table F-14).

Annual mean IWBmod scores ranged from 5.3 to 7.4 for the 1994-2013 studies (Table F-14). The 2013 score (7.0) is statistically similar to the scores except the significantly lower scores in 1994 and 1999 (Table F-14). Ohio EPA (1987, 1989 updated 2006) uses IWBmod scores to assign streams or stream segments to the following classifications: Exceptional = ≥9.6; Very Good = 9.1-9.5; Good = 8.5-9.0; Marginally Good = 8.0-8.4; Fair = 6.4-7.9; Poor = 5.0-6.3; and Very Poor = <5.0. The Ohio EPA 2006 update added the Marginally Good and Very Good classifications and changed the ranges for classifications above Poor. According to the current Ohio EPA classification scheme, the fish community in the lower Dresden Pool segment during the mid-June through August time period would have been considered poor in 1994, 1995, and 1999, and fair all other years.

The mean native species richness value for 2013 (10.7) was statistically similar to all years (Table F-14). Mean native species richness in 2013 was higher than 10 of the 16 years. The low 1994 native species richness was statistically similar to every year except 2003, 2007, and 2008.

As shown below, mean water temperatures (including data from Location 503) during the period when natural temperatures are expected to be highest (15 June through August) ranged from 26.3°C in 1994 to 31.4°C in 2011:

Year	Mean Water Temperature	CPE	IWBmod	Species Richness
2013	31.2	141.1	7.0	10.7
2011	31.4	126.2	6.9	10.2
2008	27.7	176.7	7.1	12.6
2007	28.8	202.9	6.6	11.6
2006	29.2	167.7	6.7	10.2
2005	30.3	133.9	6.5	9.9
2004	28.4	102.4	6.6	9.6
2003	28.9	299.0	7.4	12.6
2002	29.5	191.0	7.0	10.8
2001	29.3	145.0	6.4	9.7
2000	28.5	125.9	6.9	11.0
1999	30.4	151.7	6.1	8.4
1998	30.2	170.9	6.5	10.2
1997	28.1	143.2	6.8	10.6
1995	28.4	76.6	6.3	9.2
1994	26.3	47.8	5.3	7.1

Mean water temperatures exceeded 30°C in 1998, 1999, 2005, 2011, and 2013 with 2013 being the second highest observed since 1994. However, the 2013 CPE was the seventh lowest of the 16-year study, whereas IWBmod was the third highest and species richness was the fifth highest. IWBmod in the last seven study years has shown little variation, whereas species richness values have been greater than 10 the last five years.

3.2.6 Summary

Inter-year comparisons of mean native species electrofishing CPE, IWBmod scores, and native species richness were made for the June 15 through August time period when it would be expected that air and water temperatures would be highest and river flows should be lower. The 2013 CPE and native species richness for the Dresden Pool segment were not significantly different from those calculated for the previous 14 and 15 years, respectively. The 1994 CPE was significantly lower than all other years except 1995. In 2013, under Ohio EPA's classification of IWBmod scores, the fishery in the Dresden Pool segment would be considered fair. The mean water temperature in 2013 was the second highest of the 16-year study. Water temperatures reflect the warmer ambient conditions experienced in 1998, 1999, 2005, 2011, and 2013, more consistent power generation in recent years, and use of mechanical cooling towers at DNS from 2000-2013, which reduces the mean water temperatures downstream of DNS.

3.2.7 Fish Condition

3.2.7.1 Overview

Inherent in the development of standard weight (*Ws*) equations used to calculate relative weight (*Wr*) of fish is the objective of modeling the growth form of a species for individuals in better-than-average condition. A mean W*r* value close to 100 for a broad range of size groups may reflect optimal health and utilization of food resources for a given population (Anderson and Gutreuter 1983). Mean *Wr* values considerably less than 100 may suggest low food availability and/or disruption of feeding relationships or the presence of various environmental stressors.

During 2013, 604 fish representing 14 native species were collected that met the minimum length criteria of published *Ws* equations (Table F-15). Ten of these 14 species were represented by low numbers of individuals in some or all of the months, samples that were too small for monthly comparisons of mean *Wr* values. Exotic species are not discussed in the following section; however, *Wr* values were calculated for all species that have published W*s* equations (Table F-1, Exhibit E).

Composite (periods combined) mean *Wr* values for each of the four common species ranged from 84 (gizzard shad) to 114 (green sunfish), these values indicate that, except for gizzard shad, the other three species were in average or better than average condition (Table F-16). The lower mean for gizzard shad suggests possible health, food availability, and/or feeding relationships in 2013 were less than optimal compared to most previous years (Table F-16).

Gizzard shad and largemouth bass showed no significant seasonal body condition patterns, whereas green sunfish and bluegill had significantly better *Wr* in July/August (Table F-16). Mean *Wr* for all four common species was lowest in September.

Twenty-three native species that met the minimum length criteria of the *Ws* equations were collected between 15 June and 31 August 1994 through 2013 (Table F-17). Annual catches of all except six species averaged less than 20 fish, samples sizes that were determined to be too small for annual comparisons of mean *Wr* values. Relative weights were calculated for mid-June through August, which represents the period with the highest temperatures. Inter-year differences in mean *Wr* values for the past 16 study years are discussed below for gizzard shad, channel catfish, green sunfish, bluegill, smallmouth bass, and largemouth bass (Table F-18).

3.2.7.2 Gizzard shad

Relative weight has been calculated for gizzard shad 15 of the 16 years studied when sample sizes exceeded 50 fish per year (Table F-17). The mean *Wr* for summer 2013 was 85 and the composite mean *Wr* for the 15 study years was 97 (Table F-17). Mean *Wr* values were significantly lower in 2013 than all other years except 2003 and 2004 when mean *Wr* was also less than 90 (Table F-18). Mean *Wr* values were greater than or equal to 100 for 10 of the 16 years studied, indicating that the condition of gizzard shad generally has been good in the Dresden Pool study area. The significant inter-year differences were most often due to the extent in which *Wr* values exceeded the target except as noted, not due to suboptimal body condition.

3.2.7.3 Channel catfish

Relative weight has been calculated for channel catfish 14 of the 16 years studied when sample sizes exceeded 10 fish per year (Table F-17). The mean summer 2013 *Wr* was 99, slightly below the composite mean *Wr* for the study (Table F-17). Mean *Wr* was statistically ($P>0.05$) similar to all years except 1994 (Table F-18).

3.2.7.4 Green Sunfish

Relative weight has been calculated for green sunfish all 16 study years (Table F-17). Sample sizes were 12 or greater and average 98 fish per year. The mean summer *Wr* for 2013 was 117, slightly above the composite mean *Wr* for the 16 study years (Table F-18). The 2013 *Wr* value for green sunfish were statistically similar to all other years (Table F-18). Mean *Wr* values have been 108 or greater during the 16-year study, indicating that green sunfish are consistently in good condition in the Dresden Pool study area (Table F-18).

3.2.7.5 Bluegill

Relative weight has been calculated when sample sizes were greater than 14, which occurred during all years except 1994 when only two bluegills were collected (Table F-17). Sample size averaged 112 bluegill over the 16 years. The mean *Wr* for summer 2013 was 109, nearly identical to the composite mean (Table F-17). Mean *Wr* values were statistically similar to all other years except 2004 when the mean was 100 (Table F-18). *Wr* has been consistently 100 or greater, indicating bluegill are in good condition in the Dresden Pool study area.

3.2.7.6 Smallmouth Bass

Relative weight has been calculated for smallmouth bass each year except 2011 when only nine were collected (Table F-17). The 2013 summer mean *Wr* was 82 compared to the composite mean for study of 93 (Table F-17). Mean *Wr* values were significantly lower than means from eight of the 14 years (Table F-18). Mean *Wr* in 2013 was statistically ($P>0.05$) similar to years when means were less than 94. Smallmouth bass *Wr* was greater than 90 in all except five years, indicating that their condition has been average or good in most years.

3.2.7.7 Largemouth Bass

Relative weight of largemouth bass was calculated each year of the 16-year study except 1994 and 1995 when fewer than 10 were collected (Table F-17). The 2013 summer mean *Wr* was 97 compared to the composite mean for the study of 102 (Table F-17). The 2013 mean *Wr* value was statistically similar to values from nine of the 14 years compared and were statistically lower that four years when means that were 106 to 108 (Table F-18). Mean *Wr* for largemouth bass have been greater than or equal to 95 each year, indicating that their condition has consistently been good.

3.2.7.8 Summary

During the 15 June-31 August study period from 1994-2013, 7,887 native fishes meeting appropriate minimum length criteria for *Ws* equations were collected from the Dresden Pool of the UIW. Inter-year comparisons of mean *Wr* values were made for six common native species: gizzard shad, channel catfish, green sunfish, bluegill, smallmouth bass, and largemouth bass. Significant differences between years have been occasionally observed for some of those species. For green sunfish and bluegill, significant differences were due most often to the extent in which *Wr* values exceeded 100. For example, in Dresden Pool, in 2004, the mean *Wr* for green sunfish (108) was significantly lower than the 2013 mean (117); however, that difference was due to how much **above** the target value of 100 the *Wr* was, **not** to suboptimal fish condition. In many cases, however, there were no significant differences among years and *Wr* values of channel catfish, green sunfish, bluegill, and largemouth bass always exceeded 95. Smallmouth bass condition was consistently less than the target of 100 but the composite mean for the study was greater than 90. Mean *Wr* for gizzard shad in 2013 was the lowest to date (85) and below the composite mean of 97. Mean *Wr* values for gizzard shad were significantly lower in 2013 than all other years except 2004 and 2005 when means were also less than 90.

The *Wr* results indicate that in the last 16 study years, the populations of six common species typically were in average or better than average condition, which suggests that there have not been significant health, food availability, and/or feeding relationship problems for these species. The 2013 summer *Wr* for gizzard shad was the lowest to date suggesting they may have experienced less than optimal conditions based on *Wr* values. These low *Wr* are in contrast with the mean *Wr* that were 100 or higher during nine of the 15 years compared.

3.2.8 Incidence of DELT Anomalies

DELT anomalies (deformities, erosions, lesions, and tumors; Ohio EPA 1987, 1989) are the group of anomalies most relevant for this study because a clear relationship has been established between the incidence (percentage) of fish with DELT anomalies and water quality (Ohio EPA 1989). The extent to which parasites and "other" anomalies (e.g., deformed fin rays, regenerated scales) reflect water quality is unclear. Therefore, only DELT anomaly data collected in 2013 are discussed. Data regarding parasites and "other" abnormalities are presented in Exhibit F. In contrast to the evaluation of the fish community as a whole, where exotic species were eliminated, exotic species were included in the DELT comparisons because of the extent to which they (particularly common carp) are affected by DELT anomalies. Seine data were not used because this gear collects primarily small fish that often lack anomalies. For the temporal comparisons, data collected from all 2013 sampling trips were utilized. Intra-year comparisons of DELT anomalies in Dresden Pool were made for each sampling month and inter-year comparisons were made for all trips combined. Historical data were available from 1994-2008, and 2011.

3.2.8.1 Overview

In 2013, a total 1,795 fish was examined for DELT anomalies and 43 fish (2.4 percent of those examined) exhibited DELT anomalies within Dresden Pool (Table F-19). Twelve of the 43 species examined exhibited DELT affliction and common carp, channel catfish, and largemouth bass accounted for 60 percent of the DELT anomalies. Except for one gizzard shad, fin erosion was present on all fish observed with DELT anomalies (Table F-20).

3.2.8.2 Temporal Comparisons

DELT anomalies were compared between the two sampling periods: July/August and September. The incidence rate of DELT anomalies was 2.8 percent in July/August and 1.9 percent in September. Ten species had DELT anomalies in July/August and nine species had DELT anomalies in September including common, channel catfish, bluegill, and largemouth bass (Table F-21). Overall, 57 percent of the channel catfish and only 11 percent of the largemouth bass collected by electrofishing had DELT afflictions (Table F-19). In general, bottom feeders (e.g. suckers, freshwater drum, common carp, and catfishes) are the group most afflicted by DELT anomalies, possibly as the result of contact with contaminated sediments.

3.2.8.3 Inter-Year Comparisons

Inter-year comparisons of the incidence of DELT anomalies were made to examine annual variations and patterns of affliction rates during the summer (15 June through August) from 1994 through 2013 (Table F-22). These comparisons reveal that the incidence rates of DELT anomalies in the study area have varied widely over the past 16 study years:

Year	2013	2011	2008	2007	2006	2005	2004	2003
Percent DELT	2.8	0.9	2.1	1.7	2.4	2.6	5.4	2.5

Year	2002	2001	2000	1999	1998	1997	1995	1994
Percent DELT	2.3	1.7	5.1	1.6	2.1	4.9	13.6	4.1

Summer affliction rates in the Dresden Pool decreased steadily from 13.6 percent in 1995 to 1.6 percent in 1999 and increased to 5.1 percent in 2000. With few exceptions, affliction rates have been consistently near two percent during the last 12 study years. The 2013 affliction rate is the highest observed since 2004.

Bottom feeders such as common carp, golden redhorse, shorthead redhorse, smallmouth buffalo, and channel catfish have typically exhibited the highest DELT anomaly affliction rates within the Dresden Pool study area. Disproportionately higher affliction rates among bottom feeders suggest that substrates within the study area, as well as other upstream areas in the UIW, likely contain contaminants that are responsible for many of the DELT anomalies observed on these species (Bertrand et al 1992; Burton 1995; EA 1996b). The summer DELT anomaly incidence rates in largemouth bass has varied widely during the 16 year study ranging from none during four years to 19.7 in 2004 (Table F-22). Since 2004, incidence rates have been lower but have varied widely (0.0 to 16.9 percent).

3.2.8.4 Summary

A high incidence of DELT anomalies is an indicator of stress or contamination, which may be caused by a variety of environmental factors, including chemically contaminated substrates (Ohio EPA 1989). Ohio EPA (1987) uses percent DELT anomalies as an Index of Biotic Integrity (IBI) metric. For large river sites like the Upper Illinois Waterway, the IBI scoring criteria is as follows: percent DELT anomalies <0.5 = 5 (good), 0.5-3.0 = 3 (fair), and >3.0 = 1 (poor). Based on the incidence rates observed for the 15 June through August period, fish in Dresden Pool were in the poor category until 1998. Fish have been in the fair category since 1998 except for 2000 and 2004 when affliction rates were in the poor category.

Inter-year comparisons of DELT anomaly affliction rates revealed that, although the incidence rates in 1998-1999 and 2001-2003 were lower than rates from the years preceding 1998 and considering the spikes in 2000 and 2004, affliction rates remain elevated in Dresden Pool. This indicates that although there has been improvement in the system, stressors still exist. Affliction rates increased consistently from 2001 through 2004, was lower the next three years, and increased slightly in 2008 (Table F-22). The 2011 (0.9) incidence rate was the lowest observed for this 16 year record and the 2013 rate (2.8) was the highest since 2004.

3.3 DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM

3.3.1 Study Area

Two sampling locations are downstream of the Dresden Island Lock and Dam in the Marseilles Pool of the Illinois River (Figure 1). Location 512 is in the tailwater below the Dresden Island Dam and Location 515 is approximately one mile downstream of the Dresden Island Lock and Dam on the south bank. A detailed description of each location is presented in Section 2.2.

Biological and physicochemical studies were conducted downstream of the Dresden Island Lock and Dam for 14 years between 1994 and 2013. Surveys were not conducted six years during that 20-year period (1996 through 1998, 2009, 2010, and 2012).

3.3.2 Physicochemical Measurements

Near surface or mid-depth water temperatures during the 2013 monitoring program ranged from 23.8 to 32.6°C at the two electrofishing locations downstream of the Dresden Island Lock and Dam (Table F-23). Exhibit A contains all physicochemical data by location, depth, and sampling period. Mean temperatures during the study period were similar at the two locations (28.7 and 29.3°C, respectively) and were highest in July and lowest in September (Table F-23). As shown below, mean summertime (i.e., 15 June through September) water temperatures downstream of the Dresden Island Lock and Dam ranged from 25.7 to 29.6°C. The 2013 mean was the fifth highest to date. Except for 1994, mean water temperature exhibited a narrow range among study years.

Downstream Dresden Dam	
2013	29.0
2011	29.6
2008	26.7
2007	27.8
2006	28.5
2005	29.6
2004	28.5
2003	28.0
2002	29.3
2001	27.1
2000	27.9
1999	29.5
1995	28.4
1994	25.7

Surface or mid-depth dissolved oxygen (D) concentrations ranged from 7.2 to 8.1 ppm during

2013 (Table F-23 and Exhibit A). DO concentrations were consistently above the General Use minimum standards of 5 ppm at any time from March through July and 3.5 ppm at any time from August through February. Mean DO values were similar at the two locations (7.2 to 7.5 ppm). Temporally, mean DO varied by only 0.6 ppm and was highest in September (Table F-23). Mean percent saturation values were similar between locations and were highest in July while being slightly lower in August and September (Table F-23 and Exhibit A).

Specific conductance values ranged from 733 to 880 µS/cm (Table F-23 and Exhibit A). Temporally, mean values were highest in August and lowest in July. Annual mean specific conductance values were highest at Location 512 (840 µS/cm) compared to 787 µS/cm at Location 515. Based on the conductivity values encountered, the electrofishing gear output was adjusted to provide about 220 volts at five amps or greater during the surveys.

Transparency (Secchi disk readings) ranged from 56 to 97 cm (Table F-23 and Exhibit A). Mean values were similar between the two locations (74 to 79 cm). Among trips, mean transparency was lowest in July (57 cm) and highest in September (95cm). Water clarity was adequate for the field crew to observe and retrieve fish stunned by the electrofishing gear.

3.3.3 Species Composition and Abundance of Native Species

Sampling below the Dresden Island Lock and Dam during the 2013 monitoring program resulted in the collection of 847 fish representing 29 species and one hybrid (Table F-24). Numerically dominant taxa (gears combined) were spotfin shiner (47.5 percent), brook silverside (8.5 percent), bluegill (8.4 percent), bullhead minnow (4.2 percent), and emerald shiner (4.0 percent). Dominant taxa in terms of biomass were channel catfish (29.2 percent), freshwater drum (18.6 percent), golden redhorse (10.6 percent), and smallmouth bass (10.2 percent).

Electrofishing surveys produced 327 fish and seining produced 520 fish (Table F-24). The eight most abundant species in the combined catch accounted for 61.2 percent of the electrofishing catch compared to 95 percent of the seine catch. Of those species, bluegill and smallmouth bass were collected in higher numbers electrofishing, whereas emerald shiner, spotfin shiner, sand shiner, bluntnose minnow, bullhead minnow, and brook silverside were more abundant in the seine catch. Spotfin shiner was the most abundant species in both the electrofishing and seining catch.

Electrofishing produced 26 species compared to 16 species collected by seining. Thirteen of the 33 taxa were collected by both sampling methods. Conversely, 20 taxa were collected by only one gear type. Eleven of these latter species were represented in the catch by one to three individuals. Spotfin shiner was the only species collected regularly with both sampling methods (Table F-24). Spottail shiner, redfin shiner, *Moxostoma* sp., and blackstripe topminnow were the only species exclusively collected by seining. The 16 taxa collected only by electrofishing included gizzard shad, golden redhorse, channel catfish, green sunfish, and freshwater drum.

3.3.4 Spatial and Temporal Comparisons of Community Level Parameters

3.3.4.1 Electrofishing

The combined electrofishing CPE (number per km), relative abundance, and species richness for native fish species from the two locations downstream of Dresden Island Lock and Dam were compared between the July/August, and September surveys. Twenty-five species were collected in July/August and 19 species were collected in September (Table F-25). CPE increased from 90 in July/August to 147 in September. The higher September CPE was due primarily to increased catches of spotfin shiner.

CPE for redhorse species was relatively low as the highest redhorse CPE was for golden redhorse (6.0) in July/August. The mean smallmouth bass and largemouth CPE exhibited similar reductions between July/August and September (Table F-25). The mean number of native species richness was the same each period with 13 species and hybrid *Lepomis* (Table F-25).

3.3.4.2 Seining

The combined CPE (number of native fish per seine haul), relative abundance, and number of native species collected at the two locations downstream of Dresden Island Lock and Dam were compared between the July/August and September surveys (Table F-26). The number of species collected per period declined from 14 species in July/August to 11 species in September and nine species were collected both periods. Mean CPE increased 10-fold between July/August (20.5) and September (219.0) primarily due to higher catches of spotfin shiner (Table F-26). Brook silverside, emerald shiner, and sand shiner were the dominant species in July/August and spotfin shiner was the dominant species in September.

Due to the qualitative nature of seining, statistical testing was not applied to the seine data.

3.3.5 Inter-Year Comparisons of Community Level Parameters

Electrofishing data for the 15 June through August time period were compiled and compared among the past 14 study years to assess potential impacts on the fish community associated with thermal conditions in recent years and 2013 in particular. Data compared are from the same or similar locations and the seining data were excluded.

The number of fishes collected during this 14-year study period was lowest in 1994 (172) and highest in 2007 (1,362) (Table F-27). Low catches in 2011 and 2013 were likely influenced by the reduced number of sampling events (3 versus 8 surveys prior to 2011). The number of native species (25) collected in 2013 was below average (27) and was exceeded eight of the 14 years (Table F-27).

Bluegill was the most abundant species collected in 2013 and its CPE (26.5) was the highest to date. Bluegill CPE has varied widely during the 14-year study. Except for five years, bluegill CPE has been greater than 10 fish per km (Table F-27).

Emerald shiner and/or gizzard shad were the most abundant or second most abundant species most years. Green sunfish was the most abundant species in 2000 and the second most abundant species in 1999. Spotfin shiner was the third most abundant species in 2013 and second most abundant in 2008 (Table F-27).

Catch rates of commonly collected species during the 15 June through 31 August period have generally been higher since 1995 (Table F-27). Exceptions included consistently lower gizzard shad CPE since 1995 that largely represents CPEs less than 10 fish per km five of the seven years since 2004. In addition, average catch rates of emerald shiner, bullhead minnow, smallmouth buffalo, channel catfish, and smallmouth bass since 1995 have been similar to pre-1999 CPEs.

Four redhorse species were collected during the 14 years sampled. Golden redhorse accounted for about 60 percent of the redhorse. Its CPE ranged from 1.3 to 12.8 fish per km and had average catches after 1994, largely because of the high CPE (12.8) in 2002 (Table F-27). Catch rates of the other redhorse species averaged less than two fish per km and only the 1995 mean CPE for silver redhorse (10.5) exceeded four fish per km. Only one river redhorse was collected (2002) during the 14 study years.

Catch rates of freshwater drum exhibited limited variability relative to other common species, with CPEs ranging from 1.0 to 9.8 fish per km (Table F-27). The 2013 CPE was the lowest of the 14-year study.

CPE (fish per km), mean IWBmod, and mean native species richness in 2013 were not statistically ($P>0.05$) different from the other 13 years (Table F-28). IWBmod values ranged from 6.7 in 2000 to 7.9 in 2002 and 2003. Ohio EPA (1987, 1989 updated 2006) uses IWBmod scores to assign streams or stream segments to the following classifications: Exceptional = ≥9.6; Very Good = 9.1-9.5; Good = 8.5-9.0; Marginally Good = 8.0-8.4; Fair = 6.4-7.9; Poor = 5.0-6.3; and Very Poor = <5.0. According to the current Ohio EPA classification scheme, the fisheries downstream of Dresden Island Lock and Dam during the mid-June through August period would have been considered fair during the 14 year study.

As shown below, mean water temperatures during the 15 June through 31 August study period have ranged from 25.8°C in 1994 to 32.0°C in 2011:

Year	Mean Water Temperature	CPE	IWBmod	Species Richness
2013	29.0	90.9	7.1	13.0
2011	32.0	99.0	7.5	14.5
2008	28.2	170.8	7.5	15.5
2007	27.6	340.5	7.2	14.4
2006	29.8	141.3	7.2	12.9
2005	30.1	206.3	7.2	14.6
2004	29.4	176.0	7.1	11.6
2003	28.8	196.3	7.9	14.9
2002	30.0	247.5	7.9	15.1
2001	29.0	152.8	7.1	13.9
2000	28.5	105.5	6.7	11.8
1999	30.6	118.0	6.9	11.2
1995	28.4	242.5	7.8	14.3
1994	25.8	86.0	7.3	11.5

There were no clear direct relationships between mean water temperatures and mean CPE, IWBmod, or species richness. For example, the 2011 catch statistics, the warmest year, were similar to those in 1994, the coolest year. In 2005 when the third highest mean temperature was recorded, the CPE was the fourth highest; and the second highest CPE occurred in 2002 when the fourth highest mean temperature was recorded. The highest CPE occurred in 2007, when the next to lowest mean temperature was observed. Similar inconsistent patterns were evident for IWBmod and species richness.

3.3.6 Summary

Inter-year comparisons of mean electrofishing total CPE for native species, IWBmod, and species richness were made for the 15 June through August study period when air and water temperatures would be highest and river flows lowest. CPE (fish per km), mean IWBmod, and mean native species richness in 2013 were not significantly different from the previous 13 study years. Under Ohio EPA's current classification of IWBmod scores, the fishery below Dresden Island Lock and Dam during the mid-June through August period would be considered fair for all years.

The mean summer water temperature in 2013 represented the median for the 14-year study; the lowest mean water temperatures were in 1994, 2007, and 2008. The 2013 mean CPE was the second lowest in this 14 year record, likely an artifact of the reduced sampling schedule. Native species richness in 2013 (13.0) was exceeded eight of the previous 13 years surveyed and IWBmod was exceeded nine of the previous 13 years. Collectively, the 2013 catch data did not indicate any obvious adverse impacts on the native fish community downstream of the Dresden Island Lock and Dam because of the operation of DNS.

3.3.7 Fish Condition

3.3.7.1 Overview

Inherent in the development of the standard weight (*Ws*) equations used to calculate relative weight (*Wr*) is the objective of modeling the growth forms of fish in better-than-average condition. A mean *Wr* close to 100 for a broad range of size groups may reflect optimal health and utilization of food resources for a given population (Anderson and Gutreuter 1983). When mean *Wr* values are considerably less than 100, problems may exist in food availability and/or feeding relationships. Exotic species are not discussed in the following section, however, *Wr* values were calculated for all species that have published *Ws* equations (Table F-1), and those results are provided in Exhibit E.

During 2013, 130 fish representing 11 native species were collected downstream of Dresden Island Lock and Dam that met the minimum length criteria of published *Ws* equations (Table F-29). All were represented by low numbers of individuals in some or all of the months, precluding monthly comparisons of mean *Wr* values. Of the 11 species, five were represented by more than 10 individuals (Table F-29). Relative weights by species, as well as by individuals within a species, were highly variable. Mean relative weight by species ranged from 82 for gizzard shad and smallmouth buffalo to 106 for green sunfish and bluegill. Six of the 11 species had mean *Wr* values less than 90 including shorthead redhorse and smallmouth bass (Table F-29). Conditions for these species may have been suboptimal in 2013. The remaining five species each exhibited a *Wr* greater than 90, which reflects optimal health and utilization of food resources.

Since 1994, a total of 2,327 fish, representing 20 native species that met the minimum length criteria of the *Ws* equations, has been collected downstream of the Dresden Island Lock and Dam during the 15 June-August study period (Table F-30). All of these species were represented by fewer than 10 individuals in all or most years, thus preventing inter-year comparisons of mean *Wr* values due to small sample sizes. Relative weights were compiled for the mid-June through 31 August period because the highest temperatures typically occur during this period. Inter-year differences in mean *Wr* values for the past 14 study years are discussed below for seven common native species: smallmouth buffalo, channel catfish, green sunfish, bluegill, smallmouth bass, largemouth bass, and freshwater drum.

3.3.7.2 Smallmouth buffalo

Relative weight was calculated for smallmouth buffalo with annual sample sizes ranging from a single individual in 2013 to 28 fish. The mean summer *Wr* (82) in 2013 was slightly lower than the study composite mean (Table F-30). Mean W*r* was <90 all but two years, suggesting that conditions downstream of the Dresden Island Lock and Dam are consistently less than optimal for smallmouth buffalo.

3.3.7.3 Channel catfish

Relative weight was calculated for channel catfish with annual sample sizes ranging from only five individuals to 34. The mean summer *Wr* (93) in 2013 was lower than the study composite mean (Table F-30). The summer mean W*r* has consistently been >95 suggesting that conditions downstream of the Dresden Island Lock and Dam are generally optimal for channel catfish.

3.3.7.4 Green Sunfish

Relative weight was calculated for green sunfish with annual sample sizes ranging from only two individuals to 90. The mean summer *Wr* (106) in 2013 was slightly lower than the study composite mean but above the target of 100 (Table F-30). Mean *Wr* for green sunfish has consistently exceeded 100 during the 14 study years indicating that green sunfish are in good condition downstream of the Dresden Island Lock and Dam.

3.3.7.5 Bluegill

Relative weight was calculated for bluegill with annual sample sizes ranging from only four individuals to 49. The mean summer *Wr* (107) in 2013 was similar to the study composite mean and above the target of 100 (Table F-30). Mean *Wr* for bluegill has consistently exceeded 100 during the study indicating bluegills are in good condition in the study area.

3.3.7.6 Smallmouth Bass

Relative weight was calculated for smallmouth bass with annual sample sizes ranging from only one individual to 22. The mean summer *Wr* (85) in 2013 was slightly lower than the study composite mean (Table F-30). Prior to 2005, *Wr* values for smallmouth bass were consistently less than 90 downstream of the Dresden Island Lock and Dam. From 2005 through 2008, *Wr* values approached 100 suggesting conditions for this species had improved. Mean *Wr* was lower in 2011 and 2013 indicting conditions may have been suboptimal compared to most recent years.

3.3.7.7 Largemouth Bass

Relative weight was calculated for largemouth bass with annual sample sizes ranging from three individuals to 35. The mean summer *Wr* (96) in 2013 was lower than the study composite mean but approached the target of 100 (Table F-30). Except for 1995 when the mean value was 93, mean *Wr* values for largemouth bass were greater than or equal to 96, indicating that their condition is good in the study area.

3.3.7.8 Freshwater Drum

Relative weight was calculated for freshwater drum with annual sample sizes ranging from two individuals to 38. The mean summer *Wr* (90) in 2013 was lower than the study composite mean (Table F-30). Mean *Wr* for freshwater drum has consistently exceeded 100 in the study area, except in 2001, 2011, and 2013, indicating that freshwater drum are generally in good condition downstream of the Dresden Island Lock and Dam.

3.3.7.9 Summary

A total of 2,327 native fishes meeting appropriate minimum length criteria for *Ws* equations was collected from the study segment downstream of the Dresden Island Lock and Dam during the 15 June to 31 August study period in 1994-1995, 1999-2008, 2011, and 2013. Inter-year comparisons of mean *Wr* values were made for seven native species. For the 14 study years, differences between the years have been occasionally observed for some of the species. Mean *Wr* has been close to or exceeded 100 for five species (channel catfish, green sunfish, bluegill, largemouth bass, and freshwater drum). For these species, differences were due most often to the extent in which *Wr* exceeded 100. For example, the mean bluegill *Wr* of 124 in 2006 was noticeably higher than the mean in 2007 (107) (Table F-33, EA 2010). Therefore, differences, though notable, were due to how much **above** the target value of 100 the *Wr* values were, **not** to suboptimal fish condition. These values indicate that the populations of these five species were in average or better than average condition. *Wr* values for smallmouth buffalo has been sub-optimal. The reasons for those low W*r* values are unclear.

3.3.8 Incidence of DELT Anomalies

DELT anomalies (deformities, erosions, lesions, and tumors; Ohio EPA 1987, 1989) are the group of anomalies most relevant for this study because a clear relationship has been established between the incidence (percentage) of DELT anomalies and water quality (Ohio EPA 1989). The extent to which parasites and "other" anomalies (e.g., deformed fin rays, regenerated scales) reflect water quality is unclear. Therefore, only DELT anomaly data are summarized. Data regarding parasites and "other" abnormalities are presented in Exhibit F.

In contrast to the fish community evaluation, where exotic species were eliminated, exotic species were included in the DELT comparisons because of the extent to which they (typically common carp) are affected by DELT anomalies. Seine data were not used for comparative purposes because this gear collects primarily small/young fish that often lack anomalies. For the temporal comparisons, data collected during the July through September 2013 sampling trips were utilized.

Intra-year comparisons of DELT anomalies downstream of the Dresden Island Lock and Dam were made for each sampling period and inter-year comparisons were made for all trips combined. Historical data were available from 1994, 1995, 1999-2008, and 2011.

3.3.8.1 Overview

In 2013, a total 328 fish was examined for DELT anomalies, of which 13 fish (4.0 percent of the catch) exhibited DELT anomalies within the downstream Dresden Island Lock and Dam study segment (Table F-31). Freshwater drum and channel catfish exhibited the highest DELT affliction rate (50 and 64 percent, respectively) among those species for which nine or more individuals were examined. Of the species examined, only five exhibited DELT anomalies (Table F-31). Fin erosion accounted for all of the DELT anomalies observed; lesions, deformities or tumors were not observed (Table F-32; Exhibit F).

3.3.8.2 Temporal Comparisons

DELT anomalies were compared between two periods: July/August and September (Table F-33).

The incidence of DELT anomalies was lower in September (2.7 percent) relative to July/August (5.0 percent). Channel catfish and freshwater drum were the only species that had DELT anomalies in both periods.

3.3.8.3 Inter-Year Comparisons

Inter-year comparisons of the incidence of DELT anomalies were made to examine annual variations and patterns of affliction rates during the June 15-August study period from 1994 - 1995, 1999-2008, 2011,and 2013 (Table F-34). Overall, annual DELT affliction rates were widely variable ranging from 2.4 in 2007 to 8.2 in 1999. Affliction rates downstream of Dresden Island Lock and Dam in 2013 were the eighth highest in the 14 years studied. Similar rates were observed in 1995 and 2006.

Although the incidence of DELT anomalies in redhorse species have been low during some recent years, typically bottom feeders such as common carp, smallmouth buffalo, golden redhorse, shorthead redhorse, channel catfish, and freshwater drum have exhibited relatively high DELT anomaly affliction rates within the study area. The disproportionately higher affliction rates among bottom feeders suggest that the substrates within the study area, as do other upstream areas in the UIW, likely contain contaminants that are responsible for many of the DELT anomalies observed on these species (Bertrand et al. 1992; Burton 1995; EA 1996b).

3.3.8.4 Summary

A high incidence of DELT anomalies is an indication of stress and may be caused by a variety of environmental factors, including chemically contaminated substrates (Ohio EPA 1989). Ohio EPA (1987) uses percent DELT anomalies as an Index of Biotic Integrity (IBI) metric. For large river sites like the UIW, the IBI scoring criteria is as follows: percent DELT anomalies <0.5 = 5 (good), 0.5-3.0 = 3 (fair), and >3.0 = 1 (poor). DELT anomalies for fish in the Dresden Island Lock and Dam segment has been in the poor category for all years for which data are available except 2007 (2.4) when the affliction rate was in the fair range. DELT anomaly affliction rates in the Dresden Island Lock and Dam segment has been variable and usually in the poor range. This indicates that, although the system has shown some improvement, there are still stressors present.

4.0 BENTHOS RESULTS AND DISCUSSION

4.1 OVERVIEW

The benthic community in the DNS study area was sampled at six locations using Hester Dendy (HD) artificial substrate and Ponar dredge samplers. A single HD sampler array (five HDs per array) were retrieved and two replicate Ponar samples were collected at each of the six locations as part of the long-term monitoring program. Replicate Ponar sampling allowed statistical comparisons between areas (upstream versus downstream of the Station) and among years. An ANOVA (P=0.05) was used to compare taxa richness, total density, and densities of Oligochaeta (aquatic worms), Chironomidae (midges), Ephemeroptera (mayflies), and Trichoptera (caddisflies). Due to inherent differences between the study area upstream and downstream of the Dresden Island Lock and Dam, the data were segregated spatially: Dresden Pool (Locations 501A, 502, 509, and 510) and downstream of Dresden Island Lock and Dam (Marseilles Pool) (Locations 512 and 515).

To facilitate interpretation and discussion of results with regard to potential thermal effects, spatial comparisons in Dresden Pool were made between areas upstream and downstream of DNS. Ponar data for 1999, 2001-2008, and 2011 as well as HD data for 2001-2008 and 2011 were compared to the 2013 data. Downstream of the Dresden Island Lock and Dam, Ponar and HD data for 2001-2008 and 2011 were compared with data from the current study.

A total of 63 macroinvertebrate taxa were collected during the 2013 study (Table F-35). Chironomidae and Oligochaeta were the most taxa rich groups (20 and 15 taxa, respectively). Detailed results from the macroinvertebrate samples are provided in Exhibit G.

4.2 DRESDEN POOL

4.2.1 Ponar Sampler

Densities and relative abundance of three major macroinvertebrate groups in Dresden Pool were examined for trends between the areas upstream and downstream of DNS. Oligochaeta (aquatic worms) and Chironomidae (midges) were selected for these comparisons because they were the most abundant groups (Table F-36). In addition, Pelecypoda (bivalve mussels and clams) was chosen because of the increasing interest shown by regulatory agencies in this taxonomic Class. Upstream/downstream comparisons were also made using taxa richness.

For all Dresden Pool locations combined, 38 macroinvertebrate taxa were collected in the Ponar samples (Table F-36). Chironomidae, Oligochaeta, and Pelecypoda were the most taxa rich groups collected in 2013 (12, 9, and 4 taxa, respectively). Five EPT (Ephemeroptera + Plecoptera + Trichoptera) taxa were collected. Oligochaeta composed 53 percent of the benthic community and Chironomidae composed 26 percent.

In Dresden Pool, total taxa richness was higher upstream of DNS compared to downstream (Table F-37). Upstream total taxa richness during the late August survey was 32 including four EPT taxa, whereas downstream total richness was 23 taxa and one EPT taxa. Total densities were higher downstream of the Station (4,717 per m^2) compared to 3,172 per m^2 upstream; however, differences in mean total density and mean taxa richness observed between the upstream and downstream areas were not statistically ($P>0.05$) different (Table F-38).

For Dresden Pool, the relative abundance of Oligochaeta in the upstream Ponar samples (33 percent) was lower than downstream (66 percent) of the Station (Table F-37). Pelecypoda (clams) relative abundance was slightly lower downstream (8 percent) than upstream (12 percent), although densities were similar between the two areas (Table F-37). The relative abundance of Chironomidae was also lower downstream (22 percent) than upstream (33 percent). Ephemeroptera comprised about 1.0 percent of the upstream sample and were not collected downstream (Table F-37). Aquatic worm taxa generally had higher densities downstream of the Station, whereas many midge taxa had greater densities upstream (Table F-38). *Procladius* was an exception as its density was much higher downstream. The midge *Polypedilum halterale* had much higher densities upstream. *Corbicula* had similar densities in the two areas.

Compared to the fish community, the historical period of study is relatively brief for the Dresden Pool benthic community. The most recent historical studies were conducted in 1999 and 2001-2008, and 2011. These studies involved collecting Ponar grab samples during all years at the same locations sampled during the current study. Data collected during similar periods were used to make the inter-year comparisons below.

For all Dresden Pool locations combined, the number of taxa collected in the Ponar samples has varied from 26 to 48 taxa (Table F-39). EPT taxa richness ranged from zero to six taxa (Table F-39). Dresden Pool total richness in 2013 was similar to most years while EPT richness was slightly higher than most years.

Total richness upstream of DNS declined slightly each year from 28 taxa in 1999 to 17 taxa in 2003 (Table F-40). Since 2005, total richness has been slightly higher and similar among years. EPT richness has generally been low among sampling years ranging from zero to four taxa. The 2013 total and EPT richness for the combined locations upstream of DNS were the highest values observed.

Downstream of DNS, total richness has ranged from 17 taxa in 2002 to 44 taxa in 2011. As with the locations upstream of DNS, EPT richness has been low, ranging from zero to three taxa in all years except 2011 (Table F-41). The 23 total taxa observed in 2013 was average for the 11-year study while the single EPT taxon observed was similar to most years.

Mean taxa richness for all areas combined in 2013 was statistically similar ($P>0.05$) to four of the previous 10 study years and statistically higher ($P<0.05$) than the remaining six previous years (Table F-42). Annual differences in mean taxa richness were not statistically ($P>0.05$) different upstream of DNS (Table F-42). Mean taxa richness downstream of DNS was statistically similar eight of the 11 years. Downstream mean taxa richness in 1999, 2002, and 2005 was significantly ($P<0.05$) lower than four of the last five years, including 2013 (Table F-42).

Mean total density (#/m^2) for Dresden Pool locations combined ranged from a low of 788 in 2001 to 9,493 in 2011 (Table F-42). The mean 2013 total density was statistically similar to densities from all except two years and significantly ($P<0.05$) higher than densities in 2001 and 2005. Upstream of DNS, 2013 mean total densities were statistically similar ($P>0.05$) 10 of the 11 years (Table F-42). Downstream of DNS, mean total density ranged from a low of 641 in 2001 to 13,246 in 2011. The 2013 mean total downstream density was statistically ($P>0.05$) similar to densities from five years and statistically higher ($P<0.05$) than densities the other five years (Table F-42).

Mean Oligochaeta densities for Dresden Pool locations combined ranged from a low of 349 to 5,932 (Table F-42). The mean 2013 density was statistically ($P<0.05$) similar to densities from all years except 2005 and 2008 when Oligochaeta densities were lowest for the study. Upstream of DNS, 2013 mean Oligochaeta densities were statistically similar ($P>0.05$) to all years except 2008 (Table F-42). Downstream of DNS, mean Oligochaeta density ranged from 187 to 7,386. The 2013 mean downstream density was statisticallyhigher ($P<0.05$) than densities in four years and statisticallysimilar ($P>0.05$) to the other six years (Table F-42).

Mean Chironomidae density for Dresden Pool locations combined ranged from a low of 148 to 2,650 (Table F-42). The mean 2013 total density was statistically similar to densities in all years except 2007 when Chironomidae density was lowest for the study. Upstream of DNS, mean densities were statistically ($P>0.05$) similar among all years. Downstream of DNS, mean total density ranged from 43 to 4,191. The 2013 mean Chironomidae downstream density was statistically ($P<0.05$) higher than densities from five years and statistically ($P>0.05$) similar to the other five years (Table F-42).

There were no significant differences ($P>0.05$) in the mean Ephemeroptera densities for the areas combined or the upstream and downstream areas (Table F-42).

4.2.2 Hester-Dendy Artificial Substrate

The HD samples for the Dresden Pool locations combined yielded 37 total taxa and five EPT taxa (Table F-43). The mean density of macroinvertebrates in Dresden Pool was 4,770/m^2. Oligochaeta and Chironomidae were the most taxa rich groups collected (9 and 12 taxa, respectively). Chironomidae composed 62.8 percent of the benthic community sampled by artificial substrates, Trichoptera 12.0 percent, and Oligochaeta 6.5 percent.

Total taxa richness was lower downstream than upstream of DNS in 2013, 32 versus 25 total taxa, as was EPT richness, five versus three taxa, respectively (Table F-44). Total mean density in Dresden Pool was higher upstream (5,319 m^2) than downstream (4,222 per m^2) of DNS (Table F-44). The upstream/downstream difference in mean density was primarily the result of the higher densities of Turbellaria and *Glyptotendipes* (midge), which were nearly four and 30 times , respectively, more abundant upstream than downstream and composed 48 percent of the total upstream density. The caddisfly *Cyrnellus fraternus* had similar densities upstream and downstream of DNS. Twenty taxa had higher densities upstream compared to 17 taxa with higher densities downstream, but as shown above, the overall higher upstream abundance was due to two taxa.

The contribution of seven midge taxa (*Nanocladius, Dicrotendipes modestus, Dicrotendipes neomodestus, Dicrotendipes fumidus, Dicrotendipes lucifer, Dicrotendipes simpsoni*, and *Glyptotendipes*) was important either upstream or downstream of the Station or both accounting for 54.7 and 53.0 percent, respectively of the organisms on the HDs (Table F-44). Of the more common taxa, *Dicrotendipes simpsoni, D. lucifer*, and *Glyptotendipes* are considered relatively tolerant.

Densities and relative abundance of Oligochaeta, Chironomidae, Ephemeroptera, and Trichoptera were compared in Dresden Pool upstream and downstream of DNS. Statistical spatial comparisons between locations were not made because there was only one survey upstream and downstream of the Station. Chironomidae relative abundance was higher upstream (68.2 percent) than downstream (55.9 percent) primarily due to the high upstream density of *Glyptotendipes* (Table F-44). Trichoptera relative abundance was slightly higher downstream (13.9 percent) than upstream (10.5 percent) as was Oligochaeta relative abundance, 14.1 percent downstream, and 0.5 percent upstream. The higher downstream relative abundance of Oligochaeta was due to much higher downstream densities of the worm *Stylaria lacustris* (Table F-44). Ephemeroptera was a minor component (less than 0.5 percent) of the benthic community both upstream and downstream of DNS.

As was observed for Chironomidae relative abundance, their densities were higher upstream of the Station (3,628/m^2) than downstream of the Station (2,358/m^2). The opposite was true for Oligochaeta densities, 27.7/m^2 upstream of the Station and 596/m^2 downstream of the Station Table F-44).

The most recent historical studies using HD samplers were conducted in 2001-2008, 2008, and 2011 (EA 2002, EA 2003, EA 2004, EA 2005, EA 2006, EA 2007, EA 2008, EA 2010, and EA 2012). Each annual study involved placement of samplers at the same locations sampled during the current study. Data collected during similar periods were compared (Table F-45).

Annual taxa richness has ranged from 31 to 54 taxa (Table F-45). Taxa richness in 2013 (37) was the fifth lowest to date. EPT richness has ranged from four in 2011 to 11 in 2004 and averaged about seven taxa per year. The 2013 total (5 taxa) was below average but the same as 2001 and 2005. EPT richness had been 7 or 8 from 2006 through 2008. Total density in 2013 (4,770/m^2) was 76 percent lower than the record density in 2011, but was nearly three times higher than the lowest observed in 2007 (1,612/ m^2).

Total taxa richness has been variable among years upstream and downstream of DNS. Total richness has ranged from 20 to 44 taxa upstream of DNS (Table F-46). In 2013, 32 total taxa were observed upstream of DNS, which was within the range previously reported and above average. Downstream of DNS, total taxa richness has ranged from 20 taxa in 2005 to 38 taxa in 2003 (Table F-47). In 2013, 25 total taxa were observed downstream of DNS, which was within the previously reported range, but slightly below average (Table F-47). EPT richness also varied among the study years ranging from three to 10 taxa upstream (Table F-46) and two to eight taxa downstream (Table F-47). The number of EPT taxa upstream (5 taxa) and downstream (3 taxa) of the DNS in 2013 were slightly below average for the 11-year study. Mean taxa richness of benthos collected on HD samplers in Dresden Pool in 2013 was statistically similar to all other years (Table F-48).

Mean total density upstream of DNS in 2013 (5,319 per m^2) was more than double the lowest densities observed in 2004 and 2007, but roughly half the long-term mean (Table F-46). The 2013 mean total density downstream of DNS (4,222 per m^2) was about average, but well above densities from 2004 through 2008 (Table F-47). The 2013 downstream density was half the 2011 density (7,858 per m^3), the highest downstream density to date. Lower downstream densities in 2007 are probably an artifact of both the loss of the samplers at one of the downstream Locations (510) and flood conditions, which could have had a scouring effect on both natural and artificial substrates.

Densities of Oligochaeta, Chironomidae, Ephemeroptera, and Trichoptera collected in Dresden Pool during August 2001-2008, 2011, and 2013 are compared in Table F-48. There were no significant differences ($P>0.05$) in mean density among the 10 years compared for Ephemeroptera. The 2013 mean densities of Oligochaeta and Chironomidae collected on HD samplers in Dresden Pool were statistically similar to all other years (Table F-48). The 2013 Trichoptera densities in 2013 were statistically ($P<0.05$) lower than the high density in 2003 and similar to the remaining study years.

Oligochaeta were collected upstream of DNS in all study years except 2004 and downstream of DNS in all years (Table F-46). In both areas, Oligochaeta relative abundance has varied widely over the 10-year study. The relative abundance of aquatic worms upstream of DNS ranged from 0.0 percent to 22.1 percent, whereas downstream relative abundance of Oligochaeta has ranged from 1.0 to 45.3 percent.

4.2.3 Summary

The macroinvertebrate data from Ponar and HD samples indicate that a poor benthic community exists in Dresden Pool. Fauna at all locations was dominated by tolerant and facultative taxa. The Ponar samples indicated that highly tolerant Oligochaeta dominated at most locations. In addition, with a few exceptions, intolerant groups such as Ephemeroptera and Trichoptera generally were not well represented and when present, were generally collected in relatively low numbers compared to the more tolerant taxa. HD samples typically had higher total taxa richness and higher EPT taxa richness than did the Ponar samples from the same locations. In addition, densities of Trichoptera were much higher in the HD samples. Nonetheless, the number of EPT taxa was lower than would be expected for a waterway of this size. Differences in taxa richness are primarily the result of differences in sampler type; however, water quality and sediment quality may also be contributing factors.

No significant upstream/downstream differences were observed in taxa richness or Oligochaeta, Chironomidae, or Pelecypoda densities in the 2013 Dresden Pool benthic community as measured by the Ponar samples. There were slight upstream/downstream differences in substrate composition. The upstream substrate contained sand (10 to 75 percent) while the substrate downstream contained less sand (0 to 5 percent) and more silt (40 to 70 percent). Substrate at all Dresden Pool sites was composed mainly of silt, clay, and/or detritus.

Spatial comparisons among the 11 years of Ponar data from Dresden Pool showed there were no significant differences in the mean densities of Ephemeroptera for the areas combined or the two areas individually. This was also true for Chironomidae mean densities upstream of DNS. Chironomidae densities for areas combined and downstream of DNS were similar to all other years except 2002 and 2007 when densities were lower. Downstream Chironomidae densities were higher in 2013 than five of the other 10 years studies.

Oligochaeta densities in 2013 for areas combined were significantly higher than in 2005 and 2008 and were similar to all other years, whereas downstream of DNS Oligochaeta densities were higher in 2013 than in 2001, 2004, 2005, and 2008.

Results from the HD samplers, showed that in 2013 the relative abundance of Chironomidae was higher upstream of DNS, whereas, the relative abundance of Oligochaeta and Trichoptera was higher downstream. Ephemeroptera was a minor component both upstream and downstream of DNS. As was observed for Chironomidae relative abundance, Chironomidae densities were substantially higher upstream of the Station than downstream of the Station. Higher upstream densities was largely driven by the abundance of Turbellaria and the chironomid *Glyptotendipes*. The total number of taxa were higher upstream of DNS and the number of EPT taxa were slightly higher upstream. Mean Ephemeroptera densities in among years were not significantly different. Although inter-year significant differences in densities have occurred for Oligochaeta, Chironomidae, and Trichoptera, the 2013 results were statistically similar to most years for each group.

The HD samplers were set in early July and retrieved in mid-August. The Ponar samples were also collected in mid-August. The highest water temperature recorded in Dresden Pool upstream of DNS during the sampling period was 31.2°C in late-July at Location 502 (Table F-4). Maximum water temperature downstream of DNS (33.0°C) was observed in late-July at Locations 506 and 507A. The mean summertime (June 15 through September) water temperature in Dresden Pool in 2013 (28.9°C) was the fourth highest in this data record:

Dresden Pool	
Mean Temperature (˚C)	
2013	28.9
2011	29.0
2008	26.5
2007	27.9
2006	27.3
2005	29.3
2004	27.6
2003	27.9
2002	28.4
2001	27.2
2000	27.8
1999	29.8

4.3 DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM

4.3.1 Ponar Sampler

For the two locations (512 and 515) in Marseilles Pool downstream of Dresden Island Lock and Dam, a total of 17 benthic macroinvertebrate and one EPT taxa were collected (Table F-49). Chironomidae and Pelecypoda were each represented by five and four taxa, respectively. No statistical spatial comparisons were made between the locations; however, taxa richness was higher at Location 515 (Exhibit G). Downstream of the Dresden Island Lock and Dam, Pelecypoda (28.6 percent) was dominant followed by Amphipoda (22.5 percent), Chironomidae (21.6 percent), and Gastropoda (17.6 percent) (Table F-49). Taxa from these four groups accounted for over 90 percent of the organisms collected with the Ponar. The most abundant taxa from these taxa groups were the Asiatic clam, *Corbicula fluminae*, the amphipod *Apocorophium lacustre*, the snail *Elimia*, and a midge, *Polypedilum halterale*.

Comparisons of the Ponar data collected downstream of the Dresden Island Lock and Dam were made among the 10 years studied (Table F-50). Total taxa richness has varied from seven to 19 taxa. The 17 taxa observed in 2013 is above the long-term average and ranked third highest for the study. EPT richness has ranged from zero to four over the 10 study years (Table F-50). Although Oligochaeta density in 2013 was the lowest among the years compared, 2013 was statistically ($P<0.05$) similar to all years except 2007 and 2011 (Table F-51). Total Chironomidae density in 2013 was statistically similar to all other years, whereas Ephemeroptera densities were statistically similar to nine of the previous years and significantly lower than in 2006 (Table F-51).

As has been observed during most previous study years, the substrate downstream of the Dresden Island Lock and Dam consisted of higher amounts of coarse elements such as sand and gravel. Compared to upstream of the Dam in Dresden Pool, silt and detritus were relatively minor components of the substrate downstream.

4.3.2 Hester-Dendy Artificial Substrate

The HD samples yielded 23 total and six EPT taxa while the mean density of downstream of the Dam was 2,196 per m^2 (Table F-52). Chironomidae was the most taxa rich group collected (9 taxa) compared to three taxa each of Oligochaeta, Ephemeroptera, and Trichoptera (Table F-52). Chironomidae composed 70.1 percent of the benthic density, followed by Trichoptera (20.0 percent), Amphipoda (6.8 percent), and Ephemeroptera (2.1 percent).

The 23 total taxa collected in HD samples downstream of Dresden Dam was lower than average but within the range of values observed previously. Artificial substrate sampling from 2001 through 2013 yielded an average of 29.5 taxa per year ranging from 21 to 42 taxa (Table F-53). During this same period, EPT richness averaged just fewer than nine taxa and ranged from six to 15 taxa. Mean number of taxa and mean total densities were not calculated in 2007 because HD results from only one location was available.

Mean total density downstream of Dresden Island Lock and Dam has ranged from 2,196 per m^2 to 11,992 per m^2 during the 10 previous years of study (Table F-53). Densities varied widely over the 10-year study with higher densities in 2001, 2008, and 2011 and lower densities in 2002, 2007, 2013. The lower downstream densities in 2007 are likely an artifact of both the loss of the samplers at Location 512 and flood conditions, which could have had a scouring effect on both natural and the artificial substrates.

Higher total densities in 2001, 2008, and 2011 were due to Chironomidae and Trichoptera taxa. Since 2001, taxa within these groups frequently have been among the dominants and have largely dictated density trends downstream of the Dam (Table F-53).

4.3.3 Summary

The Ponar and HD artificial substrate data indicate that the benthic community in the Illinois River below the Dresden Island Lock and Dam is generally poor. As in the Dresden Pool, the benthic community below the Dam consists largely of tolerant or facultative taxa (Tables F-49 and 52). However, the more pollution tolerant taxa typically observed in the Dresden Pool Ponar samples such as *Nanocladius distinctus*, *Dicrotendipes simpsoni*, and *Glyptotendipes* were typically absent from the Ponar samples downstream of the Lock and Dam, but were present on the HD samplers. These long-term trends were observed in 2007 (despite the flood conditions and the loss of the HD data from one of the downstream locations), 2008, 2011, and 2013.

Data from the 10-year monitoring program indicate that DNS does not impact the benthic community below the Dresden Island Lock and Dam. The variability observed in this area and the lack of clear relationships to trends observed upstream are likely artifacts of the unstable conditions below the Dam and the substantial differences in habitat between the Dresden Pool and the area downstream of the Dresden Island Lock and Dam.

5.0 REFERENCES

Anderson R.O. and S.J. Gutreuter. 1983. Length, Weight, and Associated Structural Indices. Pages 283-300. In (Nielsen L.A. and D.L. Johnson, eds.) Fisheries Techniques. Southern Printing Company, Inc., Blacksburg, Virginia.

Anderson, R.O. and R.M. Neumann. 1996. Length, Weight, and Associated Structural Indices. Pages 447-482. In (Murphy, B.R. and D.W. Willis, Eds.) Fisheries Techniques, 2nd Edition. Am. Fish. Soc., Bethesda, MD.

Becker, G.C. 1983. Fishes in Wisconsin. The University of Wisconsin Press. Madison, Wisconsin.

Bister, T.J., D.W. Willis, M.L. Brown. 2000. Proposed standard weight (Ws) equations and standard length categories for 18 warmwater nongame and riverine fish species. N. Am. Jour. Fish. Mgt. 20:570-574.

Burton, G.A. 1995. Upper Illinois Waterway Study Interim Report: 1994-1995 Sediment Contamination Assessment. Prepared for Commonwealth Edison Company. Prepared by The Institute for Environmental Quality, Wright State University, Dayton, OH.

EA Engineering, Science, and Technology, Inc. (EA). 1995. The Upper Illinois Waterway study: Interim Report: 1994 fisheries investigation RM 270.2-323.2. Report by EA to Commonwealth Edison Company, Chicago, IL.

__________. 1996a. 1995 Upper Illinois Waterway fisheries investigation RM 270.2-323.2. Report by EA to Commonwealth Edison Company, Chicago, IL.

__________. 1996b. Chapter 9.0-Fisheries, in Aquatic Ecological Study of the Upper Illinois Waterway (ComEd, ed.), Vol. II, pp. 9.1-1 through 9.12-6.

__________. 1998. 1997 Upper Illinois Waterway fisheries investigation RM 272.1-

285.5. Report by EA to Commonwealth Edison Company, Chicago, IL.

__________. 1999. 1998 Upper Illinois Waterway fisheries investigation RM 272.1-285.5. Report by EA to Commonwealth Edison Company, Chicago, IL.

__________. 2000. Dresden Nuclear Station Aquatic Monitoring 1999, RM 266.0 - 274.4. Report by EA to Commonwealth Edison Company, Chicago, IL.

_________. 2001. Dresden Nuclear Station Aquatic Monitoring 2000, RM 270.5 - 273.0. Report by EA to Exelon Nuclear Company, Chicago, IL.

_________. 2002. Dresden Nuclear Station Aquatic Monitoring 2001, RM 270.5 - 273.4.

Report by EA to Exelon Nuclear Company, Chicago, IL.

_________. 2003. Dresden Nuclear Station Aquatic Monitoring 2002, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

_________. 2004. Dresden Nuclear Station Aquatic Monitoring 2003, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

_________. 2005. Dresden Nuclear Station Aquatic Monitoring 2004, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

_________. 2006. Dresden Nuclear Station Aquatic Monitoring 2005, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

_________. 2007. Dresden Nuclear Station Aquatic Monitoring 2006, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

_________. 2008. Dresden Nuclear Station Aquatic Monitoring 2007, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

_________. 2010. Dresden Nuclear Station Aquatic Monitoring 2008, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

_________. 2012. Dresden Nuclear Station Aquatic Monitoring 2011, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

Emery, E.B., T.P Simon, F.H. McCormick, P.L.Angermeier, J.E. Deshon, C.O. Yoder, R.E. Sanders, W.D. Pearson, G.D. Hickman, R.J. Reash, and J.A. Thomas. 2003. Development of a multimetric index for assessing the biological condition of the Ohio River. Trans. Am. Fish. Soc. 132:791-808.

Gammon, J.R. 1976. The fish populations of the middle 340 km of the Wabash River. Purdue Univ. Water Resources Res. Cen. Tech. Rep. 86.

Hughes, R.M. and J.R. Gammon. 1987. Longitudinal changes in fish assemblages and water quality in the Willamette River, OR. Trans. Am. Fish. Soc. 116:196-209.

Illinois Endangered Species Protection Board. 2011. Checklist of Endangered and Threatened Animals and Plants of Illinois. Effective 11 February 2011. Illinois Endangered Species Protection Board, Springfield, IL. http://www.dnr.illinois.gov/ESPB/Documents/ETChecklist2011.pdf

Karr, J.R., K.D. Fausch, P.L. Angermeier, P.R. Yant, and I.J. Schlosser. 1986. Assessing biological integrity in running waters: a method and its rationale. Ill. Nat. Hist. Surv. Sp. Publ. 5.

Lyons, J. 1992. Using the index of biotic integrity (IBI) to measure environmental quality in warmwater streams of Wisconsin. U. S. Dept. of Agriculture, Forest Service, North Central Forest Experiment Station. General Technical Report NC-149.

Monitoring and Rapid Response Group. 2014. 2013 Asian Carp Monitoring and Response Plan Interim Summary Reports. Asian Carp Regional Coordinating Committee, Monitoring and Response Workgroup. April 2014.

Murphy, B.R., D.W. Willis, and T.A. Springer. 1991. The relative weight index in fisheries management: status and needs. Fisheries 16(2): 30-28.

Ohio Environmental Protection Agency. 1987 (Updated November 8, 2006). Biological criteria for the protection of aquatic life: Vol. II. Users manual for biological field assessment of Ohio surface waters. Div. Water Quality Monitoring and Assess., Surface Water Sect., Columbus, OH.

_________. 1989 (Updated November 8, 2006). Biological criteria for the protection of aquatic life: Vol. III. Standardized field and laboratory methods for assessing fish and macroinvertebrate communities. Div. Water Quality Monitoring and Assess., Surface Water Sect., Columbus, OH.

Page, L.M., K.S. Cummings, C.A. Mayer, A.L. Post, and M.E. Retzer. 1992. Biologically significant Illinois streams: an evaluation of the streams of Illinois based on aquatic biodiversity. Ill. Dept. of Cons. and Ill. Dept. of Energy and Nat. Res. Project Completion Rept., Enhancement of Biological Stream Characterization, F-110-R.

Post, G. 1983. Textbook of fish health. TFH Publication, Inc. Neptune City. 256 pp.

Smith, P. 1979. The Fishes of Illinois. Univ. of Illinois Press, Urbana, Illinois.

Wege, G.J. and R.O. Anderson. 1978. Relative weight (Wr): a new index of condition for largemouth bass. Pages 79-91 in Novinger G.D. and J.G. Dillard, eds. New approaches to the management of small impoundments. North Central Division, American Fisheries Society, Special Publication 5.

FIGURES

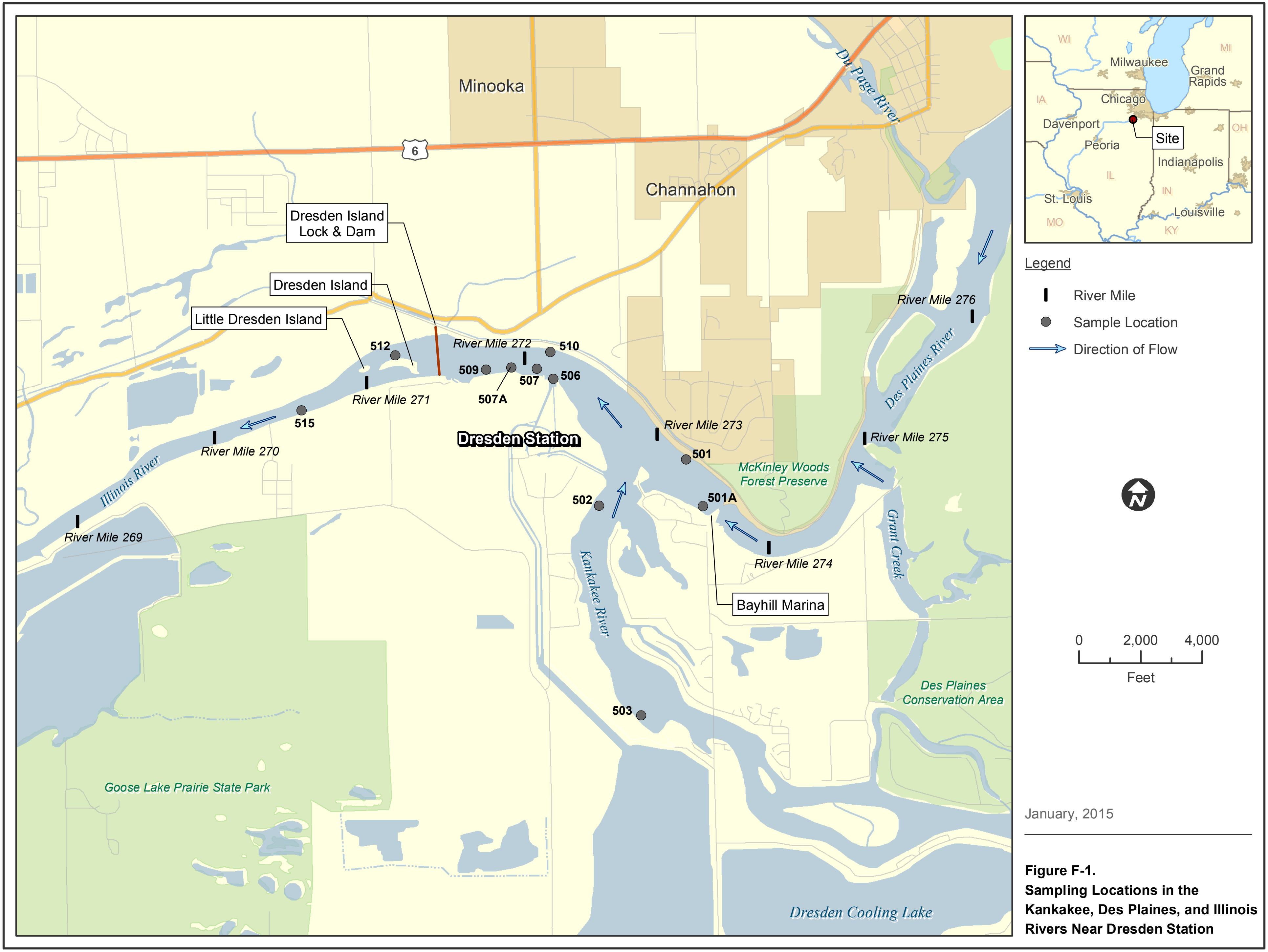

Figure F-1.
Sampling Locations in the Kankakee, Des Plaines, and Illinois Rivers Near Dresden Station

TABLES

Table F-1. Intercept (a) and Slope (b) Parameters for Standard Weight (*Ws*) Equations with Minimum Total Lengths (mm) Recommended for Application [(a)].

Species	Intercept (a)	Slope (b)	Minimum Length	Reference or developer
Longnose gar	-6.811	3.449	200	Bister et al. (2000)
Gizzard shad	-5.376	3.170	180	Anderson and Gutreuter (1983)
Rainbow trout (lentic)	-4.898	2.990	120	Simpkins and Hubert (unpublished)
Brook trout	-5.085	3.043	130	Whelan and Taylor (1984)
Chinook salmon	-4.661	2.901	200	Halseth et al. (1990)
Northern pike	-5.437	3.096	100	Willis (unpublished)
Common carp	-4.639	2.920	200	Bister et al. (2000)
Golden shiner	-5.593	3.302	50	Liao et al. (1995)
Bigmouth buffalo	-5.069	3.118	150	Bister et al. (2000)
Smallmouth buffalo	-5.298	3.208	200	Bister et al. (2000)
River carpsucker	-4.839	2.992	130	Bister et al. (2000)
White sucker	-4.755	2.940	100	Bister et al. (2000)
Shorthead redhorse	-4.841	2.962	100	Bister et al. (2000)
Black bullhead	-4.974	3.085	130	Bister et al. (2000)
Yellow bullhead	-5.374	3.232	60	Bister et al. (2000)
Brown bullhead	-5.076	3.105	130	Bister et al. (2000)
Channel catfish	-5.800	3.294	70	Brown et al. (1995)
Flathead catfish	-5.542	3.230	130	Bister et al. (2000)
White perch	-5.122	3.136	80	Bister et al. (2000)
White bass	-5.066	3.081	115	Brown and Murphy (1991)
Yellow bass	-5.142	3.133	70	Bister et al. (2000)
Striped bass	-4.924	3.007	150	Brown and Murphy (1991)
Hybrid *Morone*	-5.201	3.139	115	Brown and Murphy (1991)
Rock bass	-4.827	3.074	80	Bister et al. (2000)
Green sunfish	-4.915	3.101	60	Bister et al. (2000)
Pumpkinseed	-5.179	3.237	50	Liao et al. (1995)
Warmouth	-5.180	3.241	80	Bister et al. (2000)
Bluegill	-5.374	3.316	80	Hillman (1982)
Largemouth bass	-5.316	3.191	150	Wege and Anderson (1978)
Smallmouth bass	-5.329	3.200	150	Kolander et al. (1993)
Black crappie	-5.618	3.345	100	Neumann and Murphy (1991)
White crappie	-5.642	3.332	100	Neumann and Murphy (1991)
Walleye	-5.453	3.180	150	Murphy et al. (1990)
Yellow perch	-5.386	3.230	100	Willis et al. (1991)
Freshwater drum	-5.419	3.204	100	Blackwell et al. (1995)

(a) Sources: Bister et al. 2000, Anderson and Neumann 1996, and Murphy et al. 1991.

TABLE F-2. LIST OF COMMON AND SCIENTIFIC NAMES FOR FISH COLLECTED NEAR DRESDEN NUCLEAR STATION, 2013.

COMMON FAMILY NAME	COMMON NAME	SCIENTIFIC NAME
GARS	LONGNOSE GAR	Lepisosteus osseus
HERRINGS	SKIPJACK HERRING	Alosa chrysochloris
	GIZZARD SHAD	Dorosoma cepedianum
	THREADFIN SHAD	Dorosoma petenense
CARPS AND MINNOWS	CENTRAL STONEROLLER	Campostoma anomalum
	SPOTFIN SHINER	Cyprinella spiloptera
	COMMON CARP	Cyprinus carpio
	PALLID SHINER	Hybopsis amnis
	STRIPED SHINER	Luxilus chrysocephalus
	REDFIN SHINER	Lythrurus umbratilis
	HORNYHEAD CHUB	Nocomis biguttatus
	GOLDEN SHINER	Notemigonus crysoleucas
	Notropis sp.	Notropis sp.
	EMERALD SHINER	Notropis atherinoides
	GHOST SHINER	Notropis buchanani
	SPOTTAIL SHINER	Notropis hudsonius
	ROSYFACE SHINER	Notropis rubellus
	SAND SHINER	Notropis stramineus
	MIMIC SHINER	Notropis volucellus
	CHANNEL/MIMIC SHINER	Notropis wickliffi &/or Notropis volucellus
	BLUNTNOSE MINNOW	Pimephales notatus
	BULLHEAD MINNOW	Pimephales vigilax
SUCKERS	RIVER CARPSUCKER	Carpiodes carpio
	QUILLBACK	Carpiodes cyprinus
	SMALLMOUTH BUFFALO	Ictiobus bubalus
	SPOTTED SUCKER	Minytrema melanops
	Moxostoma sp.	Moxostoma sp.
	SILVER REDHORSE	Moxostoma anisurum
	GOLDEN REDHORSE	Moxostoma erythrurum
	SHORTHEAD REDHORSE	Moxostoma macrolepidotum
NORTH AMERICAN CATFISHES	CHANNEL CATFISH	Ictalurus punctatus
	TADPOLE MADTOM	Noturus gyrinus
	FLATHEAD CATFISH	Pylodictis olivaris
PIKES	NORTHERN PIKE	Esox lucius
NEW WORLD SILVERSIDES	BROOK SILVERSIDE	Labidesthes sicculus
TOPMINNOWS	BANDED KILLIFISH	Fundulus diaphanous menona
	BLACKSTRIPE TOPMINNOW	Fundulus notatus
LIVEBEARERS	WESTERN MOSQUITOFISH	Gambusia affinis
SUNFISHES	ROCK BASS	Ambloplites rupestris
	Lepomis sp.	Lepomis sp.
	GREEN SUNFISH	Lepomis cyanellus
	PUMPKINSEED	Lepomis gibbosus
	ORANGESPOTTED SUNFISH	Lepomis humilis
	BLUEGILL	Lepomis macrochirus
	NORTHERN SUNFISH	Lepomis peltastes
	Lepomis HYBRID	Lepomis HYBRID
	SMALLMOUTH BASS	Micropterus dolomieu
	LARGEMOUTH BASS	Micropterus salmoides
	BLACK CRAPPIE	Pomoxis nigromaculatus
PERCHES	JOHNNY DARTER	Etheostoma nigrum
	LOGPERCH	Percina caprodes
	BLACKSIDE DARTER	Percina maculata
	SLENDERHEAD DARTER	Percina phoxocephala
DRUMS AND CROAKERS	FRESHWATER DRUM	Aplodinotus grunniens
GOBIES	ROUND GOBY	Neogobius melanostomus

TABLE F-3.SPECIES COMPOSITION, NUMBER, BIOMASS, AND RELATIVE ABUNDANCE OF FISH COLLECTED NEAR DRESDEN NUCLEAR STATION, 2013.

SPECIES	NUMBER CAUGHT #	NUMBER CAUGHT %	WEIGHT CAUGHT KG	WEIGHT CAUGHT %
LONGNOSE GAR	1	0.03	2.000	1.04
SKIPJACK HERRING	2	0.05	0.045	0.02
GIZZARD SHAD	426	11.49	49.540	25.67
THREADFIN SHAD	9	0.24	0.065	0.03
NORTHERN PIKE	1	0.03	0.125	0.06
CENTRAL STONEROLLER	4	0.11	0.014	0.01
COMMON CARP	19	0.51	25.140	13.03
HORNYHEAD CHUB	2	0.05	0.007	0.00[a]
GOLDEN SHINER	2	0.05	0.003	0.00
PALLID SHINER	34	0.92	0.037	0.02
EMERALD SHINER	73	1.97	0.175	0.09
GHOST SHINER	1	0.03	0.001	0.00
STRIPED SHINER	15	0.40	0.029	0.02
SPOTTAIL SHINER	13	0.35	0.037	0.02
ROSYFACE SHINER	17	0.46	0.019	0.01
SPOTFIN SHINER	921	24.84	0.600	0.31
SAND SHINER	45	1.21	0.039	0.02
REDFIN SHINER	10	0.27	0.005	0.00
MIMIC SHINER	16	0.43	0.008	0.00
CHANNEL/MIMIC SHINER	1	0.03	0.001	0.00
Notropis sp.	2	0.05	0.002	0.00
BLUNTNOSE MINNOW	323	8.71	0.393	0.20
BULLHEAD MINNOW	192	5.18	0.142	0.07
RIVER CARPSUCKER	3	0.08	1.730	0.90
QUILLBACK	6	0.16	2.762	1.43
SMALLMOUTH BUFFALO	7	0.19	12.002	6.22
SPOTTED SUCKER	1	0.03	0.003	0.00
SILVER REDHORSE	5	0.13	2.524	1.31
GOLDEN REDHORSE	26	0.70	8.854	4.59
SHORTHEAD REDHORSE	36	0.97	1.051	0.54
Moxostoma sp.	1	0.03	0.001	0.00
CHANNEL CATFISH	25	0.67	26.530	13.75
TADPOLE MADTOM	1	0.03	0.003	0.00
FLATHEAD CATFISH	8	0.22	11.345	5.88
BANDED KILLIFISH	2	0.05	0.002	0.00
BLACKSTRIPE TOPMINNOW	130	3.51	0.117	0.06
WESTERN MOSQUITOFISH	84	2.27	0.037	0.02
BROOK SILVERSIDE	226	6.09	0.224	0.12
ROCK BASS	14	0.38	0.105	0.05
GREEN SUNFISH	92	2.48	1.379	0.71
PUMPKINSEED	9	0.24	0.132	0.07
ORANGESPOTTED SUNFISH	6	0.16	0.030	0.02
BLUEGILL	520	14.02	8.611	4.46
NORTHERN SUNFISH	107	2.89	1.332	0.69
Lepomis HYBRID	14	0.38	0.385	0.20
Lepomis sp.	8	0.22	0.005	0.00
SMALLMOUTH BASS	59	1.59	5.712	2.96
LARGEMOUTH BASS	126	3.40	17.676	9.16
BLACK CRAPPIE	1	0.03	0.003	0.00
JOHNNY DARTER	4	0.11	0.005	0.00
LOGPERCH	39	1.05	0.302	0.16
BLACKSIDE DARTER	1	0.03	0.002	0.00
SLENDERHEAD DARTER	1	0.03	0.001	0.00
FRESHWATER DRUM	14	0.38	11.670	6.05
ROUND GOBY	3	0.08	0.009	0.00
TOTAL FISH	3,708	100.00	192.971	100.00
TOTAL SPECIES	50[b]			

(a) 0.00 DENOTES VALUES LESS THAN 0.005.

(b) THE TOTAL SPECIES COUNT IN THIS AND SUBSEQUENT TABLES DO NOT INCLUDE HYBRIDS AND INCLUDES GENUS LEVEL IDENTIFICATIONS (e.g., *Lepomis* sp.) ONLY WHEN NO SPECIES (e.g., BLUEGILL) OF THAT GENUS WERE IDENTIFIED.

TABLE F-4. SUMMARY OF SURFACE OR MID-DEPTH PHYSICOCHEMICAL PARAMETERS MEASURED AT ELECTROFISHING LOCATIONS IN DRESDEN POOL, 2013.

		TEMPERATURE (C)			DISSOLVED OXYGEN (ppm)			DISSOLVED OXYGEN Percent Saturation			SPECIFIC CONDUCTANCE (µS/cm)			SECCHI (cm)		
		MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX
TRIP																
17-19 JUL		32.1	30.1	33.0	9.0	7.4	12.4	125	105	168	754	623	946	66	47	96
29-30 AUG		30.3	27.9	31.7	8.6	6.9	11.9	114	93	158	827	650	926	81	52	110
26-27 SEP		24.2	19.4	27.4	8.7	7.4	10.6	105	87	116	731	632	817	100	68	151
LOCATION																
501		28.4	23.1	32.4	8.8	7.4	9.8	115	98	137	876	774	946	110	69	151
502		27.9	22.6	31.2	10.6	7.4	12.4	138	87	168	717	623	814	69	47	107
503		25.8	19.4	30.1	9.1	7.9	10.6	111	105	116	639	632	650	66	48	76
506		30.6	27.4	33.0	8.3	7.8	8.6	111	107	115	816	725	926	89	77	100
507A		30.2	26.3	33.0	8.0	7.4	8.4	107	105	108	762	724	830	71	47	99
510		30.3	26.3	32.8	7.9	6.9	8.9	106	93	124	815	792	835	89	72	99
TRIP	**AREA (a)**															
17-19 JUL	UPSTREAM	31.2	30.1	32.4	10.0	7.9	12.4	137	105	168	734	623	946	55	47	69
	DOWNSTREAM	32.9	32.8	33.0	8.0	7.4	8.9	113	105	124	773	731	796	78	47	96
29-30 AUG	UPSTREAM	29.1	27.9	29.8	9.3	7.4	11.9	122	98	158	791	650	909	79	52	110
	DOWNSTREAM	31.5	31.3	31.7	7.9	6.9	8.6	105	93	115	864	830	926	83	72	99
26-27 SEP	UPSTREAM	21.7	19.4	23.1	9.1	7.4	10.6	104	87	116	707	632	774	111	76	151
	DOWNSTREAM	26.7	26.3	27.4	8.3	8.0	8.5	105	100	108	755	724	817	89	68	100
AREA (TRIPS COMBINED)																
UPSTREAM		27.4	19.4	32.4	9.5	7.4	12.4	121	87	168	744	623	946	82	47	151
DOWNSTREAM		30.4	26.3	33.0	8.1	6.9	8.9	108	93	124	797	724	926	83	47	100

(a) UPSTREAM AND DOWNSTREAM OF THE DRESDEN STATION DISCHARGE WITHIN DRESDEN POOL.

TABLE F-5.SPECIES COMPOSITION, NUMBER, BIOMASS, AND RELATIVE ABUNDANCE OF NATIVE FISH COLLECTED FROM DRESDEN POOL, 2013.

	ELECTRO		SEINE		GEARS COMBINED			
SPECIES	#	%	#	%	#	%	KG	%
LONGNOSE GAR	--	--	1	0.10	1	0.04	2.000	1.44
GIZZARD SHAD	410	23.19	4	0.41	414	15.08	47.734	34.48
NORTHERN PIKE	1	0.06	--	--	1	0.04	0.125	0.09
CENTRAL STONEROLLER	1	0.06	3	0.31	4	0.15	0.014	0.01
HORNYHEAD CHUB	--	--	2	0.20	2	0.07	0.007	0.01
GOLDEN SHINER	1	0.06	--	--	1	0.04	0.002	0.00
PALLID SHINER	29	1.64	5	0.51	34	1.24	0.037	0.03
EMERALD SHINER	26	1.47	13	1.33	39	1.42	0.097	0.07
GHOST SHINER	1	0.06	--	--	1	0.04	0.001	0.00
STRIPED SHINER	8	0.45	7	0.72	15	0.55	0.029	0.02
SPOTTAIL SHINER	9	0.51	3	0.31	12	0.44	0.036	0.03
ROSYFACE SHINER	3	0.17	--	--	3	0.11	0.003	0.00
SPOTFIN SHINER	143	8.09	376	38.45	519	18.90	0.372	0.27
SAND SHINER	--	--	18	1.84	18	0.66	0.009	0.01
REDFIN SHINER	--	--	9	0.92	9	0.33	0.004	0.00
MIMIC SHINER	--	--	4	0.41	4	0.15	0.001	0.00
BLUNTNOSE MINNOW	136	7.69	163	16.67	299	10.89	0.364	0.26
BULLHEAD MINNOW	58	3.28	98	10.02	156	5.68	0.116	0.08
RIVER CARPSUCKER	2	0.11	--	--	2	0.07	1.600	1.16
QUILLBACK	6	0.34	--	--	6	0.22	2.762	2.00
SMALLMOUTH BUFFALO	5	0.28	1	0.10	6	0.22	11.212	8.10
SPOTTED SUCKER	1	0.06	--	--	1	0.04	0.003	0.00
SILVER REDHORSE	2	0.11	--	--	2	0.07	1.378	1.00
GOLDEN REDHORSE	12	0.68	--	--	12	0.44	5.745	4.15
SHORTHEAD REDHORSE	31	1.75	--	--	31	1.13	0.351	0.25
CHANNEL CATFISH	14	0.79	--	--	14	0.51	17.970	12.98
TADPOLE MADTOM	--	--	1	0.10	1	0.04	0.003	0.00
FLATHEAD CATFISH	7	0.40	--	--	7	0.25	11.255	8.13
BANDED KILLIFISH	--	--	2	0.20	2	0.07	0.002	0.00
BLACKSTRIPE TOPMINNOW	3	0.17	120	12.27	123	4.48	0.113	0.08
BROOK SILVERSIDE	92	5.20	62	6.34	154	5.61	0.130	0.09
ROCK BASS	11	0.62	3	0.31	14	0.51	0.105	0.08
GREEN SUNFISH	74	4.19	1	0.10	75	2.73	1.214	0.88
PUMPKINSEED	8	0.45	1	0.10	9	0.33	0.132	0.10
ORANGESPOTTED SUNFISH	4	0.23	1	0.10	5	0.18	0.028	0.02
BLUEGILL	394	22.29	55	5.62	449	16.35	6.979	5.04
NORTHERN SUNFISH	80	4.52	15	1.53	95	3.46	1.188	0.86
Lepomis HYBRID	9	0.51	--	--	9	0.33	0.288	0.21
Lepomis sp.	3	0.17	5	0.51	8	0.29	0.005	0.00
SMALLMOUTH BASS	31	1.75	--	--	31	1.13	2.776	2.01
LARGEMOUTH BASS	113	6.39	4	0.41	117	4.26	15.867	11.46
BLACK CRAPPIE	1	0.06	--	--	1	0.04	0.003	0.00
JOHNNY DARTER	3	0.17	1	0.10	4	0.15	0.005	0.00
LOGPERCH	26	1.47	--	--	26	0.95	0.144	0.10
BLACKSIDE DARTER	1	0.06	--	--	1	0.04	0.002	0.00
SLENDERHEAD DARTER	1	0.06	--	--	1	0.04	0.001	0.00
FRESHWATER DRUM	8	0.45	--	--	8	0.29	6.210	4.49
TOTAL FISH	1,768	100.00	978	100.00	2,746	100.00	138.422	100.00
TOTAL SPECIES	38		27		45			

NOTE: 0.00 DENOTES VALUES LESS THAN 0.005.

TABLE F-6.NUMBER, CPE (No./km), AND RELATIVE ABUNDANCE OF NATIVE FISH COLLECTED ELECTROFISHING UPSTREAM AND DOWNSTREAM OF DRESDEN NUCLEAR STATION IN DRESDEN POOL, 2013.

	UPSTREAM			DOWNSTREAM		
SPECIES	#	CPE	%	#	CPE	%
GIZZARD SHAD	355	78.9	31.2	55	14.0	8.7
NORTHERN PIKE	1	0.2	0.1	--	--	--
CENTRAL STONEROLLER	1	0.2	0.1	--	--	--
GOLDEN SHINER	1	0.2	0.1	--	--	--
PALLID SHINER	29	6.4	2.5	--	--	--
EMERALD SHINER	8	1.8	0.7	18	4.6	2.9
GHOST SHINER	1	0.2	0.1	--	--	--
STRIPED SHINER	8	1.8	0.7	--	--	--
SPOTTAIL SHINER	--	--	--	9	2.3	1.4
ROSYFACE SHINER	--	--	--	3	0.8	0.5
SPOTFIN SHINER	103	22.9	9.0	40	10.2	6.4
BLUNTNOSE MINNOW	71	15.8	6.2	65	16.5	10.3
BULLHEAD MINNOW	53	11.8	4.7	5	1.3	0.8
RIVER CARPSUCKER	2	0.4	0.2	--	--	--
QUILLBACK	3	0.7	0.3	3	0.8	0.5
SMALLMOUTH BUFFALO	1	0.2	0.1	4	1.0	0.6
SPOTTED SUCKER	1	0.2	0.1	--	--	--
SILVER REDHORSE	2	0.4	0.2	--	--	--
GOLDEN REDHORSE	7	1.6	0.6	5	1.3	0.8
SHORTHEAD REDHORSE	26	5.8	2.3	5	1.3	0.8
CHANNEL CATFISH	5	1.1	0.4	9	2.3	1.4
FLATHEAD CATFISH	4	0.9	0.4	3	0.8	0.5
BLACKSTRIPE TOPMINNOW	2	0.4	0.2	1	0.3	0.2
BROOK SILVERSIDE	89	19.8	7.8	3	0.8	0.5
ROCK BASS	1	0.2	0.1	10	2.5	1.6
GREEN SUNFISH	19	4.2	1.7	55	14.0	8.7
PUMPKINSEED	5	1.1	0.4	3	0.8	0.5
ORANGESPOTTED SUNFISH	3	0.7	0.3	1	0.3	0.2
BLUEGILL	189	42.0	16.6	205	52.2	32.6
NORTHERN SUNFISH	40	8.9	3.5	40	10.2	6.4
Lepomis HYBRID	2	0.4	0.2	7	1.8	1.1
Lepomis sp.	2	0.4	0.2	1	0.3	0.2
SMALLMOUTH BASS	24	5.3	2.1	7	1.8	1.1
LARGEMOUTH BASS	43	9.6	3.8	70	17.8	11.1
BLACK CRAPPIE	1	0.2	0.1	--	--	--
JOHNNY DARTER	3	0.7	0.3	--	--	--
LOGPERCH	26	5.8	2.3	--	--	--
BLACKSIDE DARTER	--	--	--	1	0.3	0.2
SLENDERHEAD DARTER	1	0.2	0.1	--	--	--
FRESHWATER DRUM	7	1.6	0.6	1	0.3	0.2
TOTAL FISH	1,139	253.1	100.0	629	160.1	100.0
TOTAL SPECIES	35			25		

NOTE: 0.0 DENOTES VALUES LESS THAN 0.05.

Table F-7. Results of Upstream vs. Downstream Statistical Comparisons for Electrofishing Catch Parameters Near Dresden Nuclear Station, 2013.

Trips Combined	Upstream Dresden	Downstream Dresden	Significant Difference[a]	F Value	P Value
CPEs-all native fish[b]	253.1	160.1	No	0.86	0.37
IWBmod	7.21	6.86	No	0.84	0.37
Native Species Richness	13	10	No	2.88	0.11
July and August					
CPEs-all native fish[b]	211.7	127.5	No	0.80	0.39
IWBmod	7.37	6.85	No	0.85	0.38
Native Species Richness	14	10	No	1.72	0.22
September					
CPEs-all native fish	336.0	225.2	No	0.45	0.54
IWBmod	6.89	6.88	No	0.00	0.97
Native Species Richness	13	10	No	0.88	0.40

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Log transformed data used for statistical analyses because they are normally distributed.

TABLE F-8. NUMBER, CPE (No./km), AND RELATIVE ABUNDANCE OF NATIVE FISH COLLECTED ELECTROFISHING UPSTREAM AND DOWNSTREAM OF DRESDEN NUCLEAR STATION, IN DRESDEN POOL, BY SAMPLING PERIOD, 2013.

SPECIES	JULY/AUGUST						SEPTEMBER					
	UPSTREAM			DOWNSTREAM			UPSTREAM			DOWNSTREAM		
	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
GIZZARD SHAD	169	56.3	26.6	33	12.6	9.9	186	124.0	36.9	22	16.8	7.5
NORTHERN PIKE	1	0.3	0.2	--	--	--	--	--	--	--	--	--
CENTRAL STONEROLLER	--	--	--	--	--	--	1	0.7	0.2	--	--	--
GOLDEN SHINER	1	0.3	0.2	--	--	--	--	--	--	--	--	--
PALLID SHINER	6	2.0	0.9	--	--	--	23	15.3	4.6	--	--	--
EMERALD SHINER	2	0.7	0.3	4	1.5	1.2	6	4.0	1.2	14	10.7	4.7
GHOST SHINER	1	0.3	0.2	--	--	--	--	--	--	--	--	--
STRIPED SHINER	4	1.3	0.6	--	--	--	4	2.7	0.8	--	--	--
SPOTTAIL SHINER	--	--	--	7	2.7	2.1	--	--	--	2	1.5	0.7
ROSYFACE SHINER	--	--	--	3	1.1	0.9	--	--	--	--	--	--
SPOTFIN SHINER	54	18.0	8.5	26	9.9	7.8	49	32.7	9.7	14	10.7	4.7
BLUNTNOSE MINNOW	46	15.3	7.2	23	8.8	6.9	25	16.7	5.0	42	32.1	14.2
BULLHEAD MINNOW	29	9.7	4.6	1	0.4	0.3	24	16.0	4.8	4	3.1	1.4
RIVER CARPSUCKER	2	0.7	0.3	--	--	--	--	--	--	--	--	--
QUILLBACK	3	1.0	0.5	3	1.1	0.9	--	--	--	--	--	--
SMALLMOUTH BUFFALO	--	--	--	4	1.5	1.2	1	0.7	0.2	--	--	--
SPOTTED SUCKER	1	0.3	0.2	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	2	0.7	0.3	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	4	1.3	0.6	4	1.5	1.2	3	2.0	0.6	1	0.8	0.3
SHORTHEAD REDHORSE	13	4.3	2.0	2	0.8	0.6	13	8.7	2.6	3	2.3	1.0
CHANNEL CATFISH	5	1.7	0.8	6	2.3	1.8	--	--	--	3	2.3	1.0
FLATHEAD CATFISH	4	1.3	0.6	3	1.1	0.9	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	1	0.4	0.3	2	1.3	0.4	--	--	--
BROOK SILVERSIDE	30	10.0	4.7	--	--	--	59	39.3	11.7	3	2.3	1.0
ROCK BASS	1	0.3	0.2	1	0.4	0.3	--	--	--	9	6.9	3.1
GREEN SUNFISH	9	3.0	1.4	28	10.7	8.4	10	6.7	2.0	27	20.6	9.2
PUMPKINSEED	2	0.7	0.3	3	1.1	0.9	3	2.0	0.6	--	--	--
ORANGESPOTTED SUNFISH	3	1.0	0.5	1	0.4	0.3	--	--	--	--	--	--
BLUEGILL	137	45.7	21.6	105	40.1	31.4	52	34.7	10.3	100	76.3	33.9
NORTHERN SUNFISH	27	9.0	4.3	21	8.0	6.3	13	8.7	2.6	19	14.5	6.4
Lepomis HYBRID	2	0.7	0.3	5	1.9	1.5	--	--	--	2	1.5	0.7
Lepomis sp.	--	--	--	--	--	--	2	1.3	0.4	1	0.8	0.3
SMALLMOUTH BASS	16	5.3	2.5	5	1.9	1.5	8	5.3	1.6	2	1.5	0.7
LARGEMOUTH BASS	33	11.0	5.2	44	16.8	13.2	10	6.7	2.0	26	19.8	8.8
BLACK CRAPPIE	1	0.3	0.2	--	--	--	--	--	--	--	--	--
JOHNNY DARTER	2	0.7	0.3	--	--	--	1	0.7	0.2	--	--	--
LOGPERCH	19	6.3	3.0	--	--	--	7	4.7	1.4	--	--	--
BLACKSIDE DARTER	--	--	--	--	--	--	--	--	--	1	0.8	0.3
SLENDERHEAD DARTER	--	--	--	--	--	--	1	0.7	0.2	--	--	--
FRESHWATER DRUM	6	2.0	0.9	1	0.4	0.3	1	0.7	0.2	--	--	--
TOTAL FISH	635	211.7	100.0	334	127.5	100.0	504	336.0	100.0	295	225.2	100.0
TOTAL SPECIES	31			23			23			17		

TABLE F-9. COMPARISON OF ELECTROFISHING CPEs (No./km) AND RELATIVE ABUNDANCE BETWEEN SAMPLING PERIODS FOR NATIVE SPECIES COLLECTED FROM DRESDEN POOL, 2013.

SPECIES	JULY/AUGUST		SEPTEMBER	
	CPE	%	CPE	%
GIZZARD SHAD	35.9	20.8	74.0	26.0
NORTHERN PIKE	0.2	0.1	--	--
CENTRAL STONEROLLER	--	--	0.4	0.1
GOLDEN SHINER	0.2	0.1	--	--
PALLID SHINER	1.1	0.6	8.2	2.9
EMERALD SHINER	1.1	0.6	7.1	2.5
GHOST SHINER	0.2	0.1	--	--
STRIPED SHINER	0.7	0.4	1.4	0.5
SPOTTAIL SHINER	1.2	0.7	0.7	0.3
ROSYFACE SHINER	0.5	0.3	--	--
SPOTFIN SHINER	14.2	8.3	22.4	7.9
BLUNTNOSE MINNOW	12.3	7.1	23.8	8.4
BULLHEAD MINNOW	5.3	3.1	10.0	3.5
RIVER CARPSUCKER	0.4	0.2	--	--
QUILLBACK	1.1	0.6	--	--
SMALLMOUTH BUFFALO	0.7	0.4	0.4	0.1
SPOTTED SUCKER	0.2	0.1	--	--
SILVER REDHORSE	0.4	0.2	--	--
GOLDEN REDHORSE	1.4	0.8	1.4	0.5
SHORTHEAD REDHORSE	2.7	1.5	5.7	2.0
CHANNEL CATFISH	2.0	1.1	1.1	0.4
FLATHEAD CATFISH	1.2	0.7	--	--
BLACKSTRIPE TOPMINNOW	0.2	0.1	0.7	0.3
BROOK SILVERSIDE	5.3	3.1	22.1	7.8
ROCK BASS	0.4	0.2	3.2	1.1
GREEN SUNFISH	6.6	3.8	13.2	4.6
PUMPKINSEED	0.9	0.5	1.1	0.4
ORANGESPOTTED SUNFISH	0.7	0.4	--	--
BLUEGILL	43.1	25.0	54.1	19.0
NORTHERN SUNFISH	8.5	5.0	11.4	4.0
Lepomis HYBRID	1.2	0.7	0.7	0.3
Lepomis sp.	--	--	1.1	0.4
SMALLMOUTH BASS	3.7	2.2	3.6	1.3
LARGEMOUTH BASS	13.7	7.9	12.8	4.5
BLACK CRAPPIE	0.2	0.1	--	--
JOHNNY DARTER	0.4	0.2	0.4	0.1
LOGPERCH	3.4	2.0	2.5	0.9
BLACKSIDE DARTER	--	--	0.4	0.1
SLENDERHEAD DARTER	--	--	0.4	0.1
FRESHWATER DRUM	1.2	0.7	0.4	0.1
TOTAL FISH	172.4	100.0	284.3	100.0
TOTAL SPECIES	35		27	

Table F-10. Results of Statistical Comparisons Between Sampling Periods for Electrofishing Data Collected From Dresden Pool, 2013.

Catch Parameter	July/August	September	Significant Difference[a]	F Value	P Value
CPEs-all native fish[b]	172.4	284.3	No	1.82	0.20
IWBmod	7.11	6.88	No	0.30	0.59
Native Species Richness	12	12	No	0.01	0.94

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Log transformed data used for statistical analyses because they are normally distributed.

TABLE F-11. NUMBER, CPE (No./haul), AND RELATIVE ABUNDANCE OF NATIVE FISH COLLECTED SEINING UPSTREAM AND DOWNSTREAM OF DRESDEN NUCLEAR STATION IN DRESDEN POOL, 2013.

ALL TRIPS COMBINED

SPECIES	UPSTREAM			DOWNSTREAM		
	#	CPE	%	#	CPE	%
LONGNOSE GAR	1	0.1	0.1	--	--	--
GIZZARD SHAD	4	0.4	0.5	--	--	--
CENTRAL STONEROLLER	3	0.3	0.4	--	--	--
HORNYHEAD CHUB	2	0.2	0.3	--	--	--
PALLID SHINER	5	0.6	0.7	--	--	--
EMERALD SHINER	4	0.4	0.5	9	1.5	4.1
STRIPED SHINER	6	0.7	0.8	1	0.2	0.5
SPOTTAIL SHINER	2	0.2	0.3	1	0.2	0.5
SPOTFIN SHINER	315	35.0	41.6	61	10.2	27.7
SAND SHINER	13	1.4	1.7	5	0.8	2.3
REDFIN SHINER	9	1.0	1.2	--	--	--
MIMIC SHINER	4	0.4	0.5	--	--	--
BLUNTNOSE MINNOW	94	10.4	12.4	69	11.5	31.4
BULLHEAD MINNOW	94	10.4	12.4	4	0.7	1.8
SMALLMOUTH BUFFALO	--	--	--	1	0.2	0.5
TADPOLE MADTOM	--	--	--	1	0.2	0.5
BANDED KILLIFISH	2	0.2	0.3	--	--	--
BLACKSTRIPE TOPMINNOW	117	13.0	15.4	3	0.5	1.4
BROOK SILVERSIDE	54	6.0	7.1	8	1.3	3.6
ROCK BASS	3	0.3	0.4	--	--	--
GREEN SUNFISH	1	0.1	0.1	--	--	--
PUMPKINSEED	--	--	--	1	0.2	0.5
ORANGESPOTTED SUNFISH	--	--	--	1	0.2	0.5
BLUEGILL	10	1.1	1.3	45	7.5	20.5
NORTHERN SUNFISH	13	1.4	1.7	2	0.3	0.9
Lepomis sp.	1	0.1	0.1	4	0.7	1.8
LARGEMOUTH BASS	1	0.1	0.1	3	0.5	1.4
JOHNNY DARTER	--	--	--	1	0.2	0.5
TOTAL FISH	758	84.2	100.0	220	36.7	100.0
TOTAL SPECIES	22			17		
MEAN NO. OF SPECIES	6			5		

JULY/AUGUST

SPECIES	UPSTREAM			DOWNSTREAM		
	#	CPE	%	#	CPE	%
LONGNOSE GAR	1	0.2	0.3	--	--	--
GIZZARD SHAD	1	0.2	0.3	--	--	--
CENTRAL STONEROLLER	1	0.2	0.3	--	--	--
PALLID SHINER	2	0.3	0.6	--	--	--
EMERALD SHINER	4	0.7	1.3	9	2.3	5.6
STRIPED SHINER	--	--	--	1	0.3	0.6
SPOTTAIL SHINER	2	0.3	0.6	1	0.3	0.6
SPOTFIN SHINER	124	20.7	38.9	59	14.8	36.6
SAND SHINER	1	0.2	0.3	5	1.3	3.1
MIMIC SHINER	4	0.7	1.3	--	--	--
BLUNTNOSE MINNOW	66	11.0	20.7	49	12.3	30.4
BULLHEAD MINNOW	57	9.5	17.9	3	0.8	1.9
SMALLMOUTH BUFFALO	--	--	--	1	0.3	0.6
BLACKSTRIPE TOPMINNOW	19	3.2	6.0	1	0.3	0.6
BROOK SILVERSIDE	31	5.2	9.7	8	2.0	5.0
ROCK BASS	1	0.2	0.3	--	--	--
PUMPKINSEED	--	--	--	1	0.3	0.6
ORANGESPOTTED SUNFISH	--	--	--	1	0.3	0.6
BLUEGILL	2	0.3	0.6	13	3.3	8.1
NORTHERN SUNFISH	1	0.2	0.3	2	0.5	1.2
Lepomis sp.	1	0.2	0.3	4	1.0	2.5
LARGEMOUTH BASS	1	0.2	0.3	2	0.5	1.2
JOHNNY DARTER	--	--	--	1	0.3	0.6
TOTAL FISH	319	53.2	100.0	161	40.3	100.0
TOTAL SPECIES	17			16		
MEAN NO. OF SPECIES	5			6		

TABLE F-11 (cont.)

SEPTEMBER

SPECIES	UPSTREAM			DOWNSTREAM		
	#	CPE	%	#	CPE	%
GIZZARD SHAD	3	1.0	0.7	--	--	--
CENTRAL STONEROLLER	2	0.7	0.5	--	--	--
HORNYHEAD CHUB	2	0.7	0.5	--	--	--
PALLID SHINER	3	1.0	0.7	--	--	--
STRIPED SHINER	6	2.0	1.4	--	--	--
SPOTFIN SHINER	191	63.7	43.5	2	1.0	3.4
SAND SHINER	12	4.0	2.7	--	--	--
REDFIN SHINER	9	3.0	2.1	--	--	--
BLUNTNOSE MINNOW	28	9.3	6.4	20	10.0	33.9
BULLHEAD MINNOW	37	12.3	8.4	1	0.5	1.7
TADPOLE MADTOM	--	--	--	1	0.5	1.7
BANDED KILLIFISH	2	0.7	0.5	--	--	--
BLACKSTRIPE TOPMINNOW	98	32.7	22.3	2	1.0	3.4
BROOK SILVERSIDE	23	7.7	5.2	--	--	--
ROCK BASS	2	0.7	0.5	--	--	--
GREEN SUNFISH	1	0.3	0.2	--	--	--
BLUEGILL	8	2.7	1.8	32	16.0	54.2
NORTHERN SUNFISH	12	4.0	2.7	--	--	--
LARGEMOUTH BASS	--	--	--	1	0.5	1.7
TOTAL FISH	439	146.3	100.0	59	29.5	100.0
TOTAL SPECIES	17			7		
MEAN NO. OF SPECIES	8			4		

NOTE: 0.0 DENOTES VALUES LESS THAN 0.05.

TABLE F-12.COMPARISON OF SEINING CPEs (No./haul) AND RELATIVE ABUNDANCE BETWEEN SAMPLING PERIODS FOR NATIVE SPECIES COLLECTED FROM DRESDEN POOL, 2013.

SPECIES	JULY/AUGUST		SEPTEMBER	
	CPE	%	CPE	%
LONGNOSE GAR	0.1	0.2	--	--
GIZZARD SHAD	0.1	0.2	0.6	0.6
CENTRAL STONEROLLER	0.1	0.2	0.4	0.4
HORNYHEAD CHUB	--	--	0.4	0.4
PALLID SHINER	0.2	0.4	0.6	0.6
EMERALD SHINER	1.3	2.7	--	--
STRIPED SHINER	0.1	0.2	1.2	1.2
SPOTTAIL SHINER	0.3	0.6	--	--
SPOTFIN SHINER	18.3	38.1	38.6	38.8
SAND SHINER	0.6	1.3	2.4	2.4
REDFIN SHINER	--	--	1.8	1.8
MIMIC SHINER	0.4	0.8	--	--
BLUNTNOSE MINNOW	11.5	24.0	9.6	9.6
BULLHEAD MINNOW	6.0	12.5	7.6	7.6
SMALLMOUTH BUFFALO	0.1	0.2	--	--
TADPOLE MADTOM	--	--	0.2	0.2
BANDED KILLIFISH	--	--	0.4	0.4
BLACKSTRIPE TOPMINNOW	2.0	4.2	20.0	20.1
BROOK SILVERSIDE	3.9	8.1	4.6	4.6
ROCK BASS	0.1	0.2	0.4	0.4
GREEN SUNFISH	--	--	0.2	0.2
PUMPKINSEED	0.1	0.2	--	--
ORANGESPOTTED SUNFISH	0.1	0.2	--	--
BLUEGILL	1.5	3.1	8.0	8.0
NORTHERN SUNFISH	0.3	0.6	2.4	2.4
Lepomis sp.	0.5	1.0	--	--
LARGEMOUTH BASS	0.3	0.6	0.2	0.2
JOHNNY DARTER	0.1	0.2	--	--
TOTAL FISH	48.0	100.0	99.6	100.0
TOTAL SPECIES	22		19	
MEAN NO. OF SPECIES	5		6	

NOTE: 0.0 DENOTES VALUES LESS THAN 0.05.

TABLE F-13.INTER-YEAR COMPARISONS OF ELECTROFISHING CATCHES (native species only) WITHIN DRESDEN POOL FOR THE PERIOD OF 15 JUNE THROUGH AUGUST, 1994, 1995, 1997-2008, 2011, AND 2013.

SPECIES	1994			1995			1997			1998			1999		
	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
LONGNOSE GAR	4	0.9	1.8	--	--	--	--	--	--	--	--	--	1	0.1	0.1
SKIPJACK HERRING	1	0.2	0.5	--	--	--	1	0.1	0.1	6	0.8	0.5	2	0.3	0.2
GIZZARD SHAD	55	11.9	24.9	116	25.1	32.8	304	42.0	29.3	391	54.0	31.6	452	58.4	38.5
GOLDEYE	1	0.2	0.5	--	--	--	--	--	--	--	--	--	--	--	--
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CENTRAL STONEROLLER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN SHINER	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
PALLID SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	7	1.5	3.2	--	--	--	310	42.8	29.9	337	46.5	27.2	178	23.0	15.2
GHOST SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
STRIPED SHINER	--	--	--	--	--	--	7	1.0	0.7	1	0.1	0.1	--	--	--
SPOTTAIL SHINER	5	1.1	2.3	7	1.5	2.0	1	0.1	0.1	5	0.7	0.4	--	--	--
RED SHINER	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	1	0.2	0.5	4	0.9	1.1	17	2.3	1.6	5	0.7	0.4	16	2.1	1.4
SAND SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	15	3.2	6.8	11	2.4	3.1	19	2.6	1.8	49	6.8	4.0	39	5.0	3.3
BULLHEAD MINNOW	2	0.4	0.9	7	1.5	2.0	34	4.7	3.3	19	2.6	1.5	29	3.7	2.5
RIVER CARPSUCKER	1	0.2	0.5	5	1.1	1.4	3	0.4	0.3	1	0.1	0.1	3	0.4	0.3
QUILLBACK	--	--	--	6	1.3	1.7	1	0.1	0.1	4	0.6	0.3	1	0.1	0.1
WHITE SUCKER	--	--	--	1	0.2	0.3	--	--	--	1	0.1	0.1	--	--	--
SMALLMOUTH BUFFALO	6	1.3	2.7	3	0.6	0.8	9	1.2	0.9	10	1.4	0.8	8	1.0	0.7
BIGMOUTH BUFFALO	--	--	--	--	--	--	3	0.4	0.3	--	--	--	--	--	--
BLACK BUFFALO	--	--	--	1	0.2	0.3	--	--	--	--	--	--	--	--	--
SPOTTED SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	1	0.2	0.5	7	1.5	2.0	--	--	--	1	0.1	0.1	2	0.3	0.2
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	1	0.2	0.5	47	10.2	13.3	30	4.1	2.9	31	4.3	2.5	9	1.2	0.8
SHORTHEAD REDHORSE	4	0.9	1.8	34	7.4	9.6	5	0.7	0.5	8	1.1	0.6	2	0.3	0.2
Moxostoma sp.	--	--	--	1	0.2	0.3	--	--	--	--	--	--	--	--	--
ICTIOBINAE sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW BULLHEAD	--	--	--	--	--	--	--	--	--	1	0.1	0.1	--	--	--
CHANNEL CATFISH	7	1.5	3.2	9	1.9	2.5	20	2.8	1.9	4	0.6	0.3	3	0.4	0.3
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	1	0.1	0.1	--	--	--
FLATHEAD CATFISH	--	--	--	--	--	--	2	0.3	0.2	1	0.1	0.1	1	0.1	0.1
TROUT-PERCH	--	--	--	--	--	--	4	0.6	0.4	3	0.4	0.2	1	0.1	0.1
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BROOK SILVERSIDE	1	0.2	0.5	--	--	--	1	0.1	0.1	3	0.4	0.2	5	0.6	0.4
WHITE BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morone sp.	4	0.9	1.8	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	--	--	--	--	--	4	0.6	0.4	--	--	--	2	0.3	0.2
GREEN SUNFISH	12	2.6	5.4	19	4.1	5.4	46	6.4	4.4	114	15.7	9.2	148	19.1	12.6
PUMPKINSEED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	4	0.9	1.8	5	1.1	1.4	3	0.4	0.3	3	0.4	0.2	--	--	--
BLUEGILL	7	1.5	3.2	17	3.7	4.8	95	13.1	9.2	132	18.2	10.7	186	24.0	15.8
NORTHERN SUNFISH	1	0.2	0.5	--	--	--	11	1.5	1.1	2	0.3	0.2	4	0.5	0.3
Lepomis HYBRID	--	--	--	--	--	--	--	--	--	3	0.4	0.2	3	0.4	0.3
Lepomis sp.	4	0.9	1.8	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BASS	19	4.1	8.6	26	5.6	7.3	46	6.4	4.4	42	5.8	3.4	26	3.4	2.2
LARGEMOUTH BASS	12	2.6	5.4	13	2.8	3.7	30	4.1	2.9	27	3.7	2.2	47	6.1	4.0
Micropterus sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	1	0.2	0.5	1	0.2	0.3	1	0.1	0.1	--	--	--	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	1	0.2	0.5	2	0.4	0.6	4	0.6	0.4	17	2.3	1.4	5	0.6	0.4
BLACKSIDE DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SLENDERHEAD DARTER	--	--	--	--	--	--	1	0.1	0.1	2	0.3	0.2	--	--	--
WALLEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	44	9.5	19.9	12	2.6	3.4	23	3.2	2.2	13	1.8	1.1	1	0.1	0.1
TOTAL FISH	221	47.8	100.0	354	76.6	100.0	1,037	143.2	100.0	1,237	170.9	100.0	1,174	151.7	100.0
TOTAL SPECIES	26			22			31			30			25		

TABLE F-13 (cont.)

SPECIES	2000			2001			2002			2003			2004		
	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
LONGNOSE GAR	3	0.4	0.3	1	0.1	0.1	--	--	--	2	0.2	0.1	--	--	--
SKIPJACK HERRING	--	--	--	4	0.4	0.3	--	--	--	--	--	--	--	--	--
GIZZARD SHAD	210	26.4	21.0	422	45.7	31.5	423	45.8	24.0	569	61.6	20.6	218	23.6	23.0
GOLDEYE	1	0.1	0.1	--	--	--	--	--	--	--	--	--	--	--	--
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	--	--	1	0.1	0.1
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CENTRAL STONEROLLER	1	0.1	0.1	3	0.3	0.2	--	--	--	--	--	--	2	0.2	0.2
GOLDEN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PALLID SHINER	--	--	--	1	0.1	0.1	4	0.4	0.2	1	0.1	0.0	--	--	--
EMERALD SHINER	24	3.0	2.4	263	28.5	19.6	451	48.8	25.6	148	16.0	5.4	33	3.6	3.5
GHOST SHINER	1	0.1	0.1	--	--	--	--	--	--	2	0.2	0.1	--	--	--
STRIPED SHINER	--	--	--	1	0.1	0.1	7	0.8	0.4	16	1.7	0.6	1	0.1	0.1
SPOTTAIL SHINER	1	0.1	0.1	44	4.8	3.3	1	0.1	0.1	2	0.2	0.1	--	--	--
RED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	38	4.8	3.8	53	5.7	4.0	32	3.5	1.8	59	6.4	2.1	20	2.2	2.1
SAND SHINER	--	--	--	--	--	--	1	0.1	0.1	11	1.2	0.4	--	--	--
MIMIC SHINER	--	--	--	--	--	--	2	0.2	0.1	7	0.8	0.3	--	--	--
BLUNTNOSE MINNOW	50	6.3	5.0	50	5.4	3.7	171	18.5	9.7	157	17.0	5.7	16	1.7	1.7
BULLHEAD MINNOW	47	5.9	4.7	36	3.9	2.7	16	1.7	0.9	182	19.7	6.6	13	1.4	1.4
RIVER CARPSUCKER	--	--	--	4	0.4	0.3	3	0.3	0.2	--	--	--	1	0.1	0.1
QUILLBACK	3	0.4	0.3	7	0.8	0.5	2	0.2	0.1	2	0.2	0.1	1	0.1	0.1
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	8	1.0	0.8	9	1.0	0.7	11	1.2	0.6	8	0.9	0.3	8	0.9	0.8
BIGMOUTH BUFFALO	--	--	--	1	0.1	0.1	--	--	--	--	--	--	--	--	--
BLACK BUFFALO	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
SPOTTED SUCKER	--	--	--	1	0.1	0.1	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	--	--	--	3	0.3	0.2	--	--	--	--	--	--	--	--	--
RIVER REDHORSE	1	0.1	0.1	--	--	--	--	--	--	--	--	--	--	--	--
BLACK REDHORSE	--	--	--	--	--	--	--	--	--	2	0.2	0.1	--	--	--
GOLDEN REDHORSE	34	4.3	3.4	9	1.0	0.7	51	5.5	2.9	115	12.4	4.2	44	4.8	4.7
SHORTHEAD REDHORSE	3	0.4	0.3	6	0.6	0.4	1	0.1	0.1	13	1.4	0.5	--	--	--
Moxostoma sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ICTIOBINAE sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW BULLHEAD	--	--	--	--	--	--	2	0.2	0.1	2	0.2	0.1	1	0.1	0.1
CHANNEL CATFISH	29	3.6	2.9	19	2.1	1.4	28	3.0	1.6	35	3.8	1.3	28	3.0	3.0
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLATHEAD CATFISH	2	0.3	0.2	1	0.1	0.1	3	0.3	0.2	3	0.3	0.1	2	0.2	0.2
TROUT-PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	1	0.1	0.1	--	--	--	--	--	--	--	--	--	--	--	--
BROOK SILVERSIDE	16	2.0	1.6	7	0.8	0.5	16	1.7	0.9	37	4.0	1.3	4	0.4	0.4
WHITE BASS	2	0.3	0.2	--	--	--	--	--	--	3	0.3	0.1	--	--	--
Morone sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	2	0.3	0.2	1	0.1	0.1	2	0.2	0.1	2	0.2	0.1	3	0.3	0.3
GREEN SUNFISH	160	20.1	16.0	106	11.5	7.9	161	17.4	9.1	503	54.4	18.2	201	21.8	21.2
PUMPKINSEED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	3	0.4	0.3	2	0.2	0.1	2	0.2	0.1	47	5.1	1.7	2	0.2	0.2
BLUEGILL	264	33.2	26.3	166	18.0	12.4	248	26.8	14.1	528	57.1	19.1	196	21.2	20.7
NORTHERN SUNFISH	1	0.1	0.1	13	1.4	1.0	6	0.6	0.3	26	2.8	0.9	5	0.5	0.5
Lepomis HYBRID	2	0.3	0.2	1	0.1	0.1	4	0.4	0.2	10	1.1	0.4	15	1.6	1.6
Lepomis sp.	--	--	--	1	0.1	0.1	--	--	--	--	--	--	--	--	--
SMALLMOUTH BASS	34	4.3	3.4	27	2.9	2.0	43	4.7	2.4	103	11.1	3.7	53	5.7	5.6
LARGEMOUTH BASS	37	4.6	3.7	57	6.2	4.3	46	5.0	2.6	108	11.7	3.9	58	6.3	6.1
Micropterus sp.	--	--	--	1	0.1	0.1	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
JOHNNY DARTER	1	0.1	0.1	--	--	--	--	--	--	1	0.1	0.0	--	--	--
BANDED DARTER	1	0.1	0.1	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	13	1.6	1.3	6	0.6	0.4	4	0.4	0.2	8	0.9	0.3	2	0.2	0.2
BLACKSIDE DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SLENDERHEAD DARTER	1	0.1	0.1	--	--	--	--	--	--	--	--	--	--	--	--
WALLEYE	--	--	--	1	0.1	0.1	--	--	--	2	0.2	0.1	--	--	--
FRESHWATER DRUM	8	1.0	0.8	13	1.4	1.0	22	2.4	1.2	49	5.3	1.8	18	1.9	1.9
TOTAL FISH	1,002	125.9	100.0	1,340	145.0	100.0	1,765	191.0	100.0	2,763	299.0	100.0	946	102.4	100.0
TOTAL SPECIES	32			32			30			33			25		

TABLE F-13 (cont.)

SPECIES	2005 #	2005 CPE	2005 %	2006 #	2006 CPE	2006 %	2007 #	2007 CPE	2007 %	2008 #	2008 CPE	2008 %	2011 #	2011 CPE	2011 %
LONGNOSE GAR	2	0.2	0.2	4	0.4	0.3	1	0.1	0.1	5	0.5	0.3	2	0.4	0.3
SKIPJACK HERRING	--	--	--	1	0.1	0.1	--	--	--	3	0.3	0.2	--	--	--
GIZZARD SHAD	449	48.9	36.5	423	47.6	28.4	518	56.1	27.6	470	50.9	28.8	156	33.8	26.8
GOLDEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	1	0.1	0.1	--	--	--
CENTRAL STONEROLLER	--	--	--	--	--	--	--	--	--	2	0.2	0.1	--	--	--
GOLDEN SHINER	2	0.2	0.2	--	--	--	1	0.1	0.1	4	0.4	0.2	2	0.4	0.3
PALLID SHINER	1	0.1	0.1	1	0.1	0.1	--	--	--	9	1.0	0.6	--	--	--
EMERALD SHINER	66	7.2	5.4	352	39.6	23.6	345	37.3	18.4	111	12.0	6.8	14	3.0	2.4
GHOST SHINER	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
STRIPED SHINER	4	0.4	0.3	--	--	--	5	0.5	0.3	15	1.6	0.9	6	1.3	1.0
SPOTTAIL SHINER	8	0.9	0.6	--	--	--	18	1.9	1.0	24	2.6	1.5	1	0.2	0.2
RED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	1	0.2	0.2
SPOTFIN SHINER	22	2.4	1.8	15	1.7	1.0	49	5.3	2.6	63	6.8	3.9	25	5.4	4.3
SAND SHINER	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	111	12.1	9.0	53	6.0	3.6	256	27.7	13.7	104	11.3	6.4	15	3.2	2.6
BULLHEAD MINNOW	13	1.4	1.1	9	1.0	0.6	32	3.5	1.7	35	3.8	2.1	14	3.0	2.4
RIVER CARPSUCKER	3	0.3	0.2	1	0.1	0.1	1	0.1	0.1	4	0.4	0.2	--	--	--
QUILLBACK	3	0.3	0.2	3	0.3	0.2	3	0.3	0.2	--	--	--	--	--	--
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	7	0.8	0.6	11	1.2	0.7	11	1.2	0.6	7	0.8	0.4	8	1.7	1.4
BIGMOUTH BUFFALO	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK BUFFALO	--	--	--	--	--	--	--	--	--	--	--	--	1	0.2	0.2
SPOTTED SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	1	0.1	0.1	2	0.2	0.1	4	0.4	0.2	4	0.4	0.2	--	--	--
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	14	1.5	1.1	51	5.7	3.4	60	6.5	3.2	73	7.9	4.5	13	2.8	2.2
SHORTHEAD REDHORSE	--	--	--	1	0.1	0.1	3	0.3	0.2	7	0.8	0.4	6	1.3	1.0
Moxostoma sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ICTIOBINAE sp.	--	--	--	--	--	--	--	--	--	1	0.1	0.1	--	--	--
YELLOW BULLHEAD	--	--	--	--	--	--	1	0.1	0.1	--	--	--	1	0.2	0.2
CHANNEL CATFISH	28	3.0	2.3	20	2.2	1.3	16	1.7	0.9	16	1.7	1.0	11	2.4	1.9
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLATHEAD CATFISH	4	0.4	0.3	5	0.6	0.3	4	0.4	0.2	1	0.1	0.1	1	0.2	0.2
TROUT-PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	3	0.3	0.2	3	0.3	0.2	2	0.4	0.3
BROOK SILVERSIDE	60	6.5	4.9	23	2.6	1.5	15	1.6	0.8	59	6.4	3.6	8	1.7	1.4
WHITE BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morone sp.	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
ROCK BASS	4	0.4	0.3	5	0.6	0.3	2	0.2	0.1	10	1.1	0.6	2	0.4	0.3
GREEN SUNFISH	104	11.3	8.4	59	6.6	4.0	152	16.5	8.1	102	11.0	6.2	44	9.5	7.5
PUMPKINSEED	--	--	--	2	0.2	0.1	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	--	--	--	3	0.3	0.2	--	--	--	5	0.5	0.3	2	0.4	0.3
BLUEGILL	171	18.6	13.9	293	33.0	19.7	187	20.2	10.0	267	28.9	16.4	130	28.1	22.3
NORTHERN SUNFISH	8	0.9	0.6	16	1.8	1.1	12	1.3	0.6	42	4.5	2.6	28	6.1	4.8
Lepomis HYBRID	1	0.1	0.1	4	0.4	0.3	5	0.5	0.3	4	0.4	0.2	1	0.2	0.2
Lepomis sp.	--	--	--	1	0.1	0.1	1	0.1	0.1	6	0.6	0.4	1	0.2	0.2
SMALLMOUTH BASS	28	3.0	2.3	32	3.6	2.1	36	3.9	1.9	68	7.4	4.2	14	3.0	2.4
LARGEMOUTH BASS	103	11.2	8.4	83	9.3	5.6	103	11.1	5.5	85	9.2	5.2	68	14.7	11.7
Micropterus sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	1	0.1	0.1	--	--	--	--	--	--	--	--	--	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	7	0.8	0.6	5	0.6	0.3	15	1.6	0.8	15	1.6	0.9	2	0.4	0.3
BLACKSIDE DARTER	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
SLENDERHEAD DARTER	--	--	--	--	--	--	--	--	--	--	--	--	1	0.2	0.2
WALLEYE	--	--	--	--	--	--	--	--	--	1	0.1	0.1	--	--	--
FRESHWATER DRUM	6	0.7	0.5	13	1.5	0.9	12	1.3	0.6	7	0.8	0.4	3	0.6	0.5
TOTAL FISH	1,231	133.9	100.0	1,491	167.7	100.0	1,875	202.9	100.0	1,633	176.7	100.0	583	126.2	100.0
TOTAL SPECIES	27			27			32			32			29		

TABLE F-13 (cont.)

SPECIES	2013 #	2013 CPE	2013 %
LONGNOSE GAR	--	--	--
SKIPJACK HERRING	--	--	--
GIZZARD SHAD	126	27.3	19.3
GOLDEYE	--	--	--
GRASS PICKEREL	--	--	--
NORTHERN PIKE	--	--	--
CENTRAL STONEROLLER	--	--	--
GOLDEN SHINER	--	--	--
PALLID SHINER	1	0.2	0.2
EMERALD SHINER	6	1.3	0.9
GHOST SHINER	--	--	--
STRIPED SHINER	1	0.2	0.2
SPOTTAIL SHINER	7	1.5	1.1
RED SHINER	--	--	--
ROSYFACE SHINER	3	0.6	0.5
SPOTFIN SHINER	59	12.8	9.0
SAND SHINER	--	--	--
MIMIC SHINER	--	--	--
BLUNTNOSE MINNOW	33	7.1	5.1
BULLHEAD MINNOW	5	1.1	0.8
RIVER CARPSUCKER	2	0.4	0.3
QUILLBACK	6	1.3	0.9
WHITE SUCKER	--	--	--
SMALLMOUTH BUFFALO	4	0.9	0.6
BIGMOUTH BUFFALO	--	--	--
BLACK BUFFALO	--	--	--
SPOTTED SUCKER	--	--	--
SILVER REDHORSE	1	0.2	0.2
RIVER REDHORSE	--	--	--
BLACK REDHORSE	--	--	--
GOLDEN REDHORSE	4	0.9	0.6
SHORTHEAD REDHORSE	9	1.9	1.4
Moxostoma sp.	--	--	--
ICTIOBINAE sp.	--	--	--
YELLOW BULLHEAD	--	--	--
CHANNEL CATFISH	10	2.2	1.5
TADPOLE MADTOM	--	--	--
FLATHEAD CATFISH	7	1.5	1.1
TROUT-PERCH	--	--	--
BLACKSTRIPE TOPMINNOW	1	0.2	0.2
BROOK SILVERSIDE	9	1.9	1.4
WHITE BASS	--	--	--
Morone sp.	--	--	--
ROCK BASS	2	0.4	0.3
GREEN SUNFISH	37	8.0	5.7
PUMPKINSEED	5	1.1	0.8
ORANGESPOTTED SUNFISH	1	0.2	0.2
BLUEGILL	176	38.1	27.0
NORTHERN SUNFISH	31	6.7	4.8
Lepomis HYBRID	7	1.5	1.1
Lepomis sp.	--	--	--
SMALLMOUTH BASS	18	3.9	2.8
LARGEMOUTH BASS	63	13.6	9.7
Micropterus sp.	--	--	--
BLACK CRAPPIE	--	--	--
JOHNNY DARTER	--	--	--
BANDED DARTER	--	--	--
LOGPERCH	12	2.6	1.8
BLACKSIDE DARTER	--	--	--
SLENDERHEAD DARTER	--	--	--
WALLEYE	--	--	--
FRESHWATER DRUM	6	1.3	0.9
TOTAL FISH	652	141.1	100.0
TOTAL SPECIES	29		

NOTE: CPE=NUMBER PER KILOMETER.
0.0 DENOTES VALUES LESS THAN 0.05.

Table F-14. Results of Statistical Comparisons Among Years for Electrofishing Data Collected From Dresden Pool for the Period of 15 June through August, 1994, 1995, 1997-2008, 2011, and 2013.

Catch Parameter	2013	2011	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1995	1994	Significant Difference[(a)]	F Value	P Value
CPEs-all native fish[(b)]	141.1	126.2	176.7	202.9	167.7	133.9	102.4	299.0	191.0	145.0	125.9	151.7	170.9	143.2	76.6	47.8	Yes	3.93	<0.01
	AB	AB	AB	A	AB	AB	AB	A	AB	AB	AB	AB	AB	AB	BC	C[(c)]			
IWBmod[(d)]	6.98	6.92	7.14	6.63	6.76	6.46	6.65	7.45	7.00	6.36	6.88	6.09	6.51	6.83	6.31	5.30	Yes	4.42	<0.01
	AB	ABCD	AB	ABCD	ABCD	ABCD	ABCD	A	ABC	BCD	ABC	CD	ABCD	ABC	BCD	D			
Native Species Richness[(d)]	10.7	10.2	12.6	11.6	10.2	9.9	9.6	12.6	10.8	9.7	11.0	8.4	10.2	10.6	9.2	7.1	Yes	2.70	<0.01
	AB	AB	A	A	AB	AB	AB	A	AB	AB	AB	AB	AB	AB	AB	B			

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Log transformed data used for statistical analyses because they are normally distributed.
(c) Results of Tukey's Studentized Range Test; values with the same letters are not significantly different (alpha=0.05).
(d) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.

TABLE F-15. COMPARISONS OF MEAN RELATIVE WEIGHTS AMONG SAMPLING PERIODS FOR ALL NATIVE SPECIES COLLECTED FROM DRESDEN POOL, 2013.

SPECIES	JULY/AUGUST		SEPTEMBER		PERIODS COMBINED	
	N	MEAN	N	MEAN	N	MEAN
GIZZARD SHAD	137	85	61	82	198	84
NORTHERN PIKE	1	89	--	--	1	89
RIVER CARPSUCKER	2	92	--	--	2	92
SMALLMOUTH BUFFALO	4	91	1	85	5	90
SHORTHEAD REDHORSE	3	93	10	90	13	91
CHANNEL CATFISH	11	99	3	100	14	99
FLATHEAD CATFISH	7	87	--	--	7	87
ROCK BASS	1	110	2	102	3	105
GREEN SUNFISH	34	117	33	110	67	114
PUMPKINSEED	6	128	2	123	8	127
BLUEGILL	160	109	32	99	192	107
SMALLMOUTH BASS	12	82	4	88	16	83
LARGEMOUTH BASS	49	97	21	94	70	96
FRESHWATER DRUM	7	98	1	92	8	97
SPECIES COMBINED	434	99	170	94	604	97

Table F-16. Statistical Comparisons of Mean Relative Weights Between Sampling Periods for Selected Native Species Collected from Dresden Pool, 2013.

Species	Composite Mean	July/August	September	Significant Difference[a]	F Value	P Value
Gizzard shad	84	85	82	No	3.34	0.07
Green sunfish	114	117	110	Yes	7.00	0.01
Bluegill[b]	107	109	99	Yes	16.61	<0.01
Largemouth bass	96	97	94	No	0.94	0.34

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.

TABLE F-17.ANNUAL MEAN RELATIVE WEIGHTS FOR ALL NATIVE SPECIES COLLECTED FROM DRESDEN POOL DURING THE PERIOD 15 JUNE-AUGUST, 1994, 1995, 1997-2008, 2011, AND 2013.

SPECIES	1994		1995		1997		1998		1999		2000		2001		2002		2003	
	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN
LONGNOSE GAR	5	79	1	62	--	--	--	--	--	--	--	--	2	86	--	--	2	69
GIZZARD SHAD	--	--	58	112	124	108	80	101	279	104	125	90	138	102	134	114	295	87
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RIVER CARPSUCKER	6	88	6	94	3	100	1	79	3	102	--	--	4	86	3	103	--	--
WHITE SUCKER	--	--	1	91	--	--	1	86	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	7	88	5	90	8	92	8	88	5	87	7	86	10	87	12	90	10	88
BIGMOUTH BUFFALO	--	--	--	--	3	97	--	--	--	--	--	--	--	--	--	--	--	--
SHORTHEAD REDHORSE	2	98	26	102	5	94	6	83	2	103	3	80	10	98	3	97	12	89
YELLOW BULLHEAD	1	72	--	--	--	--	1	89	--	--	--	--	1	93	2	95	2	87
CHANNEL CATFISH	18	119	18	103	20	99	4	98	3	100	29	97	18	100	29	103	46	100
FLATHEAD CATFISH	--	--	--	--	2	108	1	123	1	95	1	92	5	93	8	100	6	99
WHITE BASS	1	81	1	109	--	--	--	--	--	--	2	96	--	--	--	--	1	99
ROCK BASS	1	103	1	118	2	96	--	--	2	92	1	115	3	93	4	97	4	96
GREEN SUNFISH	12	110	20	114	43	124	97	117	124	122	143	110	119	113	128	123	290	113
PUMPKINSEED	--	--	--	--	--	--	--	--	--	--	1	125	--	--	--	--	--	--
WARMOUTH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	82
BLUEGILL	2	99	14	113	67	116	79	112	49	110	172	102	82	111	138	113	277	104
SMALLMOUTH BASS	13	93	11	95	33	91	29	88	15	90	27	86	15	95	36	104	87	90
LARGEMOUTH BASS	4	100	9	104	21	105	15	100	22	99	26	97	35	108	53	104	67	99
WHITE CRAPPIE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	91	--	--
BLACK CRAPPIE	1	106	--	--	1	129	--	--	--	--	--	--	--	--	1	111	--	--
WALLEYE	--	--	--	--	--	--	--	--	--	--	--	--	1	86	--	--	--	--
FRESHWATER DRUM	40	114	18	109	22	114	10	115	--	--	8	113	19	108	24	104	36	103
SPECIES COMBINED	113	106	189	107	354	109	332	107	505	108	545	100	462	106	577	112	1136	100

SPECIES	2004		2005		2006		2007		2008		2011		2013		YEARS COMBINED	
	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN
LONGNOSE GAR	--	--	4	74	2	80	1	95	3	87	1	102	--	--	21	80
GIZZARD SHAD	266	88	139	100	279	96	97	97	138	100	118	101	137	85	2407	97
NORTHERN PIKE	--	--	--	--	--	--	--	--	2	112	--	--	1	89	3	104
RIVER CARPSUCKER	1	116	3	90	1	92	1	94	4	98	1	97	2	92	39	94
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	89
SMALLMOUTH BUFFALO	10	82	7	85	10	84	11	87	8	85	9	84	4	91	131	87
BIGMOUTH BUFFALO	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	97
SHORTHEAD REDHORSE	--	--	--	--	1	87	--	--	4	93	1	104	3	93	78	95
YELLOW BULLHEAD	1	79	--	--	--	--	1	101	--	--	1	105	--	--	10	90
CHANNEL CATFISH	30	98	27	101	21	106	20	99	23	108	13	103	11	99	330	102
FLATHEAD CATFISH	2	95	5	103	5	101	5	92	3	97	2	100	7	87	53	97
WHITE BASS	--	--	--	--	--	--	--	--	1	95	--	--	--	--	6	96
ROCK BASS	4	92	2	109	6	99	2	99	9	100	2	104	1	110	44	99
GREEN SUNFISH	146	108	94	117	51	119	139	117	95	115	39	125	34	117	1574	115
PUMPKINSEED	--	--	--	--	4	108	--	--	--	--	1	129	6	128	12	121
WARMOUTH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	82
BLUEGILL	184	100	64	111	150	116	96	108	142	108	111	115	160	109	1787	108
SMALLMOUTH BASS	51	89	21	98	34	96	27	95	42	97	9	90	12	82	462	93
LARGEMOUTH BASS	45	95	47	108	78	103	47	106	67	104	49	107	49	97	634	102
WHITE CRAPPIE	--	--	--	--	--	--	--	--	--	--	1	114	--	--	3	98
BLACK CRAPPIE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	116
WALLEYE	--	--	--	--	--	--	--	--	1	90	--	--	--	--	2	88
FRESHWATER DRUM	22	102	10	109	19	98	15	102	26	106	6	98	7	98	282	107
SPECIES COMBINED	762	96	423	106	661	104	462	106	568	105	364	108	434	99	7887	104

Table F-18. Inter-Year Comparisons of Mean Relative Weight Values for Selected Native Species Collected from Dresden Pool, 15 June through August 1994, 1995, 1997-2008, 2011, and 2013.

Species	Composite Mean	2013	2011	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1995	1994	Significant Difference[a]	F Value	P Value
Gizzard shad[b]	97	85 G	101 CDE	100 CDE	97 E	96 E	100 CDE	88 FG	87 FG	114 A	102 CD	90 F	104 BC	101 DE	108 AB	112 A[c]	--	Yes	81.22	<0.01
Channel catfish[b]	102	99 B	103 AB	108 AB	99 AB	106 AB	101 AB	98 B	100 AB	103 AB	100 B	97 B	++[d]	++	99 AB	103 AB	119 A	Yes	2.68	<0.01
Green sunfish[b]	115	117 ABCD	125 A	115 ABCD	117 ABCD	119 ABCD	117 ABCD	108 D	113 BCD	123 AB	113 ABCD	110 D	122 ABC	117 ABCD	124 ABC	114 ABCD	110 CD	Yes	9.10	<0.01
Bluegill[b]	108	109 ABC	115 A	108 ABC	108 ABCD	116 A	111 AB	100 D	104 BCD	113 AB	111 AB	102 CD	110 AB	112 AB	116 A	113 A	++	Yes	15.12	<0.01
Smallmouth bass[b]	93	82 D	++	97 AB	95 ABC	96 ABC	98 ABC	89 ABCD	90 ABCD	104 A	95 ABC	86 CD	90 ABCD	88 BCD	91 ABCD	95 ABC	93 ABC	Yes	4.89	<0.01
Largemouth bass[b]	102	97 CD	107 AB	104 ABC	106 AB	103 ABCD	108 AB	95 D	99 BCD	104 ABCD	108 A	97 CD	99 BCD	100 ABCD	105 ABCD	++	++	Yes	6.60	<0.01

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.
(c) Results of Tukey's Studentized Range Test; values with the same letters are not significantly different (alpha=0.05).
(d) Small sample sizes precluded interyear analyses.

TABLE F-19. NUMBER AND PERCENT OF FISH WITH DELT ANOMALIES IN DRESDEN POOL, 2013.

SPECIES	DELT #	EXAM #	DELT %
GIZZARD SHAD	1	410	0.2
THREADFIN SHAD	--	8	--
NORTHERN PIKE	--	1	--
CENTRAL STONEROLLER	--	1	--
COMMON CARP	6	18	33.3
GOLDEN SHINER	--	1	--
PALLID SHINER	--	29	--
EMERALD SHINER	--	26	--
GHOST SHINER	--	1	--
STRIPED SHINER	--	8	--
SPOTTAIL SHINER	--	9	--
ROSYFACE SHINER	--	3	--
SPOTFIN SHINER	--	143	--
BLUNTNOSE MINNOW	--	136	--
BULLHEAD MINNOW	--	58	--
RIVER CARPSUCKER	--	2	--
QUILLBACK	1	6	16.7
SMALLMOUTH BUFFALO	1	5	20.0
SPOTTED SUCKER	--	1	--
SILVER REDHORSE	--	2	--
GOLDEN REDHORSE	2	12	16.7
SHORTHEAD REDHORSE	--	31	--
CHANNEL CATFISH	8	14	57.1
FLATHEAD CATFISH	1	7	14.3
BLACKSTRIPE TOPMINNOW	--	3	--
BROOK SILVERSIDE	--	92	--
ROCK BASS	1	11	9.1
GREEN SUNFISH	--	74	--
PUMPKINSEED	--	8	--
ORANGESPOTTED SUNFISH	--	4	--
BLUEGILL	5	394	1.3
NORTHERN SUNFISH	--	80	--
Lepomis HYBRID	--	9	--
Lepomis sp.	--	3	--
SMALLMOUTH BASS	2	31	6.5
LARGEMOUTH BASS	12	113	10.6
BLACK CRAPPIE	--	1	--
JOHNNY DARTER	--	3	--
LOGPERCH	--	26	--
BLACKSIDE DARTER	--	1	--
SLENDERHEAD DARTER	--	1	--
FRESHWATER DRUM	3	8	37.5
ROUND GOBY	--	1	--
TOTAL FISH	43	1795	2.4

NOTE: DELT# = Number of fish with DELT anomalies;
EXAM# = Number of fish examined for DELT anomalies;
DELT% = Percentage of examined fish with DELT anomalies.
EXCLUDES SEINING DATA.

TABLE F-20. NUMBER OF FISH WITH EROSION IN DRESDEN POOL AND THE PERCENTAGE THAT EROSION CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, 2013.

SPECIES	TOTAL WITH EROSION	TOTAL WITH DELT ANOMALIES	PERCENT WITH EROSION
GIZZARD SHAD	--	1	--
THREADFIN SHAD	--	--	--
NORTHERN PIKE	--	--	--
CENTRAL STONEROLLER	--	--	--
COMMON CARP	6	6	100.0
GOLDEN SHINER	--	--	--
PALLID SHINER	--	--	--
EMERALD SHINER	--	--	--
GHOST SHINER	--	--	--
STRIPED SHINER	--	--	--
SPOTTAIL SHINER	--	--	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
BLUNTNOSE MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
QUILLBACK	1	1	100.0
SMALLMOUTH BUFFALO	1	1	100.0
SPOTTED SUCKER	--	--	--
SILVER REDHORSE	--	--	--
GOLDEN REDHORSE	2	2	100.0
SHORTHEAD REDHORSE	--	--	--
CHANNEL CATFISH	8	8	100.0
FLATHEAD CATFISH	1	1	100.0
BLACKSTRIPE TOPMINNOW	--	--	--
BROOK SILVERSIDE	--	--	--
ROCK BASS	1	1	100.0
GREEN SUNFISH	--	--	--
PUMPKINSEED	--	--	--
ORANGESPOTTED SUNFISH	--	--	--
BLUEGILL	4	5	80.0
NORTHERN SUNFISH	--	--	--
Lepomis HYBRID	--	--	--
Lepomis sp.	--	--	--
SMALLMOUTH BASS	2	2	100.0
LARGEMOUTH BASS	11	12	91.7
BLACK CRAPPIE	--	--	--
JOHNNY DARTER	--	--	--
LOGPERCH	--	--	--
BLACKSIDE DARTER	--	--	--
SLENDERHEAD DARTER	--	--	--
FRESHWATER DRUM	3	3	100.0
ROUND GOBY	--	--	--
TOTAL FISH	40	43	93.0

NOTE: EXCLUDES SEINING DATA.

TABLE F-21.COMPARISONS OF DELT ANOMALIES BETWEEN SAMPLING PERIODS WITHIN DRESDEN POOL, 2013.

SPECIES	JULY/AUGUST DELT #	JULY/AUGUST EXAM #	JULY/AUGUST DELT %	SEPTEMBER DELT #	SEPTEMBER EXAM #	SEPTEMBER DELT %
GIZZARD SHAD	--	202	--	1	208	0.5
THREADFIN SHAD	--	3	--	--	5	--
NORTHERN PIKE	--	1	--	--	--	--
CENTRAL STONEROLLER	--	--	--	--	1	--
COMMON CARP	4	14	28.6	2	4	50.0
GOLDEN SHINER	--	1	--	--	--	--
PALLID SHINER	--	6	--	--	23	--
EMERALD SHINER	--	6	--	--	20	--
GHOST SHINER	--	1	--	--	--	--
STRIPED SHINER	--	4	--	--	4	--
SPOTTAIL SHINER	--	7	--	--	2	--
ROSYFACE SHINER	--	3	--	--	--	--
SPOTFIN SHINER	--	80	--	--	63	--
BLUNTNOSE MINNOW	--	69	--	--	67	--
BULLHEAD MINNOW	--	30	--	--	28	--
RIVER CARPSUCKER	--	2	--	--	--	--
QUILLBACK	1	6	16.7	--	--	--
SMALLMOUTH BUFFALO	1	4	25.0	--	1	--
SPOTTED SUCKER	--	1	--	--	--	--
SILVER REDHORSE	--	2	--	--	--	--
GOLDEN REDHORSE	1	8	12.5	1	4	25.0
SHORTHEAD REDHORSE	--	15	--	--	16	--
CHANNEL CATFISH	5	11	45.5	3	3	100.0
FLATHEAD CATFISH	1	7	14.3	--	--	--
BLACKSTRIPE TOPMINNOW	--	1	--	--	2	--
BROOK SILVERSIDE	--	30	--	--	62	--
ROCK BASS	--	2	--	1	9	11.1
GREEN SUNFISH	--	37	--	--	37	--
PUMPKINSEED	--	5	--	--	3	--
ORANGESPOTTED SUNFISH	--	4	--	--	--	--
BLUEGILL	4	242	1.7	1	152	0.7
NORTHERN SUNFISH	--	48	--	--	32	--
Lepomis HYBRID	--	7	--	--	2	--
Lepomis sp.	--	--	--	--	3	--
SMALLMOUTH BASS	1	21	4.8	1	10	10.0
LARGEMOUTH BASS	8	77	10.4	4	36	11.1
BLACK CRAPPIE	--	1	--	--	--	--
JOHNNY DARTER	--	2	--	--	1	--
LOGPERCH	--	19	--	--	7	--
BLACKSIDE DARTER	--	--	--	--	1	--
SLENDERHEAD DARTER	--	--	--	--	1	--
FRESHWATER DRUM	2	7	28.6	1	1	100.0
ROUND GOBY	--	--	--	--	1	--
TOTAL FISH	28	986	2.8	15	809	1.9

NOTE: DELT# = Number of fish with DELT anomalies;
EXAM# = Number of fish examined for DELT anomalies;
DELT% = Percentage of examined fish with DELT anomalies.
EXCLUDES SEINING DATA.

TABLE F-22. INTER-YEAR COMPARISONS OF DELT ANOMALIES WITHIN DRESDEN POOL FOR THE PERIOD OF 15 JUNE THROUGH AUGUST, 1994, 1995, 1997-2008, 2011, AND 2013.

SPECIES	1994			1995			1997			1998			1999			2000		
	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %
LONGNOSE GAR	--	6	--	--	1	--	--	--	--	--	--	--	--	1	--	--	3	--
GAR sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	--	3	--	--	--	--	--	1	--	--	6	--	--	2	--	--	--	--
GIZZARD SHAD	--	61	--	3	128	2.3	3	304	1.0	--	391	--	--	452	--	1	210	0.5
THREADFIN SHAD	--	--	--	--	--	--	--	--	--	--	--	--	--	27	--	--	2	--
GOLDEYE	--	1	--	--	1	--	--	--	--	--	--	--	--	--	--	--	1	--
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CENTRAL STONEROLLER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
GOLDFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COMMON CARP	2	39	5.1	12	42	28.6	7	29	24.1	--	20	--	5	15	33.3	3	15	20.0
CARP X GOLDFISH HYBRID	--	17	--	4	37	10.8	1	8	12.5	2	2	100.0	--	--	--	1	3	33.3
GOLDEN SHINER	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
PALLID SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	--	9	--	1	3	33.3	--	310	--	--	337	--	--	178	--	--	24	--
GHOST SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
STRIPED SHINER	--	1	--	--	--	--	--	7	--	--	1	--	--	--	--	--	--	--
SPOTTAIL SHINER	--	6	--	--	9	--	--	1	--	--	5	--	--	--	--	--	1	--
RED SHINER	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	--	1	--	--	4	--	--	17	--	--	5	--	--	16	--	1	38	2.6
SAND SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	--	16	--	--	12	--	--	19	--	--	49	--	--	39	--	--	50	--
BULLHEAD MINNOW	--	2	--	--	9	--	--	34	--	--	19	--	--	29	--	--	47	--
RIVER CARPSUCKER	--	6	--	1	6	16.7	--	3	--	--	1	--	1	3	33.3	--	--	--
QUILLBACK	--	1	--	--	9	--	1	1	100.0	2	4	50.0	--	1	--	1	3	33.3
WHITE SUCKER	--	--	--	--	1	--	--	--	--	--	1	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	--	7	--	1	5	20.0	3	9	33.3	3	10	30.0	2	8	25.0	4	8	50.0
BIGMOUTH BUFFALO	--	--	--	--	--	--	1	3	33.3	--	--	--	--	--	--	--	--	--
BLACK BUFFALO	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTTED SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	2	6	33.3	4	11	36.4	--	--	--	--	1	--	--	2	--	--	--	--
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
BLACK REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	1	4	25.0	19	54	35.2	11	30	36.7	6	31	19.4	1	9	11.1	8	34	23.5
SHORTHEAD REDHORSE	1	6	16.7	12	40	30.0	2	5	40.0	1	8	12.5	2	2	100.0	1	3	33.3
Moxostoma sp.	--	1	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
ICTIOBINAE sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW BULLHEAD	--	1	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
CHANNEL CATFISH	7	18	38.9	10	18	55.6	16	20	80.0	2	4	50.0	1	3	33.3	13	29	44.8
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
FLATHEAD CATFISH	--	--	--	--	--	--	--	2	--	1	1	100.0	--	1	--	--	2	--
TROUT-PERCH	--	--	--	--	1	--	--	4	--	--	3	--	--	1	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
BROOK SILVERSIDE	--	1	--	--	--	--	--	1	--	--	3	--	--	5	--	--	16	--
WHITE PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WHITE BASS	--	1	--	--	2	--	--	--	--	--	--	--	--	--	--	--	2	--
Morone sp.	--	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	1	--	--	1	--	--	4	--	--	--	--	--	2	--	--	2	--
GREEN SUNFISH	--	12	--	--	20	--	--	46	--	5	114	4.4	6	148	4.1	8	160	5.0
PUMPKINSEED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WARMOUTH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	--	4	--	--	7	--	--	3	--	--	3	--	--	--	--	--	3	--
BLUEGILL	--	7	--	1	21	4.8	1	95	1.1	2	132	1.5	1	186	0.5	8	264	3.0
REDEAR SUNFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN SUNFISH	--	1	--	--	--	--	--	11	--	--	2	--	--	4	--	--	1	--
Lepomis HYBRID	--	--	--	--	--	--	--	--	--	1	3	33.3	--	3	--	--	2	--
Lepomis sp.	--	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BASS	--	19	--	1	29	3.4	1	46	2.2	--	42	--	--	26	--	--	34	--
LARGEMOUTH BASS	--	13	--	--	14	--	1	30	3.3	1	27	3.7	--	47	--	1	37	2.7
Micropterus sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WHITE CRAPPIE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	--	1	--	--	1	--	1	1	100.0	--	--	--	--	--	--	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
LOGPERCH	--	2	--	--	2	--	--	4	--	--	17	--	--	5	--	--	13	--
BLACKSIDE DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SLENDERHEAD DARTER	--	--	--	--	--	--	--	1	--	--	2	--	--	--	--	--	1	--
WALLEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SAUGEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	1	50	2.0	--	18	--	4	23	17.4	1	13	7.7	--	1	--	2	8	25.0
ROUND GOBY	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL FISH	14	338	4.1	69	508	13.6	53	1074	4.9	27	1259	2.1	19	1216	1.6	52	1022	5.1

TABLE F-22 (cont.)

SPECIES	2001			2002			2003			2004			2005			2006		
	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %
LONGNOSE GAR	--	3	--	--	--	--	--	2	--	--	--	--	--	4	--	1	4	25.0
GAR sp.	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	--	4	--	--	2	--	--	--	--	--	--	--	--	--	--	--	1	--
GIZZARD SHAD	3	467	0.6	3	443	0.7	4	646	0.6	1	299	0.3	--	536	--	--	569	--
THREADFIN SHAD	--	88	--	--	52	--	--	24	--	--	1	--	--	--	--	--	8	--
GOLDEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CENTRAL STONEROLLER	--	4	--	--	--	--	--	--	--	--	2	--	--	--	--	--	--	--
GOLDFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COMMON CARP	3	27	11.1	8	18	44.4	8	24	33.3	1	10	10.0	--	17	--	1	17	5.9
CARP X GOLDFISH HYBRID	--	--	--	--	2	--	--	--	--	--	1	--	--	--	--	--	--	--
GOLDEN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	1	2	50.0	--	--	--
PALLID SHINER	--	12	--	--	10	--	--	11	--	--	1	--	--	6	--	--	3	--
EMERALD SHINER	--	277	--	--	470	--	--	177	--	--	48	--	--	69	--	--	394	--
GHOST SHINER	--	1	--	--	--	--	--	6	--	--	--	--	--	--	--	--	--	--
STRIPED SHINER	--	2	--	--	7	--	--	19	--	--	1	--	--	6	--	--	2	--
SPOTTAIL SHINER	--	63	--	--	1	--	--	2	--	--	--	--	--	8	--	--	--	--
RED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	--	86	--	--	36	--	--	77	--	--	40	--	--	25	--	--	29	--
SAND SHINER	--	--	--	--	1	--	--	15	--	--	1	--	--	--	--	--	--	--
MIMIC SHINER	--	1	--	--	2	--	--	27	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	1	140	0.7	--	182	--	--	192	--	--	28	--	--	143	--	--	84	--
BULLHEAD MINNOW	--	68	--	--	28	--	--	209	--	--	29	--	--	45	--	--	16	--
RIVER CARPSUCKER	--	4	--	--	3	--	--	--	--	--	1	--	1	3	33.3	--	1	--
QUILLBACK	--	7	--	--	2	--	--	2	--	--	1	--	--	3	--	--	3	--
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	1	10	10.0	2	12	16.7	1	11	9.1	4	10	40.0	1	7	14.3	3	11	27.3
BIGMOUTH BUFFALO	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK BUFFALO	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTTED SUCKER	--	2	--	--	--	--	--	1	--	--	1	--	--	--	--	--	--	--
SILVER REDHORSE	--	3	--	--	--	--	--	--	--	--	--	--	--	1	--	--	3	--
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK REDHORSE	--	--	--	--	--	--	1	2	50.0	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	2	14	14.3	2	78	2.6	12	186	6.5	8	51	15.7	--	55	--	3	86	3.5
SHORTHEAD REDHORSE	--	16	--	--	4	--	3	14	21.4	--	2	--	--	7	--	--	1	--
Moxostoma sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
ICTIOBINAE sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW BULLHEAD	--	--	--	1	2	50.0	--	2	--	--	1	--	--	--	--	--	--	--
CHANNEL CATFISH	9	21	42.9	12	29	41.4	22	45	48.9	21	31	67.7	20	29	69.0	9	22	40.9
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLATHEAD CATFISH	--	5	--	--	8	--	--	6	--	--	2	--	1	5	20.0	--	5	--
TROUT-PERCH	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	2	--	--	--	--	--	2	--	--	1	--	--	2	--	--	1	--
BROOK SILVERSIDE	--	17	--	1	25	4.0	--	71	--	--	13	--	--	71	--	--	29	--
WHITE PERCH	--	2	--	--	--	--	--	1	--	--	1	--	--	--	--	--	--	--
WHITE BASS	--	--	--	--	--	--	--	3	--	--	--	--	--	--	--	--	--	--
Morone sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	1	3	33.3	--	4	--	--	4	--	--	4	--	--	4	--	--	8	--
GREEN SUNFISH	3	130	2.3	2	173	1.2	12	503	2.4	7	202	3.5	1	104	1.0	--	59	--
PUMPKINSEED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4	--
WARMOUTH	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	--	5	--	--	12	--	--	99	--	--	5	--	--	--	--	--	4	--
BLUEGILL	2	224	0.9	3	284	1.1	7	562	1.2	4	217	1.8	--	207	--	4	374	1.1
REDEAR SUNFISH	--	--	--	--	--	--	--	1	--	--	--	--	--	1	--	--	4	--
NORTHERN SUNFISH	--	25	--	--	15	--	--	37	--	--	7	--	--	12	--	--	26	--
Lepomis HYBRID	--	1	--	--	4	--	--	11	--	--	15	--	--	1	--	--	5	--
Lepomis sp.	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7	--
SMALLMOUTH BASS	--	33	--	--	60	--	6	121	5.0	3	60	5.0	--	35	--	3	39	7.7
LARGEMOUTH BASS	4	67	6.0	9	59	15.3	5	115	4.3	12	61	19.7	11	120	9.2	15	89	16.9
Micropterus sp.	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WHITE CRAPPIE	--	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	--	--	--	--	1	--	--	--	--	--	--	--	--	1	--	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	2	--
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	--	10	--	--	7	--	--	8	--	--	4	--	--	18	--	--	13	--
BLACKSIDE DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
SLENDERHEAD DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WALLEYE	--	1	--	--	--	--	--	2	--	--	--	--	--	--	--	--	--	--
SAUGEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	3	19	15.8	5	25	20.0	3	55	5.5	3	22	13.6	4	10	40.0	7	19	36.8
ROUND GOBY	--	--	--	--	--	--	--	2	--	--	1	--	--	--	--	--	2	--
TOTAL FISH	32	1869	1.7	48	2065	2.3	84	3299	2.5	64	1175	5.4	40	1559	2.6	46	1944	2.4

TABLE F-22 (cont.)

SPECIES	2007			2008			2011			2013		
	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %
LONGNOSE GAR	--	2	--	--	10	--	--	2	--	--	--	--
GAR sp.	--	--	--	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	--	--	--	--	3	--	--	--	--	--	--	--
GIZZARD SHAD	2	686	0.3	--	609	--	--	193	--	--	202	--
THREADFIN SHAD	--	--	--	--	82	--	--	1	--	--	3	--
GOLDEYE	--	--	--	--	--	--	--	--	--	--	--	--
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN PIKE	--	--	--	--	1	--	--	--	--	--	1	--
CENTRAL STONEROLLER	--	--	--	--	2	--	--	--	--	--	--	--
GOLDFISH	--	1	--	--	--	--	--	--	--	--	--	--
COMMON CARP	6	22	27.3	4	25	16.0	--	10	--	4	14	28.6
CARP X GOLDFISH HYBRID	--	--	--	--	1	--	--	--	--	--	--	--
GOLDEN SHINER	--	2	--	--	4	--	--	2	--	--	1	--
PALLID SHINER	--	28	--	--	15	--	--	--	--	--	6	--
EMERALD SHINER	--	371	--	--	112	--	--	16	--	--	6	--
GHOST SHINER	--	1	--	--	--	--	--	--	--	--	1	--
STRIPED SHINER	--	9	--	--	15	--	--	6	--	--	4	--
SPOTTAIL SHINER	--	20	--	--	25	--	--	1	--	--	7	--
RED SHINER	--	--	--	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	1	--	--	3	--
SPOTFIN SHINER	--	70	--	--	64	--	--	90	--	--	80	--
SAND SHINER	--	2	--	--	--	--	--	8	--	--	--	--
MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	--	289	--	--	121	--	--	53	--	--	69	--
BULLHEAD MINNOW	--	52	--	--	51	--	--	21	--	--	30	--
RIVER CARPSUCKER	--	1	--	--	4	--	--	1	--	--	2	--
QUILLBACK	1	4	25.0	--	--	--	--	--	--	1	6	16.7
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	4	12	33.3	2	9	22.2	--	9	--	1	4	25.0
BIGMOUTH BUFFALO	--	--	--	--	--	--	--	--	--	--	--	--
BLACK BUFFALO	--	--	--	--	--	--	--	1	--	--	--	--
SPOTTED SUCKER	--	--	--	--	--	--	--	--	--	--	1	--
SILVER REDHORSE	2	4	50.0	1	4	25.0	--	--	--	--	2	--
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--
BLACK REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	3	83	3.6	9	93	9.7	--	17	--	1	8	12.5
SHORTHEAD REDHORSE	--	7	--	--	12	--	--	6	--	--	15	--
Moxostoma sp.	--	--	--	--	--	--	--	--	--	--	--	--
ICTIOBINAE sp.	--	--	--	--	1	--	--	--	--	--	--	--
YELLOW BULLHEAD	--	1	--	--	--	--	--	1	--	--	--	--
CHANNEL CATFISH	11	21	52.4	11	25	44.0	8	13	61.5	5	11	45.5
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	--	--
FLATHEAD CATFISH	1	5	20.0	2	3	66.7	--	2	--	1	7	14.3
TROUT-PERCH	--	--	--	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	3	--	--	5	--	--	2	--	--	1	--
BROOK SILVERSIDE	--	29	--	--	61	--	--	18	--	--	30	--
WHITE PERCH	--	--	--	--	--	--	--	--	--	--	--	--
WHITE BASS	--	--	--	--	1	--	--	--	--	--	--	--
Morone sp.	--	1	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	3	--	--	13	--	--	2	--	--	2	--
GREEN SUNFISH	1	154	0.6	1	102	1.0	--	44	--	--	37	--
PUMPKINSEED	--	--	--	--	--	--	--	1	--	--	5	--
WARMOUTH	--	--	--	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	--	4	--	--	13	--	--	3	--	--	4	--
BLUEGILL	6	225	2.7	1	308	0.3	--	195	--	4	242	1.7
REDEAR SUNFISH	--	4	--	--	--	--	--	--	--	--	--	--
NORTHERN SUNFISH	--	28	--	--	60	--	--	41	--	--	48	--
Lepomis HYBRID	--	5	--	--	4	--	--	2	--	--	7	--
Lepomis sp.	--	1	--	--	7	--	--	1	--	--	--	--
SMALLMOUTH BASS	--	48	--	3	76	3.9	--	14	--	1	21	4.8
LARGEMOUTH BASS	3	118	2.5	8	102	7.8	--	86	--	8	77	10.4
Micropterus sp.	--	--	--	--	--	--	--	--	--	--	--	--
WHITE CRAPPIE	--	--	--	--	--	--	--	2	--	--	--	--
BLACK CRAPPIE	--	--	--	--	--	--	--	--	--	--	1	--
JOHNNY DARTER	--	4	--	--	--	--	--	--	--	--	2	--
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	--	40	--	--	18	--	--	4	--	--	19	--
BLACKSIDE DARTER	--	1	--	--	1	--	--	--	--	--	--	--
SLENDERHEAD DARTER	--	1	--	--	2	--	--	1	--	--	--	--
WALLEYE	--	1	--	--	1	--	--	--	--	--	--	--
SAUGEYE	--	1	--	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	--	16	--	2	27	7.4	--	6	--	2	7	28.6
ROUND GOBY	--	4	--	--	5	--	--	3	--	--	--	--
TOTAL FISH	40	2384	1.7	44	2097	2.1	8	879	0.9	28	986	2.8

NOTE: DELT# = Number of fish with DELT anomalies;
EXAM# = Number of fish examined for DELT anomalies;
DELT% = Percentage of examined fish with DELT anomalies.
EXCLUDES SEINING DATA.

TABLE F-23. SUMMARY OF SURFACE OR MID-DEPTH PHYSICOCHEMICAL PARAMETERS MEASURED AT ELECTROFISHING LOCATIONS DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, 2013.

	TEMPERATURE (C)			DISSOLVED OXYGEN (ppm)			DISSOLVED OXYGEN Percent Saturation			SPECIFIC CONDUCTANCE (µS/cm)			SECCHI (cm)		
	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX
TRIP															
17-19 JUL	32.4	32.2	32.6	7.8	7.7	7.9	108	107	109	790	786	794	57	56	57
29-30 AUG	30.2	30.0	30.4	7.4	7.2	7.5	97	96	98	845	843	847	80	74	85
26-27 SEP	24.3	23.8	24.8	8.0	7.9	8.1	96	95	96	807	733	880	95	92	97
LOCATION															
512	28.7	23.8	32.2	7.8	7.5	8.1	101	96	109	840	794	880	74	57	92
515	29.3	24.8	32.6	7.6	7.2	7.9	99	95	107	787	733	843	79	56	97

TABLE F-24.SPECIES COMPOSITION, NUMBER, BIOMASS, AND RELATIVE ABUNDANCE OF NATIVE FISH COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, 2013.

SPECIES	ELECTRO		SEINE		GEARS COMBINED			
	#	%	#	%	#	%	KG	%
SKIPJACK HERRING	2	0.61	--	--	2	0.24	0.045	0.15
GIZZARD SHAD	12	3.67	--	--	12	1.42	1.806	6.16
GOLDEN SHINER	1	0.31	--	--	1	0.12	0.001	0.00
EMERALD SHINER	3	0.92	31	5.96	34	4.01	0.078	0.27
SPOTTAIL SHINER	--	--	1	0.19	1	0.12	0.001	0.00
ROSYFACE SHINER	3	0.92	11	2.12	14	1.65	0.016	0.05
SPOTFIN SHINER	80	24.46	322	61.92	402	47.46	0.228	0.78
SAND SHINER	2	0.61	25	4.81	27	3.19	0.030	0.10
REDFIN SHINER	--	--	1	0.19	1	0.12	0.001	0.00
MIMIC SHINER	10	3.06	2	0.38	12	1.42	0.007	0.02
CHANNEL/MIMIC SHINER	1	0.31	--	--	1	0.12	0.001	0.00
Notropis sp.	1	0.31	1	0.19	2	0.24	0.002	0.01
BLUNTNOSE MINNOW	7	2.14	17	3.27	24	2.83	0.029	0.10
BULLHEAD MINNOW	6	1.83	30	5.77	36	4.25	0.026	0.09
RIVER CARPSUCKER	1	0.31	--	--	1	0.12	0.130	0.44
SMALLMOUTH BUFFALO	1	0.31	--	--	1	0.12	0.790	2.70
SILVER REDHORSE	3	0.92	--	--	3	0.35	1.146	3.91
GOLDEN REDHORSE	14	4.28	--	--	14	1.65	3.109	10.61
SHORTHEAD REDHORSE	5	1.53	--	--	5	0.59	0.700	2.39
Moxostoma sp.	--	--	1	0.19	1	0.12	0.001	0.00
CHANNEL CATFISH	11	3.36	--	--	11	1.30	8.560	29.22
FLATHEAD CATFISH	1	0.31	--	--	1	0.12	0.090	0.31
BLACKSTRIPE TOPMINNOW	--	--	7	1.35	7	0.83	0.004	0.01
BROOK SILVERSIDE	9	2.75	63	12.12	72	8.50	0.094	0.32
GREEN SUNFISH	17	5.20	--	--	17	2.01	0.165	0.56
ORANGESPOTTED SUNFISH	1	0.31	--	--	1	0.12	0.002	0.01
BLUEGILL	67	20.49	4	0.77	71	8.38	1.632	5.57
NORTHERN SUNFISH	11	3.36	1	0.19	12	1.42	0.144	0.49
Lepomis HYBRID	5	1.53	--	--	5	0.59	0.097	0.33
SMALLMOUTH BASS	26	7.95	2	0.38	28	3.31	2.936	10.02
LARGEMOUTH BASS	8	2.45	1	0.19	9	1.06	1.809	6.17
LOGPERCH	13	3.98	--	--	13	1.53	0.158	0.54
FRESHWATER DRUM	6	1.83	--	--	6	0.71	5.460	18.64
TOTAL FISH	327	100.00	520	100.00	847	100.00	29.298	100.00
TOTAL SPECIES	26		16		29			

NOTE: 0.00 DENOTES VALUES LESS THAN 0.005.

TABLE F-25.COMPARISON OF ELECTROFISHING CPEs (No./km) AND RELATIVE ABUNDANCE BETWEEN SAMPLING PERIODS FOR NATIVE SPECIES COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, 2013.

SPECIES	JULY/AUGUST		SEPTEMBER	
	CPE	%	CPE	%
SKIPJACK HERRING	1.0	1.1	--	--
GIZZARD SHAD	5.0	5.6	2.0	1.4
GOLDEN SHINER	0.5	0.6	--	--
EMERALD SHINER	0.5	0.6	2.0	1.4
ROSYFACE SHINER	0.5	0.6	2.0	1.4
SPOTFIN SHINER	7.5	8.3	65.0	44.2
SAND SHINER	--	--	2.0	1.4
MIMIC SHINER	--	--	10.0	6.8
CHANNEL/MIMIC SHINER	0.5	0.6	--	--
Notropis sp.	0.5	0.6	--	--
BLUNTNOSE MINNOW	1.0	1.1	5.0	3.4
BULLHEAD MINNOW	1.0	1.1	4.0	2.7
RIVER CARPSUCKER	0.5	0.6	--	--
SMALLMOUTH BUFFALO	0.5	0.6	--	--
SILVER REDHORSE	1.5	1.7	--	--
GOLDEN REDHORSE	6.0	6.7	2.0	1.4
SHORTHEAD REDHORSE	1.5	1.7	2.0	1.4
CHANNEL CATFISH	4.5	5.0	2.0	1.4
FLATHEAD CATFISH	0.5	0.6	--	--
BROOK SILVERSIDE	1.0	1.1	7.0	4.8
GREEN SUNFISH	6.0	6.7	5.0	3.4
ORANGESPOTTED SUNFISH	0.5	0.6	--	--
BLUEGILL	26.5	29.4	14.0	9.5
NORTHERN SUNFISH	3.5	3.9	4.0	2.7
Lepomis HYBRID	2.0	2.2	1.0	0.7
SMALLMOUTH BASS	9.5	10.6	7.0	4.8
LARGEMOUTH BASS	3.5	3.9	1.0	0.7
LOGPERCH	3.5	3.9	6.0	4.1
FRESHWATER DRUM	1.0	1.1	4.0	2.7
TOTAL FISH	90.0	100.0	147.0	100.0
TOTAL SPECIES	25		19	
MEAN NO. OF SPECIES	13		13	
MEAN IWBmod	7.14		6.67	

TABLE F-26. COMPARISON OF SEINING CPEs (No./haul) AND RELATIVE ABUNDANCE BETWEEN SAMPLING PERIODS FOR NATIVE SPECIES COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, 2013.

SPECIES	JULY/AUGUST		SEPTEMBER	
	CPE	%	CPE	%
EMERALD SHINER	4.8	23.2	6.0	2.7
SPOTTAIL SHINER	0.3	1.2	--	--
ROSYFACE SHINER	1.3	6.1	3.0	1.4
SPOTFIN SHINER	1.5	7.3	158.0	72.1
SAND SHINER	2.5	12.2	7.5	3.4
REDFIN SHINER	--	--	0.5	0.2
MIMIC SHINER	--	--	1.0	0.5
Notropis sp.	0.3	1.2	--	--
BLUNTNOSE MINNOW	1.0	4.9	6.5	3.0
BULLHEAD MINNOW	0.5	2.4	14.0	6.4
Moxostoma sp.	0.3	1.2	--	--
BLACKSTRIPE TOPMINNOW	0.5	2.4	2.5	1.1
BROOK SILVERSIDE	6.0	29.3	19.5	8.9
BLUEGILL	1.0	4.9	--	--
NORTHERN SUNFISH	0.3	1.2	--	--
SMALLMOUTH BASS	0.3	1.2	0.5	0.2
LARGEMOUTH BASS	0.3	1.2	--	--
TOTAL FISH	20.5	100.0	219.0	100.0
TOTAL SPECIES	14		11	
MEAN NO. OF SPECIES	6		9	

TABLE F-27.INTER-YEAR COMPARISONS OF ELECTROFISHING CATCHES (NATIVE SPECIES ONLY) DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM FOR THE PERIOD OF 15 JUNE THROUGH AUGUST, 1994, 1995, 1999-2008, 2011, and 2013.

SPECIES	1994			1995			1999			2000			2001		
	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
LONGNOSE GAR	--	--	--	2	1.0	0.4	2	0.7	0.6	1	0.3	0.2	1	0.3	0.2
SHORTNOSE GAR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GAR sp.	--	--	--	--	--	--	--	--	--	1	0.3	0.2	--	--	--
SKIPJACK HERRING	--	--	--	--	--	--	--	--	--	--	--	--	4	1.0	0.7
GIZZARD SHAD	16	8.0	9.3	137	68.5	28.2	98	32.7	27.7	96	24.0	22.7	75	18.8	12.3
NORTHERN PIKE	2	1.0	1.2	--	--	--	--	--	--	--	--	--	--	--	--
CENTRAL STONEROLLER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN SHINER	--	--	--	1	0.5	0.2	--	--	--	--	--	--	--	--	--
PALLID SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	41	20.5	23.8	208	104.0	42.9	35	11.7	9.9	9	2.3	2.1	237	59.3	38.8
GHOST SHINER	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.2
STRIPED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	2	0.5	0.3
SPOTTAIL SHINER	3	1.5	1.7	1	0.5	0.2	1	0.3	0.3	--	--	--	24	6.0	3.9
RED SHINER	--	--	--	--	--	--	3	1.0	0.8	--	--	--	1	0.3	0.2
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	2	1.0	1.2	5	2.5	1.0	27	9.0	7.6	37	9.3	8.8	35	8.8	5.7
SAND SHINER	--	--	--	1	0.5	0.2	--	--	--	--	--	--	6	1.5	1.0
REDFIN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	--	--	--	--	--	1	0.3	0.2	--	--	--
CHANNEL/MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Notropis sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SUCKERMOUTH MINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	6	3.0	3.5	--	--	--	6	2.0	1.7	15	3.8	3.6	32	8.0	5.2
BULLHEAD MINNOW	1	0.5	0.6	4	2.0	0.8	17	5.7	4.8	5	1.3	1.2	10	2.5	1.6
RIVER CARPSUCKER	13	6.5	7.6	9	4.5	1.9	4	1.3	1.1	1	0.3	0.2	3	0.8	0.5
QUILLBACK	7	3.5	4.1	24	12.0	4.9	1	0.3	0.3	--	--	--	5	1.3	0.8
HIGHFIN CARPSUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carpiodes sp.	--	--	--	--	--	--	1	0.3	0.3	--	--	--	1	0.3	0.2
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN HOG SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	6	3.0	3.5	5	2.5	1.0	13	4.3	3.7	15	3.8	3.6	31	7.8	5.1
BLACK BUFFALO	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	1	0.5	0.6	21	10.5	4.3	1	0.3	0.3	2	0.5	0.5	1	0.3	0.2
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	4	2.0	2.3	7	3.5	1.4	26	8.7	7.3	14	3.5	3.3	5	1.3	0.8
SHORTHEAD REDHORSE	4	2.0	2.3	7	3.5	1.4	1	0.3	0.3	--	--	--	3	0.8	0.5
CHANNEL CATFISH	11	5.5	6.4	8	4.0	1.6	5	1.7	1.4	13	3.3	3.1	7	1.8	1.1
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLATHEAD CATFISH	--	--	--	--	--	--	--	--	--	2	0.5	0.5	--	--	--
TROUT-PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BROOK SILVERSIDE	--	--	--	--	--	--	--	--	--	1	0.3	0.2	5	1.3	0.8
WHITE BASS	--	--	--	8	4.0	1.6	--	--	--	--	--	--	2	0.5	0.3
YELLOW BASS	--	--	--	--	--	--	1	0.3	0.3	1	0.3	0.2	--	--	--
Morone sp.	31	15.5	18.0	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GREEN SUNFISH	3	1.5	1.7	10	5.0	2.1	59	19.7	16.7	113	28.3	26.8	25	6.3	4.1
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	--	--	--	--	--	--	4	1.0	0.7
BLUEGILL	1	0.5	0.6	4	2.0	0.8	32	10.7	9.0	53	13.3	12.6	26	6.5	4.3
NORTHERN SUNFISH	--	--	--	--	--	--	2	0.7	0.6	--	--	--	--	--	--
Lepomis HYBRID	--	--	--	--	--	--	1	0.3	0.3	--	--	--	--	--	--
SMALLMOUTH BASS	5	2.5	2.9	13	6.5	2.7	1	0.3	0.3	12	3.0	2.8	29	7.3	4.7
LARGEMOUTH BASS	3	1.5	1.7	4	2.0	0.8	9	3.0	2.5	14	3.5	3.3	14	3.5	2.3
WHITE CRAPPIE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	--	--	--	--	--	--	1	0.3	0.3	3	0.8	0.7	--	--	--
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	2	1.0	1.2	2	1.0	0.4	--	--	--	1	0.3	0.2	3	0.8	0.5
SLENDERHEAD DARTER	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.2
RIVER DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SAUGER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WALLEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	10	5.0	5.8	4	2.0	0.8	7	2.3	2.0	12	3.0	2.8	18	4.5	2.9
TOTAL FISH	172	86.0	100.0	485	242.5	100.0	354	118.0	100.0	422	105.5	100.0	611	152.8	100.0
TOTAL SPECIES	21			22			23			22			29		

TABLE F-27 (cont.)

SPECIES	2002			2003			2004			2005			2006		
	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
LONGNOSE GAR	4	1.0	0.4	6	1.5	0.8	1	0.3	0.1	--	--	--	--	--	--
SHORTNOSE GAR	1	0.3	0.1	1	0.3	0.1	--	--	--	--	--	--	--	--	--
GAR sp.	1	0.3	0.1	--	--	--	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	5	1.3	0.5	--	--	--	--	--	--	2	0.5	0.2	6	1.6	1.1
GIZZARD SHAD	119	29.8	12.0	45	11.3	5.7	16	4.0	2.3	112	28.0	13.6	9	2.3	1.7
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CENTRAL STONEROLLER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PALLID SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	428	107.0	43.2	301	75.3	38.3	442	110.5	62.8	225	56.3	27.3	202	52.5	37.1
GHOST SHINER	--	--	--	4	1.0	0.5	--	--	--	1	0.3	0.1	--	--	--
STRIPED SHINER	1	0.3	0.1	2	0.5	0.3	1	0.3	0.1	4	1.0	0.5	--	--	--
SPOTTAIL SHINER	2	0.5	0.2	1	0.3	0.1	--	--	--	25	6.3	3.0	2	0.5	0.4
RED SHINER	1	0.3	0.1	--	--	--	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	50	12.5	5.1	53	13.3	6.8	30	7.5	4.3	76	19.0	9.2	42	10.9	7.7
SAND SHINER	7	1.8	0.7	5	1.3	0.6	--	--	--	2	0.5	0.2	3	0.8	0.6
REDFIN SHINER	--	--	--	1	0.3	0.1	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	8	2.0	1.0	--	--	--	--	--	--	--	--	--
CHANNEL/MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Notropis sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SUCKERMOUTH MINNOW	2	0.5	0.2	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	51	12.8	5.2	42	10.5	5.4	8	2.0	1.1	109	27.3	13.2	42	10.9	7.7
BULLHEAD MINNOW	5	1.3	0.5	5	1.3	0.6	2	0.5	0.3	22	5.5	2.7	6	1.6	1.1
RIVER CARPSUCKER	6	1.5	0.6	1	0.3	0.1	6	1.5	0.9	1	0.3	0.1	1	0.3	0.2
QUILLBACK	--	--	--	3	0.8	0.4	1	0.3	0.1	5	1.3	0.6	4	1.0	0.7
HIGHFIN CARPSUCKER	--	--	--	1	0.3	0.1	--	--	--	--	--	--	--	--	--
Carpiodes sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WHITE SUCKER	--	--	--	1	0.3	0.1	--	--	--	--	--	--	--	--	--
NORTHERN HOG SUCKER	2	0.5	0.2	--	--	--	--	--	--	1	0.3	0.1	--	--	--
SMALLMOUTH BUFFALO	25	6.3	2.5	22	5.5	2.8	11	2.8	1.6	4	1.0	0.5	10	2.6	1.8
BLACK BUFFALO	--	--	--	8	2.0	1.0	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	1	0.3	0.1	--	--	--	2	0.5	0.3	3	0.8	0.4	1	0.3	0.2
RIVER REDHORSE	1	0.3	0.1	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	51	12.8	5.2	16	4.0	2.0	9	2.3	1.3	10	2.5	1.2	8	2.1	1.5
SHORTHEAD REDHORSE	8	2.0	0.8	7	1.8	0.9	5	1.3	0.7	7	1.8	0.8	11	2.9	2.0
CHANNEL CATFISH	13	3.3	1.3	34	8.5	4.3	19	4.8	2.7	16	4.0	1.9	27	7.0	5.0
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLATHEAD CATFISH	--	--	--	2	0.5	0.3	--	--	--	--	--	--	--	--	--
TROUT-PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	1	0.3	0.1	--	--	--
BROOK SILVERSIDE	4	1.0	0.4	4	1.0	0.5	2	0.5	0.3	14	3.5	1.7	2	0.5	0.4
WHITE BASS	3	0.8	0.3	5	1.3	0.6	--	--	--	2	0.5	0.2	2	0.5	0.4
YELLOW BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morone sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.2
GREEN SUNFISH	27	6.8	2.7	42	10.5	5.4	25	6.3	3.6	43	10.8	5.2	33	8.6	6.1
ORANGESPOTTED SUNFISH	1	0.3	0.1	4	1.0	0.5	1	0.3	0.1	2	0.5	0.2	--	--	--
BLUEGILL	78	19.5	7.9	61	15.3	7.8	65	16.3	9.2	37	9.3	4.5	46	11.9	8.5
NORTHERN SUNFISH	1	0.3	0.1	4	1.0	0.5	--	--	--	1	0.3	0.1	2	0.5	0.4
Lepomis HYBRID	--	--	--	1	0.3	0.1	6	1.5	0.9	--	--	--	1	0.3	0.2
SMALLMOUTH BASS	22	5.5	2.2	26	6.5	3.3	13	3.3	1.8	14	3.5	1.7	11	2.9	2.0
LARGEMOUTH BASS	35	8.8	3.5	27	6.8	3.4	20	5.0	2.8	48	12.0	5.8	29	7.5	5.3
WHITE CRAPPIE	--	--	--	--	--	--	1	0.3	0.1	--	--	--	--	--	--
BLACK CRAPPIE	--	--	--	3	0.8	0.4	2	0.5	0.3	--	--	--	--	--	--
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	6	1.5	0.6	--	--	--	3	0.8	0.4	14	3.5	1.7	16	4.2	2.9
SLENDERHEAD DARTER	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.2
RIVER DARTER	--	--	--	--	--	--	--	--	--	1	0.3	0.1	--	--	--
SAUGER	--	--	--	--	--	--	1	0.3	0.1	--	--	--	--	--	--
WALLEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	29	7.3	2.9	39	9.8	5.0	12	3.0	1.7	23	5.8	2.8	26	6.8	4.8
TOTAL FISH	990	247.5	100.0	785	196.3	100.0	704	176.0	100.0	825	206.3	100.0	544	141.3	100.0
TOTAL SPECIES	31			33			25			30			26		

TABLE F-27 (cont.)

SPECIES	2007 #	2007 CPE	2007 %	2008 #	2008 CPE	2008 %	2011 #	2011 CPE	2011 %	2013 #	2013 CPE	2013 %
LONGNOSE GAR	--	--	--	5	1.3	0.7	--	--	--	--	--	--
SHORTNOSE GAR	--	--	--	--	--	--	--	--	--	--	--	--
GAR sp.	--	--	--	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	--	--	--	2	0.5	0.3	--	--	--	2	1.0	1.1
GIZZARD SHAD	236	59.0	17.3	24	6.0	3.5	9	4.5	4.5	10	5.0	5.6
NORTHERN PIKE	--	--	--	--	--	--	1	0.5	0.5	--	--	--
CENTRAL STONEROLLER	4	1.0	0.3	--	--	--	--	--	--	--	--	--
GOLDEN SHINER	--	--	--	--	--	--	--	--	--	1	0.5	0.6
PALLID SHINER	1	0.3	0.1	2	0.5	0.3	--	--	--	--	--	--
EMERALD SHINER	765	191.3	56.2	267	66.8	39.1	36	18.0	18.2	1	0.5	0.6
GHOST SHINER	--	--	--	2	0.5	0.3	--	--	--	--	--	--
STRIPED SHINER	1	0.3	0.1	3	0.8	0.4	--	--	--	--	--	--
SPOTTAIL SHINER	6	1.5	0.4	14	3.5	2.0	5	2.5	2.5	--	--	--
RED SHINER	--	--	--	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	1	0.5	0.6
SPOTFIN SHINER	39	9.8	2.9	63	15.8	9.2	18	9.0	9.1	15	7.5	8.3
SAND SHINER	1	0.3	0.1	--	--	--	2	1.0	1.0	--	--	--
REDFIN SHINER	--	--	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	1	0.3	0.1	1	0.5	0.5	--	--	--
CHANNEL/MIMIC SHINER	--	--	--	--	--	--	--	--	--	1	0.5	0.6
Notropis sp.	--	--	--	--	--	--	--	--	--	1	0.5	0.6
SUCKERMOUTH MINNOW	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	99	24.8	7.3	59	14.8	8.6	13	6.5	6.6	2	1.0	1.1
BULLHEAD MINNOW	5	1.3	0.4	11	2.8	1.6	5	2.5	2.5	2	1.0	1.1
RIVER CARPSUCKER	1	0.3	0.1	2	0.5	0.3	--	--	--	1	0.5	0.6
QUILLBACK	1	0.3	0.1	5	1.3	0.7	1	0.5	0.5	--	--	--
HIGHFIN CARPSUCKER	--	--	--	--	--	--	--	--	--	--	--	--
Carpiodes sp.	1	0.3	0.1	--	--	--	--	--	--	--	--	--
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN HOG SUCKER	--	--	--	1	0.3	0.1	1	0.5	0.5	--	--	--
SMALLMOUTH BUFFALO	17	4.3	1.2	9	2.3	1.3	2	1.0	1.0	1	0.5	0.6
BLACK BUFFALO	--	--	--	--	--	--	1	0.5	0.5	--	--	--
SILVER REDHORSE	5	1.3	0.4	2	0.5	0.3	--	--	--	3	1.5	1.7
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	6	1.5	0.4	15	3.8	2.2	13	6.5	6.6	12	6.0	6.7
SHORTHEAD REDHORSE	3	0.8	0.2	4	1.0	0.6	8	4.0	4.0	3	1.5	1.7
CHANNEL CATFISH	16	4.0	1.2	11	2.8	1.6	11	5.5	5.6	9	4.5	5.0
TADPOLE MADTOM	--	--	--	--	--	--	1	0.5	0.5	--	--	--
FLATHEAD CATFISH	1	0.3	0.1	--	--	--	3	1.5	1.5	1	0.5	0.6
TROUT-PERCH	--	--	--	--	--	--	1	0.5	0.5	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	--	--
BROOK SILVERSIDE	17	4.3	1.2	18	4.5	2.6	2	1.0	1.0	2	1.0	1.1
WHITE BASS	1	0.3	0.1	--	--	--	--	--	--	--	--	--
YELLOW BASS	--	--	--	--	--	--	--	--	--	--	--	--
Morone sp.	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	--	--	--	--	--	--	--	--	--	--	--
GREEN SUNFISH	10	2.5	0.7	14	3.5	2.0	5	2.5	2.5	12	6.0	6.7
ORANGESPOTTED SUNFISH	2	0.5	0.1	6	1.5	0.9	--	--	--	1	0.5	0.6
BLUEGILL	38	9.5	2.8	52	13.0	7.6	25	12.5	12.6	53	26.5	29.4
NORTHERN SUNFISH	1	0.3	0.1	12	3.0	1.8	4	2.0	2.0	7	3.5	3.9
Lepomis HYBRID	--	--	--	--	--	--	--	--	--	4	2.0	2.2
SMALLMOUTH BASS	15	3.8	1.1	23	5.8	3.4	10	5.0	5.1	19	9.5	10.6
LARGEMOUTH BASS	18	4.5	1.3	33	8.3	4.8	11	5.5	5.6	7	3.5	3.9
WHITE CRAPPIE	1	0.3	0.1	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	1	0.3	0.1	--	--	--	1	0.5	0.5	--	--	--
BANDED DARTER	--	--	--	1	0.3	0.1	--	--	--	--	--	--
LOGPERCH	13	3.3	1.0	6	1.5	0.9	1	0.5	0.5	7	3.5	3.9
SLENDERHEAD DARTER	1	0.3	0.1	--	--	--	1	0.5	0.5	--	--	--
RIVER DARTER	--	--	--	--	--	--	--	--	--	--	--	--
SAUGER	1	0.3	0.1	--	--	--	--	--	--	--	--	--
WALLEYE	--	--	--	1	0.3	0.1	--	--	--	--	--	--
FRESHWATER DRUM	35	8.8	2.6	15	3.8	2.2	6	3.0	3.0	2	1.0	1.1
TOTAL FISH	1362	340.5	100.0	683	170.8	100.0	198	99.0	100.0	180	90.0	100.0
TOTAL SPECIES	32			31			29			25		

NOTE: CPE=NUMBER PER KILOMETER.

Table F-28. Statistical Comparisons Among Years for Electrofishing Data Collected Downstream of Dresden Island Lock and Dam During the Period of 15 June through August, 1994, 1995, 1999-2008, 2011, and 2013.

Catch Parameter	2013	2011	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1995	1994	Significant Difference[a]	F Value	P Value
CPEs-all native fish[b]	90.0	99.0	170.8	340.5	141.3	206.3	176.0	196.3	247.5	152.8	105.5	118.0	242.5	86.0	No	1.36	0.20
IWBmod[c]	7.14	7.49	7.46	7.17	7.22	7.25	7.11	7.93	7.94	7.10	6.73	6.92	7.75	7.26	No	1.51	0.13
Native Species Richness	13.0	14.5	15.5	14.4	12.9	14.6	11.6	14.9	15.1	13.9	11.8	11.2	14.3	11.5	No	1.27	0.25

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Log transformed data used for statistical analyses because they are normally distributed.
(c) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.

TABLE F-29. COMPARISONS OF MEAN RELATIVE WEIGHTS BETWEEN SAMPLING PERIODS FOR ALL NATIVE SPECIES COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, 2013.

SPECIES	JULY/AUGUST		SEPTEMBER		PERIODS COMBINED	
	N	MEAN	N	MEAN	N	MEAN
GIZZARD SHAD	10	82	2	81	12	82
RIVER CARPSUCKER	1	84	--	--	1	84
SMALLMOUTH BUFFALO	1	82	--	--	1	82
SHORTHEAD REDHORSE	3	89	2	81	5	86
CHANNEL CATFISH	9	93	2	86	11	92
FLATHEAD CATFISH	1	95	--	--	1	95
GREEN SUNFISH	10	106	4	105	14	106
BLUEGILL	46	107	11	103	57	106
SMALLMOUTH BASS	10	85	6	86	16	86
LARGEMOUTH BASS	6	96	--	--	6	96
FRESHWATER DRUM	2	90	4	89	6	89
SPECIES COMBINED	99	99	31	94	130	98

TABLE F-30.ANNUAL MEAN RELATIVE WEIGHTS FOR ALL NATIVE SPECIES COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM DURING THE PERIOD OF 15 JUNE-AUGUST, 1994, 1995, 1999-2008, 2011, AND 2013.

SPECIES	1994		1995		1999		2000		2001		2002	
	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN
LONGNOSE GAR	4	70	10	69	2	61	1	66	1	73	3	95
GIZZARD SHAD	16	95	19	97	73	109	107	84	13	96	60	94
NORTHERN PIKE	2	84	--	--	--	--	--	--	--	--	--	--
RIVER CARPSUCKER	30	91	13	100	13	90	1	93	3	88	6	96
WHITE SUCKER	1	83	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	9	87	8	95	19	89	15	77	28	84	24	85
SHORTHEAD REDHORSE	4	91	3	77	2	106	--	--	3	92	8	93
CHANNEL CATFISH	19	106	16	101	5	104	12	102	7	100	12	101
FLATHEAD CATFISH	--	--	--	--	--	--	2	101	--	--	--	--
WHITE BASS	--	--	9	88	--	--	--	--	2	93	3	122
YELLOW BASS	--	--	--	--	1	90	1	113	--	--	--	--
ROCK BASS	--	--	--	--	--	--	--	--	--	--	--	--
GREEN SUNFISH	4	113	11	119	57	112	90	105	23	114	16	126
BLUEGILL	--	--	4	125	11	106	31	104	12	103	38	119
SMALLMOUTH BASS	4	91	8	96	1	85	8	82	11	80	13	88
LARGEMOUTH BASS	3	107	4	93	3	100	14	98	10	102	35	106
WHITE CRAPPIE	--	--	--	--	--	--	--	--	1	108	--	--
BLACK CRAPPIE	--	--	--	--	2	102	3	96	--	--	--	--
SAUGER	--	--	--	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	11	103	10	108	19	107	12	104	17	99	27	109
SPECIES COMBINED	107	96	115	98	208	106	297	95	131	97	245	103

SPECIES	2003		2004		2005		2006		2007		2008	
	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN
LONGNOSE GAR	6	71	1	73	--	--	--	--	--	--	4	93
GIZZARD SHAD	31	80	14	79	66	89	6	81	5	85	3	97
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	--	--	--
RIVER CARPSUCKER	1	95	6	85	1	93	1	88	1	96	2	99
WHITE SUCKER	1	95	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	22	87	11	81	4	92	10	87	17	82	10	87
SHORTHEAD REDHORSE	4	83	5	93	5	96	11	94	3	91	4	94
CHANNEL CATFISH	34	95	19	98	16	100	27	102	16	95	11	97
FLATHEAD CATFISH	2	106	--	--	--	--	--	--	1	97	--	--
WHITE BASS	5	96	--	--	2	93	2	82	1	93	--	--
YELLOW BASS	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	--	--	--	--	--	1	121	--	--	--	--
GREEN SUNFISH	33	106	22	108	45	113	20	118	6	119	13	108
BLUEGILL	45	106	49	101	8	108	32	124	27	107	35	108
SMALLMOUTH BASS	22	84	10	85	3	101	9	106	8	92	19	97
LARGEMOUTH BASS	20	99	17	97	9	108	24	100	10	99	32	102
WHITE CRAPPIE	--	--	1	105	--	--	--	--	1	112	--	--
BLACK CRAPPIE	3	99	1	67	--	--	--	--	1	113	--	--
SAUGER	--	--	1	75	--	--	--	--	1	92	--	--
FRESHWATER DRUM	38	103	11	101	23	111	20	105	35	105	13	104
SPECIES COMBINED	267	96	168	96	182	101	163	106	133	100	146	102

SPECIES	2011		2013		YEARS COMBINED	
	N	MEAN	N	MEAN	N	MEAN
LONGNOSE GAR	--	--	--	--	32	75
GIZZARD SHAD	7	81	10	82	430	91
NORTHERN PIKE	1	87	--	--	3	85
RIVER CARPSUCKER	--	--	1	84	79	93
WHITE SUCKER	--	--	--	--	2	89
SMALLMOUTH BUFFALO	2	87	1	82	180	85
SHORTHEAD REDHORSE	8	84	3	89	63	91
CHANNEL CATFISH	11	97	9	93	214	99
FLATHEAD CATFISH	2	105	1	95	8	102
WHITE BASS	--	--	--	--	24	95
YELLOW BASS	--	--	--	--	2	101
ROCK BASS	--	--	--	--	1	121
GREEN SUNFISH	2	117	10	106	352	111
BLUEGILL	16	111	46	107	354	109
SMALLMOUTH BASS	5	83	10	85	131	89
LARGEMOUTH BASS	5	102	6	96	192	101
WHITE CRAPPIE	--	--	--	--	3	108
BLACK CRAPPIE	1	118	--	--	11	99
SAUGER	--	--	--	--	2	83
FRESHWATER DRUM	6	98	2	90	244	105
SPECIES COMBINED	66	97	99	99	2327	99

TABLE F-31. NUMBER AND PERCENT OF FISH WITH DELT ANOMALIES DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, 2013.

SPECIES	DELT #	EXAM #	DELT %
SKIPJACK HERRING	--	2	--
GIZZARD SHAD	--	12	--
COMMON CARP	--	1	--
GOLDEN SHINER	--	1	--
EMERALD SHINER	--	3	--
ROSYFACE SHINER	--	3	--
SPOTFIN SHINER	--	80	--
SAND SHINER	--	2	--
MIMIC SHINER	--	10	--
CHANNEL/MIMIC SHINER	--	1	--
Notropis sp.	--	1	--
BLUNTNOSE MINNOW	--	7	--
BULLHEAD MINNOW	--	6	--
RIVER CARPSUCKER	--	1	--
SMALLMOUTH BUFFALO	1	1	100.0
SILVER REDHORSE	--	3	--
GOLDEN REDHORSE	1	14	7.1
SHORTHEAD REDHORSE	--	5	--
CHANNEL CATFISH	7	11	63.6
FLATHEAD CATFISH	--	1	--
BROOK SILVERSIDE	--	9	--
GREEN SUNFISH	--	17	--
ORANGESPOTTED SUNFISH	--	1	--
BLUEGILL	1	67	1.5
NORTHERN SUNFISH	--	11	--
Lepomis HYBRID	--	5	--
SMALLMOUTH BASS	--	26	--
LARGEMOUTH BASS	--	8	--
LOGPERCH	--	13	--
FRESHWATER DRUM	3	6	50.0
TOTAL FISH	13	328	4.0

NOTE: DELT# = Number of fish with DELT anomalies;
EXAM# = Number of fish examined for DELT anomalies;
DELT% = Percentage of examined fish with DELT anomalies.
EXCLUDES SEINING DATA.

TABLE F-32.NUMBER OF FISH WITH FIN EROSION DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM AND THE PERCENTAGE THAT EROSION CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, 2013.

SPECIES	TOTAL WITH EROSION	TOTAL WITH DELT ANOMALIES	PERCENT WITH EROSION
SKIPJACK HERRING	--	--	--
GIZZARD SHAD	--	--	--
COMMON CARP	--	--	--
GOLDEN SHINER	--	--	--
EMERALD SHINER	--	--	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
SAND SHINER	--	--	--
MIMIC SHINER	--	--	--
CHANNEL/MIMIC SHINER	--	--	--
Notropis sp.	--	--	--
BLUNTNOSE MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
SMALLMOUTH BUFFALO	1	1	100.0
SILVER REDHORSE	--	--	--
GOLDEN REDHORSE	1	1	100.0
SHORTHEAD REDHORSE	--	--	--
CHANNEL CATFISH	7	7	100.0
FLATHEAD CATFISH	--	--	--
BROOK SILVERSIDE	--	--	--
GREEN SUNFISH	--	--	--
ORANGESPOTTED SUNFISH	--	--	--
BLUEGILL	1	1	100.0
NORTHERN SUNFISH	--	--	--
Lepomis HYBRID	--	--	--
SMALLMOUTH BASS	--	--	--
LARGEMOUTH BASS	--	--	--
LOGPERCH	--	--	--
FRESHWATER DRUM	3	3	100.0
TOTAL FISH	13	13	100.0

NOTE: EXCLUDES SEINING DATA.

TABLE F-33. COMPARISONS OF DELT ANOMALIES BETWEEN SAMPLING PERIODS DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, 2013.

	JULY/AUGUST			SEPTEMBER		
SPECIES	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %
SKIPJACK HERRING	--	2	--	--	--	--
GIZZARD SHAD	--	10	--	--	2	--
COMMON CARP	--	--	--	--	1	--
GOLDEN SHINER	--	1	--	--	--	--
EMERALD SHINER	--	1	--	--	2	--
ROSYFACE SHINER	--	1	--	--	2	--
SPOTFIN SHINER	--	15	--	--	65	--
SAND SHINER	--	--	--	--	2	--
MIMIC SHINER	--	--	--	--	10	--
CHANNEL/MIMIC SHINER	--	1	--	--	--	--
Notropis sp.	--	1	--	--	--	--
BLUNTNOSE MINNOW	--	2	--	--	5	--
BULLHEAD MINNOW	--	2	--	--	4	--
RIVER CARPSUCKER	--	1	--	--	--	--
SMALLMOUTH BUFFALO	1	1	100.0	--	--	--
SILVER REDHORSE	--	3	--	--	--	--
GOLDEN REDHORSE	--	12	--	1	2	50.0
SHORTHEAD REDHORSE	--	3	--	--	2	--
CHANNEL CATFISH	6	9	66.7	1	2	50.0
FLATHEAD CATFISH	--	1	--	--	--	--
BROOK SILVERSIDE	--	2	--	--	7	--
GREEN SUNFISH	--	12	--	--	5	--
ORANGESPOTTED SUNFISH	--	1	--	--	--	--
BLUEGILL	1	53	1.9	--	14	--
NORTHERN SUNFISH	--	7	--	--	4	--
Lepomis HYBRID	--	4	--	--	1	--
SMALLMOUTH BASS	--	19	--	--	7	--
LARGEMOUTH BASS	--	7	--	--	1	--
LOGPERCH	--	7	--	--	6	--
FRESHWATER DRUM	1	2	50.0	2	4	50.0
TOTAL FISH	9	180	5.0	4	148	2.7

NOTE: DELT# = Number of fish with DELT anomalies;
EXAM# = Number of fish examined for DELT anomalies;
DELT% = Percentage of examined fish with DELT anomalies.
EXCLUDES SEINING DATA.

TABLE F-34.INTER-YEAR COMPARISONS OF DELT ANOMALIES DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM FOR THE PERIOD OF 15 JUNE THROUGH AUGUST, 1994, 1995, 1999-2008, 2011, AND 2013.

	1994			1995			1999			2000			2001		
SPECIES	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %
LONGNOSE GAR	--	4	--	--	10	--	1	2	50.0	--	1	--	1	1	100.0
GAR sp.	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
SKIPJACK HERRING	--	--	--	--	1	--	--	1	--	--	--	--	--	4	--
GIZZARD SHAD	--	29	--	1	148	0.7	1	124	0.8	1	96	1.0	--	75	--
THREADFIN SHAD	--	--	--	--	--	--	--	--	--	--	--	--	--	19	--
GOLDEYE	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN PIKE	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--
GRASS CARP	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
COMMON CARP	4	17	23.5	4	19	21.1	16	38	42.1	3	14	21.4	1	10	10.0
CARP X GOLDFISH HYBRID	--	1	--	--	2	--	--	--	--	--	--	--	--	1	--
GOLDEN SHINER	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	--	73	--	--	277	--	--	35	--	--	9	--	--	237	--
GHOST SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
STRIPED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	2	--
SPOTTAIL SHINER	--	3	--	--	1	--	--	1	--	--	--	--	--	24	--
RED SHINER	--	--	--	--	--	--	--	3	--	--	--	--	--	1	--
SPOTFIN SHINER	--	2	--	--	5	--	1	30	3.3	--	37	--	--	35	--
SAND SHINER	--	--	--	--	2	--	--	--	--	--	--	--	--	6	--
MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
BLUNTNOSE MINNOW	--	7	--	--	4	--	--	7	--	--	15	--	--	32	--
BULLHEAD MINNOW	--	2	--	--	5	--	--	18	--	--	5	--	--	10	--
RIVER CARPSUCKER	--	30	--	1	13	7.7	--	13	--	--	1	--	--	3	--
QUILLBACK	1	11	9.1	--	28	--	--	1	--	--	--	--	1	5	20.0
HIGHFIN CARPSUCKER	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
Carpiodes sp.	--	--	--	--	--	--	--	1	--	--	--	--	--	1	--
SMALLMOUTH BUFFALO	1	9	11.1	2	8	25.0	5	19	26.3	1	15	6.7	4	31	12.9
SILVER REDHORSE	--	2	--	9	26	34.6	1	1	100.0	--	2	--	--	1	--
GOLDEN REDHORSE	--	6	--	2	13	15.4	2	35	5.7	1	14	7.1	--	5	--
SHORTHEAD REDHORSE	--	4	--	--	7	--	--	2	--	--	--	--	2	3	66.7
Moxostoma sp.	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
CHANNEL CATFISH	10	19	52.6	15	18	83.3	2	5	40.0	4	13	30.8	2	7	28.6
FLATHEAD CATFISH	--	--	--	--	--	--	--	--	--	--	2	--	--	--	--
BROOK SILVERSIDE	--	--	--	--	--	--	--	--	--	--	1	--	--	5	--
WHITE PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
WHITE BASS	--	--	--	--	9	--	--	--	--	--	--	--	--	2	--
YELLOW BASS	--	--	--	--	--	--	--	1	--	--	1	--	--	--	--
HYBRID STRIPER	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Morone sp.	--	50	--	--	--	--	--	--	--	--	--	--	--	--	--
GREEN SUNFISH	--	4	--	--	11	--	5	59	8.5	1	113	0.9	1	25	4.0
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	4	--
BLUEGILL	--	1	--	--	4	--	2	35	5.7	--	53	--	1	26	3.8
NORTHERN SUNFISH	--	--	--	--	--	--	--	2	--	--	--	--	--	--	--
Lepomis HYBRID	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
SMALLMOUTH BASS	--	11	--	--	14	--	--	1	--	--	12	--	--	29	--
LARGEMOUTH BASS	--	3	--	1	5	20.0	--	9	--	--	14	--	3	14	21.4
BLACK CRAPPIE	--	--	--	--	--	--	--	2	--	1	3	33.3	--	--	--
LOGPERCH	--	2	--	--	2	--	--	--	--	--	1	--	1	3	33.3
SLENDERHEAD DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
FRESHWATER DRUM	1	11	9.1	--	10	--	2	19	10.5	2	12	16.7	5	18	27.8
TOTAL FISH	17	306	5.6	35	644	5.4	38	465	8.2	14	436	3.2	22	643	3.4

TABLE F-34 (cont.)

SPECIES	2002			2003			2004			2005			2006		
	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %
LONGNOSE GAR	--	4	--	--	6	--	--	1	--	--	--	--	--	--	--
SHORTNOSE GAR	--	1	--	--	1	--	--	--	--	--	--	--	--	--	--
GAR sp.	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	--	5	--	--	--	--	--	--	--	--	2	--	--	6	--
GIZZARD SHAD	--	119	--	2	45	4.4	--	16	--	--	112	--	--	9	--
THREADFIN SHAD	--	23	--	--	3	--	--	3	--	--	--	--	--	--	--
COMMON CARP	5	9	55.6	--	3	--	4	5	80.0	1	2	50.0	1	5	20.0
EMERALD SHINER	--	428	--	--	301	--	--	442	--	--	225	--	--	202	--
GHOST SHINER	--	--	--	--	4	--	--	--	--	--	1	--	--	--	--
STRIPED SHINER	--	1	--	--	2	--	--	1	--	--	4	--	--	--	--
SPOTTAIL SHINER	--	2	--	1	1	100.0	--	--	--	--	25	--	--	2	--
RED SHINER	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	--	50	--	--	53	--	--	30	--	--	76	--	--	42	--
SAND SHINER	--	7	--	--	5	--	--	--	--	--	2	--	--	3	--
REDFIN SHINER	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	8	--	--	--	--	--	--	--	--	--	--
SUCKERMOUTH MINNOW	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	--	51	--	--	42	--	--	8	--	--	109	--	--	42	--
BULLHEAD MINNOW	--	5	--	--	5	--	--	2	--	--	22	--	--	6	--
RIVER CARPSUCKER	--	6	--	--	1	--	--	6	--	--	1	--	--	1	--
QUILLBACK	--	--	--	--	3	--	--	1	--	--	5	--	--	4	--
HIGHFIN CARPSUCKER	--	--	--	1	1	100.0	--	--	--	--	--	--	--	--	--
WHITE SUCKER	--	--	--	1	1	100.0	--	--	--	--	--	--	--	--	--
NORTHERN HOG SUCKER	--	2	--	--	--	--	--	--	--	1	1	100.0	--	--	--
SMALLMOUTH BUFFALO	4	25	16.0	--	22	--	5	11	45.5	--	4	--	1	10	10.0
BLACK BUFFALO	--	--	--	1	8	12.5	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	1	1	100.0	--	--	--	--	2	--	1	3	33.3	--	1	--
RIVER REDHORSE	1	1	100.0	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	2	51	3.9	2	16	12.5	--	9	--	--	10	--	--	8	--
SHORTHEAD REDHORSE	2	8	25.0	2	7	28.6	4	5	80.0	1	7	14.3	--	11	--
CHANNEL CATFISH	6	13	46.2	24	34	70.6	14	19	73.7	15	16	93.8	17	27	63.0
FLATHEAD CATFISH	--	--	--	1	2	50.0	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
BROOK SILVERSIDE	--	4	--	--	4	--	--	2	--	--	14	--	--	2	--
WHITE PERCH	--	2	--	--	2	--	--	--	--	--	1	--	--	--	--
WHITE BASS	--	3	--	--	5	--	--	--	--	--	2	--	--	2	--
HYBRID STRIPER	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
GREEN SUNFISH	1	27	3.7	1	42	2.4	--	25	--	--	43	--	--	33	--
ORANGESPOTTED SUNFISH	--	1	--	--	4	--	--	1	--	--	2	--	--	--	--
BLUEGILL	2	78	2.6	7	61	11.5	8	65	12.3	--	37	--	--	46	--
NORTHERN SUNFISH	--	1	--	--	4	--	--	--	--	--	1	--	--	2	--
Lepomis HYBRID	--	--	--	--	1	--	--	6	--	--	--	--	--	1	--
SMALLMOUTH BASS	1	22	4.5	3	26	11.5	5	13	38.5	--	14	--	--	11	--
LARGEMOUTH BASS	5	35	14.3	--	27	--	10	20	50.0	3	48	6.3	2	29	6.9
WHITE CRAPPIE	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
BLACK CRAPPIE	--	--	--	--	3	--	1	2	50.0	--	--	--	--	--	--
LOGPERCH	--	6	--	--	--	--	--	3	--	--	14	--	--	16	--
SLENDERHEAD DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
RIVER DARTER	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
SAUGER	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
FRESHWATER DRUM	6	29	20.7	7	39	17.9	3	12	25.0	11	23	47.8	9	26	34.6
ROUND GOBY	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
TOTAL FISH	36	1025	3.5	53	793	6.7	54	713	7.6	33	828	4.0	30	549	5.5

TABLE F-34 (cont.)

	2007			2008			2011			2013		
SPECIES	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %
LONGNOSE GAR	--	--	--	1	5	20.0	--	--	--	--	--	--
SKIPJACK HERRING	--	--	--	--	2	--	--	--	--	--	2	--
GIZZARD SHAD	--	236	--	--	24	--	--	9	--	--	10	--
THREADFIN SHAD	--	1	--	--	1	--	--	--	--	--	--	--
NORTHERN PIKE	--	--	--	--	--	--	--	1	--	--	--	--
CENTRAL STONEROLLER	--	4	--	--	--	--	--	--	--	--	--	--
GRASS CARP	--	1	--	--	--	--	--	--	--	--	--	--
COMMON CARP	2	3	66.7	2	6	33.3	4	7	57.1	--	--	--
GOLDEN SHINER	--	--	--	--	--	--	--	--	--	--	1	--
PALLID SHINER	--	1	--	--	2	--	--	--	--	--	--	--
EMERALD SHINER	--	765	--	--	267	--	--	36	--	--	1	--
GHOST SHINER	--	--	--	--	2	--	--	--	--	--	--	--
STRIPED SHINER	--	1	--	--	3	--	--	--	--	--	--	--
SPOTTAIL SHINER	--	6	--	--	14	--	--	5	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	1	--
SPOTFIN SHINER	--	39	--	--	63	--	--	18	--	--	15	--
SAND SHINER	--	1	--	--	--	--	--	2	--	--	--	--
MIMIC SHINER	--	--	--	--	1	--	--	1	--	--	--	--
CHANNEL/MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	1	--
Notropis sp.	--	--	--	--	--	--	--	--	--	--	1	--
BLUNTNOSE MINNOW	--	99	--	--	59	--	--	13	--	--	2	--
BULLHEAD MINNOW	--	5	--	--	11	--	--	5	--	--	2	--
RIVER CARPSUCKER	--	1	--	--	2	--	--	--	--	--	1	--
QUILLBACK	--	1	--	--	5	--	--	1	--	--	--	--
Carpiodes sp.	--	1	--	--	--	--	--	--	--	--	--	--
NORTHERN HOG SUCKER	--	--	--	--	1	--	--	1	--	--	--	--
SMALLMOUTH BUFFALO	3	17	17.6	1	9	11.1	--	2	--	1	1	100.0
BLACK BUFFALO	--	--	--	--	--	--	--	1	--	--	--	--
SILVER REDHORSE	1	5	20.0	2	2	100.0	--	--	--	--	3	--
GOLDEN REDHORSE	3	6	50.0	--	15	--	--	13	--	--	12	--
SHORTHEAD REDHORSE	1	3	33.3	2	4	50.0	1	8	12.5	--	3	--
CHANNEL CATFISH	12	16	75.0	7	11	63.6	7	11	63.6	6	9	66.7
TADPOLE MADTOM	--	--	--	--	--	--	--	1	--	--	--	--
FLATHEAD CATFISH	1	1	100.0	--	--	--	--	3	--	--	1	--
TROUT-PERCH	--	--	--	--	--	--	--	1	--	--	--	--
BROOK SILVERSIDE	--	17	--	--	18	--	--	2	--	--	2	--
WHITE PERCH	--	1	--	--	--	--	--	--	--	--	--	--
WHITE BASS	--	1	--	--	--	--	--	--	--	--	--	--
HYBRID STRIPER	--	--	--	--	1	--	--	--	--	--	--	--
GREEN SUNFISH	--	10	--	--	14	--	--	5	--	--	12	--
ORANGESPOTTED SUNFISH	--	2	--	--	6	--	--	--	--	--	1	--
BLUEGILL	2	38	5.3	--	52	--	1	25	4.0	1	53	1.9
NORTHERN SUNFISH	--	1	--	--	12	--	--	4	--	--	7	--
Lepomis HYBRID	--	--	--	--	--	--	--	--	--	--	4	--
SMALLMOUTH BASS	--	15	--	1	23	4.3	--	10	--	--	19	--
LARGEMOUTH BASS	1	18	5.6	6	33	18.2	1	11	9.1	--	7	--
WHITE CRAPPIE	--	1	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	--	1	--	--	--	--	--	1	--	--	--	--
BANDED DARTER	--	--	--	--	1	--	--	--	--	--	--	--
LOGPERCH	--	13	--	--	6	--	--	1	--	--	7	--
SLENDERHEAD DARTER	--	1	--	--	--	--	--	1	--	--	--	--
SAUGER	--	1	--	--	--	--	--	--	--	--	--	--
WALLEYE	--	--	--	--	1	--	--	--	--	--	--	--
FRESHWATER DRUM	7	35	20.0	3	15	20.0	2	6	33.3	1	2	50.0
ROUND GOBY	--	--	--	--	--	--	--	2	--	--	--	--
TOTAL FISH	33	1368	2.4	25	691	3.6	16	207	7.7	9	180	5.0

NOTE: DELT# = Number of fish with DELT anomalies
EXAM# = Number of fish examined for DELT anomalies;
DELT% = Percentage of examined fish with DELT anomalies.
EXCLUDES SEINING DATA.

Table F-35. Benthic macroinvertebrates collected from the Upper Illinois Waterway in the vicinity of Dresden Station, August 2013.

TURBELLARIA

ANNELIDA

Oligochaeta

Dero [a]
Dero nivea
Nais communis
Nais paradalis
Nais variabilis
Pristina litoralis
Pristina aequiseta
Pristina leidyi
Stylaria lacustris
Aulodrilus pigueti
Branchiura sowerbyi
Ilyodrilus templetoni
Limnodrilus cervix
Limnodrilus hoffmeisteri
Limnodrilus claparedianus
Limnodrilus udekemianus
Imm. tub. w/bifid chaetae [a]
Imm. tub. w/hair & pectinate chaetae [a]

Hirudinea

Helobdella

CRUSTACEA

Amphipoda

Hyalella azteca
Gammarus
Apocorophium lacustre

INSECTA

Ephemeroptera

Stenacron
Maccaffertium integrum
Tricorythodes
Caenis

Odonata

Argia
Gomphus

Coleoptera

Macronychus glabratus
Stenelmis

Trichoptera

Cyrnellus fraternus
Hydropsychidae
Cheumatopsyche
Hydropsyche orris
Potamyia flava

Diptera

Chironomidae[a]

Procladius
Ablabesmyia mallochi
Cricotopus bicinctus grp.
Cricotopus sylvestris grp.
Nanocladius
Cryptochironomus
Dicrotendipes modestus
Dicrotendipes neomodestus
Dicrotendipes fumidus
Dicrotendipes lucifer
Dicrotendipes simpsoni
Glyptotendipes
Microchironomus
Parachironomus
Paracladopelma
Polypedilum flavum
Polypedilum halterale grp.
Stenochironomus
Rheotanytarsus
Tanytarsus

MOLLUSCA

Gastropoda

Elimia
Amnicola
Menetus
Pleurocera

Pelecypoda

Corbicula fluminea
Pisidium
Quadrula quadrula
Truncilla truncata
Dreissena polymorpha

Table F-35 (cont.)

Oxyethira
Oecetis

[a]Not counted as taxon for all samples combined, but may be counted for some samples and sites

TABLE F-36. PONAR DENSITIES FOR EACH TAXON COLLECTED IN DRESDEN POOL, AUGUST 2013.

TAXA	23AUG13 #/m2	23AUG13 %
Dero	7.2	0.18
Dero nivea	14.4	0.36
Paranais litoralis	7.2	0.18
Aulodrilus pigueti	179.4	4.55
Branchiura sowerbyi	14.4	0.36
Ilyodrilus templetoni	76.5	1.94
Limnodrilus cervix	21.5	0.55
Limnodrilus claparedianus	205.7	5.22
Limnodrilus hoffmeisteri	406.6	10.31
Limnodrilus udekemianus	239.2	6.06
Imm. tub. w/bifid chaetae	624.3	15.83
Imm. tub. w/hair & pectinate chaetae	279.9	7.10
Helobdella	4.8	0.12
Hyalella azteca	9.6	0.24
Gammarus	119.6	3.03
Apocorophium lacustre	76.5	1.94
Stenacron	2.4	0.06
Caenis	9.6	0.24
Cyrnellus fraternus	2.4	0.06
Oxyethira	4.8	0.12
Oecetis	4.8	0.12
Macronychus glabratus	2.4	0.06
Procladius	224.8	5.70
Ablabesmyia mallochi	4.8	0.12
Cricotopus bicinctus grp.	2.4	0.06
Cricotopus sylvestris grp.	2.4	0.06
Cryptochironomus	86.1	2.18
Dicrotendipes modestus	12.0	0.30
Dicrotendipes neomodestus	2.4	0.06
Dicrotendipes fumidus	9.6	0.24
Microchironomus	31.1	0.79
Paracladopelma	4.8	0.12
Polypedilum halterale grp.	648.2	16.43
Stenochironomus	2.4	0.06
Elimia	126.8	3.21
Amnicola	95.7	2.43
Menetus	4.8	0.12
Corbicula fluminea	361.2	9.16
Pisidium	7.2	0.18
Quadrula quadrula	2.4	0.06
Dreissena polymorpha	2.4	0.06
TOTAL BENTHOS	3,944.2	100.00
TOTAL TAXA	38	
EPT TAXA	5	

TABLE F-37. UPSTREAM VS. DOWNSTREAM COMPARISON OF MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED FROM PONAR SAMPLES IN DRESDEN POOL DURING AUGUST 2013.

TAXA	UPSTREAM DRESDEN #/m2	UPSTREAM DRESDEN %	DOWNSTREAM DRESDEN #/m2	DOWNSTREAM DRESDEN %
Dero	14.4	0.45	--	--
Dero nivea	28.7	0.90	--	--
Paranais litoralis	14.4	0.45	--	--
Aulodrilus pigueti	4.8	0.15	354.0	7.51
Branchiura sowerbyi	14.4	0.45	14.4	0.30
Ilyodrilus templetoni	28.7	0.90	124.4	2.64
Limnodrilus cervix	14.4	0.45	28.7	0.61
Limnodrilus claparedianus	76.5	2.41	334.9	7.10
Limnodrilus hoffmeisteri	301.4	9.50	511.9	10.85
Limnodrilus udekemianus	100.5	3.17	377.9	8.01
Imm. tub. w/bifid chaetae	377.9	11.92	870.6	18.46
Imm. tub. w/hair & pectinate chaetae	76.5	2.41	483.2	10.24
Helobdella	--	--	9.6	0.20
Hyalella azteca	--	--	19.1	0.41
Gammarus	200.9	6.33	38.3	0.81
Apocorophium lacustre	95.7	3.02	57.4	1.22
Stenacron	4.8	0.15	--	--
Caenis	19.1	0.60	--	--
Cyrnellus fraternus	4.8	0.15	--	--
Oxyethira	--	--	9.6	0.20
Oecetis	9.6	0.30	--	--
Macronychus glabratus	4.8	0.15	--	--
Procladius	19.1	0.60	430.5	9.13
Ablabesmyia mallochi	9.6	0.30	--	--
Cricotopus bicinctus grp.	4.8	0.15	--	--
Cricotopus sylvestris grp.	4.8	0.15	--	--
Cryptochironomus	57.4	1.81	114.8	2.43
Dicrotendipes modestus	4.8	0.15	19.1	0.41
Dicrotendipes neomodestus	4.8	0.15	--	--
Dicrotendipes fumidus	--	--	19.1	0.41
Microchironomus	--	--	62.2	1.32
Paracladopelma	--	--	9.6	0.20
Polypedilum halterale grp.	932.8	29.41	363.6	7.71
Stenochironomus	4.8	0.15	--	--
Elimia	234.4	7.39	19.1	0.41
Amnicola	119.6	3.77	71.8	1.52
Menetus	9.6	0.30	--	--
Corbicula fluminea	354.0	11.16	368.4	7.81
Pisidium	9.6	0.30	4.8	0.10
Quadrula quadrula	4.8	0.15	--	--
Dreissena polymorpha	4.8	0.15	--	--
TOTAL BENTHOS	3,171.6	100.00	4,716.8	100.00
TOTAL TAXA	32		23	
EPT TAXA	4		1	

Table F-38. Results of Upstream vs. Downstream Statistical Comparisons for Ponar Macroinvertebrate Data Collected in Dresden Pool, August 2013.

August	Upstream Dresden	Downstream Dresden	Significant Difference[a]	F Value	P Value
Density-All Taxa	3,171.6	4,716.8	No	0.75	0.42
Density-Oligochaeta	1,052.4	3,099.9	No	5.42	0.06
Density-Chironomidae[b]	1,042.9	1,018.9	No	0.53	0.49
Density-Pelecypoda	368.4	373.1	No	0.00	0.99
Taxa Richness	16.3	14.5	No	0.21	0.66

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Log transformed data used for statistical analyses because they are normally distributed.

TABLE F-39. YEAR VS. YEAR COMPARISON OF PONAR MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED IN DRESDEN POOL DURING AUGUST OF 1999, 2001-2004, 2006, 2008, 2011, 2013, AND SEPTEMBER OF 2005 AND 2007.

TAXA	1999		2001		2002		2003		2004	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Nematoda	--	--	--	--	--	--	--	--	--	--
Urnatella gracilis	--	--	--	--	--	--	--	--	--	--
Plumatella	--	--	--	--	--	--	--	--	--	--
Dero	--	--	--	--	--	--	--	--	--	--
Dero digitata	2.4	0.20	--	--	--	--	--	--	--	--
Dero nivea	--	--	--	--	--	--	--	--	--	--
Nais	--	--	--	--	--	--	--	--	--	--
Paranais litoralis	--	--	--	--	--	--	--	--	--	--
Pristina jenkinae	--	--	2.4	0.30	--	--	--	--	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	--	--
Aulodrilus limnobius	3.6	0.30	--	--	7.2	0.65	--	--	--	--
Aulodrilus pigueti	15.5	1.28	20.3	2.58	76.5	6.96	31.1	2.28	21.5	1.67
Aulodrilus pluriseta	--	--	--	--	--	--	4.8	0.35	--	--
Branchiura sowerbyi	29.9	2.47	76.5	9.71	23.9	2.17	40.7	2.99	62.2	4.82
Ilyodrilus templetoni	4.8	0.39	3.6	0.46	12.0	1.09	12.0	0.88	4.8	0.37
Limnodrilus	--	--	--	--	--	--	7.2	0.53	--	--
Limnodrilus cervix	124.4	10.26	10.8	1.37	14.4	1.30	--	--	98.1	7.61
Limnodrilus cervix (var)	--	--	2.4	0.30	28.7	2.61	--	--	9.6	0.74
Limnodrilus claparedianus	--	--	--	--	--	--	7.2	0.53	--	--
Limnodrilus hoffmeisteri	238.0	19.63	50.2	6.37	95.7	8.70	208.1	15.29	155.5	12.06
Limnodrilus maumeensis	--	--	59.8	7.59	52.6	4.78	155.5	11.42	45.4	3.53
Limnodrilus profundicola	10.8	0.89	--	--	--	--	--	--	--	--
Limnodrilus udekemianus	70.6	5.82	57.4	7.28	40.7	3.70	38.3	2.81	43.1	3.34
Imm. tub. w/bifid chaetae	522.6	43.10	253.5	32.17	440.1	40.00	531.0	39.02	473.6	36.73
Imm. tub. w/hair & pectinate chaetae	13.2	1.08	4.8	0.61	9.6	0.87	12.0	0.88	--	--
Desserobdella phalera	--	--	1.2	0.15	--	--	--	--	--	--
Helobdella	--	--	--	--	--	--	--	--	--	--
Helobdella stagnalis	--	--	--	--	--	--	2.4	0.18	--	--
Placobdella montifera	--	--	--	--	--	--	--	--	--	--
Erpobdella microstoma	--	--	--	--	--	--	2.4	0.18	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	--	--	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	--	--	--	--	2.4	0.18	26.3	2.04
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--
Stenacron	--	--	--	--	--	--	--	--	--	--
Tricorythodes	--	--	--	--	--	--	--	--	--	--
Caenis	1.2	0.10	--	--	--	--	--	--	--	--
Hexagenia bilineata	--	--	--	--	43.1	3.91	2.4	0.18	--	--
Hexagenia limbata	6.0	0.49	9.6	1.21	14.4	1.30	14.4	1.05	--	--
Argia	--	--	1.2	0.15	--	--	--	--	--	--
Enallagma	--	--	--	--	--	--	--	--	--	--
Stylurus	--	--	--	--	--	--	--	--	--	--
Corixidae	1.2	0.10	13.2	1.67	--	--	2.4	0.18	--	--
Cyrnellus fraternus	--	--	1.2	0.15	7.2	0.65	9.6	0.70	--	--
Cheumatopsyche	--	--	--	--	--	--	--	--	--	--
Hydroptila	--	--	--	--	--	--	--	--	--	--
Oxyethira	--	--	--	--	--	--	--	--	--	--
Oecetis	1.2	0.10	3.6	0.46	2.4	0.22	--	--	--	--
Dubiraphia	2.4	0.20	6.0	0.76	--	--	--	--	--	--
Macronychus glabratus	--	--	--	--	--	--	--	--	2.4	0.19
Ceratopogonidae	--	--	1.2	0.15	--	--	--	--	--	--
Chironomidae	3.6	0.30	--	--	--	--	--	--	--	--
Tanypus	--	--	--	--	--	--	--	--	2.4	0.19
Tanypus neopunctipennis	2.4	0.20	--	--	--	--	--	--	--	--
Procladius	--	--	4.8	0.61	--	--	4.8	0.35	47.8	3.71
Procladius (Holotanypus)	19.1	1.58	16.7	2.12	--	--	21.5	1.58	--	--
Coelotanypus	16.7	1.38	49.0	6.22	19.1	1.74	35.9	2.64	4.8	0.37
Ablabesmyia janta	--	--	--	--	--	--	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--
Ablabesmyia rhamphe grp.	--	--	3.6	0.46	--	--	--	--	--	--
Ablabesmyia annulata	2.4	0.20	9.6	1.21	9.6	0.87	9.6	0.70	4.8	0.37
Thienemannimyia grp.	--	--	--	--	--	--	--	--	--	--
Cricotopus	--	--	--	--	--	--	--	--	2.4	0.19
Cricotopus bicinctus grp.	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	7.2	0.56
Epoicocladius	--	--	--	--	2.4	0.22	2.4	0.18	--	--
Kiefferulus	--	--	--	--	--	--	--	--	--	--
Nanocladius distinctus	--	--	--	--	--	--	--	--	--	--
Rheocricotopus robacki	--	--	--	--	--	--	--	--	--	--
Axarus	1.2	0.10	1.2	0.15	4.8	0.43	--	--	--	--
Chironomus	10.8	0.89	28.7	3.64	81.3	7.39	100.5	7.38	19.1	1.48
Cladopelma	--	--	--	--	--	--	--	--	--	--
Cryptochironomus	23.9	1.97	27.5	3.49	14.4	1.30	14.4	1.05	45.4	3.53

TABLE F-39 (cont.)

TAXA	1999		2001		2002		2003		2004	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Cryptotendipes	--	--	--	--	--	--	2.4	0.18	--	--
Dicrotendipes modestus	--	--	--	--	--	--	--	--	4.8	0.37
Dicrotendipes neomodestus	1.2	0.10	--	--	--	--	--	--	--	--
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	--	--	1.2	0.15	--	--	--	--	--	--
Glyptotendipes	1.2	0.10	6.0	0.76	2.4	0.22	4.8	0.35	--	--
Harnischia	1.2	0.10	--	--	--	--	--	--	--	--
Microchironomus	21.5	1.78	4.8	0.61	4.8	0.43	7.2	0.53	--	--
Parachironomus	--	--	--	--	--	--	--	--	--	--
Paracladopelma	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	--	--	--	--	--	--	--	--
Polypedilum halterale grp.	38.3	3.16	34.7	4.40	33.5	3.04	4.8	0.35	55.0	4.27
Polypedilum illinoense	2.4	0.20	--	--	--	--	4.8	0.35	--	--
Polypedilum scalaenum grp.	--	--	--	--	--	--	--	--	--	--
Stenochironomus	--	--	--	--	--	--	--	--	4.8	0.37
Stictochironomus	--	--	--	--	9.6	0.87	--	--	--	--
Stictochironomus caffrarius grp.	4.8	0.39	1.2	0.15	--	--	7.2	0.53	--	--
Tribelos	--	--	1.2	0.15	--	--	--	--	--	--
Tribelos fuscicorne	--	--	--	--	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	--	--	--	--	--	--	--	--	--	--
Tanytarsus	1.2	0.10	--	--	--	--	--	--	--	--
Elimia	2.4	0.20	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	1.2	0.15	--	--	--	--	--	--
Amnicola	--	--	--	--	--	--	--	--	--	--
Pleurocera	--	--	--	--	--	--	--	--	--	--
Physa	--	--	--	--	--	--	--	--	--	--
Menetus	--	--	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	7.2	0.59	15.5	1.97	43.1	3.91	50.2	3.69	114.8	8.91
Musculium	3.6	0.30	--	--	--	--	2.4	0.18	21.5	1.67
Pisidium	--	--	--	--	--	--	--	--	4.8	0.37
Unionidae	--	--	--	--	2.4	0.22	--	--	--	--
Amblema plicata	--	--	1.2	0.15	2.4	0.22	4.8	0.35	--	--
Quadrula pustulosa	--	--	1.2	0.15	--	--	--	--	--	--
Quadrula quadrula	--	--	--	--	2.4	0.22	--	--	4.8	0.37
Leptodea fragilis	--	--	--	--	--	--	--	--	--	--
Toxolasma parvus	--	--	--	--	--	--	--	--	--	--
Dreissena polymorpha	--	--	--	--	--	--	--	--	2.4	0.19
TOTAL BENTHOS	1,212.7	100.00	788.1	100.00	1,100.3	100.00	1,361.0	100.00	1,289.2	100.00
TOTAL TAXA	32		35		27		31		26	
EPT TAXA	3		3		4		3		0	

TABLE F-39 (cont.)

TAXA	2005 #/m2	2005 %	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %
Nematoda	--	--	4.8	0.25	--	--	--	--	--	--
Urnatella gracilis	2.4	0.24	--	--	4.8	0.31	--	--	--	--
Plumatella	2.4	0.24	--	--	--	--	--	--	--	--
Dero	12.0	1.18	2.4	0.13	2.4	0.16	--	--	76.5	0.81
Dero digitata	--	--	--	--	--	--	--	--	--	--
Dero nivea	7.2	0.71	--	--	2.4	0.16	--	--	38.3	0.40
Nais	--	--	--	--	--	--	--	--	19.1	0.20
Paranais litoralis	--	--	--	--	--	--	--	--	--	--
Pristina jenkinae	2.4	0.24	--	--	--	--	--	--	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	76.5	0.81
Aulodrilus limnobius	2.4	0.24	33.5	1.76	19.1	1.26	--	--	19.1	0.20
Aulodrilus pigueti	9.6	0.95	112.4	5.91	145.9	9.59	7.2	0.73	1,224.6	12.90
Aulodrilus pluriseta	--	--	--	--	--	--	--	--	--	--
Branchiura sowerbyi	47.8	4.74	14.4	0.75	59.8	3.93	28.7	2.91	62.2	0.66
Ilyodrilus templetoni	7.2	0.71	19.1	1.01	26.3	1.73	--	--	81.3	0.86
Limnodrilus	--	--	7.2	0.38	2.4	0.16	--	--	--	--
Limnodrilus cervix	19.1	1.90	86.1	4.53	62.2	4.09	21.5	2.18	444.9	4.69
Limnodrilus cervix (var)	--	--	--	--	--	--	--	--	--	--
Limnodrilus claparedianus	--	--	--	--	2.4	0.16	--	--	4.8	0.05
Limnodrilus hoffmeisteri	78.9	7.82	196.1	10.31	212.9	13.99	47.8	4.85	846.7	8.92
Limnodrilus maumeensis	38.3	3.79	52.6	2.77	81.3	5.35	19.1	1.94	--	--
Limnodrilus profundicola	--	--	--	--	--	--	--	--	--	--
Limnodrilus udekemianus	76.5	7.58	57.4	3.02	67.0	4.40	52.6	5.34	52.6	0.55
Imm. tub. w/bifid chaetae	198.5	19.67	791.7	41.64	440.1	28.93	38.3	3.88	339.6	3.58
Imm. tub. w/hair & pectinate chaetae	12.0	1.18	69.4	3.65	16.7	1.10	133.9	13.59	2,645.4	27.87
Desserobdella phalera	--	--	--	--	--	--	--	--	--	--
Helobdella	--	--	--	--	--	--	4.8	0.49	14.4	0.15
Helobdella stagnalis	--	--	--	--	--	--	--	--	--	--
Placobdella montifera	--	--	--	--	--	--	2.4	0.24	--	--
Erpobdella microstoma	--	--	--	--	--	--	--	--	9.6	0.10
Hyalella azteca	2.4	0.24	--	--	--	--	--	--	--	--
Gammarus	--	--	--	--	2.4	0.16	14.4	1.46	14.4	0.15
Gammarus fasciatus	2.4	0.24	--	--	--	--	--	--	--	--
Apocorophium lacustre	78.9	7.82	14.4	0.75	19.1	1.26	69.4	7.04	52.6	0.55
Stenacron	--	--	--	--	--	--	--	--	--	--
Tricorythodes	--	--	--	--	--	--	--	--	2.4	0.03
Caenis	--	--	7.2	0.38	--	--	--	--	12.0	0.13
Hexagenia bilineata	--	--	--	--	--	--	--	--	--	--
Hexagenia limbata	2.4	0.24	--	--	9.6	0.63	16.7	1.70	19.1	0.20
Argia	2.4	0.24	--	--	2.4	0.16	--	--	2.4	0.03
Enallagma	--	--	--	--	12.0	0.79	--	--	2.4	0.03
Stylurus	--	--	--	--	--	--	--	--	2.4	0.03
Corixidae	--	--	--	--	--	--	7.2	0.73	2.4	0.03
Cyrnellus fraternus	--	--	16.7	0.88	--	--	7.2	0.73	43.1	0.45
Cheumatopsyche	--	--	--	--	--	--	2.4	0.24	--	--
Hydroptila	--	--	--	--	--	--	--	--	40.7	0.43
Oxyethira	--	--	--	--	--	--	--	--	--	--
Oecetis	--	--	12.0	0.63	2.4	0.16	16.7	1.70	23.9	0.25
Dubiraphia	--	--	2.4	0.13	--	--	--	--	7.2	0.08
Macronychus glabratus	--	--	--	--	--	--	--	--	--	--
Ceratopogonidae	--	--	--	--	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--	--	--
Tanypus	--	--	4.8	0.25	2.4	0.16	4.8	0.49	--	--
Tanypus neopunctipennis	--	--	--	--	--	--	--	--	--	--
Procladius	--	--	21.5	1.13	31.1	2.04	50.2	5.10	1,650.4	17.38
Procladius (Holotanypus)	--	--	--	--	--	--	--	--	--	--
Coelotanypus	4.8	0.47	95.7	5.03	12.0	0.79	64.6	6.55	28.7	0.30
Ablabesmyia janta	--	--	9.6	0.50	--	--	2.4	0.24	--	--
Ablabesmyia mallochi	--	--	2.4	0.13	--	--	--	--	76.5	0.81
Ablabesmyia rhamphe grp.	--	--	--	--	--	--	--	--	--	--
Ablabesmyia annulata	--	--	--	--	--	--	4.8	0.49	--	--
Thienemannimyia grp.	--	--	2.4	0.13	--	--	--	--	--	--
Cricotopus	--	--	--	--	--	--	--	--	--	--
Cricotopus bicinctus grp.	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	167.4	1.76
Epoicocladius	--	--	--	--	--	--	--	--	--	--
Kiefferulus	2.4	0.24	--	--	--	--	--	--	--	--
Nanocladius distinctus	--	--	--	--	--	--	9.6	0.97	--	--
Rheocricotopus robacki	--	--	--	--	2.4	0.16	--	--	--	--
Axarus	--	--	--	--	--	--	--	--	--	--
Chironomus	9.6	0.95	2.4	0.13	--	--	50.2	5.10	--	--
Cladopelma	2.4	0.24	--	--	--	--	--	--	--	--
Cryptochironomus	40.7	4.03	28.7	1.51	21.5	1.42	43.1	4.37	129.2	1.36
Cryptotendipes	--	--	--	--	--	--	--	--	--	--

TABLE F-39 (cont.)

TAXA	2005 #/m2	2005 %	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %
Dicrotendipes modestus	--	--	2.4	0.13	2.4	0.16	--	--	--	--
Dicrotendipes neomodestus	2.4	0.24	7.2	0.38	--	--	--	--	76.5	0.81
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	19.1	0.20
Dicrotendipes simpsoni	--	--	12.0	0.63	--	--	--	--	--	--
Glyptotendipes	4.8	0.47	2.4	0.13	4.8	0.31	4.8	0.49	86.1	0.91
Harnischia	--	--	--	--	--	--	4.8	0.49	--	--
Microchironomus	--	--	28.7	1.51	9.6	0.63	145.9	14.81	153.1	1.61
Parachironomus	4.8	0.47	--	--	--	--	--	--	--	--
Paracladopelma	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	4.8	0.25	38.3	2.52	--	--	19.1	0.20
Polypedilum halterale grp.	143.5	14.22	12.0	0.63	21.5	1.42	19.1	1.94	224.8	2.37
Polypedilum illinoense	2.4	0.24	--	--	--	--	--	--	--	--
Polypedilum scalaenum grp.	57.4	5.69	7.2	0.38	--	--	--	--	--	--
Stenochironomus	--	--	2.4	0.13	--	--	4.8	0.49	19.1	0.20
Stictochironomus	--	--	--	--	--	--	--	--	--	--
Stictochironomus caffrarius grp.	--	--	2.4	0.13	--	--	--	--	--	--
Tribelos	--	--	--	--	--	--	--	--	--	--
Tribelos fuscicorne	--	--	2.4	0.13	--	--	--	--	--	--
Cladotanytarsus mancus grp.	4.8	0.47	--	--	--	--	--	--	--	--
Rheotanytarsus	--	--	--	--	2.4	0.16	--	--	--	--
Tanytarsus	--	--	2.4	0.13	--	--	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	--	--	--	--	--	--	64.6	0.68
Amnicola	4.8	0.47	--	--	--	--	--	--	2.4	0.03
Pleurocera	4.8	0.47	--	--	55.0	3.62	2.4	0.24	--	--
Physa	--	--	--	--	--	--	--	--	4.8	0.05
Menetus	--	--	--	--	--	--	--	--	--	--
Ferrissia	2.4	0.24	--	--	--	--	--	--	2.4	0.03
Corbicula fluminea	95.7	9.48	141.1	7.42	124.4	8.18	69.4	7.04	564.5	5.95
Musculium	--	--	4.8	0.25	--	--	--	--	--	--
Pisidium	--	--	--	--	--	--	2.4	0.24	7.2	0.08
Unionidae	--	--	--	--	--	--	--	--	--	--
Amblema plicata	16.7	1.66	2.4	0.13	--	--	7.2	0.73	9.6	0.10
Quadrula pustulosa	--	--	--	--	--	--	--	--	--	--
Quadrula quadrula	--	--	--	--	--	--	2.4	0.24	2.4	0.03
Leptodea fragilis	--	--	--	--	--	--	2.4	0.24	2.4	0.03
Toxolasma parvus	--	--	--	--	--	--	--	--	2.4	0.03
Dreissena polymorpha	--	--	--	--	--	--	--	--	--	--
TOTAL BENTHOS	1,009.4	100.00	1,901.5	100.00	1,521.2	100.00	985.5	100.00	9,493.4	100.00
TOTAL TAXA	34		39		31		34		48	
EPT TAXA	1		3		2		4		6	

TABLE F-39 (cont.)

TAXA	2013 #/m2	2013 %
Nematoda	--	--
Urnatella gracilis	--	--
Plumatella	--	--
Dero	7.2	0.18
Dero digitata	--	--
Dero nivea	14.4	0.36
Nais	--	--
Paranais litoralis	7.2	0.18
Pristina jenkinae	--	--
Stylaria lacustris	--	--
Aulodrilus limnobius	--	--
Aulodrilus pigueti	179.4	4.55
Aulodrilus pluriseta	--	--
Branchiura sowerbyi	14.4	0.36
Ilyodrilus templetoni	76.5	1.94
Limnodrilus	--	--
Limnodrilus cervix	21.5	0.55
Limnodrilus cervix (var)	--	--
Limnodrilus claparedianus	205.7	5.22
Limnodrilus hoffmeisteri	406.6	10.31
Limnodrilus maumeensis	--	--
Limnodrilus profundicola	--	--
Limnodrilus udekemianus	239.2	6.06
Imm. tub. w/bifid chaetae	624.3	15.83
Imm. tub. w/hair & pectinate chaetae	279.9	7.10
Desserobdella phalera	--	--
Helobdella	4.8	0.12
Helobdella stagnalis	--	--
Placobdella montifera	--	--
Erpobdella microstoma	--	--
Hyalella azteca	9.6	0.24
Gammarus	119.6	3.03
Gammarus fasciatus	--	--
Apocorophium lacustre	76.5	1.94
Stenacron	2.4	0.06
Tricorythodes	--	--
Caenis	9.6	0.24
Hexagenia bilineata	--	--
Hexagenia limbata	--	--
Argia	--	--
Enallagma	--	--
Stylurus	--	--
Corixidae	--	--
Cyrnellus fraternus	2.4	0.06
Cheumatopsyche	--	--
Hydroptila	--	--
Oxyethira	4.8	0.12
Oecetis	4.8	0.12
Dubiraphia	--	--
Macronychus glabratus	2.4	0.06
Ceratopogonidae	--	--
Chironomidae	--	--
Tanypus	--	--
Tanypus neopunctipennis	--	--
Procladius	224.8	5.70
Procladius (Holotanypus)	--	--
Coelotanypus	--	--
Ablabesmyia janta	--	--
Ablabesmyia mallochi	4.8	0.12
Ablabesmyia rhamphe grp.	--	--
Ablabesmyia annulata	--	--
Thienemannimyia grp.	--	--
Cricotopus	--	--
Cricotopus bicinctus grp.	2.4	0.06
Cricotopus sylvestris grp.	2.4	0.06
Epoicocladius	--	--
Kiefferulus	--	--
Nanocladius distinctus	--	--
Rheocricotopus robacki	--	--
Axarus	--	--
Chironomus	--	--
Cladopelma	--	--
Cryptochironomus	86.1	2.18
Cryptotendipes	--	--

TABLE F-39 (cont.)

TAXA	2013 #/m2	2013 %
Dicrotendipes modestus	12.0	0.30
Dicrotendipes neomodestus	2.4	0.06
Dicrotendipes fumidus	9.6	0.24
Dicrotendipes lucifer	--	--
Dicrotendipes simpsoni	--	--
Glyptotendipes	--	--
Harnischia	--	--
Microchironomus	31.1	0.79
Parachironomus	--	--
Paracladopelma	4.8	0.12
Polypedilum flavum	--	--
Polypedilum halterale grp.	648.2	16.43
Polypedilum illinoense	--	--
Polypedilum scalaenum grp.	--	--
Stenochironomus	2.4	0.06
Stictochironomus	--	--
Stictochironomus caffrarius grp.	--	--
Tribelos	--	--
Tribelos fuscicorne	--	--
Cladotanytarsus mancus grp.	--	--
Rheotanytarsus	--	--
Tanytarsus	--	--
Elimia	126.8	3.21
Hydrobiidae	--	--
Amnicola	95.7	2.43
Pleurocera	--	--
Physa	--	--
Menetus	4.8	0.12
Ferrissia	--	--
Corbicula fluminea	361.2	9.16
Musculium	--	--
Pisidium	7.2	0.18
Unionidae	--	--
Amblema plicata	--	--
Quadrula pustulosa	--	--
Quadrula quadrula	2.4	0.06
Leptodea fragilis	--	--
Toxolasma parvus	--	--
Dreissena polymorpha	2.4	0.06
TOTAL BENTHOS	3,944.2	100.00
TOTAL TAXA	38	
EPT TAXA	5	

TABLE F-40. YEAR VS.YEAR COMPARISON OF PONAR MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED UPSTREAM OF DRESDEN STATION (IN DRESDEN POOL) DURING AUGUST OF 1999,2001-2004,2006,2008,2011,2013,AND SEPTEMBER OF 2005 AND 2007.

TAXA	1999		2001		2002		2003		2004	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Urnatella gracilis	--	--	--	--	--	--	--	--	--	--
Plumatella	--	--	--	--	--	--	--	--	--	--
Dero	--	--	--	--	--	--	--	--	--	--
Dero digitata	4.8	0.39	--	--	--	--	--	--	--	--
Dero nivea	--	--	--	--	--	--	--	--	--	--
Paranais litoralis	--	--	--	--	--	--	--	--	--	--
Pristina jenkinae	--	--	4.8	0.51	--	--	--	--	--	--
Aulodrilus limnobius	2.4	0.19	--	--	9.6	0.87	--	--	--	--
Aulodrilus pigueti	7.2	0.58	33.5	3.58	43.1	3.91	43.1	3.78	19.1	1.30
Branchiura sowerbyi	47.8	3.89	141.1	15.09	23.9	2.17	43.1	3.78	38.3	2.60
Ilyodrilus templetoni	2.4	0.19	4.8	0.51	4.8	0.43	9.6	0.84	--	--
Limnodrilus	--	--	--	--	--	--	14.4	1.26	--	--
Limnodrilus cervix	131.6	10.70	12.0	1.28	14.4	1.30	--	--	4.8	0.32
Limnodrilus cervix (var)	--	--	2.4	0.26	14.4	1.30	--	--	19.1	1.30
Limnodrilus claparedianus	--	--	--	--	--	--	--	--	--	--
Limnodrilus hoffmeisteri	133.9	10.89	23.9	2.56	71.8	6.52	57.4	5.04	267.9	18.18
Limnodrilus maumeensis	--	--	71.8	7.67	52.6	4.78	186.6	16.39	33.5	2.27
Limnodrilus profundicola	12.0	0.97	--	--	--	--	--	--	--	--
Limnodrilus udekemianus	23.9	1.95	38.3	4.09	14.4	1.30	9.6	0.84	14.4	0.97
Imm. tub. w/bifid chaetae	598.0	48.64	294.2	31.46	368.4	33.48	416.2	36.55	698.4	47.40
Imm. tub. w/hair & pectinate chaetae	12.0	0.97	7.2	0.77	4.8	0.43	14.4	1.26	--	--
Helobdella	--	--	--	--	--	--	--	--	--	--
Placobdella montifera	--	--	--	--	--	--	--	--	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	--	--	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	--	--	--	--	4.8	0.42	--	--
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--
Stenacron	--	--	--	--	--	--	--	--	--	--
Caenis	--	--	--	--	--	--	--	--	--	--
Hexagenia bilineata	--	--	--	--	86.1	7.83	--	--	--	--
Hexagenia limbata	4.8	0.39	9.6	1.02	28.7	2.61	--	--	--	--
Argia	--	--	--	--	--	--	--	--	--	--
Enallagma	--	--	--	--	--	--	--	--	--	--
Corixidae	2.4	0.19	26.3	2.81	--	--	4.8	0.42	--	--
Cyrnellus fraternus	--	--	--	--	14.4	1.30	--	--	--	--
Oecetis	2.4	0.19	2.4	0.26	--	--	--	--	--	--
Dubiraphia	--	--	4.8	0.51	--	--	--	--	--	--
Macronychus glabratus	--	--	--	--	--	--	--	--	--	--
Chironomidae	7.2	0.58	--	--	--	--	--	--	--	--
Tanypus	--	--	--	--	--	--	--	--	4.8	0.32
Tanypus neopunctipennis	2.4	0.19	--	--	--	--	--	--	--	--
Procladius	--	--	9.6	1.02	--	--	9.6	0.84	43.1	2.92
Procladius (Holotanypus)	12.0	0.97	16.7	1.79	--	--	4.8	0.42	--	--
Coelotanypus	31.1	2.53	64.6	6.91	23.9	2.17	57.4	5.04	4.8	0.32
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--
Ablabesmyia annulata	2.4	0.19	16.7	1.79	19.1	1.74	--	--	--	--
Cricotopus bicinctus grp.	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	14.4	0.97
Epoicocladius	--	--	--	--	4.8	0.43	--	--	--	--
Kiefferulus	--	--	--	--	--	--	--	--	--	--
Nanocladius distinctus	--	--	--	--	--	--	--	--	--	--
Axarus	2.4	0.19	2.4	0.26	--	--	--	--	--	--
Chironomus	19.1	1.56	57.4	6.14	162.6	14.78	196.1	17.23	33.5	2.27
Cryptochironomus	28.7	2.33	23.9	2.56	23.9	2.17	23.9	2.10	71.8	4.87
Cryptotendipes	--	--	--	--	--	--	4.8	0.42	--	--
Dicrotendipes modestus	--	--	--	--	--	--	--	--	4.8	0.32
Dicrotendipes neomodestus	--	--	--	--	--	--	--	--	--	--
Glyptotendipes	2.4	0.19	2.4	0.26	--	--	--	--	--	--
Harnischia	2.4	0.19	--	--	--	--	--	--	--	--
Microchironomus	31.1	2.53	2.4	0.26	4.8	0.43	14.4	1.26	--	--
Parachironomus	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	--	--	--	--	--	--	--	--
Polypedilum halterale grp.	71.8	5.84	52.6	5.63	62.2	5.65	--	--	105.2	7.14
Polypedilum illinoense	4.8	0.39	--	--	--	--	9.6	0.84	--	--
Polypedilum scalaenum grp.	--	--	--	--	--	--	--	--	--	--
Stenochironomus	--	--	--	--	--	--	--	--	--	--
Stictochironomus	--	--	--	--	19.1	1.74	--	--	--	--
Stictochironomus caffrarius grp.	9.6	0.78	2.4	0.26	--	--	14.4	1.26	--	--
Rheotanytarsus	--	--	--	--	--	--	--	--	--	--
Tanytarsus	2.4	0.19	--	--	--	--	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	2.4	0.26	--	--	--	--	--	--
Amnicola	--	--	--	--	--	--	--	--	--	--
Pleurocera	--	--	--	--	--	--	--	--	--	--
Menetus	--	--	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	9.6	0.78	4.8	0.51	14.4	1.30	--	--	86.1	5.84
Musculium	4.8	0.39	--	--	--	--	--	--	--	--
Pisidium	--	--	--	--	--	--	--	--	9.6	0.65
Unionidae	--	--	--	--	4.8	0.43	--	--	--	--
Amblema plicata	--	--	--	--	4.8	0.43	--	--	--	--
Quadrula quadrula	--	--	--	--	4.8	0.43	--	--	--	--
Dreissena polymorpha	--	--	--	--	--	--	--	--	--	--
TOTAL BENTHOS	1,229.4	100.00	935.2	100.00	1,100.3	100.00	1,138.5	100.00	1,473.4	100.00
TOTAL TAXA	28		26		24		17		17	
EPT TAXA	2		2		3		0		0	

TABLE F-40 (cont.)

TAXA	2005 #/m2	2005 %	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %
Urnatella gracilis	4.8	0.36	--	--	--	--	--	--	--	--
Plumatella	4.8	0.36	--	--	--	--	--	--	--	--
Dero	23.9	1.81	4.8	0.32	--	--	--	--	--	--
Dero digitata	--	--	--	--	--	--	--	--	--	--
Dero nivea	14.4	1.09	--	--	--	--	--	--	--	--
Paranais litoralis	--	--	--	--	--	--	--	--	--	--
Pristina jenkinae	4.8	0.36	--	--	--	--	--	--	--	--
Aulodrilus limnobius	4.8	0.36	67.0	4.55	--	--	--	--	38.3	0.67
Aulodrilus pigueti	19.1	1.45	172.2	11.69	143.5	9.52	14.4	2.05	956.8	16.67
Branchiura sowerbyi	86.1	6.52	28.7	1.95	67.0	4.44	--	--	47.8	0.83
Ilyodrilus templetoni	14.4	1.09	38.3	2.60	28.7	1.90	--	--	9.6	0.17
Limnodrilus	--	--	9.6	0.65	4.8	0.32	--	--	--	--
Limnodrilus cervix	33.5	2.54	90.9	6.17	81.3	5.40	19.1	2.74	669.7	11.67
Limnodrilus cervix (var)	--	--	--	--	--	--	--	--	--	--
Limnodrilus claparedianus	--	--	--	--	--	--	--	--	--	--
Limnodrilus hoffmeisteri	143.5	10.87	43.1	2.92	181.8	12.06	4.8	0.68	200.9	3.50
Limnodrilus maumeensis	71.8	5.43	38.3	2.60	119.6	7.94	23.9	3.42	--	--
Limnodrilus profundicola	--	--	--	--	--	--	--	--	--	--
Limnodrilus udekemianus	33.5	2.54	9.6	0.65	14.4	0.95	--	--	--	--
Imm. tub. w/bifid chaetae	363.6	27.54	626.7	42.53	559.7	37.14	76.5	10.96	67.0	1.17
Imm. tub. w/hair & pectinate chaetae	23.9	1.81	100.5	6.82	4.8	0.32	71.8	10.27	2,487.6	43.33
Helobdella	--	--	--	--	--	--	--	--	4.8	0.08
Placobdella montifera	--	--	--	--	--	--	4.8	0.68	--	--
Hyalella azteca	4.8	0.36	--	--	--	--	--	--	--	--
Gammarus	--	--	--	--	--	--	--	--	4.8	0.08
Gammarus fasciatus	4.8	0.36	--	--	--	--	--	--	--	--
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--
Stenacron	--	--	--	--	--	--	--	--	--	--
Caenis	--	--	--	--	--	--	--	--	4.8	0.08
Hexagenia bilineata	--	--	--	--	--	--	--	--	--	--
Hexagenia limbata	--	--	--	--	19.1	1.27	33.5	4.79	19.1	0.33
Argia	--	--	--	--	4.8	0.32	--	--	--	--
Enallagma	--	--	--	--	19.1	1.27	--	--	4.8	0.08
Corixidae	--	--	--	--	--	--	9.6	1.37	4.8	0.08
Cyrnellus fraternus	--	--	--	--	--	--	4.8	0.68	--	--
Oecetis	--	--	4.8	0.32	--	--	19.1	2.74	14.4	0.25
Dubiraphia	--	--	--	--	--	--	--	--	4.8	0.08
Macronychus glabratus	--	--	--	--	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--	--	--
Tanypus	--	--	9.6	0.65	4.8	0.32	4.8	0.68	--	--
Tanypus neopunctipennis	--	--	--	--	--	--	--	--	--	--
Procladius	--	--	9.6	0.65	62.2	4.13	71.8	10.27	822.8	14.33
Procladius (Holotanypus)	--	--	--	--	--	--	--	--	--	--
Coelotanypus	--	--	81.3	5.52	14.4	0.95	105.2	15.07	19.1	0.33
Ablabesmyia mallochi	--	--	4.8	0.32	--	--	--	--	--	--
Ablabesmyia annulata	--	--	--	--	--	--	9.6	1.37	--	--
Cricotopus bicinctus grp.	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	9.6	0.17
Epoicocladius	--	--	--	--	--	--	--	--	--	--
Kiefferulus	4.8	0.36	--	--	--	--	--	--	--	--
Nanocladius distinctus	--	--	--	--	--	--	19.1	2.74	--	--
Axarus	--	--	--	--	--	--	--	--	--	--
Chironomus	9.6	0.72	--	--	--	--	62.2	8.90	--	--
Cryptochironomus	62.2	4.71	23.9	1.62	4.8	0.32	43.1	6.16	143.5	2.50
Cryptotendipes	--	--	--	--	--	--	--	--	--	--
Dicrotendipes modestus	--	--	--	--	4.8	0.32	--	--	--	--
Dicrotendipes neomodestus	4.8	0.36	4.8	0.32	--	--	--	--	--	--
Glyptotendipes	--	--	--	--	9.6	0.63	--	--	19.1	0.33
Harnischia	--	--	--	--	--	--	9.6	1.37	--	--
Microchironomus	--	--	9.6	0.65	14.4	0.95	71.8	10.27	38.3	0.67
Parachironomus	9.6	0.72	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	--	--	76.5	5.08	--	--	--	--
Polypedilum halterale grp.	287.0	21.74	4.8	0.32	4.8	0.32	--	--	57.4	1.00
Polypedilum illinoense	--	--	--	--	--	--	--	--	--	--
Polypedilum scalaenum grp.	--	--	9.6	0.65	--	--	--	--	--	--
Stenochironomus	--	--	--	--	--	--	--	--	--	--
Stictochironomus	--	--	--	--	--	--	--	--	--	--
Stictochironomus caffrarius grp.	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	--	--	--	--	4.8	0.32	--	--	--	--
Tanytarsus	--	--	--	--	--	--	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	--	--	--	--	--	--	--	--
Amnicola	4.8	0.36	--	--	--	--	--	--	--	--
Pleurocera	9.6	0.72	--	--	28.7	1.90	--	--	--	--
Menetus	--	--	--	--	--	--	--	--	--	--
Ferrissia	4.8	0.36	--	--	--	--	--	--	--	--
Corbicula fluminea	62.2	4.71	81.3	5.52	28.7	1.90	9.6	1.37	67.0	1.17
Musculium	--	--	--	--	--	--	--	--	--	--
Pisidium	--	--	--	--	--	--	4.8	0.68	14.4	0.25
Unionidae	--	--	--	--	--	--	--	--	--	--
Amblema plicata	4.8	0.36	--	--	--	--	--	--	9.6	0.17
Quadrula quadrula	--	--	--	--	--	--	4.8	0.68	--	--
Dreissena polymorpha	--	--	--	--	--	--	--	--	--	--
TOTAL BENTHOS	1,320.3	100.00	1,473.4	100.00	1,506.9	100.00	698.4	100.00	5,740.5	100.00
TOTAL TAXA	25		21		23		21		24	
EPT TAXA	0		1		1		3		3	

TABLE F-40 (cont.)

TAXA	2013 #/m2	2013 %
Urnatella gracilis	--	--
Plumatella	--	--
Dero	14.4	0.45
Dero digitata	--	--
Dero nivea	28.7	0.90
Paranais litoralis	14.4	0.45
Pristina jenkinae	--	--
Aulodrilus limnobius	--	--
Aulodrilus pigueti	4.8	0.15
Branchiura sowerbyi	14.4	0.45
Ilyodrilus templetoni	28.7	0.90
Limnodrilus	--	--
Limnodrilus cervix	14.4	0.45
Limnodrilus cervix (var)	--	--
Limnodrilus claparedianus	76.5	2.41
Limnodrilus hoffmeisteri	301.4	9.50
Limnodrilus maumeensis	--	--
Limnodrilus profundicola	--	--
Limnodrilus udekemianus	100.5	3.17
Imm. tub. w/bifid chaetae	377.9	11.92
Imm. tub. w/hair & pectinate chaetae	76.5	2.41
Helobdella	--	--
Placobdella montifera	--	--
Hyalella azteca	--	--
Gammarus	200.9	6.33
Gammarus fasciatus	--	--
Apocorophium lacustre	95.7	3.02
Stenacron	4.8	0.15
Caenis	19.1	0.60
Hexagenia bilineata	--	--
Hexagenia limbata	--	--
Argia	--	--
Enallagma	--	--
Corixidae	--	--
Cyrnellus fraternus	4.8	0.15
Oecetis	9.6	0.30
Dubiraphia	--	--
Macronychus glabratus	4.8	0.15
Chironomidae	--	--
Tanypus	--	--
Tanypus neopunctipennis	--	--
Procladius	19.1	0.60
Procladius (Holotanypus)	--	--
Coelotanypus	--	--
Ablabesmyia mallochi	9.6	0.30
Ablabesmyia annulata	--	--
Cricotopus bicinctus grp.	4.8	0.15
Cricotopus sylvestris grp.	4.8	0.15
Epoicocladius	--	--
Kiefferulus	--	--
Nanocladius distinctus	--	--
Axarus	--	--
Chironomus	--	--
Cryptochironomus	57.4	1.81
Cryptotendipes	--	--
Dicrotendipes modestus	4.8	0.15
Dicrotendipes neomodestus	4.8	0.15
Glyptotendipes	--	--
Harnischia	--	--
Microchironomus	--	--
Parachironomus	--	--
Polypedilum flavum	--	--
Polypedilum halterale grp.	932.8	29.41
Polypedilum illinoense	--	--
Polypedilum scalaenum grp.	--	--
Stenochironomus	4.8	0.15
Stictochironomus	--	--
Stictochironomus caffrarius grp.	--	--
Rheotanytarsus	--	--
Tanytarsus	--	--
Elimia	234.4	7.39
Hydrobiidae	--	--
Amnicola	119.6	3.77
Pleurocera	--	--
Menetus	9.6	0.30
Ferrissia	--	--
Corbicula fluminea	354.0	11.16
Musculium	--	--
Pisidium	9.6	0.30
Unionidae	--	--
Amblema plicata	--	--
Quadrula quadrula	4.8	0.15
Dreissena polymorpha	4.8	0.15
TOTAL BENTHOS	3,171.6	100.00
TOTAL TAXA	32	
EPT TAXA	4	

TABLE F-41. YEAR VS. YEAR COMPARISON OF PONAR MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED DOWNSTREAM OF DRESDEN STATION (IN DRESDEN POOL) DURING AUGUST OF 1999, 2001-2004, 2006, 2008, 2011, 2013, AND SEPTEMBER OF 2005 AND 2007.

TAXA	1999		2001		2002		2003		2004	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Nematoda	--	--	--	--	--	--	--	--	--	--
Urnatella gracilis	--	--	--	--	--	--	--	--	--	--
Dero	--	--	--	--	--	--	--	--	--	--
Dero nivea	--	--	--	--	--	--	--	--	--	--
Nais	--	--	--	--	--	--	--	--	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	--	--
Aulodrilus limnobius	4.8	0.40	--	--	4.8	0.43	--	--	--	--
Aulodrilus pigueti	23.9	2.00	7.2	1.12	110.0	10.00	19.1	1.21	23.9	2.16
Aulodrilus pluriseta	--	--	--	--	--	--	9.6	0.60	--	--
Branchiura sowerbyi	12.0	1.00	12.0	1.87	23.9	2.17	38.3	2.42	86.1	7.79
Ilyodrilus templetoni	7.2	0.60	2.4	0.37	19.1	1.74	14.4	0.91	9.6	0.87
Limnodrilus	--	--	--	--	--	--	--	--	--	--
Limnodrilus cervix	117.2	9.80	9.6	1.49	14.4	1.30	--	--	191.4	17.32
Limnodrilus cervix (var)	--	--	2.4	0.37	43.1	3.91	--	--	--	--
Limnodrilus claparedianus	--	--	--	--	--	--	14.4	0.91	--	--
Limnodrilus hoffmeisteri	342.0	28.60	76.5	11.94	119.6	10.87	358.8	22.66	43.1	3.90
Limnodrilus maumeensis	--	--	47.8	7.46	52.6	4.78	124.4	7.85	57.4	5.19
Limnodrilus profundicola	9.6	0.80	--	--	--	--	--	--	--	--
Limnodrilus udekemianus	117.2	9.80	76.5	11.94	67.0	6.09	67.0	4.23	71.8	6.49
Imm. tub. w/bifid chaetae	447.3	37.40	212.9	33.21	511.9	46.52	645.8	40.79	248.8	22.51
Imm. tub. w/hair & pectinate chaetae	14.4	1.20	2.4	0.37	14.4	1.30	9.6	0.60	--	--
Desserobdella phalera	--	--	2.4	0.37	--	--	--	--	--	--
Helobdella	--	--	--	--	--	--	--	--	--	--
Helobdella stagnalis	--	--	--	--	--	--	4.8	0.30	--	--
Erpobdella microstoma	--	--	--	--	--	--	4.8	0.30	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	--	--	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	--	--	--	--	--	--	52.6	4.76
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--
Tricorythodes	--	--	--	--	--	--	--	--	--	--
Caenis	2.4	0.20	--	--	--	--	--	--	--	--
Hexagenia bilineata	--	--	--	--	--	--	4.8	0.30	--	--
Hexagenia limbata	7.2	0.60	9.6	1.49	--	--	28.7	1.81	--	--
Argia	--	--	2.4	0.37	--	--	--	--	--	--
Enallagma	--	--	--	--	--	--	--	--	--	--
Stylurus	--	--	--	--	--	--	--	--	--	--
Corixidae	--	--	--	--	--	--	--	--	--	--
Cyrnellus fraternus	--	--	2.4	0.37	--	--	19.1	1.21	--	--
Cheumatopsyche	--	--	--	--	--	--	--	--	--	--
Hydroptila	--	--	--	--	--	--	--	--	--	--
Oxyethira	--	--	--	--	--	--	--	--	--	--
Oecetis	--	--	4.8	0.75	4.8	0.43	--	--	--	--
Dubiraphia	4.8	0.40	7.2	1.12	--	--	--	--	--	--
Macronychus glabratus	--	--	--	--	--	--	--	--	4.8	0.43
Ceratopogonidae	--	--	2.4	0.37	--	--	--	--	--	--
Tanypus	--	--	--	--	--	--	--	--	--	--
Tanypus neopunctipennis	2.4	0.20	--	--	--	--	--	--	--	--
Procladius	--	--	--	--	--	--	--	--	52.6	4.76
Procladius (Holotanypus)	26.3	2.20	16.7	2.61	--	--	38.3	2.42	--	--
Coelotanypus	2.4	0.20	33.5	5.22	14.4	1.30	14.4	0.91	4.8	0.43
Ablabesmyia janta	--	--	--	--	--	--	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--
Ablabesmyia rhamphe grp.	--	--	7.2	1.12	--	--	--	--	--	--
Ablabesmyia annulata	2.4	0.20	2.4	0.37	--	--	19.1	1.21	9.6	0.87
Thienemannimyia grp.	--	--	--	--	--	--	--	--	--	--
Cricotopus	--	--	--	--	--	--	--	--	4.8	0.43
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	--	--
Epoicocladius	--	--	--	--	--	--	4.8	0.30	--	--
Rheocricotopus robacki	--	--	--	--	--	--	--	--	--	--
Axarus	--	--	--	--	9.6	0.87	--	--	--	--
Chironomus	2.4	0.20	--	--	--	--	4.8	0.30	4.8	0.43
Cladopelma	--	--	--	--	--	--	--	--	--	--
Cryptochironomus	19.1	1.60	31.1	4.85	4.8	0.43	4.8	0.30	19.1	1.73
Dicrotendipes modestus	--	--	--	--	--	--	--	--	4.8	0.43
Dicrotendipes neomodestus	2.4	0.20	--	--	--	--	--	--	--	--
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	--	--	2.4	0.37	--	--	--	--	--	--
Glyptotendipes	--	--	9.6	1.49	4.8	0.43	9.6	0.60	--	--
Microchironomus	12.0	1.00	7.2	1.12	4.8	0.43	--	--	--	--
Paracladopelma	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	--	--	--	--	--	--	--	--

TABLE F-41 (cont.)

TAXA	1999		2001		2002		2003		2004	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Polypedilum halterale grp.	4.8	0.40	16.7	2.61	4.8	0.43	9.6	0.60	4.8	0.43
Polypedilum illinoense	--	--	--	--	--	--	--	--	--	--
Polypedilum scalaenum grp.	--	--	--	--	--	--	--	--	--	--
Stenochironomus	--	--	--	--	--	--	--	--	9.6	0.87
Stictochironomus caffrarius grp.	--	--	--	--	--	--	--	--	--	--
Tribelos	--	--	2.4	0.37	--	--	--	--	--	--
Tribelos fuscicorne	--	--	--	--	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	--	--	--	--	--	--	--	--
Tanytarsus	--	--	--	--	--	--	--	--	--	--
Elimia	4.8	0.40	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	--	--	--	--	--	--	--	--
Amnicola	--	--	--	--	--	--	--	--	--	--
Pleurocera	--	--	--	--	--	--	--	--	--	--
Physa	--	--	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	4.8	0.40	26.3	4.10	71.8	6.52	100.5	6.34	143.5	12.99
Musculium	2.4	0.20	--	--	--	--	4.8	0.30	43.1	3.90
Pisidium	--	--	--	--	--	--	--	--	--	--
Amblema plicata	--	--	2.4	0.37	--	--	9.6	0.60	--	--
Quadrula pustulosa	--	--	2.4	0.37	--	--	--	--	--	--
Quadrula quadrula	--	--	--	--	--	--	--	--	9.6	0.87
Leptodea fragilis	--	--	--	--	--	--	--	--	--	--
Toxolasma parvus	--	--	--	--	--	--	--	--	--	--
Dreissena polymorpha	--	--	--	--	--	--	--	--	4.8	0.43
TOTAL BENTHOS	1,195.9	100.00	641.0	100.00	1,100.3	100.00	1,583.4	100.00	1,105.1	100.00
TOTAL TAXA	23		28		17		24		22	
EPT TAXA	1		3		1		3		0	

TABLE F-41 (cont.)

TAXA	2005 #/m2	2005 %	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %
Nematoda	--	--	9.6	0.41	--	--	--	--	--	--
Urnatella gracilis	--	--	--	--	9.6	0.62	--	--	--	--
Dero	--	--	--	--	4.8	0.31	--	--	153.1	1.16
Dero nivea	--	--	--	--	4.8	0.31	--	--	76.5	0.58
Nais	--	--	--	--	--	--	--	--	38.3	0.29
Stylaria lacustris	--	--	--	--	--	--	--	--	153.1	1.16
Aulodrilus limnobius	--	--	--	--	38.3	2.49	--	--	--	--
Aulodrilus pigueti	--	--	52.6	2.26	148.3	9.66	--	--	1,492.5	11.27
Aulodrilus pluriseta	--	--	--	--	--	--	--	--	--	--
Branchiura sowerbyi	9.6	1.37	--	--	52.6	3.43	57.4	4.51	76.5	0.58
Ilyodrilus templetoni	--	--	--	--	23.9	1.56	--	--	153.1	1.16
Limnodrilus	--	--	4.8	0.21	--	--	--	--	--	--
Limnodrilus cervix	4.8	0.68	81.3	3.49	43.1	2.80	23.9	1.88	220.1	1.66
Limnodrilus cervix (var)	--	--	--	--	--	--	--	--	--	--
Limnodrilus claparedianus	--	--	--	--	4.8	0.31	--	--	9.6	0.07
Limnodrilus hoffmeisteri	14.4	2.05	349.2	14.99	244.0	15.89	90.9	7.14	1,492.5	11.27
Limnodrilus maumeensis	4.8	0.68	67.0	2.87	43.1	2.80	14.4	1.13	--	--
Limnodrilus profundicola	--	--	--	--	--	--	--	--	--	--
Limnodrilus udekemianus	119.6	17.12	105.2	4.52	119.6	7.79	105.2	8.27	105.2	0.79
Imm. tub. w/bifid chaetae	33.5	4.79	956.8	41.07	320.5	20.87	--	--	612.3	4.62
Imm. tub. w/hair & pectinate chaetae	--	--	38.3	1.64	28.7	1.87	196.1	15.41	2,803.3	21.16
Desserobdella phalera	--	--	--	--	--	--	--	--	--	--
Helobdella	--	--	--	--	--	--	9.6	0.75	23.9	0.18
Helobdella stagnalis	--	--	--	--	--	--	--	--	--	--
Erpobdella microstoma	--	--	--	--	--	--	--	--	19.1	0.14
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	--	--	--	--	4.8	0.31	28.7	2.26	23.9	0.18
Gammarus fasciatus	--	--	--	--	--	--	--	--	--	--
Apocorophium lacustre	157.9	22.60	28.7	1.23	38.3	2.49	138.7	10.90	105.2	0.79
Tricorythodes	--	--	--	--	--	--	--	--	4.8	0.04
Caenis	--	--	14.4	0.62	--	--	--	--	19.1	0.14
Hexagenia bilineata	--	--	--	--	--	--	--	--	--	--
Hexagenia limbata	4.8	0.68	--	--	--	--	--	--	19.1	0.14
Argia	4.8	0.68	--	--	--	--	--	--	4.8	0.04
Enallagma	--	--	--	--	4.8	0.31	--	--	--	--
Stylurus	--	--	--	--	--	--	--	--	4.8	0.04
Corixidae	--	--	--	--	--	--	4.8	0.38	--	--
Cyrnellus fraternus	--	--	33.5	1.44	--	--	9.6	0.75	86.1	0.65
Cheumatopsyche	--	--	--	--	--	--	4.8	0.38	--	--
Hydroptila	--	--	--	--	--	--	--	--	81.3	0.61
Oxyethira	--	--	--	--	--	--	--	--	--	--
Oecetis	--	--	19.1	0.82	4.8	0.31	14.4	1.13	33.5	0.25
Dubiraphia	--	--	4.8	0.21	--	--	--	--	9.6	0.07
Macronychus glabratus	--	--	--	--	--	--	--	--	--	--
Ceratopogonidae	--	--	--	--	--	--	--	--	--	--
Tanypus	--	--	--	--	--	--	4.8	0.38	--	--
Tanypus neopunctipennis	--	--	--	--	--	--	--	--	--	--
Procladius	--	--	33.5	1.44	--	--	28.7	2.26	2,478.0	18.71
Procladius (Holotanypus)	--	--	--	--	--	--	--	--	--	--
Coelotanypus	9.6	1.37	110.0	4.72	9.6	0.62	23.9	1.88	38.3	0.29
Ablabesmyia janta	--	--	19.1	0.82	--	--	4.8	0.38	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	153.1	1.16
Ablabesmyia rhamphe grp.	--	--	--	--	--	--	--	--	--	--
Ablabesmyia annulata	--	--	--	--	--	--	--	--	--	--
Thienemannimyia grp.	--	--	4.8	0.21	--	--	--	--	--	--
Cricotopus	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	325.3	2.46
Epoicocladius	--	--	--	--	--	--	--	--	--	--
Rheocricotopus robacki	--	--	--	--	4.8	0.31	--	--	--	--
Axarus	--	--	--	--	--	--	--	--	--	--
Chironomus	9.6	1.37	4.8	0.21	--	--	38.3	3.01	--	--
Cladopelma	4.8	0.68	--	--	--	--	--	--	--	--
Cryptochironomus	19.1	2.74	33.5	1.44	38.3	2.49	43.1	3.38	114.8	0.87
Dicrotendipes modestus	--	--	4.8	0.21	--	--	--	--	--	--
Dicrotendipes neomodestus	--	--	9.6	0.41	--	--	--	--	153.1	1.16
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	38.3	0.29
Dicrotendipes simpsoni	--	--	23.9	1.03	--	--	--	--	--	--
Glyptotendipes	9.6	1.37	4.8	0.21	--	--	9.6	0.75	153.1	1.16
Microchironomus	--	--	47.8	2.05	4.8	0.31	220.1	17.29	267.9	2.02
Paracladopelma	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	9.6	0.41	--	--	--	--	38.3	0.29
Polypedilum halterale grp.	--	--	19.1	0.82	38.3	2.49	38.3	3.01	392.3	2.96
Polypedilum illinoense	4.8	0.68	--	--	--	--	--	--	--	--

TABLE F-41 (cont.)

TAXA	2005 #/m2	2005 %	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %
Polypedilum scalaenum grp.	114.8	16.44	4.8	0.21	--	--	--	--	--	--
Stenochironomus	--	--	4.8	0.21	--	--	9.6	0.75	38.3	0.29
Stictochironomus caffrarius grp.	--	--	4.8	0.21	--	--	--	--	--	--
Tribelos	--	--	--	--	--	--	--	--	--	--
Tribelos fuscicorne	--	--	4.8	0.21	--	--	--	--	--	--
Cladotanytarsus mancus grp.	9.6	1.37	--	--	--	--	--	--	--	--
Tanytarsus	--	--	4.8	0.21	--	--	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	--	--	--	--	--	--	129.2	0.98
Amnicola	4.8	0.68	--	--	--	--	--	--	4.8	0.04
Pleurocera	--	--	--	--	81.3	5.30	4.8	0.38	--	--
Physa	--	--	--	--	--	--	--	--	9.6	0.07
Ferrissia	--	--	--	--	--	--	--	--	4.8	0.04
Corbicula fluminea	129.2	18.49	200.9	8.62	220.1	14.33	129.2	10.15	1,062.0	8.02
Musculium	--	--	9.6	0.41	--	--	--	--	--	--
Pisidium	--	--	--	--	--	--	--	--	--	--
Amblema plicata	28.7	4.11	4.8	0.21	--	--	14.4	1.13	9.6	0.07
Quadrula pustulosa	--	--	--	--	--	--	--	--	--	--
Quadrula quadrula	--	--	--	--	--	--	--	--	4.8	0.04
Leptodea fragilis	--	--	--	--	--	--	4.8	0.38	4.8	0.04
Toxolasma parvus	--	--	--	--	--	--	--	--	4.8	0.04
Dreissena polymorpha	--	--	--	--	--	--	--	--	--	--
TOTAL BENTHOS	698.4	100.00	2,329.7	100.00	1,535.6	100.00	1,272.5	100.00	13,246.3	100.00
TOTAL TAXA	19		33		22		26		44	
EPT TAXA	1		3		1		3		6	

TABLE F-41 (cont.)

TAXA	2013 #/m2	2013 %
Nematoda	--	--
Urnatella gracilis	--	--
Dero	--	--
Dero nivea	--	--
Nais	--	--
Stylaria lacustris	--	--
Aulodrilus limnobius	--	--
Aulodrilus pigueti	354.0	7.51
Aulodrilus pluriseta	--	--
Branchiura sowerbyi	14.4	0.30
Ilyodrilus templetoni	124.4	2.64
Limnodrilus	--	--
Limnodrilus cervix	28.7	0.61
Limnodrilus cervix (var)	--	--
Limnodrilus claparedianus	334.9	7.10
Limnodrilus hoffmeisteri	511.9	10.85
Limnodrilus maumeensis	--	--
Limnodrilus profundicola	--	--
Limnodrilus udekemianus	377.9	8.01
Imm. tub. w/bifid chaetae	870.6	18.46
Imm. tub. w/hair & pectinate chaetae	483.2	10.24
Desserobdella phalera	--	--
Helobdella	9.6	0.20
Helobdella stagnalis	--	--
Erpobdella microstoma	--	--
Hyalella azteca	19.1	0.41
Gammarus	38.3	0.81
Gammarus fasciatus	--	--
Apocorophium lacustre	57.4	1.22
Tricorythodes	--	--
Caenis	--	--
Hexagenia bilineata	--	--
Hexagenia limbata	--	--
Argia	--	--
Enallagma	--	--
Stylurus	--	--
Corixidae	--	--
Cyrnellus fraternus	--	--
Cheumatopsyche	--	--
Hydroptila	--	--
Oxyethira	9.6	0.20
Oecetis	--	--
Dubiraphia	--	--
Macronychus glabratus	--	--
Ceratopogonidae	--	--
Tanypus	--	--
Tanypus neopunctipennis	--	--
Procladius	430.5	9.13
Procladius (Holotanypus)	--	--
Coelotanypus	--	--
Ablabesmyia janta	--	--
Ablabesmyia mallochi	--	--
Ablabesmyia rhamphe grp.	--	--
Ablabesmyia annulata	--	--
Thienemannimyia grp.	--	--
Cricotopus	--	--
Cricotopus sylvestris grp.	--	--
Epoicocladius	--	--
Rheocricotopus robacki	--	--
Axarus	--	--
Chironomus	--	--
Cladopelma	--	--
Cryptochironomus	114.8	2.43
Dicrotendipes modestus	19.1	0.41
Dicrotendipes neomodestus	--	--
Dicrotendipes fumidus	19.1	0.41
Dicrotendipes lucifer	--	--
Dicrotendipes simpsoni	--	--
Glyptotendipes	--	--
Microchironomus	62.2	1.32
Paracladopelma	9.6	0.20
Polypedilum flavum	--	--
Polypedilum halterale grp.	363.6	7.71
Polypedilum illinoense	--	--

TABLE F-41 (cont.)

TAXA	2013 #/m2	2013 %
Polypedilum scalaenum grp.	--	--
Stenochironomus	--	--
Stictochironomus caffrarius grp.	--	--
Tribelos	--	--
Tribelos fuscicorne	--	--
Cladotanytarsus mancus grp.	--	--
Tanytarsus	--	--
Elimia	19.1	0.41
Hydrobiidae	--	--
Amnicola	71.8	1.52
Pleurocera	--	--
Physa	--	--
Ferrissia	--	--
Corbicula fluminea	368.4	7.81
Musculium	--	--
Pisidium	4.8	0.10
Amblema plicata	--	--
Quadrula pustulosa	--	--
Quadrula quadrula	--	--
Leptodea fragilis	--	--
Toxolasma parvus	--	--
Dreissena polymorpha	--	--
TOTAL BENTHOS	4,716.8	100.00
TOTAL TAXA	23	
EPT TAXA	1	

Table F-42. Results of Year vs. Year Statistical Comparisons for Ponar Macroinvertebrate Data Collected in Dresden Pool During August of 1999, 2001-2004, 2006, 2008, 2011, and 2013, and September of 2005 and 2007.

Areas Combined	1999	2001	2002	2003	2004	2005	2006	2007	2008	2011	2013	Significant Difference(a)	F Value	P Value
Density-All Taxa(b)	1,212.7 BC	788.1 C	1,100.3 BC	1,361.0 ABC	1,289.2 BC	1,009.4 C	1,901.5 ABC	1,521.2 ABC	985.5 BC	9,493.4 A	7,888.4 AB(c)	Yes	5.72	<0.01
Density-Oligochaeta(b)	1,035.7 ABC	541.8 BC	801.3 BC	1,047.6 ABC	913.7 BC	511.9 C	1,442.3 AB	1,140.9 ABC	349.2 C	5,931.9 A	4,152.3 AB(c)	Yes	5.77	<0.01
Density-Chironomidae(b)	151.9 BC	190.2 ABC	181.8 C	220.1 ABC	198.5 ABC	279.9 ABC	253.5 ABC	148.3 C	409.0 ABC	2,650.2 A	AB(c)	Yes	3.55	0.01
Density-Ephemeroptera(b)	7.2	9.6	57.4	16.7	0	2.4	7.2	9.6	16.7	33.5	23.9	No	1.60	0.12
Taxa Richness(d)	8.9 D	9.0 CD	9.4 BCD	9.6 BCD	9.9 BCD	9.4 D	13.4 AB	10.5 ABCD	12.0 ABCD	14.3 ABC	15.4 A(e)	Yes	2.13	0.03
Upstream Dresden														
Density-All Taxa(d)	1,229.4 AB	935.2 AB	1,100.3 AB	1,138.5 AB	1,473.4 AB	1,320.3 AB	1,473.4 AB	1,506.9 AB	698.4 B	5,740.5 A	3,171.6 A(c)	Yes	2.99	0.01
Density-Oligochaeta(b)	975.9 AB	633.8 AB	621.9 AB	794.1 AB	1,095.5 AB	837.2 AB	1,229.4 AB	1,205.5 AB	210.5 B	4,477.6 A	1,052.4 A(c)	Yes	2.73	0.01
Density-Chironomidae(b)	229.6	251.1	320.5	334.9	282.2	377.9	157.9	200.9	397.1	1,109.8	1,042.9	No	0.57	0.83
Density-Ephemeroptera(b)	4.8	9.6	114.8	0	0	0	0	19.1	33.5	23.9	23.9	No	1.81	0.09
Taxa Richness(d)	9.6	8.6	10.0	8.0	9.5	11.0	11.0	9.0	9.8	10.3	16.3	No	0.74	0.68
Downstream Dresden														
Density-All Taxa(b)	1,195.9 CDE	641.0 E	1,100.3 CDE	1,583.4 ABCDE	1,105.1 CDE	698.4 DE	2,329.7 ABC	1,535.6 ABCD	1,272.5 BCDE	13,246.3 A	4,716.8 AB(c)	Yes	9.20	<0.01
Density-Oligochaeta(d)	1,095.5 BCD	449.7 DE	980.7 BCD	1,301.2 BCD	731.9 CDE	186.6 E	1,655.2 ABC	1,076.3 BCD	487.9 CDE	7,386.1 A	3,099.9 AB(c)	Yes	11.54	<0.01
Density-Chironomidae(b)	74.2 D	129.2 BCD	43.1 D	105.2 CD	114.8 CD	181.8 ABCD	349.2 ABC	95.7 CD	421.0 ABCD	4,190.6 A	1,018.9 AB(c)	Yes	7.04	<0.01
Density-Ephemeroptera(b)	9.6	9.6	0	33.5	0	4.8	14.4	0	0	43.1	0	No	1.92	0.070
Taxa Richness(d)	8.3 DE	9.4 CDE	8.8 DE	11.3 ABCDE	10.3 BCDE	7.8 E	15.8 AB	12.0 ABCD	14.3 ABC	18.3 A	14.5 ABC(e)	Yes	3.03	0.01

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.
(c) Results of Tukey's Studentized Range Test; values with the same letters are not significantly different (alpha=0.05).
(d) Log transformed data used for statistical analyses because they are normally distributed.
(e) Results of Fisher's Least-Squares-Difference Test; values with the same letters are not significantly different (alpha=0.05).

TABLE F-43. HESTER-DENDY MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED IN DRESDEN POOL, AUGUST 2013.

TAXA	23AUG13 #/m2	23AUG13 %
Turbellaria	662.6	13.89
Dero	14.9	0.31
Nais communis	4.3	0.09
Nais pardalis	12.8	0.27
Nais variabilis	15.4	0.32
Pristina aequiseta	2.1	0.04
Pristina leidyi	4.3	0.09
Stylaria lacustris	257.6	5.40
Hyalella azteca	60.1	1.26
Gammarus	82.5	1.73
Stenacron	9.6	0.20
Argia	1.1	0.02
Cyrnellus fraternus	560.5	11.75
Hydropsychidae	4.3	0.09
Cheumatopsyche	4.3	0.09
Hydropsyche orris	0.5	0.01
Potamyia flava	2.1	0.04
Stenelmis	2.1	0.04
Ablabesmyia mallochi	17.0	0.36
Cricotopus bicinctus grp.	51.1	1.07
Cricotopus sylvestris grp.	221.4	4.64
Nanocladius	161.8	3.39
Dicrotendipes modestus	540.8	11.34
Dicrotendipes neomodestus	195.9	4.11
Dicrotendipes fumidus	93.7	1.96
Dicrotendipes lucifer	298.1	6.25
Dicrotendipes simpsoni	502.4	10.53
Glyptotendipes	783.5	16.42
Parachironomus	8.5	0.18
Polypedilum flavum	76.6	1.61
Polypedilum halterale grp.	8.5	0.18
Stenochironomus	8.5	0.18
Rheotanytarsus	25.5	0.54
Elimia	13.8	0.29
Amnicola	0.5	0.01
Pleurocera	1.1	0.02
Menetus	59.6	1.25
Dreissena polymorpha	1.1	0.02
TOTAL BENTHOS	4,770.5	100.00
TOTAL TAXA	37	
EPT TAXA	5	

TABLE F-44. UPSTREAM VS. DOWNSTREAM COMPARISON OF MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED FROM HESTER-DENDY SAMPLES IN DRESDEN POOL DURING AUGUST 2013.

TAXA	UPSTREAM DRESDEN		DOWNSTREAM DRESDEN	
	#/m2	%	#/m2	%
Turbellaria	1,044.3	19.63	281.0	6.66
Dero	12.8	0.24	17.0	0.40
Nais communis	--	--	8.5	0.20
Nais pardalis	--	--	25.5	0.61
Nais variabilis	5.3	0.10	25.5	0.61
Pristina aequiseta	4.3	0.08	--	--
Pristina leidyi	--	--	8.5	0.20
Stylaria lacustris	4.3	0.08	511.0	12.10
Hyalella azteca	1.1	0.02	119.2	2.82
Gammarus	9.6	0.18	155.4	3.68
Stenacron	18.1	0.34	1.1	0.03
Argia	1.1	0.02	1.1	0.03
Cyrnellus fraternus	540.8	10.17	580.1	13.74
Hydropsychidae	--	--	8.5	0.20
Cheumatopsyche	8.5	0.16	--	--
Hydropsyche orris	1.1	0.02	--	--
Potamyia flava	4.3	0.08	--	--
Stenelmis	4.3	0.08	--	--
Ablabesmyia mallochi	--	--	34.1	0.81
Cricotopus bicinctus grp.	102.2	1.92	--	--
Cricotopus sylvestris grp.	425.8	8.00	17.0	0.40
Nanocladius	272.5	5.12	51.1	1.21
Dicrotendipes modestus	374.7	7.04	706.8	16.74
Dicrotendipes neomodestus	204.4	3.84	187.3	4.44
Dicrotendipes fumidus	68.1	1.28	119.2	2.82
Dicrotendipes lucifer	272.5	5.12	323.6	7.67
Dicrotendipes simpsoni	204.4	3.84	800.5	18.96
Glyptotendipes	1,515.8	28.50	51.1	1.21
Parachironomus	17.0	0.32	--	--
Polypedilum flavum	85.2	1.60	68.1	1.61
Polypedilum halterale grp.	17.0	0.32	--	--
Stenochironomus	17.0	0.32	--	--
Rheotanytarsus	51.1	0.96	--	--
Elimia	27.7	0.52	--	--
Amnicola	1.1	0.02	--	--
Pleurocera	2.1	0.04	--	--
Menetus	--	--	119.2	2.82
Dreissena polymorpha	1.1	0.02	1.1	0.03
TOTAL BENTHOS	5,319.2	100.00	4,221.8	100.00
TOTAL TAXA	32		25	
EPT TAXA	5		3	

TABLE F-45. COMPARISON OF HESTER-DENDY MACROINVERTEBRATE DENSITIES AMONG 2001-2008, 2011, AND 2013 FOR EACH TAXON COLLECTED IN DRESDEN POOL FOR COLONIZATION PERIODS THAT ENDED IN AUGUST OR EARLY SEPTEMBER.

TAXA	2001		2002		2003		2004		2005	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Hydra	--	--	--	--	--	--	--	--	4.3	0.05
Turbellaria	--	--	7.5	0.05	5.7	0.07	30.3	1.19	--	--
Dugesia	--	--	--	--	--	--	--	--	--	--
Urnatella gracilis	--	--	--	--	--	--	--	--	0.5	0.01
Plumatella	1.1	0.01	0.5	0.00	1.4	0.02	--	--	0.5	0.01
Pectinatella magnifica	--	--	0.5	0.00	--	--	--	--	--	--
Naidinae	--	--	--	--	11.4	0.13	--	--	--	--
Chaetogaster diastrophus	--	--	--	--	--	--	--	--	--	--
Dero	5.3	0.05	255.5	1.75	194.4	2.30	8.5	0.33	6.9	0.08
Dero lodeni	--	--	--	--	0.7	0.01	--	--	--	--
Dero nivea	5.9	0.05	332.1	2.27	22.7	0.27	6.4	0.25	6.9	0.08
Dero furcata	--	--	--	--	--	--	--	--	--	--
Nais	--	--	17.0	0.12	--	--	319.3	12.51	--	--
Nais communis	1.6	0.01	--	--	62.4	0.74	--	--	--	--
Nais pardalis	--	--	306.6	2.10	1.4	0.02	--	--	--	--
Nais variabilis	64.9	0.58	1,141.1	7.81	14.9	0.18	--	--	--	--
Pristina	2.7	0.02	--	--	--	--	--	--	--	--
Pristina aequiseta	0.5	0.00	391.7	2.68	354.1	4.18	21.3	0.83	--	--
Pristina leidyi	2.1	0.02	102.2	0.70	190.2	2.25	27.7	1.08	4.3	0.05
Pristina osborni	--	--	17.0	0.12	--	--	8.5	0.33	--	--
Pristina jenkinae	--	--	--	--	--	--	--	--	--	--
Slavina appendiculata	--	--	17.0	0.12	--	--	--	--	--	--
Stylaria lacustris	--	--	17.0	0.12	--	--	--	--	--	--
Stephensoniana trivandrana	--	--	42.6	0.29	--	--	--	--	--	--
Aulodrilus pigueti	--	--	102.2	0.70	--	--	--	--	--	--
Branchiura sowerbyi	--	--	--	--	--	--	2.1	0.08	--	--
Ilyodrilus templetoni	--	--	34.1	0.23	--	--	--	--	--	--
Limnodrilus hoffmeisteri	--	--	25.5	0.17	--	--	--	--	--	--
Limnodrilus maumeensis	--	--	17.0	0.12	--	--	--	--	--	--
Quistadrilus multisetosus	--	--	--	--	--	--	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	493.9	3.38	12.1	0.14	--	--	2.7	0.03
Imm. tub. w/hair & pectinate chaetae	--	--	17.0	0.12	11.4	0.13	4.3	0.17	--	--
Helobdella papillata	--	--	--	--	--	--	--	--	--	--
Helobdella stagnalis	--	--	--	--	--	--	--	--	--	--
Placobdella	--	--	0.5	0.00	--	--	--	--	--	--
Caecidotea	--	--	--	--	--	--	0.5	0.02	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	2.1	0.02	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	2.1	0.01	81.6	0.96	49.0	1.92	64.9	0.76
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--
Orconectes	--	--	--	--	--	--	--	--	--	--
Pseudocloeon longipalpus	--	--	--	--	--	--	--	--	1.1	0.01
Callibaetis	--	--	--	--	--	--	0.5	0.02	--	--
Stenacron	0.5	0.00	0.5	0.00	10.6	0.13	7.5	0.29	--	--
Maccaffertium integrum	--	--	0.5	0.00	24.8	0.29	1.6	0.06	--	--
Stenonema femoratum	--	--	--	--	--	--	0.5	0.02	--	--
Maccaffertium pulchellum	--	--	--	--	--	--	--	--	--	--
Maccaffertium terminatum	--	--	--	--	--	--	10.1	0.40	--	--
Maccaffertium exiguum	--	--	--	--	0.7	0.01	--	--	--	--
Tricorythodes	--	--	2.1	0.01	--	--	2.1	0.08	1.1	0.01
Caenis	--	--	1.1	0.01	--	--	--	--	--	--
Argia	1.1	0.01	1.6	0.01	--	--	3.2	0.13	1.6	0.02
Enallagma	0.5	0.00	1.6	0.01	--	--	--	--	0.5	0.01
Cyrnellus fraternus	2,208.3	19.75	2,082.7	14.26	4,946.3	58.43	672.8	26.36	1,279.0	14.92
Hydropsychidae	--	--	34.1	0.23	--	--	--	--	--	--
Cheumatopsyche	--	--	--	--	17.0	0.20	3.2	0.13	--	--
Hydropsyche orris	7.5	0.07	--	--	11.4	0.13	19.7	0.77	--	--
Hydropsyche simulans	--	--	--	--	2.1	0.03	1.1	0.04	--	--
Hydropsyche bidens	--	--	--	--	--	--	--	--	--	--
Potamyia flava	--	--	1.1	0.01	--	--	--	--	--	--
Hydroptila	12.2	0.11	52.7	0.36	0.7	0.01	26.1	1.02	0.5	0.01
Orthotrichia	--	--	0.5	0.00	--	--	--	--	--	--
Ceraclea maculata	1.1	0.01	--	--	--	--	--	--	0.5	0.01
Dineutus	1.1	0.01	1.6	0.01	1.4	0.02	1.1	0.04	0.5	0.01
Dubiraphia	--	--	0.5	0.00	--	--	1.1	0.04	--	--
Macronychus	--	--	1.6	0.01	--	--	--	--	--	--
Macronychus glabratus	--	--	--	--	4.3	0.05	2.7	0.10	0.5	0.01
Stenelmis	--	--	13.3	0.09	--	--	--	--	--	--
Stenelmis humerosa/sinuata grp.	--	--	5.3	0.04	5.7	0.07	1.1	0.04	1.1	0.01
Stenelmis crenata grp.	--	--	--	--	0.7	0.01	2.1	0.08	--	--
Chironomidae	749.4	6.70	34.1	0.23	--	--	--	--	--	--
Procladius (Holotanypus)	--	--	17.0	0.12	--	--	--	--	--	--
Ablabesmyia	25.5	0.23	--	--	--	--	--	--	--	--

TABLE F-45 (cont.)

TAXA	2001 #/m2	2001 %	2002 #/m2	2002 %	2003 #/m2	2003 %	2004 #/m2	2004 %	2005 #/m2	2005 %
Ablabesmyia janta	--	--	--	--	--	--	67.1	2.63	123.5	1.44
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--
Ablabesmyia rhamphe grp.	221.9	1.98	232.1	1.59	185.2	2.19	--	--	--	--
Labrundinia	--	--	--	--	11.4	0.13	0.5	0.02	--	--
Thienemannimyia grp.	--	--	--	--	--	--	6.4	0.25	--	--
Thienemannimyia	72.4	0.65	--	--	--	--	--	--	--	--
Thienemanniella	--	--	--	--	--	--	1.1	0.04	--	--
Cricotopus	--	--	--	--	--	--	1.1	0.04	--	--
Cricotopus bicinctus grp.	8.5	0.08	--	--	5.7	0.07	17.6	0.69	--	--
Cricotopus sylvestris grp.	--	--	--	--	5.7	0.07	4.8	0.19	--	--
Eukiefferiella	4.3	0.04	--	--	--	--	--	--	--	--
Nanocladius	--	--	--	--	--	--	--	--	--	--
Nanocladius distinctus	473.2	4.23	170.3	1.17	624.5	7.38	266.1	10.43	25.5	0.30
Nanocladius crassicornus/rectinervis	--	--	34.1	0.23	--	--	--	--	--	--
Rheocricotopus robacki	--	--	--	--	--	--	2.1	0.08	--	--
Chironomini	--	--	--	--	11.4	0.13	--	--	--	--
Chironomus	8.5	0.08	--	--	5.7	0.07	--	--	--	--
Cryptochironomus	8.5	0.08	--	--	--	--	--	--	--	--
Dicrotendipes	--	--	664.2	4.55	22.7	0.27	21.3	0.83	--	--
Dicrotendipes modestus	--	--	--	--	--	--	--	--	133.6	1.56
Dicrotendipes neomodestus	51.1	0.46	59.6	0.41	54.6	0.65	179.4	7.03	61.2	0.71
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	2,086.4	18.66	1,865.0	12.77	897.0	10.60	560.5	21.96	1,149.6	13.41
Glyptotendipes	5,105.3	45.66	5,722.7	39.17	456.3	5.39	31.4	1.23	5,494.3	64.11
Microchironomus	--	--	--	--	--	--	--	--	--	--
Parachironomus	--	--	--	--	--	--	--	--	--	--
Phaenopsectra obediens grp.	--	--	--	--	--	--	--	--	12.8	0.15
Polypedilum fallax grp.	--	--	--	--	22.7	0.27	--	--	--	--
Polypedilum flavum	4.3	0.04	127.7	0.87	22.7	0.27	38.9	1.52	2.7	0.03
Polypedilum halterale grp.	--	--	17.0	0.12	--	--	6.4	0.25	--	--
Polypedilum illinoense	4.3	0.04	--	--	5.7	0.07	13.8	0.54	--	--
Polypedilum scalaenum grp.	--	--	59.6	0.41	7.8	0.09	--	--	2.7	0.03
Pseudochironomus	17.0	0.15	--	--	22.7	0.27	7.5	0.29	--	--
Stenochironomus	17.0	0.15	17.0	0.12	56.8	0.67	46.8	1.84	4.3	0.05
Stictochironomus	--	--	--	--	--	--	--	--	8.5	0.10
Tribelos fuscicorne	--	--	8.5	0.06	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	--	--	--	--	--	--	--	--
Paratanytarsus	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	--	--	34.1	0.23	--	--	--	--	--	--
Tanytarsus glabrescens grp.	--	--	--	--	--	--	--	--	--	--
Tanytarsus sepp	4.3	0.04	--	--	--	--	--	--	--	--
Xenochironomus xenolabis	--	--	--	--	--	--	--	--	168.7	1.97
Hemerodromia	--	--	--	--	--	--	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	--	--	--	--	--	--	--	--
Amnicola	--	--	--	--	--	--	--	--	--	--
Pleuroceridae	--	--	0.5	0.00	--	--	--	--	--	--
Pleurocera	--	--	--	--	--	--	35.1	1.38	3.2	0.04
Fossaria	--	--	--	--	--	--	--	--	1.1	0.01
Physa	--	--	--	--	--	--	--	--	--	--
Helisoma	--	--	--	--	11.4	0.13	--	--	--	--
Menetus	--	--	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	1.1	0.01	4.3	0.03	44.0	0.52	10.1	0.40	1.1	0.01
Dreissena polymorpha	--	--	--	--	0.7	0.01	--	--	--	--
TOTAL BENTHOS	11,181.4	100.00	14,609.5	100.00	8,464.8	100.00	2,552.1	100.00	8,570.2	100.00
TOTAL TAXA	31		48		42		45		32	
EPT TAXA	5		8		8		11		5	

TABLE F-45 (cont.)

TAXA	2006		2007		2008		2011		2013	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Hydra	--	--	--	--	--	--	--	--	--	--
Turbellaria	3.7	0.08	8.5	0.53	1.1	0.02	162.9	0.81	662.6	13.89
Dugesia	--	--	105.0	6.52	--	--	--	--	--	--
Urnatella gracilis	--	--	11.4	0.70	--	--	--	--	--	--
Plumatella	0.5	0.01	1.4	0.09	--	--	--	--	--	--
Pectinatella magnifica	--	--	--	--	--	--	--	--	--	--
Naidinae	--	--	--	--	--	--	8.5	0.04	--	--
Chaetogaster diastrophus	--	--	2.8	0.18	--	--	--	--	--	--
Dero	14.9	0.31	25.5	1.59	4.3	0.08	--	--	14.9	0.31
Dero lodeni	--	--	--	--	--	--	--	--	--	--
Dero nivea	17.0	0.36	45.4	2.82	11.7	0.23	851.6	4.25	--	--
Dero furcata	--	--	--	--	--	--	93.7	0.47	--	--
Nais	--	--	--	--	--	--	--	--	--	--
Nais communis	--	--	2.8	0.18	--	--	--	--	4.3	0.09
Nais pardalis	--	--	2.8	0.18	--	--	--	--	12.8	0.27
Nais variabilis	564.2	11.86	51.1	3.17	31.9	0.64	1,047.5	5.23	15.4	0.32
Pristina	--	--	--	--	--	--	--	--	--	--
Pristina aequiseta	8.5	0.18	5.7	0.35	--	--	17.0	0.09	2.1	0.04
Pristina leidyi	25.5	0.54	25.5	1.59	--	--	136.3	0.68	4.3	0.09
Pristina osborni	10.6	0.22	5.7	0.35	--	--	17.0	0.09	--	--
Pristina jenkinae	--	--	--	--	--	--	8.5	0.04	--	--
Slavina appendiculata	--	--	--	--	--	--	8.5	0.04	--	--
Stylaria lacustris	--	--	--	--	--	--	8.5	0.04	257.6	5.40
Stephensoniana trivandrana	--	--	--	--	--	--	--	--	--	--
Aulodrilus pigueti	--	--	--	--	17.0	0.34	--	--	--	--
Branchiura sowerbyi	--	--	2.8	0.18	--	--	--	--	--	--
Ilyodrilus templetoni	--	--	--	--	--	--	--	--	--	--
Limnodrilus hoffmeisteri	--	--	--	--	--	--	--	--	--	--
Limnodrilus maumeensis	--	--	--	--	--	--	--	--	--	--
Quistadrilus multisetosus	--	--	2.8	0.18	--	--	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	--	--	--	--	--	--	--	--
Imm. tub. w/hair & pectinate chaetae	--	--	--	--	--	--	--	--	--	--
Helobdella papillata	--	--	0.7	0.04	--	--	--	--	--	--
Helobdella stagnalis	--	--	--	--	--	--	0.5	0.00	--	--
Placobdella	--	--	--	--	--	--	--	--	--	--
Caecidotea	--	--	--	--	--	--	--	--	--	--
Hyalella azteca	3.2	0.07	7.8	0.48	--	--	30.9	0.15	60.1	1.26
Gammarus	--	--	4.3	0.26	149.0	2.97	26.6	0.13	82.5	1.73
Gammarus fasciatus	--	--	--	--	--	--	--	--	--	--
Apocorophium lacustre	0.5	0.01	1.4	0.09	--	--	--	--	--	--
Orconectes	--	--	--	--	0.5	0.01	--	--	--	--
Pseudocloeon longipalpus	--	--	--	--	--	--	--	--	--	--
Callibaetis	--	--	--	--	--	--	--	--	--	--
Stenacron	4.3	0.09	26.3	1.63	2.1	0.04	12.8	0.06	9.6	0.20
Maccaffertium integrum	--	--	--	--	1.1	0.02	1.1	0.01	--	--
Stenonema femoratum	--	--	--	--	--	--	--	--	--	--
Maccaffertium pulchellum	--	--	--	--	1.1	0.02	--	--	--	--
Maccaffertium terminatum	--	--	0.7	0.04	--	--	--	--	--	--
Maccaffertium exiguum	--	--	--	--	--	--	--	--	--	--
Tricorythodes	11.7	0.25	5.7	0.35	17.0	0.34	--	--	--	--
Caenis	1.1	0.02	0.7	0.04	--	--	0.5	0.00	--	--
Argia	1.6	0.03	24.1	1.50	0.5	0.01	1.1	0.01	1.1	0.02
Enallagma	--	--	2.8	0.18	--	--	13.8	0.07	--	--
Cyrnellus fraternus	1,593.5	33.49	505.3	31.35	1,987.4	39.66	1,855.9	9.27	560.5	11.75
Hydropsychidae	--	--	--	--	--	--	--	--	4.3	0.09
Cheumatopsyche	--	--	1.4	0.09	10.1	0.20	--	--	4.3	0.09
Hydropsyche orris	5.3	0.11	2.8	0.18	31.4	0.63	--	--	0.5	0.01
Hydropsyche simulans	--	--	--	--	--	--	--	--	--	--
Hydropsyche bidens	--	--	2.1	0.13	--	--	--	--	--	--
Potamyia flava	--	--	--	--	--	--	--	--	2.1	0.04
Hydroptila	13.8	0.29	--	--	4.8	0.10	--	--	--	--
Orthotrichia	--	--	--	--	--	--	--	--	--	--
Ceraclea maculata	0.5	0.01	--	--	--	--	--	--	--	--
Dineutus	2.1	0.04	--	--	--	--	10.1	0.05	--	--
Dubiraphia	--	--	--	--	--	--	--	--	--	--
Macronychus	--	--	--	--	--	--	--	--	--	--
Macronychus glabratus	1.1	0.02	7.8	0.48	8.5	0.17	1.6	0.01	--	--
Stenelmis	--	--	--	--	1.1	0.02	14.4	0.07	2.1	0.04
Stenelmis humerosa/sinuata grp.	--	--	--	--	--	--	--	--	--	--
Stenelmis crenata grp.	4.8	0.10	6.4	0.40	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--	--	--
Procladius (Holotanypus)	--	--	--	--	--	--	--	--	--	--
Ablabesmyia	--	--	--	--	--	--	--	--	--	--
Ablabesmyia janta	87.3	1.83	49.0	3.04	31.9	0.64	--	--	--	--

TABLE F-45 (cont.)

TAXA	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %	2013 #/m2	2013 %
Ablabesmyia mallochi	--	--	2.1	0.13	--	--	63.9	0.32	17.0	0.36
Ablabesmyia rhamphe grp.	--	--	--	--	--	--	--	--	--	--
Labrundinia	--	--	--	--	--	--	--	--	--	--
Thienemannimyia grp.	--	--	8.5	0.53	--	--	--	--	--	--
Thienemannimyia	--	--	--	--	--	--	--	--	--	--
Thienemanniella	--	--	--	--	--	--	--	--	--	--
Cricotopus	--	--	--	--	--	--	--	--	--	--
Cricotopus bicinctus grp.	34.1	0.72	--	--	29.8	0.59	--	--	51.1	1.07
Cricotopus sylvestris grp.	25.5	0.54	--	--	--	--	8.5	0.04	221.4	4.64
Eukiefferiella	--	--	--	--	--	--	--	--	--	--
Nanocladius	--	--	--	--	--	--	--	--	161.8	3.39
Nanocladius distinctus	183.1	3.85	93.7	5.81	387.5	7.73	72.4	0.36	--	--
Nanocladius crassicornus/rectinervis	--	--	--	--	--	--	--	--	--	--
Rheocricotopus robacki	--	--	2.1	0.13	--	--	--	--	--	--
Chironomini	--	--	--	--	--	--	--	--	--	--
Chironomus	--	--	2.8	0.18	--	--	--	--	--	--
Cryptochironomus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes	--	--	--	--	--	--	--	--	--	--
Dicrotendipes modestus	21.3	0.45	9.9	0.62	6.4	0.13	651.5	3.25	540.8	11.34
Dicrotendipes neomodestus	210.8	4.43	2.8	0.18	291.7	5.82	268.3	1.34	195.9	4.11
Dicrotendipes fumidus	--	--	15.6	0.97	20.2	0.40	191.6	0.96	93.7	1.96
Dicrotendipes lucifer	--	--	147.6	9.16	290.1	5.79	221.4	1.11	298.1	6.25
Dicrotendipes simpsoni	938.9	19.73	85.9	5.33	556.2	11.10	1,179.5	5.89	502.4	10.53
Glyptotendipes	785.6	16.51	137.0	8.50	987.3	19.70	13,016.5	65.00	783.5	16.42
Microchironomus	--	--	4.3	0.26	--	--	--	--	--	--
Parachironomus	17.0	0.36	--	--	--	--	--	--	8.5	0.18
Phaenopsectra obediens grp.	--	--	--	--	--	--	--	--	--	--
Polypedilum fallax grp.	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	17.0	0.36	35.5	2.20	14.9	0.30	8.5	0.04	76.6	1.61
Polypedilum halterale grp.	4.3	0.09	2.8	0.18	--	--	8.5	0.04	8.5	0.18
Polypedilum illinoense	8.5	0.18	6.4	0.40	4.3	0.08	4.3	0.02	--	--
Polypedilum scalaenum grp.	4.3	0.09	2.8	0.18	--	--	--	--	--	--
Pseudochironomus	10.6	0.22	--	--	17.0	0.34	--	--	--	--
Stenochironomus	102.2	2.15	41.2	2.55	78.8	1.57	--	--	8.5	0.18
Stictochironomus	--	--	--	--	--	--	--	--	--	--
Tribelos fuscicorne	--	--	--	--	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	5.7	0.35	--	--	--	--	--	--
Paratanytarsus	--	--	2.1	0.13	--	--	--	--	--	--
Rheotanytarsus	10.6	0.22	8.5	0.53	2.1	0.04	--	--	25.5	0.54
Tanytarsus glabrescens grp.	--	--	4.3	0.26	--	--	--	--	--	--
Tanytarsus sepp	--	--	--	--	--	--	--	--	--	--
Xenochironomus xenolabis	--	--	--	--	4.3	0.08	--	--	--	--
Hemerodromia	0.5	0.01	--	--	--	--	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	13.8	0.29
Hydrobiidae	--	--	--	--	--	--	1.1	0.01	--	--
Amnicola	--	--	--	--	--	--	--	--	0.5	0.01
Pleuroceridae	--	--	--	--	--	--	--	--	--	--
Pleurocera	4.8	0.10	39.7	2.47	3.7	0.07	--	--	1.1	0.02
Fossaria	--	--	--	--	--	--	--	--	--	--
Physa	0.5	0.01	--	--	--	--	--	--	--	--
Helisoma	--	--	--	--	--	--	--	--	--	--
Menetus	--	--	--	--	--	--	--	--	59.6	1.25
Ferrissia	0.5	0.01	--	--	--	--	--	--	--	--
Corbicula fluminea	2.7	0.06	0.7	0.04	3.2	0.06	1.1	0.01	--	--
Dreissena polymorpha	--	--	0.7	0.04	0.5	0.01	--	--	1.1	0.02
TOTAL BENTHOS	4,758.8	100.00	1,611.6	100.00	5,010.5	100.00	20,026.2	100.00	4,770.5	100.00
TOTAL TAXA	41		54		35		36		37	
EPT TAXA	7		8		8		4		5	

NOTE: ALL SAMPLERS LOST FROM LOCATION 502 IN 2003 AND FROM LOCATION 510 IN 2007.

TABLE F-46. COMPARISON OF HESTER-DENDY MACROINVERTEBRATE DENSITIES AMONG 2001-2008, 2011, AND 2013 FOR EACH TAXON COLLECTED UPSTREAM OF DRESDEN STATION (IN DRESDEN POOL) FOR COLONIZATION PERIODS THAT ENDED IN AUGUST OR EARLY SEPTEMBER.

TAXA	2001		2002		2003		2004		2005	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Hydra	--	--	--	--	--	--	--	--	8.5	0.06
Turbellaria	--	--	11.7	0.06	--	--	60.7	3.44	--	--
Dugesia	--	--	--	--	--	--	--	--	--	--
Urnatella gracilis	--	--	--	--	--	--	--	--	1.1	0.01
Plumatella	1.1	0.01	1.1	0.01	--	--	--	--	1.1	0.01
Pectinatella magnifica	--	--	1.1	0.01	--	--	--	--	--	--
Chaetogaster diastrophus	--	--	--	--	--	--	--	--	--	--
Dero	--	--	204.4	1.04	391.7	2.70	--	--	8.5	0.06
Dero nivea	2.1	0.01	306.6	1.55	--	--	--	--	8.5	0.06
Dero furcata	--	--	--	--	--	--	--	--	--	--
Nais	--	--	34.1	0.17	--	--	--	--	--	--
Nais communis	3.2	0.02	--	--	34.1	0.23	--	--	--	--
Nais pardalis	--	--	579.1	2.94	--	--	--	--	--	--
Nais variabilis	51.1	0.29	2,248.2	11.40	--	--	--	--	--	--
Pristina	5.3	0.03	--	--	--	--	--	--	--	--
Pristina aequiseta	--	--	749.4	3.80	990.0	6.82	--	--	--	--
Pristina leidyi	--	--	102.2	0.52	376.8	2.59	--	--	--	--
Pristina osborni	--	--	--	--	--	--	--	--	--	--
Slavina appendiculata	--	--	34.1	0.17	--	--	--	--	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	--	--
Stephensoniana trivandrana	--	--	68.1	0.35	--	--	--	--	--	--
Aulodrilus pigueti	--	--	--	--	--	--	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	34.1	0.17	--	--	--	--	--	--
Helobdella papillata	--	--	--	--	--	--	--	--	--	--
Helobdella stagnalis	--	--	--	--	--	--	--	--	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	1.1	0.01	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	2.1	0.01	8.5	0.06	42.6	2.41	73.4	0.51
Pseudocloeon longipalpus	--	--	--	--	--	--	--	--	2.1	0.01
Callibaetis	--	--	--	--	--	--	1.1	0.06	--	--
Stenacron	--	--	1.1	0.01	--	--	12.8	0.72	--	--
Maccaffertium integrum	--	--	1.1	0.01	--	--	3.2	0.18	--	--
Maccaffertium pulchellum	--	--	--	--	--	--	--	--	--	--
Maccaffertium terminatum	--	--	--	--	--	--	20.2	1.15	--	--
Tricorythodes	--	--	1.1	0.01	--	--	4.3	0.24	2.1	0.01
Caenis	--	--	--	--	--	--	--	--	--	--
Argia	1.1	0.01	2.1	0.01	--	--	4.3	0.24	--	--
Enallagma	1.1	0.01	--	--	--	--	--	--	1.1	0.01
Cyrnellus fraternus	2,790.0	16.10	3,398.9	17.23	9,412.2	64.80	390.7	22.15	2,000.2	13.96
Hydropsychidae	--	--	68.1	0.35	--	--	--	--	--	--
Cheumatopsyche	--	--	--	--	6.4	0.04	6.4	0.36	--	--
Hydropsyche orris	--	--	--	--	27.7	0.19	25.5	1.45	--	--
Hydropsyche simulans	--	--	--	--	2.1	0.01	1.1	0.06	--	--
Hydropsyche bidens	--	--	--	--	--	--	--	--	--	--
Potamyia flava	--	--	2.1	0.01	--	--	--	--	--	--
Hydroptila	23.4	0.14	1.1	0.01	--	--	36.2	2.05	--	--
Ceraclea maculata	2.1	0.01	--	--	--	--	--	--	1.1	0.01
Dineutus	1.1	0.01	2.1	0.01	--	--	2.1	0.12	1.1	0.01
Dubiraphia	--	--	1.1	0.01	--	--	2.1	0.12	--	--
Macronychus	--	--	3.2	0.02	--	--	--	--	--	--
Macronychus glabratus	--	--	--	--	--	--	5.3	0.30	1.1	0.01
Stenelmis	--	--	5.3	0.03	--	--	--	--	--	--
Stenelmis humerosa/sinuata grp.	--	--	--	--	2.1	0.01	--	--	--	--
Stenelmis crenata grp.	--	--	--	--	--	--	4.3	0.24	--	--
Chironomidae	1,362.5	7.86	34.1	0.17	--	--	--	--	--	--
Ablabesmyia	51.1	0.29	--	--	--	--	--	--	--	--
Ablabesmyia janta	--	--	--	--	--	--	44.7	2.53	170.3	1.19
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--
Ablabesmyia rhamphe grp.	--	--	72.4	0.37	306.6	2.11	--	--	--	--
Labrundinia	--	--	--	--	34.1	0.23	1.1	0.06	--	--
Thienemannimyia grp.	--	--	--	--	--	--	--	--	--	--
Thienemannimyia	144.8	0.84	--	--	--	--	--	--	--	--
Thienemanniella	--	--	--	--	--	--	2.1	0.12	--	--
Cricotopus	--	--	--	--	--	--	2.1	0.12	--	--
Cricotopus bicinctus grp.	17.0	0.10	--	--	--	--	26.6	1.51	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	9.6	0.54	--	--
Eukiefferiella	8.5	0.05	--	--	--	--	--	--	--	--
Nanocladius	--	--	--	--	--	--	--	--	--	--
Nanocladius distinctus	502.4	2.90	306.6	1.55	1,124.1	7.74	323.6	18.35	34.1	0.24
Nanocladius crassicornus/rectinervis	--	--	68.1	0.35	--	--	--	--	--	--
Rheocricotopus robacki	--	--	--	--	--	--	--	--	--	--
Chironomini	--	--	--	--	34.1	0.23	--	--	--	--

TABLE F-46 (cont.)

TAXA	2001 #/m2	2001 %	2002 #/m2	2002 %	2003 #/m2	2003 %	2004 #/m2	2004 %	2005 #/m2	2005 %
Dicrotendipes	--	--	681.3	3.45	--	--	42.6	2.41	--	--
Dicrotendipes modestus	--	--	--	--	--	--	--	--	127.7	0.89
Dicrotendipes neomodestus	--	--	68.1	0.35	--	--	111.8	6.34	--	--
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	2,435.5	14.05	1,907.6	9.67	1,090.0	7.50	358.7	20.34	817.5	5.70
Glyptotendipes	9,904.0	57.14	8,345.6	42.31	476.9	3.28	28.7	1.63	10,730.0	74.88
Microchironomus	--	--	--	--	--	--	--	--	--	--
Parachironomus	--	--	--	--	--	--	--	--	--	--
Polypedilum fallax grp.	--	--	--	--	68.1	0.47	--	--	--	--
Polypedilum flavum	8.5	0.05	238.4	1.21	68.1	0.47	43.6	2.47	--	--
Polypedilum halterale grp.	--	--	--	--	--	--	--	--	--	--
Polypedilum illinoense	8.5	0.05	--	--	--	--	27.7	1.57	--	--
Polypedilum scalaenum grp.	--	--	34.1	0.17	--	--	--	--	--	--
Pseudochironomus	--	--	--	--	--	--	2.1	0.12	--	--
Stenochironomus	--	--	34.1	0.17	68.1	0.47	42.6	2.41	8.5	0.06
Paratanytarsus	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	--	--	68.1	0.35	--	--	--	--	--	--
Tanytarsus glabrescens grp.	--	--	--	--	--	--	--	--	--	--
Tanytarsus sepp	8.5	0.05	--	--	--	--	--	--	--	--
Xenochironomus xenolabis	--	--	--	--	--	--	--	--	323.6	2.26
Elimia	--	--	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	--	--	--	--	--	--	--	--
Amnicola	--	--	--	--	--	--	--	--	--	--
Pleuroceridae	--	--	1.1	0.01	--	--	--	--	--	--
Pleurocera	--	--	--	--	--	--	70.3	3.98	6.4	0.04
Fossaria	--	--	--	--	--	--	--	--	2.1	0.01
Physa	--	--	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	--	--	2.1	0.01	2.1	0.01	3.2	0.18	--	--
Dreissena polymorpha	--	--	--	--	2.1	0.01	--	--	--	--
TOTAL BENTHOS	17,334.1	100.00	19,724.9	100.00	14,526.0	100.00	1,763.9	100.00	14,330.1	100.00
TOTAL TAXA	22		36		20		33		21	
EPT TAXA	3		6		4		10		4	
MEAN NUMBER OF TAXA	16		24		--		22		14	

TABLE F-46 (cont.)

TAXA	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %	2013 #/m2	2013 %
Hydra	--	--	--	--	--	--	--	--	--	--
Turbellaria	7.5	0.11	12.8	0.76	2.1	0.03	308.7	0.96	1,044.3	19.63
Dugesia	--	--	157.5	9.35	--	--	--	--	--	--
Urnatella gracilis	--	--	17.0	1.01	--	--	--	--	--	--
Plumatella	1.1	0.02	2.1	0.13	--	--	--	--	--	--
Pectinatella magnifica	--	--	--	--	--	--	--	--	--	--
Chaetogaster diastrophus	--	--	4.3	0.25	--	--	--	--	--	--
Dero	8.5	0.12	34.1	2.02	--	--	--	--	12.8	0.24
Dero nivea	--	--	42.6	2.53	8.5	0.11	153.3	0.48	--	--
Dero furcata	--	--	--	--	--	--	187.3	0.58	--	--
Nais	--	--	--	--	--	--	--	--	--	--
Nais communis	--	--	--	--	--	--	--	--	--	--
Nais pardalis	--	--	4.3	0.25	--	--	--	--	--	--
Nais variabilis	493.9	7.02	76.6	4.55	51.1	0.67	493.9	1.53	5.3	0.10
Pristina	--	--	--	--	--	--	--	--	--	--
Pristina aequiseta	17.0	0.24	8.5	0.51	--	--	--	--	4.3	0.08
Pristina leidyi	51.1	0.73	21.3	1.26	--	--	--	--	--	--
Pristina osborni	8.5	0.12	8.5	0.51	--	--	--	--	--	--
Slavina appendiculata	--	--	--	--	--	--	--	--	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	4.3	0.08
Stephensoniana trivandrana	--	--	--	--	--	--	--	--	--	--
Aulodrilus pigueti	--	--	--	--	34.1	0.44	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	--	--	--	--	--	--	--	--
Helobdella papillata	--	--	1.1	0.06	--	--	--	--	--	--
Helobdella stagnalis	--	--	--	--	--	--	1.1	0.00	--	--
Hyalella azteca	3.2	0.05	10.6	0.63	--	--	--	--	1.1	0.02
Gammarus	--	--	6.4	0.38	1.1	0.01	34.1	0.11	9.6	0.18
Gammarus fasciatus	--	--	--	--	--	--	--	--	--	--
Pseudocloeon longipalpus	--	--	--	--	--	--	--	--	--	--
Callibaetis	--	--	--	--	--	--	--	--	--	--
Stenacron	8.5	0.12	39.4	2.34	4.3	0.06	23.4	0.07	18.1	0.34
Maccaffertium integrum	--	--	--	--	--	--	1.1	0.00	--	--
Maccaffertium pulchellum	--	--	--	--	2.1	0.03	--	--	--	--
Maccaffertium terminatum	--	--	--	--	--	--	--	--	--	--
Tricorythodes	10.6	0.15	6.4	0.38	34.1	0.44	--	--	--	--
Caenis	2.1	0.03	--	--	--	--	1.1	0.00	--	--
Argia	3.2	0.05	33.0	1.96	1.1	0.01	2.1	0.01	1.1	0.02
Enallagma	--	--	2.1	0.13	--	--	10.6	0.03	--	--
Cyrnellus fraternus	2,743.2	38.97	446.0	26.47	2,667.6	34.82	2,060.8	6.40	540.8	10.17
Hydropsychidae	--	--	--	--	--	--	--	--	--	--
Cheumatopsyche	--	--	2.1	0.13	20.2	0.26	--	--	8.5	0.16
Hydropsyche orris	10.6	0.15	4.3	0.25	62.8	0.82	--	--	1.1	0.02
Hydropsyche simulans	--	--	--	--	--	--	--	--	--	--
Hydropsyche bidens	--	--	3.2	0.19	--	--	--	--	--	--
Potamyia flava	--	--	--	--	--	--	--	--	4.3	0.08
Hydroptila	17.0	0.24	--	--	9.6	0.13	--	--	--	--
Ceraclea maculata	1.1	0.02	--	--	--	--	--	--	--	--
Dineutus	3.2	0.05	--	--	--	--	--	--	--	--
Dubiraphia	--	--	--	--	--	--	--	--	--	--
Macronychus	--	--	--	--	--	--	--	--	--	--
Macronychus glabratus	1.1	0.02	11.7	0.69	8.5	0.11	--	--	--	--
Stenelmis	--	--	--	--	--	--	27.7	0.09	4.3	0.08
Stenelmis humerosa/sinuata grp.	--	--	--	--	--	--	--	--	--	--
Stenelmis crenata grp.	8.5	0.12	7.5	0.44	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--	--	--
Ablabesmyia	--	--	--	--	--	--	--	--	--	--
Ablabesmyia janta	51.1	0.73	25.5	1.52	34.1	0.44	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	68.1	0.21	--	--
Ablabesmyia rhamphe grp.	--	--	--	--	--	--	--	--	--	--
Labrundinia	--	--	--	--	--	--	--	--	--	--
Thienemannimyia grp.	--	--	8.5	0.51	--	--	--	--	--	--
Thienemannimyia	--	--	--	--	--	--	--	--	--	--
Thienemanniella	--	--	--	--	--	--	--	--	--	--
Cricotopus	--	--	--	--	--	--	--	--	--	--
Cricotopus bicinctus grp.	59.6	0.85	--	--	59.6	0.78	--	--	102.2	1.92
Cricotopus sylvestris grp.	51.1	0.73	--	--	--	--	--	--	425.8	8.00
Eukiefferiella	--	--	--	--	--	--	--	--	--	--
Nanocladius	--	--	--	--	--	--	--	--	272.5	5.12
Nanocladius distinctus	315.1	4.48	140.5	8.34	666.4	8.70	34.1	0.11	--	--
Nanocladius crassicornus/rectinervis	--	--	--	--	--	--	--	--	--	--
Rheocricotopus robacki	--	--	3.2	0.19	--	--	--	--	--	--
Chironomini	--	--	--	--	--	--	--	--	--	--
Dicrotendipes	--	--	--	--	--	--	--	--	--	--
Dicrotendipes modestus	34.1	0.48	4.3	0.25	8.5	0.11	749.4	2.33	374.7	7.04

TABLE F-46 (cont.)

TAXA	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %	2013 #/m2	2013 %
Dicrotendipes neomodestus	255.5	3.63	4.3	0.25	476.9	6.22	374.7	1.16	204.4	3.84
Dicrotendipes fumidus	--	--	6.4	0.38	25.5	0.33	--	--	68.1	1.28
Dicrotendipes lucifer	--	--	112.8	6.70	480.1	6.27	238.4	0.74	272.5	5.12
Dicrotendipes simpsoni	1,073.0	15.24	72.4	4.30	886.7	11.57	1,413.6	4.39	204.4	3.84
Glyptotendipes	1,473.2	20.93	154.4	9.16	1,904.4	24.86	25,990.5	80.73	1,515.8	28.50
Microchironomus	--	--	6.4	0.38	--	--	--	--	--	--
Parachironomus	34.1	0.48	--	--	--	--	--	--	17.0	0.32
Polypedilum fallax grp.	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	34.1	0.48	53.2	3.16	25.5	0.33	17.0	0.05	85.2	1.60
Polypedilum halterale grp.	--	--	--	--	--	--	--	--	17.0	0.32
Polypedilum illinoense	17.0	0.24	9.6	0.57	--	--	--	--	--	--
Polypedilum scalaenum grp.	--	--	4.3	0.25	--	--	--	--	--	--
Pseudochironomus	17.0	0.24	--	--	34.1	0.44	--	--	--	--
Stenochironomus	195.9	2.78	31.9	1.90	136.3	1.78	--	--	17.0	0.32
Paratanytarsus	--	--	3.2	0.19	--	--	--	--	--	--
Rheotanytarsus	17.0	0.24	12.8	0.76	--	--	--	--	51.1	0.96
Tanytarsus glabrescens grp.	--	--	6.4	0.38	--	--	--	--	--	--
Tanytarsus sepp	--	--	--	--	--	--	--	--	--	--
Xenochironomus xenolabis	--	--	--	--	8.5	0.11	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	27.7	0.52
Hydrobiidae	--	--	--	--	--	--	2.1	0.01	--	--
Amnicola	--	--	--	--	--	--	--	--	1.1	0.02
Pleuroceridae	--	--	--	--	--	--	--	--	--	--
Pleurocera	9.6	0.14	59.6	3.54	7.5	0.10	--	--	2.1	0.04
Fossaria	--	--	--	--	--	--	--	--	--	--
Physa	1.1	0.02	--	--	--	--	--	--	--	--
Ferrissia	1.1	0.02	--	--	--	--	--	--	--	--
Corbicula fluminea	--	--	1.1	0.06	--	--	--	--	--	--
Dreissena polymorpha	--	--	1.1	0.06	--	--	--	--	1.1	0.02
TOTAL BENTHOS	7,039.4	100.00	1,685.1	100.00	7,661.1	100.00	32,193.3	100.00	5,319.2	100.00
TOTAL TAXA	36		44		28		22		32	
EPT TAXA	7		6		7		4		5	
MEAN NUMBER OF TAXA	21		30		19		14		20	

NOTE: 2003 DATA FROM ONLY LOCATION 501A; ALL SAMPLERS LOST FROM LOCATION 502.

TABLE F-47. COMPARISON OF HESTER-DENDY MACROINVERTEBRATE DENSITIES AMONG 2001-2008, 2011, AND 2013 FOR EACH TAXON COLLECTED DOWNSTREAM OF DRESDEN STATION (IN DRESDEN POOL) FOR COLONIZATION PERIODS THAT ENDED IN AUGUST OR EARLY SEPTEMBER.

TAXA	2001		2002		2003		2004		2005	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	3.2	0.03	8.5	0.16	--	--	--	--
Plumatella	1.1	0.02	--	--	2.1	0.04	--	--	--	--
Naidinae	--	--	--	--	17.0	0.31	--	--	--	--
Dero	10.6	0.21	306.6	3.23	95.8	1.76	17.0	0.51	5.3	0.19
Dero lodeni	--	--	--	--	1.1	0.02	--	--	--	--
Dero nivea	9.6	0.19	357.7	3.77	34.1	0.63	12.8	0.38	5.3	0.19
Nais	--	--	--	--	--	--	638.7	19.12	--	--
Nais communis	--	--	--	--	76.6	1.41	--	--	--	--
Nais pardalis	--	--	34.1	0.36	2.1	0.04	--	--	--	--
Nais variabilis	78.8	1.57	34.1	0.36	22.4	0.41	--	--	--	--
Pristina aequiseta	1.1	0.02	34.1	0.36	36.2	0.67	42.6	1.27	--	--
Pristina leidyi	4.3	0.08	102.2	1.08	96.9	1.78	55.4	1.66	8.5	0.30
Pristina osborni	--	--	34.1	0.36	--	--	17.0	0.51	--	--
Pristina jenkinae	--	--	--	--	--	--	--	--	--	--
Slavina appendiculata	--	--	--	--	--	--	--	--	--	--
Stylaria lacustris	--	--	34.1	0.36	--	--	--	--	--	--
Stephensoniana trivandrana	--	--	17.0	0.18	--	--	--	--	--	--
Aulodrilus pigueti	--	--	204.4	2.15	--	--	--	--	--	--
Branchiura sowerbyi	--	--	--	--	--	--	4.3	0.13	--	--
Ilyodrilus templetoni	--	--	68.1	0.72	--	--	--	--	--	--
Limnodrilus hoffmeisteri	--	--	51.1	0.54	--	--	--	--	--	--
Limnodrilus maumeensis	--	--	34.1	0.36	--	--	--	--	--	--
Quistadrilus multisetosus	--	--	--	--	--	--	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	953.8	10.05	18.1	0.33	--	--	5.3	0.19
Imm. tub. w/hair & pectinate chaetae	--	--	34.1	0.36	17.0	0.31	8.5	0.25	--	--
Placobdella	--	--	1.1	0.01	--	--	--	--	--	--
Caecidotea	--	--	--	--	--	--	1.1	0.03	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	3.2	0.06	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	2.1	0.02	118.2	2.17	55.4	1.66	56.4	2.01
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--
Orconectes	--	--	--	--	--	--	--	--	--	--
Stenacron	1.1	0.02	--	--	16.0	0.29	2.1	0.06	--	--
Maccaffertium integrum	--	--	--	--	37.3	0.69	--	--	--	--
Stenonema femoratum	--	--	--	--	--	--	1.1	0.03	--	--
Maccaffertium terminatum	--	--	--	--	--	--	--	--	--	--
Maccaffertium exiguum	--	--	--	--	1.1	0.02	--	--	--	--
Tricorythodes	--	--	3.2	0.03	--	--	--	--	--	--
Caenis	--	--	2.1	0.02	--	--	--	--	--	--
Argia	1.1	0.02	1.1	0.01	--	--	2.1	0.06	3.2	0.11
Enallagma	--	--	3.2	0.03	--	--	--	--	--	--
Cyrnellus fraternus	1,626.5	32.35	766.4	8.07	2,713.4	49.93	954.8	28.59	557.8	19.85
Hydropsychidae	--	--	--	--	--	--	--	--	--	--
Cheumatopsyche	--	--	--	--	22.4	0.41	--	--	--	--
Hydropsyche orris	14.9	0.30	--	--	3.2	0.06	13.8	0.41	--	--
Hydropsyche simulans	--	--	--	--	2.1	0.04	1.1	0.03	--	--
Hydroptila	1.1	0.02	104.3	1.10	1.1	0.02	16.0	0.48	1.1	0.04
Orthotrichia	--	--	1.1	0.01	--	--	--	--	--	--
Dineutus	1.1	0.02	1.1	0.01	2.1	0.04	--	--	--	--
Macronychus glabratus	--	--	--	--	6.4	0.12	--	--	--	--
Stenelmis	--	--	21.3	0.22	--	--	--	--	--	--
Stenelmis humerosa/sinuata grp.	--	--	10.6	0.11	7.5	0.14	2.1	0.06	2.1	0.08
Stenelmis crenata grp.	--	--	--	--	1.1	0.02	--	--	--	--
Chironomidae	136.3	2.71	34.1	0.36	--	--	--	--	--	--
Procladius (Holotanypus)	--	--	34.1	0.36	--	--	--	--	--	--
Ablabesmyia janta	--	--	--	--	--	--	89.4	2.68	76.6	2.73
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--
Ablabesmyia rhamphe grp.	443.9	8.83	391.7	4.13	124.5	2.29	--	--	--	--
Thienemannimyia grp.	--	--	--	--	--	--	12.8	0.38	--	--
Cricotopus bicinctus grp.	--	--	--	--	8.5	0.16	8.5	0.25	--	--
Cricotopus sylvestris grp.	--	--	--	--	8.5	0.16	--	--	--	--
Nanocladius	--	--	--	--	--	--	--	--	--	--
Nanocladius distinctus	443.9	8.83	34.1	0.36	374.7	6.90	208.6	6.25	17.0	0.61
Rheocricotopus robacki	--	--	--	--	--	--	4.3	0.13	--	--
Chironomus	17.0	0.34	--	--	8.5	0.16	--	--	--	--
Cryptochironomus	17.0	0.34	--	--	--	--	--	--	--	--
Dicrotendipes	--	--	647.2	6.82	34.1	0.63	--	--	--	--
Dicrotendipes modestus	--	--	--	--	--	--	--	--	139.4	4.96
Dicrotendipes neomodestus	102.2	2.03	51.1	0.54	82.0	1.51	247.0	7.39	122.4	4.36
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	1,737.2	34.55	1,822.4	19.19	800.5	14.73	762.2	22.82	1,481.8	52.73

TABLE F-47 (cont.)

TAXA	2001 #/m2	2001 %	2002 #/m2	2002 %	2003 #/m2	2003 %	2004 #/m2	2004 %	2005 #/m2	2005 %
Glyptotendipes	306.6	6.10	3,099.8	32.65	446.0	8.21	34.1	1.02	258.7	9.20
Phaenopsectra obediens grp.	--	--	--	--	--	--	--	--	25.5	0.91
Polypedilum flavum	--	--	17.0	0.18	--	--	34.1	1.02	5.3	0.19
Polypedilum halterale grp.	--	--	34.1	0.36	--	--	12.8	0.38	--	--
Polypedilum illinoense	--	--	--	--	8.5	0.16	--	--	--	--
Polypedilum scalaenum grp.	--	--	85.2	0.90	11.7	0.22	--	--	5.3	0.19
Pseudochironomus	34.1	0.68	--	--	34.1	0.63	12.8	0.38	--	--
Stenochironomus	34.1	0.68	--	--	51.1	0.94	51.1	1.53	--	--
Stictochironomus	--	--	--	--	--	--	--	--	17.0	0.61
Tribelos fuscicorne	--	--	17.0	0.18	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	--	--	--	--	--	--	--	--	--	--
Xenochironomus xenolabis	--	--	--	--	--	--	--	--	13.8	0.49
Hemerodromia	--	--	--	--	--	--	--	--	--	--
Helisoma	--	--	--	--	17.0	0.31	--	--	--	--
Menetus	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	2.1	0.04	6.4	0.07	64.9	1.19	17.0	0.51	2.1	0.08
Dreissena polymorpha	--	--	--	--	--	--	--	--	--	--
TOTAL BENTHOS	5,028.6	100.00	9,494.2	100.00	5,434.2	100.00	3,340.4	100.00	2,810.2	100.00
TOTAL TAXA	22		36		38		29		20	
EPT TAXA	4		5		8		6		2	
MEAN NUMBER OF TAXA	16		23		27		22		15	

TABLE F-47 (cont.)

TAXA	2006		2007		2008		2011		2013	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	--	--	--	--	17.0	0.22	281.0	6.66
Plumatella	--	--	--	--	--	--	--	--	--	--
Naidinae	--	--	--	--	--	--	17.0	0.22	--	--
Dero	21.3	0.86	8.5	0.58	8.5	0.36	--	--	17.0	0.40
Dero lodeni	--	--	--	--	--	--	--	--	--	--
Dero nivea	34.1	1.37	51.1	3.49	14.9	0.63	1,549.9	19.72	--	--
Nais	--	--	--	--	--	--	--	--	--	--
Nais communis	--	--	8.5	0.58	--	--	--	--	8.5	0.20
Nais pardalis	--	--	--	--	--	--	--	--	25.5	0.61
Nais variabilis	634.4	25.60	--	--	12.8	0.54	1,601.0	20.37	25.5	0.61
Pristina aequiseta	--	--	--	--	--	--	34.1	0.43	--	--
Pristina leidyi	--	--	34.1	2.33	--	--	272.5	3.47	8.5	0.20
Pristina osborni	12.8	0.52	--	--	--	--	34.1	0.43	--	--
Pristina jenkinae	--	--	--	--	--	--	17.0	0.22	--	--
Slavina appendiculata	--	--	--	--	--	--	17.0	0.22	--	--
Stylaria lacustris	--	--	--	--	--	--	17.0	0.22	511.0	12.10
Stephensoniana trivandrana	--	--	--	--	--	--	--	--	--	--
Aulodrilus pigueti	--	--	--	--	--	--	--	--	--	--
Branchiura sowerbyi	--	--	8.5	0.58	--	--	--	--	--	--
Ilyodrilus templetoni	--	--	--	--	--	--	--	--	--	--
Limnodrilus hoffmeisteri	--	--	--	--	--	--	--	--	--	--
Limnodrilus maumeensis	--	--	--	--	--	--	--	--	--	--
Quistadrilus multisetosus	--	--	8.5	0.58	--	--	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	--	--	--	--	--	--	--	--
Imm. tub. w/hair & pectinate chaetae	--	--	--	--	--	--	--	--	--	--
Placobdella	--	--	--	--	--	--	--	--	--	--
Caecidotea	--	--	--	--	--	--	--	--	--	--
Hyalella azteca	3.2	0.13	2.1	0.15	--	--	61.7	0.79	119.2	2.82
Gammarus	--	--	--	--	297.0	12.58	19.2	0.24	155.4	3.68
Gammarus fasciatus	--	--	--	--	--	--	--	--	--	--
Apocorophium lacustre	1.1	0.04	4.3	0.29	--	--	--	--	--	--
Orconectes	--	--	--	--	1.1	0.05	--	--	--	--
Stenacron	--	--	--	--	--	--	2.1	0.03	1.1	0.03
Maccaffertium integrum	--	--	--	--	2.1	0.09	1.1	0.01	--	--
Stenonema femoratum	--	--	--	--	--	--	--	--	--	--
Maccaffertium terminatum	--	--	2.1	0.15	--	--	--	--	--	--
Maccaffertium exiguum	--	--	--	--	--	--	--	--	--	--
Tricorythodes	12.8	0.52	4.3	0.29	--	--	--	--	--	--
Caenis	--	--	2.1	0.15	--	--	--	--	--	--
Argia	--	--	6.4	0.44	--	--	--	--	1.1	0.03
Enallagma	--	--	4.3	0.29	--	--	17.0	0.22	--	--
Cyrnellus fraternus	443.9	17.91	623.8	42.59	1,307.2	55.39	1,651.0	21.01	580.1	13.74
Hydropsychidae	--	--	--	--	--	--	--	--	8.5	0.20
Cheumatopsyche	--	--	--	--	--	--	--	--	--	--
Hydropsyche orris	--	--	--	--	--	--	--	--	--	--
Hydropsyche simulans	--	--	--	--	--	--	--	--	--	--
Hydroptila	10.6	0.43	--	--	--	--	--	--	--	--
Orthotrichia	--	--	--	--	--	--	--	--	--	--
Dineutus	1.1	0.04	--	--	--	--	20.2	0.26	--	--
Macronychus glabratus	1.1	0.04	--	--	8.5	0.36	3.2	0.04	--	--
Stenelmis	--	--	--	--	2.1	0.09	1.1	0.01	--	--
Stenelmis humerosa/sinuata grp.	--	--	--	--	--	--	--	--	--	--
Stenelmis crenata grp.	1.1	0.04	4.3	0.29	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--	--	--
Procladius (Holotanypus)	--	--	--	--	--	--	--	--	--	--
Ablabesmyia janta	123.5	4.98	95.8	6.54	29.8	1.26	--	--	--	--
Ablabesmyia mallochi	--	--	6.4	0.44	--	--	59.6	0.76	34.1	0.81
Ablabesmyia rhamphe grp.	--	--	--	--	--	--	--	--	--	--
Thienemannimyia grp.	--	--	8.5	0.58	--	--	--	--	--	--
Cricotopus bicinctus grp.	8.5	0.34	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	17.0	0.22	17.0	0.40
Nanocladius	--	--	--	--	--	--	--	--	51.1	1.21
Nanocladius distinctus	51.1	2.06	--	--	108.6	4.60	110.7	1.41	--	--
Rheocricotopus robacki	--	--	--	--	--	--	--	--	--	--
Chironomus	--	--	8.5	0.58	--	--	--	--	--	--
Cryptochironomus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes	--	--	--	--	--	--	--	--	--	--
Dicrotendipes modestus	8.5	0.34	21.3	1.45	4.3	0.18	553.5	7.04	706.8	16.74
Dicrotendipes neomodestus	166.1	6.70	--	--	106.4	4.51	161.8	2.06	187.3	4.44
Dicrotendipes fumidus	--	--	34.1	2.33	14.9	0.63	383.2	4.88	119.2	2.82
Dicrotendipes lucifer	--	--	217.2	14.83	100.1	4.24	204.4	2.60	323.6	7.67
Dicrotendipes simpsoni	804.8	32.47	112.8	7.70	225.7	9.56	945.3	12.03	800.5	18.96
Glyptotendipes	97.9	3.95	102.2	6.98	70.3	2.98	42.6	0.54	51.1	1.21
Phaenopsectra obediens grp.	--	--	--	--	--	--	--	--	--	--

TABLE F-47 (cont.)

TAXA	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %	2013 #/m2	2013 %
Polypedilum flavum	--	--	--	--	4.3	0.18	--	--	68.1	1.61
Polypedilum halterale grp.	8.5	0.34	8.5	0.58	--	--	17.0	0.22	--	--
Polypedilum illinoense	--	--	--	--	8.5	0.36	8.5	0.11	--	--
Polypedilum scalaenum grp.	8.5	0.34	--	--	--	--	--	--	--	--
Pseudochironomus	4.3	0.17	--	--	--	--	--	--	--	--
Stenochironomus	8.5	0.34	59.6	4.07	21.3	0.90	--	--	--	--
Stictochironomus	--	--	--	--	--	--	--	--	--	--
Tribelos fuscicorne	--	--	--	--	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	17.0	1.16	--	--	--	--	--	--
Rheotanytarsus	4.3	0.17	--	--	4.3	0.18	--	--	--	--
Xenochironomus xenolabis	--	--	--	--	--	--	--	--	--	--
Hemerodromia	1.1	0.04	--	--	--	--	--	--	--	--
Helisoma	--	--	--	--	--	--	--	--	--	--
Menetus	--	--	--	--	--	--	--	--	119.2	2.82
Corbicula fluminea	5.3	0.21	--	--	6.4	0.27	2.1	0.03	--	--
Dreissena polymorpha	--	--	--	--	1.1	0.05	--	--	1.1	0.03
TOTAL BENTHOS	2,478.1	100.00	1,464.7	100.00	2,360.0	100.00	7,859.1	100.00	4,221.8	100.00
TOTAL TAXA	26		26		22		30		25	
EPT TAXA	3		4		2		3		3	
MEAN NUMBER OF TAXA	16		--		16		21		19	

NOTE: 2007 DATA FROM ONLY LOCATION 509; ALL SAMPLERS LOST FROM LOCATION 510.

Table F-48. Results of Interyear Statistical Comparisons for Hester-Dendy Macroinvertebrate Data Collected in Dresden Pool During Colonization Periods that Ended in August or Early September 2001-2008, 2011, and 2013.

Parameter	2001	2002	2003[a]	2004	2005	2006	2007[a]	2008	2011	2013	Significant Difference[b]	F Value	P Value
Density-All Taxa[c]	11,181.4 AB	14,609.5 A	8,464.8 AB	2,552.1 AB	8,570.2 AB	4,758.8 AB	1,611.6 B	5,010.5 AB	20,026.2 A	4,770.5 AB[d]	Yes	2.91	0.01
Density-Oligochaeta[e]	83.0 AB	3,329.7 A	875.7 AB	398.1 AB	20.8 B	640.8 AB	173.2 AB	64.9 AB	2,197.1 AB	311.4 AB[d]	Yes	2.80	0.02
Density-Chironomidae[c]	8,861.9 AB	9,063.0 A	2,418.5 AB	1,272.6 AB	7,187.4 AB	2,461.1 AB	670.6 B	2,722.4 AB	15,694.8 AB	2,993.3 AB[d]	Yes	2.46	0.03
Density-Ephemeroptera[e]	0.5	4.3	36.2	22.4	2.1	17.0	33.4	21.3	14.4	9.6	No	0.78	0.64
Density-Trichoptera[c]	2,229.0 AB	2,171.0 AB	4,977.5 A	722.8 B	1,280.0 AB	1,613.2 AB	511.7 B	2,033.7 AB	1,855.9 AB	571.6 B[d]	Yes	2.85	0.02
Taxa Richness[c]	15.8 BC	23.5 AB	24.0 AB	22.3 ABC	13.8 C	18.5 ABC	28.7 A	17.5 BC	17.3 BC	19.8 ABC[d]	Yes	4.46	<0.01

(a) All samplers lost from Location 502 in 2003 and from Location 510 in 2007.
(b) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(c) Log transformed data used for statistical analyses because they are normally distributed.
(d) Results of Tukey's Studentized Range Test; values with the same letters are not significantly different (alpha=0.05).
(e) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.

TABLE F-49. PONAR MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED DOWNSTREAM OF DRESDEN LOCK AND DAM, AUGUST 2013.

TAXA	28AUG13	
	#/m2	%
Limnodrilus claparedianus	9.6	1.96
Limnodrilus hoffmeisteri	4.8	0.98
Imm. tub. w/bifid chaetae	4.8	0.98
Gammarus	14.4	2.94
Apocorophium lacustre	105.2	21.57
Gomphus	4.8	0.98
Cyrnellus fraternus	14.4	2.94
Cryptochironomus	23.9	4.90
Dicrotendipes modestus	19.1	3.92
Dicrotendipes neomodestus	4.8	0.98
Polypedilum halterale grp.	52.6	10.78
Tanytarsus	4.8	0.98
Elimia	76.5	15.69
Amnicola	9.6	1.96
Corbicula fluminea	114.8	23.53
Quadrula quadrula	4.8	0.98
Truncilla truncata	4.8	0.98
Dreissena polymorpha	14.4	2.94
TOTAL BENTHOS	487.9	100.00
TOTAL TAXA	17	
EPT TAXA	1	

TABLE F-50. COMPARISON OF PONAR MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED DOWNSTREAM OF DRESDEN LOCK AND DAM DURING AUGUST OF 2001-2004, 2006, 2008, 2011, 5013, AND SEPTEMBER OF 2005 AND 2007.

TAXA	2001		2002		2003		2004		2005		2006	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	--	--	--	--	--	--	--	--	4.8	0.52
Nematoda	--	--	--	--	--	--	--	--	4.8	0.68	--	--
Urnatella gracilis	--	--	--	--	--	--	--	--	--	--	--	--
Dero	--	--	--	--	4.8	1.16	--	--	--	--	--	--
Aulodrilus limnobius	--	--	--	--	--	--	--	--	9.6	1.36	4.8	0.52
Branchiura sowerbyi	12.0	3.82	47.8	11.49	28.7	6.98	62.2	21.31	19.1	2.72	71.8	7.85
Ilyodrilus templetoni	--	--	--	--	9.6	2.33	--	--	--	--	--	--
Limnodrilus cervix	14.4	4.58	--	--	--	--	--	--	4.8	0.68	14.4	1.57
Limnodrilus cervix (var)	2.4	0.76	14.4	3.45	9.6	2.33	9.6	3.28	--	--	--	--
Limnodrilus claparedianus	--	--	--	--	--	--	--	--	--	--	--	--
Limnodrilus hoffmeisteri	57.4	18.32	47.8	11.49	95.7	23.26	38.3	13.11	124.4	17.69	52.6	5.76
Limnodrilus maumeensis	28.7	9.16	19.1	4.60	28.7	6.98	23.9	8.20	4.8	0.68	14.4	1.57
Limnodrilus udekemianus	7.2	2.29	43.1	10.34	4.8	1.16	14.4	4.92	9.6	1.36	4.8	0.52
Imm. tub. w/bifid chaetae	102.9	32.82	90.9	21.84	129.2	31.40	57.4	19.67	81.3	11.56	90.9	9.95
Imm. tub. w/hair & pectinate chaetae	14.4	4.58	14.4	3.45	14.4	3.49	--	--	9.6	1.36	23.9	2.62
Actinobdella inequiannulata	--	--	--	--	--	--	--	--	--	--	14.4	1.57
Helobdella	--	--	--	--	--	--	--	--	--	--	--	--
Erpobdella microstoma	--	--	--	--	--	--	--	--	--	--	--	--
Gammarus	--	--	--	--	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	--	--	--	--	4.8	1.64	--	--	--	--
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--	258.3	28.27
Tricorythodes	--	--	--	--	--	--	--	--	28.7	4.08	4.8	0.52
Caenis	--	--	--	--	--	--	--	--	--	--	14.4	1.57
Anthopotamus myops grp.	--	--	--	--	--	--	--	--	--	--	9.6	1.05
Hexagenia limbata	--	--	--	--	4.8	1.16	--	--	--	--	--	--
Gomphus	--	--	--	--	--	--	--	--	--	--	--	--
Cyrnellus fraternus	--	--	--	--	4.8	1.16	--	--	--	--	9.6	1.05
Dubiraphia	2.4	0.76	--	--	--	--	4.8	1.64	--	--	--	--
Stenelmis	--	--	--	--	--	--	--	--	--	--	--	--
Stenelmis humerosa/sinuata grp.	--	--	--	--	--	--	--	--	9.6	1.36	--	--
Chironomidae	9.6	3.05	--	--	--	--	--	--	--	--	--	--
Tanypus	--	--	--	--	--	--	--	--	--	--	--	--
Procladius	--	--	--	--	--	--	--	--	--	--	--	--
Coelotanypus	--	--	--	--	4.8	1.16	--	--	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--	4.8	0.52
Ablabesmyia rhamphe grp.	2.4	0.76	--	--	--	--	--	--	--	--	--	--
Monodiamesa	--	--	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	--	--	--	--
Nanocladius distinctus	--	--	--	--	--	--	--	--	9.6	1.36	--	--
Rheocricotopus robacki	--	--	--	--	--	--	--	--	4.8	0.68	--	--
Chironomus	--	--	--	--	--	--	--	--	--	--	--	--
Cryptochironomus	16.7	5.34	23.9	5.75	14.4	3.49	9.6	3.28	52.6	7.48	14.4	1.57
Dicrotendipes modestus	--	--	--	--	--	--	--	--	--	--	--	--
Dicrotendipes neomodestus	--	--	--	--	--	--	--	--	--	--	4.8	0.52
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	--	--	--	--	--	--	4.8	0.68	--	--
Polypedilum halterale grp.	19.1	6.11	114.8	27.59	33.5	8.14	4.8	1.64	--	--	81.3	8.90
Polypedilum scalaenum grp.	7.2	2.29	--	--	--	--	--	--	205.7	29.25	--	--
Pseudochironomus	--	--	--	--	--	--	--	--	4.8	0.68	--	--
Tanytarsus	--	--	--	--	--	--	--	--	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	--	--	--	--
Amnicola	--	--	--	--	--	--	--	--	4.8	0.68	--	--
Pleurocera	--	--	--	--	--	--	--	--	4.8	0.68	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--	4.8	0.52
Corbicula fluminea	16.7	5.34	--	--	14.4	3.49	43.1	14.75	100.5	14.29	210.5	23.04
Musculium	--	--	--	--	--	--	9.6	3.28	--	--	--	--
Pisidium	--	--	--	--	--	--	4.8	1.64	--	--	--	--
Amblema plicata	--	--	--	--	4.8	1.16	--	--	4.8	0.68	--	--
Quadrula quadrula	--	--	--	--	--	--	4.8	1.64	--	--	--	--
Potamilus alatus	--	--	--	--	--	--	--	--	--	--	--	--
Truncilla truncata	--	--	--	--	--	--	--	--	--	--	--	--
Dreissena polymorpha	--	--	--	--	4.8	1.16	--	--	--	--	--	--
TOTAL BENTHOS	313.3	100.00	416.2	100.00	411.4	100.00	291.8	100.00	703.2	100.00	913.7	100.00
TOTAL TAXA	12		7		15		13		19		19	
EPT TAXA	0		0		2		0		1		4	

TABLE F-50 (cont.)

TAXA	2007		2008		2011		2013	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	--	--	--	--	--	--
Nematoda	--	--	--	--	--	--	--	--
Urnatella gracilis	14.4	1.89	--	--	--	--	--	--
Dero	--	--	--	--	--	--	--	--
Aulodrilus limnobius	--	--	--	--	--	--	--	--
Branchiura sowerbyi	57.4	7.55	57.4	11.76	76.5	4.71	--	--
Ilyodrilus templetoni	23.9	3.14	4.8	0.98	--	--	--	--
Limnodrilus cervix	19.1	2.52	47.8	9.80	191.4	11.76	--	--
Limnodrilus cervix (var)	--	--	--	--	--	--	--	--
Limnodrilus claparedianus	--	--	--	--	--	--	9.6	1.96
Limnodrilus hoffmeisteri	143.5	18.87	57.4	11.76	153.1	9.41	4.8	0.98
Limnodrilus maumeensis	--	--	4.8	0.98	--	--	--	--
Limnodrilus udekemianus	28.7	3.77	19.1	3.92	153.1	9.41	--	--
Imm. tub. w/bifid chaetae	47.8	6.29	153.1	31.37	--	--	4.8	0.98
Imm. tub. w/hair & pectinate chaetae	177.0	23.27	9.6	1.96	535.8	32.94	--	--
Actinobdella inequiannulata	--	--	--	--	--	--	--	--
Helobdella	--	--	4.8	0.98	--	--	--	--
Erpobdella microstoma	--	--	--	--	76.5	4.71	--	--
Gammarus	--	--	--	--	38.3	2.35	14.4	2.94
Gammarus fasciatus	--	--	--	--	--	--	--	--
Apocorophium lacustre	--	--	--	--	--	--	105.2	21.57
Tricorythodes	--	--	--	--	--	--	--	--
Caenis	--	--	--	--	--	--	--	--
Anthopotamus myops grp.	--	--	--	--	--	--	--	--
Hexagenia limbata	9.6	1.26	--	--	--	--	--	--
Gomphus	--	--	--	--	--	--	4.8	0.98
Cyrnellus fraternus	--	--	--	--	--	--	14.4	2.94
Dubiraphia	9.6	1.26	--	--	--	--	--	--
Stenelmis	--	--	4.8	0.98	--	--	--	--
Stenelmis humerosa/sinuata grp.	--	--	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--
Tanypus	4.8	0.63	--	--	--	--	--	--
Procladius	43.1	5.66	--	--	--	--	--	--
Coelotanypus	38.3	5.03	--	--	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	--	--
Ablabesmyia rhamphe grp.	--	--	--	--	--	--	--	--
Monodiamesa	--	--	9.6	1.96	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	38.3	2.35	--	--
Nanocladius distinctus	--	--	--	--	--	--	--	--
Rheocricotopus robacki	--	--	--	--	--	--	--	--
Chironomus	4.8	0.63	--	--	--	--	--	--
Cryptochironomus	--	--	43.1	8.82	38.3	2.35	23.9	4.90
Dicrotendipes modestus	--	--	--	--	--	--	19.1	3.92
Dicrotendipes neomodestus	4.8	0.63	--	--	--	--	4.8	0.98
Dicrotendipes lucifer	--	--	--	--	38.3	2.35	--	--
Polypedilum flavum	--	--	--	--	--	--	--	--
Polypedilum halterale grp.	33.5	4.40	33.5	6.86	114.8	7.06	52.6	10.78
Polypedilum scalaenum grp.	--	--	--	--	--	--	--	--
Pseudochironomus	--	--	--	--	--	--	--	--
Tanytarsus	--	--	--	--	--	--	4.8	0.98
Elimia	--	--	--	--	--	--	76.5	15.69
Amnicola	--	--	--	--	--	--	9.6	1.96
Pleurocera	95.7	12.58	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--
Corbicula fluminea	4.8	0.63	23.9	4.90	124.4	7.65	114.8	23.53
Musculium	--	--	--	--	--	--	--	--
Pisidium	--	--	--	--	38.3	2.35	--	--
Amblema plicata	--	--	4.8	0.98	4.8	0.29	--	--
Quadrula quadrula	--	--	9.6	1.96	--	--	4.8	0.98
Potamilus alatus	--	--	--	--	4.8	0.29	--	--
Truncilla truncata	--	--	--	--	--	--	4.8	0.98
Dreissena polymorpha	--	--	--	--	--	--	14.4	2.94
TOTAL BENTHOS	760.6	100.00	487.9	100.00	1,626.5	100.00	487.9	100.00
TOTAL TAXA	16		14		14		17	
EPT TAXA	1		0		0		1	

Table F-51. Results of Year vs. Year Statistical Comparisons for Ponar Macroinvertebrate Data Collected Downstream of Dresden Lock and Dam During August of 2001-2004, 2006, 2008, 2011, 2013, and September of 2005 and 2007.

Parameter	2001	2002	2003	2004	2005	2006	2007	2008	2011	2013	Significant Difference[a]	F Value	P Value
Density-All Taxa[b]	313.3 B	416.2 AB	411.4 AB	291.8 B	703.2 AB	913.7 AB	760.6 AB	487.9 AB	1,626.5 A	487.9 AB[c]	Yes	3.20	0.01
Density-Oligochaeta[d]	239.2 AB	277.5 AB	325.3 AB	205.7 AB	263.1 AB	277.5 AB	497.5 A	354.0 AB	1,109.8 A	19.1 B[c]	Yes	3.30	0.01
Density-Chironomidae[d]	55.0	138.7	52.6	14.4	282.2	105.2	129.2	86.1	229.6	105.2	No	1.23	0.31
Density-Ephemeroptera[d]	0 B	0 B	4.8 AB	0 B	28.7 AB	28.7 A	9.6 AB	0 B	0 B	0 B[c]	Yes	2.59	0.02
Taxa Richness	4.8	5.0	6.8	5.8	7.8	7.8	8.8	7.0	6.3	8.0	No	1.58	0.16

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Log transformed data used for statistical analyses because they are normally distributed.
(c) Results of Tukey's Studentized Range Test; values with the same letters are not significantly different (alpha=0.05).
(d) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.

TABLE F-52. HESTER-DENDY MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED DOWNSTREAM OF DRESDEN LOCK AND DAM, AUGUST 2013.

TAXA	28AUG13 #/m2	28AUG13 %
Nais pardalis	6.4	0.29
Nais variabilis	3.2	0.15
Stylaria lacustris	6.4	0.29
Hyalella azteca	74.5	3.39
Gammarus	35.1	1.60
Apocorophium lacustre	40.5	1.84
Stenacron	17.0	0.78
Maccaffertium integrum	20.2	0.92
Tricorythodes	9.6	0.44
Argia	1.1	0.05
Cyrnellus fraternus	429.0	19.53
Cheumatopsyche	6.4	0.29
Hydropsyche orris	3.2	0.15
Nanocladius	97.9	4.46
Dicrotendipes modestus	187.3	8.53
Dicrotendipes neomodestus	25.5	1.16
Dicrotendipes fumidus	25.5	1.16
Dicrotendipes lucifer	562.0	25.59
Dicrotendipes simpsoni	149.0	6.79
Polypedilum flavum	400.2	18.23
Stenochironomus	85.2	3.88
Rheotanytarsus	7.5	0.34
Dreissena polymorpha	3.2	0.15
TOTAL BENTHOS	2,196.0	100.00
TOTAL TAXA	23	
EPT TAXA	6	

TABLE F-53. COMPARISON OF HESTER-DENDY MACROINVERTEBRATE DENSITIES AMONG 2001-2008, 2011 and 2013 FOR EACH TAXON COLLECTED DOWNSTREAM OF DRESDEN LOCK AND DAM DURING COLONIZATION PERIODS THAT ENDED IN AUGUST OR EARLY SEPTEMBER.

TAXA	2001 #/m2	2001 %	2002 #/m2	2002 %	2003 #/m2	2003 %	2004 #/m2	2004 %	2005 #/m2	2005 %
Turbellaria	1.1	0.01	16.0	0.47	2.1	0.03	--	--	--	--
Urnatella gracilis	1.1	0.01	--	--	--	--	--	--	--	--
Plumatella	1.1	0.01	--	--	1.1	0.02	1.1	0.02	--	--
Aeolosoma	--	--	8.5	0.25	--	--	--	--	--	--
Naidinae	--	--	--	--	25.5	0.39	--	--	--	--
Chaetogaster diastrophus	--	--	--	--	--	--	--	--	--	--
Dero	1.1	0.01	8.5	0.25	1.1	0.02	--	--	4.3	0.09
Dero nivea	1.1	0.01	17.0	0.50	--	--	--	--	--	--
Nais	--	--	--	--	--	--	17.0	0.33	--	--
Nais pardalis	--	--	--	--	1.1	0.02	--	--	--	--
Nais variabilis	6.4	0.07	153.3	4.54	49.0	0.75	--	--	--	--
Pristina sima	--	--	17.0	0.50	--	--	--	--	--	--
Pristina	--	--	--	--	--	--	--	--	--	--
Pristina aequiseta	1.1	0.01	144.8	4.28	46.8	0.72	--	--	--	--
Pristina leidyi	1.1	0.01	93.7	2.77	17.0	0.26	--	--	--	--
Pristina osborni	--	--	--	--	--	--	--	--	--	--
Pristina jenkinae	--	--	--	--	--	--	--	--	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	--	--
Aulodrilus pigueti	--	--	--	--	--	--	--	--	--	--
Branchiura sowerbyi	--	--	8.5	0.25	--	--	--	--	--	--
Limnodrilus maumeensis	--	--	--	--	--	--	--	--	--	--
Limnodrilus udekemianus	--	--	--	--	--	--	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	8.5	0.25	--	--	--	--	--	--
Imm. tub. w/hair & pectinate chaetae	--	--	--	--	--	--	--	--	--	--
Actinobdella inequiannulata	--	--	--	--	--	--	--	--	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	1.1	0.01	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	1.1	0.03	29.8	0.46	8.5	0.17	1.1	0.02
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--
Orconectes	--	--	--	--	--	--	--	--	1.1	0.02
Isonychia	--	--	1.1	0.03	11.7	0.18	--	--	--	--
Baetis intercalaris	--	--	75.6	2.24	--	--	--	--	--	--
Pseudocloeon longipalpus	--	--	6.4	0.19	45.8	0.70	--	--	51.1	1.03
Stenacron	5.3	0.06	1.1	0.03	165.0	2.54	3.2	0.06	--	--
Maccaffertium	--	--	1.1	0.03	--	--	--	--	--	--
Maccaffertium integrum	3.2	0.03	13.8	0.41	87.3	1.34	11.7	0.23	--	--
Stenonema femoratum	--	--	--	--	--	--	--	--	--	--
Maccaffertium terminatum	5.3	0.06	--	--	23.4	0.36	9.6	0.19	--	--
Maccaffertium exiguum	--	--	19.2	0.57	145.8	2.24	--	--	--	--
Tricorythodes	139.4	1.47	13.8	0.41	23.4	0.36	16.0	0.31	8.5	0.17
Argia	--	--	2.1	0.06	--	--	--	--	--	--
Enallagma	--	--	1.1	0.03	--	--	--	--	--	--
Cyrnellus fraternus	996.4	10.53	437.5	12.95	607.8	9.35	190.5	3.74	685.5	13.84
Cheumatopsyche	1,083.6	11.45	28.7	0.85	468.4	7.21	1,366.8	26.82	85.2	1.72
Hydropsyche	--	--	36.2	1.07	--	--	--	--	--	--
Hydropsyche orris	1,099.6	11.62	208.6	6.18	749.4	11.53	802.6	15.75	761.1	15.37
Hydropsyche simulans	--	--	1.1	0.03	1.1	0.02	17.0	0.33	--	--
Hydropsyche aerata	--	--	--	--	--	--	--	--	--	--
Hydropsyche bidens	--	--	58.5	1.73	68.1	1.05	--	--	--	--
Potamyia flava	--	--	1.1	0.03	--	--	--	--	17.0	0.34
Hydroptila	68.1	0.72	8.5	0.25	91.5	1.41	2.1	0.04	17.0	0.34
Ceraclea maculata	--	--	--	--	2.1	0.03	--	--	2.1	0.04
Dineutus	--	--	--	--	2.1	0.03	--	--	--	--
Macronychus glabratus	--	--	--	--	--	--	--	--	--	--
Stenelmis	--	--	--	--	--	--	--	--	--	--
Stenelmis humerosa/sinuata grp.	1.1	0.01	--	--	1.1	0.02	--	--	--	--
Stenelmis crenata grp.	--	--	--	--	--	--	--	--	--	--
Chironomidae	170.3	1.80	59.6	1.76	--	--	1.1	0.02	--	--
Ablabesmyia janta	--	--	--	--	--	--	54.3	1.07	85.2	1.72
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--
Ablabesmyia rhamphe grp.	323.6	3.42	76.6	2.27	224.6	3.46	--	--	--	--
Thienemannimyia grp.	119.2	1.26	8.5	0.25	175.6	2.70	54.3	1.07	868.6	17.54
Thienemannimyia	68.1	0.72	--	--	--	--	--	--	--	--
Thienemanniella n. sp. 3	17.0	0.18	--	--	--	--	--	--	--	--
Thienemanniella similis	--	--	34.1	1.01	--	--	--	--	--	--
Thienemanniella lobapodema	--	--	--	--	--	--	--	--	--	--
Cricotopus bicinctus grp.	187.3	1.98	--	--	68.1	1.05	18.1	0.36	--	--
Cricotopus bicinctus	--	--	17.0	0.50	--	--	--	--	--	--
Nanocladius	--	--	17.0	0.50	--	--	--	--	--	--
Nanocladius distinctus	885.7	9.36	178.8	5.29	224.6	3.46	212.9	4.18	17.0	0.34
Nanocladius crassicornus/rectinervis	34.1	0.36	17.0	0.50	34.1	0.52	--	--	--	--
Dicrotendipes	--	--	153.3	4.54	--	--	--	--	--	--

TABLE F-53 (cont.)

TAXA	2001		2002		2003		2004		2005	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Dicrotendipes modestus	--	--	--	--	--	--	--	--	374.7	7.57
Dicrotendipes neomodestus	204.4	2.16	--	--	30.9	0.48	54.3	1.07	208.6	4.21
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	885.7	9.36	349.2	10.33	161.8	2.49	96.9	1.90	651.5	13.16
Glyptotendipes	204.4	2.16	85.2	2.52	156.5	2.41	18.1	0.36	298.1	6.02
Parachironomus	--	--	--	--	204.4	3.14	--	--	--	--
Polypedilum flavum	2,691.0	28.43	672.8	19.91	1,320.0	20.31	1,995.9	39.16	417.3	8.43
Polypedilum halterale grp.	--	--	--	--	--	--	17.0	0.33	--	--
Polypedilum illinoense	--	--	--	--	17.0	0.26	--	--	--	--
Polypedilum scalaenum grp.	34.1	0.36	8.5	0.25	17.0	0.26	--	--	8.5	0.17
Pseudochironomus	--	--	8.5	0.25	--	--	--	--	--	--
Stelechomyia perpulchra	--	--	--	--	22.4	0.34	--	--	--	--
Stenochironomus	102.2	1.08	221.4	6.55	218.2	3.36	108.6	2.13	157.5	3.18
Stictochironomus	--	--	--	--	--	--	--	--	102.2	2.06
Tribelos fuscicorne	--	--	8.5	0.25	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	119.2	1.26	68.1	2.02	260.8	4.01	18.1	0.36	--	--
Xenochironomus xenolabis	--	--	--	--	--	--	--	--	127.7	2.58
Ferrissia	--	--	1.1	0.03	684.5	10.53	--	--	--	--
Corbicula fluminea	1.1	0.01	--	--	10.6	0.16	1.1	0.02	1.1	0.02
Dreissena polymorpha	--	--	1.1	0.03	--	--	--	--	--	--
TOTAL BENTHOS	9,464.4	100.00	3,378.7	100.00	6,498.7	100.00	5,096.8	100.00	4,952.0	100.00
TOTAL TAXA	31		42		41		24		24	
EPT TAXA	8		15		14		9		8	
MEAN NUMBER OF TAXA	22		28		30		21		17	

TABLE F-53 (cont.)

TAXA	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %	2013 #/m2	2013 %
Turbellaria	--	--	--	--	--	--	17.0	0.14	--	--
Urnatella gracilis	--	--	--	--	--	--	--	--	--	--
Plumatella	1.1	0.02	--	--	--	--	--	--	--	--
Aeolosoma	--	--	--	--	--	--	--	--	--	--
Naidinae	--	--	--	--	--	--	--	--	--	--
Chaetogaster diastrophus	--	--	17.0	0.59	--	--	--	--	--	--
Dero	--	--	--	--	17.0	0.17	--	--	--	--
Dero nivea	--	--	34.1	1.19	--	--	--	--	--	--
Nais	--	--	--	--	--	--	--	--	--	--
Nais pardalis	--	--	--	--	--	--	--	--	6.4	0.29
Nais variabilis	--	--	68.1	2.37	--	--	630.2	5.25	3.2	0.15
Pristina sima	--	--	--	--	--	--	--	--	--	--
Pristina	--	--	17.0	0.59	51.1	0.50	--	--	--	--
Pristina aequiseta	--	--	85.2	2.96	--	--	--	--	--	--
Pristina leidyi	--	--	119.2	4.15	--	--	119.2	0.99	--	--
Pristina osborni	--	--	51.1	1.78	--	--	--	--	--	--
Pristina jenkinae	--	--	--	--	--	--	170.3	1.42	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	6.4	0.29
Aulodrilus pigueti	--	--	34.1	1.19	--	--	--	--	--	--
Branchiura sowerbyi	--	--	--	--	--	--	--	--	--	--
Limnodrilus maumeensis	--	--	--	--	17.0	0.17	--	--	--	--
Limnodrilus udekemianus	--	--	--	--	17.0	0.17	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	17.0	0.59	--	--	--	--	--	--
Imm. tub. w/hair & pectinate chaetae	--	--	--	--	34.1	0.33	--	--	--	--
Actinobdella inequiannulata	--	--	2.1	0.07	--	--	--	--	--	--
Hyalella azteca	10.6	0.15	23.4	0.81	--	--	51.1	0.43	74.5	3.39
Gammarus	--	--	106.4	3.70	--	--	121.4	1.01	35.1	1.60
Gammarus fasciatus	--	--	--	--	--	--	--	--	--	--
Apocorophium lacustre	4.3	0.06	6.4	0.22	--	--	2.1	0.02	40.5	1.84
Orconectes	--	--	--	--	--	--	--	--	--	--
Isonychia	--	--	--	--	--	--	--	--	--	--
Baetis intercalaris	--	--	--	--	--	--	--	--	--	--
Pseudocloeon longipalpus	--	--	--	--	--	--	--	--	--	--
Stenacron	71.3	1.04	53.2	1.85	--	--	36.2	0.30	17.0	0.78
Maccaffertium	--	--	--	--	--	--	--	--	--	--
Maccaffertium integrum	21.3	0.31	2.1	0.07	2.1	0.02	38.3	0.32	20.2	0.92
Stenonema femoratum	--	--	2.1	0.07	--	--	--	--	--	--
Maccaffertium terminatum	--	--	19.2	0.67	--	--	--	--	--	--
Maccaffertium exiguum	--	--	--	--	--	--	1.1	0.01	--	--
Tricorythodes	141.6	2.06	14.9	0.52	205.4	2.00	3.2	0.03	9.6	0.44
Argia	--	--	10.6	0.37	--	--	--	--	1.1	0.05
Enallagma	--	--	--	--	--	--	--	--	--	--
Cyrnellus fraternus	361.9	5.25	770.7	26.81	1,398.7	13.60	7,508.9	62.61	429.0	19.53
Cheumatopsyche	1,212.5	17.60	2.1	0.07	1,499.9	14.59	2.1	0.02	6.4	0.29
Hydropsyche	--	--	--	--	--	--	--	--	--	--
Hydropsyche orris	1,411.5	20.49	59.6	2.07	3,509.6	34.13	--	--	3.2	0.15
Hydropsyche simulans	--	--	--	--	--	--	--	--	--	--
Hydropsyche aerata	--	--	--	--	1.1	0.01	--	--	--	--
Hydropsyche bidens	--	--	--	--	--	--	--	--	--	--
Potamyia flava	--	--	--	--	17.0	0.17	--	--	--	--
Hydroptila	--	--	--	--	34.1	0.33	--	--	--	--
Ceraclea maculata	--	--	--	--	--	--	--	--	--	--
Dineutus	--	--	--	--	--	--	1.1	0.01	--	--
Macronychus glabratus	--	--	12.8	0.44	--	--	34.1	0.28	--	--
Stenelmis	--	--	--	--	--	--	3.2	0.03	--	--
Stenelmis humerosa/sinuata grp.	--	--	--	--	--	--	--	--	--	--
Stenelmis crenata grp.	--	--	2.1	0.07	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--	--	--
Ablabesmyia janta	89.4	1.30	49.0	1.70	323.6	3.15	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	51.1	0.43	--	--
Ablabesmyia rhamphe grp.	--	--	--	--	--	--	--	--	--	--
Thienemannimyia grp.	46.8	0.68	80.9	2.81	--	--	--	--	--	--
Thienemannimyia	--	--	--	--	--	--	--	--	--	--
Thienemanniella n. sp. 3	--	--	--	--	--	--	--	--	--	--
Thienemanniella similis	--	--	--	--	--	--	--	--	--	--
Thienemanniella lobapodema	--	--	--	--	--	--	17.0	0.14	--	--
Cricotopus bicinctus grp.	119.2	1.73	--	--	51.1	0.50	51.1	0.43	--	--
Cricotopus bicinctus	--	--	--	--	--	--	--	--	--	--
Nanocladius	--	--	--	--	--	--	--	--	97.9	4.46
Nanocladius distinctus	161.8	2.35	74.5	2.59	698.3	6.79	868.6	7.24	--	--
Nanocladius crassicornus/rectinervis	--	--	--	--	--	--	--	--	--	--
Dicrotendipes	--	--	--	--	--	--	--	--	--	--
Dicrotendipes modestus	8.5	0.12	--	--	--	--	647.2	5.40	187.3	8.53
Dicrotendipes neomodestus	93.7	1.36	--	--	34.1	0.33	34.1	0.28	25.5	1.16

TABLE F-53 (cont.)

TAXA	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %	2013 #/m2	2013 %
Dicrotendipes fumidus	--	--	49.0	1.70	--	--	136.3	1.14	25.5	1.16
Dicrotendipes lucifer	--	--	242.7	8.44	119.2	1.16	885.7	7.39	562.0	25.59
Dicrotendipes simpsoni	242.7	3.52	80.9	2.81	255.5	2.48	255.5	2.13	149.0	6.79
Glyptotendipes	42.6	0.62	80.9	2.81	153.3	1.49	34.1	0.28	--	--
Parachironomus	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	2,329.1	33.81	129.9	4.52	1,244.4	12.10	--	--	400.2	18.23
Polypedilum halterale grp.	--	--	--	--	--	--	--	--	--	--
Polypedilum illinoense	183.1	2.66	--	--	68.1	0.66	--	--	--	--
Polypedilum scalaenum grp.	--	--	--	--	--	--	--	--	--	--
Pseudochironomus	--	--	--	--	--	--	--	--	--	--
Stelechomyia perpulchra	--	--	--	--	--	--	--	--	--	--
Stenochironomus	161.8	2.35	161.8	5.63	408.8	3.98	255.5	2.13	85.2	3.88
Stictochironomus	--	--	--	--	--	--	--	--	--	--
Tribelos fuscicorne	--	--	--	--	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	97.9	3.41	--	--	--	--	--	--
Rheotanytarsus	174.6	2.53	291.7	10.15	119.2	1.16	17.0	0.14	7.5	0.34
Xenochironomus xenolabis	--	--	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	--	--	4.3	0.15	2.1	0.02	--	--	--	--
Dreissena polymorpha	--	--	--	--	--	--	--	--	3.2	0.15
TOTAL BENTHOS	6,889.4	100.00	2,874.1	100.00	10,281.9	100.00	11,992.5	100.00	2,196.0	100.00
TOTAL TAXA	21		36		25		28		23	
EPT TAXA	6		8		8		6		6	
MEAN NUMBER OF TAXA	17		--		19		21		18	

NOTE: ALL SAMPLERS LOST FROM LOCATION 512 IN 2007.

EXHIBITS

EXHIBIT A:

PHYSICOCHEMICAL MEASUREMENTS

EXHIBIT A. PHYSICOCHEMICAL MEASUREMENTS RECORDED AT EACH ELECTROFISHING LOCATION, 2013.

LOCATION	DATE	DEPTH	TEMP (C)	D.O. (ppm)	D.O. (% SAT)	SPEC COND (uS/cm)	SECCHI (cm)
501	17JUL	MID	32.4	9.8	137	946	69.0
	29AUG	MID	29.7	7.4	98	909	110.0
	26SEP	MID	23.1	9.2	110	774	151.0
502	18JUL	MID	31.2	12.4	168	623	47.0
	29AUG	MID	29.8	11.9	158	814	52.0
	26SEP	MID	22.6	7.4	87	715	107.0
503	18JUL	MID	30.1	7.9	105	634	48.0
	29AUG	MID	27.9	8.7	111	650	75.0
	26SEP	MID	19.4	10.6	116	632	76.0
506	18JUL	MID	33.0	7.8	110	796	90.0
	29AUG	MID	31.5	8.6	115	926	77.0
	26SEP	MID	27.4	8.5	107	725	100.0
507A	18JUL	MID	33.0	7.4	105	731	47.0
	29AUG	MID	31.3	8.2	108	830	99.0
	26SEP	MID	26.3	8.4	108	724	68.0
510	18JUL	MID	32.8	8.9	124	792	96.0
	29AUG	MID	31.7	6.9	93	835	72.0
	26SEP	SUR	26.3	8.0	100	817	99.0
		1.0	26.3	8.2	102		
512	19JUL	MID	32.2	7.9	109	794	57.0
	30AUG	MID	30.0	7.5	98	847	74.0
	27SEP	MID	23.8	8.1	96	880	92.0
515	19JUL	MID	32.6	7.7	107	786	56.0
	30AUG	MID	30.4	7.2	96	843	85.0
	27SEP	MID	24.8	7.9	95	733	97.0

EXHIBIT B:

CATCH-PER-EFFORT AND RELATIVE ABUNDANCE SUMMARIES

EXHIBIT B

TABLE B-1. TOTAL NUMBER, CATCH-PER-EFFORT (#/km), AND RELATIVE ABUNDANCE OF NATIVE FISH COLLECTED BY ELECTROFISHING AT EACH LOCATION NEAR THE DRESDEN STATION, JULY-SEPTEMBER 2013.

	LOCATION											
	501			502			503			506		
SPECIES	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
GIZZARD SHAD	10	6.7	7.75	136	90.7	38.31	209	139.3	31.91	5	5.4	4.10
NORTHERN PIKE	--	--	--	--	--	--	1	0.7	0.15	--	--	--
CENTRAL STONEROLLER	--	--	--	--	--	--	1	0.7	0.15	--	--	--
GOLDEN SHINER	--	--	--	--	--	--	1	0.7	0.15	--	--	--
PALLID SHINER	--	--	--	4	2.7	1.13	25	16.7	3.82	--	--	--
EMERALD SHINER	--	--	--	2	1.3	0.56	6	4.0	0.92	9	9.7	7.38
GHOST SHINER	--	--	--	--	--	--	1	0.7	0.15	--	--	--
STRIPED SHINER	--	--	--	1	0.7	0.28	7	4.7	1.07	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	3	3.2	2.46
SPOTFIN SHINER	--	--	--	44	29.3	12.39	59	39.3	9.01	30	32.3	24.59
BLUNTNOSE MINNOW	--	--	--	13	8.7	3.66	58	38.7	8.85	6	6.5	4.92
BULLHEAD MINNOW	--	--	--	20	13.3	5.63	33	22.0	5.04	--	--	--
RIVER CARPSUCKER	1	0.7	0.78	1	0.7	0.28	--	--	--	--	--	--
QUILLBACK	--	--	--	3	2.0	0.85	--	--	--	--	--	--
SMALLMOUTH BUFFALO	1	0.7	0.78	--	--	--	--	--	--	--	--	--
SPOTTED SUCKER	--	--	--	--	--	--	1	0.7	0.15	--	--	--
SILVER REDHORSE	--	--	--	1	0.7	0.28	1	0.7	0.15	--	--	--
GOLDEN REDHORSE	3	2.0	2.33	--	--	--	4	2.7	0.61	--	--	--
SHORTHEAD REDHORSE	--	--	--	9	6.0	2.54	17	11.3	2.60	--	--	--
CHANNEL CATFISH	2	1.3	1.55	2	1.3	0.56	1	0.7	0.15	3	3.2	2.46
FLATHEAD CATFISH	2	1.3	1.55	2	1.3	0.56	--	--	--	3	3.2	2.46
BLACKSTRIPE TOPMINNOW	1	0.7	0.78	--	--	--	1	0.7	0.15	--	--	--
BROOK SILVERSIDE	--	--	--	9	6.0	2.54	80	53.3	12.21	1	1.1	0.82
ROCK BASS	--	--	--	1	0.7	0.28	--	--	--	1	1.1	0.82
GREEN SUNFISH	17	11.3	13.18	2	1.3	0.56	--	--	--	7	7.5	5.74
PUMPKINSEED	--	--	--	4	2.7	1.13	1	0.7	0.15	--	--	--
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	3	2.0	0.46	--	--	--
BLUEGILL	50	33.3	38.76	48	32.0	13.52	91	60.7	13.89	32	34.4	26.23
NORTHERN SUNFISH	7	4.7	5.43	13	8.7	3.66	20	13.3	3.05	2	2.2	1.64
Lepomis HYBRID	--	--	--	2	1.3	0.56	--	--	--	4	4.3	3.28
Lepomis sp.	--	--	--	1	0.7	0.28	1	0.7	0.15	--	--	--
SMALLMOUTH BASS	6	4.0	4.65	14	9.3	3.94	4	2.7	0.61	5	5.4	4.10
LARGEMOUTH BASS	24	16.0	18.60	4	2.7	1.13	15	10.0	2.29	11	11.8	9.02
BLACK CRAPPIE	--	--	--	--	--	--	1	0.7	0.15	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	3	2.0	0.46	--	--	--
LOGPERCH	--	--	--	17	11.3	4.79	9	6.0	1.37	--	--	--
SLENDERHEAD DARTER	--	--	--	1	0.7	0.28	--	--	--	--	--	--
FRESHWATER DRUM	5	3.3	3.88	1	0.7	0.28	1	0.7	0.15	--	--	--
TOTAL FISH	129	86.0	100.00	355	236.7	100.00	655	436.7	100.00	122	131.2	100.00
TOTAL SPECIES	13			24			28			14		
MEAN NO. OF SPECIES	8			15			17			8		
MEAN IWBmod	6.79			7.32			7.52			6.49		

TABLE B-1 (cont.)

	LOCATION											
	507A			510			512			515		
SPECIES	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
SKIPJACK HERRING	--	--	--	--	--	--	2	1.3	0.91	--	--	--
GIZZARD SHAD	42	28.0	19.27	8	5.3	2.77	8	5.3	3.64	4	2.7	3.74
GOLDEN SHINER	--	--	--	--	--	--	--	--	--	1	0.7	0.93
EMERALD SHINER	9	6.0	4.13	--	--	--	3	2.0	1.36	--	--	--
SPOTTAIL SHINER	9	6.0	4.13	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	2	1.3	0.91	1	0.7	0.93
SPOTFIN SHINER	10	6.7	4.59	--	--	--	77	51.3	35.00	3	2.0	2.80
SAND SHINER	--	--	--	--	--	--	2	1.3	0.91	--	--	--
MIMIC SHINER	--	--	--	--	--	--	10	6.7	4.55	--	--	--
CHANNEL/MIMIC SHINER	--	--	--	--	--	--	1	0.7	0.45	--	--	--
Notropis sp.	--	--	--	--	--	--	1	0.7	0.45	--	--	--
BLUNTNOSE MINNOW	41	27.3	18.81	18	12.0	6.23	5	3.3	2.27	2	1.3	1.87
BULLHEAD MINNOW	5	3.3	2.29	--	--	--	6	4.0	2.73	--	--	--
RIVER CARPSUCKER	--	--	--	--	--	--	1	0.7	0.45	--	--	--
QUILLBACK	3	2.0	1.38	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	1	0.7	0.46	3	2.0	1.04	1	0.7	0.45	--	--	--
SILVER REDHORSE	--	--	--	--	--	--	2	1.3	0.91	1	0.7	0.93
GOLDEN REDHORSE	1	0.7	0.46	4	2.7	1.38	9	6.0	4.09	5	3.3	4.67
SHORTHEAD REDHORSE	5	3.3	2.29	--	--	--	5	3.3	2.27	--	--	--
CHANNEL CATFISH	1	0.7	0.46	5	3.3	1.73	5	3.3	2.27	6	4.0	5.61
FLATHEAD CATFISH	--	--	--	--	--	--	1	0.7	0.45	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	1	0.7	0.35	--	--	--	--	--	--
BROOK SILVERSIDE	2	1.3	0.92	--	--	--	1	0.7	0.45	8	5.3	7.48
ROCK BASS	--	--	--	9	6.0	3.11	--	--	--	--	--	--
GREEN SUNFISH	10	6.7	4.59	38	25.3	13.15	7	4.7	3.18	10	6.7	9.35
PUMPKINSEED	1	0.7	0.46	2	1.3	0.69	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	1	0.7	0.46	--	--	--	1	0.7	0.45	--	--	--
BLUEGILL	57	38.0	26.15	116	77.3	40.14	28	18.7	12.73	39	26.0	36.45
NORTHERN SUNFISH	4	2.7	1.83	34	22.7	11.76	5	3.3	2.27	6	4.0	5.61
Lepomis HYBRID	1	0.7	0.46	2	1.3	0.69	1	0.7	0.45	4	2.7	3.74
Lepomis sp.	--	--	--	1	0.7	0.35	--	--	--	--	--	--
SMALLMOUTH BASS	--	--	--	2	1.3	0.69	12	8.0	5.45	14	9.3	13.08
LARGEMOUTH BASS	14	9.3	6.42	45	30.0	15.57	6	4.0	2.73	2	1.3	1.87
LOGPERCH	--	--	--	--	--	--	13	8.7	5.91	--	--	--
BLACKSIDE DARTER	1	0.7	0.46	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	--	--	--	1	0.7	0.35	5	3.3	2.27	1	0.7	0.93
TOTAL FISH	218	145.3	100.00	289	192.7	100.00	220	146.7	100.00	107	71.3	100.00
TOTAL SPECIES	19			14			25			15		
MEAN NO. OF SPECIES	12			9			16			10		
MEAN IWBmod	6.81			7.28			7.58			6.38		

TABLE B-2. TOTAL NUMBER, CATCH-PER-EFFORT (#/haul), AND RELATIVE ABUNDANCE OF NATIVE FISH COLLECTED BY SEINING AT EACH LOCATION NEAR THE DRESDEN STATION, JULY-SEPTEMBER 2013.

	LOCATION											
	501			502			503			507		
SPECIES	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
LONGNOSE GAR	--	--	--	--	--	--	1	0.3	0.35	--	--	--
GIZZARD SHAD	2	0.7	0.55	--	--	--	2	0.7	0.69	--	--	--
CENTRAL STONEROLLER	3	1.0	0.82	--	--	--	--	--	--	--	--	--
HORNYHEAD CHUB	2	0.7	0.55	--	--	--	--	--	--	--	--	--
PALLID SHINER	--	--	--	--	--	--	5	1.7	1.73	--	--	--
EMERALD SHINER	3	1.0	0.82	--	--	--	1	0.3	0.35	9	3.0	7.56
STRIPED SHINER	5	1.7	1.37	--	--	--	1	0.3	0.35	1	0.3	0.84
SPOTTAIL SHINER	--	--	--	--	--	--	2	0.7	0.69	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	127	42.3	34.79	48	16.0	46.15	140	46.7	48.44	60	20.0	50.42
SAND SHINER	1	0.3	0.27	1	0.3	0.96	11	3.7	3.81	5	1.7	4.20
REDFIN SHINER	9	3.0	2.47	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	4	1.3	3.85	--	--	--	--	--	--
Notropis sp.	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	71	23.7	19.45	5	1.7	4.81	18	6.0	6.23	29	9.7	24.37
BULLHEAD MINNOW	--	--	--	15	5.0	14.42	79	26.3	27.34	4	1.3	3.36
SMALLMOUTH BUFFALO	--	--	--	--	--	--	--	--	--	1	0.3	0.84
Moxostoma sp.	--	--	--	--	--	--	--	--	--	--	--	--
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	--	--
BANDED KILLIFISH	2	0.7	0.55	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	116	38.7	31.78	1	0.3	0.96	--	--	--	2	0.7	1.68
BROOK SILVERSIDE	--	--	--	28	9.3	26.92	26	8.7	9.00	8	2.7	6.72
ROCK BASS	3	1.0	0.82	--	--	--	--	--	--	--	--	--
GREEN SUNFISH	1	0.3	0.27	--	--	--	--	--	--	--	--	--
PUMPKINSEED	--	--	--	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	--	--	--	--	--	--
BLUEGILL	8	2.7	2.19	--	--	--	2	0.7	0.69	--	--	--
NORTHERN SUNFISH	11	3.7	3.01	1	0.3	0.96	1	0.3	0.35	--	--	--
Lepomis sp.	--	--	--	1	0.3	0.96	--	--	--	--	--	--
SMALLMOUTH BASS	--	--	--	--	--	--	--	--	--	--	--	--
LARGEMOUTH BASS	1	0.3	0.27	--	--	--	--	--	--	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL FISH	365	121.7	100.00	104	34.7	100.00	289	96.3	100.00	119	39.7	100.00
TOTAL SPECIES	16			8			13			9		
MEAN NO. OF SPECIES	8			3			7			4		

	LOCATION								
	509			512			515		
SPECIES	#	CPE	%	#	CPE	%	#	CPE	%
LONGNOSE GAR	--	--	--	--	--	--	--	--	--
GIZZARD SHAD	--	--	--	--	--	--	--	--	--
CENTRAL STONEROLLER	--	--	--	--	--	--	--	--	--
HORNYHEAD CHUB	--	--	--	--	--	--	--	--	--
PALLID SHINER	--	--	--	--	--	--	--	--	--
EMERALD SHINER	--	--	--	29	9.7	7.04	2	0.7	1.85
STRIPED SHINER	--	--	--	--	--	--	--	--	--
SPOTTAIL SHINER	1	0.3	0.99	1	0.3	0.24	--	--	--
ROSYFACE SHINER	--	--	--	10	3.3	2.43	1	0.3	0.93
SPOTFIN SHINER	1	0.3	0.99	241	80.3	58.50	81	27.0	75.00
SAND SHINER	--	--	--	19	6.3	4.61	6	2.0	5.56
REDFIN SHINER	--	--	--	1	0.3	0.24	--	--	--
MIMIC SHINER	--	--	--	--	--	--	2	0.7	1.85
Notropis sp.	--	--	--	1	0.3	0.24	--	--	--
BLUNTNOSE MINNOW	40	13.3	39.60	10	3.3	2.43	7	2.3	6.48
BULLHEAD MINNOW	--	--	--	28	9.3	6.80	2	0.7	1.85
SMALLMOUTH BUFFALO	--	--	--	--	--	--	--	--	--
Moxostoma sp.	--	--	--	1	0.3	0.24	--	--	--
TADPOLE MADTOM	1	0.3	0.99	--	--	--	--	--	--
BANDED KILLIFISH	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	1	0.3	0.99	6	2.0	1.46	1	0.3	0.93
BROOK SILVERSIDE	--	--	--	61	20.3	14.81	2	0.7	1.85
ROCK BASS	--	--	--	--	--	--	--	--	--
GREEN SUNFISH	--	--	--	--	--	--	--	--	--
PUMPKINSEED	1	0.3	0.99	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	1	0.3	0.99	--	--	--	--	--	--
BLUEGILL	45	15.0	44.55	2	0.7	0.49	2	0.7	1.85
NORTHERN SUNFISH	2	0.7	1.98	--	--	--	1	0.3	0.93
Lepomis sp.	4	1.3	3.96	--	--	--	--	--	--
SMALLMOUTH BASS	--	--	--	1	0.3	0.24	1	0.3	0.93
LARGEMOUTH BASS	3	1.0	2.97	1	0.3	0.24	--	--	--
JOHNNY DARTER	1	0.3	0.99	--	--	--	--	--	--
TOTAL FISH	101	33.7	100.00	412	137.3	100.00	108	36.0	100.00
TOTAL SPECIES	11			14			12		
MEAN NO. OF SPECIES	5			8			5		

2013 DRESDEN STATION FISH STUDY
CPE AND COMPOSITION SUMMARIES FOR EACH TRIP (CPE: ELECTRO=No./Km)

GEAR: ELECTRO
and LOCATION: 501

SAMPLING TRIP

SPECIES	17-19 JUL		29-30 AUG		26-27 SEP	
	CPE	%	CPE	%	CPE	%
GIZZARD SHAD	2.0	2.3	18.0	21.4	--	--
RIVER CARPSUCKER	--	--	2.0	2.4	--	--
SMALLMOUTH BUFFALO	--	--	--	--	2.0	2.3
GOLDEN REDHORSE	--	--	--	--	6.0	7.0
CHANNEL CATFISH	--	--	4.0	4.8	--	--
FLATHEAD CATFISH	2.0	2.3	2.0	2.4	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	2.0	2.3
GREEN SUNFISH	10.0	11.4	6.0	7.1	18.0	20.9
BLUEGILL	48.0	54.5	24.0	28.6	28.0	32.6
NORTHERN SUNFISH	--	--	--	--	14.0	16.3
SMALLMOUTH BASS	6.0	6.8	6.0	7.1	--	--
LARGEMOUTH BASS	14.0	15.9	20.0	23.8	14.0	16.3
FRESHWATER DRUM	6.0	6.8	2.0	2.4	2.0	2.3
TOTAL FISH	88.0	100.0	84.0	100.0	86.0	100.0

GEAR: ELECTRO
and LOCATION: 502

SAMPLING TRIP

SPECIES	17-19 JUL		29-30 AUG		26-27 SEP	
	CPE	%	CPE	%	CPE	%
GIZZARD SHAD	52.0	48.1	114.0	32.0	106.0	43.1
PALLID SHINER	--	--	2.0	0.6	6.0	2.4
EMERALD SHINER	--	--	4.0	1.1	--	--
STRIPED SHINER	--	--	2.0	0.6	--	--
SPOTFIN SHINER	8.0	7.4	58.0	16.3	22.0	8.9
BLUNTNOSE MINNOW	2.0	1.9	18.0	5.1	6.0	2.4
BULLHEAD MINNOW	--	--	8.0	2.2	32.0	13.0
RIVER CARPSUCKER	--	--	2.0	0.6	--	--
QUILLBACK	4.0	3.7	2.0	0.6	--	--
SILVER REDHORSE	--	--	2.0	0.6	--	--
SHORTHEAD REDHORSE	--	--	14.0	3.9	4.0	1.6
CHANNEL CATFISH	2.0	1.9	2.0	0.6	--	--
FLATHEAD CATFISH	2.0	1.9	2.0	0.6	--	--
BROOK SILVERSIDE	--	--	18.0	5.1	--	--
ROCK BASS	--	--	2.0	0.6	--	--
GREEN SUNFISH	2.0	1.9	--	--	2.0	0.8
PUMPKINSEED	4.0	3.7	--	--	4.0	1.6
BLUEGILL	22.0	20.4	48.0	13.5	26.0	10.6
NORTHERN SUNFISH	2.0	1.9	18.0	5.1	6.0	2.4
Lepomis HYBRID	--	--	4.0	1.1	--	--
Lepomis sp.	--	--	--	--	2.0	0.8
SMALLMOUTH BASS	8.0	7.4	6.0	1.7	14.0	5.7
LARGEMOUTH BASS	--	--	4.0	1.1	4.0	1.6
LOGPERCH	--	--	24.0	6.7	10.0	4.1
SLENDERHEAD DARTER	--	--	--	--	2.0	0.8
FRESHWATER DRUM	--	--	2.0	0.6	--	--
TOTAL FISH	108.0	100.0	356.0	100.0	246.0	100.0

EXHIBIT B (cont.)

2013 DRESDEN STATION FISH STUDY
CPE AND COMPOSITION SUMMARIES FOR EACH TRIP (CPE: ELECTRO=No./Km)

GEAR: ELECTRO
and LOCATION: 503

SAMPLING TRIP

SPECIES	17-19 JUL		29-30 AUG		26-27 SEP	
	CPE	%	CPE	%	CPE	%
GIZZARD SHAD	54.0	49.1	98.0	18.7	266.0	39.3
NORTHERN PIKE	--	--	2.0	0.4	--	--
CENTRAL STONEROLLER	--	--	--	--	2.0	0.3
GOLDEN SHINER	--	--	2.0	0.4	--	--
PALLID SHINER	--	--	10.0	1.9	40.0	5.9
EMERALD SHINER	--	--	--	--	12.0	1.8
GHOST SHINER	2.0	1.8	--	--	--	--
STRIPED SHINER	--	--	6.0	1.1	8.0	1.2
SPOTFIN SHINER	4.0	3.6	38.0	7.3	76.0	11.2
BLUNTNOSE MINNOW	2.0	1.8	70.0	13.4	44.0	6.5
BULLHEAD MINNOW	2.0	1.8	48.0	9.2	16.0	2.4
SPOTTED SUCKER	--	--	2.0	0.4	--	--
SILVER REDHORSE	2.0	1.8	--	--	--	--
GOLDEN REDHORSE	2.0	1.8	6.0	1.1	--	--
SHORTHEAD REDHORSE	--	--	12.0	2.3	22.0	3.3
CHANNEL CATFISH	2.0	1.8	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	2.0	0.3
BROOK SILVERSIDE	2.0	1.8	40.0	7.6	118.0	17.5
PUMPKINSEED	--	--	--	--	2.0	0.3
ORANGESPOTTED SUNFISH	--	--	6.0	1.1	--	--
BLUEGILL	30.0	27.3	102.0	19.5	50.0	7.4
NORTHERN SUNFISH	--	--	34.0	6.5	6.0	0.9
Lepomis sp.	--	--	--	--	2.0	0.3
SMALLMOUTH BASS	--	--	6.0	1.1	2.0	0.3
LARGEMOUTH BASS	6.0	5.5	22.0	4.2	2.0	0.3
BLACK CRAPPIE	--	--	2.0	0.4	--	--
JOHNNY DARTER	--	--	4.0	0.8	2.0	0.3
LOGPERCH	2.0	1.8	12.0	2.3	4.0	0.6
FRESHWATER DRUM	--	--	2.0	0.4	--	--
TOTAL FISH	110.0	100.0	524.0	100.0	676.0	100.0

GEAR: ELECTRO
and LOCATION: 506

SAMPLING TRIP

SPECIES	17-19 JUL		29-30 AUG		26-27 SEP	
	CPE	%	CPE	%	CPE	%
GIZZARD SHAD	--	--	3.2	1.3	12.9	11.8
EMERALD SHINER	--	--	9.7	4.0	19.4	17.6
ROSYFACE SHINER	--	--	9.7	4.0	--	--
SPOTFIN SHINER	6.5	15.4	67.7	28.0	22.6	20.6
BLUNTNOSE MINNOW	--	--	19.4	8.0	--	--
CHANNEL CATFISH	--	--	9.7	4.0	--	--
FLATHEAD CATFISH	--	--	9.7	4.0	--	--
BROOK SILVERSIDE	--	--	--	--	3.2	2.9
ROCK BASS	--	--	3.2	1.3	--	--
GREEN SUNFISH	--	--	16.1	6.7	6.5	5.9
BLUEGILL	25.8	61.5	58.1	24.0	19.4	17.6
NORTHERN SUNFISH	--	--	--	--	6.5	5.9
Lepomis HYBRID	--	--	12.9	5.3	--	--
SMALLMOUTH BASS	6.5	15.4	3.2	1.3	6.5	5.9
LARGEMOUTH BASS	3.2	7.7	19.4	8.0	12.9	11.8
TOTAL FISH	41.9	100.0	241.9	100.0	109.7	100.0

2013 DRESDEN STATION FISH STUDY
CPE AND COMPOSITION SUMMARIES FOR EACH TRIP (CPE: ELECTRO=No./Km)

GEAR: ELECTRO
and LOCATION: 507A

SPECIES	17-19 JUL CPE	17-19 JUL %	29-30 AUG CPE	29-30 AUG %	26-27 SEP CPE	26-27 SEP %
GIZZARD SHAD	24.0	30.0	26.0	16.9	34.0	16.8
EMERALD SHINER	2.0	2.5	--	--	16.0	7.9
SPOTTAIL SHINER	--	--	14.0	9.1	4.0	2.0
SPOTFIN SHINER	4.0	5.0	2.0	1.3	14.0	6.9
BLUNTNOSE MINNOW	4.0	5.0	26.0	16.9	52.0	25.7
BULLHEAD MINNOW	2.0	2.5	--	--	8.0	4.0
QUILLBACK	--	--	6.0	3.9	--	--
SMALLMOUTH BUFFALO	2.0	2.5	--	--	--	--
GOLDEN REDHORSE	2.0	2.5	--	--	--	--
SHORTHEAD REDHORSE	--	--	4.0	2.6	6.0	3.0
CHANNEL CATFISH	--	--	2.0	1.3	--	--
BROOK SILVERSIDE	--	--	--	--	4.0	2.0
GREEN SUNFISH	2.0	2.5	14.0	9.1	4.0	2.0
PUMPKINSEED	--	--	2.0	1.3	--	--
ORANGESPOTTED SUNFISH	--	--	2.0	1.3	--	--
BLUEGILL	24.0	30.0	48.0	31.2	42.0	20.8
NORTHERN SUNFISH	2.0	2.5	2.0	1.3	4.0	2.0
Lepomis HYBRID	--	--	--	--	2.0	1.0
LARGEMOUTH BASS	12.0	15.0	6.0	3.9	10.0	5.0
BLACKSIDE DARTER	--	--	--	--	2.0	1.0
TOTAL FISH	80.0	100.0	154.0	100.0	202.0	100.0

GEAR: ELECTRO
and LOCATION: 510

SPECIES	17-19 JUL CPE	17-19 JUL %	29-30 AUG CPE	29-30 AUG %	26-27 SEP CPE	26-27 SEP %
GIZZARD SHAD	4.0	5.3	10.0	5.5	2.0	0.6
BLUNTNOSE MINNOW	--	--	4.0	2.2	32.0	10.0
SMALLMOUTH BUFFALO	6.0	7.9	--	--	--	--
GOLDEN REDHORSE	--	--	6.0	3.3	2.0	0.6
CHANNEL CATFISH	2.0	2.6	2.0	1.1	6.0	1.9
BLACKSTRIPE TOPMINNOW	--	--	2.0	1.1	--	--
ROCK BASS	--	--	--	--	18.0	5.6
GREEN SUNFISH	8.0	10.5	22.0	12.1	46.0	14.4
PUMPKINSEED	--	--	4.0	2.2	--	--
BLUEGILL	16.0	21.1	70.0	38.5	146.0	45.6
NORTHERN SUNFISH	16.0	21.1	22.0	12.1	30.0	9.4
Lepomis HYBRID	--	--	2.0	1.1	2.0	0.6
Lepomis sp.	--	--	--	--	2.0	0.6
SMALLMOUTH BASS	4.0	5.3	--	--	--	--
LARGEMOUTH BASS	18.0	23.7	38.0	20.9	34.0	10.6
FRESHWATER DRUM	2.0	2.6	--	--	--	--
TOTAL FISH	76.0	100.0	182.0	100.0	320.0	100.0

2013 DRESDEN STATION FISH STUDY
CPE AND COMPOSITION SUMMARIES FOR EACH TRIP (CPE: ELECTRO=No./Km)

GEAR: ELECTRO
and LOCATION: 512

SPECIES	17-19 JUL CPE	17-19 JUL %	29-30 AUG CPE	29-30 AUG %	26-27 SEP CPE	26-27 SEP %
SKIPJACK HERRING	--	--	4.0	2.4	--	--
GIZZARD SHAD	8.0	14.3	6.0	3.6	2.0	0.9
EMERALD SHINER	--	--	2.0	1.2	4.0	1.9
ROSYFACE SHINER	--	--	2.0	1.2	2.0	0.9
SPOTFIN SHINER	--	--	26.0	15.5	128.0	59.3
SAND SHINER	--	--	--	--	4.0	1.9
MIMIC SHINER	--	--	--	--	20.0	9.3
CHANNEL/MIMIC SHINER	--	--	2.0	1.2	--	--
Notropis sp.	--	--	2.0	1.2	--	--
BLUNTNOSE MINNOW	--	--	--	--	10.0	4.6
BULLHEAD MINNOW	--	--	4.0	2.4	8.0	3.7
RIVER CARPSUCKER	--	--	2.0	1.2	--	--
SMALLMOUTH BUFFALO	2.0	3.6	--	--	--	--
SILVER REDHORSE	4.0	7.1	--	--	--	--
GOLDEN REDHORSE	4.0	7.1	10.0	6.0	4.0	1.9
SHORTHEAD REDHORSE	4.0	7.1	2.0	1.2	4.0	1.9
CHANNEL CATFISH	4.0	7.1	6.0	3.6	--	--
FLATHEAD CATFISH	2.0	3.6	--	--	--	--
BROOK SILVERSIDE	--	--	2.0	1.2	--	--
GREEN SUNFISH	6.0	10.7	8.0	4.8	--	--
ORANGESPOTTED SUNFISH	--	--	2.0	1.2	--	--
BLUEGILL	10.0	17.9	40.0	23.8	6.0	2.8
NORTHERN SUNFISH	2.0	3.6	6.0	3.6	2.0	0.9
Lepomis HYBRID	--	--	2.0	1.2	--	--
SMALLMOUTH BASS	4.0	7.1	18.0	10.7	2.0	0.9
LARGEMOUTH BASS	4.0	7.1	6.0	3.6	2.0	0.9
LOGPERCH	--	--	14.0	8.3	12.0	5.6
FRESHWATER DRUM	2.0	3.6	2.0	1.2	6.0	2.8
TOTAL FISH	56.0	100.0	168.0	100.0	216.0	100.0

GEAR: ELECTRO
and LOCATION: 515

SPECIES	17-19 JUL CPE	17-19 JUL %	29-30 AUG CPE	29-30 AUG %	26-27 SEP CPE	26-27 SEP %
GIZZARD SHAD	--	--	6.0	7.7	2.0	2.6
GOLDEN SHINER	2.0	3.4	--	--	--	--
ROSYFACE SHINER	--	--	--	--	2.0	2.6
SPOTFIN SHINER	--	--	4.0	5.1	2.0	2.6
BLUNTNOSE MINNOW	4.0	6.9	--	--	--	--
SILVER REDHORSE	2.0	3.4	--	--	--	--
GOLDEN REDHORSE	4.0	6.9	6.0	7.7	--	--
CHANNEL CATFISH	2.0	3.4	6.0	7.7	4.0	5.1
BROOK SILVERSIDE	--	--	2.0	2.6	14.0	17.9
GREEN SUNFISH	8.0	13.8	2.0	2.6	10.0	12.8
BLUEGILL	26.0	44.8	30.0	38.5	22.0	28.2
NORTHERN SUNFISH	2.0	3.4	4.0	5.1	6.0	7.7
Lepomis HYBRID	2.0	3.4	4.0	5.1	2.0	2.6
SMALLMOUTH BASS	6.0	10.3	10.0	12.8	12.0	15.4
LARGEMOUTH BASS	--	--	4.0	5.1	--	--
FRESHWATER DRUM	--	--	--	--	2.0	2.6
TOTAL FISH	58.0	100.0	78.0	100.0	78.0	100.0

EXHIBIT B (cont.)

2013 DRESDEN STATION FISH STUDY
CPE AND COMPOSITION SUMMARIES FOR EACH TRIP (SEINE=No./Haul)

GEAR: SEINE and LOCATION: 501

SPECIES	17-19 JUL CPE	17-19 JUL %	29-30 AUG CPE	29-30 AUG %	26-27 SEP CPE	26-27 SEP %
GIZZARD SHAD	--	--	1	0.8	1	0.4
CENTRAL STONEROLLER	--	--	1	0.8	2	0.8
HORNYHEAD CHUB	--	--	--	--	2	0.8
EMERALD SHINER	--	--	3	2.5	--	--
STRIPED SHINER	--	--	--	--	5	2.0
SPOTFIN SHINER	1	100.0	38	32.2	88	35.8
SAND SHINER	--	--	--	--	1	0.4
REDFIN SHINER	--	--	--	--	9	3.7
BLUNTNOSE MINNOW	--	--	53	44.9	18	7.3
BANDED KILLIFISH	--	--	--	--	2	0.8
BLACKSTRIPE TOPMINNOW	--	--	18	15.3	98	39.8
ROCK BASS	--	--	1	0.8	2	0.8
GREEN SUNFISH	--	--	--	--	1	0.4
BLUEGILL	--	--	2	1.7	6	2.4
NORTHERN SUNFISH	--	--	--	--	11	4.5
LARGEMOUTH BASS	--	--	1	0.8	--	--
TOTAL FISH	1	100.0	118	100.0	246	100.0

GEAR: SEINE and LOCATION: 502

SPECIES	17-19 JUL CPE	17-19 JUL %	29-30 AUG CPE	29-30 AUG %	26-27 SEP CPE	26-27 SEP %
SPOTFIN SHINER	--	--	48	55.8	--	--
SAND SHINER	--	--	1	1.2	--	--
MIMIC SHINER	--	--	4	4.7	--	--
BLUNTNOSE MINNOW	--	--	5	5.8	--	--
BULLHEAD MINNOW	--	--	15	17.4	--	--
BLACKSTRIPE TOPMINNOW	1	50.0	--	--	--	--
BROOK SILVERSIDE	--	--	12	14.0	16	100.0
NORTHERN SUNFISH	1	50.0	--	--	--	--
Lepomis sp.	--	--	1	1.2	--	--
TOTAL FISH	2	100.0	86	100.0	16	100.0

GEAR: SEINE and LOCATION: 503

SPECIES	17-19 JUL CPE	17-19 JUL %	29-30 AUG CPE	29-30 AUG %	26-27 SEP CPE	26-27 SEP %
LONGNOSE GAR	1	2.5	--	--	--	--
GIZZARD SHAD	--	--	--	--	2	1.1
PALLID SHINER	--	--	2	2.8	3	1.7
EMERALD SHINER	--	--	1	1.4	--	--
STRIPED SHINER	--	--	--	--	1	0.6
SPOTTAIL SHINER	2	5.0	--	--	--	--
SPOTFIN SHINER	26	65.0	11	15.3	103	58.2
SAND SHINER	--	--	--	--	11	6.2
BLUNTNOSE MINNOW	2	5.0	6	8.3	10	5.6
BULLHEAD MINNOW	8	20.0	34	47.2	37	20.9
BROOK SILVERSIDE	1	2.5	18	25.0	7	4.0
BLUEGILL	--	--	--	--	2	1.1
NORTHERN SUNFISH	--	--	--	--	1	0.6
TOTAL FISH	40	100.0	72	100.0	177	100.0

2013 DRESDEN STATION FISH STUDY
CPE AND COMPOSITION SUMMARIES FOR EACH TRIP (SEINE=No./Haul)

GEAR: SEINE and LOCATION: 507

SPECIES	SAMPLING TRIP 17-19 JUL CPE	%	29-30 AUG CPE	%	26-27 SEP CPE	%
EMERALD SHINER	--	--	9	11.4	--	--
STRIPED SHINER	--	--	1	1.3	--	--
SPOTFIN SHINER	1	2.9	57	72.2	2	40.0
SAND SHINER	4	11.4	1	1.3	--	--
BLUNTNOSE MINNOW	29	82.9	--	--	--	--
BULLHEAD MINNOW	--	--	3	3.8	1	20.0
SMALLMOUTH BUFFALO	1	2.9	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	2	40.0
BROOK SILVERSIDE	--	--	8	10.1	--	--
TOTAL FISH	35	100.0	79	100.0	5	100.0

GEAR: SEINE
and LOCATION: 509

SPECIES	SAMPLING TRIP 17-19 JUL CPE	%	29-30 AUG CPE	%	26-27 SEP CPE	%
SPOTTAIL SHINER	1	5.0	--	--	--	--
SPOTFIN SHINER	1	5.0	--	--	--	--
BLUNTNOSE MINNOW	7	35.0	13	48.1	20	37.0
TADPOLE MADTOM	--	--	--	--	1	1.9
BLACKSTRIPE TOPMINNOW	--	--	1	3.7	--	--
PUMPKINSEED	1	5.0	--	--	--	--
ORANGESPOTTED SUNFISH	1	5.0	--	--	--	--
BLUEGILL	5	25.0	8	29.6	32	59.3
NORTHERN SUNFISH	2	10.0	--	--	--	--
Lepomis sp.	--	--	4	14.8	--	--
LARGEMOUTH BASS	2	10.0	--	--	1	1.9
JOHNNY DARTER	--	--	1	3.7	--	--
TOTAL FISH	20	100.0	27	100.0	54	100.0

GEAR: SEINE
and LOCATION: 512

SPECIES	SAMPLING TRIP 17-19 JUL CPE	%	29-30 AUG CPE	%	26-27 SEP CPE	%
EMERALD SHINER	--	--	18	47.4	11	3.2
SPOTTAIL SHINER	1	3.2	--	--	--	--
ROSYFACE SHINER	4	12.9	1	2.6	5	1.5
SPOTFIN SHINER	4	12.9	1	2.6	236	68.8
SAND SHINER	4	12.9	--	--	15	4.4
REDFIN SHINER	--	--	--	--	1	0.3
Notropis sp.	1	3.2	--	--	--	--
BLUNTNOSE MINNOW	3	9.7	--	--	7	2.0
BULLHEAD MINNOW	--	--	2	5.3	26	7.6
Moxostoma sp.	1	3.2	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	1	2.6	5	1.5
BROOK SILVERSIDE	12	38.7	12	31.6	37	10.8
BLUEGILL	--	--	2	5.3	--	--
SMALLMOUTH BASS	--	--	1	2.6	--	--
LARGEMOUTH BASS	1	3.2	--	--	--	--
TOTAL FISH	31	100.0	38	100.0	343	100.0

2013 DRESDEN STATION FISH STUDY
CPE AND COMPOSITION SUMMARIES FOR EACH TRIP (SEINE=No./Haul)

GEAR: SEINE
and LOCATION: 515

SPECIES	17-19 JUL CPE	17-19 JUL %	29-30 AUG CPE	29-30 AUG %	26-27 SEP CPE	26-27 SEP %
EMERALD SHINER	--	--	1	25.0	1	1.1
ROSYFACE SHINER	--	--	--	--	1	1.1
SPOTFIN SHINER	1	11.1	--	--	80	84.2
SAND SHINER	6	66.7	--	--	--	--
MIMIC SHINER	--	--	--	--	2	2.1
BLUNTNOSE MINNOW	1	11.1	--	--	6	6.3
BULLHEAD MINNOW	--	--	--	--	2	2.1
BLACKSTRIPE TOPMINNOW	--	--	1	25.0	--	--
BROOK SILVERSIDE	--	--	--	--	2	2.1
BLUEGILL	--	--	2	50.0	--	--
NORTHERN SUNFISH	1	11.1	--	--	--	--
SMALLMOUTH BASS	--	--	--	--	1	1.1
TOTAL FISH	9	100.0	4	100.0	95	100.0

EXHIBIT C:

RAW DATA LISTING – FISH

EXHIBIT C

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SITE: DRESDEN GEAR: ELECTRO DATE: 17JUL13 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER				
GIZZARD SHAD	253	135	.	.
FLATHEAD CATFISH	427	630	.	.
GREEN SUNFISH	140	51	.	.
GREEN SUNFISH	61	5	.	.
GREEN SUNFISH	101	21	.	.
GREEN SUNFISH	80	13	.	.
GREEN SUNFISH	82	14	.	.
BLUEGILL	150	55	.	.
BLUEGILL	162	80	.	.
BLUEGILL	134	47	.	.
BLUEGILL	139	57	.	.
BLUEGILL	166	80	.	.
BLUEGILL	166	100	.	.
BLUEGILL	140	53	.	.
BLUEGILL	112	24	.	.
BLUEGILL	148	81	.	.
BLUEGILL	147	57	.	.
BLUEGILL	150	61	.	.
BLUEGILL	87	15	.	.
BLUEGILL	115	34	.	.
BLUEGILL	84	13	.	.
BLUEGILL	92	17	.	.
BLUEGILL	81	13	.	.
BLUEGILL	120	30	.	.
BLUEGILL	105	25	.	.
BLUEGILL	79	10	.	.
BLUEGILL	91	16	.	.
BLUEGILL	92	16	.	.
BLUEGILL	65	6	.	.
BLUEGILL	77	9	.	.
BLUEGILL	90	16	.	.
SMALLMOUTH BASS	347	500	.	.
SMALLMOUTH BASS	350	500	.	.
SMALLMOUTH BASS	258	215	.	.
LARGEMOUTH BASS	258	240	.	.
LARGEMOUTH BASS	166	48	.	.
LARGEMOUTH BASS	327	590	.	.
LARGEMOUTH BASS	228	155	.	.
LARGEMOUTH BASS	180	70	.	.
LARGEMOUTH BASS	277	330	.	.
LARGEMOUTH BASS	237	165	.	.
FRESHWATER DRUM	360	610	.	.
FRESHWATER DRUM	405	900	.	.
FRESHWATER DRUM	412	860	.	.
SITE: DRESDEN GEAR: ELECTRO DATE: 18JUL13 LOCATION: 502 MESOHABITAT: TRIBUTARY MOUTH				
GIZZARD SHAD	288	225	.	.
GIZZARD SHAD	267	170	.	.
GIZZARD SHAD	236	130	.	.
GIZZARD SHAD	308	280	.	.
GIZZARD SHAD	288	190	.	.
GIZZARD SHAD	305	250	.	.
GIZZARD SHAD	240	120	.	.
GIZZARD SHAD	207	72	.	.
GIZZARD SHAD	296	230	.	.
GIZZARD SHAD	274	185	.	.
GIZZARD SHAD	310	290	.	.
GIZZARD SHAD	303	255	.	.
GIZZARD SHAD	291	230	.	.
GIZZARD SHAD	293	215	.	.
GIZZARD SHAD	280	195	.	.
GIZZARD SHAD	268	175	.	.
GIZZARD SHAD	246	140	.	.
GIZZARD SHAD	288	205	.	.
GIZZARD SHAD	255	145	.	.
GIZZARD SHAD	251	170	.	.
GIZZARD SHAD	268	170	.	.
GIZZARD SHAD	272	180	.	.
GIZZARD SHAD	253	165	.	.
GIZZARD SHAD	272	195	.	.
GIZZARD SHAD	265	160	.	.
GIZZARD SHAD	257	145	.	.
SPOTFIN SHINER	.	.	4	8
BLUNTNOSE MINNOW	.	.	1	5
QUILLBACK	342	545	.	.
QUILLBACK	460	1190	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
CHANNEL CATFISH	510	1290	.	.
FLATHEAD CATFISH	318	295	.	.
GREEN SUNFISH	72	8	.	.
PUMPKINSEED	70	8	.	.
PUMPKINSEED	59	5	.	.
BLUEGILL	165	100	.	.
BLUEGILL	102	19	.	.
BLUEGILL	151	61	.	.
BLUEGILL	123	30	.	.
BLUEGILL	68	6	.	.
BLUEGILL	71	7	.	.
BLUEGILL	84	11	.	.
BLUEGILL	85	12	.	.
BLUEGILL	71	8	.	.
BLUEGILL	80	10	.	.
BLUEGILL	78	10	.	.
NORTHERN SUNFISH	82	10	.	.
SMALLMOUTH BASS	150	35	.	.
SMALLMOUTH BASS	122	20	.	.
SMALLMOUTH BASS	150	35	.	.
SMALLMOUTH BASS	119	18	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 18JUL13 LOCATION: 503 MESOHABITAT: TRIBUTARY MOUTH

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	257	145	.	.
GIZZARD SHAD	196	65	.	.
GIZZARD SHAD	286	190	.	.
GIZZARD SHAD	293	235	.	.
GIZZARD SHAD	206	70	.	.
GIZZARD SHAD	177	52	.	.
GIZZARD SHAD	285	225	.	.
GIZZARD SHAD	240	125	.	.
GIZZARD SHAD	233	100	.	.
GIZZARD SHAD	228	120	.	.
GIZZARD SHAD	231	110	.	.
GIZZARD SHAD	225	110	.	.
GIZZARD SHAD	207	95	.	.
GIZZARD SHAD	193	70	.	.
GIZZARD SHAD	190	72	.	.
GIZZARD SHAD	291	220	.	.
GIZZARD SHAD	275	180	.	.
GIZZARD SHAD	206	85	.	.
GIZZARD SHAD	227	110	.	.
GIZZARD SHAD	318	220	.	.
GIZZARD SHAD	182	58	.	.
GIZZARD SHAD	181	60	.	.
GIZZARD SHAD	310	275	.	.
GIZZARD SHAD	268	200	.	.
GIZZARD SHAD	176	51	.	.
GIZZARD SHAD	175	48	.	.
GIZZARD SHAD	148	30	.	.
GHOST SHINER	.	.	1	1
SPOTFIN SHINER	.	.	2	4
BLUNTNOSE MINNOW	.	.	1	2
BULLHEAD MINNOW	.	.	1	1
SILVER REDHORSE	488	1370	.	.
GOLDEN REDHORSE	375	600	.	.
CHANNEL CATFISH	495	1035	.	.
BROOK SILVERSIDE	.	.	1	1
BLUEGILL	171	98	.	.
BLUEGILL	122	30	.	.
BLUEGILL	108	20	.	.
BLUEGILL	132	46	.	.
BLUEGILL	112	22	.	.
BLUEGILL	108	20	.	.
BLUEGILL	168	78	.	.
BLUEGILL	162	70	.	.
BLUEGILL	120	32	.	.
BLUEGILL	128	34	.	.
BLUEGILL	113	30	.	.
BLUEGILL	103	24	.	.
BLUEGILL	75	9	.	.
BLUEGILL	69	7	.	.
BLUEGILL	55	3	.	.
LARGEMOUTH BASS	252	225	.	.
LARGEMOUTH BASS	312	395	.	.
LARGEMOUTH BASS	118	18	.	.
LOGPERCH	.	.	1	8

SITE: DRESDEN GEAR: ELECTRO DATE: 18JUL13 LOCATION: 506 MESOHABITAT: MAIN CHANNEL BORDER

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
COMMON CARP	360	680	.	.
SPOTFIN SHINER	.	.	1	1
SPOTFIN SHINER	.	.	1	3
BLUEGILL	145	64	.	.
BLUEGILL	137	46	.	.
BLUEGILL	135	45	.	.
BLUEGILL	110	27	.	.
BLUEGILL	148	60	.	.
BLUEGILL	95	15	.	.
BLUEGILL	142	64	.	.
BLUEGILL	82	11	.	.
SMALLMOUTH BASS	214	130	.	.
SMALLMOUTH BASS	137	30	.	.
LARGEMOUTH BASS	243	220	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 18JUL13 LOCATION: 507A MESOHABITAT: MAIN CHANNEL BORDER

GIZZARD SHAD	343	365	.	.
GIZZARD SHAD	228	107	.	.
GIZZARD SHAD	313	255	.	.
GIZZARD SHAD	257	170	.	.
GIZZARD SHAD	280	225	.	.
GIZZARD SHAD	277	175	.	.
GIZZARD SHAD	250	120	.	.
GIZZARD SHAD	241	145	.	.
GIZZARD SHAD	262	180	.	.
GIZZARD SHAD	192	70	.	.
GIZZARD SHAD	218	92	.	.
GIZZARD SHAD	198	66	.	.
COMMON CARP	567	2150	.	.
COMMON CARP	320	580	.	.
EMERALD SHINER	.	.	1	1
SPOTFIN SHINER	.	.	2	3
BLUNTNOSE MINNOW	.	.	2	7
BULLHEAD MINNOW	.	.	1	1
SMALLMOUTH BUFFALO	590	3900	.	.
GOLDEN REDHORSE	287	300	.	.
GREEN SUNFISH	85	16	.	.
BLUEGILL	135	54	.	.
BLUEGILL	143	61	.	.
BLUEGILL	143	66	.	.
BLUEGILL	86	15	.	.
BLUEGILL	100	23	.	.
BLUEGILL	85	14	.	.
BLUEGILL	92	18	.	.
BLUEGILL	105	25	.	.
BLUEGILL	74	9	.	.
BLUEGILL	82	12	.	.
BLUEGILL	87	16	.	.
BLUEGILL	71	7	.	.
NORTHERN SUNFISH	80	13	.	.
LARGEMOUTH BASS	103	13	.	.
LARGEMOUTH BASS	325	540	.	.
LARGEMOUTH BASS	285	325	.	.
LARGEMOUTH BASS	228	170	.	.
LARGEMOUTH BASS	210	135	.	.
LARGEMOUTH BASS	170	75	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 18JUL13 LOCATION: 510 MESOHABITAT: MAIN CHANNEL BORDER

GIZZARD SHAD	198	80	.	.
GIZZARD SHAD	296	270	.	.
COMMON CARP	257	270	.	.
SMALLMOUTH BUFFALO	540	2500	.	.
SMALLMOUTH BUFFALO	505	2200	.	.
SMALLMOUTH BUFFALO	470	1640	.	.
CHANNEL CATFISH	550	1300	.	.
GREEN SUNFISH	45	1	.	.
GREEN SUNFISH	62	6	.	.
GREEN SUNFISH	63	5	.	.
GREEN SUNFISH	80	12	.	.
BLUEGILL	117	25	.	.
BLUEGILL	88	12	.	.
BLUEGILL	160	75	.	.
BLUEGILL	114	29	.	.
BLUEGILL	91	13	.	.
BLUEGILL	69	7	.	.
BLUEGILL	95	22	.	.
BLUEGILL	90	17	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
NORTHERN SUNFISH	106	26	.	.
NORTHERN SUNFISH	107	33	.	.
NORTHERN SUNFISH	113	34	.	.
NORTHERN SUNFISH	110	35	.	.
NORTHERN SUNFISH	88	15	.	.
NORTHERN SUNFISH	67	8	.	.
NORTHERN SUNFISH	72	10	.	.
NORTHERN SUNFISH	69	9	.	.
SMALLMOUTH BASS	119	21	.	.
SMALLMOUTH BASS	57	3	.	.
LARGEMOUTH BASS	280	330	.	.
LARGEMOUTH BASS	225	120	.	.
LARGEMOUTH BASS	165	50	.	.
LARGEMOUTH BASS	176	66	.	.
LARGEMOUTH BASS	316	520	.	.
LARGEMOUTH BASS	245	190	.	.
LARGEMOUTH BASS	267	300	.	.
LARGEMOUTH BASS	248	175	.	.
LARGEMOUTH BASS	57	2	.	.
FRESHWATER DRUM	495	1670	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 19JUL13 LOCATION: 512 MESOHABITAT: TAILWATER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	345	350	.	.
GIZZARD SHAD	290	220	.	.
GIZZARD SHAD	270	200	.	.
GIZZARD SHAD	186	56	.	.
SMALLMOUTH BUFFALO	382	790	.	.
SILVER REDHORSE	430	890	.	.
SILVER REDHORSE	264	220	.	.
GOLDEN REDHORSE	340	390	.	.
GOLDEN REDHORSE	296	275	.	.
SHORTHEAD REDHORSE	177	56	.	.
SHORTHEAD REDHORSE	298	300	.	.
CHANNEL CATFISH	465	900	.	.
CHANNEL CATFISH	471	1010	.	.
FLATHEAD CATFISH	213	90	.	.
GREEN SUNFISH	51	3	.	.
GREEN SUNFISH	55	4	.	.
GREEN SUNFISH	91	15	.	.
BLUEGILL	128	36	.	.
BLUEGILL	112	24	.	.
BLUEGILL	112	29	.	.
BLUEGILL	66	5	.	.
BLUEGILL	75	9	.	.
NORTHERN SUNFISH	92	20	.	.
SMALLMOUTH BASS	177	56	.	.
SMALLMOUTH BASS	124	20	.	.
LARGEMOUTH BASS	263	265	.	.
LARGEMOUTH BASS	312	410	.	.
FRESHWATER DRUM	477	1250	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 19JUL13 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GOLDEN SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	2	4
SILVER REDHORSE	148	36	.	.
GOLDEN REDHORSE	328	410	.	.
GOLDEN REDHORSE	142	34	.	.
CHANNEL CATFISH	390	440	.	.
GREEN SUNFISH	67	6	.	.
GREEN SUNFISH	61	4	.	.
GREEN SUNFISH	69	8	.	.
GREEN SUNFISH	60	4	.	.
BLUEGILL	112	23	.	.
BLUEGILL	126	33	.	.
BLUEGILL	125	35	.	.
BLUEGILL	112	22	.	.
BLUEGILL	127	38	.	.
BLUEGILL	118	33	.	.
BLUEGILL	125	35	.	.
BLUEGILL	120	32	.	.
BLUEGILL	100	19	.	.
BLUEGILL	56	3	.	.
BLUEGILL	61	5	.	.
BLUEGILL	65	5	.	.
BLUEGILL	87	15	.	.
NORTHERN SUNFISH	67	7	.	.
Lepomis HYBRID	.	.	1	9
SMALLMOUTH BASS	160	43	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SMALLMOUTH BASS	120	18	.	.
SMALLMOUTH BASS	112	14	.	.

SITE: DRESDEN GEAR: SEINE DATE: 17JUL13 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	1	2

SITE: DRESDEN GEAR: SEINE DATE: 18JUL13 LOCATION: 502 MESOHABITAT: TRIBUTARY MOUTH

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLACKSTRIPE TOPMINNOW	.	.	1	1
WESTERN MOSQUITOFISH	.	.	1	1
NORTHERN SUNFISH	83	14	.	.

SITE: DRESDEN GEAR: SEINE DATE: 18JUL13 LOCATION: 503 MESOHABITAT: TRIBUTARY MOUTH

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LONGNOSE GAR	.	.	1	2000
SPOTTAIL SHINER	.	.	2	1
SPOTFIN SHINER	.	.	26	29
BLUNTNOSE MINNOW	.	.	1	1
BLUNTNOSE MINNOW	.	.	1	2
BULLHEAD MINNOW	.	.	8	11
BROOK SILVERSIDE	.	.	1	1

SITE: DRESDEN GEAR: SEINE DATE: 18JUL13 LOCATION: 507 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	1	1
SAND SHINER	.	.	4	1
BLUNTNOSE MINNOW	.	.	29	11
SMALLMOUTH BUFFALO	53	2	.	.

SITE: DRESDEN GEAR: SEINE DATE: 18JUL13 LOCATION: 509 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTTAIL SHINER	.	.	1	1
SPOTFIN SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	7	3
PUMPKINSEED	107	33	.	.
ORANGESPOTTED SUNFISH	64	6	.	.
BLUEGILL	82	13	.	.
BLUEGILL	69	7	.	.
BLUEGILL	29	1	.	.
BLUEGILL	43	2	.	.
BLUEGILL	39	1	.	.
NORTHERN SUNFISH	80	12	.	.
NORTHERN SUNFISH	73	10	.	.
LARGEMOUTH BASS	46	2	.	.
LARGEMOUTH BASS	55	2	.	.

SITE: DRESDEN GEAR: SEINE DATE: 19JUL13 LOCATION: 512 MESOHABITAT: TAILWATER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTTAIL SHINER	.	.	1	1
ROSYFACE SHINER	.	.	4	2
SPOTFIN SHINER	.	.	4	6
SAND SHINER	.	.	4	4
Notropis sp.	.	.	1	1
BLUNTNOSE MINNOW	.	.	3	3
Moxostoma sp.	33	1	.	.
BROOK SILVERSIDE	.	.	12	5
LARGEMOUTH BASS	174	84	.	.

SITE: DRESDEN GEAR: SEINE DATE: 19JUL13 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	1	1
SAND SHINER	.	.	6	13
BLUNTNOSE MINNOW	.	.	1	1
NORTHERN SUNFISH	61	5	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 29AUG13 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	318	290	.	.
GIZZARD SHAD	314	305	.	.
GIZZARD SHAD	292	220	.	.
GIZZARD SHAD	282	200	.	.
GIZZARD SHAD	242	140	.	.
GIZZARD SHAD	294	230	.	.
GIZZARD SHAD	232	125	.	.
GIZZARD SHAD	194	62	.	.
GIZZARD SHAD	232	112	.	.
COMMON CARP	354	640	.	.
COMMON CARP	396	900	.	.
RIVER CARPSUCKER	413	880	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
CHANNEL CATFISH	460	1060	.	.
CHANNEL CATFISH	388	480	.	.
FLATHEAD CATFISH	905	9100	.	.
GREEN SUNFISH	132	53	.	.
GREEN SUNFISH	118	35	.	.
GREEN SUNFISH	105	31	.	.
BLUEGILL	148	68	.	.
BLUEGILL	149	68	.	.
BLUEGILL	124	40	.	.
BLUEGILL	105	26	.	.
BLUEGILL	110	29	.	.
BLUEGILL	103	25	.	.
BLUEGILL	109	27	.	.
BLUEGILL	47	2	.	.
BLUEGILL	90	14	.	.
BLUEGILL	126	41	.	.
BLUEGILL	107	27	.	.
BLUEGILL	102	22	.	.
SMALLMOUTH BASS	152	31	.	.
SMALLMOUTH BASS	178	65	.	.
SMALLMOUTH BASS	72	5	.	.
LARGEMOUTH BASS	305	320	.	.
LARGEMOUTH BASS	298	415	.	.
LARGEMOUTH BASS	308	380	.	.
LARGEMOUTH BASS	163	59	.	.
LARGEMOUTH BASS	85	10	.	.
LARGEMOUTH BASS	82	7	.	.
LARGEMOUTH BASS	83	9	.	.
LARGEMOUTH BASS	88	10	.	.
LARGEMOUTH BASS	83	8	.	.
LARGEMOUTH BASS	80	8	.	.
FRESHWATER DRUM	362	520	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 29AUG13 LOCATION: 502 MESOHABITAT: TRIBUTARY MOUTH

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	280	220	.	.
GIZZARD SHAD	272	180	.	.
GIZZARD SHAD	260	160	.	.
GIZZARD SHAD	232	115	.	.
GIZZARD SHAD	288	210	.	.
GIZZARD SHAD	318	345	.	.
GIZZARD SHAD	266	165	.	.
GIZZARD SHAD	232	105	.	.
GIZZARD SHAD	272	215	.	.
GIZZARD SHAD	263	160	.	.
GIZZARD SHAD	302	270	.	.
GIZZARD SHAD	313	315	.	.
GIZZARD SHAD	284	212	.	.
GIZZARD SHAD	211	75	.	.
GIZZARD SHAD	238	145	.	.
GIZZARD SHAD	285	225	.	.
GIZZARD SHAD	270	170	.	.
GIZZARD SHAD	258	170	.	.
GIZZARD SHAD	282	215	.	.
GIZZARD SHAD	226	120	.	.
GIZZARD SHAD	293	215	.	.
GIZZARD SHAD	309	290	.	.
GIZZARD SHAD	318	340	.	.
GIZZARD SHAD	307	290	.	.
GIZZARD SHAD	305	240	.	.
GIZZARD SHAD	292	235	.	.
GIZZARD SHAD	225	105	.	.
GIZZARD SHAD	290	220	.	.
GIZZARD SHAD	305	290	.	.
GIZZARD SHAD	282	205	.	.
GIZZARD SHAD	.	.	27	5550
PALLID SHINER	.	.	1	1
EMERALD SHINER	.	.	1	2
EMERALD SHINER	.	.	1	1
STRIPED SHINER	.	.	1	1
SPOTFIN SHINER	.	.	16	18
SPOTFIN SHINER	.	.	11	3
SPOTFIN SHINER	.	.	2	1
BLUNTNOSE MINNOW	.	.	9	14
BULLHEAD MINNOW	.	.	4	3
RIVER CARPSUCKER	382	720	.	.
QUILLBACK	371	780	.	.
SILVER REDHORSE	86	8	.	.
SHORTHEAD REDHORSE	91	9	.	.
SHORTHEAD REDHORSE	95	10	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SHORTHEAD REDHORSE	77	6	.	.
SHORTHEAD REDHORSE	94	10	.	.
SHORTHEAD REDHORSE	87	8	.	.
SHORTHEAD REDHORSE	73	5	.	.
SHORTHEAD REDHORSE	67	4	.	.
CHANNEL CATFISH	542	1400	.	.
FLATHEAD CATFISH	272	210	.	.
BROOK SILVERSIDE	.	.	9	8
ROCK BASS	44	2	.	.
BLUEGILL	124	28	.	.
BLUEGILL	79	12	.	.
BLUEGILL	105	26	.	.
BLUEGILL	78	10	.	.
BLUEGILL	78	9	.	.
BLUEGILL	106	25	.	.
BLUEGILL	93	17	.	.
BLUEGILL	101	24	.	.
BLUEGILL	110	28	.	.
BLUEGILL	82	12	.	.
BLUEGILL	80	11	.	.
BLUEGILL	90	16	.	.
BLUEGILL	87	13	.	.
BLUEGILL	62	5	.	.
BLUEGILL	70	7	.	.
BLUEGILL	80	10	.	.
BLUEGILL	78	9	.	.
BLUEGILL	43	1	.	.
BLUEGILL	34	1	.	.
BLUEGILL	42	1	.	.
BLUEGILL	32	1	.	.
BLUEGILL	30	1	.	.
BLUEGILL	36	1	.	.
BLUEGILL	27	1	.	.
NORTHERN SUNFISH	107	22	.	.
NORTHERN SUNFISH	106	21	.	.
NORTHERN SUNFISH	78	12	.	.
NORTHERN SUNFISH	74	10	.	.
NORTHERN SUNFISH	75	10	.	.
NORTHERN SUNFISH	67	7	.	.
NORTHERN SUNFISH	71	9	.	.
NORTHERN SUNFISH	69	8	.	.
NORTHERN SUNFISH	73	9	.	.
Lepomis HYBRID	154	95	.	.
Lepomis HYBRID	.	.	1	25
SMALLMOUTH BASS	153	42	.	.
SMALLMOUTH BASS	71	5	.	.
SMALLMOUTH BASS	64	4	.	.
LARGEMOUTH BASS	294	320	.	.
LARGEMOUTH BASS	82	8	.	.
LOGPERCH	.	.	12	60
FRESHWATER DRUM	318	380	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 29AUG13 LOCATION: 503 MESOHABITAT: TRIBUTARY MOUTH

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	238	125	.	.
GIZZARD SHAD	230	90	.	.
GIZZARD SHAD	280	180	.	.
GIZZARD SHAD	278	200	.	.
GIZZARD SHAD	175	39	.	.
GIZZARD SHAD	199	65	.	.
GIZZARD SHAD	125	18	.	.
GIZZARD SHAD	171	44	.	.
GIZZARD SHAD	291	210	.	.
GIZZARD SHAD	293	210	.	.
GIZZARD SHAD	143	32	.	.
GIZZARD SHAD	194	53	.	.
GIZZARD SHAD	282	180	.	.
GIZZARD SHAD	196	65	.	.
GIZZARD SHAD	132	22	.	.
GIZZARD SHAD	132	21	.	.
GIZZARD SHAD	182	49	.	.
GIZZARD SHAD	188	56	.	.
GIZZARD SHAD	239	125	.	.
GIZZARD SHAD	171	39	.	.
GIZZARD SHAD	191	59	.	.
GIZZARD SHAD	176	48	.	.
GIZZARD SHAD	229	105	.	.
GIZZARD SHAD	196	70	.	.
GIZZARD SHAD	205	75	.	.
GIZZARD SHAD	306	240	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	222	85	.	.
GIZZARD SHAD	268	155	.	.
GIZZARD SHAD	284	205	.	.
GIZZARD SHAD	131	21	.	.
GIZZARD SHAD	.	.	16	1250
GIZZARD SHAD	124	22	.	.
GIZZARD SHAD	120	17	.	.
GIZZARD SHAD	125	20	.	.
NORTHERN PIKE	282	125	.	.
COMMON CARP	521	1890	.	.
COMMON CARP	504	1540	.	.
GOLDEN SHINER	.	.	1	2
PALLID SHINER	.	.	5	4
STRIPED SHINER	.	.	3	4
SPOTFIN SHINER	.	.	14	18
SPOTFIN SHINER	.	.	4	1
SPOTFIN SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	35	38
BULLHEAD MINNOW	.	.	24	38
SPOTTED SUCKER	65	3	.	.
GOLDEN REDHORSE	370	520	.	.
GOLDEN REDHORSE	398	620	.	.
GOLDEN REDHORSE	362	490	.	.
SHORTHEAD REDHORSE	169	51	.	.
SHORTHEAD REDHORSE	126	22	.	.
SHORTHEAD REDHORSE	90	8	.	.
SHORTHEAD REDHORSE	85	7	.	.
SHORTHEAD REDHORSE	81	5	.	.
SHORTHEAD REDHORSE	70	4	.	.
BROOK SILVERSIDE	.	.	20	19
ORANGESPOTTED SUNFISH	62	5	.	.
ORANGESPOTTED SUNFISH	63	5	.	.
ORANGESPOTTED SUNFISH	72	7	.	.
BLUEGILL	155	84	.	.
BLUEGILL	122	32	.	.
BLUEGILL	125	32	.	.
BLUEGILL	121	31	.	.
BLUEGILL	124	36	.	.
BLUEGILL	134	46	.	.
BLUEGILL	129	35	.	.
BLUEGILL	128	49	.	.
BLUEGILL	120	30	.	.
BLUEGILL	121	33	.	.
BLUEGILL	124	31	.	.
BLUEGILL	109	25	.	.
BLUEGILL	64	5	.	.
BLUEGILL	91	14	.	.
BLUEGILL	80	9	.	.
BLUEGILL	85	11	.	.
BLUEGILL	78	9	.	.
BLUEGILL	68	6	.	.
BLUEGILL	81	10	.	.
BLUEGILL	69	6	.	.
BLUEGILL	91	15	.	.
BLUEGILL	71	7	.	.
BLUEGILL	64	5	.	.
BLUEGILL	83	12	.	.
BLUEGILL	54	3	.	.
BLUEGILL	90	15	.	.
BLUEGILL	78	9	.	.
BLUEGILL	82	10	.	.
BLUEGILL	95	17	.	.
BLUEGILL	71	6	.	.
BLUEGILL	.	.	9	130
BLUEGILL	.	.	1	10
BLUEGILL	.	.	11	8
NORTHERN SUNFISH	113	28	.	.
NORTHERN SUNFISH	107	28	.	.
NORTHERN SUNFISH	95	19	.	.
NORTHERN SUNFISH	92	19	.	.
NORTHERN SUNFISH	86	15	.	.
NORTHERN SUNFISH	80	12	.	.
NORTHERN SUNFISH	83	12	.	.
NORTHERN SUNFISH	96	23	.	.
NORTHERN SUNFISH	75	9	.	.
NORTHERN SUNFISH	74	10	.	.
NORTHERN SUNFISH	65	6	.	.
NORTHERN SUNFISH	78	10	.	.
NORTHERN SUNFISH	53	3	.	.
NORTHERN SUNFISH	69	7	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
NORTHERN SUNFISH	71	8	.	.
NORTHERN SUNFISH	68	7	.	.
NORTHERN SUNFISH	69	7	.	.
SMALLMOUTH BASS	173	51	.	.
SMALLMOUTH BASS	182	59	.	.
SMALLMOUTH BASS	75	6	.	.
LARGEMOUTH BASS	262	235	.	.
LARGEMOUTH BASS	251	215	.	.
LARGEMOUTH BASS	272	245	.	.
LARGEMOUTH BASS	254	215	.	.
LARGEMOUTH BASS	103	11	.	.
LARGEMOUTH BASS	192	75	.	.
LARGEMOUTH BASS	151	38	.	.
LARGEMOUTH BASS	178	64	.	.
LARGEMOUTH BASS	166	51	.	.
LARGEMOUTH BASS	93	12	.	.
LARGEMOUTH BASS	90	11	.	.
BLACK CRAPPIE	60	3	.	.
JOHNNY DARTER	.	.	2	2
LOGPERCH	.	.	6	29
FRESHWATER DRUM	325	410	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 29AUG13 LOCATION: 506 MESOHABITAT: MAIN CHANNEL BORDER

GIZZARD SHAD	202	70	.	.
THREADFIN SHAD	84	6	.	.
THREADFIN SHAD	129	17	.	.
THREADFIN SHAD	61	2	.	.
EMERALD SHINER	.	.	2	5
EMERALD SHINER	.	.	1	3
ROSYFACE SHINER	.	.	3	3
SPOTFIN SHINER	.	.	21	54
BLUNTNOSE MINNOW	.	.	6	10
CHANNEL CATFISH	542	1880	.	.
CHANNEL CATFISH	612	2500	.	.
CHANNEL CATFISH	438	830	.	.
FLATHEAD CATFISH	348	440	.	.
FLATHEAD CATFISH	296	240	.	.
FLATHEAD CATFISH	338	340	.	.
ROCK BASS	83	13	.	.
GREEN SUNFISH	141	52	.	.
GREEN SUNFISH	84	11	.	.
GREEN SUNFISH	73	10	.	.
GREEN SUNFISH	91	15	.	.
GREEN SUNFISH	66	6	.	.
BLUEGILL	161	84	.	.
BLUEGILL	109	24	.	.
BLUEGILL	124	40	.	.
BLUEGILL	122	39	.	.
BLUEGILL	113	33	.	.
BLUEGILL	103	22	.	.
BLUEGILL	110	27	.	.
BLUEGILL	105	25	.	.
BLUEGILL	86	13	.	.
BLUEGILL	108	29	.	.
BLUEGILL	75	9	.	.
BLUEGILL	111	31	.	.
BLUEGILL	105	25	.	.
BLUEGILL	101	19	.	.
BLUEGILL	90	14	.	.
BLUEGILL	68	6	.	.
BLUEGILL	63	5	.	.
BLUEGILL	85	13	.	.
Lepomis HYBRID	141	68	.	.
Lepomis HYBRID	138	60	.	.
Lepomis HYBRID	.	.	2	29
SMALLMOUTH BASS	232	140	.	.
LARGEMOUTH BASS	305	380	.	.
LARGEMOUTH BASS	163	53	.	.
LARGEMOUTH BASS	325	460	.	.
LARGEMOUTH BASS	282	320	.	.
LARGEMOUTH BASS	188	74	.	.
LARGEMOUTH BASS	82	8	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 29AUG13 LOCATION: 507A MESOHABITAT: MAIN CHANNEL BORDER

GIZZARD SHAD	211	85	.	.
GIZZARD SHAD	188	70	.	.
GIZZARD SHAD	227	115	.	.
GIZZARD SHAD	324	340	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	257	135	.	.
GIZZARD SHAD	257	140	.	.
GIZZARD SHAD	243	120	.	.
GIZZARD SHAD	170	55	.	.
GIZZARD SHAD	121	18	.	.
GIZZARD SHAD	102	10	.	.
GIZZARD SHAD	73	4	.	.
GIZZARD SHAD	93	9	.	.
GIZZARD SHAD	90	8	.	.
COMMON CARP	331	480	.	.
COMMON CARP	232	190	.	.
COMMON CARP	520	1780	.	.
COMMON CARP	572	2400	.	.
SPOTTAIL SHINER	.	.	7	26
SPOTFIN SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	13	13
QUILLBACK	185	95	.	.
QUILLBACK	196	105	.	.
QUILLBACK	151	47	.	.
SHORTHEAD REDHORSE	110	16	.	.
SHORTHEAD REDHORSE	89	9	.	.
CHANNEL CATFISH	531	1680	.	.
GREEN SUNFISH	98	22	.	.
GREEN SUNFISH	83	13	.	.
GREEN SUNFISH	82	12	.	.
GREEN SUNFISH	70	8	.	.
GREEN SUNFISH	76	10	.	.
GREEN SUNFISH	85	12	.	.
GREEN SUNFISH	64	6	.	.
PUMPKINSEED	76	11	.	.
ORANGESPOTTED SUNFISH	63	5	.	.
BLUEGILL	143	52	.	.
BLUEGILL	128	39	.	.
BLUEGILL	106	23	.	.
BLUEGILL	113	21	.	.
BLUEGILL	40	1	.	.
BLUEGILL	36	1	.	.
BLUEGILL	112	31	.	.
BLUEGILL	109	27	.	.
BLUEGILL	100	23	.	.
BLUEGILL	113	32	.	.
BLUEGILL	84	12	.	.
BLUEGILL	110	29	.	.
BLUEGILL	51	3	.	.
BLUEGILL	99	21	.	.
BLUEGILL	100	22	.	.
BLUEGILL	82	11	.	.
BLUEGILL	101	21	.	.
BLUEGILL	93	18	.	.
BLUEGILL	74	8	.	.
BLUEGILL	60	4	.	.
BLUEGILL	66	6	.	.
BLUEGILL	65	6	.	.
BLUEGILL	30	1	.	.
BLUEGILL	24	1	.	.
NORTHERN SUNFISH	91	18	.	.
LARGEMOUTH BASS	273	300	.	.
LARGEMOUTH BASS	91	11	.	.
LARGEMOUTH BASS	86	9	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 29AUG13 LOCATION: 510 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	213	90	.	.
GIZZARD SHAD	315	290	.	.
GIZZARD SHAD	260	120	.	.
GIZZARD SHAD	215	95	.	.
GIZZARD SHAD	137	26	.	.
COMMON CARP	358	610	.	.
COMMON CARP	495	2000	.	.
BLUNTNOSE MINNOW	.	.	2	4
GOLDEN REDHORSE	313	310	.	.
GOLDEN REDHORSE	351	500	.	.
GOLDEN REDHORSE	352	490	.	.
CHANNEL CATFISH	538	1500	.	.
BLACKSTRIPE TOPMINNOW	.	.	1	1
GREEN SUNFISH	51	3	.	.
GREEN SUNFISH	82	13	.	.
GREEN SUNFISH	46	2	.	.
GREEN SUNFISH	109	32	.	.
GREEN SUNFISH	88	14	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GREEN SUNFISH	80	12	.	.
GREEN SUNFISH	74	8	.	.
GREEN SUNFISH	70	8	.	.
GREEN SUNFISH	78	10	.	.
GREEN SUNFISH	69	7	.	.
GREEN SUNFISH	72	8	.	.
PUMPKINSEED	107	30	.	.
PUMPKINSEED	111	30	.	.
BLUEGILL	123	32	.	.
BLUEGILL	110	28	.	.
BLUEGILL	96	18	.	.
BLUEGILL	79	10	.	.
BLUEGILL	54	3	.	.
BLUEGILL	98	18	.	.
BLUEGILL	44	2	.	.
BLUEGILL	96	19	.	.
BLUEGILL	94	17	.	.
BLUEGILL	129	52	.	.
BLUEGILL	43	2	.	.
BLUEGILL	54	3	.	.
BLUEGILL	101	23	.	.
BLUEGILL	58	4	.	.
BLUEGILL	90	14	.	.
BLUEGILL	105	22	.	.
BLUEGILL	99	20	.	.
BLUEGILL	108	27	.	.
BLUEGILL	47	2	.	.
BLUEGILL	54	3	.	.
BLUEGILL	60	4	.	.
BLUEGILL	56	4	.	.
BLUEGILL	87	15	.	.
BLUEGILL	103	23	.	.
BLUEGILL	74	9	.	.
BLUEGILL	97	19	.	.
BLUEGILL	110	28	.	.
BLUEGILL	108	28	.	.
BLUEGILL	85	13	.	.
BLUEGILL	99	20	.	.
BLUEGILL	92	17	.	.
BLUEGILL	.	.	4	79
NORTHERN SUNFISH	41	2	.	.
NORTHERN SUNFISH	71	8	.	.
NORTHERN SUNFISH	103	28	.	.
NORTHERN SUNFISH	107	33	.	.
NORTHERN SUNFISH	84	14	.	.
NORTHERN SUNFISH	93	18	.	.
NORTHERN SUNFISH	85	15	.	.
NORTHERN SUNFISH	70	8	.	.
NORTHERN SUNFISH	100	26	.	.
NORTHERN SUNFISH	82	12	.	.
NORTHERN SUNFISH	68	8	.	.
Lepomis HYBRID	.	.	1	4
LARGEMOUTH BASS	380	680	.	.
LARGEMOUTH BASS	178	59	.	.
LARGEMOUTH BASS	348	640	.	.
LARGEMOUTH BASS	305	440	.	.
LARGEMOUTH BASS	265	280	.	.
LARGEMOUTH BASS	264	280	.	.
LARGEMOUTH BASS	206	120	.	.
LARGEMOUTH BASS	145	31	.	.
LARGEMOUTH BASS	113	21	.	.
LARGEMOUTH BASS	80	7	.	.
LARGEMOUTH BASS	85	8	.	.
LARGEMOUTH BASS	90	10	.	.
LARGEMOUTH BASS	81	7	.	.
LARGEMOUTH BASS	91	9	.	.
LARGEMOUTH BASS	96	11	.	.
LARGEMOUTH BASS	76	6	.	.
LARGEMOUTH BASS	64	3	.	.
LARGEMOUTH BASS	79	7	.	.
LARGEMOUTH BASS	70	4	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 30AUG13 LOCATION: 512 MESOHABITAT: TAILWATER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SKIPJACK HERRING	147	27	.	.
SKIPJACK HERRING	132	18	.	.
GIZZARD SHAD	213	90	.	.
GIZZARD SHAD	272	170	.	.
GIZZARD SHAD	242	125	.	.
EMERALD SHINER	.	.	1	2

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
ROSYFACE SHINER	.	.	1	1
SPOTFIN SHINER	.	.	12	16
SPOTFIN SHINER	.	.	1	1
CHANNEL/MIMIC SHINER	.	.	1	1
Notropis sp.	.	.	1	1
BULLHEAD MINNOW	.	.	2	1
RIVER CARPSUCKER	223	130	.	.
GOLDEN REDHORSE	305	310	.	.
GOLDEN REDHORSE	310	315	.	.
GOLDEN REDHORSE	362	470	.	.
GOLDEN REDHORSE	213	105	.	.
GOLDEN REDHORSE	221	120	.	.
SHORTHEAD REDHORSE	218	104	.	.
CHANNEL CATFISH	415	645	.	.
CHANNEL CATFISH	410	610	.	.
CHANNEL CATFISH	371	415	.	.
BROOK SILVERSIDE	.	.	1	2
GREEN SUNFISH	109	28	.	.
GREEN SUNFISH	103	19	.	.
GREEN SUNFISH	86	13	.	.
GREEN SUNFISH	84	13	.	.
ORANGESPOTTED SUNFISH	51	2	.	.
BLUEGILL	151	68	.	.
BLUEGILL	144	59	.	.
BLUEGILL	104	24	.	.
BLUEGILL	86	14	.	.
BLUEGILL	115	32	.	.
BLUEGILL	90	15	.	.
BLUEGILL	69	6	.	.
BLUEGILL	78	9	.	.
BLUEGILL	57	4	.	.
BLUEGILL	99	22	.	.
BLUEGILL	85	10	.	.
BLUEGILL	82	11	.	.
BLUEGILL	92	15	.	.
BLUEGILL	87	13	.	.
BLUEGILL	72	7	.	.
BLUEGILL	87	14	.	.
BLUEGILL	82	11	.	.
BLUEGILL	83	11	.	.
BLUEGILL	76	8	.	.
BLUEGILL	85	11	.	.
NORTHERN SUNFISH	64	6	.	.
NORTHERN SUNFISH	66	6	.	.
NORTHERN SUNFISH	81	11	.	.
Lepomis HYBRID	.	.	1	14
SMALLMOUTH BASS	322	480	.	.
SMALLMOUTH BASS	300	300	.	.
SMALLMOUTH BASS	172	54	.	.
SMALLMOUTH BASS	144	34	.	.
SMALLMOUTH BASS	171	55	.	.
SMALLMOUTH BASS	168	58	.	.
SMALLMOUTH BASS	182	68	.	.
SMALLMOUTH BASS	143	42	.	.
SMALLMOUTH BASS	111	16	.	.
LARGEMOUTH BASS	182	59	.	.
LARGEMOUTH BASS	104	11	.	.
LARGEMOUTH BASS	107	17	.	.
LOGPERCH	.	.	7	92
FRESHWATER DRUM	402	790	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 30AUG13 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

GIZZARD SHAD	252	135	.	.
GIZZARD SHAD	213	80	.	.
GIZZARD SHAD	250	130	.	.
SPOTFIN SHINER	.	.	1	2
SPOTFIN SHINER	.	.	1	1
GOLDEN REDHORSE	164	48	.	.
GOLDEN REDHORSE	148	39	.	.
GOLDEN REDHORSE	151	43	.	.
CHANNEL CATFISH	448	800	.	.
CHANNEL CATFISH	438	690	.	.
CHANNEL CATFISH	468	1040	.	.
BROOK SILVERSIDE	.	.	1	1
GREEN SUNFISH	90	14	.	.
BLUEGILL	127	32	.	.
BLUEGILL	134	39	.	.
BLUEGILL	134	49	.	.
BLUEGILL	124	32	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLUEGILL	106	25	.	.
BLUEGILL	104	24	.	.
BLUEGILL	97	19	.	.
BLUEGILL	87	14	.	.
BLUEGILL	85	12	.	.
BLUEGILL	86	13	.	.
BLUEGILL	95	18	.	.
BLUEGILL	92	15	.	.
BLUEGILL	86	13	.	.
BLUEGILL	78	9	.	.
BLUEGILL	94	16	.	.
NORTHERN SUNFISH	84	15	.	.
NORTHERN SUNFISH	86	15	.	.
Lepomis HYBRID	.	.	2	65
SMALLMOUTH BASS	182	72	.	.
SMALLMOUTH BASS	148	38	.	.
SMALLMOUTH BASS	151	38	.	.
SMALLMOUTH BASS	122	19	.	.
SMALLMOUTH BASS	143	32	.	.
LARGEMOUTH BASS	388	890	.	.
LARGEMOUTH BASS	177	59	.	.

SITE: DRESDEN GEAR: SEINE DATE: 29AUG13 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

GIZZARD SHAD	300	285	.	.
CENTRAL STONEROLLER	.	.	1	3
EMERALD SHINER	.	.	3	1
SPOTFIN SHINER	.	.	6	11
SPOTFIN SHINER	.	.	24	26
SPOTFIN SHINER	.	.	8	2
BLUNTNOSE MINNOW	.	.	53	63
BLACKSTRIPE TOPMINNOW	.	.	18	23
WESTERN MOSQUITOFISH	.	.	3	2
ROCK BASS	54	4	.	.
BLUEGILL	88	14	.	.
BLUEGILL	71	7	.	.
LARGEMOUTH BASS	80	7	.	.
ROUND GOBY	62	4	.	.
ROUND GOBY	60	3	.	.

SITE: DRESDEN GEAR: SEINE DATE: 29AUG13 LOCATION: 502 MESOHABITAT: TRIBUTARY MOUTH

SPOTFIN SHINER	.	.	48	26
SAND SHINER	.	.	1	1
MIMIC SHINER	.	.	4	1
BLUNTNOSE MINNOW	.	.	5	2
BULLHEAD MINNOW	.	.	15	4
BROOK SILVERSIDE	.	.	12	8
Lepomis sp.	19	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 29AUG13 LOCATION: 503 MESOHABITAT: TRIBUTARY MOUTH

PALLID SHINER	.	.	2	2
EMERALD SHINER	.	.	1	2
SPOTFIN SHINER	.	.	3	1
SPOTFIN SHINER	.	.	8	4
BLUNTNOSE MINNOW	.	.	3	2
BLUNTNOSE MINNOW	.	.	3	1
BULLHEAD MINNOW	.	.	25	14
BULLHEAD MINNOW	.	.	9	1
BROOK SILVERSIDE	.	.	18	14

SITE: DRESDEN GEAR: SEINE DATE: 29AUG13 LOCATION: 507 MESOHABITAT: MAIN CHANNEL BORDER

EMERALD SHINER	.	.	9	4
STRIPED SHINER	.	.	1	1
SPOTFIN SHINER	.	.	57	24
SAND SHINER	.	.	1	1
BULLHEAD MINNOW	.	.	3	2
BROOK SILVERSIDE	.	.	6	3
BROOK SILVERSIDE	.	.	1	1
BROOK SILVERSIDE	.	.	1	1

SITE: DRESDEN GEAR: SEINE DATE: 29AUG13 LOCATION: 509 MESOHABITAT: MAIN CHANNEL BORDER

BLUNTNOSE MINNOW	.	.	11	16
BLUNTNOSE MINNOW	.	.	2	1
BLACKSTRIPE TOPMINNOW	.	.	1	1
BLUEGILL	42	2	.	.
BLUEGILL	36	1	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLUEGILL	39	1	.	.
BLUEGILL	35	1	.	.
BLUEGILL	36	1	.	.
BLUEGILL	29	1	.	.
BLUEGILL	28	1	.	.
BLUEGILL	28	1	.	.
Lepomis sp.	25	.	.	.
Lepomis sp.	26	.	.	.
Lepomis sp.	21	.	.	.
Lepomis sp.	22	.	.	1
JOHNNY DARTER	.	.	1	1

SITE: DRESDEN GEAR: SEINE DATE: 30AUG13 LOCATION: 512 MESOHABITAT: TAILWATER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
THREADFIN SHAD	43	1	.	.
EMERALD SHINER	.	.	18	44
ROSYFACE SHINER	.	.	1	1
SPOTFIN SHINER	.	.	1	1
BULLHEAD MINNOW	.	.	2	5
BLACKSTRIPE TOPMINNOW	.	.	1	1
BROOK SILVERSIDE	.	.	12	14
BLUEGILL	91	17	.	.
BLUEGILL	86	13	.	.
SMALLMOUTH BASS	136	35	.	.

SITE: DRESDEN GEAR: SEINE DATE: 30AUG13 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	1	1
BLACKSTRIPE TOPMINNOW	.	.	1	1
BLUEGILL	86	12	.	.
BLUEGILL	91	17	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 26SEP13 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SMALLMOUTH BUFFALO	403	970	.	.
GOLDEN REDHORSE	385	630	.	.
GOLDEN REDHORSE	328	350	.	.
GOLDEN REDHORSE	360	520	.	.
BLACKSTRIPE TOPMINNOW	.	.	1	1
GREEN SUNFISH	101	24	.	.
GREEN SUNFISH	102	24	.	.
GREEN SUNFISH	71	9	.	.
GREEN SUNFISH	82	12	.	.
GREEN SUNFISH	81	12	.	.
GREEN SUNFISH	71	8	.	.
GREEN SUNFISH	72	8	.	.
GREEN SUNFISH	74	8	.	.
GREEN SUNFISH	73	8	.	.
BLUEGILL	108	22	.	.
BLUEGILL	110	22	.	.
BLUEGILL	65	5	.	.
BLUEGILL	43	1	.	.
BLUEGILL	47	2	.	.
BLUEGILL	52	3	.	.
BLUEGILL	64	5	.	.
BLUEGILL	62	5	.	.
BLUEGILL	71	7	.	.
BLUEGILL	97	18	.	.
BLUEGILL	68	6	.	.
BLUEGILL	50	2	.	.
BLUEGILL	49	2	.	.
BLUEGILL	86	12	.	.
NORTHERN SUNFISH	73	9	.	.
NORTHERN SUNFISH	92	19	.	.
NORTHERN SUNFISH	87	16	.	.
NORTHERN SUNFISH	83	12	.	.
NORTHERN SUNFISH	90	18	.	.
NORTHERN SUNFISH	87	16	.	.
NORTHERN SUNFISH	93	18	.	.
LARGEMOUTH BASS	260	230	.	.
LARGEMOUTH BASS	212	115	.	.
LARGEMOUTH BASS	117	18	.	.
LARGEMOUTH BASS	95	10	.	.
LARGEMOUTH BASS	110	13	.	.
LARGEMOUTH BASS	98	10	.	.
LARGEMOUTH BASS	93	9	.	.
FRESHWATER DRUM	415	860	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 26SEP13 LOCATION: 502 MESOHABITAT: TRIBUTARY MOUTH

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	263	165	.	.
GIZZARD SHAD	247	115	.	.
GIZZARD SHAD	302	245	.	.
GIZZARD SHAD	263	160	.	.
GIZZARD SHAD	220	100	.	.
GIZZARD SHAD	187	59	.	.
GIZZARD SHAD	283	195	.	.
GIZZARD SHAD	312	330	.	.
GIZZARD SHAD	298	265	.	.
GIZZARD SHAD	290	200	.	.
GIZZARD SHAD	270	170	.	.
GIZZARD SHAD	277	205	.	.
GIZZARD SHAD	250	155	.	.
GIZZARD SHAD	284	200	.	.
GIZZARD SHAD	278	185	.	.
GIZZARD SHAD	278	170	.	.
GIZZARD SHAD	288	220	.	.
GIZZARD SHAD	307	245	.	.
GIZZARD SHAD	270	180	.	.
GIZZARD SHAD	284	190	.	.
GIZZARD SHAD	265	175	.	.
GIZZARD SHAD	279	180	.	.
GIZZARD SHAD	278	195	.	.
GIZZARD SHAD	277	175	.	.
GIZZARD SHAD	217	80	.	.
GIZZARD SHAD	293	235	.	.
GIZZARD SHAD	302	250	.	.
GIZZARD SHAD	276	175	.	.
GIZZARD SHAD	240	130	.	.
GIZZARD SHAD	225	100	.	.
GIZZARD SHAD	.	.	10	1840
GIZZARD SHAD	.	.	13	2550
COMMON CARP	537	1860	.	.
COMMON CARP	538	2230	.	.
PALLID SHINER	.	.	3	3
SPOTFIN SHINER	.	.	3	2
SPOTFIN SHINER	.	.	8	2
BLUNTNOSE MINNOW	.	.	3	1
BULLHEAD MINNOW	.	.	16	11
SHORTHEAD REDHORSE	108	14	.	.
SHORTHEAD REDHORSE	100	12	.	.
GREEN SUNFISH	75	9	.	.
PUMPKINSEED	65	6	.	.
PUMPKINSEED	49	2	.	.
BLUEGILL	92	11	.	.
BLUEGILL	122	35	.	.
BLUEGILL	98	15	.	.
BLUEGILL	88	10	.	.
BLUEGILL	180	110	.	.
BLUEGILL	96	18	.	.
BLUEGILL	90	14	.	.
BLUEGILL	56	3	.	.
BLUEGILL	46	2	.	.
BLUEGILL	43	2	.	.
BLUEGILL	32	1	.	.
BLUEGILL	38	1	.	.
BLUEGILL	.	.	1	1
NORTHERN SUNFISH	92	14	.	.
NORTHERN SUNFISH	83	13	.	.
NORTHERN SUNFISH	86	15	.	.
Lepomis sp.	40	1	.	.
SMALLMOUTH BASS	102	12	.	.
SMALLMOUTH BASS	102	12	.	.
SMALLMOUTH BASS	170	65	.	.
SMALLMOUTH BASS	185	72	.	.
SMALLMOUTH BASS	103	12	.	.
SMALLMOUTH BASS	93	11	.	.
SMALLMOUTH BASS	98	12	.	.
LARGEMOUTH BASS	202	105	.	.
LARGEMOUTH BASS	305	395	.	.
LOGPERCH	.	.	1	6
LOGPERCH	.	.	1	7
LOGPERCH	.	.	3	19
SLENDERHEAD DARTER	.	.	1	1
SITE: DRESDEN	GEAR: ELECTRO	DATE: 26SEP13	LOCATION: 503	MESOHABITAT: TRIBUTARY MOUTH
GIZZARD SHAD	262	180	.	.
GIZZARD SHAD	263	185	.	.
GIZZARD SHAD	243	127	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	192	64	.	.
GIZZARD SHAD	267	150	.	.
GIZZARD SHAD	276	190	.	.
GIZZARD SHAD	212	79	.	.
GIZZARD SHAD	300	210	.	.
GIZZARD SHAD	263	170	.	.
GIZZARD SHAD	295	220	.	.
GIZZARD SHAD	207	85	.	.
GIZZARD SHAD	210	75	.	.
GIZZARD SHAD	196	75	.	.
GIZZARD SHAD	220	100	.	.
GIZZARD SHAD	227	98	.	.
GIZZARD SHAD	.	.	2	200
GIZZARD SHAD	163	39	.	.
GIZZARD SHAD	.	.	15	2260
GIZZARD SHAD	76	4	.	.
GIZZARD SHAD	77	5	.	.
GIZZARD SHAD	74	4	.	.
GIZZARD SHAD	69	3	.	.
GIZZARD SHAD	61	3	.	.
GIZZARD SHAD	58	2	.	.
GIZZARD SHAD	63	3	.	.
GIZZARD SHAD	58	2	.	.
GIZZARD SHAD	71	3	.	.
GIZZARD SHAD	59	2	.	.
GIZZARD SHAD	47	1	.	.
GIZZARD SHAD	62	3	.	.
GIZZARD SHAD	58	2	.	.
GIZZARD SHAD	59	2	.	.
GIZZARD SHAD	.	.	2	34
GIZZARD SHAD	.	.	84	269
THREADFIN SHAD	110	12	.	.
THREADFIN SHAD	89	6	.	.
THREADFIN SHAD	85	5	.	.
THREADFIN SHAD	86	6	.	.
CENTRAL STONEROLLER	.	.	1	2
PALLID SHINER	.	.	20	23
EMERALD SHINER	.	.	6	19
STRIPED SHINER	.	.	4	9
SPOTFIN SHINER	.	.	9	9
SPOTFIN SHINER	.	.	29	10
BLUNTNOSE MINNOW	.	.	22	31
BULLHEAD MINNOW	.	.	4	7
BULLHEAD MINNOW	.	.	4	2
SHORTHEAD REDHORSE	102	12	.	.
SHORTHEAD REDHORSE	111	14	.	.
SHORTHEAD REDHORSE	96	9	.	.
SHORTHEAD REDHORSE	86	7	.	.
SHORTHEAD REDHORSE	110	15	.	.
SHORTHEAD REDHORSE	91	9	.	.
SHORTHEAD REDHORSE	110	12	.	.
SHORTHEAD REDHORSE	75	4	.	.
SHORTHEAD REDHORSE	84	6	.	.
SHORTHEAD REDHORSE	79	5	.	.
SHORTHEAD REDHORSE	117	16	.	.
BLACKSTRIPE TOPMINNOW	.	.	1	1
BROOK SILVERSIDE	.	.	43	44
BROOK SILVERSIDE	.	.	16	5
PUMPKINSEED	68	7	.	.
BLUEGILL	128	38	.	.
BLUEGILL	102	20	.	.
BLUEGILL	81	10	.	.
BLUEGILL	89	13	.	.
BLUEGILL	77	8	.	.
BLUEGILL	76	8	.	.
BLUEGILL	83	10	.	.
BLUEGILL	79	8	.	.
BLUEGILL	43	1	.	.
BLUEGILL	67	5	.	.
BLUEGILL	44	2	.	.
BLUEGILL	42	1	.	.
BLUEGILL	47	2	.	.
BLUEGILL	50	2	.	.
BLUEGILL	37	1	.	.
BLUEGILL	37	1	.	.
BLUEGILL	28	1	.	.
BLUEGILL	46	2	.	.
BLUEGILL	41	1	.	.
BLUEGILL	41	1	.	.
BLUEGILL	44	1	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLUEGILL	42	1	.	.
BLUEGILL	42	1	.	.
BLUEGILL	38	1	.	.
BLUEGILL	29	1	.	.
NORTHERN SUNFISH	105	22	.	.
NORTHERN SUNFISH	81	12	.	.
NORTHERN SUNFISH	64	5	.	.
Lepomis sp.	37	1	.	.
SMALLMOUTH BASS	76	5	.	.
LARGEMOUTH BASS	181	76	.	.
JOHNNY DARTER	.	.	1	2
LOGPERCH	.	.	1	11
LOGPERCH	.	.	1	4

SITE: DRESDEN GEAR: ELECTRO DATE: 26SEP13 LOCATION: 506 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	316	260	.	.
GIZZARD SHAD	240	125	.	.
GIZZARD SHAD	230	100	.	.
GIZZARD SHAD	264	165	.	.
THREADFIN SHAD	105	10	.	.
EMERALD SHINER	.	.	6	26
SPOTFIN SHINER	.	.	7	16
BROOK SILVERSIDE	.	.	1	2
GREEN SUNFISH	127	35	.	.
GREEN SUNFISH	113	26	.	.
BLUEGILL	175	115	.	.
BLUEGILL	112	25	.	.
BLUEGILL	78	8	.	.
BLUEGILL	100	20	.	.
BLUEGILL	70	7	.	.
BLUEGILL	66	6	.	.
NORTHERN SUNFISH	93	17	.	.
NORTHERN SUNFISH	76	10	.	.
SMALLMOUTH BASS	302	380	.	.
SMALLMOUTH BASS	298	280	.	.
LARGEMOUTH BASS	186	92	.	.
LARGEMOUTH BASS	190	92	.	.
LARGEMOUTH BASS	152	48	.	.
LARGEMOUTH BASS	220	119	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 26SEP13 LOCATION: 507A MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	262	150	.	.
GIZZARD SHAD	228	100	.	.
GIZZARD SHAD	156	34	.	.
GIZZARD SHAD	348	380	.	.
GIZZARD SHAD	297	285	.	.
GIZZARD SHAD	280	195	.	.
GIZZARD SHAD	227	110	.	.
GIZZARD SHAD	196	70	.	.
GIZZARD SHAD	266	160	.	.
GIZZARD SHAD	230	105	.	.
GIZZARD SHAD	243	130	.	.
GIZZARD SHAD	201	75	.	.
GIZZARD SHAD	79	6	.	.
GIZZARD SHAD	121	22	.	.
GIZZARD SHAD	91	9	.	.
GIZZARD SHAD	91	8	.	.
GIZZARD SHAD	116	17	.	.
COMMON CARP	391	840	.	.
COMMON CARP	585	2450	.	.
EMERALD SHINER	.	.	8	33
SPOTTAIL SHINER	.	.	2	8
SPOTFIN SHINER	.	.	7	8
BLUNTNOSE MINNOW	.	.	26	51
BULLHEAD MINNOW	.	.	4	4
SHORTHEAD REDHORSE	104	13	.	.
SHORTHEAD REDHORSE	102	13	.	.
SHORTHEAD REDHORSE	115	16	.	.
BROOK SILVERSIDE	.	.	2	3
GREEN SUNFISH	127	37	.	.
GREEN SUNFISH	77	10	.	.
BLUEGILL	117	31	.	.
BLUEGILL	118	31	.	.
BLUEGILL	116	27	.	.
BLUEGILL	141	57	.	.
BLUEGILL	53	3	.	.
BLUEGILL	51	3	.	.
BLUEGILL	53	3	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLUEGILL	46	2	.	.
BLUEGILL	59	4	.	.
BLUEGILL	55	3	.	.
BLUEGILL	60	4	.	.
BLUEGILL	36	1	.	.
BLUEGILL	51	3	.	.
BLUEGILL	63	5	.	.
BLUEGILL	53	3	.	.
BLUEGILL	28	1	.	.
BLUEGILL	63	5	.	.
BLUEGILL	62	5	.	.
BLUEGILL	80	9	.	.
BLUEGILL	61	5	.	.
BLUEGILL	75	8	.	.
NORTHERN SUNFISH	93	18	.	.
NORTHERN SUNFISH	65	6	.	.
Lepomis HYBRID	.	.	1	2
LARGEMOUTH BASS	108	14	.	.
LARGEMOUTH BASS	107	15	.	.
LARGEMOUTH BASS	109	16	.	.
LARGEMOUTH BASS	107	14	.	.
LARGEMOUTH BASS	88	9	.	.
BLACKSIDE DARTER	.	.	1	2
ROUND GOBY	47	2	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 26SEP13 LOCATION: 510 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	255	130	.	.
BLUNTNOSE MINNOW	.	.	16	30
GOLDEN REDHORSE	345	415	.	.
CHANNEL CATFISH	441	800	.	.
CHANNEL CATFISH	540	1500	.	.
CHANNEL CATFISH	415	715	.	.
ROCK BASS	112	28	.	.
ROCK BASS	89	16	.	.
ROCK BASS	66	6	.	.
ROCK BASS	55	4	.	.
ROCK BASS	47	2	.	.
ROCK BASS	67	6	.	.
ROCK BASS	56	4	.	.
ROCK BASS	56	4	.	.
ROCK BASS	55	4	.	.
GREEN SUNFISH	141	61	.	.
GREEN SUNFISH	135	54	.	.
GREEN SUNFISH	132	44	.	.
GREEN SUNFISH	120	35	.	.
GREEN SUNFISH	118	37	.	.
GREEN SUNFISH	105	19	.	.
GREEN SUNFISH	.	.	1	8
GREEN SUNFISH	.	.	1	7
GREEN SUNFISH	97	18	.	.
GREEN SUNFISH	49	3	.	.
GREEN SUNFISH	72	7	.	.
GREEN SUNFISH	67	6	.	.
GREEN SUNFISH	113	32	.	.
GREEN SUNFISH	72	8	.	.
GREEN SUNFISH	47	2	.	.
GREEN SUNFISH	66	6	.	.
GREEN SUNFISH	93	20	.	.
GREEN SUNFISH	86	13	.	.
GREEN SUNFISH	81	11	.	.
GREEN SUNFISH	68	7	.	.
GREEN SUNFISH	70	7	.	.
GREEN SUNFISH	65	6	.	.
GREEN SUNFISH	70	7	.	.
BLUEGILL	128	40	.	.
BLUEGILL	107	19	.	.
BLUEGILL	95	17	.	.
BLUEGILL	130	41	.	.
BLUEGILL	132	45	.	.
BLUEGILL	103	18	.	.
BLUEGILL	112	28	.	.
BLUEGILL	112	26	.	.
BLUEGILL	.	.	1	5
BLUEGILL	56	4	.	.
BLUEGILL	47	2	.	.
BLUEGILL	49	2	.	.
BLUEGILL	68	6	.	.
BLUEGILL	73	8	.	.
BLUEGILL	70	7	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLUEGILL	65	6	.	.
BLUEGILL	48	2	.	.
BLUEGILL	68	6	.	.
BLUEGILL	51	2	.	.
BLUEGILL	52	3	.	.
BLUEGILL	55	4	.	.
BLUEGILL	57	4	.	.
BLUEGILL	51	2	.	.
BLUEGILL	69	6	.	.
BLUEGILL	45	2	.	.
BLUEGILL	44	2	.	.
BLUEGILL	68	7	.	.
BLUEGILL	60	4	.	.
BLUEGILL	44	2	.	.
BLUEGILL	46	2	.	.
BLUEGILL	.	.	8	55
BLUEGILL	.	.	35	93
NORTHERN SUNFISH	83	14	.	.
NORTHERN SUNFISH	90	18	.	.
NORTHERN SUNFISH	80	11	.	.
NORTHERN SUNFISH	76	10	.	.
NORTHERN SUNFISH	82	12	.	.
NORTHERN SUNFISH	94	18	.	.
NORTHERN SUNFISH	82	13	.	.
NORTHERN SUNFISH	81	13	.	.
NORTHERN SUNFISH	90	18	.	.
NORTHERN SUNFISH	78	9	.	.
NORTHERN SUNFISH	77	10	.	.
NORTHERN SUNFISH	70	8	.	.
NORTHERN SUNFISH	78	10	.	.
NORTHERN SUNFISH	78	11	.	.
NORTHERN SUNFISH	76	9	.	.
Lepomis HYBRID	.	.	1	5
Lepomis sp.	22	1	.	.
LARGEMOUTH BASS	310	460	.	.
LARGEMOUTH BASS	182	75	.	.
LARGEMOUTH BASS	193	89	.	.
LARGEMOUTH BASS	157	42	.	.
LARGEMOUTH BASS	158	58	.	.
LARGEMOUTH BASS	98	9	.	.
LARGEMOUTH BASS	270	280	.	.
LARGEMOUTH BASS	265	210	.	.
LARGEMOUTH BASS	281	290	.	.
LARGEMOUTH BASS	202	85	.	.
LARGEMOUTH BASS	125	23	.	.
LARGEMOUTH BASS	127	22	.	.
LARGEMOUTH BASS	96	10	.	.
LARGEMOUTH BASS	231	125	.	.
LARGEMOUTH BASS	205	95	.	.
LARGEMOUTH BASS	218	130	.	.
LARGEMOUTH BASS	80	6	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 27SEP13 LOCATION: 512 MESOHABITAT: TAILWATER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	256	150	.	.
EMERALD SHINER	.	.	2	7
ROSYFACE SHINER	.	.	1	2
SPOTFIN SHINER	.	.	16	13
SPOTFIN SHINER	.	.	47	15
SPOTFIN SHINER	.	.	1	1
SAND SHINER	.	.	2	1
MIMIC SHINER	.	.	10	6
BLUNTNOSE MINNOW	.	.	5	10
BULLHEAD MINNOW	.	.	3	5
BULLHEAD MINNOW	.	.	1	1
GOLDEN REDHORSE	256	190	.	.
GOLDEN REDHORSE	325	360	.	.
SHORTHEAD REDHORSE	242	130	.	.
SHORTHEAD REDHORSE	223	110	.	.
BLUEGILL	146	61	.	.
BLUEGILL	61	4	.	.
BLUEGILL	107	23	.	.
NORTHERN SUNFISH	80	11	.	.
SMALLMOUTH BASS	155	45	.	.
LARGEMOUTH BASS	104	14	.	.
LOGPERCH	.	.	1	9
LOGPERCH	.	.	1	13
LOGPERCH	.	.	4	44
FRESHWATER DRUM	430	830	.	.
FRESHWATER DRUM	462	1310	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
FRESHWATER DRUM	407	900	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 27SEP13 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	228	100	.	.
COMMON CARP	488	1650	.	.
ROSYFACE SHINER	.	.	1	1
SPOTFIN SHINER	.	.	1	1
CHANNEL CATFISH	505	1080	.	.
CHANNEL CATFISH	480	930	.	.
BROOK SILVERSIDE	.	.	7	11
GREEN SUNFISH	77	9	.	.
GREEN SUNFISH	71	7	.	.
GREEN SUNFISH	60	4	.	.
GREEN SUNFISH	46	2	.	.
GREEN SUNFISH	83	12	.	.
BLUEGILL	152	71	.	.
BLUEGILL	133	58	.	.
BLUEGILL	149	70	.	.
BLUEGILL	149	65	.	.
BLUEGILL	135	52	.	.
BLUEGILL	110	26	.	.
BLUEGILL	103	19	.	.
BLUEGILL	35	1	.	.
BLUEGILL	44	2	.	.
BLUEGILL	88	12	.	.
BLUEGILL	90	14	.	.
NORTHERN SUNFISH	92	16	.	.
NORTHERN SUNFISH	87	15	.	.
NORTHERN SUNFISH	91	17	.	.
Lepomis HYBRID	.	.	1	9
SMALLMOUTH BASS	393	680	.	.
SMALLMOUTH BASS	185	71	.	.
SMALLMOUTH BASS	181	71	.	.
SMALLMOUTH BASS	83	6	.	.
SMALLMOUTH BASS	335	470	.	.
SMALLMOUTH BASS	195	94	.	.
FRESHWATER DRUM	344	380	.	.

SITE: DRESDEN GEAR: SEINE DATE: 26SEP13 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	60	2	.	.
CENTRAL STONEROLLER	.	.	2	9
HORNYHEAD CHUB	.	.	2	7
STRIPED SHINER	.	.	5	13
SPOTFIN SHINER	.	.	7	10
SPOTFIN SHINER	.	.	1	2
SPOTFIN SHINER	.	.	80	28
SAND SHINER	.	.	1	1
REDFIN SHINER	.	.	9	4
BLUNTNOSE MINNOW	.	.	18	37
BANDED KILLIFISH	.	.	2	2
BLACKSTRIPE TOPMINNOW	.	.	89	80
BLACKSTRIPE TOPMINNOW	.	.	9	4
WESTERN MOSQUITOFISH	.	.	70	31
WESTERN MOSQUITOFISH	.	.	7	1
ROCK BASS	63	5	.	.
ROCK BASS	68	7	.	.
GREEN SUNFISH	36	1	.	.
BLUEGILL	50	2	.	.
BLUEGILL	61	5	.	.
BLUEGILL	57	4	.	.
BLUEGILL	56	3	.	.
BLUEGILL	61	5	.	.
BLUEGILL	61	5	.	.
NORTHERN SUNFISH	36	1	.	.
NORTHERN SUNFISH	38	1	.	.
NORTHERN SUNFISH	35	1	.	.
NORTHERN SUNFISH	47	2	.	.
NORTHERN SUNFISH	49	2	.	.
NORTHERN SUNFISH	36	1	.	.
NORTHERN SUNFISH	32	1	.	.
NORTHERN SUNFISH	39	1	.	.
NORTHERN SUNFISH	36	1	.	.
NORTHERN SUNFISH	34	1	.	.
NORTHERN SUNFISH	35	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 26SEP13 LOCATION: 502 MESOHABITAT: TRIBUTARY MOUTH

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BROOK SILVERSIDE	.	.	16	15

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT

SITE: DRESDEN GEAR: SEINE DATE: 26SEP13 LOCATION: 503 MESOHABITAT: TRIBUTARY MOUTH

GIZZARD SHAD	70	4	.	.
GIZZARD SHAD	74	5	.	.
PALLID SHINER	.	.	3	4
STRIPED SHINER	.	.	1	1
SPOTFIN SHINER	.	.	14	14
SPOTFIN SHINER	.	.	80	25
SPOTFIN SHINER	.	.	9	1
SAND SHINER	.	.	10	4
SAND SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	6	4
BLUNTNOSE MINNOW	.	.	4	1
BULLHEAD MINNOW	.	.	9	7
BULLHEAD MINNOW	.	.	26	7
BULLHEAD MINNOW	.	.	1	1
BULLHEAD MINNOW	.	.	1	1
BROOK SILVERSIDE	.	.	7	5
BLUEGILL	31	1	.	.
BLUEGILL	40	1	.	.
NORTHERN SUNFISH	35	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 26SEP13 LOCATION: 507 MESOHABITAT: MAIN CHANNEL BORDER

SPOTFIN SHINER	.	.	2	2
BULLHEAD MINNOW	.	.	1	1
BLACKSTRIPE TOPMINNOW	.	.	2	1

SITE: DRESDEN GEAR: SEINE DATE: 26SEP13 LOCATION: 509 MESOHABITAT: MAIN CHANNEL BORDER

BLUNTNOSE MINNOW	.	.	15	12
BLUNTNOSE MINNOW	.	.	5	2
TADPOLE MADTOM	60	3	.	.
BLUEGILL	49	3	.	.
BLUEGILL	60	4	.	.
BLUEGILL	61	5	.	.
BLUEGILL	58	4	.	.
BLUEGILL	53	3	.	.
BLUEGILL	62	5	.	.
BLUEGILL	57	4	.	.
BLUEGILL	64	5	.	.
BLUEGILL	60	4	.	.
BLUEGILL	54	4	.	.
BLUEGILL	47	2	.	.
BLUEGILL	54	3	.	.
BLUEGILL	43	2	.	.
BLUEGILL	60	4	.	.
BLUEGILL	57	4	.	.
BLUEGILL	58	4	.	.
BLUEGILL	50	3	.	.
BLUEGILL	47	2	.	.
BLUEGILL	47	2	.	.
BLUEGILL	61	5	.	.
BLUEGILL	51	3	.	.
BLUEGILL	51	3	.	.
BLUEGILL	49	2	.	.
BLUEGILL	46	2	.	.
BLUEGILL	51	3	.	.
BLUEGILL	68	7	.	.
BLUEGILL	45	2	.	.
BLUEGILL	58	4	.	.
BLUEGILL	62	5	.	.
BLUEGILL	50	3	.	.
BLUEGILL	.	.	1	1
BLUEGILL	29	1	.	.
LARGEMOUTH BASS	106	16	.	.

SITE: DRESDEN GEAR: SEINE DATE: 27SEP13 LOCATION: 512 MESOHABITAT: TAILWATER

EMERALD SHINER	.	.	11	23
ROSYFACE SHINER	.	.	5	7
SPOTFIN SHINER	.	.	33	35
SPOTFIN SHINER	.	.	100	39
SPOTFIN SHINER	.	.	103	40
SAND SHINER	.	.	15	12
REDFIN SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	5	5
BLUNTNOSE MINNOW	.	.	2	1
BULLHEAD MINNOW	.	.	17	10

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BULLHEAD MINNOW	.	.	9	1
BLACKSTRIPE TOPMINNOW	.	.	5	2
WESTERN MOSQUITOFISH	.	.	2	1
BROOK SILVERSIDE	.	.	37	58

SITE: DRESDEN GEAR: SEINE DATE: 27SEP13 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	1	1
ROSYFACE SHINER	.	.	1	2
SPOTFIN SHINER	.	.	70	52
SPOTFIN SHINER	.	.	9	3
SPOTFIN SHINER	.	.	1	1
MIMIC SHINER	.	.	2	1
BLUNTNOSE MINNOW	.	.	4	4
BLUNTNOSE MINNOW	.	.	2	1
BULLHEAD MINNOW	.	.	2	3
WESTERN MOSQUITOFISH	.	.	1	1
BROOK SILVERSIDE	.	.	2	3
SMALLMOUTH BASS	78	7	.	.

EXHIBIT D:

INDEX OF WELL BEING SCORES

EXHIBIT D. INDEX OF WELL BEING (IWB and IWBmod) SUMMARY - DRESDEN STATION FISH STUDY, 2013.

METHOD	DATE	LOCATION	DISTANCE	IWB	IWBMOD	TOTCNT	TOTWGT	INTCNT	INTWGT	DIVERCNT	DIVERWGT
BOAT	17JUL13	501	500	6.596	6.529	88.00	13.934	78.00	13.726	1.408	1.632
BOAT	29AUG13	501	500	7.522	7.411	88.00	34.198	78.00	30.880	1.921	1.596
BOAT	26SEP13	501	500	6.572	6.440	86.00	8.138	68.00	7.912	1.732	1.565
BOAT	18JUL13	502	500	6.684	6.664	108.00	17.266	104.00	17.240	1.675	1.243
BOAT	29AUG13	502	500	8.113	8.077	356.00	32.624	334.00	32.356	2.260	1.173
BOAT	26SEP13	502	500	7.400	7.216	250.00	29.972	238.00	21.772	2.015	0.924
BOAT	18JUL13	503	500	6.829	6.820	110.00	15.008	108.00	15.004	1.566	1.559
BOAT	29AUG13	503	500	8.971	8.729	528.00	24.716	452.00	17.776	2.440	1.793
BOAT	26SEP13	503	500	7.063	7.018	684.00	10.868	632.00	10.748	2.013	0.593
BOAT	18JUL13	506	310	5.158	4.788	45.16	4.503	41.94	2.310	1.253	1.248
BOAT	29AUG13	506	310	7.935	7.787	251.61	27.603	193.55	26.681	2.209	1.304
BOAT	26SEP13	506	310	6.959	6.896	112.90	6.400	103.23	6.171	2.116	1.551
BOAT	18JUL13	507A	500	7.222	7.007	84.00	21.038	74.00	15.532	1.963	1.520
BOAT	29AUG13	507A	500	7.488	6.899	162.00	17.602	114.00	7.710	2.126	1.384
BOAT	26SEP13	507A	500	7.179	6.537	208.00	11.306	144.00	4.522	2.232	1.065
BOAT	18JUL13	510	500	7.248	7.168	78.00	24.202	68.00	23.614	2.006	1.471
BOAT	29AUG13	510	500	7.730	7.468	186.00	19.180	154.00	13.710	1.859	1.781
BOAT	26SEP13	510	500	7.380	7.202	320.00	13.502	240.00	12.596	1.691	1.504
BOAT	19JUL13	512	500	7.944	7.886	56.00	15.786	50.00	15.742	2.432	2.120
BOAT	30AUG13	512	500	8.405	8.368	168.00	12.462	158.00	12.288	2.571	2.011
BOAT	27SEP13	512	500	6.521	6.496	216.00	8.530	206.00	8.510	1.667	1.095
BOAT	19JUL13	515	500	5.816	5.641	58.00	2.672	42.00	2.600	1.817	1.477
BOAT	30AUG13	515	500	6.699	6.651	78.00	9.192	72.00	9.034	2.020	1.392
BOAT	27SEP13	515	500	7.108	6.847	80.00	12.052	66.00	8.666	2.102	1.571

EXHIBIT E:

RELATIVE WEIGHTS

EXHIBIT E. LINE LISTING OF RELATIVE WEIGHT DATA BY SEGMENT, SPECIES, AND DATE, DRESDEN STATION 2013.

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	501	17JUL13	GIZZARD SHAD	253	135	77.3
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	288	225	85.5
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	267	170	82.1
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	236	130	92.9
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	308	280	86.0
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	288	190	72.2
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	305	250	79.2
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	240	120	81.3
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	207	72	77.9
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	296	230	80.1
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	274	185	82.3
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	310	290	87.3
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	303	255	82.5
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	291	230	84.6
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	293	215	77.4
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	280	195	81.0
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	268	175	83.5
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	246	140	87.7
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	288	205	77.9
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	255	145	81.0
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	251	170	99.9
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	268	170	81.1
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	272	180	82.0
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	253	165	94.5
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	272	195	88.8
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	265	160	79.1
DRESDEN POOL	502	18JUL13	GIZZARD SHAD	257	145	79.0
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	257	145	79.0
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	196	65	83.6
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	286	190	73.8
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	293	235	84.5
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	206	70	76.9
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	285	225	88.4
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	240	125	84.7
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	233	100	74.4
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	228	120	95.6
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	231	110	84.1
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	225	110	91.4
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	207	95	102.8
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	193	70	94.6
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	190	72	102.3
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	291	220	80.9
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	275	180	79.2
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	206	85	93.4
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	227	110	88.9
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	318	220	61.1
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	182	58	94.4
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	181	60	99.4
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	310	275	82.7
DRESDEN POOL	503	18JUL13	GIZZARD SHAD	268	200	95.5
DRESDEN POOL	507A	18JUL13	GIZZARD SHAD	343	365	79.7
DRESDEN POOL	507A	18JUL13	GIZZARD SHAD	228	107	85.3
DRESDEN POOL	507A	18JUL13	GIZZARD SHAD	313	255	74.4
DRESDEN POOL	507A	18JUL13	GIZZARD SHAD	257	170	92.7
DRESDEN POOL	507A	18JUL13	GIZZARD SHAD	280	225	93.5
DRESDEN POOL	507A	18JUL13	GIZZARD SHAD	277	175	75.2
DRESDEN POOL	507A	18JUL13	GIZZARD SHAD	250	120	71.4
DRESDEN POOL	507A	18JUL13	GIZZARD SHAD	241	145	96.9
DRESDEN POOL	507A	18JUL13	GIZZARD SHAD	262	180	92.3
DRESDEN POOL	507A	18JUL13	GIZZARD SHAD	192	70	96.2
DRESDEN POOL	507A	18JUL13	GIZZARD SHAD	218	92	84.5
DRESDEN POOL	507A	18JUL13	GIZZARD SHAD	198	66	82.2
DRESDEN POOL	510	18JUL13	GIZZARD SHAD	198	80	99.7
DRESDEN POOL	510	18JUL13	GIZZARD SHAD	296	270	94.1
DRESDEN POOL	501	29AUG13	GIZZARD SHAD	318	290	80.5
DRESDEN POOL	501	29AUG13	GIZZARD SHAD	314	305	88.1
DRESDEN POOL	501	29AUG13	GIZZARD SHAD	292	220	80.0
DRESDEN POOL	501	29AUG13	GIZZARD SHAD	282	200	81.2
DRESDEN POOL	501	29AUG13	GIZZARD SHAD	242	140	92.3
DRESDEN POOL	501	29AUG13	GIZZARD SHAD	294	230	81.9
DRESDEN POOL	501	29AUG13	GIZZARD SHAD	232	125	94.3
DRESDEN POOL	501	29AUG13	GIZZARD SHAD	194	62	82.4
DRESDEN POOL	501	29AUG13	GIZZARD SHAD	232	112	84.5
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	280	220	91.4
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	272	180	82.0
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	260	160	84.1
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	232	115	86.7
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	288	210	79.8
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	318	345	95.7
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	266	165	80.7
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	232	105	79.2
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	272	215	97.9

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	263	160	81.1
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	302	270	88.3
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	313	315	91.9
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	284	212	84.2
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	211	75	76.4
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	238	145	100.8
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	285	225	88.4
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	270	170	79.3
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	258	170	91.5
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	282	215	87.3
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	226	120	98.3
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	293	215	77.4
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	309	290	88.2
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	318	340	94.4
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	307	290	90.0
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	305	240	76.0
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	292	235	85.5
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	225	105	87.3
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	290	220	81.8
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	305	290	91.9
DRESDEN POOL	502	29AUG13	GIZZARD SHAD	282	205	83.3
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	238	125	86.9
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	230	90	69.8
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	280	180	74.8
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	278	200	85.0
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	199	65	79.7
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	291	210	77.2
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	293	210	75.6
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	194	53	70.5
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	282	180	73.1
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	196	65	83.6
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	182	49	79.8
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	188	56	82.2
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	239	125	85.8
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	191	59	82.4
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	229	105	82.5
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	196	70	90.1
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	205	75	83.7
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	306	240	75.2
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	222	85	73.7
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	268	155	74.0
DRESDEN POOL	503	29AUG13	GIZZARD SHAD	284	205	81.4
DRESDEN POOL	506	29AUG13	GIZZARD SHAD	202	70	81.9
DRESDEN POOL	507A	29AUG13	GIZZARD SHAD	211	85	86.6
DRESDEN POOL	507A	29AUG13	GIZZARD SHAD	188	70	102.8
DRESDEN POOL	507A	29AUG13	GIZZARD SHAD	227	115	92.9
DRESDEN POOL	507A	29AUG13	GIZZARD SHAD	324	340	88.9
DRESDEN POOL	507A	29AUG13	GIZZARD SHAD	257	135	73.6
DRESDEN POOL	507A	29AUG13	GIZZARD SHAD	257	140	76.3
DRESDEN POOL	507A	29AUG13	GIZZARD SHAD	243	120	78.1
DRESDEN POOL	510	29AUG13	GIZZARD SHAD	213	90	89.0
DRESDEN POOL	510	29AUG13	GIZZARD SHAD	315	290	82.9
DRESDEN POOL	510	29AUG13	GIZZARD SHAD	260	120	63.1
DRESDEN POOL	510	29AUG13	GIZZARD SHAD	215	95	91.2
DRESDEN POOL	501	29AUG13	GIZZARD SHAD	300	285	95.1
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	263	165	83.6
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	247	115	71.1
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	302	245	80.1
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	263	160	81.1
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	220	100	89.2
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	187	59	88.1
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	283	195	78.3
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	312	330	97.3
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	298	265	90.4
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	290	200	74.3
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	270	170	79.3
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	277	205	88.1
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	250	155	92.2
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	284	200	79.4
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	278	185	78.6
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	278	170	72.2
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	288	220	83.6
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	307	245	76.0
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	270	180	83.9
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	284	190	75.5
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	265	175	86.6
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	279	180	75.6
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	278	195	82.9
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	277	175	75.2
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	217	80	74.6
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	293	235	84.5
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	302	250	81.7

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	276	175	76.1
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	240	130	88.0
DRESDEN POOL	502	26SEP13	GIZZARD SHAD	225	100	83.1
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	262	180	92.3
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	263	185	93.7
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	243	127	82.7
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	192	64	87.9
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	267	150	72.5
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	276	190	82.6
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	212	79	79.3
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	300	210	70.1
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	263	170	86.1
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	295	220	77.5
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	207	85	92.0
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	210	75	77.6
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	196	75	96.5
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	220	100	89.2
DRESDEN POOL	503	26SEP13	GIZZARD SHAD	227	98	79.2
DRESDEN POOL	506	26SEP13	GIZZARD SHAD	316	260	73.6
DRESDEN POOL	506	26SEP13	GIZZARD SHAD	240	125	84.7
DRESDEN POOL	506	26SEP13	GIZZARD SHAD	230	100	77.5
DRESDEN POOL	506	26SEP13	GIZZARD SHAD	264	165	82.6
DRESDEN POOL	507A	26SEP13	GIZZARD SHAD	262	150	76.9
DRESDEN POOL	507A	26SEP13	GIZZARD SHAD	228	100	79.7
DRESDEN POOL	507A	26SEP13	GIZZARD SHAD	348	380	79.2
DRESDEN POOL	507A	26SEP13	GIZZARD SHAD	297	285	98.2
DRESDEN POOL	507A	26SEP13	GIZZARD SHAD	280	195	81.0
DRESDEN POOL	507A	26SEP13	GIZZARD SHAD	227	110	88.9
DRESDEN POOL	507A	26SEP13	GIZZARD SHAD	196	70	90.1
DRESDEN POOL	507A	26SEP13	GIZZARD SHAD	266	160	78.2
DRESDEN POOL	507A	26SEP13	GIZZARD SHAD	230	105	81.4
DRESDEN POOL	507A	26SEP13	GIZZARD SHAD	243	130	84.6
DRESDEN POOL	507A	26SEP13	GIZZARD SHAD	201	75	89.1
DRESDEN POOL	510	26SEP13	GIZZARD SHAD	255	130	72.6
DRESDEN POOL	503	29AUG13	NORTHERN PIKE	282	125	88.7
DRESDEN POOL	506	18JUL13	COMMON CARP	360	680	101.6
DRESDEN POOL	507A	18JUL13	COMMON CARP	567	2150	85.3
DRESDEN POOL	507A	18JUL13	COMMON CARP	320	580	122.3
DRESDEN POOL	510	18JUL13	COMMON CARP	257	270	108.0
DRESDEN POOL	501	29AUG13	COMMON CARP	354	640	100.5
DRESDEN POOL	501	29AUG13	COMMON CARP	396	900	101.9
DRESDEN POOL	503	29AUG13	COMMON CARP	521	1890	96.0
DRESDEN POOL	503	29AUG13	COMMON CARP	504	1540	86.2
DRESDEN POOL	507A	29AUG13	COMMON CARP	331	480	91.7
DRESDEN POOL	507A	29AUG13	COMMON CARP	232	190	102.5
DRESDEN POOL	507A	29AUG13	COMMON CARP	520	1780	90.9
DRESDEN POOL	507A	29AUG13	COMMON CARP	572	2400	92.8
DRESDEN POOL	510	29AUG13	COMMON CARP	358	610	92.7
DRESDEN POOL	510	29AUG13	COMMON CARP	495	2000	118.0
DRESDEN POOL	502	26SEP13	COMMON CARP	537	1860	86.5
DRESDEN POOL	502	26SEP13	COMMON CARP	538	2230	103.1
DRESDEN POOL	507A	26SEP13	COMMON CARP	391	840	98.7
DRESDEN POOL	507A	26SEP13	COMMON CARP	585	2450	88.7
DRESDEN POOL	501	29AUG13	RIVER CARPSUCKER	413	880	90.5
DRESDEN POOL	502	29AUG13	RIVER CARPSUCKER	382	720	93.5
DRESDEN POOL	507A	18JUL13	SMALLMOUTH BUFFALO	590	3900	100.0
DRESDEN POOL	510	18JUL13	SMALLMOUTH BUFFALO	540	2500	85.2
DRESDEN POOL	510	18JUL13	SMALLMOUTH BUFFALO	505	2200	93.0
DRESDEN POOL	510	18JUL13	SMALLMOUTH BUFFALO	470	1640	87.2
DRESDEN POOL	501	26SEP13	SMALLMOUTH BUFFALO	403	970	84.5
DRESDEN POOL	503	29AUG13	SHORTHEAD REDHORSE	169	51	89.0
DRESDEN POOL	503	29AUG13	SHORTHEAD REDHORSE	126	22	91.6
DRESDEN POOL	507A	29AUG13	SHORTHEAD REDHORSE	110	16	99.7
DRESDEN POOL	502	26SEP13	SHORTHEAD REDHORSE	108	14	92.1
DRESDEN POOL	502	26SEP13	SHORTHEAD REDHORSE	100	12	99.1
DRESDEN POOL	503	26SEP13	SHORTHEAD REDHORSE	102	12	93.5
DRESDEN POOL	503	26SEP13	SHORTHEAD REDHORSE	111	14	84.9
DRESDEN POOL	503	26SEP13	SHORTHEAD REDHORSE	110	15	93.4
DRESDEN POOL	503	26SEP13	SHORTHEAD REDHORSE	110	12	74.7
DRESDEN POOL	503	26SEP13	SHORTHEAD REDHORSE	117	16	83.0
DRESDEN POOL	507A	26SEP13	SHORTHEAD REDHORSE	104	13	95.6
DRESDEN POOL	507A	26SEP13	SHORTHEAD REDHORSE	102	13	101.3
DRESDEN POOL	507A	26SEP13	SHORTHEAD REDHORSE	115	16	87.4
DRESDEN POOL	502	18JUL13	CHANNEL CATFISH	510	1290	98.1
DRESDEN POOL	503	18JUL13	CHANNEL CATFISH	495	1035	86.9
DRESDEN POOL	510	18JUL13	CHANNEL CATFISH	550	1300	77.1
DRESDEN POOL	501	29AUG13	CHANNEL CATFISH	460	1060	113.3
DRESDEN POOL	501	29AUG13	CHANNEL CATFISH	388	480	89.9
DRESDEN POOL	502	29AUG13	CHANNEL CATFISH	542	1400	87.2
DRESDEN POOL	506	29AUG13	CHANNEL CATFISH	542	1880	117.0
DRESDEN POOL	506	29AUG13	CHANNEL CATFISH	612	2500	104.3
DRESDEN POOL	506	29AUG13	CHANNEL CATFISH	438	830	104.2

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	507A	29AUG13	CHANNEL CATFISH	531	1680	111.9
DRESDEN POOL	510	29AUG13	CHANNEL CATFISH	538	1500	95.7
DRESDEN POOL	510	26SEP13	CHANNEL CATFISH	441	800	98.2
DRESDEN POOL	510	26SEP13	CHANNEL CATFISH	540	1500	94.5
DRESDEN POOL	510	26SEP13	CHANNEL CATFISH	415	715	107.3
DRESDEN POOL	501	17JUL13	FLATHEAD CATFISH	427	630	70.0
DRESDEN POOL	502	18JUL13	FLATHEAD CATFISH	318	295	84.9
DRESDEN POOL	501	29AUG13	FLATHEAD CATFISH	905	9100	89.3
DRESDEN POOL	502	29AUG13	FLATHEAD CATFISH	272	210	100.1
DRESDEN POOL	506	29AUG13	FLATHEAD CATFISH	348	440	94.7
DRESDEN POOL	506	29AUG13	FLATHEAD CATFISH	296	240	87.1
DRESDEN POOL	506	29AUG13	FLATHEAD CATFISH	338	340	80.4
DRESDEN POOL	506	29AUG13	ROCK BASS	83	13	110.1
DRESDEN POOL	510	26SEP13	ROCK BASS	112	28	94.4
DRESDEN POOL	510	26SEP13	ROCK BASS	89	16	109.3
DRESDEN POOL	501	17JUL13	GREEN SUNFISH	140	51	92.8
DRESDEN POOL	501	17JUL13	GREEN SUNFISH	61	5	119.6
DRESDEN POOL	501	17JUL13	GREEN SUNFISH	101	21	105.2
DRESDEN POOL	501	17JUL13	GREEN SUNFISH	80	13	134.1
DRESDEN POOL	501	17JUL13	GREEN SUNFISH	82	14	133.8
DRESDEN POOL	502	18JUL13	GREEN SUNFISH	72	8	114.4
DRESDEN POOL	507A	18JUL13	GREEN SUNFISH	85	16	136.8
DRESDEN POOL	510	18JUL13	GREEN SUNFISH	62	6	136.4
DRESDEN POOL	510	18JUL13	GREEN SUNFISH	63	5	108.2
DRESDEN POOL	510	18JUL13	GREEN SUNFISH	80	12	123.8
DRESDEN POOL	501	29AUG13	GREEN SUNFISH	132	53	115.7
DRESDEN POOL	501	29AUG13	GREEN SUNFISH	118	35	108.2
DRESDEN POOL	501	29AUG13	GREEN SUNFISH	105	31	137.6
DRESDEN POOL	506	29AUG13	GREEN SUNFISH	141	52	92.5
DRESDEN POOL	506	29AUG13	GREEN SUNFISH	84	11	97.5
DRESDEN POOL	506	29AUG13	GREEN SUNFISH	73	10	137.0
DRESDEN POOL	506	29AUG13	GREEN SUNFISH	91	15	103.8
DRESDEN POOL	506	29AUG13	GREEN SUNFISH	66	6	112.4
DRESDEN POOL	507A	29AUG13	GREEN SUNFISH	98	22	121.0
DRESDEN POOL	507A	29AUG13	GREEN SUNFISH	83	13	119.6
DRESDEN POOL	507A	29AUG13	GREEN SUNFISH	82	12	114.7
DRESDEN POOL	507A	29AUG13	GREEN SUNFISH	70	8	124.9
DRESDEN POOL	507A	29AUG13	GREEN SUNFISH	76	10	120.9
DRESDEN POOL	507A	29AUG13	GREEN SUNFISH	85	12	102.6
DRESDEN POOL	507A	29AUG13	GREEN SUNFISH	64	6	123.6
DRESDEN POOL	510	29AUG13	GREEN SUNFISH	82	13	124.2
DRESDEN POOL	510	29AUG13	GREEN SUNFISH	109	32	126.5
DRESDEN POOL	510	29AUG13	GREEN SUNFISH	88	14	107.5
DRESDEN POOL	510	29AUG13	GREEN SUNFISH	80	12	123.8
DRESDEN POOL	510	29AUG13	GREEN SUNFISH	74	8	105.1
DRESDEN POOL	510	29AUG13	GREEN SUNFISH	70	8	124.9
DRESDEN POOL	510	29AUG13	GREEN SUNFISH	78	10	111.6
DRESDEN POOL	510	29AUG13	GREEN SUNFISH	69	7	114.2
DRESDEN POOL	510	29AUG13	GREEN SUNFISH	72	8	114.4
DRESDEN POOL	501	26SEP13	GREEN SUNFISH	101	24	120.2
DRESDEN POOL	501	26SEP13	GREEN SUNFISH	102	24	116.6
DRESDEN POOL	501	26SEP13	GREEN SUNFISH	71	9	134.4
DRESDEN POOL	501	26SEP13	GREEN SUNFISH	82	12	114.7
DRESDEN POOL	501	26SEP13	GREEN SUNFISH	81	12	119.1
DRESDEN POOL	501	26SEP13	GREEN SUNFISH	71	8	119.5
DRESDEN POOL	501	26SEP13	GREEN SUNFISH	72	8	114.4
DRESDEN POOL	501	26SEP13	GREEN SUNFISH	74	8	105.1
DRESDEN POOL	501	26SEP13	GREEN SUNFISH	73	8	109.6
DRESDEN POOL	502	26SEP13	GREEN SUNFISH	75	9	113.4
DRESDEN POOL	506	26SEP13	GREEN SUNFISH	127	35	86.1
DRESDEN POOL	506	26SEP13	GREEN SUNFISH	113	26	91.9
DRESDEN POOL	507A	26SEP13	GREEN SUNFISH	127	37	91.1
DRESDEN POOL	507A	26SEP13	GREEN SUNFISH	77	10	116.1
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	141	61	108.5
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	135	54	110.0
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	132	44	96.1
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	120	35	102.7
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	118	37	114.4
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	105	19	84.3
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	97	18	102.2
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	72	7	100.1
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	67	6	107.3
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	113	32	113.1
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	72	8	114.4
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	66	6	112.4
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	93	20	129.3
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	86	13	107.2
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	81	11	109.2
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	68	7	119.5
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	70	7	109.3
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	65	6	117.8
DRESDEN POOL	510	26SEP13	GREEN SUNFISH	70	7	109.3

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	502	18JUL13	PUMPKINSEED	70	8	128.7
DRESDEN POOL	502	18JUL13	PUMPKINSEED	59	5	139.9
DRESDEN POOL	509	18JUL13	PUMPKINSEED	107	33	134.4
DRESDEN POOL	507A	29AUG13	PUMPKINSEED	76	11	135.6
DRESDEN POOL	510	29AUG13	PUMPKINSEED	107	30	122.2
DRESDEN POOL	510	29AUG13	PUMPKINSEED	111	30	108.5
DRESDEN POOL	502	26SEP13	PUMPKINSEED	65	6	122.7
DRESDEN POOL	503	26SEP13	PUMPKINSEED	68	7	123.7
DRESDEN POOL	501	17JUL13	BLUEGILL	150	55	79.1
DRESDEN POOL	501	17JUL13	BLUEGILL	162	80	89.2
DRESDEN POOL	501	17JUL13	BLUEGILL	134	47	98.3
DRESDEN POOL	501	17JUL13	BLUEGILL	139	57	105.6
DRESDEN POOL	501	17JUL13	BLUEGILL	166	80	82.3
DRESDEN POOL	501	17JUL13	BLUEGILL	166	100	102.8
DRESDEN POOL	501	17JUL13	BLUEGILL	140	53	95.9
DRESDEN POOL	501	17JUL13	BLUEGILL	112	24	91.0
DRESDEN POOL	501	17JUL13	BLUEGILL	148	81	121.9
DRESDEN POOL	501	17JUL13	BLUEGILL	147	57	87.7
DRESDEN POOL	501	17JUL13	BLUEGILL	150	61	87.8
DRESDEN POOL	501	17JUL13	BLUEGILL	87	15	131.4
DRESDEN POOL	501	17JUL13	BLUEGILL	115	34	118.1
DRESDEN POOL	501	17JUL13	BLUEGILL	84	13	127.9
DRESDEN POOL	501	17JUL13	BLUEGILL	92	17	123.7
DRESDEN POOL	501	17JUL13	BLUEGILL	81	13	144.3
DRESDEN POOL	501	17JUL13	BLUEGILL	120	30	90.5
DRESDEN POOL	501	17JUL13	BLUEGILL	105	25	117.4
DRESDEN POOL	501	17JUL13	BLUEGILL	91	16	120.8
DRESDEN POOL	501	17JUL13	BLUEGILL	92	16	116.5
DRESDEN POOL	501	17JUL13	BLUEGILL	90	16	125.3
DRESDEN POOL	502	18JUL13	BLUEGILL	165	100	104.9
DRESDEN POOL	502	18JUL13	BLUEGILL	102	19	98.2
DRESDEN POOL	502	18JUL13	BLUEGILL	151	61	85.9
DRESDEN POOL	502	18JUL13	BLUEGILL	123	30	83.4
DRESDEN POOL	502	18JUL13	BLUEGILL	84	11	108.3
DRESDEN POOL	502	18JUL13	BLUEGILL	85	12	113.6
DRESDEN POOL	502	18JUL13	BLUEGILL	80	10	115.7
DRESDEN POOL	503	18JUL13	BLUEGILL	171	98	91.3
DRESDEN POOL	503	18JUL13	BLUEGILL	122	30	85.7
DRESDEN POOL	503	18JUL13	BLUEGILL	108	20	85.5
DRESDEN POOL	503	18JUL13	BLUEGILL	132	46	101.1
DRESDEN POOL	503	18JUL13	BLUEGILL	112	22	83.4
DRESDEN POOL	503	18JUL13	BLUEGILL	108	20	85.5
DRESDEN POOL	503	18JUL13	BLUEGILL	168	78	77.1
DRESDEN POOL	503	18JUL13	BLUEGILL	162	70	78.0
DRESDEN POOL	503	18JUL13	BLUEGILL	120	32	96.5
DRESDEN POOL	503	18JUL13	BLUEGILL	128	34	82.8
DRESDEN POOL	503	18JUL13	BLUEGILL	113	30	110.4
DRESDEN POOL	503	18JUL13	BLUEGILL	103	24	120.1
DRESDEN POOL	506	18JUL13	BLUEGILL	145	64	103.1
DRESDEN POOL	506	18JUL13	BLUEGILL	137	46	89.4
DRESDEN POOL	506	18JUL13	BLUEGILL	135	45	91.8
DRESDEN POOL	506	18JUL13	BLUEGILL	110	27	108.7
DRESDEN POOL	506	18JUL13	BLUEGILL	148	60	90.3
DRESDEN POOL	506	18JUL13	BLUEGILL	95	15	98.2
DRESDEN POOL	506	18JUL13	BLUEGILL	142	64	110.5
DRESDEN POOL	506	18JUL13	BLUEGILL	82	11	117.3
DRESDEN POOL	507A	18JUL13	BLUEGILL	135	54	110.2
DRESDEN POOL	507A	18JUL13	BLUEGILL	143	61	102.9
DRESDEN POOL	507A	18JUL13	BLUEGILL	143	66	111.3
DRESDEN POOL	507A	18JUL13	BLUEGILL	86	15	136.6
DRESDEN POOL	507A	18JUL13	BLUEGILL	100	23	127.0
DRESDEN POOL	507A	18JUL13	BLUEGILL	85	14	132.5
DRESDEN POOL	507A	18JUL13	BLUEGILL	92	18	131.0
DRESDEN POOL	507A	18JUL13	BLUEGILL	105	25	117.4
DRESDEN POOL	507A	18JUL13	BLUEGILL	82	12	127.9
DRESDEN POOL	507A	18JUL13	BLUEGILL	87	16	140.2
DRESDEN POOL	510	18JUL13	BLUEGILL	117	25	82.0
DRESDEN POOL	510	18JUL13	BLUEGILL	88	12	101.2
DRESDEN POOL	510	18JUL13	BLUEGILL	160	75	87.1
DRESDEN POOL	510	18JUL13	BLUEGILL	114	29	103.7
DRESDEN POOL	510	18JUL13	BLUEGILL	91	13	98.1
DRESDEN POOL	510	18JUL13	BLUEGILL	95	22	144.0
DRESDEN POOL	510	18JUL13	BLUEGILL	90	17	133.1
DRESDEN POOL	509	18JUL13	BLUEGILL	82	13	138.6
DRESDEN POOL	501	29AUG13	BLUEGILL	148	68	102.3
DRESDEN POOL	501	29AUG13	BLUEGILL	149	68	100.1
DRESDEN POOL	501	29AUG13	BLUEGILL	124	40	108.2
DRESDEN POOL	501	29AUG13	BLUEGILL	105	26	122.1
DRESDEN POOL	501	29AUG13	BLUEGILL	110	29	116.7
DRESDEN POOL	501	29AUG13	BLUEGILL	103	25	125.1
DRESDEN POOL	501	29AUG13	BLUEGILL	109	27	112.0
DRESDEN POOL	501	29AUG13	BLUEGILL	90	14	109.6

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	501	29AUG13	BLUEGILL	126	41	105.2
DRESDEN POOL	501	29AUG13	BLUEGILL	107	27	119.1
DRESDEN POOL	501	29AUG13	BLUEGILL	102	22	113.7
DRESDEN POOL	502	29AUG13	BLUEGILL	124	28	75.7
DRESDEN POOL	502	29AUG13	BLUEGILL	105	26	122.1
DRESDEN POOL	502	29AUG13	BLUEGILL	106	25	113.8
DRESDEN POOL	502	29AUG13	BLUEGILL	93	17	119.4
DRESDEN POOL	502	29AUG13	BLUEGILL	101	24	128.2
DRESDEN POOL	502	29AUG13	BLUEGILL	110	28	112.7
DRESDEN POOL	502	29AUG13	BLUEGILL	82	12	127.9
DRESDEN POOL	502	29AUG13	BLUEGILL	80	11	127.3
DRESDEN POOL	502	29AUG13	BLUEGILL	90	16	125.3
DRESDEN POOL	502	29AUG13	BLUEGILL	87	13	113.9
DRESDEN POOL	502	29AUG13	BLUEGILL	80	10	115.7
DRESDEN POOL	503	29AUG13	BLUEGILL	155	84	108.4
DRESDEN POOL	503	29AUG13	BLUEGILL	122	32	91.4
DRESDEN POOL	503	29AUG13	BLUEGILL	125	32	84.3
DRESDEN POOL	503	29AUG13	BLUEGILL	121	31	91.0
DRESDEN POOL	503	29AUG13	BLUEGILL	124	36	97.4
DRESDEN POOL	503	29AUG13	BLUEGILL	134	46	96.2
DRESDEN POOL	503	29AUG13	BLUEGILL	129	35	83.1
DRESDEN POOL	503	29AUG13	BLUEGILL	128	49	119.3
DRESDEN POOL	503	29AUG13	BLUEGILL	120	30	90.5
DRESDEN POOL	503	29AUG13	BLUEGILL	121	33	96.8
DRESDEN POOL	503	29AUG13	BLUEGILL	124	31	83.9
DRESDEN POOL	503	29AUG13	BLUEGILL	109	25	103.7
DRESDEN POOL	503	29AUG13	BLUEGILL	91	14	105.7
DRESDEN POOL	503	29AUG13	BLUEGILL	80	9	104.1
DRESDEN POOL	503	29AUG13	BLUEGILL	85	11	104.1
DRESDEN POOL	503	29AUG13	BLUEGILL	81	10	111.0
DRESDEN POOL	503	29AUG13	BLUEGILL	91	15	113.2
DRESDEN POOL	503	29AUG13	BLUEGILL	83	12	122.9
DRESDEN POOL	503	29AUG13	BLUEGILL	90	15	117.4
DRESDEN POOL	503	29AUG13	BLUEGILL	82	10	106.6
DRESDEN POOL	503	29AUG13	BLUEGILL	95	17	111.3
DRESDEN POOL	506	29AUG13	BLUEGILL	161	84	95.6
DRESDEN POOL	506	29AUG13	BLUEGILL	109	24	99.6
DRESDEN POOL	506	29AUG13	BLUEGILL	124	40	108.2
DRESDEN POOL	506	29AUG13	BLUEGILL	122	39	111.4
DRESDEN POOL	506	29AUG13	BLUEGILL	113	33	121.5
DRESDEN POOL	506	29AUG13	BLUEGILL	103	22	110.1
DRESDEN POOL	506	29AUG13	BLUEGILL	110	27	108.7
DRESDEN POOL	506	29AUG13	BLUEGILL	105	25	117.4
DRESDEN POOL	506	29AUG13	BLUEGILL	86	13	118.3
DRESDEN POOL	506	29AUG13	BLUEGILL	108	29	124.0
DRESDEN POOL	506	29AUG13	BLUEGILL	111	31	121.1
DRESDEN POOL	506	29AUG13	BLUEGILL	105	25	117.4
DRESDEN POOL	506	29AUG13	BLUEGILL	101	19	101.5
DRESDEN POOL	506	29AUG13	BLUEGILL	90	14	109.6
DRESDEN POOL	506	29AUG13	BLUEGILL	85	13	123.0
DRESDEN POOL	507A	29AUG13	BLUEGILL	143	52	87.7
DRESDEN POOL	507A	29AUG13	BLUEGILL	128	39	95.0
DRESDEN POOL	507A	29AUG13	BLUEGILL	106	23	104.7
DRESDEN POOL	507A	29AUG13	BLUEGILL	113	21	77.3
DRESDEN POOL	507A	29AUG13	BLUEGILL	112	31	117.5
DRESDEN POOL	507A	29AUG13	BLUEGILL	109	27	112.0
DRESDEN POOL	507A	29AUG13	BLUEGILL	100	23	127.0
DRESDEN POOL	507A	29AUG13	BLUEGILL	113	32	117.8
DRESDEN POOL	507A	29AUG13	BLUEGILL	84	12	118.1
DRESDEN POOL	507A	29AUG13	BLUEGILL	110	29	116.7
DRESDEN POOL	507A	29AUG13	BLUEGILL	99	21	119.9
DRESDEN POOL	507A	29AUG13	BLUEGILL	100	22	121.5
DRESDEN POOL	507A	29AUG13	BLUEGILL	82	11	117.3
DRESDEN POOL	507A	29AUG13	BLUEGILL	101	21	112.2
DRESDEN POOL	507A	29AUG13	BLUEGILL	93	18	126.4
DRESDEN POOL	510	29AUG13	BLUEGILL	123	32	88.9
DRESDEN POOL	510	29AUG13	BLUEGILL	110	28	112.7
DRESDEN POOL	510	29AUG13	BLUEGILL	96	18	113.8
DRESDEN POOL	510	29AUG13	BLUEGILL	98	18	106.3
DRESDEN POOL	510	29AUG13	BLUEGILL	96	19	120.1
DRESDEN POOL	510	29AUG13	BLUEGILL	94	17	115.2
DRESDEN POOL	510	29AUG13	BLUEGILL	129	52	123.4
DRESDEN POOL	510	29AUG13	BLUEGILL	101	23	122.9
DRESDEN POOL	510	29AUG13	BLUEGILL	90	14	109.6
DRESDEN POOL	510	29AUG13	BLUEGILL	105	22	103.3
DRESDEN POOL	510	29AUG13	BLUEGILL	99	20	114.2
DRESDEN POOL	510	29AUG13	BLUEGILL	108	27	115.5
DRESDEN POOL	510	29AUG13	BLUEGILL	87	15	131.4
DRESDEN POOL	510	29AUG13	BLUEGILL	103	23	115.1
DRESDEN POOL	510	29AUG13	BLUEGILL	97	19	116.0
DRESDEN POOL	510	29AUG13	BLUEGILL	110	28	112.7
DRESDEN POOL	510	29AUG13	BLUEGILL	108	28	119.8

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	510	29AUG13	BLUEGILL	85	13	123.0
DRESDEN POOL	510	29AUG13	BLUEGILL	99	20	114.2
DRESDEN POOL	510	29AUG13	BLUEGILL	92	17	123.7
DRESDEN POOL	501	29AUG13	BLUEGILL	88	14	118.1
DRESDEN POOL	501	26SEP13	BLUEGILL	108	22	94.1
DRESDEN POOL	501	26SEP13	BLUEGILL	110	22	88.5
DRESDEN POOL	501	26SEP13	BLUEGILL	97	18	109.9
DRESDEN POOL	501	26SEP13	BLUEGILL	86	12	109.2
DRESDEN POOL	502	26SEP13	BLUEGILL	92	11	80.1
DRESDEN POOL	502	26SEP13	BLUEGILL	122	35	99.9
DRESDEN POOL	502	26SEP13	BLUEGILL	98	15	88.5
DRESDEN POOL	502	26SEP13	BLUEGILL	88	10	84.4
DRESDEN POOL	502	26SEP13	BLUEGILL	180	110	86.5
DRESDEN POOL	502	26SEP13	BLUEGILL	96	18	113.8
DRESDEN POOL	502	26SEP13	BLUEGILL	90	14	109.6
DRESDEN POOL	503	26SEP13	BLUEGILL	128	38	92.5
DRESDEN POOL	503	26SEP13	BLUEGILL	102	20	103.4
DRESDEN POOL	503	26SEP13	BLUEGILL	81	10	111.0
DRESDEN POOL	503	26SEP13	BLUEGILL	89	13	105.6
DRESDEN POOL	503	26SEP13	BLUEGILL	83	10	102.4
DRESDEN POOL	506	26SEP13	BLUEGILL	175	115	99.3
DRESDEN POOL	506	26SEP13	BLUEGILL	112	25	94.8
DRESDEN POOL	506	26SEP13	BLUEGILL	100	20	110.4
DRESDEN POOL	507A	26SEP13	BLUEGILL	117	31	101.7
DRESDEN POOL	507A	26SEP13	BLUEGILL	118	31	98.9
DRESDEN POOL	507A	26SEP13	BLUEGILL	116	27	91.1
DRESDEN POOL	507A	26SEP13	BLUEGILL	141	57	100.7
DRESDEN POOL	507A	26SEP13	BLUEGILL	80	9	104.1
DRESDEN POOL	510	26SEP13	BLUEGILL	128	40	97.4
DRESDEN POOL	510	26SEP13	BLUEGILL	107	19	83.8
DRESDEN POOL	510	26SEP13	BLUEGILL	95	17	111.3
DRESDEN POOL	510	26SEP13	BLUEGILL	130	41	94.8
DRESDEN POOL	510	26SEP13	BLUEGILL	132	45	98.9
DRESDEN POOL	510	26SEP13	BLUEGILL	103	18	90.1
DRESDEN POOL	510	26SEP13	BLUEGILL	112	28	106.2
DRESDEN POOL	510	26SEP13	BLUEGILL	112	26	98.6
DRESDEN POOL	501	17JUL13	SMALLMOUTH BASS	347	500	79.2
DRESDEN POOL	501	17JUL13	SMALLMOUTH BASS	350	500	77.1
DRESDEN POOL	501	17JUL13	SMALLMOUTH BASS	258	215	88.0
DRESDEN POOL	502	18JUL13	SMALLMOUTH BASS	150	35	81.2
DRESDEN POOL	502	18JUL13	SMALLMOUTH BASS	150	35	81.2
DRESDEN POOL	506	18JUL13	SMALLMOUTH BASS	214	130	96.7
DRESDEN POOL	501	29AUG13	SMALLMOUTH BASS	152	31	68.9
DRESDEN POOL	501	29AUG13	SMALLMOUTH BASS	178	65	87.2
DRESDEN POOL	502	29AUG13	SMALLMOUTH BASS	153	42	91.5
DRESDEN POOL	503	29AUG13	SMALLMOUTH BASS	173	51	75.0
DRESDEN POOL	503	29AUG13	SMALLMOUTH BASS	182	59	73.7
DRESDEN POOL	506	29AUG13	SMALLMOUTH BASS	232	140	80.5
DRESDEN POOL	502	26SEP13	SMALLMOUTH BASS	170	65	101.0
DRESDEN POOL	502	26SEP13	SMALLMOUTH BASS	185	72	85.4
DRESDEN POOL	506	26SEP13	SMALLMOUTH BASS	302	380	93.9
DRESDEN POOL	506	26SEP13	SMALLMOUTH BASS	298	280	72.2
DRESDEN POOL	501	17JUL13	LARGEMOUTH BASS	258	240	100.2
DRESDEN POOL	501	17JUL13	LARGEMOUTH BASS	166	48	81.8
DRESDEN POOL	501	17JUL13	LARGEMOUTH BASS	327	590	115.6
DRESDEN POOL	501	17JUL13	LARGEMOUTH BASS	228	155	96.0
DRESDEN POOL	501	17JUL13	LARGEMOUTH BASS	180	70	92.2
DRESDEN POOL	501	17JUL13	LARGEMOUTH BASS	277	330	109.8
DRESDEN POOL	501	17JUL13	LARGEMOUTH BASS	237	165	90.3
DRESDEN POOL	503	18JUL13	LARGEMOUTH BASS	252	225	101.2
DRESDEN POOL	503	18JUL13	LARGEMOUTH BASS	312	395	89.9
DRESDEN POOL	506	18JUL13	LARGEMOUTH BASS	243	220	111.2
DRESDEN POOL	507A	18JUL13	LARGEMOUTH BASS	325	540	107.9
DRESDEN POOL	507A	18JUL13	LARGEMOUTH BASS	285	325	98.7
DRESDEN POOL	507A	18JUL13	LARGEMOUTH BASS	228	170	105.3
DRESDEN POOL	507A	18JUL13	LARGEMOUTH BASS	210	135	108.7
DRESDEN POOL	507A	18JUL13	LARGEMOUTH BASS	170	75	118.5
DRESDEN POOL	510	18JUL13	LARGEMOUTH BASS	280	330	106.1
DRESDEN POOL	510	18JUL13	LARGEMOUTH BASS	225	120	77.5
DRESDEN POOL	510	18JUL13	LARGEMOUTH BASS	165	50	86.9
DRESDEN POOL	510	18JUL13	LARGEMOUTH BASS	176	66	93.3
DRESDEN POOL	510	18JUL13	LARGEMOUTH BASS	316	520	113.6
DRESDEN POOL	510	18JUL13	LARGEMOUTH BASS	245	190	93.5
DRESDEN POOL	510	18JUL13	LARGEMOUTH BASS	267	300	112.2
DRESDEN POOL	510	18JUL13	LARGEMOUTH BASS	248	175	82.9
DRESDEN POOL	501	29AUG13	LARGEMOUTH BASS	305	320	78.3
DRESDEN POOL	501	29AUG13	LARGEMOUTH BASS	298	415	109.4
DRESDEN POOL	501	29AUG13	LARGEMOUTH BASS	308	380	90.1
DRESDEN POOL	501	29AUG13	LARGEMOUTH BASS	163	59	106.6
DRESDEN POOL	502	29AUG13	LARGEMOUTH BASS	294	320	88.0
DRESDEN POOL	503	29AUG13	LARGEMOUTH BASS	262	235	93.4
DRESDEN POOL	503	29AUG13	LARGEMOUTH BASS	251	215	98.0

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	503	29AUG13	LARGEMOUTH BASS	272	245	86.4
DRESDEN POOL	503	29AUG13	LARGEMOUTH BASS	254	215	94.3
DRESDEN POOL	503	29AUG13	LARGEMOUTH BASS	192	75	80.4
DRESDEN POOL	503	29AUG13	LARGEMOUTH BASS	151	38	87.6
DRESDEN POOL	503	29AUG13	LARGEMOUTH BASS	178	64	87.3
DRESDEN POOL	503	29AUG13	LARGEMOUTH BASS	166	51	86.9
DRESDEN POOL	506	29AUG13	LARGEMOUTH BASS	305	380	93.0
DRESDEN POOL	506	29AUG13	LARGEMOUTH BASS	163	53	95.8
DRESDEN POOL	506	29AUG13	LARGEMOUTH BASS	325	460	91.9
DRESDEN POOL	506	29AUG13	LARGEMOUTH BASS	282	320	100.6
DRESDEN POOL	506	29AUG13	LARGEMOUTH BASS	188	74	84.8
DRESDEN POOL	507A	29AUG13	LARGEMOUTH BASS	273	300	104.6
DRESDEN POOL	510	29AUG13	LARGEMOUTH BASS	380	680	82.5
DRESDEN POOL	510	29AUG13	LARGEMOUTH BASS	178	59	80.5
DRESDEN POOL	510	29AUG13	LARGEMOUTH BASS	348	640	102.8
DRESDEN POOL	510	29AUG13	LARGEMOUTH BASS	305	440	107.7
DRESDEN POOL	510	29AUG13	LARGEMOUTH BASS	265	280	107.3
DRESDEN POOL	510	29AUG13	LARGEMOUTH BASS	264	280	108.6
DRESDEN POOL	510	29AUG13	LARGEMOUTH BASS	206	120	102.7
DRESDEN POOL	501	26SEP13	LARGEMOUTH BASS	260	230	93.7
DRESDEN POOL	501	26SEP13	LARGEMOUTH BASS	212	115	89.8
DRESDEN POOL	502	26SEP13	LARGEMOUTH BASS	202	105	95.7
DRESDEN POOL	502	26SEP13	LARGEMOUTH BASS	305	395	96.6
DRESDEN POOL	503	26SEP13	LARGEMOUTH BASS	181	76	98.3
DRESDEN POOL	506	26SEP13	LARGEMOUTH BASS	186	92	109.1
DRESDEN POOL	506	26SEP13	LARGEMOUTH BASS	190	92	101.9
DRESDEN POOL	506	26SEP13	LARGEMOUTH BASS	152	48	108.4
DRESDEN POOL	506	26SEP13	LARGEMOUTH BASS	220	119	82.6
DRESDEN POOL	510	26SEP13	LARGEMOUTH BASS	310	460	106.9
DRESDEN POOL	510	26SEP13	LARGEMOUTH BASS	182	75	95.3
DRESDEN POOL	510	26SEP13	LARGEMOUTH BASS	193	89	93.8
DRESDEN POOL	510	26SEP13	LARGEMOUTH BASS	157	42	85.5
DRESDEN POOL	510	26SEP13	LARGEMOUTH BASS	158	58	115.7
DRESDEN POOL	510	26SEP13	LARGEMOUTH BASS	270	280	101.1
DRESDEN POOL	510	26SEP13	LARGEMOUTH BASS	265	210	80.5
DRESDEN POOL	510	26SEP13	LARGEMOUTH BASS	281	290	92.2
DRESDEN POOL	510	26SEP13	LARGEMOUTH BASS	202	85	77.5
DRESDEN POOL	510	26SEP13	LARGEMOUTH BASS	231	125	74.2
DRESDEN POOL	510	26SEP13	LARGEMOUTH BASS	205	95	82.6
DRESDEN POOL	510	26SEP13	LARGEMOUTH BASS	218	130	92.9
DRESDEN POOL	501	17JUL13	FRESHWATER DRUM	360	610	103.3
DRESDEN POOL	501	17JUL13	FRESHWATER DRUM	405	900	104.5
DRESDEN POOL	501	17JUL13	FRESHWATER DRUM	412	860	94.5
DRESDEN POOL	510	18JUL13	FRESHWATER DRUM	495	1670	101.9
DRESDEN POOL	501	29AUG13	FRESHWATER DRUM	362	520	86.5
DRESDEN POOL	502	29AUG13	FRESHWATER DRUM	318	380	95.7
DRESDEN POOL	503	29AUG13	FRESHWATER DRUM	325	410	96.3
DRESDEN POOL	501	26SEP13	FRESHWATER DRUM	415	860	92.3
DOWNSTREAM DRESDEN DAM	512	19JUL13	GIZZARD SHAD	345	350	75.0
DOWNSTREAM DRESDEN DAM	512	19JUL13	GIZZARD SHAD	290	220	81.8
DOWNSTREAM DRESDEN DAM	512	19JUL13	GIZZARD SHAD	270	200	93.2
DOWNSTREAM DRESDEN DAM	512	19JUL13	GIZZARD SHAD	186	56	85.1
DOWNSTREAM DRESDEN DAM	512	30AUG13	GIZZARD SHAD	213	90	89.0
DOWNSTREAM DRESDEN DAM	512	30AUG13	GIZZARD SHAD	272	170	77.4
DOWNSTREAM DRESDEN DAM	512	30AUG13	GIZZARD SHAD	242	125	82.5
DOWNSTREAM DRESDEN DAM	515	30AUG13	GIZZARD SHAD	252	135	78.3
DOWNSTREAM DRESDEN DAM	515	30AUG13	GIZZARD SHAD	213	80	79.1
DOWNSTREAM DRESDEN DAM	515	30AUG13	GIZZARD SHAD	250	130	77.4
DOWNSTREAM DRESDEN DAM	512	27SEP13	GIZZARD SHAD	256	150	82.8
DOWNSTREAM DRESDEN DAM	515	27SEP13	GIZZARD SHAD	228	100	79.7
DOWNSTREAM DRESDEN DAM	515	27SEP13	COMMON CARP	488	1650	101.5
DOWNSTREAM DRESDEN DAM	512	30AUG13	RIVER CARPSUCKER	223	130	84.5
DOWNSTREAM DRESDEN DAM	512	19JUL13	SMALLMOUTH BUFFALO	382	790	81.7
DOWNSTREAM DRESDEN DAM	512	19JUL13	SHORTHEAD REDHORSE	177	56	85.2
DOWNSTREAM DRESDEN DAM	512	19JUL13	SHORTHEAD REDHORSE	298	300	97.6
DOWNSTREAM DRESDEN DAM	512	30AUG13	SHORTHEAD REDHORSE	218	104	85.4
DOWNSTREAM DRESDEN DAM	512	27SEP13	SHORTHEAD REDHORSE	242	130	78.4
DOWNSTREAM DRESDEN DAM	512	27SEP13	SHORTHEAD REDHORSE	223	110	84.5
DOWNSTREAM DRESDEN DAM	512	19JUL13	CHANNEL CATFISH	465	900	92.8
DOWNSTREAM DRESDEN DAM	512	19JUL13	CHANNEL CATFISH	471	1010	99.9
DOWNSTREAM DRESDEN DAM	515	19JUL13	CHANNEL CATFISH	390	440	81.0
DOWNSTREAM DRESDEN DAM	512	30AUG13	CHANNEL CATFISH	415	645	96.8
DOWNSTREAM DRESDEN DAM	512	30AUG13	CHANNEL CATFISH	410	610	95.2
DOWNSTREAM DRESDEN DAM	512	30AUG13	CHANNEL CATFISH	371	415	90.1
DOWNSTREAM DRESDEN DAM	515	30AUG13	CHANNEL CATFISH	448	800	93.3
DOWNSTREAM DRESDEN DAM	515	30AUG13	CHANNEL CATFISH	438	690	86.7
DOWNSTREAM DRESDEN DAM	515	30AUG13	CHANNEL CATFISH	468	1040	105.0
DOWNSTREAM DRESDEN DAM	515	27SEP13	CHANNEL CATFISH	505	1080	84.9
DOWNSTREAM DRESDEN DAM	515	27SEP13	CHANNEL CATFISH	480	930	86.4
DOWNSTREAM DRESDEN DAM	512	19JUL13	FLATHEAD CATFISH	213	90	94.5
DOWNSTREAM DRESDEN DAM	512	19JUL13	GREEN SUNFISH	91	15	103.8
DOWNSTREAM DRESDEN DAM	515	19JUL13	GREEN SUNFISH	67	6	107.3

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DOWNSTREAM DRESDEN DAM	515	19JUL13	GREEN SUNFISH	61	4	95.7
DOWNSTREAM DRESDEN DAM	515	19JUL13	GREEN SUNFISH	69	8	130.6
DOWNSTREAM DRESDEN DAM	515	19JUL13	GREEN SUNFISH	60	4	100.7
DOWNSTREAM DRESDEN DAM	512	30AUG13	GREEN SUNFISH	109	28	110.7
DOWNSTREAM DRESDEN DAM	512	30AUG13	GREEN SUNFISH	103	19	89.5
DOWNSTREAM DRESDEN DAM	512	30AUG13	GREEN SUNFISH	86	13	107.2
DOWNSTREAM DRESDEN DAM	512	30AUG13	GREEN SUNFISH	84	13	115.3
DOWNSTREAM DRESDEN DAM	515	30AUG13	GREEN SUNFISH	90	14	100.2
DOWNSTREAM DRESDEN DAM	515	27SEP13	GREEN SUNFISH	77	9	104.5
DOWNSTREAM DRESDEN DAM	515	27SEP13	GREEN SUNFISH	71	7	104.6
DOWNSTREAM DRESDEN DAM	515	27SEP13	GREEN SUNFISH	60	4	100.7
DOWNSTREAM DRESDEN DAM	515	27SEP13	GREEN SUNFISH	83	12	110.4
DOWNSTREAM DRESDEN DAM	512	19JUL13	BLUEGILL	128	36	87.7
DOWNSTREAM DRESDEN DAM	512	19JUL13	BLUEGILL	112	24	91.0
DOWNSTREAM DRESDEN DAM	512	19JUL13	BLUEGILL	112	29	109.9
DOWNSTREAM DRESDEN DAM	515	19JUL13	BLUEGILL	112	23	87.2
DOWNSTREAM DRESDEN DAM	515	19JUL13	BLUEGILL	126	33	84.7
DOWNSTREAM DRESDEN DAM	515	19JUL13	BLUEGILL	125	35	92.2
DOWNSTREAM DRESDEN DAM	515	19JUL13	BLUEGILL	112	22	83.4
DOWNSTREAM DRESDEN DAM	515	19JUL13	BLUEGILL	127	38	95.0
DOWNSTREAM DRESDEN DAM	515	19JUL13	BLUEGILL	118	33	105.2
DOWNSTREAM DRESDEN DAM	515	19JUL13	BLUEGILL	125	35	92.2
DOWNSTREAM DRESDEN DAM	515	19JUL13	BLUEGILL	120	32	96.5
DOWNSTREAM DRESDEN DAM	515	19JUL13	BLUEGILL	100	19	104.9
DOWNSTREAM DRESDEN DAM	515	19JUL13	BLUEGILL	87	15	131.4
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	151	68	95.7
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	144	59	97.2
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	104	24	116.3
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	86	14	127.4
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	115	32	111.1
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	90	15	117.4
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	99	22	125.6
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	85	10	94.6
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	82	11	117.3
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	92	15	109.2
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	87	13	113.9
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	87	14	122.7
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	82	11	117.3
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	83	11	112.6
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	85	11	104.1
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	127	32	80.0
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	134	39	81.6
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	134	49	102.5
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	124	32	86.6
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	106	25	113.8
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	104	24	116.3
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	97	19	116.0
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	87	14	122.7
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	85	12	113.6
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	86	13	118.3
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	95	18	117.8
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	92	15	109.2
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	86	13	118.3
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	94	16	108.4
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	91	17	128.3
DOWNSTREAM DRESDEN DAM	512	30AUG13	BLUEGILL	86	13	118.3
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	86	12	109.2
DOWNSTREAM DRESDEN DAM	515	30AUG13	BLUEGILL	91	17	128.3
DOWNSTREAM DRESDEN DAM	512	27SEP13	BLUEGILL	146	61	96.0
DOWNSTREAM DRESDEN DAM	512	27SEP13	BLUEGILL	107	23	101.5
DOWNSTREAM DRESDEN DAM	515	27SEP13	BLUEGILL	152	71	97.8
DOWNSTREAM DRESDEN DAM	515	27SEP13	BLUEGILL	133	58	124.4
DOWNSTREAM DRESDEN DAM	515	27SEP13	BLUEGILL	149	70	103.0
DOWNSTREAM DRESDEN DAM	515	27SEP13	BLUEGILL	149	65	95.6
DOWNSTREAM DRESDEN DAM	515	27SEP13	BLUEGILL	135	52	106.1
DOWNSTREAM DRESDEN DAM	515	27SEP13	BLUEGILL	110	26	104.6
DOWNSTREAM DRESDEN DAM	515	27SEP13	BLUEGILL	103	19	95.1
DOWNSTREAM DRESDEN DAM	515	27SEP13	BLUEGILL	88	12	101.2
DOWNSTREAM DRESDEN DAM	515	27SEP13	BLUEGILL	90	14	109.6
DOWNSTREAM DRESDEN DAM	512	19JUL13	SMALLMOUTH BASS	177	56	76.5
DOWNSTREAM DRESDEN DAM	515	19JUL13	SMALLMOUTH BASS	160	43	81.1
DOWNSTREAM DRESDEN DAM	512	30AUG13	SMALLMOUTH BASS	322	480	96.6
DOWNSTREAM DRESDEN DAM	512	30AUG13	SMALLMOUTH BASS	300	300	75.7
DOWNSTREAM DRESDEN DAM	512	30AUG13	SMALLMOUTH BASS	172	54	80.9
DOWNSTREAM DRESDEN DAM	512	30AUG13	SMALLMOUTH BASS	171	55	83.9
DOWNSTREAM DRESDEN DAM	512	30AUG13	SMALLMOUTH BASS	168	58	93.6
DOWNSTREAM DRESDEN DAM	512	30AUG13	SMALLMOUTH BASS	182	68	85.0
DOWNSTREAM DRESDEN DAM	515	30AUG13	SMALLMOUTH BASS	182	72	90.0
DOWNSTREAM DRESDEN DAM	515	30AUG13	SMALLMOUTH BASS	151	38	86.3
DOWNSTREAM DRESDEN DAM	512	27SEP13	SMALLMOUTH BASS	155	45	94.0
DOWNSTREAM DRESDEN DAM	515	27SEP13	SMALLMOUTH BASS	393	680	72.4
DOWNSTREAM DRESDEN DAM	515	27SEP13	SMALLMOUTH BASS	185	71	84.2

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DOWNSTREAM DRESDEN DAM	515	27SEP13	SMALLMOUTH BASS	181	71	90.3
DOWNSTREAM DRESDEN DAM	515	27SEP13	SMALLMOUTH BASS	335	470	83.4
DOWNSTREAM DRESDEN DAM	515	27SEP13	SMALLMOUTH BASS	195	94	94.2
DOWNSTREAM DRESDEN DAM	512	19JUL13	LARGEMOUTH BASS	263	265	104.0
DOWNSTREAM DRESDEN DAM	512	19JUL13	LARGEMOUTH BASS	312	410	93.3
DOWNSTREAM DRESDEN DAM	512	19JUL13	LARGEMOUTH BASS	174	84	123.2
DOWNSTREAM DRESDEN DAM	512	30AUG13	LARGEMOUTH BASS	182	59	75.0
DOWNSTREAM DRESDEN DAM	515	30AUG13	LARGEMOUTH BASS	388	890	101.0
DOWNSTREAM DRESDEN DAM	515	30AUG13	LARGEMOUTH BASS	177	59	82.0
DOWNSTREAM DRESDEN DAM	512	19JUL13	FRESHWATER DRUM	477	1250	85.9
DOWNSTREAM DRESDEN DAM	512	30AUG13	FRESHWATER DRUM	402	790	93.9
DOWNSTREAM DRESDEN DAM	512	27SEP13	FRESHWATER DRUM	430	830	79.5
DOWNSTREAM DRESDEN DAM	512	27SEP13	FRESHWATER DRUM	462	1310	99.7
DOWNSTREAM DRESDEN DAM	512	27SEP13	FRESHWATER DRUM	407	900	102.8
DOWNSTREAM DRESDEN DAM	515	27SEP13	FRESHWATER DRUM	344	380	74.4

EXHIBIT F:

INCIDENCE OF DISEASE, PARASITISM, AND ABNORMALITIES OF FISH

EXHIBIT F

TABLE F-1. NUMBER OF FISH WITH DEFORMITIES IN DRESDEN POOL AND THE PERCENTAGE THAT DEFORMITIES CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, JULY-SEPTEMBER 2013.

SPECIES	TOTAL WITH DEFORMS	TOTAL WITH DELT ANOMALIES	PERCENT WITH DEFORMS
GIZZARD SHAD	--	1	--
THREADFIN SHAD	--	--	--
NORTHERN PIKE	--	--	--
CENTRAL STONEROLLER	--	--	--
COMMON CARP	--	6	--
GOLDEN SHINER	--	--	--
PALLID SHINER	--	--	--
EMERALD SHINER	--	--	--
GHOST SHINER	--	--	--
STRIPED SHINER	--	--	--
SPOTTAIL SHINER	--	--	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
BLUNTNOSE MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
QUILLBACK	--	1	--
SMALLMOUTH BUFFALO	--	1	--
SPOTTED SUCKER	--	--	--
SILVER REDHORSE	--	--	--
GOLDEN REDHORSE	--	2	--
SHORTHEAD REDHORSE	--	--	--
CHANNEL CATFISH	--	8	--
FLATHEAD CATFISH	--	1	--
BLACKSTRIPE TOPMINNOW	--	--	--
BROOK SILVERSIDE	--	--	--
ROCK BASS	--	1	--
GREEN SUNFISH	--	--	--
PUMPKINSEED	--	--	--
ORANGESPOTTED SUNFISH	--	--	--
BLUEGILL	1	5	20.0
NORTHERN SUNFISH	--	--	--
Lepomis HYBRID	--	--	--
Lepomis sp.	--	--	--
SMALLMOUTH BASS	--	2	--
LARGEMOUTH BASS	1	12	8.3
BLACK CRAPPIE	--	--	--
JOHNNY DARTER	--	--	--
LOGPERCH	--	--	--
BLACKSIDE DARTER	--	--	--
SLENDERHEAD DARTER	--	--	--
FRESHWATER DRUM	--	3	--
ROUND GOBY	--	--	--
TOTAL FISH	2	43	4.7

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-2. NUMBER OF FISH WITH LESIONS IN DRESDEN POOL AND THE PERCENTAGE THAT LESIONS CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, JULY-SEPTEMBER 2013.

SPECIES	TOTAL WITH LESIONS	TOTAL WITH DELT ANOMALIES	PERCENT WITH LESIONS
GIZZARD SHAD	1	1	100.0
THREADFIN SHAD	--	--	--
NORTHERN PIKE	--	--	--
CENTRAL STONEROLLER	--	--	--
COMMON CARP	--	6	--
GOLDEN SHINER	--	--	--
PALLID SHINER	--	--	--
EMERALD SHINER	--	--	--
GHOST SHINER	--	--	--
STRIPED SHINER	--	--	--
SPOTTAIL SHINER	--	--	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
BLUNTNOSE MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
QUILLBACK	--	1	--
SMALLMOUTH BUFFALO	--	1	--
SPOTTED SUCKER	--	--	--
SILVER REDHORSE	--	--	--
GOLDEN REDHORSE	1	2	50.0
SHORTHEAD REDHORSE	--	--	--
CHANNEL CATFISH	1	8	12.5
FLATHEAD CATFISH	--	1	--
BLACKSTRIPE TOPMINNOW	--	--	--
BROOK SILVERSIDE	--	--	--
ROCK BASS	--	1	--
GREEN SUNFISH	--	--	--
PUMPKINSEED	--	--	--
ORANGESPOTTED SUNFISH	--	--	--
BLUEGILL	--	5	--
NORTHERN SUNFISH	--	--	--
Lepomis HYBRID	--	--	--
Lepomis sp.	--	--	--
SMALLMOUTH BASS	--	2	--
LARGEMOUTH BASS	--	12	--
BLACK CRAPPIE	--	--	--
JOHNNY DARTER	--	--	--
LOGPERCH	--	--	--
BLACKSIDE DARTER	--	--	--
SLENDERHEAD DARTER	--	--	--
FRESHWATER DRUM	--	3	--
ROUND GOBY	--	--	--
TOTAL FISH	3	43	7.0

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-3. NUMBER OF FISH WITH TUMORS IN DRESDEN POOL AND THE PERCENTAGE THAT TUMORS CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, JULY-SEPTEMBER 2013.

SPECIES	TOTAL WITH TUMORS	TOTAL WITH DELT ANOMALIES	PERCENT WITH TUMORS
GIZZARD SHAD	--	1	--
THREADFIN SHAD	--	--	--
NORTHERN PIKE	--	--	--
CENTRAL STONEROLLER	--	--	--
COMMON CARP	--	6	--
GOLDEN SHINER	--	--	--
PALLID SHINER	--	--	--
EMERALD SHINER	--	--	--
GHOST SHINER	--	--	--
STRIPED SHINER	--	--	--
SPOTTAIL SHINER	--	--	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
BLUNTNOSE MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
QUILLBACK	--	1	--
SMALLMOUTH BUFFALO	--	1	--
SPOTTED SUCKER	--	--	--
SILVER REDHORSE	--	--	--
GOLDEN REDHORSE	--	2	--
SHORTHEAD REDHORSE	--	--	--
CHANNEL CATFISH	--	8	--
FLATHEAD CATFISH	--	1	--
BLACKSTRIPE TOPMINNOW	--	--	--
BROOK SILVERSIDE	--	--	--
ROCK BASS	--	1	--
GREEN SUNFISH	--	--	--
PUMPKINSEED	--	--	--
ORANGESPOTTED SUNFISH	--	--	--
BLUEGILL	--	5	--
NORTHERN SUNFISH	--	--	--
Lepomis HYBRID	--	--	--
Lepomis sp.	--	--	--
SMALLMOUTH BASS	--	2	--
LARGEMOUTH BASS	--	12	--
BLACK CRAPPIE	--	--	--
JOHNNY DARTER	--	--	--
LOGPERCH	--	--	--
BLACKSIDE DARTER	--	--	--
SLENDERHEAD DARTER	--	--	--
FRESHWATER DRUM	--	3	--
ROUND GOBY	--	--	--
TOTAL FISH	--	43	--

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-4. NUMBER OF FISH WITH DEFORMITIES DOWNSTREAM OF DRESDEN LOCK AND DAM AND THE PERCENTAGE THAT DEFORMITIES CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, JULY-SEPTEMBER 2013.

SPECIES	TOTAL WITH DEFORMS	TOTAL WITH DELT ANOMALIES	PERCENT WITH DEFORMS
SKIPJACK HERRING	--	--	--
GIZZARD SHAD	--	--	--
COMMON CARP	--	--	--
GOLDEN SHINER	--	--	--
EMERALD SHINER	--	--	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
SAND SHINER	--	--	--
MIMIC SHINER	--	--	--
CHANNEL/MIMIC SHINER	--	--	--
Notropis sp.	--	--	--
BLUNTNOSE MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
SMALLMOUTH BUFFALO	--	1	--
SILVER REDHORSE	--	--	--
GOLDEN REDHORSE	--	1	--
SHORTHEAD REDHORSE	--	--	--
CHANNEL CATFISH	--	7	--
FLATHEAD CATFISH	--	--	--
BROOK SILVERSIDE	--	--	--
GREEN SUNFISH	--	--	--
ORANGESPOTTED SUNFISH	--	--	--
BLUEGILL	--	1	--
NORTHERN SUNFISH	--	--	--
Lepomis HYBRID	--	--	--
SMALLMOUTH BASS	--	--	--
LARGEMOUTH BASS	--	--	--
LOGPERCH	--	--	--
FRESHWATER DRUM	--	3	--
TOTAL FISH	--	13	--

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-5. NUMBER OF FISH WITH LESIONS DOWNSTREAM OF DRESDEN LOCK AND DAM AND THE PERCENTAGE THAT LESIONS CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, JULY-SEPTEMBER 2013.

SPECIES	TOTAL WITH LESIONS	TOTAL WITH DELT ANOMALIES	PERCENT WITH LESIONS
SKIPJACK HERRING	--	--	--
GIZZARD SHAD	--	--	--
COMMON CARP	--	--	--
GOLDEN SHINER	--	--	--
EMERALD SHINER	--	--	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
SAND SHINER	--	--	--
MIMIC SHINER	--	--	--
CHANNEL/MIMIC SHINER	--	--	--
Notropis sp.	--	--	--
BLUNTNOSE MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
SMALLMOUTH BUFFALO	--	1	--
SILVER REDHORSE	--	--	--
GOLDEN REDHORSE	--	1	--
SHORTHEAD REDHORSE	--	--	--
CHANNEL CATFISH	2	7	28.6
FLATHEAD CATFISH	--	--	--
BROOK SILVERSIDE	--	--	--
GREEN SUNFISH	--	--	--
ORANGESPOTTED SUNFISH	--	--	--
BLUEGILL	--	1	--
NORTHERN SUNFISH	--	--	--
Lepomis HYBRID	--	--	--
SMALLMOUTH BASS	--	--	--
LARGEMOUTH BASS	--	--	--
LOGPERCH	--	--	--
FRESHWATER DRUM	--	3	--
TOTAL FISH	2	13	15.4

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-6. NUMBER OF FISH WITH TUMORS DOWNSTREAM OF DRESDEN LOCK AND DAM AND THE PERCENTAGE THAT TUMORS CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, JULY-SEPTEMBER 2013.

SPECIES	TOTAL WITH TUMORS	TOTAL WITH DELT ANOMALIES	PERCENT WITH TUMORS
SKIPJACK HERRING	--	--	--
GIZZARD SHAD	--	--	--
COMMON CARP	--	--	--
GOLDEN SHINER	--	--	--
EMERALD SHINER	--	--	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
SAND SHINER	--	--	--
MIMIC SHINER	--	--	--
CHANNEL/MIMIC SHINER	--	--	--
Notropis sp.	--	--	--
BLUNTNOSE MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
SMALLMOUTH BUFFALO	--	1	--
SILVER REDHORSE	--	--	--
GOLDEN REDHORSE	--	1	--
SHORTHEAD REDHORSE	--	--	--
CHANNEL CATFISH	--	7	--
FLATHEAD CATFISH	--	--	--
BROOK SILVERSIDE	--	--	--
GREEN SUNFISH	--	--	--
ORANGESPOTTED SUNFISH	--	--	--
BLUEGILL	--	1	--
NORTHERN SUNFISH	--	--	--
Lepomis HYBRID	--	--	--
SMALLMOUTH BASS	--	--	--
LARGEMOUTH BASS	--	--	--
LOGPERCH	--	--	--
FRESHWATER DRUM	--	3	--
TOTAL FISH	--	13	--

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-7. NUMBER AND PERCENT OF FISH WITH ALL ANOMALIES IN DRESDEN POOL AND DOWNSTREAM OF DRESDEN LOCK AND DAM, JULY-SEPTEMBER 2013.

	DRESDEN POOL		DOWNSTREAM DRESDEN DAM		TOTAL NUMBER	TOTAL NUMBER	TOTAL PERCENT
SPECIES	#	%	#	%	AFFECTED	EXAMINED	AFFECTED
SKIPJACK HERRING	--	--	--	--	--	2	--
GIZZARD SHAD	4	1.0	--	--	4	422	0.9
THREADFIN SHAD	--	--	--	--	--	8	--
NORTHERN PIKE	--	--	--	--	--	1	--
CENTRAL STONEROLLER	--	--	--	--	--	1	--
COMMON CARP	7	38.9	--	--	7	19	36.8
GOLDEN SHINER	--	--	--	--	--	2	--
PALLID SHINER	--	--	--	--	--	29	--
EMERALD SHINER	--	--	--	--	--	29	--
GHOST SHINER	--	--	--	--	--	1	--
STRIPED SHINER	--	--	--	--	--	8	--
SPOTTAIL SHINER	--	--	--	--	--	9	--
ROSYFACE SHINER	--	--	--	--	--	6	--
SPOTFIN SHINER	--	--	--	--	--	223	--
SAND SHINER	--	--	--	--	--	2	--
MIMIC SHINER	--	--	--	--	--	10	--
CHANNEL/MIMIC SHINER	--	--	--	--	--	1	--
Notropis sp.	--	--	--	--	--	1	--
BLUNTNOSE MINNOW	--	--	--	--	--	143	--
BULLHEAD MINNOW	--	--	--	--	--	64	--
RIVER CARPSUCKER	--	--	--	--	--	3	--
QUILLBACK	1	16.7	--	--	1	6	16.7
SMALLMOUTH BUFFALO	1	20.0	1	100.0	2	6	33.3
SPOTTED SUCKER	--	--	--	--	--	1	--
SILVER REDHORSE	--	--	1	33.3	1	5	20.0
GOLDEN REDHORSE	3	25.0	2	14.3	5	26	19.2
SHORTHEAD REDHORSE	--	--	1	20.0	1	36	2.8
CHANNEL CATFISH	11	78.6	10	90.9	21	25	84.0
FLATHEAD CATFISH	1	14.3	--	--	1	8	12.5
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	3	--
BROOK SILVERSIDE	--	--	--	--	--	101	--
ROCK BASS	1	9.1	--	--	1	11	9.1
GREEN SUNFISH	2	2.7	--	--	2	91	2.2
PUMPKINSEED	--	--	--	--	--	8	--
ORANGESPOTTED SUNFISH	--	--	--	--	--	5	--
BLUEGILL	13	3.3	3	4.5	16	461	3.5
NORTHERN SUNFISH	1	1.3	--	--	1	91	1.1
Lepomis HYBRID	--	--	--	--	--	14	--
Lepomis sp.	--	--	--	--	--	3	--
SMALLMOUTH BASS	4	12.9	2	7.7	6	57	10.5
LARGEMOUTH BASS	22	19.5	1	12.5	23	121	19.0
BLACK CRAPPIE	--	--	--	--	--	1	--
JOHNNY DARTER	--	--	--	--	--	3	--
LOGPERCH	--	--	--	--	--	39	--
BLACKSIDE DARTER	--	--	--	--	--	1	--
SLENDERHEAD DARTER	--	--	--	--	--	1	--
FRESHWATER DRUM	3	37.5	4	66.7	7	14	50.0
ROUND GOBY	--	--	--	--	--	1	--
TOTAL FISH	74	4.1	25	7.6	99	2123	4.7

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-8. NUMBER AND PERCENT OF FISH WITH DELT ANOMALIES, PARASITES, AND "OTHER" ABNORMALITIES IN DRESDEN POOL AND DOWNSTREAM OF DRESDEN LOCK AND DAM, JULY-SEPTEMBER 2013.

SEGMENT: DRESDEN POOL

SPECIES	DELT #	DELT %	PARST #	PARST %	OTHER #	OTHER %	TOTAL NUMBER AFFECTED	TOTAL NUMBER EXAMINED	TOTAL PERCENT AFFECTED
GIZZARD SHAD	1	0.2	--	--	3	0.7	4	410	1.0
THREADFIN SHAD	--	--	--	--	--	--	--	8	--
NORTHERN PIKE	--	--	--	--	--	--	--	1	--
CENTRAL STONEROLLER	--	--	--	--	--	--	--	1	--
COMMON CARP	6	33.3	--	--	4	22.2	7	18	38.9
GOLDEN SHINER	--	--	--	--	--	--	--	1	--
PALLID SHINER	--	--	--	--	--	--	--	29	--
EMERALD SHINER	--	--	--	--	--	--	--	26	--
GHOST SHINER	--	--	--	--	--	--	--	1	--
STRIPED SHINER	--	--	--	--	--	--	--	8	--
SPOTTAIL SHINER	--	--	--	--	--	--	--	9	--
ROSYFACE SHINER	--	--	--	--	--	--	--	3	--
SPOTFIN SHINER	--	--	--	--	--	--	--	143	--
BLUNTNOSE MINNOW	--	--	--	--	--	--	--	136	--
BULLHEAD MINNOW	--	--	--	--	--	--	--	58	--
RIVER CARPSUCKER	--	--	--	--	--	--	--	2	--
QUILLBACK	1	16.7	--	--	1	16.7	1	6	16.7
SMALLMOUTH BUFFALO	1	20.0	--	--	--	--	1	5	20.0
SPOTTED SUCKER	--	--	--	--	--	--	--	1	--
SILVER REDHORSE	--	--	--	--	--	--	--	2	--
GOLDEN REDHORSE	2	16.7	--	--	1	8.3	3	12	25.0
SHORTHEAD REDHORSE	--	--	--	--	--	--	--	31	--
CHANNEL CATFISH	8	57.1	4	28.6	1	7.1	11	14	78.6
FLATHEAD CATFISH	1	14.3	--	--	1	14.3	1	7	14.3
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	3	--
BROOK SILVERSIDE	--	--	--	--	--	--	--	92	--
ROCK BASS	1	9.1	--	--	--	--	1	11	9.1
GREEN SUNFISH	--	--	2	2.7	--	--	2	74	2.7
PUMPKINSEED	--	--	--	--	--	--	--	8	--
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	--	4	--
BLUEGILL	5	1.3	3	0.8	6	1.5	13	394	3.3
NORTHERN SUNFISH	--	--	1	1.3	--	--	1	80	1.3
Lepomis HYBRID	--	--	--	--	--	--	--	9	--
Lepomis sp.	--	--	--	--	--	--	--	3	--
SMALLMOUTH BASS	2	6.5	--	--	4	12.9	4	31	12.9
LARGEMOUTH BASS	12	10.6	5	4.4	7	6.2	22	113	19.5
BLACK CRAPPIE	--	--	--	--	--	--	--	1	--
JOHNNY DARTER	--	--	--	--	--	--	--	3	--
LOGPERCH	--	--	--	--	--	--	--	26	--
BLACKSIDE DARTER	--	--	--	--	--	--	--	1	--
SLENDERHEAD DARTER	--	--	--	--	--	--	--	1	--
FRESHWATER DRUM	3	37.5	--	--	--	--	3	8	37.5
ROUND GOBY	--	--	--	--	--	--	--	1	--
TOTAL FISH	43	2.4	15	0.8	28	1.6	74	1795	4.1

EXHIBIT F (cont.)

TABLE F-8 (cont.)

SEGMENT: DOWNSTREAM DRESDEN DAM

SPECIES	DELT #	DELT %	PARST #	PARST %	OTHER #	OTHER %	TOTAL NUMBER AFFECTED	TOTAL NUMBER EXAMINED	TOTAL PERCENT AFFECTED
SKIPJACK HERRING	--	--	--	--	--	--	--	2	--
GIZZARD SHAD	--	--	--	--	--	--	--	12	--
COMMON CARP	--	--	--	--	--	--	--	1	--
GOLDEN SHINER	--	--	--	--	--	--	--	1	--
EMERALD SHINER	--	--	--	--	--	--	--	3	--
ROSYFACE SHINER	--	--	--	--	--	--	--	3	--
SPOTFIN SHINER	--	--	--	--	--	--	--	80	--
SAND SHINER	--	--	--	--	--	--	--	2	--
MIMIC SHINER	--	--	--	--	--	--	--	10	--
CHANNEL/MIMIC SHINER	--	--	--	--	--	--	--	1	--
Notropis sp.	--	--	--	--	--	--	--	1	--
BLUNTNOSE MINNOW	--	--	--	--	--	--	--	7	--
BULLHEAD MINNOW	--	--	--	--	--	--	--	6	--
RIVER CARPSUCKER	--	--	--	--	--	--	--	1	--
SMALLMOUTH BUFFALO	1	100.0	--	--	1	100.0	1	1	100.0
SILVER REDHORSE	--	--	--	--	1	33.3	1	3	33.3
GOLDEN REDHORSE	1	7.1	--	--	1	7.1	2	14	14.3
SHORTHEAD REDHORSE	--	--	--	--	1	20.0	1	5	20.0
CHANNEL CATFISH	7	63.6	3	27.3	3	27.3	10	11	90.9
FLATHEAD CATFISH	--	--	--	--	--	--	--	1	--
BROOK SILVERSIDE	--	--	--	--	--	--	--	9	--
GREEN SUNFISH	--	--	--	--	--	--	--	17	--
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	--	1	--
BLUEGILL	1	1.5	1	1.5	1	1.5	3	67	4.5
NORTHERN SUNFISH	--	--	--	--	--	--	--	11	--
Lepomis HYBRID	--	--	--	--	--	--	--	5	--
SMALLMOUTH BASS	--	--	1	3.8	2	7.7	2	26	7.7
LARGEMOUTH BASS	--	--	1	12.5	--	--	1	8	12.5
LOGPERCH	--	--	--	--	--	--	--	13	--
FRESHWATER DRUM	3	50.0	1	16.7	3	50.0	4	6	66.7
TOTAL FISH	13	4.0	7	2.1	13	4.0	25	328	7.6

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-9. NUMBERS OF FISH EXHIBITING SLIGHT, MODERATE, AND SEVERE FIN EROSION IN DRESDEN POOL AND DOWNSTREAM OF DRESDEN LOCK AND DAM AND THE PERCENTAGE THAT EACH CATEGORY OF FIN EROSION CONTRIBUTED TO ALL FIN EROSION COMBINED, JULY-SEPTEMBER 2013.

SEGMENT: DRESDEN POOL

SPECIES	SLIGHT #	MODERATE #	SEVERE #	TOTAL EROSION %	SLIGHT %	MODERATE %	SEVERE %
COMMON CARP	4	1	1	6	66.7	16.7	16.7
QUILLBACK	1	0	0	1	100.0	0.0	0.0
SMALLMOUTH BUFFALO	1	0	0	1	100.0	0.0	0.0
GOLDEN REDHORSE	1	1	0	2	50.0	50.0	0.0
CHANNEL CATFISH	1	0	0	1	100.0	0.0	0.0
FLATHEAD CATFISH	1	0	0	1	100.0	0.0	0.0
ROCK BASS	1	0	0	1	100.0	0.0	0.0
BLUEGILL	4	0	0	4	100.0	0.0	0.0
SMALLMOUTH BASS	2	0	0	2	100.0	0.0	0.0
LARGEMOUTH BASS	11	0	0	11	100.0	0.0	0.0
FRESHWATER DRUM	3	0	0	3	100.0	0.0	0.0
TOTAL FISH	30	2	1	33	90.9	6.1	3.0

SEGMENT: DOWNSTREAM DRESDEN DAM

SPECIES	SLIGHT #	MODERATE #	SEVERE #	TOTAL EROSION %	SLIGHT %	MODERATE %	SEVERE %
SMALLMOUTH BUFFALO	1	0	0	1	100.0	0.0	0.0
GOLDEN REDHORSE	1	0	0	1	100.0	0.0	0.0
CHANNEL CATFISH	2	0	0	2	100.0	0.0	0.0
BLUEGILL	1	0	0	1	100.0	0.0	0.0
FRESHWATER DRUM	2	1	0	3	66.7	33.3	0.0
TOTAL FISH	7	1	0	8	87.5	12.5	0.0

NOTE: SEINE DATA ARE EXCLUDED.

RAW DATA LISTING OF FISH WITH ANOMALIES, 2013.

TRIP: 17-19 JUL

SPECIES	ANOMALY	502 #	503 #	506 #	507 #	512 #	515 #	TOTAL #		
LONGNOSE GAR	Scoliosis	-	-	1	-	-	-	-	-	1
GIZZARD SHAD	Emaciated	-	-	1	-	-	-	-	-	1
COMMON CARP	Eroded fin-slight	-	-	-	1	1	-	-	-	2
	Deformed fin rays	-	-	-	-	1	-	-	-	1
	Missing scales	-	-	-	-	1	-	-	-	1
QUILLBACK	Eroded fin-slight	-	1	-	-	-	-	-	-	1
	Regenerated scales	-	1	-	-	-	-	-	-	1
SMALLMOUTH BUFFALO	Eroded fin-slight	-	-	-	-	-	1	1	-	2
	Deformed fin rays	-	-	-	-	-	-	1	-	1
SILVER REDHORSE	Regenerated scales	-	-	-	-	-	-	1	-	1
GOLDEN REDHORSE	Eroded fin-moderate	-	-	-	-	1	-	-	-	1
CHANNEL CATFISH	Eroded fin-slight	-	-	-	-	-	1	2	-	3
	Parasite	-	1	1	-	-	-	-	-	2
	Lesion	-	-	-	-	-	1	1	-	2
	Eroded barbels	-	-	1	-	-	1	2	1	5
FLATHEAD CATFISH	Eroded fin-slight	1	-	-	-	-	-	-	-	1
	Deformed fin rays	1	-	-	-	-	-	-	-	1
	Emaciated	1	-	-	-	-	-	-	-	1
BLUEGILL	Eroded fin-slight	3	-	1	-	-	-	1	-	5
	Deformed fin rays	-	-	1	-	-	-	-	-	1
	Parasite	1	-	1	1	-	-	-	1	4
	Fungus	1	-	-	-	-	-	-	-	1
	Emaciated	1	-	1	-	-	-	-	-	2
SMALLMOUTH BASS	Eroded fin-slight	1	-	-	-	-	-	-	-	1
	Deformed fin rays	2	-	-	-	-	-	-	-	2
	Emaciated	2	-	-	-	-	-	-	-	2
LARGEMOUTH BASS	Eroded fin-slight	1	-	-	-	-	-	-	-	1
	Parasite	-	-	-	-	1	-	-	-	1
	Blackspot	-	-	1	-	-	-	-	-	1
	Emaciated	1	-	-	-	-	1	-	-	2
FRESHWATER DRUM	Eroded fin-slight	1	-	-	-	-	1	1	-	3
	Parasite	-	-	-	-	-	-	1	-	1

TRIP: 29-30 AUG

SPECIES	ANOMALY	501 #	502 #	503 #	506 #	507A #	510 #	512 #	515 #	TOTAL #
GIZZARD SHAD	Emaciated	-	-	1	-	-	1	-	-	2
COMMON CARP	Eroded fin-moderate	-	-	-	-	-	1	-	-	1
	Eroded fin-severe	-	-	-	-	1	-	-	-	1
	Deformed fin rays	-	-	1	-	-	1	-	-	2
ROSYFACE SHINER	Deformed body	-	-	-	-	-	-	1	-	1
SPOTFIN SHINER	Blackspot	1	-	-	-	-	-	-	-	1
GOLDEN REDHORSE	Regenerated scales	-	-	1	-	-	-	1	-	2
SHORTHEAD REDHORSE	Regenerated scales	-	-	-	-	-	-	1	-	1
CHANNEL CATFISH	Parasite	-	1	-	-	-	1	2	-	4
	Eroded barbels	-	1	-	1	1	-	1	2	6
	Other	-	-	-	1	-	-	-	-	1
	Emaciated	-	-	-	-	-	-	3	-	3
BLUEGILL	Fungus	-	1	1	-	-	-	-	-	2
NORTHERN SUNFISH	Parasite	-	-	-	-	-	1	-	-	1
SMALLMOUTH BASS	Emaciated	1	-	-	-	-	-	1	-	2
LARGEMOUTH BASS	Eroded fin-slight	-	-	-	1	1	4	-	-	6
	Deformed body	-	-	-	-	-	1	-	-	1
	Parasite	1	-	-	-	-	1	-	-	2
	Blackspot	-	-	1	-	-	-	-	-	1
	Emaciated	2	-	-	-	1	-	-	-	3

TRIP: 26-27 SEP

SPECIES	ANOMALY	LOCATION 501 #	502 #	507A #	510 #	512 #	515 #	TOTAL #		
GIZZARD SHAD	Lesion	-	-	-	1	-	-	-	-	1
COMMON CARP	Eroded fin-slight	-	-	-	2	-	-	-	-	2
	Deformed fin rays	-	-	-	1	-	-	-	-	1
SPOTFIN SHINER	Blackspot	1	-	-	-	-	-	-	-	1
GOLDEN REDHORSE	Eroded fin-slight	1	-	-	-	-	-	1	-	2
	Lesion	1	-	-	-	-	-	-	-	1
CHANNEL CATFISH	Parasite	-	-	-	-	-	-	-	1	1
	Lesion	-	-	-	-	-	-	-	1	1
	Eroded barbels	-	-	-	-	-	3	-	1	4
ROCK BASS	Eroded fin-slight	-	-	-	-	-	1	-	-	1
GREEN SUNFISH	Blackspot	1	-	-	-	-	1	-	-	2
BLUEGILL	Deformed fin rays	-	-	-	-	-	-	1	-	1
	Missing body part	-	1	-	-	-	-	-	-	1
SMALLMOUTH BASS	Eroded fin-slight	-	-	1	-	-	-	-	-	1
	Parasite	-	-	-	-	-	-	-	1	1
	Fungus	-	-	1	-	-	-	-	-	1
	Missing scales	-	-	-	-	-	-	-	1	1
	Emaciated	-	-	-	-	-	-	-	1	1
LARGEMOUTH BASS	Eroded fin-slight	1	-	-	-	-	3	-	-	4
	Fungus	-	-	-	-	1	-	-	-	1
	Blackspot	-	-	-	1	1	-	1	-	3
	Emaciated	1	-	-	-	-	1	-	-	2
FRESHWATER DRUM	Eroded fin-slight	1	-	-	-	-	-	1	-	2
	Eroded fin-moderate	-	-	-	-	-	-	1	-	1
	Emaciated	-	-	-	-	-	-	2	1	3

EXHIBIT G:

RAW DATA LISTING - MACROINVERTEBRATES

EXHIBIT G -- EXELON NUCLEAR - 2013 DRESDEN STATION MACROINVERTEBRATE STUDY - TAXA SUMMARY
PONAR DATA

SAMPLING TRIP= AUGUST 2013,
LOCATION= 501A,
and DATE= 28AUG13

TAXA	REP A #	REP B #	DENSITY #/m2	DENSITY %
Dero	1	2	28.7	0.53
Dero nivea	0	6	57.4	1.06
Aulodrilus pigueti	1	0	9.6	0.18
Branchiura sowerbyi	1	0	9.6	0.18
Ilyodrilus templetoni	6	0	57.4	1.06
Limnodrilus cervix	0	2	19.1	0.35
Limnodrilus claparedianus	1	10	105.2	1.94
Limnodrilus hoffmeisteri	9	54	602.8	11.09
Limnodrilus udekemianus	6	14	191.4	3.52
Imm. tub. w/bifid chaetae	15	48	602.8	11.09
Imm. tub. w/hair & pectinate chaetae	4	12	153.1	2.82
Gammarus	6	36	401.8	7.39
Apocorophium lacustre	18	2	191.4	3.52
Caenis	1	0	9.6	0.18
Cyrnellus fraternus	1	0	9.6	0.18
Oecetis	1	0	9.6	0.18
Macronychus glabratus	1	0	9.6	0.18
Procladius	1	2	28.7	0.53
Ablabesmyia mallochi	0	2	19.1	0.35
Cricotopus bicinctus grp.	1	0	9.6	0.18
Cricotopus sylvestris grp.	1	0	9.6	0.18
Cryptochironomus	1	2	28.7	0.53
Dicrotendipes modestus	1	0	9.6	0.18
Polypedilum halterale grp.	10	166	1,683.9	30.99
Elimia	16	27	411.4	7.57
Amnicola	1	6	67.0	1.23
Corbicula fluminea	62	10	688.9	12.68
Dreissena polymorpha	1	0	9.6	0.18
TOTAL BENTHOS	167	401	5,434.4	100.00

SAMPLING TRIP= AUGUST 2013,
LOCATION= 502,
and DATE= 28AUG13

TAXA	REP A #	REP B #	DENSITY #/m2	DENSITY %
Paranais litoralis	0	3	28.7	3.16
Branchiura sowerbyi	0	2	19.1	2.11
Limnodrilus cervix	1	0	9.6	1.05
Limnodrilus claparedianus	0	5	47.8	5.26
Limnodrilus udekemianus	0	1	9.6	1.05
Imm. tub. w/bifid chaetae	5	11	153.1	16.84
Stenacron	1	0	9.6	1.05
Caenis	3	0	28.7	3.16
Oecetis	1	0	9.6	1.05
Procladius	1	0	9.6	1.05
Cryptochironomus	2	7	86.1	9.47
Dicrotendipes neomodestus	1	0	9.6	1.05
Polypedilum halterale grp.	2	17	181.8	20.00
Stenochironomus	1	0	9.6	1.05
Elimia	6	0	57.4	6.32
Amnicola	18	0	172.2	18.95
Menetus	2	0	19.1	2.11
Corbicula fluminea	0	2	19.1	2.11
Pisidium	2	0	19.1	2.11
Quadrula quadrula	1	0	9.6	1.05
TOTAL BENTHOS	47	48	908.9	100.00

EXHIBIT G (CONT.)

SAMPLING TRIP= AUGUST 2013,
LOCATION= 509,
and DATE= 28AUG13

TAXA	REP A #	REP B #	DENSITY #/m2	DENSITY %
Aulodrilus pigueti	26	40	631.5	12.00
Branchiura sowerbyi	3	0	28.7	0.55
Ilyodrilus templetoni	10	16	248.8	4.73
Limnodrilus cervix	2	0	19.1	0.36
Limnodrilus claparedianus	6	16	210.5	4.00
Limnodrilus hoffmeisteri	11	16	258.3	4.91
Limnodrilus udekemianus	3	0	28.7	0.55
Imm. tub. w/bifid chaetae	38	88	1,205.5	22.91
Imm. tub. w/hair & pectinate chaetae	29	72	966.3	18.36
Helobdella	2	0	19.1	0.36
Gammarus	0	2	19.1	0.36
Oxyethira	2	0	19.1	0.36
Procladius	18	40	554.9	10.55
Cryptochironomus	8	8	153.1	2.91
Microchironomus	5	8	124.4	2.36
Paracladopelma	2	0	19.1	0.36
Polypedilum halterale grp.	24	32	535.8	10.18
Amnicola	1	0	9.6	0.18
Corbicula fluminea	17	5	210.5	4.00
TOTAL BENTHOS	207	343	5,262.2	100.00

SAMPLING TRIP= AUGUST 2013,
LOCATION= 510,
and DATE= 28AUG13

TAXA	REP A #	REP B #	DENSITY #/m2	DENSITY %
Aulodrilus pigueti	4	4	76.5	1.83
Limnodrilus cervix	4	0	38.3	0.92
Limnodrilus claparedianus	36	12	459.2	11.01
Limnodrilus hoffmeisteri	64	16	765.4	18.35
Limnodrilus udekemianus	40	36	727.1	17.43
Imm. tub. w/bifid chaetae	28	28	535.8	12.84
Hyalella azteca	4	0	38.3	0.92
Gammarus	4	2	57.4	1.38
Apocorophium lacustre	0	12	114.8	2.75
Procladius	24	8	306.2	7.34
Cryptochironomus	8	0	76.5	1.83
Dicrotendipes modestus	0	4	38.3	0.92
Dicrotendipes fumidus	4	0	38.3	0.92
Polypedilum halterale grp.	16	4	191.4	4.59
Elimia	4	0	38.3	0.92
Amnicola	10	4	133.9	3.21
Corbicula fluminea	34	21	526.2	12.61
Pisidium	1	0	9.6	0.23
TOTAL BENTHOS	285	151	4,171.5	100.00

SAMPLING TRIP= AUGUST 2013,
LOCATION= 512,
and DATE= 28AUG13

TAXA	REP A #	REP B #	DENSITY #/m2	DENSITY %
Limnodrilus claparedianus	0	1	9.6	3.33
Imm. tub. w/bifid chaetae	1	0	9.6	3.33
Gammarus	1	0	9.6	3.33
Apocorophium lacustre	1	0	9.6	3.33
Cryptochironomus	3	2	47.8	16.67
Dicrotendipes modestus	0	1	9.6	3.33
Polypedilum halterale grp.	2	8	95.7	33.33
Elimia	0	1	9.6	3.33
Corbicula fluminea	6	3	86.1	30.00
TOTAL BENTHOS	14	16	287.0	100.00

EXHIBIT G (CONT.)

SAMPLING TRIP= AUGUST 2013,
LOCATION= 515,
and DATE= 28AUG13

	REP A	REP B	DENSITY	
	#	#	#/m2	%
TAXA				
Limnodrilus claparedianus	1	0	9.6	1.39
Limnodrilus hoffmeisteri	1	0	9.6	1.39
Gammarus	2	0	19.1	2.78
Apocorophium lacustre	7	14	200.9	29.17
Gomphus	0	1	9.6	1.39
Cyrnellus fraternus	3	0	28.7	4.17
Dicrotendipes modestus	0	3	28.7	4.17
Dicrotendipes neomodestus	1	0	9.6	1.39
Polypedilum halterale grp.	0	1	9.6	1.39
Tanytarsus	0	1	9.6	1.39
Elimia	8	7	143.5	20.83
Amnicola	0	2	19.1	2.78
Corbicula fluminea	8	7	143.5	20.83
Quadrula quadrula	1	0	9.6	1.39
Truncilla truncata	1	0	9.6	1.39
Dreissena polymorpha	2	1	28.7	4.17
TOTAL BENTHOS	35	37	688.9	100.00

EXHIBIT G -- EXELON NUCLEAR - 2013 DRESDEN STATION MACROINVERTEBRATE STUDY - TAXA SUMMARY
HESTER-DENDY DATA

SAMPLING TRIP= AUGUST 2013,
LOCATION= 501A,
and DATE= 28AUG13

TAXA	NUMBER #	DENSITY #/m2	%
Turbellaria	21	44.7	1.47
Dero	12	25.5	0.84
Pristina aequiseta	4	8.5	0.28
Stylaria lacustris	4	8.5	0.28
Hyalella azteca	1	2.1	0.07
Gammarus	8	17.0	0.56
Stenacron	1	2.1	0.07
Argia	1	2.1	0.07
Cyrnellus fraternus	252	536.5	17.67
Cheumatopsyche	8	17.0	0.56
Hydropsyche orris	1	2.1	0.07
Potamyia flava	4	8.5	0.28
Stenelmis	4	8.5	0.28
Cricotopus bicinctus grp.	96	204.4	6.73
Nanocladius	224	476.9	15.71
Dicrotendipes modestus	160	340.6	11.22
Dicrotendipes neomodestus	160	340.6	11.22
Dicrotendipes fumidus	32	68.1	2.24
Dicrotendipes lucifer	256	545.0	17.95
Dicrotendipes simpsoni	32	68.1	2.24
Parachironomus	16	34.1	1.12
Polypedilum flavum	48	102.2	3.37
Polypedilum halterale grp.	16	34.1	1.12
Stenochironomus	16	34.1	1.12
Rheotanytarsus	48	102.2	3.37
Dreissena polymorpha	1	2.1	0.07
TOTAL BENTHOS	1,426	3,035.9	100.00

SAMPLING TRIP= AUGUST 2013,
LOCATION= 502,
and DATE= 28AUG13

TAXA	NUMBER #	DENSITY #/m2	%
Turbellaria	960	2,043.8	26.88
Nais variabilis	5	10.6	0.14
Gammarus	1	2.1	0.03
Stenacron	16	34.1	0.45
Cyrnellus fraternus	256	545.0	7.17
Cricotopus sylvestris grp.	400	851.6	11.20
Nanocladius	32	68.1	0.90
Dicrotendipes modestus	192	408.8	5.38
Dicrotendipes neomodestus	32	68.1	0.90
Dicrotendipes fumidus	32	68.1	0.90
Dicrotendipes simpsoni	160	340.6	4.48
Glyptotendipes	1,424	3,031.7	39.88
Polypedilum flavum	32	68.1	0.90
Elimia	26	55.4	0.73
Amnicola	1	2.1	0.03
Pleurocera	2	4.3	0.06
TOTAL BENTHOS	3,571	7,602.6	100.00

SAMPLING TRIP= AUGUST 2013,
LOCATION= 509,
and DATE= 28AUG13

TAXA	NUMBER #	DENSITY #/m2	%
Turbellaria	16	34.1	0.86
Dero	16	34.1	0.86
Nais pardalis	16	34.1	0.86
Nais variabilis	16	34.1	0.86
Pristina leidyi	8	17.0	0.43
Hyalella azteca	8	17.0	0.43
Gammarus	145	308.7	7.83
Stenacron	1	2.1	0.05
Cyrnellus fraternus	417	887.8	22.53
Ablabesmyia mallochi	32	68.1	1.73
Cricotopus sylvestris grp.	16	34.1	0.86
Nanocladius	16	34.1	0.86
Dicrotendipes modestus	344	732.4	18.58
Dicrotendipes neomodestus	32	68.1	1.73
Dicrotendipes fumidus	80	170.3	4.32
Dicrotendipes lucifer	112	238.4	6.05
Dicrotendipes simpsoni	416	885.7	22.47
Glyptotendipes	48	102.2	2.59
Menetus	112	238.4	6.05
TOTAL BENTHOS	1,851	3,940.7	100.00

SAMPLING TRIP= AUGUST 2013,
LOCATION= 510,
and DATE= 28AUG13

TAXA	NUMBER #	DENSITY #/m2	%
Turbellaria	248	528.0	11.73
Nais communis	8	17.0	0.38
Nais pardalis	8	17.0	0.38
Nais variabilis	8	17.0	0.38
Stylaria lacustris	480	1,021.9	22.70
Hyalella azteca	104	221.4	4.92
Gammarus	1	2.1	0.05
Argia	1	2.1	0.05
Cyrnellus fraternus	128	272.5	6.05
Hydropsychidae	8	17.0	0.38
Nanocladius	32	68.1	1.51
Dicrotendipes modestus	320	681.3	15.13
Dicrotendipes neomodestus	144	306.6	6.81
Dicrotendipes fumidus	32	68.1	1.51
Dicrotendipes lucifer	192	408.8	9.08
Dicrotendipes simpsoni	336	715.3	15.89
Polypedilum flavum	64	136.3	3.03
Dreissena polymorpha	1	2.1	0.05
TOTAL BENTHOS	2,115	4,502.8	100.00

EXHIBIT G (CONT.)

SAMPLING TRIP= AUGUST 2013,
LOCATION= 512,
and DATE= 28AUG13

TAXA	NUMBER #	DENSITY #/m2	%
Nais pardalis	6	12.8	0.47
Nais variabilis	3	6.4	0.24
Stylaria lacustris	6	12.8	0.47
Hyalella azteca	67	142.6	5.28
Gammarus	1	2.1	0.08
Apocorophium lacustre	38	80.9	2.99
Stenacron	16	34.1	1.26
Maccaffertium integrum	11	23.4	0.87
Tricorythodes	6	12.8	0.47
Argia	1	2.1	0.08
Cyrnellus fraternus	166	353.4	13.07
Cheumatopsyche	3	6.4	0.24
Hydropsyche orris	3	6.4	0.24
Nanocladius	40	85.2	3.15
Dicrotendipes modestus	96	204.4	7.56
Dicrotendipes neomodestus	24	51.1	1.89
Dicrotendipes fumidus	16	34.1	1.26
Dicrotendipes lucifer	272	579.1	21.42
Dicrotendipes simpsoni	120	255.5	9.45
Polypedilum flavum	368	783.5	28.98
Rheotanytarsus	7	14.9	0.55
TOTAL BENTHOS	1,270	2,703.8	100.00

SAMPLING TRIP= AUGUST 2013,
LOCATION= 515,
and DATE= 28AUG13

TAXA	NUMBER #	DENSITY #/m2	%
Hyalella azteca	3	6.4	0.38
Gammarus	32	68.1	4.04
Maccaffertium integrum	8	17.0	1.01
Tricorythodes	3	6.4	0.38
Cyrnellus fraternus	237	504.6	29.89
Cheumatopsyche	3	6.4	0.38
Nanocladius	52	110.7	6.56
Dicrotendipes modestus	80	170.3	10.09
Dicrotendipes fumidus	8	17.0	1.01
Dicrotendipes lucifer	256	545.0	32.28
Dicrotendipes simpsoni	20	42.6	2.52
Polypedilum flavum	8	17.0	1.01
Stenochironomus	80	170.3	10.09
Dreissena polymorpha	3	6.4	0.38
TOTAL BENTHOS	793	1,688.3	100.00

APPENDIX G

Supportive Reports:
Dresden Nuclear Station Aquatic Monitoring 2014 Upper Illinois Waterway River Mile 270.5 – 273.4

DRESDEN NUCLEAR STATION

AQUATIC MONITORING 2014
UPPER ILLINOIS WATERWAY
RIVER MILE 270.5-273.4

Prepared for:

Exelon Nuclear
Dresden Generating Station
6500 North Dresden Road
Morris, Illinois 60450

Prepared by:

EA Engineering, Science, and Technology
444 Lake Cook Road, Suite 18
Deerfield, Illinois 60015

DRESDEN NUCLEAR STATION

AQUATIC MONITORING 2014
UPPER ILLINOIS WATERWAY
RIVER MILE 270.5-273.4

Prepared for:

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Relative Weight (W*r*)

Secchi disk

Seining

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Transparency

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DEFINITIONS

Analysis of Variance (ANOVA) - This useful statistical tool helps the user to identify sources of variability from one or more potential sources, such as locations, months, or years, by partitioning the total variance in the data into components assignable to specific sources. The analysis of variance looks at the statistical differences between the averages (means) of different groups of data. When the statistical significance of the differences of means can be assessed, then a more accurate comparison can be made between groups. In an ANOVA analysis, the relationship between measurements of the mean and the variance or "random error" of each group provides the information needed to determine if the difference between the two is significant.

Benthos - Collective term for aquatic organisms living in or on the bottom substrates and large enough to be seen with the naked eye. Used in this report to refer to benthic macroinvertebrates **-** animals without backbones of a size large enough to be seen by the unaided eye, and which can be retained by a U.S. Standard No. 30 strainer (28 openings per inch, 0.595-mm openings). Benthic macroinvertebrates help maintain the health of the water ecosystem by eating bacteria, dead and decaying plants, and animals, and are a source of food for other organisms. USEPA indicates that benthic macroinvertebrates make good indicators of watershed health because they live in the water for all or most of their life, stay in areas suitable for their survival, are relatively easy to collect, differ in their tolerance to the amount and types of pollution, often live for more than one year, have limited mobility, and are integrators of environmental condition. See Macroinvertebrates.

Catch per Effort (CPE) - A common method fisheries biologists use to compare the relative abundance of fish between one area and another, where the only common link is the method used to catch the fish. CPE is the catch of fish in numbers or weight taken by a defined effort. CPE can be applied to a number of situations, including the number of fish captured divided by the amount of time it took to catch the fish (fish per hour), number of fish captured divided by distance electrofished (fish per kilometer), the number of seine hauls made to catch fish (fish per seine haul), weight of fish taken per hour of trawling (weight per hour) and number of fish taken by overnight gillnet sets (number per gill-net night). CPE is also termed catch per unit effort, catch rate, or fishing success.

DELT Anomalies - DELT anomalies (Deformities, Erosions, Lesions, and Tumors) are a subset of external anomalies. A complete description is included in Section 2.3.1. An external anomaly on fish is defined as the presence of externally visible skin or just under the skin disorders, and is expressed as percent of affected fish among all fish processed. It provides an indication of the physical condition of fish monitored at each sampling site. Biosurvey results collected by Ohio EPA show a high frequency of DELT anomalies to be an accurate indication of pollution stress usually caused by multiple sublethal stresses as the result of degraded water quality (e.g. often a combination of toxic impacts combined with marginal DO concentrations). There also appears to be a positive relationship between sites containing chemically contaminated sediments *(e.g.* metals, PAHs) and very high percent occurrence of DELT anomalies in combination with very low Index of Biotic Integrity (IBI) and Modified Index of Well-Being scores (IWBmod). See IBI and IWBmod.

Electrofishing - a fish collection technique that employs an electric current to attract (DC current) or temporarily stun (AC current) fish enabling them to be captured so they can be weighed and measured. A boat-mounted AC electrofishing system consists of a boat to carry the complete system, a gas-fueled generator to produce the electric current, a control box, a safety system that allows the boat driver and/or the individual collecting fish from the front of the boat to disrupt the current flow to the electrodes, and electrodes to conduct the current to the water. Dip nets are used to retrieve fish that have been stunned. Electrofishing is a useful sampling technique because it provides a good indication of which species are present in a waterway. It is an efficient capture method that can be used on most streams to obtain reliable fish population information, length-weight relationships, and age and growth. Electrofishing equipment tends to collect larger fish more easily than smaller fish but adjustments can be made to voltage and amperage to reduce size selectivity. Electrofishing efficiency is affected by stream conductivity, temperature, depth, and transparency (clarity) of water. Each condition must be considered to ensure reliable fish collection and relative population abundance estimates. This technique can be more efficient than other methods of sample collection but is often used in conjunction with seining and/or gill netting.

Entrainment - The incorporation of any life stages of fish and shellfish with intake water flow entering and passing through a cooling water intake structure including the traveling screens and into a cooling water system. Fish eggs and larvae as well as other small organisms are susceptible to entrainment.

EPT Taxa - USEPA uses the presence and abundance of pollution-sensitive benthic invertebrates, primarily aquatic insects, as indicators of stream water quality. Pollution-sensitive insect species typically include EPT taxa. This refers to members of the insect groups Ephemeroptera (mayflies), Plecoptera (stoneflies), and Trichoptera (caddisflies). See Taxa. The relatively low tolerance for pollutants and other poor water quality conditions (low dissolved oxygen and turbidity) characteristic of most members of these three insect groups is well documented. A stream is considered healthy if a good distribution of these pollution-sensitive insects is found. When there is an imbalance in the insect community (i.e., more pollution-tolerant species [or individuals] than intolerant species), the stream system could be stressed by an excess of loading from organic wastes, sediments, nutrients, metals, etc. EPT taxa usually dominate gravel and cobble habitats in good quality rivers and streams.

Gear - Refers to equipment used for obtaining samples or measuring of things such as fish, benthos, sediment, and water samples. Examples of gear are seines, electrofishing equipment, Hester Dendy artificial substrate samplers, Ponar grab samplers and dissolved oxygen meters.

Hester Dendy (HD) Artificial Substrate Sampler - this sampling gear provides an artificial substrate for benthic macroinvertebrate organisms to colonize. They are used where the substrate (rock) will not allow grab samplers or there is an interest in data from locations above the bottom substrate. The HD multiple-plate substrate sampler mimics substrates by providing cover and narrow openings, such as found under, between rocks, under, or in leaves or woody debris. The hardboard plates are stacked on top of each other and divided by spacers. The plates have smooth surfaces on each side, are fastened together with a long eyebolt, and can easily be disassembled for specimen examination. A good collection of insect larva and other organisms can be attracted when the sampler is left in place for four or more weeks. After the samplers are recovered, the insects that have colonized the surfaces are counted and identified. Since the surface area of the plates is known, the multiple-plate samplers yield quantitative results.

Impingement - The entrapment of any life stages of fish and shellfish on the outer part of an intake structure or against screening devices during periods of intake water withdrawal. Organisms that are too large to pass through the traveling screens are impinged.

Index or multimetric index - a numeric combination of scores derived from biological measures called metrics. A metric is a characteristic of the animals and/or plants from a particular region that changes in some predictable way with increased human influence and can therefore be scored according to conditions.

Index of Biotic Integrity Metric (IBI) - A method of looking at the quality of water and stream habitat using fish survey data. Usually, the total number of organisms and the number of different species present are determined. An IBI typically includes 10-12 biological metrics based on fish composition and the abundance and condition of fish. Each metric is scored against criteria developed from appropriate regional reference sites. Individual metrics might differ in their relative sensitivity to various levels of biological condition. Points are assigned to metrics like the type of species (those that prefer clean environments getting a higher score), the number of each species found in a sample (higher scores for high numbers) and the number of different species found in certain groups (e.g., the number of sucker species, with higher scores for greater diversity within each group). The IBI can provide a consistent theoretical framework for analyzing fish community data.

Index of Well Being (IWB) - This is a composite index that combines several parameters to help assess the health of a community. The four parameters that comprise the IWB are (1) fish density (number), (2) fish biomass (weight), (3) Shannon-Wiener Index of

Diversity based on numbers of fish, and (4) Shannon-Wiener Index of Diversity based on weight of fish. See Modified Index of Well Being.

Macroinvertebrate - An invertebrate animal (i.e., without a backbone) large enough to be seen without magnification. Major groups of invertebrates include sponges, hydroids, flatworms, bryozoans, segmented worms, leeches, crayfish, insects, snails, and mussels. The life cycle of a macroinvertebrate goes from egg to adult form and they can undergo either complete or incomplete metamorphosis. Complete metamorphosis has four stages: egg, larvae, pupa, and adult. Organisms, which undergo complete metamorphosis, include true flies, beetles, and caddisflies. Many of these organisms are aquatic during the egg and larval stages, but not in the adult stage. Incomplete metamorphosis has three stages: egg, nymph, and adult. Organisms that undergo incomplete metamorphosis include stoneflies, mayflies, dragonflies, and true bugs.

Modified Index of Well Being (IWBmod) - Ohio EPA modified the IWB index by excluding weight and number of 13 common pollution-tolerant fish species, although these taxa are included in the fish diversity calculations. This makes the index more sensitive to a wider array of environmental disturbances, particularly those that result in shifts in community composition without large reductions in species richness, numbers, and/or biomass. This modification eliminates the “undesired” effect caused by a high abundance of tolerant species like common carp (which clearly is the case in the Upper Illinois Waterway), but retains their “desired” influence on the diversity indices

Ponar Sampler - This sampler is used to collect samples of benthic macroinvertebrates in the bottom substrate. The Ponar grab (or dredge) sampler consists of two opposing semi-circular jaws that are normally held open by a trigger mechanism. It is called a grab sampler because of the manner in which it obtains samples. The sampler is lowered to the bottom where contact with the bottom sets off the trigger and a strong spring snaps the jaws shut trapping a sample of the bottom inside. A fine screen covers the top of the jaws so that the trapped material will not wash out as the sampler is retrieved. The grab sampler provides a means to obtain a somewhat quantitative and undisturbed sample of the bottom material. The Ponar sampler is a commonly used sampler that is very versatile for both soft and hard bottoms such as sand, gravel, and clay. Samples retrieved from the sampler are preserved and returned to the laboratory for analysis.

Relative Weight (W*r*) - This is a condition index that quantifies fish condition (i.e., how much does a fish weigh for its length). In making an assessment of a fish population, it is of interest to know if fish are growing poorly or losing weight. Lack of food, poor water quality, poor water temperatures (too hot or too cold), or disease can cause stress that results in poor growth. While growth may be difficult to measure, condition or plumpness of fish is easy to measure and indicates if fish are under stress. Relative weight is the ratio of the actual weight of a fish to what a rapidly growing healthy fish of the same length should weigh, called standard weight (W*s*) that are published in the scientific literature**.** Fish with high relative weights are plump while those with low relative weights are thin. A W*r* range of 90-100 is a typical objective for most fish species. When mean W*r* values are well below 100 for a size group, problems may exist in food and feeding relationships.

Secchi disk - This sampling gear provides a means of determining the limit of water transparency (clarity) that is based on contrast. The upper surface of the Secchi disk is divided into four equal quadrants that are alternately black and white. An eyebolt is located at the center of the disk on the upper side so that a line can be tied to the disk. The disk, which has a 6-inch radius, is lowered into the water from a boat or dock. A weight is attached to the underside of the disk so that it will sink below the surface. This line is marked in inches or centimeters making it possible to determine the depth at which the Secchi disk disappears from sight as it is lowered into the water. It is lowered into the water until it can no longer be seen and then lifted back up until it can be seen again. Averaging the two depths gives the clarity of the water; Secchi measurements are made in the shade with the sun to back of the observer to make an accurate and reproducible reading. Higher Secchi readings mean more rope was let out before the disk disappeared from sight and indicates clearer water. Lower readings indicate turbid or colored water. Clear water lets light penetrate more deeply into the lake than murky water. This light allows photosynthesis to occur and oxygen to be produced. The rule of thumb is that light can penetrate to a depth of about 2-3 times the Secchi disk depth. Clarity is affected by algae, soil particles, and other materials suspended in the water.

Seining - The process of using a seine net to sample fish in ponds or streams. A seine net has fine mesh netting attached to a sturdy stake or pole at each end. The netting is equipped with an upper float line and a lower weighted line to keep the net in a vertical position when stretched horizontally and dragged through shallow waters. Seining is usually a two-person task, as most seines are wider than they are long; similar in some respects to a tennis net, though much smaller in width. The technique involves pulling the seine along the bottom in shallow waters where many types of small and young fish are found. This is almost always accomplished by walking or wading. Seines are highly effective even though they do not immediately capture the fish. Instead, the nets are pulled in one direction over a good distance, causing the fish to attempt to swim against it. The seine is then pulled into shore and the seine is raised upward and the sample is collected.

Specific Conductance - Conductivity or specific conductance is the measure of the water's ability to conduct an electric current. Conductivity depends upon the number of ions or charged particles (total dissolved salts) in the water. Conductivity is reported in micromhos per centimeter (µmhos/cm) which has been recently renamed as microSiemans per centimeter (µS/cm) at 25°C. Distilled or deionized water has very few dissolved ions and so has low conductivity. Low conductivity (less than 50 µS/cm) makes it difficult to use electrofishing to stun fish for monitoring. Conductivity determinations can be useful in aquatic studies because they provide an estimate of dissolved particles in the water. Low specific conductance values are characteristic of low nutrient waters. High specific conductance values are observed in waters rich in dissolved minerals and organics where plant nutrients (fertilizer) are in greater abundance. Very high values are good indicators of possible pollution sites. For instance, industrial discharges, road salt, and failing septic tanks can raise conductivity. Lakes and rivers vary in conductivity based on the geology of an area. Water bodies underlain by granite have lower conductivity than those areas of clay soils. Conductivity in rivers in the United States range from 50 to 1,500 µS/cm.

Taxa - A category, at any level, in a system for classifying plants or animals. Biologists classify life into a widely accepted hierarchical system that reflects evolutionary relationships among organisms. From top to bottom, the main categories or *taxa*, of living things are kingdom, phylum (for animals) or division (for plants and fungi), class, order, family, genus, species. Humans, for example, are classified as follows: Animalia *(Kingdom)*, Chordata *(Phylum)*, Mammalia *(Class)*, Primates *(Order)*, Hominidae *(Family)*, Homo *(Genus)*, sapiens *(Species)*. These last two designations, together referred to as the Latin binomial, are used to identify an organism and distinguish it from any other.

Transparency - Transparency of water relates to the depth that light will penetrate water. This parameter is routinely estimated by the depth at which an observer can no longer see a Secchi disk. Higher water transparency or clarity is an aid to retrieval of fish that have been collected by electrofishing. On a broader level, the transmission of light into a body of water is extremely important since the sun is the primary source of energy for all biological phenomena. Light is necessary for photosynthesis, a process that produces oxygen and food for consumers. It is common practice for biologists to consider the depth of the euphotic zone (the upper layers of a body of water into which sufficient light penetrates to permit growth of green plants) to be roughly three times the limit of visibility.

Tukey's Test - is a statistical test generally used in conjunction with an ANOVA to find which means are significantly different from one another. The test compares the means of every treatment to the means of every other treatment, and identifies where the difference between two means is greater than the standard error would be expected to allow.

Voucher Specimens - Voucher specimens are representative samples of each species. The purpose of a voucher collection is to set aside a representative collection of the taxa identified from the study. This set can be verified by a fisheries expert, and can be used to check future identifications.

EXECUTIVE SUMMARY

Biological monitoring programs have been conducted at Dresden Nuclear Station (DNS) since the late 1960's. Although study elements and sampling locations have varied over the years to meet specific monitoring needs, the studies consistently have been conducted to determine if various activities at DNS caused a significant adverse impact on the aquatic environment.

In recent years, the studies have been used to support the operation of the facility under the thermal variance granted under Section 316(a) of the Clean Water Act, indirect open cycle, and occasional provisional variances granted by the Illinois Pollution Control Board (IPCB) and Illinois Environmental Protection Agency (IEPA). The studies also provide fish population data to support activities demonstrating compliance with cooling water intake regulations under Section 316(b) of the Clean Water Act.

The majority of the annual studies have examined the diversity and number/weight of juvenile and adult fishes in the waterways from which DNS withdraws and discharges water. DNS's location at the confluence of two rivers and just above a dam has added to the complexity of the sampling program. Sampling locations have been established in the Kankakee, Des Plaines, and Illinois Rivers above the Dresden Island Lock and Dam as well as in the Illinois River below the Dam.

This report discusses the results of the 2014 DNS monitoring program (fish and benthos) and can be used to assess trends in the health of the aquatic life in the Upper Illinois Waterway (UIW). During the 2014 DNS program (Dresden Pool and Downstream of Dresden Island Lock and Dam segments combined), 12,986 fish representing 71 species, and two hybrids were collected. Numerically, the combined catch was dominated by spotfin shiner (17.5 percent), gizzard shad (15.4 percent), bluntnose minnow (7.3 percent), bullhead minnow (6.8 percent), and threadfin shad (6.6 percent). By weight, the combined catch was dominated by channel catfish (20.9 percent), common carp (18.8 percent), freshwater drum (12.4 percent), smallmouth buffalo (11.4 percent), largemouth bass (5.2 percent), and smallmouth bass (4.7 percent).

The state-endangered pallid shiner was collected again in 2014. The 128 specimens were the third highest catch to date. Catches of pallid shiner had declined from a peak of 151 in 2008 to 10 in 2011 and 34 in 2013, likely reflecting reduced sampling effort those two years. Two state-endangered Western sand darter specimens were also collected, both downstream of Dresden Island Lock and Dam. In addition to pallid shiner and western sand darter, eight specimens of the state-threatened banded killifish were collected in Dresden Pool and two specimens were collected downstream of Dresden Island Lock and Dam. The 2014 occurrence marks the second time banded killifish has been collected as part of the DNS fish monitoring program and the first occurrence of this species downstream of the dam. No other state or federal listed fish species were collected during the May through September 2014 program.

The 2014 catch-per-unit-effort (CPE), IWBmod, and number of native species for the Dresden Pool segment were statistically similar to most previous years. The 1994 CPE was significantly lower than all other years except 1995. The 2014 score for the fish community health index (IWBmod) was statistically similar to the IWBmod scores for all years except 1994, 1995 and 1999. Under Ohio EPA's classification of IWBmod scores, the fishery in the Dresden Pool segment in 2014 would be considered fair, as it has been every other year except 1994, 1995, and 1999 when the IWBmod scores were in the poor range.

The body condition of fish collected in the waterway during 2014 and prior years was assessed using length-weight relationships. In the Dresden Pool segment, inter-year comparisons were made for six common native species: smallmouth buffalo, channel catfish, green sunfish, bluegill, smallmouth bass, largemouth bass, and freshwater drum. Based on relative weight (*Wr*), condition of each species in 2014 was good except for smallmouth buffalo that have had marginal relative weights throughout the long-term monitoring program. Consistently lower *Wr* values of suggest that there are health, food availability, and/or feeding relationship problem for smallmouth buffalo in Dresden Pool.

All fish encountered in the Dresden Pool in 2014 were examined for DELT (deformities, erosions, lesions, and tumors) anomalies because a clear relationship has been established between their incidence and water quality. DELT anomalies were observed on 1.9 percent of the catch within the Dresden Pool study area. Except for 2000 and 2004, affliction rates have been consistently near two percent during the past 12 years. Fin erosion accounted for the majority (89.4 percent) of the DELT anomalies observed. In general, bottom feeders such as common carp, catfish, suckers, and freshwater drum exhibited the highest affliction rates. Using the Ohio EPA ranking system, fish in Dresden Pool were in the poorest category until 1998. Since 1998, except for 2000 and 2004 when fish again fell in the poor category, fish collected from the Dresden Pool have been in the fair category.

Fish collected downstream of Dresden Island Lock and Dam underwent the same analyses and showed similar results as the Dresden Pool, except that DELT scores in the segment below the dam have been in the poor category each year except 2007 when the incidence of DELTs (2.4 percent) was in the fair range.

Benthos

Macroinvertebrate data collected by Ponar grab and Hester Dendy artificial substrate samplers continue to indicate that a poor benthic community exists in both Dresden Pool and in the Illinois River downstream of the Dresden Island Lock and Dam. The fauna at all locations in the DNS study area was dominated by tolerant or facultative taxa. The Ponar samples indicated that the highly tolerant Oligochaeta (worms) dominated at most locations. With a few exceptions, intolerant groups such as Ephemeroptera (mayflies) and Trichoptera (caddisflies) generally were not well represented and when present were generally collected in relatively low numbers. The number of EPT taxa was lower than would be expected for a waterway of this size. As expected, HD samples typically had higher total taxa richness, higher EPT taxa richness, and a more even distribution of abundance among the taxa, than did Ponar samples from the same locations.

No significant upstream/downstream differences were observed in total density (all taxa), densities of Oligochaeta, Chironomidae, and Pelecypoda, and taxa richness in the Ponar samples. Comparisons among the 11 years of Ponar data from Dresden Pool showed there were no significant differences in the mean densities of Ephemeroptera for areas combined or the two areas individually. In addition, no significant annual differences were observed among the upstream total density, Oligochaeta density, or Chironomidae density. Downstream of DNS, total density, Oligochaeta density, and Chironomidae density were the highest or among the highest observed and were statistically similar except between years with the lowest densities. Ponar total taxa richness was the highest observed upstream, downstream, and for the areas combined and was statistically higher than the majority of study years.

Results from the 2014 HD samplers, showed that the relative abundance of Chironomidae was higher upstream of DNS, whereas, the relative abundance of Oligochaeta and Trichoptera was higher downstream of DNS. Ephemeroptera was a relatively minor component both upstream and downstream of DNS. As was observed for Chironomidae relative abundance, Chironomidae densities were higher upstream of DNS than downstream of DNS. The total number of taxa were higher upstream of DNS and the number of EPT taxa were slightly higher upstream. Mean Ephemeroptera and Oligochaeta densities among years were not significantly different. Although inter-year significant differences in Chironomidae and Trichoptera densities have occurred, the 2014 results were statistically similar to most years for each group.

The more pollution tolerant taxa typically observed in the Dresden Pool Ponar samples such as *Nanocladius distinctus*, *Dicrotendipes simpsoni*, and Glyptotendipes were typically absent or present in substantially lower densities for the downstream of Dresden Island Lock and Dam Ponar and HD samples. These long-term trends were observed in 2007 (despite the flood conditions and the loss of the HD data from one of the downstream locations), 2008, 2011, 2013, and 2014. The variability observed in this area and the lack of clear relationships to trends observed upstream are likely artifacts of the unstable conditions below the Dam and the substantial differences in habitat between the Dresden Pool and the area downstream of the Dresden Island Lock and Dam.

1.0 INTRODUCTION

Biological and physicochemical monitoring was conducted during the period May through September 2014 in the Dresden Pool of the Upper Illinois Waterway (UIW), both upstream and downstream of Dresden Nuclear Station (DNS), and in Marseilles Pool downstream of Dresden Island Lock and Dam. Cooling water for DNS is withdrawn from a location near the confluence of the Kankakee and Des Plaines Rivers, whereas the facility's discharge is located on the Illinois River. Withdrawn water, after passing through the generating facility and a series of canals, is pumped into a cooling reservoir (pond). After circulating through the cooling reservoir, water exits over a spillway and, depending upon the time of year, is recirculated back to the DNS (closed cycle operation) or discharged to the Illinois River (indirect open cycle). DNS operates in indirect cycle (once through the reservoir) mode from June 15 through September 30 each year and operates in closed cycle mode from October 1 through June 14. Under emergencies, the cooling reservoir can be bypassed and DNS can operate in open cycle mode.

The 2014 monitoring program was comprised of two primary elements.

- Continuation of the long-term fish monitoring program and associated physicochemical measurements, which was last conducted in 2013.

- Continuation of the benthic macroinvertebrate (benthos) monitoring program that began in 1999 and was last conducted in 2013.

The objectives of the 2014 Dresden program were to:

- Determine the current species composition and relative abundance of fish within the study area.

- Determine current spatial trends regarding the composition, distribution, and abundance compared to historical trends.

- Determine current spatial patterns of fish condition and health in the study area compared to historical trends.

- Determine current taxa richness, density, and relative abundance of benthos within the study area compared to historical trends.

Historical data comparisons in this report are found in monitoring reports conducted from 1994 through 2011(EA Reports: 1995, 1996a, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2011, 2012, and 2014).

EA Engineering, Science, and Technology (EA) was contracted by Exelon Nuclear to perform these studies.

2.0 METHODS

Fish surveys in 2014 were conducted at eight locations along 2.9 miles of the Upper Illinois Waterway (RM 270.5-RM 273.4) and two locations in the Kankakee River. DNS is located within this stretch at RM 272.3 (Figure G-1). The 2014 sampling program included eight surveys conducted from May through September as was the case prior to 2011. The sampling programs in 2011 and 2013 were reduced to three surveys (once in July, August, and September). As in previous studies, the benthic macroinvertebrate community (benthos) was sampled at six locations with artificial substrate samplers (Hester Dendy samplers) that were deployed in early-July and retrieved in mid-August and with a Ponar grab sampler in mid-August.

2.1 Description of Sampling Gear

2.1.1 Electrofishing

Electrofishing was conducted at 10 locations (Locations 501, 502, 503, 506, 507A, 510, 512, 513, 514, and 515) using a boat-mounted electrofishing system energized by a 230-volt, 5,000-watt three-phase AC generator. Each electrofishing zone was 500 m long, except at Location 506 (DNS discharge canal), which was 310 m long. Electrofishing was conducted in a downstream direction at nine of the 10 locations. The discharge canal (Location 506) was sampled by a combination of upstream and downstream electrofishing runs due to the very fast current within that zone. Electrofishing began no earlier than 0.5 hours after sunrise and finished no later than 0.5 hours before sunset. The sampling crew consisted of a driver and a dip netter. Both individuals had long-handled dip nets for catching stunned fish. The electrofishing program has been conducted in the same manner since 2001.

2.1.2 Seining

Seining was conducted at nine locations (Locations 501, 502, 503, 507, 509, 512, 513, 514, and 515) using a straight seine that was 25 ft (7.6 m) long by 6 ft (1.8 m) deep with 3/16-inch (4.8 mm) Ace mesh. The sampling distance depended on the seinable area available at each location and to the extent possible, was kept constant during each sampling period. If electrofishing and seining were conducted in the same area on the same day, seining was conducted first and at least one hour elapsed before electrofishing was conducted. Sampling areas were consistent with those of previous years. The seining program has been conducted in the same manner since 2001.

2.1.3 Benthos

Benthos sampling was conducted at six locations (501A, 502, 509, 510, 512, and 515) using HD samplers and a Ponar dredge sampler. Each modified HD sampler consisted of eight 3x3-inch plates constructed from 1/8 inch tempered hardboard and twelve 1/8-inch plastic spacers. The plates and spacers were arranged on a 1/4-inch eyebolt so that each sampler had three 1/8-inch spaces, three 1/4-inch spaces, and one 3/8-inch space between the plates. The total surface area of a single sampler, excluding the eyebolt, was 1.01 square feet. Each sample consisted of five HDs suspended approximately 30-50 cm below the water surface. Duplicate HD sets were deployed at each location as a contingency against loss and/or vandalism of the HD samplers. HD samplers were set in early-July and remained in place for a six-week colonization period. Retrieval of the HDs was accomplished by enclosing the samplers in a fine-mesh sweep-net and then carefully lifting the sampler array and net to the surface. The HDs were disassembled from the array, placed into a single labeled container, and preserved with 10 percent formalin.

Two Ponar grab samples were collected at each location using a full-sized Ponar dredge sampler. The two samples served as replicates. The Ponar samples were collected when the HD artificial substrates were retrieved in mid-August. Each sample was sieved in the field using an U.S. Standard No. 35 (500 μm) mesh sieve and preserved. Substrate materials were examined qualitatively to determine substrate characteristics and percent composition.

2.2 Description of Sampling Locations

Of the eleven locations sampled in 2014, two were in the lower Des Plaines River; two in the Kankakee River and seven locations in the Illinois River; five above the Dresden Island Lock and Dam (Dresden Pool of the Illinois River) and four below the Dam (Marseilles Pool).

Location 501A-- Near Mouth of Lower Des Plaines River (RM 273.4) -- Main Channel Border

Benthos samples are collected just downstream of Bayhill Marina's dock. Artificial substrates are placed near the no wake buoys. Ponar grab samples taken directly downstream of the old rusty dock.

Location 501-- Mouth of Lower Des Plaines River (RM 273.0) -- Main Channel Border

The 500 m electroshocking zone ends just upstream of a small point and extends upstream to a point 300 meters downstream of the I&M spillway. Seining is conducted approximately 100 meters downstream of the I&M spillway.

Location 502 -- Mouth of Kankakee River (RM 0.6) -- Tributary Mouth

The 500 m electrofishing zone is located immediately upstream of the Dresden intake canal along the left bank. Seining is conducted along shore ~ 200 m upstream of the intake canal. Benthos samples are collected near the duck blinds located within the electrofishing zone. Ponar grab samples taken near the start of the electrofishing zone.

Location 503 -- Kankakee River (RM 2.2) - Main Channel Border

In 2003, both the 500 m electrofishing zone and seining location had to be moved to a location upstream of County Line Bridge. Prior to this year, part of the zone is upstream of the bridge and part downstream. The change was needed due to the construction of a residential development and associated shoreline disturbance adjacent to the sampling location.

Electrofishing begins 840 m upstream of County Line Bridge along the left bank and continues downstream 500 m ending approximately 50 m upstream of the group of homes that are located just upstream of the bridge. Seining is conducted approximately 130 m upstream of the start of the zone along left bank opposite the upstream end of island.

Location 506 -- Dresden Nuclear Station Discharge Canal (RM 272.1) -- Thermally Enhanced -- Main Channel Border

Electrofishing consists of sampling each side of the canal twice, which yields a total distance of 310 m. Because of excessive depth, seining is not conducted at this location.

Location 507 -- South Shore Illinois River (RM 271.9) -- Thermally Enhanced -- Main Channel Border

Seining is conducted along shore immediately downstream of old barge downstream of DNS's discharge canal. Electrofishing is not conducted at this location.

Location 507A -- South Shore Illinois River (RM 271.9) -- Thermally Enhanced -- Main Channel Border

Electrofishing begins at the embedded barge just downstream of the DNS discharge and extends downstream for 500 m along the left bank. The entire zone is shallow (maximum depth ~ 0.5 m) and is sampled 5-30 meters from the shore.

Location 509 -- South Shore Illinois River (RM 271.6) -- Thermally Enhanced--Main Channel Border

Seining is conducted along the shore near the first docking cell upstream of Dresden Island and Dam. Benthos samples are also collected near the first docking cell. Ponar grab samples taken in the small bay upstream of the lock and dam boat launch. Electrofishing is not conducted at this location.

Location 510 -- North Shore Illinois River (RM 272.1) -- Thermally Enhanced--Main Channel Border

Electrofishing begins directly across the river from the DNS discharge canal and extends downstream for 500 m. Seining is not conducted at this location. Benthos samples are collected at the downstream end of this zone. Benthos samples are collected near the no boat buoys located off of the north bank. Ponar grab samples taken near the end of the electrofishing zone.

Location 512 -- Dresden Island Lock and Dam (RM 271.3) -- Tailwater

Electrofishing is conducted along both banks at this location. Sampling is conducted along the north bank of Big Dresden Island, beginning at a pile of boulders adjacent to the fast tailwater current and continues downstream to the tip of the island: a distance of 340 m. An additional 160m is sampled along the right (north) bank of the river, beginning ~300 meters downstream of the dam and ending opposite the midpoint of Little Dresden Island. Seining is conducted near the tip of Big Dresden Island along the north bank. Benthos samples are collected near the green channel marker buoy at the downstream end of Big Dresden Island. Ponar grab samples taken at the seining location.

Location 513 -- South Shore Illinois River (RM 271.3) -- Downstream end of the Dresden Island Lock canal - Main Channel Border

Electrofishing begins at the second mooring cell and extends downstream along the left bank, ending ~70 m upstream of the railroad bridge. The entire zone is shallow (max. depth ~ 0.5 m) and is sampled 5 – 10 m from shore. Seining is conducted at the furthest downstream mooring cell.

Location 514 -- North Shore Illinois River (RM 270.7) -- Downstream of Dresden Island Lock and Dam -- Main Channel Border

Electrofishing begins ~75 m downstream of the railroad bridge and extends downstream along the right bank for 500 m, ending adjacent to a green channel marker buoy. Seining is conducted downstream of the railroad bridge but upstream of the beginning of the electrofishing zone. Due to changes in habitat related to repairs of the railroad bridge in recent years, the seining location may be moved and will be noted.

Location 515 -- South Shore Illinois River (RM 270.5) -- Downstream of Dresden Island Lock and Dam -- Main Channel Border

Electrofishing begins ~50 m downstream of the railroad bridge and extends downstream along the left bank for 500 m, ending at Reichold Chemical's discharge. Seining is conducted upstream of the railroad bridge downstream of the docking cell. Benthos samples are collected near the downstream end of Reichold Chemical's shoreline bridge support. Ponar grab samples taken near the seining location.

2.3 Sample Processing

2.3.1 Fish

All fish were counted and identified to the lowest practical taxonomic level, usually species. For each location and gear, a maximum of 30 specimens of each species collected were measured for total length (mm) and weighed (g). If over 30 individuals of a species were collected at any location, then 30 representative individuals were measured and weighed. The remaining individuals of that species were counted and a group (batch) weight recorded. Cyprinids (minnows, excluding all carp species, goldfish, and their hybrids) were identified, counted, and batch weighed. All fish were maintained in water immediately after collection and held for processing. After processing, they were returned to the river. All fish not processed in the field were preserved in formalin, labeled, and returned to the laboratory for processing. In the laboratory, fish were processed in the same manner as in the field.

A voucher collection of unusual or taxonomically difficult species was compiled. Threatened or endangered species (IESPB 2011) were **not** included in the voucher collection.

All fish encountered were examined for external anomalies. External anomalies were classified as DELT (Deformities, Erosions, Lesions, and Tumors; Ohio EPA 1987, 1989) anomalies, parasites, or "other" abnormalities. The following is an overview of DELT anomalies and their causes in freshwater fishes (Ohio EPA 1989):

1) *Deformities* - These anomalies can affect the head, spine, fins, and have a variety of causes including toxic chemicals, viruses, bacteria (e.g., *Mycobacterium* sp.), and protozoan parasites (e.g., *Myxosoma cerebalis*).

2) *Eroded fins* - These are the result of chronic disease principally caused by flexibacteria invading the fins causing a necrosis of the tissue (Post 1983). Necrosis of the fins may also be caused by gryodactylids, a small trematode parasite. For this study, fin erosion was separated into three categories: slight erosion -<1/3 of fin eroded;

moderate erosion -1/3 -2/3 of fin eroded, and severe erosion ->2/3 of fin eroded

3) *Lesions and Ulcers* - These appear as open sores or exposed tissue and can be caused by viral (e.g., *Lymphocystis* sp.) or bacterial (e.g., *Flexibacter columnaris*, *Aeromonas* spp., *Vibrio* sp.) infections.

4) *Tumors* - Tumors result from the loss of carefully regulated cellular proliferative growth in tissue and are generally referred to as neoplasia. In wild fish populations tumors can be the result of exposure to toxic chemicals. Baumann et al. (1987) identified polynuclear aromatic hydrocarbons (PAHs) as the cause of hepatic tumors in brown bullheads in the Black River (Ohio). Viral infections (e.g., Lymphocystis) can also cause tumors. Parasites (e.g., *Glugea anomala* and *Ceratomyxa shasta*; Post 1983) may cause tumor-like masses, but are not considered tumors. Parasite masses can be squeezed and broken between the thumb and forefinger whereas true tumors are firm and not easily broken.

Only those anomalies visible to the naked eye were recorded. The exact counts of anomalies present (e.g., the number of tumors or lesions per fish) were not recorded. An external anomaly is defined as the presence of externally visible skin or subcutaneous disorders, and is expressed as percent of affected fish among all fish processed (Ohio EPA 1989).

2.3.2 Benthos

The benthos samples were analyzed in the laboratory utilizing procedures outlined in EA's Macroinvertebrate Quality Control and Procedures Manual. Prior to analysis, each sample was rinsed on an U.S. No. 35-mesh sieve to remove preservative. The sample material was sorted, a small portion at a time, under a dissecting microscope at 10X magnification. Sorted macroinvertebrates were separated into the following groups: Oligochaeta, Chironomidae, and other taxa. Specimens were preserved in 70 percent alcohol. All macroinvertebrates were identified to the lowest practical taxon using the latest taxonomic keys. Oligochaetes and Chironomids were mounted on glass slides using CMC-10 mounting media prior to examination under a compound binocular microscope at 40-1,000X magnifications.

2.4 Physicochemical Measurements

Dissolved oxygen (DO) concentrations and water temperatures were measured at the surface, at subsequent one-meter depth intervals, and at the bottom at each electroshocking sampling location, but only at mid-depth where the water was one meter or less in depth. Measurements were recorded each day at those locations where electrofishing was conducted. Near-surface specific conductance measurements were also taken at each electrofishing location during each sampling event. Instruments used to measure temperature were checked against a calibrated thermometer. Instruments used to measure DO were calibrated before each measurement. In addition, immediately before each sampling day, they were checked against the Winkler method as specified in *Standard Methods for the Examination of Water and Wastewater* (current edition). The conductivity meter was also checked against a standard before each electrofishing sampling day. Percent oxygen saturation was determined from the relationship between dissolved oxygen in the water and water temperature. Transparency was measured using a Secchi disk. Appendix A provides physicochemical data.

2.5 Aquatic Habitat Assessment

Habitat was evaluated using Ohio Environmental Protection Agency's (OEPA) Qualitative Habitat Evaluation Index (QHEI) (Rankin 1989; OEPA 2006). Methods for calculating the QHEI are detailed in Volume III of OEPA's User Manual (OEPA 1989b, 2006) and therefore are not discussed in-depth here. Principal components (metrics) that are used to develop the QHEI score are:

- Substrate
- Cover
- Channel Morphology
- Riparian Zone And Bank Erosion
- Pool, Riffle, Run Quality
- Stream Gradient

QHEI scores from hundreds of segments around the State of Ohio have indicated that values greater than 60 are generally conducive to the existence of quality warmwater faunas, whereas scores less than 45 generally will not support a quality warmwater assemblage consistent with the WWH biological criteria (OEPA 2006).

The habitat assessments were conducted at each electrofishing location (Figure G-1). The first assessment was completed in early summer and the second assessment was conducted in early fall, after aquatic macrophytes had matured. These data were supplemented with substrate characterization data collected during the 2014 mussel survey (Appendix H) as well as bathymetric data collected during the hydrothermal plume surveys in 2013 (Appendix D).

2.6 Data Handling and Analysis

2.6.1 Fish

Field and laboratory data were entered on forms compatible for computer entry following serialization, diga-coding, and QA/QC checks. Data were managed in a SAS format (Release 8.02) to provide flexibility in reporting study results.

Data from electrofishing were reported as number, catch-per-unit-effort (CPE, number per km), and percent abundance for each species. Data were segregated by location, study segment, and sampling period. Data obtained by seining were reported as number, CPE (number per haul), and percent abundance for each species by location, study segment, and sampling period. Summaries of the catch data for each gear type were prepared for combined dates. Total number of fish, total number of species, CPE, and percent abundance were included in the summaries. For the total species counts, hybrids were not counted and genus level identifications (e.g., unidentified *Moxostoma*) were counted as a "species" only when no species of that genus were collected.

Measurement of the distance electrofished during each pass allowed the use of the Index of Well-Being (IWB) that was developed by Gammon (1976) and uses the number, weight, and diversity of fishes to assess the health of the community. The IWB was calculated according to the formula:

$$IWB = 0.5 \ln N + 0.5 \ln B + d(no.) + d(wt.)$$

where: N = Number of fish collected per km.
B = Biomass (in kg) of fish per km.
d(no.) = Shannon diversity index based on numbers.
d(wt.) = Shannon diversity index based on weight.
If B was less than 1 kg, then B was always assigned a value of 1 kg to prevent negative IWB or IWBmod values.

The IWB is regularly used in the Midwest and has been shown to work reasonably well even outside the Midwest (Hughes and Gammon 1987). It was developed for use on large Midwestern rivers such as the Wabash and Ohio rivers so its use on the UIW is appropriate. In addition, Ohio incorporates IWB criteria into its State water quality standards.

A version of the IWB that was modified by Ohio EPA (IWBmod) was used, which makes the index more sensitive to a wider array of environmental disturbances, particularly those that result in shifts in community composition without large reductions in species richness, numbers, and/or biomass (Ohio EPA 1987). That modification calls for the exclusion of 13 highly tolerant species, all hybrids, and all exotic species from the number and weight calculations. However, these taxa are included in the two Shannon index calculations. This modification eliminates the "undesired" effect caused by a high abundance of tolerant species (which clearly is the case in the UIW), but retains their influence on the Shannon diversity indices. Ohio EPA has also found that examining the difference between the IWB and IWBmod can be of value; in that an increasing difference between IWBmod and IWB is a direct indication of the influence of tolerant species, which in turn is correlated with a loss of integrity in the fish community (Ohio EPA 1987).

The 13 species considered by the Ohio EPA as highly tolerant are central mudminnow, common carp, goldfish, golden shiner, bluntnose minnow, fathead minnow, blacknose dace, creek chub, white sucker, yellow bullhead, brown bullhead, eastern banded killifish, and green sunfish. In addition to these 13 species, the following exotics and hybrids collected from the DNS study area were excluded during calculation of the IWBmod: threadfin shad, western mosquitofish, hybrid sunfish (*Lepomis* hybrid), and round goby. Our classification of exotic species for the UIW is discussed in greater detail in Section 3.1.

Fish condition was evaluated using the relative weight (*Wr*) index (Wege and Anderson 1978). This index represents a refinement of the relative condition factor concept and allows for inter-population comparisons by making the standard weight-length regression species-specific rather than population-specific. Relative weight was calculated as:

$$Wr = W/Ws \times 100$$

Where W is the measured weight, W*s* is the standard weight and *Wr* is the length-specific standard weight predicted by a weight-length regression constructed to represent the species as a whole. Length-specific standard weight functions are in the form:

$$\log_{10} Ws = a + (b \times \log_{10} \text{total length})$$

where *a* (intercept) and *b* (slope) ideally account for genetically determined shape characteristics of a species and yield *Wr* values of 100 at particular times of the year for fish that have been well fed (Anderson and Gutreuter 1983).

Intercept, slope, and minimum length values for the *Ws* equation have been published for 34 species and one hybrid known from the UIW (Bister et al. 2000; Anderson and Neumann 1996; Murphy et al. 1991) (Table G-1). Minimum lengths are established because the accuracy in weighing fish decreases markedly for smaller individuals, and minimum lengths represent the length at which the variance to mean ratio for $\log_{10}$ sharply increases (Murphy et al. 1991).

Analysis of variance (ANOVA) and Tukey's Studentized Range Test were used to statistically test for spatial and inter-year differences in CPE, IWBmod, species richness, and *Wr* values. Before each data set was statistically evaluated using these methods, they were analyzed to determine whether the data were normally distributed. If data were not normally distributed, they were transformed using Log (Y+1).

2.6.2 Benthos

Due to inherent differences between the river upstream and downstream of Dresden Island Lock and Dam, the benthic data were segregated spatially into two areas: Dresden Pool (Locations 501A, 502, 509, and 510) and downstream of Dresden Island Lock and Dam (Locations 512 and 515). In addition, spatial comparisons were restricted to the Dresden Pool upstream versus downstream of DNS in order to facilitate interpretation and discussion of data regarding potential thermal effects. Ponar data from 1999, 2001-2008, 2011, 2013, and 2014 were compared for Dresden Pool locations upstream and downstream of DNS. The HD samples collected in August 2014 were compared with HD data from 2001-2008, 2011, and 2013. HD samples were not collected in 1999.

Spatial and temporal comparisons were made using density (number of organisms per square meter; #/m2), relative abundance (percentage), number of Ephemeroptera+Plecoptera+ Trichoptera (EPT) taxa, and total taxa richness. In addition, an ANOVA was used to statistically compare taxa richness, total density, Oligochaeta (aquatic worm) density, Chironomidae (midge) density, and Ephemeroptera (mayfly) density among sample areas and periods in Dresden Pool.

2.6.3 Aquatic Habitat Assessment

QHEI results for each of the two surveys conducted in 2014 were evaluated based on established narrative classifications (Rankin 1989; OEPA 2006).

Additionally, in order to evaluate aquatic habitat changes that may have occurred in the Des Plaines, Kankakee, and Illinois Rivers, the 2014 QHEI results were compared to scores observed during surveys conducted from 1993 and 1994 (ComEd 1996). Due to differences in assessment locations among study years, historical mean QHEI scores from locations in similar areas were used to compare to the 2014 QHEI scores.

3.0 FISH RESULTS AND DISCUSSION

3.1 Species Composition and Abundance

3.1.1 Overview

From May through September 2014, a total of 120 gear efforts (64 electrofishing and 56 seining) were expended at 10 locations within the study area (Dresden Pool and downstream of Dresden Island Lock and Dam) as part of the long-term fish monitoring program for the DNS. These efforts produced 12,986 fish representing 71 species and two hybrids (Tables G-2 and G-3). Numerically, the combined catch was dominated by spotfin shiner (17.5 percent), gizzard shad (15.4 percent), bluntnose minnow (7.3 percent), bullhead minnow (6.8 percent), and threadfin shad (6.6 percent). Eleven other species contributed 1.1 to 4.9 percent of total catch including bluegill, smallmouth bass, largemouth bass, and logperch. Collectively, the 19 most abundant species accounted for 91percent of the numerical catch. Conversely, 40 species/taxa were represented by 10 or fewer individuals. By weight, the combined catch was dominated by channel catfish (20.9 percent), common carp (18.8 percent), freshwater drum (12.4 percent), smallmouth buffalo (11.5 percent), largemouth bass (5.2 percent), and smallmouth bass (4.7 percent). Fifteen species accounted for 91.7 percent of the total biomass.

The state-endangered pallid shiner was again collected in 2014. The 128 specimens collected in 2014 were the third highest to date. Catches declined from 151 pallid shiner in 2008 to 10 in 2011 and 34 in 2013, likely reflecting reduced sampling effort those two years. Two state-endangered Western sand darter specimens were also collected, both downstream of Dresden Island Lock and Dam. Eight specimens of the state-threatened banded killifish were also collected in Dresden Pool and two were observed downstream of Dresden Island Lock and Dam. 2013 was the first year Banded killifish was first collected in 2013 as part of the DNS fish monitoring program and 2014 represents this species first reported occurrence downstream of the dam. No other state or federal listed fish species (IESPB 2011) were collected during the July through September 2013 program.

Forty-six round goby, an accidentally introduced nuisance species, were collected for the ninth year during the DNS monitoring program. Previous catches of round goby ranged from three in 2013 to 77 in 2008. Two silver carp were collected in 2014. In 2008, a silver carp was collected downstream of the Dresden Island Lock and Dam for the first time during this program. In 2010, the Monitoring and Rapid Response Group (MRRWG) began a program to sample and remove Asian carp. In 2014, approximately 150 bighead carp and 604 silver carp were collected from the Dresden/Marseilles Pools (ACRCC 2014). Nearly 90 percent of the Asian carp were collected from the Marseilles Pool.

Diversity was highest in the minnow, sucker, and sunfish families. Species richness in the study area can be attributed to its location at the confluence of two major rivers, as well as periodic contributions to the study area of fish from the species-rich Kankakee River.

Complete summaries of fish data by survey and for surveys combined are provided in Appendix B and a raw data listing is provided in Appendix C.

3.1.2 Comparisons Upstream and Downstream of Dresden Island Lock and Dam

Habitat upstream and downstream of the Dresden Island Lock and Dam is generally different. The area above the Dam is more lentic (lake-like) than the area downstream of the Dam, where habitat is more riverine. Upstream of the Dam there are more shallow water areas, patches of rubble, macrophytes, and silt substrates predominate except in the lower Kankakee River. The study area downstream of the Dam has swifter currents and the banks of the Illinois River are steeper than most areas upstream of the Dam, with more sand and gravel in the bottom sediments.

The physicochemical characteristics of the two areas are also different. Water quality in the Illinois River upstream the Dam is affected by differences in water quality between the lower Des Plaines and Kankakee Rivers, the degree of mixing between these rivers, as well as the thermal discharge from DNS. These factors tend to produce variable conditions among sample locations upstream of the Dam. The area downstream of the Dam exhibits more uniform physicochemical characteristics among sample locations primarily due to the thorough mixing of water as it flows over the Dam. Despite distinct habitat differences, the fish communities in the two areas are generally similar.

3.1.3 Exotic Taxa

Eleven exotic taxa (as defined by Ohio EPA 1987, 1989; Page et al. 1992; Smith 1979) were collected within the DNS study area in 2014: threadfin shad, goldfish, common carp, carp x goldfish hybrid, grass carp, silver carp, golden shiner, western mosquitofish, white perch, *Lepomis* hybrid, and round goby. Collectively, these exotic taxa accounted for 8.1 percent of the total catch with threadfin shad accounting for the majority of the exotics (Table G-3).

Exotic species often thrive at the expense of native fishes because ecological checks and balances (e.g., predators, diseases, and parasites) that normally keep populations in equilibrium are lacking or greatly reduced for exotics. Thus, exotics have a considerable propensity for population explosions (e.g., alewife [in Lake Michigan], common carp, and zebra mussels). Although some exotics (e.g., salmonids) may be considered "good" and others "not so good" (e.g., common carp, round goby, and zebra mussels), several facts are clear:

- Exotics usually expand their populations at the expense of native species (Smith 1979; Becker 1983).

- The lack of normal checks and balances means that trends in the numerical abundance of exotics often do not follow expected patterns (e.g., exotics may increase in abundance under poor water quality conditions, whereas most native species decline when water quality is poor) (Karr 1986; Ohio EPA 1987, 1989).

- The presence of exotics, often in high numbers, confounds data analysis and can result in misleading or erroneous conclusions concerning the "quality" of the area (Ohio EPA 1987, 1989, Lyons 1992, Emery et al. 2003).

- It is the policy of some resource agencies and professional societies (e.g., American Fisheries Society) to encourage biodiversity of native species and slow down or even reverse the spread and introduction of exotics.

For the reasons listed above, we tabulated the occurrence and distribution of exotic species in the previous section, but will exclude them from subsequent spatial, temporal, and interyear analyses presented in the following sections. Thus, following Ohio EPA (1987, 1989) and Lyons (1992), exotic species are excluded from species richness and other calculations. For the purposes of this report, exotic species are all fishes not native to some portion of Illinois. Thus, even though red shiner is not native to the Upper Illinois Waterway (UIW), we do not classify it as an exotic because it originally was native to western and southern Illinois, and its occurrence in the UIW is part of a natural eastward expansion of its range. However, western mosquitofish is treated as an exotic because their natural distributions in Illinois are limited to the southern third of the state (Smith 1979). Their occurrence in northern Illinois is the result of stockings rather than natural expansions of their ranges. The western mosquitofish was stocked for mosquito control.

We believe it is inappropriate to subjectively classify some exotics as good and some as bad, therefore, the exotic taxa listed above are excluded. Our listing of these taxa as exotics is consistent with lists of exotics developed in Illinois (Page et al. 1992), Ohio (Ohio EPA 1987, 1989), and Wisconsin (Lyons 1992). Except for common carp and more recently threadfin shad and round goby, exotics are usually rare in the DNS study area. Although it would be true that including the other exotics would not appreciably affect variables such as catch rate, species richness, biomass, their exclusion is warranted to maintain a consistent approach as to how exotics are treated as part of our analysis. Numerous researchers (Karr et al. 1986, Ohio EPA 1987; 1989b, Lyons 1992) recommend that exotics be excluded because including them can lead to erroneous conclusions because of greatly inflated catch statistics. Data for exotic taxa are provided in Appendix C.

3.2 Dresden Pool

3.2.1 Study Area

The DNS is located at River Mile 273 at the junction of the lower Des Plaines and Kankakee Rivers (Figure G-1). These two rivers form the Illinois River (lower Dresden Pool). DNS's cooling water intake is situated on the Kankakee River from which the greatest percentage of cooling water is drawn. Under low flow conditions, a small percentage of cooling water is drawn from the lower Des Plaines River. The percentage varies depending on flow in each of the two rivers. DNS's discharge is located along the south shoreline of lower Dresden Pool. Because of temperature and water quality differences between the Kankakee and lower Des Plaines Rivers, the characteristics of lower Dresden Pool are typically a mix of the two river systems, the Kankakee River on the south side and the lower Des Plaines River on the north side of the Illinois River. However, substantial mixing does not occur until the water flows over the Dresden Island Dam.

The Dresden Pool study area encompasses the lower reaches of the Des Plaines River (Locations 501 and 501A), the Kankakee River (Locations 502 and 503), and the lower Dresden Pool of the Illinois River (Locations 506, 507, 507A, 509, and 510) (Figure G-1). Locations in Dresden Pool were established in the lower portion of the Units 2/3 discharge canal (Location 506), and downstream from DNS's discharge (Locations 507, 507A, 509, and 510). A detailed description of each location is provided in Section 2.2.

3.2.2 Physicochemical Measurements

Physicochemical data by location, depth, and sampling period are provided in Appendix A.

Surface or mid-depth water temperatures during the 2014 monitoring program ranged from 17.4 to 30.8°C at the six electrofishing locations in Dresden Pool near DNS (Table G-4). Mean temperatures during the study period ranged from 23.1°C (Kankakee River, Location 503) to 27.2°C (DNS's discharge canal, Location 506). Mean temperatures within the discharge canal were 0.7 to 3.4°C higher than at all other locations except at Kankakee River Location 503, which had a mean temperature 4.1 °C lower than the mean discharge canal temperature.

During individual trips, water temperatures in Dresden Pool downstream of the discharge were consistently warmer than water temperatures upstream (Table G-4 and Appendix A). Downstream mean water temperatures were warmest in August (30.1 and 30.5°C) and coolest in May (20.3°C). For all trips combined (May-September), the mean upstream temperature was 2.7°C cooler than downstream (Table G-4).

The mean 2014 Dresden Pool summertime (i.e., 15 June through September) water temperature (26.1°C) was the lowest to date, reflecting low temperatures in September (Table G-4):

Upstream Dresden Dam(1)		Upstream Dresden Dam(1)	
2014	26.1	2002	28.4
2013	28.9	2001	27.2
2011	29.0	2000	27.8
2008	26.5	1999	29.8
2007	27.9	1998	29.3
2006	27.3	1997	27.6
2005	29.3	1995	28.5
2004	27.6	1994	26.4
2003	27.9		

Surface or mid-depth dissolved oxygen (DO) concentrations ranged from 2.8 to 14.7 ppm (Table G-4 and Appendix A). Mean DO concentrations were above the General Use minimum standards, which became effective 28 January 2008, of 5 ppm at any time from March through July and 3.5 ppm at any time from August through February. The minimum concentrations occurred at lower Des Plaines River Location 501 in September and maximum concentrations occurred at Kankakee River Location 502 in July (Table G-4). Seasonally, mean DO concentrations ranged from 6.5 ppm in early September to 10.2 and 10.3 ppm during the two July surveys (Table G-4). Spatially, mean DO was highest at Kankakee River Location 502 (9.6 ppm). Mean DO values at the other five locations ranged from 7.6 to 9.3 ppm. Mean dissolved oxygen during the summertime (i.e., 15 June through September) period in Dresden Pool were lower downstream of the DNS discharge. For all trips combined, the mean upstream DO was 1.4 ppm higher than the downstream mean (Table G-4). Spatial and temporal patterns of mean percent saturation values were similar to those discussed for DO (Table G-4 and Appendix A).

Specific conductance values ranged from 536 to 1,195 µS/cm (Table G-4 and Appendix A). Seasonally, mean values were highest in May and June and lowest in early September. Spatially, annual mean conductivity values were lowest in the Kankakee River at Locations 503 (618 µS/cm) and highest at Des Plaines River Location 501 (998 µS/cm). Lower means at both Locations 502 and 503 reflect lower conductivity of the Kankakee River compared to the Des Plaines River. For all trips combined, mean conductivity was lower upstream (755 µS/cm) than downstream (788 µS/cm) of the DNS discharge. Based on conductivity, the electrofishing gear was adjusted to provide output at about 220 volts at five amps or greater.

Transparency (Secchi disk) readings ranged from 27 to 100 cm (Table G-4 and Appendix A). Mean values ranged from 40 cm at Location 503 to 81 cm at Location 501. Other locations had similar mean readings ranging from 48 to 78 cm. Among trips, mean values were lowest in early September (38 cm) and highest in July/August and September (66 to 67 cm). Mean transparency was similar upstream (56 cm) and downstream (61 cm) of the Dresden discharge (Table G-4). Water clarity was adequate for the field crew to observe and retrieve fish stunned by the electrofishing gear throughout the 2014 program.

3.2.3 Species Composition and Abundance of Native Species

Sampling in Dresden Pool near DNS during 2014 yielded 7,318 native fish representing 57 species and one hybrid (Table G-5). Numerically dominant species (gears combined) were gizzard shad (26.3 percent), spotfin shiner (11.1 percent), bullhead minnow (10.0 percent), bluntnose minnow (8.8 percent), largemouth bass (7.4 percent), and bluegill (5.0 percent). Other species that comprised one percent or more of the catch by number included emerald shiner, spottail shiner, Northern sunfish, smallmouth bass, and logperch (Table G-5). Collectively, 17 species accounted for 90.9 percent of the total catch. Dominant taxa in terms of biomass were channel catfish (21.7 percent), freshwater drum (19.3 percent), smallmouth buffalo (16.1 percent), and largemouth bass (10.8 percent).

Electrofishing produced 5,621 fish and seining produced 1,697 fish (Table G-5). Gizzard shad, largemouth bass, bullhead minnow, bluntnose minnow, spotfin shiner, bluegill, and Northern sunfish were the seven most abundant species in the electrofishing samples, whereas spotfin shiner, bullhead minnow, bluntnose minnow, and gizzard shad were the most abundant species in the seine samples.

Electrofishing produced 52 species and seining 39 species. Of the 57 species in the combined catch, 24 species were collected either by electrofishing or seining and 33 species were collected by both sampling methods. Gizzard shad, spotfin shiner, spottail shiner, mimic shiner, bluntnose minnow, bullhead minnow, brook silverside, bluegill, and largemouth bass were the only species collected in relatively large numbers (>50 specimens) with both sampling methods (Table G-5).

Pallid shiner, listed as endangered by the State of Illinois, was collected by electrofishing (97) and seining (17) in the Dresden Pool area. Fourteen pallid shiner were collected downstream of the Dresden Island Lock and Dam at three of the four locations (Appendix B). In addition to pallid shiner and western sand darter, the state-threatened banded killifish was also collected by electrofishing (four) and seining (six) during 2014. Two banded killifish were collected downstream of Dresden Island Lock and Dam (Exhibit B). These are the second collections of banded killifish as part of the DNS fish monitoring program and the first recorded incidence of this species downstream of Dresden Island Lock and Dam.

3.2.4 Spatial and Temporal Comparisons of Community Level Parameters

3.2.4.1 Electrofishing

To aid in the assessment of the hydrological and temperature conditions during the 2014 study period, electrofishing catch-per-unit-effort (CPE), IWBmod, and species richness values for Dresden Pool locations upstream and downstream of DNS were compared for all trips combined and three seasonal periods, May and June trips combined; July and August trips combined (typically the warmest period), and the September trips.

Fifty-two native species were collected from the Dresden Pool by electrofishing as part of the 2014 monitoring study, 48 species upstream, and 43 species downstream of DNS (Table G-6). Fourteen of the 18 species comprising at least one percent of the total upstream catch also comprised at least one percent of the downstream totals. Gizzard shad was the dominant species upstream followed by (in order) bullhead minnow, bluntnose minnow, spotfin shiner, and largemouth bass. Gizzard shad was also the most abundant species downstream followed by largemouth bass, bluegill, spottail shiner, bluntnose minnow, Northern sunfish, and spotfin shiner. Most of the state-listed pallid shiners collected by electrofishing were collected upstream of DNS (Table G-6).

The 2014 native fish catch rate (CPE, trips combined) was 296.5 fish per km upstream of the DNS discharge versus 196.9 per km downstream of DNS (Table G-7). Mean IWBmod was 7.7 above and 6.8 below DNS and the mean upstream native species richness was 17 versus 13 downstream for all trips combined (Table G-7). The upstream/downstream differences in CPE were statistically (P>0.05) similar for trips combined and for the May/June, July/August, and September trips; however, IWBmod and native species richness for trips combined and the July/August trips combined were statistically (P<0.05) higher upstream of DNS as was IWBmod in September (Table G-7).

From June 15 through September 30 the facility operates in a cooling mode referred to as indirect open cycle (cooling water is circulated through the reservoir before being discharged to the Illinois River). The July/August collections occur during a period of typically higher air temperatures, whereas the May/early June and September collections occur during somewhat cooler temperatures. Table G-8 presents Dresden Pool catch data upstream and downstream of DNS for the three seasonal groups: May/June, July/August, and September. In each of the three periods, eight to 12 native species were collected upstream of the Dresden discharge that were not collected downstream of DNS. During the May/June surveys, nine fewer native species were collected downstream of the discharge which accounted for 12 percent of the upstream catch. Brook silverside was the only species represented by more than nine individuals. In July/August there were eight species collected upstream but not downstream that accounted for only one percent of the upstream catch. Although 12 species were collected upstream during the September surveys that were not collected downstream, only pallid shiner, channel catfish, and orangespotted sunfish were represented by more than 10 individuals (Table G-8). Pallid shiner was collected from both areas in May/June and July/August but only upstream in September. Overall, all but five pallid shiner were collected upstream of DNS in 2014.

Only four native species were collected in Dresden Pool downstream of DNS that were not collected upstream of it. These species represented less than one percent of the total 2014 catch (Table G-8). These upstream/downstream differences in species richness were not statistically different for the May/June and September trips but were statistically lower downstream for the July/August trips combined (Table G-7).

Electrofishing catch rates, relative abundance, and total species were also compared between the three seasonal groups for all Dresden Pool locations combined (Table G-9). Thirty-three species were collected in May/June, 46 in July/August, and 42 in September. CPE was lowest in May/June and highest in July/August. Catch rates of 16 of the most abundant species were higher in July/August or September. CPEs of gizzard shad, and spotfin shiner, and bluntnose minnow were higher July/August and CPEs of bullhead minnow, bluegill, and largemouth bass were higher in September (Table G-9). Of the 20 most abundant species, only channel catfish, smallmouth bass, and freshwater drum higher rates in May/June (Table G-9). CPEs for all native fish were statistically higher in July/August and September compared to the May/June rates (Table G-10). Seasonal differences in IWBmod scores were not statistically (P>0.05) different among sampling periods, whereas native species richness was statistically higher in July/August and September compared to richness in May/June (Table G-10).

In summary, in July/August when the river temperature was highest and discharge temperatures are typically at their maximum, native species and IWBmod scores were significant higher upstream of DNS. However, native species CPE were statistically similar upstream and downstream throughout the study. Differences in these parameters can be attributed to fish distribution patterns and movements in response to changes in water temperature and flow. Better habitat quality in the Kankakee River compared to the other sampling locations in the study area contributed to the higher native species richness values upstream of DNS.

3.2.4.2 Seining

The seine data were not statistically analyzed because of the qualitative nature of seining. Therefore, intra-year comparisons of spatial data were confined to compositional and mean native species richness results. The seine catch rate (number of native fish per seine haul) in 2014 for all trips combined was 42.5 upstream versus 42.4 downstream of the DNS discharge (Table G-11). For all trips combined, 31 species were collected upstream and 32 species downstream of DNS. Spotfin shiner, bluntnose minnow, and bullhead minnow were abundant upstream and downstream of DNS. Other common species upstream of the discharge were gizzard shad and mimic shiner (Table G-11). Downstream of the discharge, *Moxostoma* and largemouth bass were common.

The number of native fish per haul (CPE) was the same upstream and downstream of the Dresden discharge in the combined May/June surveys. Spotfin shiner and bluntnose minnow was the most abundant species upstream, whereas bullhead minnow and spotfin were the most abundant species downstream (Table G-11). Three species (spotfin shiner, bluntnose minnow, and bullhead minnow) accounted for 78.2 and 63.8 percent of the upstream and downstream seine catches, respectively in the May/June season. Young-of-the-year (YOY) *Moxostoma* accounted for 19.8 percent of the downstream catch, but was not collected upstream.

The number of native fish per seine haul (CPE) was also similar between areas in the combined July/August surveys (Table G-11). Spotfin shiner, bluntnose minnow, and bullhead minnow were again the most abundant species upstream, whereas gizzard shad, sand shiner, and largemouth bass were the most abundant species downstream (Table G-11).

The number of native fish per haul (CPE) was slightly lower downstream (7) vs, 9 upstream in the combined September surveys (Table G-11). Gizzard shad and bluntnose minnow were the most abundant species upstream, whereas gizzard shad, spottail shiner, brook silverside, and bluegill were the most abundant species downstream (Table G-11).

Mean native species richness (all trips combined) downstream of DNS during the past 17 study years has been similar to or slightly higher than at the upstream locations:

	Upstream Dresden Discharge	Downstream Dresden Discharge

2014	7.0	6.0
2013	6.0	5.0
2011	4.0	6.0
2008	5.3	7.0
2007	7.8	8.1
2006	6.5	8.4
2005	7.2	8.1
2004	7.5	8.8
2003	8.8	9.7
2002	5.3	5.5
2001	5.1	7.0
2000	4.9	4.3
1999	3.7	3.7
1998	3.7	3.6
1997	4.3	5.5
1995	3.9	6.3
1994	6.5	5.8

CPE, relative abundance, and mean number of species collected by seining were compared between the three seasonal periods for all Dresden Pool locations combined (Table G-12). CPE for total fish was three to four times higher in May/June (92.3) than in July/August (23.2) and September (31.0). Higher catches in May/June primarily reflect seasonally high catches of spotfin shiner, bluntnose minnow, bullhead minnow, and *Moxostoma*, which collectively accounted for 79.7 percent to the May/June catch (Table G-12). The same four taxa accounted for 49.5 and 23.6 percent of the July/August and September combined catches, respectively. *Moxostoma* were collected primarily in May/June and not in September. Gizzard shad, emerald shiner, spottail shiner, and brook silverside accounted for 42.3 percent of the September catch compared to 3.8 and 20.3 percent in May/June and July/August, respectively.

3.2.5 Inter-Year Comparisons of Community Level Parameters

Electrofishing data for the 15 June through August survey period were compiled and compared among results from 17 years of monitoring to assess potential impacts on the fish community because of thermal conditions. Data were compared data from the same or similar locations (501/419A, 502, 506, 507A, and 510) excluding the seine data. Historical data collected from 1994-2000 for Location 503 (Kankakee River) are not available, therefore the 2001-2014 data sets used for the inter-year electrofishing comparisons excluded those data.

Gizzard shad was either the most abundant or the second most abundant species collected during the 17-year monitoring period (Table G-13). Catch rates ranged from 11.9 fish per km in 1994 to record levels in 2014 (100.9 per km) that was more than twice as high as the long-term average rate. Emerald shiner or bluegill CPE was higher than the gizzard shad CPE in 1997, 2000, 2002, and 2013.

The 2014 catch rates of 33 species were above the 17-year average. Species with above average CPEs included many of the most common species in the study area including gizzard shad, spotfin shiner, bluntnose minnow, bullhead minnow, Northern sunfish, largemouth bass, smallmouth bass, and logperch. Green sunfish and bluegill CPE varied widely over the 17-year study with rates that ranged from less than three fish per km in 1994 to more than 50 fish per km in 2003 for both species (Table G-13). The 2014 rates for both species were below average.

Catch rates of smallmouth bass and largemouth bass were less variable than the sunfish CPEs. Smallmouth bass CPE has ranged from 2.9 to 11.1 fish per km and averaged 5.0. The 2014 CPE (5.6) was below the 17-year average. Catch rates of largemouth bass ranged from 2.6 to 28.7 fish per km and averaged 8.9 fish per km. Catch rates of largemouth bass in 2014 were the highest to date. Largemouth bass CPEs were higher in 2011 and 2013 than all previous years despite the reduced effort during those two years (Table G-13).

Five redhorse species were collected during the 1994-2014 study period. Their catch rates ranged from 1.3 to 19.5 fish per km in 2014 and averaged 6.7 fish per km. The 2011 and 2013 CPEs were below the long-term average, likely due to the reduced sampling effort those two years. Typically, golden redhorse has been the most abundant redhorse species; however, in 2014 the catch rates of shorthead redhorse (8.2) and silver redhorse (5.8) were four to six times higher than the golden redhorse rate (1.4) and eight to 12 times greater than their respective long-term averages.

Total catch rates of native species were similar among most years ranging from 47.8 to 299.0 fish per km and averaged 157.3 fish per km. The 2011(126.2) and 2013 (141.1) total CPEs were somewhat below the long-term average likely because of the reduced sampling effort those two years. The 2014 total CPE (273.3) was exceeded only by the record rate in 2003 (299.0). Total CPE of native species in 1994 was significantly ($P<0.01$) lower compared to all years except

1995, whereas the 2014 CPE was significantly similar to all years except 1994 (Table G-14).

Annual mean IWBmod scores ranged from 5.3 to 7.4 for the 1994-2014 study-periods (Table G-14). The 2014 score (7.2) is statistically similar to scores from all other years except 1994 and 1999 (Table G-14). Ohio EPA (1987, 1989 updated 2006) uses IWBmod scores to assign streams or stream segments to the following classifications: Exceptional = ≥9.6; Very Good = 9.1-9.5; Good = 8.5-9.0; Marginally Good = 8.0-8.4; Fair = 6.4-7.9; Poor = 5.0-6.3; and Very Poor = <5.0. The Ohio EPA 2006 update added the Marginally Good and Very Good classifications and changed the ranges for classifications above Poor. According to the current Ohio EPA classification scheme, the fish community in the lower Dresden Pool segment during the mid-June through August time period would have been considered poor in 1994, 1995, and 1999, and fair all other years. The mean native species richness value for 2014 (15.3) was the highest value observed during the 16 study years. It was statistically higher than eight of the previous 16 years (Table G-14).

As shown below, mean water temperatures (including data from Location 503) during the period when natural temperatures are expected to be highest (15 June through August) ranged from 26.3°C in 1994 to 31.4°C in 2011:

Year	Mean Water Temperature	CPE	IWBmod	Species Richness
2014	28.4	273.3	7.2	15.3
2013	31.2	141.1	7.0	10.7
2011	31.4	126.2	6.9	10.2
2008	27.2	176.7	7.1	12.6
2007	28.8	202.9	6.6	11.6
2006	29.2	167.7	6.7	10.2
2005	30.3	133.9	6.5	9.9
2004	28.4	102.4	6.6	9.6
2003	28.9	299.0	7.4	12.6
2002	29.5	191.0	7.0	10.8
2001	29.3	145.0	6.4	9.7
2000	28.5	125.9	6.9	11.0
1999	30.4	151.7	6.1	8.4
1998	30.2	170.9	6.5	10.2
1997	28.1	143.2	6.8	10.6
1995	28.4	76.6	6.3	9.2
1994	26.3	47.8	5.3	7.1

The 2014 CPE was the second highest of the 17-year study period, whereas IWBmod was the second highest and species richness was the highest. IWBmod in the last eight study years has shown little variation, whereas species richness values have been greater than 10 the last six years.

3.2.6 Summary

Inter-year comparisons of native species electrofishing CPE, IWBmod scores, and native species richness were made for the June 15 through August time period when it would be expected that air and water temperatures would be highest and river flows should be lower. The 2014 CPE for the Dresden Pool segment was not significantly different than CPEs from 15 of the previous 16 years. The 1994 CPE was significantly lower than all other years except 1995. In 2014, under

Ohio EPA's classification of IWBmod scores, the fishery in the Dresden Pool segment would be considered fair and species richness was the highest to date. Mean water temperature in 2014 was the fourth lowest of the study. Warmer water temperatures in 1998, 1999, 2005, 2011, and 2013 reflect more consistent power generation in recent years and use of mechanical cooling towers at DNS from 2000-2013, which reduces the mean water temperatures downstream of DNS.

3.2.7 Fish Condition

3.2.7.1 Overview

Inherent in the development of standard weight (*Ws*) equations used to calculate relative weight (*Wr*) of fish is the objective of modeling the growth form of a species for individuals in better-than-average condition. A mean W*r* value close to 100 for a broad range of size groups may reflect optimal health and utilization of food resources for a given population (Anderson and Gutreuter 1983). Mean *Wr* values considerably less than 100 may suggest low food availability and/or disruption of feeding relationships or the presence of various environmental stressors.

During 2014, 602 fish representing 21 native species were collected that met the minimum length criteria of published *Ws* equations (Table G-15). Many of these species were represented by low numbers of individuals in some or all of the months, samples too small for monthly comparisons of *Wr* values. Exotic species are not discussed in the following section; however, *Wr* values were calculated for all species that have published W*s* equations (Table G-1, Appendix E).

Composite (months combined) mean *Wr* values for six common species ranged from 95 (smallmouth bass) to 119 (green sunfish), values that indicates these species were in average or better than average condition (Table G-16). Largemouth bass showed significant seasonal body condition patterns with better *Wr* in September (Table G-16). Mean *Wr* the other five species did not vary seasonally.

Twenty-three native species that met the minimum length criteria of the *Ws* equations were collected between 15 June and 31 August 1994 through 2014 (Table G-17). Annual catches of all except seven species averaged less than 17 fish, samples sizes that were determined to be too small for annual comparisons of mean *Wr* values. Relative weights were calculated for mid-June through August, which represents the period with the highest temperatures. Inter-year differences in mean *Wr* values are discussed below for smallmouth buffalo, channel catfish, green sunfish, bluegill, smallmouth bass, largemouth bass, and freshwater drum (Table G-18).

3.2.7.2 Smallmouth Buffalo

Relative weight was calculated for smallmouth buffalo seven years studied when sample sizes averaged greater than 10 fish per year (Table G-17). The mean *Wr* for summer 2014 was 90 and the composite mean *Wr* for the seven study years was 87 (Table G-18). These results indicate smallmouth buffalo are in average or below condition especially in 2004 and 2006 when mean Wr was 82 and 84, respectively.

3.2.7.3 Channel catfish

Relative weight was calculated for channel catfish 15 of the 17 years studied when sample sizes exceeded 10 fish and averaged 23 fish per year (Table G-17). The mean summer 2014 *Wr* was 98, slightly below the composite mean *Wr* for the study (Table G-18). The mean *Wr* for channel catfish was statistically ($P>0.05$) similar to all years except 1994 when the highest *Wr* (119) was recorded.

3.2.7.4 Green Sunfish

Relative weight has been calculated for green sunfish all 17 study years (Table G-17). Sample sizes were 12 or greater and averaged 95 fish per year (Table G-17). The mean summer *Wr* for 2014 (119) was slightly above the composite mean *Wr* for the study (Table G-18). The 2014 *Wr* value for green sunfish were statistically similar to all other years except 2004, which had the lowest mean *Wr* of the study (Table G-18). Mean *Wr* values have been 108 or greater during the 17-year study, indicating that green sunfish are consistently in good condition in the Dresden Pool study area (Table G-18).

3.2.7.5 Bluegill

Relative weight has been calculated each of the 17 years studied except 1994 when only two bluegills were collected (Table G-17). Sample size was 14 or greater and averaged 115 bluegill over the remaining years. The mean *Wr* for summer 2014 was 110, nearly identical to the composite mean (Table G-18). Mean *Wr* values were statistically similar to all other years except 2004 when the mean was 100 (Table G-18). *Wr* has been consistently 100 or greater, indicating bluegill are in good condition in the Dresden Pool study area.

3.2.7.6 Smallmouth Bass

Relative weight has been calculated for smallmouth bass each year except 2011 when only nine were collected (Table G-17). The 2014 summer mean *Wr* was 95 compared to the composite mean for study of 93 (Table G-18). Mean *Wr* values were statistically similar among years except for the low *Wr* in 2013. Smallmouth bass *Wr* was greater than 90 all except four years, indicating that their condition has consistently been good.

3.2.7.7 Largemouth Bass

Relative weight of largemouth bass was calculated each of the 17 study years except 1994 and 1995 when fewer than 10 were collected (Table G-17). The 2014 summer mean *Wr* (103) was equal to the composite mean for the study (Table G-18). It was statistically similar to values from all other years compared (Table G-18). Mean *Wr* for largemouth bass have been greater than or equal to 95 each year, indicating that their condition has consistently been good.

3.2.7.8 Freshwater Drum

Relative weight of freshwater drum was calculated 13 of the 17 study years when the sample sizes averaged 19 fish (Table G-17). The 2014 summer mean *Wr* was 98 compared to the composite mean for the study of 106 (Table G-18). The 2014 mean *Wr* value was statistically similar to values from all years compared except 1994, 1997, and 1998 when mean *Wr* was highest (Table G-17). Mean *Wr* for freshwater drum have been greater than or equal to 95 each year compared, indicating that their condition has consistently been good.

3.2.7.9 Summary

During the 15 June-31 August study period from 1994-2014, more than 8,000 native fishes meeting appropriate minimum length criteria for *Ws* equations were collected from the Dresden Pool. Inter-year comparisons of mean *Wr* values were made for seven common native species: smallmouth buffalo, channel catfish, green sunfish, bluegill, smallmouth bass, largemouth bass, and freshwater drum. Significant differences between years have been occasionally observed for some of those species. For green sunfish and bluegill, significant differences were due most often to the extent in which *Wr* values exceeded 100. For example, in 2004 the mean *Wr* for green sunfish (108) was significantly lower than the 2014 mean (119); however, that difference was due to how much **above** the target value of 100 the *Wr* was, **not** to suboptimal body condition. In many cases, however, there were no significant differences among years and *Wr* values of channel catfish, green sunfish, bluegill, and largemouth bass always exceeded 95. Smallmouth bass condition was consistently less than the target of 100 but the composite mean for the study was 93. Smallmouth buffalo had the lowest *Wr* of the common species evaluated in 2014 with a composite mean of 87 and annual means less than 90 five of the seven years compared.

The *Wr* results indicate that in the last 17 study years, the populations of six common species typically were in average or better than average condition, which suggests there have not been significant health, food availability, and/or feeding relationship problems for these species. The 2014 summer *Wr* for smallmouth buffalo was the above the composite mean but overall the data suggest they experience less than optimal conditions compared to the other common species.

3.2.8 Incidence of DELT Anomalies

DELT anomalies (deformities, erosions, lesions, and tumors; Ohio EPA 1987, 1989) are the group of anomalies most relevant for this study because a clear relationship has been established between the incidence (percentage) of fish with DELT anomalies and water quality (Ohio EPA 1989). The extent to which parasites and “other” anomalies (e.g., deformed fin rays, regenerated scales) reflect water quality is unclear. Therefore, only DELT anomaly data collected in are discussed. Data regarding parasites and “other” abnormalities are presented in Appendix F. In contrast to the evaluation of the fish community as a whole, where exotic species were eliminated, exotic species were included in the DELT comparisons because of the extent to which they (particularly common carp) are affected by DELT anomalies. Seine data were not used because this gear collects primarily small fish that often lack anomalies. For the temporal comparisons, data collected from all 2014 sampling trips were utilized. Intra-year comparisons of DELT anomalies in Dresden Pool were made for each sampling month and inter-year comparisons were made for all trips combined. Historical data were available from 1994, 1995, 1997-2008, 2011, and 2013.

3.2.8.1 Overview

In 2014, a total 6,431 fish was examined for DELT anomalies and 123 fish (1.9 percent of those examined) exhibited DELT anomalies within Dresden Pool (Table G-19). Twenty-one of the 65 taxa examined exhibited DELT affliction and common carp, smallmouth buffalo, channel catfish, largemouth bass, and freshwater drum accounted for 74 percent of the DELT anomalies. Fin erosion was present on nearly 90 of the fish observed with DELT anomalies (Table G-20). Lesions accounted for most of the other DELT anomalies observed; tumors were not observed (Appendix F).

3.2.8.2 Temporal Comparisons

DELT anomalies were compared between the three sampling periods: May/June, July/August, and September (Table G-21). The incidence rate of DELT anomalies was high in May/June (10.3 percent) but much lower in July/August (1.3 percent) and September (0.8 percent). More species had DELT anomalies in May/June (15) and July/August (13) than in September (7) Higher incidence rates in May/June reflect relatively high affliction rates for common carp, channel catfish, and freshwater drum that accounted for 60 percent of the DELT anomalies in that period. Channel catfish also had relatively higher incidence rates in July/August and September. Overall, 68 percent of the channel catfish had DELT afflictions compared to only 2.7 percent of the largemouth bass collected by electrofishing. In general, bottom feeders (e.g. suckers, freshwater drum, common carp, and catfishes) are the group most afflicted by DELT anomalies, possibly as the result of contact with contaminated sediments.

3.2.8.3 Inter-Year Comparisons

Inter-year comparisons of the incidence of DELT anomalies were made to examine annual variations and patterns of affliction rates during the summer (15 June through August) from 1994 through 2014 (Table G-22). These comparisons reveal that the incidence rates of DELT anomalies in the study area have varied widely during the study:

Year	2014	2013	2011	2008	2007	2006	2005	2004	2003
Percent DELT	1.9	2.8	0.9	2.1	1.7	2.4	2.6	5.4	2.5

Year	2002	2001	2000	1999	1998	1997	1995	1994
Percent DELT	2.3	1.7	5.1	1.6	2.1	4.9	13.6	4.1

Summer affliction rates in the Dresden Pool decreased steadily from 13.6 percent in 1995 to 1.6 percent in 1999 and increased to 5.1 percent in 2000. With few exceptions, affliction rates have been consistently near two percent during the last 14 study years. The lowest affliction rate occurred in 2011 (0.9) and has been less than 2.0 four other years.

Bottom feeders such as common carp, golden redhorse, shorthead redhorse, smallmouth buffalo, and channel catfish have typically exhibited the highest DELT anomaly affliction rates within the Dresden Pool study area. Disproportionately higher affliction rates among bottom feeders suggest that substrates within the study area, as do other upstream areas in the UIW, likely contain contaminants that are responsible for many of the DELT anomalies observed on these species (Bertrand et al 1992; Burton 1995; EA 1996b). The summer DELT anomaly incidence rates in largemouth bass has varied widely during the study ranging from none during four years to 19.7 in 2004 (Table G-22). Since 2004, incidence rates for largemouth bass have been lower but have varied widely from zero in 2011 to 16.9 percent in 2006. Since 2006, their incidence rate has been much lower and was only 1.7 percent in 2014.

3.2.8.4 Summary

A high incidence of DELT anomalies is an indicator of stress or contamination, which may be caused by a variety of environmental factors, including chemically contaminated substrates (Ohio EPA 1989). Ohio EPA (1987) uses percent DELT anomalies as an Index of Biotic Integrity (IBI) metric. For large river sites like the Upper Illinois Waterway, the IBI scoring criteria is as follows: percent DELT anomalies <0.5 = 5 (good), 0.5-3.0 = 3 (fair), and >3.0 = 1 (poor). Based on the incidence rates observed for the 15 June through August period, fish in Dresden Pool were in the poor category until 1998. Fish have been in the fair category since 1998 except for 2000 and 2004 when affliction rates were in the poor category.

Inter-year comparisons of DELT anomaly affliction rates revealed that although the incidence rates in 1998-1999 and 2001-2003 were lower than rates from the years preceding 1998 and considering the spikes in 2000 and 2004, affliction rates remain elevated in Dresden Pool. This indicates that although there has been improvement in the system, stressors still exist. Affliction

rates increased consistently from 2001 through 2004, was lower the next three years, and increased slightly in 2008 (Table G-22). The 2011 (0.9) incidence rate was the lowest observed for this 17 year record.

3.3 Downstream Of Dresden Island Lock and Dam

3.3.1 Study Area

Four sampling locations downstream of the Dresden Island Lock and Dam in the Marseilles Pool of the Illinois River were monitored in 2014 (Figure G-1). Location 512 is in the tailwater below the Dresden Island Dam and Location 513 is at the downstream end of the Dresden Island lock canal. Locations 514 and 515 are along the main channel borders approximately one mile downstream of the Dresden Island Lock and Dam on the north and south bank (Figure G-1). A detailed description of each location is presented in Section 2.2.

Biological and physicochemical studies were conducted downstream of the Dresden Island Lock and Dam for 15 years between 1994 and 2014. Surveys were not conducted six years during that 21-year period (1996 through 1998, 2009, 2010, and 2012).

3.3.2 Physicochemical Measurements

Near surface or mid-depth water temperatures during the 2014 monitoring program ranged from 19.6 to 28.9°C at the electrofishing locations downstream of the Dresden Island Lock and Dam (Table G-23). Appendix A contains all physicochemical data by location, depth, and sampling period. Mean temperatures during the study period were similar among locations (24.3 to 24.9°C) and were highest in August (Table G-23). As shown below, mean summertime (i.e., 15 June through September) water temperatures downstream of the Dresden Island Lock and Dam ranged from 20.2 to 28.7°C. The 2014 mean was lowest to date. Except in 1994 and 2014, mean water temperature downstream of Dresden Island Lock and Dam exhibited a narrow range among study years.

Downstream Dresden Dam

2014	25.5
2013	29.0
2011	29.6
2008	26.7
2007	27.8
2006	28.5
2005	29.6
2004	28.5
2003	28.0
2002	29.3
2001	27.1
2000	27.9
1999	29.5
1995	28.4
1994	25.7

Surface or mid-depth dissolved oxygen (D) concentrations ranged from 6.7 to 10.5 ppm during 2014 (Table G-23 and Appendix A). DO concentrations were consistently above the General Use minimum standards (i.e., 5 ppm at any time from March through July and 3.5 ppm at any time from August through February). Mean DO values varied by only 0.5 ppm among locations (8.2 to 8.7 ppm). Temporally, mean DO varied by 1.8 ppm, was lowest in late August (7.6 ppm) and highest (9.4 ppm) in late September (Table G-23). Mean percent saturation was similar among locations and was highest in early July and slightly less than 100 in May and once each in July, August, and September (Table G-23 and Appendix A).

Specific conductance values ranged from 610 to 1009 µS/cm (Table G-23 and Appendix A). Temporally, mean values were highest in May and lowest in September. Annual mean specific conductance values were highest at Location 514 (847 µS/cm) compared to 809 to 815 µS/cm at the other three locations. Based on the conductivity values encountered, the electrofishing gear output was adjusted to provide about 220 volts at five amps or greater during the surveys.

Transparency (Secchi disk readings) ranged from 30 to 82 cm (Table G-23 and Appendix A). Mean values were similar among locations (54 to 62 cm). Among trips, mean transparency was lowest in early September (34cm) and highest in early August (73 cm). Water clarity was adequate for the field crew to observe and retrieve fish stunned by the electrofishing gear.

3.3.3 Species Composition and Abundance of Native Species

Sampling below the Dresden Island Lock and Dam during the 2014 monitoring program resulted in the collection of 4,631 fish representing 47 species and one hybrid (Table G-24). Numerically dominant species were spotfin shiner (31.5 percent), emerald shiner (16.8 percent), bluntnose minnow (6.6 percent), spottail shiner (6.6 percent), and mimic shiner (4.6 percent). Twelve other species accounted for a quarter of the total catch including gizzard shad, golden redhorse, bluegill, smallmouth bass, largemouth bass, and logperch (Table G-24). Dominant species in terms of biomass were channel catfish (35.9 percent), smallmouth buffalo (13.7 percent), freshwater drum (12.1 percent), and smallmouth bass (8.4 percent).

Electrofishing surveys produced 2,433 fish and seining produced 2,198 fish (Table G-24). The 14 most abundant species in the combined catch accounted for 84 percent of the electrofishing catch compared to 95 percent of the seine catch. Of those species, emerald shiner, mimic shiner, bluntnose minnow, bluegill and smallmouth bass were more abundant in the electrofishing catch, whereas spotfin shiner, spottail shiner, sand shiner were more abundant in the seine catch.

Electrofishing produced 44 species compared to 31 species collected by seining. Twenty-eight of the 47 taxa in the combined catch were collected by both sampling methods. Conversely, 20 taxa were collected by only one or the other gear type. Eight of these latter taxa were represented in the catch by one individual and five were represented in the catch by two individuals. Five cyprinids (spotfin shiner, emerald shiner, bluntnose minnow, spottail shiner, and mimic shiner) were regularly collected with both gears (Table G-24).

3.3.4 Spatial and Temporal Comparisons of Community Level Parameters

3.3.4.1 Electrofishing

The combined electrofishing CPE (number per km), relative abundance, species richness for native fish species, and IWBmod from the four locations downstream of Dresden Island Lock and Dam were compared among the May/June, July/August, and September surveys. CPE increased from 138.0 fish per km in May/June to 179.9 in July/August and then declined to 110.5 in September (Table G-25). The higher CPE in July/August reflects a greater number of species (40) than were collected during the other two seasons (29 and 31) and increased catches of spotfin shiner, bluntnose minnow, and mimic shiner. Species with higher catch rates in May/June included golden redhorse, channel catfish, white bass, and bluegill (Table G-25). Species with higher catch rates in September included smallmouth buffalo, brook silverside, and largemouth bass. Differences in total CPE (all native species) among seasons were not statistically significant (Table G-26).

Mean IWBmod was similar among all three seasons; May/June (7.2), July/August (7.40), and September (7.6). The mean number of native species increased slightly from 14 in May/June to 17 in September (Table G-25). The IWBmod and mean number of native species were also statistically similar among the three seasonal surveys (Table G-26).

3.3.4.2 Seining

The combined CPE (number of native fish per seine haul), relative abundance, and number of native species collected at the four locations downstream of Dresden Island Lock and Dam were compared between the May/June, July/August, and September surveys (Table G-27). The number of species collected per period increased from 20 species in May/June to 29 in July/August, then declined to 19 species in September. The 13 species that were collected each of the three seasons, collectively accounted for 95 to 96 percent of the total CPE. The higher CPE in May/June was due primarily to spotfin shiner, sand shiner, and mimic shiner. Although catch rates were lower in the July/August and September collections, spotfin shiner was also the most abundant species (Table G-27). Co-dominants in July/August included emerald shiner, spottail shiner, and mimic shiner, whereas in September co-dominants were emerald shiner and spottail shiner.

Due to the qualitative nature of seining, statistical testing was not applied to the seine data.

3.3.5 Inter-Year Comparisons of Community Level Parameters

Electrofishing data for the 15 June through August time period were compiled and compared among the past 15 study years to assess potential impacts on the fish community associated with thermal conditions downstream of the Dresden Island Lock and Dam. Data compared are from the same or similar locations. This evaluation excludes the seining data because of its qualitative nature.

The number of fishes collected during this 15-year study period was lowest in 1994 (172) and highest in 2007 (1,362) (Table G-28). Low catches in 2011 and 2013 were likely influenced by the reduced number of sampling events (3 vs. 8 surveys prior to 2011). Renewal of the eight seasonal surveys for 2014 program yielded a total native species CPE that was the sixth highest for the study and the number of species (35) collected in 2014 was the highest to date (Table G-28).

Spotfin shiner was the second most abundant species collected in 2014 and its CPE (31.0) was the highest to date. Emerald shiner and/or gizzard shad were the most abundant or second most abundant species most years. Bluegill CPE has varied widely during the study, but except for six years was greater than 10 fish per km (Table G-28). Green sunfish was the most abundant species in 2000 and the second most abundant species in 1999. Spotfin shiner was the third most abundant species in 2013 and second most abundant in 2008 (Table G-28).

Catch rates of commonly collected species during the 15 June through 31 August period have generally been higher since 1995 (Table G-28). Exceptions included consistently lower gizzard shad CPE since 1995 that largely represents CPEs less than 10 fish per km five of the seven years since 2004. In addition, average catch rates of emerald shiner, bullhead minnow, smallmouth buffalo, channel catfish, and smallmouth bass since 1995 have been similar to pre-1999 CPEs.

Four redhorse species were collected during the 15 years sampled. Golden redhorse accounted for about 60 percent of the redhorse. Its CPE ranged from 1.3 to 12.8 fish per km and had average catches after 1994, largely because of the high CPE (12.8) in 2002 (Table G-28). Catch rates of the other redhorse species averaged less than two fish per km and only the 1995 mean CPE for silver redhorse (10.5) exceeded four fish per km. One river redhorse was collected in 2014.

Catch rates of freshwater drum exhibited limited variability relative to other common species, with CPEs ranging from1.0 to 9.8 fish per km (Table G-28). The 2013 CPE was the lowest of the 14-year study and the 2014 rate was about average.

Native species CPE (fish per km) and mean IWBmod in 2014 were not statistically ($P>0.05$) different from the other 14 years (Table G-29). Native species richness in 2014 was the highest to date and statistically ($P<0.05$) higher than the six years with the lowest richness. IWBmod values ranged from 6.7 to 7.9 over the 15 years studied. Ohio EPA (1987, 1989 updated 2006) uses IWBmod scores to assign streams or stream segments to the following classifications: Exceptional = ≥9.6; Very Good = 9.1-9.5; Good = 8.5-9.0; Marginally Good = 8.0-8.4; Fair = 6.4-7.9; Poor = 5.0-6.3; and Very Poor = <5.0. According to the current Ohio EPA classification scheme, the fisheries downstream of Dresden Island Lock and Dam during the mid-June through August period would have been considered fair each year.

As shown below, mean water temperatures during the 15 June through 31 August study period have ranged from 25.8°C in 1994 to 32.0°C in 2011:

Year	Mean Water Temperature	CPE	IWBmod	Species Richness
2014	27.9	195.3	7.6	17.5
2013	29.0	90.9	7.1	13.0
2011	32.0	99.0	7.5	14.5
2008	28.2	170.8	7.5	15.5
2007	27.6	340.5	7.2	14.4
2006	29.8	141.3	7.2	12.9
2005	30.1	206.3	7.2	14.6
2004	29.4	176.0	7.1	11.6
2003	28.8	196.3	7.9	14.9
2002	30.0	247.5	7.9	15.1
2001	29.0	152.8	7.1	13.9
2000	28.5	105.5	6.7	11.8
1999	30.6	118.0	6.9	11.2
1995	28.4	242.5	7.8	14.3
1994	25.8	86.0	7.3	11.5

There were no clear direct relationships between mean water temperatures and mean CPE, IWBmod, or species richness. For example, the 2011 catch statistics, the warmest year, were similar to those in 1994, the coolest year. In 2005 when the third highest mean temperature was recorded, the CPE was the fourth highest; and the second highest CPE occurred in 2002 when the fourth highest mean temperature was recorded. The highest CPE occurred in 2007, when the next to lowest mean temperature was observed. Similar inconsistent patterns were evident for IWBmod and species richness.

3.3.6 Summary

Inter-year comparisons of mean electrofishing total CPE for native species, IWBmod, and species richness were made for the 15 June through August study period when air and water temperatures would be highest and river flows lowest. CPE (fish per km) and mean IWBmod, in

2014were not significantly different from the previous 14 study years. The 2014 native species richness was statistically similar to that from eight other years and statistically higher than six other years. Under Ohio EPA's current classification of IWBmod scores, the fishery below Dresden Island Lock and Dam during the mid-June through August period would be considered fair for all years.

The mean summer water temperature in 2014 was less than the median for the 15 study years; the lowest mean water temperatures were in 1994 2007, and 2008. The 2013 mean CPE was the second lowest in this 14 year record, likely an artifact of the reduced sampling schedule. Native species richness in 2014 (17.5) was the highest to date and the IWBmod score (7.6) was above the 15-year median. Collectively, the 2014 catch data did not indicate any obvious adverse impacts on the native fish community downstream of the Dresden Island Lock and Dam because of the operation of DNS.

3.3.7 Fish Condition

3.3.7.1 Overview

Inherent in the development of the standard weight (*Ws*) equations used to calculate relative weight (*Wr*) is the objective of modeling the growth forms of fish in better-than-average condition. A mean *Wr* close to 100 for a broad range of size groups may reflect optimal health and utilization of food resources for a given population (Anderson and Gutreuter 1983). When mean *Wr* values are considerably less than 100, problems may exist in food availability and/or feeding relationships. Exotic species are not discussed in the following section, however, *Wr* values were calculated for all species that have published *Ws* equations (Table G-1), and those results are provided in Appendix E.

During 2014, 420 fish representing 15 native species were collected downstream of Dresden Island Lock and Dam that met the minimum length criteria of published *Ws* equations (Table G-30). All were represented by low numbers of individuals in some or all of the months, precluding monthly comparisons of mean *Wr* values. Of the 15 species, five were represented by more than 30 individuals (Table G-30). Relative weights by species, as well as by individuals within a species, were highly variable. Mean relative weight by species ranged from 74 for longnose gar to 112 for green sunfish. Four species had mean *Wr* values less than 90 including smallmouth buffalo and smallmouth bass (Table G-30). Conditions for these species may have been suboptimal. The remaining species examined appeared to reflect optimal health and utilization of food resources based upon relative weight. Five species examined exhibited a *Wr* of greater than 90.

Statistical comparisons of mean *Wr* for the five most common species indicated no seasonal differences during the study (Table G-31). Smallmouth buffalo had suboptimal *Wr* each season as did smallmouth bass except in July/August when the mean *Wr* was 92. The other three species (channel catfish, bluegill, and freshwater drum) had mean *Wr* greater than 100 each season compared (Table G-31).

Since 1994, a total of 2,493 fish representing 20 native species that met the minimum length criteria of the *Ws* equations, has been collected downstream of the Dresden Island Lock and Dam during the 15 June-August study period (Table G-32). All of these species were represented by fewer than 10 individuals in all or a number of years, thus preventing inter-year comparisons of mean *Wr* values due to small sample sizes. Relative weights were compiled for the mid-June through 31 August period because the highest temperatures typically occur during this period. Inter-year differences in mean *Wr* values for the past 15 study years are discussed below for six most common native species: smallmouth buffalo, channel catfish, green sunfish, bluegill, smallmouth bass, and freshwater drum.

3.3.7.2 Smallmouth buffalo

Relative weight of smallmouth buffalo was calculated for 10 of the 15 study years with annual sample sizes ranging from 10 to 28 fish (Table G-32). The mean summer *Wr* (82) in 2014 was slightly lower than the study composite mean, but was statistically ($P<0.05$) similar to all other years (Table G-33). Annually low W*r* suggests that conditions downstream of the Dresden Island Lock and Dam are consistently less than optimal for smallmouth buffalo.

3.3.7.3 Channel catfish

Relative weight of channel catfish was calculated for 12 of the 15 study years with annual sample sizes ranging from 11 to 34 individuals (Table G-32). The mean summer *Wr* (101) in 2014 was slightly greater than the study composite mean but was statistically ($P<0.05$) similar to all other years (Table G-33). The summer mean W*r* has consistently been >95 suggesting that conditions downstream of the Dresden Island Lock and Dam are generally optimal for channel catfish.

3.3.7.4 Green Sunfish

Relative weight of green sunfish was calculated for 12 of the 15 study years with annual sample sizes ranging from 10 to 90 individuals. The mean summer *Wr* (112) in 2014 was slightly higher than the study composite mean but statistically ($P>0.05$) similar to all other years (Table G-30). Mean *Wr* for green sunfish has consistently exceeded 100 during the study indicating that conditions downstream of the Dresden Island Lock and Dam are optimal for green sunfish.

3.3.7.5 Bluegill

Relative weight of bluegill was calculated for bluegill for 12 of the 15 study years with annual sample sizes ranging from 11 to 49 individuals (Table G-32). The mean summer *Wr* (111) in 2014 was similar to the study composite mean and statistically ($P<0.05$) similar to all other years (Table G-33). Mean *Wr* for bluegill has consistently exceeded 100 during the study indicating that conditions downstream of the Dresden Island Lock and Dam are optimal for bluegill.

3.3.7.6 Smallmouth Bass

Relative weight of smallmouth bass was calculated for seven of the 15 study years with annual sample sizes ranging 10 to 33 individuals (Table G-32). The mean summer *Wr* (92) in 2014 was slightly above the study composite mean but statistically ($P<0.05$) similar to six of the years compared and significantly higher than the low Wr in 2001 (Table G-33). Mean *Wr* values for smallmouth bass were less than 90 five of the seven years. Improved condition was evident in 2008 and 2014 with *Wr* values approached 100.

3.3.7.7 Freshwater Drum

Relative weight of freshwater drum was calculated 13 of the 15 study years with annual sample sizes ranging from 10 to 38 individuals (Table G-32). The mean summer *Wr* (103) in 2014 was slightly lower than the study composite mean (Table G-30). Mean *Wr* for freshwater drum has consistently exceeded 100 in the study area indicating that conditions downstream of the Dresden Island Lock and Dam have been optimal for freshwater drum.

3.3.7.8 Summary

A total of 2,493 native fishes meeting appropriate minimum length criteria for *Ws* equations was collected from the study segment downstream of the Dresden Island Lock and Dam during the 15 June to 31 August study period in 1994-1995, 1999-2008, 2011, 2013, and 2014. Inter-year comparisons of mean *Wr* values were made for six native species. Annual differences among years have been occasionally observed for some of the species. Mean *Wr* has been close to or exceeded 100 for four species (channel catfish, green sunfish, bluegill, and freshwater drum). For these species, differences were due most often to the extent in which *Wr* exceeded 100. For example, the mean bluegill *Wr* of 124 in 2006 was significantly higher than the mean in 2007 (107) (Table G-33, EA 2010). Therefore, differences, though significant, were due to how much **above** the target value of 100 the *Wr* values were, **not** to suboptimal fish condition. These values indicate that the populations of these four species were in average or better than average condition. *Wr* values for smallmouth buffalo and smallmouth bass have been sub-optimal. The reasons for those low W*r* values are unclear.

3.3.8 Incidence of DELT Anomalies

DELT anomalies (deformities, erosions, lesions, and tumors; Ohio EPA 1987, 1989) are the group of anomalies most relevant for this study because a clear relationship has been established between the incidence (percentage) of DELT anomalies and water quality (Ohio EPA 1989). The extent to which parasites and "other" anomalies (e.g., deformed fin rays, regenerated scales) reflect water quality is unclear. Therefore, only DELT anomaly data are summarized. Data regarding parasites and “other” abnormalities are presented in Appendix F.

In contrast to the fish community evaluation, where exotic species were eliminated, exotic species were included in the DELT comparisons because of the extent to which they (typically common carp) are affected by DELT anomalies. Seine data were not used for comparative purposes because this gear collects primarily small/young fish that often lack anomalies. For the temporal comparisons, data collected during the May/June, July/August, and September 2014 sampling trips were utilized.

Intra-year comparisons of DELT anomalies downstream of the Dresden Island Lock and Dam were made for each sampling period and inter-year comparisons were made for all trips combined. Historical data were available from 1994, 1995, 1999-2008, 2011, and 2013.

3.3.8.1 Overview

In 2014, 2,607 fish were examined for DELT anomalies, of which 122 (4.7 percent) exhibited DELT anomalies downstream of the Dresden Island Lock and Dam (Table G-34). Freshwater drum and channel catfish exhibited the highest DELT affliction rates (32.6 and 92.8 percent, respectively) among those species for which nine or more individuals were examined. Of the 51 species examined, 15 exhibited DELT anomalies (Table G-34). Fin erosion accounted 90 percent of the DELT anomalies observed (Table G-35); lesions accounted for most of the other DELT deformities; tumors were not observed (Appendix F).

3.3.8.2 Temporal Comparisons

DELT anomalies were compared between three periods: May/June, July/August, and September (Table G-36). The incidence of DELT anomalies was lowest in July/August (2.8 percent) and highest in May/June (8.8 percent). Six species (common carp, golden redhorse, channel catfish, green sunfish, bluegill, and freshwater drum) had DELT anomalies in both periods but only channel catfish and freshwater drum had consistently relatively high incidence rates (Table G-36).

3.3.8.3 Inter-Year Comparisons

Inter-year comparisons of the incidence of DELT anomalies were made to examine annual variations and patterns of affliction rates during the June 15-August study period from 1994 - 1995, 1999-2008, 2011, 2013, and 2014 (Table G-37). Affliction rates downstream of Dresden Island Lock and Dam in 2014 were the second lowest in the 15 years studied. Overall, annual DELT affliction rates were widely variable ranging from 2.4 in 2007 to 8.2 in 1999:

Year	2014	2013	2011	2008	2007	2006	2005	2004

% DELTs	2.8	5.0	7.7	3.6	2.4	5.5	4.0	7.6
Year	2003	2002	2001	2000	1999	1995	1994	
% DELTs	6.7	3.5	3.4	3.2	8.2	5.4	5.6	

Although DELT anomalies in redhorse species have occasionally been low, typically bottom feeders such as common carp, smallmouth buffalo, golden redhorse, shorthead redhorse, channel catfish, and freshwater drum have exhibited relatively high DELT anomaly affliction rates within the study area. The disproportionately higher affliction rates among bottom feeders suggest that the substrates within the study area, as do other upstream areas in the UIW, likely contain contaminants that are responsible for many of the DELT anomalies observed on these species (Bertrand et al. 1992; Burton 1995; EA 1996b).

3.3.8.4 Summary

A high incidence of DELT anomalies is an indication of stress and may be caused by a variety of environmental factors, including chemically contaminated substrates (Ohio EPA 1989). Ohio EPA (1987) uses percent DELT anomalies as an Index of Biotic Integrity (IBI) metric. For large river sites like the UIW, the IBI scoring criteria is as follows: percent DELT anomalies <0.5 = 5 (good), 0.5-3.0 = 3 (fair), and >3.0 = 1 (poor). DELT anomalies for fish in the Dresden Island Lock and Dam segment has been in the poor category for all years for which data are available except 2007 (2.4 percent) and 2014 (2.8 percent) when affliction rates were in the fair range. DELT anomaly affliction rates in the Dresden Island Lock and Dam segment has been variable and usually in the poor range indicating that although the system has shown some improvement, there are still stressors present.

3.4 Aquatic Habitat Assessment

Based on substrate and bathymetric data collected during 2013 and 2014, the general habitat near DNS is dominated by main channel type, which composes for 53% of the area upstream of Dresden Island Lock and Dam (Figure G-2). Lotus bed and silt/compact sand/hard substrate also comprised more than 10% of the reach. In general, habitats of greater complexity are somewhat limited throughout the upper Illinois, lower Des Plaines and lower Kankakee Rivers, particularly downstream toward the Dresden Island Lock and Dam. Upstream of the DNS discharge, there are 11 habitat types represented within the examined reach. In contrast, only four habitat types are represented in Dresden Pool, downstream of the DNS discharge. The lack of complexity in the most downstream portion of lower Dresden Pool is a function of the proximity to Dresden Island Lock and Dam while the confluence of two large rivers upstream of DNS provides for greater habitat complexity.

QHEI assessments were completed at each electrofishing location during early July and early September 2014; before and after aquatic macrophytes had matured. In July, QHEI scores were similarly low among all locations and ranged from 40.0 at Location 513 to 57.5 at Location 506 (Table G-38). OEPA (2006) has developed narrative classifications for the QHEI:

	QHEI Range	
Narrative Rating	**Headwaters**	**Larger Streams**
Excellent	> 70	
Good	55 to 69	60 to 74
Fair	43 to 54	45 to 59
Poor	30 to 42	30 to 44
Very Poor	< 30	0

Based on these thresholds, all locations were categorized as fair or poor in July (Table G-38). In September, QHEI scores were again rated poor to fair and ranged from 40.5 at Location 507A to 56.0 at Location 501 (Table G-39). Lower values for substrate quality and cover at Locations 513 and 507A were largely responsible for the lower overall QHEI scores, in July and September, respectively (Tables G-38 and G-39). There were no consistent longitudinal trends in habitat quality from upstream to downstream in either July or September.

Despite the increase in mature aquatic macrophytes beds, September QHEI scores generally showed only a slight increase in habitat quality among the locations compared to July (Tables G-38 and G-39). This lack of meaningful difference between periods is attributable to the fact that, among the QHEI metrics, macrophytes abundance/coverage only influences the cover metric. As such, presence, absence, or aerial extent of macrophytes has a limited effect on the overall QHEI score.

In comparison to earlier habitat surveys conducted in 1993 and 1994 (ComEd 1996), the 2014 QHEI results confirmed that habitat complexity and quality have changed minimally over the past 20+ years (Tables G-38, G-39, and G-40). Although scores from the 1990s averaged slightly higher than 2014, both studies suggest that habitat quality is generally fair and limited in the vicinity of DNS.

4.0 BENTHOS RESULTS AND DISCUSSION

4.1 Overview

The benthic community in the Dresden study area was sampled at six locations using Hester Dendy (HD) artificial substrate and Ponar dredge samplers. Duplicate HD sampler arrays (five HDs per array) were set and two replicate Ponar samples were collected at each of the six locations as part of the long-term monitoring program for DNS. Replicate sampling allowed statistical comparisons between areas (upstream vs. downstream of DNS) and among years. An ANOVA (P=0.05) was used to compare taxa richness, total density, and densities of Oligochaeta (aquatic worms), Chironomidae (midges), Ephemeroptera (mayflies), and Trichoptera (caddisflies). Due to inherent differences between the river upstream and downstream of the Dresden Island Lock and Dam, the data were segregated spatially: Dresden Pool (Locations 501A, 502, 509, and 510) and downstream of Dresden Island Lock and Dam (Marseilles Pool) (Locations 512 and 515).

To facilitate interpretation and discussion of results with regard to potential thermal effects, spatial comparisons in Dresden Pool were made between areas upstream and downstream of DNS. Ponar data for 1999, 2001-2008, 2011 and 2013 and HD data for 2001-2008, 2011 and 2013 were compared to the 2014 data. Downstream of the Dresden Island Lock and Dam, Ponar and HD data for 2001-2008, 2011, and 2013 were compared with data from the current study.

A total of 88 macroinvertebrate taxa were collected during the 2014 study (Table G-41). Chironomidae and Oligochaeta were the most taxa rich groups (27 and 14 taxa, respectively). Detailed results from the macroinvertebrate samples are provided in Exhibit G.

4.2 Dresden Pool

4.2.1 Ponar Sampler

Densities and relative abundance of three major macroinvertebrate groups in Dresden Pool were examined for trends between the areas upstream and downstream of DNS. Oligochaeta (aquatic worms) and Chironomidae (midges) were selected for these comparisons because they were the most abundant groups (Table G-42). In addition, Pelecypoda (bivalve mussels and clams) was chosen because of the increasing interest shown by regulatory agencies in this taxonomic Class. Upstream/downstream comparisons were also made using taxa richness.

For all Dresden Pool locations combined, 59 macroinvertebrate taxa were collected in the Ponar samples (Table G-42). Chironomidae, Oligochaeta, and Pelecypoda were the most taxa rich groups collected in 2014 (24, 7, and 5 taxa, respectively). Seven EPT (Ephemeroptera + Plecoptera + Trichoptera) taxa were collected. Chironomidae composed 48 percent and

Oligochaeta composed 29 percent of the benthic community.

In Dresden Pool, total taxa richness was similar upstream of DNS compared to downstream (Table G-43). Upstream total taxa richness during the late August survey was 48 including seven EPT taxa, whereas downstream total richness was 47 taxa and five EPT taxa. Total densities were nearly twice as high downstream of the DNS (10,945/m^2) compared to 5,831/m^2 upstream; however, differences in mean total density and mean taxa richness observed between the upstream and downstream areas were not statistically ($P>0.05$) different (Table G-44).

For Dresden Pool, the relative abundance of Oligochaeta in the upstream Ponar samples (33 percent) was lower than downstream (66 percent) of DNS (Table G-43). Pelecypoda (clams) relative abundance also was similar downstream (4 percent) than upstream (3 percent), although densities were three times higher downstream (Table G-44). As with the other two groups assessed, the relative abundance of Chironomidae was similar downstream (50 percent) and upstream (46 percent). Ephemeroptera and Trichoptera together comprised about four percent of the upstream sample but represented less than one percent downstream (Table G-43). Aquatic worm and midge taxa were similarly split between higher and lower densities in the areas upstream and downstream of DNS, whereas Pelecypoda taxa generally had higher densities downstream of DNS compared to upstream (Table G-43).

Compared to the fish community, the historical period of study is relatively brief for the Dresden Pool benthic community. The most recent historical studies were conducted in 1999 and 2001-2008, 2011 and 2013. These studies involved collecting Ponar grab samples during all years at the same locations sampled during the current study. Data collected during similar periods were used to make the inter-year comparisons below.

For all Dresden Pool locations combined, the number of taxa collected in the Ponar samples has varied from 26 to 59 taxa (Table G-45). EPT taxa richness ranged from zero to seven taxa (Table G-45). Dresden Pool total and EPT richness in 2014 were higher than all previous study years.

Total richness upstream of DNS declined slightly each year from 28 taxa in 1999 to 17 taxa in 2003 (Table G-46). Since 2005, total richness has been slightly higher and similar but has increased each of the past four years. EPT richness has generally been low among sampling years ranging from zero to three taxa most years but increased in both 2013 and 2014. The 2014 total and EPT richness for the combined locations upstream of DNS were the highest values observed.

Downstream of DNS, total richness has ranged from 17 taxa in 2002 to 47 taxa in 2014 (Table G-47). As with the locations upstream of DNS, EPT richness has been low, ranging from zero to three taxa in all years except 2011 and 2014 (Table G-47). As with upstream of DNS, the 47 total and five EPT taxa in 2014 were the highest observed downstream of DNS.

Mean taxa richness for all areas combined in 2014 was significantly higher ($P<0.05$) than all previous years (Table G-48). Annual differences in upstream of DNS mean taxa richness in 2014 were significantly higher ($P<0.05$) than nine of the previous 11 years (Table G-48). As with the areas combined, mean taxa richness downstream of DNS was significantly higher ($P<0.05$) than all previous 11 years (Table G-48).

Mean total density (#/m^2) for Dresden Pool locations combined ranged from a low of 788 in 2001 to 9,493 in 2011 (Table G-48). The mean 2014 total density was statistically similar ($P>0.05$) to densities from 2006, 2011, and 2013 and significantly ($P<0.05$) higher eight of the previous 11 years. Upstream of DNS, 2014 mean total density was statistically similar ($P>0.05$) all years (Table G-48). Downstream of DNS, mean total density ranged from a low of 641 in 2001 to 13,246 in 2011. The 2014 mean total downstream density was statistically ($P>0.05$) similar to densities from five of the years and statistically higher ($P<0.05$) than densities the other six years (Table G-48).

Mean Oligochaeta densities for Dresden Pool locations combined ranged from a low of 349 in 2008 to 5,932 in 2011 (Table G-48). The mean 2014 density was statistically similar ($P>0.05$) to densities from all years except 2005 and 2008 when Oligochaeta densities were lowest for the study. Upstream of DNS, 2014 mean Oligochaeta densities were statistically similar ($P>0.05$) to all years (Table G-48). Downstream of DNS, mean Oligochaeta density ranged from 187 in 2005 to 7,386 in 2011. The 2014 mean downstream density was statistically similar ($P>0.05$) to nine previous years of study and significantly higher ($P<0.05$) than 2001 and 2005 (Table G-42).

The 2014 mean Chironomidae density for Dresden Pool locations combined was the highest observed in 12 years of study and significantly higher ($P<0.05$) than eight of those years (Table G-48). Upstream of DNS, mean densities were statistically similar ($P>0.05$) among all years. Downstream of DNS, mean total density ranged from 43 in 2002 to 5,468 in 2014. The 2014 mean Chironomidae downstream density was statistically higher ($P<0.05$) than densities from six years and statistically similar ($P>0.05$) to the other five years (Table G-48).

There were no significant differences ($P>0.05$) in the mean Ephemeroptera densities for the areas combined or the upstream and downstream areas (Table G-48).

4.2.2 Hester-Dendy Artificial Substrate

The HD samples for the Dresden Pool locations combined yielded 47 total taxa and ten EPT taxa (Table G-49). The mean density of macroinvertebrates in Dresden Pool was 6,842/m^2. Chironomidae and Ephemeroptera were the most taxa rich groups collected (15 and 6 taxa, respectively). Chironomidae composed 36 percent of the benthic community sampled by artificial substrates, Oligochaeta 19 percent, and Trichoptera eight percent.

Total taxa richness was lower downstream than upstream of DNS in 2014, 40 versus 34 total taxa, as was EPT richness, nine versus seven taxa, respectively (Table G-50). Total mean density in Dresden Pool was higher upstream (7,631/m^2) than downstream (6,053/m^2) of DNS (Table G-50). The upstream/downstream difference in mean density was primarily the result of the higher densities of Turbellaria and *Glyptotendipes* (midge), which were substantially more abundant upstream than downstream and composed 71 percent of the total upstream density. The caddisfly *Cyrnellus fraternus* densities were nearly double downstream compared to upstream of DNS. Twenty-eight of the 49 taxa observed in Dresden Pool had higher densities upstream compared to downstream, but as shown above, the overall higher upstream abundance was primarily due to two taxa.

Densities and relative abundance of Oligochaeta, Chironomidae, Ephemeroptera, and Trichoptera were compared in Dresden Pool upstream and downstream of DNS. Statistical spatial comparisons between locations were not made because there was only one survey upstream and downstream of DNS. The contribution of Chironomidae was similarly important upstream and downstream of DNS accounting for 40 and 32 percent of the organisms on the HDs, respectively (Table G-50). Of the more common taxa, *Dicrotendipes lucifer*, *D. simpsoni*, and *Glyptotendipes* are considered relatively tolerant. Conversely, Trichoptera relative abundance was higher downstream (10.5 percent) than upstream (6.1 percent) while Oligochaeta relative abundance was substantially higher downstream (42.9 percent) compared to upstream (0.2 percent). The higher downstream relative abundance of Oligochaeta was due to much higher downstream densities of the worm *Nais variabilis* and *Pristina leidyi* (Table G-50). Ephemeroptera was more abundant upstream (2.5 percent) than downstream (0.4 percent) but was a relatively minor component in both areas compared to other major groups.

As was observed for Chironomidae relative abundance, their densities were higher upstream of DNS (3,032/m^2) than downstream of DNS (1,961/m^2). The opposite was true for Oligochaeta densities, 18/m^2 upstream of DNS and 2,597/m^2 downstream of DNS (Table G-50).

The most recent historical studies using HD samplers were conducted in 2001-2008, 2011, and 2013 (EA 2002, EA 2003, EA 2004, EA 2005, EA 2006, EA 2007, EA 2008, EA 2010, EA 2012, and EA 2014). Each annual study involved placement of samplers at the same locations sampled during the current study. Data collected during similar periods were compared (Table G-51).

Annual taxa richness has ranged from 31 to 54 taxa (Table G-51). Taxa richness in 2014 (47 taxa) was the third highest to date. EPT richness has ranged from four in 2011 to 11 in 2004 and averaged about seven taxa per year. The 2014 total (10 EPT taxa) was above average and the second highest value observed since 2001. Total density in 2014 (6,842/m^2) was higher than five of the previous 10 years; 66 percent lower than the record density in 2011 and over four times higher than the lowest observed in 2007 (1,612/m^2).

Total taxa richness has been variable among years upstream and downstream of DNS. Total richness has ranged from 20 to 44 taxa upstream of DNS (Table G-52). In 2014, 40 total taxa were observed upstream of DNS, which was the second highest value observed since 2001

(Table G-52). Downstream of DNS, total taxa richness has ranged from 20 taxa in 2005 to 38 taxa in 2003 (Table G-53). In 2014, 34 total taxa were observed downstream of DNS, which was the third highest observed since 2001 (Table G-53). EPT richness also varied among the study years ranging from three to 10 taxa upstream (Table G-52) and two to eight taxa downstream (Table G-53). The number of EPT taxa upstream (9 taxa) and downstream (7 taxa) of the DNS in 2014 were both above average for the 11-year study. Mean taxa richness of benthos collected on HD samplers in Dresden Pool in 2014 was significantly higher ($P<0.05$) than 2005 but statistically similar ($P>0.05$) to all other years (Table G-54).

Mean total density upstream of DNS in 2014 (7,631/m^2) was more than three times higher than the lowest densities observed in 2004 and 2007, but less than the long-term average (Table G-52). The 2014 mean total density downstream of DNS (6,053/m^2) was above average and well above densities from 2004 through 2008 (Table G-53). The 2014 downstream density was slightly lower than the 2011 density (7,858/m^2), the highest downstream density to date. Lower downstream densities in 2007 are probably an artifact of both the loss of the samplers Location 510 and flood conditions, which could have had a scouring effect on both natural and artificial substrates.

Densities of Oligochaeta, Chironomidae, Ephemeroptera, and Trichoptera collected in Dresden Pool during August 2001-2008, 2011, 2013, and 2014 are compared in Table G-54. There were no significant differences ($P>0.05$) in Ephemeroptera or Oligochaeta mean density among the 11 years compared. The 2014 Chironomidae mean densities collected on HD samplers in Dresden Pool were statistically similar to all other years (Table G-54). The 2014 Trichoptera densities in were significantly lower ($P<0.05$) than the high density in 2003 but similar to the remaining study years.

Oligochaeta were collected upstream of DNS in all study years except 2004 and downstream of DNS in all years (Table G-52). In both areas, Oligochaeta relative abundance has varied widely over the 10-year study. The relative abundance of aquatic worms upstream of DNS ranged from 0.0 percent to 22.1 percent, whereas downstream relative abundance of Oligochaeta has ranged from 1.0 to 45.3 percent.

4.2.3 Summary

The macroinvertebrate data from Ponar and HD samples indicate that a poor benthic community exists in Dresden Pool. Fauna at all locations was dominated by tolerant and facultative taxa. The Ponar samples indicated that highly tolerant Oligochaeta dominated at most locations. In addition, with a few exceptions, intolerant groups such as Ephemeroptera and Trichoptera generally were not well represented and when present, were generally collected in relatively low numbers compared to the more tolerant taxa. HD samples typically had higher total taxa richness and higher EPT taxa richness than did the Ponar samples from the same locations. In addition, densities of Trichoptera were much higher in the HD samples. Nonetheless, the number of EPT taxa was lower than would be expected for a waterway of this size. Differences in taxa richness between gears are primarily the result of differences in sampler type; however, water quality and sediment quality may also be contributing factors.

No significant upstream/downstream differences were observed in taxa richness or Oligochaeta, Chironomidae, or Pelecypoda densities in the 2014 Dresden Pool benthic community as measured by the Ponar samples. Upstream and downstream differences in substrate composition were slight and all Dresden Pool sites was composed mainly of silt, clay, and/or detritus.

Spatial comparisons among the 11 years of Ponar data from Dresden Pool showed there were no significant differences in the mean densities of Ephemeroptera for the areas combined or the two areas individually. This was also true for Chironomidae mean densities upstream of DNS. Chironomidae densities for areas combined were higher than all years prior to 2008 while 2014 downstream Chironomidae densities were higher six of the other 10 years studies.

Oligochaeta densities in 2014 for areas combined were similar to all other years, whereas downstream of DNS Oligochaeta densities were higher in 2014 than in 2001 and 2005.

Results from the HD samplers, showed that in 2014 the relative abundance of Chironomidae was higher upstream of DNS, whereas, the relative abundance of Oligochaeta and Trichoptera was higher downstream. Ephemeroptera was a relatively minor component both upstream and downstream of DNS. As was observed for Chironomidae relative abundance, Chironomidae densities were higher upstream of DNS than downstream of DNS. Higher upstream densities was largely driven by the abundance of Turbellaria and the chironomid *Glyptotendipes*. The total number of taxa were higher upstream of DNS and the number of EPT taxa were slightly higher upstream. Mean Ephemeroptera and Oligochaeta densities among years were not significantly different. Although inter-year significant differences in Chironomidae and Trichoptera densities have occurred, the 2014 results were statistically similar to most years for each group.

The HD samplers were set in early July and retrieved in mid-August. The Ponar samples were also collected in mid-August. The highest water temperature recorded in Dresden Pool upstream of DNS during the sampling period was 29.7°C in early-August at Location 501 (Table G-4). Maximum water temperature downstream of DNS (30.8°C) was observed in early-July and early-August at Location 506. The mean summertime (June 15 through 30 September) water temperature in Dresden Pool in 2014 (26.1°C) was the lowest in this data record:

Dresden Pool Mean Temperature (˚C)	
2014	26.1
2013	28.9
2011	29.0
2008	26.5
2007	27.9
2006	27.3
2005	29.3
2004	27.6
2003	27.9
2002	28.4
2001	27.2
2000	27.8
1999	29.8

4.3 Downstream Of Dresden Island Lock and Dam

4.3.1 Ponar Sampler

For the two locations (512 and 515) in Marseilles Pool downstream of Dresden Island Lock and Dam, a total of 39 benthic macroinvertebrate and one EPT taxa were collected (Table G-55). Chironomidae and Oligochaeta were each represented by 12 and eight taxa, respectively. No statistical spatial comparisons were made between the locations; however, taxa richness was higher at Location 512 (Exhibit G). Downstream of the Dresden Island Lock and Dam, Chironomidae (41.2 percent) was dominant followed by Pelecypoda (24.6 percent), and Oligochaeta (15.2 percent) (Table G-55). Taxa from these four groups accounted for over 80 percent of the organisms collected by Ponar. The most abundant taxa from these taxa groups were the Asiatic clam, *Corbicula fluminea*, two midges, *Polypedilum halterale* and *Dicrotendipes neomodestus*, as well as the amphipod *Apocorophium lacustre*.

Comparisons of the Ponar data collected downstream of the Dresden Island Lock and Dam were made among the 10 years studied (Table G-56). During previous study years, total taxa richness has varied from seven to 19 taxa. The 39 taxa observed in 2014 is the highest for the study. The two EPT taxa observed in 2014 are within the range of zero to four EPT taxa over the previous 10 study years (Table G-56). Total density was significantly higher ($P<0.05$) than 2001 and 2004 but was similar to the remaining years (Table G-57). Oligochaeta density in 2014 was statistically similar ($P>0.05$) to all years, except 2013, which was significantly lower ($P<0.05$). Total taxa richness was significantly higher during 2014 compared to 2001 and 2002 but similar to all other years. Total Chironomidae and Ephemeroptera density in 2014 was statistically similar ($P>0.05$) to all other years (Table G-57).

As has been observed during most previous study years, the substrate downstream of the Dresden Island Lock and Dam consisted of higher amounts of coarse elements such as sand and gravel. Compared to upstream in Dresden Pool, silt and detritus were relatively minor components of the substrate downstream.

4.3.2 Hester-Dendy Artificial Substrate (Downstream Dresden Island Lock and Dam)

The HD samples yielded 25 total and three EPT taxa while the mean density of downstream of the Dam was 1,073 per m^2 (Table G-58). Chironomidae was the most taxa rich group collected (12 taxa) compared to three Amphipoda taxa and two taxa each of Oligochaeta, Trichoptera, and Coleoptera (Table G-58). Chironomidae composed 65 percent of the benthic density, followed by Trichoptera (23 percent), and Amphipoda (9 percent).

The 25 total taxa collected in HD samples downstream of Dresden Dam was similar to six of the previous 10 years and within the range of values observed previously. HD sampling from 2001 through 2013 yielded an average of 29.1 taxa per year ranging from 21 to 42 taxa (Table G-59). During this same period, EPT richness averaged just over eight taxa and ranged from six to 15 taxa. As such, the EPT richness observed in 2014 is the lowest on record. Mean number of taxa and mean total densities were not calculated in 2007 because HD results from only one location was available.

Mean total density downstream of Dresden Island Lock and Dam has ranged from 1,073/m^2 to 11,992/m^2 during the 11 years of study (Table G-60). Densities varied widely over the period of study with higher densities in 2001, 2008, and 2011 and lower densities in 2002, 2007, 2013, and 2014. The lower downstream densities in 2007 are likely an artifact of both the loss of the samplers at Location 512 and flood conditions, which could have had a scouring effect on both natural and the artificial substrates.

Higher total densities in 2001, 2008, and 2011 were due to Chironomidae and Trichoptera taxa. Since 2001, taxa within these groups frequently have been among the dominants and have largely dictated density trends downstream of the Dam (Table G-60).

4.3.3 Summary

The Ponar and HD artificial substrate data indicate that the benthic community in the Illinois River below the Dresden Island Lock and Dam is generally poor. As in the Dresden Pool, the benthic community below the Dam consists largely of tolerant or facultative taxa (Tables G-55 and G-58). However, the more pollution tolerant taxa typically observed in the Dresden Pool Ponar samples such as Nanocladius distinctus, Dicrotendipes simpsoni, and Glyptotendipes were typically absent or present in substantially lower densities for the downstream of Dresden Island Lock and Dam Ponar and HD samples. These long-term trends were observed in 2007 (despite the flood conditions and the loss of the HD data from one of the downstream locations), 2008, 2011, 2013, and 2014.

Data from the 11-year monitoring program indicate that DNS does not impact the benthic community below the Dresden Island Lock and Dam. The variability observed in this area and the lack of clear relationships to trends observed upstream are likely artifacts of the unstable conditions below the Dam and the substantial differences in habitat between the Dresden Pool and the area downstream of the Dresden Island Lock and Dam.

5.0 REFERENCES

Anderson R.O. and S.J. Gutreuter. 1983. Length, Weight, and Associated Structural Indices. Pages 283-300. In (Nielsen L.A. and D.L. Johnson, eds.) Fisheries Techniques. Southern Printing Company, Inc., Blacksburg, Virginia.

Anderson, R.O. and R.M. Neumann. 1996. Length, Weight, and Associated Structural Indices. Pages 447-482. In (Murphy, B.R. and D.W. Willis, Eds.) Fisheries Techniques, 2nd Edition. Am. Fish. Soc., Bethesda, MD.

Asian Carp Regional Coordinating Committee (ACRCC). 2014. Sampling Results Chicago Waterway System, March through October 2014. Accessed December 2014. http://www.asiancarp.us/sampling/results.htm.

Baumann, P.C., W.D. Smith, and W.K. Parland. 1987. Tumor frequencies and contaminant concentrations in brown bullhead from an industrialized river and a recreational lake. Trans. Am. Fish. Soc. 116(1):79-86.

Becker, G.C. 1983. Fishes in Wisconsin. The University of Wisconsin Press. Madison, Wisconsin.

Bister, T.J., D.W. Willis, M.L. Brown. 2000. Proposed standard weight (Ws) equations and standard length categories for 18 warmwater nongame and riverine fish species. N. Am. Jour. Fish. Mgt. 20:570-574.

Burton, G.A. 1995. Upper Illinois Waterway Study Interim Report: 1994-1995 Sediment Contamination Assessment. Prepared for Commonwealth Edison Company. Prepared by The Institute for Environmental Quality, Wright State University, Dayton, OH.

Commonwealth Edison Company and the Upper Illinois Waterway Ecological Study Task Force (ComEd). 1996. Final Report. Aquatic Ecological Study of the Upper Illinois Waterway Volumes 1 and 2. Commonwealth Edison Company, Chicago, Illinois.

EA Engineering, Science, and Technology, Inc. (EA). 1995. The Upper Illinois Waterway study: Interim Report: 1994 fisheries investigation RM 270.2-323.2. Report by EA to Commonwealth Edison Company, Chicago, IL.

__________. 1996a. 1995 Upper Illinois Waterway fisheries investigation RM 270.2-323.2. Report by EA to Commonwealth Edison Company, Chicago, IL.

__________. 1996b. Chapter 9.0-Fisheries, in Aquatic Ecological Study of the Upper Illinois Waterway (ComEd, ed.), Vol. II, pp. 9.1-1 through 9.12-6.

__________. 1998. 1997 Upper Illinois Waterway fisheries investigation RM 272.1-285.5. Report by EA to Commonwealth Edison Company, Chicago, IL.

__________. 1999. 1998 Upper Illinois Waterway fisheries investigation RM 272.1-285.5. Report by EA to Commonwealth Edison Company, Chicago, IL.

__________. 2000. Dresden Nuclear Station Aquatic Monitoring 1999, RM 266.0 - 274.4. Report by EA to Commonwealth Edison Company, Chicago, IL.

__________. 2001. Dresden Nuclear Station Aquatic Monitoring 2000, RM 270.5 - 273.0. Report by EA to Exelon Nuclear Company, Chicago, IL.

__________. 2002. Dresden Nuclear Station Aquatic Monitoring 2001, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

__________. 2003. Dresden Nuclear Station Aquatic Monitoring 2002, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

__________. 2004. Dresden Nuclear Station Aquatic Monitoring 2003, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

__________. 2005. Dresden Nuclear Station Aquatic Monitoring 2004, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

__________. 2006. Dresden Nuclear Station Aquatic Monitoring 2005, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

__________. 2007. Dresden Nuclear Station Aquatic Monitoring 2006, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

__________. 2008. Dresden Nuclear Station Aquatic Monitoring 2007, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

__________. 2010. Dresden Nuclear Station Aquatic Monitoring 2008, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

__________. 2012. Dresden Nuclear Station Aquatic Monitoring 2011, RM 270.5 - 273.4.

Report by EA to Exelon Nuclear Company, Chicago, IL.

_________. 2014. Dresden Nuclear Station Aquatic Monitoring 2013, RM 270.5 - 273.4. Report by EA to Exelon Nuclear Company, Chicago, IL.

Emery, E.B., T.P Simon, F.H. McCormick, P.L.Angermeier, J.E. Deshon, C.O. Yoder, R.E. Sanders, W.D. Pearson, G.D. Hickman, R.J. Reash, and J.A. Thomas. 2003. Development of a multimetric index for assessing the biological condition of the Ohio River. Trans. Am. Fish. Soc. 132:791-808.

Gammon, J.R. 1976. The fish populations of the middle 340 km of the Wabash River. Purdue Univ. Water Resources Res. Cen. Tech. Rep. 86.

Hughes, R.M. and J.R. Gammon. 1987. Longitudinal changes in fish assemblages and water quality in the Willamette River, OR. Trans. Am. Fish. Soc. 116:196-209.

Illinois Endangered Species Protection Board. 2011. Checklist of Endangered and Threatened Animals and Plants of Illinois. Effective 11 February 2011. Illinois Endangered Species Protection Board, Springfield, IL. http://www.dnr.illinois.gov/ESPB/Documents/ETChecklist2011.pdf

Karr, J.R., K.D. Fausch, P.L. Angermeier, P.R. Yant, and I.J. Schlosser. 1986. Assessing biological integrity in running waters: a method and its rationale. Ill. Nat. Hist. Surv. Sp. Publ. 5.

Lyons, J. 1992. Using the index of biotic integrity (IBI) to measure environmental quality in warmwater streams of Wisconsin. U. S. Dept. of Agriculture, Forest Service, North Central Forest Experiment Station. General Technical Report NC-149.

Monitoring and Rapid Response Group. 2011. Monitoring and Rapid Response Plan for Asian carp in the Upper Illinois River and Chicago Area Waterway System. Asian Carp Regional Coordinating Committee. May 2001.

Murphy, B.R., D.W. Willis, and T.A. Springer. 1991. The relative weight index in fisheries management: status and needs. Fisheries 16(2): 30-28.

Ohio Environmental Protection Agency. 1987 (Updated November 8, 2006). Biological criteria for the protection of aquatic life: Vol. II. Users manual for biological field assessment of Ohio surface waters. Div. Water Quality Monitoring and Assess., Surface Water Sect., Columbus, OH.

_________. 1989 (Updated November 8, 2006). Biological criteria for the protection of aquatic life: Vol. III. Standardized field and laboratory methods for assessing fish and macroinvertebrate communities. Div. Water Quality Monitoring and Assess., Surface Water Sect., Columbus, OH.

_________. 2006. Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI). Div. of Surface Water, Groveport, OH.

Page, L.M., K.S. Cummings, C.A. Mayer, A.L. Post, and M.E. Retzer. 1992. Biologically significant Illinois streams: an evaluation of the streams of Illinois based on aquatic biodiversity. Ill. Dept. of Cons. and Ill. Dept. of Energy and Nat. Res. Project Completion Rept., Enhancement of Biological Stream Characterization, F-110-R.

Post, G. 1983. Textbook of fish health. TFH Publication, Inc. Neptune City. 256 pp.

Rankin, E.T. 1989. The qualitative habitat evaluation index (QHEI). Rationale, methods, and applications. Ohio EPA, Div. Water Quality Planning and Assess. Ecological Analysis Sect., Columbus, OH.

Smith, P. 1979. The Fishes of Illinois. Univ. of Illinois Press, Urbana, Illinois.

Wege, G.J. and R.O. Anderson. 1978. Relative weight (Wr): a new index of condition for largemouth bass. Pages 79-91 in Novinger G.D. and J.G. Dillard, eds. New approaches to the management of small impoundments. North Central Division, American Fisheries Society, Special Publication 5.

FIGURES

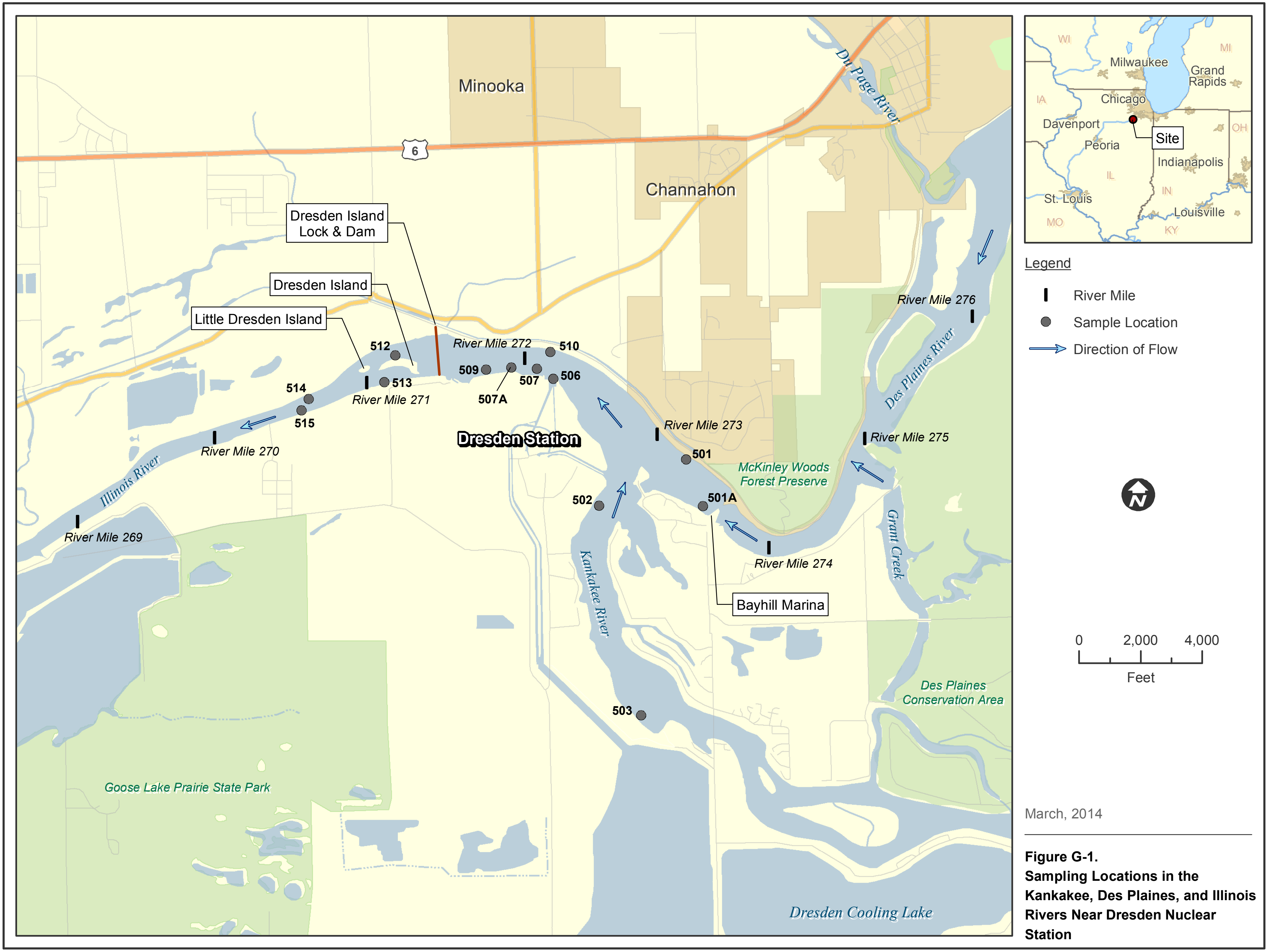
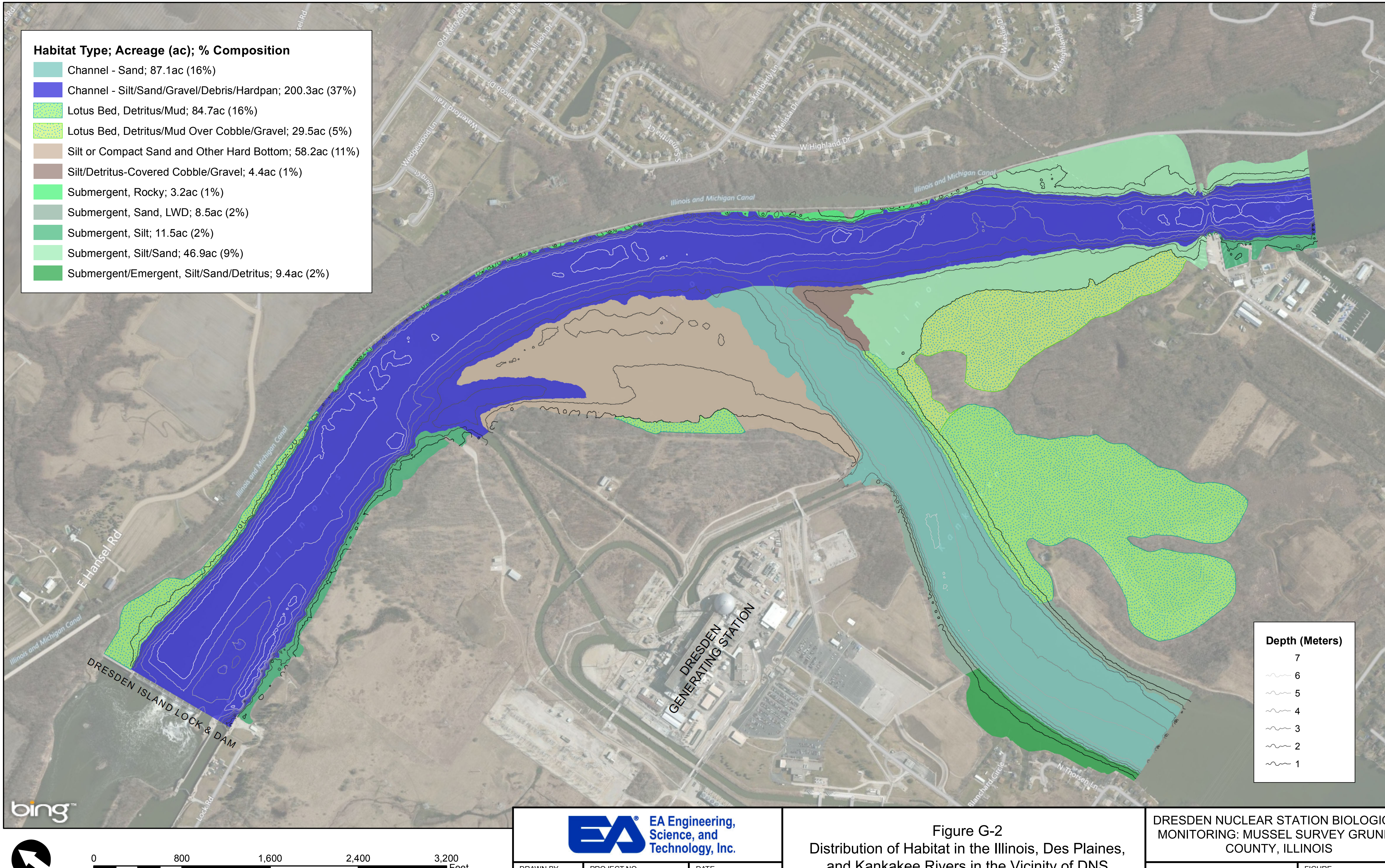


Figure G-1.
Sampling Locations in the Kankakee, Des Plaines, and Illinois Rivers Near Dresden Nuclear Station

SOURCE: Bing Maps Hybrid ©2010 Microsoft Corporation and its data suppliers



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BJO	1500404	12/5/2014

Figure G-2
Distribution of Habitat in the Illinois, Des Plaines, and Kankakee Rivers in the Vicinity of DNS

DRESDEN NUCLEAR STATION BIOLOGICAL MONITORING: MUSSEL SURVEY GRUNDY COUNTY, ILLINOIS

	FIGURE
1 inch = 800 feet	1

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TABLES

Table G-1. Intercept (a) and Slope (b) Parameters for Standard Weight (Ws) Equations with Minimum Total Lengths (mm) Recommended for Application [a].

Species	Intercept (a)	Slope (b)	Minimum Length	Reference or developer
Longnose Gar	-6.811	3.449	200	Bister et al. (2000)
Gizzard Shad	-5.376	3.170	180	Anderson and Gutreuter (1983)
Rainbow Trout (lentic)	-4.898	2.990	120	Simpkins and Hubert (unpublished)
Brook Trout	-5.085	3.043	130	Whelan and Taylor (1984)
Chinook Salmon	-4.661	2.901	200	Halseth et al. (1990)
Northern Pike	-5.437	3.096	100	Willis (unpublished)
Common Carp	-4.639	2.920	200	Bister et al. (2000)
Golden Shiner	-5.593	3.302	50	Liao et al. (1995)
Bigmouth Buffalo	-5.069	3.118	150	Bister et al. (2000)
Smallmouth Buffalo	-5.298	3.208	200	Bister et al. (2000)
River Carpsucker	-4.839	2.992	130	Bister et al. (2000)
White Sucker	-4.755	2.940	100	Bister et al. (2000)
Shorthead Redhorse	-4.841	2.962	100	Bister et al. (2000)
Black Bullhead	-4.974	3.085	130	Bister et al. (2000)
Yellow Bullhead	-5.374	3.232	60	Bister et al. (2000)
Brown Bullhead	-5.076	3.105	130	Bister et al. (2000)
Channel Catfish	-5.800	3.294	70	Brown et al. (1995)
Flathead Catfish	-5.542	3.230	130	Bister et al. (2000)
White Perch	-5.122	3.136	80	Bister et al. (2000)
White Bass	-5.066	3.081	115	Brown and Murphy (1991)
Yellow Bass	-5.142	3.133	70	Bister et al. (2000)
Striped Bass	-4.924	3.007	150	Brown and Murphy (1991)
Hybrid striper	-5.201	3.139	115	Brown and Murphy (1991)
Rock Bass	-4.827	3.074	80	Bister et al. (2000)
Green Sunfish	-4.915	3.101	60	Bister et al. (2000)
Pumpkinseed	-5.179	3.237	50	Liao et al. (1995)
Warmouth	-5.180	3.241	80	Bister et al. (2000)
Bluegill	-5.374	3.316	80	Hillman (1982)
Largemouth Bass	-5.316	3.191	150	Wege and Angerson (1978)
Smallmouth Bass	-5.329	3.200	150	Kolander et al. (1993)
Black Crappie	-5.618	3.345	100	Neumann and Murphy (1991)
White Crappie	-5.642	3.332	100	Neumann and Murphy (1991)
Yellow Perch	-5.386	3.230	100	Willis et al. (1991)
Sauger	-5.492	3.187	70	C.S. Guy (unpublished)
Walleye	-5.453	3.180	150	Murphy et al. (1990)
Freshwater Drum	-5.419	3.204	100	Blackwell et al. (1995)

(a) Sources: Bister et al. 2000, Anderson and Neumann 1996, and Murphy et al. 1991.

TABLE G-2. LIST OF COMMON AND SCIENTIFIC NAMES FOR FISH TAXA COLLECTED NEAR DRESDEN NUCLEAR STATION, 2014.

COMMON FAMILY NAME	COMMON NAME	SCIENTIFIC NAME
GARS	GAR sp.	Lepisosteus sp.
	LONGNOSE GAR	Lepisosteus osseus
	SHORTNOSE GAR	Lepisosteus platostomus
HERRINGS	SKIPJACK HERRING	Alosa chrysochloris
	GIZZARD SHAD	Dorosoma cepedianum
	THREADFIN SHAD	Dorosoma petenense
CARPS AND MINNOWS	CENTRAL STONEROLLER	Campostoma anomalum
	GOLDFISH	Carassius auratus
	GRASS CARP	Ctenopharyngodon idella
	RED SHINER	Cyprinella lutrensis
	SPOTFIN SHINER	Cyprinella spiloptera
	COMMON CARP	Cyprinus carpio
	CARP X GOLDFISH HYBRID	Cyprinus carpio X Carassius auratus
	PALLID SHINER	Hybopsis amnis
	SILVER CARP	Hypophthalmichthys molitrix
	STRIPED SHINER	Luxilus chrysocephalus
	REDFIN SHINER	Lythrurus umbratilis
	GOLDEN SHINER	Notemigonus crysoleucas
	Notropis sp.	Notropis sp.
	EMERALD SHINER	Notropis atherinoides
	GHOST SHINER	Notropis buchanani
	SPOTTAIL SHINER	Notropis hudsonius
	ROSYFACE SHINER	Notropis rubellus
	SAND SHINER	Notropis stramineus
	MIMIC SHINER	Notropis volucellus
	SUCKERMOUTH MINNOW	Phenacobius mirabilis
	BLUNTNOSE MINNOW	Pimephales notatus
	FATHEAD MINNOW	Pimephales promelas
	BULLHEAD MINNOW	Pimephales vigilax
SUCKERS	Carpiodes sp.	Carpiodes sp.
	RIVER CARPSUCKER	Carpiodes carpio
	QUILLBACK	Carpiodes cyprinus
	HIGHFIN CARPSUCKER	Carpiodes velifer
	ICTIOBINAE sp.	Carpiodes sp. &/or Ictiobus sp.
	CATOSTOMINAE sp.	CATOSTOMINAE sp.
	WHITE SUCKER	Catostomus commersonii
	NORTHERN HOG SUCKER	Hypentelium nigricans
	Ictiobus sp.	Ictiobus sp.
	SMALLMOUTH BUFFALO	Ictiobus bubalus
	BIGMOUTH BUFFALO	Ictiobus cyprinellus
	BLACK BUFFALO	Ictiobus niger
	SPOTTED SUCKER	Minytrema melanops
	Moxostoma sp.	Moxostoma sp.
	SILVER REDHORSE	Moxostoma anisurum
	RIVER REDHORSE	Moxostoma carinatum
	GOLDEN REDHORSE	Moxostoma erythrurum
	SHORTHEAD REDHORSE	Moxostoma macrolepidotum
NORTH AMERICAN CATFISHES	YELLOW BULLHEAD	Ameiurus natalis
	CHANNEL CATFISH	Ictalurus punctatus
	TADPOLE MADTOM	Noturus gyrinus
	FLATHEAD CATFISH	Pylodictis olivaris
PIKES AND MUDMINNOWS	GRASS PICKEREL	Esox americanus vermiculatus
TROUT-PERCHES	TROUT-PERCH	Percopsis omiscomaycus
NEW WORLD SILVERSIDES	BROOK SILVERSIDE	Labidesthes sicculus
TOPMINNOWS	BANDED KILLIFISH	Fundulus diaphanus menona
	BLACKSTRIPE TOPMINNOW	Fundulus notatus
LIVEBEARERS	WESTERN MOSQUITOFISH	Gambusia affinis
TEMPERATE BASSES	WHITE PERCH	Morone americana
	WHITE BASS	Morone chrysops
	YELLOW BASS	Morone mississippiensis

TABLE G-2 (cont.)

COMMON FAMILY NAME	COMMON NAME	SCIENTIFIC NAME
SUNFISHES	ROCK BASS	Ambloplites rupestris
	Lepomis sp.	Lepomis sp.
	GREEN SUNFISH	Lepomis cyanellus
	PUMPKINSEED	Lepomis gibbosus
	ORANGESPOTTED SUNFISH	Lepomis humilis
	BLUEGILL	Lepomis macrochirus
	NORTHERN SUNFISH	Lepomis peltastes
	Lepomis HYBRID	Lepomis HYBRID
	SMALLMOUTH BASS	Micropterus dolomieu
	LARGEMOUTH BASS	Micropterus salmoides
	WHITE CRAPPIE	Pomoxis annularis
	BLACK CRAPPIE	Pomoxis nigromaculatus
PERCHES AND DARTERS	WESTERN SAND DARTER	Ammocrypta clara
	JOHNNY DARTER	Etheostoma nigrum
	BANDED DARTER	Etheostoma zonale
	DARTER sp.	Etheostoma sp. &/or Percina sp.
	YELLOW PERCH	Perca flavescens
	Percina sp.	Percina sp.
	LOGPERCH	Percina caprodes
	BLACKSIDE DARTER	Percina maculata
	Sander sp.	Sander sp.
	WALLEYE	Sander vitreus
DRUMS AND CROAKERS	FRESHWATER DRUM	Aplodinotus grunniens
GOBIES	ROUND GOBY	Neogobius melanostomus

TABLE G-3. SPECIES COMPOSITION, NUMBER, BIOMASS, AND RELATIVE ABUNDANCE OF FISH COLLECTED NEAR DRESDEN NUCLEAR STATION, 2014.

SPECIES	NUMBER CAUGHT #	NUMBER CAUGHT %	WEIGHT CAUGHT KG	WEIGHT CAUGHT %
LONGNOSE GAR	25	0.19	14.710	2.13
SHORTNOSE GAR	1	0.01	0.690	0.10
GAR sp.	1	0.01	0.001	0.00[(a)]
SKIPJACK HERRING	3	0.02	0.257	0.04
GIZZARD SHAD	2,000	15.40	14.511	2.11
THREADFIN SHAD	858	6.61	1.977	0.29
GRASS PICKEREL	4	0.03	0.130	0.02
CENTRAL STONEROLLER	6	0.05	0.007	0.00
GOLDFISH	27	0.21	0.257	0.04
GRASS CARP	2	0.02	24.600	3.57
COMMON CARP	88	0.68	129.712	18.82
CARP X GOLDFISH HYBRID	2	0.02	3.440	0.50
SILVER CARP	2	0.02	6.570	0.95
GOLDEN SHINER	5	0.04	0.020	0.00
PALLID SHINER	128	0.99	0.151	0.02
EMERALD SHINER	923	7.11	2.149	0.31
GHOST SHINER	12	0.09	0.009	0.00
STRIPED SHINER	7	0.05	0.015	0.00
SPOTTAIL SHINER	558	4.30	1.114	0.16
RED SHINER	4	0.03	0.009	0.00
ROSYFACE SHINER	24	0.18	0.016	0.00
SPOTFIN SHINER	2,274	17.51	2.784	0.40
SAND SHINER	201	1.55	0.192	0.03
REDFIN SHINER	9	0.07	0.009	0.00
MIMIC SHINER	345	2.66	0.238	0.03
Notropis sp.	1	0.01	0.001	0.00
SUCKERMOUTH MINNOW	1	0.01	0.001	0.00
BLUNTNOSE MINNOW	947	7.29	1.473	0.21
FATHEAD MINNOW	2	0.02	0.004	0.00
BULLHEAD MINNOW	887	6.83	1.316	0.19
RIVER CARPSUCKER	13	0.10	10.350	1.50
QUILLBACK	10	0.08	4.089	0.59
HIGHFIN CARPSUCKER	4	0.03	0.855	0.12
Carpiodes sp.	1	0.01	0.002	0.00
WHITE SUCKER	1	0.01	0.001	0.00
NORTHERN HOG SUCKER	19	0.15	0.006	0.00
SMALLMOUTH BUFFALO	61	0.47	78.916	11.45
BIGMOUTH BUFFALO	2	0.02	5.260	0.76
BLACK BUFFALO	1	0.01	3.200	0.46
Ictiobus sp.	1	0.01	0.003	0.00
SPOTTED SUCKER	1	0.01	0.070	0.01
SILVER REDHORSE	92	0.71	11.175	1.62
RIVER REDHORSE	1	0.01	1.350	0.20
GOLDEN REDHORSE	100	0.77	24.376	3.54
SHORTHEAD REDHORSE	142	1.09	2.906	0.42
Moxostoma sp.	128	0.99	0.089	0.01
CATOSTOMINAE sp.	29	0.22	0.007	0.00
ICTIOBINAE sp.	4	0.03	0.004	0.00
YELLOW BULLHEAD	3	0.02	0.284	0.04
CHANNEL CATFISH	129	0.99	144.037	20.90
TADPOLE MADTOM	1	0.01	0.001	0.00
FLATHEAD CATFISH	12	0.09	7.149	1.04
TROUT-PERCH	1	0.01	0.005	0.00
BANDED KILLIFISH	10	0.08	0.020	0.00
BLACKSTRIPE TOPMINNOW	62	0.48	0.069	0.01
WESTERN MOSQUITOFISH	1	0.01	0.001	0.00
BROOK SILVERSIDE	357	2.75	0.395	0.06
WHITE PERCH	11	0.08	0.246	0.04
WHITE BASS	21	0.16	7.946	1.15
YELLOW BASS	1	0.01	0.153	0.02
ROCK BASS	33	0.25	1.215	0.18
GREEN SUNFISH	159	1.22	2.540	0.37
PUMPKINSEED	13	0.10	0.352	0.05
ORANGESPOTTED SUNFISH	59	0.45	0.385	0.06
BLUEGILL	494	3.80	11.080	1.61
NORTHERN SUNFISH	331	2.55	5.314	0.77
Lepomis HYBRID	15	0.12	0.705	0.10
Lepomis sp.	9	0.07	0.009	0.00
SMALLMOUTH BASS	303	2.33	32.285	4.68
LARGEMOUTH BASS	596	4.59	36.007	5.22
WHITE CRAPPIE	3	0.02	0.961	0.14
BLACK CRAPPIE	16	0.12	0.203	0.03
WESTERN SAND DARTER	2	0.02	0.002	0.00
JOHNNY DARTER	25	0.19	0.024	0.00
BANDED DARTER	4	0.03	0.004	0.00
YELLOW PERCH	6	0.05	0.044	0.01
LOGPERCH	180	1.39	0.634	0.09
BLACKSIDE DARTER	1	0.01	0.001	0.00
Percina sp.	1	0.01	0.001	0.00
WALLEYE	23	0.18	2.802	0.41
Sander sp.	1	0.01	0.001	0.00
DARTER sp.	1	0.01	0.001	0.00
FRESHWATER DRUM	99	0.76	85.207	12.36
ROUND GOBY	46	0.35	0.129	0.02
TOTAL FISH	12,986	100.00	689.234	100.00
TOTAL SPECIES	71[(b)]			

(a) 0.00 DENOTES VALUES LESS THAN 0.005.
(b) THE TOTAL SPECIES COUNT IN THIS AND SUBSEQUENT TABLES DO NOT INCLUDE HYBRIDS AND INCLUDES GENUS LEVEL IDENTIFICATIONS (e.g., UNID LEPOMIS) ONLY WHEN NO SPECIES (e.g., BLUEGILL) OF THAT GENUS WERE IDENTIFIED.

TABLE G-4. SUMMARY OF SURFACE OR MID-DEPTH PHYSICOCHEMICAL PARAMETERS MEASURED AT ELECTROFISHING LOCATIONS IN DRESDEN POOL, 2014.

	TEMPERATURE (C)			DISSOLVED OXYGEN (ppm)			DISSOLVED OXYGEN Percent Saturation			SPECIFIC CONDUCTANCE (µS/cm)			SECCHI (cm)		
	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX
TRIP															
22-23 MAY	20.1	18.3	22.0	7.8	7.3	8.2	86	80	91	808	630	1173	58	43	72
5-6 JUN	25.2	24.2	26.2	7.5	6.1	9.0	91	76	106	835	626	1195	56	30	92
10-11 JUL	28.6	27.1	30.8	10.3	7.3	13.2	130	98	165	762	635	976	67	53	99
24-25 JUL	27.0	24.5	28.7	10.2	7.8	14.7	127	100	184	763	617	936	54	32	78
5-6 AUG	28.9	26.4	30.8	7.9	7.0	8.3	103	94	111	782	579	967	66	40	89
19-20 AUG	29.0	25.9	30.7	8.6	6.9	11.2	112	93	138	806	655	943	67	38	100
11-12 SEP	21.8	19.5	26.1	6.5	2.8	7.5	74	30	92	638	536	800	38	27	49
22-23 SEP	21.4	17.4	26.1	9.5	8.0	12.3	105	80	135	780	632	1036	63	43	97
LOCATION															
501	24.8	19.6	29.7	8.8	2.8	12.3	106	30	146	998	800	1195	81	49	100
502	23.8	18.6	27.7	9.6	7.1	14.7	114	78	184	650	580	842	48	27	61
503	23.1	17.4	27.8	9.3	7.5	12.7	109	80	155	618	536	655	40	28	59
506	27.2	19.1	30.8	7.6	6.9	8.6	95	85	105	687	548	798	52	40	63
507A	26.5	20.5	30.4	7.9	7.5	8.3	98	88	111	730	560	893	53	30	75
510	26.2	21.2	30.4	7.9	6.1	10.6	98	74	132	948	766	1144	78	43	99

TABLE G-4 (cont.)

TRIP	AREA (a)	TEMPERATURE (C)			DISSOLVED OXYGEN (ppm)			DISSOLVED OXYGEN Percent Saturation			SPECIFIC CONDUCTANCE (µS/cm)			SECCHI (cm)		
		MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX
22-23 MAY	UPSTREAM	19.9	18.3	22.0	7.7	7.5	7.9	85	80	88	813	630	1173	56	43	72
	DOWNSTREAM	20.3	19.1	21.2	7.8	7.3	8.2	86	82	91	803	636	1132	60	56	66
5-6 JUN	UPSTREAM	24.7	24.2	25.2	8.0	6.8	9.0	96	84	106	816	626	1195	57	33	88
	DOWNSTREAM	25.7	24.7	26.2	7.0	6.1	7.6	87	76	92	854	703	1144	55	30	92
10-11 JUL	UPSTREAM	27.7	27.1	28.2	12.0	10.2	13.2	149	128	165	735	635	930	65	53	83
	DOWNSTREAM	29.5	28.6	30.8	8.5	7.3	10.2	111	98	132	789	649	976	70	54	99
24-25 JUL	UPSTREAM	25.5	24.5	26.8	12.5	10.6	14.7	153	130	184	732	617	936	52	32	78
	DOWNSTREAM	28.5	28.3	28.7	7.9	7.8	8.0	101	100	103	793	726	853	57	50	66
5-6 AUG	UPSTREAM	27.2	26.4	28.5	8.2	7.9	8.3	105	99	108	709	579	967	57	40	89
	DOWNSTREAM	30.5	30.4	30.8	7.5	7.0	8.3	101	94	111	856	798	893	74	63	85
19-20 AUG	UPSTREAM	27.8	25.9	29.7	9.7	8.2	11.2	125	105	138	813	655	943	66	38	100
	DOWNSTREAM	30.1	29.8	30.7	7.4	6.9	7.8	99	93	104	798	739	833	68	59	76
11-12 SEP	UPSTREAM	19.9	19.5	20.3	5.8	2.8	7.5	63	30	82	650	536	800	35	27	49
	DOWNSTREAM	23.7	22.3	26.1	7.1	6.4	7.5	85	74	92	625	548	766	40	38	43
22-23 SEP	UPSTREAM	18.5	17.4	19.6	9.9	8.3	12.3	102	80	135	772	632	1036	63	44	88
	DOWNSTREAM	24.3	21.9	26.1	9.1	8.0	10.6	107	99	118	787	677	1004	63	43	97
AREA (TRIPS COMBINED)																
UPSTREAM		23.9	17.4	29.7	9.2	2.8	14.7	110	30	184	755	536	1195	56	27	100
DOWNSTREAM		26.6	19.1	30.8	7.8	6.1	10.6	97	74	132	788	548	1144	61	30	99

(a) UPSTREAM AND DOWNSTREAM OF THE DRESDEN STATION DISCHARGE WITHIN DRESDEN POOL.

TABLE G-5. SPECIES COMPOSITION, NUMBER, BIOMASS, AND RELATIVE ABUNDANCE OF NATIVE FISH COLLECTED FROM DRESDEN POOL, 2014.

	ELECTRO		SEINE		GEARS COMBINED			
SPECIES	#	%	#	%	#	%	KG	%
LONGNOSE GAR	15	0.27	--	--	15	0.20	5.310	1.73
GAR sp.	1	0.02	--	--	1	0.01	0.001	0.00
SKIPJACK HERRING	1	0.02	--	--	1	0.01	0.053	0.02
GIZZARD SHAD	1,807	32.15	114	6.72	1,921	26.25	12.773	4.16
GRASS PICKEREL	3	0.05	1	0.06	4	0.05	0.130	0.04
CENTRAL STONEROLLER	6	0.11	--	--	6	0.08	0.007	0.00
GOLDEN SHINER	5	0.09	--	--	5	0.07	0.020	0.01
PALLID SHINER	97	1.73	17	1.00	114	1.56	0.133	0.04
EMERALD SHINER	108	1.92	38	2.24	146	2.00	0.422	0.14
GHOST SHINER	3	0.05	2	0.12	5	0.07	0.004	0.00
STRIPED SHINER	4	0.07	1	0.06	5	0.07	0.014	0.00
SPOTTAIL SHINER	199	3.54	54	3.18	253	3.46	0.577	0.19
RED SHINER	1	0.02	--	--	1	0.01	0.003	0.00
ROSYFACE SHINER	3	0.05	--	--	3	0.04	0.001	0.00
SPOTFIN SHINER	378	6.72	436	25.69	814	11.12	1.063	0.35
SAND SHINER	18	0.32	36	2.12	54	0.74	0.050	0.02
REDFIN SHINER	5	0.09	2	0.12	7	0.10	0.007	0.00
MIMIC SHINER	68	1.21	62	3.65	130	1.78	0.102	0.03
SUCKERMOUTH MINNOW	--	--	1	0.06	1	0.01	0.001	0.00
BLUNTNOSE MINNOW	415	7.38	225	13.26	640	8.75	1.022	0.33
FATHEAD MINNOW	1	0.02	--	--	1	0.01	0.003	0.00
BULLHEAD MINNOW	435	7.74	297	17.50	732	10.00	1.051	0.34
RIVER CARPSUCKER	4	0.07	--	--	4	0.05	4.560	1.48
QUILLBACK	4	0.07	--	--	4	0.05	3.015	0.98
WHITE SUCKER	--	--	1	0.06	1	0.01	0.001	0.00
NORTHERN HOG SUCKER	--	--	10	0.59	10	0.14	0.002	0.00
SMALLMOUTH BUFFALO	27	0.48	--	--	27	0.37	49.449	16.09
BIGMOUTH BUFFALO	2	0.04	--	--	2	0.03	5.260	1.71
BLACK BUFFALO	1	0.02	--	--	1	0.01	3.200	1.04
Ictiobus sp.	1	0.02	--	--	1	0.01	0.003	0.00
SPOTTED SUCKER	1	0.02	--	--	1	0.01	0.070	0.02
SILVER REDHORSE	68	1.21	10	0.59	78	1.07	2.847	0.93
GOLDEN REDHORSE	44	0.78	2	0.12	46	0.63	18.057	5.87
SHORTHEAD REDHORSE	121	2.15	6	0.35	127	1.74	1.210	0.39
Moxostoma sp.	41	0.73	80	4.71	121	1.65	0.082	0.03
CATOSTOMINAE sp.	--	--	14	0.82	14	0.19	0.003	0.00
YELLOW BULLHEAD	3	0.05	--	--	3	0.04	0.284	0.09
CHANNEL CATFISH	56	1.00	3	0.18	59	0.81	66.800	21.73
TADPOLE MADTOM	--	--	1	0.06	1	0.01	0.001	0.00
FLATHEAD CATFISH	8	0.14	--	--	8	0.11	4.002	1.30
TROUT-PERCH	1	0.02	--	--	1	0.01	0.005	0.00
BANDED KILLIFISH	4	0.07	4	0.24	8	0.11	0.018	0.01
BLACKSTRIPE TOPMINNOW	18	0.32	18	1.06	36	0.49	0.048	0.02
BROOK SILVERSIDE	149	2.65	54	3.18	203	2.77	0.238	0.08
YELLOW BASS	1	0.02	--	--	1	0.01	0.153	0.05
ROCK BASS	22	0.39	5	0.29	27	0.37	1.056	0.34
GREEN SUNFISH	94	1.67	5	0.29	99	1.35	2.020	0.66
PUMPKINSEED	10	0.18	3	0.18	13	0.18	0.352	0.11
ORANGESPOTTED SUNFISH	32	0.57	5	0.29	37	0.51	0.283	0.09
BLUEGILL	302	5.37	63	3.71	365	4.99	7.043	2.29
NORTHERN SUNFISH	205	3.65	22	1.30	227	3.10	3.773	1.23
Lepomis HYBRID	6	0.11	1	0.06	7	0.10	0.224	0.07
Lepomis sp.	3	0.05	5	0.29	8	0.11	0.008	0.00
SMALLMOUTH BASS	129	2.29	1	0.06	130	1.78	14.304	4.65
LARGEMOUTH BASS	479	8.52	65	3.83	544	7.43	33.222	10.81
WHITE CRAPPIE	1	0.02	2	0.12	3	0.04	0.961	0.31
BLACK CRAPPIE	3	0.05	12	0.71	15	0.20	0.201	0.07
JOHNNY DARTER	9	0.16	7	0.41	16	0.22	0.017	0.01
YELLOW PERCH	5	0.09	1	0.06	6	0.08	0.044	0.01
LOGPERCH	122	2.17	8	0.47	130	1.78	0.401	0.13
BLACKSIDE DARTER	--	--	1	0.06	1	0.01	0.001	0.00
Percina sp.	--	--	1	0.06	1	0.01	0.001	0.00
WALLEYE	19	0.34	--	--	19	0.26	2.233	0.73
Sander sp.	--	--	1	0.06	1	0.01	0.001	0.00
FRESHWATER DRUM	53	0.94	--	--	53	0.72	59.157	19.25
TOTAL FISH	5,621	100.00	1,697	100.00	7,318	100.00	307.357	100.00
TOTAL SPECIES	52		39		57			

NOTE: 0.00 DENOTES VALUES LESS THAN 0.005.

TABLE G-6. NUMBER, CPE (No./km), AND RELATIVE ABUNDANCE OF NATIVE FISH COLLECTED ELECTROFISHING UPSTREAM AND DOWNSTREAM OF DRESDEN NUCLEAR STATION IN DRESDEN POOL, 2014.

	UPSTREAM			DOWNSTREAM		
SPECIES	#	CPE	%	#	CPE	%
LONGNOSE GAR	5	0.4	0.1	10	1.0	0.5
GAR sp.	1	0.1	0.0	--	--	--
SKIPJACK HERRING	1	0.1	0.0	--	--	--
GIZZARD SHAD	1,253	104.4	35.2	554	52.9	26.9
GRASS PICKEREL	--	--	--	3	0.3	0.1
CENTRAL STONEROLLER	1	0.1	0.0	5	0.5	0.2
GOLDEN SHINER	2	0.2	0.1	3	0.3	0.1
PALLID SHINER	92	7.7	2.6	5	0.5	0.2
EMERALD SHINER	83	6.9	2.3	25	2.4	1.2
GHOST SHINER	2	0.2	0.1	1	0.1	0.0
STRIPED SHINER	2	0.2	0.1	2	0.2	0.1
SPOTTAIL SHINER	33	2.8	0.9	166	15.8	8.0
RED SHINER	--	--	--	1	0.1	0.0
ROSYFACE SHINER	3	0.3	0.1	--	--	--
SPOTFIN SHINER	265	22.1	7.4	113	10.8	5.5
SAND SHINER	17	1.4	0.5	1	0.1	0.0
REDFIN SHINER	4	0.3	0.1	1	0.1	0.0
MIMIC SHINER	62	5.2	1.7	6	0.6	0.3
BLUNTNOSE MINNOW	273	22.8	7.7	142	13.5	6.9
FATHEAD MINNOW	1	0.1	0.0	--	--	--
BULLHEAD MINNOW	367	30.6	10.3	68	6.5	3.3
RIVER CARPSUCKER	2	0.2	0.1	2	0.2	0.1
QUILLBACK	2	0.2	0.1	2	0.2	0.1
SMALLMOUTH BUFFALO	13	1.1	0.4	14	1.3	0.7
BIGMOUTH BUFFALO	--	--	--	2	0.2	0.1
BLACK BUFFALO	1	0.1	0.0	--	--	--
Ictiobus sp.	1	0.1	0.0	--	--	--
SPOTTED SUCKER	1	0.1	0.0	--	--	--
SILVER REDHORSE	46	3.8	1.3	22	2.1	1.1
GOLDEN REDHORSE	31	2.6	0.9	13	1.2	0.6
SHORTHEAD REDHORSE	74	6.2	2.1	47	4.5	2.3
Moxostoma sp.	13	1.1	0.4	28	2.7	1.4
YELLOW BULLHEAD	1	0.1	0.0	2	0.2	0.1
CHANNEL CATFISH	48	4.0	1.3	8	0.8	0.4
FLATHEAD CATFISH	5	0.4	0.1	3	0.3	0.1
TROUT-PERCH	1	0.1	0.0	--	--	--
BANDED KILLIFISH	--	--	--	4	0.4	0.2
BLACKSTRIPE TOPMINNOW	6	0.5	0.2	12	1.1	0.6
BROOK SILVERSIDE	123	10.3	3.5	26	2.5	1.3
YELLOW BASS	1	0.1	0.0	--	--	--
ROCK BASS	12	1.0	0.3	10	1.0	0.5
GREEN SUNFISH	30	2.5	0.8	64	6.1	3.1
PUMPKINSEED	4	0.3	0.1	6	0.6	0.3
ORANGESPOTTED SUNFISH	32	2.7	0.9	--	--	--
BLUEGILL	127	10.6	3.6	175	16.7	8.5
NORTHERN SUNFISH	73	6.1	2.1	132	12.6	6.4
Lepomis HYBRID	1	0.1	0.0	5	0.5	0.2
Lepomis sp.	1	0.1	0.0	2	0.2	0.1
SMALLMOUTH BASS	86	7.2	2.4	43	4.1	2.1
LARGEMOUTH BASS	223	18.6	6.3	256	24.4	12.4
WHITE CRAPPIE	1	0.1	0.0	--	--	--
BLACK CRAPPIE	2	0.2	0.1	1	0.1	0.0
JOHNNY DARTER	5	0.4	0.1	4	0.4	0.2
YELLOW PERCH	3	0.3	0.1	2	0.2	0.1
LOGPERCH	73	6.1	2.1	49	4.7	2.4
WALLEYE	18	1.5	0.5	1	0.1	0.0
FRESHWATER DRUM	31	2.6	0.9	22	2.1	1.1
TOTAL FISH	3,558	296.5	100.0	2,063	196.9	100.0
TOTAL SPECIES	48			43		

NOTE: 0.0 DENOTES VALUES LESS THAN 0.05.

Table G-7. Results of Upstream vs. Downstream Statistical Comparisons for Electrofishing Catch Parameters Near Dresden Nuclear Station, 2014.

Trips Combined	Upstream Dresden	Downstream Dresden	Significant Difference[a]	F Value	P Value
CPEs-all native fish[b]	296.5	196.9	No	2.45	0.12
IWBmod[c]	7.68	6.77	Yes	13.64	<0.01
Native Species Richness	17	13	Yes	6.41	0.02
May and June					
CPEs-all native fish[b]	117.7	76.0	No	0.87	0.37
IWBmod	7.23	6.19	No	1.92	0.20
Native Species Richness	12	9	No	1.80	0.21
July and August					
CPEs-all native fish[b]	378.3	238.2	No	1.87	0.18
IWBmod	7.69	7.03	Yes	5.38	0.03
Native Species Richness	18	14	Yes	5.53	0.03
September					
CPEs-all native fish	311.7	235.1	No	0.72	0.42
IWBmod	8.09	6.80	Yes	8.57	0.02
Native Species Richness	19	15	No	1.42	0.26

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Log transformed data used for statistical analyses because they are normally distributed.
(c) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.

TABLE G-8. NUMBER, CPE (No./km), AND RELATIVE ABUNDANCE OF NATIVE FISH COLLECTED ELECTROFISHING UPSTREAM AND DOWNSTREAM OF DRESDEN NUCLEAR STATION, IN DRESDEN POOL, BY SAMPLING PERIOD, 2014.

SPECIES	MAY/JUNE						JULY/AUGUST						SEPTEMBER					
	UPSTREAM			DOWNSTREAM			UPSTREAM			DOWNSTREAM			UPSTREAM			DOWNSTREAM		
	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
LONGNOSE GAR	3	1.0	0.8	--	--	--	2	0.3	0.1	10	1.9	0.8	--	--	--	--	--	--
GAR sp.	1	0.3	0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.1	--	--	--
GIZZARD SHAD	--	--	--	2	0.8	1.0	1,010	168.3	44.5	385	73.5	30.8	243	81.0	26.0	167	63.7	27.1
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	2	0.4	0.2	--	--	--	1	0.4	0.2
CENTRAL STONEROLLER	--	--	--	--	--	--	1	0.2	0.0	4	0.8	0.3	--	--	--	1	0.4	0.2
GOLDEN SHINER	1	0.3	0.3	1	0.4	0.5	--	--	--	1	0.2	0.1	1	0.3	0.1	1	0.4	0.2
PALLID SHINER	11	3.7	3.1	3	1.1	1.5	39	6.5	1.7	2	0.4	0.2	42	14.0	4.5	--	--	--
EMERALD SHINER	5	1.7	1.4	1	0.4	0.5	43	7.2	1.9	9	1.7	0.7	35	11.7	3.7	15	5.7	2.4
GHOST SHINER	--	--	--	1	0.4	0.5	--	--	--	--	--	--	2	0.7	0.2	--	--	--
STRIPED SHINER	--	--	--	1	0.4	0.5	2	0.3	0.1	--	--	--	--	--	--	1	0.4	0.2
SPOTTAIL SHINER	--	--	--	--	--	--	28	4.7	1.2	131	25.0	10.5	5	1.7	0.5	35	13.4	5.7
RED SHINER	--	--	--	--	--	--	--	--	--	1	0.2	0.1	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	3	0.5	0.1	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	50	16.7	14.2	13	5.0	6.5	180	30.0	7.9	74	14.1	5.9	35	11.7	3.7	26	9.9	4.2
SAND SHINER	7	2.3	2.0	--	--	--	9	1.5	0.4	1	0.2	0.1	1	0.3	0.1	--	--	--
REDFIN SHINER	--	--	--	1	0.4	0.5	4	0.7	0.2	--	--	--	--	--	--	--	--	--
MIMIC SHINER	9	3.0	2.5	--	--	--	8	1.3	0.4	2	0.4	0.2	45	15.0	4.8	4	1.5	0.6
BLUNTNOSE MINNOW	43	14.3	12.2	8	3.1	4.0	190	31.7	8.4	103	19.7	8.3	40	13.3	4.3	31	11.8	5.0
FATHEAD MINNOW	--	--	--	--	--	--	1	0.2	0.0	--	--	--	--	--	--	--	--	--
BULLHEAD MINNOW	51	17.0	14.4	34	13.0	17.1	163	27.2	7.2	19	3.6	1.5	153	51.0	16.4	15	5.7	2.4
RIVER CARPSUCKER	--	--	--	1	0.4	0.5	2	0.3	0.1	1	0.2	0.1	--	--	--	--	--	--
QUILLBACK	--	--	--	1	0.4	0.5	--	--	--	1	0.2	0.1	2	0.7	0.2	--	--	--
SMALLMOUTH BUFFALO	5	1.7	1.4	2	0.8	1.0	3	0.5	0.1	9	1.7	0.7	5	1.7	0.5	3	1.1	0.5
BIGMOUTH BUFFALO	--	--	--	--	--	--	--	--	--	2	0.4	0.2	--	--	--	--	--	--
BLACK BUFFALO	--	--	--	--	--	--	1	0.2	0.0	--	--	--	--	--	--	--	--	--
Ictiobus sp.	--	--	--	--	--	--	1	0.2	0.0	--	--	--	--	--	--	--	--	--
SPOTTED SUCKER	--	--	--	--	--	--	1	0.2	0.0	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	1	0.3	0.3	1	0.4	0.5	40	6.7	1.8	16	3.1	1.3	5	1.7	0.5	5	1.9	0.8
GOLDEN REDHORSE	7	2.3	2.0	2	0.8	1.0	10	1.7	0.4	7	1.3	0.6	14	4.7	1.5	4	1.5	0.6
SHORTHEAD REDHORSE	2	0.7	0.6	2	0.8	1.0	49	8.2	2.2	30	5.7	2.4	23	7.7	2.5	15	5.7	2.4
Moxostoma sp.	--	--	--	--	--	--	11	1.8	0.5	28	5.3	2.2	2	0.7	0.2	--	--	--
YELLOW BULLHEAD	1	0.3	0.3	--	--	--	--	--	--	1	0.2	0.1	--	--	--	1	0.4	0.2
CHANNEL CATFISH	21	7.0	5.9	4	1.5	2.0	16	2.7	0.7	4	0.8	0.3	11	3.7	1.2	--	--	--
FLATHEAD CATFISH	1	0.3	0.3	--	--	--	4	0.7	0.2	3	0.6	0.2	--	--	--	--	--	--
TROUT-PERCH	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.1	--	--	--
BANDED KILLIFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4	1.5	0.6
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	2	0.3	0.1	10	1.9	0.8	4	1.3	0.4	2	0.8	0.3
BROOK SILVERSIDE	17	5.7	4.8	--	--	--	29	4.8	1.3	6	1.1	0.5	77	25.7	8.2	20	7.6	3.2
YELLOW BASS	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.1	--	--	--
ROCK BASS	2	0.7	0.6	--	--	--	5	0.8	0.2	6	1.1	0.5	5	1.7	0.5	4	1.5	0.6
GREEN SUNFISH	2	0.7	0.6	5	1.9	2.5	19	3.2	0.8	34	6.5	2.7	9	3.0	1.0	25	9.5	4.1
PUMPKINSEED	--	--	--	1	0.4	0.5	3	0.5	0.1	1	0.2	0.1	1	0.3	0.1	4	1.5	0.6
ORANGESPOTTED SUNFISH	1	0.3	0.3	--	--	--	7	1.2	0.3	--	--	--	24	8.0	2.6	--	--	--
BLUEGILL	37	12.3	10.5	41	15.6	20.6	64	10.7	2.8	63	12.0	5.0	26	8.7	2.8	71	27.1	11.5
NORTHERN SUNFISH	22	7.3	6.2	31	11.8	15.6	39	6.5	1.7	82	15.6	6.6	12	4.0	1.3	19	7.3	3.1
Lepomis HYBRID	1	0.3	0.3	1	0.4	0.5	--	--	--	3	0.6	0.2	--	--	--	1	0.4	0.2
Lepomis sp.	--	--	--	--	--	--	1	0.2	0.0	--	--	--	--	--	--	2	0.8	0.3
SMALLMOUTH BASS	25	8.3	7.1	20	7.6	10.1	47	7.8	2.1	9	1.7	0.7	14	4.7	1.5	14	5.3	2.3
LARGEMOUTH BASS	11	3.7	3.1	7	2.7	3.5	147	24.5	6.5	141	26.9	11.3	65	21.7	7.0	108	41.2	17.5
WHITE CRAPPIE	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.1	--	--	--
BLACK CRAPPIE	--	--	--	--	--	--	1	0.2	0.0	1	0.2	0.1	1	0.3	0.1	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	4	0.7	0.2	2	0.4	0.2	1	0.3	0.1	2	0.8	0.3
YELLOW PERCH	--	--	--	--	--	--	3	0.5	0.1	1	0.2	0.1	--	--	--	1	0.4	0.2
LOGPERCH	--	--	--	--	--	--	59	9.8	2.6	36	6.9	2.9	14	4.7	1.5	13	5.0	2.1
WALLEYE	1	0.3	0.3	--	--	--	8	1.3	0.4	--	--	--	9	3.0	1.0	1	0.4	0.2
FRESHWATER DRUM	15	5.0	4.2	15	5.7	7.5	11	1.8	0.5	7	1.3	0.6	5	1.7	0.5	--	--	--
TOTAL FISH	353	117.7	100.0	199	76.0	100.0	2,270	378.3	100.0	1,248	238.2	100.0	935	311.7	100.0	616	235.1	100.0
TOTAL SPECIES	26			24			40			38			36			30		

NOTE: 0.0 DENOTES VALUES LESS THAN 0.05.

TABLE G-9. COMPARISON OF ELECTROFISHING CPEs (No./km) AND RELATIVE ABUNDANCE AMONG SAMPLING PERIODS FOR NATIVE SPECIES COLLECTED FROM DRESDEN POOL, 2014.

SPECIES	MAY/JUNE		JULY/AUGUST		SEPTEMBER	
	CPE	%	CPE	%	CPE	%
LONGNOSE GAR	0.5	0.5	1.1	0.3	--	--
GAR sp.	0.2	0.2	--	--	--	--
SKIPJACK HERRING	--	--	--	--	0.2	0.1
GIZZARD SHAD	0.4	0.4	124.1	39.7	73.0	26.4
GRASS PICKEREL	--	--	0.2	0.1	0.2	0.1
CENTRAL STONEROLLER	--	--	0.4	0.1	0.2	0.1
GOLDEN SHINER	0.4	0.4	0.1	0.0	0.4	0.1
PALLID SHINER	2.5	2.5	3.6	1.2	7.5	2.7
EMERALD SHINER	1.1	1.1	4.6	1.5	8.9	3.2
GHOST SHINER	0.2	0.2	--	--	0.4	0.1
STRIPED SHINER	0.2	0.2	0.2	0.1	0.2	0.1
SPOTTAIL SHINER	--	--	14.1	4.5	7.1	2.6
RED SHINER	--	--	0.1	0.0	--	--
ROSYFACE SHINER	--	--	0.3	0.1	--	--
SPOTFIN SHINER	11.2	11.4	22.6	7.2	10.9	3.9
SAND SHINER	1.2	1.3	0.9	0.3	0.2	0.1
REDFIN SHINER	0.2	0.2	0.4	0.1	--	--
MIMIC SHINER	1.6	1.6	0.9	0.3	8.7	3.2
BLUNTNOSE MINNOW	9.1	9.2	26.1	8.3	12.6	4.6
FATHEAD MINNOW	--	--	0.1	0.0	--	--
BULLHEAD MINNOW	15.1	15.4	16.2	5.2	29.9	10.8
RIVER CARPSUCKER	0.2	0.2	0.3	0.1	--	--
QUILLBACK	0.2	0.2	0.1	0.0	0.4	0.1
SMALLMOUTH BUFFALO	1.2	1.3	1.1	0.3	1.4	0.5
BIGMOUTH BUFFALO	--	--	0.2	0.1	--	--
BLACK BUFFALO	--	--	0.1	0.0	--	--
Ictiobus sp.	--	--	0.1	0.0	--	--
SPOTTED SUCKER	--	--	0.1	0.0	--	--
SILVER REDHORSE	0.4	0.4	5.0	1.6	1.8	0.6
GOLDEN REDHORSE	1.6	1.6	1.5	0.5	3.2	1.2
SHORTHEAD REDHORSE	0.7	0.7	7.0	2.2	6.8	2.5
Moxostoma sp.	--	--	3.5	1.1	0.4	0.1
YELLOW BULLHEAD	0.2	0.2	0.1	0.0	0.2	0.1
CHANNEL CATFISH	4.4	4.5	1.8	0.6	2.0	0.7
FLATHEAD CATFISH	0.2	0.2	0.6	0.2	--	--
TROUT-PERCH	--	--	--	--	0.2	0.1
BANDED KILLIFISH	--	--	--	--	0.7	0.3
BLACKSTRIPE TOPMINNOW	--	--	1.1	0.3	1.1	0.4
BROOK SILVERSIDE	3.0	3.1	3.1	1.0	17.3	6.3
YELLOW BASS	--	--	--	--	0.2	0.1
ROCK BASS	0.4	0.4	1.0	0.3	1.6	0.6
GREEN SUNFISH	1.2	1.3	4.7	1.5	6.0	2.2
PUMPKINSEED	0.2	0.2	0.4	0.1	0.9	0.3
ORANGESPOTTED SUNFISH	0.2	0.2	0.6	0.2	4.3	1.5
BLUEGILL	13.9	14.1	11.3	3.6	17.3	6.3
NORTHERN SUNFISH	9.4	9.6	10.8	3.4	5.5	2.0
Lepomis HYBRID	0.4	0.4	0.3	0.1	0.2	0.1
Lepomis sp.	--	--	0.1	0.0	0.4	0.1
SMALLMOUTH BASS	8.0	8.2	5.0	1.6	5.0	1.8
LARGEMOUTH BASS	3.2	3.3	25.6	8.2	30.8	11.2
WHITE CRAPPIE	--	--	--	--	0.2	0.1
BLACK CRAPPIE	--	--	0.2	0.1	0.2	0.1
JOHNNY DARTER	--	--	0.5	0.2	0.5	0.2
YELLOW PERCH	--	--	0.4	0.1	0.2	0.1
LOGPERCH	--	--	8.5	2.7	4.8	1.7
WALLEYE	0.2	0.2	0.7	0.2	1.8	0.6
FRESHWATER DRUM	5.3	5.4	1.6	0.5	0.9	0.3
TOTAL FISH	98.2	100.0	313.0	100.0	276.0	100.0
TOTAL SPECIES	33		46		42	

NOTE: 0.0 DENOTES VALUES LESS THAN 0.05.

Table G-10. Results of Statistical Comparisons Among Sampling Periods for Electrofishing Data Collected From Dresden Pool, 2014.

Catch Parameter	May/June	July/August	September	Significant Difference[(a)]	F Value	P Value
CPEs-all native fish[(b)]	98.2 B	313.0 A	276.0 A[(c)]	Yes	10.21	<0.01
IWBmod[(d)]	6.71	7.36	7.45	No	1.18	0.32
Native Species Richness	11 B	16 A	17 A	Yes	6.91	<0.01

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Log transformed data used for statistical analyses because they are normally distributed.
(c) Results of Tukey's Studentized Range Test; values with the same letters are not significantly different (alpha=0.05).
(d) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.

TABLE G-11. NUMBER, CPE (No./haul), AND RELATIVE ABUNDANCE OF NATIVE FISH COLLECTED SEINING UPSTREAM AND DOWNSTREAM OF DRESDEN NUCLEAR STATION IN DRESDEN POOL, 2014.

ALL TRIPS COMBINED

SPECIES	UPSTREAM			DOWNSTREAM		
	#	CPE	%	#	CPE	%
GIZZARD SHAD	62	2.6	6.1	52	3.3	7.7
GRASS PICKEREL	--	--	--	1	0.1	0.1
PALLID SHINER	16	0.7	1.6	1	0.1	0.1
EMERALD SHINER	35	1.5	3.4	3	0.2	0.4
GHOST SHINER	2	0.1	0.2	--	--	--
STRIPED SHINER	--	--	--	1	0.1	0.1
SPOTTAIL SHINER	32	1.3	3.1	22	1.4	3.2
SPOTFIN SHINER	307	12.8	30.1	129	8.1	19.0
SAND SHINER	8	0.3	0.8	28	1.8	4.1
REDFIN SHINER	1	0.0	0.1	1	0.1	0.1
MIMIC SHINER	58	2.4	5.7	4	0.3	0.6
SUCKERMOUTH MINNOW	--	--	--	1	0.1	0.1
BLUNTNOSE MINNOW	179	7.5	17.6	46	2.9	6.8
BULLHEAD MINNOW	161	6.7	15.8	136	8.5	20.1
WHITE SUCKER	--	--	--	1	0.1	0.1
NORTHERN HOG SUCKER	--	--	--	10	0.6	1.5
SILVER REDHORSE	2	0.1	0.2	8	0.5	1.2
GOLDEN REDHORSE	1	0.0	0.1	1	0.1	0.1
SHORTHEAD REDHORSE	6	0.3	0.6	--	--	--
Moxostoma sp.	1	0.0	0.1	79	4.9	11.7
CATOSTOMINAE sp.	1	0.0	0.1	13	0.8	1.9
CHANNEL CATFISH	2	0.1	0.2	1	0.1	0.1
TADPOLE MADTOM	1	0.0	0.1	--	--	--
BANDED KILLIFISH	--	--	--	4	0.3	0.6
BLACKSTRIPE TOPMINNOW	14	0.6	1.4	4	0.3	0.6
BROOK SILVERSIDE	28	1.2	2.7	26	1.6	3.8
ROCK BASS	4	0.2	0.4	1	0.1	0.1
GREEN SUNFISH	1	0.0	0.1	4	0.3	0.6
PUMPKINSEED	2	0.1	0.2	1	0.1	0.1
ORANGESPOTTED SUNFISH	4	0.2	0.4	1	0.1	0.1
BLUEGILL	36	1.5	3.5	27	1.7	4.0
NORTHERN SUNFISH	8	0.3	0.8	14	0.9	2.1
Lepomis HYBRID	1	0.0	0.1	--	--	--
Lepomis sp.	5	0.2	0.5	--	--	--
SMALLMOUTH BASS	1	0.0	0.1	--	--	--
LARGEMOUTH BASS	15	0.6	1.5	50	3.1	7.4
WHITE CRAPPIE	2	0.1	0.2	--	--	--
BLACK CRAPPIE	12	0.5	1.2	--	--	--
JOHNNY DARTER	4	0.2	0.4	3	0.2	0.4
YELLOW PERCH	--	--	--	1	0.1	0.1
LOGPERCH	6	0.3	0.6	2	0.1	0.3
BLACKSIDE DARTER	--	--	--	1	0.1	0.1
Percina sp.	--	--	--	1	0.1	0.1
Sander sp.	1	0.0	0.1	--	--	--
TOTAL FISH	1,019	42.5	100.0	678	42.4	100.0
TOTAL SPECIES	31			32		
MEAN NO. OF SPECIES	7			6		

TABLE G-11 (cont.)

MAY/JUNE

SPECIES	UPSTREAM #	UPSTREAM CPE	UPSTREAM %	DOWNSTREAM #	DOWNSTREAM CPE	DOWNSTREAM %
PALLID SHINER	1	0.2	0.2	1	0.3	0.2
EMERALD SHINER	15	2.5	3.2	--	--	--
GHOST SHINER	2	0.3	0.4	--	--	--
SPOTTAIL SHINER	4	0.7	0.9	8	2.0	1.8
SPOTFIN SHINER	244	40.7	52.4	123	30.8	26.9
SAND SHINER	8	1.3	1.7	8	2.0	1.8
REDFIN SHINER	1	0.2	0.2	--	--	--
MIMIC SHINER	37	6.2	7.9	4	1.0	0.9
SUCKERMOUTH MINNOW	--	--	--	1	0.3	0.2
BLUNTNOSE MINNOW	67	11.2	14.4	34	8.5	7.4
BULLHEAD MINNOW	53	8.8	11.4	135	33.8	29.5
WHITE SUCKER	--	--	--	1	0.3	0.2
NORTHERN HOG SUCKER	--	--	--	10	2.5	2.2
SILVER REDHORSE	2	0.3	0.4	7	1.8	1.5
GOLDEN REDHORSE	1	0.2	0.2	--	--	--
SHORTHEAD REDHORSE	3	0.5	0.6	--	--	--
Moxostoma sp.	--	--	--	79	19.8	17.3
CATOSTOMINAE sp.	1	0.2	0.2	13	3.3	2.8
BLACKSTRIPE TOPMINNOW	3	0.5	0.6	1	0.3	0.2
BROOK SILVERSIDE	8	1.3	1.7	--	--	--
ROCK BASS	1	0.2	0.2	1	0.3	0.2
GREEN SUNFISH	--	--	--	2	0.5	0.4
ORANGESPOTTED SUNFISH	--	--	--	1	0.3	0.2
BLUEGILL	8	1.3	1.7	2	0.5	0.4
NORTHERN SUNFISH	2	0.3	0.4	8	2.0	1.8
LARGEMOUTH BASS	1	0.2	0.2	15	3.8	3.3
WHITE CRAPPIE	1	0.2	0.2	--	--	--
JOHNNY DARTER	1	0.2	0.2	1	0.3	0.2
LOGPERCH	1	0.2	0.2	--	--	--
BLACKSIDE DARTER	--	--	--	1	0.3	0.2
Percina sp.	--	--	--	1	0.3	0.2
Sander sp.	1	0.2	0.2	--	--	--
TOTAL FISH	466	77.7	100.0	457	114.3	100.0
TOTAL SPECIES	23			20		
MEAN NO. OF SPECIES	7			7		

TABLE G-11 (cont.)

JULY/AUGUST

SPECIES	UPSTREAM #	UPSTREAM CPE	UPSTREAM %	DOWNSTREAM #	DOWNSTREAM CPE	DOWNSTREAM %
GIZZARD SHAD	31	2.6	9.4	38	4.8	28.6
PALLID SHINER	10	0.8	3.0	--	--	--
EMERALD SHINER	1	0.1	0.3	--	--	--
SPOTTAIL SHINER	8	0.7	2.4	5	0.6	3.8
SPOTFIN SHINER	60	5.0	18.1	1	0.1	0.8
SAND SHINER	--	--	--	20	2.5	15.0
REDFIN SHINER	--	--	--	1	0.1	0.8
MIMIC SHINER	2	0.2	0.6	--	--	--
BLUNTNOSE MINNOW	75	6.3	22.7	4	0.5	3.0
BULLHEAD MINNOW	89	7.4	26.9	--	--	--
GOLDEN REDHORSE	--	--	--	1	0.1	0.8
SHORTHEAD REDHORSE	1	0.1	0.3	--	--	--
Moxostoma sp.	1	0.1	0.3	--	--	--
TADPOLE MADTOM	1	0.1	0.3	--	--	--
BANDED KILLIFISH	--	--	--	1	0.1	0.8
BLACKSTRIPE TOPMINNOW	--	--	--	2	0.3	1.5
BROOK SILVERSIDE	2	0.2	0.6	9	1.1	6.8
GREEN SUNFISH	1	0.1	0.3	2	0.3	1.5
ORANGESPOTTED SUNFISH	4	0.3	1.2	--	--	--
BLUEGILL	15	1.3	4.5	13	1.6	9.8
NORTHERN SUNFISH	4	0.3	1.2	6	0.8	4.5
Lepomis sp.	1	0.1	0.3	--	--	--
LARGEMOUTH BASS	12	1.0	3.6	27	3.4	20.3
WHITE CRAPPIE	1	0.1	0.3	--	--	--
BLACK CRAPPIE	8	0.7	2.4	--	--	--
JOHNNY DARTER	2	0.2	0.6	2	0.3	1.5
YELLOW PERCH	--	--	--	1	0.1	0.8
LOGPERCH	2	0.2	0.6	--	--	--
TOTAL FISH	331	27.6	100.0	133	16.6	100.0
TOTAL SPECIES	20			16		
MEAN NO. OF SPECIES	5			4		

SEPTEMBER

SPECIES	UPSTREAM #	UPSTREAM CPE	UPSTREAM %	DOWNSTREAM #	DOWNSTREAM CPE	DOWNSTREAM %
GIZZARD SHAD	31	5.2	14.0	14	3.5	15.9
GRASS PICKEREL	--	--	--	1	0.3	1.1
PALLID SHINER	5	0.8	2.3	--	--	--
EMERALD SHINER	19	3.2	8.6	3	0.8	3.4
STRIPED SHINER	--	--	--	1	0.3	1.1
SPOTTAIL SHINER	20	3.3	9.0	9	2.3	10.2
SPOTFIN SHINER	3	0.5	1.4	5	1.3	5.7
MIMIC SHINER	19	3.2	8.6	--	--	--
BLUNTNOSE MINNOW	37	6.2	16.7	8	2.0	9.1
BULLHEAD MINNOW	19	3.2	8.6	1	0.3	1.1
SILVER REDHORSE	--	--	--	1	0.3	1.1
SHORTHEAD REDHORSE	2	0.3	0.9	--	--	--
CHANNEL CATFISH	2	0.3	0.9	1	0.3	1.1
BANDED KILLIFISH	--	--	--	3	0.8	3.4
BLACKSTRIPE TOPMINNOW	11	1.8	5.0	1	0.3	1.1
BROOK SILVERSIDE	18	3.0	8.1	17	4.3	19.3
ROCK BASS	3	0.5	1.4	--	--	--
PUMPKINSEED	2	0.3	0.9	1	0.3	1.1
BLUEGILL	13	2.2	5.9	12	3.0	13.6
NORTHERN SUNFISH	2	0.3	0.9	--	--	--
Lepomis HYBRID	1	0.2	0.5	--	--	--
Lepomis sp.	4	0.7	1.8	--	--	--
SMALLMOUTH BASS	1	0.2	0.5	--	--	--
LARGEMOUTH BASS	2	0.3	0.9	8	2.0	9.1
BLACK CRAPPIE	4	0.7	1.8	--	--	--
JOHNNY DARTER	1	0.2	0.5	--	--	--
LOGPERCH	3	0.5	1.4	2	0.5	2.3
TOTAL FISH	222	37.0	100.0	88	22.0	100.0
TOTAL SPECIES	21			17		
MEAN NO. OF SPECIES	9			7		

NOTE: 0.0 DENOTES VALUES LESS THAN 0.05.

TABLE G-12. COMPARISON OF SEINING CPEs (No./haul) AND RELATIVE ABUNDANCE AMONG SAMPLING PERIODS FOR NATIVE SPECIES COLLECTED FROM DRESDEN POOL, 2014.

SPECIES	MAY/JUNE		JULY/AUGUST		SEPTEMBER	
	CPE	%	CPE	%	CPE	%
GIZZARD SHAD	--	--	3.5	14.9	4.5	14.5
GRASS PICKEREL	--	--	--	--	0.1	0.3
PALLID SHINER	0.2	0.2	0.5	2.2	0.5	1.6
EMERALD SHINER	1.5	1.6	0.1	0.2	2.2	7.1
GHOST SHINER	0.2	0.2	--	--	--	--
STRIPED SHINER	--	--	--	--	0.1	0.3
SPOTTAIL SHINER	1.2	1.3	0.7	2.8	2.9	9.4
SPOTFIN SHINER	36.7	39.8	3.1	13.1	0.8	2.6
SAND SHINER	1.6	1.7	1.0	4.3	--	--
REDFIN SHINER	0.1	0.1	0.1	0.2	--	--
MIMIC SHINER	4.1	4.4	0.1	0.4	1.9	6.1
SUCKERMOUTH MINNOW	0.1	0.1	--	--	--	--
BLUNTNOSE MINNOW	10.1	10.9	4.0	17.0	4.5	14.5
BULLHEAD MINNOW	18.8	20.4	4.5	19.2	2.0	6.5
WHITE SUCKER	0.1	0.1	--	--	--	--
NORTHERN HOG SUCKER	1.0	1.1	--	--	--	--
SILVER REDHORSE	0.9	1.0	--	--	0.1	0.3
GOLDEN REDHORSE	0.1	0.1	0.1	0.2	--	--
SHORTHEAD REDHORSE	0.3	0.3	0.1	0.2	0.2	0.6
Moxostoma sp.	7.9	8.6	0.1	0.2	--	--
CATOSTOMINAE sp.	1.4	1.5	--	--	--	--
CHANNEL CATFISH	--	--	--	--	0.3	1.0
TADPOLE MADTOM	--	--	0.1	0.2	--	--
BANDED KILLIFISH	--	--	0.1	0.2	0.3	1.0
BLACKSTRIPE TOPMINNOW	0.4	0.4	0.1	0.4	1.2	3.9
BROOK SILVERSIDE	0.8	0.9	0.6	2.4	3.5	11.3
ROCK BASS	0.2	0.2	--	--	0.3	1.0
GREEN SUNFISH	0.2	0.2	0.2	0.6	--	--
PUMPKINSEED	--	--	--	--	0.3	1.0
ORANGESPOTTED SUNFISH	0.1	0.1	0.2	0.9	--	--
BLUEGILL	1.0	1.1	1.4	6.0	2.5	8.1
NORTHERN SUNFISH	1.0	1.1	0.5	2.2	0.2	0.6
Lepomis HYBRID	--	--	--	--	0.1	0.3
Lepomis sp.	--	--	0.1	0.2	0.4	1.3
SMALLMOUTH BASS	--	--	--	--	0.1	0.3
LARGEMOUTH BASS	1.6	1.7	2.0	8.4	1.0	3.2
WHITE CRAPPIE	0.1	0.1	0.1	0.2	--	--
BLACK CRAPPIE	--	--	0.4	1.7	0.4	1.3
JOHNNY DARTER	0.2	0.2	0.2	0.9	0.1	0.3
YELLOW PERCH	--	--	0.1	0.2	--	--
LOGPERCH	0.1	0.1	0.1	0.4	0.5	1.6
BLACKSIDE DARTER	0.1	0.1	--	--	--	--
Percina sp.	0.1	0.1	--	--	--	--
Sander sp.	0.1	0.1	--	--	--	--
TOTAL FISH	92.3	100.0	23.2	100.0	31.0	100.0
TOTAL SPECIES	29		26		25	
MEAN NO. OF SPECIES	7		5		8	

NOTE: 0.0 DENOTES VALUES LESS THAN 0.05.

TABLE G-13. INTER-YEAR COMPARISONS OF ELECTROFISHING CATCHES (native species only) WITHIN DRESDEN POOL FOR THE PERIOD OF 15 JUNE THROUGH AUGUST, 1994, 1995, 1997-2008, 2011, 2013, AND 2014.

SPECIES	1994			1995			1997			1998			1999		
	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
LONGNOSE GAR	4	0.9	1.8	--	--	--	--	--	--	--	--	--	1	0.1	0.1
SKIPJACK HERRING	1	0.2	0.5	--	--	--	1	0.1	0.1	6	0.8	0.5	2	0.3	0.2
GIZZARD SHAD	55	11.9	24.9	116	25.1	32.8	304	42.0	29.3	391	54.0	31.6	452	58.4	38.5
GOLDEYE	1	0.2	0.5	--	--	--	--	--	--	--	--	--	--	--	--
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CENTRAL STONEROLLER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN SHINER	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
PALLID SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	7	1.5	3.2	--	--	--	310	42.8	29.9	337	46.5	27.2	178	23.0	15.2
GHOST SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
STRIPED SHINER	--	--	--	--	--	--	7	1.0	0.7	1	0.1	0.1	--	--	--
SPOTTAIL SHINER	5	1.1	2.3	7	1.5	2.0	1	0.1	0.1	5	0.7	0.4	--	--	--
RED SHINER	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	1	0.2	0.5	4	0.9	1.1	17	2.3	1.6	5	0.7	0.4	16	2.1	1.4
SAND SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REDFIN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	15	3.2	6.8	11	2.4	3.1	19	2.6	1.8	49	6.8	4.0	39	5.0	3.3
BULLHEAD MINNOW	2	0.4	0.9	7	1.5	2.0	34	4.7	3.3	19	2.6	1.5	29	3.7	2.5
RIVER CARPSUCKER	1	0.2	0.5	5	1.1	1.4	3	0.4	0.3	1	0.1	0.1	3	0.4	0.3
QUILLBACK	--	--	--	6	1.3	1.7	1	0.1	0.1	4	0.6	0.3	1	0.1	0.1
WHITE SUCKER	--	--	--	1	0.2	0.3	--	--	--	1	0.1	0.1	--	--	--
SMALLMOUTH BUFFALO	6	1.3	2.7	3	0.6	0.8	9	1.2	0.9	10	1.4	0.8	8	1.0	0.7
BIGMOUTH BUFFALO	--	--	--	--	--	--	3	0.4	0.3	--	--	--	--	--	--
BLACK BUFFALO	--	--	--	1	0.2	0.3	--	--	--	--	--	--	--	--	--
SPOTTED SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	1	0.2	0.5	7	1.5	2.0	--	--	--	1	0.1	0.1	2	0.3	0.2
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	1	0.2	0.5	47	10.2	13.3	30	4.1	2.9	31	4.3	2.5	9	1.2	0.8
SHORTHEAD REDHORSE	4	0.9	1.8	34	7.4	9.6	5	0.7	0.5	8	1.1	0.6	2	0.3	0.2
Moxostoma sp.	--	--	--	1	0.2	0.3	--	--	--	--	--	--	--	--	--
ICTIOBINAE sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW BULLHEAD	--	--	--	--	--	--	--	--	--	1	0.1	0.1	--	--	--
CHANNEL CATFISH	7	1.5	3.2	9	1.9	2.5	20	2.8	1.9	4	0.6	0.3	3	0.4	0.3
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	1	0.1	0.1	--	--	--
FLATHEAD CATFISH	--	--	--	--	--	--	2	0.3	0.2	1	0.1	0.1	1	0.1	0.1
TROUT-PERCH	--	--	--	--	--	--	4	0.6	0.4	3	0.4	0.2	1	0.1	0.1
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BROOK SILVERSIDE	1	0.2	0.5	--	--	--	1	0.1	0.1	3	0.4	0.2	5	0.6	0.4
WHITE BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morone sp.	4	0.9	1.8	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	--	--	--	--	--	4	0.6	0.4	--	--	--	2	0.3	0.2
GREEN SUNFISH	12	2.6	5.4	19	4.1	5.4	46	6.4	4.4	114	15.7	9.2	148	19.1	12.6
PUMPKINSEED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	4	0.9	1.8	5	1.1	1.4	3	0.4	0.3	3	0.4	0.2	--	--	--
BLUEGILL	7	1.5	3.2	17	3.7	4.8	95	13.1	9.2	132	18.2	10.7	186	24.0	15.8
NORTHERN SUNFISH	1	0.2	0.5	--	--	--	11	1.5	1.1	2	0.3	0.2	4	0.5	0.3
Lepomis HYBRID	--	--	--	--	--	--	--	--	--	3	0.4	0.2	3	0.4	0.3
Lepomis sp.	4	0.9	1.8	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BASS	19	4.1	8.6	26	5.6	7.3	46	6.4	4.4	42	5.8	3.4	26	3.4	2.2
LARGEMOUTH BASS	12	2.6	5.4	13	2.8	3.7	30	4.1	2.9	27	3.7	2.2	47	6.1	4.0
Micropterus sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	1	0.2	0.5	1	0.2	0.3	1	0.1	0.1	--	--	--	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	1	0.2	0.5	2	0.4	0.6	4	0.6	0.4	17	2.3	1.4	5	0.6	0.4
BLACKSIDE DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SLENDERHEAD DARTER	--	--	--	--	--	--	1	0.1	0.1	2	0.3	0.2	--	--	--
WALLEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	44	9.5	19.9	12	2.6	3.4	23	3.2	2.2	13	1.8	1.1	1	0.1	0.1
TOTAL FISH	221	47.8	100.0	354	76.6	100.0	1,037	143.2	100.0	1,237	170.9	100.0	1,174	151.7	100.0
TOTAL SPECIES	26			22			31			30			25		

TABLE G-13 (cont.)

SPECIES	2000 #	2000 CPE	2000 %	2001 #	2001 CPE	2001 %	2002 #	2002 CPE	2002 %	2003 #	2003 CPE	2003 %	2004 #	2004 CPE	2004 %
LONGNOSE GAR	3	0.4	0.3	1	0.1	0.1	--	--	--	2	0.2	0.1	--	--	--
SKIPJACK HERRING	--	--	--	4	0.4	0.3	--	--	--	--	--	--	--	--	--
GIZZARD SHAD	210	26.4	21.0	422	45.7	31.5	423	45.8	24.0	569	61.6	20.6	218	23.6	23.0
GOLDEYE	1	0.1	0.1	--	--	--	--	--	--	--	--	--	--	--	--
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	--	--	1	0.1	0.1
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CENTRAL STONEROLLER	1	0.1	0.1	3	0.3	0.2	--	--	--	--	--	--	2	0.2	0.2
GOLDEN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PALLID SHINER	--	--	--	1	0.1	0.1	4	0.4	0.2	1	0.1	0.0	--	--	--
EMERALD SHINER	24	3.0	2.4	263	28.5	19.6	451	48.8	25.6	148	16.0	5.4	33	3.6	3.5
GHOST SHINER	1	0.1	0.1	--	--	--	--	--	--	2	0.2	0.1	--	--	--
STRIPED SHINER	--	--	--	1	0.1	0.1	7	0.8	0.4	16	1.7	0.6	1	0.1	0.1
SPOTTAIL SHINER	1	0.1	0.1	44	4.8	3.3	1	0.1	0.1	2	0.2	0.1	--	--	--
RED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	38	4.8	3.8	53	5.7	4.0	32	3.5	1.8	59	6.4	2.1	20	2.2	2.1
SAND SHINER	--	--	--	--	--	--	1	0.1	0.1	11	1.2	0.4	--	--	--
REDFIN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	--	--	2	0.2	0.1	7	0.8	0.3	--	--	--
BLUNTNOSE MINNOW	50	6.3	5.0	50	5.4	3.7	171	18.5	9.7	157	17.0	5.7	16	1.7	1.7
BULLHEAD MINNOW	47	5.9	4.7	36	3.9	2.7	16	1.7	0.9	182	19.7	6.6	13	1.4	1.4
RIVER CARPSUCKER	--	--	--	4	0.4	0.3	3	0.3	0.2	--	--	--	1	0.1	0.1
QUILLBACK	3	0.4	0.3	7	0.8	0.5	2	0.2	0.1	2	0.2	0.1	1	0.1	0.1
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	8	1.0	0.8	9	1.0	0.7	11	1.2	0.6	8	0.9	0.3	8	0.9	0.8
BIGMOUTH BUFFALO	--	--	--	1	0.1	0.1	--	--	--	--	--	--	--	--	--
BLACK BUFFALO	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
SPOTTED SUCKER	--	--	--	1	0.1	0.1	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	--	--	--	3	0.3	0.2	--	--	--	--	--	--	--	--	--
RIVER REDHORSE	1	0.1	0.1	--	--	--	--	--	--	--	--	--	--	--	--
BLACK REDHORSE	--	--	--	--	--	--	--	--	--	2	0.2	0.1	--	--	--
GOLDEN REDHORSE	34	4.3	3.4	9	1.0	0.7	51	5.5	2.9	115	12.4	4.2	44	4.8	4.7
SHORTHEAD REDHORSE	3	0.4	0.3	6	0.6	0.4	1	0.1	0.1	13	1.4	0.5	--	--	--
Moxostoma sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ICTIOBINAE sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW BULLHEAD	--	--	--	--	--	--	2	0.2	0.1	2	0.2	0.1	1	0.1	0.1
CHANNEL CATFISH	29	3.6	2.9	19	2.1	1.4	28	3.0	1.6	35	3.8	1.3	28	3.0	3.0
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLATHEAD CATFISH	2	0.3	0.2	1	0.1	0.1	3	0.3	0.2	3	0.3	0.1	2	0.2	0.2
TROUT-PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	1	0.1	0.1	--	--	--	--	--	--	--	--	--	--	--	--
BROOK SILVERSIDE	16	2.0	1.6	7	0.8	0.5	16	1.7	0.9	37	4.0	1.3	4	0.4	0.4
WHITE BASS	2	0.3	0.2	--	--	--	--	--	--	3	0.3	0.1	--	--	--
Morone sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	2	0.3	0.2	1	0.1	0.1	2	0.2	0.1	2	0.2	0.1	3	0.3	0.3
GREEN SUNFISH	160	20.1	16.0	106	11.5	7.9	161	17.4	9.1	503	54.4	18.2	201	21.8	21.2
PUMPKINSEED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	3	0.4	0.3	2	0.2	0.1	2	0.2	0.1	47	5.1	1.7	2	0.2	0.2
BLUEGILL	264	33.2	26.3	166	18.0	12.4	248	26.8	14.1	528	57.1	19.1	196	21.2	20.7
NORTHERN SUNFISH	1	0.1	0.1	13	1.4	1.0	6	0.6	0.3	26	2.8	0.9	5	0.5	0.5
Lepomis HYBRID	2	0.3	0.2	1	0.1	0.1	4	0.4	0.2	10	1.1	0.4	15	1.6	1.6
Lepomis sp.	--	--	--	1	0.1	0.1	--	--	--	--	--	--	--	--	--
SMALLMOUTH BASS	34	4.3	3.4	27	2.9	2.0	43	4.7	2.4	103	11.1	3.7	53	5.7	5.6
LARGEMOUTH BASS	37	4.6	3.7	57	6.2	4.3	46	5.0	2.6	108	11.7	3.9	58	6.3	6.1
Micropterus sp.	--	--	--	1	0.1	0.1	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
JOHNNY DARTER	1	0.1	0.1	--	--	--	--	--	--	1	0.1	0.0	--	--	--
BANDED DARTER	1	0.1	0.1	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	13	1.6	1.3	6	0.6	0.4	4	0.4	0.2	8	0.9	0.3	2	0.2	0.2
BLACKSIDE DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SLENDERHEAD DARTER	1	0.1	0.1	--	--	--	--	--	--	--	--	--	--	--	--
WALLEYE	--	--	--	1	0.1	0.1	--	--	--	2	0.2	0.1	--	--	--
FRESHWATER DRUM	8	1.0	0.8	13	1.4	1.0	22	2.4	1.2	49	5.3	1.8	18	1.9	1.9
TOTAL FISH	1,002	125.9	100.0	1,340	145.0	100.0	1,765	191.0	100.0	2,763	299.0	100.0	946	102.4	100.0
TOTAL SPECIES	32			32			30			33			25		

TABLE G-13 (cont.)

SPECIES	2005 #	2005 CPE	2005 %	2006 #	2006 CPE	2006 %	2007 #	2007 CPE	2007 %	2008 #	2008 CPE	2008 %	2011 #	2011 CPE	2011 %
LONGNOSE GAR	2	0.2	0.2	4	0.4	0.3	1	0.1	0.1	5	0.5	0.3	2	0.4	0.3
SKIPJACK HERRING	--	--	--	1	0.1	0.1	--	--	--	3	0.3	0.2	--	--	--
GIZZARD SHAD	449	48.9	36.5	423	47.6	28.4	518	56.1	27.6	470	50.9	28.8	156	33.8	26.8
GOLDEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	1	0.1	0.1	--	--	--
CENTRAL STONEROLLER	--	--	--	--	--	--	--	--	--	2	0.2	0.1	--	--	--
GOLDEN SHINER	2	0.2	0.2	--	--	--	1	0.1	0.1	4	0.4	0.2	2	0.4	0.3
PALLID SHINER	1	0.1	0.1	1	0.1	0.1	--	--	--	9	1.0	0.6	--	--	--
EMERALD SHINER	66	7.2	5.4	352	39.6	23.6	345	37.3	18.4	111	12.0	6.8	14	3.0	2.4
GHOST SHINER	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
STRIPED SHINER	4	0.4	0.3	--	--	--	5	0.5	0.3	15	1.6	0.9	6	1.3	1.0
SPOTTAIL SHINER	8	0.9	0.6	--	--	--	18	1.9	1.0	24	2.6	1.5	1	0.2	0.2
RED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	1	0.2	0.2
SPOTFIN SHINER	22	2.4	1.8	15	1.7	1.0	49	5.3	2.6	63	6.8	3.9	25	5.4	4.3
SAND SHINER	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
REDFIN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	111	12.1	9.0	53	6.0	3.6	256	27.7	13.7	104	11.3	6.4	15	3.2	2.6
BULLHEAD MINNOW	13	1.4	1.1	9	1.0	0.6	32	3.5	1.7	35	3.8	2.1	14	3.0	2.4
RIVER CARPSUCKER	3	0.3	0.2	1	0.1	0.1	1	0.1	0.1	4	0.4	0.2	--	--	--
QUILLBACK	3	0.3	0.2	3	0.3	0.2	3	0.3	0.2	--	--	--	--	--	--
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	7	0.8	0.6	11	1.2	0.7	11	1.2	0.6	7	0.8	0.4	8	1.7	1.4
BIGMOUTH BUFFALO	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK BUFFALO	--	--	--	--	--	--	--	--	--	--	--	--	1	0.2	0.2
SPOTTED SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	1	0.1	0.1	2	0.2	0.1	4	0.4	0.2	4	0.4	0.2	--	--	--
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	14	1.5	1.1	51	5.7	3.4	60	6.5	3.2	73	7.9	4.5	13	2.8	2.2
SHORTHEAD REDHORSE	--	--	--	1	0.1	0.1	3	0.3	0.2	7	0.8	0.4	6	1.3	1.0
Moxostoma sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ICTIOBINAE sp.	--	--	--	--	--	--	--	--	--	1	0.1	0.1	--	--	--
YELLOW BULLHEAD	--	--	--	--	--	--	1	0.1	0.1	--	--	--	1	0.2	0.2
CHANNEL CATFISH	28	3.0	2.3	20	2.2	1.3	16	1.7	0.9	16	1.7	1.0	11	2.4	1.9
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLATHEAD CATFISH	4	0.4	0.3	5	0.6	0.3	4	0.4	0.2	1	0.1	0.1	1	0.2	0.2
TROUT-PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	3	0.3	0.2	3	0.3	0.2	2	0.4	0.3
BROOK SILVERSIDE	60	6.5	4.9	23	2.6	1.5	15	1.6	0.8	59	6.4	3.6	8	1.7	1.4
WHITE BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morone sp.	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
ROCK BASS	4	0.4	0.3	5	0.6	0.3	2	0.2	0.1	10	1.1	0.6	2	0.4	0.3
GREEN SUNFISH	104	11.3	8.4	59	6.6	4.0	152	16.5	8.1	102	11.0	6.2	44	9.5	7.5
PUMPKINSEED	--	--	--	2	0.2	0.1	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	--	--	--	3	0.3	0.2	--	--	--	5	0.5	0.3	2	0.4	0.3
BLUEGILL	171	18.6	13.9	293	33.0	19.7	187	20.2	10.0	267	28.9	16.4	130	28.1	22.3
NORTHERN SUNFISH	8	0.9	0.6	16	1.8	1.1	12	1.3	0.6	42	4.5	2.6	28	6.1	4.8
Lepomis HYBRID	1	0.1	0.1	4	0.4	0.3	5	0.5	0.3	4	0.4	0.2	1	0.2	0.2
Lepomis sp.	--	--	--	1	0.1	0.1	1	0.1	0.1	6	0.6	0.4	1	0.2	0.2
SMALLMOUTH BASS	28	3.0	2.3	32	3.6	2.1	36	3.9	1.9	68	7.4	4.2	14	3.0	2.4
LARGEMOUTH BASS	103	11.2	8.4	83	9.3	5.6	103	11.1	5.5	85	9.2	5.2	68	14.7	11.7
Micropterus sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	1	0.1	0.1	--	--	--	--	--	--	--	--	--	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	7	0.8	0.6	5	0.6	0.3	15	1.6	0.8	15	1.6	0.9	2	0.4	0.3
BLACKSIDE DARTER	--	--	--	--	--	--	1	0.1	0.1	--	--	--	--	--	--
SLENDERHEAD DARTER	--	--	--	--	--	--	--	--	--	--	--	--	1	0.2	0.2
WALLEYE	--	--	--	--	--	--	--	--	--	1	0.1	0.1	--	--	--
FRESHWATER DRUM	6	0.7	0.5	13	1.5	0.9	12	1.3	0.6	7	0.8	0.4	3	0.6	0.5
TOTAL FISH	1,231	133.9	100.0	1,491	167.7	100.0	1,875	202.9	100.0	1,633	176.7	100.0	583	126.2	100.0
TOTAL SPECIES	27			27			32			32			29		

TABLE G-13 (cont.)

SPECIES	2013 #	2013 CPE	2013 %	2014 #	2014 CPE	2014 %
LONGNOSE GAR	--	--	--	11	1.2	0.4
SKIPJACK HERRING	--	--	--	--	--	--
GIZZARD SHAD	126	27.3	19.3	932	100.9	36.9
GOLDEYE	--	--	--	--	--	--
GRASS PICKEREL	--	--	--	2	0.2	0.1
NORTHERN PIKE	--	--	--	--	--	--
CENTRAL STONEROLLER	--	--	--	4	0.4	0.2
GOLDEN SHINER	--	--	--	1	0.1	0.0
PALLID SHINER	1	0.2	0.2	5	0.5	0.2
EMERALD SHINER	6	1.3	0.9	44	4.8	1.7
GHOST SHINER	--	--	--	--	--	--
STRIPED SHINER	1	0.2	0.2	1	0.1	0.0
SPOTTAIL SHINER	7	1.5	1.1	152	16.5	6.0
RED SHINER	--	--	--	1	0.1	0.0
ROSYFACE SHINER	3	0.6	0.5	3	0.3	0.1
SPOTFIN SHINER	59	12.8	9.0	132	14.3	5.2
SAND SHINER	--	--	--	1	0.1	0.0
REDFIN SHINER	--	--	--	2	0.2	0.1
MIMIC SHINER	--	--	--	10	1.1	0.4
BLUNTNOSE MINNOW	33	7.1	5.1	210	22.7	8.3
BULLHEAD MINNOW	5	1.1	0.8	61	6.6	2.4
RIVER CARPSUCKER	2	0.4	0.3	2	0.2	0.1
QUILLBACK	6	1.3	0.9	1	0.1	0.0
WHITE SUCKER	--	--	--	--	--	--
SMALLMOUTH BUFFALO	4	0.9	0.6	11	1.2	0.4
BIGMOUTH BUFFALO	--	--	--	2	0.2	0.1
BLACK BUFFALO	--	--	--	1	0.1	0.0
SPOTTED SUCKER	--	--	--	1	0.1	0.0
SILVER REDHORSE	1	0.2	0.2	54	5.8	2.1
RIVER REDHORSE	--	--	--	--	--	--
BLACK REDHORSE	--	--	--	--	--	--
GOLDEN REDHORSE	4	0.9	0.6	13	1.4	0.5
SHORTHEAD REDHORSE	9	1.9	1.4	76	8.2	3.0
Moxostoma sp.	--	--	--	38	4.1	1.5
ICTIOBINAE sp.	--	--	--	--	--	--
YELLOW BULLHEAD	--	--	--	1	0.1	0.0
CHANNEL CATFISH	10	2.2	1.5	15	1.6	0.6
TADPOLE MADTOM	--	--	--	--	--	--
FLATHEAD CATFISH	7	1.5	1.1	4	0.4	0.2
TROUT-PERCH	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	1	0.2	0.2	12	1.3	0.5
BROOK SILVERSIDE	9	1.9	1.4	26	2.8	1.0
WHITE BASS	--	--	--	--	--	--
Morone sp.	--	--	--	--	--	--
ROCK BASS	2	0.4	0.3	9	1.0	0.4
GREEN SUNFISH	37	8.0	5.7	53	5.7	2.1
PUMPKINSEED	5	1.1	0.8	4	0.4	0.2
ORANGESPOTTED SUNFISH	1	0.2	0.2	1	0.1	0.0
BLUEGILL	176	38.1	27.0	107	11.6	4.2
NORTHERN SUNFISH	31	6.7	4.8	91	9.8	3.6
Lepomis HYBRID	7	1.5	1.1	3	0.3	0.1
Lepomis sp.	--	--	--	--	--	--
SMALLMOUTH BASS	18	3.9	2.8	52	5.6	2.1
LARGEMOUTH BASS	63	13.6	9.7	265	28.7	10.5
Micropterus sp.	--	--	--	--	--	--
BLACK CRAPPIE	--	--	--	2	0.2	0.1
JOHNNY DARTER	--	--	--	4	0.4	0.2
BANDED DARTER	--	--	--	--	--	--
YELLOW PERCH	--	--	--	3	0.3	0.1
LOGPERCH	12	2.6	1.8	81	8.8	3.2
BLACKSIDE DARTER	--	--	--	--	--	--
SLENDERHEAD DARTER	--	--	--	--	--	--
WALLEYE	--	--	--	6	0.6	0.2
FRESHWATER DRUM	6	1.3	0.9	15	1.6	0.6
TOTAL FISH	652	141.1	100.0	2,525	273.3	100.0
TOTAL SPECIES	29			45		

NOTE: CPE=NUMBER PER KILOMETER.
0.0 DENOTES VALUES LESS THAN 0.05.

Table G-14. Results of Statistical Comparisons Among Years for Electrofishing Data Collected From Dresden Pool for the Period of 15 June through August, 1994, 1995, 1997-2008, 2011, 2013, and 2014.

Catch Parameter	2014	2013	2011	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1995	1994	Significant Difference[a]	F Value	P Value
CPEs-all native fish[b]	273.3 A	141.1 AB	126.2 AB	176.7 AB	202.9 A	167.7 AB	133.9 AB	102.4 AB	299.0 A	191.0 AB	145.0 AB	125.9 AB	151.7 AB	170.9 AB	143.2 AB	76.6 BC	47.8 C[c]	Yes	4.22	<0.01
IWBmod[d]	7.24 AB	6.98 AB	6.92 ABCD	7.14 AB	6.63 ABCD	6.76 ABCD	6.46 ABCD	6.65 ABCD	7.45 A	7.00 ABC	6.36 BCD	6.88 ABC	6.09 CD	6.51 ABCD	6.83 ABC	6.31 BCD	5.30 D	Yes	4.65	<0.01
Native Species Richness[d]	15.3 A	10.7 ABC	10.2 BC	12.6 AB	11.6 AB	10.2 BC	9.9 BC	9.6 BC	12.6 AB	10.8 ABC	9.7 BC	11.0 ABC	8.4 BC	10.2 ABC	10.6 ABC	9.2 BC	7.1 C	Yes	4.26	<0.01

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Log transformed data used for statistical analyses because they are normally distributed.
(c) Results of Tukey's Studentized Range Test; values with the same letters are not significantly different (alpha=0.05).
(d) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.

TABLE G-15. COMPARISONS OF MEAN RELATIVE WEIGHTS AMONG SAMPLING PERIODS FOR ALL NATIVE SPECIES COLLECTED FROM DRESDEN POOL, 2014.

SPECIES	MAY/JUNE		JULY/AUGUST		SEPTEMBER		PERIODS COMBINED	
	N	MEAN	N	MEAN	N	MEAN	N	MEAN
LONGNOSE GAR	2	72	5	79	--	--	7	77
GIZZARD SHAD	--	--	--	--	2	87	2	87
RIVER CARPSUCKER	1	99	3	97	--	--	4	97
SMALLMOUTH BUFFALO	7	86	10	90	5	86	22	88
BIGMOUTH BUFFALO	--	--	2	106	--	--	2	106
SHORTHEAD REDHORSE	7	93	--	--	12	91	19	92
YELLOW BULLHEAD	1	105	1	79	1	108	3	97
CHANNEL CATFISH	25	100	20	98	13	102	58	100
FLATHEAD CATFISH	1	90	7	93	--	--	8	92
YELLOW BASS	--	--	--	--	1	103	1	103
ROCK BASS	2	103	8	104	6	108	16	105
GREEN SUNFISH	7	121	34	119	31	118	72	119
PUMPKINSEED	1	114	4	118	8	118	13	118
BLUEGILL	55	112	59	110	36	115	150	112
SMALLMOUTH BASS	23	95	36	95	22	95	81	95
LARGEMOUTH BASS	17	100	28	103	29	115	74	107
WHITE CRAPPIE	1	78	--	--	1	105	2	92
BLACK CRAPPIE	--	--	--	--	1	90	1	90
YELLOW PERCH	--	--	--	--	1	96	1	96
WALLEYE	1	78	7	99	10	90	18	93
FRESHWATER DRUM	25	109	18	98	5	107	48	105
SPECIES COMBINED	176	104	242	104	184	107	602	105

Table G-16. Statistical Comparisons of Mean Relative Weights Among Sampling Periods for Selected Native Species Collected from Dresden Pool, 2014.

Species	Composite Mean	May/June	July/August	September	Significant Difference[a]	F Value	P Value
Channel Catfish	100	100	98	102	No	0.22	0.80
Green Sunfish	119	++[b]	119	118	No	0.10	0.76
Bluegill	112	112	110	115	No	1.46	0.24
Smallmouth Bass[c]	95	95	95	95	No	0.01	0.99
Largemouth bass[c]	107	100 B	103 B	115 A[d]	Yes	7.94	<0.01
Freshwater Drum	105	109	98	++	Yes	10.66	<0.01

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Small sample size precluded analysis.
(c) Log transformed data used for statistical analyses because they are normally distributed.
(d) Results of Tukey's Studentized Range Test; values with the same letters are not significantly different (alpha=0.05).

TABLE G-17. ANNUAL MEAN RELATIVE WEIGHTS FOR ALL NATIVE SPECIES COLLECTED FROM DRESDEN POOL DURING THE PERIOD 15 JUNE-AUGUST, 1994, 1995, 1997-2008, 2011, 2013, AND 2014.

SPECIES	1994		1995		1997		1998		1999		2000		2001		2002		2003	
	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN
LONGNOSE GAR	5	79	1	62	--	--	--	--	--	--	--	--	2	86	--	--	2	69
GIZZARD SHAD	--	--	58	112	124	108	80	101	279	104	125	90	138	102	134	114	295	87
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RIVER CARPSUCKER	6	88	6	94	3	100	1	79	3	102	--	--	4	86	3	103	--	--
WHITE SUCKER	--	--	1	91	--	--	1	86	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	7	88	5	90	8	92	8	88	5	87	7	86	10	87	12	90	10	88
BIGMOUTH BUFFALO	--	--	--	--	3	97	--	--	--	--	--	--	--	--	--	--	--	--
SHORTHEAD REDHORSE	2	98	26	102	5	94	6	83	2	103	3	80	10	98	3	97	12	89
YELLOW BULLHEAD	1	72	--	--	--	--	1	89	--	--	--	--	1	93	2	95	2	87
CHANNEL CATFISH	18	119	18	103	20	99	4	98	3	100	29	97	18	100	29	103	46	100
FLATHEAD CATFISH	--	--	--	--	2	108	1	123	1	95	1	92	5	93	8	100	6	99
WHITE BASS	1	81	1	109	--	--	--	--	--	--	2	96	--	--	--	--	1	99
ROCK BASS	1	103	1	118	2	96	--	--	2	92	1	115	3	93	4	97	4	96
GREEN SUNFISH	12	110	20	114	43	124	97	117	124	122	143	110	119	113	128	123	290	113
PUMPKINSEED	--	--	--	--	--	--	--	--	--	--	1	125	--	--	--	--	--	--
WARMOUTH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	82
BLUEGILL	2	99	14	113	67	116	79	112	49	110	172	102	82	111	138	113	277	104
SMALLMOUTH BASS	13	93	11	95	33	91	29	88	15	90	27	86	15	95	36	104	87	90
LARGEMOUTH BASS	4	100	9	104	21	105	15	100	22	99	26	97	35	108	53	104	67	99
WHITE CRAPPIE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	91	--	--
BLACK CRAPPIE	1	106	--	--	1	129	--	--	--	--	--	--	--	--	1	111	--	--
WALLEYE	--	--	--	--	--	--	--	--	--	--	--	--	1	86	--	--	--	--
FRESHWATER DRUM	40	114	18	109	22	114	10	115	--	--	8	113	19	108	24	104	36	103
SPECIES COMBINED	113	106	189	107	354	109	332	107	505	108	545	100	462	106	577	112	1136	100

SPECIES	2004		2005		2006		2007		2008		2011		2013		2014		YEARS COMBINED	
	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN
LONGNOSE GAR	--	--	4	74	2	80	1	95	3	87	1	102	--	--	5	79	26	80
GIZZARD SHAD	266	88	139	100	279	96	97	97	138	100	118	101	137	85	--	--	2407	97
NORTHERN PIKE	--	--	--	--	--	--	--	--	2	112	--	--	1	89	--	--	3	104
RIVER CARPSUCKER	1	116	3	90	1	92	1	94	4	98	1	97	2	92	3	97	42	94
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	89
SMALLMOUTH BUFFALO	10	82	7	85	10	84	11	87	8	85	9	84	4	91	10	90	141	87
BIGMOUTH BUFFALO	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	106	5	101
SHORTHEAD REDHORSE	--	--	--	--	1	87	--	--	4	93	1	104	3	93	--	--	78	95
YELLOW BULLHEAD	1	79	--	--	--	--	1	101	--	--	1	105	--	--	1	79	11	89
CHANNEL CATFISH	30	98	27	101	21	106	20	99	23	108	13	103	11	99	20	98	350	102
FLATHEAD CATFISH	2	95	5	103	5	101	5	92	3	97	2	100	7	87	7	93	60	97
WHITE BASS	--	--	--	--	--	--	--	--	1	95	--	--	--	--	--	--	6	96
ROCK BASS	4	92	2	109	6	99	2	99	9	100	2	104	1	110	8	104	52	100
GREEN SUNFISH	146	108	94	117	51	119	139	117	95	115	39	125	34	117	34	119	1608	115
PUMPKINSEED	--	--	--	--	4	108	--	--	--	--	1	129	6	128	4	118	16	121
WARMOUTH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	82
BLUEGILL	184	100	64	111	150	116	96	108	142	108	111	115	160	109	59	110	1846	108
SMALLMOUTH BASS	51	89	21	98	34	96	27	95	42	97	9	90	12	82	36	95	498	93
LARGEMOUTH BASS	45	95	47	108	78	103	47	106	67	104	49	107	49	97	28	103	662	103
WHITE CRAPPIE	--	--	--	--	--	--	--	--	--	--	1	114	--	--	--	--	3	98
BLACK CRAPPIE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	116
WALLEYE	--	--	--	--	--	--	--	--	1	90	--	--	--	--	7	99	9	97
FRESHWATER DRUM	22	102	10	109	19	98	15	102	26	106	6	98	7	98	18	98	300	106
SPECIES COMBINED	762	96	423	106	661	104	462	106	568	105	364	108	434	99	242	104	8129	104

Table G-18. Inter-Year Comparisons of Mean Relative Weight Values for Selected Native Species Collected from Dresden Pool, 15 June through August 1994, 1995, 1997-2008, 2011, 2013, and 2014.

Species	Composite Mean	2014	2013	2011	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1998	1997	1995	1994	Significant Difference[a]	F Value	P Value
Smallmouth Buffalo	87	90	++[b]	++	++	87	84	++	82	88	90	87	++	++	++	++	++	++	No	1.01	0.43
Channel Catfish[c]	102	98	99	103	108	99	106	101	98	100	103	100	97	++	++	99	103	119	Yes	2.55	<0.01
		B	AB	AB	AB	AB	AB	AB	B	AB	AB	B	B			AB	AB	A[d]			
Green Sunfish[c]	115	119	117	125	115	117	119	117	108	113	123	113	110	122	117	124	114	110	Yes	8.72	<0.01
		ABCD	ABCDE	A	ABCDE	ABCDE	ABCDE	ABCDE	E	BCDE	AB	ABCDE	DE	ABC	ABCDE	ABC	ABCDE	CDE			
Bluegill[c]	108	110	109	115	108	108	116	111	100	104	113	111	102	110	112	116	113	++	Yes	14.13	<0.01
		ABC	ABC	A	ABCD	ABCD	A	AB	D	BCD	AB	AB	CD	AB	AB	A	A				
Smallmouth Bass[c]	93	95	82	++	97	95	96	98	89	90	104	95	86	90	88	91	95	93	Yes	4.63	<0.01
		ABC	D		AB	ABC	ABC	ABC	ABCD	ABCD	A	ABC	CD	ABCD	BCD	ABCD	ABC	ABC			
Largemouth Bass[c]	103	103	97	107	104	106	103	108	95	99	104	108	97	99	100	105	++	++	Yes	6.21	<0.01
		ABCD	CD	AB	ABC	AB	ABCD	AB	D	BCD	ABCD	A	CD	BCD	ABCD	ABCD					
Freshwater Drum[c]	106	98	++	++	106	102	98	109	102	103	104	108	++	--	115	114	109	114	Yes	3.80	<0.01
		B			AB	AB	B	AB	AB	AB	AB	AB			A	A	AB	A			

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Small sample sizes precluded interyear analyses.
(c) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.
(d) Results of Tukey's Studentized Range Test; values with the same letters are not significantly different (alpha=0.05).

TABLE G-19. NUMBER AND PERCENT OF FISH WITH DELT ANOMALIES IN DRESDEN POOL, 2014.

SPECIES	DELT #	EXAM #	DELT %
LONGNOSE GAR	1	15	6.7
GAR sp.	--	1	--
SKIPJACK HERRING	--	1	--
GIZZARD SHAD	2	1807	0.1
THREADFIN SHAD	--	707	--
GRASS PICKEREL	--	3	--
CENTRAL STONEROLLER	--	6	--
GOLDFISH	--	4	--
GRASS CARP	--	1	--
COMMON CARP	14	69	20.3
CARP X GOLDFISH HYBRID	--	2	--
SILVER CARP	--	1	--
GOLDEN SHINER	--	5	--
PALLID SHINER	--	97	--
EMERALD SHINER	1	108	0.9
GHOST SHINER	--	3	--
STRIPED SHINER	--	4	--
SPOTTAIL SHINER	--	199	--
RED SHINER	1	1	100.0
ROSYFACE SHINER	--	3	--
SPOTFIN SHINER	--	378	--
SAND SHINER	--	18	--
REDFIN SHINER	--	5	--
MIMIC SHINER	--	68	--
BLUNTNOSE MINNOW	1	415	0.2
FATHEAD MINNOW	--	1	--
BULLHEAD MINNOW	--	435	--
RIVER CARPSUCKER	--	4	--
QUILLBACK	1	4	25.0
SMALLMOUTH BUFFALO	8	27	29.6
BIGMOUTH BUFFALO	2	2	100.0
BLACK BUFFALO	--	1	--
Ictiobus sp.	--	1	--
SPOTTED SUCKER	--	1	--
SILVER REDHORSE	--	68	--
GOLDEN REDHORSE	4	44	9.1
SHORTHEAD REDHORSE	1	121	0.8
Moxostoma sp.	1	41	2.4
YELLOW BULLHEAD	--	3	--
CHANNEL CATFISH	38	56	67.9
FLATHEAD CATFISH	1	8	12.5
TROUT-PERCH	--	1	--
BANDED KILLIFISH	--	4	--
BLACKSTRIPE TOPMINNOW	--	18	--
BROOK SILVERSIDE	--	149	--
WHITE PERCH	--	7	--
YELLOW BASS	--	1	--
ROCK BASS	--	22	--
GREEN SUNFISH	4	94	4.3
PUMPKINSEED	--	10	--
ORANGESPOTTED SUNFISH	--	32	--
BLUEGILL	6	302	2.0
NORTHERN SUNFISH	4	205	2.0
Lepomis HYBRID	--	6	--
Lepomis sp.	--	3	--
SMALLMOUTH BASS	1	129	0.8
LARGEMOUTH BASS	13	479	2.7
WHITE CRAPPIE	--	1	--
BLACK CRAPPIE	--	3	--
JOHNNY DARTER	--	9	--
YELLOW PERCH	--	5	--
LOGPERCH	--	122	--
WALLEYE	1	19	5.3
FRESHWATER DRUM	18	53	34.0
ROUND GOBY	--	19	--
TOTAL FISH	123	6431	1.9

NOTE: DELT# = Number of fish with DELT anomalies;
EXAM# = Number of fish examined for DELT anomalies;
DELT% = Percentage of examined fish with DELT anomalies.
EXCLUDES SEINING DATA.

TABLE G-20. NUMBER OF FISH WITH EROSION IN DRESDEN POOL AND THE PERCENTAGE THAT EROSION CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, 2014.

SPECIES	TOTAL WITH EROSION	TOTAL WITH DELT ANOMALIES	PERCENT WITH EROSION
LONGNOSE GAR	--	1	--
GAR sp.	--	--	--
SKIPJACK HERRING	--	--	--
GIZZARD SHAD	--	2	--
THREADFIN SHAD	--	--	--
GRASS PICKEREL	--	--	--
CENTRAL STONEROLLER	--	--	--
GOLDFISH	--	--	--
GRASS CARP	--	--	--
COMMON CARP	13	14	92.9
CARP X GOLDFISH HYBRID	--	--	--
SILVER CARP	--	--	--
GOLDEN SHINER	--	--	--
PALLID SHINER	--	--	--
EMERALD SHINER	--	1	--
GHOST SHINER	--	--	--
STRIPED SHINER	--	--	--
SPOTTAIL SHINER	--	--	--
RED SHINER	1	1	100.0
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
SAND SHINER	--	--	--
REDFIN SHINER	--	--	--
MIMIC SHINER	--	--	--
BLUNTNOSE MINNOW	--	1	--
FATHEAD MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
QUILLBACK	1	1	100.0
SMALLMOUTH BUFFALO	7	8	87.5
BIGMOUTH BUFFALO	1	2	50.0
BLACK BUFFALO	--	--	--
Ictiobus sp.	--	--	--
SPOTTED SUCKER	--	--	--
SILVER REDHORSE	--	--	--
GOLDEN REDHORSE	4	4	100.0
SHORTHEAD REDHORSE	1	1	100.0
Moxostoma sp.	--	1	--
YELLOW BULLHEAD	--	--	--
CHANNEL CATFISH	36	38	94.7
FLATHEAD CATFISH	1	1	100.0
TROUT-PERCH	--	--	--
BANDED KILLIFISH	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--
BROOK SILVERSIDE	--	--	--
WHITE PERCH	--	--	--
YELLOW BASS	--	--	--
ROCK BASS	--	--	--
GREEN SUNFISH	4	4	100.0
PUMPKINSEED	--	--	--
ORANGESPOTTED SUNFISH	--	--	--
BLUEGILL	5	6	83.3
NORTHERN SUNFISH	4	4	100.0
Lepomis HYBRID	--	--	--
Lepomis sp.	--	--	--
SMALLMOUTH BASS	1	1	100.0
LARGEMOUTH BASS	12	13	92.3
WHITE CRAPPIE	--	--	--
BLACK CRAPPIE	--	--	--
JOHNNY DARTER	--	--	--
YELLOW PERCH	--	--	--
LOGPERCH	--	--	--
WALLEYE	1	1	100.0
FRESHWATER DRUM	18	18	100.0
ROUND GOBY	--	--	--
TOTAL FISH	110	123	89.4

NOTE: EXCLUDES SEINING DATA.

TABLE G-21. COMPARISONS OF DELT ANOMALIES AMONG SAMPLING PERIODS WITHIN DRESDEN POOL, 2014.

	MAY/JUNE			JULY/AUGUST			SEPTEMBER		
SPECIES	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %
LONGNOSE GAR	1	3	33.3	--	12	--	--	--	--
GAR sp.	--	1	--	--	--	--	--	--	--
SKIPJACK HERRING	--	--	--	--	--	--	--	1	--
GIZZARD SHAD	--	2	--	2	1395	0.1	--	410	--
THREADFIN SHAD	--	--	--	--	180	--	--	527	--
GRASS PICKEREL	--	--	--	--	2	--	--	1	--
CENTRAL STONEROLLER	--	--	--	--	5	--	--	1	--
GOLDFISH	--	--	--	--	1	--	--	3	--
GRASS CARP	--	1	--	--	--	--	--	--	--
COMMON CARP	7	8	87.5	5	29	17.2	2	32	6.3
CARP X GOLDFISH HYBRID	--	--	--	--	1	--	--	1	--
SILVER CARP	--	--	--	--	--	--	--	1	--
GOLDEN SHINER	--	2	--	--	1	--	--	2	--
PALLID SHINER	--	14	--	--	41	--	--	42	--
EMERALD SHINER	1	6	16.7	--	52	--	--	50	--
GHOST SHINER	--	1	--	--	--	--	--	2	--
STRIPED SHINER	--	1	--	--	2	--	--	1	--
SPOTTAIL SHINER	--	--	--	--	159	--	--	40	--
RED SHINER	--	--	--	1	1	100.0	--	--	--
ROSYFACE SHINER	--	--	--	--	3	--	--	--	--
SPOTFIN SHINER	--	63	--	--	254	--	--	61	--
SAND SHINER	--	7	--	--	10	--	--	1	--
REDFIN SHINER	--	1	--	--	4	--	--	--	--
MIMIC SHINER	--	9	--	--	10	--	--	49	--
BLUNTNOSE MINNOW	1	51	2.0	--	293	--	--	71	--
FATHEAD MINNOW	--	--	--	--	1	--	--	--	--
BULLHEAD MINNOW	--	85	--	--	182	--	--	168	--
RIVER CARPSUCKER	--	1	--	--	3	--	--	--	--
QUILLBACK	1	1	100.0	--	1	--	--	2	--
SMALLMOUTH BUFFALO	1	7	14.3	5	12	41.7	2	8	25.0
BIGMOUTH BUFFALO	--	--	--	2	2	100.0	--	--	--
BLACK BUFFALO	--	--	--	--	1	--	--	--	--
Ictiobus sp.	--	--	--	--	1	--	--	--	--
SPOTTED SUCKER	--	--	--	--	1	--	--	--	--
SILVER REDHORSE	--	2	--	--	56	--	--	10	--
GOLDEN REDHORSE	2	9	22.2	1	17	5.9	1	18	5.6
SHORTHEAD REDHORSE	1	4	25.0	--	79	--	--	38	--
Moxostoma sp.	--	--	--	1	39	2.6	--	2	--
YELLOW BULLHEAD	--	1	--	--	1	--	--	1	--
CHANNEL CATFISH	17	25	68.0	15	20	75.0	6	11	54.5
FLATHEAD CATFISH	--	1	--	1	7	14.3	--	--	--
TROUT-PERCH	--	--	--	--	--	--	--	1	--
BANDED KILLIFISH	--	--	--	--	--	--	--	4	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	12	--	--	6	--
BROOK SILVERSIDE	--	17	--	--	35	--	--	97	--
WHITE PERCH	--	--	--	--	4	--	--	3	--
YELLOW BASS	--	--	--	--	--	--	--	1	--
ROCK BASS	--	2	--	--	11	--	--	9	--
GREEN SUNFISH	--	7	--	3	53	5.7	1	34	2.9
PUMPKINSEED	--	1	--	--	4	--	--	5	--
ORANGESPOTTED SUNFISH	--	1	--	--	7	--	--	24	--
BLUEGILL	5	78	6.4	1	127	0.8	--	97	--
NORTHERN SUNFISH	4	53	7.5	--	121	--	--	31	--
Lepomis HYBRID	--	2	--	--	3	--	--	1	--
Lepomis sp.	--	--	--	--	1	--	--	2	--
SMALLMOUTH BASS	1	45	2.2	--	56	--	--	28	--
LARGEMOUTH BASS	4	18	22.2	5	288	1.7	4	173	2.3
WHITE CRAPPIE	--	--	--	--	--	--	--	1	--
BLACK CRAPPIE	--	--	--	--	2	--	--	1	--
JOHNNY DARTER	--	--	--	--	6	--	--	3	--
YELLOW PERCH	--	--	--	--	4	--	--	1	--
LOGPERCH	--	--	--	--	95	--	--	27	--
WALLEYE	1	1	100.0	--	8	--	--	10	--
FRESHWATER DRUM	11	30	36.7	5	18	27.8	2	5	40.0
ROUND GOBY	--	1	--	--	15	--	--	3	--
TOTAL FISH	58	562	10.3	47	3748	1.3	18	2121	0.8

NOTE: DELT# = Number of fish with DELT anomalies;
EXAM# = Number of fish examined for DELT anomalies;
DELT% = Percentage of examined fish with DELT anomalies.
EXCLUDES SEINING DATA.

TABLE G-22. INTER-YEAR COMPARISONS OF DELT ANOMALIES WITHIN DRESDEN POOL FOR THE PERIOD OF 15 JUNE THROUGH AUGUST, 1994, 1995, 1997-2008, 2011, 2013, AND 2014.

	1994			1995			1997			1998			1999			2000		
SPECIES	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %
LONGNOSE GAR	--	6	--	--	1	--	--	--	--	--	--	--	--	1	--	--	3	--
GAR sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	--	3	--	--	--	--	--	1	--	--	6	--	--	2	--	--	--	--
GIZZARD SHAD	--	61	--	3	128	2.3	3	304	1.0	--	391	--	--	452	--	1	210	0.5
THREADFIN SHAD	--	--	--	--	--	--	--	--	--	--	--	--	--	27	--	--	2	--
GOLDEYE	--	1	--	--	1	--	--	--	--	--	--	--	--	--	--	--	1	--
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CENTRAL STONEROLLER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
GOLDFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COMMON CARP	2	39	5.1	12	42	28.6	7	29	24.1	--	20	--	5	15	33.3	3	15	20.0
CARP X GOLDFISH HYBRID	--	17	--	4	37	10.8	1	8	12.5	2	2	100.0	--	--	--	1	3	33.3
GOLDEN SHINER	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
PALLID SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	--	9	--	1	3	33.3	--	310	--	--	337	--	--	178	--	--	24	--
GHOST SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
STRIPED SHINER	--	1	--	--	--	--	--	7	--	--	1	--	--	--	--	--	--	--
SPOTTAIL SHINER	--	6	--	--	9	--	--	1	--	--	5	--	--	--	--	--	1	--
RED SHINER	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	--	1	--	--	4	--	--	17	--	--	5	--	--	16	--	1	38	2.6
SAND SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
REDFIN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	--	16	--	--	12	--	--	19	--	--	49	--	--	39	--	--	50	--
FATHEAD MINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BULLHEAD MINNOW	--	2	--	--	9	--	--	34	--	--	19	--	--	29	--	--	47	--
RIVER CARPSUCKER	--	6	--	1	6	16.7	--	3	--	--	1	--	1	3	33.3	--	--	--
QUILLBACK	--	1	--	--	9	--	1	1	100.0	2	4	50.0	--	1	--	1	3	33.3
WHITE SUCKER	--	--	--	--	1	--	--	--	--	--	1	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	--	7	--	1	5	20.0	3	9	33.3	3	10	30.0	2	8	25.0	4	8	50.0
BIGMOUTH BUFFALO	--	--	--	--	--	--	1	3	33.3	--	--	--	--	--	--	--	--	--
BLACK BUFFALO	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Ictiobus sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTTED SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	2	6	33.3	4	11	36.4	--	--	--	--	1	--	--	2	--	--	--	--
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
BLACK REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	1	4	25.0	19	54	35.2	11	30	36.7	6	31	19.4	1	9	11.1	8	34	23.5
SHORTHEAD REDHORSE	1	6	16.7	12	40	30.0	2	5	40.0	1	8	12.5	2	2	100.0	1	3	33.3
Moxostoma sp.	--	1	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
ICTIOBINAE sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW BULLHEAD	--	1	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
CHANNEL CATFISH	7	18	38.9	10	18	55.6	16	20	80.0	2	4	50.0	1	3	33.3	13	29	44.8
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
FLATHEAD CATFISH	--	--	--	--	--	--	--	2	--	1	1	100.0	--	1	--	--	2	--
TROUT-PERCH	--	--	--	--	1	--	--	4	--	--	3	--	--	1	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
BROOK SILVERSIDE	--	1	--	--	--	--	--	1	--	--	3	--	--	5	--	--	16	--
WHITE PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WHITE BASS	--	1	--	--	2	--	--	--	--	--	--	--	--	--	--	--	2	--
Morone sp.	--	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	1	--	--	1	--	--	4	--	--	--	--	--	2	--	--	2	--
GREEN SUNFISH	--	12	--	--	20	--	--	46	--	5	114	4.4	6	148	4.1	8	160	5.0
PUMPKINSEED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WARMOUTH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	--	4	--	--	7	--	--	3	--	--	3	--	--	--	--	--	3	--
BLUEGILL	--	7	--	1	21	4.8	1	95	1.1	2	132	1.5	1	186	0.5	8	264	3.0
REDEAR SUNFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN SUNFISH	--	1	--	--	--	--	--	11	--	--	2	--	--	4	--	--	1	--
Lepomis HYBRID	--	--	--	--	--	--	--	--	--	1	3	33.3	--	3	--	--	2	--
Lepomis sp.	--	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BASS	--	19	--	1	29	3.4	1	46	2.2	--	42	--	--	26	--	--	34	--
LARGEMOUTH BASS	--	13	--	--	14	--	1	30	3.3	1	27	3.7	--	47	--	1	37	2.7
Micropterus sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WHITE CRAPPIE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	--	1	--	--	1	--	1	1	100.0	--	--	--	--	--	--	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
YELLOW PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	--	2	--	--	2	--	--	4	--	--	17	--	--	5	--	--	13	--
BLACKSIDE DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SLENDERHEAD DARTER	--	--	--	--	--	--	--	1	--	--	2	--	--	--	--	--	1	--
WALLEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SAUGEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	1	50	2.0	--	18	--	4	23	17.4	1	13	7.7	--	1	--	2	8	25.0
ROUND GOBY	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL FISH	14	338	4.1	69	508	13.6	53	1074	4.9	27	1259	2.1	19	1216	1.6	52	1022	5.1

TABLE G-22 (cont.)

SPECIES	2001 DELT #	2001 EXAM #	2001 DELT %	2002 DELT #	2002 EXAM #	2002 DELT %	2003 DELT #	2003 EXAM #	2003 DELT %	2004 DELT #	2004 EXAM #	2004 DELT %	2005 DELT #	2005 EXAM #	2005 DELT %	2006 DELT #	2006 EXAM #	2006 DELT %
LONGNOSE GAR	--	3	--	--	--	--	--	2	--	--	--	--	--	4	--	1	4	25.0
GAR sp.	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	--	4	--	--	2	--	--	--	--	--	--	--	--	--	--	--	1	--
GIZZARD SHAD	3	467	0.6	3	443	0.7	4	646	0.6	1	299	0.3	--	536	--	--	569	--
THREADFIN SHAD	--	88	--	--	52	--	--	24	--	--	1	--	--	--	--	--	8	--
GOLDEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CENTRAL STONEROLLER	--	4	--	--	--	--	--	--	--	--	2	--	--	--	--	--	--	--
GOLDFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
COMMON CARP	3	27	11.1	8	18	44.4	8	24	33.3	1	10	10.0	--	17	--	1	17	5.9
CARP X GOLDFISH HYBRID	--	--	--	--	2	--	--	--	--	--	1	--	--	--	--	--	--	--
GOLDEN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	1	2	50.0	--	--	--
PALLID SHINER	--	12	--	--	10	--	--	11	--	--	1	--	--	6	--	--	3	--
EMERALD SHINER	--	277	--	--	470	--	--	177	--	--	48	--	--	69	--	--	394	--
GHOST SHINER	--	1	--	--	--	--	--	6	--	--	--	--	--	--	--	--	--	--
STRIPED SHINER	--	2	--	--	7	--	--	19	--	--	1	--	--	6	--	--	2	--
SPOTTAIL SHINER	--	63	--	--	1	--	--	2	--	--	--	--	--	8	--	--	--	--
RED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	--	86	--	--	36	--	--	77	--	--	40	--	--	25	--	--	29	--
SAND SHINER	--	--	--	--	1	--	--	15	--	--	1	--	--	--	--	--	--	--
REDFIN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	1	--	--	2	--	--	27	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	1	140	0.7	--	182	--	--	192	--	--	28	--	--	143	--	--	84	--
FATHEAD MINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BULLHEAD MINNOW	--	68	--	--	28	--	--	209	--	--	29	--	--	45	--	--	16	--
RIVER CARPSUCKER	--	4	--	--	3	--	--	--	--	--	1	--	1	3	33.3	--	1	--
QUILLBACK	--	7	--	--	2	--	--	2	--	--	1	--	--	3	--	--	3	--
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	1	10	10.0	2	12	16.7	1	11	9.1	4	10	40.0	1	7	14.3	3	11	27.3
BIGMOUTH BUFFALO	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK BUFFALO	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Ictiobus sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTTED SUCKER	--	2	--	--	--	--	--	1	--	--	1	--	--	--	--	--	--	--
SILVER REDHORSE	--	3	--	--	--	--	--	--	--	--	--	--	--	1	--	--	3	--
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK REDHORSE	--	--	--	--	--	--	1	2	50.0	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	2	14	14.3	2	78	2.6	12	186	6.5	8	51	15.7	--	55	--	3	86	3.5
SHORTHEAD REDHORSE	--	16	--	--	4	--	3	14	21.4	--	2	--	--	7	--	--	1	--
Moxostoma sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
ICTIOBINAE sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW BULLHEAD	--	--	--	1	2	50.0	--	2	--	--	1	--	--	--	--	--	--	--
CHANNEL CATFISH	9	21	42.9	12	29	41.4	22	45	48.9	21	31	67.7	20	29	69.0	9	22	40.9
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLATHEAD CATFISH	--	5	--	--	8	--	--	6	--	--	2	--	1	5	20.0	--	5	--
TROUT-PERCH	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	2	--	--	--	--	--	2	--	--	1	--	--	2	--	--	1	--
BROOK SILVERSIDE	--	17	--	1	25	4.0	--	71	--	--	13	--	--	71	--	--	29	--
WHITE PERCH	--	2	--	--	--	--	--	1	--	--	1	--	--	--	--	--	--	--
WHITE BASS	--	--	--	--	--	--	--	3	--	--	--	--	--	--	--	--	--	--
Morone sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	1	3	33.3	--	4	--	--	4	--	--	4	--	--	4	--	--	8	--
GREEN SUNFISH	3	130	2.3	2	173	1.2	12	503	2.4	7	202	3.5	1	104	1.0	--	59	--
PUMPKINSEED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4	--
WARMOUTH	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	--	5	--	--	12	--	--	99	--	--	5	--	--	--	--	--	4	--
BLUEGILL	2	224	0.9	3	284	1.1	7	562	1.2	4	217	1.8	--	207	--	4	374	1.1
REDEAR SUNFISH	--	--	--	--	--	--	--	1	--	--	--	--	--	1	--	--	4	--
NORTHERN SUNFISH	--	25	--	--	15	--	--	37	--	--	7	--	--	12	--	--	26	--
Lepomis HYBRID	--	1	--	--	4	--	--	11	--	--	15	--	--	1	--	--	5	--
Lepomis sp.	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7	--
SMALLMOUTH BASS	--	33	--	--	60	--	6	121	5.0	3	60	5.0	--	35	--	3	39	7.7
LARGEMOUTH BASS	4	67	6.0	9	59	15.3	5	115	4.3	12	61	19.7	11	120	9.2	15	89	16.9
Micropterus sp.	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WHITE CRAPPIE	--	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	--	--	--	--	1	--	--	--	--	--	--	--	--	1	--	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	2	--
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	--	10	--	--	7	--	--	8	--	--	4	--	--	18	--	--	13	--
BLACKSIDE DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
SLENDERHEAD DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WALLEYE	--	1	--	--	--	--	--	2	--	--	--	--	--	--	--	--	--	--
SAUGEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	3	19	15.8	5	25	20.0	3	55	5.5	3	22	13.6	4	10	40.0	7	19	36.8
ROUND GOBY	--	--	--	--	--	--	--	2	--	--	1	--	--	--	--	--	2	--
TOTAL FISH	32	1869	1.7	48	2065	2.3	84	3299	2.5	64	1175	5.4	40	1559	2.6	46	1944	2.4

TABLE G-22 (cont.)

SPECIES	2007 DELT #	2007 EXAM #	2007 DELT %	2008 DELT #	2008 EXAM #	2008 DELT %	2011 DELT #	2011 EXAM #	2011 DELT %	2013 DELT #	2013 EXAM #	2013 DELT %	2014 DELT #	2014 EXAM #	2014 DELT %
LONGNOSE GAR	--	2	--	--	10	--	--	2	--	--	--	--	--	12	--
GAR sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	--	--	--	--	3	--	--	--	--	--	--	--	--	--	--
GIZZARD SHAD	2	686	0.3	--	609	--	--	193	--	--	202	--	2	1395	0.1
THREADFIN SHAD	--	--	--	--	82	--	--	1	--	--	3	--	--	180	--
GOLDEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	--	--	--	2	--
NORTHERN PIKE	--	--	--	--	1	--	--	--	--	--	1	--	--	--	--
CENTRAL STONEROLLER	--	--	--	--	2	--	--	--	--	--	--	--	--	5	--
GOLDFISH	--	1	--	--	--	--	--	--	--	--	--	--	--	1	--
COMMON CARP	6	22	27.3	4	25	16.0	--	10	--	4	14	28.6	5	29	17.2
CARP X GOLDFISH HYBRID	--	--	--	--	1	--	--	--	--	--	--	--	--	1	--
GOLDEN SHINER	--	2	--	--	4	--	--	2	--	--	1	--	--	1	--
PALLID SHINER	--	28	--	--	15	--	--	--	--	--	6	--	--	41	--
EMERALD SHINER	--	371	--	--	112	--	--	16	--	--	6	--	--	52	--
GHOST SHINER	--	1	--	--	--	--	--	--	--	--	1	--	--	--	--
STRIPED SHINER	--	9	--	--	15	--	--	6	--	--	4	--	--	2	--
SPOTTAIL SHINER	--	20	--	--	25	--	--	1	--	--	7	--	--	159	--
RED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	1	1	100.0
ROSYFACE SHINER	--	--	--	--	--	--	--	1	--	--	3	--	--	3	--
SPOTFIN SHINER	--	70	--	--	64	--	--	90	--	--	80	--	--	254	--
SAND SHINER	--	2	--	--	--	--	--	8	--	--	--	--	--	10	--
REDFIN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	4	--
MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	10	--
BLUNTNOSE MINNOW	--	289	--	--	121	--	--	53	--	--	69	--	--	293	--
FATHEAD MINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
BULLHEAD MINNOW	--	52	--	--	51	--	--	21	--	--	30	--	--	182	--
RIVER CARPSUCKER	--	1	--	--	4	--	--	1	--	--	2	--	--	3	--
QUILLBACK	1	4	25.0	--	--	--	--	--	--	1	6	16.7	--	1	--
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	4	12	33.3	2	9	22.2	--	9	--	1	4	25.0	5	12	41.7
BIGMOUTH BUFFALO	--	--	--	--	--	--	--	--	--	--	--	--	2	2	100.0
BLACK BUFFALO	--	--	--	--	--	--	--	1	--	--	--	--	--	1	--
Ictiobus sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
SPOTTED SUCKER	--	--	--	--	--	--	--	--	--	--	1	--	--	1	--
SILVER REDHORSE	2	4	50.0	1	4	25.0	--	--	--	--	2	--	--	56	--
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	3	83	3.6	9	93	9.7	--	17	--	1	8	12.5	1	17	5.9
SHORTHEAD REDHORSE	--	7	--	--	12	--	--	6	--	--	15	--	--	79	--
Moxostoma sp.	--	--	--	--	--	--	--	--	--	--	--	--	1	39	2.6
ICTIOBINAE sp.	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
YELLOW BULLHEAD	--	1	--	--	--	--	--	1	--	--	--	--	--	1	--
CHANNEL CATFISH	11	21	52.4	11	25	44.0	8	13	61.5	5	11	45.5	15	20	75.0
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLATHEAD CATFISH	1	5	20.0	2	3	66.7	--	2	--	1	7	14.3	1	7	14.3
TROUT-PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	3	--	--	5	--	--	2	--	--	1	--	--	12	--
BROOK SILVERSIDE	--	29	--	--	61	--	--	18	--	--	30	--	--	35	--
WHITE PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	4	--
WHITE BASS	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
Morone sp.	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	3	--	--	13	--	--	2	--	--	2	--	--	11	--
GREEN SUNFISH	1	154	0.6	1	102	1.0	--	44	--	--	37	--	3	53	5.7
PUMPKINSEED	--	--	--	--	--	--	--	1	--	--	5	--	--	4	--
WARMOUTH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	--	4	--	--	13	--	--	3	--	--	4	--	--	7	--
BLUEGILL	6	225	2.7	1	308	0.3	--	195	--	4	242	1.7	1	127	0.8
REDEAR SUNFISH	--	4	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN SUNFISH	--	28	--	--	60	--	--	41	--	--	48	--	--	121	--
Lepomis HYBRID	--	5	--	--	4	--	--	2	--	--	7	--	--	3	--
Lepomis sp.	--	1	--	--	7	--	--	1	--	--	--	--	--	1	--
SMALLMOUTH BASS	--	48	--	3	76	3.9	--	14	--	1	21	4.8	--	56	--
LARGEMOUTH BASS	3	118	2.5	8	102	7.8	--	86	--	8	77	10.4	5	288	1.7
Micropterus sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WHITE CRAPPIE	--	--	--	--	--	--	--	2	--	--	--	--	--	--	--
BLACK CRAPPIE	--	--	--	--	--	--	--	--	--	--	1	--	--	2	--
JOHNNY DARTER	--	4	--	--	--	--	--	--	--	--	2	--	--	6	--
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	4	--
LOGPERCH	--	40	--	--	18	--	--	4	--	--	19	--	--	95	--
BLACKSIDE DARTER	--	1	--	--	1	--	--	--	--	--	--	--	--	--	--
SLENDERHEAD DARTER	--	1	--	--	2	--	--	1	--	--	--	--	--	--	--
WALLEYE	--	1	--	--	1	--	--	--	--	--	--	--	--	8	--
SAUGEYE	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	--	16	--	2	27	7.4	--	6	--	2	7	28.6	5	18	27.8
ROUND GOBY	--	4	--	--	5	--	--	3	--	--	--	--	--	15	--
TOTAL FISH	40	2384	1.7	44	2097	2.1	8	879	0.9	28	986	2.8	47	3748	1.3

NOTE: DELT# = Number of fish with DELT anomalies;
EXAM# = Number of fish examined for DELT anomalies;
DELT% = Percentage of examined fish with DELT anomalies.
EXCLUDES SEINING DATA.

TABLE G-23. SUMMARY OF SURFACE OR MID-DEPTH PHYSICOCHEMICAL PARAMETERS MEASURED AT ELECTROFISHING LOCATIONS DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, 2014.

	TEMPERATURE (C)			DISSOLVED OXYGEN (ppm)			DISSOLVED OXYGEN Percent Saturation			SPECIFIC CONDUCTANCE (µS/cm)			SECCHI (cm)		
TRIP	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX	MEAN	MIN	MAX
22-23 MAY	20.2	19.6	20.6	8.7	8.4	8.9	96	94	98	867	808	1009	54	50	59
5-6 JUN	24.5	23.9	25.0	8.7	8.2	9.9	104	98	117	909	894	934	67	60	82
10-11 JUL	27.3	26.8	27.6	9.5	9.2	9.6	120	117	122	857	841	890	50	45	59
24-25 JUL	27.2	27.0	27.5	7.7	7.4	8.5	97	94	106	841	829	848	55	52	61
5-6 AUG	28.7	28.6	28.9	8.0	7.8	8.3	103	101	108	866	860	875	73	70	77
19-20 AUG	28.5	28.2	28.8	7.6	7.3	7.7	97	94	100	810	801	814	67	61	75
11-12 SEP	20.2	20.0	20.5	8.3	6.7	8.8	97	97	97	629	610	678	34	30	36
22-23 SEP	21.1	20.4	21.6	9.4	8.9	10.5	105	99	114	792	786	798	52	45	55
LOCATION															
512	24.3	19.6	28.6	8.7	7.5	9.9	104	94	120	809	614	907	54	30	70
513	24.7	20.2	28.7	8.4	7.5	9.2	101	94	117	812	615	894	54	34	71
514	24.9	20.5	28.8	8.2	6.7	9.6	102	94	122	847	678	1009	62	36	82
515	24.9	20.2	28.9	8.6	7.3	10.5	103	94	121	815	610	900	56	35	77

TABLE G-24. SPECIES COMPOSITION, NUMBER, BIOMASS, AND RELATIVE ABUNDANCE OF NATIVE FISH COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, 2014.

SPECIES	ELECTRO		SEINE		GEARS COMBINED			
	#	%	#	%	#	%	KG	%
LONGNOSE GAR	10	0.41	--	--	10	0.22	9.400	4.37
SHORTNOSE GAR	1	0.04	--	--	1	0.02	0.690	0.32
SKIPJACK HERRING	2	0.08	--	--	2	0.04	0.204	0.09
GIZZARD SHAD	75	3.08	4	0.18	79	1.71	1.738	0.81
PALLID SHINER	9	0.37	5	0.23	14	0.30	0.018	0.01
EMERALD SHINER	537	22.07	240	10.92	777	16.78	1.727	0.80
GHOST SHINER	5	0.21	2	0.09	7	0.15	0.005	0.00
STRIPED SHINER	--	--	2	0.09	2	0.04	0.001	0.00
SPOTTAIL SHINER	54	2.22	251	11.42	305	6.59	0.537	0.25
RED SHINER	3	0.12	--	--	3	0.06	0.006	0.00
ROSYFACE SHINER	17	0.70	4	0.18	21	0.45	0.015	0.01
SPOTFIN SHINER	379	15.58	1,081	49.18	1,460	31.53	1.721	0.80
SAND SHINER	37	1.52	110	5.00	147	3.17	0.142	0.07
REDFIN SHINER	1	0.04	1	0.05	2	0.04	0.002	0.00
MIMIC SHINER	128	5.26	87	3.96	215	4.64	0.136	0.06
Notropis sp.	1	0.04	--	--	1	0.02	0.001	0.00
BLUNTNOSE MINNOW	178	7.32	129	5.87	307	6.63	0.451	0.21
FATHEAD MINNOW	1	0.04	--	--	1	0.02	0.001	0.00
BULLHEAD MINNOW	73	3.00	82	3.73	155	3.35	0.265	0.12
RIVER CARPSUCKER	9	0.37	--	--	9	0.19	5.790	2.69
QUILLBACK	6	0.25	--	--	6	0.13	1.074	0.50
HIGHFIN CARPSUCKER	4	0.16	--	--	4	0.09	0.855	0.40
Carpiodes sp.	--	--	1	0.05	1	0.02	0.002	0.00
NORTHERN HOG SUCKER	--	--	9	0.41	9	0.19	0.004	0.00
SMALLMOUTH BUFFALO	33	1.36	1	0.05	34	0.73	29.467	13.71
SILVER REDHORSE	13	0.53	1	0.05	14	0.30	8.328	3.87
RIVER REDHORSE	1	0.04	--	--	1	0.02	1.350	0.63
GOLDEN REDHORSE	54	2.22	--	--	54	1.17	6.319	2.94
SHORTHEAD REDHORSE	15	0.62	--	--	15	0.32	1.696	0.79
Moxostoma sp.	4	0.16	3	0.14	7	0.15	0.007	0.00
CATOSTOMINAE sp.	--	--	15	0.68	15	0.32	0.004	0.00
ICTIOBINAE sp.	--	--	4	0.18	4	0.09	0.004	0.00
CHANNEL CATFISH	69	2.84	1	0.05	70	1.51	77.237	35.93
FLATHEAD CATFISH	4	0.16	--	--	4	0.09	3.147	1.46
BANDED KILLIFISH	--	--	2	0.09	2	0.04	0.002	0.00
BLACKSTRIPE TOPMINNOW	3	0.12	23	1.05	26	0.56	0.021	0.01
BROOK SILVERSIDE	81	3.33	73	3.32	154	3.33	0.157	0.07
WHITE BASS	21	0.86	--	--	21	0.45	7.946	3.70
ROCK BASS	6	0.25	--	--	6	0.13	0.159	0.07
GREEN SUNFISH	56	2.30	4	0.18	60	1.30	0.520	0.24
ORANGESPOTTED SUNFISH	18	0.74	4	0.18	22	0.48	0.102	0.05
BLUEGILL	121	4.97	8	0.36	129	2.79	4.037	1.88
NORTHERN SUNFISH	95	3.90	9	0.41	104	2.25	1.541	0.72
Lepomis HYBRID	8	0.33	--	--	8	0.17	0.481	0.22
Lepomis sp.	--	--	1	0.05	1	0.02	0.001	0.00
SMALLMOUTH BASS	162	6.66	11	0.50	173	3.74	17.981	8.37
LARGEMOUTH BASS	39	1.60	13	0.59	52	1.12	2.785	1.30
BLACK CRAPPIE	1	0.04	--	--	1	0.02	0.002	0.00
WESTERN SAND DARTER	1	0.04	1	0.05	2	0.04	0.002	0.00
JOHNNY DARTER	6	0.25	3	0.14	9	0.19	0.007	0.00
BANDED DARTER	3	0.12	1	0.05	4	0.09	0.004	0.00
LOGPERCH	39	1.60	11	0.50	50	1.08	0.233	0.11
WALLEYE	4	0.16	--	--	4	0.09	0.569	0.26
DARTER sp.	--	--	1	0.05	1	0.02	0.001	0.00
FRESHWATER DRUM	46	1.89	--	--	46	0.99	26.050	12.12
TOTAL FISH	2,433	100.00	2,198	100.00	4,631	100.00	214.945	100.00
TOTAL SPECIES	44		31		47			

NOTE: 0.00 DENOTES VALUES LESS THAN 0.005.

TABLE G-25. COMPARISON OF ELECTROFISHING CPEs (No./km) AND RELATIVE ABUNDANCE AMONG SAMPLING PERIODS FOR NATIVE SPECIES COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, 2014.

SPECIES	MAY/JUNE		JULY/AUGUST		SEPTEMBER	
	CPE	%	CPE	%	CPE	%
LONGNOSE GAR	0.5	0.4	0.8	0.4	0.5	0.5
SHORTNOSE GAR	--	--	0.1	0.1	--	--
SKIPJACK HERRING	0.3	0.2	--	--	0.3	0.2
GIZZARD SHAD	--	--	7.1	4.0	4.5	4.1
PALLID SHINER	1.8	1.3	--	--	0.5	0.5
EMERALD SHINER	38.0	27.5	38.1	21.2	20.0	18.1
GHOST SHINER	1.0	0.7	0.1	0.1	--	--
SPOTTAIL SHINER	--	--	4.9	2.7	3.8	3.4
RED SHINER	--	--	0.4	0.2	--	--
ROSYFACE SHINER	--	--	1.9	1.0	0.5	0.5
SPOTFIN SHINER	15.0	10.9	36.3	20.2	7.3	6.6
SAND SHINER	1.3	0.9	3.5	1.9	1.0	0.9
REDFIN SHINER	--	--	0.1	0.1	--	--
MIMIC SHINER	6.3	4.5	11.8	6.5	2.3	2.0
Notropis sp.	--	--	--	--	0.3	0.2
BLUNTNOSE MINNOW	6.0	4.3	16.0	8.9	6.5	5.9
FATHEAD MINNOW	--	--	0.1	0.1	--	--
BULLHEAD MINNOW	6.3	4.5	2.6	1.5	6.8	6.1
RIVER CARPSUCKER	0.3	0.2	0.5	0.3	1.0	0.9
QUILLBACK	0.3	0.2	0.6	0.3	--	--
HIGHFIN CARPSUCKER	--	--	0.5	0.3	--	--
SMALLMOUTH BUFFALO	1.8	1.3	1.3	0.7	4.0	3.6
SILVER REDHORSE	--	--	1.6	0.9	--	--
RIVER REDHORSE	--	--	0.1	0.1	--	--
GOLDEN REDHORSE	5.8	4.2	3.3	1.8	1.3	1.1
SHORTHEAD REDHORSE	1.3	0.9	0.8	0.4	1.0	0.9
Moxostoma sp.	--	--	0.5	0.3	--	--
CHANNEL CATFISH	7.0	5.1	2.9	1.6	4.5	4.1
FLATHEAD CATFISH	0.3	0.2	0.1	0.1	0.5	0.5
BLACKSTRIPE TOPMINNOW	0.3	0.2	--	--	0.5	0.5
BROOK SILVERSIDE	0.5	0.4	3.9	2.2	12.0	10.9
WHITE BASS	5.0	3.6	--	--	0.3	0.2
ROCK BASS	0.3	0.2	0.4	0.2	0.5	0.5
GREEN SUNFISH	0.8	0.5	5.5	3.1	2.3	2.0
ORANGESPOTTED SUNFISH	0.3	0.2	1.4	0.8	1.5	1.4
BLUEGILL	12.5	9.1	5.4	3.0	7.0	6.3
NORTHERN SUNFISH	7.0	5.1	6.9	3.8	3.0	2.7
Lepomis HYBRID	--	--	0.8	0.4	0.5	0.5
SMALLMOUTH BASS	14.5	10.5	9.1	5.1	7.8	7.0
LARGEMOUTH BASS	0.8	0.5	2.3	1.3	4.5	4.1
BLACK CRAPPIE	--	--	0.1	0.1	--	--
WESTERN SAND DARTER	--	--	0.1	0.1	--	--
JOHNNY DARTER	--	--	0.8	0.4	--	--
BANDED DARTER	--	--	0.4	0.2	--	--
LOGPERCH	2.3	1.6	3.6	2.0	0.3	0.2
WALLEYE	--	--	0.1	0.1	0.8	0.7
FRESHWATER DRUM	1.3	0.9	3.4	1.9	3.5	3.2
TOTAL FISH	138.0	100.0	179.9	100.0	110.5	100.0
TOTAL SPECIES	29		40		31	

Table G-26. Results of Statistical Comparisons Among Sampling Periods for Data Collected by Electrofishing Downstream of Dresden Island Lock and Dam, 2014.

Catch Parameter	May/June	July/August	September	Significant Difference[(a)]	F Value	P Value
CPEs-all native fish[(b)]	138.0	179.9	110.5	No	1.53	0.23
IWBmod	7.25	7.40	7.56	No	0.33	0.72
Native Species Richness	14	16	17	No	2.34	0.11

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Log transformed data used for statistical analyses because they are normally distributed.

TABLE G-27. COMPARISON OF SEINING CPEs (No./haul) AND RELATIVE ABUNDANCE AMONG SAMPLING PERIODS FOR NATIVE SPECIES COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, 2014.

SPECIES	MAY/JUNE		JULY/AUGUST		SEPTEMBER	
	CPE	%	CPE	%	CPE	%
GIZZARD SHAD	--	--	0.2	0.4	0.1	0.2
PALLID SHINER	--	--	0.1	0.1	0.5	0.8
EMERALD SHINER	1.3	1.1	6.9	14.2	14.9	24.1
GHOST SHINER	0.1	0.1	0.1	0.1	--	--
STRIPED SHINER	--	--	0.1	0.3	--	--
SPOTTAIL SHINER	1.8	1.5	9.3	18.9	11.1	18.0
ROSYFACE SHINER	--	--	0.1	0.1	0.4	0.6
SPOTFIN SHINER	86.8	75.4	15.8	32.3	16.8	27.1
SAND SHINER	6.0	5.2	3.1	6.3	1.6	2.6
REDFIN SHINER	--	--	0.1	0.1	--	--
MIMIC SHINER	8.1	7.1	1.3	2.7	0.1	0.2
BLUNTNOSE MINNOW	3.6	3.2	5.6	11.4	1.4	2.2
BULLHEAD MINNOW	1.1	1.0	2.1	4.2	5.0	8.1
Carpiodes sp.	--	--	0.1	0.1	--	--
NORTHERN HOG SUCKER	1.1	1.0	--	--	--	--
SMALLMOUTH BUFFALO	--	--	0.1	0.1	--	--
SILVER REDHORSE	--	--	0.1	0.1	--	--
Moxostoma sp.	0.4	0.3	--	--	--	--
CATOSTOMINAE sp.	1.9	1.6	--	--	--	--
ICTIOBINAE sp.	0.5	0.4	--	--	--	--
CHANNEL CATFISH	--	--	0.1	0.1	--	--
BANDED KILLIFISH	--	--	0.1	0.1	0.1	0.2
BLACKSTRIPE TOPMINNOW	--	--	1.1	2.2	0.8	1.2
BROOK SILVERSIDE	0.1	0.1	1.4	2.8	6.3	10.1
GREEN SUNFISH	0.1	0.1	0.2	0.4	--	--
ORANGESPOTTED SUNFISH	0.3	0.2	0.1	0.1	0.1	0.2
BLUEGILL	0.3	0.2	0.1	0.1	0.6	1.0
NORTHERN SUNFISH	0.1	0.1	0.4	0.9	0.1	0.2
Lepomis sp.	--	--	--	--	0.1	0.2
SMALLMOUTH BASS	0.1	0.1	0.4	0.8	0.5	0.8
LARGEMOUTH BASS	0.9	0.8	0.1	0.3	0.5	0.8
WESTERN SAND DARTER	--	--	0.1	0.1	--	--
JOHNNY DARTER	0.3	0.2	0.1	0.1	--	--
BANDED DARTER	0.1	0.1	--	--	--	--
LOGPERCH	--	--	0.3	0.6	0.8	1.2
DARTER sp.	0.1	0.1	--	--	--	--
TOTAL FISH	115.0	100.0	49.0	100.0	61.8	100.0
TOTAL SPECIES	20		29		19	
MEAN NO. OF SPECIES	7		7		7	

TABLE G-28. INTER-YEAR COMPARISONS OF ELECTROFISHING CATCHES (NATIVE SPECIES ONLY) DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM FOR THE PERIOD OF 15 JUNE THROUGH AUGUST, 1994, 1995, 1999-2008, 2011, 2013, and 2014.

SPECIES	1994			1995			1999			2000			2001		
	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
LONGNOSE GAR	--	--	--	2	1.0	0.4	2	0.7	0.6	1	0.3	0.2	1	0.3	0.2
SHORTNOSE GAR	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GAR sp.	--	--	--	--	--	--	--	--	--	1	0.3	0.2	--	--	--
SKIPJACK HERRING	--	--	--	--	--	--	--	--	--	--	--	--	4	1.0	0.7
GIZZARD SHAD	16	8.0	9.3	137	68.5	28.2	98	32.7	27.7	96	24.0	22.7	75	18.8	12.3
NORTHERN PIKE	2	1.0	1.2	--	--	--	--	--	--	--	--	--	--	--	--
CENTRAL STONEROLLER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN SHINER	--	--	--	1	0.5	0.2	--	--	--	--	--	--	--	--	--
PALLID SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	41	20.5	23.8	208	104.0	42.9	35	11.7	9.9	9	2.3	2.1	237	59.3	38.8
GHOST SHINER	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.2
STRIPED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	2	0.5	0.3
SPOTTAIL SHINER	3	1.5	1.7	1	0.5	0.2	1	0.3	0.3	--	--	--	24	6.0	3.9
RED SHINER	--	--	--	--	--	--	3	1.0	0.8	--	--	--	1	0.3	0.2
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	2	1.0	1.2	5	2.5	1.0	27	9.0	7.6	37	9.3	8.8	35	8.8	5.7
SAND SHINER	--	--	--	1	0.5	0.2	--	--	--	--	--	--	6	1.5	1.0
REDFIN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	--	--	--	--	--	1	0.3	0.2	--	--	--
CHANNEL/MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Notropis sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SUCKERMOUTH MINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	6	3.0	3.5	--	--	--	6	2.0	1.7	15	3.8	3.6	32	8.0	5.2
FATHEAD MINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BULLHEAD MINNOW	1	0.5	0.6	4	2.0	0.8	17	5.7	4.8	5	1.3	1.2	10	2.5	1.6
RIVER CARPSUCKER	13	6.5	7.6	9	4.5	1.9	4	1.3	1.1	1	0.3	0.2	3	0.8	0.5
QUILLBACK	7	3.5	4.1	24	12.0	4.9	1	0.3	0.3	--	--	--	5	1.3	0.8
HIGHFIN CARPSUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carpiodes sp.	--	--	--	--	--	--	1	0.3	0.3	--	--	--	1	0.3	0.2
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN HOG SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	6	3.0	3.5	5	2.5	1.0	13	4.3	3.7	15	3.8	3.6	31	7.8	5.1
BLACK BUFFALO	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	1	0.5	0.6	21	10.5	4.3	1	0.3	0.3	2	0.5	0.5	1	0.3	0.2
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	4	2.0	2.3	7	3.5	1.4	26	8.7	7.3	14	3.5	3.3	5	1.3	0.8
SHORTHEAD REDHORSE	4	2.0	2.3	7	3.5	1.4	1	0.3	0.3	--	--	--	3	0.8	0.5
Moxostoma sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHANNEL CATFISH	11	5.5	6.4	8	4.0	1.6	5	1.7	1.4	13	3.3	3.1	7	1.8	1.1
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLATHEAD CATFISH	--	--	--	--	--	--	--	--	--	2	0.5	0.5	--	--	--
TROUT-PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BROOK SILVERSIDE	--	--	--	--	--	--	--	--	--	1	0.3	0.2	5	1.3	0.8
WHITE BASS	--	--	--	8	4.0	1.6	--	--	--	--	--	--	2	0.5	0.3
YELLOW BASS	--	--	--	--	--	--	1	0.3	0.3	1	0.3	0.2	--	--	--
Morone sp.	31	15.5	18.0	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GREEN SUNFISH	3	1.5	1.7	10	5.0	2.1	59	19.7	16.7	113	28.3	26.8	25	6.3	4.1
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	--	--	--	--	--	--	4	1.0	0.7
BLUEGILL	1	0.5	0.6	4	2.0	0.8	32	10.7	9.0	53	13.3	12.6	26	6.5	4.3
NORTHERN SUNFISH	--	--	--	--	--	--	2	0.7	0.6	--	--	--	--	--	--
Lepomis HYBRID	--	--	--	--	--	--	1	0.3	0.3	--	--	--	--	--	--
SMALLMOUTH BASS	5	2.5	2.9	13	6.5	2.7	1	0.3	0.3	12	3.0	2.8	29	7.3	4.7
LARGEMOUTH BASS	3	1.5	1.7	4	2.0	0.8	9	3.0	2.5	14	3.5	3.3	14	3.5	2.3
WHITE CRAPPIE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	--	--	--	--	--	--	1	0.3	0.3	3	0.8	0.7	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	2	1.0	1.2	2	1.0	0.4	--	--	--	1	0.3	0.2	3	0.8	0.5
SLENDERHEAD DARTER	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.2
RIVER DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SAUGER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WALLEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	10	5.0	5.8	4	2.0	0.8	7	2.3	2.0	12	3.0	2.8	18	4.5	2.9
TOTAL FISH	172	86.0	100.0	485	242.5	100.0	354	118.0	100.0	422	105.5	100.0	611	152.8	100.0
TOTAL SPECIES	21			22			23			22			29		

TABLE G-28 (cont.)

SPECIES	2002			2003			2004			2005			2006		
	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
LONGNOSE GAR	4	1.0	0.4	6	1.5	0.8	1	0.3	0.1	--	--	--	--	--	--
SHORTNOSE GAR	1	0.3	0.1	1	0.3	0.1	--	--	--	--	--	--	--	--	--
GAR sp.	1	0.3	0.1	--	--	--	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	5	1.3	0.5	--	--	--	--	--	--	2	0.5	0.2	6	1.6	1.1
GIZZARD SHAD	119	29.8	12.0	45	11.3	5.7	16	4.0	2.3	112	28.0	13.6	9	2.3	1.7
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CENTRAL STONEROLLER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PALLID SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	428	107.0	43.2	301	75.3	38.3	442	110.5	62.8	225	56.3	27.3	202	52.5	37.1
GHOST SHINER	--	--	--	4	1.0	0.5	--	--	--	1	0.3	0.1	--	--	--
STRIPED SHINER	1	0.3	0.1	2	0.5	0.3	1	0.3	0.1	4	1.0	0.5	--	--	--
SPOTTAIL SHINER	2	0.5	0.2	1	0.3	0.1	--	--	--	25	6.3	3.0	2	0.5	0.4
RED SHINER	1	0.3	0.1	--	--	--	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	50	12.5	5.1	53	13.3	6.8	30	7.5	4.3	76	19.0	9.2	42	10.9	7.7
SAND SHINER	7	1.8	0.7	5	1.3	0.6	--	--	--	2	0.5	0.2	3	0.8	0.6
REDFIN SHINER	--	--	--	1	0.3	0.1	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	8	2.0	1.0	--	--	--	--	--	--	--	--	--
CHANNEL/MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Notropis sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SUCKERMOUTH MINNOW	2	0.5	0.2	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	51	12.8	5.2	42	10.5	5.4	8	2.0	1.1	109	27.3	13.2	42	10.9	7.7
FATHEAD MINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BULLHEAD MINNOW	5	1.3	0.5	5	1.3	0.6	2	0.5	0.3	22	5.5	2.7	6	1.6	1.1
RIVER CARPSUCKER	6	1.5	0.6	1	0.3	0.1	6	1.5	0.9	1	0.3	0.1	1	0.3	0.2
QUILLBACK	--	--	--	3	0.8	0.4	1	0.3	0.1	5	1.3	0.6	4	1.0	0.7
HIGHFIN CARPSUCKER	--	--	--	1	0.3	0.1	--	--	--	--	--	--	--	--	--
Carpiodes sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WHITE SUCKER	--	--	--	1	0.3	0.1	--	--	--	--	--	--	--	--	--
NORTHERN HOG SUCKER	2	0.5	0.2	--	--	--	--	--	--	1	0.3	0.1	--	--	--
SMALLMOUTH BUFFALO	25	6.3	2.5	22	5.5	2.8	11	2.8	1.6	4	1.0	0.5	10	2.6	1.8
BLACK BUFFALO	--	--	--	8	2.0	1.0	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	1	0.3	0.1	--	--	--	2	0.5	0.3	3	0.8	0.4	1	0.3	0.2
RIVER REDHORSE	1	0.3	0.1	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	51	12.8	5.2	16	4.0	2.0	9	2.3	1.3	10	2.5	1.2	8	2.1	1.5
SHORTHEAD REDHORSE	8	2.0	0.8	7	1.8	0.9	5	1.3	0.7	7	1.8	0.8	11	2.9	2.0
Moxostoma sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHANNEL CATFISH	13	3.3	1.3	34	8.5	4.3	19	4.8	2.7	16	4.0	1.9	27	7.0	5.0
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FLATHEAD CATFISH	--	--	--	2	0.5	0.3	--	--	--	--	--	--	--	--	--
TROUT-PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	1	0.3	0.1	--	--	--
BROOK SILVERSIDE	4	1.0	0.4	4	1.0	0.5	2	0.5	0.3	14	3.5	1.7	2	0.5	0.4
WHITE BASS	3	0.8	0.3	5	1.3	0.6	--	--	--	2	0.5	0.2	2	0.5	0.4
YELLOW BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morone sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.2
GREEN SUNFISH	27	6.8	2.7	42	10.5	5.4	25	6.3	3.6	43	10.8	5.2	33	8.6	6.1
ORANGESPOTTED SUNFISH	1	0.3	0.1	4	1.0	0.5	1	0.3	0.1	2	0.5	0.2	--	--	--
BLUEGILL	78	19.5	7.9	61	15.3	7.8	65	16.3	9.2	37	9.3	4.5	46	11.9	8.5
NORTHERN SUNFISH	1	0.3	0.1	4	1.0	0.5	--	--	--	1	0.3	0.1	2	0.5	0.4
Lepomis HYBRID	--	--	--	1	0.3	0.1	6	1.5	0.9	--	--	--	1	0.3	0.2
SMALLMOUTH BASS	22	5.5	2.2	26	6.5	3.3	13	3.3	1.8	14	3.5	1.7	11	2.9	2.0
LARGEMOUTH BASS	35	8.8	3.5	27	6.8	3.4	20	5.0	2.8	48	12.0	5.8	29	7.5	5.3
WHITE CRAPPIE	--	--	--	--	--	--	1	0.3	0.1	--	--	--	--	--	--
BLACK CRAPPIE	--	--	--	3	0.8	0.4	2	0.5	0.3	--	--	--	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	6	1.5	0.6	--	--	--	3	0.8	0.4	14	3.5	1.7	16	4.2	2.9
SLENDERHEAD DARTER	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.2
RIVER DARTER	--	--	--	--	--	--	--	--	--	1	0.3	0.1	--	--	--
SAUGER	--	--	--	--	--	--	1	0.3	0.1	--	--	--	--	--	--
WALLEYE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	29	7.3	2.9	39	9.8	5.0	12	3.0	1.7	23	5.8	2.8	26	6.8	4.8
TOTAL FISH	990	247.5	100.0	785	196.3	100.0	704	176.0	100.0	825	206.3	100.0	544	141.3	100.0
TOTAL SPECIES	31			33			25			30			26		

TABLE G-28 (cont.)

SPECIES	2007 #	2007 CPE	2007 %	2008 #	2008 CPE	2008 %	2011 #	2011 CPE	2011 %	2013 #	2013 CPE	2013 %	2014 #	2014 CPE	2014 %
LONGNOSE GAR	--	--	--	5	1.3	0.7	--	--	--	--	--	--	4	1.0	0.5
SHORTNOSE GAR	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.1
GAR sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	--	--	--	2	0.5	0.3	--	--	--	2	1.0	1.1	--	--	--
GIZZARD SHAD	236	59.0	17.3	24	6.0	3.5	9	4.5	4.5	10	5.0	5.6	10	2.5	1.3
NORTHERN PIKE	--	--	--	--	--	--	1	0.5	0.5	--	--	--	--	--	--
CENTRAL STONEROLLER	4	1.0	0.3	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN SHINER	--	--	--	--	--	--	--	--	--	1	0.5	0.6	--	--	--
PALLID SHINER	1	0.3	0.1	2	0.5	0.3	--	--	--	--	--	--	--	--	--
EMERALD SHINER	765	191.3	56.2	267	66.8	39.1	36	18.0	18.2	1	0.5	0.6	233	58.3	29.8
GHOST SHINER	--	--	--	2	0.5	0.3	--	--	--	--	--	--	1	0.3	0.1
STRIPED SHINER	1	0.3	0.1	3	0.8	0.4	--	--	--	--	--	--	--	--	--
SPOTTAIL SHINER	6	1.5	0.4	14	3.5	2.0	5	2.5	2.5	--	--	--	13	3.3	1.7
RED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	1	0.5	0.6	12	3.0	1.5
SPOTFIN SHINER	39	9.8	2.9	63	15.8	9.2	18	9.0	9.1	15	7.5	8.3	124	31.0	15.9
SAND SHINER	1	0.3	0.1	--	--	--	2	1.0	1.0	--	--	--	6	1.5	0.8
REDFIN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.1
MIMIC SHINER	--	--	--	1	0.3	0.1	1	0.5	0.5	--	--	--	51	12.8	6.5
CHANNEL/MIMIC SHINER	--	--	--	--	--	--	--	--	--	1	0.5	0.6	--	--	--
Notropis sp.	--	--	--	--	--	--	--	--	--	1	0.5	0.6	--	--	--
SUCKERMOUTH MINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	99	24.8	7.3	59	14.8	8.6	13	6.5	6.6	2	1.0	1.1	59	14.8	7.6
FATHEAD MINNOW	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.1
BULLHEAD MINNOW	5	1.3	0.4	11	2.8	1.6	5	2.5	2.5	2	1.0	1.1	10	2.5	1.3
RIVER CARPSUCKER	1	0.3	0.1	2	0.5	0.3	--	--	--	1	0.5	0.6	--	--	--
QUILLBACK	1	0.3	0.1	5	1.3	0.7	1	0.5	0.5	--	--	--	1	0.3	0.1
HIGHFIN CARPSUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carpiodes sp.	1	0.3	0.1	--	--	--	--	--	--	--	--	--	--	--	--
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN HOG SUCKER	--	--	--	1	0.3	0.1	1	0.5	0.5	--	--	--	--	--	--
SMALLMOUTH BUFFALO	17	4.3	1.2	9	2.3	1.3	2	1.0	1.0	1	0.5	0.6	5	1.3	0.6
BLACK BUFFALO	--	--	--	--	--	--	1	0.5	0.5	--	--	--	--	--	--
SILVER REDHORSE	5	1.3	0.4	2	0.5	0.3	--	--	--	3	1.5	1.7	9	2.3	1.2
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	1	0.3	0.1
GOLDEN REDHORSE	6	1.5	0.4	15	3.8	2.2	13	6.5	6.6	12	6.0	6.7	8	2.0	1.0
SHORTHEAD REDHORSE	3	0.8	0.2	4	1.0	0.6	8	4.0	4.0	3	1.5	1.7	5	1.3	0.6
Moxostoma sp.	--	--	--	--	--	--	--	--	--	--	--	--	2	0.5	0.3
CHANNEL CATFISH	16	4.0	1.2	11	2.8	1.6	11	5.5	5.6	9	4.5	5.0	15	3.8	1.9
TADPOLE MADTOM	--	--	--	--	--	--	1	0.5	0.5	--	--	--	--	--	--
FLATHEAD CATFISH	1	0.3	0.1	--	--	--	3	1.5	1.5	1	0.5	0.6	--	--	--
TROUT-PERCH	--	--	--	--	--	--	1	0.5	0.5	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BROOK SILVERSIDE	17	4.3	1.2	18	4.5	2.6	2	1.0	1.0	2	1.0	1.1	26	6.5	3.3
WHITE BASS	1	0.3	0.1	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Morone sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	--	--	--	--	--	--	--	--	--	--	--	2	0.5	0.3
GREEN SUNFISH	10	2.5	0.7	14	3.5	2.0	5	2.5	2.5	12	6.0	6.7	22	5.5	2.8
ORANGESPOTTED SUNFISH	2	0.5	0.1	6	1.5	0.9	--	--	--	1	0.5	0.6	10	2.5	1.3
BLUEGILL	38	9.5	2.8	52	13.0	7.6	25	12.5	12.6	53	26.5	29.4	24	6.0	3.1
NORTHERN SUNFISH	1	0.3	0.1	12	3.0	1.8	4	2.0	2.0	7	3.5	3.9	35	8.8	4.5
Lepomis HYBRID	--	--	--	--	--	--	--	--	--	4	2.0	2.2	5	1.3	0.6
SMALLMOUTH BASS	15	3.8	1.1	23	5.8	3.4	10	5.0	5.1	19	9.5	10.6	30	7.5	3.8
LARGEMOUTH BASS	18	4.5	1.3	33	8.3	4.8	11	5.5	5.6	7	3.5	3.9	14	3.5	1.8
WHITE CRAPPIE	1	0.3	0.1	--	--	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	1	0.3	0.1	--	--	--	1	0.5	0.5	--	--	--	1	0.3	0.1
JOHNNY DARTER	--	--	--	--	--	--	--	--	--	--	--	--	3	0.8	0.4
BANDED DARTER	--	--	--	1	0.3	0.1	--	--	--	--	--	--	1	0.3	0.1
LOGPERCH	13	3.3	1.0	6	1.5	0.9	1	0.5	0.5	7	3.5	3.9	18	4.5	2.3
SLENDERHEAD DARTER	1	0.3	0.1	--	--	--	1	0.5	0.5	--	--	--	--	--	--
RIVER DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SAUGER	1	0.3	0.1	--	--	--	--	--	--	--	--	--	--	--	--
WALLEYE	--	--	--	1	0.3	0.1	--	--	--	--	--	--	1	0.3	0.1
FRESHWATER DRUM	35	8.8	2.6	15	3.8	2.2	6	3.0	3.0	2	1.0	1.1	17	4.3	2.2
TOTAL FISH	1362	340.5	100.0	683	170.8	100.0	198	99.0	100.0	180	90.0	100.0	781	195.3	100.0
TOTAL SPECIES	32			31			29			25			35		

NOTE: CPE=NUMBER PER KILOMETER.

Table G-29. Statistical Comparisons Among Years for Electrofishing Data Collected Downstream of Dresden Island Lock and Dam During the Period of 15 June through August, 1994, 1995, 1999-2008, 2011, 2013, and 2014.

Catch Parameter	2014	2013	2011	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1995	1994	Significant Difference[a]	F Value	P Value
CPEs-all native fish[b]	195.3	90.0	99.0	170.8	340.5	141.3	206.3	176.0	196.3	247.5	152.8	105.5	118.0	242.5	86.0	No	1.37	0.19
IWBmod[c]	7.56	7.14	7.49	7.46	7.17	7.22	7.25	7.11	7.93	7.94	7.10	6.73	6.92	7.75	7.26	No	1.39	0.17
Native Species Richness	17.5	13.0	14.5	15.5	14.4	12.9	14.6	11.6	14.9	15.1	13.9	11.8	11.2	14.3	11.5	Yes	1.85	0.04
	A	BCD	ABCD	AB	ABCD	BCD	ABCD	BCD	ABCD	ABC	ABCD	BCD	D	ABCD	CD[d]			

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Log transformed data used for statistical analyses because they are normally distributed.
(c) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.
(d) Results of Fisher's Least-Squares-Difference Test; values with the same letters are not significantly different (alpha=0.05).

TABLE G-30. COMPARISONS OF MEAN RELATIVE WEIGHTS AMONG SAMPLING PERIODS FOR ALL NATIVE SPECIES COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, 2014.

SPECIES	MAY/JUNE		JULY/AUGUST		SEPTEMBER		PERIODS COMBINED	
	N	MEAN	N	MEAN	N	MEAN	N	MEAN
LONGNOSE GAR	2	73	6	71	2	82	10	74
GIZZARD SHAD	--	--	2	92	--	--	2	92
RIVER CARPSUCKER	1	96	4	105	4	92	9	98
SMALLMOUTH BUFFALO	7	89	10	82	15	85	32	85
SHORTHEAD REDHORSE	5	91	4	101	2	90	11	94
CHANNEL CATFISH	28	104	24	101	18	108	70	104
FLATHEAD CATFISH	1	103	1	109	1	96	3	103
WHITE BASS	20	85	--	--	1	90	21	85
ROCK BASS	--	--	2	97	2	104	4	100
GREEN SUNFISH	4	111	18	112	6	111	28	112
BLUEGILL	41	112	35	111	19	111	95	111
SMALLMOUTH BASS	27	87	33	92	23	87	83	89
LARGEMOUTH BASS	3	99	1	99	2	102	6	100
WALLEYE	--	--	--	--	3	95	3	95
FRESHWATER DRUM	5	98	26	103	12	107	43	104
SPECIES COMBINED	144	99	166	100	110	99	420	99

Table G-31. Statistical Comparisons of Mean Relative Weights Among Sampling Periods for Selected Native Species Collected Downstream of Dresden Island Lock and Dam, 2014.

Species	Composite Mean	May/June	July/August	September	Significant Difference[a]	F Value	P Value
Smallmouth Buffalo	85	++[b]	82	85	No	1.03	0.32
Channel Catfish	104	104	101	108	No	1.70	0.19
Bluegill	111	112	111	111	No	0.12	0.89
Smallmouth Bass	89	87	92	87	No	2.81	0.07
Freshwater Drum	104	++	103	107	No	1.22	0.28

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Small sample sizes precluded intraperiod analyses.

TABLE G-32. ANNUAL MEAN RELATIVE WEIGHTS FOR ALL NATIVE SPECIES COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM DURING THE PERIOD OF 15 JUNE-AUGUST, 1994, 1995, 1999-2008, 2011, 2013, AND 2014.

SPECIES	1994		1995		1999		2000		2001		2002	
	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN
LONGNOSE GAR	4	70	10	69	2	61	1	66	1	73	3	95
GIZZARD SHAD	16	95	19	97	73	109	107	84	13	96	60	94
NORTHERN PIKE	2	84	--	--	--	--	--	--	--	--	--	--
RIVER CARPSUCKER	30	91	13	100	13	90	1	93	3	88	6	96
WHITE SUCKER	1	83	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	9	87	8	95	19	89	15	77	28	84	24	85
SHORTHEAD REDHORSE	4	91	3	77	2	106	--	--	3	92	8	93
CHANNEL CATFISH	19	106	16	101	5	104	12	102	7	100	12	101
FLATHEAD CATFISH	--	--	--	--	--	--	2	101	--	--	--	--
WHITE BASS	--	--	9	88	--	--	--	--	2	93	3	122
YELLOW BASS	--	--	--	--	1	90	1	113	--	--	--	--
ROCK BASS	--	--	--	--	--	--	--	--	--	--	--	--
GREEN SUNFISH	4	113	11	119	57	112	90	105	23	114	16	126
BLUEGILL	--	--	4	125	11	106	31	104	12	103	38	119
SMALLMOUTH BASS	4	91	8	96	1	85	8	82	11	80	13	88
LARGEMOUTH BASS	3	107	4	93	3	100	14	98	10	102	35	106
WHITE CRAPPIE	--	--	--	--	--	--	--	--	1	108	--	--
BLACK CRAPPIE	--	--	--	--	2	102	3	96	--	--	--	--
SAUGER	--	--	--	--	--	--	--	--	--	--	--	--
FRESHWATER DRUM	11	103	10	108	19	107	12	104	17	99	27	109
SPECIES COMBINED	107	96	115	98	208	106	297	95	131	97	245	103

SPECIES	2003		2004		2005		2006		2007		2008	
	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN	N	MEAN
LONGNOSE GAR	6	71	1	73	--	--	--	--	--	--	4	93
GIZZARD SHAD	31	80	14	79	66	89	6	81	5	85	3	97
NORTHERN PIKE	--	--	--	--	--	--	--	--	--	--	--	--
RIVER CARPSUCKER	1	95	6	85	1	93	1	88	1	96	2	99
WHITE SUCKER	1	95	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	22	87	11	81	4	92	10	87	17	82	10	87
SHORTHEAD REDHORSE	4	83	5	93	5	96	11	94	3	91	4	94
CHANNEL CATFISH	34	95	19	98	16	100	27	102	16	95	11	97
FLATHEAD CATFISH	2	106	--	--	--	--	--	--	1	97	--	--
WHITE BASS	5	96	--	--	2	93	2	82	1	93	--	--
YELLOW BASS	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	--	--	--	--	--	1	121	--	--	--	--
GREEN SUNFISH	33	106	22	108	45	113	20	118	6	119	13	108
BLUEGILL	45	106	49	101	8	108	32	124	27	107	35	108
SMALLMOUTH BASS	22	84	10	85	3	101	9	106	8	92	19	97
LARGEMOUTH BASS	20	99	17	97	9	108	24	100	10	99	32	102
WHITE CRAPPIE	--	--	1	105	--	--	--	--	1	112	--	--
BLACK CRAPPIE	3	99	1	67	--	--	--	--	1	113	--	--
SAUGER	--	--	1	75	--	--	--	--	1	92	--	--
FRESHWATER DRUM	38	103	11	101	23	111	20	105	35	105	13	104
SPECIES COMBINED	267	96	168	96	182	101	163	106	133	100	146	102

SPECIES	2011		2013		2014		YEARS COMBINED	
	N	MEAN	N	MEAN	N	MEAN	N	MEAN
LONGNOSE GAR	--	--	--	--	6	71	38	74
GIZZARD SHAD	7	81	10	82	2	92	432	91
NORTHERN PIKE	1	87	--	--	--	--	3	85
RIVER CARPSUCKER	--	--	1	84	4	105	83	93
WHITE SUCKER	--	--	--	--	--	--	2	89
SMALLMOUTH BUFFALO	2	87	1	82	10	82	190	85
SHORTHEAD REDHORSE	8	84	3	89	4	101	67	91
CHANNEL CATFISH	11	97	9	93	24	101	238	99
FLATHEAD CATFISH	2	105	1	95	1	109	9	103
WHITE BASS	--	--	--	--	--	--	24	95
YELLOW BASS	--	--	--	--	--	--	2	101
ROCK BASS	--	--	--	--	2	97	3	105
GREEN SUNFISH	2	117	10	106	18	112	370	111
BLUEGILL	16	111	46	107	35	111	389	109
SMALLMOUTH BASS	5	83	10	85	33	92	164	90
LARGEMOUTH BASS	5	102	6	96	1	99	193	101
WHITE CRAPPIE	--	--	--	--	--	--	3	108
BLACK CRAPPIE	1	118	--	--	--	--	11	99
SAUGER	--	--	--	--	--	--	2	83
FRESHWATER DRUM	6	98	2	90	26	103	270	105
SPECIES COMBINED	66	97	99	99	166	100	2493	99

Table G-33. Interyear Comparisons of Mean Relative Weight Values for Selected Native Species Collected Downstream of Dresden Island Lock and Dam During the Period of 15 June through August, 1994, 1995, 1999-2008, 2011, 2013, and 2014.

Species	Composite Mean	2014	2013	2011	2008	2007	2006	2005	2004	2003	2002	2001	2000	1999	1995	1994	Significant Difference[(a)]	F Value	P Value
Smallmouth buffalo[(b)]	85	82 AB	++[(c)]	++	87 A	82 AB	87 A	++	81 AB	87 A	85 AB	84 AB	77 B	89 A[(d)]	++	++	Yes	3.11	<0.01
Channel catfish[(e)]	99	101	++	97	97	95	102	100	98	95	101	++	102	++	101	106	No	1.10	0.36
Green sunfish[(b)]	111	112 AB	106 B	++	108 B	++	118 AB	113 AB	108 B	106 B	126 A	114 AB	105 B	112 AB	119 AB	++	Yes	3.37	<0.01
Bluegill[(b)]	109	111 ABC	107 BC	111 ABC	108 BC	107 BC	124 A	++	101 C	106 BC	119 AB	103 C	104 BC	106 BC	++	--	Yes	6.12	<0.01
Smallmouth bass	90	92 AB	85 BC	++	97 A	++	++	++	85 BC	84 BC	88 ABC	80 C	++	++	++	++	Yes	5.90	<0.01
Freshwater drum[(b)]	105	103	++	++	104	105	105	111	101	103	109	99	104	107	108	103	No	0.99	0.46

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Log transformed data used for statistical analyses because they are normally distributed.
(c) Small sample sizes precluded interyear analyses.
(d) Results of Tukey's Studentized Range Test; values with the same letters are not significantly different (alpha=0.05).
(e) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.

TABLE G-34. NUMBER AND PERCENT OF FISH WITH DELT ANOMALIES DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, 2014.

SPECIES	DELT #	EXAM #	DELT %
LONGNOSE GAR	2	10	20.0
SHORTNOSE GAR	--	1	--
SKIPJACK HERRING	--	2	--
GIZZARD SHAD	--	75	--
THREADFIN SHAD	--	115	--
GOLDFISH	--	23	--
GRASS CARP	--	1	--
COMMON CARP	6	18	33.3
SILVER CARP	--	1	--
PALLID SHINER	--	9	--
EMERALD SHINER	1	537	0.2
GHOST SHINER	--	5	--
SPOTTAIL SHINER	--	54	--
RED SHINER	--	3	--
ROSYFACE SHINER	--	17	--
SPOTFIN SHINER	--	379	--
SAND SHINER	--	37	--
REDFIN SHINER	--	1	--
MIMIC SHINER	--	128	--
Notropis sp.	--	1	--
BLUNTNOSE MINNOW	--	178	--
FATHEAD MINNOW	--	1	--
BULLHEAD MINNOW	--	73	--
RIVER CARPSUCKER	--	9	--
QUILLBACK	--	6	--
HIGHFIN CARPSUCKER	--	4	--
SMALLMOUTH BUFFALO	5	33	15.2
SILVER REDHORSE	3	13	23.1
RIVER REDHORSE	--	1	--
GOLDEN REDHORSE	4	54	7.4
SHORTHEAD REDHORSE	--	15	--
Moxostoma sp.	--	4	--
CHANNEL CATFISH	64	69	92.8
FLATHEAD CATFISH	1	4	25.0
BLACKSTRIPE TOPMINNOW	--	3	--
BROOK SILVERSIDE	--	81	--
WHITE PERCH	--	4	--
WHITE BASS	5	21	23.8
ROCK BASS	--	6	--
GREEN SUNFISH	3	56	5.4
ORANGESPOTTED SUNFISH	1	18	5.6
BLUEGILL	7	121	5.8
NORTHERN SUNFISH	--	95	--
Lepomis HYBRID	--	8	--
SMALLMOUTH BASS	3	162	1.9
LARGEMOUTH BASS	2	39	5.1
BLACK CRAPPIE	--	1	--
WESTERN SAND DARTER	--	1	--
JOHNNY DARTER	--	6	--
BANDED DARTER	--	3	--
LOGPERCH	--	39	--
WALLEYE	--	4	--
FRESHWATER DRUM	15	46	32.6
ROUND GOBY	--	12	--
TOTAL FISH	122	2607	4.7

NOTE: DELT# = Number of fish with DELT anomalies;
EXAM# = Number of fish examined for DELT anomalies;
DELT% = Percentage of examined fish with DELT anomalies.
EXCLUDES SEINING DATA.

TABLE G-35. NUMBER OF FISH WITH FIN EROSION DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM AND THE PERCENTAGE THAT EROSION CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, 2014.

SPECIES	TOTAL WITH EROSION	TOTAL WITH DELT ANOMALIES	PERCENT WITH EROSION
LONGNOSE GAR	--	2	--
SHORTNOSE GAR	--	--	--
SKIPJACK HERRING	--	--	--
GIZZARD SHAD	--	--	--
THREADFIN SHAD	--	--	--
GOLDFISH	--	--	--
GRASS CARP	--	--	--
COMMON CARP	6	6	100.0
SILVER CARP	--	--	--
PALLID SHINER	--	--	--
EMERALD SHINER	--	1	--
GHOST SHINER	--	--	--
SPOTTAIL SHINER	--	--	--
RED SHINER	--	--	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
SAND SHINER	--	--	--
REDFIN SHINER	--	--	--
MIMIC SHINER	--	--	--
Notropis sp.	--	--	--
BLUNTNOSE MINNOW	--	--	--
FATHEAD MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
QUILLBACK	--	--	--
HIGHFIN CARPSUCKER	--	--	--
SMALLMOUTH BUFFALO	4	5	80.0
SILVER REDHORSE	2	3	66.7
RIVER REDHORSE	--	--	--
GOLDEN REDHORSE	3	4	75.0
SHORTHEAD REDHORSE	--	--	--
Moxostoma sp.	--	--	--
CHANNEL CATFISH	62	64	96.9
FLATHEAD CATFISH	1	1	100.0
BLACKSTRIPE TOPMINNOW	--	--	--
BROOK SILVERSIDE	--	--	--
WHITE PERCH	--	--	--
WHITE BASS	5	5	100.0
ROCK BASS	--	--	--
GREEN SUNFISH	3	3	100.0
ORANGESPOTTED SUNFISH	1	1	100.0
BLUEGILL	6	7	85.7
NORTHERN SUNFISH	--	--	--
Lepomis HYBRID	--	--	--
SMALLMOUTH BASS	1	3	33.3
LARGEMOUTH BASS	2	2	100.0
BLACK CRAPPIE	--	--	--
WESTERN SAND DARTER	--	--	--
JOHNNY DARTER	--	--	--
BANDED DARTER	--	--	--
LOGPERCH	--	--	--
WALLEYE	--	--	--
FRESHWATER DRUM	14	15	93.3
ROUND GOBY	--	--	--
TOTAL FISH	110	122	90.2

NOTE: EXCLUDES SEINING DATA.

TABLE G-36. COMPARISONS OF DELT ANOMALIES AMONG SAMPLING PERIODS DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, 2014.

	MAY/JUNE			JULY/AUGUST			SEPTEMBER		
SPECIES	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %
LONGNOSE GAR	--	2	--	2	6	33.3	--	2	--
SHORTNOSE GAR	--	--	--	--	1	--	--	--	--
SKIPJACK HERRING	--	1	--	--	--	--	--	1	--
GIZZARD SHAD	--	--	--	--	57	--	--	18	--
THREADFIN SHAD	--	--	--	--	98	--	--	17	--
GOLDFISH	--	--	--	--	23	--	--	--	--
GRASS CARP	--	1	--	--	--	--	--	--	--
COMMON CARP	2	2	100.0	2	7	28.6	2	9	22.2
SILVER CARP	--	1	--	--	--	--	--	--	--
PALLID SHINER	--	7	--	--	--	--	--	2	--
EMERALD SHINER	1	152	0.7	--	305	--	--	80	--
GHOST SHINER	--	4	--	--	1	--	--	--	--
SPOTTAIL SHINER	--	--	--	--	39	--	--	15	--
RED SHINER	--	--	--	--	3	--	--	--	--
ROSYFACE SHINER	--	--	--	--	15	--	--	2	--
SPOTFIN SHINER	--	60	--	--	290	--	--	29	--
SAND SHINER	--	5	--	--	28	--	--	4	--
REDFIN SHINER	--	--	--	--	1	--	--	--	--
MIMIC SHINER	--	25	--	--	94	--	--	9	--
Notropis sp.	--	--	--	--	--	--	--	1	--
BLUNTNOSE MINNOW	--	24	--	--	128	--	--	26	--
FATHEAD MINNOW	--	--	--	--	1	--	--	--	--
BULLHEAD MINNOW	--	25	--	--	21	--	--	27	--
RIVER CARPSUCKER	--	1	--	--	4	--	--	4	--
QUILLBACK	--	1	--	--	5	--	--	--	--
HIGHFIN CARPSUCKER	--	--	--	--	4	--	--	--	--
SMALLMOUTH BUFFALO	--	7	--	1	10	10.0	4	16	25.0
SILVER REDHORSE	--	--	--	3	13	23.1	--	--	--
RIVER REDHORSE	--	--	--	--	1	--	--	--	--
GOLDEN REDHORSE	1	23	4.3	2	26	7.7	1	5	20.0
SHORTHEAD REDHORSE	--	5	--	--	6	--	--	4	--
Moxostoma sp.	--	--	--	--	4	--	--	--	--
CHANNEL CATFISH	27	28	96.4	21	23	91.3	16	18	88.9
FLATHEAD CATFISH	1	1	100.0	--	1	--	--	2	--
BLACKSTRIPE TOPMINNOW	--	1	--	--	--	--	--	2	--
BROOK SILVERSIDE	--	2	--	--	31	--	--	48	--
WHITE PERCH	--	--	--	--	2	--	--	2	--
WHITE BASS	5	20	25.0	--	--	--	--	1	--
ROCK BASS	--	1	--	--	3	--	--	2	--
GREEN SUNFISH	1	3	33.3	1	44	2.3	1	9	11.1
ORANGESPOTTED SUNFISH	--	1	--	1	11	9.1	--	6	--
BLUEGILL	5	50	10.0	1	43	2.3	1	28	3.6
NORTHERN SUNFISH	--	28	--	--	55	--	--	12	--
Lepomis HYBRID	--	--	--	--	6	--	--	2	--
SMALLMOUTH BASS	--	58	--	1	73	1.4	2	31	6.5
LARGEMOUTH BASS	2	3	66.7	--	18	--	--	18	--
BLACK CRAPPIE	--	--	--	--	1	--	--	--	--
WESTERN SAND DARTER	--	--	--	--	1	--	--	--	--
JOHNNY DARTER	--	--	--	--	6	--	--	--	--
BANDED DARTER	--	--	--	--	3	--	--	--	--
LOGPERCH	--	9	--	--	29	--	--	1	--
WALLEYE	--	--	--	--	1	--	--	3	--
FRESHWATER DRUM	4	5	80.0	10	27	37.0	1	14	7.1
ROUND GOBY	--	--	--	--	11	--	--	1	--
TOTAL FISH	49	556	8.8	45	1580	2.8	28	471	5.9

NOTE: DELT# = Number of fish with DELT anomalies;
EXAM# = Number of fish examined for DELT anomalies;
DELT% = Percentage of examined fish with DELT anomalies.
EXCLUDES SEINING DATA.

TABLE G-37. INTERYEAR COMPARISONS OF DELT ANOMALIES DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM FOR THE PERIOD OF 15 JUNE THROUGH AUGUST, 1994, 1995, 1999-2008, 2011, 2013, AND 2014.

	1994			1995			1999			2000			2001		
SPECIES	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %
LONGNOSE GAR	--	4	--	--	10	--	1	2	50.0	--	1	--	1	1	100.0
GAR sp.	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
SKIPJACK HERRING	--	--	--	--	1	--	--	1	--	--	--	--	--	4	--
GIZZARD SHAD	--	29	--	1	148	0.7	1	124	0.8	1	96	1.0	--	75	--
THREADFIN SHAD	--	--	--	--	--	--	--	--	--	--	--	--	--	19	--
GOLDEYE	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN PIKE	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--
GRASS CARP	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
COMMON CARP	4	17	23.5	4	19	21.1	16	38	42.1	3	14	21.4	1	10	10.0
CARP X GOLDFISH HYBRID	--	1	--	--	2	--	--	--	--	--	--	--	--	1	--
GOLDEN SHINER	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	--	73	--	--	277	--	--	35	--	--	9	--	--	237	--
GHOST SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
STRIPED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	2	--
SPOTTAIL SHINER	--	3	--	--	1	--	--	1	--	--	--	--	--	24	--
RED SHINER	--	--	--	--	--	--	--	3	--	--	--	--	--	1	--
SPOTFIN SHINER	--	2	--	--	5	--	1	30	3.3	--	37	--	--	35	--
SAND SHINER	--	--	--	--	2	--	--	--	--	--	--	--	--	6	--
MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
BLUNTNOSE MINNOW	--	7	--	--	4	--	--	7	--	--	15	--	--	32	--
BULLHEAD MINNOW	--	2	--	--	5	--	--	18	--	--	5	--	--	10	--
RIVER CARPSUCKER	--	30	--	1	13	7.7	--	13	--	--	1	--	--	3	--
QUILLBACK	1	11	9.1	--	28	--	--	1	--	--	--	--	1	5	20.0
HIGHFIN CARPSUCKER	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
Carpiodes sp.	--	--	--	--	--	--	--	1	--	--	--	--	--	1	--
SMALLMOUTH BUFFALO	1	9	11.1	2	8	25.0	5	19	26.3	1	15	6.7	4	31	12.9
SILVER REDHORSE	--	2	--	9	26	34.6	1	1	100.0	--	2	--	--	1	--
GOLDEN REDHORSE	--	6	--	2	13	15.4	2	35	5.7	1	14	7.1	--	5	--
SHORTHEAD REDHORSE	--	4	--	--	7	--	--	2	--	--	--	--	2	3	66.7
Moxostoma sp.	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
CHANNEL CATFISH	10	19	52.6	15	18	83.3	2	5	40.0	4	13	30.8	2	7	28.6
FLATHEAD CATFISH	--	--	--	--	--	--	--	--	--	--	2	--	--	--	--
BROOK SILVERSIDE	--	--	--	--	--	--	--	--	--	--	1	--	--	5	--
WHITE PERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
WHITE BASS	--	--	--	--	9	--	--	--	--	--	--	--	--	2	--
YELLOW BASS	--	--	--	--	--	--	--	1	--	--	1	--	--	--	--
HYBRID STRIPER	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
Morone sp.	--	50	--	--	--	--	--	--	--	--	--	--	--	--	--
GREEN SUNFISH	--	4	--	--	11	--	5	59	8.5	1	113	0.9	1	25	4.0
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	4	--
BLUEGILL	--	1	--	--	4	--	2	35	5.7	--	53	--	1	26	3.8
NORTHERN SUNFISH	--	--	--	--	--	--	--	2	--	--	--	--	--	--	--
Lepomis HYBRID	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
SMALLMOUTH BASS	--	11	--	--	14	--	--	1	--	--	12	--	--	29	--
LARGEMOUTH BASS	--	3	--	1	5	20.0	--	9	--	--	14	--	3	14	21.4
BLACK CRAPPIE	--	--	--	--	--	--	--	2	--	1	3	33.3	--	--	--
LOGPERCH	--	2	--	--	2	--	--	--	--	--	1	--	1	3	33.3
SLENDERHEAD DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
FRESHWATER DRUM	1	11	9.1	--	10	--	2	19	10.5	2	12	16.7	5	18	27.8
TOTAL FISH	17	306	5.6	35	644	5.4	38	465	8.2	14	436	3.2	22	643	3.4

TABLE G-37 (cont.)

SPECIES	2002			2003			2004			2005			2006		
	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %	DELT #	EXAM #	DELT %
LONGNOSE GAR	--	4	--	--	6	--	--	1	--	--	--	--	--	--	--
SHORTNOSE GAR	--	1	--	--	1	--	--	--	--	--	--	--	--	--	--
GAR sp.	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	--	5	--	--	--	--	--	--	--	--	2	--	--	6	--
GIZZARD SHAD	--	119	--	2	45	4.4	--	16	--	--	112	--	--	9	--
THREADFIN SHAD	--	23	--	--	3	--	--	3	--	--	--	--	--	--	--
COMMON CARP	5	9	55.6	--	3	--	4	5	80.0	1	2	50.0	1	5	20.0
EMERALD SHINER	--	428	--	--	301	--	--	442	--	--	225	--	--	202	--
GHOST SHINER	--	--	--	--	4	--	--	--	--	--	1	--	--	--	--
STRIPED SHINER	--	1	--	--	2	--	--	1	--	--	4	--	--	--	--
SPOTTAIL SHINER	--	2	--	1	1	100.0	--	--	--	--	25	--	--	2	--
RED SHINER	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	--	50	--	--	53	--	--	30	--	--	76	--	--	42	--
SAND SHINER	--	7	--	--	5	--	--	--	--	--	2	--	--	3	--
REDFIN SHINER	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	8	--	--	--	--	--	--	--	--	--	--
SUCKERMOUTH MINNOW	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	--	51	--	--	42	--	--	8	--	--	109	--	--	42	--
BULLHEAD MINNOW	--	5	--	--	5	--	--	2	--	--	22	--	--	6	--
RIVER CARPSUCKER	--	6	--	--	1	--	--	6	--	--	1	--	--	1	--
QUILLBACK	--	--	--	--	3	--	--	1	--	--	5	--	--	4	--
HIGHFIN CARPSUCKER	--	--	--	1	1	100.0	--	--	--	--	--	--	--	--	--
WHITE SUCKER	--	--	--	1	1	100.0	--	--	--	--	--	--	--	--	--
NORTHERN HOG SUCKER	--	2	--	--	--	--	--	--	--	1	1	100.0	--	--	--
SMALLMOUTH BUFFALO	4	25	16.0	--	22	--	5	11	45.5	--	4	--	1	10	10.0
BLACK BUFFALO	--	--	--	1	8	12.5	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	1	1	100.0	--	--	--	--	2	--	1	3	33.3	--	1	--
RIVER REDHORSE	1	1	100.0	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	2	51	3.9	2	16	12.5	--	9	--	--	10	--	--	8	--
SHORTHEAD REDHORSE	2	8	25.0	2	7	28.6	4	5	80.0	1	7	14.3	--	11	--
CHANNEL CATFISH	6	13	46.2	24	34	70.6	14	19	73.7	15	16	93.8	17	27	63.0
FLATHEAD CATFISH	--	--	--	1	2	50.0	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
BROOK SILVERSIDE	--	4	--	--	4	--	--	2	--	--	14	--	--	2	--
WHITE PERCH	--	2	--	--	2	--	--	--	--	--	1	--	--	--	--
WHITE BASS	--	3	--	--	5	--	--	--	--	--	2	--	--	2	--
HYBRID STRIPER	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
GREEN SUNFISH	1	27	3.7	1	42	2.4	--	25	--	--	43	--	--	33	--
ORANGESPOTTED SUNFISH	--	1	--	--	4	--	--	1	--	--	2	--	--	--	--
BLUEGILL	2	78	2.6	7	61	11.5	8	65	12.3	--	37	--	--	46	--
NORTHERN SUNFISH	--	1	--	--	4	--	--	--	--	--	1	--	--	2	--
Lepomis HYBRID	--	--	--	--	1	--	--	6	--	--	--	--	--	1	--
SMALLMOUTH BASS	1	22	4.5	3	26	11.5	5	13	38.5	--	14	--	--	11	--
LARGEMOUTH BASS	5	35	14.3	--	27	--	10	20	50.0	3	48	6.3	2	29	6.9
WHITE CRAPPIE	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
BLACK CRAPPIE	--	--	--	--	3	--	1	2	50.0	--	--	--	--	--	--
LOGPERCH	--	6	--	--	--	--	--	3	--	--	14	--	--	16	--
SLENDERHEAD DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
RIVER DARTER	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
SAUGER	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
FRESHWATER DRUM	6	29	20.7	7	39	17.9	3	12	25.0	11	23	47.8	9	26	34.6
ROUND GOBY	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
TOTAL FISH	36	1025	3.5	53	793	6.7	54	713	7.6	33	828	4.0	30	549	5.5

TABLE G-37 (cont.)

SPECIES	2007 DELT #	2007 EXAM #	2007 DELT %	2008 DELT #	2008 EXAM #	2008 DELT %	2011 DELT #	2011 EXAM #	2011 DELT %	2013 DELT #	2013 EXAM #	2013 DELT %	2014 DELT #	2014 EXAM #	2014 DELT %
LONGNOSE GAR	--	--	--	1	5	20.0	--	--	--	--	--	--	2	6	33.3
SHORTNOSE GAR	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
SKIPJACK HERRING	--	--	--	--	2	--	--	--	--	--	2	--	--	--	--
GIZZARD SHAD	--	236	--	--	24	--	--	9	--	--	10	--	--	57	--
THREADFIN SHAD	--	1	--	--	1	--	--	--	--	--	--	--	--	98	--
NORTHERN PIKE	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
CENTRAL STONEROLLER	--	4	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	23	--
GRASS CARP	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
COMMON CARP	2	3	66.7	2	6	33.3	4	7	57.1	--	--	--	2	7	28.6
GOLDEN SHINER	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
PALLID SHINER	--	1	--	--	2	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	--	765	--	--	267	--	--	36	--	--	1	--	--	305	--
GHOST SHINER	--	--	--	--	2	--	--	--	--	--	--	--	--	1	--
STRIPED SHINER	--	1	--	--	3	--	--	--	--	--	--	--	--	--	--
SPOTTAIL SHINER	--	6	--	--	14	--	--	5	--	--	--	--	--	39	--
RED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	3	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	1	--	--	15	--
SPOTFIN SHINER	--	39	--	--	63	--	--	18	--	--	15	--	--	290	--
SAND SHINER	--	1	--	--	--	--	--	2	--	--	--	--	--	28	--
REDFIN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
MIMIC SHINER	--	--	--	--	1	--	--	1	--	--	--	--	--	94	--
CHANNEL/MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
Notropis sp.	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--
BLUNTNOSE MINNOW	--	99	--	--	59	--	--	13	--	--	2	--	--	128	--
FATHEAD MINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
BULLHEAD MINNOW	--	5	--	--	11	--	--	5	--	--	2	--	--	21	--
RIVER CARPSUCKER	--	1	--	--	2	--	--	--	--	--	1	--	--	4	--
QUILLBACK	--	1	--	--	5	--	--	1	--	--	--	--	--	5	--
HIGHFIN CARPSUCKER	--	--	--	--	--	--	--	--	--	--	--	--	--	4	--
Carpiodes sp.	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN HOG SUCKER	--	--	--	--	1	--	--	1	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	3	17	17.6	1	9	11.1	--	2	--	1	1	100.0	1	10	10.0
BLACK BUFFALO	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
SILVER REDHORSE	1	5	20.0	2	2	100.0	--	--	--	--	3	--	3	13	23.1
RIVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
GOLDEN REDHORSE	3	6	50.0	--	15	--	--	13	--	--	12	--	2	26	7.7
SHORTHEAD REDHORSE	1	3	33.3	2	4	50.0	1	8	12.5	--	3	--	--	6	--
Moxostoma sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	4	--
CHANNEL CATFISH	12	16	75.0	7	11	63.6	7	11	63.6	6	9	66.7	21	23	91.3
TADPOLE MADTOM	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
FLATHEAD CATFISH	1	1	100.0	--	--	--	--	3	--	--	1	--	--	1	--
TROUT-PERCH	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--
BROOK SILVERSIDE	--	17	--	--	18	--	--	2	--	--	2	--	--	31	--
WHITE PERCH	--	1	--	--	--	--	--	--	--	--	--	--	--	2	--
WHITE BASS	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
HYBRID STRIPER	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	3	--
GREEN SUNFISH	--	10	--	--	14	--	--	5	--	--	12	--	1	44	2.3
ORANGESPOTTED SUNFISH	--	2	--	--	6	--	--	--	--	--	1	--	1	11	9.1
BLUEGILL	2	38	5.3	--	52	--	1	25	4.0	1	53	1.9	1	43	2.3
NORTHERN SUNFISH	--	1	--	--	12	--	--	4	--	--	7	--	--	55	--
Lepomis HYBRID	--	--	--	--	--	--	--	--	--	--	4	--	--	6	--
SMALLMOUTH BASS	--	15	--	1	23	4.3	--	10	--	--	19	--	1	73	1.4
LARGEMOUTH BASS	1	18	5.6	6	33	18.2	1	11	9.1	--	7	--	--	18	--
WHITE CRAPPIE	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	--	1	--	--	--	--	--	1	--	--	--	--	--	1	--
WESTERN SAND DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--
JOHNNY DARTER	--	--	--	--	--	--	--	--	--	--	--	--	--	6	--
BANDED DARTER	--	--	--	--	1	--	--	--	--	--	--	--	--	3	--
LOGPERCH	--	13	--	--	6	--	--	1	--	--	7	--	--	29	--
SLENDERHEAD DARTER	--	1	--	--	--	--	--	1	--	--	--	--	--	--	--
SAUGER	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--
WALLEYE	--	--	--	--	1	--	--	--	--	--	--	--	--	1	--
FRESHWATER DRUM	7	35	20.0	3	15	20.0	2	6	33.3	1	2	50.0	10	27	37.0
ROUND GOBY	--	--	--	--	--	--	--	2	--	--	--	--	--	11	--
TOTAL FISH	33	1368	2.4	25	691	3.6	16	207	7.7	9	180	5.0	45	1580	2.8

NOTE: DELT# = Number of fish with DELT anomalies
EXAM# = Number of fish examined for DELT anomalies;
DELT% = Percentage of examined fish with DELT anomalies.
EXCLUDES SEINING DATA.

Table G-38. Summary of QHEI Metric Scores for the Dresden Nuclear Station Sampling Stations, July 2014.

Waterbody	Location	Substrate	Cover	Channel	Riparian	Pool/Current	Riffle/Run	Gradient	QHEI Score	Narrative	1993/1994 Mean QHEI Score
Des Plaines River	501	16.00	12.00	9.00	5.00	8.00	0.00	6.00	56.00	Fair	45.00
Kankakee River	502	8.00	11.00	11.00	4.00	8.00	0.00	6.00	48.00	Fair	56.50
Kankakee River	503	1.00	15.00	11.00	8.00	8.00	0.00	6.00	49.00	Fair	58.50
Illinois River	506	16.00	12.00	9.00	3.50	11.00	0.00	6.00	57.50	Fair	64.00
Illinois River	507A	0.00	10.00	9.00	7.50	8.00	0.00	6.00	40.50	Poor	53.00
Illinois River	510	10.50	11.00	9.00	6.00	8.00	0.00	6.00	50.50	Fair	56.00
Illinois River	512	8.00	5.00	9.00	6.50	11.00	0.00	6.00	45.50	Fair	66.50
Illinois River	513	4.00	5.00	9.00	8.00	8.00	0.00	6.00	40.00	Poor	56.00
Illinois River	514	13.00	7.00	9.00	8.00	9.00	0.00	6.00	52.00	Fair	44.50
Illinois River	515	10.00	6.00	9.00	7.00	8.00	0.00	6.00	46.00	Fair	56.30

Table G-39. Summary of QHEI Metric Scores for the Dresden Nuclear Station Sampling Stations, September 2014.

Waterbody	Location	Substrate	Cover	Channel	Riparian	Pool/Current	Riffle/Run	Gradient	QHEI Score	Narrative	1993/1994 Mean QHEI Score
Des Plaines River	501	16.00	12.00	9.00	5.00	8.00	0.00	6.00	56.00	Fair	45.00
Kankakee River	502	7.00	13.00	11.00	4.00	8.00	0.00	6.00	49.00	Fair	56.50
Kankakee River	503	1.00	15.00	11.00	8.00	8.00	0.00	6.00	49.00	Fair	58.50
Illinois River	506	16.00	10.00	9.00	3.50	10.00	0.00	6.00	54.50	Fair	64.00
Illinois River	507A	0.00	10.00	9.00	7.50	8.00	0.00	6.00	40.50	Poor	53.00
Illinois River	510	8.50	10.00	9.00	6.00	8.00	0.00	6.00	47.50	Fair	56.00
Illinois River	512	8.00	5.00	9.00	6.00	12.00	0.00	6.00	46.00	Fair	66.50
Illinois River	513	4.00	11.00	9.00	8.00	10.00	0.00	6.00	48.00	Fair	56.00
Illinois River	514	13.00	9.00	9.00	8.00	10.00	0.00	6.00	55.00	Fair	44.50
Illinois River	515	9.50	10.00	9.00	6.50	10.00	0.00	6.00	51.00	Fair	56.30

Table G-40. Summary of Average QHEI Metric Scores for the Dresden Nuclear Station Sampling Stations, July/September 2014.

Waterbody	Location	Substrate	Cover	Channel	Riparian	Pool/Current	Riffle/Run	Gradient	QHEI Score	Narrative	1993/1994 Mean QHEI Score
Des Plaines River	501	16.00	12.00	9.00	5.00	8.00	0.00	6.00	56.00	Fair	45.00
Kankakee River	502	7.50	12.00	11.00	4.00	8.00	0.00	6.00	48.50	Fair	56.50
Kankakee River	503	1.00	15.00	11.00	8.00	8.00	0.00	6.00	49.00	Fair	58.50
Illinois River	506	16.00	11.00	9.00	3.50	10.50	0.00	6.00	56.00	Fair	64.00
Illinois River	507A	0.00	10.00	9.00	7.50	8.00	0.00	6.00	40.50	Poor	53.00
Illinois River	510	9.50	10.50	9.00	6.00	8.00	0.00	6.00	49.00	Fair	56.00
Illinois River	512	8.00	5.00	9.00	6.25	11.50	0.00	6.00	45.75	Fair	66.50
Illinois River	513	4.00	8.00	9.00	8.00	9.00	0.00	6.00	44.00	Poor	56.00
Illinois River	514	13.00	8.00	9.00	8.00	9.50	0.00	6.00	53.50	Fair	44.50
Illinois River	515	9.75	8.00	9.00	6.75	9.00	0.00	6.00	48.50	Fair	56.30

Table G-41. Benthic macroinvertebrates collected from the Upper Illinois Waterway in the vicinity of Dresden Nuclear Station, August 2014.

TURBELLARIA
NEMATODA
BRYOZOA
Plumatella
ANNELIDA
Oligochaeta
Dero
Dero nivea
Nais communis
Nais variabilis
Pristina leidyi
Pristina osborni
Stylaria lacustris
Aulodrilus limnobius
Aulodrilus pigueti
Branchiura sowerbyi
Ilyodrilus templetoni
Limnodrilus [a]
Limnodrilus cervix
Limnodrilus hoffmeisteri
Limnodrilus udekemianus
Imm. tub. w/bifid chaetae[a]
Imm. tub. w/hair & pectinate chaetae [a]
Hirudinea[a]
Helobdella
Helobdella stagnalis
Placobdella montifera
Erpobdella
Erpobdella microstoma
CRUSTACEA
Amphipoda
Hyalella azteca
Gammarus
Apocorophium lacustre
Decapoda
Orconectes
ARACHNIDA
Hydracarina
INSECTA
Ephemeroptera
Baetis intercalaris
Stenacron
Maccaffertium integrum
Stenonema femoratum
Maccaffertium pulchellum
Tricorythodes
Caenis
Hexagenia limbata
Odonata
Argia
Enallagma
Gomphus
Stylurus
Epitheca (Epicordulia)
Hemiptera
Corixidae
Trichoptera
Cyrnellus fraternus
Cheumatopsyche
Hydropsyche orris
Hydroptila
Nectopsyche
Oecetis
Coleoptera
Dineutus
Dubiraphia
Macronychus glabratus
Stenelmis
Diptera
Ceratopogonidae
Chironomidae
Tanypus
Procladius
Ablabesmyia
Ablabesmyia mallochi
Nilotanypus
Cricotopus bicinctus grp.
Cricotopus sylvestris grp.
Nanocladius distinctus
Nanocladius crassicornus/rectinervis
Axarus
Chironomus
Cryptochironomus
Cryptotendipes
Dicrotendipes modestus
Dicrotendipes neomodestus
Dicrotendipes fumidus
Dicrotendipes lucifer
Dicrotendipes simpsoni
Glyptotendipes
Parachironomus
Polypedilum flavum
Polypedilum halterale grp.
Polypedilum illinoense
Stenochironomus
Micropsectra
Rheotanytarsus
Tanytarsus
MOLLUSCA
Gastropoda
Amnicola
Pleurocera
Physa
Ferrissia
Pelecypoda
Corbicula fluminea
Sphaerium
Pisidium
Leptodea fragilis
Dreissena polymorpha

[a]Not counted as taxon for all samples combined, but may be counted for some samples and sites

TABLE G-42. PONAR DENSITIES FOR EACH TAXON COLLECTED IN DRESDEN POOL, AUGUST 2014.

TAXA	19-20 AUG 2014 #/m2	%
Turbellaria	12.0	0.14
Nematoda	2.4	0.03
Plumatella	2.4	0.03
Stylaria lacustris	9.6	0.11
Aulodrilus limnobius	38.3	0.46
Aulodrilus pigueti	55.0	0.66
Branchiura sowerbyi	43.1	0.51
Limnodrilus	114.8	1.37
Limnodrilus cervix	45.4	0.54
Limnodrilus hoffmeisteri	40.7	0.48
Limnodrilus udekemianus	284.6	3.39
Imm. tub. w/bifid chaetae	1,514.1	18.05
Imm. tub. w/hair & pectinate chaetae	294.2	3.51
Hirudinea	7.2	0.09
Helobdella	7.2	0.09
Helobdella stagnalis	4.8	0.06
Placobdella montifera	4.8	0.06
Erpobdella	2.4	0.03
Erpobdella microstoma	69.4	0.83
Hyalella azteca	492.7	5.87
Gammarus	167.4	2.00
Hydracarina	28.7	0.34
Baetis intercalaris	2.4	0.03
Tricorythodes	4.8	0.06
Caenis	14.4	0.17
Hexagenia limbata	83.7	1.00
Enallagma	33.5	0.40
Corixidae	67.0	0.80
Cyrnellus fraternus	12.0	0.14
Hydroptila	21.5	0.26
Oecetis	21.5	0.26
Dubiraphia	19.1	0.23
Stenelmis	4.8	0.06
Ceratopogonidae	40.7	0.48
Tanypus	59.8	0.71
Procladius	686.5	8.18
Ablabesmyia	4.8	0.06
Ablabesmyia mallochi	21.5	0.26
Nilotanypus	2.4	0.03
Cricotopus bicinctus grp.	35.9	0.43
Cricotopus sylvestris grp.	43.1	0.51
Axarus	2.4	0.03
Chironomus	731.9	8.73
Cryptochironomus	71.8	0.86
Cryptotendipes	9.6	0.11
Dicrotendipes modestus	35.9	0.43
Dicrotendipes neomodestus	487.9	5.82
Dicrotendipes fumidus	2.4	0.03
Dicrotendipes lucifer	2.4	0.03
Dicrotendipes simpsoni	33.5	0.40
Glyptotendipes	267.9	3.19
Parachironomus	52.6	0.63
Polypedilum flavum	52.6	0.63
Polypedilum halterale grp.	435.3	5.19
Polypedilum illinoense	9.6	0.11
Micropsectra	2.4	0.03
Rheotanytarsus	4.8	0.06
Tanytarsus	1,016.6	12.12
Amnicola	385.1	4.59
Pleurocera	28.7	0.34
Ferrissia	9.6	0.11
Corbicula fluminea	172.2	2.05
Sphaerium	95.7	1.14
Pisidium	50.2	0.60
Leptodea fragilis	2.4	0.03
Dreissena polymorpha	4.8	0.06
TOTAL BENTHOS	8,388.3	100.00
TOTAL TAXA	59	
EPT TAXA	7	

TABLE G-43. UPSTREAM VS. DOWNSTREAM COMPARISON OF MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED FROM PONAR SAMPLES IN DRESDEN POOL DURING AUGUST 2014.

TAXA	UPSTREAM DRESDEN #/m2	UPSTREAM DRESDEN %	DOWNSTREAM DRESDEN #/m2	DOWNSTREAM DRESDEN %
Turbellaria	19.1	0.33	4.8	0.04
Nematoda	--	--	4.8	0.04
Plumatella	4.8	0.08	--	--
Stylaria lacustris	19.1	0.33	--	--
Aulodrilus limnobius	--	--	76.5	0.70
Aulodrilus pigueti	86.1	1.48	23.9	0.22
Branchiura sowerbyi	47.8	0.82	38.3	0.35
Limnodrilus	--	--	229.6	2.10
Limnodrilus cervix	33.5	0.57	57.4	0.52
Limnodrilus hoffmeisteri	47.8	0.82	33.5	0.31
Limnodrilus udekemianus	129.2	2.21	440.1	4.02
Imm. tub. w/bifid chaetae	794.1	13.62	2,234.0	20.41
Imm. tub. w/hair & pectinate chaetae	358.8	6.15	229.6	2.10
Hirudinea	9.6	0.16	4.8	0.04
Helobdella	4.8	0.08	9.6	0.09
Helobdella stagnalis	9.6	0.16	--	--
Placobdella montifera	4.8	0.08	4.8	0.04
Erpobdella	4.8	0.08	--	--
Erpobdella microstoma	43.1	0.74	95.7	0.87
Hyalella azteca	330.1	5.66	655.4	5.99
Gammarus	153.1	2.63	181.8	1.66
Hydracarina	47.8	0.82	9.6	0.09
Baetis intercalaris	--	--	4.8	0.04
Tricorythodes	4.8	0.08	4.8	0.04
Caenis	28.7	0.49	--	--
Hexagenia limbata	167.4	2.87	--	--
Enallagma	9.6	0.16	57.4	0.52
Corixidae	133.9	2.30	--	--
Cyrnellus fraternus	23.9	0.41	--	--
Hydroptila	9.6	0.16	33.5	0.31
Oecetis	23.9	0.41	19.1	0.17
Dubiraphia	38.3	0.66	--	--
Stenelmis	--	--	9.6	0.09
Ceratopogonidae	--	--	81.3	0.74
Tanypus	9.6	0.16	110.0	1.01
Procladius	282.2	4.84	1,090.7	9.97
Ablabesmyia	9.6	0.16	--	--
Ablabesmyia mallochi	--	--	43.1	0.39
Nilotanypus	4.8	0.08	--	--
Cricotopus bicinctus grp.	--	--	71.8	0.66
Cricotopus sylvestris grp.	9.6	0.16	76.5	0.70
Axarus	4.8	0.08	--	--
Chironomus	947.2	16.24	516.6	4.72
Cryptochironomus	76.5	1.31	67.0	0.61
Cryptotendipes	--	--	19.1	0.17
Dicrotendipes modestus	67.0	1.15	4.8	0.04
Dicrotendipes neomodestus	196.1	3.36	779.8	7.12
Dicrotendipes fumidus	--	--	4.8	0.04
Dicrotendipes lucifer	4.8	0.08	--	--
Dicrotendipes simpsoni	62.2	1.07	4.8	0.04
Glyptotendipes	526.2	9.02	9.6	0.09
Parachironomus	86.1	1.48	19.1	0.17
Polypedilum flavum	76.5	1.31	28.7	0.26
Polypedilum halterale grp.	306.2	5.25	564.5	5.16
Polypedilum illinoense	9.6	0.16	9.6	0.09
Micropsectra	--	--	4.8	0.04
Rheotanytarsus	--	--	9.6	0.09
Tanytarsus	--	--	2,033.1	18.58
Amnicola	382.7	6.56	387.5	3.54
Pleurocera	4.8	0.08	52.6	0.48
Ferrissia	14.4	0.25	4.8	0.04
Corbicula fluminea	62.2	1.07	282.2	2.58
Sphaerium	28.7	0.49	162.6	1.49
Pisidium	57.4	0.98	43.1	0.39
Leptodea fragilis	4.8	0.08	--	--
Dreissena polymorpha	9.6	0.16	--	--
TOTAL BENTHOS	5,831.4	100.00	10,945.3	100.00
TOTAL TAXA	48		47	
EPT TAXA	7		5	

Table G-44. Results of Upstream vs. Downstream Statistical Comparisons for Ponar Macroinvertebrate Data Collected in Dresden Pool, August 2014.

August	Upstream Dresden	Downstream Dresden	Significant Difference[a]	F Value	P Value
Density-All Taxa[b]	5,831.4	10,945.3	No	0.60	0.47
Density-Oligochaeta[b]	1,516.5	3,363.0	No	1.27	0.30
Density-Chironomidae[b]	2,678.5	5,467.9	No	0.03	0.86
Density-Pelecypoda	153.1	487.9	No	4.38	0.08
Taxa Richness[c]	26.3	27.0	No	0.08	0.79

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Log transformed data used for statistical analyses because they are normally distributed.
(c) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.

TABLE G-45. YEAR VS. YEAR COMPARISON OF PONAR MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED IN DRESDEN POOL DURING AUGUST OF 1999, 2001-2004, 2006, 2008, 2011, 2013, 2014, AND SEPTEMBER OF 2005 AND 2007.

TAXA	1999		2001		2002		2003		2004	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	--	--	--	--	--	--	--	--
Nematoda	--	--	--	--	--	--	--	--	--	--
Urnatella gracilis	--	--	--	--	--	--	--	--	--	--
Plumatella	--	--	--	--	--	--	--	--	--	--
Dero	--	--	--	--	--	--	--	--	--	--
Dero digitata	2.4	0.20	--	--	--	--	--	--	--	--
Dero nivea	--	--	--	--	--	--	--	--	--	--
Nais	--	--	--	--	--	--	--	--	--	--
Paranais litoralis	--	--	--	--	--	--	--	--	--	--
Pristina jenkinae	--	--	2.4	0.30	--	--	--	--	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	--	--
Aulodrilus limnobius	3.6	0.30	--	--	7.2	0.65	--	--	--	--
Aulodrilus pigueti	15.5	1.28	20.3	2.58	76.5	6.96	31.1	2.28	21.5	1.67
Aulodrilus pluriseta	--	--	--	--	--	--	4.8	0.35	--	--
Branchiura sowerbyi	29.9	2.47	76.5	9.71	23.9	2.17	40.7	2.99	62.2	4.82
Ilyodrilus templetoni	4.8	0.39	3.6	0.46	12.0	1.09	12.0	0.88	4.8	0.37
Limnodrilus	--	--	--	--	--	--	7.2	0.53	--	--
Limnodrilus cervix	124.4	10.26	10.8	1.37	14.4	1.30	--	--	98.1	7.61
Limnodrilus cervix (var)	--	--	2.4	0.30	28.7	2.61	--	--	9.6	0.74
Limnodrilus claparedianus	--	--	--	--	--	--	7.2	0.53	--	--
Limnodrilus hoffmeisteri	238.0	19.63	50.2	6.37	95.7	8.70	208.1	15.29	155.5	12.06
Limnodrilus maumeensis	--	--	59.8	7.59	52.6	4.78	155.5	11.42	45.4	3.53
Limnodrilus profundicola	10.8	0.89	--	--	--	--	--	--	--	--
Limnodrilus udekemianus	70.6	5.82	57.4	7.28	40.7	3.70	38.3	2.81	43.1	3.34
Imm. tub. w/bifid chaetae	522.6	43.10	253.5	32.17	440.1	40.00	531.0	39.02	473.6	36.73
Imm. tub. w/hair & pectinate chaetae	13.2	1.08	4.8	0.61	9.6	0.87	12.0	0.88	--	--
Hirudinea	--	--	--	--	--	--	--	--	--	--
Desserobdella phalera	--	--	1.2	0.15	--	--	--	--	--	--
Helobdella	--	--	--	--	--	--	--	--	--	--
Helobdella stagnalis	--	--	--	--	--	--	2.4	0.18	--	--
Placobdella montifera	--	--	--	--	--	--	--	--	--	--
Erpobdella	--	--	--	--	--	--	--	--	--	--
Erpobdella microstoma	--	--	--	--	--	--	2.4	0.18	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	--	--	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	--	--	--	--	2.4	0.18	26.3	2.04
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--
Hydracarina	--	--	--	--	--	--	--	--	--	--
Baetis intercalaris	--	--	--	--	--	--	--	--	--	--
Stenacron	--	--	--	--	--	--	--	--	--	--
Tricorythodes	--	--	--	--	--	--	--	--	--	--
Caenis	1.2	0.10	--	--	--	--	--	--	--	--
Hexagenia bilineata	--	--	--	--	43.1	3.91	2.4	0.18	--	--
Hexagenia limbata	6.0	0.49	9.6	1.21	14.4	1.30	14.4	1.05	--	--
Argia	--	--	1.2	0.15	--	--	--	--	--	--
Enallagma	--	--	--	--	--	--	--	--	--	--
Stylurus	--	--	--	--	--	--	--	--	--	--
Corixidae	1.2	0.10	13.2	1.67	--	--	2.4	0.18	--	--
Cyrnellus fraternus	--	--	1.2	0.15	7.2	0.65	9.6	0.70	--	--
Cheumatopsyche	--	--	--	--	--	--	--	--	--	--
Hydroptila	--	--	--	--	--	--	--	--	--	--
Oxyethira	--	--	--	--	--	--	--	--	--	--
Oecetis	1.2	0.10	3.6	0.46	2.4	0.22	--	--	--	--
Dubiraphia	2.4	0.20	6.0	0.76	--	--	--	--	--	--
Macronychus glabratus	--	--	--	--	--	--	--	--	2.4	0.19
Stenelmis	--	--	--	--	--	--	--	--	--	--
Ceratopogonidae	--	--	1.2	0.15	--	--	--	--	--	--
Chironomidae	3.6	0.30	--	--	--	--	--	--	--	--
Tanypus	--	--	--	--	--	--	--	--	2.4	0.19
Tanypus neopunctipennis	2.4	0.20	--	--	--	--	--	--	--	--
Procladius	--	--	4.8	0.61	--	--	4.8	0.35	47.8	3.71
Procladius (Holotanypus)	19.1	1.58	16.7	2.12	--	--	21.5	1.58	--	--
Coelotanypus	16.7	1.38	49.0	6.22	19.1	1.74	35.9	2.64	4.8	0.37
Ablabesmyia	--	--	--	--	--	--	--	--	--	--
Ablabesmyia janta	--	--	--	--	--	--	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--
Ablabesmyia rhamphe grp.	--	--	3.6	0.46	--	--	--	--	--	--
Ablabesmyia annulata	2.4	0.20	9.6	1.21	9.6	0.87	9.6	0.70	4.8	0.37
Nilotanypus	--	--	--	--	--	--	--	--	--	--
Thienemannimyia grp.	--	--	--	--	--	--	--	--	--	--
Cricotopus	--	--	--	--	--	--	--	--	2.4	0.19
Cricotopus bicinctus grp.	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	7.2	0.56

TABLE G-45 (cont.)

TAXA	1999 #/m2	1999 %	2001 #/m2	2001 %	2002 #/m2	2002 %	2003 #/m2	2003 %	2004 #/m2	2004 %
Epoicocladius	--	--	--	--	2.4	0.22	2.4	0.18	--	--
Kiefferulus	--	--	--	--	--	--	--	--	--	--
Nanocladius distinctus	--	--	--	--	--	--	--	--	--	--
Rheocricotopus robacki	--	--	--	--	--	--	--	--	--	--
Axarus	1.2	0.10	1.2	0.15	4.8	0.43	--	--	--	--
Chironomus	10.8	0.89	28.7	3.64	81.3	7.39	100.5	7.38	19.1	1.48
Cladopelma	--	--	--	--	--	--	--	--	--	--
Cryptochironomus	23.9	1.97	27.5	3.49	14.4	1.30	14.4	1.05	45.4	3.53
Cryptotendipes	--	--	--	--	--	--	2.4	0.18	--	--
Dicrotendipes modestus	--	--	--	--	--	--	--	--	4.8	0.37
Dicrotendipes neomodestus	1.2	0.10	--	--	--	--	--	--	--	--
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	--	--	1.2	0.15	--	--	--	--	--	--
Glyptotendipes	1.2	0.10	6.0	0.76	2.4	0.22	4.8	0.35	--	--
Harnischia	1.2	0.10	--	--	--	--	--	--	--	--
Microchironomus	21.5	1.78	4.8	0.61	4.8	0.43	7.2	0.53	--	--
Parachironomus	--	--	--	--	--	--	--	--	--	--
Paracladopelma	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	--	--	--	--	--	--	--	--
Polypedilum halterale grp.	38.3	3.16	34.7	4.40	33.5	3.04	4.8	0.35	55.0	4.27
Polypedilum illinoense	2.4	0.20	--	--	--	--	4.8	0.35	--	--
Polypedilum scalaenum grp.	--	--	--	--	--	--	--	--	--	--
Stenochironomus	--	--	--	--	--	--	--	--	4.8	0.37
Stictochironomus	--	--	--	--	9.6	0.87	--	--	--	--
Stictochironomus caffrarius grp.	4.8	0.39	1.2	0.15	--	--	7.2	0.53	--	--
Tribelos	--	--	1.2	0.15	--	--	--	--	--	--
Tribelos fuscicorne	--	--	--	--	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	--	--	--	--	--	--	--	--
Micropsectra	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	--	--	--	--	--	--	--	--	--	--
Tanytarsus	1.2	0.10	--	--	--	--	--	--	--	--
Elimia	2.4	0.20	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	1.2	0.15	--	--	--	--	--	--
Amnicola	--	--	--	--	--	--	--	--	--	--
Pleurocera	--	--	--	--	--	--	--	--	--	--
Physa	--	--	--	--	--	--	--	--	--	--
Menetus	--	--	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	7.2	0.59	15.5	1.97	43.1	3.91	50.2	3.69	114.8	8.91
Sphaerium	--	--	--	--	--	--	--	--	--	--
Musculium	3.6	0.30	--	--	--	--	2.4	0.18	21.5	1.67
Pisidium	--	--	--	--	--	--	--	--	4.8	0.37
Unionidae	--	--	--	--	2.4	0.22	--	--	--	--
Amblema plicata	--	--	1.2	0.15	2.4	0.22	4.8	0.35	--	--
Quadrula pustulosa	--	--	1.2	0.15	--	--	--	--	--	--
Quadrula quadrula	--	--	--	--	2.4	0.22	--	--	4.8	0.37
Leptodea fragilis	--	--	--	--	--	--	--	--	--	--
Toxolasma parvus	--	--	--	--	--	--	--	--	--	--
Dreissena polymorpha	--	--	--	--	--	--	--	--	2.4	0.19
TOTAL BENTHOS	1,212.7	100.00	788.1	100.00	1,100.3	100.00	1,361.0	100.00	1,289.2	100.00
TOTAL TAXA	32		35		27		31		26	
EPT TAXA	3		3		4		3		0	

TABLE G-45 (cont.)

TAXA	2005 #/m2	2005 %	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %
Turbellaria	--	--	--	--	--	--	--	--	--	--
Nematoda	--	--	4.8	0.25	--	--	--	--	--	--
Urnatella gracilis	2.4	0.24	--	--	4.8	0.31	--	--	--	--
Plumatella	2.4	0.24	--	--	--	--	--	--	--	--
Dero	12.0	1.18	2.4	0.13	2.4	0.16	--	--	76.5	0.81
Dero digitata	--	--	--	--	--	--	--	--	--	--
Dero nivea	7.2	0.71	--	--	2.4	0.16	--	--	38.3	0.40
Nais	--	--	--	--	--	--	--	--	19.1	0.20
Paranais litoralis	--	--	--	--	--	--	--	--	--	--
Pristina jenkinae	2.4	0.24	--	--	--	--	--	--	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	76.5	0.81
Aulodrilus limnobius	2.4	0.24	33.5	1.76	19.1	1.26	--	--	19.1	0.20
Aulodrilus pigueti	9.6	0.95	112.4	5.91	145.9	9.59	7.2	0.73	1,224.6	12.90
Aulodrilus pluriseta	--	--	--	--	--	--	--	--	--	--
Branchiura sowerbyi	47.8	4.74	14.4	0.75	59.8	3.93	28.7	2.91	62.2	0.66
Ilyodrilus templetoni	7.2	0.71	19.1	1.01	26.3	1.73	--	--	81.3	0.86
Limnodrilus	--	--	7.2	0.38	2.4	0.16	--	--	--	--
Limnodrilus cervix	19.1	1.90	86.1	4.53	62.2	4.09	21.5	2.18	444.9	4.69
Limnodrilus cervix (var)	--	--	--	--	--	--	--	--	--	--
Limnodrilus claparedianus	--	--	--	--	2.4	0.16	--	--	4.8	0.05
Limnodrilus hoffmeisteri	78.9	7.82	196.1	10.31	212.9	13.99	47.8	4.85	846.7	8.92
Limnodrilus maumeensis	38.3	3.79	52.6	2.77	81.3	5.35	19.1	1.94	--	--
Limnodrilus profundicola	--	--	--	--	--	--	--	--	--	--
Limnodrilus udekemianus	76.5	7.58	57.4	3.02	67.0	4.40	52.6	5.34	52.6	0.55
Imm. tub. w/bifid chaetae	198.5	19.67	791.7	41.64	440.1	28.93	38.3	3.88	339.6	3.58
Imm. tub. w/hair & pectinate chaetae	12.0	1.18	69.4	3.65	16.7	1.10	133.9	13.59	2,645.4	27.87
Hirudinea	--	--	--	--	--	--	--	--	--	--
Desserobdella phalera	--	--	--	--	--	--	--	--	--	--
Helobdella	--	--	--	--	--	--	4.8	0.49	14.4	0.15
Helobdella stagnalis	--	--	--	--	--	--	--	--	--	--
Placobdella montifera	--	--	--	--	--	--	2.4	0.24	--	--
Erpobdella	--	--	--	--	--	--	--	--	--	--
Erpobdella microstoma	--	--	--	--	--	--	--	--	9.6	0.10
Hyalella azteca	2.4	0.24	--	--	--	--	--	--	--	--
Gammarus	--	--	--	--	2.4	0.16	14.4	1.46	14.4	0.15
Gammarus fasciatus	2.4	0.24	--	--	--	--	--	--	--	--
Apocorophium lacustre	78.9	7.82	14.4	0.75	19.1	1.26	69.4	7.04	52.6	0.55
Hydracarina	--	--	--	--	--	--	--	--	--	--
Baetis intercalaris	--	--	--	--	--	--	--	--	--	--
Stenacron	--	--	--	--	--	--	--	--	--	--
Tricorythodes	--	--	--	--	--	--	--	--	2.4	0.03
Caenis	--	--	7.2	0.38	--	--	--	--	12.0	0.13
Hexagenia bilineata	--	--	--	--	--	--	--	--	--	--
Hexagenia limbata	2.4	0.24	--	--	9.6	0.63	16.7	1.70	19.1	0.20
Argia	2.4	0.24	--	--	2.4	0.16	--	--	2.4	0.03
Enallagma	--	--	--	--	12.0	0.79	--	--	2.4	0.03
Stylurus	--	--	--	--	--	--	--	--	2.4	0.03
Corixidae	--	--	--	--	--	--	7.2	0.73	2.4	0.03
Cyrnellus fraternus	--	--	16.7	0.88	--	--	7.2	0.73	43.1	0.45
Cheumatopsyche	--	--	--	--	--	--	2.4	0.24	--	--
Hydroptila	--	--	--	--	--	--	--	--	40.7	0.43
Oxyethira	--	--	--	--	--	--	--	--	--	--
Oecetis	--	--	12.0	0.63	2.4	0.16	16.7	1.70	23.9	0.25
Dubiraphia	--	--	2.4	0.13	--	--	--	--	7.2	0.08
Macronychus glabratus	--	--	--	--	--	--	--	--	--	--
Stenelmis	--	--	--	--	--	--	--	--	--	--
Ceratopogonidae	--	--	--	--	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--	--	--
Tanypus	--	--	4.8	0.25	2.4	0.16	4.8	0.49	--	--
Tanypus neopunctipennis	--	--	--	--	--	--	--	--	--	--
Procladius	--	--	21.5	1.13	31.1	2.04	50.2	5.10	1,650.4	17.38
Procladius (Holotanypus)	--	--	--	--	--	--	--	--	--	--
Coelotanypus	4.8	0.47	95.7	5.03	12.0	0.79	64.6	6.55	28.7	0.30
Ablabesmyia	--	--	--	--	--	--	--	--	--	--
Ablabesmyia janta	--	--	9.6	0.50	--	--	2.4	0.24	--	--
Ablabesmyia mallochi	--	--	2.4	0.13	--	--	--	--	76.5	0.81
Ablabesmyia rhamphe grp.	--	--	--	--	--	--	--	--	--	--
Ablabesmyia annulata	--	--	--	--	--	--	4.8	0.49	--	--
Nilotanypus	--	--	--	--	--	--	--	--	--	--
Thienemannimyia grp.	--	--	2.4	0.13	--	--	--	--	--	--
Cricotopus	--	--	--	--	--	--	--	--	--	--
Cricotopus bicinctus grp.	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	167.4	1.76
Epoicocladius	--	--	--	--	--	--	--	--	--	--

TABLE G-45 (cont.)

TAXA	2005 #/m2	2005 %	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %
Kiefferulus	2.4	0.24	--	--	--	--	--	--	--	--
Nanocladius distinctus	--	--	--	--	--	--	9.6	0.97	--	--
Rheocricotopus robacki	--	--	--	--	2.4	0.16	--	--	--	--
Axarus	--	--	--	--	--	--	--	--	--	--
Chironomus	9.6	0.95	2.4	0.13	--	--	50.2	5.10	--	--
Cladopelma	2.4	0.24	--	--	--	--	--	--	--	--
Cryptochironomus	40.7	4.03	28.7	1.51	21.5	1.42	43.1	4.37	129.2	1.36
Cryptotendipes	--	--	--	--	--	--	--	--	--	--
Dicrotendipes modestus	--	--	2.4	0.13	2.4	0.16	--	--	--	--
Dicrotendipes neomodestus	2.4	0.24	7.2	0.38	--	--	--	--	76.5	0.81
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	19.1	0.20
Dicrotendipes simpsoni	--	--	12.0	0.63	--	--	--	--	--	--
Glyptotendipes	4.8	0.47	2.4	0.13	4.8	0.31	4.8	0.49	86.1	0.91
Harnischia	--	--	--	--	--	--	4.8	0.49	--	--
Microchironomus	--	--	28.7	1.51	9.6	0.63	145.9	14.81	153.1	1.61
Parachironomus	4.8	0.47	--	--	--	--	--	--	--	--
Paracladopelma	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	4.8	0.25	38.3	2.52	--	--	19.1	0.20
Polypedilum halterale grp.	143.5	14.22	12.0	0.63	21.5	1.42	19.1	1.94	224.8	2.37
Polypedilum illinoense	2.4	0.24	--	--	--	--	--	--	--	--
Polypedilum scalaenum grp.	57.4	5.69	7.2	0.38	--	--	--	--	--	--
Stenochironomus	--	--	2.4	0.13	--	--	4.8	0.49	19.1	0.20
Stictochironomus	--	--	--	--	--	--	--	--	--	--
Stictochironomus caffrarius grp.	--	--	2.4	0.13	--	--	--	--	--	--
Tribelos	--	--	--	--	--	--	--	--	--	--
Tribelos fuscicorne	--	--	2.4	0.13	--	--	--	--	--	--
Cladotanytarsus mancus grp.	4.8	0.47	--	--	--	--	--	--	--	--
Micropsectra	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	--	--	--	--	2.4	0.16	--	--	--	--
Tanytarsus	--	--	2.4	0.13	--	--	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	--	--	--	--	--	--	64.6	0.68
Amnicola	4.8	0.47	--	--	--	--	--	--	2.4	0.03
Pleurocera	4.8	0.47	--	--	55.0	3.62	2.4	0.24	--	--
Physa	--	--	--	--	--	--	--	--	4.8	0.05
Menetus	--	--	--	--	--	--	--	--	--	--
Ferrissia	2.4	0.24	--	--	--	--	--	--	2.4	0.03
Corbicula fluminea	95.7	9.48	141.1	7.42	124.4	8.18	69.4	7.04	564.5	5.95
Sphaerium	--	--	--	--	--	--	--	--	--	--
Musculium	--	--	4.8	0.25	--	--	--	--	--	--
Pisidium	--	--	--	--	--	--	2.4	0.24	7.2	0.08
Unionidae	--	--	--	--	--	--	--	--	--	--
Amblema plicata	16.7	1.66	2.4	0.13	--	--	7.2	0.73	9.6	0.10
Quadrula pustulosa	--	--	--	--	--	--	--	--	--	--
Quadrula quadrula	--	--	--	--	--	--	2.4	0.24	2.4	0.03
Leptodea fragilis	--	--	--	--	--	--	2.4	0.24	2.4	0.03
Toxolasma parvus	--	--	--	--	--	--	--	--	2.4	0.03
Dreissena polymorpha	--	--	--	--	--	--	--	--	--	--
TOTAL BENTHOS	1,009.4	100.00	1,901.5	100.00	1,521.2	100.00	985.5	100.00	9,493.4	100.00
TOTAL TAXA	34		39		31		34		48	
EPT TAXA	1		3		2		4		6	

TABLE G-45 (cont.)

TAXA	2013 #/m2	2013 %	2014 #/m2	2014 %
Turbellaria	--	--	12.0	0.14
Nematoda	--	--	2.4	0.03
Urnatella gracilis	--	--	--	--
Plumatella	--	--	2.4	0.03
Dero	7.2	0.18	--	--
Dero digitata	--	--	--	--
Dero nivea	14.4	0.36	--	--
Nais	--	--	--	--
Paranais litoralis	7.2	0.18	--	--
Pristina jenkinae	--	--	--	--
Stylaria lacustris	--	--	9.6	0.11
Aulodrilus limnobius	--	--	38.3	0.46
Aulodrilus pigueti	179.4	4.55	55.0	0.66
Aulodrilus pluriseta	--	--	--	--
Branchiura sowerbyi	14.4	0.36	43.1	0.51
Ilyodrilus templetoni	76.5	1.94	--	--
Limnodrilus	--	--	114.8	1.37
Limnodrilus cervix	21.5	0.55	45.4	0.54
Limnodrilus cervix (var)	--	--	--	--
Limnodrilus claparedianus	205.7	5.22	--	--
Limnodrilus hoffmeisteri	406.6	10.31	40.7	0.48
Limnodrilus maumeensis	--	--	--	--
Limnodrilus profundicola	--	--	--	--
Limnodrilus udekemianus	239.2	6.06	284.6	3.39
Imm. tub. w/bifid chaetae	624.3	15.83	1,514.1	18.05
Imm. tub. w/hair & pectinate chaetae	279.9	7.10	294.2	3.51
Hirudinea	--	--	7.2	0.09
Desserobdella phalera	--	--	--	--
Helobdella	4.8	0.12	7.2	0.09
Helobdella stagnalis	--	--	4.8	0.06
Placobdella montifera	--	--	4.8	0.06
Erpobdella	--	--	2.4	0.03
Erpobdella microstoma	--	--	69.4	0.83
Hyalella azteca	9.6	0.24	492.7	5.87
Gammarus	119.6	3.03	167.4	2.00
Gammarus fasciatus	--	--	--	--
Apocorophium lacustre	76.5	1.94	--	--
Hydracarina	--	--	28.7	0.34
Baetis intercalaris	--	--	2.4	0.03
Stenacron	2.4	0.06	--	--
Tricorythodes	--	--	4.8	0.06
Caenis	9.6	0.24	14.4	0.17
Hexagenia bilineata	--	--	--	--
Hexagenia limbata	--	--	83.7	1.00
Argia	--	--	--	--
Enallagma	--	--	33.5	0.40
Stylurus	--	--	--	--
Corixidae	--	--	67.0	0.80
Cyrnellus fraternus	2.4	0.06	12.0	0.14
Cheumatopsyche	--	--	--	--
Hydroptila	--	--	21.5	0.26
Oxyethira	4.8	0.12	--	--
Oecetis	4.8	0.12	21.5	0.26
Dubiraphia	--	--	19.1	0.23
Macronychus glabratus	2.4	0.06	--	--
Stenelmis	--	--	4.8	0.06
Ceratopogonidae	--	--	40.7	0.48
Chironomidae	--	--	--	--
Tanypus	--	--	59.8	0.71
Tanypus neopunctipennis	--	--	--	--
Procladius	224.8	5.70	686.5	8.18
Procladius (Holotanypus)	--	--	--	--
Coelotanypus	--	--	--	--
Ablabesmyia	--	--	4.8	0.06
Ablabesmyia janta	--	--	--	--
Ablabesmyia mallochi	4.8	0.12	21.5	0.26
Ablabesmyia rhamphe grp.	--	--	--	--
Ablabesmyia annulata	--	--	--	--
Nilotanypus	--	--	2.4	0.03
Thienemannimyia grp.	--	--	--	--
Cricotopus	--	--	--	--
Cricotopus bicinctus grp.	2.4	0.06	35.9	0.43
Cricotopus sylvestris grp.	2.4	0.06	43.1	0.51
Epoicocladius	--	--	--	--

TABLE G-45 (cont.)

TAXA	2013 #/m2	2013 %	2014 #/m2	2014 %
Kiefferulus	--	--	--	--
Nanocladius distinctus	--	--	--	--
Rheocricotopus robacki	--	--	--	--
Axarus	--	--	2.4	0.03
Chironomus	--	--	731.9	8.73
Cladopelma	--	--	--	--
Cryptochironomus	86.1	2.18	71.8	0.86
Cryptotendipes	--	--	9.6	0.11
Dicrotendipes modestus	12.0	0.30	35.9	0.43
Dicrotendipes neomodestus	2.4	0.06	487.9	5.82
Dicrotendipes fumidus	9.6	0.24	2.4	0.03
Dicrotendipes lucifer	--	--	2.4	0.03
Dicrotendipes simpsoni	--	--	33.5	0.40
Glyptotendipes	--	--	267.9	3.19
Harnischia	--	--	--	--
Microchironomus	31.1	0.79	--	--
Parachironomus	--	--	52.6	0.63
Paracladopelma	4.8	0.12	--	--
Polypedilum flavum	--	--	52.6	0.63
Polypedilum halterale grp.	648.2	16.43	435.3	5.19
Polypedilum illinoense	--	--	9.6	0.11
Polypedilum scalaenum grp.	--	--	--	--
Stenochironomus	2.4	0.06	--	--
Stictochironomus	--	--	--	--
Stictochironomus caffrarius grp.	--	--	--	--
Tribelos	--	--	--	--
Tribelos fuscicorne	--	--	--	--
Cladotanytarsus mancus grp.	--	--	--	--
Micropsectra	--	--	2.4	0.03
Rheotanytarsus	--	--	4.8	0.06
Tanytarsus	--	--	1,016.6	12.12
Elimia	126.8	3.21	--	--
Hydrobiidae	--	--	--	--
Amnicola	95.7	2.43	385.1	4.59
Pleurocera	--	--	28.7	0.34
Physa	--	--	--	--
Menetus	4.8	0.12	--	--
Ferrissia	--	--	9.6	0.11
Corbicula fluminea	361.2	9.16	172.2	2.05
Sphaerium	--	--	95.7	1.14
Musculium	--	--	--	--
Pisidium	7.2	0.18	50.2	0.60
Unionidae	--	--	--	--
Amblema plicata	--	--	--	--
Quadrula pustulosa	--	--	--	--
Quadrula quadrula	2.4	0.06	--	--
Leptodea fragilis	--	--	2.4	0.03
Toxolasma parvus	--	--	--	--
Dreissena polymorpha	2.4	0.06	4.8	0.06
TOTAL BENTHOS	3,944.2	100.00	8,388.3	100.00
TOTAL TAXA	38		59	
EPT TAXA	5		7	

TABLE G-46. YEAR VS. YEAR COMPARISON OF PONAR MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED UPSTREAM OF DRESDEN NUCLEAR STATION (IN DRESDEN POOL) DURING AUGUST OF 1999, 2001-2004, 2006, 2008, 2011, 2013, 2014, AND SEPTEMBER OF 2005 AND 2007.

TAXA	1999		2001		2002		2003		2004	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	--	--	--	--	--	--	--	--
Urnatella gracilis	--	--	--	--	--	--	--	--	--	--
Plumatella	--	--	--	--	--	--	--	--	--	--
Dero	--	--	--	--	--	--	--	--	--	--
Dero digitata	4.8	0.39	--	--	--	--	--	--	--	--
Dero nivea	--	--	--	--	--	--	--	--	--	--
Paranais litoralis	--	--	--	--	--	--	--	--	--	--
Pristina jenkinae	--	--	4.8	0.51	--	--	--	--	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	--	--
Aulodrilus limnobius	2.4	0.19	--	--	9.6	0.87	--	--	--	--
Aulodrilus pigueti	7.2	0.58	33.5	3.58	43.1	3.91	43.1	3.78	19.1	1.30
Branchiura sowerbyi	47.8	3.89	141.1	15.09	23.9	2.17	43.1	3.78	38.3	2.60
Ilyodrilus templetoni	2.4	0.19	4.8	0.51	4.8	0.43	9.6	0.84	--	--
Limnodrilus	--	--	--	--	--	--	14.4	1.26	--	--
Limnodrilus cervix	131.6	10.70	12.0	1.28	14.4	1.30	--	--	4.8	0.32
Limnodrilus cervix (var)	--	--	2.4	0.26	14.4	1.30	--	--	19.1	1.30
Limnodrilus claparedianus	--	--	--	--	--	--	--	--	--	--
Limnodrilus hoffmeisteri	133.9	10.89	23.9	2.56	71.8	6.52	57.4	5.04	267.9	18.18
Limnodrilus maumeensis	--	--	71.8	7.67	52.6	4.78	186.6	16.39	33.5	2.27
Limnodrilus profundicola	12.0	0.97	--	--	--	--	--	--	--	--
Limnodrilus udekemianus	23.9	1.95	38.3	4.09	14.4	1.30	9.6	0.84	14.4	0.97
Imm. tub. w/bifid chaetae	598.0	48.64	294.2	31.46	368.4	33.48	416.2	36.55	698.4	47.40
Imm. tub. w/hair & pectinate chaetae	12.0	0.97	7.2	0.77	4.8	0.43	14.4	1.26	--	--
Hirudinea	--	--	--	--	--	--	--	--	--	--
Helobdella	--	--	--	--	--	--	--	--	--	--
Helobdella stagnalis	--	--	--	--	--	--	--	--	--	--
Placobdella montifera	--	--	--	--	--	--	--	--	--	--
Erpobdella	--	--	--	--	--	--	--	--	--	--
Erpobdella microstoma	--	--	--	--	--	--	--	--	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	--	--	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	--	--	--	--	4.8	0.42	--	--
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--
Hydracarina	--	--	--	--	--	--	--	--	--	--
Stenacron	--	--	--	--	--	--	--	--	--	--
Tricorythodes	--	--	--	--	--	--	--	--	--	--
Caenis	--	--	--	--	--	--	--	--	--	--
Hexagenia bilineata	--	--	--	--	86.1	7.83	--	--	--	--
Hexagenia limbata	4.8	0.39	9.6	1.02	28.7	2.61	--	--	--	--
Argia	--	--	--	--	--	--	--	--	--	--
Enallagma	--	--	--	--	--	--	--	--	--	--
Corixidae	2.4	0.19	26.3	2.81	--	--	4.8	0.42	--	--
Cyrnellus fraternus	--	--	--	--	14.4	1.30	--	--	--	--
Hydroptila	--	--	--	--	--	--	--	--	--	--
Oecetis	2.4	0.19	2.4	0.26	--	--	--	--	--	--
Dubiraphia	--	--	4.8	0.51	--	--	--	--	--	--
Macronychus glabratus	--	--	--	--	--	--	--	--	--	--
Chironomidae	7.2	0.58	--	--	--	--	--	--	--	--
Tanypus	--	--	--	--	--	--	--	--	4.8	0.32
Tanypus neopunctipennis	2.4	0.19	--	--	--	--	--	--	--	--
Procladius	--	--	9.6	1.02	--	--	9.6	0.84	43.1	2.92
Procladius (Holotanypus)	12.0	0.97	16.7	1.79	--	--	4.8	0.42	--	--
Coelotanypus	31.1	2.53	64.6	6.91	23.9	2.17	57.4	5.04	4.8	0.32
Ablabesmyia	--	--	--	--	--	--	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--
Ablabesmyia annulata	2.4	0.19	16.7	1.79	19.1	1.74	--	--	--	--
Nilotanypus	--	--	--	--	--	--	--	--	--	--
Cricotopus bicinctus grp.	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	14.4	0.97
Epoicocladius	--	--	--	--	4.8	0.43	--	--	--	--
Kiefferulus	--	--	--	--	--	--	--	--	--	--
Nanocladius distinctus	--	--	--	--	--	--	--	--	--	--
Axarus	2.4	0.19	2.4	0.26	--	--	--	--	--	--
Chironomus	19.1	1.56	57.4	6.14	162.6	14.78	196.1	17.23	33.5	2.27
Cryptochironomus	28.7	2.33	23.9	2.56	23.9	2.17	23.9	2.10	71.8	4.87
Cryptotendipes	--	--	--	--	--	--	4.8	0.42	--	--
Dicrotendipes modestus	--	--	--	--	--	--	--	--	4.8	0.32
Dicrotendipes neomodestus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	--	--	--	--	--	--	--	--	--	--
Glyptotendipes	2.4	0.19	2.4	0.26	--	--	--	--	--	--
Harnischia	2.4	0.19	--	--	--	--	--	--	--	--
Microchironomus	31.1	2.53	2.4	0.26	4.8	0.43	14.4	1.26	--	--
Parachironomus	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	--	--	--	--	--	--	--	--
Polypedilum halterale grp.	71.8	5.84	52.6	5.63	62.2	5.65	--	--	105.2	7.14
Polypedilum illinoense	4.8	0.39	--	--	--	--	9.6	0.84	--	--

TABLE G-46 (cont.)

TAXA	1999 #/m2	1999 %	2001 #/m2	2001 %	2002 #/m2	2002 %	2003 #/m2	2003 %	2004 #/m2	2004 %
Polypedilum scalaenum grp.	--	--	--	--	--	--	--	--	--	--
Stenochironomus	--	--	--	--	--	--	--	--	--	--
Stictochironomus	--	--	--	--	19.1	1.74	--	--	--	--
Stictochironomus caffrarius grp.	9.6	0.78	2.4	0.26	--	--	14.4	1.26	--	--
Rheotanytarsus	--	--	--	--	--	--	--	--	--	--
Tanytarsus	2.4	0.19	--	--	--	--	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	2.4	0.26	--	--	--	--	--	--
Amnicola	--	--	--	--	--	--	--	--	--	--
Pleurocera	--	--	--	--	--	--	--	--	--	--
Menetus	--	--	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	9.6	0.78	4.8	0.51	14.4	1.30	--	--	86.1	5.84
Sphaerium	--	--	--	--	--	--	--	--	--	--
Musculium	4.8	0.39	--	--	--	--	--	--	--	--
Pisidium	--	--	--	--	--	--	--	--	9.6	0.65
Unionidae	--	--	--	--	4.8	0.43	--	--	--	--
Amblema plicata	--	--	--	--	4.8	0.43	--	--	--	--
Quadrula quadrula	--	--	--	--	4.8	0.43	--	--	--	--
Leptodea fragilis	--	--	--	--	--	--	--	--	--	--
Dreissena polymorpha	--	--	--	--	--	--	--	--	--	--
TOTAL BENTHOS	1,229.4	100.00	935.2	100.00	1,100.3	100.00	1,138.5	100.00	1,473.4	100.00
TOTAL TAXA	28		26		24		17		17	
EPT TAXA	2		2		3		0		0	

TABLE G-46 (cont.)

TAXA	2005 #/m2	2005 %	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %
Turbellaria	--	--	--	--	--	--	--	--	--	--
Urnatella gracilis	4.8	0.36	--	--	--	--	--	--	--	--
Plumatella	4.8	0.36	--	--	--	--	--	--	--	--
Dero	23.9	1.81	4.8	0.32	--	--	--	--	--	--
Dero digitata	--	--	--	--	--	--	--	--	--	--
Dero nivea	14.4	1.09	--	--	--	--	--	--	--	--
Paranais litoralis	--	--	--	--	--	--	--	--	--	--
Pristina jenkinae	4.8	0.36	--	--	--	--	--	--	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	--	--
Aulodrilus limnobius	4.8	0.36	67.0	4.55	--	--	--	--	38.3	0.67
Aulodrilus pigueti	19.1	1.45	172.2	11.69	143.5	9.52	14.4	2.05	956.8	16.67
Branchiura sowerbyi	86.1	6.52	28.7	1.95	67.0	4.44	--	--	47.8	0.83
Ilyodrilus templetoni	14.4	1.09	38.3	2.60	28.7	1.90	--	--	9.6	0.17
Limnodrilus	--	--	9.6	0.65	4.8	0.32	--	--	--	--
Limnodrilus cervix	33.5	2.54	90.9	6.17	81.3	5.40	19.1	2.74	669.7	11.67
Limnodrilus cervix (var)	--	--	--	--	--	--	--	--	--	--
Limnodrilus claparedianus	--	--	--	--	--	--	--	--	--	--
Limnodrilus hoffmeisteri	143.5	10.87	43.1	2.92	181.8	12.06	4.8	0.68	200.9	3.50
Limnodrilus maumeensis	71.8	5.43	38.3	2.60	119.6	7.94	23.9	3.42	--	--
Limnodrilus profundicola	--	--	--	--	--	--	--	--	--	--
Limnodrilus udekemianus	33.5	2.54	9.6	0.65	14.4	0.95	--	--	--	--
Imm. tub. w/bifid chaetae	363.6	27.54	626.7	42.53	559.7	37.14	76.5	10.96	67.0	1.17
Imm. tub. w/hair & pectinate chaetae	23.9	1.81	100.5	6.82	4.8	0.32	71.8	10.27	2,487.6	43.33
Hirudinea	--	--	--	--	--	--	--	--	--	--
Helobdella	--	--	--	--	--	--	--	--	4.8	0.08
Helobdella stagnalis	--	--	--	--	--	--	--	--	--	--
Placobdella montifera	--	--	--	--	--	--	4.8	0.68	--	--
Erpobdella	--	--	--	--	--	--	--	--	--	--
Erpobdella microstoma	--	--	--	--	--	--	--	--	--	--
Hyalella azteca	4.8	0.36	--	--	--	--	--	--	--	--
Gammarus	--	--	--	--	--	--	--	--	4.8	0.08
Gammarus fasciatus	4.8	0.36	--	--	--	--	--	--	--	--
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--
Hydracarina	--	--	--	--	--	--	--	--	--	--
Stenacron	--	--	--	--	--	--	--	--	--	--
Tricorythodes	--	--	--	--	--	--	--	--	--	--
Caenis	--	--	--	--	--	--	--	--	4.8	0.08
Hexagenia bilineata	--	--	--	--	--	--	--	--	--	--
Hexagenia limbata	--	--	--	--	19.1	1.27	33.5	4.79	19.1	0.33
Argia	--	--	--	--	4.8	0.32	--	--	--	--
Enallagma	--	--	--	--	19.1	1.27	--	--	4.8	0.08
Corixidae	--	--	--	--	--	--	9.6	1.37	4.8	0.08
Cyrnellus fraternus	--	--	--	--	--	--	4.8	0.68	--	--
Hydroptila	--	--	--	--	--	--	--	--	--	--
Oecetis	--	--	4.8	0.32	--	--	19.1	2.74	14.4	0.25
Dubiraphia	--	--	--	--	--	--	--	--	4.8	0.08
Macronychus glabratus	--	--	--	--	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--	--	--
Tanypus	--	--	9.6	0.65	4.8	0.32	4.8	0.68	--	--
Tanypus neopunctipennis	--	--	--	--	--	--	--	--	--	--
Procladius	--	--	9.6	0.65	62.2	4.13	71.8	10.27	822.8	14.33
Procladius (Holotanypus)	--	--	--	--	--	--	--	--	--	--
Coelotanypus	--	--	81.3	5.52	14.4	0.95	105.2	15.07	19.1	0.33
Ablabesmyia	--	--	--	--	--	--	--	--	--	--
Ablabesmyia mallochi	--	--	4.8	0.32	--	--	--	--	--	--
Ablabesmyia annulata	--	--	--	--	--	--	9.6	1.37	--	--
Nilotanypus	--	--	--	--	--	--	--	--	--	--
Cricotopus bicinctus grp.	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	9.6	0.17
Epoicocladius	--	--	--	--	--	--	--	--	--	--
Kiefferulus	4.8	0.36	--	--	--	--	--	--	--	--
Nanocladius distinctus	--	--	--	--	--	--	19.1	2.74	--	--
Axarus	--	--	--	--	--	--	--	--	--	--
Chironomus	9.6	0.72	--	--	--	--	62.2	8.90	--	--
Cryptochironomus	62.2	4.71	23.9	1.62	4.8	0.32	43.1	6.16	143.5	2.50
Cryptotendipes	--	--	--	--	--	--	--	--	--	--
Dicrotendipes modestus	--	--	--	--	4.8	0.32	--	--	--	--
Dicrotendipes neomodestus	4.8	0.36	4.8	0.32	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	--	--	--	--	--	--	--	--	--	--
Glyptotendipes	--	--	--	--	9.6	0.63	--	--	19.1	0.33
Harnischia	--	--	--	--	--	--	9.6	1.37	--	--
Microchironomus	--	--	9.6	0.65	14.4	0.95	71.8	10.27	38.3	0.67
Parachironomus	9.6	0.72	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	--	--	76.5	5.08	--	--	--	--
Polypedilum halterale grp.	287.0	21.74	4.8	0.32	4.8	0.32	--	--	57.4	1.00
Polypedilum illinoense	--	--	--	--	--	--	--	--	--	--
Polypedilum scalaenum grp.	--	--	9.6	0.65	--	--	--	--	--	--

TABLE G-46 (cont.)

TAXA	2005 #/m2	2005 %	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %
Stenochironomus	--	--	--	--	--	--	--	--	--	--
Stictochironomus	--	--	--	--	--	--	--	--	--	--
Stictochironomus caffrarius grp.	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	--	--	--	--	4.8	0.32	--	--	--	--
Tanytarsus	--	--	--	--	--	--	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	--	--	--	--	--	--	--	--
Amnicola	4.8	0.36	--	--	--	--	--	--	--	--
Pleurocera	9.6	0.72	--	--	28.7	1.90	--	--	--	--
Menetus	--	--	--	--	--	--	--	--	--	--
Ferrissia	4.8	0.36	--	--	--	--	--	--	--	--
Corbicula fluminea	62.2	4.71	81.3	5.52	28.7	1.90	9.6	1.37	67.0	1.17
Sphaerium	--	--	--	--	--	--	--	--	--	--
Musculium	--	--	--	--	--	--	--	--	--	--
Pisidium	--	--	--	--	--	--	4.8	0.68	14.4	0.25
Unionidae	--	--	--	--	--	--	--	--	--	--
Amblema plicata	4.8	0.36	--	--	--	--	--	--	9.6	0.17
Quadrula quadrula	--	--	--	--	--	--	4.8	0.68	--	--
Leptodea fragilis	--	--	--	--	--	--	--	--	--	--
Dreissena polymorpha	--	--	--	--	--	--	--	--	--	--
TOTAL BENTHOS	1,320.3	100.00	1,473.4	100.00	1,506.9	100.00	698.4	100.00	5,740.5	100.00
TOTAL TAXA	25		21		23		21		24	
EPT TAXA	0		1		1		3		3	

TABLE G-46 (cont.)

TAXA	2013 #/m2	2013 %	2014 #/m2	2014 %
Turbellaria	--	--	19.1	0.33
Urnatella gracilis	--	--	--	--
Plumatella	--	--	4.8	0.08
Dero	14.4	0.45	--	--
Dero digitata	--	--	--	--
Dero nivea	28.7	0.90	--	--
Paranais litoralis	14.4	0.45	--	--
Pristina jenkinae	--	--	--	--
Stylaria lacustris	--	--	19.1	0.33
Aulodrilus limnobius	--	--	--	--
Aulodrilus pigueti	4.8	0.15	86.1	1.48
Branchiura sowerbyi	14.4	0.45	47.8	0.82
Ilyodrilus templetoni	28.7	0.90	--	--
Limnodrilus	--	--	--	--
Limnodrilus cervix	14.4	0.45	33.5	0.57
Limnodrilus cervix (var)	--	--	--	--
Limnodrilus claparedianus	76.5	2.41	--	--
Limnodrilus hoffmeisteri	301.4	9.50	47.8	0.82
Limnodrilus maumeensis	--	--	--	--
Limnodrilus profundicola	--	--	--	--
Limnodrilus udekemianus	100.5	3.17	129.2	2.21
Imm. tub. w/bifid chaetae	377.9	11.92	794.1	13.62
Imm. tub. w/hair & pectinate chaetae	76.5	2.41	358.8	6.15
Hirudinea	--	--	9.6	0.16
Helobdella	--	--	4.8	0.08
Helobdella stagnalis	--	--	9.6	0.16
Placobdella montifera	--	--	4.8	0.08
Erpobdella	--	--	4.8	0.08
Erpobdella microstoma	--	--	43.1	0.74
Hyalella azteca	--	--	330.1	5.66
Gammarus	200.9	6.33	153.1	2.63
Gammarus fasciatus	--	--	--	--
Apocorophium lacustre	95.7	3.02	--	--
Hydracarina	--	--	47.8	0.82
Stenacron	4.8	0.15	--	--
Tricorythodes	--	--	4.8	0.08
Caenis	19.1	0.60	28.7	0.49
Hexagenia bilineata	--	--	--	--
Hexagenia limbata	--	--	167.4	2.87
Argia	--	--	--	--
Enallagma	--	--	9.6	0.16
Corixidae	--	--	133.9	2.30
Cyrnellus fraternus	4.8	0.15	23.9	0.41
Hydroptila	--	--	9.6	0.16
Oecetis	9.6	0.30	23.9	0.41
Dubiraphia	--	--	38.3	0.66
Macronychus glabratus	4.8	0.15	--	--
Chironomidae	--	--	--	--
Tanypus	--	--	9.6	0.16
Tanypus neopunctipennis	--	--	--	--
Procladius	19.1	0.60	282.2	4.84
Procladius (Holotanypus)	--	--	--	--
Coelotanypus	--	--	--	--
Ablabesmyia	--	--	9.6	0.16
Ablabesmyia mallochi	9.6	0.30	--	--
Ablabesmyia annulata	--	--	--	--
Nilotanypus	--	--	4.8	0.08
Cricotopus bicinctus grp.	4.8	0.15	--	--
Cricotopus sylvestris grp.	4.8	0.15	9.6	0.16
Epoicocladius	--	--	--	--
Kiefferulus	--	--	--	--
Nanocladius distinctus	--	--	--	--
Axarus	--	--	4.8	0.08
Chironomus	--	--	947.2	16.24
Cryptochironomus	57.4	1.81	76.5	1.31
Cryptotendipes	--	--	--	--
Dicrotendipes modestus	4.8	0.15	67.0	1.15
Dicrotendipes neomodestus	4.8	0.15	196.1	3.36
Dicrotendipes lucifer	--	--	4.8	0.08
Dicrotendipes simpsoni	--	--	62.2	1.07
Glyptotendipes	--	--	526.2	9.02
Harnischia	--	--	--	--
Microchironomus	--	--	--	--
Parachironomus	--	--	86.1	1.48
Polypedilum flavum	--	--	76.5	1.31
Polypedilum halterale grp.	932.8	29.41	306.2	5.25
Polypedilum illinoense	--	--	9.6	0.16
Polypedilum scalaenum grp.	--	--	--	--

TABLE G-46 (cont.)

TAXA	2013		2014	
	#/m2	%	#/m2	%
Stenochironomus	4.8	0.15	--	--
Stictochironomus	--	--	--	--
Stictochironomus caffrarius grp.	--	--	--	--
Rheotanytarsus	--	--	--	--
Tanytarsus	--	--	--	--
Elimia	234.4	7.39	--	--
Hydrobiidae	--	--	--	--
Amnicola	119.6	3.77	382.7	6.56
Pleurocera	--	--	4.8	0.08
Menetus	9.6	0.30	--	--
Ferrissia	--	--	14.4	0.25
Corbicula fluminea	354.0	11.16	62.2	1.07
Sphaerium	--	--	28.7	0.49
Musculium	--	--	--	--
Pisidium	9.6	0.30	57.4	0.98
Unionidae	--	--	--	--
Amblema plicata	--	--	--	--
Quadrula quadrula	4.8	0.15	--	--
Leptodea fragilis	--	--	4.8	0.08
Dreissena polymorpha	4.8	0.15	9.6	0.16
TOTAL BENTHOS	3,171.6	100.00	5,831.4	100.00
TOTAL TAXA	32		47	
EPT TAXA	4		5	

TABLE G-47. YEAR VS. YEAR COMPARISON OF PONAR MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED DOWNSTREAM OF DRESDEN NUCLEAR STATION (IN DRESDEN POOL) DURING AUGUST OF 1999, 2001-2004, 2006, 2008, 2011, 2013, 2014 AND SEPTEMBER OF 2005 AND 2007.

TAXA	1999		2001		2002		2003		2004	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	--	--	--	--	--	--	--	--
Nematoda	--	--	--	--	--	--	--	--	--	--
Urnatella gracilis	--	--	--	--	--	--	--	--	--	--
Dero	--	--	--	--	--	--	--	--	--	--
Dero nivea	--	--	--	--	--	--	--	--	--	--
Nais	--	--	--	--	--	--	--	--	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	--	--
Aulodrilus limnobius	4.8	0.40	--	--	4.8	0.43	--	--	--	--
Aulodrilus pigueti	23.9	2.00	7.2	1.12	110.0	10.00	19.1	1.21	23.9	2.16
Aulodrilus pluriseta	--	--	--	--	--	--	9.6	0.60	--	--
Branchiura sowerbyi	12.0	1.00	12.0	1.87	23.9	2.17	38.3	2.42	86.1	7.79
Ilyodrilus templetoni	7.2	0.60	2.4	0.37	19.1	1.74	14.4	0.91	9.6	0.87
Limnodrilus	--	--	--	--	--	--	--	--	--	--
Limnodrilus cervix	117.2	9.80	9.6	1.49	14.4	1.30	--	--	191.4	17.32
Limnodrilus cervix (var)	--	--	2.4	0.37	43.1	3.91	--	--	--	--
Limnodrilus claparedianus	--	--	--	--	--	--	14.4	0.91	--	--
Limnodrilus hoffmeisteri	342.0	28.60	76.5	11.94	119.6	10.87	358.8	22.66	43.1	3.90
Limnodrilus maumeensis	--	--	47.8	7.46	52.6	4.78	124.4	7.85	57.4	5.19
Limnodrilus profundicola	9.6	0.80	--	--	--	--	--	--	--	--
Limnodrilus udekemianus	117.2	9.80	76.5	11.94	67.0	6.09	67.0	4.23	71.8	6.49
Imm. tub. w/bifid chaetae	447.3	37.40	212.9	33.21	511.9	46.52	645.8	40.79	248.8	22.51
Imm. tub. w/hair & pectinate chaetae	14.4	1.20	2.4	0.37	14.4	1.30	9.6	0.60	--	--
Hirudinea	--	--	--	--	--	--	--	--	--	--
Desserobdella phalera	--	--	2.4	0.37	--	--	--	--	--	--
Helobdella	--	--	--	--	--	--	--	--	--	--
Helobdella stagnalis	--	--	--	--	--	--	4.8	0.30	--	--
Placobdella montifera	--	--	--	--	--	--	--	--	--	--
Erpobdella microstoma	--	--	--	--	--	--	4.8	0.30	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	--	--	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	--	--	--	--	--	--	52.6	4.76
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--
Hydracarina	--	--	--	--	--	--	--	--	--	--
Baetis intercalaris	--	--	--	--	--	--	--	--	--	--
Tricorythodes	--	--	--	--	--	--	--	--	--	--
Caenis	2.4	0.20	--	--	--	--	--	--	--	--
Hexagenia bilineata	--	--	--	--	--	--	4.8	0.30	--	--
Hexagenia limbata	7.2	0.60	9.6	1.49	--	--	28.7	1.81	--	--
Argia	--	--	2.4	0.37	--	--	--	--	--	--
Enallagma	--	--	--	--	--	--	--	--	--	--
Stylurus	--	--	--	--	--	--	--	--	--	--
Corixidae	--	--	--	--	--	--	--	--	--	--
Cyrnellus fraternus	--	--	2.4	0.37	--	--	19.1	1.21	--	--
Cheumatopsyche	--	--	--	--	--	--	--	--	--	--
Hydroptila	--	--	--	--	--	--	--	--	--	--
Oxyethira	--	--	--	--	--	--	--	--	--	--
Oecetis	--	--	4.8	0.75	4.8	0.43	--	--	--	--
Dubiraphia	4.8	0.40	7.2	1.12	--	--	--	--	--	--
Macronychus glabratus	--	--	--	--	--	--	--	--	4.8	0.43
Stenelmis	--	--	--	--	--	--	--	--	--	--
Ceratopogonidae	--	--	2.4	0.37	--	--	--	--	--	--
Tanypus	--	--	--	--	--	--	--	--	--	--
Tanypus neopunctipennis	2.4	0.20	--	--	--	--	--	--	--	--
Procladius	--	--	--	--	--	--	--	--	52.6	4.76
Procladius (Holotanypus)	26.3	2.20	16.7	2.61	--	--	38.3	2.42	--	--
Coelotanypus	2.4	0.20	33.5	5.22	14.4	1.30	14.4	0.91	4.8	0.43
Ablabesmyia janta	--	--	--	--	--	--	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--
Ablabesmyia rhamphe grp.	--	--	7.2	1.12	--	--	--	--	--	--
Ablabesmyia annulata	2.4	0.20	2.4	0.37	--	--	19.1	1.21	9.6	0.87
Thienemannimyia grp.	--	--	--	--	--	--	--	--	--	--
Cricotopus	--	--	--	--	--	--	--	--	4.8	0.43
Cricotopus bicinctus grp.	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	--	--
Epoicocladius	--	--	--	--	--	--	4.8	0.30	--	--
Rheocricotopus robacki	--	--	--	--	--	--	--	--	--	--
Axarus	--	--	--	--	9.6	0.87	--	--	--	--
Chironomus	2.4	0.20	--	--	--	--	4.8	0.30	4.8	0.43
Cladopelma	--	--	--	--	--	--	--	--	--	--
Cryptochironomus	19.1	1.60	31.1	4.85	4.8	0.43	4.8	0.30	19.1	1.73
Cryptotendipes	--	--	--	--	--	--	--	--	--	--
Dicrotendipes modestus	--	--	--	--	--	--	--	--	4.8	0.43

TABLE G-47 (cont.)

TAXA	1999		2001		2002		2003		2004	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Dicrotendipes neomodestus	2.4	0.20	--	--	--	--	--	--	--	--
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	--	--	2.4	0.37	--	--	--	--	--	--
Glyptotendipes	--	--	9.6	1.49	4.8	0.43	9.6	0.60	--	--
Microchironomus	12.0	1.00	7.2	1.12	4.8	0.43	--	--	--	--
Parachironomus	--	--	--	--	--	--	--	--	--	--
Paracladopelma	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	--	--	--	--	--	--	--	--
Polypedilum halterale grp.	4.8	0.40	16.7	2.61	4.8	0.43	9.6	0.60	4.8	0.43
Polypedilum illinoense	--	--	--	--	--	--	--	--	--	--
Polypedilum scalaenum grp.	--	--	--	--	--	--	--	--	--	--
Stenochironomus	--	--	--	--	--	--	--	--	9.6	0.87
Stictochironomus caffrarius grp.	--	--	--	--	--	--	--	--	--	--
Tribelos	--	--	2.4	0.37	--	--	--	--	--	--
Tribelos fuscicorne	--	--	--	--	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	--	--	--	--	--	--	--	--
Micropsectra	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	--	--	--	--	--	--	--	--	--	--
Tanytarsus	--	--	--	--	--	--	--	--	--	--
Elimia	4.8	0.40	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	--	--	--	--	--	--	--	--
Amnicola	--	--	--	--	--	--	--	--	--	--
Pleurocera	--	--	--	--	--	--	--	--	--	--
Physa	--	--	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	4.8	0.40	26.3	4.10	71.8	6.52	100.5	6.34	143.5	12.99
Sphaerium	--	--	--	--	--	--	--	--	--	--
Musculium	2.4	0.20	--	--	--	--	4.8	0.30	43.1	3.90
Pisidium	--	--	--	--	--	--	--	--	--	--
Amblema plicata	--	--	2.4	0.37	--	--	9.6	0.60	--	--
Quadrula pustulosa	--	--	2.4	0.37	--	--	--	--	--	--
Quadrula quadrula	--	--	--	--	--	--	--	--	9.6	0.87
Leptodea fragilis	--	--	--	--	--	--	--	--	--	--
Toxolasma parvus	--	--	--	--	--	--	--	--	--	--
Dreissena polymorpha	--	--	--	--	--	--	--	--	4.8	0.43
TOTAL BENTHOS	1,195.9	100.00	641.0	100.00	1,100.3	100.00	1,583.4	100.00	1,105.1	100.00
TOTAL TAXA	23		28		17		24		22	
EPT TAXA	1		3		1		3		0	

TABLE G-47 (cont.)

TAXA	2005 #/m2	2005 %	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %
Turbellaria	--	--	--	--	--	--	--	--	--	--
Nematoda	--	--	9.6	0.41	--	--	--	--	--	--
Urnatella gracilis	--	--	--	--	9.6	0.62	--	--	--	--
Dero	--	--	--	--	4.8	0.31	--	--	153.1	1.16
Dero nivea	--	--	--	--	4.8	0.31	--	--	76.5	0.58
Nais	--	--	--	--	--	--	--	--	38.3	0.29
Stylaria lacustris	--	--	--	--	--	--	--	--	153.1	1.16
Aulodrilus limnobius	--	--	--	--	38.3	2.49	--	--	--	--
Aulodrilus pigueti	--	--	52.6	2.26	148.3	9.66	--	--	1,492.5	11.27
Aulodrilus pluriseta	--	--	--	--	--	--	--	--	--	--
Branchiura sowerbyi	9.6	1.37	--	--	52.6	3.43	57.4	4.51	76.5	0.58
Ilyodrilus templetoni	--	--	--	--	23.9	1.56	--	--	153.1	1.16
Limnodrilus	--	--	4.8	0.21	--	--	--	--	--	--
Limnodrilus cervix	4.8	0.68	81.3	3.49	43.1	2.80	23.9	1.88	220.1	1.66
Limnodrilus cervix (var)	--	--	--	--	--	--	--	--	--	--
Limnodrilus claparedianus	--	--	--	--	4.8	0.31	--	--	9.6	0.07
Limnodrilus hoffmeisteri	14.4	2.05	349.2	14.99	244.0	15.89	90.9	7.14	1,492.5	11.27
Limnodrilus maumeensis	4.8	0.68	67.0	2.87	43.1	2.80	14.4	1.13	--	--
Limnodrilus profundicola	--	--	--	--	--	--	--	--	--	--
Limnodrilus udekemianus	119.6	17.12	105.2	4.52	119.6	7.79	105.2	8.27	105.2	0.79
Imm. tub. w/bifid chaetae	33.5	4.79	956.8	41.07	320.5	20.87	--	--	612.3	4.62
Imm. tub. w/hair & pectinate chaetae	--	--	38.3	1.64	28.7	1.87	196.1	15.41	2,803.3	21.16
Hirudinea	--	--	--	--	--	--	--	--	--	--
Desserobdella phalera	--	--	--	--	--	--	--	--	--	--
Helobdella	--	--	--	--	--	--	9.6	0.75	23.9	0.18
Helobdella stagnalis	--	--	--	--	--	--	--	--	--	--
Placobdella montifera	--	--	--	--	--	--	--	--	--	--
Erpobdella microstoma	--	--	--	--	--	--	--	--	19.1	0.14
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	--	--	--	--	4.8	0.31	28.7	2.26	23.9	0.18
Gammarus fasciatus	--	--	--	--	--	--	--	--	--	--
Apocorophium lacustre	157.9	22.60	28.7	1.23	38.3	2.49	138.7	10.90	105.2	0.79
Hydracarina	--	--	--	--	--	--	--	--	--	--
Baetis intercalaris	--	--	--	--	--	--	--	--	--	--
Tricorythodes	--	--	--	--	--	--	--	--	4.8	0.04
Caenis	--	--	14.4	0.62	--	--	--	--	19.1	0.14
Hexagenia bilineata	--	--	--	--	--	--	--	--	--	--
Hexagenia limbata	4.8	0.68	--	--	--	--	--	--	19.1	0.14
Argia	4.8	0.68	--	--	--	--	--	--	4.8	0.04
Enallagma	--	--	--	--	4.8	0.31	--	--	--	--
Stylurus	--	--	--	--	--	--	--	--	4.8	0.04
Corixidae	--	--	--	--	--	--	4.8	0.38	--	--
Cyrnellus fraternus	--	--	33.5	1.44	--	--	9.6	0.75	86.1	0.65
Cheumatopsyche	--	--	--	--	--	--	4.8	0.38	--	--
Hydroptila	--	--	--	--	--	--	--	--	81.3	0.61
Oxyethira	--	--	--	--	--	--	--	--	--	--
Oecetis	--	--	19.1	0.82	4.8	0.31	14.4	1.13	33.5	0.25
Dubiraphia	--	--	4.8	0.21	--	--	--	--	9.6	0.07
Macronychus glabratus	--	--	--	--	--	--	--	--	--	--
Stenelmis	--	--	--	--	--	--	--	--	--	--
Ceratopogonidae	--	--	--	--	--	--	--	--	--	--
Tanypus	--	--	--	--	--	--	4.8	0.38	--	--
Tanypus neopunctipennis	--	--	--	--	--	--	--	--	--	--
Procladius	--	--	33.5	1.44	--	--	28.7	2.26	2,478.0	18.71
Procladius (Holotanypus)	--	--	--	--	--	--	--	--	--	--
Coelotanypus	9.6	1.37	110.0	4.72	9.6	0.62	23.9	1.88	38.3	0.29
Ablabesmyia janta	--	--	19.1	0.82	--	--	4.8	0.38	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	153.1	1.16
Ablabesmyia rhamphe grp.	--	--	--	--	--	--	--	--	--	--
Ablabesmyia annulata	--	--	--	--	--	--	--	--	--	--
Thienemannimyia grp.	--	--	4.8	0.21	--	--	--	--	--	--
Cricotopus	--	--	--	--	--	--	--	--	--	--
Cricotopus bicinctus grp.	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	325.3	2.46
Epoicocladius	--	--	--	--	--	--	--	--	--	--
Rheocricotopus robacki	--	--	--	--	4.8	0.31	--	--	--	--
Axarus	--	--	--	--	--	--	--	--	--	--
Chironomus	9.6	1.37	4.8	0.21	--	--	38.3	3.01	--	--
Cladopelma	4.8	0.68	--	--	--	--	--	--	--	--
Cryptochironomus	19.1	2.74	33.5	1.44	38.3	2.49	43.1	3.38	114.8	0.87
Cryptotendipes	--	--	--	--	--	--	--	--	--	--
Dicrotendipes modestus	--	--	4.8	0.21	--	--	--	--	--	--
Dicrotendipes neomodestus	--	--	9.6	0.41	--	--	--	--	153.1	1.16
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--

TABLE G-47 (cont.)

TAXA	2005 #/m2	2005 %	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	38.3	0.29
Dicrotendipes simpsoni	--	--	23.9	1.03	--	--	--	--	--	--
Glyptotendipes	9.6	1.37	4.8	0.21	--	--	9.6	0.75	153.1	1.16
Microchironomus	--	--	47.8	2.05	4.8	0.31	220.1	17.29	267.9	2.02
Parachironomus	--	--	--	--	--	--	--	--	--	--
Paracladopelma	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	9.6	0.41	--	--	--	--	38.3	0.29
Polypedilum halterale grp.	--	--	19.1	0.82	38.3	2.49	38.3	3.01	392.3	2.96
Polypedilum illinoense	4.8	0.68	--	--	--	--	--	--	--	--
Polypedilum scalaenum grp.	114.8	16.44	4.8	0.21	--	--	--	--	--	--
Stenochironomus	--	--	4.8	0.21	--	--	9.6	0.75	38.3	0.29
Stictochironomus caffrarius grp.	--	--	4.8	0.21	--	--	--	--	--	--
Tribelos	--	--	--	--	--	--	--	--	--	--
Tribelos fuscicorne	--	--	4.8	0.21	--	--	--	--	--	--
Cladotanytarsus mancus grp.	9.6	1.37	--	--	--	--	--	--	--	--
Micropsectra	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	--	--	--	--	--	--	--	--	--	--
Tanytarsus	--	--	4.8	0.21	--	--	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	--	--	--	--	--	--	129.2	0.98
Amnicola	4.8	0.68	--	--	--	--	--	--	4.8	0.04
Pleurocera	--	--	--	--	81.3	5.30	4.8	0.38	--	--
Physa	--	--	--	--	--	--	--	--	9.6	0.07
Ferrissia	--	--	--	--	--	--	--	--	4.8	0.04
Corbicula fluminea	129.2	18.49	200.9	8.62	220.1	14.33	129.2	10.15	1,062.0	8.02
Sphaerium	--	--	--	--	--	--	--	--	--	--
Musculium	--	--	9.6	0.41	--	--	--	--	--	--
Pisidium	--	--	--	--	--	--	--	--	--	--
Amblema plicata	28.7	4.11	4.8	0.21	--	--	14.4	1.13	9.6	0.07
Quadrula pustulosa	--	--	--	--	--	--	--	--	--	--
Quadrula quadrula	--	--	--	--	--	--	--	--	4.8	0.04
Leptodea fragilis	--	--	--	--	--	--	4.8	0.38	4.8	0.04
Toxolasma parvus	--	--	--	--	--	--	--	--	4.8	0.04
Dreissena polymorpha	--	--	--	--	--	--	--	--	--	--
TOTAL BENTHOS	698.4	100.00	2,329.7	100.00	1,535.6	100.00	1,272.5	100.00	13,246.3	100.00
TOTAL TAXA	19		33		22		26		44	
EPT TAXA	1		3		1		3		6	

TABLE G-47 (cont.)

TAXA	2013 #/m2	2013 %	2014 #/m2	2014 %
Turbellaria	--	--	4.8	0.04
Nematoda	--	--	4.8	0.04
Urnatella gracilis	--	--	--	--
Dero	--	--	--	--
Dero nivea	--	--	--	--
Nais	--	--	--	--
Stylaria lacustris	--	--	--	--
Aulodrilus limnobius	--	--	76.5	0.70
Aulodrilus pigueti	354.0	7.51	23.9	0.22
Aulodrilus pluriseta	--	--	--	--
Branchiura sowerbyi	14.4	0.30	38.3	0.35
Ilyodrilus templetoni	124.4	2.64	--	--
Limnodrilus	--	--	229.6	2.10
Limnodrilus cervix	28.7	0.61	57.4	0.52
Limnodrilus cervix (var)	--	--	--	--
Limnodrilus claparedianus	334.9	7.10	--	--
Limnodrilus hoffmeisteri	511.9	10.85	33.5	0.31
Limnodrilus maumeensis	--	--	--	--
Limnodrilus profundicola	--	--	--	--
Limnodrilus udekemianus	377.9	8.01	440.1	4.02
Imm. tub. w/bifid chaetae	870.6	18.46	2,234.0	20.41
Imm. tub. w/hair & pectinate chaetae	483.2	10.24	229.6	2.10
Hirudinea	--	--	4.8	0.04
Desserobdella phalera	--	--	--	--
Helobdella	9.6	0.20	9.6	0.09
Helobdella stagnalis	--	--	--	--
Placobdella montifera	--	--	4.8	0.04
Erpobdella microstoma	--	--	95.7	0.87
Hyalella azteca	19.1	0.41	655.4	5.99
Gammarus	38.3	0.81	181.8	1.66
Gammarus fasciatus	--	--	--	--
Apocorophium lacustre	57.4	1.22	--	--
Hydracarina	--	--	9.6	0.09
Baetis intercalaris	--	--	4.8	0.04
Tricorythodes	--	--	4.8	0.04
Caenis	--	--	--	--
Hexagenia bilineata	--	--	--	--
Hexagenia limbata	--	--	--	--
Argia	--	--	--	--
Enallagma	--	--	57.4	0.52
Stylurus	--	--	--	--
Corixidae	--	--	--	--
Cyrnellus fraternus	--	--	--	--
Cheumatopsyche	--	--	--	--
Hydroptila	--	--	33.5	0.31
Oxyethira	9.6	0.20	--	--
Oecetis	--	--	19.1	0.17
Dubiraphia	--	--	--	--
Macronychus glabratus	--	--	--	--
Stenelmis	--	--	9.6	0.09
Ceratopogonidae	--	--	81.3	0.74
Tanypus	--	--	110.0	1.01
Tanypus neopunctipennis	--	--	--	--
Procladius	430.5	9.13	1,090.7	9.97
Procladius (Holotanypus)	--	--	--	--
Coelotanypus	--	--	--	--
Ablabesmyia janta	--	--	--	--
Ablabesmyia mallochi	--	--	43.1	0.39
Ablabesmyia rhamphe grp.	--	--	--	--
Ablabesmyia annulata	--	--	--	--
Thienemannimyia grp.	--	--	--	--
Cricotopus	--	--	--	--
Cricotopus bicinctus grp.	--	--	71.8	0.66
Cricotopus sylvestris grp.	--	--	76.5	0.70
Epoicocladius	--	--	--	--
Rheocricotopus robacki	--	--	--	--
Axarus	--	--	--	--
Chironomus	--	--	516.6	4.72
Cladopelma	--	--	--	--
Cryptochironomus	114.8	2.43	67.0	0.61
Cryptotendipes	--	--	19.1	0.17
Dicrotendipes modestus	19.1	0.41	4.8	0.04
Dicrotendipes neomodestus	--	--	779.8	7.12
Dicrotendipes fumidus	19.1	0.41	4.8	0.04

TABLE G-47 (cont.)

TAXA	2013 #/m2	2013 %	2014 #/m2	2014 %
Dicrotendipes lucifer	--	--	--	--
Dicrotendipes simpsoni	--	--	4.8	0.04
Glyptotendipes	--	--	9.6	0.09
Microchironomus	62.2	1.32	--	--
Parachironomus	--	--	19.1	0.17
Paracladopelma	9.6	0.20	--	--
Polypedilum flavum	--	--	28.7	0.26
Polypedilum halterale grp.	363.6	7.71	564.5	5.16
Polypedilum illinoense	--	--	9.6	0.09
Polypedilum scalaenum grp.	--	--	--	--
Stenochironomus	--	--	--	--
Stictochironomus caffrarius grp.	--	--	--	--
Tribelos	--	--	--	--
Tribelos fuscicorne	--	--	--	--
Cladotanytarsus mancus grp.	--	--	--	--
Micropsectra	--	--	4.8	0.04
Rheotanytarsus	--	--	9.6	0.09
Tanytarsus	--	--	2,033.1	18.58
Elimia	19.1	0.41	--	--
Hydrobiidae	--	--	--	--
Amnicola	71.8	1.52	387.5	3.54
Pleurocera	--	--	52.6	0.48
Physa	--	--	--	--
Ferrissia	--	--	4.8	0.04
Corbicula fluminea	368.4	7.81	282.2	2.58
Sphaerium	--	--	162.6	1.49
Musculium	--	--	--	--
Pisidium	4.8	0.10	43.1	0.39
Amblema plicata	--	--	--	--
Quadrula pustulosa	--	--	--	--
Quadrula quadrula	--	--	--	--
Leptodea fragilis	--	--	--	--
Toxolasma parvus	--	--	--	--
Dreissena polymorpha	--	--	--	--
TOTAL BENTHOS	4,716.8	100.00	10,945.3	100.00
TOTAL TAXA	23		47	
EPT TAXA	1		5	

Table G-48. Results of Year vs. Year Statistical Comparisons for Ponar Macroinvertebrate Data Collected in Dresden Pool During August of 1999, 2001-2004, 2006, 2008, 2011, 2013, 2014, and September of 2005 and 2007.

Areas Combined	1999	2001	2002	2003	2004	2005	2006	2007	2008	2011	2013	2014	Significant Difference[a]	F Value	P Value
Density-All Taxa[b]	1,212.7 CD	788.1 D	1,100.3 CD	1,361.0 CD	1,289.2 CD	1,009.4 D	1,901.5 ABCD	1,521.2 BCD	985.5 D	9,493.4 AB	7,888.4 ABC	8,388.3 A[c]	Yes	8.43	<0.01
Density-Oligochaeta[b]	1,035.7 ABC	541.8 BC	801.3 BC	1,047.6 ABC	913.7 ABC	511.9 C	1,442.3 AB	1,140.9 ABC	349.2 C	5,931.9 A	4,152.3 AB	2,439.7 ABC[c]	Yes	4.89	<0.01
Density-Chironomidae[b]	151.9 D	190.2 BCD	181.8 D	220.1 BCD	198.5 CD	279.9 BCD	253.5 BCD	148.3 D	409.0 ABCD	2,650.2 AB	1,030.9 ABC	4,073.4 A[c]	Yes	5.82	<0.01
Density-Ephemeroptera[b]	7.2	9.6	57.4	16.7	0	2.4	7.2	9.6	16.7	33.5	23.9	105.2	No	1.89	0.050
Taxa Richness[d]	8.9 D	9.0 D	9.4 CD	9.6 CD	9.9 CD	9.4 D	13.4 BC	10.5 CD	12.0 BCD	14.3 BC	15.4 B	26.6 A[e]	Yes	6.64	<0.01
Upstream Dresden															
Density-All Taxa[d]	1,229.4	935.2	1,100.3	1,138.5	1,473.4	1,320.3	1,473.4	1,506.9	698.4	5,740.5	3,171.6	5,831.4	No	2.04	0.053
Density-Oligochaeta[b]	975.9	633.8	621.9	794.1	1,095.5	837.2	1,229.4	1,205.5	210.5	4,477.6	1,052.4	1,516.5	No	1.83	0.09
Density-Chironomidae[b]	229.6	251.1	320.5	334.9	282.2	377.9	157.9	200.9	397.1	1,109.8	1,042.9	2,678.9	No	0.54	0.85
Density-Ephemeroptera[b]	4.8	9.6	114.8	0	0	0	0	19.1	33.5	23.9	23.9	200.9	No	1.43	0.20
Taxa Richness[d]	9.6 B	8.6 B	10.0 B	8.0 B	9.5 B	11.0 B	11.0 AB	9.0 B	9.8 B	10.3 B	16.3 AB	26.3 A[e]	Yes	2.81	0.01
Downstream Dresden															
Density-All Taxa[b]	1,195.9 DEF	641.0 F	1,100.3 DEF	1,583.4 BCDEF	1,105.1 DEF	698.4 EF	2,329.7 ABCD	1,535.6 ABCDE	1,272.5 CDEF	13,246.3 A	4,716.8 ABC	10,945.3 AB[c]	Yes	11.83	<0.01
Density-Oligochaeta[d]	1,095.5 BCD	449.7 DE	980.7 BCDE	1,301.2 BCD	731.9 CDE	186.6 E	1,655.2 ABCD	1,076.3 BCD	487.9 CDE	7,386.1 A	3,099.9 AB	3,363.0 ABC[c]	Yes	8.87	<0.01
Density-Chironomidae[b]	74.2 D	129.2 BCD	43.1 D	105.2 CD	114.8 CD	181.8 ABCD	349.2 ABC	95.7 D	421.0 ABCD	4,190.6 A	1,018.9 AB	5,467.9 A[c]	Yes	8.86	<0.01
Density-Ephemeroptera[b]	9.6	9.6	0	33.5	0	4.8	14.4	0	0	43.1	0	10	No	1.69	0.11
Taxa Richness[d]	8.3 EF	9.4 DEF	8.8 EF	11.3 BCDEF	10.3 CDEF	7.8 F	15.8 BC	12.0 BCDE	14.3 BCD	18.3 B	14.5 BCD	27.0 A[e]	Yes	5.62	<0.01

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.
(c) Results of Tukey's Studentized Range Test; values with the same letters are not significantly different (alpha=0.05).
(d) Log transformed data used for statistical analyses because they are normally distributed.
(e) Results of Fisher's Least-Squares-Difference Test; values with the same letters are not significantly different (alpha=0.05).

TABLE G-49. HESTER-DENDY MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED IN DRESDEN POOL, AUGUST 2014.

TAXA	19-20 AUG 2014 #/m2	19-20 AUG 2014 %
Turbellaria	1,694.1	24.76
Nematoda	4.3	0.06
Dero	4.3	0.06
Dero nivea	4.3	0.06
Nais communis	1.6	0.02
Nais variabilis	647.2	9.46
Pristina leidyi	650.4	9.51
Hyalella azteca	82.5	1.21
Gammarus	395.5	5.78
Orconectes	1.1	0.02
Baetis intercalaris	4.3	0.06
Stenacron	66.0	0.96
Maccaffertium integrum	4.8	0.07
Stenonema femoratum	9.6	0.14
Maccaffertium pulchellum	1.1	0.02
Tricorythodes	19.2	0.28
Argia	4.8	0.07
Enallagma	9.0	0.13
Epitheca (Epicordulia)	0.5	0.01
Cyrnellus fraternus	495.0	7.23
Cheumatopsyche	21.3	0.31
Hydropsyche orris	4.8	0.07
Hydroptila	28.7	0.42
Dineutus	20.2	0.30
Dubiraphia	17.0	0.25
Macronychus glabratus	4.3	0.06
Stenelmis	4.3	0.06
Ablabesmyia	4.3	0.06
Ablabesmyia mallochi	74.0	1.08
Nanocladius distinctus	70.8	1.03
Nanocladius crassicornus/rectinervis	153.3	2.24
Dicrotendipes modestus	173.0	2.53
Dicrotendipes neomodestus	149.0	2.18
Dicrotendipes fumidus	11.2	0.16
Dicrotendipes lucifer	350.7	5.13
Dicrotendipes simpsoni	320.9	4.69
Glyptotendipes	1,118.2	16.34
Parachironomus	21.3	0.31
Polypedilum flavum	12.8	0.19
Polypedilum illinoense	12.8	0.19
Micropsectra	11.2	0.16
Rheotanytarsus	12.8	0.19
Amnicola	4.3	0.06
Pleurocera	89.9	1.31
Physa	0.5	0.01
Ferrissia	8.5	0.12
Corbicula fluminea	38.9	0.57
Sphaerium	3.2	0.05
Dreissena polymorpha	0.5	0.01
TOTAL BENTHOS	6,842.0	100.00
TOTAL TAXA	47	
EPT TAXA	10	

TABLE G-50. UPSTREAM VS. DOWNSTREAM COMPARISON OF MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED FROM HESTER-DENDY SAMPLES IN DRESDEN POOL DURING AUGUST 2014.

TAXA	UPSTREAM DRESDEN #/m2	UPSTREAM DRESDEN %	DOWNSTREAM DRESDEN #/m2	DOWNSTREAM DRESDEN %
Turbellaria	3,299.9	43.24	88.4	1.46
Nematoda	8.5	0.11	--	--
Dero	8.5	0.11	--	--
Dero nivea	--	--	8.5	0.14
Nais communis	--	--	3.2	0.05
Nais variabilis	8.5	0.11	1,285.9	21.25
Pristina leidyi	1.1	0.01	1,299.7	21.47
Hyalella azteca	17.0	0.22	148.0	2.44
Gammarus	251.2	3.29	539.7	8.92
Orconectes	1.1	0.01	1.1	0.02
Baetis intercalaris	8.5	0.11	--	--
Stenacron	117.1	1.53	14.9	0.25
Maccaffertium integrum	8.5	0.11	1.1	0.02
Stenonema femoratum	19.2	0.25	--	--
Maccaffertium pulchellum	--	--	2.1	0.04
Tricorythodes	34.1	0.45	4.3	0.07
Argia	9.6	0.13	--	--
Enallagma	17.0	0.22	1.1	0.02
Epitheca (Epicordulia)	--	--	1.1	0.02
Cyrnellus fraternus	369.4	4.84	620.6	10.25
Cheumatopsyche	42.6	0.56	--	--
Hydropsyche orris	8.5	0.11	1.1	0.02
Hydroptila	42.6	0.56	14.9	0.25
Dineutus	1.1	0.01	39.4	0.65
Dubiraphia	34.1	0.45	--	--
Macronychus glabratus	8.5	0.11	--	--
Stenelmis	8.5	0.11	--	--
Ablabesmyia	8.5	0.11	--	--
Ablabesmyia mallochi	85.2	1.12	62.8	1.04
Nanocladius distinctus	102.2	1.34	39.4	0.65
Nanocladius crassicornus/rectinervis	170.3	2.23	136.3	2.25
Dicrotendipes modestus	170.3	2.23	175.6	2.90
Dicrotendipes neomodestus	51.1	0.67	247.0	4.08
Dicrotendipes fumidus	--	--	22.4	0.37
Dicrotendipes lucifer	136.3	1.79	565.2	9.34
Dicrotendipes simpsoni	68.1	0.89	573.8	9.48
Glyptotendipes	2,146.0	28.12	90.5	1.49
Parachironomus	42.6	0.56	--	--
Polypedilum flavum	8.5	0.11	17.0	0.28
Polypedilum illinoense	17.0	0.22	8.5	0.14
Micropsectra	--	--	22.4	0.37
Rheotanytarsus	25.5	0.33	--	--
Amnicola	8.5	0.11	--	--
Pleurocera	179.9	2.36	--	--
Physa	1.1	0.01	--	--
Ferrissia	8.5	0.11	8.5	0.14
Corbicula fluminea	76.6	1.00	1.1	0.02
Sphaerium	--	--	6.4	0.11
Dreissena polymorpha	--	--	1.1	0.02
TOTAL BENTHOS	7,631.3	100.00	6,052.7	100.00
TOTAL TAXA	40		34	
EPT TAXA	9		7	

TABLE G-51. COMPARISON OF HESTER-DENDY MACROINVERTEBRATE DENSITIES AMONG 2001-2008, 2011, 2013, AND 2013 FOR EACH TAXON COLLECTED IN DRESDEN POOL FOR COLONIZATION PERIODS THAT ENDED IN AUGUST OR EARLY SEPTEMBER.

TAXA	2001 #/m2	2001 %	2002 #/m2	2002 %	2003 #/m2	2003 %	2004 #/m2	2004 %	2005 #/m2	2005 %
Hydra	--	--	--	--	--	--	--	--	4.3	0.05
Turbellaria	--	--	7.5	0.05	5.7	0.07	30.3	1.19	--	--
Dugesia	--	--	--	--	--	--	--	--	--	--
Nematoda	--	--	--	--	--	--	--	--	--	--
Urnatella gracilis	--	--	--	--	--	--	--	--	0.5	0.01
Plumatella	1.1	0.01	0.5	0.00	1.4	0.02	--	--	0.5	0.01
Pectinatella magnifica	--	--	0.5	0.00	--	--	--	--	--	--
Naidinae	--	--	--	--	11.4	0.13	--	--	--	--
Chaetogaster diastrophus	--	--	--	--	--	--	--	--	--	--
Dero	5.3	0.05	255.5	1.75	194.4	2.30	8.5	0.33	6.9	0.08
Dero lodeni	--	--	--	--	0.7	0.01	--	--	--	--
Dero nivea	5.9	0.05	332.1	2.27	22.7	0.27	6.4	0.25	6.9	0.08
Dero furcata	--	--	--	--	--	--	--	--	--	--
Nais	--	--	17.0	0.12	--	--	319.3	12.51	--	--
Nais communis	1.6	0.01	--	--	62.4	0.74	--	--	--	--
Nais pardalis	--	--	306.6	2.10	1.4	0.02	--	--	--	--
Nais variabilis	64.9	0.58	1,141.1	7.81	14.9	0.18	--	--	--	--
Pristina	2.7	0.02	--	--	--	--	--	--	--	--
Pristina aequiseta	0.5	0.00	391.7	2.68	354.1	4.18	21.3	0.83	--	--
Pristina leidyi	2.1	0.02	102.2	0.70	190.2	2.25	27.7	1.08	4.3	0.05
Pristina osborni	--	--	17.0	0.12	--	--	8.5	0.33	--	--
Pristina jenkinae	--	--	--	--	--	--	--	--	--	--
Slavina appendiculata	--	--	17.0	0.12	--	--	--	--	--	--
Stylaria lacustris	--	--	17.0	0.12	--	--	--	--	--	--
Stephensoniana trivandrana	--	--	42.6	0.29	--	--	--	--	--	--
Aulodrilus pigueti	--	--	102.2	0.70	--	--	--	--	--	--
Branchiura sowerbyi	--	--	--	--	--	--	2.1	0.08	--	--
Ilyodrilus templetoni	--	--	34.1	0.23	--	--	--	--	--	--
Limnodrilus hoffmeisteri	--	--	25.5	0.17	--	--	--	--	--	--
Limnodrilus maumeensis	--	--	17.0	0.12	--	--	--	--	--	--
Quistadrilus multisetosus	--	--	--	--	--	--	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	493.9	3.38	12.1	0.14	--	--	2.7	0.03
Imm. tub. w/hair & pectinate chaetae	--	--	17.0	0.12	11.4	0.13	4.3	0.17	--	--
Helobdella papillata	--	--	--	--	--	--	--	--	--	--
Helobdella stagnalis	--	--	--	--	--	--	--	--	--	--
Placobdella	--	--	0.5	0.00	--	--	--	--	--	--
Caecidotea	--	--	--	--	--	--	0.5	0.02	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	2.1	0.02	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	2.1	0.01	81.6	0.96	49.0	1.92	64.9	0.76
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--
Orconectes	--	--	--	--	--	--	--	--	--	--
Baetis intercalaris	--	--	--	--	--	--	--	--	--	--
Pseudocloeon longipalpus	--	--	--	--	--	--	--	--	1.1	0.01
Callibaetis	--	--	--	--	--	--	0.5	0.02	--	--
Stenacron	0.5	0.00	0.5	0.00	10.6	0.13	7.5	0.29	--	--
Maccaffertium integrum	--	--	0.5	0.00	24.8	0.29	1.6	0.06	--	--
Stenonema femoratum	--	--	--	--	--	--	0.5	0.02	--	--
Maccaffertium pulchellum	--	--	--	--	--	--	--	--	--	--
Maccaffertium terminatum	--	--	--	--	--	--	10.1	0.40	--	--
Maccaffertium exiguum	--	--	--	--	0.7	0.01	--	--	--	--
Tricorythodes	--	--	2.1	0.01	--	--	2.1	0.08	1.1	0.01
Caenis	--	--	1.1	0.01	--	--	--	--	--	--
Argia	1.1	0.01	1.6	0.01	--	--	3.2	0.13	1.6	0.02
Enallagma	0.5	0.00	1.6	0.01	--	--	--	--	0.5	0.01
Epitheca (Epicordulia)	--	--	--	--	--	--	--	--	--	--
Cyrnellus fraternus	2,208.3	19.75	2,082.7	14.26	4,946.3	58.43	672.8	26.36	1,279.0	14.92
Hydropsychidae	--	--	34.1	0.23	--	--	--	--	--	--
Cheumatopsyche	--	--	--	--	17.0	0.20	3.2	0.13	--	--
Hydropsyche orris	7.5	0.07	--	--	11.4	0.13	19.7	0.77	--	--
Hydropsyche simulans	--	--	--	--	2.1	0.03	1.1	0.04	--	--
Hydropsyche bidens	--	--	--	--	--	--	--	--	--	--
Potamyia flava	--	--	1.1	0.01	--	--	--	--	--	--
Hydroptila	12.2	0.11	52.7	0.36	0.7	0.01	26.1	1.02	0.5	0.01
Orthotrichia	--	--	0.5	0.00	--	--	--	--	--	--
Ceraclea maculata	1.1	0.01	--	--	--	--	--	--	0.5	0.01
Dineutus	1.1	0.01	1.6	0.01	1.4	0.02	1.1	0.04	0.5	0.01
Dubiraphia	--	--	0.5	0.00	--	--	1.1	0.04	--	--
Macronychus	--	--	1.6	0.01	--	--	--	--	--	--
Macronychus glabratus	--	--	--	--	4.3	0.05	2.7	0.10	0.5	0.01
Stenelmis	--	--	13.3	0.09	--	--	--	--	--	--
Stenelmis humerosa/sinuata grp.	--	--	5.3	0.04	5.7	0.07	1.1	0.04	1.1	0.01
Stenelmis crenata grp.	--	--	--	--	0.7	0.01	2.1	0.08	--	--

TABLE G-51 (cont.)

TAXA	2001 #/m2	2001 %	2002 #/m2	2002 %	2003 #/m2	2003 %	2004 #/m2	2004 %	2005 #/m2	2005 %
Chironomidae	749.4	6.70	34.1	0.23	--	--	--	--	--	--
Procladius (Holotanypus)	--	--	17.0	0.12	--	--	--	--	--	--
Ablabesmyia	25.5	0.23	--	--	--	--	--	--	--	--
Ablabesmyia janta	--	--	--	--	--	--	67.1	2.63	123.5	1.44
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--
Ablabesmyia rhamphe grp.	221.9	1.98	232.1	1.59	185.2	2.19	--	--	--	--
Labrundinia	--	--	--	--	11.4	0.13	0.5	0.02	--	--
Thienemannimyia grp.	--	--	--	--	--	--	6.4	0.25	--	--
Thienemannimyia	72.4	0.65	--	--	--	--	--	--	--	--
Thienemanniella	--	--	--	--	--	--	1.1	0.04	--	--
Cricotopus	--	--	--	--	--	--	1.1	0.04	--	--
Cricotopus bicinctus grp.	8.5	0.08	--	--	5.7	0.07	17.6	0.69	--	--
Cricotopus sylvestris grp.	--	--	--	--	5.7	0.07	4.8	0.19	--	--
Eukiefferiella	4.3	0.04	--	--	--	--	--	--	--	--
Nanocladius	--	--	--	--	--	--	--	--	--	--
Nanocladius distinctus	473.2	4.23	170.3	1.17	624.5	7.38	266.1	10.43	25.5	0.30
Nanocladius crassicornus/rectinervis	--	--	34.1	0.23	--	--	--	--	--	--
Rheocricotopus robacki	--	--	--	--	--	--	2.1	0.08	--	--
Chironomini	--	--	--	--	11.4	0.13	--	--	--	--
Chironomus	8.5	0.08	--	--	5.7	0.07	--	--	--	--
Cryptochironomus	8.5	0.08	--	--	--	--	--	--	--	--
Dicrotendipes	--	--	664.2	4.55	22.7	0.27	21.3	0.83	--	--
Dicrotendipes modestus	--	--	--	--	--	--	--	--	133.6	1.56
Dicrotendipes neomodestus	51.1	0.46	59.6	0.41	54.6	0.65	179.4	7.03	61.2	0.71
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	2,086.4	18.66	1,865.0	12.77	897.0	10.60	560.5	21.96	1,149.6	13.41
Glyptotendipes	5,105.3	45.66	5,722.7	39.17	456.3	5.39	31.4	1.23	5,494.3	64.11
Microchironomus	--	--	--	--	--	--	--	--	--	--
Parachironomus	--	--	--	--	--	--	--	--	--	--
Phaenopsectra obediens grp.	--	--	--	--	--	--	--	--	12.8	0.15
Polypedilum fallax grp.	--	--	--	--	22.7	0.27	--	--	--	--
Polypedilum flavum	4.3	0.04	127.7	0.87	22.7	0.27	38.9	1.52	2.7	0.03
Polypedilum halterale grp.	--	--	17.0	0.12	--	--	6.4	0.25	--	--
Polypedilum illinoense	4.3	0.04	--	--	5.7	0.07	13.8	0.54	--	--
Polypedilum scalaenum grp.	--	--	59.6	0.41	7.8	0.09	--	--	2.7	0.03
Pseudochironomus	17.0	0.15	--	--	22.7	0.27	7.5	0.29	--	--
Stenochironomus	17.0	0.15	17.0	0.12	56.8	0.67	46.8	1.84	4.3	0.05
Stictochironomus	--	--	--	--	--	--	--	--	8.5	0.10
Tribelos fuscicorne	--	--	8.5	0.06	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	--	--	--	--	--	--	--	--
Micropsectra	--	--	--	--	--	--	--	--	--	--
Paratanytarsus	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	--	--	34.1	0.23	--	--	--	--	--	--
Tanytarsus glabrescens grp.	--	--	--	--	--	--	--	--	--	--
Tanytarsus sepp	4.3	0.04	--	--	--	--	--	--	--	--
Xenochironomus xenolabis	--	--	--	--	--	--	--	--	168.7	1.97
Hemerodromia	--	--	--	--	--	--	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	--	--	--	--	--	--	--	--
Amnicola	--	--	--	--	--	--	--	--	--	--
Pleuroceridae	--	--	0.5	0.00	--	--	--	--	--	--
Pleurocera	--	--	--	--	--	--	35.1	1.38	3.2	0.04
Fossaria	--	--	--	--	--	--	--	--	1.1	0.01
Physa	--	--	--	--	--	--	--	--	--	--
Helisoma	--	--	--	--	11.4	0.13	--	--	--	--
Menetus	--	--	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	1.1	0.01	4.3	0.03	44.0	0.52	10.1	0.40	1.1	0.01
Sphaerium	--	--	--	--	--	--	--	--	--	--
Dreissena polymorpha	--	--	--	--	0.7	0.01	--	--	--	--
TOTAL BENTHOS	11,181.4	100.00	14,609.5	100.00	8,464.8	100.00	2,552.1	100.00	8,570.2	100.00
TOTAL TAXA	31		48		42		45		32	
EPT TAXA	5		8		8		11		5	

TABLE G-51 (cont.)

TAXA	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %	2013 #/m2	2013 %
Hydra	--	--	--	--	--	--	--	--	--	--
Turbellaria	3.7	0.08	8.5	0.53	1.1	0.02	162.9	0.81	662.6	13.89
Dugesia	--	--	105.0	6.52	--	--	--	--	--	--
Nematoda	--	--	--	--	--	--	--	--	--	--
Urnatella gracilis	--	--	11.4	0.70	--	--	--	--	--	--
Plumatella	0.5	0.01	1.4	0.09	--	--	--	--	--	--
Pectinatella magnifica	--	--	--	--	--	--	--	--	--	--
Naidinae	--	--	--	--	--	--	8.5	0.04	--	--
Chaetogaster diastrophus	--	--	2.8	0.18	--	--	--	--	--	--
Dero	14.9	0.31	25.5	1.59	4.3	0.08	--	--	14.9	0.31
Dero lodeni	--	--	--	--	--	--	--	--	--	--
Dero nivea	17.0	0.36	45.4	2.82	11.7	0.23	851.6	4.25	--	--
Dero furcata	--	--	--	--	--	--	93.7	0.47	--	--
Nais	--	--	--	--	--	--	--	--	--	--
Nais communis	--	--	2.8	0.18	--	--	--	--	4.3	0.09
Nais pardalis	--	--	2.8	0.18	--	--	--	--	12.8	0.27
Nais variabilis	564.2	11.86	51.1	3.17	31.9	0.64	1,047.5	5.23	15.4	0.32
Pristina	--	--	--	--	--	--	--	--	--	--
Pristina aequiseta	8.5	0.18	5.7	0.35	--	--	17.0	0.09	2.1	0.04
Pristina leidyi	25.5	0.54	25.5	1.59	--	--	136.3	0.68	4.3	0.09
Pristina osborni	10.6	0.22	5.7	0.35	--	--	17.0	0.09	--	--
Pristina jenkinae	--	--	--	--	--	--	8.5	0.04	--	--
Slavina appendiculata	--	--	--	--	--	--	8.5	0.04	--	--
Stylaria lacustris	--	--	--	--	--	--	8.5	0.04	257.6	5.40
Stephensoniana trivandrana	--	--	--	--	--	--	--	--	--	--
Aulodrilus pigueti	--	--	--	--	17.0	0.34	--	--	--	--
Branchiura sowerbyi	--	--	2.8	0.18	--	--	--	--	--	--
Ilyodrilus templetoni	--	--	--	--	--	--	--	--	--	--
Limnodrilus hoffmeisteri	--	--	--	--	--	--	--	--	--	--
Limnodrilus maumeensis	--	--	--	--	--	--	--	--	--	--
Quistadrilus multisetosus	--	--	2.8	0.18	--	--	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	--	--	--	--	--	--	--	--
Imm. tub. w/hair & pectinate chaetae	--	--	--	--	--	--	--	--	--	--
Helobdella papillata	--	--	0.7	0.04	--	--	--	--	--	--
Helobdella stagnalis	--	--	--	--	--	--	0.5	0.00	--	--
Placobdella	--	--	--	--	--	--	--	--	--	--
Caecidotea	--	--	--	--	--	--	--	--	--	--
Hyalella azteca	3.2	0.07	7.8	0.48	--	--	30.9	0.15	60.1	1.26
Gammarus	--	--	4.3	0.26	149.0	2.97	26.6	0.13	82.5	1.73
Gammarus fasciatus	--	--	--	--	--	--	--	--	--	--
Apocorophium lacustre	0.5	0.01	1.4	0.09	--	--	--	--	--	--
Orconectes	--	--	--	--	0.5	0.01	--	--	--	--
Baetis intercalaris	--	--	--	--	--	--	--	--	--	--
Pseudocloeon longipalpus	--	--	--	--	--	--	--	--	--	--
Callibaetis	--	--	--	--	--	--	--	--	--	--
Stenacron	4.3	0.09	26.3	1.63	2.1	0.04	12.8	0.06	9.6	0.20
Maccaffertium integrum	--	--	--	--	1.1	0.02	1.1	0.01	--	--
Stenonema femoratum	--	--	--	--	--	--	--	--	--	--
Maccaffertium pulchellum	--	--	--	--	1.1	0.02	--	--	--	--
Maccaffertium terminatum	--	--	0.7	0.04	--	--	--	--	--	--
Maccaffertium exiguum	--	--	--	--	--	--	--	--	--	--
Tricorythodes	11.7	0.25	5.7	0.35	17.0	0.34	--	--	--	--
Caenis	1.1	0.02	0.7	0.04	--	--	0.5	0.00	--	--
Argia	1.6	0.03	24.1	1.50	0.5	0.01	1.1	0.01	1.1	0.02
Enallagma	--	--	2.8	0.18	--	--	13.8	0.07	--	--
Epitheca (Epicordulia)	--	--	--	--	--	--	--	--	--	--
Cyrnellus fraternus	1,593.5	33.49	505.3	31.35	1,987.4	39.66	1,855.9	9.27	560.5	11.75
Hydropsychidae	--	--	--	--	--	--	--	--	4.3	0.09
Cheumatopsyche	--	--	1.4	0.09	10.1	0.20	--	--	4.3	0.09
Hydropsyche orris	5.3	0.11	2.8	0.18	31.4	0.63	--	--	0.5	0.01
Hydropsyche simulans	--	--	--	--	--	--	--	--	--	--
Hydropsyche bidens	--	--	2.1	0.13	--	--	--	--	--	--
Potamyia flava	--	--	--	--	--	--	--	--	2.1	0.04
Hydroptila	13.8	0.29	--	--	4.8	0.10	--	--	--	--
Orthotrichia	--	--	--	--	--	--	--	--	--	--
Ceraclea maculata	0.5	0.01	--	--	--	--	--	--	--	--
Dineutus	2.1	0.04	--	--	--	--	10.1	0.05	--	--
Dubiraphia	--	--	--	--	--	--	--	--	--	--
Macronychus	--	--	--	--	--	--	--	--	--	--
Macronychus glabratus	1.1	0.02	7.8	0.48	8.5	0.17	1.6	0.01	--	--
Stenelmis	--	--	--	--	1.1	0.02	14.4	0.07	2.1	0.04
Stenelmis humerosa/sinuata grp.	--	--	--	--	--	--	--	--	--	--
Stenelmis crenata grp.	4.8	0.10	6.4	0.40	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--	--	--

TABLE G-51 (cont.)

TAXA	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %	2013 #/m2	2013 %
Procladius (Holotanypus)	--	--	--	--	--	--	--	--	--	--
Ablabesmyia	--	--	--	--	--	--	--	--	--	--
Ablabesmyia janta	87.3	1.83	49.0	3.04	31.9	0.64	--	--	--	--
Ablabesmyia mallochi	--	--	2.1	0.13	--	--	63.9	0.32	17.0	0.36
Ablabesmyia rhamphe grp.	--	--	--	--	--	--	--	--	--	--
Labrundinia	--	--	--	--	--	--	--	--	--	--
Thienemannimyia grp.	--	--	8.5	0.53	--	--	--	--	--	--
Thienemannimyia	--	--	--	--	--	--	--	--	--	--
Thienemanniella	--	--	--	--	--	--	--	--	--	--
Cricotopus	--	--	--	--	--	--	--	--	--	--
Cricotopus bicinctus grp.	34.1	0.72	--	--	29.8	0.59	--	--	51.1	1.07
Cricotopus sylvestris grp.	25.5	0.54	--	--	--	--	8.5	0.04	221.4	4.64
Eukiefferiella	--	--	--	--	--	--	--	--	--	--
Nanocladius	--	--	--	--	--	--	--	--	161.8	3.39
Nanocladius distinctus	183.1	3.85	93.7	5.81	387.5	7.73	72.4	0.36	--	--
Nanocladius crassicornus/rectinervis	--	--	--	--	--	--	--	--	--	--
Rheocricotopus robacki	--	--	2.1	0.13	--	--	--	--	--	--
Chironomini	--	--	--	--	--	--	--	--	--	--
Chironomus	--	--	2.8	0.18	--	--	--	--	--	--
Cryptochironomus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes	--	--	--	--	--	--	--	--	--	--
Dicrotendipes modestus	21.3	0.45	9.9	0.62	6.4	0.13	651.5	3.25	540.8	11.34
Dicrotendipes neomodestus	210.8	4.43	2.8	0.18	291.7	5.82	268.3	1.34	195.9	4.11
Dicrotendipes fumidus	--	--	15.6	0.97	20.2	0.40	191.6	0.96	93.7	1.96
Dicrotendipes lucifer	--	--	147.6	9.16	290.1	5.79	221.4	1.11	298.1	6.25
Dicrotendipes simpsoni	938.9	19.73	85.9	5.33	556.2	11.10	1,179.5	5.89	502.4	10.53
Glyptotendipes	785.6	16.51	137.0	8.50	987.3	19.70	13,016.5	65.00	783.5	16.42
Microchironomus	--	--	4.3	0.26	--	--	--	--	--	--
Parachironomus	17.0	0.36	--	--	--	--	--	--	8.5	0.18
Phaenopsectra obediens grp.	--	--	--	--	--	--	--	--	--	--
Polypedilum fallax grp.	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	17.0	0.36	35.5	2.20	14.9	0.30	8.5	0.04	76.6	1.61
Polypedilum halterale grp.	4.3	0.09	2.8	0.18	--	--	8.5	0.04	8.5	0.18
Polypedilum illinoense	8.5	0.18	6.4	0.40	4.3	0.08	4.3	0.02	--	--
Polypedilum scalaenum grp.	4.3	0.09	2.8	0.18	--	--	--	--	--	--
Pseudochironomus	10.6	0.22	--	--	17.0	0.34	--	--	--	--
Stenochironomus	102.2	2.15	41.2	2.55	78.8	1.57	--	--	8.5	0.18
Stictochironomus	--	--	--	--	--	--	--	--	--	--
Tribelos fuscicorne	--	--	--	--	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	5.7	0.35	--	--	--	--	--	--
Micropsectra	--	--	--	--	--	--	--	--	--	--
Paratanytarsus	--	--	2.1	0.13	--	--	--	--	--	--
Rheotanytarsus	10.6	0.22	8.5	0.53	2.1	0.04	--	--	25.5	0.54
Tanytarsus glabrescens grp.	--	--	4.3	0.26	--	--	--	--	--	--
Tanytarsus sepp	--	--	--	--	--	--	--	--	--	--
Xenochironomus xenolabis	--	--	--	--	4.3	0.08	--	--	--	--
Hemerodromia	0.5	0.01	--	--	--	--	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	13.8	0.29
Hydrobiidae	--	--	--	--	--	--	1.1	0.01	--	--
Amnicola	--	--	--	--	--	--	--	--	0.5	0.01
Pleuroceridae	--	--	--	--	--	--	--	--	--	--
Pleurocera	4.8	0.10	39.7	2.47	3.7	0.07	--	--	1.1	0.02
Fossaria	--	--	--	--	--	--	--	--	--	--
Physa	0.5	0.01	--	--	--	--	--	--	--	--
Helisoma	--	--	--	--	--	--	--	--	--	--
Menetus	--	--	--	--	--	--	--	--	59.6	1.25
Ferrissia	0.5	0.01	--	--	--	--	--	--	--	--
Corbicula fluminea	2.7	0.06	0.7	0.04	3.2	0.06	1.1	0.01	--	--
Sphaerium	--	--	--	--	--	--	--	--	--	--
Dreissena polymorpha	--	--	0.7	0.04	0.5	0.01	--	--	1.1	0.02
TOTAL BENTHOS	4,758.8	100.00	1,611.6	100.00	5,010.5	100.00	20,026.2	100.00	4,770.5	100.00
TOTAL TAXA	41		54		35		36		37	
EPT TAXA	7		8		8		4		5	

TABLE G-51 (cont.)

TAXA	2014 #/m2	2014 %
Hydra	--	--
Turbellaria	1,694.1	24.76
Dugesia	--	--
Nematoda	4.3	0.06
Urnatella gracilis	--	--
Plumatella	--	--
Pectinatella magnifica	--	--
Naidinae	--	--
Chaetogaster diastrophus	--	--
Dero	4.3	0.06
Dero lodeni	--	--
Dero nivea	4.3	0.06
Dero furcata	--	--
Nais	--	--
Nais communis	1.6	0.02
Nais pardalis	--	--
Nais variabilis	647.2	9.46
Pristina	--	--
Pristina aequiseta	--	--
Pristina leidyi	650.4	9.51
Pristina osborni	--	--
Pristina jenkinae	--	--
Slavina appendiculata	--	--
Stylaria lacustris	--	--
Stephensoniana trivandrana	--	--
Aulodrilus pigueti	--	--
Branchiura sowerbyi	--	--
Ilyodrilus templetoni	--	--
Limnodrilus hoffmeisteri	--	--
Limnodrilus maumeensis	--	--
Quistadrilus multisetosus	--	--
Imm. tub. w/bifid chaetae	--	--
Imm. tub. w/hair & pectinate chaetae	--	--
Helobdella papillata	--	--
Helobdella stagnalis	--	--
Placobdella	--	--
Caecidotea	--	--
Hyalella azteca	82.5	1.21
Gammarus	395.5	5.78
Gammarus fasciatus	--	--
Apocorophium lacustre	--	--
Orconectes	1.1	0.02
Baetis intercalaris	4.3	0.06
Pseudocloeon longipalpus	--	--
Callibaetis	--	--
Stenacron	66.0	0.96
Maccaffertium integrum	4.8	0.07
Stenonema femoratum	9.6	0.14
Maccaffertium pulchellum	1.1	0.02
Maccaffertium terminatum	--	--
Maccaffertium exiguum	--	--
Tricorythodes	19.2	0.28
Caenis	--	--
Argia	4.8	0.07
Enallagma	9.0	0.13
Epitheca (Epicordulia)	0.5	0.01
Cyrnellus fraternus	495.0	7.23
Hydropsychidae	--	--
Cheumatopsyche	21.3	0.31
Hydropsyche orris	4.8	0.07
Hydropsyche simulans	--	--
Hydropsyche bidens	--	--
Potamyia flava	--	--
Hydroptila	28.7	0.42
Orthotrichia	--	--
Ceraclea maculata	--	--
Dineutus	20.2	0.30
Dubiraphia	17.0	0.25
Macronychus	--	--
Macronychus glabratus	4.3	0.06
Stenelmis	4.3	0.06
Stenelmis humerosa/sinuata grp.	--	--
Stenelmis crenata grp.	--	--
Chironomidae	--	--

TABLE G-51 (cont.)

TAXA	2014 #/m2	2014 %
Procladius (Holotanypus)	--	--
Ablabesmyia	4.3	0.06
Ablabesmyia janta	--	--
Ablabesmyia mallochi	74.0	1.08
Ablabesmyia rhamphe grp.	--	--
Labrundinia	--	--
Thienemannimyia grp.	--	--
Thienemannimyia	--	--
Thienemanniella	--	--
Cricotopus	--	--
Cricotopus bicinctus grp.	--	--
Cricotopus sylvestris grp.	--	--
Eukiefferiella	--	--
Nanocladius	--	--
Nanocladius distinctus	70.8	1.03
Nanocladius crassicornus/rectinervis	153.3	2.24
Rheocricotopus robacki	--	--
Chironomini	--	--
Chironomus	--	--
Cryptochironomus	--	--
Dicrotendipes	--	--
Dicrotendipes modestus	173.0	2.53
Dicrotendipes neomodestus	149.0	2.18
Dicrotendipes fumidus	11.2	0.16
Dicrotendipes lucifer	350.7	5.13
Dicrotendipes simpsoni	320.9	4.69
Glyptotendipes	1,118.2	16.34
Microchironomus	--	--
Parachironomus	21.3	0.31
Phaenopsectra obediens grp.	--	--
Polypedilum fallax grp.	--	--
Polypedilum flavum	12.8	0.19
Polypedilum halterale grp.	--	--
Polypedilum illinoense	12.8	0.19
Polypedilum scalaenum grp.	--	--
Pseudochironomus	--	--
Stenochironomus	--	--
Stictochironomus	--	--
Tribelos fuscicorne	--	--
Cladotanytarsus mancus grp.	--	--
Micropsectra	11.2	0.16
Paratanytarsus	--	--
Rheotanytarsus	12.8	0.19
Tanytarsus glabrescens grp.	--	--
Tanytarsus sepp	--	--
Xenochironomus xenolabis	--	--
Hemerodromia	--	--
Elimia	--	--
Hydrobiidae	--	--
Amnicola	4.3	0.06
Pleuroceridae	--	--
Pleurocera	89.9	1.31
Fossaria	--	--
Physa	0.5	0.01
Helisoma	--	--
Menetus	--	--
Ferrissia	8.5	0.12
Corbicula fluminea	38.9	0.57
Sphaerium	3.2	0.05
Dreissena polymorpha	0.5	0.01
TOTAL BENTHOS	6,842.0	100.00
TOTAL TAXA	47	
EPT TAXA	10	

NOTE: ALL SAMPLERS LOST FROM LOCATION 502 IN 2003 AND FROM LOCATION 510 IN 2007.

TABLE G-52. COMPARISON OF HESTER-DENDY MACROINVERTEBRATE DENSITIES AMONG 2001-2008, 2011, 2013, AND 2014 FOR EACH TAXON COLLECTED UPSTREAM OF DRESDEN NUCLEAR STATION (IN DRESDEN POOL) FOR COLONIZATION PERIODS THAT ENDED IN AUGUST OR EARLY SEPTEMBER.

TAXA	2001		2002		2003		2004		2005	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Hydra	--	--	--	--	--	--	--	--	8.5	0.06
Turbellaria	--	--	11.7	0.06	--	--	60.7	3.44	--	--
Dugesia	--	--	--	--	--	--	--	--	--	--
Nematoda	--	--	--	--	--	--	--	--	--	--
Urnatella gracilis	--	--	--	--	--	--	--	--	1.1	0.01
Plumatella	1.1	0.01	1.1	0.01	--	--	--	--	1.1	0.01
Pectinatella magnifica	--	--	1.1	0.01	--	--	--	--	--	--
Chaetogaster diastrophus	--	--	--	--	--	--	--	--	--	--
Dero	--	--	204.4	1.04	391.7	2.70	--	--	8.5	0.06
Dero nivea	2.1	0.01	306.6	1.55	--	--	--	--	8.5	0.06
Dero furcata	--	--	--	--	--	--	--	--	--	--
Nais	--	--	34.1	0.17	--	--	--	--	--	--
Nais communis	3.2	0.02	--	--	34.1	0.23	--	--	--	--
Nais pardalis	--	--	579.1	2.94	--	--	--	--	--	--
Nais variabilis	51.1	0.29	2,248.2	11.40	--	--	--	--	--	--
Pristina	5.3	0.03	--	--	--	--	--	--	--	--
Pristina aequiseta	--	--	749.4	3.80	990.0	6.82	--	--	--	--
Pristina leidyi	--	--	102.2	0.52	376.8	2.59	--	--	--	--
Pristina osborni	--	--	--	--	--	--	--	--	--	--
Slavina appendiculata	--	--	34.1	0.17	--	--	--	--	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	--	--
Stephensoniana trivandrana	--	--	68.1	0.35	--	--	--	--	--	--
Aulodrilus pigueti	--	--	--	--	--	--	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	34.1	0.17	--	--	--	--	--	--
Helobdella papillata	--	--	--	--	--	--	--	--	--	--
Helobdella stagnalis	--	--	--	--	--	--	--	--	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	1.1	0.01	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	2.1	0.01	8.5	0.06	42.6	2.41	73.4	0.51
Orconectes	--	--	--	--	--	--	--	--	--	--
Baetis intercalaris	--	--	--	--	--	--	--	--	--	--
Pseudocloeon longipalpus	--	--	--	--	--	--	--	--	2.1	0.01
Callibaetis	--	--	--	--	--	--	1.1	0.06	--	--
Stenacron	--	--	1.1	0.01	--	--	12.8	0.72	--	--
Maccaffertium integrum	--	--	1.1	0.01	--	--	3.2	0.18	--	--
Stenonema femoratum	--	--	--	--	--	--	--	--	--	--
Maccaffertium pulchellum	--	--	--	--	--	--	--	--	--	--
Maccaffertium terminatum	--	--	--	--	--	--	20.2	1.15	--	--
Tricorythodes	--	--	1.1	0.01	--	--	4.3	0.24	2.1	0.01
Caenis	--	--	--	--	--	--	--	--	--	--
Argia	1.1	0.01	2.1	0.01	--	--	4.3	0.24	--	--
Enallagma	1.1	0.01	--	--	--	--	--	--	1.1	0.01
Cyrnellus fraternus	2,790.0	16.10	3,398.9	17.23	9,412.2	64.80	390.7	22.15	2,000.2	13.96
Hydropsychidae	--	--	68.1	0.35	--	--	--	--	--	--
Cheumatopsyche	--	--	--	--	6.4	0.04	6.4	0.36	--	--
Hydropsyche orris	--	--	--	--	27.7	0.19	25.5	1.45	--	--
Hydropsyche simulans	--	--	--	--	2.1	0.01	1.1	0.06	--	--
Hydropsyche bidens	--	--	--	--	--	--	--	--	--	--
Potamyia flava	--	--	2.1	0.01	--	--	--	--	--	--
Hydroptila	23.4	0.14	1.1	0.01	--	--	36.2	2.05	--	--
Ceraclea maculata	2.1	0.01	--	--	--	--	--	--	1.1	0.01
Dineutus	1.1	0.01	2.1	0.01	--	--	2.1	0.12	1.1	0.01
Dubiraphia	--	--	1.1	0.01	--	--	2.1	0.12	--	--
Macronychus	--	--	3.2	0.02	--	--	--	--	--	--
Macronychus glabratus	--	--	--	--	--	--	5.3	0.30	1.1	0.01
Stenelmis	--	--	5.3	0.03	--	--	--	--	--	--
Stenelmis humerosa/sinuata grp.	--	--	--	--	2.1	0.01	--	--	--	--
Stenelmis crenata grp.	--	--	--	--	--	--	4.3	0.24	--	--
Chironomidae	1,362.5	7.86	34.1	0.17	--	--	--	--	--	--
Ablabesmyia	51.1	0.29	--	--	--	--	--	--	--	--
Ablabesmyia janta	--	--	--	--	--	--	44.7	2.53	170.3	1.19
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--
Ablabesmyia rhamphe grp.	--	--	72.4	0.37	306.6	2.11	--	--	--	--
Labrundinia	--	--	--	--	34.1	0.23	1.1	0.06	--	--
Thienemannimyia grp.	--	--	--	--	--	--	--	--	--	--
Thienemannimyia	144.8	0.84	--	--	--	--	--	--	--	--
Thienemanniella	--	--	--	--	--	--	2.1	0.12	--	--
Cricotopus	--	--	--	--	--	--	2.1	0.12	--	--
Cricotopus bicinctus grp.	17.0	0.10	--	--	--	--	26.6	1.51	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	9.6	0.54	--	--
Eukiefferiella	8.5	0.05	--	--	--	--	--	--	--	--
Nanocladius	--	--	--	--	--	--	--	--	--	--

TABLE G-52 (cont.)

TAXA	2001 #/m2	2001 %	2002 #/m2	2002 %	2003 #/m2	2003 %	2004 #/m2	2004 %	2005 #/m2	2005 %
Nanocladius distinctus	502.4	2.90	306.6	1.55	1,124.1	7.74	323.6	18.35	34.1	0.24
Nanocladius crassicornus/rectinervis	--	--	68.1	0.35	--	--	--	--	--	--
Rheocricotopus robacki	--	--	--	--	--	--	--	--	--	--
Chironomini	--	--	--	--	34.1	0.23	--	--	--	--
Dicrotendipes	--	--	681.3	3.45	--	--	42.6	2.41	--	--
Dicrotendipes modestus	--	--	--	--	--	--	--	--	127.7	0.89
Dicrotendipes neomodestus	--	--	68.1	0.35	--	--	111.8	6.34	--	--
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	2,435.5	14.05	1,907.6	9.67	1,090.0	7.50	358.7	20.34	817.5	5.70
Glyptotendipes	9,904.0	57.14	8,345.6	42.31	476.9	3.28	28.7	1.63	10,730.0	74.88
Microchironomus	--	--	--	--	--	--	--	--	--	--
Parachironomus	--	--	--	--	--	--	--	--	--	--
Polypedilum fallax grp.	--	--	--	--	68.1	0.47	--	--	--	--
Polypedilum flavum	8.5	0.05	238.4	1.21	68.1	0.47	43.6	2.47	--	--
Polypedilum halterale grp.	--	--	--	--	--	--	--	--	--	--
Polypedilum illinoense	8.5	0.05	--	--	--	--	27.7	1.57	--	--
Polypedilum scalaenum grp.	--	--	34.1	0.17	--	--	--	--	--	--
Pseudochironomus	--	--	--	--	--	--	2.1	0.12	--	--
Stenochironomus	--	--	34.1	0.17	68.1	0.47	42.6	2.41	8.5	0.06
Paratanytarsus	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	--	--	68.1	0.35	--	--	--	--	--	--
Tanytarsus glabrescens grp.	--	--	--	--	--	--	--	--	--	--
Tanytarsus sepp	8.5	0.05	--	--	--	--	--	--	--	--
Xenochironomus xenolabis	--	--	--	--	--	--	--	--	323.6	2.26
Elimia	--	--	--	--	--	--	--	--	--	--
Hydrobiidae	--	--	--	--	--	--	--	--	--	--
Amnicola	--	--	--	--	--	--	--	--	--	--
Pleuroceridae	--	--	1.1	0.01	--	--	--	--	--	--
Pleurocera	--	--	--	--	--	--	70.3	3.98	6.4	0.04
Fossaria	--	--	--	--	--	--	--	--	2.1	0.01
Physa	--	--	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	--	--	2.1	0.01	2.1	0.01	3.2	0.18	--	--
Dreissena polymorpha	--	--	--	--	2.1	0.01	--	--	--	--
TOTAL BENTHOS	17,334.1	100.00	19,724.9	100.00	14,526.0	100.00	1,763.9	100.00	14,330.1	100.00
TOTAL TAXA	22		36		20		33		21	
EPT TAXA	3		6		4		10		4	
MEAN NUMBER OF TAXA	16		24		--		22		14	

TABLE G-52 (cont.)

TAXA	2006		2007		2008		2011		2013	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Hydra	--	--	--	--	--	--	--	--	--	--
Turbellaria	7.5	0.11	12.8	0.76	2.1	0.03	308.7	0.96	1,044.3	19.63
Dugesia	--	--	157.5	9.35	--	--	--	--	--	--
Nematoda	--	--	--	--	--	--	--	--	--	--
Urnatella gracilis	--	--	17.0	1.01	--	--	--	--	--	--
Plumatella	1.1	0.02	2.1	0.13	--	--	--	--	--	--
Pectinatella magnifica	--	--	--	--	--	--	--	--	--	--
Chaetogaster diastrophus	--	--	4.3	0.25	--	--	--	--	--	--
Dero	8.5	0.12	34.1	2.02	--	--	--	--	12.8	0.24
Dero nivea	--	--	42.6	2.53	8.5	0.11	153.3	0.48	--	--
Dero furcata	--	--	--	--	--	--	187.3	0.58	--	--
Nais	--	--	--	--	--	--	--	--	--	--
Nais communis	--	--	--	--	--	--	--	--	--	--
Nais pardalis	--	--	4.3	0.25	--	--	--	--	--	--
Nais variabilis	493.9	7.02	76.6	4.55	51.1	0.67	493.9	1.53	5.3	0.10
Pristina	--	--	--	--	--	--	--	--	--	--
Pristina aequiseta	17.0	0.24	8.5	0.51	--	--	--	--	4.3	0.08
Pristina leidyi	51.1	0.73	21.3	1.26	--	--	--	--	--	--
Pristina osborni	8.5	0.12	8.5	0.51	--	--	--	--	--	--
Slavina appendiculata	--	--	--	--	--	--	--	--	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	4.3	0.08
Stephensoniana trivandrana	--	--	--	--	--	--	--	--	--	--
Aulodrilus pigueti	--	--	--	--	34.1	0.44	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	--	--	--	--	--	--	--	--
Helobdella papillata	--	--	1.1	0.06	--	--	--	--	--	--
Helobdella stagnalis	--	--	--	--	--	--	1.1	0.00	--	--
Hyalella azteca	3.2	0.05	10.6	0.63	--	--	--	--	1.1	0.02
Gammarus	--	--	6.4	0.38	1.1	0.01	34.1	0.11	9.6	0.18
Gammarus fasciatus	--	--	--	--	--	--	--	--	--	--
Orconectes	--	--	--	--	--	--	--	--	--	--
Baetis intercalaris	--	--	--	--	--	--	--	--	--	--
Pseudocloeon longipalpus	--	--	--	--	--	--	--	--	--	--
Callibaetis	--	--	--	--	--	--	--	--	--	--
Stenacron	8.5	0.12	39.4	2.34	4.3	0.06	23.4	0.07	18.1	0.34
Maccaffertium integrum	--	--	--	--	--	--	1.1	0.00	--	--
Stenonema femoratum	--	--	--	--	--	--	--	--	--	--
Maccaffertium pulchellum	--	--	--	--	2.1	0.03	--	--	--	--
Maccaffertium terminatum	--	--	--	--	--	--	--	--	--	--
Tricorythodes	10.6	0.15	6.4	0.38	34.1	0.44	--	--	--	--
Caenis	2.1	0.03	--	--	--	--	1.1	0.00	--	--
Argia	3.2	0.05	33.0	1.96	1.1	0.01	2.1	0.01	1.1	0.02
Enallagma	--	--	2.1	0.13	--	--	10.6	0.03	--	--
Cyrnellus fraternus	2,743.2	38.97	446.0	26.47	2,667.6	34.82	2,060.8	6.40	540.8	10.17
Hydropsychidae	--	--	--	--	--	--	--	--	--	--
Cheumatopsyche	--	--	2.1	0.13	20.2	0.26	--	--	8.5	0.16
Hydropsyche orris	10.6	0.15	4.3	0.25	62.8	0.82	--	--	1.1	0.02
Hydropsyche simulans	--	--	--	--	--	--	--	--	--	--
Hydropsyche bidens	--	--	3.2	0.19	--	--	--	--	--	--
Potamyia flava	--	--	--	--	--	--	--	--	4.3	0.08
Hydroptila	17.0	0.24	--	--	9.6	0.13	--	--	--	--
Ceraclea maculata	1.1	0.02	--	--	--	--	--	--	--	--
Dineutus	3.2	0.05	--	--	--	--	--	--	--	--
Dubiraphia	--	--	--	--	--	--	--	--	--	--
Macronychus	--	--	--	--	--	--	--	--	--	--
Macronychus glabratus	1.1	0.02	11.7	0.69	8.5	0.11	--	--	--	--
Stenelmis	--	--	--	--	--	--	27.7	0.09	4.3	0.08
Stenelmis humerosa/sinuata grp.	--	--	--	--	--	--	--	--	--	--
Stenelmis crenata grp.	8.5	0.12	7.5	0.44	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--	--	--
Ablabesmyia	--	--	--	--	--	--	--	--	--	--
Ablabesmyia janta	51.1	0.73	25.5	1.52	34.1	0.44	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	68.1	0.21	--	--
Ablabesmyia rhamphe grp.	--	--	--	--	--	--	--	--	--	--
Labrundinia	--	--	--	--	--	--	--	--	--	--
Thienemannimyia grp.	--	--	8.5	0.51	--	--	--	--	--	--
Thienemannimyia	--	--	--	--	--	--	--	--	--	--
Thienemanniella	--	--	--	--	--	--	--	--	--	--
Cricotopus	--	--	--	--	--	--	--	--	--	--
Cricotopus bicinctus grp.	59.6	0.85	--	--	59.6	0.78	--	--	102.2	1.92
Cricotopus sylvestris grp.	51.1	0.73	--	--	--	--	--	--	425.8	8.00
Eukiefferiella	--	--	--	--	--	--	--	--	--	--
Nanocladius	--	--	--	--	--	--	--	--	272.5	5.12
Nanocladius distinctus	315.1	4.48	140.5	8.34	666.4	8.70	34.1	0.11	--	--
Nanocladius crassicornus/rectinervis	--	--	--	--	--	--	--	--	--	--

TABLE G-52 (cont.)

TAXA	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %	2013 #/m2	2013 %
Rheocricotopus robacki	--	--	3.2	0.19	--	--	--	--	--	--
Chironomini	--	--	--	--	--	--	--	--	--	--
Dicrotendipes	--	--	--	--	--	--	--	--	--	--
Dicrotendipes modestus	34.1	0.48	4.3	0.25	8.5	0.11	749.4	2.33	374.7	7.04
Dicrotendipes neomodestus	255.5	3.63	4.3	0.25	476.9	6.22	374.7	1.16	204.4	3.84
Dicrotendipes fumidus	--	--	6.4	0.38	25.5	0.33	--	--	68.1	1.28
Dicrotendipes lucifer	--	--	112.8	6.70	480.1	6.27	238.4	0.74	272.5	5.12
Dicrotendipes simpsoni	1,073.0	15.24	72.4	4.30	886.7	11.57	1,413.6	4.39	204.4	3.84
Glyptotendipes	1,473.2	20.93	154.4	9.16	1,904.4	24.86	25,990.5	80.73	1,515.8	28.50
Microchironomus	--	--	6.4	0.38	--	--	--	--	--	--
Parachironomus	34.1	0.48	--	--	--	--	--	--	17.0	0.32
Polypedilum fallax grp.	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	34.1	0.48	53.2	3.16	25.5	0.33	17.0	0.05	85.2	1.60
Polypedilum halterale grp.	--	--	--	--	--	--	--	--	17.0	0.32
Polypedilum illinoense	17.0	0.24	9.6	0.57	--	--	--	--	--	--
Polypedilum scalaenum grp.	--	--	4.3	0.25	--	--	--	--	--	--
Pseudochironomus	17.0	0.24	--	--	34.1	0.44	--	--	--	--
Stenochironomus	195.9	2.78	31.9	1.90	136.3	1.78	--	--	17.0	0.32
Paratanytarsus	--	--	3.2	0.19	--	--	--	--	--	--
Rheotanytarsus	17.0	0.24	12.8	0.76	--	--	--	--	51.1	0.96
Tanytarsus glabrescens grp.	--	--	6.4	0.38	--	--	--	--	--	--
Tanytarsus sepp	--	--	--	--	--	--	--	--	--	--
Xenochironomus xenolabis	--	--	--	--	8.5	0.11	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	27.7	0.52
Hydrobiidae	--	--	--	--	--	--	2.1	0.01	--	--
Amnicola	--	--	--	--	--	--	--	--	1.1	0.02
Pleuroceridae	--	--	--	--	--	--	--	--	--	--
Pleurocera	9.6	0.14	59.6	3.54	7.5	0.10	--	--	2.1	0.04
Fossaria	--	--	--	--	--	--	--	--	--	--
Physa	1.1	0.02	--	--	--	--	--	--	--	--
Ferrissia	1.1	0.02	--	--	--	--	--	--	--	--
Corbicula fluminea	--	--	1.1	0.06	--	--	--	--	--	--
Dreissena polymorpha	--	--	1.1	0.06	--	--	--	--	1.1	0.02
TOTAL BENTHOS	7,039.4	100.00	1,685.1	100.00	7,661.1	100.00	32,193.3	100.00	5,319.2	100.00
TOTAL TAXA	36		44		28		22		32	
EPT TAXA	7		6		7		4		5	
MEAN NUMBER OF TAXA	21		30		19		14		20	

TABLE G-52 (cont.)

TAXA	2014 #/m2	2014 %
Hydra	--	--
Turbellaria	3,299.9	43.24
Dugesia	--	--
Nematoda	8.5	0.11
Urnatella gracilis	--	--
Plumatella	--	--
Pectinatella magnifica	--	--
Chaetogaster diastrophus	--	--
Dero	8.5	0.11
Dero nivea	--	--
Dero furcata	--	--
Nais	--	--
Nais communis	--	--
Nais pardalis	--	--
Nais variabilis	8.5	0.11
Pristina	--	--
Pristina aequiseta	--	--
Pristina leidyi	1.1	0.01
Pristina osborni	--	--
Slavina appendiculata	--	--
Stylaria lacustris	--	--
Stephensoniana trivandrana	--	--
Aulodrilus pigueti	--	--
Imm. tub. w/bifid chaetae	--	--
Helobdella papillata	--	--
Helobdella stagnalis	--	--
Hyalella azteca	17.0	0.22
Gammarus	251.2	3.29
Gammarus fasciatus	--	--
Orconectes	1.1	0.01
Baetis intercalaris	8.5	0.11
Pseudocloeon longipalpus	--	--
Callibaetis	--	--
Stenacron	117.1	1.53
Maccaffertium integrum	8.5	0.11
Stenonema femoratum	19.2	0.25
Maccaffertium pulchellum	--	--
Maccaffertium terminatum	--	--
Tricorythodes	34.1	0.45
Caenis	--	--
Argia	9.6	0.13
Enallagma	17.0	0.22
Cyrnellus fraternus	369.4	4.84
Hydropsychidae	--	--
Cheumatopsyche	42.6	0.56
Hydropsyche orris	8.5	0.11
Hydropsyche simulans	--	--
Hydropsyche bidens	--	--
Potamyia flava	--	--
Hydroptila	42.6	0.56
Ceraclea maculata	--	--
Dineutus	1.1	0.01
Dubiraphia	34.1	0.45
Macronychus	--	--
Macronychus glabratus	8.5	0.11
Stenelmis	8.5	0.11
Stenelmis humerosa/sinuata grp.	--	--
Stenelmis crenata grp.	--	--
Chironomidae	--	--
Ablabesmyia	8.5	0.11
Ablabesmyia janta	--	--
Ablabesmyia mallochi	85.2	1.12
Ablabesmyia rhamphe grp.	--	--
Labrundinia	--	--
Thienemannimyia grp.	--	--
Thienemannimyia	--	--
Thienemanniella	--	--
Cricotopus	--	--
Cricotopus bicinctus grp.	--	--
Cricotopus sylvestris grp.	--	--
Eukiefferiella	--	--
Nanocladius	--	--
Nanocladius distinctus	102.2	1.34
Nanocladius crassicornus/rectinervis	170.3	2.23

TABLE G-52 (cont.)

TAXA	2014 #/m2	2014 %
Rheocricotopus robacki	--	--
Chironomini	--	--
Dicrotendipes	--	--
Dicrotendipes modestus	170.3	2.23
Dicrotendipes neomodestus	51.1	0.67
Dicrotendipes fumidus	--	--
Dicrotendipes lucifer	136.3	1.79
Dicrotendipes simpsoni	68.1	0.89
Glyptotendipes	2,146.0	28.12
Microchironomus	--	--
Parachironomus	42.6	0.56
Polypedilum fallax grp.	--	--
Polypedilum flavum	8.5	0.11
Polypedilum halterale grp.	--	--
Polypedilum illinoense	17.0	0.22
Polypedilum scalaenum grp.	--	--
Pseudochironomus	--	--
Stenochironomus	--	--
Paratanytarsus	--	--
Rheotanytarsus	25.5	0.33
Tanytarsus glabrescens grp.	--	--
Tanytarsus sepp	--	--
Xenochironomus xenolabis	--	--
Elimia	--	--
Hydrobiidae	--	--
Amnicola	8.5	0.11
Pleuroceridae	--	--
Pleurocera	179.9	2.36
Fossaria	--	--
Physa	1.1	0.01
Ferrissia	8.5	0.11
Corbicula fluminea	76.6	1.00
Dreissena polymorpha	--	--
TOTAL BENTHOS	7,631.3	100.00
TOTAL TAXA	40	
EPT TAXA	9	
MEAN NUMBER OF TAXA	26	

NOTE: 2003 DATA FROM ONLY LOCATION 501A; ALL SAMPLERS LOST FROM LOCATION 502.

TABLE G-53. COMPARISON OF HESTER-DENDY MACROINVERTEBRATE DENSITIES AMONG 2001-2008, 2011, 2013, AND 2014 FOR EACH TAXON COLLECTED DOWNSTREAM OF DRESDEN NUCLEAR STATION (IN DRESDEN POOL) FOR COLONIZATION PERIODS THAT ENDED IN AUGUST OR EARLY SEPTEMBER.

TAXA	2001		2002		2003		2004		2005	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	3.2	0.03	8.5	0.16	--	--	--	--
Plumatella	1.1	0.02	--	--	2.1	0.04	--	--	--	--
Naidinae	--	--	--	--	17.0	0.31	--	--	--	--
Dero	10.6	0.21	306.6	3.23	95.8	1.76	17.0	0.51	5.3	0.19
Dero lodeni	--	--	--	--	1.1	0.02	--	--	--	--
Dero nivea	9.6	0.19	357.7	3.77	34.1	0.63	12.8	0.38	5.3	0.19
Nais	--	--	--	--	--	--	638.7	19.12	--	--
Nais communis	--	--	--	--	76.6	1.41	--	--	--	--
Nais pardalis	--	--	34.1	0.36	2.1	0.04	--	--	--	--
Nais variabilis	78.8	1.57	34.1	0.36	22.4	0.41	--	--	--	--
Pristina aequiseta	1.1	0.02	34.1	0.36	36.2	0.67	42.6	1.27	--	--
Pristina leidyi	4.3	0.08	102.2	1.08	96.9	1.78	55.4	1.66	8.5	0.30
Pristina osborni	--	--	34.1	0.36	--	--	17.0	0.51	--	--
Pristina jenkinae	--	--	--	--	--	--	--	--	--	--
Slavina appendiculata	--	--	--	--	--	--	--	--	--	--
Stylaria lacustris	--	--	34.1	0.36	--	--	--	--	--	--
Stephensoniana trivandrana	--	--	17.0	0.18	--	--	--	--	--	--
Aulodrilus pigueti	--	--	204.4	2.15	--	--	--	--	--	--
Branchiura sowerbyi	--	--	--	--	--	--	4.3	0.13	--	--
Ilyodrilus templetoni	--	--	68.1	0.72	--	--	--	--	--	--
Limnodrilus hoffmeisteri	--	--	51.1	0.54	--	--	--	--	--	--
Limnodrilus maumeensis	--	--	34.1	0.36	--	--	--	--	--	--
Quistadrilus multisetosus	--	--	--	--	--	--	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	953.8	10.05	18.1	0.33	--	--	5.3	0.19
Imm. tub. w/hair & pectinate chaetae	--	--	34.1	0.36	17.0	0.31	8.5	0.25	--	--
Placobdella	--	--	1.1	0.01	--	--	--	--	--	--
Caecidotea	--	--	--	--	--	--	1.1	0.03	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	3.2	0.06	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	2.1	0.02	118.2	2.17	55.4	1.66	56.4	2.01
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--
Orconectes	--	--	--	--	--	--	--	--	--	--
Stenacron	1.1	0.02	--	--	16.0	0.29	2.1	0.06	--	--
Maccaffertium integrum	--	--	--	--	37.3	0.69	--	--	--	--
Stenonema femoratum	--	--	--	--	--	--	1.1	0.03	--	--
Maccaffertium pulchellum	--	--	--	--	--	--	--	--	--	--
Maccaffertium terminatum	--	--	--	--	--	--	--	--	--	--
Maccaffertium exiguum	--	--	--	--	1.1	0.02	--	--	--	--
Tricorythodes	--	--	3.2	0.03	--	--	--	--	--	--
Caenis	--	--	2.1	0.02	--	--	--	--	--	--
Argia	1.1	0.02	1.1	0.01	--	--	2.1	0.06	3.2	0.11
Enallagma	--	--	3.2	0.03	--	--	--	--	--	--
Epitheca (Epicordulia)	--	--	--	--	--	--	--	--	--	--
Cyrnellus fraternus	1,626.5	32.35	766.4	8.07	2,713.4	49.93	954.8	28.59	557.8	19.85
Hydropsychidae	--	--	--	--	--	--	--	--	--	--
Cheumatopsyche	--	--	--	--	22.4	0.41	--	--	--	--
Hydropsyche orris	14.9	0.30	--	--	3.2	0.06	13.8	0.41	--	--
Hydropsyche simulans	--	--	--	--	2.1	0.04	1.1	0.03	--	--
Hydroptila	1.1	0.02	104.3	1.10	1.1	0.02	16.0	0.48	1.1	0.04
Orthotrichia	--	--	1.1	0.01	--	--	--	--	--	--
Dineutus	1.1	0.02	1.1	0.01	2.1	0.04	--	--	--	--
Macronychus glabratus	--	--	--	--	6.4	0.12	--	--	--	--
Stenelmis	--	--	21.3	0.22	--	--	--	--	--	--
Stenelmis humerosa/sinuata grp.	--	--	10.6	0.11	7.5	0.14	2.1	0.06	2.1	0.08
Stenelmis crenata grp.	--	--	--	--	1.1	0.02	--	--	--	--
Chironomidae	136.3	2.71	34.1	0.36	--	--	--	--	--	--
Procladius (Holotanypus)	--	--	34.1	0.36	--	--	--	--	--	--
Ablabesmyia janta	--	--	--	--	--	--	89.4	2.68	76.6	2.73
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--
Ablabesmyia rhamphe grp.	443.9	8.83	391.7	4.13	124.5	2.29	--	--	--	--
Thienemannimyia grp.	--	--	--	--	--	--	12.8	0.38	--	--
Cricotopus bicinctus grp.	--	--	--	--	8.5	0.16	8.5	0.25	--	--
Cricotopus sylvestris grp.	--	--	--	--	8.5	0.16	--	--	--	--
Nanocladius	--	--	--	--	--	--	--	--	--	--
Nanocladius distinctus	443.9	8.83	34.1	0.36	374.7	6.90	208.6	6.25	17.0	0.61
Nanocladius crassicornus/rectinervis	--	--	--	--	--	--	--	--	--	--
Rheocricotopus robacki	--	--	--	--	--	--	4.3	0.13	--	--
Chironomus	17.0	0.34	--	--	8.5	0.16	--	--	--	--
Cryptochironomus	17.0	0.34	--	--	--	--	--	--	--	--
Dicrotendipes	--	--	647.2	6.82	34.1	0.63	--	--	--	--
Dicrotendipes modestus	--	--	--	--	--	--	--	--	139.4	4.96
Dicrotendipes neomodestus	102.2	2.03	51.1	0.54	82.0	1.51	247.0	7.39	122.4	4.36

TABLE G-53 (cont.)

TAXA	2001 #/m2	2001 %	2002 #/m2	2002 %	2003 #/m2	2003 %	2004 #/m2	2004 %	2005 #/m2	2005 %
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	1,737.2	34.55	1,822.4	19.19	800.5	14.73	762.2	22.82	1,481.8	52.73
Glyptotendipes	306.6	6.10	3,099.8	32.65	446.0	8.21	34.1	1.02	258.7	9.20
Phaenopsectra obediens grp.	--	--	--	--	--	--	--	--	25.5	0.91
Polypedilum flavum	--	--	17.0	0.18	--	--	34.1	1.02	5.3	0.19
Polypedilum halterale grp.	--	--	34.1	0.36	--	--	12.8	0.38	--	--
Polypedilum illinoense	--	--	--	--	8.5	0.16	--	--	--	--
Polypedilum scalaenum grp.	--	--	85.2	0.90	11.7	0.22	--	--	5.3	0.19
Pseudochironomus	34.1	0.68	--	--	34.1	0.63	12.8	0.38	--	--
Stenochironomus	34.1	0.68	--	--	51.1	0.94	51.1	1.53	--	--
Stictochironomus	--	--	--	--	--	--	--	--	17.0	0.61
Tribelos fuscicorne	--	--	17.0	0.18	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	--	--	--	--	--	--	--	--
Micropsectra	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	--	--	--	--	--	--	--	--	--	--
Xenochironomus xenolabis	--	--	--	--	--	--	--	--	13.8	0.49
Hemerodromia	--	--	--	--	--	--	--	--	--	--
Helisoma	--	--	--	--	17.0	0.31	--	--	--	--
Menetus	--	--	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	2.1	0.04	6.4	0.07	64.9	1.19	17.0	0.51	2.1	0.08
Sphaerium	--	--	--	--	--	--	--	--	--	--
Dreissena polymorpha	--	--	--	--	--	--	--	--	--	--
TOTAL BENTHOS	5,028.6	100.00	9,494.2	100.00	5,434.2	100.00	3,340.4	100.00	2,810.2	100.00
TOTAL TAXA	22		36		38		29		20	
EPT TAXA	4		5		8		6		2	
MEAN NUMBER OF TAXA	16		23		27		22		15	

TABLE G-53 (cont.)

TAXA	2006		2007		2008		2011		2013	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	--	--	--	--	17.0	0.22	281.0	6.66
Plumatella	--	--	--	--	--	--	--	--	--	--
Naidinae	--	--	--	--	--	--	17.0	0.22	--	--
Dero	21.3	0.86	8.5	0.58	8.5	0.36	--	--	17.0	0.40
Dero lodeni	--	--	--	--	--	--	--	--	--	--
Dero nivea	34.1	1.37	51.1	3.49	14.9	0.63	1,549.9	19.72	--	--
Nais	--	--	--	--	--	--	--	--	--	--
Nais communis	--	--	8.5	0.58	--	--	--	--	8.5	0.20
Nais pardalis	--	--	--	--	--	--	--	--	25.5	0.61
Nais variabilis	634.4	25.60	--	--	12.8	0.54	1,601.0	20.37	25.5	0.61
Pristina aequiseta	--	--	--	--	--	--	34.1	0.43	--	--
Pristina leidyi	--	--	34.1	2.33	--	--	272.5	3.47	8.5	0.20
Pristina osborni	12.8	0.52	--	--	--	--	34.1	0.43	--	--
Pristina jenkinae	--	--	--	--	--	--	17.0	0.22	--	--
Slavina appendiculata	--	--	--	--	--	--	17.0	0.22	--	--
Stylaria lacustris	--	--	--	--	--	--	17.0	0.22	511.0	12.10
Stephensoniana trivandrana	--	--	--	--	--	--	--	--	--	--
Aulodrilus pigueti	--	--	--	--	--	--	--	--	--	--
Branchiura sowerbyi	--	--	8.5	0.58	--	--	--	--	--	--
Ilyodrilus templetoni	--	--	--	--	--	--	--	--	--	--
Limnodrilus hoffmeisteri	--	--	--	--	--	--	--	--	--	--
Limnodrilus maumeensis	--	--	--	--	--	--	--	--	--	--
Quistadrilus multisetosus	--	--	8.5	0.58	--	--	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	--	--	--	--	--	--	--	--
Imm. tub. w/hair & pectinate chaetae	--	--	--	--	--	--	--	--	--	--
Placobdella	--	--	--	--	--	--	--	--	--	--
Caecidotea	--	--	--	--	--	--	--	--	--	--
Hyalella azteca	3.2	0.13	2.1	0.15	--	--	61.7	0.79	119.2	2.82
Gammarus	--	--	--	--	297.0	12.58	19.2	0.24	155.4	3.68
Gammarus fasciatus	--	--	--	--	--	--	--	--	--	--
Apocorophium lacustre	1.1	0.04	4.3	0.29	--	--	--	--	--	--
Orconectes	--	--	--	--	1.1	0.05	--	--	--	--
Stenacron	--	--	--	--	--	--	2.1	0.03	1.1	0.03
Maccaffertium integrum	--	--	--	--	2.1	0.09	1.1	0.01	--	--
Stenonema femoratum	--	--	--	--	--	--	--	--	--	--
Maccaffertium pulchellum	--	--	--	--	--	--	--	--	--	--
Maccaffertium terminatum	--	--	2.1	0.15	--	--	--	--	--	--
Maccaffertium exiguum	--	--	--	--	--	--	--	--	--	--
Tricorythodes	12.8	0.52	4.3	0.29	--	--	--	--	--	--
Caenis	--	--	2.1	0.15	--	--	--	--	--	--
Argia	--	--	6.4	0.44	--	--	--	--	1.1	0.03
Enallagma	--	--	4.3	0.29	--	--	17.0	0.22	--	--
Epitheca (Epicordulia)	--	--	--	--	--	--	--	--	--	--
Cyrnellus fraternus	443.9	17.91	623.8	42.59	1,307.2	55.39	1,651.0	21.01	580.1	13.74
Hydropsychidae	--	--	--	--	--	--	--	--	8.5	0.20
Cheumatopsyche	--	--	--	--	--	--	--	--	--	--
Hydropsyche orris	--	--	--	--	--	--	--	--	--	--
Hydropsyche simulans	--	--	--	--	--	--	--	--	--	--
Hydroptila	10.6	0.43	--	--	--	--	--	--	--	--
Orthotrichia	--	--	--	--	--	--	--	--	--	--
Dineutus	1.1	0.04	--	--	--	--	20.2	0.26	--	--
Macronychus glabratus	1.1	0.04	--	--	8.5	0.36	3.2	0.04	--	--
Stenelmis	--	--	--	--	2.1	0.09	1.1	0.01	--	--
Stenelmis humerosa/sinuata grp.	--	--	--	--	--	--	--	--	--	--
Stenelmis crenata grp.	1.1	0.04	4.3	0.29	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--	--	--
Procladius (Holotanypus)	--	--	--	--	--	--	--	--	--	--
Ablabesmyia janta	123.5	4.98	95.8	6.54	29.8	1.26	--	--	--	--
Ablabesmyia mallochi	--	--	6.4	0.44	--	--	59.6	0.76	34.1	0.81
Ablabesmyia rhamphe grp.	--	--	--	--	--	--	--	--	--	--
Thienemannimyia grp.	--	--	8.5	0.58	--	--	--	--	--	--
Cricotopus bicinctus grp.	8.5	0.34	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	17.0	0.22	17.0	0.40
Nanocladius	--	--	--	--	--	--	--	--	51.1	1.21
Nanocladius distinctus	51.1	2.06	--	--	108.6	4.60	110.7	1.41	--	--
Nanocladius crassicornus/rectinervis	--	--	--	--	--	--	--	--	--	--
Rheocricotopus robacki	--	--	--	--	--	--	--	--	--	--
Chironomus	--	--	8.5	0.58	--	--	--	--	--	--
Cryptochironomus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes	--	--	--	--	--	--	--	--	--	--
Dicrotendipes modestus	8.5	0.34	21.3	1.45	4.3	0.18	553.5	7.04	706.8	16.74
Dicrotendipes neomodestus	166.1	6.70	--	--	106.4	4.51	161.8	2.06	187.3	4.44
Dicrotendipes fumidus	--	--	34.1	2.33	14.9	0.63	383.2	4.88	119.2	2.82
Dicrotendipes lucifer	--	--	217.2	14.83	100.1	4.24	204.4	2.60	323.6	7.67

TABLE G-53 (cont.)

TAXA	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %	2013 #/m2	2013 %
Dicrotendipes simpsoni	804.8	32.47	112.8	7.70	225.7	9.56	945.3	12.03	800.5	18.96
Glyptotendipes	97.9	3.95	102.2	6.98	70.3	2.98	42.6	0.54	51.1	1.21
Phaenopsectra obediens grp.	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	--	--	4.3	0.18	--	--	68.1	1.61
Polypedilum halterale grp.	8.5	0.34	8.5	0.58	--	--	17.0	0.22	--	--
Polypedilum illinoense	--	--	--	--	8.5	0.36	8.5	0.11	--	--
Polypedilum scalaenum grp.	8.5	0.34	--	--	--	--	--	--	--	--
Pseudochironomus	4.3	0.17	--	--	--	--	--	--	--	--
Stenochironomus	8.5	0.34	59.6	4.07	21.3	0.90	--	--	--	--
Stictochironomus	--	--	--	--	--	--	--	--	--	--
Tribelos fuscicorne	--	--	--	--	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	17.0	1.16	--	--	--	--	--	--
Micropsectra	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	4.3	0.17	--	--	4.3	0.18	--	--	--	--
Xenochironomus xenolabis	--	--	--	--	--	--	--	--	--	--
Hemerodromia	1.1	0.04	--	--	--	--	--	--	--	--
Helisoma	--	--	--	--	--	--	--	--	--	--
Menetus	--	--	--	--	--	--	--	--	119.2	2.82
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	5.3	0.21	--	--	6.4	0.27	2.1	0.03	--	--
Sphaerium	--	--	--	--	--	--	--	--	--	--
Dreissena polymorpha	--	--	--	--	1.1	0.05	--	--	1.1	0.03
TOTAL BENTHOS	2,478.1	100.00	1,464.7	100.00	2,360.0	100.00	7,859.1	100.00	4,221.8	100.00
TOTAL TAXA	26		26		22		30		25	
EPT TAXA	3		4		2		3		3	
MEAN NUMBER OF TAXA	16		--		16		21		19	

TABLE G-53 (cont.)

TAXA	2014 #/m2	2014 %
Turbellaria	88.4	1.46
Plumatella	--	--
Naidinae	--	--
Dero	--	--
Dero lodeni	--	--
Dero nivea	8.5	0.14
Nais	--	--
Nais communis	3.2	0.05
Nais pardalis	--	--
Nais variabilis	1,285.9	21.25
Pristina aequiseta	--	--
Pristina leidyi	1,299.7	21.47
Pristina osborni	--	--
Pristina jenkinae	--	--
Slavina appendiculata	--	--
Stylaria lacustris	--	--
Stephensoniana trivandrana	--	--
Aulodrilus pigueti	--	--
Branchiura sowerbyi	--	--
Ilyodrilus templetoni	--	--
Limnodrilus hoffmeisteri	--	--
Limnodrilus maumeensis	--	--
Quistadrilus multisetosus	--	--
Imm. tub. w/bifid chaetae	--	--
Imm. tub. w/hair & pectinate chaetae	--	--
Placobdella	--	--
Caecidotea	--	--
Hyalella azteca	148.0	2.44
Gammarus	539.7	8.92
Gammarus fasciatus	--	--
Apocorophium lacustre	--	--
Orconectes	1.1	0.02
Stenacron	14.9	0.25
Maccaffertium integrum	1.1	0.02
Stenonema femoratum	--	--
Maccaffertium pulchellum	2.1	0.04
Maccaffertium terminatum	--	--
Maccaffertium exiguum	--	--
Tricorythodes	4.3	0.07
Caenis	--	--
Argia	--	--
Enallagma	1.1	0.02
Epitheca (Epicordulia)	1.1	0.02
Cyrnellus fraternus	620.6	10.25
Hydropsychidae	--	--
Cheumatopsyche	--	--
Hydropsyche orris	1.1	0.02
Hydropsyche simulans	--	--
Hydroptila	14.9	0.25
Orthotrichia	--	--
Dineutus	39.4	0.65
Macronychus glabratus	--	--
Stenelmis	--	--
Stenelmis humerosa/sinuata grp.	--	--
Stenelmis crenata grp.	--	--
Chironomidae	--	--
Procladius (Holotanypus)	--	--
Ablabesmyia janta	--	--
Ablabesmyia mallochi	62.8	1.04
Ablabesmyia rhamphe grp.	--	--
Thienemannimyia grp.	--	--
Cricotopus bicinctus grp.	--	--
Cricotopus sylvestris grp.	--	--
Nanocladius	--	--
Nanocladius distinctus	39.4	0.65
Nanocladius crassicornus/rectinervis	136.3	2.25
Rheocricotopus robacki	--	--
Chironomus	--	--
Cryptochironomus	--	--
Dicrotendipes	--	--
Dicrotendipes modestus	175.6	2.90
Dicrotendipes neomodestus	247.0	4.08
Dicrotendipes fumidus	22.4	0.37
Dicrotendipes lucifer	565.2	9.34

TABLE G-53 (cont.)

TAXA	2014 #/m2	2014 %
Dicrotendipes simpsoni	573.8	9.48
Glyptotendipes	90.5	1.49
Phaenopsectra obediens grp.	--	--
Polypedilum flavum	17.0	0.28
Polypedilum halterale grp.	--	--
Polypedilum illinoense	8.5	0.14
Polypedilum scalaenum grp.	--	--
Pseudochironomus	--	--
Stenochironomus	--	--
Stictochironomus	--	--
Tribelos fuscicorne	--	--
Cladotanytarsus mancus grp.	--	--
Micropsectra	22.4	0.37
Rheotanytarsus	--	--
Xenochironomus xenolabis	--	--
Hemerodromia	--	--
Helisoma	--	--
Menetus	--	--
Ferrissia	8.5	0.14
Corbicula fluminea	1.1	0.02
Sphaerium	6.4	0.11
Dreissena polymorpha	1.1	0.02
TOTAL BENTHOS	6,052.7	100.00
TOTAL TAXA	34	
EPT TAXA	7	
MEAN NUMBER OF TAXA	24	

NOTE: 2007 DATA FROM ONLY LOCATION 509; ALL SAMPLERS LOST FROM LOCATION 510.

Table G-54. Results of Interyear Statistical Comparisons for Hester-Dendy Macroinvertebrate Data Collected in Dresden Pool During Colonization Periods that Ended in August or Early September 2001-2008, 2011, 2014, and 2014.

Parameter	2001	2002	2003[(a)]	2004	2005	2006	2007[(a)]	2008	2011	2013	2014	Significant Difference[(b)]	F Value	P Value
Density-All Taxa[(c)]	11,181.4 AB	14,609.5 A	8,464.8 AB	2,552.1 AB	8,570.2 AB	4,758.8 AB	1,611.6 B	5,010.5 AB	20,026.2 A	4,770.5 AB	6,482.0 AB[(c)]	Yes	2.63	0.02
Density-Oligochaeta[(c)]	83.0	3,329.7	875.7	398.1	20.8	640.8	173.2	64.9	2,197.1	311.4	1,307.7	No	1.53	0.18
Density-Chironomidae[(c)]	8,861.9 AB	9,063.0 A	2,418.5 AB	1,272.6 AB	7,187.4 AB	2,461.1 AB	670.6 B	2,722.4 AB	15,694.8 AB	2,993.3 AB	2,496.2 AB	Yes	2.30	0.04
Density-Ephemeroptera[(e)]	0.5	4.3	36.2	22.4	2.1	17.0	33.4	21.3	14.4	9.6	104.9	No	1.29	0.28
Density-Trichoptera[(c)]	2,229.0 AB	2,171.0 AB	4,977.5 A	722.8 B	1,280.0 AB	1,613.2 AB	511.7 B	2,033.7 AB	1,855.9 AB	571.6 B	549.8 B	Yes	3.12	0.01
Taxa Richness[(c)]	15.8 BC	23.5 AB	24.0 AB	22.3 ABC	13.8 C	18.5 ABC	28.7 A	17.5 BC	17.3 BC	19.8 ABC	24.8 AB	Yes	4.95	<0.01

(a) All samplers lost from Location 502 in 2003 and from Location 510 in 2007.
(b) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(c) Log transformed data used for statistical analyses because they are normally distributed.
(d) Results of Tukey's Studentized Range Test; values with the same letters are not significantly different (alpha=0.05).
(e) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.

TABLE G-55. PONAR MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, AUGUST 2014.

TAXA	19-20 AUG 2014	
	#/m2	%
Nematoda	9.6	0.36
Nais variabilis	4.8	0.18
Pristina osborni	4.8	0.18
Aulodrilus pigueti	4.8	0.18
Branchiura sowerbyi	38.3	1.43
Ilyodrilus templetoni	14.4	0.54
Limnodrilus cervix	57.4	2.15
Limnodrilus hoffmeisteri	105.2	3.94
Limnodrilus udekemianus	100.5	3.76
Imm. tub. w/bifid chaetae	57.4	2.15
Imm. tub. w/hair & pectinate chaetae	19.1	0.72
Erpobdella microstoma	9.6	0.36
Hyalella azteca	23.9	0.90
Gammarus	38.3	1.43
Apocorophium lacustre	186.6	6.99
Tricorythodes	14.4	0.54
Caenis	14.4	0.54
Enallagma	4.8	0.18
Gomphus	4.8	0.18
Stylurus	4.8	0.18
Corixidae	4.8	0.18
Hydroptila	38.3	1.43
Nectopsyche	4.8	0.18
Oecetis	9.6	0.36
Dubiraphia	23.9	0.90
Stenelmis	19.1	0.72
Procladius	19.1	0.72
Ablabesmyia mallochi	71.8	2.69
Cricotopus sylvestris grp.	19.1	0.72
Chironomus	67.0	2.51
Cryptochironomus	43.1	1.61
Dicrotendipes modestus	9.6	0.36
Dicrotendipes neomodestus	310.9	11.65
Dicrotendipes lucifer	4.8	0.18
Glyptotendipes	28.7	1.08
Polypedilum halterale grp.	507.1	19.00
Polypedilum illinoense	4.8	0.18
Tanytarsus	14.4	0.54
Amnicola	4.8	0.18
Pleurocera	90.9	3.41
Corbicula fluminea	655.4	24.55
TOTAL BENTHOS	2,669.3	100.00
TOTAL TAXA	39	
EPT TAXA	2	

TABLE G-56. COMPARISON OF PONAR MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM DURING AUGUST OF 2001-2004, 2006, 2008, 2011, 2013, 2014, AND SEPTEMBER OF 2005 AND 2007.

TAXA	2001		2002		2003		2004		2005		2006	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	--	--	--	--	--	--	--	--	4.8	0.52
Nematoda	--	--	--	--	--	--	--	--	4.8	0.68	--	--
Urnatella gracilis	--	--	--	--	--	--	--	--	--	--	--	--
Dero	--	--	--	--	4.8	1.16	--	--	--	--	--	--
Nais variabilis	--	--	--	--	--	--	--	--	--	--	--	--
Pristina osborni	--	--	--	--	--	--	--	--	--	--	--	--
Aulodrilus limnobius	--	--	--	--	--	--	--	--	9.6	1.36	4.8	0.52
Aulodrilus pigueti	--	--	--	--	--	--	--	--	--	--	--	--
Branchiura sowerbyi	12.0	3.82	47.8	11.49	28.7	6.98	62.2	21.31	19.1	2.72	71.8	7.85
Ilyodrilus templetoni	--	--	--	--	9.6	2.33	--	--	--	--	--	--
Limnodrilus cervix	14.4	4.58	--	--	--	--	--	--	4.8	0.68	14.4	1.57
Limnodrilus cervix (var)	2.4	0.76	14.4	3.45	9.6	2.33	9.6	3.28	--	--	--	--
Limnodrilus claparedianus	--	--	--	--	--	--	--	--	--	--	--	--
Limnodrilus hoffmeisteri	57.4	18.32	47.8	11.49	95.7	23.26	38.3	13.11	124.4	17.69	52.6	5.76
Limnodrilus maumeensis	28.7	9.16	19.1	4.60	28.7	6.98	23.9	8.20	4.8	0.68	14.4	1.57
Limnodrilus udekemianus	7.2	2.29	43.1	10.34	4.8	1.16	14.4	4.92	9.6	1.36	4.8	0.52
Imm. tub. w/bifid chaetae	102.9	32.82	90.9	21.84	129.2	31.40	57.4	19.67	81.3	11.56	90.9	9.95
Imm. tub. w/hair & pectinate chaetae	14.4	4.58	14.4	3.45	14.4	3.49	--	--	9.6	1.36	23.9	2.62
Actinobdella inequiannulata	--	--	--	--	--	--	--	--	--	--	14.4	1.57
Helobdella	--	--	--	--	--	--	--	--	--	--	--	--
Erpobdella microstoma	--	--	--	--	--	--	--	--	--	--	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--	--	--
Gammarus	--	--	--	--	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	--	--	--	--	4.8	1.64	--	--	--	--
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--	258.3	28.27
Tricorythodes	--	--	--	--	--	--	--	--	28.7	4.08	4.8	0.52
Caenis	--	--	--	--	--	--	--	--	--	--	14.4	1.57
Anthopotamus myops grp.	--	--	--	--	--	--	--	--	--	--	9.6	1.05
Hexagenia limbata	--	--	--	--	4.8	1.16	--	--	--	--	--	--
Enallagma	--	--	--	--	--	--	--	--	--	--	--	--
Gomphus	--	--	--	--	--	--	--	--	--	--	--	--
Stylurus	--	--	--	--	--	--	--	--	--	--	--	--
Corixidae	--	--	--	--	--	--	--	--	--	--	--	--
Cyrnellus fraternus	--	--	--	--	4.8	1.16	--	--	--	--	9.6	1.05
Hydroptila	--	--	--	--	--	--	--	--	--	--	--	--
Nectopsyche	--	--	--	--	--	--	--	--	--	--	--	--
Oecetis	--	--	--	--	--	--	--	--	--	--	--	--
Dubiraphia	2.4	0.76	--	--	--	--	4.8	1.64	--	--	--	--
Stenelmis	--	--	--	--	--	--	--	--	--	--	--	--
Stenelmis humerosa/sinuata grp.	--	--	--	--	--	--	--	--	9.6	1.36	--	--
Chironomidae	9.6	3.05	--	--	--	--	--	--	--	--	--	--
Tanypus	--	--	--	--	--	--	--	--	--	--	--	--
Procladius	--	--	--	--	--	--	--	--	--	--	--	--
Coelotanypus	--	--	--	--	4.8	1.16	--	--	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--	4.8	0.52
Ablabesmyia rhamphe grp.	2.4	0.76	--	--	--	--	--	--	--	--	--	--
Monodiamesa	--	--	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	--	--	--	--
Nanocladius distinctus	--	--	--	--	--	--	--	--	9.6	1.36	--	--
Rheocricotopus robacki	--	--	--	--	--	--	--	--	4.8	0.68	--	--
Chironomus	--	--	--	--	--	--	--	--	--	--	--	--
Cryptochironomus	16.7	5.34	23.9	5.75	14.4	3.49	9.6	3.28	52.6	7.48	14.4	1.57
Dicrotendipes modestus	--	--	--	--	--	--	--	--	--	--	--	--
Dicrotendipes neomodestus	--	--	--	--	--	--	--	--	--	--	4.8	0.52
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--	--	--
Glyptotendipes	--	--	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	--	--	--	--	--	--	--	--	4.8	0.68	--	--
Polypedilum halterale grp.	19.1	6.11	114.8	27.59	33.5	8.14	4.8	1.64	--	--	81.3	8.90
Polypedilum illinoense	--	--	--	--	--	--	--	--	--	--	--	--
Polypedilum scalaenum grp.	7.2	2.29	--	--	--	--	--	--	205.7	29.25	--	--
Pseudochironomus	--	--	--	--	--	--	--	--	4.8	0.68	--	--
Tanytarsus	--	--	--	--	--	--	--	--	--	--	--	--
Elimia	--	--	--	--	--	--	--	--	--	--	--	--
Amnicola	--	--	--	--	--	--	--	--	4.8	0.68	--	--
Pleurocera	--	--	--	--	--	--	--	--	4.8	0.68	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--	4.8	0.52
Corbicula fluminea	16.7	5.34	--	--	14.4	3.49	43.1	14.75	100.5	14.29	210.5	23.04
Musculium	--	--	--	--	--	--	9.6	3.28	--	--	--	--
Pisidium	--	--	--	--	--	--	4.8	1.64	--	--	--	--
Amblema plicata	--	--	--	--	4.8	1.16	--	--	4.8	0.68	--	--
Quadrula quadrula	--	--	--	--	--	--	4.8	1.64	--	--	--	--
Potamilus alatus	--	--	--	--	--	--	--	--	--	--	--	--
Truncilla truncata	--	--	--	--	--	--	--	--	--	--	--	--
Dreissena polymorpha	--	--	--	--	4.8	1.16	--	--	--	--	--	--
TOTAL BENTHOS	313.3	100.00	416.2	100.00	411.4	100.00	291.8	100.00	703.2	100.00	913.7	100.00
TOTAL TAXA	12		7		15		13		19		19	
EPT TAXA	0		0		2		0		1		4	

TABLE G-56 (cont.)

TAXA	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %	2013 #/m2	2013 %	2014 #/m2	2014 %
Turbellaria	--	--	--	--	--	--	--	--	--	--
Nematoda	--	--	--	--	--	--	--	--	9.6	0.36
Urnatella gracilis	14.4	1.89	--	--	--	--	--	--	--	--
Dero	--	--	--	--	--	--	--	--	--	--
Nais variabilis	--	--	--	--	--	--	--	--	4.8	0.18
Pristina osborni	--	--	--	--	--	--	--	--	4.8	0.18
Aulodrilus limnobius	--	--	--	--	--	--	--	--	--	--
Aulodrilus pigueti	--	--	--	--	--	--	--	--	4.8	0.18
Branchiura sowerbyi	57.4	7.55	57.4	11.76	76.5	4.71	--	--	38.3	1.43
Ilyodrilus templetoni	23.9	3.14	4.8	0.98	--	--	--	--	14.4	0.54
Limnodrilus cervix	19.1	2.52	47.8	9.80	191.4	11.76	--	--	57.4	2.15
Limnodrilus cervix (var)	--	--	--	--	--	--	--	--	--	--
Limnodrilus claparedianus	--	--	--	--	--	--	9.6	1.96	--	--
Limnodrilus hoffmeisteri	143.5	18.87	57.4	11.76	153.1	9.41	4.8	0.98	105.2	3.94
Limnodrilus maumeensis	--	--	4.8	0.98	--	--	--	--	--	--
Limnodrilus udekemianus	28.7	3.77	19.1	3.92	153.1	9.41	--	--	100.5	3.76
Imm. tub. w/bifid chaetae	47.8	6.29	153.1	31.37	--	--	4.8	0.98	57.4	2.15
Imm. tub. w/hair & pectinate chaetae	177.0	23.27	9.6	1.96	535.8	32.94	--	--	19.1	0.72
Actinobdella inequiannulata	--	--	--	--	--	--	--	--	--	--
Helobdella	--	--	4.8	0.98	--	--	--	--	--	--
Erpobdella microstoma	--	--	--	--	76.5	4.71	--	--	9.6	0.36
Hyalella azteca	--	--	--	--	--	--	--	--	23.9	0.90
Gammarus	--	--	--	--	38.3	2.35	14.4	2.94	38.3	1.43
Gammarus fasciatus	--	--	--	--	--	--	--	--	--	--
Apocorophium lacustre	--	--	--	--	--	--	105.2	21.57	186.6	6.99
Tricorythodes	--	--	--	--	--	--	--	--	14.4	0.54
Caenis	--	--	--	--	--	--	--	--	14.4	0.54
Anthopotamus myops grp.	--	--	--	--	--	--	--	--	--	--
Hexagenia limbata	9.6	1.26	--	--	--	--	--	--	--	--
Enallagma	--	--	--	--	--	--	--	--	4.8	0.18
Gomphus	--	--	--	--	--	--	4.8	0.98	4.8	0.18
Stylurus	--	--	--	--	--	--	--	--	4.8	0.18
Corixidae	--	--	--	--	--	--	--	--	4.8	0.18
Cyrnellus fraternus	--	--	--	--	--	--	14.4	2.94	--	--
Hydroptila	--	--	--	--	--	--	--	--	38.3	1.43
Nectopsyche	--	--	--	--	--	--	--	--	4.8	0.18
Oecetis	--	--	--	--	--	--	--	--	9.6	0.36
Dubiraphia	9.6	1.26	--	--	--	--	--	--	23.9	0.90
Stenelmis	--	--	4.8	0.98	--	--	--	--	19.1	0.72
Stenelmis humerosa/sinuata grp.	--	--	--	--	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--	--	--
Tanypus	4.8	0.63	--	--	--	--	--	--	--	--
Procladius	43.1	5.66	--	--	--	--	--	--	19.1	0.72
Coelotanypus	38.3	5.03	--	--	--	--	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	71.8	2.69
Ablabesmyia rhamphe grp.	--	--	--	--	--	--	--	--	--	--
Monodiamesa	--	--	9.6	1.96	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	38.3	2.35	--	--	19.1	0.72
Nanocladius distinctus	--	--	--	--	--	--	--	--	--	--
Rheocricotopus robacki	--	--	--	--	--	--	--	--	--	--
Chironomus	4.8	0.63	--	--	--	--	--	--	67.0	2.51
Cryptochironomus	--	--	43.1	8.82	38.3	2.35	23.9	4.90	43.1	1.61
Dicrotendipes modestus	--	--	--	--	--	--	19.1	3.92	9.6	0.36
Dicrotendipes neomodestus	4.8	0.63	--	--	--	--	4.8	0.98	310.9	11.65
Dicrotendipes lucifer	--	--	--	--	38.3	2.35	--	--	4.8	0.18
Glyptotendipes	--	--	--	--	--	--	--	--	28.7	1.08
Polypedilum flavum	--	--	--	--	--	--	--	--	--	--
Polypedilum halterale grp.	33.5	4.40	33.5	6.86	114.8	7.06	52.6	10.78	507.1	19.00
Polypedilum illinoense	--	--	--	--	--	--	--	--	4.8	0.18
Polypedilum scalaenum grp.	--	--	--	--	--	--	--	--	--	--
Pseudochironomus	--	--	--	--	--	--	--	--	--	--
Tanytarsus	--	--	--	--	--	--	4.8	0.98	14.4	0.54
Elimia	--	--	--	--	--	--	76.5	15.69	--	--
Amnicola	--	--	--	--	--	--	9.6	1.96	4.8	0.18
Pleurocera	95.7	12.58	--	--	--	--	--	--	90.9	3.41
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	4.8	0.63	23.9	4.90	124.4	7.65	114.8	23.53	655.4	24.55
Musculium	--	--	--	--	--	--	--	--	--	--
Pisidium	--	--	--	--	38.3	2.35	--	--	--	--
Amblema plicata	--	--	4.8	0.98	4.8	0.29	--	--	--	--
Quadrula quadrula	--	--	9.6	1.96	--	--	4.8	0.98	--	--
Potamilus alatus	--	--	--	--	4.8	0.29	--	--	--	--
Truncilla truncata	--	--	--	--	--	--	4.8	0.98	--	--
Dreissena polymorpha	--	--	--	--	--	--	14.4	2.94	--	--
TOTAL BENTHOS	760.6	100.00	487.9	100.00	1,626.5	100.00	487.9	100.00	2,669.3	100.00
TOTAL TAXA	16		14		14		17		39	
EPT TAXA	1		0		0		1		2	

Table G-57. Results of Year vs. Year Statistical Comparisons for Ponar Macroinvertebrate Data Collected Downstream of Dresden Island Lock and Dam During August of 2001-2004, 2006, 2008, 2011, 2013, 2014, and September of 2005 and 2007.

Parameter	2001	2002	2003	2004	2005	2006	2007	2008	2011	2013	2014	Significant Difference[(a)]	F Value	P Value
Density-All Taxa[(b)]	313.3 B	416.2 AB	411.4 AB	291.8 B	703.2 AB	913.7 AB	760.6 AB	487.9 AB	1,626.5 A	487.9 AB	2,669.4 A[(c)]	Yes	3.89	<0.01
Density-Oligochaeta[(d)]	239.2 AB	277.5 AB	325.3 AB	205.7 AB	263.1 AB	277.5 AB	497.5 A	354.0 AB	1,109.8 A	19.1 B	406.6 AB	Yes	3.14	0.01
Density-Chironomidae[(d)]	55.0	138.7	52.6	14.4	282.2	105.2	129.2	86.1	229.6	105.2	1100.3	No	1.22	0.31
Density-Ephemeroptera[(d)]	0	0	4.8	0	28.7	28.7	9.6	0	0	0	28.7	No	2.00	0.06
Taxa Richness	4.8 B	5.0 B	6.8 AB	5.8 AB	7.8 AB	7.8 AB	8.8 AB	7.0 AB	6.3 AB	8.0 AB	15.3 A	Yes	2.77	0.01

(a) Results of one-factor parametric Analysis of Variance tests (alpha=0.05).
(b) Log transformed data used for statistical analyses because they are normally distributed.
(c) Results of Tukey's Studentized Range Test; values with the same letters are not significantly different (alpha=0.05).
(d) Data ranks used for statistical analyses because raw data and log transformed data are not normally distributed.

TABLE G-58. HESTER-DENDY MACROINVERTEBRATE DENSITIES FOR EACH TAXON COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM, AUGUST 2014.

TAXA	19-20AUG14	
	#/m2	%
Turbellaria	2.1	0.20
Nematoda	1.1	0.10
Nais variabilis	2.1	0.20
Pristina leidyi	8.5	0.79
Hyalella azteca	58.5	5.46
Gammarus	43.6	4.07
Apocorophium lacustre	8.5	0.79
Maccaffertium integrum	2.1	0.20
Argia	1.1	0.10
Cyrnellus fraternus	236.3	22.02
Cheumatopsyche	6.4	0.60
Dubiraphia	2.1	0.20
Macronychus glabratus	2.1	0.20
Cricotopus sylvestris grp.	49.0	4.56
Nanocladius distinctus	80.9	7.54
Nanocladius crassicornus/rectinervis	97.9	9.13
Dicrotendipes modestus	161.8	15.08
Dicrotendipes neomodestus	25.5	2.38
Dicrotendipes lucifer	76.6	7.14
Dicrotendipes simpsoni	2.1	0.20
Glyptotendipes	29.8	2.78
Parachironomus	8.5	0.79
Polypedilum flavum	2.1	0.20
Polypedilum illinoense	100.1	9.33
Stenochironomus	63.9	5.95
TOTAL BENTHOS	1,073.0	100.00
TOTAL TAXA	25	
EPT TAXA	3	

TABLE G-59. COMPARISON OF HESTER-DENDY MACROINVERTEBRATE DENSITIES AMONG 2001-2008, 2011, 2013; and 2014 FOR EACH TAXON COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM DURING COLONIZATION PERIODS THAT ENDED IN AUGUST OR EARLY SEPTEMBER.

TAXA	2001		2002		2003		2004		2005	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	1.1	0.01	16.0	0.47	2.1	0.03	--	--	--	--
Nematoda	--	--	--	--	--	--	--	--	--	--
Urnatella gracilis	1.1	0.01	--	--	--	--	--	--	--	--
Plumatella	1.1	0.01	--	--	1.1	0.02	1.1	0.02	--	--
Aeolosoma	--	--	8.5	0.25	--	--	--	--	--	--
Naidinae	--	--	--	--	25.5	0.39	--	--	--	--
Chaetogaster diastrophus	--	--	--	--	--	--	--	--	--	--
Dero	1.1	0.01	8.5	0.25	1.1	0.02	--	--	4.3	0.09
Dero nivea	1.1	0.01	17.0	0.50	--	--	--	--	--	--
Nais	--	--	--	--	--	--	17.0	0.33	--	--
Nais pardalis	--	--	--	--	1.1	0.02	--	--	--	--
Nais variabilis	6.4	0.07	153.3	4.54	49.0	0.75	--	--	--	--
Pristina sima	--	--	17.0	0.50	--	--	--	--	--	--
Pristina	--	--	--	--	--	--	--	--	--	--
Pristina aequiseta	1.1	0.01	144.8	4.28	46.8	0.72	--	--	--	--
Pristina leidyi	1.1	0.01	93.7	2.77	17.0	0.26	--	--	--	--
Pristina osborni	--	--	--	--	--	--	--	--	--	--
Pristina jenkinae	--	--	--	--	--	--	--	--	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	--	--
Aulodrilus pigueti	--	--	--	--	--	--	--	--	--	--
Branchiura sowerbyi	--	--	8.5	0.25	--	--	--	--	--	--
Limnodrilus maumeensis	--	--	--	--	--	--	--	--	--	--
Limnodrilus udekemianus	--	--	--	--	--	--	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	8.5	0.25	--	--	--	--	--	--
Imm. tub. w/hair & pectinate chaetae	--	--	--	--	--	--	--	--	--	--
Actinobdella inequiannulata	--	--	--	--	--	--	--	--	--	--
Hyalella azteca	--	--	--	--	--	--	--	--	--	--
Gammarus	1.1	0.01	--	--	--	--	--	--	--	--
Gammarus fasciatus	--	--	1.1	0.03	29.8	0.46	8.5	0.17	1.1	0.02
Apocorophium lacustre	--	--	--	--	--	--	--	--	--	--
Orconectes	--	--	--	--	--	--	--	--	1.1	0.02
Isonychia	--	--	1.1	0.03	11.7	0.18	--	--	--	--
Baetis intercalaris	--	--	75.6	2.24	--	--	--	--	--	--
Pseudocloeon longipalpus	--	--	6.4	0.19	45.8	0.70	--	--	51.1	1.03
Stenacron	5.3	0.06	1.1	0.03	165.0	2.54	3.2	0.06	--	--
Maccaffertium	--	--	1.1	0.03	--	--	--	--	--	--
Maccaffertium integrum	3.2	0.03	13.8	0.41	87.3	1.34	11.7	0.23	--	--
Stenonema femoratum	--	--	--	--	--	--	--	--	--	--
Maccaffertium terminatum	5.3	0.06	--	--	23.4	0.36	9.6	0.19	--	--
Maccaffertium exiguum	--	--	19.2	0.57	145.8	2.24	--	--	--	--
Tricorythodes	139.4	1.47	13.8	0.41	23.4	0.36	16.0	0.31	8.5	0.17
Argia	--	--	2.1	0.06	--	--	--	--	--	--
Enallagma	--	--	1.1	0.03	--	--	--	--	--	--
Cyrnellus fraternus	996.4	10.53	437.5	12.95	607.8	9.35	190.5	3.74	685.5	13.84
Cheumatopsyche	1,083.6	11.45	28.7	0.85	468.4	7.21	1,366.8	26.82	85.2	1.72
Hydropsyche	--	--	36.2	1.07	--	--	--	--	--	--
Hydropsyche orris	1,099.6	11.62	208.6	6.18	749.4	11.53	802.6	15.75	761.1	15.37
Hydropsyche simulans	--	--	1.1	0.03	1.1	0.02	17.0	0.33	--	--
Hydropsyche aerata	--	--	--	--	--	--	--	--	--	--
Hydropsyche bidens	--	--	58.5	1.73	68.1	1.05	--	--	--	--
Potamyia flava	--	--	1.1	0.03	--	--	--	--	17.0	0.34
Hydroptila	68.1	0.72	8.5	0.25	91.5	1.41	2.1	0.04	17.0	0.34
Ceraclea maculata	--	--	--	--	2.1	0.03	--	--	2.1	0.04
Dineutus	--	--	--	--	2.1	0.03	--	--	--	--
Dubiraphia	--	--	--	--	--	--	--	--	--	--
Macronychus glabratus	--	--	--	--	--	--	--	--	--	--
Stenelmis	--	--	--	--	--	--	--	--	--	--
Stenelmis humerosa/sinuata grp.	1.1	0.01	--	--	1.1	0.02	--	--	--	--
Stenelmis crenata grp.	--	--	--	--	--	--	--	--	--	--
Chironomidae	170.3	1.80	59.6	1.76	--	--	1.1	0.02	--	--
Ablabesmyia janta	--	--	--	--	--	--	54.3	1.07	85.2	1.72
Ablabesmyia mallochi	--	--	--	--	--	--	--	--	--	--
Ablabesmyia rhamphe grp.	323.6	3.42	76.6	2.27	224.6	3.46	--	--	--	--
Thienemannimyia grp.	119.2	1.26	8.5	0.25	175.6	2.70	54.3	1.07	868.6	17.54
Thienemannimyia	68.1	0.72	--	--	--	--	--	--	--	--
Thienemanniella n. sp. 3	17.0	0.18	--	--	--	--	--	--	--	--
Thienemanniella similis	--	--	34.1	1.01	--	--	--	--	--	--
Thienemanniella lobapodema	--	--	--	--	--	--	--	--	--	--
Cricotopus bicinctus grp.	187.3	1.98	--	--	68.1	1.05	18.1	0.36	--	--
Cricotopus bicinctus	--	--	17.0	0.50	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	--	--
Nanocladius	--	--	17.0	0.50	--	--	--	--	--	--

TABLE G-59 (cont.)

TAXA	2001 #/m2	2001 %	2002 #/m2	2002 %	2003 #/m2	2003 %	2004 #/m2	2004 %	2005 #/m2	2005 %
Nanocladius distinctus	885.7	9.36	178.8	5.29	224.6	3.46	212.9	4.18	17.0	0.34
Nanocladius crassicornus/rectinervis	34.1	0.36	17.0	0.50	34.1	0.52	--	--	--	--
Dicrotendipes	--	--	153.3	4.54	--	--	--	--	--	--
Dicrotendipes modestus	--	--	--	--	--	--	--	--	374.7	7.57
Dicrotendipes neomodestus	204.4	2.16	--	--	30.9	0.48	54.3	1.07	208.6	4.21
Dicrotendipes fumidus	--	--	--	--	--	--	--	--	--	--
Dicrotendipes lucifer	--	--	--	--	--	--	--	--	--	--
Dicrotendipes simpsoni	885.7	9.36	349.2	10.33	161.8	2.49	96.9	1.90	651.5	13.16
Glyptotendipes	204.4	2.16	85.2	2.52	156.5	2.41	18.1	0.36	298.1	6.02
Parachironomus	--	--	--	--	204.4	3.14	--	--	--	--
Polypedilum flavum	2,691.0	28.43	672.8	19.91	1,320.0	20.31	1,995.9	39.16	417.3	8.43
Polypedilum halterale grp.	--	--	--	--	--	--	17.0	0.33	--	--
Polypedilum illinoense	--	--	--	--	17.0	0.26	--	--	--	--
Polypedilum scalaenum grp.	34.1	0.36	8.5	0.25	17.0	0.26	--	--	8.5	0.17
Pseudochironomus	--	--	8.5	0.25	--	--	--	--	--	--
Stelechomyia perpulchra	--	--	--	--	22.4	0.34	--	--	--	--
Stenochironomus	102.2	1.08	221.4	6.55	218.2	3.36	108.6	2.13	157.5	3.18
Stictochironomus	--	--	--	--	--	--	--	--	102.2	2.06
Tribelos fuscicorne	--	--	8.5	0.25	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	--	--	--	--	--	--	--	--
Rheotanytarsus	119.2	1.26	68.1	2.02	260.8	4.01	18.1	0.36	--	--
Xenochironomus xenolabis	--	--	--	--	--	--	--	--	127.7	2.58
Ferrissia	--	--	1.1	0.03	684.5	10.53	--	--	--	--
Corbicula fluminea	1.1	0.01	--	--	10.6	0.16	1.1	0.02	1.1	0.02
Dreissena polymorpha	--	--	1.1	0.03	--	--	--	--	--	--
TOTAL BENTHOS	9,464.4	100.00	3,378.7	100.00	6,498.7	100.00	5,096.8	100.00	4,952.0	100.00
TOTAL TAXA	31		42		41		24		24	
EPT TAXA	8		15		14		9		8	
MEAN NUMBER OF TAXA	22		28		30		21		17	

TABLE G-59 (cont.)

TAXA	2006		2007		2008		2011		2013	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
Turbellaria	--	--	--	--	--	--	17.0	0.14	--	--
Nematoda	--	--	--	--	--	--	--	--	--	--
Urnatella gracilis	--	--	--	--	--	--	--	--	--	--
Plumatella	1.1	0.02	--	--	--	--	--	--	--	--
Aeolosoma	--	--	--	--	--	--	--	--	--	--
Naidinae	--	--	--	--	--	--	--	--	--	--
Chaetogaster diastrophus	--	--	17.0	0.59	--	--	--	--	--	--
Dero	--	--	--	--	17.0	0.17	--	--	--	--
Dero nivea	--	--	34.1	1.19	--	--	--	--	--	--
Nais	--	--	--	--	--	--	--	--	--	--
Nais pardalis	--	--	--	--	--	--	--	--	6.4	0.29
Nais variabilis	--	--	68.1	2.37	--	--	630.2	5.25	3.2	0.15
Pristina sima	--	--	--	--	--	--	--	--	--	--
Pristina	--	--	17.0	0.59	51.1	0.50	--	--	--	--
Pristina aequiseta	--	--	85.2	2.96	--	--	--	--	--	--
Pristina leidyi	--	--	119.2	4.15	--	--	119.2	0.99	--	--
Pristina osborni	--	--	51.1	1.78	--	--	--	--	--	--
Pristina jenkinae	--	--	--	--	--	--	170.3	1.42	--	--
Stylaria lacustris	--	--	--	--	--	--	--	--	6.4	0.29
Aulodrilus pigueti	--	--	34.1	1.19	--	--	--	--	--	--
Branchiura sowerbyi	--	--	--	--	--	--	--	--	--	--
Limnodrilus maumeensis	--	--	--	--	17.0	0.17	--	--	--	--
Limnodrilus udekemianus	--	--	--	--	17.0	0.17	--	--	--	--
Imm. tub. w/bifid chaetae	--	--	17.0	0.59	--	--	--	--	--	--
Imm. tub. w/hair & pectinate chaetae	--	--	--	--	34.1	0.33	--	--	--	--
Actinobdella inequiannulata	--	--	2.1	0.07	--	--	--	--	--	--
Hyalella azteca	10.6	0.15	23.4	0.81	--	--	51.1	0.43	74.5	3.39
Gammarus	--	--	106.4	3.70	--	--	121.4	1.01	35.1	1.60
Gammarus fasciatus	--	--	--	--	--	--	--	--	--	--
Apocorophium lacustre	4.3	0.06	6.4	0.22	--	--	2.1	0.02	40.5	1.84
Orconectes	--	--	--	--	--	--	--	--	--	--
Isonychia	--	--	--	--	--	--	--	--	--	--
Baetis intercalaris	--	--	--	--	--	--	--	--	--	--
Pseudocloeon longipalpus	--	--	--	--	--	--	--	--	--	--
Stenacron	71.3	1.04	53.2	1.85	--	--	36.2	0.30	17.0	0.78
Maccaffertium	--	--	--	--	--	--	--	--	--	--
Maccaffertium integrum	21.3	0.31	2.1	0.07	2.1	0.02	38.3	0.32	20.2	0.92
Stenonema femoratum	--	--	2.1	0.07	--	--	--	--	--	--
Maccaffertium terminatum	--	--	19.2	0.67	--	--	--	--	--	--
Maccaffertium exiguum	--	--	--	--	--	--	1.1	0.01	--	--
Tricorythodes	141.6	2.06	14.9	0.52	205.4	2.00	3.2	0.03	9.6	0.44
Argia	--	--	10.6	0.37	--	--	--	--	1.1	0.05
Enallagma	--	--	--	--	--	--	--	--	--	--
Cyrnellus fraternus	361.9	5.25	770.7	26.81	1,398.7	13.60	7,508.9	62.61	429.0	19.53
Cheumatopsyche	1,212.5	17.60	2.1	0.07	1,499.9	14.59	2.1	0.02	6.4	0.29
Hydropsyche	--	--	--	--	--	--	--	--	--	--
Hydropsyche orris	1,411.5	20.49	59.6	2.07	3,509.6	34.13	--	--	3.2	0.15
Hydropsyche simulans	--	--	--	--	--	--	--	--	--	--
Hydropsyche aerata	--	--	--	--	1.1	0.01	--	--	--	--
Hydropsyche bidens	--	--	--	--	--	--	--	--	--	--
Potamyia flava	--	--	--	--	17.0	0.17	--	--	--	--
Hydroptila	--	--	--	--	34.1	0.33	--	--	--	--
Ceraclea maculata	--	--	--	--	--	--	--	--	--	--
Dineutus	--	--	--	--	--	--	1.1	0.01	--	--
Dubiraphia	--	--	--	--	--	--	--	--	--	--
Macronychus glabratus	--	--	12.8	0.44	--	--	34.1	0.28	--	--
Stenelmis	--	--	--	--	--	--	3.2	0.03	--	--
Stenelmis humerosa/sinuata grp.	--	--	--	--	--	--	--	--	--	--
Stenelmis crenata grp.	--	--	2.1	0.07	--	--	--	--	--	--
Chironomidae	--	--	--	--	--	--	--	--	--	--
Ablabesmyia janta	89.4	1.30	49.0	1.70	323.6	3.15	--	--	--	--
Ablabesmyia mallochi	--	--	--	--	--	--	51.1	0.43	--	--
Ablabesmyia rhamphe grp.	--	--	--	--	--	--	--	--	--	--
Thienemannimyia grp.	46.8	0.68	80.9	2.81	--	--	--	--	--	--
Thienemannimyia	--	--	--	--	--	--	--	--	--	--
Thienemanniella n. sp. 3	--	--	--	--	--	--	--	--	--	--
Thienemanniella similis	--	--	--	--	--	--	--	--	--	--
Thienemanniella lobapodema	--	--	--	--	--	--	17.0	0.14	--	--
Cricotopus bicinctus grp.	119.2	1.73	--	--	51.1	0.50	51.1	0.43	--	--
Cricotopus bicinctus	--	--	--	--	--	--	--	--	--	--
Cricotopus sylvestris grp.	--	--	--	--	--	--	--	--	--	--
Nanocladius	--	--	--	--	--	--	--	--	97.9	4.46
Nanocladius distinctus	161.8	2.35	74.5	2.59	698.3	6.79	868.6	7.24	--	--
Nanocladius crassicornus/rectinervis	--	--	--	--	--	--	--	--	--	--

TABLE G-59 (cont.)

TAXA	2006 #/m2	2006 %	2007 #/m2	2007 %	2008 #/m2	2008 %	2011 #/m2	2011 %	2013 #/m2	2013 %
Dicrotendipes	--	--	--	--	--	--	--	--	--	--
Dicrotendipes modestus	8.5	0.12	--	--	--	--	647.2	5.40	187.3	8.53
Dicrotendipes neomodestus	93.7	1.36	--	--	34.1	0.33	34.1	0.28	25.5	1.16
Dicrotendipes fumidus	--	--	49.0	1.70	--	--	136.3	1.14	25.5	1.16
Dicrotendipes lucifer	--	--	242.7	8.44	119.2	1.16	885.7	7.39	562.0	25.59
Dicrotendipes simpsoni	242.7	3.52	80.9	2.81	255.5	2.48	255.5	2.13	149.0	6.79
Glyptotendipes	42.6	0.62	80.9	2.81	153.3	1.49	34.1	0.28	--	--
Parachironomus	--	--	--	--	--	--	--	--	--	--
Polypedilum flavum	2,329.1	33.81	129.9	4.52	1,244.4	12.10	--	--	400.2	18.23
Polypedilum halterale grp.	--	--	--	--	--	--	--	--	--	--
Polypedilum illinoense	183.1	2.66	--	--	68.1	0.66	--	--	--	--
Polypedilum scalaenum grp.	--	--	--	--	--	--	--	--	--	--
Pseudochironomus	--	--	--	--	--	--	--	--	--	--
Stelechomyia perpulchra	--	--	--	--	--	--	--	--	--	--
Stenochironomus	161.8	2.35	161.8	5.63	408.8	3.98	255.5	2.13	85.2	3.88
Stictochironomus	--	--	--	--	--	--	--	--	--	--
Tribelos fuscicorne	--	--	--	--	--	--	--	--	--	--
Cladotanytarsus mancus grp.	--	--	97.9	3.41	--	--	--	--	--	--
Rheotanytarsus	174.6	2.53	291.7	10.15	119.2	1.16	17.0	0.14	7.5	0.34
Xenochironomus xenolabis	--	--	--	--	--	--	--	--	--	--
Ferrissia	--	--	--	--	--	--	--	--	--	--
Corbicula fluminea	--	--	4.3	0.15	2.1	0.02	--	--	--	--
Dreissena polymorpha	--	--	--	--	--	--	--	--	3.2	0.15
TOTAL BENTHOS	6,889.4	100.00	2,874.1	100.00	10,281.9	100.00	11,992.5	100.00	2,196.0	100.00
TOTAL TAXA	21		36		25		28		23	
EPT TAXA	6		8		8		6		6	
MEAN NUMBER OF TAXA	17		--		19		21		18	

TABLE G-59 (cont.)

TAXA	2014 #/m2	2014 %
Turbellaria	2.1	0.20
Nematoda	1.1	0.10
Urnatella gracilis	--	--
Plumatella	--	--
Aeolosoma	--	--
Naidinae	--	--
Chaetogaster diastrophus	--	--
Dero	--	--
Dero nivea	--	--
Nais	--	--
Nais pardalis	--	--
Nais variabilis	2.1	0.20
Pristina sima	--	--
Pristina	--	--
Pristina aequiseta	--	--
Pristina leidyi	8.5	0.79
Pristina osborni	--	--
Pristina jenkinae	--	--
Stylaria lacustris	--	--
Aulodrilus pigueti	--	--
Branchiura sowerbyi	--	--
Limnodrilus maumeensis	--	--
Limnodrilus udekemianus	--	--
Imm. tub. w/bifid chaetae	--	--
Imm. tub. w/hair & pectinate chaetae	--	--
Actinobdella inequiannulata	--	--
Hyalella azteca	58.5	5.46
Gammarus	43.6	4.07
Gammarus fasciatus	--	--
Apocorophium lacustre	8.5	0.79
Orconectes	--	--
Isonychia	--	--
Baetis intercalaris	--	--
Pseudocloeon longipalpus	--	--
Stenacron	--	--
Maccaffertium	--	--
Maccaffertium integrum	2.1	0.20
Stenonema femoratum	--	--
Maccaffertium terminatum	--	--
Maccaffertium exiguum	--	--
Tricorythodes	--	--
Argia	1.1	0.10
Enallagma	--	--
Cyrnellus fraternus	236.3	22.02
Cheumatopsyche	6.4	0.60
Hydropsyche	--	--
Hydropsyche orris	--	--
Hydropsyche simulans	--	--
Hydropsyche aerata	--	--
Hydropsyche bidens	--	--
Potamyia flava	--	--
Hydroptila	--	--
Ceraclea maculata	--	--
Dineutus	--	--
Dubiraphia	2.1	0.20
Macronychus glabratus	2.1	0.20
Stenelmis	--	--
Stenelmis humerosa/sinuata grp.	--	--
Stenelmis crenata grp.	--	--
Chironomidae	--	--
Ablabesmyia janta	--	--
Ablabesmyia mallochi	--	--
Ablabesmyia rhamphe grp.	--	--
Thienemannimyia grp.	--	--
Thienemannimyia	--	--
Thienemanniella n. sp. 3	--	--
Thienemanniella similis	--	--
Thienemanniella lobapodema	--	--
Cricotopus bicinctus grp.	--	--
Cricotopus bicinctus	--	--
Cricotopus sylvestris grp.	49.0	4.56
Nanocladius	--	--
Nanocladius distinctus	80.9	7.54
Nanocladius crassicornus/rectinervis	97.9	9.13

TABLE G-59 (cont.)

TAXA	2014 #/m2	2014 %
Dicrotendipes	--	--
Dicrotendipes modestus	161.8	15.08
Dicrotendipes neomodestus	25.5	2.38
Dicrotendipes fumidus	--	--
Dicrotendipes lucifer	76.6	7.14
Dicrotendipes simpsoni	2.1	0.20
Glyptotendipes	29.8	2.78
Parachironomus	8.5	0.79
Polypedilum flavum	2.1	0.20
Polypedilum halterale grp.	--	--
Polypedilum illinoense	100.1	9.33
Polypedilum scalaenum grp.	--	--
Pseudochironomus	--	--
Stelechomyia perpulchra	--	--
Stenochironomus	63.9	5.95
Stictochironomus	--	--
Tribelos fuscicorne	--	--
Cladotanytarsus mancus grp.	--	--
Rheotanytarsus	--	--
Xenochironomus xenolabis	--	--
Ferrissia	--	--
Corbicula fluminea	--	--
Dreissena polymorpha	--	--
TOTAL BENTHOS	1,073.0	100.00
TOTAL TAXA	25	
EPT TAXA	3	
MEAN NUMBER OF TAXA	17	

NOTE: ALL SAMPLERS LOST FROM LOCATION 512 IN 2007.

Table G-60. COMPARISON OF HESTER-DENDY MACROINVERTEBRATE DENSITIES AMONG 2001-2008, 2011, 2013, AND 2014 FOR SELECTED GROUPS COLLECTED DOWNSTREAM OF DRESDEN ISLAND LOCK AND DAM DURING COLONIZATION PERIODS THAT ENDED IN AUGUST OR EARLY SEPTEMBER.

	2001		2002		2003		2004		2005		2006	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
GROUP												
Chironomidae	6,046.3	63.88	1,984.2	58.73	3,136.0	48.26	2,649.5	51.98	3,316.9	66.98	3,653.3	53.03
Coleoptera	1.1	0.01	--	--	3.2	0.05	--	--	--	--	--	--
Crustacea	--	--	--	--	--	--	--	--	--	--	--	--
Dreissena polymorpha	--	--	1.1	0.03	--	--	--	--	--	--	--	--
Ephemeroptera	153.3	1.62	132.0	3.91	502.4	7.73	40.5	0.79	59.6	1.20	234.2	3.40
Gastropoda	--	--	1.1	0.03	684.5	10.53	--	--	--	--	--	--
Hirudinea	--	--	--	--	--	--	--	--	--	--	--	--
Nematoda"	--	--	--	--	--	--	--	--	--	--	--	--
Odonata	--	--	3.2	0.09	--	--	--	--	--	--	--	--
Oligochaeta	10.6	0.11	459.9	13.61	140.5	2.16	17.0	0.33	4.3	0.09	--	--
Other	4.3	0.04	17.0	0.50	33.0	0.51	9.6	0.19	2.1	0.04	16.0	0.23
Pelecypoda	1.1	0.01	--	--	10.6	0.16	1.1	0.02	1.1	0.02	--	--
Trichoptera	3,247.7	34.32	780.3	23.09	1,988.5	30.60	2,379.1	46.68	1,568.0	31.66	2,985.9	43.34
Turbellaria	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL BENTHOS	9,464.4	100.00	3,378.7	100.00	6,498.7	100.00	5,096.8	100.00	4,952.0	100.00	6,889.4	100.00

	2007		2008		2011		2013		2014	
	#/m2	%	#/m2	%	#/m2	%	#/m2	%	#/m2	%
GROUP										
Chironomidae	1,339.1	46.59	3,475.5	33.80	3,253.1	27.13	1,540.3	70.14	698.3	65.08
Coleoptera	14.9	0.52	--	--	38.3	0.32	--	--	4.3	0.40
Crustacea	--	--	--	--	--	--	--	--	110.7	10.32
Dreissena polymorpha	--	--	--	--	--	--	3.2	0.15	--	--
Ephemeroptera	91.5	3.19	207.6	2.02	78.8	0.66	46.8	2.13	2.1	0.20
Gastropoda	--	--	--	--	--	--	--	--	--	--
Hirudinea	2.1	0.07	--	--	--	--	--	--	--	--
Nematoda"	--	--	--	--	--	--	--	--	1.1	0.10
Odonata	10.6	0.37	--	--	--	--	1.1	0.05	1.1	0.10
Oligochaeta	442.8	15.41	136.3	1.33	919.7	7.67	16.0	0.73	10.6	0.99
Other	136.3	4.74	--	--	191.6	1.60	150.1	6.83	--	--
Pelecypoda	4.3	0.15	2.1	0.02	--	--	--	--	--	--
Trichoptera	832.4	28.96	6,460.4	62.83	7,511.0	62.63	438.6	19.97	242.7	22.62
Turbellaria	--	--	--	--	--	--	--	--	2.1	0.20
TOTAL BENTHOS	2,874.1	100.00	10,281.9	100.00	11,992.5	100.00	2,196.0	100.00	1,073.0	100.00

EXHIBITS

EXHIBIT A:

PHYSICOCHEMICAL MEASUREMENTS

EXHIBIT A. PHYSICOCHEMICAL MEASUREMENTS RECORDED AT EACH ELECTROFISHING LOCATION, 2014.

LOCATION	DATE	DEPTH	TEMP (C)	D.O. (ppm)	D.O. (% SAT)	SPEC COND (uS/cm)	SECCHI (cm)
501	22MAY	MID	22.0	7.7	88	1173	72.0
	05JUN	MID	25.2	6.8	84	1195	88.0
	10JUL	MID	28.2	10.2	128	930	83.0
	24JUL	MID	24.5	12.1	146	936	78.0
	05AUG	MID	28.5	8.3	108	967	89.0
	20AUG	MID	29.7	9.8	131	943	100.0
	11SEP	MID	20.3	2.8	30	800	49.0
	23SEP	MID	19.6	12.3	135	1036	88.0
502	22MAY	MID	19.3	7.9	87	630	54.0
	05JUN	MID	24.6	8.2	98	626	51.0
	10JUL	MID	27.1	13.2	165	640	53.0
	24JUL	MID	26.8	14.7	184	617	45.0
	05AUG	MID	26.7	8.3	107	580	40.0
	20AUG	MID	27.7	8.2	105	842	61.0
	11SEP	MID	19.8	7.1	78	615	27.0
	23SEP	MID	18.6	9.0	91	648	56.0
503	22MAY	MID	18.3	7.5	80	635	43.0
	05JUN	MID	24.2	9.0	106	626	33.0
	10JUL	MID	27.8	12.7	155	635	59.0
	24JUL	MID	25.3	10.6	130	644	32.0
	05AUG	MID	26.4	7.9	99	579	42.0
	20AUG	MID	25.9	11.2	138	655	38.0
	11SEP	MID	19.5	7.5	82	536	28.0
	23SEP	MID	17.4	8.3	80	632	44.0
506	22MAY	MID	19.1	7.9	85	636	57.0
	05JUN	MID	26.2	7.4	92	716	42.0
	10JUL	MID	30.8	7.3	98	649	56.0
	24JUL	SUR	28.7	8.0	103	726	54.0
		1.0	28.7	8.1	104		
	05AUG	MID	30.8	7.0	94	798	63.0
	20AUG	SUR	30.7	6.9	93	739	59.0
		1.0	30.4	7.0	92		
		2.0	30.4	6.8	90		
	11SEP	MID	26.1	7.4	92	548	40.0
	23SEP	MID	25.0	8.6	105	681	43.0
507A	22MAY	SUR	20.5	8.2	91	640	56.0
		1.0	20.3	8.2	91		
		2.0	19.9	8.0	89		
	05JUN	MID	24.7	7.6	92	703	30.0
	10JUL	MID	28.6	7.9	103	741	54.0
	24JUL	MID	28.6	7.8	101	801	50.0
	05AUG	MID	30.4	8.3	111	893	75.0
	20AUG	MID	29.9	7.6	100	821	70.0
	11SEP	MID	22.8	7.5	88	560	38.0
	23SEP	MID	26.1	8.0	99	677	49.0
510	22MAY	MID	21.2	7.3	82	1132	66.0
	05JUN	SUR	26.2	6.1	76	1144	92.0
		1.0	26.0	6.2	76		
		2.0	24.1	6.4	76		
		3.0	24.0	6.4	75		
	11JUL	MID	29.2	10.2	132	976	99.0
	24JUL	MID	28.3	7.8	100	853	66.0
	05AUG	MID	30.4	7.3	97	876	85.0
	20AUG	MID	29.8	7.8	104	833	76.0
	11SEP	MID	22.3	6.4	74	766	43.0
	23SEP	MID	21.9	10.6	118	1004	97.0
512	23MAY	MID	19.6	8.6	94	813	52.0
	06JUN	MID	23.9	9.9	117	907	62.0
	11JUL	MID	26.8	9.6	120	849	49.0
	25JUL	MID	27.0	8.5	106	829	52.0
	06AUG	MID	28.6	7.8	101	875	70.0
	19AUG	MID	28.2	7.5	96	801	61.0
	12SEP	MID	20.0	8.8	97	614	30.0
	22SEP	MID	20.4	8.9	99	787	53.0
513	23MAY	MID	20.4	8.9	98	839	59.0
	06JUN	MID	24.4	8.2	98	894	60.0
	11JUL	MID	27.4	9.2	117	846	45.0
	25JUL	SUR	27.2	7.5	94	839	55.0
		1.0	27.3	7.5	93		
		2.0	27.4	7.5	94		
	06AUG	MID	28.7	7.9	103	866	71.0
	19AUG	SUR	28.6	7.7	99	814	63.0
		1.0	28.6	7.7	99		
	12SEP	MID	20.2	8.8	97	615	34.0
	22SEP	MID	20.9	8.9	100	786	45.0

EXHIBIT A (cont.)

514	23MAY	MID	20.6	8.4	94	1009	53.0
	06JUN	MID	24.5	8.3	99	934	82.0
	11JUL	MID	27.6	9.6	122	841	59.0
	25JUL	MID	27.2	7.4	94	848	61.0
	06AUG	MID	28.7	7.8	101	861	73.0
	19AUG	MID	28.8	7.7	100	810	75.0
	12SEP	MID	20.5	6.7	97	678	36.0
	22SEP	MID	21.3	9.3	106	798	55.0
515	23MAY	MID	20.2	8.7	96	808	50.0
	06JUN	SUR	25.0	8.5	102	900	62.0
		1.0	25.0	8.3	102		
	11JUL	MID	27.5	9.5	121	890	48.0
	25JUL	MID	27.5	7.5	95	846	53.0
	06AUG	MID	28.9	8.3	108	860	77.0
	19AUG	MID	28.2	7.3	94	813	68.0
	12SEP	MID	20.2	8.8	97	610	35.0
	22SEP	MID	21.6	10.5	114	795	54.0

EXHIBIT B:

CATCH-PER-EFFORT AND RELATIVE ABUNDANCE SUMMARIES

TABLE B-1. TOTAL NUMBER, CATCH-PER-EFFORT (#/km), AND RELATIVE ABUNDANCE OF NATIVE FISH COLLECTED BY ELECTROFISHING AT EACH LOCATION NEAR THE DRESDEN STATION, MAY-SEPTEMBER 2014.

	LOCATION											
	501			502			503			506		
SPECIES	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
LONGNOSE GAR	1	0.3	0.18	--	--	--	4	1.0	0.23	2	0.8	0.52
GAR sp.	1	0.3	0.18	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	--	--	--	1	0.3	0.08	--	--	--	--	--	--
GIZZARD SHAD	84	21.0	14.74	562	140.5	46.10	607	151.8	34.31	19	7.7	4.97
CENTRAL STONEROLLER	--	--	--	--	--	--	1	0.3	0.06	4	1.6	1.05
GOLDEN SHINER	1	0.3	0.18	--	--	--	1	0.3	0.06	1	0.4	0.26
PALLID SHINER	--	--	--	14	3.5	1.15	78	19.5	4.41	3	1.2	0.79
EMERALD SHINER	5	1.3	0.88	48	12.0	3.94	30	7.5	1.70	7	2.8	1.83
GHOST SHINER	--	--	--	1	0.3	0.08	1	0.3	0.06	1	0.4	0.26
STRIPED SHINER	1	0.3	0.18	--	--	--	1	0.3	0.06	1	0.4	0.26
SPOTTAIL SHINER	10	2.5	1.75	13	3.3	1.07	10	2.5	0.57	1	0.4	0.26
RED SHINER	--	--	--	--	--	--	--	--	--	1	0.4	0.26
ROSYFACE SHINER	--	--	--	3	0.8	0.25	--	--	--	--	--	--
SPOTFIN SHINER	6	1.5	1.05	81	20.3	6.64	178	44.5	10.06	90	36.3	23.56
SAND SHINER	--	--	--	--	--	--	17	4.3	0.96	--	--	--
REDFIN SHINER	1	0.3	0.18	1	0.3	0.08	2	0.5	0.11	1	0.4	0.26
MIMIC SHINER	4	1.0	0.70	18	4.5	1.48	40	10.0	2.26	3	1.2	0.79
BLUNTNOSE MINNOW	93	23.3	16.32	30	7.5	2.46	150	37.5	8.48	18	7.3	4.71
FATHEAD MINNOW	--	--	--	--	--	--	1	0.3	0.06	--	--	--
BULLHEAD MINNOW	3	0.8	0.53	87	21.8	7.14	277	69.3	15.66	55	22.2	14.40
RIVER CARPSUCKER	1	0.3	0.18	--	--	--	1	0.3	0.06	2	0.8	0.52
QUILLBACK	2	0.5	0.35	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	3	0.8	0.53	5	1.3	0.41	5	1.3	0.28	9	3.6	2.36
BIGMOUTH BUFFALO	--	--	--	--	--	--	--	--	--	1	0.4	0.26
BLACK BUFFALO	1	0.3	0.18	--	--	--	--	--	--	--	--	--
Ictiobus sp.	--	--	--	--	--	--	1	0.3	0.06	--	--	--
SPOTTED SUCKER	1	0.3	0.18	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	--	--	--	42	10.5	3.45	4	1.0	0.23	--	--	--
GOLDEN REDHORSE	3	0.8	0.53	21	5.3	1.72	7	1.8	0.40	--	--	--
SHORTHEAD REDHORSE	--	--	--	65	16.3	5.33	9	2.3	0.51	1	0.4	0.26
Moxostoma sp.	1	0.3	0.18	11	2.8	0.90	1	0.3	0.06	--	--	--
YELLOW BULLHEAD	1	0.3	0.18	--	--	--	--	--	--	--	--	--
CHANNEL CATFISH	12	3.0	2.11	14	3.5	1.15	22	5.5	1.24	4	1.6	1.05
FLATHEAD CATFISH	--	--	--	2	0.5	0.16	3	0.8	0.17	3	1.2	0.79
TROUT-PERCH	--	--	--	--	--	--	1	0.3	0.06	--	--	--
BLACKSTRIPE TOPMINNOW	2	0.5	0.35	--	--	--	4	1.0	0.23	1	0.4	0.26
BROOK SILVERSIDE	8	2.0	1.40	34	8.5	2.79	81	20.3	4.58	1	0.4	0.26
YELLOW BASS	--	--	--	--	--	--	1	0.3	0.06	--	--	--
ROCK BASS	4	1.0	0.70	2	0.5	0.16	6	1.5	0.34	2	0.8	0.52
GREEN SUNFISH	23	5.8	4.04	7	1.8	0.57	--	--	--	29	11.7	7.59
PUMPKINSEED	4	1.0	0.70	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	--	--	--	5	1.3	0.41	27	6.8	1.53	--	--	--
BLUEGILL	53	13.3	9.30	27	6.8	2.21	47	11.8	2.66	42	16.9	10.99
NORTHERN SUNFISH	10	2.5	1.75	9	2.3	0.74	54	13.5	3.05	18	7.3	4.71
Lepomis HYBRID	--	--	--	1	0.3	0.08	--	--	--	4	1.6	1.05
Lepomis sp.	--	--	--	--	--	--	1	0.3	0.06	--	--	--
SMALLMOUTH BASS	54	13.5	9.47	26	6.5	2.13	6	1.5	0.34	18	7.3	4.71
LARGEMOUTH BASS	160	40.0	28.07	18	4.5	1.48	45	11.3	2.54	28	11.3	7.33
WHITE CRAPPIE	--	--	--	--	--	--	1	0.3	0.06	--	--	--
BLACK CRAPPIE	1	0.3	0.18	--	--	--	1	0.3	0.06	--	--	--
JOHNNY DARTER	--	--	--	3	0.8	0.25	2	0.5	0.11	--	--	--
YELLOW PERCH	--	--	--	2	0.5	0.16	1	0.3	0.06	--	--	--
LOGPERCH	3	0.8	0.53	48	12.0	3.94	22	5.5	1.24	--	--	--
WALLEYE	--	--	--	9	2.3	0.74	9	2.3	0.51	--	--	--
FRESHWATER DRUM	13	3.3	2.28	9	2.3	0.74	9	2.3	0.51	12	4.8	3.14
TOTAL FISH	570	142.5	100.00	1219	304.8	100.00	1769	442.3	100.00	382	154.0	100.00
TOTAL SPECIES	31			31			40			30		
MEAN NO. OF SPECIES	12			19			20			12		
MEAN IWBmod	7.13			7.78			8.12			7.01		

TABLE B-1 (cont.)

	LOCATION											
	507A			510			512			513		
SPECIES	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
LONGNOSE GAR	1	0.3	0.09	7	1.8	1.36	4	1.0	0.96	3	0.8	0.50
SHORTNOSE GAR	--	--	--	--	--	--	--	--	--	--	--	--
SKIPJACK HERRING	--	--	--	--	--	--	1	0.3	0.24	--	--	--
GIZZARD SHAD	514	128.5	44.08	21	5.3	4.08	16	4.0	3.85	48	12.0	7.93
GRASS PICKEREL	1	0.3	0.09	2	0.5	0.39	--	--	--	--	--	--
CENTRAL STONEROLLER	1	0.3	0.09	--	--	--	--	--	--	--	--	--
GOLDEN SHINER	1	0.3	0.09	1	0.3	0.19	--	--	--	--	--	--
PALLID SHINER	2	0.5	0.17	--	--	--	7	1.8	1.68	--	--	--
EMERALD SHINER	15	3.8	1.29	3	0.8	0.58	62	15.5	14.90	94	23.5	15.54
GHOST SHINER	--	--	--	--	--	--	5	1.3	1.20	--	--	--
STRIPED SHINER	1	0.3	0.09	--	--	--	--	--	--	--	--	--
SPOTTAIL SHINER	115	28.8	9.86	50	12.5	9.71	10	2.5	2.40	33	8.3	5.45
RED SHINER	--	--	--	--	--	--	--	--	--	1	0.3	0.17
ROSYFACE SHINER	--	--	--	--	--	--	5	1.3	1.20	1	0.3	0.17
SPOTFIN SHINER	17	4.3	1.46	6	1.5	1.17	52	13.0	12.50	91	22.8	15.04
SAND SHINER	1	0.3	0.09	--	--	--	4	1.0	0.96	22	5.5	3.64
REDFIN SHINER	--	--	--	--	--	--	1	0.3	0.24	--	--	--
MIMIC SHINER	1	0.3	0.09	2	0.5	0.39	50	12.5	12.02	32	8.0	5.29
Notropis sp.	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	66	16.5	5.66	58	14.5	11.26	15	3.8	3.61	56	14.0	9.26
FATHEAD MINNOW	--	--	--	--	--	--	--	--	--	--	--	--
BULLHEAD MINNOW	11	2.8	0.94	2	0.5	0.39	17	4.3	4.09	29	7.3	4.79
RIVER CARPSUCKER	--	--	--	--	--	--	1	0.3	0.24	4	1.0	0.66
QUILLBACK	2	0.5	0.17	--	--	--	2	0.5	0.48	3	0.8	0.50
HIGHFIN CARPSUCKER	--	--	--	--	--	--	--	--	--	4	1.0	0.66
SMALLMOUTH BUFFALO	2	0.5	0.17	3	0.8	0.58	3	0.8	0.72	13	3.3	2.15
BIGMOUTH BUFFALO	--	--	--	1	0.3	0.19	--	--	--	--	--	--
SILVER REDHORSE	21	5.3	1.80	1	0.3	0.19	6	1.5	1.44	4	1.0	0.66
RIVER REDHORSE	--	--	--	--	--	--	1	0.3	0.24	--	--	--
GOLDEN REDHORSE	9	2.3	0.77	4	1.0	0.78	8	2.0	1.92	13	3.3	2.15
SHORTHEAD REDHORSE	43	10.8	3.69	3	0.8	0.58	6	1.5	1.44	4	1.0	0.66
Moxostoma sp.	27	6.8	2.32	1	0.3	0.19	--	--	--	2	0.5	0.33
YELLOW BULLHEAD	1	0.3	0.09	1	0.3	0.19	--	--	--	--	--	--
CHANNEL CATFISH	1	0.3	0.09	3	0.8	0.58	16	4.0	3.85	7	1.8	1.16
FLATHEAD CATFISH	--	--	--	--	--	--	1	0.3	0.24	1	0.3	0.17
BANDED KILLIFISH	4	1.0	0.34	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	3	0.8	0.26	8	2.0	1.55	--	--	--	--	--	--
BROOK SILVERSIDE	23	5.8	1.97	2	0.5	0.39	8	2.0	1.92	13	3.3	2.15
WHITE BASS	--	--	--	--	--	--	9	2.3	2.16	2	0.5	0.33
ROCK BASS	5	1.3	0.43	3	0.8	0.58	--	--	--	1	0.3	0.17
GREEN SUNFISH	26	6.5	2.23	9	2.3	1.75	3	0.8	0.72	14	3.5	2.31
PUMPKINSEED	1	0.3	0.09	5	1.3	0.97	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	11	2.8	2.64	2	0.5	0.33
BLUEGILL	36	9.0	3.09	97	24.3	18.83	23	5.8	5.53	14	3.5	2.31
NORTHERN SUNFISH	30	7.5	2.57	84	21.0	16.31	7	1.8	1.68	28	7.0	4.63
Lepomis HYBRID	1	0.3	0.09	--	--	--	2	0.5	0.48	--	--	--
Lepomis sp.	1	0.3	0.09	1	0.3	0.19	--	--	--	--	--	--
SMALLMOUTH BASS	1	0.3	0.09	24	6.0	4.66	28	7.0	6.73	34	8.5	5.62
LARGEMOUTH BASS	123	30.8	10.55	105	26.3	20.39	6	1.5	1.44	9	2.3	1.49
BLACK CRAPPIE	--	--	--	1	0.3	0.19	--	--	--	--	--	--
WESTERN SAND DARTER	--	--	--	--	--	--	--	--	--	1	0.3	0.17
JOHNNY DARTER	4	1.0	0.34	--	--	--	1	0.3	0.24	3	0.8	0.50
BANDED DARTER	--	--	--	--	--	--	--	--	--	1	0.3	0.17
YELLOW PERCH	2	0.5	0.17	--	--	--	--	--	--	--	--	--
LOGPERCH	46	11.5	3.95	3	0.8	0.58	6	1.5	1.44	9	2.3	1.49
WALLEYE	1	0.3	0.09	--	--	--	2	0.5	0.48	--	--	--
FRESHWATER DRUM	6	1.5	0.51	4	1.0	0.78	17	4.3	4.09	9	2.3	1.49
TOTAL FISH	1166	291.5	100.00	515	128.8	100.00	416	104.0	100.00	605	151.3	100.00
TOTAL SPECIES	36			29			35			34		
MEAN NO. OF SPECIES	15			12			16			16		
MEAN IWBmod	6.53			6.76			7.45			7.22		

EXHIBIT B (cont.)

TABLE B-1 (cont.)

	LOCATION					
	514			515		
SPECIES	#	CPE	%	#	CPE	%
LONGNOSE GAR	2	0.5	0.37	1	0.3	0.11
SHORTNOSE GAR	--	--	--	1	0.3	0.11
SKIPJACK HERRING	--	--	--	1	0.3	0.11
GIZZARD SHAD	7	1.8	1.31	4	1.0	0.46
GRASS PICKEREL	--	--	--	--	--	--
CENTRAL STONEROLLER	--	--	--	--	--	--
GOLDEN SHINER	--	--	--	--	--	--
PALLID SHINER	1	0.3	0.19	1	0.3	0.11
EMERALD SHINER	77	19.3	14.42	304	76.0	34.62
GHOST SHINER	--	--	--	--	--	--
STRIPED SHINER	--	--	--	--	--	--
SPOTTAIL SHINER	2	0.5	0.37	9	2.3	1.03
RED SHINER	2	0.5	0.37	--	--	--
ROSYFACE SHINER	2	0.5	0.37	9	2.3	1.03
SPOTFIN SHINER	118	29.5	22.10	118	29.5	13.44
SAND SHINER	4	1.0	0.75	7	1.8	0.80
REDFIN SHINER	--	--	--	--	--	--
MIMIC SHINER	14	3.5	2.62	32	8.0	3.64
Notropis sp.	--	--	--	1	0.3	0.11
BLUNTNOSE MINNOW	39	9.8	7.30	68	17.0	7.74
FATHEAD MINNOW	--	--	--	1	0.3	0.11
BULLHEAD MINNOW	14	3.5	2.62	13	3.3	1.48
RIVER CARPSUCKER	3	0.8	0.56	1	0.3	0.11
QUILLBACK	1	0.3	0.19	--	--	--
HIGHFIN CARPSUCKER	--	--	--	--	--	--
SMALLMOUTH BUFFALO	11	2.8	2.06	6	1.5	0.68
BIGMOUTH BUFFALO	--	--	--	--	--	--
SILVER REDHORSE	--	--	--	3	0.8	0.34
RIVER REDHORSE	--	--	--	--	--	--
GOLDEN REDHORSE	19	4.8	3.56	14	3.5	1.59
SHORTHEAD REDHORSE	3	0.8	0.56	2	0.5	0.23
Moxostoma sp.	--	--	--	2	0.5	0.23
YELLOW BULLHEAD	--	--	--	--	--	--
CHANNEL CATFISH	25	6.3	4.68	21	5.3	2.39
FLATHEAD CATFISH	1	0.3	0.19	1	0.3	0.11
BANDED KILLIFISH	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	2	0.5	0.37	1	0.3	0.11
BROOK SILVERSIDE	18	4.5	3.37	42	10.5	4.78
WHITE BASS	7	1.8	1.31	3	0.8	0.34
ROCK BASS	3	0.8	0.56	2	0.5	0.23
GREEN SUNFISH	17	4.3	3.18	22	5.5	2.51
PUMPKINSEED	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	2	0.5	0.37	3	0.8	0.34
BLUEGILL	43	10.8	8.05	41	10.3	4.67
NORTHERN SUNFISH	5	1.3	0.94	55	13.8	6.26
Lepomis HYBRID	2	0.5	0.37	4	1.0	0.46
Lepomis sp.	--	--	--	--	--	--
SMALLMOUTH BASS	62	15.5	11.61	38	9.5	4.33
LARGEMOUTH BASS	8	2.0	1.50	16	4.0	1.82
BLACK CRAPPIE	--	--	--	1	0.3	0.11
WESTERN SAND DARTER	--	--	--	--	--	--
JOHNNY DARTER	--	--	--	2	0.5	0.23
BANDED DARTER	1	0.3	0.19	1	0.3	0.11
YELLOW PERCH	--	--	--	--	--	--
LOGPERCH	7	1.8	1.31	17	4.3	1.94
WALLEYE	1	0.3	0.19	1	0.3	0.11
FRESHWATER DRUM	11	2.8	2.06	9	2.3	1.03
TOTAL FISH	534	133.5	100.00	878	219.5	100.00
TOTAL SPECIES	33			37		
MEAN NO. OF SPECIES	15			17		
MEAN IWBmod	7.60			7.33		

TABLE B-2. TOTAL NUMBER, CATCH-PER-EFFORT (#/haul), AND RELATIVE ABUNDANCE OF NATIVE FISH COLLECTED BY SEINING AT EACH LOCATION NEAR THE DRESDEN STATION, MAY-SEPTEMBER 2014.

	LOCATION											
	501			502			503			507		
SPECIES	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
GIZZARD SHAD	17	2.1	10.56	12	1.5	13.79	33	4.1	4.28	2	0.3	0.54
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	--	--
PALLID SHINER	--	--	--	6	0.8	6.90	10	1.3	1.30	1	0.1	0.27
EMERALD SHINER	--	--	--	3	0.4	3.45	32	4.0	4.15	3	0.4	0.81
GHOST SHINER	--	--	--	--	--	--	2	0.3	0.26	--	--	--
STRIPED SHINER	--	--	--	--	--	--	--	--	--	--	--	--
SPOTTAIL SHINER	4	0.5	2.48	6	0.8	6.90	22	2.8	2.85	16	2.0	4.34
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	2	0.3	1.24	16	2.0	18.39	289	36.1	37.48	120	15.0	32.52
SAND SHINER	--	--	--	--	--	--	8	1.0	1.04	28	3.5	7.59
REDFIN SHINER	1	0.1	0.62	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	1	0.1	1.15	57	7.1	7.39	4	0.5	1.08
SUCKERMOUTH MINNOW	--	--	--	--	--	--	--	--	--	1	0.1	0.27
BLUNTNOSE MINNOW	55	6.9	34.16	1	0.1	1.15	123	15.4	15.95	13	1.6	3.52
BULLHEAD MINNOW	15	1.9	9.32	22	2.8	25.29	124	15.5	16.08	121	15.1	32.79
Carpiodes sp.	--	--	--	--	--	--	--	--	--	--	--	--
WHITE SUCKER	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN HOG SUCKER	--	--	--	--	--	--	--	--	--	1	0.1	0.27
SMALLMOUTH BUFFALO	--	--	--	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	2	0.3	1.24	--	--	--	--	--	--	1	0.1	0.27
GOLDEN REDHORSE	1	0.1	0.62	--	--	--	--	--	--	--	--	--
SHORTHEAD REDHORSE	3	0.4	1.86	2	0.3	2.30	1	0.1	0.13	--	--	--
Moxostoma sp.	--	--	--	1	0.1	1.15	--	--	--	2	0.3	0.54
CATOSTOMINAE sp.	--	--	--	1	0.1	1.15	--	--	--	12	1.5	3.25
ICTIOBINAE sp.	--	--	--	--	--	--	--	--	--	--	--	--
CHANNEL CATFISH	1	0.1	0.62	1	0.1	1.15	--	--	--	--	--	--
TADPOLE MADTOM	1	0.1	0.62	--	--	--	--	--	--	--	--	--
BANDED KILLIFISH	--	--	--	--	--	--	--	--	--	1	0.1	0.27
BLACKSTRIPE TOPMINNOW	10	1.3	6.21	--	--	--	4	0.5	0.52	1	0.1	0.27
BROOK SILVERSIDE	--	--	--	4	0.5	4.60	24	3.0	3.11	26	3.3	7.05
ROCK BASS	1	0.1	0.62	--	--	--	3	0.4	0.39	--	--	--
GREEN SUNFISH	1	0.1	0.62	--	--	--	--	--	--	3	0.4	0.81
PUMPKINSEED	2	0.3	1.24	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	4	0.5	0.52	--	--	--
BLUEGILL	27	3.4	16.77	2	0.3	2.30	7	0.9	0.91	1	0.1	0.27
NORTHERN SUNFISH	7	0.9	4.35	1	0.1	1.15	--	--	--	--	--	--
Lepomis HYBRID	1	0.1	0.62	--	--	--	--	--	--	--	--	--
Lepomis sp.	--	--	--	1	0.1	1.15	4	0.5	0.52	--	--	--
SMALLMOUTH BASS	--	--	--	1	0.1	1.15	--	--	--	--	--	--
LARGEMOUTH BASS	9	1.1	5.59	1	0.1	1.15	5	0.6	0.65	5	0.6	1.36
WHITE CRAPPIE	--	--	--	--	--	--	2	0.3	0.26	--	--	--
BLACK CRAPPIE	--	--	--	--	--	--	12	1.5	1.56	--	--	--
WESTERN SAND DARTER	--	--	--	--	--	--	--	--	--	--	--	--
JOHNNY DARTER	--	--	--	2	0.3	2.30	2	0.3	0.26	3	0.4	0.81
BANDED DARTER	--	--	--	--	--	--	--	--	--	--	--	--
YELLOW PERCH	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	1	0.1	0.62	3	0.4	3.45	2	0.3	0.26	2	0.3	0.54
BLACKSIDE DARTER	--	--	--	--	--	--	--	--	--	1	0.1	0.27
Percina sp.	--	--	--	--	--	--	--	--	--	1	0.1	0.27
Sander sp.	--	--	--	--	--	--	1	0.1	0.13	--	--	--
DARTER sp.	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL FISH	161	20.1	100.00	87	10.9	100.00	771	96.4	100.00	369	46.1	100.00
TOTAL SPECIES	19			17			22			21		
MEAN NO. OF SPECIES	5			6			9			5		

EXHIBIT B (cont.)

TABLE B-2 (cont.)

	LOCATION											
	509			512			513			514		
SPECIES	#	CPE	%	#	CPE	%	#	CPE	%	#	CPE	%
GIZZARD SHAD	50	6.3	16.18	--	--	--	--	--	--	3	0.4	0.50
GRASS PICKEREL	1	0.1	0.32	--	--	--	--	--	--	--	--	--
PALLID SHINER	--	--	--	1	0.1	0.27	1	0.1	0.12	3	0.4	0.50
EMERALD SHINER	--	--	--	9	1.1	2.42	73	9.1	8.40	40	5.0	6.71
GHOST SHINER	--	--	--	2	0.3	0.54	--	--	--	--	--	--
STRIPED SHINER	1	0.1	0.32	--	--	--	2	0.3	0.23	--	--	--
SPOTTAIL SHINER	6	0.8	1.94	58	7.3	15.59	88	11.0	10.13	96	12.0	16.11
ROSYFACE SHINER	--	--	--	--	--	--	1	0.1	0.12	1	0.1	0.17
SPOTFIN SHINER	9	1.1	2.91	192	24.0	51.61	485	60.6	55.81	274	34.3	45.97
SAND SHINER	--	--	--	24	3.0	6.45	38	4.8	4.37	36	4.5	6.04
REDFIN SHINER	1	0.1	0.32	--	--	--	--	--	--	1	0.1	0.17
MIMIC SHINER	--	--	--	9	1.1	2.42	59	7.4	6.79	13	1.6	2.18
SUCKERMOUTH MINNOW	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	33	4.1	10.68	16	2.0	4.30	45	5.6	5.18	33	4.1	5.54
BULLHEAD MINNOW	15	1.9	4.85	12	1.5	3.23	23	2.9	2.65	45	5.6	7.55
Carpiodes sp.	--	--	--	--	--	--	--	--	--	1	0.1	0.17
WHITE SUCKER	1	0.1	0.32	--	--	--	--	--	--	--	--	--
NORTHERN HOG SUCKER	9	1.1	2.91	6	0.8	1.61	1	0.1	0.12	2	0.3	0.34
SMALLMOUTH BUFFALO	--	--	--	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	7	0.9	2.27	1	0.1	0.27	--	--	--	--	--	--
GOLDEN REDHORSE	1	0.1	0.32	--	--	--	--	--	--	--	--	--
SHORTHEAD REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--
Moxostoma sp.	77	9.6	24.92	--	--	--	3	0.4	0.35	--	--	--
CATOSTOMINAE sp.	1	0.1	0.32	12	1.5	3.23	--	--	--	3	0.4	0.50
ICTIOBINAE sp.	--	--	--	1	0.1	0.27	2	0.3	0.23	1	0.1	0.17
CHANNEL CATFISH	1	0.1	0.32	--	--	--	1	0.1	0.12	--	--	--
TADPOLE MADTOM	--	--	--	--	--	--	--	--	--	--	--	--
BANDED KILLIFISH	3	0.4	0.97	1	0.1	0.27	--	--	--	1	0.1	0.17
BLACKSTRIPE TOPMINNOW	3	0.4	0.97	5	0.6	1.34	9	1.1	1.04	8	1.0	1.34
BROOK SILVERSIDE	--	--	--	5	0.6	1.34	23	2.9	2.65	18	2.3	3.02
ROCK BASS	1	0.1	0.32	--	--	--	--	--	--	--	--	--
GREEN SUNFISH	1	0.1	0.32	1	0.1	0.27	2	0.3	0.23	--	--	--
PUMPKINSEED	1	0.1	0.32	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	1	0.1	0.32	2	0.3	0.54	--	--	--	1	0.1	0.17
BLUEGILL	26	3.3	8.41	1	0.1	0.27	1	0.1	0.12	3	0.4	0.50
NORTHERN SUNFISH	14	1.8	4.53	--	--	--	2	0.3	0.23	2	0.3	0.34
Lepomis HYBRID	--	--	--	--	--	--	--	--	--	--	--	--
Lepomis sp.	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BASS	--	--	--	2	0.3	0.54	4	0.5	0.46	3	0.4	0.50
LARGEMOUTH BASS	45	5.6	14.56	7	0.9	1.88	2	0.3	0.23	4	0.5	0.67
WHITE CRAPPIE	--	--	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	--	--	--	--	--	--	--	--	--	--	--	--
WESTERN SAND DARTER	--	--	--	--	--	--	1	0.1	0.12	--	--	--
JOHNNY DARTER	--	--	--	2	0.3	0.54	1	0.1	0.12	--	--	--
BANDED DARTER	--	--	--	--	--	--	1	0.1	0.12	--	--	--
YELLOW PERCH	1	0.1	0.32	--	--	--	--	--	--	--	--	--
LOGPERCH	--	--	--	2	0.3	0.54	1	0.1	0.12	4	0.5	0.67
BLACKSIDE DARTER	--	--	--	--	--	--	--	--	--	--	--	--
Percina sp.	--	--	--	--	--	--	--	--	--	--	--	--
Sander sp.	--	--	--	--	--	--	--	--	--	--	--	--
DARTER sp.	--	--	--	1	0.1	0.27	--	--	--	--	--	--
TOTAL FISH	309	38.6	100.00	372	46.5	100.00	869	108.6	100.00	596	74.5	100.00
TOTAL SPECIES	23			22			25			23		
MEAN NO. OF SPECIES	6			7			8			7		

TABLE B-2 (cont.)

SPECIES	LOCATION 515 #	CPE	%
GIZZARD SHAD	1	0.1	0.28
GRASS PICKEREL	--	--	--
PALLID SHINER	--	--	--
EMERALD SHINER	118	14.8	32.69
GHOST SHINER	--	--	--
STRIPED SHINER	--	--	--
SPOTTAIL SHINER	9	1.1	2.49
ROSYFACE SHINER	2	0.3	0.55
SPOTFIN SHINER	130	16.3	36.01
SAND SHINER	12	1.5	3.32
REDFIN SHINER	--	--	--
MIMIC SHINER	6	0.8	1.66
SUCKERMOUTH MINNOW	--	--	--
BLUNTNOSE MINNOW	35	4.4	9.70
BULLHEAD MINNOW	2	0.3	0.55
Carpiodes sp.	--	--	--
WHITE SUCKER	--	--	--
NORTHERN HOG SUCKER	--	--	--
SMALLMOUTH BUFFALO	1	0.1	0.28
SILVER REDHORSE	--	--	--
GOLDEN REDHORSE	--	--	--
SHORTHEAD REDHORSE	--	--	--
Moxostoma sp.	--	--	--
CATOSTOMINAE sp.	--	--	--
ICTIOBINAE sp.	--	--	--
CHANNEL CATFISH	--	--	--
TADPOLE MADTOM	--	--	--
BANDED KILLIFISH	--	--	--
BLACKSTRIPE TOPMINNOW	1	0.1	0.28
BROOK SILVERSIDE	27	3.4	7.48
ROCK BASS	--	--	--
GREEN SUNFISH	1	0.1	0.28
PUMPKINSEED	--	--	--
ORANGESPOTTED SUNFISH	1	0.1	0.28
BLUEGILL	3	0.4	0.83
NORTHERN SUNFISH	5	0.6	1.39
Lepomis HYBRID	--	--	--
Lepomis sp.	1	0.1	0.28
SMALLMOUTH BASS	2	0.3	0.55
LARGEMOUTH BASS	--	--	--
WHITE CRAPPIE	--	--	--
BLACK CRAPPIE	--	--	--
WESTERN SAND DARTER	--	--	--
JOHNNY DARTER	--	--	--
BANDED DARTER	--	--	--
YELLOW PERCH	--	--	--
LOGPERCH	4	0.5	1.11
BLACKSIDE DARTER	--	--	--
Percina sp.	--	--	--
Sander sp.	--	--	--
DARTER sp.	--	--	--
TOTAL FISH	361	45.1	100.00
TOTAL SPECIES	18		
MEAN NO. OF SPECIES	6		

2014 DRESDEN STATION FISH STUDY
CPE AND COMPOSITION SUMMARIES FOR EACH TRIP (CPE: ELECTRO=No./Km)

GEAR: ELECTRO
and LOCATION: 501

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
LONGNOSE GAR	--	--	--	--	--	--	--	--	2.0	1.5	--	--	--	--	--	--
GAR sp.	--	--	2.0	4.2	--	--	--	--	--	--	--	--	--	--	--	--
GIZZARD SHAD	--	--	--	--	--	--	72.0	21.6	14.0	10.4	--	--	14.0	9.9	68.0	51.5
GOLDEN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	2.0	1.4	--	--
EMERALD SHINER	--	--	--	--	2.0	0.9	2.0	0.6	--	--	--	--	6.0	4.2	--	--
STRIPED SHINER	--	--	--	--	--	--	2.0	0.6	--	--	--	--	--	--	--	--
SPOTTAIL SHINER	--	--	--	--	8.0	3.4	12.0	3.6	--	--	--	--	--	--	--	--
SPOTFIN SHINER	--	--	--	--	2.0	0.9	6.0	1.8	2.0	1.5	--	--	2.0	1.4	--	--
REDFIN SHINER	--	--	--	--	--	--	--	--	2.0	1.5	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	8.0	3.4	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	--	--	--	--	48.0	20.5	112.0	33.5	14.0	10.4	6.0	7.1	4.0	2.8	2.0	1.5
BULLHEAD MINNOW	--	--	--	--	6.0	2.6	--	--	--	--	--	--	--	--	--	--
RIVER CARPSUCKER	--	--	--	--	--	--	--	--	2.0	1.5	--	--	--	--	--	--
QUILLBACK	--	--	--	--	--	--	--	--	--	--	--	--	4.0	2.8	--	--
SMALLMOUTH BUFFALO	--	--	2.0	4.2	--	--	--	--	--	--	--	--	--	--	4.0	3.0
BLACK BUFFALO	--	--	--	--	--	--	--	--	--	--	2.0	2.4	--	--	--	--
SPOTTED SUCKER	--	--	--	--	--	--	--	--	2.0	1.5	--	--	--	--	--	--
GOLDEN REDHORSE	2.0	6.3	--	--	--	--	--	--	--	--	--	--	--	--	4.0	3.0
Moxostoma sp.	--	--	--	--	2.0	0.9	--	--	--	--	--	--	--	--	--	--
YELLOW BULLHEAD	2.0	6.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHANNEL CATFISH	4.0	12.5	4.0	8.3	6.0	2.6	4.0	1.2	4.0	3.0	--	--	2.0	1.4	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	2.0	0.6	2.0	1.5	--	--	--	--	--	--
BROOK SILVERSIDE	--	--	--	--	--	--	2.0	0.6	14.0	10.4	--	--	--	--	--	--
ROCK BASS	--	--	--	--	2.0	0.9	2.0	0.6	--	--	--	--	4.0	2.8	--	--
GREEN SUNFISH	--	--	--	--	16.0	6.8	10.0	3.0	4.0	3.0	4.0	4.8	8.0	5.6	4.0	3.0
PUMPKINSEED	--	--	--	--	--	--	2.0	0.6	4.0	3.0	--	--	--	--	2.0	1.5
BLUEGILL	4.0	12.5	8.0	16.7	20.0	8.5	8.0	2.4	20.0	14.9	16.0	19.0	14.0	9.9	16.0	12.1
NORTHERN SUNFISH	--	--	--	--	6.0	2.6	--	--	--	--	4.0	4.8	6.0	4.2	4.0	3.0
SMALLMOUTH BASS	12.0	37.5	14.0	29.2	28.0	12.0	10.0	3.0	16.0	11.9	12.0	14.3	12.0	8.5	4.0	3.0
LARGEMOUTH BASS	--	--	12.0	25.0	68.0	29.1	84.0	25.1	30.0	22.4	40.0	47.6	62.0	43.7	24.0	18.2
BLACK CRAPPIE	--	--	--	--	2.0	0.9	--	--	--	--	--	--	--	--	--	--
LOGPERCH	--	--	--	--	4.0	1.7	2.0	0.6	--	--	--	--	--	--	--	--
FRESHWATER DRUM	8.0	25.0	6.0	12.5	6.0	2.6	2.0	0.6	2.0	1.5	--	--	2.0	1.4	--	--
TOTAL FISH	32.0	100.0	48.0	100.0	234.0	100.0	334.0	100.0	134.0	100.0	84.0	100.0	142.0	100.0	132.0	100.0

2014 DRESDEN STATION FISH STUDY
CPE AND COMPOSITION SUMMARIES FOR EACH TRIP (CPE: ELECTRO=No./Km)

GEAR: ELECTRO
and LOCATION: 502

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
SKIPJACK HERRING	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.6	--	--
GIZZARD SHAD	--	--	--	--	--	--	868.0	80.8	130.0	40.4	10.0	3.5	74.0	23.7	42.0	23.3
PALLID SHINER	--	--	2.0	2.6	--	--	--	--	2.0	0.6	4.0	1.4	20.0	6.4	--	--
EMERALD SHINER	--	--	--	--	4.0	4.8	20.0	1.9	42.0	13.0	--	--	18.0	5.8	12.0	6.7
GHOST SHINER	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.6	--	--
SPOTTAIL SHINER	--	--	--	--	2.0	2.4	2.0	0.2	4.0	1.2	14.0	4.9	2.0	0.6	2.0	1.1
ROSYFACE SHINER	--	--	--	--	--	--	--	--	6.0	1.9	--	--	--	--	--	--
SPOTFIN SHINER	16.0	15.7	12.0	15.8	20.0	23.8	60.0	5.6	6.0	1.9	20.0	6.9	8.0	2.6	20.0	11.1
REDFIN SHINER	--	--	--	--	--	--	--	--	2.0	0.6	--	--	--	--	--	--
MIMIC SHINER	2.0	2.0	--	--	6.0	7.1	--	--	2.0	0.6	--	--	12.0	3.8	14.0	7.8
BLUNTNOSE MINNOW	12.0	11.8	4.0	5.3	--	--	8.0	0.7	16.0	5.0	10.0	3.5	10.0	3.2	--	--
BULLHEAD MINNOW	12.0	11.8	4.0	5.3	12.0	14.3	28.0	2.6	18.0	5.6	20.0	6.9	58.0	18.6	22.0	12.2
SMALLMOUTH BUFFALO	--	--	4.0	5.3	2.0	2.4	--	--	--	--	2.0	0.7	2.0	0.6	--	--
SILVER REDHORSE	--	--	--	--	4.0	4.8	10.0	0.9	12.0	3.7	50.0	17.4	2.0	0.6	6.0	3.3
GOLDEN REDHORSE	8.0	7.8	4.0	5.3	6.0	7.1	--	--	--	--	6.0	2.1	12.0	3.8	6.0	3.3
SHORTHEAD REDHORSE	4.0	3.9	--	--	--	--	6.0	0.6	24.0	7.5	62.0	21.5	16.0	5.1	18.0	10.0
Moxostoma sp.	--	--	--	--	--	--	2.0	0.2	6.0	1.9	10.0	3.5	4.0	1.3	--	--
CHANNEL CATFISH	10.0	9.8	8.0	10.5	2.0	2.4	2.0	0.2	2.0	0.6	2.0	0.7	--	--	2.0	1.1
FLATHEAD CATFISH	--	--	2.0	2.6	--	--	--	--	2.0	0.6	--	--	--	--	--	--
BROOK SILVERSIDE	4.0	3.9	2.0	2.6	--	--	6.0	0.6	6.0	1.9	12.0	4.2	36.0	11.5	2.0	1.1
ROCK BASS	--	--	--	--	--	--	--	--	2.0	0.6	--	--	--	--	2.0	1.1
GREEN SUNFISH	2.0	2.0	2.0	2.6	--	--	4.0	0.4	--	--	--	--	2.0	0.6	4.0	2.2
ORANGESPOTTED SUNFISH	--	--	2.0	2.6	2.0	2.4	--	--	--	--	--	--	4.0	1.3	2.0	1.1
BLUEGILL	10.0	9.8	10.0	13.2	8.0	9.5	2.0	0.2	6.0	1.9	8.0	2.8	6.0	1.9	4.0	2.2
NORTHERN SUNFISH	2.0	2.0	6.0	7.9	2.0	2.4	4.0	0.4	--	--	2.0	0.7	2.0	0.6	--	--
Lepomis HYBRID	2.0	2.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BASS	6.0	5.9	14.0	18.4	2.0	2.4	8.0	0.7	6.0	1.9	4.0	1.4	4.0	1.3	8.0	4.4
LARGEMOUTH BASS	--	--	--	--	2.0	2.4	4.0	0.4	10.0	3.1	10.0	3.5	6.0	1.9	4.0	2.2
JOHNNY DARTER	--	--	--	--	--	--	4.0	0.4	--	--	--	--	--	--	2.0	1.1
YELLOW PERCH	--	--	--	--	--	--	2.0	0.2	2.0	0.6	--	--	--	--	--	--
LOGPERCH	--	--	--	--	10.0	11.9	30.0	2.8	12.0	3.7	32.0	11.1	4.0	1.3	8.0	4.4
WALLEYE	2.0	2.0	--	--	--	--	2.0	0.2	2.0	0.6	8.0	2.8	4.0	1.3	--	--
FRESHWATER DRUM	10.0	9.8	--	--	--	--	2.0	0.2	2.0	0.6	2.0	0.7	2.0	0.6	--	--
TOTAL FISH	102.0	100.0	76.0	100.0	84.0	100.0	1074	100.0	322.0	100.0	288.0	100.0	312.0	100.0	180.0	100.0

GEAR: ELECTRO
and LOCATION: 503

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
LONGNOSE GAR	4.0	1.4	2.0	1.2	--	--	2.0	0.2	--	--	--	--	--	--	--	--
GIZZARD SHAD	--	--	--	--	6.0	3.1	696.0	69.9	104.0	22.4	120.0	36.1	78.0	12.7	210.0	42.7
CENTRAL STONEROLLER	--	--	--	--	--	--	--	--	--	--	2.0	0.6	--	--	--	--
GOLDEN SHINER	2.0	0.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PALLID SHINER	16.0	5.7	4.0	2.4	--	--	8.0	0.8	38.0	8.2	26.0	7.8	54.0	8.8	10.0	2.0
EMERALD SHINER	10.0	3.6	--	--	--	--	--	--	16.0	3.4	--	--	28.0	4.6	6.0	1.2
GHOST SHINER	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.3	--	--
STRIPED SHINER	--	--	--	--	--	--	--	--	--	--	2.0	0.6	--	--	--	--
SPOTTAIL SHINER	--	--	--	--	--	--	4.0	0.4	6.0	1.3	4.0	1.2	6.0	1.0	--	--
SPOTFIN SHINER	40.0	14.3	32.0	19.0	76.0	39.2	94.0	9.4	62.0	13.4	12.0	3.6	18.0	2.9	22.0	4.5
SAND SHINER	4.0	1.4	10.0	6.0	6.0	3.1	12.0	1.2	--	--	--	--	--	--	2.0	0.4
REDFIN SHINER	--	--	--	--	--	--	4.0	0.4	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	16.0	9.5	--	--	--	--	--	--	--	--	52.0	8.5	12.0	2.4
BLUNTNOSE MINNOW	40.0	14.3	30.0	17.9	32.0	16.5	36.0	3.6	58.0	12.5	40.0	12.0	28.0	4.6	36.0	7.3
FATHEAD MINNOW	--	--	--	--	--	--	2.0	0.2	--	--	--	--	--	--	--	--
BULLHEAD MINNOW	58.0	20.7	28.0	16.7	18.0	9.3	62.0	6.2	94.0	20.3	68.0	20.5	180.0	29.4	46.0	9.3
RIVER CARPSUCKER	--	--	--	--	--	--	--	--	2.0	0.4	--	--	--	--	--	--
SMALLMOUTH BUFFALO	--	--	4.0	2.4	--	--	--	--	--	--	2.0	0.6	4.0	0.7	--	--
Ictiobus sp.	--	--	--	--	--	--	--	--	2.0	0.4	--	--	--	--	--	--
SILVER REDHORSE	2.0	0.7	--	--	2.0	1.0	2.0	0.2	--	--	--	--	2.0	0.3	--	--
GOLDEN REDHORSE	--	--	--	--	2.0	1.0	2.0	0.2	2.0	0.4	2.0	0.6	4.0	0.7	2.0	0.4
SHORTHEAD REDHORSE	--	--	--	--	--	--	--	--	2.0	0.4	4.0	1.2	4.0	0.7	8.0	1.6
Moxostoma sp.	--	--	--	--	--	--	--	--	2.0	0.4	--	--	--	--	--	--
CHANNEL CATFISH	14.0	5.0	2.0	1.2	8.0	4.1	2.0	0.2	--	--	--	--	6.0	1.0	12.0	2.4
FLATHEAD CATFISH	--	--	--	--	2.0	1.0	--	--	2.0	0.4	2.0	0.6	--	--	--	--

TROUT-PERCH	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.3	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8.0	1.6
BROOK SILVERSIDE	22.0	7.9	6.0	3.6	2.0	1.0	2.0	0.2	12.0	2.6	2.0	0.6	32.0	5.2	84.0	17.1
YELLOW BASS	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.3	--	--
ROCK BASS	4.0	1.4	--	--	--	--	--	--	2.0	0.4	2.0	0.6	4.0	0.7	--	--
ORANGESPOTTED SUNFISH	--	--	--	--	4.0	2.1	--	--	6.0	1.3	2.0	0.6	42.0	6.9	--	--
BLUEGILL	30.0	10.7	12.0	7.1	16.0	8.2	12.0	1.2	6.0	1.3	6.0	1.8	6.0	1.0	6.0	1.2
NORTHERN SUNFISH	28.0	10.0	8.0	4.8	10.0	5.2	20.0	2.0	14.0	3.0	16.0	4.8	12.0	2.0	--	--
Lepomis sp.	--	--	--	--	--	--	--	--	2.0	0.4	--	--	--	--	--	--
SMALLMOUTH BASS	2.0	0.7	2.0	1.2	2.0	1.0	2.0	0.2	2.0	0.4	2.0	0.6	--	--	--	--
LARGEMOUTH BASS	4.0	1.4	6.0	3.6	6.0	3.1	24.0	2.4	8.0	1.7	8.0	2.4	18.0	2.9	16.0	3.3
WHITE CRAPPIE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.4
BLACK CRAPPIE	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.3	--	--
JOHNNY DARTER	--	--	--	--	--	--	4.0	0.4	--	--	--	--	--	--	--	--
YELLOW PERCH	--	--	--	--	--	--	--	--	2.0	0.4	--	--	--	--	--	--
LOGPERCH	--	--	--	--	2.0	1.0	6.0	0.6	16.0	3.4	4.0	1.2	8.0	1.3	8.0	1.6
WALLEYE	--	--	--	--	--	--	--	--	2.0	0.4	2.0	0.6	12.0	2.0	2.0	0.4
FRESHWATER DRUM	--	--	6.0	3.6	--	--	--	--	2.0	0.4	4.0	1.2	6.0	1.0	--	--
TOTAL FISH	280.0	100.0	168.0	100.0	194.0	100.0	996.0	100.0	464.0	100.0	332.0	100.0	612.0	100.0	492.0	100.0

GEAR: ELECTRO
and LOCATION: 506

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
LONGNOSE GAR	--	--	--	--	6.5	3.5	--	--	--	--	--	--	--	--	--	--
GIZZARD SHAD	--	--	--	--	25.8	14.0	6.5	4.5	19.4	11.8	--	--	--	--	9.7	8.1
CENTRAL STONEROLLER	--	--	--	--	9.7	5.3	--	--	--	--	--	--	3.2	1.4	--	--
GOLDEN SHINER	--	--	3.2	5.6	--	--	--	--	--	--	--	--	--	--	--	--
PALLID SHINER	6.5	2.4	3.2	5.6	--	--	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	--	--	--	--	3.2	1.8	9.7	6.8	--	--	3.2	5.3	6.5	2.8	--	--
GHOST SHINER	3.2	1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
STRIPED SHINER	3.2	1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTTAIL SHINER	--	--	--	--	--	--	--	--	--	--	3.2	5.3	--	--	--	--
RED SHINER	--	--	--	--	3.2	1.8	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	22.6	8.3	9.7	16.7	29.0	15.8	71.0	50.0	58.1	35.3	29.0	47.4	61.3	26.4	9.7	8.1
REDFIN SHINER	3.2	1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--	9.7	4.2	--	--
BLUNTNOSE MINNOW	9.7	3.6	--	--	3.2	1.8	19.4	13.6	9.7	5.9	--	--	16.1	6.9	--	--
BULLHEAD MINNOW	106.5	39.3	--	--	22.6	12.3	3.2	2.3	12.9	7.8	3.2	5.3	29.0	12.5	--	--
RIVER CARPSUCKER	3.2	1.2	--	--	--	--	--	--	--	--	3.2	5.3	--	--	--	--
SMALLMOUTH BUFFALO	--	--	--	--	6.5	3.5	3.2	2.3	3.2	2.0	9.7	15.8	6.5	2.8	--	--
BIGMOUTH BUFFALO	--	--	--	--	--	--	--	--	3.2	2.0	--	--	--	--	--	--
SHORTHEAD REDHORSE	--	--	--	--	--	--	--	--	--	--	3.2	5.3	--	--	--	--
CHANNEL CATFISH	3.2	1.2	--	--	6.5	3.5	--	--	3.2	2.0	--	--	--	--	--	--
FLATHEAD CATFISH	--	--	--	--	3.2	1.8	--	--	3.2	2.0	3.2	5.3	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.2	2.7
BROOK SILVERSIDE	--	--	--	--	--	--	--	--	3.2	2.0	--	--	--	--	--	--
ROCK BASS	--	--	--	--	3.2	1.8	--	--	--	--	--	--	3.2	1.4	--	--
GREEN SUNFISH	6.5	2.4	9.7	16.7	22.6	12.3	9.7	6.8	12.9	7.8	--	--	12.9	5.6	19.4	16.2
BLUEGILL	45.2	16.7	12.9	22.2	9.7	5.3	3.2	2.3	6.5	3.9	--	--	25.8	11.1	32.3	27.0
NORTHERN SUNFISH	--	--	9.7	16.7	6.5	3.5	9.7	6.8	12.9	7.8	--	--	6.5	2.8	12.9	10.8
Lepomis HYBRID	3.2	1.2	--	--	6.5	3.5	3.2	2.3	--	--	--	--	--	--	--	--
SMALLMOUTH BASS	12.9	4.8	--	--	3.2	1.8	--	--	3.2	2.0	--	--	32.3	13.9	6.5	5.4
LARGEMOUTH BASS	12.9	4.8	3.2	5.6	12.9	7.0	3.2	2.3	12.9	7.8	--	--	19.4	8.3	25.8	21.6
FRESHWATER DRUM	29.0	10.7	6.5	11.1	--	--	--	--	--	--	3.2	5.3	--	--	--	--
TOTAL FISH	271.0	100.0	58.1	100.0	183.9	100.0	141.9	100.0	164.5	100.0	61.3	100.0	232.3	100.0	119.4	100.0

GEAR: ELECTRO
and LOCATION: 507A

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
LONGNOSE GAR	--	--	--	--	2.0	0.4	--	--	--	--	--	--	--	--	--	--
GIZZARD SHAD	--	--	4.0	28.6	358.0	66.1	226.0	39.0	112.0	41.8	38.0	28.8	104.0	28.9	186.0	44.5
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.6	--	--
CENTRAL STONEROLLER	--	--	--	--	2.0	0.4	--	--	--	--	--	--	--	--	--	--
GOLDEN SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.5
PALLID SHINER	--	--	--	--	--	--	4.0	0.7	--	--	--	--	--	--	--	--
EMERALD SHINER	2.0	11.1	--	--	--	--	--	--	--	--	2.0	1.5	6.0	1.7	20.0	4.8
STRIPED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.6	--	--

SPOTTAIL SHINER	--	--	--	--	8.0	1.5	84.0	14.5	58.0	21.6	10.0	7.6	38.0	10.6	32.0	7.7
SPOTFIN SHINER	--	--	2.0	14.3	8.0	1.5	16.0	2.8	--	--	--	--	4.0	1.1	4.0	1.0
SAND SHINER	--	--	--	--	--	--	--	--	2.0	0.7	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.6	--	--
BLUNTNOSE MINNOW	--	--	--	--	20.0	3.7	48.0	8.3	14.0	5.2	8.0	6.1	16.0	4.4	26.0	6.2
BULLHEAD MINNOW	--	--	--	--	8.0	1.5	2.0	0.3	--	--	2.0	1.5	6.0	1.7	4.0	1.0
QUILLBACK	2.0	11.1	--	--	2.0	0.4	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	2.0	11.1	--	--	--	--	--	--	2.0	0.7	--	--	--	--	--	--
SILVER REDHORSE	--	--	--	--	10.0	1.8	12.0	2.1	4.0	1.5	6.0	4.5	10.0	2.8	--	--
GOLDEN REDHORSE	--	--	--	--	--	--	--	--	--	--	12.0	9.1	4.0	1.1	2.0	0.5
SHORTHEAD REDHORSE	--	--	--	--	2.0	0.4	40.0	6.9	10.0	3.7	4.0	3.0	10.0	2.8	20.0	4.8
Moxostoma sp.	--	--	--	--	20.0	3.7	32.0	5.5	2.0	0.7	--	--	--	--	--	--
YELLOW BULLHEAD	--	--	--	--	--	--	--	--	--	--	2.0	1.5	--	--	--	--
CHANNEL CATFISH	--	--	--	--	2.0	0.4	--	--	--	--	--	--	--	--	--	--
BANDED KILLIFISH	--	--	--	--	--	--	--	--	--	--	--	--	6.0	1.7	2.0	0.5
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	2.0	0.7	2.0	1.5	2.0	0.6	--	--
BROOK SILVERSIDE	--	--	--	--	2.0	0.4	2.0	0.3	4.0	1.5	2.0	1.5	8.0	2.2	28.0	6.7
ROCK BASS	--	--	--	--	--	--	4.0	0.7	2.0	0.7	2.0	1.5	2.0	0.6	--	--
GREEN SUNFISH	--	--	--	--	8.0	1.5	16.0	2.8	6.0	2.2	--	--	8.0	2.2	14.0	3.3
PUMPKINSEED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.5
BLUEGILL	4.0	22.2	4.0	28.6	10.0	1.8	6.0	1.0	--	--	10.0	7.6	28.0	7.8	10.0	2.4
NORTHERN SUNFISH	2.0	11.1	2.0	14.3	28.0	5.2	14.0	2.4	2.0	0.7	--	--	6.0	1.7	6.0	1.4
Lepomis HYBRID	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.6	--	--
Lepomis sp.	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.6	--	--
SMALLMOUTH BASS	--	--	2.0	14.3	--	--	--	--	--	--	--	--	--	--	--	--
LARGEMOUTH BASS	--	--	--	--	24.0	4.4	46.0	7.9	30.0	11.2	26.0	19.7	68.0	18.9	52.0	12.4
JOHNNY DARTER	--	--	--	--	2.0	0.4	2.0	0.3	--	--	--	--	2.0	0.6	2.0	0.5
YELLOW PERCH	--	--	--	--	--	--	2.0	0.3	--	--	--	--	--	--	2.0	0.5
LOGPERCH	--	--	--	--	24.0	4.4	24.0	4.1	16.0	6.0	4.0	3.0	20.0	5.6	4.0	1.0
WALLEYE	--	--	--	--	--	--	--	--	--	--	--	--	2.0	0.6	--	--
FRESHWATER DRUM	6.0	33.3	--	--	2.0	0.4	--	--	2.0	0.7	2.0	1.5	--	--	--	--
TOTAL FISH	18.0	100.0	14.0	100.0	542.0	100.0	580.0	100.0	268.0	100.0	132.0	100.0	360.0	100.0	418.0	100.0

GEAR: ELECTRO
and LOCATION: 510

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
LONGNOSE GAR	--	--	--	--	10.0	5.3	2.0	1.0	2.0	1.5	--	--	--	--	--	--
GIZZARD SHAD	--	--	--	--	--	--	2.0	1.0	2.0	1.5	--	--	24.0	15.6	14.0	17.1
GRASS PICKEREL	--	--	--	--	2.0	1.1	--	--	2.0	1.5	--	--	--	--	--	--
GOLDEN SHINER	--	--	--	--	2.0	1.1	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	--	--	--	--	--	--	--	--	4.0	2.9	2.0	1.8	--	--	--	--
SPOTTAIL SHINER	--	--	--	--	56.0	29.8	34.0	17.3	10.0	7.4	--	--	--	--	--	--
SPOTFIN SHINER	2.0	3.2	2.0	2.0	2.0	1.1	4.0	2.0	2.0	1.5	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	4.0	2.1	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	--	--	10.0	10.0	18.0	9.6	56.0	28.6	16.0	11.8	6.0	5.4	4.0	2.6	6.0	7.3
BULLHEAD MINNOW	2.0	3.2	--	--	--	--	--	--	--	--	--	--	2.0	1.3	--	--
SMALLMOUTH BUFFALO	--	--	2.0	2.0	--	--	--	--	2.0	1.5	--	--	2.0	1.3	--	--
BIGMOUTH BUFFALO	--	--	--	--	--	--	2.0	1.0	--	--	--	--	--	--	--	--
SILVER REDHORSE	2.0	3.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	2.0	3.2	2.0	2.0	--	--	--	--	2.0	1.5	--	--	2.0	1.3	--	--
SHORTHEAD REDHORSE	4.0	6.5	--	--	--	--	--	--	2.0	1.5	--	--	--	--	--	--
Moxostoma sp.	--	--	--	--	2.0	1.1	--	--	--	--	--	--	--	--	--	--
YELLOW BULLHEAD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0	2.4
CHANNEL CATFISH	2.0	3.2	4.0	4.0	--	--	--	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	12.0	6.1	2.0	1.5	2.0	1.8	--	--	--	--
BROOK SILVERSIDE	--	--	--	--	--	--	--	--	--	--	--	--	2.0	1.3	2.0	2.4
ROCK BASS	--	--	--	--	--	--	2.0	1.0	--	--	--	--	4.0	2.6	--	--
GREEN SUNFISH	--	--	--	--	6.0	3.2	--	--	2.0	1.5	2.0	1.8	6.0	3.9	2.0	2.4
PUMPKINSEED	--	--	2.0	2.0	2.0	1.1	--	--	--	--	--	--	2.0	1.3	4.0	4.9
BLUEGILL	16.0	25.8	22.0	22.0	10.0	5.3	24.0	12.2	26.0	19.1	28.0	25.0	36.0	23.4	32.0	39.0
NORTHERN SUNFISH	14.0	22.6	38.0	38.0	36.0	19.1	16.0	8.2	20.0	14.7	30.0	26.8	8.0	5.2	6.0	7.3
Lepomis sp.	--	--	--	--	--	--	--	--	--	--	--	--	2.0	1.3	--	--
SMALLMOUTH BASS	16.0	25.8	14.0	14.0	4.0	2.1	8.0	4.1	--	--	2.0	1.8	2.0	1.3	2.0	2.4
LARGEMOUTH BASS	2.0	3.2	2.0	2.0	32.0	17.0	28.0	14.3	42.0	30.9	36.0	32.1	56.0	36.4	12.0	14.6
BLACK CRAPPIE	--	--	--	--	--	--	--	--	--	--	2.0	1.8	--	--	--	--
LOGPERCH	--	--	--	--	2.0	1.1	2.0	1.0	--	--	--	--	2.0	1.3	--	--
FRESHWATER DRUM	--	--	2.0	2.0	--	--	4.0	2.0	--	--	2.0	1.8	--	--	--	--
TOTAL FISH	62.0	100.0	100.0	100.0	188.0	100.0	196.0	100.0	136.0	100.0	112.0	100.0	154.0	100.0	82.0	100.0

2014 DRESDEN STATION FISH STUDY
CPE AND COMPOSITION SUMMARIES FOR EACH TRIP (CPE: ELECTRO=No./Km)

GEAR: ELECTRO
and LOCATION: 512

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
LONGNOSE GAR	2.0	2.5	--	--	--	--	2.0	1.7	2.0	1.6	2.0	2.7	--	--	--	--
SKIPJACK HERRING	--	--	--	--	--	--	--	--	--	--	--	--	2.0	2.2	--	--
GIZZARD SHAD	--	--	--	--	--	--	12.0	10.3	2.0	1.6	--	--	14.0	15.2	4.0	5.1
PALLID SHINER	--	--	10.0	7.2	--	--	--	--	--	--	--	--	4.0	4.3	--	--
EMERALD SHINER	10.0	12.5	4.0	2.9	4.0	3.2	14.0	12.1	32.0	25.0	20.0	27.0	14.0	15.2	26.0	33.3
GHOST SHINER	--	--	8.0	5.8	--	--	2.0	1.7	--	--	--	--	--	--	--	--
SPOTTAIL SHINER	--	--	--	--	6.0	4.8	--	--	4.0	3.1	--	--	6.0	6.5	4.0	5.1
ROSYFACE SHINER	--	--	--	--	--	--	2.0	1.7	6.0	4.7	--	--	2.0	2.2	--	--
SPOTFIN SHINER	8.0	10.0	18.0	13.0	44.0	34.9	16.0	13.8	8.0	6.3	6.0	8.1	2.0	2.2	2.0	2.6
SAND SHINER	--	--	--	--	--	--	--	--	4.0	3.1	--	--	4.0	4.3	--	--
REDFIN SHINER	--	--	--	--	2.0	1.6	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	2.0	2.5	44.0	31.9	24.0	19.0	2.0	1.7	20.0	15.6	4.0	5.4	4.0	4.3	--	--
BLUNTNOSE MINNOW	2.0	2.5	2.0	1.4	2.0	1.6	4.0	3.4	--	--	6.0	8.1	8.0	8.7	6.0	7.7
BULLHEAD MINNOW	6.0	7.5	6.0	4.3	2.0	1.6	--	--	8.0	6.3	2.0	2.7	4.0	4.3	6.0	7.7
RIVER CARPSUCKER	--	--	--	--	--	--	--	--	--	--	--	--	2.0	2.2	--	--
QUILLBACK	--	--	2.0	1.4	--	--	2.0	1.7	--	--	--	--	--	--	--	--
SMALLMOUTH BUFFALO	--	--	--	--	2.0	1.6	--	--	--	--	--	--	4.0	4.3	--	--
SILVER REDHORSE	--	--	--	--	--	--	8.0	6.9	2.0	1.6	2.0	2.7	--	--	--	--
RIVER REDHORSE	--	--	--	--	--	--	--	--	2.0	1.6	--	--	--	--	--	--
GOLDEN REDHORSE	2.0	2.5	6.0	4.3	--	--	--	--	4.0	3.1	2.0	2.7	--	--	2.0	2.6
SHORTHEAD REDHORSE	--	--	4.0	2.9	2.0	1.6	--	--	4.0	3.1	2.0	2.7	--	--	--	--
CHANNEL CATFISH	6.0	7.5	4.0	2.9	12.0	9.5	--	--	4.0	3.1	2.0	2.7	--	--	4.0	5.1
FLATHEAD CATFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0	2.6
BROOK SILVERSIDE	--	--	--	--	--	--	--	--	--	--	--	--	12.0	13.0	4.0	5.1
WHITE BASS	18.0	22.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GREEN SUNFISH	--	--	--	--	2.0	1.6	4.0	3.4	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	2.0	2.5	--	--	8.0	6.3	6.0	5.2	--	--	6.0	8.1	--	--	--	--
BLUEGILL	16.0	20.0	6.0	4.3	4.0	3.2	2.0	1.7	4.0	3.1	2.0	2.7	6.0	6.5	6.0	7.7
NORTHERN SUNFISH	--	--	4.0	2.9	2.0	1.6	4.0	3.4	2.0	1.6	2.0	2.7	--	--	--	--
Lepomis HYBRID	--	--	--	--	--	--	2.0	1.7	2.0	1.6	--	--	--	--	--	--
SMALLMOUTH BASS	6.0	7.5	14.0	10.1	6.0	4.8	6.0	5.2	8.0	6.3	8.0	10.8	--	--	8.0	10.3
LARGEMOUTH BASS	--	--	2.0	1.4	--	--	--	--	--	--	6.0	8.1	--	--	4.0	5.1
JOHNNY DARTER	--	--	--	--	--	--	2.0	1.7	--	--	--	--	--	--	--	--
LOGPERCH	--	--	4.0	2.9	2.0	1.6	6.0	5.2	--	--	--	--	--	--	--	--
WALLEYE	--	--	--	--	--	--	2.0	1.7	--	--	--	--	2.0	2.2	--	--
FRESHWATER DRUM	--	--	--	--	2.0	1.6	18.0	15.5	10.0	7.8	2.0	2.7	2.0	2.2	--	--
TOTAL FISH	80.0	100.0	138.0	100.0	126.0	100.0	116.0	100.0	128.0	100.0	74.0	100.0	92.0	100.0	78.0	100.0

GEAR: ELECTRO
and LOCATION: 513

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
LONGNOSE GAR	--	--	2.0	1.6	--	--	--	--	--	--	--	--	4.0	3.8	--	--
GIZZARD SHAD	--	--	--	--	2.0	0.5	--	--	--	--	88.0	63.8	2.0	1.9	4.0	3.9
EMERALD SHINER	42.0	38.9	46.0	36.5	24.0	5.9	14.0	11.7	26.0	25.5	8.0	5.8	18.0	17.0	10.0	9.8
SPOTTAIL SHINER	--	--	--	--	38.0	9.3	12.0	10.0	2.0	2.0	--	--	10.0	9.4	4.0	3.9
RED SHINER	--	--	--	--	2.0	0.5	--	--	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	2.0	1.7	--	--	--	--	--	--	--	--
SPOTFIN SHINER	--	--	14.0	11.1	112.0	27.5	22.0	18.3	18.0	17.6	6.0	4.3	4.0	3.8	6.0	5.9
SAND SHINER	--	--	6.0	4.8	28.0	6.9	6.0	5.0	2.0	2.0	--	--	--	--	2.0	2.0
MIMIC SHINER	--	--	--	--	60.0	14.7	2.0	1.7	--	--	--	--	2.0	1.9	--	--
BLUNTNOSE MINNOW	8.0	7.4	4.0	3.2	58.0	14.2	6.0	5.0	12.0	11.8	--	--	8.0	7.5	16.0	15.7
BULLHEAD MINNOW	20.0	18.5	2.0	1.6	18.0	4.4	2.0	1.7	--	--	--	--	10.0	9.4	6.0	5.9
RIVER CARPSUCKER	--	--	--	--	--	--	--	--	2.0	2.0	2.0	1.4	4.0	3.8	--	--
QUILLBACK	--	--	--	--	--	--	--	--	2.0	2.0	4.0	2.9	--	--	--	--
HIGHFIN CARPSUCKER	--	--	--	--	--	--	--	--	--	--	8.0	5.8	--	--	--	--
SMALLMOUTH BUFFALO	4.0	3.7	4.0	3.2	--	--	4.0	3.3	--	--	--	--	10.0	9.4	4.0	3.9
SILVER REDHORSE	--	--	--	--	2.0	0.5	2.0	1.7	4.0	3.9	--	--	--	--	--	--
GOLDEN REDHORSE	2.0	1.9	6.0	4.8	2.0	0.5	4.0	3.3	2.0	2.0	4.0	2.9	--	--	6.0	5.9
SHORTHEAD REDHORSE	--	--	4.0	3.2	--	--	2.0	1.7	--	--	--	--	--	--	2.0	2.0
Moxostoma sp.	--	--	--	--	4.0	1.0	--	--	--	--	--	--	--	--	--	--
CHANNEL CATFISH	8.0	7.4	2.0	1.6	--	--	--	--	--	--	2.0	1.4	--	--	2.0	2.0
FLATHEAD CATFISH	--	--	--	--	2.0	0.5	--	--	--	--	--	--	--	--	--	--
BROOK SILVERSIDE	--	--	--	--	--	--	--	--	6.0	5.9	--	--	20.0	18.9	--	--

WHITE BASS	2.0	1.9	2.0	1.6	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	2.0	1.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GREEN SUNFISH	--	--	--	--	22.0	5.4	2.0	1.7	--	--	--	--	--	--	4.0	3.9
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.0	3.9
BLUEGILL	6.0	5.6	4.0	3.2	--	--	4.0	3.3	6.0	5.9	--	--	4.0	3.8	4.0	3.9
NORTHERN SUNFISH	4.0	3.7	10.0	7.9	10.0	2.5	16.0	13.3	6.0	5.9	4.0	2.9	--	--	6.0	5.9
SMALLMOUTH BASS	8.0	7.4	14.0	11.1	6.0	1.5	12.0	10.0	12.0	11.8	4.0	2.9	6.0	5.7	6.0	5.9
LARGEMOUTH BASS	--	--	--	--	2.0	0.5	--	--	--	--	--	--	4.0	3.8	12.0	11.8
WESTERN SAND DARTER	--	--	--	--	--	--	2.0	1.7	--	--	--	--	--	--	--	--
JOHNNY DARTER	--	--	--	--	6.0	1.5	--	--	--	--	--	--	--	--	--	--
BANDED DARTER	--	--	--	--	2.0	0.5	--	--	--	--	--	--	--	--	--	--
LOGPERCH	--	--	4.0	3.2	6.0	1.5	4.0	3.3	2.0	2.0	--	--	--	--	2.0	2.0
FRESHWATER DRUM	2.0	1.9	2.0	1.6	2.0	0.5	2.0	1.7	--	--	8.0	5.8	--	--	2.0	2.0
TOTAL FISH	108.0	100.0	126.0	100.0	408.0	100.0	120.0	100.0	102.0	100.0	138.0	100.0	106.0	100.0	102.0	100.0

GEAR: ELECTRO
and LOCATION: 514

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
LONGNOSE GAR	--	--	--	--	2.0	0.9	--	--	2.0	1.6	--	--	--	--	--	--
GIZZARD SHAD	--	--	--	--	--	--	--	--	--	--	4.0	10.5	4.0	2.9	6.0	6.7
PALLID SHINER	2.0	1.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	58.0	37.7	--	--	30.0	13.6	20.0	12.3	18.0	14.1	4.0	10.5	18.0	13.2	6.0	6.7
SPOTTAIL SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.0	4.4
RED SHINER	--	--	--	--	2.0	0.9	2.0	1.2	--	--	--	--	--	--	--	--
ROSYFACE SHINER	--	--	--	--	--	--	--	--	2.0	1.6	2.0	5.3	--	--	--	--
SPOTFIN SHINER	8.0	5.2	28.0	20.0	94.0	42.7	54.0	33.3	22.0	17.2	4.0	10.5	12.0	8.8	14.0	15.6
SAND SHINER	--	--	--	--	4.0	1.8	--	--	4.0	3.1	--	--	--	--	--	--
MIMIC SHINER	--	--	2.0	1.4	12.0	5.5	8.0	4.9	4.0	3.1	--	--	2.0	1.5	--	--
BLUNTNOSE MINNOW	--	--	10.0	7.1	18.0	8.2	18.0	11.1	24.0	18.8	2.0	5.3	2.0	1.5	4.0	4.4
BULLHEAD MINNOW	14.0	9.1	--	--	--	--	2.0	1.2	--	--	--	--	6.0	4.4	6.0	6.7
RIVER CARPSUCKER	--	--	2.0	1.4	4.0	1.8	--	--	--	--	--	--	--	--	--	--
QUILLBACK	--	--	--	--	--	--	--	--	2.0	1.6	--	--	--	--	--	--
SMALLMOUTH BUFFALO	6.0	3.9	--	--	4.0	1.8	--	--	2.0	1.6	--	--	8.0	5.9	2.0	2.2
GOLDEN REDHORSE	--	--	12.0	8.6	8.0	3.6	--	--	4.0	3.1	12.0	31.6	2.0	1.5	--	--
SHORTHEAD REDHORSE	--	--	2.0	1.4	--	--	--	--	--	--	--	--	--	--	4.0	4.4
CHANNEL CATFISH	16.0	10.4	4.0	2.9	8.0	3.6	2.0	1.2	--	--	4.0	10.5	10.0	7.4	6.0	6.7
FLATHEAD CATFISH	2.0	1.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	2.0	1.3	--	--	--	--	--	--	--	--	--	--	--	--	2.0	2.2
BROOK SILVERSIDE	--	--	--	--	--	--	4.0	2.5	--	--	--	--	32.0	23.5	--	--
WHITE BASS	14.0	9.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ROCK BASS	--	--	--	--	--	--	--	--	2.0	1.6	--	--	2.0	1.5	2.0	2.2
GREEN SUNFISH	--	--	4.0	2.9	2.0	0.9	12.0	7.4	6.0	4.7	--	--	4.0	2.9	6.0	6.7
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	--	--	2.0	1.6	--	--	--	--	2.0	2.2
BLUEGILL	16.0	10.4	28.0	20.0	8.0	3.6	4.0	2.5	12.0	9.4	4.0	10.5	8.0	5.9	6.0	6.7
NORTHERN SUNFISH	--	--	2.0	1.4	2.0	0.9	2.0	1.2	--	--	--	--	2.0	1.5	2.0	2.2
Lepomis HYBRID	--	--	--	--	--	--	2.0	1.2	--	--	--	--	--	--	2.0	2.2
SMALLMOUTH BASS	8.0	5.2	44.0	31.4	12.0	5.5	20.0	12.3	18.0	14.1	2.0	5.3	14.0	10.3	6.0	6.7
LARGEMOUTH BASS	--	--	2.0	1.4	2.0	0.9	4.0	2.5	--	--	--	--	2.0	1.5	6.0	6.7
BANDED DARTER	--	--	--	--	2.0	0.9	--	--	--	--	--	--	--	--	--	--
LOGPERCH	4.0	2.6	--	--	4.0	1.8	6.0	3.7	--	--	--	--	--	--	--	--
WALLEYE	--	--	--	--	--	--	--	--	--	--	--	--	2.0	1.5	--	--
FRESHWATER DRUM	4.0	2.6	--	--	2.0	0.9	2.0	1.2	4.0	3.1	--	--	6.0	4.4	4.0	4.4
TOTAL FISH	154.0	100.0	140.0	100.0	220.0	100.0	162.0	100.0	128.0	100.0	38.0	100.0	136.0	100.0	90.0	100.0

GEAR: ELECTRO
and LOCATION: 515

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
LONGNOSE GAR	--	--	--	--	2.0	0.8	--	--	--	--	--	--	--	--	--	--
SHORTNOSE GAR	--	--	--	--	--	--	2.0	0.4	--	--	--	--	--	--	--	--
SKIPJACK HERRING	--	--	2.0	0.9	--	--	--	--	--	--	--	--	--	--	--	--
GIZZARD SHAD	--	--	--	--	2.0	0.8	--	--	4.0	2.1	--	--	2.0	1.0	--	--
PALLID SHINER	--	--	2.0	0.9	--	--	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	86.0	69.4	58.0	24.8	8.0	3.0	160.0	35.1	104.0	53.6	124.0	61.4	56.0	26.9	12.0	16.7
SPOTTAIL SHINER	--	--	--	--	6.0	2.3	8.0	1.8	--	--	2.0	1.0	--	--	2.0	2.8
ROSYFACE SHINER	--	--	--	--	--	--	4.0	0.9	--	--	12.0	5.9	2.0	1.0	--	--
SPOTFIN SHINER	16.0	12.9	28.0	12.0	66.0	24.8	74.0	16.2	28.0	14.4	6.0	3.0	18.0	8.7	--	--
SAND SHINER	--	--	4.0	1.7	4.0	1.5	4.0	0.9	--	--	--	--	2.0	1.0	--	--
MIMIC SHINER	--	--	2.0	0.9	22.0	8.3	14.0	3.1	2.0	1.0	14.0	6.9	8.0	3.8	2.0	2.8
Notropis sp.	--	--	--	--	--	--	--	--	--	--	--	--	2.0	1.0	--	--

BLUNTNOSE MINNOW	2.0	1.6	20.0	8.5	48.0	18.0	48.0	10.5	6.0	3.1	4.0	2.0	8.0	3.8	--	--
FATHEAD MINNOW	--	--	--	--	2.0	0.8	--	--	--	--	--	--	--	--	--	--
BULLHEAD MINNOW	--	--	2.0	0.9	4.0	1.5	4.0	0.9	--	--	--	--	6.0	2.9	10.0	13.9
RIVER CARPSUCKER	--	--	--	--	--	--	--	--	--	--	--	--	2.0	1.0	--	--
SMALLMOUTH BUFFALO	--	--	--	--	6.0	2.3	--	--	2.0	1.0	--	--	4.0	1.9	--	--
SILVER REDHORSE	--	--	--	--	6.0	2.3	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	--	--	18.0	7.7	4.0	1.5	2.0	0.4	--	--	4.0	2.0	--	--	--	--
SHORTHEAD REDHORSE	--	--	--	--	2.0	0.8	--	--	--	--	--	--	2.0	1.0	--	--
Moxostoma sp.	--	--	--	--	4.0	1.5	--	--	--	--	--	--	--	--	--	--
CHANNEL CATFISH	2.0	1.6	14.0	6.0	6.0	2.3	2.0	0.4	4.0	2.1	--	--	12.0	5.8	2.0	2.8
FLATHEAD CATFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.0	2.8
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	--	--	2.0	1.0	--	--
BROOK SILVERSIDE	2.0	1.6	2.0	0.9	2.0	0.8	32.0	7.0	--	--	18.0	8.9	26.0	12.5	2.0	2.8
WHITE BASS	4.0	3.2	--	--	--	--	--	--	--	--	--	--	2.0	1.0	--	--
ROCK BASS	--	--	--	--	2.0	0.8	2.0	0.4	--	--	--	--	--	--	--	--
GREEN SUNFISH	--	--	2.0	0.9	20.0	7.5	14.0	3.1	--	--	4.0	2.0	--	--	4.0	5.6
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	--	--	--	--	--	--	6.0	2.9	--	--
BLUEGILL	2.0	1.6	22.0	9.4	16.0	6.0	16.0	3.5	2.0	1.0	2.0	1.0	14.0	6.7	8.0	11.1
NORTHERN SUNFISH	2.0	1.6	34.0	14.5	12.0	4.5	36.0	7.9	12.0	6.2	--	--	8.0	3.8	6.0	8.3
Lepomis HYBRID	--	--	--	--	2.0	0.8	--	--	2.0	1.0	2.0	1.0	--	--	2.0	2.8
SMALLMOUTH BASS	8.0	6.5	14.0	6.0	10.0	3.8	10.0	2.2	10.0	5.2	2.0	1.0	10.0	4.8	12.0	16.7
LARGEMOUTH BASS	--	--	2.0	0.9	--	--	4.0	0.9	12.0	6.2	6.0	3.0	4.0	1.9	4.0	5.6
BLACK CRAPPIE	--	--	--	--	--	--	2.0	0.4	--	--	--	--	--	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	4.0	0.9	--	--	--	--	--	--	--	--
BANDED DARTER	--	--	--	--	--	--	--	--	2.0	1.0	--	--	--	--	--	--
LOGPERCH	--	--	6.0	2.6	8.0	3.0	14.0	3.1	4.0	2.1	2.0	1.0	--	--	--	--
WALLEYE	--	--	--	--	--	--	--	--	--	--	--	--	2.0	1.0	--	--
FRESHWATER DRUM	--	--	2.0	0.9	2.0	0.8	--	--	--	--	--	--	10.0	4.8	4.0	5.6
TOTAL FISH	124.0	100.0	234.0	100.0	266.0	100.0	456.0	100.0	194.0	100.0	202.0	100.0	208.0	100.0	72.0	100.0

2014 DRESDEN STATION FISH STUDY
CPE AND COMPOSITION SUMMARIES FOR EACH TRIP (SEINE=No./Haul)

GEAR: SEINE
and LOCATION: 501

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
GIZZARD SHAD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	17	32.7
SPOTTAIL SHINER	--	--	4	13.8	--	--	--	--	--	--	--	--	--	--	--	--
SPOTFIN SHINER	1	3.4	--	--	--	--	1	20.0	--	--	--	--	--	--	--	--
REDFIN SHINER	1	3.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	6	20.7	12	41.4	1	25.0	--	--	18	58.1	--	--	--	--	18	34.6
BULLHEAD MINNOW	10	34.5	5	17.2	--	--	--	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	2	6.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	1	3.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SHORTHEAD REDHORSE	3	10.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CHANNEL CATFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1.9
TADPOLE MADTOM	--	--	--	--	--	--	1	20.0	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	3	10.3	--	--	--	--	--	--	--	--	--	--	--	--	7	13.5
ROCK BASS	--	--	1	3.4	--	--	--	--	--	--	--	--	--	--	--	--
GREEN SUNFISH	--	--	--	--	--	--	--	--	--	--	1	14.3	--	--	--	--
PUMPKINSEED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	3.8
BLUEGILL	2	6.9	5	17.2	1	25.0	--	--	5	16.1	6	85.7	3	75.0	5	9.6
NORTHERN SUNFISH	--	--	1	3.4	--	--	--	--	4	12.9	--	--	1	25.0	1	1.9
Lepomis HYBRID	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1.9
LARGEMOUTH BASS	--	--	--	--	2	50.0	3	60.0	4	12.9	--	--	--	--	--	--
LOGPERCH	--	--	1	3.4	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL FISH	29	100.0	29	100.0	4	100.0	5	100.0	31	100.0	7	100.0	4	100.0	52	100.0

GEAR: SEINE
and LOCATION: 502

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
GIZZARD SHAD	--	--	--	--	1	10.0	4	44.4	3	21.4	--	--	1	7.7	3	15.8
PALLID SHINER	1	16.7	--	--	1	10.0	--	--	--	--	--	--	2	15.4	2	10.5
EMERALD SHINER	1	16.7	--	--	--	--	--	--	--	--	1	50.0	1	7.7	--	--
SPOTTAIL SHINER	--	--	--	--	--	--	--	--	2	14.3	--	--	2	15.4	2	10.5
SPOTFIN SHINER	1	16.7	6	42.9	3	30.0	5	55.6	--	--	--	--	--	--	1	5.3
MIMIC SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	5.3
BLUNTNOSE MINNOW	1	16.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BULLHEAD MINNOW	--	--	4	28.6	4	40.0	--	--	4	28.6	--	--	4	30.8	6	31.6
SHORTHEAD REDHORSE	--	--	--	--	--	--	--	--	1	7.1	--	--	1	7.7	--	--
Moxostoma sp.	--	--	--	--	1	10.0	--	--	--	--	--	--	--	--	--	--
CATOSTOMINAE sp.	--	--	1	7.1	--	--	--	--	--	--	--	--	--	--	--	--
CHANNEL CATFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	5.3
BROOK SILVERSIDE	2	33.3	1	7.1	--	--	--	--	--	--	1	50.0	--	--	--	--
BLUEGILL	--	--	--	--	--	--	--	--	1	7.1	--	--	1	7.7	--	--
NORTHERN SUNFISH	--	--	1	7.1	--	--	--	--	--	--	--	--	--	--	--	--
Lepomis sp.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	5.3
SMALLMOUTH BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	5.3
LARGEMOUTH BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	5.3
JOHNNY DARTER	--	--	1	7.1	--	--	--	--	1	7.1	--	--	--	--	--	--
LOGPERCH	--	--	--	--	--	--	--	--	2	14.3	--	--	1	7.7	--	--
TOTAL FISH	6	100.0	14	100.0	10	100.0	9	100.0	14	100.0	2	100.0	13	100.0	19	100.0

GEAR: SEINE
and LOCATION: 503

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
GIZZARD SHAD	--	--	--	--	--	--	17	35.4	3	4.7	3	9.1	6	26.1	4	3.6
PALLID SHINER	--	--	--	--	2	1.9	--	--	1	1.6	6	18.2	--	--	1	0.9
EMERALD SHINER	14	3.9	--	--	--	--	--	--	--	--	--	--	2	8.7	16	14.4
GHOST SHINER	2	0.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SPOTTAIL SHINER	--	--	--	--	--	--	--	--	2	3.1	4	12.1	4	17.4	12	10.8
SPOTFIN SHINER	235	64.9	1	3.8	15	14.4	28	58.3	8	12.5	--	--	--	--	2	1.8
SAND SHINER	8	2.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--

MIMIC SHINER	36	9.9	1	3.8	1	1.0	1	2.1	--	--	--	--	1	4.3	17	15.3
BLUNTNOSE MINNOW	36	9.9	12	46.2	50	48.1	1	2.1	4	6.3	1	3.0	--	--	19	17.1
BULLHEAD MINNOW	26	7.2	8	30.8	26	25.0	--	--	44	68.8	11	33.3	1	4.3	8	7.2
SHORTHEAD REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	0.9
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4	3.6
BROOK SILVERSIDE	4	1.1	1	3.8	--	--	--	--	--	--	1	3.0	6	26.1	12	10.8
ROCK BASS	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	2.7
ORANGESPOTTED SUNFISH	--	--	--	--	3	2.9	--	--	1	1.6	--	--	--	--	--	--
BLUEGILL	1	0.3	--	--	--	--	--	--	--	--	2	6.1	1	4.3	3	2.7
Lepomis sp.	--	--	--	--	--	--	--	--	--	--	1	3.0	1	4.3	2	1.8
LARGEMOUTH BASS	--	--	1	3.8	1	1.0	1	2.1	--	--	1	3.0	--	--	1	0.9
WHITE CRAPPIE	--	--	1	3.8	1	1.0	--	--	--	--	--	--	--	--	--	--
BLACK CRAPPIE	--	--	--	--	5	4.8	--	--	1	1.6	2	6.1	1	4.3	3	2.7
JOHNNY DARTER	--	--	--	--	--	--	--	--	--	--	1	3.0	--	--	1	0.9
LOGPERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	1.8
Sander sp.	--	--	1	3.8	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL FISH	362	100.0	26	100.0	104	100.0	48	100.0	64	100.0	33	100.0	23	100.0	111	100.0

GEAR: SEINE
and LOCATION: 507

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
GIZZARD SHAD	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	8.3
PALLID SHINER	1	0.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
EMERALD SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	12.5
SPOTTAIL SHINER	--	--	8	28.6	1	25.0	--	--	--	--	--	--	--	--	7	29.2
SPOTFIN SHINER	114	43.8	--	--	--	--	--	--	1	100.0	--	--	3	15.0	2	8.3
SAND SHINER	8	3.1	--	--	2	50.0	18	64.3	--	--	--	--	--	--	--	--
MIMIC SHINER	4	1.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SUCKERMOUTH MINNOW	--	--	1	3.6	--	--	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	12	4.6	--	--	--	--	--	--	--	--	1	25.0	--	--	--	--
BULLHEAD MINNOW	119	45.8	1	3.6	--	--	--	--	--	--	--	--	1	5.0	--	--
NORTHERN HOG SUCKER	--	--	1	3.6	--	--	--	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	4.2
Moxostoma sp.	2	0.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CATOSTOMINAE sp.	--	--	12	42.9	--	--	--	--	--	--	--	--	--	--	--	--
BANDED KILLIFISH	--	--	--	--	--	--	1	3.6	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	--	--	1	5.0	--	--
BROOK SILVERSIDE	--	--	--	--	--	--	7	25.0	--	--	2	50.0	14	70.0	3	12.5
GREEN SUNFISH	--	--	2	7.1	--	--	--	--	--	--	1	25.0	--	--	--	--
BLUEGILL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	4.2
LARGEMOUTH BASS	--	--	--	--	--	--	1	3.6	--	--	--	--	1	5.0	3	12.5
JOHNNY DARTER	--	--	1	3.6	1	25.0	1	3.6	--	--	--	--	--	--	--	--
LOGPERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	8.3
BLACKSIDE DARTER	--	--	1	3.6	--	--	--	--	--	--	--	--	--	--	--	--
Percina sp.	--	--	1	3.6	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL FISH	260	100.0	28	100.0	4	100.0	28	100.0	1	100.0	4	100.0	20	100.0	24	100.0

GEAR: SEINE
and LOCATION: 509

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
GIZZARD SHAD	--	--	--	--	24	61.5	4	10.0	10	71.4	--	--	1	11.1	11	31.4
GRASS PICKEREL	--	--	--	--	--	--	--	--	--	--	--	--	1	11.1	--	--
STRIPED SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	2.9
SPOTTAIL SHINER	--	--	--	--	--	--	4	10.0	--	--	--	--	1	11.1	1	2.9
SPOTFIN SHINER	4	57.1	5	3.1	--	--	--	--	--	--	--	--	--	--	--	--
REDFIN SHINER	--	--	--	--	--	--	1	2.5	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	2	28.6	20	12.3	--	--	1	2.5	1	7.1	1	33.3	3	33.3	5	14.3
BULLHEAD MINNOW	--	--	15	9.3	--	--	--	--	--	--	--	--	--	--	--	--
WHITE SUCKER	--	--	1	0.6	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN HOG SUCKER	--	--	9	5.6	--	--	--	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	--	--	7	4.3	--	--	--	--	--	--	--	--	--	--	--	--
GOLDEN REDHORSE	--	--	--	--	1	2.6	--	--	--	--	--	--	--	--	--	--
Moxostoma sp.	--	--	77	47.5	--	--	--	--	--	--	--	--	--	--	--	--
CATOSTOMINAE sp.	--	--	1	0.6	--	--	--	--	--	--	--	--	--	--	--	--
CHANNEL CATFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	2.9
BANDED KILLIFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	8.6
BLACKSTRIPE TOPMINNOW	1	14.3	--	--	--	--	2	5.0	--	--	--	--	--	--	--	--
ROCK BASS	--	--	1	0.6	--	--	--	--	--	--	--	--	--	--	--	--

GREEN SUNFISH	--	--	--	--	--	--	--	--	1	7.1	--	--	--	--	--	--
PUMPKINSEED	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	2.9
ORANGESPOTTED SUNFISH	--	--	1	0.6	--	--	--	--	--	--	--	--	--	--	--	--
BLUEGILL	--	--	2	1.2	3	7.7	9	22.5	1	7.1	--	--	3	33.3	8	22.9
NORTHERN SUNFISH	--	--	8	4.9	4	10.3	2	5.0	--	--	--	--	--	--	--	--
LARGEMOUTH BASS	--	--	15	9.3	7	17.9	16	40.0	1	7.1	2	66.7	--	--	4	11.4
YELLOW PERCH	--	--	--	--	--	--	1	2.5	--	--	--	--	--	--	--	--
TOTAL FISH	7	100.0	162	100.0	39	100.0	40	100.0	14	100.0	3	100.0	9	100.0	35	100.0

GEAR: SEINE
and LOCATION: 512

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
PALLID SHINER	--	--	--	--	--	--	1	2.0	--	--	--	--	--	--	--	--
EMERALD SHINER	--	--	1	0.5	--	--	5	10.0	3	23.1	--	--	--	--	--	--
GHOST SHINER	1	7.7	--	--	1	2.4	--	--	--	--	--	--	--	--	--	--
SPOTTAIL SHINER	--	--	13	6.3	17	41.5	13	26.0	4	30.8	10	33.3	--	--	1	11.1
SPOTFIN SHINER	5	38.5	144	70.2	16	39.0	17	34.0	1	7.7	1	3.3	--	--	8	88.9
SAND SHINER	4	30.8	4	2.0	3	7.3	5	10.0	2	15.4	--	--	6	54.5	--	--
MIMIC SHINER	2	15.4	6	2.9	1	2.4	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	--	--	3	1.5	--	--	1	2.0	--	--	11	36.7	1	9.1	--	--
BULLHEAD MINNOW	1	7.7	4	2.0	2	4.9	3	6.0	1	7.7	1	3.3	--	--	--	--
NORTHERN HOG SUCKER	--	--	6	2.9	--	--	--	--	--	--	--	--	--	--	--	--
SILVER REDHORSE	--	--	--	--	--	--	1	2.0	--	--	--	--	--	--	--	--
CATOSTOMINAE sp.	--	--	12	5.9	--	--	--	--	--	--	--	--	--	--	--	--
ICTIOBINAE sp.	--	--	1	0.5	--	--	--	--	--	--	--	--	--	--	--	--
BANDED KILLIFISH	--	--	--	--	--	--	--	--	--	--	--	--	1	9.1	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	--	--	5	16.7	--	--	--	--
BROOK SILVERSIDE	--	--	1	0.5	--	--	1	2.0	--	--	2	6.7	1	9.1	--	--
GREEN SUNFISH	--	--	--	--	--	--	1	2.0	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	--	--	1	0.5	1	2.4	--	--	--	--	--	--	--	--	--	--
BLUEGILL	--	--	--	--	--	--	--	--	--	--	--	--	1	9.1	--	--
SMALLMOUTH BASS	--	--	--	--	--	--	--	--	1	7.7	--	--	1	9.1	--	--
LARGEMOUTH BASS	--	--	6	2.9	--	--	1	2.0	--	--	--	--	--	--	--	--
JOHNNY DARTER	--	--	2	1.0	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	--	--	--	--	--	--	1	2.0	1	7.7	--	--	--	--	--	--
DARTER sp.	--	--	1	0.5	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL FISH	13	100.0	205	100.0	41	100.0	50	100.0	13	100.0	30	100.0	11	100.0	9	100.0

EXHIBIT B (cont.)

2014 DRESDEN STATION FISH STUDY
CPE AND COMPOSITION SUMMARIES FOR EACH TRIP (SEINE=No./Haul)

GEAR: SEINE
and LOCATION: 513

SAMPLING TRIP

SPECIES	22-23 MAY CPE	22-23 MAY %	5-6 JUN CPE	5-6 JUN %	10-11 JUL CPE	10-11 JUL %	24-25 JUL CPE	24-25 JUL %	5-6 AUG CPE	5-6 AUG %	19-20 AUG CPE	19-20 AUG %	11-12 SEP CPE	11-12 SEP %	22-23 SEP CPE	22-23 SEP %
PALLID SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	0.9
EMERALD SHINER	1	0.3	6	2.8	3	8.6	12	21.1	21	28.0	8	19.0	8	53.3	14	12.1
STRIPED SHINER	--	--	--	--	--	--	--	--	2	2.7	--	--	--	--	--	--
SPOTTAIL SHINER	--	--	1	0.5	5	14.3	19	33.3	16	21.3	--	--	1	6.7	46	39.7
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	1	2.4	--	--	--	--
SPOTFIN SHINER	290	92.7	129	59.7	19	54.3	15	26.3	12	16.0	3	7.1	--	--	17	14.7
SAND SHINER	6	1.9	12	5.6	3	8.6	--	--	--	--	13	31.0	--	--	4	3.4
MIMIC SHINER	1	0.3	56	25.9	2	5.7	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	8	2.6	5	2.3	--	--	1	1.8	21	28.0	8	19.0	2	13.3	--	--
BULLHEAD MINNOW	4	1.3	--	--	1	2.9	3	5.3	--	--	--	--	--	--	15	12.9
NORTHERN HOG SUCKER	--	--	1	0.5	--	--	--	--	--	--	--	--	--	--	--	--
Moxostoma sp.	--	--	3	1.4	--	--	--	--	--	--	--	--	--	--	--	--
ICTIOBINAE sp.	1	0.3	1	0.5	--	--	--	--	--	--	--	--	--	--	--	--
CHANNEL CATFISH	--	--	--	--	--	--	1	1.8	--	--	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	--	3	4.0	--	--	--	--	6	5.2
BROOK SILVERSIDE	--	--	--	--	--	--	1	1.8	--	--	8	19.0	4	26.7	10	8.6
GREEN SUNFISH	--	--	--	--	--	--	2	3.5	--	--	--	--	--	--	--	--
BLUEGILL	1	0.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NORTHERN SUNFISH	1	0.3	--	--	1	2.9	--	--	--	--	--	--	--	--	--	--
SMALLMOUTH BASS	--	--	1	0.5	1	2.9	--	--	--	--	1	2.4	--	--	1	0.9
LARGEMOUTH BASS	--	--	--	--	--	--	1	1.8	--	--	--	--	--	--	1	0.9
WESTERN SAND DARTER	--	--	--	--	--	--	1	1.8	--	--	--	--	--	--	--	--
JOHNNY DARTER	--	--	--	--	--	--	1	1.8	--	--	--	--	--	--	--	--
BANDED DARTER	--	--	1	0.5	--	--	--	--	--	--	--	--	--	--	--	--
LOGPERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	0.9
TOTAL FISH	313	100.0	216	100.0	35	100.0	57	100.0	75	100.0	42	100.0	15	100.0	116	100.0

GEAR: SEINE
and LOCATION: 514

SAMPLING TRIP

SPECIES	22-23 MAY CPE	22-23 MAY %	5-6 JUN CPE	5-6 JUN %	10-11 JUL CPE	10-11 JUL %	24-25 JUL CPE	24-25 JUL %	5-6 AUG CPE	5-6 AUG %	19-20 AUG CPE	19-20 AUG %	11-12 SEP CPE	11-12 SEP %	22-23 SEP CPE	22-23 SEP %
GIZZARD SHAD	--	--	--	--	2	1.2	--	--	1	2.0	--	--	--	--	--	--
PALLID SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	1.8
EMERALD SHINER	1	33.3	--	--	4	2.5	--	--	9	17.6	6	8.2	1	25.0	19	11.2
SPOTTAIL SHINER	--	--	--	--	34	20.9	--	--	7	13.7	16	21.9	--	--	39	22.9
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	0.6
SPOTFIN SHINER	2	66.7	101	79.5	81	49.7	5	100.0	12	23.5	15	20.5	--	--	58	34.1
SAND SHINER	--	--	18	14.2	4	2.5	--	--	8	15.7	3	4.1	2	50.0	1	0.6
REDFIN SHINER	--	--	--	--	1	0.6	--	--	--	--	--	--	--	--	--	--
MIMIC SHINER	--	--	--	--	13	8.0	--	--	--	--	--	--	--	--	--	--
BLUNTNOSE MINNOW	--	--	1	0.8	--	--	--	--	--	--	29	39.7	--	--	3	1.8
BULLHEAD MINNOW	--	--	--	--	20	12.3	--	--	1	2.0	--	--	--	--	24	14.1
Carpiodes sp.	--	--	--	--	--	--	--	--	1	2.0	--	--	--	--	--	--
NORTHERN HOG SUCKER	--	--	2	1.6	--	--	--	--	--	--	--	--	--	--	--	--
CATOSTOMINAE sp.	--	--	3	2.4	--	--	--	--	--	--	--	--	--	--	--	--
ICTIOBINAE sp.	--	--	1	0.8	--	--	--	--	--	--	--	--	--	--	--	--
BANDED KILLIFISH	--	--	--	--	--	--	--	--	1	2.0	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	2	1.2	--	--	4	7.8	2	2.7	--	--	--	--
BROOK SILVERSIDE	--	--	--	--	--	--	--	--	7	13.7	2	2.7	1	25.0	8	4.7
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	0.6
BLUEGILL	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3	1.8
NORTHERN SUNFISH	--	--	--	--	1	0.6	--	--	--	--	--	--	--	--	1	0.6
SMALLMOUTH BASS	--	--	--	--	1	0.6	--	--	--	--	--	--	--	--	2	1.2
LARGEMOUTH BASS	--	--	1	0.8	--	--	--	--	--	--	--	--	--	--	3	1.8
LOGPERCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4	2.4
TOTAL FISH	3	100.0	127	100.0	163	100.0	5	100.0	51	100.0	73	100.0	4	100.0	170	100.0

2014 DRESDEN STATION FISH STUDY
CPE AND COMPOSITION SUMMARIES FOR EACH TRIP (SEINE=No./Haul)

GEAR: SEINE
and LOCATION: 515

SAMPLING TRIP

SPECIES	22-23 MAY		5-6 JUN		10-11 JUL		24-25 JUL		5-6 AUG		19-20 AUG		11-12 SEP		22-23 SEP	
	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%	CPE	%
GIZZARD SHAD	--	--	--	--	--	--	--	--	--	--	--	--	1	0.7	--	--
EMERALD SHINER	--	--	1	4.8	--	--	--	--	20	44.4	20	38.5	74	54.0	3	9.4
SPOTTAIL SHINER	--	--	--	--	--	--	--	--	2	4.4	5	9.6	1	0.7	1	3.1
ROSYFACE SHINER	--	--	--	--	--	--	--	--	--	--	--	--	2	1.5	--	--
SPOTFIN SHINER	17	77.3	6	28.6	30	73.2	6	54.5	15	33.3	5	9.6	26	19.0	25	78.1
SAND SHINER	3	13.6	1	4.8	--	--	3	27.3	--	--	5	9.6	--	--	--	--
MIMIC SHINER	--	--	--	--	4	9.8	--	--	1	2.2	--	--	1	0.7	--	--
BLUNTNOSE MINNOW	--	--	12	57.1	4	9.8	1	9.1	4	8.9	9	17.3	2	1.5	3	9.4
BULLHEAD MINNOW	--	--	--	--	1	2.4	--	--	--	--	--	--	1	0.7	--	--
SMALLMOUTH BUFFALO	--	--	--	--	--	--	--	--	1	2.2	--	--	--	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	1	9.1	--	--	--	--	--	--	--	--
BROOK SILVERSIDE	--	--	--	--	--	--	--	--	--	--	1	1.9	26	19.0	--	--
GREEN SUNFISH	1	4.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ORANGESPOTTED SUNFISH	--	--	1	4.8	--	--	--	--	--	--	--	--	--	--	--	--
BLUEGILL	1	4.5	--	--	1	2.4	--	--	--	--	--	--	1	0.7	--	--
NORTHERN SUNFISH	--	--	--	--	1	2.4	--	--	2	4.4	2	3.8	--	--	--	--
Lepomis sp.	--	--	--	--	--	--	--	--	--	--	--	--	1	0.7	--	--
SMALLMOUTH BASS	--	--	--	--	--	--	--	--	--	--	2	3.8	--	--	--	--
LOGPERCH	--	--	--	--	--	--	--	--	--	--	3	5.8	1	0.7	--	--
TOTAL FISH	22	100.0	21	100.0	41	100.0	11	100.0	45	100.0	52	100.0	137	100.0	32	100.0

EXHIBIT C:

RAW DATA LISTING – FISH

EXHIBIT C

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SITE: DRESDEN	GEAR: ELECTRO	DATE: 22MAY14	LOCATION: 501	MESOHABITAT: MAIN CHANNEL BORDER
GOLDEN REDHORSE	220	130	.	.
YELLOW BULLHEAD	176	80	.	.
CHANNEL CATFISH	555	1620	.	.
CHANNEL CATFISH	482	1110	.	.
BLUEGILL	140	55	.	.
BLUEGILL	72	7	.	.
SMALLMOUTH BASS	348	530	.	.
SMALLMOUTH BASS	247	215	.	.
SMALLMOUTH BASS	240	210	.	.
SMALLMOUTH BASS	241	200	.	.
SMALLMOUTH BASS	203	83	.	.
SMALLMOUTH BASS	214	127	.	.
FRESHWATER DRUM	340	550	.	.
FRESHWATER DRUM	410	1000	.	.
FRESHWATER DRUM	417	970	.	.
FRESHWATER DRUM	495	1540	.	.
SITE: DRESDEN	GEAR: ELECTRO	DATE: 22MAY14	LOCATION: 502	MESOHABITAT: .
SPOTFIN SHINER	.	.	8	17
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	6	15
BULLHEAD MINNOW	.	.	6	12
GOLDEN REDHORSE	377	700	.	.
GOLDEN REDHORSE	427	910	.	.
GOLDEN REDHORSE	430	820	.	.
GOLDEN REDHORSE	423	900	.	.
SHORTHEAD REDHORSE	119	18	.	.
SHORTHEAD REDHORSE	118	20	.	.
CHANNEL CATFISH	540	1570	.	.
CHANNEL CATFISH	580	1710	.	.
CHANNEL CATFISH	480	950	.	.
CHANNEL CATFISH	505	1170	.	.
CHANNEL CATFISH	455	970	.	.
BROOK SILVERSIDE	.	.	2	4
GREEN SUNFISH	112	29	.	.
BLUEGILL	127	40	.	.
BLUEGILL	117	31	.	.
BLUEGILL	123	37	.	.
BLUEGILL	77	9	.	.
BLUEGILL	52	2	.	.
NORTHERN SUNFISH	97	20	.	.
Lepomis HYBRID	.	.	1	90
SMALLMOUTH BASS	158	45	.	.
SMALLMOUTH BASS	88	7	.	.
SMALLMOUTH BASS	98	9	.	.
WALLEYE	540	1350	.	.
FRESHWATER DRUM	549	2410	.	.
FRESHWATER DRUM	298	370	.	.
FRESHWATER DRUM	360	540	.	.
FRESHWATER DRUM	296	405	.	.
FRESHWATER DRUM	331	520	.	.
SITE: DRESDEN	GEAR: ELECTRO	DATE: 22MAY14	LOCATION: 503	MESOHABITAT: .
LONGNOSE GAR	766	1060	.	.
LONGNOSE GAR	310	40	.	.
GOLDEN SHINER	.	.	1	4
PALLID SHINER	.	.	8	13
EMERALD SHINER	.	.	4	26
EMERALD SHINER	.	.	1	6
SPOTFIN SHINER	.	.	18	11
SPOTFIN SHINER	.	.	1	1
SPOTFIN SHINER	.	.	1	1
SAND SHINER	.	.	2	1
BLUNTNOSE MINNOW	.	.	20	35
BULLHEAD MINNOW	.	.	4	1
BULLHEAD MINNOW	.	.	25	16
SILVER REDHORSE	471	1330	.	.
CHANNEL CATFISH	440	700	.	.
CHANNEL CATFISH	530	1550	.	.
CHANNEL CATFISH	451	850	.	.
CHANNEL CATFISH	502	1170	.	.
CHANNEL CATFISH	675	2840	.	.
CHANNEL CATFISH	486	1220	.	.
CHANNEL CATFISH	550	1160	.	.
BROOK SILVERSIDE	.	.	11	27

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
ROCK BASS	182	130	.	.
ROCK BASS	51	3	.	.
BLUEGILL	114	30	.	.
BLUEGILL	164	90	.	.
BLUEGILL	127	42	.	.
BLUEGILL	115	36	.	.
BLUEGILL	96	17	.	.
BLUEGILL	112	29	.	.
BLUEGILL	88	13	.	.
BLUEGILL	81	10	.	.
BLUEGILL	106	21	.	.
BLUEGILL	111	26	.	.
BLUEGILL	95	16	.	.
BLUEGILL	81	9	.	.
BLUEGILL	51	2	.	.
BLUEGILL	36	1	.	.
BLUEGILL	55	3	.	.
NORTHERN SUNFISH	87	13	.	.
NORTHERN SUNFISH	80	11	.	.
NORTHERN SUNFISH	81	12	.	.
NORTHERN SUNFISH	69	8	.	.
NORTHERN SUNFISH	68	8	.	.
NORTHERN SUNFISH	71	7	.	.
NORTHERN SUNFISH	89	15	.	.
NORTHERN SUNFISH	80	11	.	.
NORTHERN SUNFISH	82	14	.	.
NORTHERN SUNFISH	81	12	.	.
NORTHERN SUNFISH	52	3	.	.
NORTHERN SUNFISH	36	1	.	.
NORTHERN SUNFISH	42	1	.	.
NORTHERN SUNFISH	42	2	.	.
SMALLMOUTH BASS	113	19	.	.
LARGEMOUTH BASS	217	130	.	.
LARGEMOUTH BASS	198	88	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 22MAY14 LOCATION: 506 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GRASS CARP	1014	20500	.	.
COMMON CARP	531	2190	.	.
COMMON CARP	610	3000	.	.
PALLID SHINER	.	.	1	2
PALLID SHINER	.	.	1	1
GHOST SHINER	.	.	1	1
STRIPED SHINER	.	.	1	6
SPOTFIN SHINER	.	.	7	16
REDFIN SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	3	6
BULLHEAD MINNOW	.	.	33	47
RIVER CARPSUCKER	385	780	.	.
CHANNEL CATFISH	495	1290	.	.
GREEN SUNFISH	129	52	.	.
GREEN SUNFISH	110	33	.	.
BLUEGILL	137	58	.	.
BLUEGILL	136	55	.	.
BLUEGILL	122	33	.	.
BLUEGILL	121	43	.	.
BLUEGILL	130	42	.	.
BLUEGILL	124	42	.	.
BLUEGILL	70	7	.	.
BLUEGILL	57	3	.	.
BLUEGILL	46	2	.	.
BLUEGILL	63	4	.	.
BLUEGILL	59	4	.	.
BLUEGILL	69	7	.	.
BLUEGILL	71	7	.	.
BLUEGILL	49	2	.	.
Lepomis HYBRID	.	.	1	21
SMALLMOUTH BASS	176	54	.	.
SMALLMOUTH BASS	163	50	.	.
SMALLMOUTH BASS	205	98	.	.
SMALLMOUTH BASS	124	24	.	.
LARGEMOUTH BASS	422	1060	.	.
LARGEMOUTH BASS	260	230	.	.
LARGEMOUTH BASS	327	570	.	.
LARGEMOUTH BASS	333	480	.	.
FRESHWATER DRUM	441	1150	.	.
FRESHWATER DRUM	456	1400	.	.
FRESHWATER DRUM	422	1210	.	.
FRESHWATER DRUM	475	1720	.	.
FRESHWATER DRUM	.	.	4	5540

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
FRESHWATER DRUM	546	2260	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 22MAY14 LOCATION: 507A MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	1	6
QUILLBACK	412	860	.	.
SMALLMOUTH BUFFALO	546	2620	.	.
BLUEGILL	131	47	.	.
BLUEGILL	60	4	.	.
NORTHERN SUNFISH	117	42	.	.
FRESHWATER DRUM	544	2900	.	.
FRESHWATER DRUM	350	540	.	.
FRESHWATER DRUM	.	.	1	500

SITE: DRESDEN GEAR: ELECTRO DATE: 22MAY14 LOCATION: 510 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	1	7
BULLHEAD MINNOW	.	.	1	1
SILVER REDHORSE	457	1010	.	.
GOLDEN REDHORSE	382	500	.	.
SHORTHEAD REDHORSE	355	410	.	.
SHORTHEAD REDHORSE	114	17	.	.
CHANNEL CATFISH	476	1200	.	.
BLUEGILL	168	110	.	.
BLUEGILL	121	47	.	.
BLUEGILL	128	37	.	.
BLUEGILL	149	70	.	.
BLUEGILL	130	51	.	.
BLUEGILL	117	33	.	.
BLUEGILL	51	2	.	.
BLUEGILL	45	1	.	.
NORTHERN SUNFISH	103	28	.	.
NORTHERN SUNFISH	92	20	.	.
NORTHERN SUNFISH	97	20	.	.
NORTHERN SUNFISH	113	37	.	.
NORTHERN SUNFISH	115	37	.	.
NORTHERN SUNFISH	94	24	.	.
NORTHERN SUNFISH	87	19	.	.
SMALLMOUTH BASS	150	45	.	.
SMALLMOUTH BASS	97	9	.	.
SMALLMOUTH BASS	107	13	.	.
SMALLMOUTH BASS	198	85	.	.
SMALLMOUTH BASS	132	27	.	.
SMALLMOUTH BASS	88	7	.	.
SMALLMOUTH BASS	81	7	.	.
SMALLMOUTH BASS	97	11	.	.
LARGEMOUTH BASS	304	385	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 23MAY14 LOCATION: 512 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LONGNOSE GAR	650	590	.	.
EMERALD SHINER	.	.	5	21
SPOTFIN SHINER	.	.	4	12
MIMIC SHINER	.	.	1	2
BLUNTNOSE MINNOW	.	.	1	1
BULLHEAD MINNOW	.	.	3	8
GOLDEN REDHORSE	207	95	.	.
CHANNEL CATFISH	600	2450	.	.
CHANNEL CATFISH	590	2310	.	.
CHANNEL CATFISH	515	1190	.	.
WHITE BASS	261	200	.	.
WHITE BASS	325	450	.	.
WHITE BASS	362	580	.	.
WHITE BASS	270	260	.	.
WHITE BASS	337	500	.	.
WHITE BASS	335	460	.	.
WHITE BASS	362	530	.	.
WHITE BASS	322	410	.	.
WHITE BASS	345	450	.	.
ORANGESPOTTED SUNFISH	79	10	.	.
BLUEGILL	159	112	.	.
BLUEGILL	119	32	.	.
BLUEGILL	117	31	.	.
BLUEGILL	121	37	.	.
BLUEGILL	108	24	.	.
BLUEGILL	140	58	.	.
BLUEGILL	121	35	.	.
BLUEGILL	126	46	.	.
SMALLMOUTH BASS	477	1200	.	.
SMALLMOUTH BASS	146	41	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SMALLMOUTH BASS	109	13	.	.
SITE: DRESDEN GEAR: ELECTRO DATE: 23MAY14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER				
EMERALD SHINER	.	.	21	125
BLUNTNOSE MINNOW	.	.	4	5
BULLHEAD MINNOW	.	.	10	9
SMALLMOUTH BUFFALO	356	780	.	.
SMALLMOUTH BUFFALO	365	730	.	.
GOLDEN REDHORSE	88	7	.	.
CHANNEL CATFISH	572	1800	.	.
CHANNEL CATFISH	495	1130	.	.
CHANNEL CATFISH	450	1030	.	.
CHANNEL CATFISH	545	1700	.	.
WHITE BASS	362	530	.	.
ROCK BASS	32	1	.	.
BLUEGILL	126	40	.	.
BLUEGILL	92	13	.	.
BLUEGILL	61	4	.	.
NORTHERN SUNFISH	110	35	.	.
NORTHERN SUNFISH	43	1	.	.
SMALLMOUTH BASS	241	180	.	.
SMALLMOUTH BASS	157	47	.	.
SMALLMOUTH BASS	132	28	.	.
SMALLMOUTH BASS	210	115	.	.
FRESHWATER DRUM	322	420	.	.
SITE: DRESDEN GEAR: ELECTRO DATE: 23MAY14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER				
COMMON CARP	612	3000	.	.
COMMON CARP	618	2650	.	.
PALLID SHINER	.	.	1	2
EMERALD SHINER	.	.	29	138
SPOTFIN SHINER	.	.	4	8
BULLHEAD MINNOW	.	.	5	14
BULLHEAD MINNOW	.	.	2	13
SMALLMOUTH BUFFALO	396	975	.	.
SMALLMOUTH BUFFALO	454	1520	.	.
SMALLMOUTH BUFFALO	375	735	.	.
CHANNEL CATFISH	470	1215	.	.
CHANNEL CATFISH	570	1950	.	.
CHANNEL CATFISH	520	1460	.	.
CHANNEL CATFISH	408	625	.	.
CHANNEL CATFISH	565	1940	.	.
CHANNEL CATFISH	518	1310	.	.
CHANNEL CATFISH	440	930	.	.
CHANNEL CATFISH	452	820	.	.
FLATHEAD CATFISH	595	2700	.	.
BLACKSTRIPE TOPMINNOW	.	.	1	1
WHITE BASS	358	490	.	.
WHITE BASS	355	490	.	.
WHITE BASS	348	475	.	.
WHITE BASS	276	250	.	.
WHITE BASS	277	240	.	.
WHITE BASS	267	210	.	.
WHITE BASS	284	260	.	.
BLUEGILL	162	104	.	.
BLUEGILL	128	44	.	.
BLUEGILL	103	27	.	.
BLUEGILL	130	36	.	.
BLUEGILL	121	35	.	.
BLUEGILL	105	20	.	.
BLUEGILL	91	15	.	.
BLUEGILL	76	9	.	.
SMALLMOUTH BASS	204	92	.	.
SMALLMOUTH BASS	195	66	.	.
SMALLMOUTH BASS	162	48	.	.
SMALLMOUTH BASS	89	9	.	.
LOGPERCH	.	.	1	8
LOGPERCH	.	.	1	5
FRESHWATER DRUM	372	620	.	.
FRESHWATER DRUM	398	740	.	.
SITE: DRESDEN GEAR: ELECTRO DATE: 23MAY14 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER				
EMERALD SHINER	.	.	43	181
SPOTFIN SHINER	.	.	5	6
SPOTFIN SHINER	.	.	2	1
SPOTFIN SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	1	3

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
CHANNEL CATFISH	418	715	.	.
BROOK SILVERSIDE	.	.	1	1
WHITE BASS	324	390	.	.
WHITE BASS	351	470	.	.
BLUEGILL	168	110	.	.
NORTHERN SUNFISH	83	15	.	.
SMALLMOUTH BASS	375	680	.	.
SMALLMOUTH BASS	172	56	.	.
SMALLMOUTH BASS	93	7	.	.
SMALLMOUTH BASS	92	10	.	.

SITE: DRESDEN GEAR: SEINE DATE: 22MAY14 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	1	1
REDFIN SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	6	6
BULLHEAD MINNOW	.	.	10	11
SILVER REDHORSE	134	34	.	.
SILVER REDHORSE	127	25	.	.
GOLDEN REDHORSE	96	11	.	.
SHORTHEAD REDHORSE	122	22	.	.
SHORTHEAD REDHORSE	116	18	.	.
SHORTHEAD REDHORSE	103	12	.	.
BLACKSTRIPE TOPMINNOW	.	.	3	4
BLUEGILL	120	42	.	.
BLUEGILL	119	35	.	.

SITE: DRESDEN GEAR: SEINE DATE: 22MAY14 LOCATION: 502 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
PALLID SHINER	.	.	1	2
EMERALD SHINER	.	.	1	4
SPOTFIN SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	1	2
BROOK SILVERSIDE	.	.	2	5

SITE: DRESDEN GEAR: SEINE DATE: 22MAY14 LOCATION: 503 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	14	76
GHOST SHINER	.	.	2	1
SPOTFIN SHINER	.	.	148	61
SPOTFIN SHINER	.	.	84	14
SPOTFIN SHINER	.	.	3	1
SAND SHINER	.	.	7	2
SAND SHINER	.	.	1	1
MIMIC SHINER	.	.	27	5
MIMIC SHINER	.	.	9	2
BLUNTNOSE MINNOW	.	.	36	22
BULLHEAD MINNOW	.	.	22	6
BULLHEAD MINNOW	.	.	4	1
BROOK SILVERSIDE	.	.	4	8
BLUEGILL	35	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 22MAY14 LOCATION: 507 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
PALLID SHINER	.	.	1	1
SPOTFIN SHINER	.	.	86	24
SPOTFIN SHINER	.	.	16	2
SPOTFIN SHINER	.	.	12	2
SAND SHINER	.	.	7	2
SAND SHINER	.	.	1	1
MIMIC SHINER	.	.	3	1
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	12	5
BULLHEAD MINNOW	.	.	111	46
BULLHEAD MINNOW	.	.	8	1
Moxostoma sp.	24	1	.	.
Moxostoma sp.	25	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 22MAY14 LOCATION: 509 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	4	11
BLUNTNOSE MINNOW	.	.	1	1
BLUNTNOSE MINNOW	.	.	1	1
BLACKSTRIPE TOPMINNOW	.	.	1	1

SITE: DRESDEN GEAR: SEINE DATE: 23MAY14 LOCATION: 512 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GHOST SHINER	.	.	1	1
SPOTFIN SHINER	.	.	4	3
SPOTFIN SHINER	.	.	1	1

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SAND SHINER	.	.	4	2
MIMIC SHINER	.	.	2	1
BULLHEAD MINNOW	.	.	1	1

SITE: DRESDEN GEAR: SEINE DATE: 23MAY14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	1	7
SPOTFIN SHINER	.	.	100	63
SPOTFIN SHINER	.	.	187	118
SPOTFIN SHINER	.	.	3	1
SAND SHINER	.	.	6	4
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	8	4
BULLHEAD MINNOW	.	.	3	2
BULLHEAD MINNOW	.	.	1	1
ICTIOBINAE sp.	12	1	.	.
BLUEGILL	31	1	.	.
NORTHERN SUNFISH	47	2	.	.

SITE: DRESDEN GEAR: SEINE DATE: 23MAY14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	1	6
SPOTFIN SHINER	.	.	2	2

SITE: DRESDEN GEAR: SEINE DATE: 23MAY14 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	6	1
SPOTFIN SHINER	.	.	7	9
SPOTFIN SHINER	.	.	4	1
SAND SHINER	.	.	3	2
GREEN SUNFISH	63	5	.	.
BLUEGILL	45	2	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 05JUN14 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GAR sp.	47	1	.	.
COMMON CARP	455	1230	.	.
SMALLMOUTH BUFFALO	430	1300	.	.
CHANNEL CATFISH	444	1050	.	.
CHANNEL CATFISH	427	720	.	.
BLUEGILL	156	99	.	.
BLUEGILL	121	36	.	.
BLUEGILL	114	39	.	.
BLUEGILL	79	12	.	.
SMALLMOUTH BASS	231	195	.	.
SMALLMOUTH BASS	258	260	.	.
SMALLMOUTH BASS	207	135	.	.
SMALLMOUTH BASS	242	225	.	.
SMALLMOUTH BASS	196	88	.	.
SMALLMOUTH BASS	245	220	.	.
SMALLMOUTH BASS	180	66	.	.
LARGEMOUTH BASS	268	290	.	.
LARGEMOUTH BASS	306	410	.	.
LARGEMOUTH BASS	337	570	.	.
LARGEMOUTH BASS	322	570	.	.
LARGEMOUTH BASS	298	395	.	.
LARGEMOUTH BASS	297	430	.	.
FRESHWATER DRUM	452	1280	.	.
FRESHWATER DRUM	427	970	.	.
FRESHWATER DRUM	448	1340	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 05JUN14 LOCATION: 502 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
PALLID SHINER	.	.	1	2
SPOTFIN SHINER	.	.	6	20
BLUNTNOSE MINNOW	.	.	2	4
BULLHEAD MINNOW	.	.	2	4
SMALLMOUTH BUFFALO	692	5000	.	.
SMALLMOUTH BUFFALO	505	1925	.	.
GOLDEN REDHORSE	126	24	.	.
GOLDEN REDHORSE	111	13	.	.
CHANNEL CATFISH	525	1460	.	.
CHANNEL CATFISH	162	32	.	.
CHANNEL CATFISH	460	970	.	.
CHANNEL CATFISH	408	570	.	.
FLATHEAD CATFISH	320	320	.	.
BROOK SILVERSIDE	.	.	1	3
GREEN SUNFISH	91	18	.	.
ORANGESPOTTED SUNFISH	72	7	.	.
BLUEGILL	127	47	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLUEGILL	117	39	.	.
BLUEGILL	105	22	.	.
BLUEGILL	117	36	.	.
BLUEGILL	122	35	.	.
NORTHERN SUNFISH	106	34	.	.
NORTHERN SUNFISH	82	14	.	.
NORTHERN SUNFISH	108	33	.	.
SMALLMOUTH BASS	175	60	.	.
SMALLMOUTH BASS	95	11	.	.
SMALLMOUTH BASS	113	22	.	.
SMALLMOUTH BASS	108	20	.	.
SMALLMOUTH BASS	103	15	.	.
SMALLMOUTH BASS	122	22	.	.
SMALLMOUTH BASS	114	21	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 05JUN14 LOCATION: 503 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LONGNOSE GAR	.	.	1	1000
COMMON CARP	592	2810	.	.
COMMON CARP	477	1610	.	.
COMMON CARP	568	2400	.	.
COMMON CARP	537	1820	.	.
PALLID SHINER	.	.	2	4
SPOTFIN SHINER	.	.	15	16
SPOTFIN SHINER	.	.	1	1
SAND SHINER	.	.	5	4
MIMIC SHINER	.	.	8	4
BLUNTNOSE MINNOW	.	.	14	21
BLUNTNOSE MINNOW	.	.	1	3
BULLHEAD MINNOW	.	.	14	26
SMALLMOUTH BUFFALO	617	3750	.	.
SMALLMOUTH BUFFALO	589	3240	.	.
CHANNEL CATFISH	427	950	.	.
BROOK SILVERSIDE	.	.	3	7
BLUEGILL	118	32	.	.
BLUEGILL	136	45	.	.
BLUEGILL	105	26	.	.
BLUEGILL	99	19	.	.
BLUEGILL	92	19	.	.
BLUEGILL	110	28	.	.
NORTHERN SUNFISH	98	23	.	.
NORTHERN SUNFISH	83	15	.	.
NORTHERN SUNFISH	88	20	.	.
NORTHERN SUNFISH	86	18	.	.
SMALLMOUTH BASS	101	14	.	.
LARGEMOUTH BASS	200	100	.	.
LARGEMOUTH BASS	286	320	.	.
LARGEMOUTH BASS	172	62	.	.
FRESHWATER DRUM	335	580	.	.
FRESHWATER DRUM	337	600	.	.
FRESHWATER DRUM	387	850	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 05JUN14 LOCATION: 506 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GOLDEN SHINER	.	.	1	4
PALLID SHINER	.	.	1	1
SPOTFIN SHINER	.	.	3	5
GREEN SUNFISH	122	45	.	.
GREEN SUNFISH	92	18	.	.
GREEN SUNFISH	124	46	.	.
BLUEGILL	125	50	.	.
BLUEGILL	86	16	.	.
BLUEGILL	75	10	.	.
BLUEGILL	50	3	.	.
NORTHERN SUNFISH	66	7	.	.
NORTHERN SUNFISH	66	7	.	.
NORTHERN SUNFISH	62	6	.	.
LARGEMOUTH BASS	26	1	.	.
FRESHWATER DRUM	577	2700	.	.
FRESHWATER DRUM	445	1210	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 05JUN14 LOCATION: 507A MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	55	2	.	.
GIZZARD SHAD	50	2	.	.
SPOTFIN SHINER	.	.	1	3
BLUEGILL	87	15	.	.
BLUEGILL	55	4	.	.
NORTHERN SUNFISH	105	34	.	.
SMALLMOUTH BASS	251	175	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SITE: DRESDEN	GEAR: ELECTRO	DATE: 05JUN14	LOCATION: 510	MESOHABITAT: MAIN CHANNEL BORDER
COMMON CARP	415	750	.	.
SPOTFIN SHINER	.	.	1	4
BLUNTNOSE MINNOW	.	.	4	13
BLUNTNOSE MINNOW	.	.	1	5
SMALLMOUTH BUFFALO	523	2620	.	.
GOLDEN REDHORSE	130	30	.	.
CHANNEL CATFISH	468	1040	.	.
CHANNEL CATFISH	438	820	.	.
PUMPKINSEED	134	58	.	.
BLUEGILL	116	33	.	.
BLUEGILL	86	13	.	.
BLUEGILL	92	16	.	.
BLUEGILL	84	14	.	.
BLUEGILL	58	4	.	.
BLUEGILL	92	16	.	.
BLUEGILL	74	8	.	.
BLUEGILL	73	8	.	.
BLUEGILL	76	10	.	.
BLUEGILL	57	4	.	.
BLUEGILL	69	7	.	.
NORTHERN SUNFISH	112	40	.	.
NORTHERN SUNFISH	122	40	.	.
NORTHERN SUNFISH	103	33	.	.
NORTHERN SUNFISH	104	30	.	.
NORTHERN SUNFISH	109	39	.	.
NORTHERN SUNFISH	108	35	.	.
NORTHERN SUNFISH	104	30	.	.
NORTHERN SUNFISH	76	11	.	.
NORTHERN SUNFISH	96	30	.	.
NORTHERN SUNFISH	94	26	.	.
NORTHERN SUNFISH	95	30	.	.
NORTHERN SUNFISH	87	20	.	.
NORTHERN SUNFISH	91	21	.	.
NORTHERN SUNFISH	103	32	.	.
NORTHERN SUNFISH	92	26	.	.
NORTHERN SUNFISH	54	3	.	.
NORTHERN SUNFISH	53	3	.	.
NORTHERN SUNFISH	36	1	.	.
NORTHERN SUNFISH	32	1	.	.
SMALLMOUTH BASS	187	100	.	.
SMALLMOUTH BASS	188	85	.	.
SMALLMOUTH BASS	112	17	.	.
SMALLMOUTH BASS	112	22	.	.
SMALLMOUTH BASS	100	11	.	.
SMALLMOUTH BASS	114	19	.	.
SMALLMOUTH BASS	103	15	.	.
LARGEMOUTH BASS	337	660	.	.
FRESHWATER DRUM	445	1070	.	.
ROUND GOBY	84	10	.	.
SITE: DRESDEN	GEAR: ELECTRO	DATE: 06JUN14	LOCATION: 512	MESOHABITAT: .
SILVER CARP	588	2320	.	.
PALLID SHINER	.	.	5	7
EMERALD SHINER	.	.	1	6
EMERALD SHINER	.	.	1	2
GHOST SHINER	.	.	4	2
SPOTFIN SHINER	.	.	9	18
MIMIC SHINER	.	.	20	9
MIMIC SHINER	.	.	2	1
BLUNTNOSE MINNOW	.	.	1	1
BULLHEAD MINNOW	.	.	3	2
QUILLBACK	185	80	.	.
GOLDEN REDHORSE	162	50	.	.
GOLDEN REDHORSE	172	60	.	.
GOLDEN REDHORSE	163	57	.	.
SHORTHEAD REDHORSE	177	60	.	.
SHORTHEAD REDHORSE	161	47	.	.
CHANNEL CATFISH	640	2760	.	.
CHANNEL CATFISH	528	1610	.	.
BLUEGILL	157	95	.	.
BLUEGILL	68	5	.	.
BLUEGILL	54	3	.	.
NORTHERN SUNFISH	65	7	.	.
NORTHERN SUNFISH	82	14	.	.
SMALLMOUTH BASS	412	810	.	.
SMALLMOUTH BASS	273	300	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SMALLMOUTH BASS	196	105	.	.
SMALLMOUTH BASS	182	71	.	.
SMALLMOUTH BASS	131	24	.	.
SMALLMOUTH BASS	110	14	.	.
SMALLMOUTH BASS	128	22	.	.
LARGEMOUTH BASS	316	410	.	.
LOGPERCH	.	.	1	13
LOGPERCH	.	.	1	5

SITE: DRESDEN GEAR: ELECTRO DATE: 06JUN14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LONGNOSE GAR	761	940	.	.
EMERALD SHINER	.	.	23	84
SPOTFIN SHINER	.	.	7	12
SAND SHINER	.	.	3	7
BLUNTNOSE MINNOW	.	.	2	1
BULLHEAD MINNOW	.	.	1	2
SMALLMOUTH BUFFALO	361	720	.	.
SMALLMOUTH BUFFALO	412	1080	.	.
GOLDEN REDHORSE	169	50	.	.
GOLDEN REDHORSE	145	35	.	.
GOLDEN REDHORSE	131	24	.	.
SHORTHEAD REDHORSE	130	20	.	.
SHORTHEAD REDHORSE	132	29	.	.
CHANNEL CATFISH	415	720	.	.
WHITE BASS	193	81	.	.
BLUEGILL	116	27	.	.
BLUEGILL	125	55	.	.
NORTHERN SUNFISH	103	25	.	.
NORTHERN SUNFISH	106	33	.	.
NORTHERN SUNFISH	81	14	.	.
NORTHERN SUNFISH	72	8	.	.
NORTHERN SUNFISH	64	6	.	.
SMALLMOUTH BASS	122	22	.	.
SMALLMOUTH BASS	101	10	.	.
SMALLMOUTH BASS	214	124	.	.
SMALLMOUTH BASS	137	27	.	.
SMALLMOUTH BASS	118	20	.	.
SMALLMOUTH BASS	110	15	.	.
SMALLMOUTH BASS	121	21	.	.
LOGPERCH	.	.	1	5
LOGPERCH	.	.	1	8
FRESHWATER DRUM	402	760	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 06JUN14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GRASS CARP	715	4100	.	.
SPOTFIN SHINER	.	.	14	31
MIMIC SHINER	.	.	1	2
BLUNTNOSE MINNOW	.	.	5	13
RIVER CARPSUCKER	362	630	.	.
GOLDEN REDHORSE	167	48	.	.
GOLDEN REDHORSE	161	47	.	.
GOLDEN REDHORSE	198	105	.	.
GOLDEN REDHORSE	180	68	.	.
GOLDEN REDHORSE	162	46	.	.
GOLDEN REDHORSE	172	55	.	.
SHORTHEAD REDHORSE	155	38	.	.
CHANNEL CATFISH	391	500	.	.
CHANNEL CATFISH	445	850	.	.
GREEN SUNFISH	114	33	.	.
GREEN SUNFISH	108	27	.	.
BLUEGILL	129	50	.	.
BLUEGILL	122	45	.	.
BLUEGILL	110	27	.	.
BLUEGILL	72	7	.	.
BLUEGILL	127	32	.	.
BLUEGILL	152	78	.	.
BLUEGILL	105	25	.	.
BLUEGILL	119	34	.	.
BLUEGILL	94	15	.	.
BLUEGILL	83	14	.	.
BLUEGILL	74	7	.	.
BLUEGILL	86	14	.	.
BLUEGILL	81	12	.	.
BLUEGILL	107	24	.	.
NORTHERN SUNFISH	115	37	.	.
SMALLMOUTH BASS	218	140	.	.
SMALLMOUTH BASS	198	91	.	.
SMALLMOUTH BASS	162	54	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SMALLMOUTH BASS	178	59	.	.
SMALLMOUTH BASS	170	56	.	.
SMALLMOUTH BASS	102	15	.	.
SMALLMOUTH BASS	107	12	.	.
SMALLMOUTH BASS	172	60	.	.
SMALLMOUTH BASS	176	61	.	.
SMALLMOUTH BASS	205	95	.	.
SMALLMOUTH BASS	175	54	.	.
SMALLMOUTH BASS	168	56	.	.
SMALLMOUTH BASS	194	85	.	.
SMALLMOUTH BASS	103	13	.	.
SMALLMOUTH BASS	208	97	.	.
SMALLMOUTH BASS	136	30	.	.
SMALLMOUTH BASS	112	17	.	.
SMALLMOUTH BASS	114	16	.	.
SMALLMOUTH BASS	93	8	.	.
SMALLMOUTH BASS	167	62	.	.
SMALLMOUTH BASS	109	16	.	.
SMALLMOUTH BASS	112	17	.	.
LARGEMOUTH BASS	370	770	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 06JUN14 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SKIPJACK HERRING	266	150	.	.
PALLID SHINER	.	.	1	2
EMERALD SHINER	.	.	28	107
EMERALD SHINER	.	.	1	3
SPOTFIN SHINER	.	.	5	20
SPOTFIN SHINER	.	.	7	10
SPOTFIN SHINER	.	.	2	4
SAND SHINER	.	.	2	2
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	5	28
BLUNTNOSE MINNOW	.	.	5	4
BULLHEAD MINNOW	.	.	1	1
GOLDEN REDHORSE	191	70	.	.
GOLDEN REDHORSE	174	56	.	.
GOLDEN REDHORSE	140	33	.	.
GOLDEN REDHORSE	163	47	.	.
GOLDEN REDHORSE	246	170	.	.
GOLDEN REDHORSE	164	54	.	.
GOLDEN REDHORSE	163	57	.	.
GOLDEN REDHORSE	165	60	.	.
GOLDEN REDHORSE	227	155	.	.
CHANNEL CATFISH	381	600	.	.
CHANNEL CATFISH	530	1500	.	.
CHANNEL CATFISH	572	2360	.	.
CHANNEL CATFISH	360	375	.	.
CHANNEL CATFISH	530	1780	.	.
CHANNEL CATFISH	523	1420	.	.
CHANNEL CATFISH	480	1160	.	.
BROOK SILVERSIDE	.	.	1	1
GREEN SUNFISH	66	6	.	.
BLUEGILL	114	30	.	.
BLUEGILL	106	22	.	.
BLUEGILL	109	27	.	.
BLUEGILL	87	14	.	.
BLUEGILL	82	11	.	.
BLUEGILL	91	17	.	.
BLUEGILL	86	14	.	.
BLUEGILL	77	10	.	.
BLUEGILL	82	11	.	.
BLUEGILL	64	6	.	.
BLUEGILL	71	7	.	.
NORTHERN SUNFISH	103	27	.	.
NORTHERN SUNFISH	101	23	.	.
NORTHERN SUNFISH	100	30	.	.
NORTHERN SUNFISH	81	13	.	.
NORTHERN SUNFISH	84	17	.	.
NORTHERN SUNFISH	86	17	.	.
NORTHERN SUNFISH	92	19	.	.
NORTHERN SUNFISH	86	21	.	.
NORTHERN SUNFISH	72	9	.	.
NORTHERN SUNFISH	82	14	.	.
NORTHERN SUNFISH	74	9	.	.
NORTHERN SUNFISH	54	3	.	.
NORTHERN SUNFISH	57	4	.	.
NORTHERN SUNFISH	83	13	.	.
NORTHERN SUNFISH	73	11	.	.
NORTHERN SUNFISH	78	11	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
NORTHERN SUNFISH	82	13	.	.
SMALLMOUTH BASS	116	18	.	.
SMALLMOUTH BASS	122	20	.	.
SMALLMOUTH BASS	98	12	.	.
SMALLMOUTH BASS	110	16	.	.
SMALLMOUTH BASS	100	9	.	.
SMALLMOUTH BASS	112	16	.	.
SMALLMOUTH BASS	97	13	.	.
LARGEMOUTH BASS	224	160	.	.
LOGPERCH	.	.	1	10
LOGPERCH	.	.	1	9
LOGPERCH	.	.	1	15
FRESHWATER DRUM	402	940	.	.

SITE: DRESDEN GEAR: SEINE DATE: 05JUN14 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTTAIL SHINER	.	.	4	1
BLUNTNOSE MINNOW	.	.	12	27
BULLHEAD MINNOW	.	.	5	6
ROCK BASS	178	133	.	.
BLUEGILL	157	79	.	.
BLUEGILL	148	64	.	.
BLUEGILL	56	3	.	.
BLUEGILL	68	7	.	.
BLUEGILL	62	5	.	.
NORTHERN SUNFISH	114	40	.	.
LOGPERCH	.	.	1	1

SITE: DRESDEN GEAR: SEINE DATE: 05JUN14 LOCATION: 502 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	6	12
BULLHEAD MINNOW	.	.	3	6
BULLHEAD MINNOW	.	.	1	1
CATOSTOMINAE sp.	17	1	.	.
BROOK SILVERSIDE	.	.	1	1
NORTHERN SUNFISH	83	14	.	.
JOHNNY DARTER	.	.	1	1
ROUND GOBY	87	10	.	.

SITE: DRESDEN GEAR: SEINE DATE: 05JUN14 LOCATION: 503 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	1	1
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	12	33
BULLHEAD MINNOW	.	.	8	10
BROOK SILVERSIDE	.	.	1	1
LARGEMOUTH BASS	22	1	.	.
WHITE CRAPPIE	343	500	.	.
Sander sp.	.	.	1	1

SITE: DRESDEN GEAR: SEINE DATE: 05JUN14 LOCATION: 507 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTTAIL SHINER	.	.	8	1
SUCKERMOUTH MINNOW	.	.	1	1
BULLHEAD MINNOW	.	.	1	1
NORTHERN HOG SUCKER	26	1	.	.
CATOSTOMINAE sp.	.	.	12	1
GREEN SUNFISH	37	1	.	.
GREEN SUNFISH	47	2	.	.
JOHNNY DARTER	.	.	1	1
BLACKSIDE DARTER	.	.	1	1
Percina sp.	.	.	1	1

SITE: DRESDEN GEAR: SEINE DATE: 05JUN14 LOCATION: 509 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	3	8
SPOTFIN SHINER	.	.	2	1
BLUNTNOSE MINNOW	.	.	20	39
BULLHEAD MINNOW	.	.	15	24
WHITE SUCKER	24	1	.	.
NORTHERN HOG SUCKER	20	.	.	.
NORTHERN HOG SUCKER	21	.	.	.
NORTHERN HOG SUCKER	20	.	.	.
NORTHERN HOG SUCKER	21	.	.	.
NORTHERN HOG SUCKER	20	.	.	.
NORTHERN HOG SUCKER	22	.	.	.
NORTHERN HOG SUCKER	21	.	.	.
NORTHERN HOG SUCKER	21	.	.	.
NORTHERN HOG SUCKER	20	.	.	1
SILVER REDHORSE	21	.	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SILVER REDHORSE	23	.	.	.
SILVER REDHORSE	23	.	.	.
SILVER REDHORSE	23	.	.	.
SILVER REDHORSE	22	.	.	.
SILVER REDHORSE	23	.	.	.
SILVER REDHORSE	20	.	.	1
Moxostoma sp.	21	.	.	.
Moxostoma sp.	18	.	.	.
Moxostoma sp.	19	.	.	.
Moxostoma sp.	20	.	.	.
Moxostoma sp.	19	.	.	.
Moxostoma sp.	19	.	.	.
Moxostoma sp.	20	.	.	.
Moxostoma sp.	21	.	.	.
Moxostoma sp.	19	.	.	.
Moxostoma sp.	21	.	.	.
Moxostoma sp.	20	.	.	.
Moxostoma sp.	21	.	.	.
Moxostoma sp.	21	.	.	.
Moxostoma sp.	20	.	.	.
Moxostoma sp.	21	.	.	.
Moxostoma sp.	20	.	.	.
Moxostoma sp.	18	.	.	.
Moxostoma sp.	20	.	.	.
Moxostoma sp.	17	.	.	.
Moxostoma sp.	18	.	.	.
Moxostoma sp.	19	.	.	.
Moxostoma sp.	19	.	.	.
Moxostoma sp.	22	.	.	.
Moxostoma sp.	21	.	.	.
Moxostoma sp.	18	.	.	.
Moxostoma sp.	18	.	.	.
Moxostoma sp.	21	.	.	.
Moxostoma sp.	20	.	.	.
Moxostoma sp.	18	.	.	.
Moxostoma sp.	18	.	.	2
Moxostoma sp.	17	1	.	.
Moxostoma sp.	16	1	.	.
Moxostoma sp.	16	1	.	.
Moxostoma sp.	17	1	.	.
Moxostoma sp.	.	.	43	4
CATOSTOMINAE sp.	16	1	.	.
ROCK BASS	62	6	.	.
ORANGESPOTTED SUNFISH	63	5	.	.
BLUEGILL	50	3	.	.
BLUEGILL	57	4	.	.
NORTHERN SUNFISH	98	31	.	.
NORTHERN SUNFISH	47	2	.	.
NORTHERN SUNFISH	44	2	.	.
NORTHERN SUNFISH	54	4	.	.
NORTHERN SUNFISH	56	4	.	.
NORTHERN SUNFISH	54	4	.	.
NORTHERN SUNFISH	50	3	.	.
NORTHERN SUNFISH	58	5	.	.
LARGEMOUTH BASS	21	.	.	.
LARGEMOUTH BASS	24	.	.	.
LARGEMOUTH BASS	30	.	.	.
LARGEMOUTH BASS	29	.	.	.
LARGEMOUTH BASS	20	.	.	.
LARGEMOUTH BASS	25	.	.	.
LARGEMOUTH BASS	31	.	.	.
LARGEMOUTH BASS	30	.	.	.
LARGEMOUTH BASS	25	.	.	.
LARGEMOUTH BASS	20	.	.	.
LARGEMOUTH BASS	19	.	.	.
LARGEMOUTH BASS	28	.	.	.
LARGEMOUTH BASS	28	.	.	.
LARGEMOUTH BASS	24	.	.	.
LARGEMOUTH BASS	26	.	.	5

SITE: DRESDEN GEAR: SEINE DATE: 06JUN14 LOCATION: 512 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	1	2
SPOTTAIL SHINER	.	.	13	1
SPOTFIN SHINER	.	.	138	100
SPOTFIN SHINER	.	.	6	4
SAND SHINER	.	.	4	5
MIMIC SHINER	.	.	3	1
MIMIC SHINER	.	.	3	2
BLUNTNOSE MINNOW	.	.	3	2

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BULLHEAD MINNOW	.	.	4	5
NORTHERN HOG SUCKER	19	.	.	.
NORTHERN HOG SUCKER	19	.	.	.
NORTHERN HOG SUCKER	21	.	.	.
NORTHERN HOG SUCKER	21	.	.	.
NORTHERN HOG SUCKER	20	.	.	.
NORTHERN HOG SUCKER	20	.	.	1
CATOSTOMINAE sp.	18	.	.	.
CATOSTOMINAE sp.	15	.	.	.
CATOSTOMINAE sp.	16	.	.	.
CATOSTOMINAE sp.	19	.	.	.
CATOSTOMINAE sp.	18	.	.	.
CATOSTOMINAE sp.	17	.	.	.
CATOSTOMINAE sp.	19	.	.	.
CATOSTOMINAE sp.	20	.	.	.
CATOSTOMINAE sp.	16	.	.	.
CATOSTOMINAE sp.	18	.	.	.
CATOSTOMINAE sp.	21	.	.	.
CATOSTOMINAE sp.	18	.	.	1
ICTIOBINAE sp.	19	1	.	.
BROOK SILVERSIDE	.	.	1	3
ORANGESPOTTED SUNFISH	53	3	.	.
LARGEMOUTH BASS	26	.	.	.
LARGEMOUTH BASS	27	.	.	.
LARGEMOUTH BASS	25	.	.	.
LARGEMOUTH BASS	26	.	.	.
LARGEMOUTH BASS	27	.	.	.
LARGEMOUTH BASS	24	.	.	1
JOHNNY DARTER	.	.	1	1
JOHNNY DARTER	.	.	1	1
DARTER sp.	.	.	1	1

SITE: DRESDEN GEAR: SEINE DATE: 06JUN14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	6	19
SPOTTAIL SHINER	.	.	1	1
SPOTFIN SHINER	.	.	126	114
SPOTFIN SHINER	.	.	3	4
SAND SHINER	.	.	12	7
MIMIC SHINER	.	.	56	23
BLUNTNOSE MINNOW	.	.	5	3
NORTHERN HOG SUCKER	22	1	.	.
Moxostoma sp.	21	1	.	.
Moxostoma sp.	22	1	.	.
Moxostoma sp.	22	1	.	.
ICTIOBINAE sp.	27	1	.	.
SMALLMOUTH BASS	113	18	.	.
BANDED DARTER	.	.	1	1

SITE: DRESDEN GEAR: SEINE DATE: 06JUN14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	81	74
SPOTFIN SHINER	.	.	20	5
SAND SHINER	.	.	18	10
BLUNTNOSE MINNOW	.	.	1	1
NORTHERN HOG SUCKER	19	1	.	.
NORTHERN HOG SUCKER	22	1	.	.
CATOSTOMINAE sp.	18	1	.	.
CATOSTOMINAE sp.	21	1	.	.
CATOSTOMINAE sp.	20	1	.	.
ICTIOBINAE sp.	19	1	.	.
LARGEMOUTH BASS	26	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 06JUN14 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	1	1
SPOTFIN SHINER	.	.	6	9
SAND SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	11	9
BLUNTNOSE MINNOW	.	.	1	1
ORANGESPOTTED SUNFISH	59	4	.	.
ROUND GOBY	78	8	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 10JUL14 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
COMMON CARP	378	840	.	.
COMMON CARP	486	1810	.	.
CARP X GOLDFISH HYBRID	392	910	.	.
EMERALD SHINER	.	.	1	1
SPOTTAIL SHINER	.	.	4	7

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	1	4
MIMIC SHINER	.	.	4	5
BLUNTNOSE MINNOW	.	.	23	35
BLUNTNOSE MINNOW	.	.	1	1
BULLHEAD MINNOW	.	.	3	1
Moxostoma sp.	40	1	.	.
CHANNEL CATFISH	563	1920	.	.
CHANNEL CATFISH	253	140	.	.
CHANNEL CATFISH	403	640	.	.
ROCK BASS	80	13	.	.
GREEN SUNFISH	131	62	.	.
GREEN SUNFISH	119	47	.	.
GREEN SUNFISH	97	22	.	.
GREEN SUNFISH	118	48	.	.
GREEN SUNFISH	115	42	.	.
GREEN SUNFISH	73	9	.	.
GREEN SUNFISH	119	40	.	.
GREEN SUNFISH	114	38	.	.
BLUEGILL	131	60	.	.
BLUEGILL	83	12	.	.
BLUEGILL	68	7	.	.
BLUEGILL	82	13	.	.
BLUEGILL	75	10	.	.
BLUEGILL	72	9	.	.
BLUEGILL	27	1	.	.
BLUEGILL	30	1	.	.
BLUEGILL	28	1	.	.
BLUEGILL	67	6	.	.
NORTHERN SUNFISH	90	22	.	.
NORTHERN SUNFISH	102	34	.	.
NORTHERN SUNFISH	96	25	.	.
SMALLMOUTH BASS	206	103	.	.
SMALLMOUTH BASS	262	240	.	.
SMALLMOUTH BASS	292	360	.	.
SMALLMOUTH BASS	235	225	.	.
SMALLMOUTH BASS	214	104	.	.
SMALLMOUTH BASS	213	127	.	.
SMALLMOUTH BASS	173	58	.	.
SMALLMOUTH BASS	153	57	.	.
SMALLMOUTH BASS	146	42	.	.
SMALLMOUTH BASS	142	36	.	.
SMALLMOUTH BASS	123	26	.	.
SMALLMOUTH BASS	154	44	.	.
SMALLMOUTH BASS	243	160	.	.
SMALLMOUTH BASS	33	1	.	.
LARGEMOUTH BASS	73	4	.	.
LARGEMOUTH BASS	49	2	.	.
LARGEMOUTH BASS	46	2	.	.
LARGEMOUTH BASS	64	3	.	.
LARGEMOUTH BASS	55	3	.	.
LARGEMOUTH BASS	61	4	.	.
LARGEMOUTH BASS	69	5	.	.
LARGEMOUTH BASS	82	9	.	.
LARGEMOUTH BASS	54	2	.	.
LARGEMOUTH BASS	70	5	.	.
LARGEMOUTH BASS	68	5	.	.
LARGEMOUTH BASS	48	2	.	.
LARGEMOUTH BASS	60	3	.	.
LARGEMOUTH BASS	65	4	.	.
LARGEMOUTH BASS	50	2	.	.
LARGEMOUTH BASS	61	3	.	.
LARGEMOUTH BASS	75	6	.	.
LARGEMOUTH BASS	59	3	.	.
LARGEMOUTH BASS	60	4	.	.
LARGEMOUTH BASS	44	1	.	.
LARGEMOUTH BASS	55	3	.	.
LARGEMOUTH BASS	63	4	.	.
LARGEMOUTH BASS	42	1	.	.
LARGEMOUTH BASS	43	1	.	.
LARGEMOUTH BASS	55	3	.	.
LARGEMOUTH BASS	54	3	.	.
LARGEMOUTH BASS	56	3	.	.
LARGEMOUTH BASS	57	3	.	.
LARGEMOUTH BASS	43	1	.	.
LARGEMOUTH BASS	34	1	.	.
LARGEMOUTH BASS	.	.	4	6
BLACK CRAPPIE	53	2	.	.
LOGPERCH	.	.	1	3
LOGPERCH	.	.	1	3
FRESHWATER DRUM	362	640	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
FRESHWATER DRUM	453	970	.	.
FRESHWATER DRUM	376	630	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 10JUL14 LOCATION: 502 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
COMMON CARP	542	2180	.	.
EMERALD SHINER	.	.	2	12
SPOTTAIL SHINER	.	.	1	1
SPOTFIN SHINER	.	.	1	1
SPOTFIN SHINER	.	.	9	25
MIMIC SHINER	.	.	3	3
BULLHEAD MINNOW	.	.	6	14
SMALLMOUTH BUFFALO	380	845	.	.
SILVER REDHORSE	47	1	.	.
SILVER REDHORSE	39	1	.	.
GOLDEN REDHORSE	408	850	.	.
GOLDEN REDHORSE	379	670	.	.
GOLDEN REDHORSE	415	910	.	.
CHANNEL CATFISH	609	2130	.	.
ORANGESPOTTED SUNFISH	52	3	.	.
BLUEGILL	138	54	.	.
BLUEGILL	121	36	.	.
BLUEGILL	115	29	.	.
BLUEGILL	77	9	.	.
NORTHERN SUNFISH	119	38	.	.
SMALLMOUTH BASS	45	2	.	.
LARGEMOUTH BASS	327	510	.	.
LOGPERCH	.	.	5	4

SITE: DRESDEN GEAR: ELECTRO DATE: 10JUL14 LOCATION: 503 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	77	5	.	.
GIZZARD SHAD	75	5	.	.
GIZZARD SHAD	73	5	.	.
COMMON CARP	48	3	.	.
SPOTFIN SHINER	.	.	37	98
SPOTFIN SHINER	.	.	1	2
SAND SHINER	.	.	3	3
BLUNTNOSE MINNOW	.	.	16	32
BULLHEAD MINNOW	.	.	8	10
BULLHEAD MINNOW	.	.	1	1
SILVER REDHORSE	40	1	.	.
GOLDEN REDHORSE	403	730	.	.
CHANNEL CATFISH	483	1030	.	.
CHANNEL CATFISH	532	1310	.	.
CHANNEL CATFISH	465	890	.	.
CHANNEL CATFISH	314	240	.	.
FLATHEAD CATFISH	293	310	.	.
BROOK SILVERSIDE	.	.	1	1
ORANGESPOTTED SUNFISH	60	4	.	.
ORANGESPOTTED SUNFISH	75	8	.	.
BLUEGILL	138	52	.	.
BLUEGILL	110	30	.	.
BLUEGILL	52	3	.	.
BLUEGILL	134	52	.	.
BLUEGILL	110	30	.	.
BLUEGILL	122	37	.	.
BLUEGILL	78	10	.	.
BLUEGILL	56	3	.	.
NORTHERN SUNFISH	100	24	.	.
NORTHERN SUNFISH	93	19	.	.
NORTHERN SUNFISH	93	22	.	.
NORTHERN SUNFISH	89	19	.	.
NORTHERN SUNFISH	116	41	.	.
SMALLMOUTH BASS	243	190	.	.
LARGEMOUTH BASS	289	360	.	.
LARGEMOUTH BASS	48	2	.	.
LARGEMOUTH BASS	37	1	.	.
LOGPERCH	.	.	1	1
ROUND GOBY	32	2	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 10JUL14 LOCATION: 506 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LONGNOSE GAR	782	910	.	.
LONGNOSE GAR	703	760	.	.
GIZZARD SHAD	63	2	.	.
GIZZARD SHAD	74	4	.	.
GIZZARD SHAD	68	3	.	.
GIZZARD SHAD	75	4	.	.
GIZZARD SHAD	65	3	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	65	3	.	.
GIZZARD SHAD	62	2	.	.
GIZZARD SHAD	57	1	.	.
THREADFIN SHAD	25	1	.	.
THREADFIN SHAD	45	1	.	.
THREADFIN SHAD	42	1	.	.
THREADFIN SHAD	67	3	.	.
THREADFIN SHAD	60	2	.	.
THREADFIN SHAD	75	3	.	.
THREADFIN SHAD	61	2	.	.
THREADFIN SHAD	55	2	.	.
THREADFIN SHAD	69	3	.	.
THREADFIN SHAD	57	2	.	.
THREADFIN SHAD	60	2	.	.
THREADFIN SHAD	75	3	.	.
THREADFIN SHAD	68	3	.	.
THREADFIN SHAD	58	2	.	.
THREADFIN SHAD	72	3	.	.
THREADFIN SHAD	64	2	.	.
THREADFIN SHAD	66	3	.	.
THREADFIN SHAD	65	3	.	.
THREADFIN SHAD	55	2	.	.
THREADFIN SHAD	69	3	.	.
THREADFIN SHAD	82	5	.	.
THREADFIN SHAD	66	3	.	.
THREADFIN SHAD	55	1	.	.
THREADFIN SHAD	57	2	.	.
THREADFIN SHAD	60	2	.	.
THREADFIN SHAD	58	2	.	.
THREADFIN SHAD	63	2	.	.
CENTRAL STONEROLLER	.	.	3	2
COMMON CARP	423	1140	.	.
EMERALD SHINER	.	.	1	1
RED SHINER	.	.	1	3
SPOTFIN SHINER	.	.	9	31
BLUNTNOSE MINNOW	.	.	1	7
BULLHEAD MINNOW	.	.	7	9
SMALLMOUTH BUFFALO	423	1320	.	.
SMALLMOUTH BUFFALO	.	.	1	2030
CHANNEL CATFISH	532	1210	.	.
CHANNEL CATFISH	482	920	.	.
FLATHEAD CATFISH	146	27	.	.
ROCK BASS	62	5	.	.
GREEN SUNFISH	136	49	.	.
GREEN SUNFISH	100	24	.	.
GREEN SUNFISH	77	10	.	.
GREEN SUNFISH	105	28	.	.
GREEN SUNFISH	41	2	.	.
GREEN SUNFISH	56	4	.	.
GREEN SUNFISH	53	3	.	.
BLUEGILL	124	47	.	.
BLUEGILL	71	7	.	.
BLUEGILL	104	23	.	.
NORTHERN SUNFISH	70	8	.	.
NORTHERN SUNFISH	57	4	.	.
Lepomis HYBRID	.	.	1	53
Lepomis HYBRID	.	.	1	36
SMALLMOUTH BASS	231	180	.	.
LARGEMOUTH BASS	105	18	.	.
LARGEMOUTH BASS	58	3	.	.
LARGEMOUTH BASS	54	2	.	.
LARGEMOUTH BASS	59	3	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 10JUL14 LOCATION: 507A MESOHABITAT: MAIN CHANNEL BORDER

LONGNOSE GAR	672	680	.	.
GIZZARD SHAD	79	5	.	.
GIZZARD SHAD	77	4	.	.
GIZZARD SHAD	69	3	.	.
GIZZARD SHAD	67	3	.	.
GIZZARD SHAD	62	2	.	.
GIZZARD SHAD	67	3	.	.
GIZZARD SHAD	55	2	.	.
GIZZARD SHAD	58	2	.	.
GIZZARD SHAD	63	3	.	.
GIZZARD SHAD	72	3	.	.
GIZZARD SHAD	62	2	.	.
GIZZARD SHAD	50	2	.	.
GIZZARD SHAD	79	5	.	.
GIZZARD SHAD	63	2	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	51	2	.	.
GIZZARD SHAD	59	2	.	.
GIZZARD SHAD	72	3	.	.
GIZZARD SHAD	75	4	.	.
GIZZARD SHAD	72	3	.	.
GIZZARD SHAD	58	2	.	.
GIZZARD SHAD	69	4	.	.
GIZZARD SHAD	70	3	.	.
GIZZARD SHAD	67	3	.	.
GIZZARD SHAD	66	2	.	.
GIZZARD SHAD	58	2	.	.
GIZZARD SHAD	60	2	.	.
GIZZARD SHAD	58	2	.	.
GIZZARD SHAD	74	4	.	.
GIZZARD SHAD	78	5	.	.
GIZZARD SHAD	60	2	.	.
GIZZARD SHAD	.	.	93	309
GIZZARD SHAD	.	.	56	108
THREADFIN SHAD	26	1	.	.
THREADFIN SHAD	67	3	.	.
THREADFIN SHAD	45	1	.	.
THREADFIN SHAD	51	1	.	.
THREADFIN SHAD	51	1	.	.
THREADFIN SHAD	24	1	.	.
THREADFIN SHAD	66	3	.	.
THREADFIN SHAD	66	3	.	.
THREADFIN SHAD	59	2	.	.
THREADFIN SHAD	61	2	.	.
THREADFIN SHAD	52	1	.	.
THREADFIN SHAD	54	1	.	.
THREADFIN SHAD	51	2	.	.
THREADFIN SHAD	46	1	.	.
THREADFIN SHAD	48	1	.	.
THREADFIN SHAD	58	2	.	.
THREADFIN SHAD	56	2	.	.
THREADFIN SHAD	64	3	.	.
THREADFIN SHAD	60	2	.	.
THREADFIN SHAD	61	2	.	.
THREADFIN SHAD	67	3	.	.
THREADFIN SHAD	60	2	.	.
THREADFIN SHAD	66	3	.	.
THREADFIN SHAD	60	2	.	.
THREADFIN SHAD	63	2	.	.
THREADFIN SHAD	52	1	.	.
THREADFIN SHAD	56	2	.	.
THREADFIN SHAD	66	3	.	.
THREADFIN SHAD	67	3	.	.
THREADFIN SHAD	55	2	.	.
THREADFIN SHAD	.	.	38	67
THREADFIN SHAD	.	.	4	1
CENTRAL STONEROLLER	.	.	1	1
SPOTTAIL SHINER	.	.	4	4
SPOTFIN SHINER	.	.	4	7
BLUNTNOSE MINNOW	.	.	10	23
BULLHEAD MINNOW	.	.	4	3
QUILLBACK	143	35	.	.
SILVER REDHORSE	50	2	.	.
SILVER REDHORSE	52	2	.	.
SILVER REDHORSE	58	3	.	.
SILVER REDHORSE	43	1	.	.
SILVER REDHORSE	41	1	.	.
SHORTHEAD REDHORSE	52	4	.	.
Moxostoma sp.	37	1	.	.
Moxostoma sp.	35	1	.	.
Moxostoma sp.	46	1	.	.
Moxostoma sp.	39	1	.	.
Moxostoma sp.	43	1	.	.
Moxostoma sp.	40	1	.	.
Moxostoma sp.	40	1	.	.
Moxostoma sp.	47	1	.	.
Moxostoma sp.	40	1	.	.
Moxostoma sp.	.	.	1	1
CHANNEL CATFISH	512	1460	.	.
BROOK SILVERSIDE	.	.	1	1
WHITE PERCH	130	34	.	.
GREEN SUNFISH	61	5	.	.
GREEN SUNFISH	47	2	.	.
GREEN SUNFISH	50	3	.	.
GREEN SUNFISH	53	3	.	.
BLUEGILL	37	1	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLUEGILL	63	5	.	.
BLUEGILL	71	8	.	.
BLUEGILL	67	6	.	.
BLUEGILL	138	55	.	.
NORTHERN SUNFISH	99	27	.	.
NORTHERN SUNFISH	64	6	.	.
NORTHERN SUNFISH	106	38	.	.
NORTHERN SUNFISH	112	41	.	.
NORTHERN SUNFISH	121	53	.	.
NORTHERN SUNFISH	110	39	.	.
NORTHERN SUNFISH	102	36	.	.
NORTHERN SUNFISH	81	15	.	.
NORTHERN SUNFISH	73	11	.	.
NORTHERN SUNFISH	104	30	.	.
NORTHERN SUNFISH	82	15	.	.
NORTHERN SUNFISH	85	17	.	.
NORTHERN SUNFISH	77	13	.	.
NORTHERN SUNFISH	76	12	.	.
LARGEMOUTH BASS	71	5	.	.
LARGEMOUTH BASS	77	6	.	.
LARGEMOUTH BASS	54	3	.	.
LARGEMOUTH BASS	68	5	.	.
LARGEMOUTH BASS	71	5	.	.
LARGEMOUTH BASS	62	4	.	.
LARGEMOUTH BASS	61	4	.	.
LARGEMOUTH BASS	54	2	.	.
LARGEMOUTH BASS	67	4	.	.
LARGEMOUTH BASS	51	2	.	.
LARGEMOUTH BASS	43	1	.	.
LARGEMOUTH BASS	41	1	.	.
JOHNNY DARTER	.	.	1	1
LOGPERCH	.	.	5	5
LOGPERCH	.	.	1	1
LOGPERCH	.	.	6	8
FRESHWATER DRUM	514	2030	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 11JUL14 LOCATION: 510 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LONGNOSE GAR	145	5	.	.
LONGNOSE GAR	110	2	.	.
LONGNOSE GAR	120	3	.	.
LONGNOSE GAR	116	3	.	.
LONGNOSE GAR	124	3	.	.
GRASS PICKEREL	123	11	.	.
GOLDEN SHINER	.	.	1	1
SPOTTAIL SHINER	.	.	28	22
SPOTFIN SHINER	.	.	1	1
MIMIC SHINER	.	.	2	1
BLUNTNOSE MINNOW	.	.	6	5
BLUNTNOSE MINNOW	.	.	3	1
Moxostoma sp.	37	1	.	.
GREEN SUNFISH	122	42	.	.
GREEN SUNFISH	52	4	.	.
GREEN SUNFISH	51	3	.	.
PUMPKINSEED	122	44	.	.
BLUEGILL	90	19	.	.
BLUEGILL	71	8	.	.
BLUEGILL	26	1	.	.
BLUEGILL	28	1	.	.
BLUEGILL	32	1	.	.
NORTHERN SUNFISH	123	51	.	.
NORTHERN SUNFISH	103	21	.	.
NORTHERN SUNFISH	96	24	.	.
NORTHERN SUNFISH	114	37	.	.
NORTHERN SUNFISH	56	4	.	.
NORTHERN SUNFISH	92	24	.	.
NORTHERN SUNFISH	100	30	.	.
NORTHERN SUNFISH	102	32	.	.
NORTHERN SUNFISH	101	32	.	.
NORTHERN SUNFISH	93	26	.	.
NORTHERN SUNFISH	68	8	.	.
NORTHERN SUNFISH	56	4	.	.
NORTHERN SUNFISH	83	16	.	.
NORTHERN SUNFISH	72	10	.	.
NORTHERN SUNFISH	70	10	.	.
NORTHERN SUNFISH	59	5	.	.
NORTHERN SUNFISH	78	14	.	.
NORTHERN SUNFISH	65	6	.	.
SMALLMOUTH BASS	214	135	.	.
SMALLMOUTH BASS	40	1	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LARGEMOUTH BASS	336	600	.	.
LARGEMOUTH BASS	72	5	.	.
LARGEMOUTH BASS	72	5	.	.
LARGEMOUTH BASS	62	4	.	.
LARGEMOUTH BASS	78	7	.	.
LARGEMOUTH BASS	78	7	.	.
LARGEMOUTH BASS	86	10	.	.
LARGEMOUTH BASS	77	7	.	.
LARGEMOUTH BASS	58	3	.	.
LARGEMOUTH BASS	42	1	.	.
LARGEMOUTH BASS	64	4	.	.
LARGEMOUTH BASS	56	3	.	.
LARGEMOUTH BASS	46	2	.	.
LARGEMOUTH BASS	41	1	.	.
LARGEMOUTH BASS	44	1	.	.
LARGEMOUTH BASS	40	1	.	.
LOGPERCH	.	.	1	1
ROUND GOBY	45	2	.	.
ROUND GOBY	39	1	.	.
ROUND GOBY	35	1	.	.
ROUND GOBY	33	1	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 11JUL14 LOCATION: 512 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
THREADFIN SHAD	56	2	.	.
THREADFIN SHAD	57	1	.	.
THREADFIN SHAD	52	1	.	.
THREADFIN SHAD	44	1	.	.
THREADFIN SHAD	37	1	.	.
THREADFIN SHAD	40	1	.	.
THREADFIN SHAD	36	1	.	.
GOLDFISH	66	6	.	.
GOLDFISH	65	6	.	.
GOLDFISH	62	5	.	.
GOLDFISH	65	6	.	.
GOLDFISH	64	5	.	.
GOLDFISH	59	4	.	.
GOLDFISH	52	4	.	.
GOLDFISH	63	5	.	.
EMERALD SHINER	.	.	1	8
EMERALD SHINER	.	.	1	1
SPOTTAIL SHINER	.	.	3	3
SPOTFIN SHINER	.	.	22	42
REDFIN SHINER	.	.	1	1
MIMIC SHINER	.	.	7	4
MIMIC SHINER	.	.	5	5
BLUNTNOSE MINNOW	.	.	1	1
BULLHEAD MINNOW	.	.	1	7
SMALLMOUTH BUFFALO	362	740	.	.
SHORTHEAD REDHORSE	264	240	.	.
CHANNEL CATFISH	604	2310	.	.
CHANNEL CATFISH	423	810	.	.
CHANNEL CATFISH	512	1430	.	.
CHANNEL CATFISH	496	1230	.	.
CHANNEL CATFISH	473	1240	.	.
CHANNEL CATFISH	498	1440	.	.
GREEN SUNFISH	50	3	.	.
ORANGESPOTTED SUNFISH	.	.	1	5
ORANGESPOTTED SUNFISH	55	3	.	.
ORANGESPOTTED SUNFISH	55	3	.	.
ORANGESPOTTED SUNFISH	36	1	.	.
BLUEGILL	117	37	.	.
BLUEGILL	102	24	.	.
NORTHERN SUNFISH	92	18	.	.
SMALLMOUTH BASS	275	310	.	.
SMALLMOUTH BASS	216	127	.	.
SMALLMOUTH BASS	40	1	.	.
LOGPERCH	.	.	1	1
FRESHWATER DRUM	154	46	.	.
ROUND GOBY	36	1	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 11JUL14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	86	7	.	.
THREADFIN SHAD	63	2	.	.
THREADFIN SHAD	70	3	.	.
THREADFIN SHAD	62	2	.	.
THREADFIN SHAD	63	2	.	.
THREADFIN SHAD	56	2	.	.
THREADFIN SHAD	66	3	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
THREADFIN SHAD	60	2	.	.
THREADFIN SHAD	58	2	.	.
THREADFIN SHAD	63	2	.	.
THREADFIN SHAD	52	1	.	.
THREADFIN SHAD	37	1	.	.
THREADFIN SHAD	50	1	.	.
THREADFIN SHAD	55	1	.	.
THREADFIN SHAD	40	1	.	.
THREADFIN SHAD	34	1	.	.
THREADFIN SHAD	40	1	.	.
THREADFIN SHAD	40	1	.	.
THREADFIN SHAD	37	1	.	.
THREADFIN SHAD	34	1	.	.
THREADFIN SHAD	42	1	.	.
THREADFIN SHAD	35	1	.	.
THREADFIN SHAD	35	1	.	.
THREADFIN SHAD	34	1	.	.
THREADFIN SHAD	37	1	.	.
THREADFIN SHAD	38	1	.	.
THREADFIN SHAD	42	1	.	.
THREADFIN SHAD	42	1	.	.
THREADFIN SHAD	37	1	.	.
THREADFIN SHAD	34	1	.	.
THREADFIN SHAD	38	1	.	.
THREADFIN SHAD	.	.	3	1
GOLDFISH	62	5	.	.
GOLDFISH	64	4	.	.
GOLDFISH	65	5	.	.
GOLDFISH	67	6	.	.
GOLDFISH	61	4	.	.
GOLDFISH	56	3	.	.
COMMON CARP	41	1	.	.
EMERALD SHINER	.	.	7	29
EMERALD SHINER	.	.	5	2
SPOTTAIL SHINER	.	.	19	20
RED SHINER	.	.	1	1
SPOTFIN SHINER	.	.	54	61
SPOTFIN SHINER	.	.	2	1
SAND SHINER	.	.	13	13
SAND SHINER	.	.	1	1
MIMIC SHINER	.	.	27	18
MIMIC SHINER	.	.	3	3
BLUNTNOSE MINNOW	.	.	29	48
BULLHEAD MINNOW	.	.	9	12
SILVER REDHORSE	41	1	.	.
GOLDEN REDHORSE	119	21	.	.
Moxostoma sp.	25	1	.	.
Moxostoma sp.	33	1	.	.
FLATHEAD CATFISH	308	340	.	.
WHITE PERCH	162	67	.	.
WHITE PERCH	49	2	.	.
GREEN SUNFISH	54	3	.	.
GREEN SUNFISH	83	13	.	.
GREEN SUNFISH	77	11	.	.
GREEN SUNFISH	51	3	.	.
GREEN SUNFISH	66	7	.	.
GREEN SUNFISH	40	1	.	.
GREEN SUNFISH	59	5	.	.
GREEN SUNFISH	43	2	.	.
GREEN SUNFISH	58	4	.	.
GREEN SUNFISH	52	3	.	.
GREEN SUNFISH	51	3	.	.
NORTHERN SUNFISH	101	33	.	.
NORTHERN SUNFISH	58	5	.	.
NORTHERN SUNFISH	77	11	.	.
NORTHERN SUNFISH	80	12	.	.
NORTHERN SUNFISH	41	1	.	.
SMALLMOUTH BASS	263	210	.	.
SMALLMOUTH BASS	134	24	.	.
SMALLMOUTH BASS	108	15	.	.
LARGEMOUTH BASS	69	5	.	.
JOHNNY DARTER	.	.	1	1
JOHNNY DARTER	.	.	2	1
BANDED DARTER	.	.	1	1
LOGPERCH	.	.	3	2
FRESHWATER DRUM	473	1440	.	.
ROUND GOBY	35	1	.	.
ROUND GOBY	29	1	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 11JUL14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LONGNOSE GAR	654	530	.	.
THREADFIN SHAD	57	2	.	.
THREADFIN SHAD	55	1	.	.
THREADFIN SHAD	66	4	.	.
THREADFIN SHAD	54	2	.	.
THREADFIN SHAD	55	2	.	.
THREADFIN SHAD	52	1	.	.
THREADFIN SHAD	55	2	.	.
THREADFIN SHAD	55	2	.	.
THREADFIN SHAD	57	1	.	.
THREADFIN SHAD	56	1	.	.
THREADFIN SHAD	53	1	.	.
THREADFIN SHAD	50	1	.	.
THREADFIN SHAD	35	1	.	.
THREADFIN SHAD	50	1	.	.
THREADFIN SHAD	43	1	.	.
THREADFIN SHAD	35	1	.	.
THREADFIN SHAD	38	1	.	.
THREADFIN SHAD	42	1	.	.
THREADFIN SHAD	42	1	.	.
THREADFIN SHAD	41	1	.	.
THREADFIN SHAD	38	1	.	.
THREADFIN SHAD	37	1	.	.
THREADFIN SHAD	51	1	.	.
THREADFIN SHAD	45	1	.	.
THREADFIN SHAD	38	1	.	.
THREADFIN SHAD	31	1	.	.
THREADFIN SHAD	36	1	.	.
THREADFIN SHAD	35	1	.	.
THREADFIN SHAD	36	1	.	.
THREADFIN SHAD	40	1	.	.
THREADFIN SHAD	44	1	.	.
THREADFIN SHAD	37	1	.	.
THREADFIN SHAD	40	1	.	.
THREADFIN SHAD	38	1	.	.
THREADFIN SHAD	36	1	.	.
THREADFIN SHAD	37	1	.	.
THREADFIN SHAD	32	1	.	.
THREADFIN SHAD	34	1	.	.
GOLDFISH	61	5	.	.
COMMON CARP	540	2070	.	.
EMERALD SHINER	.	.	1	1
EMERALD SHINER	.	.	14	3
RED SHINER	.	.	1	4
SPOTFIN SHINER	.	.	47	84
SAND SHINER	.	.	2	2
MIMIC SHINER	.	.	6	2
BLUNTNOSE MINNOW	.	.	8	16
BLUNTNOSE MINNOW	.	.	1	1
RIVER CARPSUCKER	385	740	.	.
RIVER CARPSUCKER	380	740	.	.
SMALLMOUTH BUFFALO	428	1210	.	.
SMALLMOUTH BUFFALO	410	910	.	.
GOLDEN REDHORSE	343	500	.	.
GOLDEN REDHORSE	273	250	.	.
GOLDEN REDHORSE	196	85	.	.
GOLDEN REDHORSE	194	75	.	.
CHANNEL CATFISH	392	610	.	.
CHANNEL CATFISH	405	630	.	.
CHANNEL CATFISH	382	510	.	.
CHANNEL CATFISH	357	415	.	.
GREEN SUNFISH	44	2	.	.
BLUEGILL	146	74	.	.
BLUEGILL	103	21	.	.
BLUEGILL	69	7	.	.
BLUEGILL	73	9	.	.
NORTHERN SUNFISH	61	5	.	.
SMALLMOUTH BASS	116	17	.	.
SMALLMOUTH BASS	183	76	.	.
SMALLMOUTH BASS	225	158	.	.
SMALLMOUTH BASS	126	22	.	.
SMALLMOUTH BASS	126	25	.	.
SMALLMOUTH BASS	115	19	.	.
LARGEMOUTH BASS	74	6	.	.
BANDED DARTER	.	.	1	1
LOGPERCH	.	.	1	5
LOGPERCH	.	.	1	6
FRESHWATER DRUM	332	380	.	.
ROUND GOBY	32	1	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SITE: DRESDEN	GEAR: ELECTRO	DATE: 11JUL14	LOCATION: 515	MESOHABITAT: MAIN CHANNEL BORDER
LONGNOSE GAR	773	1030	.	.
GIZZARD SHAD	65	3	.	.
THREADFIN SHAD	68	3	.	.
THREADFIN SHAD	24	1	.	.
THREADFIN SHAD	50	1	.	.
THREADFIN SHAD	57	2	.	.
THREADFIN SHAD	41	1	.	.
THREADFIN SHAD	42	1	.	.
THREADFIN SHAD	36	1	.	.
THREADFIN SHAD	32	1	.	.
THREADFIN SHAD	33	1	.	.
THREADFIN SHAD	31	1	.	.
GOLDFISH	58	4	.	.
GOLDFISH	70	6	.	.
GOLDFISH	71	7	.	.
GOLDFISH	65	5	.	.
GOLDFISH	58	3	.	.
GOLDFISH	62	5	.	.
GOLDFISH	57	4	.	.
GOLDFISH	68	6	.	.
COMMON CARP	84	12	.	.
EMERALD SHINER	.	.	3	14
EMERALD SHINER	.	.	1	1
SPOTTAIL SHINER	.	.	3	2
SPOTFIN SHINER	.	.	33	67
SAND SHINER	.	.	2	2
MIMIC SHINER	.	.	11	7
BLUNTNOSE MINNOW	.	.	24	40
FATHEAD MINNOW	.	.	1	1
BULLHEAD MINNOW	.	.	2	1
SMALLMOUTH BUFFALO	378	690	.	.
SMALLMOUTH BUFFALO	362	640	.	.
SMALLMOUTH BUFFALO	371	810	.	.
SILVER REDHORSE	431	1060	.	.
SILVER REDHORSE	423	1140	.	.
SILVER REDHORSE	40	1	.	.
GOLDEN REDHORSE	332	470	.	.
GOLDEN REDHORSE	203	114	.	.
SHORTHEAD REDHORSE	53	2	.	.
Moxostoma sp.	36	1	.	.
Moxostoma sp.	39	1	.	.
CHANNEL CATFISH	568	1710	.	.
CHANNEL CATFISH	364	510	.	.
CHANNEL CATFISH	443	960	.	.
BROOK SILVERSIDE	.	.	1	1
ROCK BASS	54	3	.	.
GREEN SUNFISH	49	3	.	.
GREEN SUNFISH	62	5	.	.
GREEN SUNFISH	55	4	.	.
GREEN SUNFISH	41	2	.	.
GREEN SUNFISH	54	4	.	.
GREEN SUNFISH	49	2	.	.
GREEN SUNFISH	46	2	.	.
GREEN SUNFISH	56	4	.	.
GREEN SUNFISH	52	3	.	.
GREEN SUNFISH	58	5	.	.
BLUEGILL	153	84	.	.
BLUEGILL	143	54	.	.
BLUEGILL	132	56	.	.
BLUEGILL	110	24	.	.
BLUEGILL	95	18	.	.
BLUEGILL	109	31	.	.
BLUEGILL	96	21	.	.
BLUEGILL	77	9	.	.
NORTHERN SUNFISH	111	32	.	.
NORTHERN SUNFISH	102	28	.	.
NORTHERN SUNFISH	100	24	.	.
NORTHERN SUNFISH	72	8	.	.
NORTHERN SUNFISH	58	5	.	.
NORTHERN SUNFISH	65	6	.	.
Lepomis HYBRID	.	.	1	29
SMALLMOUTH BASS	223	130	.	.
SMALLMOUTH BASS	208	93	.	.
SMALLMOUTH BASS	156	39	.	.
SMALLMOUTH BASS	192	94	.	.
SMALLMOUTH BASS	134	29	.	.
LOGPERCH	.	.	1	1

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LOGPERCH	.	.	3	7
FRESHWATER DRUM	372	680	.	.
ROUND GOBY	34	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 10JUL14 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLUNTNOSE MINNOW	.	.	1	1
BLUEGILL	24	1	.	.
LARGEMOUTH BASS	39	1	.	.
LARGEMOUTH BASS	44	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 10JUL14 LOCATION: 502 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	75	5	.	.
PALLID SHINER	.	.	1	1
SPOTFIN SHINER	.	.	3	6
BULLHEAD MINNOW	.	.	4	6
Moxostoma sp.	38	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 10JUL14 LOCATION: 503 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
PALLID SHINER	.	.	2	3
SPOTFIN SHINER	.	.	15	20
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	50	99
BULLHEAD MINNOW	.	.	26	30
ORANGESPOTTED SUNFISH	82	13	.	.
ORANGESPOTTED SUNFISH	83	14	.	.
ORANGESPOTTED SUNFISH	86	10	.	.
LARGEMOUTH BASS	38	1	.	.
WHITE CRAPPIE	35	1	.	.
BLACK CRAPPIE	44	1	.	.
BLACK CRAPPIE	37	1	.	.
BLACK CRAPPIE	38	1	.	.
BLACK CRAPPIE	36	1	.	.
BLACK CRAPPIE	42	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 10JUL14 LOCATION: 507 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTTAIL SHINER	.	.	1	2
SAND SHINER	.	.	2	3
JOHNNY DARTER	.	.	1	1

SITE: DRESDEN GEAR: SEINE DATE: 10JUL14 LOCATION: 509 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	67	3	.	.
GIZZARD SHAD	72	3	.	.
GIZZARD SHAD	80	5	.	.
GIZZARD SHAD	77	4	.	.
GIZZARD SHAD	70	3	.	.
GIZZARD SHAD	67	3	.	.
GIZZARD SHAD	70	3	.	.
GIZZARD SHAD	70	3	.	.
GIZZARD SHAD	84	6	.	.
GIZZARD SHAD	71	4	.	.
GIZZARD SHAD	67	3	.	.
GIZZARD SHAD	65	3	.	.
GIZZARD SHAD	70	3	.	.
GIZZARD SHAD	55	2	.	.
GIZZARD SHAD	63	2	.	.
GIZZARD SHAD	55	2	.	.
GIZZARD SHAD	66	3	.	.
GIZZARD SHAD	63	3	.	.
GIZZARD SHAD	62	2	.	.
GIZZARD SHAD	68	3	.	.
GIZZARD SHAD	65	3	.	.
GIZZARD SHAD	69	3	.	.
GIZZARD SHAD	70	3	.	.
GIZZARD SHAD	65	3	.	.
GOLDEN REDHORSE	55	2	.	.
BLUEGILL	164	116	.	.
BLUEGILL	143	68	.	.
BLUEGILL	40	1	.	.
NORTHERN SUNFISH	87	20	.	.
NORTHERN SUNFISH	59	5	.	.
NORTHERN SUNFISH	66	7	.	.
NORTHERN SUNFISH	65	7	.	.
LARGEMOUTH BASS	42	1	.	.
LARGEMOUTH BASS	50	2	.	.
LARGEMOUTH BASS	45	2	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LARGEMOUTH BASS	45	2	.	.
LARGEMOUTH BASS	38	1	.	.
LARGEMOUTH BASS	39	1	.	.
LARGEMOUTH BASS	35	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 11JUL14 LOCATION: 512 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
THREADFIN SHAD	59	2	.	.
THREADFIN SHAD	55	2	.	.
THREADFIN SHAD	40	1	.	.
GHOST SHINER	.	.	1	1
SPOTTAIL SHINER	.	.	17	14
SPOTFIN SHINER	.	.	16	21
SAND SHINER	.	.	3	3
MIMIC SHINER	.	.	1	1
BULLHEAD MINNOW	.	.	2	4
ORANGESPOTTED SUNFISH	70	6	.	.

SITE: DRESDEN GEAR: SEINE DATE: 11JUL14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
THREADFIN SHAD	59	2	.	.
THREADFIN SHAD	46	1	.	.
THREADFIN SHAD	41	1	.	.
THREADFIN SHAD	32	1	.	.
THREADFIN SHAD	27	1	.	.
THREADFIN SHAD	42	1	.	.
EMERALD SHINER	.	.	2	7
EMERALD SHINER	.	.	1	1
SPOTTAIL SHINER	.	.	5	3
SPOTFIN SHINER	.	.	19	18
SAND SHINER	.	.	2	3
SAND SHINER	.	.	1	2
MIMIC SHINER	.	.	2	1
BULLHEAD MINNOW	.	.	1	1
NORTHERN SUNFISH	108	36	.	.
SMALLMOUTH BASS	34	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 11JUL14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	63	3	.	.
GIZZARD SHAD	39	1	.	.
THREADFIN SHAD	70	3	.	.
THREADFIN SHAD	60	2	.	.
THREADFIN SHAD	58	2	.	.
THREADFIN SHAD	46	1	.	.
THREADFIN SHAD	47	1	.	.
THREADFIN SHAD	45	1	.	.
THREADFIN SHAD	46	1	.	.
THREADFIN SHAD	53	2	.	.
THREADFIN SHAD	49	1	.	.
THREADFIN SHAD	41	1	.	.
THREADFIN SHAD	43	1	.	.
THREADFIN SHAD	42	1	.	.
THREADFIN SHAD	35	1	.	.
THREADFIN SHAD	39	1	.	.
THREADFIN SHAD	35	1	.	.
THREADFIN SHAD	39	1	.	.
THREADFIN SHAD	37	1	.	.
THREADFIN SHAD	37	1	.	.
EMERALD SHINER	.	.	4	13
SPOTTAIL SHINER	.	.	33	23
SPOTTAIL SHINER	.	.	1	1
SPOTFIN SHINER	.	.	80	110
SPOTFIN SHINER	.	.	1	1
SAND SHINER	.	.	4	4
REDFIN SHINER	.	.	1	1
MIMIC SHINER	.	.	13	7
BULLHEAD MINNOW	.	.	20	24
BLACKSTRIPE TOPMINNOW	.	.	1	1
BLACKSTRIPE TOPMINNOW	.	.	1	1
NORTHERN SUNFISH	60	4	.	.
SMALLMOUTH BASS	31	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 11JUL14 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	30	33
MIMIC SHINER	.	.	4	3
BLUNTNOSE MINNOW	.	.	4	9
BULLHEAD MINNOW	.	.	1	1
BLUEGILL	138	58	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
NORTHERN SUNFISH	83	15	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 24JUL14 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	88	7	.	.
GIZZARD SHAD	82	6	.	.
GIZZARD SHAD	82	5	.	.
GIZZARD SHAD	94	8	.	.
GIZZARD SHAD	81	4	.	.
GIZZARD SHAD	84	6	.	.
GIZZARD SHAD	87	6	.	.
GIZZARD SHAD	85	5	.	.
GIZZARD SHAD	86	5	.	.
GIZZARD SHAD	87	6	.	.
GIZZARD SHAD	85	6	.	.
GIZZARD SHAD	120	19	.	.
GIZZARD SHAD	92	8	.	.
GIZZARD SHAD	66	3	.	.
GIZZARD SHAD	82	6	.	.
GIZZARD SHAD	87	7	.	.
GIZZARD SHAD	86	8	.	.
GIZZARD SHAD	91	9	.	.
GIZZARD SHAD	82	7	.	.
GIZZARD SHAD	79	6	.	.
GIZZARD SHAD	84	7	.	.
GIZZARD SHAD	77	6	.	.
GIZZARD SHAD	75	5	.	.
GIZZARD SHAD	83	7	.	.
GIZZARD SHAD	82	7	.	.
GIZZARD SHAD	76	5	.	.
GIZZARD SHAD	78	6	.	.
GIZZARD SHAD	72	4	.	.
GIZZARD SHAD	68	3	.	.
GIZZARD SHAD	89	8	.	.
GIZZARD SHAD	84	6	.	.
GIZZARD SHAD	102	12	.	.
GIZZARD SHAD	76	5	.	.
GIZZARD SHAD	96	10	.	.
GIZZARD SHAD	84	6	.	.
GIZZARD SHAD	103	15	.	.
THREADFIN SHAD	62	3	.	.
THREADFIN SHAD	56	2	.	.
THREADFIN SHAD	62	3	.	.
COMMON CARP	87	14	.	.
EMERALD SHINER	.	.	1	1
STRIPED SHINER	.	.	1	1
SPOTTAIL SHINER	.	.	6	14
SPOTFIN SHINER	.	.	2	5
SPOTFIN SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	50	70
BLUNTNOSE MINNOW	.	.	6	2
CHANNEL CATFISH	503	1480	.	.
CHANNEL CATFISH	518	1060	.	.
BLACKSTRIPE TOPMINNOW	.	.	1	1
BROOK SILVERSIDE	.	.	1	1
ROCK BASS	40	2	.	.
GREEN SUNFISH	127	48	.	.
GREEN SUNFISH	116	34	.	.
GREEN SUNFISH	105	24	.	.
GREEN SUNFISH	134	61	.	.
GREEN SUNFISH	86	12	.	.
PUMPKINSEED	160	106	.	.
BLUEGILL	118	29	.	.
BLUEGILL	164	99	.	.
BLUEGILL	102	22	.	.
BLUEGILL	77	8	.	.
SMALLMOUTH BASS	202	100	.	.
SMALLMOUTH BASS	46	2	.	.
SMALLMOUTH BASS	51	2	.	.
SMALLMOUTH BASS	47	2	.	.
SMALLMOUTH BASS	52	2	.	.
LARGEMOUTH BASS	336	635	.	.
LARGEMOUTH BASS	357	605	.	.
LARGEMOUTH BASS	75	5	.	.
LARGEMOUTH BASS	67	4	.	.
LARGEMOUTH BASS	74	5	.	.
LARGEMOUTH BASS	65	3	.	.
LARGEMOUTH BASS	62	3	.	.
LARGEMOUTH BASS	76	6	.	.
LARGEMOUTH BASS	322	505	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LARGEMOUTH BASS	97	12	.	.
LARGEMOUTH BASS	72	5	.	.
LARGEMOUTH BASS	67	3	.	.
LARGEMOUTH BASS	71	3	.	.
LARGEMOUTH BASS	76	5	.	.
LARGEMOUTH BASS	72	4	.	.
LARGEMOUTH BASS	63	3	.	.
LARGEMOUTH BASS	73	5	.	.
LARGEMOUTH BASS	293	385	.	.
LARGEMOUTH BASS	87	8	.	.
LARGEMOUTH BASS	65	3	.	.
LARGEMOUTH BASS	72	4	.	.
LARGEMOUTH BASS	97	11	.	.
LARGEMOUTH BASS	71	5	.	.
LARGEMOUTH BASS	73	5	.	.
LARGEMOUTH BASS	79	5	.	.
LARGEMOUTH BASS	67	4	.	.
LARGEMOUTH BASS	74	5	.	.
LARGEMOUTH BASS	57	2	.	.
LARGEMOUTH BASS	62	2	.	.
LARGEMOUTH BASS	61	3	.	.
LARGEMOUTH BASS	65	3	.	.
LARGEMOUTH BASS	54	3	.	.
LARGEMOUTH BASS	64	4	.	.
LARGEMOUTH BASS	56	3	.	.
LARGEMOUTH BASS	56	3	.	.
LARGEMOUTH BASS	54	4	.	.
LARGEMOUTH BASS	62	3	.	.
LARGEMOUTH BASS	62	3	.	.
LARGEMOUTH BASS	62	3	.	.
LARGEMOUTH BASS	47	2	.	.
LARGEMOUTH BASS	46	2	.	.
LARGEMOUTH BASS	69	4	.	.
LOGPERCH	.	.	1	2
FRESHWATER DRUM	431	1000	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 24JUL14 LOCATION: 502 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	.	.	100	655
GIZZARD SHAD	.	.	184	1470
GIZZARD SHAD	95	10	.	.
GIZZARD SHAD	83	6	.	.
GIZZARD SHAD	78	6	.	.
GIZZARD SHAD	79	5	.	.
GIZZARD SHAD	91	10	.	.
GIZZARD SHAD	79	6	.	.
GIZZARD SHAD	86	7	.	.
GIZZARD SHAD	88	9	.	.
GIZZARD SHAD	90	8	.	.
GIZZARD SHAD	98	12	.	.
GIZZARD SHAD	94	9	.	.
GIZZARD SHAD	88	9	.	.
GIZZARD SHAD	96	11	.	.
GIZZARD SHAD	85	8	.	.
GIZZARD SHAD	98	10	.	.
GIZZARD SHAD	93	7	.	.
GIZZARD SHAD	102	10	.	.
GIZZARD SHAD	90	9	.	.
GIZZARD SHAD	86	7	.	.
GIZZARD SHAD	72	5	.	.
GIZZARD SHAD	80	6	.	.
GIZZARD SHAD	87	8	.	.
GIZZARD SHAD	88	8	.	.
GIZZARD SHAD	81	6	.	.
GIZZARD SHAD	90	8	.	.
GIZZARD SHAD	88	8	.	.
GIZZARD SHAD	91	9	.	.
GIZZARD SHAD	86	6	.	.
GIZZARD SHAD	83	7	.	.
GIZZARD SHAD	86	8	.	.
GIZZARD SHAD	.	.	120	160
EMERALD SHINER	.	.	1	6
EMERALD SHINER	.	.	9	4
SPOTTAIL SHINER	.	.	1	1
SPOTFIN SHINER	.	.	1	3
SPOTFIN SHINER	.	.	1	2
SPOTFIN SHINER	.	.	28	60
BLUNTNOSE MINNOW	.	.	4	10
BULLHEAD MINNOW	.	.	13	24
BULLHEAD MINNOW	.	.	1	1

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SILVER REDHORSE	52	2	.	.
SILVER REDHORSE	46	1	.	.
SILVER REDHORSE	48	1	.	.
SILVER REDHORSE	50	1	.	.
SILVER REDHORSE	42	1	.	.
SHORTHEAD REDHORSE	58	2	.	.
SHORTHEAD REDHORSE	65	3	.	.
SHORTHEAD REDHORSE	49	1	.	.
Moxostoma sp.	52	1	.	.
CHANNEL CATFISH	516	1380	.	.
BROOK SILVERSIDE	.	.	3	2
GREEN SUNFISH	117	30	.	.
GREEN SUNFISH	60	5	.	.
BLUEGILL	125	36	.	.
NORTHERN SUNFISH	112	33	.	.
NORTHERN SUNFISH	65	6	.	.
SMALLMOUTH BASS	267	285	.	.
SMALLMOUTH BASS	237	165	.	.
SMALLMOUTH BASS	238	175	.	.
SMALLMOUTH BASS	117	19	.	.
LARGEMOUTH BASS	327	505	.	.
LARGEMOUTH BASS	51	1	.	.
JOHNNY DARTER	.	.	2	3
YELLOW PERCH	84	6	.	.
LOGPERCH	.	.	4	6
LOGPERCH	.	.	3	4
LOGPERCH	.	.	1	1
LOGPERCH	.	.	1	1
LOGPERCH	.	.	1	1
LOGPERCH	.	.	5	20
WALLEYE	132	18	.	.
FRESHWATER DRUM	442	1120	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 24JUL14 LOCATION: 503 MESOHABITAT: .

LONGNOSE GAR	671	820	.	.
GIZZARD SHAD	.	.	307	2250
GIZZARD SHAD	88	9	.	.
GIZZARD SHAD	89	8	.	.
GIZZARD SHAD	57	2	.	.
GIZZARD SHAD	79	5	.	.
GIZZARD SHAD	91	9	.	.
GIZZARD SHAD	83	7	.	.
GIZZARD SHAD	88	8	.	.
GIZZARD SHAD	78	5	.	.
GIZZARD SHAD	77	6	.	.
GIZZARD SHAD	82	7	.	.
GIZZARD SHAD	84	7	.	.
GIZZARD SHAD	90	8	.	.
GIZZARD SHAD	84	7	.	.
GIZZARD SHAD	69	3	.	.
GIZZARD SHAD	61	3	.	.
GIZZARD SHAD	87	8	.	.
GIZZARD SHAD	92	9	.	.
GIZZARD SHAD	82	7	.	.
GIZZARD SHAD	84	8	.	.
GIZZARD SHAD	76	5	.	.
GIZZARD SHAD	88	8	.	.
GIZZARD SHAD	93	10	.	.
GIZZARD SHAD	84	7	.	.
GIZZARD SHAD	73	5	.	.
GIZZARD SHAD	80	6	.	.
GIZZARD SHAD	88	8	.	.
GIZZARD SHAD	84	8	.	.
GIZZARD SHAD	81	6	.	.
GIZZARD SHAD	81	6	.	.
GIZZARD SHAD	.	.	12	75
THREADFIN SHAD	69	3	.	.
THREADFIN SHAD	66	3	.	.
THREADFIN SHAD	82	6	.	.
THREADFIN SHAD	83	6	.	.
THREADFIN SHAD	62	2	.	.
THREADFIN SHAD	73	4	.	.
THREADFIN SHAD	57	2	.	.
COMMON CARP	466	1350	.	.
PALLID SHINER	.	.	3	5
PALLID SHINER	.	.	1	1
SPOTTAIL SHINER	.	.	2	1
SPOTFIN SHINER	.	.	47	67
SAND SHINER	.	.	4	4

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SAND SHINER	.	.	2	2
REDFIN SHINER	.	.	2	2
BLUNTNOSE MINNOW	.	.	18	34
FATHEAD MINNOW	.	.	1	3
BULLHEAD MINNOW	.	.	31	44
SILVER REDHORSE	53	2	.	.
GOLDEN REDHORSE	59	2	.	.
CHANNEL CATFISH	590	1975	.	.
BROOK SILVERSIDE	.	.	1	3
BLUEGILL	118	30	.	.
BLUEGILL	137	41	.	.
BLUEGILL	110	25	.	.
BLUEGILL	153	72	.	.
BLUEGILL	77	9	.	.
BLUEGILL	66	6	.	.
NORTHERN SUNFISH	102	25	.	.
NORTHERN SUNFISH	112	34	.	.
NORTHERN SUNFISH	94	17	.	.
NORTHERN SUNFISH	106	25	.	.
NORTHERN SUNFISH	74	10	.	.
NORTHERN SUNFISH	49	3	.	.
NORTHERN SUNFISH	46	2	.	.
NORTHERN SUNFISH	54	3	.	.
NORTHERN SUNFISH	64	6	.	.
NORTHERN SUNFISH	54	3	.	.
SMALLMOUTH BASS	108	15	.	.
LARGEMOUTH BASS	214	120	.	.
LARGEMOUTH BASS	234	185	.	.
LARGEMOUTH BASS	287	340	.	.
LARGEMOUTH BASS	330	490	.	.
LARGEMOUTH BASS	260	260	.	.
LARGEMOUTH BASS	354	595	.	.
LARGEMOUTH BASS	288	380	.	.
LARGEMOUTH BASS	290	350	.	.
LARGEMOUTH BASS	92	12	.	.
LARGEMOUTH BASS	75	6	.	.
LARGEMOUTH BASS	60	3	.	.
LARGEMOUTH BASS	52	2	.	.
JOHNNY DARTER	.	.	2	1
LOGPERCH	.	.	2	2
LOGPERCH	.	.	1	2

SITE: DRESDEN GEAR: ELECTRO DATE: 24JUL14 LOCATION: 506 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	77	3	.	.
GIZZARD SHAD	81	4	.	.
THREADFIN SHAD	62	2	.	.
THREADFIN SHAD	61	2	.	.
THREADFIN SHAD	67	3	.	.
THREADFIN SHAD	60	2	.	.
THREADFIN SHAD	62	2	.	.
THREADFIN SHAD	63	3	.	.
THREADFIN SHAD	40	1	.	.
THREADFIN SHAD	40	1	.	.
THREADFIN SHAD	66	3	.	.
THREADFIN SHAD	65	3	.	.
EMERALD SHINER	.	.	1	7
EMERALD SHINER	.	.	2	17
SPOTFIN SHINER	.	.	1	5
SPOTFIN SHINER	.	.	1	3
SPOTFIN SHINER	.	.	1	4
SPOTFIN SHINER	.	.	19	43
BLUNTNOSE MINNOW	.	.	6	20
BULLHEAD MINNOW	.	.	1	2
SMALLMOUTH BUFFALO	.	.	1	1190
GREEN SUNFISH	119	35	.	.
GREEN SUNFISH	128	43	.	.
GREEN SUNFISH	60	5	.	.
BLUEGILL	102	23	.	.
NORTHERN SUNFISH	71	8	.	.
NORTHERN SUNFISH	58	5	.	.
NORTHERN SUNFISH	50	3	.	.
Lepomis HYBRID	.	.	1	15
LARGEMOUTH BASS	95	12	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 24JUL14 LOCATION: 507A MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	71	4	.	.
GIZZARD SHAD	52	2	.	.
GIZZARD SHAD	67	3	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	62	3	.	.
GIZZARD SHAD	68	3	.	.
GIZZARD SHAD	72	4	.	.
GIZZARD SHAD	64	3	.	.
GIZZARD SHAD	62	3	.	.
GIZZARD SHAD	57	2	.	.
GIZZARD SHAD	66	4	.	.
GIZZARD SHAD	65	3	.	.
GIZZARD SHAD	55	2	.	.
GIZZARD SHAD	57	3	.	.
GIZZARD SHAD	68	4	.	.
GIZZARD SHAD	64	3	.	.
GIZZARD SHAD	82	6	.	.
GIZZARD SHAD	73	4	.	.
GIZZARD SHAD	54	1	.	.
GIZZARD SHAD	62	3	.	.
GIZZARD SHAD	66	3	.	.
GIZZARD SHAD	64	3	.	.
GIZZARD SHAD	78	5	.	.
GIZZARD SHAD	66	4	.	.
GIZZARD SHAD	63	2	.	.
GIZZARD SHAD	66	3	.	.
GIZZARD SHAD	66	4	.	.
GIZZARD SHAD	67	4	.	.
GIZZARD SHAD	72	4	.	.
GIZZARD SHAD	68	4	.	.
GIZZARD SHAD	72	3	.	.
GIZZARD SHAD	.	.	77	279
GIZZARD SHAD	.	.	6	40
THREADFIN SHAD	57	1	.	.
THREADFIN SHAD	34	1	.	.
THREADFIN SHAD	33	1	.	.
THREADFIN SHAD	37	1	.	.
THREADFIN SHAD	36	1	.	.
THREADFIN SHAD	32	1	.	.
THREADFIN SHAD	54	2	.	.
THREADFIN SHAD	52	2	.	.
THREADFIN SHAD	61	2	.	.
THREADFIN SHAD	61	2	.	.
THREADFIN SHAD	56	2	.	.
THREADFIN SHAD	54	2	.	.
THREADFIN SHAD	53	2	.	.
THREADFIN SHAD	57	2	.	.
THREADFIN SHAD	61	2	.	.
THREADFIN SHAD	51	1	.	.
THREADFIN SHAD	53	1	.	.
THREADFIN SHAD	57	2	.	.
THREADFIN SHAD	56	2	.	.
THREADFIN SHAD	53	1	.	.
THREADFIN SHAD	54	2	.	.
THREADFIN SHAD	66	3	.	.
THREADFIN SHAD	60	2	.	.
THREADFIN SHAD	54	2	.	.
THREADFIN SHAD	50	1	.	.
THREADFIN SHAD	54	2	.	.
THREADFIN SHAD	54	2	.	.
THREADFIN SHAD	35	1	.	.
THREADFIN SHAD	36	1	.	.
GOLDFISH	77	9	.	.
COMMON CARP	79	9	.	.
COMMON CARP	91	13	.	.
COMMON CARP	86	12	.	.
COMMON CARP	96	16	.	.
PALLID SHINER	.	.	2	2
SPOTTAIL SHINER	.	.	42	73
SPOTFIN SHINER	.	.	8	14
BLUNTNOSE MINNOW	.	.	1	2
BLUNTNOSE MINNOW	.	.	13	29
BLUNTNOSE MINNOW	.	.	10	4
BULLHEAD MINNOW	.	.	1	2
SILVER REDHORSE	56	2	.	.
SILVER REDHORSE	70	4	.	.
SILVER REDHORSE	56	2	.	.
SILVER REDHORSE	57	2	.	.
SILVER REDHORSE	54	2	.	.
SILVER REDHORSE	45	1	.	.
SHORTHEAD REDHORSE	70	4	.	.
SHORTHEAD REDHORSE	74	4	.	.
SHORTHEAD REDHORSE	64	3	.	.
SHORTHEAD REDHORSE	61	3	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SHORTHEAD REDHORSE	72	4	.	.
SHORTHEAD REDHORSE	58	2	.	.
SHORTHEAD REDHORSE	56	2	.	.
SHORTHEAD REDHORSE	59	2	.	.
SHORTHEAD REDHORSE	61	2	.	.
SHORTHEAD REDHORSE	64	3	.	.
SHORTHEAD REDHORSE	61	3	.	.
SHORTHEAD REDHORSE	68	3	.	.
SHORTHEAD REDHORSE	46	1	.	.
SHORTHEAD REDHORSE	46	1	.	.
SHORTHEAD REDHORSE	58	2	.	.
SHORTHEAD REDHORSE	56	2	.	.
SHORTHEAD REDHORSE	53	2	.	.
SHORTHEAD REDHORSE	55	2	.	.
SHORTHEAD REDHORSE	56	2	.	.
SHORTHEAD REDHORSE	61	2	.	.
Moxostoma sp.	71	4	.	.
Moxostoma sp.	67	3	.	.
Moxostoma sp.	56	2	.	.
Moxostoma sp.	54	2	.	.
Moxostoma sp.	56	2	.	.
Moxostoma sp.	59	2	.	.
Moxostoma sp.	60	2	.	.
Moxostoma sp.	51	2	.	.
Moxostoma sp.	48	1	.	.
Moxostoma sp.	54	2	.	.
Moxostoma sp.	57	2	.	.
Moxostoma sp.	61	2	.	.
Moxostoma sp.	57	2	.	.
Moxostoma sp.	48	1	.	.
Moxostoma sp.	54	2	.	.
Moxostoma sp.	50	1	.	.
BROOK SILVERSIDE	.	.	1	1
ROCK BASS	80	9	.	.
ROCK BASS	80	11	.	.
GREEN SUNFISH	117	36	.	.
GREEN SUNFISH	52	2	.	.
GREEN SUNFISH	38	1	.	.
GREEN SUNFISH	36	1	.	.
GREEN SUNFISH	52	3	.	.
GREEN SUNFISH	56	4	.	.
GREEN SUNFISH	54	4	.	.
GREEN SUNFISH	60	5	.	.
BLUEGILL	88	12	.	.
BLUEGILL	83	10	.	.
BLUEGILL	94	19	.	.
NORTHERN SUNFISH	88	13	.	.
NORTHERN SUNFISH	101	22	.	.
NORTHERN SUNFISH	92	19	.	.
NORTHERN SUNFISH	112	30	.	.
NORTHERN SUNFISH	97	23	.	.
NORTHERN SUNFISH	64	6	.	.
NORTHERN SUNFISH	63	6	.	.
LARGEMOUTH BASS	98	12	.	.
LARGEMOUTH BASS	63	3	.	.
LARGEMOUTH BASS	61	2	.	.
LARGEMOUTH BASS	62	3	.	.
LARGEMOUTH BASS	63	3	.	.
LARGEMOUTH BASS	317	495	.	.
LARGEMOUTH BASS	72	5	.	.
LARGEMOUTH BASS	56	3	.	.
LARGEMOUTH BASS	56	3	.	.
LARGEMOUTH BASS	64	4	.	.
LARGEMOUTH BASS	62	4	.	.
LARGEMOUTH BASS	71	5	.	.
LARGEMOUTH BASS	63	4	.	.
LARGEMOUTH BASS	66	4	.	.
LARGEMOUTH BASS	50	3	.	.
LARGEMOUTH BASS	62	3	.	.
LARGEMOUTH BASS	57	3	.	.
LARGEMOUTH BASS	71	5	.	.
LARGEMOUTH BASS	68	4	.	.
LARGEMOUTH BASS	62	3	.	.
LARGEMOUTH BASS	57	3	.	.
LARGEMOUTH BASS	66	4	.	.
LARGEMOUTH BASS	63	3	.	.
JOHNNY DARTER	.	.	1	1
YELLOW PERCH	80	5	.	.
LOGPERCH	.	.	1	2
LOGPERCH	.	.	1	2

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LOGPERCH	.	.	2	4
LOGPERCH	.	.	1	2
LOGPERCH	.	.	1	2
LOGPERCH	.	.	2	4
LOGPERCH	.	.	1	2
LOGPERCH	.	.	1	2
LOGPERCH	.	.	1	1
LOGPERCH	.	.	1	3
ROUND GOBY	46	2	.	.
ROUND GOBY	45	1	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 24JUL14 LOCATION: 510 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LONGNOSE GAR	208	13	.	.
GIZZARD SHAD	66	2	.	.
SPOTTAIL SHINER	.	.	17	24
SPOTFIN SHINER	.	.	1	1
SPOTFIN SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	4	1
BLUNTNOSE MINNOW	.	.	24	27
BIGMOUTH BUFFALO	580	3540	.	.
BLACKSTRIPE TOPMINNOW	.	.	6	15
ROCK BASS	118	35	.	.
BLUEGILL	46	2	.	.
BLUEGILL	44	2	.	.
BLUEGILL	38	1	.	.
BLUEGILL	41	1	.	.
BLUEGILL	43	2	.	.
BLUEGILL	48	1	.	.
BLUEGILL	35	1	.	.
BLUEGILL	26	1	.	.
BLUEGILL	31	1	.	.
BLUEGILL	34	1	.	.
BLUEGILL	28	1	.	.
BLUEGILL	36	1	.	.
NORTHERN SUNFISH	110	32	.	.
NORTHERN SUNFISH	97	23	.	.
NORTHERN SUNFISH	107	28	.	.
NORTHERN SUNFISH	112	34	.	.
NORTHERN SUNFISH	89	17	.	.
NORTHERN SUNFISH	109	32	.	.
NORTHERN SUNFISH	69	8	.	.
NORTHERN SUNFISH	59	5	.	.
SMALLMOUTH BASS	232	160	.	.
SMALLMOUTH BASS	97	10	.	.
SMALLMOUTH BASS	156	45	.	.
SMALLMOUTH BASS	49	2	.	.
LARGEMOUTH BASS	80	6	.	.
LARGEMOUTH BASS	110	15	.	.
LARGEMOUTH BASS	107	17	.	.
LARGEMOUTH BASS	88	9	.	.
LARGEMOUTH BASS	57	3	.	.
LARGEMOUTH BASS	52	2	.	.
LARGEMOUTH BASS	59	3	.	.
LARGEMOUTH BASS	66	4	.	.
LARGEMOUTH BASS	56	3	.	.
LARGEMOUTH BASS	47	2	.	.
LARGEMOUTH BASS	59	3	.	.
LARGEMOUTH BASS	62	4	.	.
LARGEMOUTH BASS	67	4	.	.
LARGEMOUTH BASS	56	3	.	.
LOGPERCH	.	.	1	2
FRESHWATER DRUM	457	1170	.	.
FRESHWATER DRUM	476	1200	.	.
ROUND GOBY	54	3	.	.
ROUND GOBY	43	1	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 25JUL14 LOCATION: 512 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LONGNOSE GAR	699	610	.	.
GIZZARD SHAD	63	3	.	.
GIZZARD SHAD	78	4	.	.
GIZZARD SHAD	92	9	.	.
GIZZARD SHAD	74	4	.	.
GIZZARD SHAD	79	6	.	.
GIZZARD SHAD	81	5	.	.
THREADFIN SHAD	87	6	.	.
THREADFIN SHAD	81	5	.	.
THREADFIN SHAD	63	2	.	.
THREADFIN SHAD	48	1	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
THREADFIN SHAD	37	1	.	.
THREADFIN SHAD	37	1	.	.
THREADFIN SHAD	41	1	.	.
EMERALD SHINER	.	.	7	4
GHOST SHINER	.	.	1	1
ROSYFACE SHINER	.	.	1	1
SPOTFIN SHINER	.	.	7	17
SPOTFIN SHINER	.	.	1	4
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	2	2
QUILLBACK	348	490	.	.
SILVER REDHORSE	407	775	.	.
SILVER REDHORSE	478	1220	.	.
SILVER REDHORSE	443	1080	.	.
SILVER REDHORSE	69	4	.	.
GREEN SUNFISH	56	4	.	.
GREEN SUNFISH	63	5	.	.
ORANGESPOTTED SUNFISH	62	5	.	.
ORANGESPOTTED SUNFISH	77	9	.	.
ORANGESPOTTED SUNFISH	51	2	.	.
BLUEGILL	129	46	.	.
NORTHERN SUNFISH	58	4	.	.
NORTHERN SUNFISH	53	3	.	.
Lepomis HYBRID	.	.	1	120
SMALLMOUTH BASS	330	415	.	.
SMALLMOUTH BASS	207	100	.	.
SMALLMOUTH BASS	231	160	.	.
JOHNNY DARTER	.	.	1	1
LOGPERCH	.	.	1	12
LOGPERCH	.	.	1	1
LOGPERCH	.	.	1	1
WALLEYE	143	29	.	.
FRESHWATER DRUM	378	700	.	.
FRESHWATER DRUM	460	1245	.	.
FRESHWATER DRUM	397	830	.	.
FRESHWATER DRUM	126	25	.	.
FRESHWATER DRUM	347	560	.	.
FRESHWATER DRUM	162	47	.	.
FRESHWATER DRUM	155	41	.	.
FRESHWATER DRUM	120	21	.	.
FRESHWATER DRUM	62	3	.	.
ROUND GOBY	35	1	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 25JUL14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
COMMON CARP	612	2890	.	.
EMERALD SHINER	.	.	1	5
EMERALD SHINER	.	.	6	2
SPOTTAIL SHINER	.	.	6	6
ROSYFACE SHINER	.	.	1	1
SPOTFIN SHINER	.	.	11	12
SAND SHINER	.	.	1	4
SAND SHINER	.	.	2	1
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	3	3
BULLHEAD MINNOW	.	.	1	1
SMALLMOUTH BUFFALO	361	700	.	.
SMALLMOUTH BUFFALO	375	720	.	.
SILVER REDHORSE	346	445	.	.
GOLDEN REDHORSE	217	102	.	.
GOLDEN REDHORSE	162	46	.	.
SHORTHEAD REDHORSE	48	1	.	.
GREEN SUNFISH	36	1	.	.
BLUEGILL	86	12	.	.
BLUEGILL	78	9	.	.
NORTHERN SUNFISH	82	16	.	.
NORTHERN SUNFISH	86	13	.	.
NORTHERN SUNFISH	102	21	.	.
NORTHERN SUNFISH	102	22	.	.
NORTHERN SUNFISH	103	23	.	.
NORTHERN SUNFISH	94	21	.	.
NORTHERN SUNFISH	96	18	.	.
NORTHERN SUNFISH	104	30	.	.
SMALLMOUTH BASS	148	40	.	.
SMALLMOUTH BASS	134	31	.	.
SMALLMOUTH BASS	137	32	.	.
SMALLMOUTH BASS	112	15	.	.
SMALLMOUTH BASS	137	32	.	.
SMALLMOUTH BASS	116	18	.	.
WESTERN SAND DARTER	.	.	1	1

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LOGPERCH	.	.	1	17
LOGPERCH	.	.	1	1
FRESHWATER DRUM	333	515	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 25JUL14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
COMMON CARP	542	1985	.	.
EMERALD SHINER	.	.	6	2
EMERALD SHINER	.	.	4	5
RED SHINER	.	.	1	1
SPOTFIN SHINER	.	.	1	1
SPOTFIN SHINER	.	.	26	37
MIMIC SHINER	.	.	4	3
BLUNTNOSE MINNOW	.	.	9	18
BULLHEAD MINNOW	.	.	1	2
CHANNEL CATFISH	437	680	.	.
BROOK SILVERSIDE	.	.	2	1
GREEN SUNFISH	107	21	.	.
GREEN SUNFISH	97	17	.	.
GREEN SUNFISH	62	6	.	.
GREEN SUNFISH	48	3	.	.
GREEN SUNFISH	62	6	.	.
GREEN SUNFISH	75	9	.	.
BLUEGILL	146	53	.	.
BLUEGILL	132	53	.	.
NORTHERN SUNFISH	53	3	.	.
Lepomis HYBRID	.	.	1	54
SMALLMOUTH BASS	127	26	.	.
SMALLMOUTH BASS	138	31	.	.
SMALLMOUTH BASS	130	32	.	.
SMALLMOUTH BASS	150	47	.	.
SMALLMOUTH BASS	133	35	.	.
SMALLMOUTH BASS	107	15	.	.
SMALLMOUTH BASS	125	23	.	.
SMALLMOUTH BASS	137	31	.	.
SMALLMOUTH BASS	51	1	.	.
SMALLMOUTH BASS	48	1	.	.
LARGEMOUTH BASS	392	900	.	.
LARGEMOUTH BASS	106	16	.	.
LOGPERCH	.	.	1	7
LOGPERCH	.	.	1	1
LOGPERCH	.	.	1	1
FRESHWATER DRUM	435	1140	.	.
ROUND GOBY	39	1	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 25JUL14 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SHORTNOSE GAR	592	690	.	.
THREADFIN SHAD	43	1	.	.
THREADFIN SHAD	65	2	.	.
EMERALD SHINER	.	.	59	106
EMERALD SHINER	.	.	21	9
SPOTTAIL SHINER	.	.	4	2
ROSYFACE SHINER	.	.	2	1
SPOTFIN SHINER	.	.	35	60
SPOTFIN SHINER	.	.	2	7
SAND SHINER	.	.	2	3
MIMIC SHINER	.	.	7	6
BLUNTNOSE MINNOW	.	.	23	30
BLUNTNOSE MINNOW	.	.	1	1
BULLHEAD MINNOW	.	.	2	3
GOLDEN REDHORSE	143	35	.	.
CHANNEL CATFISH	507	1140	.	.
BROOK SILVERSIDE	.	.	1	1
BROOK SILVERSIDE	.	.	15	8
ROCK BASS	127	45	.	.
GREEN SUNFISH	149	59	.	.
GREEN SUNFISH	98	17	.	.
GREEN SUNFISH	104	21	.	.
GREEN SUNFISH	28	1	.	.
GREEN SUNFISH	58	4	.	.
GREEN SUNFISH	65	7	.	.
GREEN SUNFISH	39	1	.	.
BLUEGILL	108	24	.	.
BLUEGILL	142	66	.	.
BLUEGILL	127	53	.	.
BLUEGILL	122	38	.	.
BLUEGILL	122	44	.	.
BLUEGILL	67	5	.	.
BLUEGILL	83	11	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLUEGILL	33	1	.	.
NORTHERN SUNFISH	103	27	.	.
NORTHERN SUNFISH	107	28	.	.
NORTHERN SUNFISH	92	17	.	.
NORTHERN SUNFISH	98	18	.	.
NORTHERN SUNFISH	96	18	.	.
NORTHERN SUNFISH	89	17	.	.
NORTHERN SUNFISH	84	13	.	.
NORTHERN SUNFISH	57	4	.	.
NORTHERN SUNFISH	50	3	.	.
NORTHERN SUNFISH	80	12	.	.
NORTHERN SUNFISH	66	6	.	.
NORTHERN SUNFISH	65	6	.	.
NORTHERN SUNFISH	71	8	.	.
NORTHERN SUNFISH	67	6	.	.
NORTHERN SUNFISH	71	7	.	.
NORTHERN SUNFISH	53	3	.	.
NORTHERN SUNFISH	56	4	.	.
NORTHERN SUNFISH	52	3	.	.
SMALLMOUTH BASS	128	25	.	.
SMALLMOUTH BASS	147	40	.	.
SMALLMOUTH BASS	132	26	.	.
SMALLMOUTH BASS	132	28	.	.
SMALLMOUTH BASS	48	2	.	.
LARGEMOUTH BASS	67	4	.	.
LARGEMOUTH BASS	79	7	.	.
BLACK CRAPPIE	56	2	.	.
JOHNNY DARTER	.	.	2	1
LOGPERCH	.	.	1	1
LOGPERCH	.	.	1	2
LOGPERCH	.	.	1	1
LOGPERCH	.	.	1	1
LOGPERCH	.	.	3	5
ROUND GOBY	38	1	.	.
ROUND GOBY	48	2	.	.
ROUND GOBY	46	2	.	.

SITE: DRESDEN GEAR: SEINE DATE: 24JUL14 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	1	5
TADPOLE MADTOM	.	.	1	1
LARGEMOUTH BASS	81	7	.	.
LARGEMOUTH BASS	82	9	.	.
LARGEMOUTH BASS	69	5	.	.
ROUND GOBY	69	6	.	.

SITE: DRESDEN GEAR: SEINE DATE: 24JUL14 LOCATION: 502 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	86	7	.	.
GIZZARD SHAD	83	6	.	.
GIZZARD SHAD	86	8	.	.
GIZZARD SHAD	76	5	.	.
SPOTFIN SHINER	.	.	5	9

SITE: DRESDEN GEAR: SEINE DATE: 24JUL14 LOCATION: 503 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	51	2	.	.
GIZZARD SHAD	74	5	.	.
GIZZARD SHAD	82	6	.	.
GIZZARD SHAD	92	9	.	.
GIZZARD SHAD	77	5	.	.
GIZZARD SHAD	72	4	.	.
GIZZARD SHAD	67	4	.	.
GIZZARD SHAD	63	3	.	.
GIZZARD SHAD	62	3	.	.
GIZZARD SHAD	60	3	.	.
GIZZARD SHAD	89	9	.	.
GIZZARD SHAD	81	7	.	.
GIZZARD SHAD	84	7	.	.
GIZZARD SHAD	66	4	.	.
GIZZARD SHAD	54	2	.	.
GIZZARD SHAD	53	2	.	.
GIZZARD SHAD	56	2	.	.
SPOTFIN SHINER	.	.	27	31
SPOTFIN SHINER	.	.	1	1
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	1	4
LARGEMOUTH BASS	56	2	.	.

SITE: DRESDEN GEAR: SEINE DATE: 24JUL14 LOCATION: 507 MESOHABITAT: MAIN CHANNEL BORDER

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SAND SHINER	.	.	16	22
SAND SHINER	.	.	1	1
SAND SHINER	.	.	1	1
BANDED KILLIFISH	.	.	1	1
BROOK SILVERSIDE	.	.	7	4
LARGEMOUTH BASS	46	2	.	.
JOHNNY DARTER	.	.	1	1

SITE: DRESDEN GEAR: SEINE DATE: 24JUL14 LOCATION: 509 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	65	3	.	.
GIZZARD SHAD	66	4	.	.
GIZZARD SHAD	65	3	.	.
GIZZARD SHAD	71	4	.	.
COMMON CARP	74	8	.	.
SPOTTAIL SHINER	.	.	4	7
REDFIN SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	1	2
BLACKSTRIPE TOPMINNOW	.	.	2	5
BLUEGILL	162	82	.	.
BLUEGILL	150	60	.	.
BLUEGILL	151	73	.	.
BLUEGILL	144	61	.	.
BLUEGILL	146	61	.	.
BLUEGILL	109	27	.	.
BLUEGILL	81	12	.	.
BLUEGILL	75	9	.	.
BLUEGILL	60	4	.	.
NORTHERN SUNFISH	84	16	.	.
NORTHERN SUNFISH	52	3	.	.
LARGEMOUTH BASS	73	6	.	.
LARGEMOUTH BASS	52	3	.	.
LARGEMOUTH BASS	41	1	.	.
LARGEMOUTH BASS	58	3	.	.
LARGEMOUTH BASS	57	3	.	.
LARGEMOUTH BASS	56	3	.	.
LARGEMOUTH BASS	58	3	.	.
LARGEMOUTH BASS	63	4	.	.
LARGEMOUTH BASS	57	3	.	.
LARGEMOUTH BASS	57	3	.	.
LARGEMOUTH BASS	54	3	.	.
LARGEMOUTH BASS	59	3	.	.
LARGEMOUTH BASS	64	4	.	.
LARGEMOUTH BASS	55	3	.	.
LARGEMOUTH BASS	44	1	.	.
LARGEMOUTH BASS	52	2	.	.
YELLOW PERCH	80	7	.	.

SITE: DRESDEN GEAR: SEINE DATE: 25JUL14 LOCATION: 512 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
PALLID SHINER	.	.	1	1
EMERALD SHINER	.	.	5	2
SPOTTAIL SHINER	.	.	13	16
SPOTFIN SHINER	.	.	17	16
SAND SHINER	.	.	5	6
BLUNTNOSE MINNOW	.	.	1	1
BULLHEAD MINNOW	.	.	3	3
SILVER REDHORSE	56	2	.	.
BROOK SILVERSIDE	.	.	1	1
GREEN SUNFISH	31	1	.	.
LARGEMOUTH BASS	56	2	.	.
LOGPERCH	.	.	1	1
ROUND GOBY	41	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 25JUL14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	12	10
SPOTTAIL SHINER	.	.	19	20
SPOTFIN SHINER	.	.	15	23
BLUNTNOSE MINNOW	.	.	1	1
BULLHEAD MINNOW	.	.	3	3
CHANNEL CATFISH	71	2	.	.
BROOK SILVERSIDE	.	.	1	1
GREEN SUNFISH	63	5	.	.
GREEN SUNFISH	35	1	.	.
LARGEMOUTH BASS	48	1	.	.
WESTERN SAND DARTER	.	.	1	1
JOHNNY DARTER	.	.	1	1

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SITE: DRESDEN GEAR: SEINE DATE: 25JUL14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER				
SPOTFIN SHINER	.	.	5	6
SITE: DRESDEN GEAR: SEINE DATE: 25JUL14 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER				
SPOTFIN SHINER	.	.	6	8
SAND SHINER	.	.	3	4
BLUNTNOSE MINNOW	.	.	1	2
BLACKSTRIPE TOPMINNOW	.	.	1	1
WESTERN MOSQUITOFISH	.	.	1	1
ROUND GOBY	24	1	.	.
SITE: DRESDEN GEAR: ELECTRO DATE: 05AUG14 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER				
LONGNOSE GAR	119	3	.	.
GIZZARD SHAD	90	8	.	.
GIZZARD SHAD	99	10	.	.
GIZZARD SHAD	104	13	.	.
GIZZARD SHAD	120	18	.	.
GIZZARD SHAD	106	13	.	.
GIZZARD SHAD	108	13	.	.
GIZZARD SHAD	104	11	.	.
THREADFIN SHAD	73	4	.	.
COMMON CARP	162	75	.	.
SPOTFIN SHINER	.	.	1	2
REDFIN SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	6	8
BLUNTNOSE MINNOW	.	.	1	1
RIVER CARPSUCKER	416	910	.	.
SPOTTED SUCKER	180	70	.	.
CHANNEL CATFISH	580	2155	.	.
CHANNEL CATFISH	492	1140	.	.
BLACKSTRIPE TOPMINNOW	.	.	1	1
BROOK SILVERSIDE	.	.	3	2
BROOK SILVERSIDE	.	.	4	1
WHITE PERCH	67	4	.	.
WHITE PERCH	53	2	.	.
GREEN SUNFISH	129	51	.	.
GREEN SUNFISH	129	58	.	.
PUMPKINSEED	56	4	.	.
PUMPKINSEED	55	3	.	.
BLUEGILL	149	72	.	.
BLUEGILL	156	92	.	.
BLUEGILL	131	48	.	.
BLUEGILL	125	40	.	.
BLUEGILL	49	2	.	.
BLUEGILL	45	2	.	.
BLUEGILL	51	3	.	.
BLUEGILL	49	3	.	.
BLUEGILL	48	2	.	.
BLUEGILL	47	2	.	.
SMALLMOUTH BASS	259	220	.	.
SMALLMOUTH BASS	285	300	.	.
SMALLMOUTH BASS	241	180	.	.
SMALLMOUTH BASS	253	200	.	.
SMALLMOUTH BASS	281	280	.	.
SMALLMOUTH BASS	235	165	.	.
SMALLMOUTH BASS	172	59	.	.
SMALLMOUTH BASS	59	3	.	.
LARGEMOUTH BASS	92	11	.	.
LARGEMOUTH BASS	95	10	.	.
LARGEMOUTH BASS	97	13	.	.
LARGEMOUTH BASS	95	10	.	.
LARGEMOUTH BASS	72	5	.	.
LARGEMOUTH BASS	56	3	.	.
LARGEMOUTH BASS	77	7	.	.
LARGEMOUTH BASS	70	5	.	.
LARGEMOUTH BASS	71	5	.	.
LARGEMOUTH BASS	80	7	.	.
LARGEMOUTH BASS	75	5	.	.
LARGEMOUTH BASS	74	5	.	.
LARGEMOUTH BASS	75	6	.	.
LARGEMOUTH BASS	73	5	.	.
LARGEMOUTH BASS	62	4	.	.
FRESHWATER DRUM	370	575	.	.
ROUND GOBY	57	3	.	.
SITE: DRESDEN GEAR: ELECTRO DATE: 05AUG14 LOCATION: 502 MESOHABITAT: .				

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	95	11	.	.
GIZZARD SHAD	88	8	.	.
GIZZARD SHAD	96	9	.	.
GIZZARD SHAD	79	6	.	.
GIZZARD SHAD	72	4	.	.
GIZZARD SHAD	86	7	.	.
GIZZARD SHAD	96	11	.	.
GIZZARD SHAD	92	8	.	.
GIZZARD SHAD	77	5	.	.
GIZZARD SHAD	102	11	.	.
GIZZARD SHAD	98	10	.	.
GIZZARD SHAD	81	7	.	.
GIZZARD SHAD	87	8	.	.
GIZZARD SHAD	89	9	.	.
GIZZARD SHAD	98	10	.	.
GIZZARD SHAD	88	8	.	.
GIZZARD SHAD	91	10	.	.
GIZZARD SHAD	95	10	.	.
GIZZARD SHAD	96	10	.	.
GIZZARD SHAD	98	9	.	.
GIZZARD SHAD	92	8	.	.
GIZZARD SHAD	96	10	.	.
GIZZARD SHAD	89	8	.	.
GIZZARD SHAD	78	5	.	.
GIZZARD SHAD	90	8	.	.
GIZZARD SHAD	99	11	.	.
GIZZARD SHAD	101	12	.	.
GIZZARD SHAD	93	9	.	.
GIZZARD SHAD	91	10	.	.
GIZZARD SHAD	90	9	.	.
GIZZARD SHAD	.	.	35	350
THREADFIN SHAD	72	4	.	.
THREADFIN SHAD	51	1	.	.
THREADFIN SHAD	48	1	.	.
THREADFIN SHAD	55	1	.	.
THREADFIN SHAD	59	2	.	.
THREADFIN SHAD	41	1	.	.
THREADFIN SHAD	39	1	.	.
PALLID SHINER	.	.	1	1
EMERALD SHINER	.	.	1	1
EMERALD SHINER	.	.	20	19
SPOTTAIL SHINER	.	.	2	3
ROSYFACE SHINER	.	.	3	1
SPOTFIN SHINER	.	.	2	5
SPOTFIN SHINER	.	.	1	1
REDFIN SHINER	.	.	1	1
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	7	11
BLUNTNOSE MINNOW	.	.	1	1
BULLHEAD MINNOW	.	.	9	18
SILVER REDHORSE	69	4	.	.
SILVER REDHORSE	59	3	.	.
SILVER REDHORSE	61	3	.	.
SILVER REDHORSE	60	3	.	.
SILVER REDHORSE	53	2	.	.
SILVER REDHORSE	67	3	.	.
SHORTHEAD REDHORSE	67	3	.	.
SHORTHEAD REDHORSE	66	3	.	.
SHORTHEAD REDHORSE	66	3	.	.
SHORTHEAD REDHORSE	56	2	.	.
SHORTHEAD REDHORSE	59	2	.	.
SHORTHEAD REDHORSE	57	2	.	.
SHORTHEAD REDHORSE	51	1	.	.
SHORTHEAD REDHORSE	48	1	.	.
SHORTHEAD REDHORSE	73	5	.	.
SHORTHEAD REDHORSE	59	2	.	.
SHORTHEAD REDHORSE	56	2	.	.
SHORTHEAD REDHORSE	60	2	.	.
Moxostoma sp.	50	1	.	.
Moxostoma sp.	51	1	.	.
Moxostoma sp.	52	1	.	.
CHANNEL CATFISH	525	1250	.	.
FLATHEAD CATFISH	192	65	.	.
BROOK SILVERSIDE	.	.	3	2
ROCK BASS	104	25	.	.
BLUEGILL	148	55	.	.
BLUEGILL	151	52	.	.
BLUEGILL	29	1	.	.
SMALLMOUTH BASS	147	33	.	.
SMALLMOUTH BASS	279	305	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SMALLMOUTH BASS	72	5	.	.
LARGEMOUTH BASS	430	1360	.	.
LARGEMOUTH BASS	283	340	.	.
LARGEMOUTH BASS	76	6	.	.
LARGEMOUTH BASS	70	5	.	.
LARGEMOUTH BASS	63	3	.	.
YELLOW PERCH	82	6	.	.
LOGPERCH	.	.	6	12
WALLEYE	152	31	.	.
FRESHWATER DRUM	425	1010	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 05AUG14 LOCATION: 503 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	74	5	.	.
GIZZARD SHAD	78	5	.	.
GIZZARD SHAD	101	13	.	.
GIZZARD SHAD	100	12	.	.
GIZZARD SHAD	93	11	.	.
GIZZARD SHAD	99	12	.	.
GIZZARD SHAD	102	12	.	.
GIZZARD SHAD	79	5	.	.
GIZZARD SHAD	61	2	.	.
GIZZARD SHAD	67	4	.	.
GIZZARD SHAD	88	9	.	.
GIZZARD SHAD	89	9	.	.
GIZZARD SHAD	69	4	.	.
GIZZARD SHAD	85	7	.	.
GIZZARD SHAD	84	7	.	.
GIZZARD SHAD	95	12	.	.
GIZZARD SHAD	96	12	.	.
GIZZARD SHAD	88	9	.	.
GIZZARD SHAD	76	6	.	.
GIZZARD SHAD	99	11	.	.
GIZZARD SHAD	56	2	.	.
GIZZARD SHAD	87	8	.	.
GIZZARD SHAD	96	10	.	.
GIZZARD SHAD	76	5	.	.
GIZZARD SHAD	72	4	.	.
GIZZARD SHAD	83	7	.	.
GIZZARD SHAD	99	11	.	.
GIZZARD SHAD	86	7	.	.
GIZZARD SHAD	96	10	.	.
GIZZARD SHAD	66	3	.	.
GIZZARD SHAD	.	.	4	21
GIZZARD SHAD	.	.	18	183
THREADFIN SHAD	.	.	4	10
COMMON CARP	641	3160	.	.
COMMON CARP	377	870	.	.
PALLID SHINER	.	.	19	24
EMERALD SHINER	.	.	8	10
SPOTTAIL SHINER	.	.	3	5
SPOTFIN SHINER	.	.	31	50
BLUNTNOSE MINNOW	.	.	29	47
BULLHEAD MINNOW	.	.	47	74
RIVER CARPSUCKER	515	1950	.	.
Ictiobus sp.	61	3	.	.
GOLDEN REDHORSE	392	695	.	.
SHORTHEAD REDHORSE	58	2	.	.
Moxostoma sp.	41	1	.	.
FLATHEAD CATFISH	379	530	.	.
BROOK SILVERSIDE	.	.	5	4
BROOK SILVERSIDE	.	.	1	1
ROCK BASS	152	69	.	.
ORANGESPOTTED SUNFISH	60	4	.	.
ORANGESPOTTED SUNFISH	61	4	.	.
ORANGESPOTTED SUNFISH	57	3	.	.
BLUEGILL	152	65	.	.
BLUEGILL	112	30	.	.
BLUEGILL	143	53	.	.
NORTHERN SUNFISH	112	32	.	.
NORTHERN SUNFISH	112	31	.	.
NORTHERN SUNFISH	59	4	.	.
NORTHERN SUNFISH	80	11	.	.
NORTHERN SUNFISH	66	6	.	.
NORTHERN SUNFISH	71	8	.	.
NORTHERN SUNFISH	79	11	.	.
Lepomis sp.	23	1	.	.
SMALLMOUTH BASS	185	65	.	.
LARGEMOUTH BASS	250	210	.	.
LARGEMOUTH BASS	215	129	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LARGEMOUTH BASS	52	2	.	.
LARGEMOUTH BASS	70	5	.	.
YELLOW PERCH	71	4	.	.
LOGPERCH	.	.	8	16
WALLEYE	150	28	.	.
FRESHWATER DRUM	319	405	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 05AUG14 LOCATION: 506 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	66	3	.	.
GIZZARD SHAD	54	2	.	.
GIZZARD SHAD	67	4	.	.
GIZZARD SHAD	89	8	.	.
GIZZARD SHAD	74	5	.	.
GIZZARD SHAD	76	4	.	.
THREADFIN SHAD	75	4	.	.
THREADFIN SHAD	74	4	.	.
THREADFIN SHAD	79	5	.	.
SPOTFIN SHINER	.	.	13	50
SPOTFIN SHINER	.	.	4	12
SPOTFIN SHINER	.	.	1	2
BLUNTNOSE MINNOW	.	.	3	13
BULLHEAD MINNOW	.	.	4	8
SMALLMOUTH BUFFALO	395	1090	.	.
BIGMOUTH BUFFALO	446	1720	.	.
CHANNEL CATFISH	380	570	.	.
FLATHEAD CATFISH	375	530	.	.
BROOK SILVERSIDE	.	.	1	1
GREEN SUNFISH	105	24	.	.
GREEN SUNFISH	111	24	.	.
GREEN SUNFISH	103	23	.	.
GREEN SUNFISH	67	7	.	.
BLUEGILL	103	23	.	.
BLUEGILL	53	3	.	.
NORTHERN SUNFISH	115	38	.	.
NORTHERN SUNFISH	64	6	.	.
NORTHERN SUNFISH	62	6	.	.
NORTHERN SUNFISH	66	7	.	.
SMALLMOUTH BASS	175	64	.	.
LARGEMOUTH BASS	91	9	.	.
LARGEMOUTH BASS	125	26	.	.
LARGEMOUTH BASS	130	34	.	.
LARGEMOUTH BASS	102	15	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 05AUG14 LOCATION: 507A MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	66	3	.	.
GIZZARD SHAD	76	4	.	.
GIZZARD SHAD	80	5	.	.
GIZZARD SHAD	71	4	.	.
GIZZARD SHAD	64	3	.	.
GIZZARD SHAD	83	6	.	.
GIZZARD SHAD	82	6	.	.
GIZZARD SHAD	86	7	.	.
GIZZARD SHAD	75	5	.	.
GIZZARD SHAD	68	4	.	.
GIZZARD SHAD	65	3	.	.
GIZZARD SHAD	75	4	.	.
GIZZARD SHAD	67	3	.	.
GIZZARD SHAD	73	4	.	.
GIZZARD SHAD	77	5	.	.
GIZZARD SHAD	85	7	.	.
GIZZARD SHAD	79	6	.	.
GIZZARD SHAD	62	3	.	.
GIZZARD SHAD	60	2	.	.
GIZZARD SHAD	83	5	.	.
GIZZARD SHAD	62	3	.	.
GIZZARD SHAD	49	1	.	.
GIZZARD SHAD	61	3	.	.
GIZZARD SHAD	70	4	.	.
GIZZARD SHAD	72	4	.	.
GIZZARD SHAD	85	6	.	.
GIZZARD SHAD	59	2	.	.
GIZZARD SHAD	69	4	.	.
GIZZARD SHAD	65	3	.	.
GIZZARD SHAD	86	6	.	.
GIZZARD SHAD	.	.	2	11
GIZZARD SHAD	.	.	24	99
COMMON CARP	509	2350	.	.
COMMON CARP	109	20	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTTAIL SHINER	.	.	29	59
SAND SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	7	5
SMALLMOUTH BUFFALO	525	2855	.	.
SILVER REDHORSE	69	4	.	.
SILVER REDHORSE	73	5	.	.
SHORTHEAD REDHORSE	76	5	.	.
SHORTHEAD REDHORSE	63	3	.	.
SHORTHEAD REDHORSE	64	3	.	.
SHORTHEAD REDHORSE	75	4	.	.
SHORTHEAD REDHORSE	77	5	.	.
Moxostoma sp.	59	2	.	.
BLACKSTRIPE TOPMINNOW	.	.	1	1
BROOK SILVERSIDE	.	.	2	1
ROCK BASS	78	10	.	.
GREEN SUNFISH	55	3	.	.
GREEN SUNFISH	54	3	.	.
GREEN SUNFISH	48	2	.	.
NORTHERN SUNFISH	100	27	.	.
LARGEMOUTH BASS	110	15	.	.
LARGEMOUTH BASS	94	12	.	.
LARGEMOUTH BASS	86	8	.	.
LARGEMOUTH BASS	75	6	.	.
LARGEMOUTH BASS	75	6	.	.
LARGEMOUTH BASS	111	19	.	.
LARGEMOUTH BASS	77	6	.	.
LARGEMOUTH BASS	72	5	.	.
LARGEMOUTH BASS	71	5	.	.
LARGEMOUTH BASS	68	5	.	.
LARGEMOUTH BASS	78	7	.	.
LARGEMOUTH BASS	53	2	.	.
LARGEMOUTH BASS	68	4	.	.
LARGEMOUTH BASS	72	5	.	.
LARGEMOUTH BASS	73	5	.	.
LOGPERCH	.	.	8	24
FRESHWATER DRUM	237	167	.	.
ROUND GOBY	52	2	.	.
ROUND GOBY	41	1	.	.

SITE: DRESDEN   GEAR: ELECTRO DATE: 05AUG14 LOCATION: 510   MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LONGNOSE GAR	180	8	.	.
GIZZARD SHAD	96	11	.	.
GRASS PICKEREL	164	24	.	.
COMMON CARP	159	69	.	.
COMMON CARP	691	4600	.	.
EMERALD SHINER	.	.	2	2
SPOTTAIL SHINER	.	.	5	11
SPOTFIN SHINER	.	.	1	2
BLUNTNOSE MINNOW	.	.	8	5
SMALLMOUTH BUFFALO	632	3750	.	.
GOLDEN REDHORSE	61	2	.	.
SHORTHEAD REDHORSE	70	3	.	.
BLACKSTRIPE TOPMINNOW	.	.	1	1
GREEN SUNFISH	49	3	.	.
BLUEGILL	156	85	.	.
BLUEGILL	101	19	.	.
BLUEGILL	40	1	.	.
BLUEGILL	46	2	.	.
BLUEGILL	54	3	.	.
BLUEGILL	49	2	.	.
BLUEGILL	53	3	.	.
BLUEGILL	46	2	.	.
BLUEGILL	46	2	.	.
BLUEGILL	51	2	.	.
BLUEGILL	46	2	.	.
BLUEGILL	32	1	.	.
BLUEGILL	39	1	.	.
NORTHERN SUNFISH	108	22	.	.
NORTHERN SUNFISH	71	7	.	.
NORTHERN SUNFISH	79	12	.	.
NORTHERN SUNFISH	61	5	.	.
NORTHERN SUNFISH	79	10	.	.
NORTHERN SUNFISH	62	5	.	.
NORTHERN SUNFISH	66	7	.	.
NORTHERN SUNFISH	65	6	.	.
NORTHERN SUNFISH	59	4	.	.
NORTHERN SUNFISH	59	5	.	.
LARGEMOUTH BASS	318	430	.	.
LARGEMOUTH BASS	117	22	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LARGEMOUTH BASS	112	19	.	.
LARGEMOUTH BASS	74	6	.	.
LARGEMOUTH BASS	70	5	.	.
LARGEMOUTH BASS	77	7	.	.
LARGEMOUTH BASS	84	6	.	.
LARGEMOUTH BASS	129	29	.	.
LARGEMOUTH BASS	94	11	.	.
LARGEMOUTH BASS	55	2	.	.
LARGEMOUTH BASS	81	8	.	.
LARGEMOUTH BASS	88	9	.	.
LARGEMOUTH BASS	78	7	.	.
LARGEMOUTH BASS	58	3	.	.
LARGEMOUTH BASS	57	3	.	.
LARGEMOUTH BASS	74	5	.	.
LARGEMOUTH BASS	65	4	.	.
LARGEMOUTH BASS	67	4	.	.
LARGEMOUTH BASS	75	6	.	.
LARGEMOUTH BASS	60	3	.	.
LARGEMOUTH BASS	64	4	.	.
ROUND GOBY	45	1	.	.
SITE: DRESDEN GEAR: ELECTRO DATE: 06AUG14 LOCATION: 512 MESOHABITAT: .				
LONGNOSE GAR	752	950	.	.
GIZZARD SHAD	87	7	.	.
EMERALD SHINER	.	.	15	15
EMERALD SHINER	.	.	1	1
SPOTTAIL SHINER	.	.	2	3
ROSYFACE SHINER	.	.	3	1
SPOTFIN SHINER	.	.	4	5
SAND SHINER	.	.	2	1
MIMIC SHINER	.	.	10	10
BULLHEAD MINNOW	.	.	4	7
SILVER REDHORSE	396	820	.	.
RIVER REDHORSE	501	1350	.	.
GOLDEN REDHORSE	260	200	.	.
GOLDEN REDHORSE	207	89	.	.
SHORTHEAD REDHORSE	351	460	.	.
SHORTHEAD REDHORSE	335	430	.	.
CHANNEL CATFISH	401	610	.	.
CHANNEL CATFISH	479	900	.	.
BLUEGILL	119	32	.	.
BLUEGILL	65	5	.	.
NORTHERN SUNFISH	115	41	.	.
Lepomis HYBRID	.	.	1	35
SMALLMOUTH BASS	404	810	.	.
SMALLMOUTH BASS	430	1020	.	.
SMALLMOUTH BASS	236	145	.	.
SMALLMOUTH BASS	64	4	.	.
FRESHWATER DRUM	431	880	.	.
FRESHWATER DRUM	375	750	.	.
FRESHWATER DRUM	341	470	.	.
FRESHWATER DRUM	340	540	.	.
FRESHWATER DRUM	390	790	.	.
SITE: DRESDEN GEAR: ELECTRO DATE: 06AUG14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER				
EMERALD SHINER	.	.	13	14
SPOTTAIL SHINER	.	.	1	1
SPOTFIN SHINER	.	.	9	14
SAND SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	4	9
BLUNTNOSE MINNOW	.	.	2	1
RIVER CARPSUCKER	265	300	.	.
QUILLBACK	230	160	.	.
SILVER REDHORSE	482	1310	.	.
SILVER REDHORSE	265	220	.	.
GOLDEN REDHORSE	211	89	.	.
BROOK SILVERSIDE	.	.	3	3
BLUEGILL	111	26	.	.
BLUEGILL	92	15	.	.
BLUEGILL	86	13	.	.
NORTHERN SUNFISH	102	22	.	.
NORTHERN SUNFISH	95	20	.	.
NORTHERN SUNFISH	63	6	.	.
SMALLMOUTH BASS	131	29	.	.
SMALLMOUTH BASS	165	59	.	.
SMALLMOUTH BASS	132	31	.	.
SMALLMOUTH BASS	110	16	.	.
SMALLMOUTH BASS	152	41	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SMALLMOUTH BASS	152	43	.	.
LOGPERCH	.	.	1	3

SITE: DRESDEN GEAR: ELECTRO DATE: 06AUG14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LONGNOSE GAR	1150	4250	.	.
EMERALD SHINER	.	.	9	8
ROSYFACE SHINER	.	.	1	1
SPOTFIN SHINER	.	.	11	19
SAND SHINER	.	.	2	3
MIMIC SHINER	.	.	2	2
BLUNTNOSE MINNOW	.	.	12	17
QUILLBACK	294	310	.	.
SMALLMOUTH BUFFALO	370	720	.	.
GOLDEN REDHORSE	245	190	.	.
GOLDEN REDHORSE	166	46	.	.
ROCK BASS	139	52	.	.
GREEN SUNFISH	75	9	.	.
GREEN SUNFISH	89	16	.	.
GREEN SUNFISH	61	4	.	.
ORANGESPOTTED SUNFISH	52	2	.	.
BLUEGILL	155	82	.	.
BLUEGILL	137	57	.	.
BLUEGILL	129	40	.	.
BLUEGILL	124	40	.	.
BLUEGILL	79	8	.	.
BLUEGILL	78	8	.	.
SMALLMOUTH BASS	221	145	.	.
SMALLMOUTH BASS	204	100	.	.
SMALLMOUTH BASS	162	60	.	.
SMALLMOUTH BASS	152	44	.	.
SMALLMOUTH BASS	145	40	.	.
SMALLMOUTH BASS	155	48	.	.
SMALLMOUTH BASS	144	41	.	.
SMALLMOUTH BASS	171	63	.	.
SMALLMOUTH BASS	77	6	.	.
FRESHWATER DRUM	476	1460	.	.
FRESHWATER DRUM	422	1130	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 06AUG14 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	111	14	.	.
GIZZARD SHAD	89	8	.	.
EMERALD SHINER	.	.	52	57
SPOTFIN SHINER	.	.	13	24
SPOTFIN SHINER	.	.	1	2
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	3	5
SMALLMOUTH BUFFALO	367	620	.	.
CHANNEL CATFISH	351	420	.	.
CHANNEL CATFISH	395	620	.	.
BLUEGILL	137	52	.	.
NORTHERN SUNFISH	86	14	.	.
NORTHERN SUNFISH	88	15	.	.
NORTHERN SUNFISH	58	4	.	.
NORTHERN SUNFISH	58	4	.	.
NORTHERN SUNFISH	59	4	.	.
NORTHERN SUNFISH	65	5	.	.
Lepomis HYBRID	.	.	1	42
SMALLMOUTH BASS	261	260	.	.
SMALLMOUTH BASS	149	41	.	.
SMALLMOUTH BASS	147	41	.	.
SMALLMOUTH BASS	58	3	.	.
SMALLMOUTH BASS	67	4	.	.
LARGEMOUTH BASS	102	17	.	.
LARGEMOUTH BASS	74	5	.	.
LARGEMOUTH BASS	77	6	.	.
LARGEMOUTH BASS	88	9	.	.
LARGEMOUTH BASS	92	12	.	.
LARGEMOUTH BASS	100	14	.	.
BANDED DARTER	.	.	1	1
LOGPERCH	.	.	2	5

SITE: DRESDEN GEAR: SEINE DATE: 05AUG14 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLUNTNOSE MINNOW	.	.	17	22
BLUNTNOSE MINNOW	.	.	1	1
BLUEGILL	142	75	.	.
BLUEGILL	36	1	.	.
BLUEGILL	25	1	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLUEGILL	36	1	.	.
BLUEGILL	24	1	.	.
NORTHERN SUNFISH	36	1	.	.
NORTHERN SUNFISH	35	1	.	.
NORTHERN SUNFISH	31	1	.	.
NORTHERN SUNFISH	34	1	.	.
LARGEMOUTH BASS	81	7	.	.
LARGEMOUTH BASS	72	6	.	.
LARGEMOUTH BASS	76	7	.	.
LARGEMOUTH BASS	72	6	.	.

SITE: DRESDEN GEAR: SEINE DATE: 05AUG14 LOCATION: 502 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	89	8	.	.
GIZZARD SHAD	89	8	.	.
GIZZARD SHAD	79	6	.	.
SPOTTAIL SHINER	.	.	2	3
BULLHEAD MINNOW	.	.	4	6
SHORTHEAD REDHORSE	52	2	.	.
BLUEGILL	31	1	.	.
JOHNNY DARTER	.	.	1	1
LOGPERCH	.	.	2	4

SITE: DRESDEN GEAR: SEINE DATE: 05AUG14 LOCATION: 503 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	67	4	.	.
GIZZARD SHAD	73	5	.	.
GIZZARD SHAD	88	9	.	.
THREADFIN SHAD	46	1	.	.
PALLID SHINER	.	.	1	3
SPOTTAIL SHINER	.	.	2	4
SPOTFIN SHINER	.	.	8	11
BLUNTNOSE MINNOW	.	.	4	6
BULLHEAD MINNOW	.	.	44	59
ORANGESPOTTED SUNFISH	52	3	.	.
BLACK CRAPPIE	58	3	.	.

SITE: DRESDEN GEAR: SEINE DATE: 05AUG14 LOCATION: 507 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	1	3

SITE: DRESDEN GEAR: SEINE DATE: 05AUG14 LOCATION: 509 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	72	4	.	.
GIZZARD SHAD	91	9	.	.
GIZZARD SHAD	76	6	.	.
GIZZARD SHAD	72	4	.	.
GIZZARD SHAD	68	4	.	.
GIZZARD SHAD	67	4	.	.
GIZZARD SHAD	74	5	.	.
GIZZARD SHAD	84	7	.	.
GIZZARD SHAD	82	6	.	.
GIZZARD SHAD	72	4	.	.
BLUNTNOSE MINNOW	.	.	1	1
GREEN SUNFISH	43	2	.	.
BLUEGILL	147	72	.	.
LARGEMOUTH BASS	66	4	.	.
ROUND GOBY	52	2	.	.

SITE: DRESDEN GEAR: SEINE DATE: 06AUG14 LOCATION: 512 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	3	3
SPOTTAIL SHINER	.	.	4	4
SPOTFIN SHINER	.	.	1	1
SAND SHINER	.	.	2	2
BULLHEAD MINNOW	.	.	1	2
SMALLMOUTH BASS	74	5	.	.
LOGPERCH	.	.	1	4
ROUND GOBY	52	2	.	.

SITE: DRESDEN GEAR: SEINE DATE: 06AUG14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	21	21
STRIPED SHINER	.	.	2	1
SPOTTAIL SHINER	.	.	16	20
SPOTFIN SHINER	.	.	12	17
BLUNTNOSE MINNOW	.	.	21	25
BLACKSTRIPE TOPMINNOW	.	.	3	2

SITE: DRESDEN GEAR: SEINE DATE: 06AUG14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	84	6	.	.
EMERALD SHINER	.	.	9	10
SPOTTAIL SHINER	.	.	7	13
SPOTFIN SHINER	.	.	12	15
SAND SHINER	.	.	1	2
SAND SHINER	.	.	7	8
BULLHEAD MINNOW	.	.	1	1
Carpiodes sp.	53	2	.	.
BANDED KILLIFISH	.	.	1	1
BLACKSTRIPE TOPMINNOW	.	.	4	3
BROOK SILVERSIDE	.	.	7	5

SITE: DRESDEN GEAR: SEINE DATE: 06AUG14 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	20	23
SPOTTAIL SHINER	.	.	2	3
SPOTFIN SHINER	.	.	15	17
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	4	7
SMALLMOUTH BUFFALO	101	17	.	.
NORTHERN SUNFISH	99	21	.	.
NORTHERN SUNFISH	62	4	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 20AUG14 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
COMMON CARP	142	47	.	.
COMMON CARP	158	66	.	.
COMMON CARP	168	81	.	.
COMMON CARP	115	29	.	.
BLUNTNOSE MINNOW	.	.	3	4
BLACK BUFFALO	550	3200	.	.
GREEN SUNFISH	127	48	.	.
GREEN SUNFISH	58	4	.	.
BLUEGILL	172	115	.	.
BLUEGILL	57	3	.	.
BLUEGILL	61	4	.	.
BLUEGILL	56	3	.	.
BLUEGILL	62	4	.	.
BLUEGILL	47	2	.	.
BLUEGILL	46	2	.	.
BLUEGILL	50	1	.	.
NORTHERN SUNFISH	103	29	.	.
NORTHERN SUNFISH	53	3	.	.
SMALLMOUTH BASS	181	87	.	.
SMALLMOUTH BASS	171	70	.	.
SMALLMOUTH BASS	137	35	.	.
SMALLMOUTH BASS	175	70	.	.
SMALLMOUTH BASS	256	200	.	.
SMALLMOUTH BASS	70	4	.	.
LARGEMOUTH BASS	85	10	.	.
LARGEMOUTH BASS	94	14	.	.
LARGEMOUTH BASS	112	17	.	.
LARGEMOUTH BASS	102	14	.	.
LARGEMOUTH BASS	270	300	.	.
LARGEMOUTH BASS	147	50	.	.
LARGEMOUTH BASS	128	29	.	.
LARGEMOUTH BASS	107	17	.	.
LARGEMOUTH BASS	103	17	.	.
LARGEMOUTH BASS	87	11	.	.
LARGEMOUTH BASS	78	6	.	.
LARGEMOUTH BASS	82	7	.	.
LARGEMOUTH BASS	85	7	.	.
LARGEMOUTH BASS	84	6	.	.
LARGEMOUTH BASS	82	7	.	.
LARGEMOUTH BASS	80	6	.	.
LARGEMOUTH BASS	90	9	.	.
LARGEMOUTH BASS	85	8	.	.
LARGEMOUTH BASS	80	7	.	.
LARGEMOUTH BASS	85	8	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 20AUG14 LOCATION: 502 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	132	25	.	.
GIZZARD SHAD	122	19	.	.
GIZZARD SHAD	121	22	.	.
GIZZARD SHAD	127	23	.	.
GIZZARD SHAD	81	5	.	.
THREADFIN SHAD	40	1	.	.
COMMON CARP	510	1780	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
COMMON CARP	419	1030	.	.
COMMON CARP	172	88	.	.
COMMON CARP	192	125	.	.
PALLID SHINER	.	.	2	1
SPOTTAIL SHINER	.	.	7	18
SPOTFIN SHINER	.	.	7	22
SPOTFIN SHINER	.	.	3	2
BLUNTNOSE MINNOW	.	.	5	5
BULLHEAD MINNOW	.	.	10	19
SMALLMOUTH BUFFALO	558	2680	.	.
SILVER REDHORSE	97	11	.	.
SILVER REDHORSE	85	8	.	.
SILVER REDHORSE	91	10	.	.
SILVER REDHORSE	87	8	.	.
SILVER REDHORSE	88	8	.	.
SILVER REDHORSE	79	6	.	.
SILVER REDHORSE	90	8	.	.
SILVER REDHORSE	81	6	.	.
SILVER REDHORSE	81	7	.	.
SILVER REDHORSE	91	9	.	.
SILVER REDHORSE	89	9	.	.
SILVER REDHORSE	69	4	.	.
SILVER REDHORSE	83	7	.	.
SILVER REDHORSE	85	6	.	.
SILVER REDHORSE	90	8	.	.
SILVER REDHORSE	81	6	.	.
SILVER REDHORSE	77	5	.	.
SILVER REDHORSE	80	6	.	.
SILVER REDHORSE	84	6	.	.
SILVER REDHORSE	84	7	.	.
SILVER REDHORSE	84	6	.	.
SILVER REDHORSE	87	7	.	.
SILVER REDHORSE	94	9	.	.
SILVER REDHORSE	83	6	.	.
SILVER REDHORSE	89	8	.	.
GOLDEN REDHORSE	57	1	.	.
GOLDEN REDHORSE	57	1	.	.
GOLDEN REDHORSE	62	2	.	.
SHORTHEAD REDHORSE	91	9	.	.
SHORTHEAD REDHORSE	78	5	.	.
SHORTHEAD REDHORSE	74	6	.	.
SHORTHEAD REDHORSE	73	4	.	.
SHORTHEAD REDHORSE	89	7	.	.
SHORTHEAD REDHORSE	83	6	.	.
SHORTHEAD REDHORSE	74	4	.	.
SHORTHEAD REDHORSE	80	6	.	.
SHORTHEAD REDHORSE	86	7	.	.
SHORTHEAD REDHORSE	69	4	.	.
SHORTHEAD REDHORSE	71	4	.	.
SHORTHEAD REDHORSE	85	7	.	.
SHORTHEAD REDHORSE	70	4	.	.
SHORTHEAD REDHORSE	70	3	.	.
SHORTHEAD REDHORSE	74	5	.	.
SHORTHEAD REDHORSE	85	6	.	.
SHORTHEAD REDHORSE	91	8	.	.
SHORTHEAD REDHORSE	86	7	.	.
SHORTHEAD REDHORSE	82	5	.	.
SHORTHEAD REDHORSE	75	4	.	.
SHORTHEAD REDHORSE	86	7	.	.
SHORTHEAD REDHORSE	77	5	.	.
SHORTHEAD REDHORSE	91	8	.	.
SHORTHEAD REDHORSE	89	7	.	.
SHORTHEAD REDHORSE	79	5	.	.
SHORTHEAD REDHORSE	70	3	.	.
SHORTHEAD REDHORSE	83	6	.	.
SHORTHEAD REDHORSE	83	6	.	.
SHORTHEAD REDHORSE	72	3	.	.
SHORTHEAD REDHORSE	72	4	.	.
SHORTHEAD REDHORSE	.	.	1	3
Moxostoma sp.	77	4	.	.
Moxostoma sp.	64	3	.	.
Moxostoma sp.	67	3	.	.
Moxostoma sp.	63	3	.	.
Moxostoma sp.	46	1	.	.
CHANNEL CATFISH	127	17	.	.
BROOK SILVERSIDE	.	.	1	1
BROOK SILVERSIDE	.	.	5	1
BLUEGILL	133	52	.	.
BLUEGILL	99	22	.	.
BLUEGILL	45	2	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLUEGILL	34	1	.	.
NORTHERN SUNFISH	64	5	.	.
SMALLMOUTH BASS	158	57	.	.
SMALLMOUTH BASS	152	50	.	.
LARGEMOUTH BASS	93	11	.	.
LARGEMOUTH BASS	101	13	.	.
LARGEMOUTH BASS	71	5	.	.
LARGEMOUTH BASS	70	5	.	.
LARGEMOUTH BASS	80	7	.	.
LOGPERCH	.	.	1	4
LOGPERCH	.	.	1	4
LOGPERCH	.	.	1	4
LOGPERCH	.	.	1	3
LOGPERCH	.	.	1	7
LOGPERCH	.	.	1	3
LOGPERCH	.	.	2	7
LOGPERCH	.	.	4	15
LOGPERCH	.	.	1	4
LOGPERCH	.	.	3	9
WALLEYE	181	57	.	.
WALLEYE	157	33	.	.
WALLEYE	165	39	.	.
WALLEYE	158	31	.	.
FRESHWATER DRUM	348	600	.	.
ROUND GOBY	62	3	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 20AUG14 LOCATION: 503 MESOHABITAT: .

GIZZARD SHAD	127	24	.	.
GIZZARD SHAD	122	21	.	.
GIZZARD SHAD	114	14	.	.
GIZZARD SHAD	106	13	.	.
GIZZARD SHAD	142	30	.	.
GIZZARD SHAD	98	13	.	.
GIZZARD SHAD	116	18	.	.
GIZZARD SHAD	87	8	.	.
GIZZARD SHAD	107	15	.	.
GIZZARD SHAD	102	11	.	.
GIZZARD SHAD	113	18	.	.
GIZZARD SHAD	126	24	.	.
GIZZARD SHAD	77	6	.	.
GIZZARD SHAD	.	.	9	115
GIZZARD SHAD	.	.	6	100
GIZZARD SHAD	.	.	8	110
GIZZARD SHAD	122	25	.	.
GIZZARD SHAD	104	14	.	.
GIZZARD SHAD	84	6	.	.
GIZZARD SHAD	86	7	.	.
GIZZARD SHAD	85	7	.	.
GIZZARD SHAD	116	18	.	.
GIZZARD SHAD	105	13	.	.
GIZZARD SHAD	111	17	.	.
GIZZARD SHAD	116	23	.	.
GIZZARD SHAD	90	10	.	.
GIZZARD SHAD	97	10	.	.
GIZZARD SHAD	84	6	.	.
GIZZARD SHAD	96	10	.	.
GIZZARD SHAD	105	16	.	.
GIZZARD SHAD	101	12	.	.
GIZZARD SHAD	103	14	.	.
GIZZARD SHAD	106	16	.	.
GIZZARD SHAD	102	13	.	.
GIZZARD SHAD	113	16	.	.
GIZZARD SHAD	119	21	.	.
GIZZARD SHAD	97	11	.	.
GIZZARD SHAD	97	10	.	.
GIZZARD SHAD	73	4	.	.
GIZZARD SHAD	111	17	.	.
THREADFIN SHAD	45	1	.	.
THREADFIN SHAD	50	1	.	.
THREADFIN SHAD	49	1	.	.
THREADFIN SHAD	46	1	.	.
THREADFIN SHAD	48	1	.	.
THREADFIN SHAD	45	1	.	.
THREADFIN SHAD	60	2	.	.
THREADFIN SHAD	41	1	.	.
THREADFIN SHAD	45	1	.	.
THREADFIN SHAD	51	1	.	.
THREADFIN SHAD	53	1	.	.
CENTRAL STONEROLLER	.	.	1	2

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
COMMON CARP	150	63	.	.
PALLID SHINER	.	.	13	11
STRIPED SHINER	.	.	1	2
SPOTTAIL SHINER	.	.	2	6
SPOTFIN SHINER	.	.	6	13
BLUNTNOSE MINNOW	.	.	20	38
BULLHEAD MINNOW	.	.	34	67
SMALLMOUTH BUFFALO	508	1970	.	.
GOLDEN REDHORSE	412	790	.	.
SHORTHEAD REDHORSE	64	3	.	.
SHORTHEAD REDHORSE	73	5	.	.
FLATHEAD CATFISH	498	1170	.	.
BROOK SILVERSIDE	.	.	1	1
WHITE PERCH	100	14	.	.
ROCK BASS	102	24	.	.
ORANGESPOTTED SUNFISH	73	9	.	.
BLUEGILL	141	58	.	.
BLUEGILL	92	16	.	.
BLUEGILL	41	1	.	.
NORTHERN SUNFISH	111	29	.	.
NORTHERN SUNFISH	92	17	.	.
NORTHERN SUNFISH	90	16	.	.
NORTHERN SUNFISH	77	11	.	.
NORTHERN SUNFISH	84	16	.	.
NORTHERN SUNFISH	75	10	.	.
NORTHERN SUNFISH	84	12	.	.
NORTHERN SUNFISH	68	7	.	.
SMALLMOUTH BASS	75	6	.	.
LARGEMOUTH BASS	265	305	.	.
LARGEMOUTH BASS	76	6	.	.
LARGEMOUTH BASS	102	14	.	.
LARGEMOUTH BASS	117	17	.	.
LOGPERCH	.	.	1	8
LOGPERCH	.	.	1	4
WALLEYE	176	52	.	.
FRESHWATER DRUM	437	1110	.	.
FRESHWATER DRUM	357	500	.	.
SITE: DRESDEN	GEAR: ELECTRO	DATE: 20AUG14	LOCATION: 506	MESOHABITAT: MAIN CHANNEL BORDER
THREADFIN SHAD	86	6	.	.
THREADFIN SHAD	75	4	.	.
THREADFIN SHAD	79	4	.	.
THREADFIN SHAD	80	4	.	.
THREADFIN SHAD	76	3	.	.
EMERALD SHINER	.	.	1	4
SPOTTAIL SHINER	.	.	1	3
SPOTFIN SHINER	.	.	6	26
SPOTFIN SHINER	.	.	2	9
SPOTFIN SHINER	.	.	1	4
BULLHEAD MINNOW	.	.	1	3
RIVER CARPSUCKER	413	920	.	.
SMALLMOUTH BUFFALO	409	910	.	.
SMALLMOUTH BUFFALO	433	1350	.	.
SMALLMOUTH BUFFALO	429	1280	.	.
SHORTHEAD REDHORSE	83	6	.	.
FLATHEAD CATFISH	468	1050	.	.
FRESHWATER DRUM	497	1650	.	.
SITE: DRESDEN	GEAR: ELECTRO	DATE: 20AUG14	LOCATION: 507A	MESOHABITAT: MAIN CHANNEL BORDER
GIZZARD SHAD	83	7	.	.
GIZZARD SHAD	92	8	.	.
GIZZARD SHAD	81	7	.	.
GIZZARD SHAD	88	8	.	.
GIZZARD SHAD	78	6	.	.
GIZZARD SHAD	91	8	.	.
GIZZARD SHAD	67	4	.	.
GIZZARD SHAD	99	11	.	.
GIZZARD SHAD	82	6	.	.
GIZZARD SHAD	83	8	.	.
GIZZARD SHAD	86	7	.	.
GIZZARD SHAD	78	6	.	.
GIZZARD SHAD	85	8	.	.
GIZZARD SHAD	86	7	.	.
GIZZARD SHAD	87	8	.	.
GIZZARD SHAD	83	5	.	.
GIZZARD SHAD	87	8	.	.
GIZZARD SHAD	84	7	.	.
GIZZARD SHAD	76	5	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	1	4
SPOTTAIL SHINER	.	.	5	21
BLUNTNOSE MINNOW	.	.	4	3
BULLHEAD MINNOW	.	.	1	1
SILVER REDHORSE	83	8	.	.
SILVER REDHORSE	97	12	.	.
SILVER REDHORSE	93	10	.	.
GOLDEN REDHORSE	78	6	.	.
GOLDEN REDHORSE	70	4	.	.
GOLDEN REDHORSE	68	4	.	.
GOLDEN REDHORSE	73	4	.	.
GOLDEN REDHORSE	72	4	.	.
GOLDEN REDHORSE	74	4	.	.
SHORTHEAD REDHORSE	91	8	.	.
SHORTHEAD REDHORSE	84	6	.	.
YELLOW BULLHEAD	238	160	.	.
BLACKSTRIPE TOPMINNOW	.	.	1	2
BROOK SILVERSIDE	.	.	1	1
ROCK BASS	117	38	.	.
BLUEGILL	103	26	.	.
BLUEGILL	66	6	.	.
BLUEGILL	74	10	.	.
BLUEGILL	69	7	.	.
BLUEGILL	38	1	.	.
LARGEMOUTH BASS	323	500	.	.
LARGEMOUTH BASS	93	12	.	.
LARGEMOUTH BASS	308	470	.	.
LARGEMOUTH BASS	184	80	.	.
LARGEMOUTH BASS	122	28	.	.
LARGEMOUTH BASS	94	12	.	.
LARGEMOUTH BASS	97	12	.	.
LARGEMOUTH BASS	82	7	.	.
LARGEMOUTH BASS	85	9	.	.
LARGEMOUTH BASS	87	10	.	.
LARGEMOUTH BASS	94	12	.	.
LARGEMOUTH BASS	104	16	.	.
LARGEMOUTH BASS	86	9	.	.
LOGPERCH	.	.	1	7
LOGPERCH	.	.	1	5
FRESHWATER DRUM	352	595	.	.
ROUND GOBY	51	2	.	.
SITE: DRESDEN	GEAR: ELECTRO	DATE: 20AUG14	LOCATION: 510	MESOHABITAT: MAIN CHANNEL BORDER
COMMON CARP	141	44	.	.
COMMON CARP	117	29	.	.
EMERALD SHINER	.	.	1	7
BLUNTNOSE MINNOW	.	.	3	3
BLACKSTRIPE TOPMINNOW	.	.	1	1
GREEN SUNFISH	87	16	.	.
BLUEGILL	114	32	.	.
BLUEGILL	87	16	.	.
BLUEGILL	54	3	.	.
BLUEGILL	56	4	.	.
BLUEGILL	56	4	.	.
BLUEGILL	58	4	.	.
BLUEGILL	67	6	.	.
BLUEGILL	66	5	.	.
BLUEGILL	57	4	.	.
BLUEGILL	63	5	.	.
BLUEGILL	56	4	.	.
BLUEGILL	66	6	.	.
BLUEGILL	71	7	.	.
BLUEGILL	54	4	.	.
NORTHERN SUNFISH	100	28	.	.
NORTHERN SUNFISH	102	26	.	.
NORTHERN SUNFISH	97	21	.	.
NORTHERN SUNFISH	102	26	.	.
NORTHERN SUNFISH	100	25	.	.
NORTHERN SUNFISH	92	18	.	.
NORTHERN SUNFISH	93	20	.	.
NORTHERN SUNFISH	74	10	.	.
NORTHERN SUNFISH	79	14	.	.
NORTHERN SUNFISH	81	12	.	.
NORTHERN SUNFISH	73	10	.	.
NORTHERN SUNFISH	84	16	.	.
NORTHERN SUNFISH	73	9	.	.
NORTHERN SUNFISH	78	14	.	.
NORTHERN SUNFISH	72	9	.	.
SMALLMOUTH BASS	235	140	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LARGEMOUTH BASS	132	35	.	.
LARGEMOUTH BASS	87	10	.	.
LARGEMOUTH BASS	112	15	.	.
LARGEMOUTH BASS	126	31	.	.
LARGEMOUTH BASS	90	11	.	.
LARGEMOUTH BASS	86	10	.	.
LARGEMOUTH BASS	97	15	.	.
LARGEMOUTH BASS	87	8	.	.
LARGEMOUTH BASS	86	9	.	.
LARGEMOUTH BASS	73	6	.	.
LARGEMOUTH BASS	72	6	.	.
LARGEMOUTH BASS	87	9	.	.
LARGEMOUTH BASS	77	7	.	.
LARGEMOUTH BASS	76	7	.	.
LARGEMOUTH BASS	81	8	.	.
LARGEMOUTH BASS	72	6	.	.
LARGEMOUTH BASS	80	8	.	.
LARGEMOUTH BASS	67	4	.	.
BLACK CRAPPIE	86	9	.	.
FRESHWATER DRUM	482	1630	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 19AUG14 LOCATION: 512 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LONGNOSE GAR	518	270	.	.
THREADFIN SHAD	93	9	.	.
EMERALD SHINER	.	.	10	14
SPOTFIN SHINER	.	.	2	9
SPOTFIN SHINER	.	.	1	1
MIMIC SHINER	.	.	2	2
BLUNTNOSE MINNOW	.	.	3	3
BULLHEAD MINNOW	.	.	1	1
SILVER REDHORSE	282	250	.	.
GOLDEN REDHORSE	190	75	.	.
SHORTHEAD REDHORSE	206	105	.	.
CHANNEL CATFISH	492	965	.	.
ORANGESPOTTED SUNFISH	61	5	.	.
ORANGESPOTTED SUNFISH	57	4	.	.
ORANGESPOTTED SUNFISH	52	2	.	.
BLUEGILL	115	27	.	.
NORTHERN SUNFISH	112	35	.	.
SMALLMOUTH BASS	265	230	.	.
SMALLMOUTH BASS	186	80	.	.
SMALLMOUTH BASS	161	48	.	.
SMALLMOUTH BASS	180	70	.	.
LARGEMOUTH BASS	132	33	.	.
LARGEMOUTH BASS	103	16	.	.
LARGEMOUTH BASS	84	7	.	.
FRESHWATER DRUM	376	695	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 19AUG14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	130	22	.	.
GIZZARD SHAD	157	39	.	.
GIZZARD SHAD	147	32	.	.
GIZZARD SHAD	133	23	.	.
GIZZARD SHAD	153	30	.	.
GIZZARD SHAD	135	24	.	.
GIZZARD SHAD	132	23	.	.
GIZZARD SHAD	130	22	.	.
GIZZARD SHAD	131	23	.	.
GIZZARD SHAD	127	20	.	.
GIZZARD SHAD	131	20	.	.
GIZZARD SHAD	134	25	.	.
GIZZARD SHAD	97	9	.	.
GIZZARD SHAD	122	15	.	.
GIZZARD SHAD	110	13	.	.
GIZZARD SHAD	107	12	.	.
GIZZARD SHAD	119	19	.	.
GIZZARD SHAD	131	18	.	.
GIZZARD SHAD	120	15	.	.
GIZZARD SHAD	134	21	.	.
GIZZARD SHAD	117	15	.	.
GIZZARD SHAD	114	17	.	.
GIZZARD SHAD	127	21	.	.
GIZZARD SHAD	122	23	.	.
GIZZARD SHAD	125	21	.	.
GIZZARD SHAD	116	17	.	.
GIZZARD SHAD	110	15	.	.
GIZZARD SHAD	104	11	.	.
GIZZARD SHAD	147	32	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	136	25	.	.
GIZZARD SHAD	.	.	13	245
GIZZARD SHAD	.	.	1	44
EMERALD SHINER	.	.	3	5
EMERALD SHINER	.	.	1	1
SPOTFIN SHINER	.	.	3	3
RIVER CARPSUCKER	322	520	.	.
QUILLBACK	102	15	.	.
QUILLBACK	112	19	.	.
HIGHFIN CARPSUCKER	265	260	.	.
HIGHFIN CARPSUCKER	235	185	.	.
HIGHFIN CARPSUCKER	248	210	.	.
HIGHFIN CARPSUCKER	241	200	.	.
GOLDEN REDHORSE	197	95	.	.
GOLDEN REDHORSE	161	47	.	.
CHANNEL CATFISH	328	285	.	.
NORTHERN SUNFISH	103	25	.	.
NORTHERN SUNFISH	61	5	.	.
SMALLMOUTH BASS	194	85	.	.
SMALLMOUTH BASS	160	47	.	.
FRESHWATER DRUM	408	940	.	.
FRESHWATER DRUM	418	860	.	.
FRESHWATER DRUM	348	500	.	.
FRESHWATER DRUM	437	925	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 19AUG14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER

GIZZARD SHAD	273	210	.	.
GIZZARD SHAD	244	140	.	.
COMMON CARP	492	1560	.	.
COMMON CARP	503	1690	.	.
EMERALD SHINER	.	.	2	3
ROSYFACE SHINER	.	.	1	1
SPOTFIN SHINER	.	.	2	6
BLUNTNOSE MINNOW	.	.	1	2
GOLDEN REDHORSE	288	250	.	.
GOLDEN REDHORSE	180	60	.	.
GOLDEN REDHORSE	313	355	.	.
GOLDEN REDHORSE	212	120	.	.
GOLDEN REDHORSE	218	115	.	.
GOLDEN REDHORSE	187	75	.	.
CHANNEL CATFISH	575	1440	.	.
CHANNEL CATFISH	630	2060	.	.
BLUEGILL	131	55	.	.
BLUEGILL	139	53	.	.
SMALLMOUTH BASS	43	1	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 19AUG14 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

EMERALD SHINER	.	.	59	90
EMERALD SHINER	.	.	3	1
SPOTTAIL SHINER	.	.	1	2
ROSYFACE SHINER	.	.	6	3
SPOTFIN SHINER	.	.	3	5
MIMIC SHINER	.	.	7	6
BLUNTNOSE MINNOW	.	.	2	4
GOLDEN REDHORSE	198	86	.	.
GOLDEN REDHORSE	313	380	.	.
BROOK SILVERSIDE	.	.	9	7
GREEN SUNFISH	45	2	.	.
GREEN SUNFISH	59	4	.	.
BLUEGILL	81	10	.	.
Lepomis HYBRID	.	.	1	75
SMALLMOUTH BASS	247	225	.	.
LARGEMOUTH BASS	114	20	.	.
LARGEMOUTH BASS	130	28	.	.
LARGEMOUTH BASS	86	7	.	.
LOGPERCH	.	.	1	11
ROUND GOBY	51	2	.	.

SITE: DRESDEN GEAR: SEINE DATE: 20AUG14 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

GREEN SUNFISH	42	2	.	.
BLUEGILL	43	2	.	.
BLUEGILL	46	2	.	.
BLUEGILL	44	1	.	.
BLUEGILL	37	1	.	.
BLUEGILL	29	1	.	.
BLUEGILL	26	1	.	.
ROUND GOBY	67	5	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
ROUND GOBY	63	4	.	.
ROUND GOBY	66	5	.	.

SITE: DRESDEN GEAR: SEINE DATE: 20AUG14 LOCATION: 502 MESOHABITAT: .

EMERALD SHINER	.	.	1	2
BROOK SILVERSIDE	.	.	1	1

SITE: DRESDEN GEAR: SEINE DATE: 20AUG14 LOCATION: 503 MESOHABITAT: .

GIZZARD SHAD	97	12	.	.
GIZZARD SHAD	65	3	.	.
GIZZARD SHAD	76	5	.	.
THREADFIN SHAD	43	1	.	.
THREADFIN SHAD	42	1	.	.
THREADFIN SHAD	44	1	.	.
THREADFIN SHAD	48	1	.	.
PALLID SHINER	.	.	6	7
SPOTTAIL SHINER	.	.	4	12
BLUNTNOSE MINNOW	.	.	1	2
BULLHEAD MINNOW	.	.	11	18
BROOK SILVERSIDE	.	.	1	1
BLUEGILL	87	16	.	.
BLUEGILL	40	1	.	.
Lepomis sp.	14	1	.	.
LARGEMOUTH BASS	255	265	.	.
BLACK CRAPPIE	61	3	.	.
BLACK CRAPPIE	58	3	.	.
JOHNNY DARTER	.	.	1	2

SITE: DRESDEN GEAR: SEINE DATE: 20AUG14 LOCATION: 507 MESOHABITAT: MAIN CHANNEL BORDER

BLUNTNOSE MINNOW	.	.	1	1
BROOK SILVERSIDE	.	.	2	2
GREEN SUNFISH	54	4	.	.

SITE: DRESDEN GEAR: SEINE DATE: 20AUG14 LOCATION: 509 MESOHABITAT: MAIN CHANNEL BORDER

BLUNTNOSE MINNOW	.	.	1	1
LARGEMOUTH BASS	83	9	.	.
LARGEMOUTH BASS	78	6	.	.
ROUND GOBY	62	4	.	.

SITE: DRESDEN GEAR: SEINE DATE: 19AUG14 LOCATION: 512 MESOHABITAT: .

SPOTTAIL SHINER	.	.	10	12
SPOTFIN SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	11	8
BULLHEAD MINNOW	.	.	1	1
BLACKSTRIPE TOPMINNOW	.	.	4	1
BLACKSTRIPE TOPMINNOW	.	.	1	1
BROOK SILVERSIDE	.	.	2	1

SITE: DRESDEN GEAR: SEINE DATE: 19AUG14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER

EMERALD SHINER	.	.	8	6
ROSYFACE SHINER	.	.	1	1
SPOTFIN SHINER	.	.	3	5
SAND SHINER	.	.	12	5
SAND SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	8	5
BROOK SILVERSIDE	.	.	8	9
SMALLMOUTH BASS	63	3	.	.

SITE: DRESDEN GEAR: SEINE DATE: 19AUG14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER

EMERALD SHINER	.	.	6	7
SPOTTAIL SHINER	.	.	16	30
SPOTFIN SHINER	.	.	15	24
SAND SHINER	.	.	3	3
BLUNTNOSE MINNOW	.	.	1	4
BLUNTNOSE MINNOW	.	.	27	49
BLUNTNOSE MINNOW	.	.	1	1
BLACKSTRIPE TOPMINNOW	.	.	2	1
BROOK SILVERSIDE	.	.	2	2

SITE: DRESDEN GEAR: SEINE DATE: 19AUG14 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

EMERALD SHINER	.	.	20	56
SPOTTAIL SHINER	.	.	5	9

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTFIN SHINER	.	.	1	3
SPOTFIN SHINER	.	.	4	6
SAND SHINER	.	.	4	6
SAND SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	9	14
BROOK SILVERSIDE	.	.	1	1
NORTHERN SUNFISH	62	6	.	.
NORTHERN SUNFISH	63	6	.	.
SMALLMOUTH BASS	63	3	.	.
SMALLMOUTH BASS	66	4	.	.
LOGPERCH	.	.	3	29

SITE: DRESDEN GEAR: ELECTRO DATE: 11SEP14 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	133	26	.	.
GIZZARD SHAD	105	10	.	.
GIZZARD SHAD	87	7	.	.
GIZZARD SHAD	104	11	.	.
GIZZARD SHAD	110	14	.	.
GIZZARD SHAD	115	16	.	.
GIZZARD SHAD	120	18	.	.
COMMON CARP	453	1510	.	.
COMMON CARP	623	4000	.	.
COMMON CARP	208	140	.	.
GOLDEN SHINER	.	.	1	9
EMERALD SHINER	.	.	2	4
EMERALD SHINER	.	.	1	5
SPOTFIN SHINER	.	.	1	5
BLUNTNOSE MINNOW	.	.	2	2
QUILLBACK	422	1140	.	.
QUILLBACK	408	980	.	.
CHANNEL CATFISH	451	1040	.	.
ROCK BASS	152	81	.	.
ROCK BASS	173	126	.	.
GREEN SUNFISH	115	36	.	.
GREEN SUNFISH	114	41	.	.
GREEN SUNFISH	126	47	.	.
GREEN SUNFISH	89	18	.	.
BLUEGILL	143	62	.	.
BLUEGILL	137	49	.	.
BLUEGILL	93	17	.	.
BLUEGILL	61	5	.	.
BLUEGILL	75	9	.	.
BLUEGILL	68	6	.	.
BLUEGILL	71	8	.	.
NORTHERN SUNFISH	101	28	.	.
NORTHERN SUNFISH	54	4	.	.
NORTHERN SUNFISH	82	12	.	.
SMALLMOUTH BASS	193	119	.	.
SMALLMOUTH BASS	274	320	.	.
SMALLMOUTH BASS	264	280	.	.
SMALLMOUTH BASS	185	76	.	.
SMALLMOUTH BASS	293	380	.	.
SMALLMOUTH BASS	93	11	.	.
LARGEMOUTH BASS	364	790	.	.
LARGEMOUTH BASS	326	630	.	.
LARGEMOUTH BASS	208	140	.	.
LARGEMOUTH BASS	186	119	.	.
LARGEMOUTH BASS	175	98	.	.
LARGEMOUTH BASS	176	94	.	.
LARGEMOUTH BASS	153	67	.	.
LARGEMOUTH BASS	153	68	.	.
LARGEMOUTH BASS	83	9	.	.
LARGEMOUTH BASS	77	7	.	.
LARGEMOUTH BASS	98	13	.	.
LARGEMOUTH BASS	87	9	.	.
LARGEMOUTH BASS	97	12	.	.
LARGEMOUTH BASS	85	9	.	.
LARGEMOUTH BASS	85	8	.	.
LARGEMOUTH BASS	85	8	.	.
LARGEMOUTH BASS	76	7	.	.
LARGEMOUTH BASS	89	10	.	.
LARGEMOUTH BASS	89	9	.	.
LARGEMOUTH BASS	85	8	.	.
LARGEMOUTH BASS	75	6	.	.
LARGEMOUTH BASS	82	8	.	.
LARGEMOUTH BASS	94	12	.	.
LARGEMOUTH BASS	85	8	.	.
LARGEMOUTH BASS	91	10	.	.
LARGEMOUTH BASS	76	6	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LARGEMOUTH BASS	77	6	.	.
LARGEMOUTH BASS	101	15	.	.
LARGEMOUTH BASS	79	7	.	.
LARGEMOUTH BASS	78	7	.	.
LARGEMOUTH BASS	80	8	.	.
FRESHWATER DRUM	453	1340	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 11SEP14 LOCATION: 502 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SKIPJACK HERRING	179	53	.	.
GIZZARD SHAD	75	4	.	.
GIZZARD SHAD	70	3	.	.
GIZZARD SHAD	68	3	.	.
GIZZARD SHAD	134	25	.	.
GIZZARD SHAD	93	7	.	.
GIZZARD SHAD	77	5	.	.
GIZZARD SHAD	82	6	.	.
GIZZARD SHAD	95	8	.	.
GIZZARD SHAD	75	5	.	.
GIZZARD SHAD	72	4	.	.
GIZZARD SHAD	81	5	.	.
GIZZARD SHAD	74	4	.	.
GIZZARD SHAD	83	6	.	.
GIZZARD SHAD	65	3	.	.
GIZZARD SHAD	74	4	.	.
GIZZARD SHAD	70	3	.	.
GIZZARD SHAD	86	6	.	.
GIZZARD SHAD	72	4	.	.
GIZZARD SHAD	122	17	.	.
GIZZARD SHAD	107	11	.	.
GIZZARD SHAD	68	4	.	.
GIZZARD SHAD	61	2	.	.
GIZZARD SHAD	78	5	.	.
GIZZARD SHAD	83	6	.	.
GIZZARD SHAD	75	5	.	.
GIZZARD SHAD	72	4	.	.
GIZZARD SHAD	80	5	.	.
GIZZARD SHAD	62	3	.	.
GIZZARD SHAD	67	3	.	.
GIZZARD SHAD	73	4	.	.
GIZZARD SHAD	.	.	2	14
GIZZARD SHAD	.	.	5	16
THREADFIN SHAD	63	2	.	.
THREADFIN SHAD	85	6	.	.
THREADFIN SHAD	92	8	.	.
THREADFIN SHAD	84	6	.	.
THREADFIN SHAD	80	5	.	.
COMMON CARP	546	2230	.	.
COMMON CARP	593	3490	.	.
PALLID SHINER	.	.	10	10
EMERALD SHINER	.	.	9	18
GHOST SHINER	.	.	1	1
SPOTTAIL SHINER	.	.	1	4
SPOTFIN SHINER	.	.	4	10
MIMIC SHINER	.	.	6	6
BLUNTNOSE MINNOW	.	.	5	9
BULLHEAD MINNOW	.	.	27	72
BULLHEAD MINNOW	.	.	2	1
SMALLMOUTH BUFFALO	111	19	.	.
SILVER REDHORSE	96	13	.	.
GOLDEN REDHORSE	409	800	.	.
GOLDEN REDHORSE	423	910	.	.
GOLDEN REDHORSE	423	1000	.	.
GOLDEN REDHORSE	404	840	.	.
GOLDEN REDHORSE	77	5	.	.
GOLDEN REDHORSE	63	3	.	.
SHORTHEAD REDHORSE	81	6	.	.
SHORTHEAD REDHORSE	105	13	.	.
SHORTHEAD REDHORSE	95	11	.	.
SHORTHEAD REDHORSE	92	9	.	.
SHORTHEAD REDHORSE	82	6	.	.
SHORTHEAD REDHORSE	84	7	.	.
SHORTHEAD REDHORSE	74	4	.	.
SHORTHEAD REDHORSE	75	5	.	.
Moxostoma sp.	53	2	.	.
Moxostoma sp.	55	2	.	.
BROOK SILVERSIDE	.	.	18	22
WHITE PERCH	93	12	.	.
GREEN SUNFISH	98	23	.	.
ORANGESPOTTED SUNFISH	75	9	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
ORANGESPOTTED SUNFISH	86	15	.	.
BLUEGILL	61	4	.	.
BLUEGILL	93	19	.	.
BLUEGILL	35	1	.	.
NORTHERN SUNFISH	70	9	.	.
SMALLMOUTH BASS	263	240	.	.
SMALLMOUTH BASS	83	7	.	.
LARGEMOUTH BASS	336	610	.	.
LARGEMOUTH BASS	122	23	.	.
LARGEMOUTH BASS	152	44	.	.
LOGPERCH	.	.	2	8
WALLEYE	193	61	.	.
WALLEYE	179	46	.	.
FRESHWATER DRUM	523	2130	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 11SEP14 LOCATION: 503 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	87	7	.	.
GIZZARD SHAD	46	1	.	.
GIZZARD SHAD	73	4	.	.
GIZZARD SHAD	58	2	.	.
GIZZARD SHAD	76	5	.	.
GIZZARD SHAD	102	9	.	.
GIZZARD SHAD	101	10	.	.
GIZZARD SHAD	109	13	.	.
GIZZARD SHAD	76	5	.	.
GIZZARD SHAD	95	8	.	.
GIZZARD SHAD	81	6	.	.
GIZZARD SHAD	73	4	.	.
GIZZARD SHAD	78	5	.	.
GIZZARD SHAD	87	6	.	.
GIZZARD SHAD	72	4	.	.
GIZZARD SHAD	71	4	.	.
GIZZARD SHAD	80	6	.	.
GIZZARD SHAD	76	4	.	.
GIZZARD SHAD	91	7	.	.
GIZZARD SHAD	76	4	.	.
GIZZARD SHAD	71	4	.	.
GIZZARD SHAD	83	5	.	.
GIZZARD SHAD	91	8	.	.
GIZZARD SHAD	74	5	.	.
GIZZARD SHAD	90	7	.	.
GIZZARD SHAD	93	8	.	.
GIZZARD SHAD	74	4	.	.
GIZZARD SHAD	76	4	.	.
GIZZARD SHAD	86	6	.	.
GIZZARD SHAD	76	5	.	.
GIZZARD SHAD	.	.	9	47
THREADFIN SHAD	95	8	.	.
THREADFIN SHAD	96	8	.	.
COMMON CARP	623	3960	.	.
PALLID SHINER	.	.	27	21
EMERALD SHINER	.	.	14	40
GHOST SHINER	.	.	1	1
SPOTTAIL SHINER	.	.	3	10
SPOTFIN SHINER	.	.	1	2
SPOTFIN SHINER	.	.	6	2
SPOTFIN SHINER	.	.	2	1
MIMIC SHINER	.	.	26	27
BLUNTNOSE MINNOW	.	.	12	26
BLUNTNOSE MINNOW	.	.	2	1
BULLHEAD MINNOW	.	.	83	189
BULLHEAD MINNOW	.	.	7	2
SMALLMOUTH BUFFALO	376	790	.	.
SMALLMOUTH BUFFALO	103	15	.	.
SILVER REDHORSE	119	19	.	.
GOLDEN REDHORSE	423	980	.	.
GOLDEN REDHORSE	386	730	.	.
SHORTHEAD REDHORSE	103	12	.	.
SHORTHEAD REDHORSE	102	13	.	.
CHANNEL CATFISH	533	1340	.	.
CHANNEL CATFISH	462	1010	.	.
CHANNEL CATFISH	146	28	.	.
TROUT-PERCH	79	5	.	.
BROOK SILVERSIDE	.	.	16	20
WHITE PERCH	92	12	.	.
YELLOW BASS	216	153	.	.
ROCK BASS	28	1	.	.
ROCK BASS	57	4	.	.
ORANGESPOTTED SUNFISH	73	9	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
ORANGESPOTTED SUNFISH	87	11	.	.
ORANGESPOTTED SUNFISH	93	18	.	.
ORANGESPOTTED SUNFISH	66	6	.	.
ORANGESPOTTED SUNFISH	67	6	.	.
ORANGESPOTTED SUNFISH	37	1	.	.
ORANGESPOTTED SUNFISH	63	5	.	.
ORANGESPOTTED SUNFISH	78	9	.	.
ORANGESPOTTED SUNFISH	38	1	.	.
ORANGESPOTTED SUNFISH	70	7	.	.
ORANGESPOTTED SUNFISH	68	6	.	.
ORANGESPOTTED SUNFISH	65	6	.	.
ORANGESPOTTED SUNFISH	83	12	.	.
ORANGESPOTTED SUNFISH	71	8	.	.
ORANGESPOTTED SUNFISH	85	13	.	.
ORANGESPOTTED SUNFISH	82	11	.	.
ORANGESPOTTED SUNFISH	66	5	.	.
ORANGESPOTTED SUNFISH	72	8	.	.
ORANGESPOTTED SUNFISH	68	5	.	.
ORANGESPOTTED SUNFISH	61	5	.	.
ORANGESPOTTED SUNFISH	83	11	.	.
BLUEGILL	134	44	.	.
BLUEGILL	122	41	.	.
BLUEGILL	30	1	.	.
NORTHERN SUNFISH	104	28	.	.
NORTHERN SUNFISH	90	19	.	.
NORTHERN SUNFISH	67	8	.	.
NORTHERN SUNFISH	75	9	.	.
NORTHERN SUNFISH	61	5	.	.
NORTHERN SUNFISH	32	1	.	.
LARGEMOUTH BASS	97	13	.	.
LARGEMOUTH BASS	94	12	.	.
LARGEMOUTH BASS	106	16	.	.
LARGEMOUTH BASS	97	14	.	.
LARGEMOUTH BASS	108	17	.	.
LARGEMOUTH BASS	106	17	.	.
LARGEMOUTH BASS	86	10	.	.
LARGEMOUTH BASS	102	16	.	.
LARGEMOUTH BASS	96	12	.	.
BLACK CRAPPIE	223	155	.	.
LOGPERCH	.	.	1	4
LOGPERCH	.	.	3	18
WALLEYE	196	64	.	.
WALLEYE	183	54	.	.
WALLEYE	191	59	.	.
WALLEYE	189	54	.	.
WALLEYE	194	66	.	.
WALLEYE	190	53	.	.
FRESHWATER DRUM	463	1230	.	.
FRESHWATER DRUM	403	980	.	.
FRESHWATER DRUM	296	350	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 11SEP14 LOCATION: 506 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
THREADFIN SHAD	95	8	.	.
THREADFIN SHAD	93	7	.	.
THREADFIN SHAD	80	5	.	.
THREADFIN SHAD	93	7	.	.
THREADFIN SHAD	76	4	.	.
THREADFIN SHAD	75	3	.	.
THREADFIN SHAD	76	4	.	.
THREADFIN SHAD	81	4	.	.
CENTRAL STONEROLLER	.	.	1	2
COMMON CARP	493	1810	.	.
COMMON CARP	567	2360	.	.
CARP X GOLDFISH HYBRID	563	2530	.	.
EMERALD SHINER	.	.	2	4
SPOTFIN SHINER	.	.	19	61
MIMIC SHINER	.	.	3	3
BLUNTNOSE MINNOW	.	.	5	9
BULLHEAD MINNOW	.	.	9	17
SMALLMOUTH BUFFALO	386	860	.	.
SMALLMOUTH BUFFALO	453	1330	.	.
ROCK BASS	95	19	.	.
GREEN SUNFISH	60	5	.	.
GREEN SUNFISH	110	32	.	.
GREEN SUNFISH	123	37	.	.
GREEN SUNFISH	57	4	.	.
BLUEGILL	143	63	.	.
BLUEGILL	120	40	.	.
BLUEGILL	121	39	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLUEGILL	105	26	.	.
BLUEGILL	83	13	.	.
BLUEGILL	104	25	.	.
BLUEGILL	73	8	.	.
BLUEGILL	70	6	.	.
NORTHERN SUNFISH	72	9	.	.
NORTHERN SUNFISH	77	11	.	.
SMALLMOUTH BASS	306	430	.	.
SMALLMOUTH BASS	284	320	.	.
SMALLMOUTH BASS	328	540	.	.
SMALLMOUTH BASS	172	61	.	.
SMALLMOUTH BASS	176	59	.	.
SMALLMOUTH BASS	178	63	.	.
SMALLMOUTH BASS	177	66	.	.
SMALLMOUTH BASS	116	23	.	.
SMALLMOUTH BASS	104	16	.	.
SMALLMOUTH BASS	91	10	.	.
LARGEMOUTH BASS	376	790	.	.
LARGEMOUTH BASS	184	64	.	.
LARGEMOUTH BASS	165	60	.	.
LARGEMOUTH BASS	148	46	.	.
LARGEMOUTH BASS	91	10	.	.
LARGEMOUTH BASS	73	5	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 11SEP14 LOCATION: 507A MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	85	7	.	.
GIZZARD SHAD	83	6	.	.
GIZZARD SHAD	77	5	.	.
GIZZARD SHAD	76	4	.	.
GIZZARD SHAD	75	4	.	.
GIZZARD SHAD	78	4	.	.
GIZZARD SHAD	76	5	.	.
GIZZARD SHAD	88	7	.	.
GIZZARD SHAD	83	6	.	.
GIZZARD SHAD	81	5	.	.
GIZZARD SHAD	79	5	.	.
GIZZARD SHAD	95	8	.	.
GIZZARD SHAD	71	4	.	.
GIZZARD SHAD	76	5	.	.
GIZZARD SHAD	75	5	.	.
GIZZARD SHAD	69	3	.	.
GIZZARD SHAD	75	5	.	.
GIZZARD SHAD	93	8	.	.
GIZZARD SHAD	78	4	.	.
GIZZARD SHAD	91	9	.	.
GIZZARD SHAD	83	6	.	.
GIZZARD SHAD	80	7	.	.
GIZZARD SHAD	92	8	.	.
GIZZARD SHAD	77	5	.	.
GIZZARD SHAD	81	5	.	.
GIZZARD SHAD	78	5	.	.
GIZZARD SHAD	75	4	.	.
GIZZARD SHAD	85	6	.	.
GIZZARD SHAD	.	.	23	115
GIZZARD SHAD	74	4	.	.
THREADFIN SHAD	63	2	.	.
GRASS PICKEREL	204	56	.	.
COMMON CARP	432	1310	.	.
COMMON CARP	546	2310	.	.
COMMON CARP	708	5300	.	.
COMMON CARP	167	68	.	.
EMERALD SHINER	.	.	3	15
STRIPED SHINER	.	.	1	3
SPOTTAIL SHINER	.	.	19	73
SPOTFIN SHINER	.	.	2	4
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	8	8
BULLHEAD MINNOW	.	.	3	8
SILVER REDHORSE	104	14	.	.
SILVER REDHORSE	106	17	.	.
SILVER REDHORSE	105	14	.	.
SILVER REDHORSE	101	14	.	.
SILVER REDHORSE	97	12	.	.
GOLDEN REDHORSE	186	59	.	.
GOLDEN REDHORSE	186	81	.	.
SHORTHEAD REDHORSE	100	11	.	.
SHORTHEAD REDHORSE	99	10	.	.
SHORTHEAD REDHORSE	76	4	.	.
SHORTHEAD REDHORSE	97	10	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SHORTHEAD REDHORSE	103	12	.	.
BANDED KILLIFISH	.	.	2	3
BANDED KILLIFISH	.	.	1	2
BLACKSTRIPE TOPMINNOW	.	.	1	1
BROOK SILVERSIDE	.	.	4	4
WHITE PERCH	91	12	.	.
ROCK BASS	68	7	.	.
GREEN SUNFISH	117	28	.	.
GREEN SUNFISH	63	6	.	.
GREEN SUNFISH	70	9	.	.
GREEN SUNFISH	89	14	.	.
BLUEGILL	154	96	.	.
BLUEGILL	164	106	.	.
BLUEGILL	126	46	.	.
BLUEGILL	67	6	.	.
BLUEGILL	51	3	.	.
BLUEGILL	73	8	.	.
BLUEGILL	80	11	.	.
BLUEGILL	69	6	.	.
BLUEGILL	73	9	.	.
BLUEGILL	76	9	.	.
BLUEGILL	74	9	.	.
BLUEGILL	76	9	.	.
BLUEGILL	80	11	.	.
BLUEGILL	81	10	.	.
NORTHERN SUNFISH	85	16	.	.
NORTHERN SUNFISH	99	24	.	.
NORTHERN SUNFISH	83	14	.	.
Lepomis HYBRID	.	.	1	8
Lepomis sp.	30	1	.	.
LARGEMOUTH BASS	176	74	.	.
LARGEMOUTH BASS	153	56	.	.
LARGEMOUTH BASS	143	53	.	.
LARGEMOUTH BASS	146	45	.	.
LARGEMOUTH BASS	126	31	.	.
LARGEMOUTH BASS	136	45	.	.
LARGEMOUTH BASS	90	9	.	.
LARGEMOUTH BASS	72	6	.	.
LARGEMOUTH BASS	95	13	.	.
LARGEMOUTH BASS	70	5	.	.
LARGEMOUTH BASS	79	7	.	.
LARGEMOUTH BASS	95	12	.	.
LARGEMOUTH BASS	97	12	.	.
LARGEMOUTH BASS	96	12	.	.
LARGEMOUTH BASS	96	13	.	.
LARGEMOUTH BASS	100	13	.	.
LARGEMOUTH BASS	77	7	.	.
LARGEMOUTH BASS	98	14	.	.
LARGEMOUTH BASS	96	13	.	.
LARGEMOUTH BASS	86	9	.	.
LARGEMOUTH BASS	120	23	.	.
LARGEMOUTH BASS	96	13	.	.
LARGEMOUTH BASS	93	11	.	.
LARGEMOUTH BASS	92	12	.	.
LARGEMOUTH BASS	70	4	.	.
LARGEMOUTH BASS	67	4	.	.
LARGEMOUTH BASS	107	17	.	.
LARGEMOUTH BASS	79	7	.	.
LARGEMOUTH BASS	78	6	.	.
LARGEMOUTH BASS	99	13	.	.
LARGEMOUTH BASS	.	.	4	42
JOHNNY DARTER	.	.	1	1
LOGPERCH	.	.	6	34
LOGPERCH	.	.	4	19
WALLEYE	206	63	.	.
SITE: DRESDEN	GEAR: ELECTRO	DATE: 11SEP14	LOCATION: 510	MESOHABITAT: MAIN CHANNEL BORDER
GIZZARD SHAD	76	5	.	.
GIZZARD SHAD	142	26	.	.
GIZZARD SHAD	136	29	.	.
GIZZARD SHAD	139	24	.	.
GIZZARD SHAD	119	18	.	.
GIZZARD SHAD	68	3	.	.
GIZZARD SHAD	91	7	.	.
GIZZARD SHAD	84	6	.	.
GIZZARD SHAD	140	22	.	.
GIZZARD SHAD	125	20	.	.
GIZZARD SHAD	82	6	.	.
GIZZARD SHAD	75	4	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
THREADFIN SHAD	53	2	.	.
THREADFIN SHAD	64	2	.	.
COMMON CARP	226	190	.	.
COMMON CARP	227	180	.	.
COMMON CARP	208	135	.	.
COMMON CARP	573	2870	.	.
BLUNTNOSE MINNOW	.	.	2	2
BULLHEAD MINNOW	.	.	1	2
SMALLMOUTH BUFFALO	.	.	1	1500
GOLDEN REDHORSE	377	580	.	.
BROOK SILVERSIDE	.	.	1	1
ROCK BASS	173	125	.	.
ROCK BASS	186	155	.	.
GREEN SUNFISH	75	11	.	.
GREEN SUNFISH	71	9	.	.
GREEN SUNFISH	83	13	.	.
PUMPKINSEED	143	64	.	.
BLUEGILL	87	16	.	.
BLUEGILL	61	5	.	.
BLUEGILL	69	7	.	.
BLUEGILL	65	6	.	.
BLUEGILL	65	6	.	.
BLUEGILL	80	11	.	.
BLUEGILL	71	8	.	.
BLUEGILL	69	7	.	.
BLUEGILL	74	9	.	.
BLUEGILL	66	6	.	.
BLUEGILL	60	4	.	.
BLUEGILL	62	5	.	.
BLUEGILL	54	4	.	.
BLUEGILL	57	4	.	.
BLUEGILL	55	4	.	.
BLUEGILL	60	4	.	.
BLUEGILL	67	7	.	.
BLUEGILL	48	2	.	.
NORTHERN SUNFISH	101	28	.	.
NORTHERN SUNFISH	88	18	.	.
NORTHERN SUNFISH	80	13	.	.
NORTHERN SUNFISH	52	3	.	.
Lepomis sp.	30	1	.	.
SMALLMOUTH BASS	254	205	.	.
LARGEMOUTH BASS	176	73	.	.
LARGEMOUTH BASS	134	37	.	.
LARGEMOUTH BASS	126	27	.	.
LARGEMOUTH BASS	119	21	.	.
LARGEMOUTH BASS	132	28	.	.
LARGEMOUTH BASS	113	17	.	.
LARGEMOUTH BASS	136	31	.	.
LARGEMOUTH BASS	142	41	.	.
LARGEMOUTH BASS	142	38	.	.
LARGEMOUTH BASS	96	13	.	.
LARGEMOUTH BASS	97	14	.	.
LARGEMOUTH BASS	84	9	.	.
LARGEMOUTH BASS	75	6	.	.
LARGEMOUTH BASS	79	7	.	.
LARGEMOUTH BASS	65	4	.	.
LARGEMOUTH BASS	85	9	.	.
LARGEMOUTH BASS	77	6	.	.
LARGEMOUTH BASS	86	10	.	.
LARGEMOUTH BASS	79	7	.	.
LARGEMOUTH BASS	82	9	.	.
LARGEMOUTH BASS	83	9	.	.
LARGEMOUTH BASS	72	5	.	.
LARGEMOUTH BASS	81	8	.	.
LARGEMOUTH BASS	84	9	.	.
LARGEMOUTH BASS	76	7	.	.
LARGEMOUTH BASS	70	5	.	.
LARGEMOUTH BASS	75	6	.	.
LARGEMOUTH BASS	81	8	.	.
LOGPERCH	.	.	1	4

SITE: DRESDEN GEAR: ELECTRO DATE: 12SEP14 LOCATION: 512 MESOHABITAT: .

SKIPJACK HERRING	186	54	.	.
GIZZARD SHAD	163	38	.	.
GIZZARD SHAD	102	9	.	.
GIZZARD SHAD	124	16	.	.
GIZZARD SHAD	114	11	.	.
GIZZARD SHAD	113	10	.	.
GIZZARD SHAD	83	5	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	86	5	.	.
THREADFIN SHAD	61	2	.	.
THREADFIN SHAD	80	4	.	.
THREADFIN SHAD	80	4	.	.
THREADFIN SHAD	60	1	.	.
PALLID SHINER	.	.	2	2
EMERALD SHINER	.	.	7	14
SPOTTAIL SHINER	.	.	3	9
ROSYFACE SHINER	.	.	1	1
SPOTFIN SHINER	.	.	1	2
SAND SHINER	.	.	2	2
MIMIC SHINER	.	.	2	1
BLUNTNOSE MINNOW	.	.	3	4
BLUNTNOSE MINNOW	.	.	1	1
BULLHEAD MINNOW	.	.	2	3
RIVER CARPSUCKER	396	660	.	.
SMALLMOUTH BUFFALO	414	1070	.	.
SMALLMOUTH BUFFALO	506	1790	.	.
BROOK SILVERSIDE	.	.	6	5
WHITE PERCH	173	76	.	.
BLUEGILL	132	55	.	.
BLUEGILL	132	56	.	.
BLUEGILL	141	61	.	.
WALLEYE	182	56	.	.
FRESHWATER DRUM	108	14	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 12SEP14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LONGNOSE GAR	376	95	.	.
LONGNOSE GAR	412	135	.	.
GIZZARD SHAD	79	4	.	.
THREADFIN SHAD	95	7	.	.
THREADFIN SHAD	73	3	.	.
THREADFIN SHAD	78	4	.	.
THREADFIN SHAD	81	4	.	.
COMMON CARP	476	1460	.	.
EMERALD SHINER	.	.	9	22
SPOTTAIL SHINER	.	.	5	14
SPOTFIN SHINER	.	.	2	3
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	4	3
BULLHEAD MINNOW	.	.	5	10
RIVER CARPSUCKER	382	720	.	.
RIVER CARPSUCKER	382	750	.	.
SMALLMOUTH BUFFALO	409	940	.	.
SMALLMOUTH BUFFALO	408	990	.	.
SMALLMOUTH BUFFALO	403	1020	.	.
SMALLMOUTH BUFFALO	384	830	.	.
SMALLMOUTH BUFFALO	356	640	.	.
BROOK SILVERSIDE	.	.	10	11
BLUEGILL	136	49	.	.
BLUEGILL	147	64	.	.
SMALLMOUTH BASS	271	270	.	.
SMALLMOUTH BASS	236	130	.	.
SMALLMOUTH BASS	184	74	.	.
LARGEMOUTH BASS	77	5	.	.
LARGEMOUTH BASS	85	7	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 12SEP14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	137	25	.	.
GIZZARD SHAD	161	39	.	.
COMMON CARP	673	4600	.	.
COMMON CARP	523	1940	.	.
EMERALD SHINER	.	.	9	19
SPOTFIN SHINER	.	.	4	5
SPOTFIN SHINER	.	.	1	1
SPOTFIN SHINER	.	.	1	1
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	1	1
BULLHEAD MINNOW	.	.	3	8
SMALLMOUTH BUFFALO	336	540	.	.
SMALLMOUTH BUFFALO	473	1480	.	.
SMALLMOUTH BUFFALO	381	940	.	.
SMALLMOUTH BUFFALO	.	.	1	630
GOLDEN REDHORSE	286	240	.	.
CHANNEL CATFISH	443	920	.	.
CHANNEL CATFISH	436	930	.	.
CHANNEL CATFISH	412	720	.	.
CHANNEL CATFISH	428	890	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
CHANNEL CATFISH	446	980	.	.
BROOK SILVERSIDE	.	.	16	14
ROCK BASS	132	46	.	.
GREEN SUNFISH	107	27	.	.
GREEN SUNFISH	69	6	.	.
BLUEGILL	168	106	.	.
BLUEGILL	116	33	.	.
BLUEGILL	119	40	.	.
BLUEGILL	89	12	.	.
NORTHERN SUNFISH	89	14	.	.
SMALLMOUTH BASS	423	980	.	.
SMALLMOUTH BASS	346	590	.	.
SMALLMOUTH BASS	276	260	.	.
SMALLMOUTH BASS	268	230	.	.
SMALLMOUTH BASS	256	200	.	.
SMALLMOUTH BASS	257	205	.	.
SMALLMOUTH BASS	246	190	.	.
LARGEMOUTH BASS	60	3	.	.
WALLEYE	203	74	.	.
FRESHWATER DRUM	436	1120	.	.
FRESHWATER DRUM	91	8	.	.
FRESHWATER DRUM	121	18	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 12SEP14 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	166	49	.	.
THREADFIN SHAD	80	5	.	.
THREADFIN SHAD	62	2	.	.
COMMON CARP	426	1380	.	.
EMERALD SHINER	.	.	28	69
ROSYFACE SHINER	.	.	1	1
SPOTFIN SHINER	.	.	7	11
SPOTFIN SHINER	.	.	2	1
SAND SHINER	.	.	1	2
MIMIC SHINER	.	.	4	4
Notropis sp.	.	.	1	1
BLUNTNOSE MINNOW	.	.	4	5
BULLHEAD MINNOW	.	.	3	9
RIVER CARPSUCKER	374	730	.	.
SMALLMOUTH BUFFALO	362	680	.	.
SMALLMOUTH BUFFALO	308	470	.	.
SHORTHEAD REDHORSE	283	235	.	.
CHANNEL CATFISH	396	600	.	.
CHANNEL CATFISH	423	850	.	.
CHANNEL CATFISH	506	1040	.	.
CHANNEL CATFISH	419	700	.	.
CHANNEL CATFISH	526	1680	.	.
CHANNEL CATFISH	476	910	.	.
BLACKSTRIPE TOPMINNOW	.	.	1	1
BROOK SILVERSIDE	.	.	13	13
WHITE PERCH	94	11	.	.
WHITE BASS	263	220	.	.
ORANGESPOTTED SUNFISH	60	4	.	.
ORANGESPOTTED SUNFISH	70	6	.	.
ORANGESPOTTED SUNFISH	61	5	.	.
BLUEGILL	163	92	.	.
BLUEGILL	146	64	.	.
BLUEGILL	42	1	.	.
BLUEGILL	60	4	.	.
BLUEGILL	117	39	.	.
BLUEGILL	108	26	.	.
BLUEGILL	109	27	.	.
NORTHERN SUNFISH	108	32	.	.
NORTHERN SUNFISH	86	15	.	.
NORTHERN SUNFISH	120	40	.	.
NORTHERN SUNFISH	110	30	.	.
SMALLMOUTH BASS	268	230	.	.
SMALLMOUTH BASS	264	200	.	.
SMALLMOUTH BASS	264	230	.	.
SMALLMOUTH BASS	66	4	.	.
SMALLMOUTH BASS	82	7	.	.
LARGEMOUTH BASS	99	13	.	.
LARGEMOUTH BASS	95	13	.	.
WALLEYE	362	410	.	.
FRESHWATER DRUM	396	840	.	.
FRESHWATER DRUM	196	87	.	.
FRESHWATER DRUM	120	22	.	.
FRESHWATER DRUM	113	18	.	.
FRESHWATER DRUM	104	13	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SITE: DRESDEN	GEAR: SEINE	DATE: 11SEP14	LOCATION: 501	MESOHABITAT: MAIN CHANNEL BORDER
BLUEGILL	29	1	.	.
BLUEGILL	39	1	.	.
BLUEGILL	46	2	.	.
NORTHERN SUNFISH	41	2	.	.
SITE: DRESDEN	GEAR: SEINE	DATE: 11SEP14	LOCATION: 502	MESOHABITAT: .
GIZZARD SHAD	69	3	.	.
THREADFIN SHAD	75	3	.	.
THREADFIN SHAD	83	5	.	.
PALLID SHINER	.	.	2	1
EMERALD SHINER	.	.	1	2
SPOTTAIL SHINER	.	.	2	7
BULLHEAD MINNOW	.	.	3	4
BULLHEAD MINNOW	.	.	1	1
SHORTHEAD REDHORSE	91	8	.	.
BLUEGILL	26	1	.	.
LOGPERCH	.	.	1	3
SITE: DRESDEN	GEAR: SEINE	DATE: 11SEP14	LOCATION: 503	MESOHABITAT: .
GIZZARD SHAD	66	3	.	.
GIZZARD SHAD	70	3	.	.
GIZZARD SHAD	79	4	.	.
GIZZARD SHAD	70	3	.	.
GIZZARD SHAD	64	2	.	.
GIZZARD SHAD	68	3	.	.
EMERALD SHINER	.	.	2	4
SPOTTAIL SHINER	.	.	4	13
MIMIC SHINER	.	.	1	1
BULLHEAD MINNOW	.	.	1	1
BROOK SILVERSIDE	.	.	6	6
BLUEGILL	54	3	.	.
Lepomis sp.	.	.	1	1
BLACK CRAPPIE	74	5	.	.
SITE: DRESDEN	GEAR: SEINE	DATE: 11SEP14	LOCATION: 507	MESOHABITAT: MAIN CHANNEL BORDER
SPOTFIN SHINER	.	.	3	3
BULLHEAD MINNOW	.	.	1	1
BLACKSTRIPE TOPMINNOW	.	.	1	1
BROOK SILVERSIDE	.	.	13	14
BROOK SILVERSIDE	.	.	1	1
LARGEMOUTH BASS	88	9	.	.
SITE: DRESDEN	GEAR: SEINE	DATE: 11SEP14	LOCATION: 509	MESOHABITAT: MAIN CHANNEL BORDER
GIZZARD SHAD	72	3	.	.
GRASS PICKEREL	186	39	.	.
SPOTTAIL SHINER	.	.	1	3
BLUNTNOSE MINNOW	.	.	3	3
BLUEGILL	104	21	.	.
BLUEGILL	71	7	.	.
BLUEGILL	67	5	.	.
SITE: DRESDEN	GEAR: SEINE	DATE: 12SEP14	LOCATION: 512	MESOHABITAT: .
SAND SHINER	.	.	6	8
BLUNTNOSE MINNOW	.	.	1	2
BANDED KILLIFISH	.	.	1	1
BROOK SILVERSIDE	.	.	1	1
BLUEGILL	69	7	.	.
SMALLMOUTH BASS	73	5	.	.
SITE: DRESDEN	GEAR: SEINE	DATE: 12SEP14	LOCATION: 513	MESOHABITAT: MAIN CHANNEL BORDER
EMERALD SHINER	.	.	8	15
SPOTTAIL SHINER	.	.	1	4
BLUNTNOSE MINNOW	.	.	2	2
BROOK SILVERSIDE	.	.	4	4
SITE: DRESDEN	GEAR: SEINE	DATE: 12SEP14	LOCATION: 514	MESOHABITAT: MAIN CHANNEL BORDER
EMERALD SHINER	.	.	1	2
SAND SHINER	.	.	2	2
BROOK SILVERSIDE	.	.	1	1
SITE: DRESDEN	GEAR: SEINE	DATE: 12SEP14	LOCATION: 515	MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	81	5	.	.
THREADFIN SHAD	70	3	.	.
THREADFIN SHAD	70	3	.	.
EMERALD SHINER	.	.	74	156
SPOTTAIL SHINER	.	.	1	2
ROSYFACE SHINER	.	.	2	2
SPOTFIN SHINER	.	.	26	48
MIMIC SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	2	4
BULLHEAD MINNOW	.	.	1	1
BROOK SILVERSIDE	.	.	26	37
BLUEGILL	30	1	.	.
Lepomis sp.	24	1	.	.
LOGPERCH	.	.	1	3

SITE: DRESDEN GEAR: ELECTRO DATE: 23SEP14 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	123	18	.	.
GIZZARD SHAD	127	23	.	.
GIZZARD SHAD	136	25	.	.
GIZZARD SHAD	119	15	.	.
GIZZARD SHAD	110	16	.	.
GIZZARD SHAD	90	7	.	.
GIZZARD SHAD	85	6	.	.
GIZZARD SHAD	91	8	.	.
GIZZARD SHAD	90	6	.	.
GIZZARD SHAD	94	8	.	.
GIZZARD SHAD	102	10	.	.
GIZZARD SHAD	90	8	.	.
GIZZARD SHAD	112	13	.	.
GIZZARD SHAD	99	10	.	.
GIZZARD SHAD	89	8	.	.
GIZZARD SHAD	86	7	.	.
GIZZARD SHAD	91	8	.	.
GIZZARD SHAD	78	5	.	.
GIZZARD SHAD	114	14	.	.
GIZZARD SHAD	90	7	.	.
GIZZARD SHAD	94	8	.	.
GIZZARD SHAD	97	9	.	.
GIZZARD SHAD	88	7	.	.
GIZZARD SHAD	89	7	.	.
GIZZARD SHAD	95	8	.	.
GIZZARD SHAD	120	18	.	.
GIZZARD SHAD	89	8	.	.
GIZZARD SHAD	92	8	.	.
GIZZARD SHAD	88	7	.	.
GIZZARD SHAD	93	7	.	.
GIZZARD SHAD	.	.	4	28
GOLDFISH	142	50	.	.
GOLDFISH	.	.	1	69
COMMON CARP	570	2750	.	.
COMMON CARP	198	128	.	.
COMMON CARP	188	105	.	.
COMMON CARP	201	138	.	.
COMMON CARP	95	14	.	.
BLUNTNOSE MINNOW	.	.	1	2
SMALLMOUTH BUFFALO	463	1710	.	.
SMALLMOUTH BUFFALO	465	1500	.	.
GOLDEN REDHORSE	419	930	.	.
GOLDEN REDHORSE	407	880	.	.
GREEN SUNFISH	135	55	.	.
GREEN SUNFISH	52	4	.	.
PUMPKINSEED	89	13	.	.
BLUEGILL	70	7	.	.
BLUEGILL	65	6	.	.
BLUEGILL	49	2	.	.
BLUEGILL	59	4	.	.
BLUEGILL	65	6	.	.
BLUEGILL	51	2	.	.
BLUEGILL	65	6	.	.
BLUEGILL	64	5	.	.
NORTHERN SUNFISH	100	23	.	.
NORTHERN SUNFISH	50	3	.	.
SMALLMOUTH BASS	219	124	.	.
SMALLMOUTH BASS	174	70	.	.
LARGEMOUTH BASS	345	770	.	.
LARGEMOUTH BASS	463	1750	.	.
LARGEMOUTH BASS	415	1160	.	.
LARGEMOUTH BASS	350	720	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LARGEMOUTH BASS	159	62	.	.
LARGEMOUTH BASS	152	59	.	.
LARGEMOUTH BASS	145	44	.	.
LARGEMOUTH BASS	263	300	.	.
LARGEMOUTH BASS	127	29	.	.
LARGEMOUTH BASS	77	7	.	.
LARGEMOUTH BASS	82	8	.	.
LARGEMOUTH BASS	91	9	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 23SEP14 LOCATION: 502 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	139	28	.	.
GIZZARD SHAD	129	22	.	.
GIZZARD SHAD	118	18	.	.
GIZZARD SHAD	96	9	.	.
GIZZARD SHAD	110	13	.	.
GIZZARD SHAD	73	5	.	.
GIZZARD SHAD	70	4	.	.
GIZZARD SHAD	77	5	.	.
GIZZARD SHAD	77	5	.	.
GIZZARD SHAD	99	11	.	.
GIZZARD SHAD	121	19	.	.
GIZZARD SHAD	154	33	.	.
GIZZARD SHAD	116	16	.	.
GIZZARD SHAD	76	4	.	.
GIZZARD SHAD	101	11	.	.
GIZZARD SHAD	94	8	.	.
GIZZARD SHAD	86	7	.	.
GIZZARD SHAD	90	7	.	.
GIZZARD SHAD	95	9	.	.
GIZZARD SHAD	76	4	.	.
GIZZARD SHAD	85	6	.	.
EMERALD SHINER	.	.	6	16
SPOTTAIL SHINER	.	.	1	4
SPOTFIN SHINER	.	.	9	23
SPOTFIN SHINER	.	.	1	2
MIMIC SHINER	.	.	7	10
BULLHEAD MINNOW	.	.	11	34
SILVER REDHORSE	115	20	.	.
SILVER REDHORSE	110	18	.	.
SILVER REDHORSE	103	15	.	.
GOLDEN REDHORSE	404	870	.	.
GOLDEN REDHORSE	69	4	.	.
GOLDEN REDHORSE	61	3	.	.
SHORTHEAD REDHORSE	105	13	.	.
SHORTHEAD REDHORSE	92	9	.	.
SHORTHEAD REDHORSE	92	9	.	.
SHORTHEAD REDHORSE	81	7	.	.
SHORTHEAD REDHORSE	92	9	.	.
SHORTHEAD REDHORSE	82	6	.	.
SHORTHEAD REDHORSE	85	7	.	.
SHORTHEAD REDHORSE	74	5	.	.
SHORTHEAD REDHORSE	94	9	.	.
CHANNEL CATFISH	603	1950	.	.
BROOK SILVERSIDE	.	.	1	1
ROCK BASS	101	22	.	.
GREEN SUNFISH	124	39	.	.
GREEN SUNFISH	60	5	.	.
ORANGESPOTTED SUNFISH	73	9	.	.
BLUEGILL	141	56	.	.
BLUEGILL	65	5	.	.
SMALLMOUTH BASS	296	320	.	.
SMALLMOUTH BASS	174	75	.	.
SMALLMOUTH BASS	418	910	.	.
SMALLMOUTH BASS	86	9	.	.
LARGEMOUTH BASS	105	14	.	.
LARGEMOUTH BASS	104	14	.	.
JOHNNY DARTER	.	.	1	1
LOGPERCH	.	.	4	21
ROUND GOBY	58	3	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 23SEP14 LOCATION: 503 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	296	270	.	.
GIZZARD SHAD	146	31	.	.
GIZZARD SHAD	129	20	.	.
GIZZARD SHAD	38	1	.	.
GIZZARD SHAD	115	17	.	.
GIZZARD SHAD	114	13	.	.
GIZZARD SHAD	84	6	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	90	7	.	.
GIZZARD SHAD	119	16	.	.
GIZZARD SHAD	105	12	.	.
GIZZARD SHAD	85	6	.	.
GIZZARD SHAD	114	15	.	.
GIZZARD SHAD	63	3	.	.
GIZZARD SHAD	89	7	.	.
GIZZARD SHAD	123	19	.	.
GIZZARD SHAD	80	5	.	.
GIZZARD SHAD	126	20	.	.
GIZZARD SHAD	106	11	.	.
GIZZARD SHAD	80	5	.	.
GIZZARD SHAD	75	4	.	.
GIZZARD SHAD	76	5	.	.
GIZZARD SHAD	54	2	.	.
GIZZARD SHAD	84	6	.	.
GIZZARD SHAD	109	12	.	.
GIZZARD SHAD	83	5	.	.
GIZZARD SHAD	83	6	.	.
GIZZARD SHAD	117	15	.	.
GIZZARD SHAD	71	4	.	.
GIZZARD SHAD	78	5	.	.
GIZZARD SHAD	92	8	.	.
GIZZARD SHAD	.	.	10	139
GIZZARD SHAD	.	.	65	365
THREADFIN SHAD	80	5	.	.
COMMON CARP	520	2030	.	.
COMMON CARP	440	1335	.	.
PALLID SHINER	.	.	5	11
EMERALD SHINER	.	.	2	6
EMERALD SHINER	.	.	1	2
SPOTFIN SHINER	.	.	9	19
SPOTFIN SHINER	.	.	1	3
SPOTFIN SHINER	.	.	1	1
SAND SHINER	.	.	1	2
MIMIC SHINER	.	.	6	7
BLUNTNOSE MINNOW	.	.	18	39
BULLHEAD MINNOW	.	.	23	57
GOLDEN REDHORSE	63	3	.	.
SHORTHEAD REDHORSE	100	11	.	.
SHORTHEAD REDHORSE	98	10	.	.
SHORTHEAD REDHORSE	70	5	.	.
SHORTHEAD REDHORSE	115	17	.	.
CHANNEL CATFISH	548	1770	.	.
CHANNEL CATFISH	565	1350	.	.
CHANNEL CATFISH	590	1920	.	.
CHANNEL CATFISH	548	1740	.	.
CHANNEL CATFISH	504	1190	.	.
CHANNEL CATFISH	205	68	.	.
BLACKSTRIPE TOPMINNOW	.	.	4	4
BROOK SILVERSIDE	.	.	38	44
BROOK SILVERSIDE	.	.	4	1
BLUEGILL	155	82	.	.
BLUEGILL	157	89	.	.
BLUEGILL	155	80	.	.
LARGEMOUTH BASS	406	1210	.	.
LARGEMOUTH BASS	332	570	.	.
LARGEMOUTH BASS	130	28	.	.
LARGEMOUTH BASS	125	24	.	.
LARGEMOUTH BASS	93	12	.	.
LARGEMOUTH BASS	90	10	.	.
LARGEMOUTH BASS	84	9	.	.
LARGEMOUTH BASS	91	10	.	.
WHITE CRAPPIE	306	460	.	.
LOGPERCH	.	.	4	16
WALLEYE	212	74	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 23SEP14 LOCATION: 506 MESOHABITAT: MAIN CHANNEL BORDER

GIZZARD SHAD	181	48	.	.
GIZZARD SHAD	87	6	.	.
GIZZARD SHAD	116	13	.	.
COMMON CARP	525	2020	.	.
COMMON CARP	695	4750	.	.
COMMON CARP	632	3600	.	.
COMMON CARP	455	1510	.	.
COMMON CARP	547	2060	.	.
COMMON CARP	549	2450	.	.
COMMON CARP	460	1420	.	.
COMMON CARP	483	1660	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SILVER CARP	735	4250	.	.
SPOTFIN SHINER	.	.	3	8
BLACKSTRIPE TOPMINNOW	.	.	1	2
GREEN SUNFISH	139	59	.	.
GREEN SUNFISH	124	36	.	.
GREEN SUNFISH	116	25	.	.
GREEN SUNFISH	85	13	.	.
GREEN SUNFISH	70	8	.	.
GREEN SUNFISH	67	7	.	.
BLUEGILL	155	80	.	.
BLUEGILL	121	35	.	.
BLUEGILL	88	13	.	.
BLUEGILL	120	39	.	.
BLUEGILL	126	42	.	.
BLUEGILL	85	12	.	.
BLUEGILL	75	9	.	.
BLUEGILL	96	18	.	.
BLUEGILL	74	8	.	.
BLUEGILL	76	9	.	.
NORTHERN SUNFISH	72	9	.	.
NORTHERN SUNFISH	69	8	.	.
NORTHERN SUNFISH	73	10	.	.
NORTHERN SUNFISH	67	7	.	.
SMALLMOUTH BASS	171	52	.	.
SMALLMOUTH BASS	188	93	.	.
LARGEMOUTH BASS	128	26	.	.
LARGEMOUTH BASS	174	72	.	.
LARGEMOUTH BASS	164	48	.	.
LARGEMOUTH BASS	104	14	.	.
LARGEMOUTH BASS	106	14	.	.
LARGEMOUTH BASS	240	182	.	.
LARGEMOUTH BASS	181	76	.	.
LARGEMOUTH BASS	89	8	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 23SEP14 LOCATION: 507A MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	135	19	.	.
GIZZARD SHAD	120	16	.	.
GIZZARD SHAD	108	12	.	.
GIZZARD SHAD	71	3	.	.
GIZZARD SHAD	80	4	.	.
GIZZARD SHAD	77	4	.	.
GIZZARD SHAD	80	5	.	.
GIZZARD SHAD	69	3	.	.
GIZZARD SHAD	71	3	.	.
GIZZARD SHAD	91	8	.	.
GIZZARD SHAD	87	6	.	.
GIZZARD SHAD	89	6	.	.
GIZZARD SHAD	85	5	.	.
GIZZARD SHAD	85	5	.	.
GIZZARD SHAD	91	8	.	.
GIZZARD SHAD	82	5	.	.
GIZZARD SHAD	96	10	.	.
GIZZARD SHAD	74	4	.	.
GIZZARD SHAD	76	4	.	.
GIZZARD SHAD	82	5	.	.
GIZZARD SHAD	116	16	.	.
GIZZARD SHAD	95	9	.	.
GIZZARD SHAD	82	6	.	.
GIZZARD SHAD	87	7	.	.
GIZZARD SHAD	96	10	.	.
GIZZARD SHAD	87	6	.	.
GIZZARD SHAD	91	7	.	.
GIZZARD SHAD	71	3	.	.
GIZZARD SHAD	102	10	.	.
GIZZARD SHAD	77	4	.	.
GIZZARD SHAD	.	.	8	94
GIZZARD SHAD	.	.	55	337
THREADFIN SHAD	74	4	.	.
THREADFIN SHAD	61	2	.	.
THREADFIN SHAD	60	2	.	.
THREADFIN SHAD	81	5	.	.
THREADFIN SHAD	73	3	.	.
THREADFIN SHAD	63	3	.	.
THREADFIN SHAD	76	4	.	.
THREADFIN SHAD	72	4	.	.
THREADFIN SHAD	74	4	.	.
THREADFIN SHAD	68	3	.	.
THREADFIN SHAD	76	4	.	.
THREADFIN SHAD	69	3	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
THREADFIN SHAD	59	2	.	.
THREADFIN SHAD	73	4	.	.
THREADFIN SHAD	76	4	.	.
THREADFIN SHAD	61	2	.	.
THREADFIN SHAD	60	2	.	.
THREADFIN SHAD	62	2	.	.
THREADFIN SHAD	58	2	.	.
THREADFIN SHAD	56	1	.	.
THREADFIN SHAD	71	3	.	.
THREADFIN SHAD	67	3	.	.
THREADFIN SHAD	63	2	.	.
THREADFIN SHAD	58	2	.	.
THREADFIN SHAD	59	2	.	.
THREADFIN SHAD	61	2	.	.
THREADFIN SHAD	61	2	.	.
THREADFIN SHAD	74	4	.	.
THREADFIN SHAD	75	4	.	.
THREADFIN SHAD	75	4	.	.
THREADFIN SHAD	.	.	53	228
THREADFIN SHAD	.	.	100	221
THREADFIN SHAD	.	.	325	718
GOLDEN SHINER	.	.	1	2
EMERALD SHINER	.	.	10	43
SPOTTAIL SHINER	.	.	16	70
SPOTFIN SHINER	.	.	2	7
BLUNTNOSE MINNOW	.	.	13	21
BULLHEAD MINNOW	.	.	2	4
GOLDEN REDHORSE	374	660	.	.
SHORTHEAD REDHORSE	120	16	.	.
SHORTHEAD REDHORSE	109	14	.	.
SHORTHEAD REDHORSE	117	18	.	.
SHORTHEAD REDHORSE	90	9	.	.
SHORTHEAD REDHORSE	99	12	.	.
SHORTHEAD REDHORSE	98	11	.	.
SHORTHEAD REDHORSE	111	15	.	.
SHORTHEAD REDHORSE	90	8	.	.
SHORTHEAD REDHORSE	80	6	.	.
SHORTHEAD REDHORSE	91	8	.	.
BANDED KILLIFISH	.	.	1	5
BROOK SILVERSIDE	.	.	13	14
BROOK SILVERSIDE	.	.	1	1
GREEN SUNFISH	90	16	.	.
GREEN SUNFISH	75	10	.	.
GREEN SUNFISH	67	6	.	.
GREEN SUNFISH	69	7	.	.
GREEN SUNFISH	76	9	.	.
GREEN SUNFISH	56	4	.	.
GREEN SUNFISH	70	8	.	.
PUMPKINSEED	73	9	.	.
BLUEGILL	71	8	.	.
BLUEGILL	65	6	.	.
BLUEGILL	71	8	.	.
BLUEGILL	67	6	.	.
BLUEGILL	37	1	.	.
NORTHERN SUNFISH	90	19	.	.
NORTHERN SUNFISH	90	16	.	.
NORTHERN SUNFISH	91	16	.	.
LARGEMOUTH BASS	95	11	.	.
LARGEMOUTH BASS	92	9	.	.
LARGEMOUTH BASS	81	7	.	.
LARGEMOUTH BASS	98	11	.	.
LARGEMOUTH BASS	100	14	.	.
LARGEMOUTH BASS	145	46	.	.
LARGEMOUTH BASS	103	16	.	.
LARGEMOUTH BASS	113	17	.	.
LARGEMOUTH BASS	90	9	.	.
LARGEMOUTH BASS	104	11	.	.
LARGEMOUTH BASS	96	11	.	.
LARGEMOUTH BASS	115	22	.	.
LARGEMOUTH BASS	110	15	.	.
LARGEMOUTH BASS	104	14	.	.
LARGEMOUTH BASS	112	21	.	.
LARGEMOUTH BASS	100	11	.	.
LARGEMOUTH BASS	102	12	.	.
LARGEMOUTH BASS	140	35	.	.
LARGEMOUTH BASS	99	11	.	.
LARGEMOUTH BASS	91	11	.	.
LARGEMOUTH BASS	80	8	.	.
LARGEMOUTH BASS	88	11	.	.
LARGEMOUTH BASS	106	18	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
LARGEMOUTH BASS	87	10	.	.
LARGEMOUTH BASS	88	9	.	.
LARGEMOUTH BASS	90	10	.	.
JOHNNY DARTER	.	.	1	1
YELLOW PERCH	111	16	.	.
LOGPERCH	.	.	2	14
ROUND GOBY	80	9	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 23SEP14 LOCATION: 510 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	141	32	.	.
GIZZARD SHAD	136	28	.	.
GIZZARD SHAD	129	25	.	.
GIZZARD SHAD	138	26	.	.
GIZZARD SHAD	88	8	.	.
GIZZARD SHAD	130	22	.	.
GIZZARD SHAD	127	20	.	.
GOLDFISH	91	16	.	.
COMMON CARP	220	190	.	.
BLUNTNOSE MINNOW	.	.	3	7
YELLOW BULLHEAD	145	44	.	.
BROOK SILVERSIDE	.	.	1	1
GREEN SUNFISH	84	15	.	.
PUMPKINSEED	84	13	.	.
PUMPKINSEED	71	8	.	.
BLUEGILL	83	11	.	.
BLUEGILL	60	4	.	.
BLUEGILL	68	7	.	.
BLUEGILL	76	10	.	.
BLUEGILL	68	7	.	.
BLUEGILL	69	7	.	.
BLUEGILL	72	8	.	.
BLUEGILL	60	4	.	.
BLUEGILL	61	4	.	.
BLUEGILL	60	4	.	.
BLUEGILL	55	4	.	.
BLUEGILL	64	5	.	.
BLUEGILL	69	7	.	.
BLUEGILL	70	7	.	.
BLUEGILL	60	4	.	.
BLUEGILL	60	4	.	.
NORTHERN SUNFISH	105	25	.	.
NORTHERN SUNFISH	96	20	.	.
NORTHERN SUNFISH	107	30	.	.
SMALLMOUTH BASS	167	53	.	.
LARGEMOUTH BASS	89	9	.	.
LARGEMOUTH BASS	76	6	.	.
LARGEMOUTH BASS	117	24	.	.
LARGEMOUTH BASS	90	10	.	.
LARGEMOUTH BASS	81	7	.	.
LARGEMOUTH BASS	105	16	.	.
ROUND GOBY	51	2	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 22SEP14 LOCATION: 512 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	147	31	.	.
GIZZARD SHAD	136	24	.	.
THREADFIN SHAD	85	5	.	.
THREADFIN SHAD	103	10	.	.
THREADFIN SHAD	79	5	.	.
THREADFIN SHAD	62	2	.	.
THREADFIN SHAD	78	4	.	.
THREADFIN SHAD	76	4	.	.
COMMON CARP	528	2190	.	.
EMERALD SHINER	.	.	13	42
SPOTTAIL SHINER	.	.	2	11
SPOTFIN SHINER	.	.	1	3
BLUNTNOSE MINNOW	.	.	3	3
BULLHEAD MINNOW	.	.	3	6
GOLDEN REDHORSE	290	270	.	.
CHANNEL CATFISH	499	1260	.	.
CHANNEL CATFISH	471	1110	.	.
FLATHEAD CATFISH	52	2	.	.
BROOK SILVERSIDE	.	.	2	3
BLUEGILL	116	32	.	.
BLUEGILL	119	35	.	.
BLUEGILL	75	9	.	.
SMALLMOUTH BASS	170	55	.	.
SMALLMOUTH BASS	370	700	.	.
SMALLMOUTH BASS	82	8	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SMALLMOUTH BASS	81	7	.	.
LARGEMOUTH BASS	111	17	.	.
LARGEMOUTH BASS	87	9	.	.
ROUND GOBY	44	1	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 22SEP14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	145	26	.	.
GIZZARD SHAD	127	21	.	.
EMERALD SHINER	.	.	5	12
SPOTTAIL SHINER	.	.	2	5
SPOTFIN SHINER	.	.	3	7
SAND SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	8	11
BULLHEAD MINNOW	.	.	3	12
SMALLMOUTH BUFFALO	421	1040	.	.
SMALLMOUTH BUFFALO	429	1230	.	.
GOLDEN REDHORSE	296	280	.	.
GOLDEN REDHORSE	160	42	.	.
GOLDEN REDHORSE	190	68	.	.
SHORTHEAD REDHORSE	103	12	.	.
CHANNEL CATFISH	416	760	.	.
GREEN SUNFISH	50	3	.	.
GREEN SUNFISH	54	4	.	.
ORANGESPOTTED SUNFISH	70	7	.	.
ORANGESPOTTED SUNFISH	77	10	.	.
BLUEGILL	54	3	.	.
BLUEGILL	29	1	.	.
NORTHERN SUNFISH	62	5	.	.
NORTHERN SUNFISH	71	8	.	.
NORTHERN SUNFISH	82	14	.	.
SMALLMOUTH BASS	166	54	.	.
SMALLMOUTH BASS	139	31	.	.
SMALLMOUTH BASS	93	10	.	.
LARGEMOUTH BASS	150	44	.	.
LARGEMOUTH BASS	95	12	.	.
LARGEMOUTH BASS	82	7	.	.
LARGEMOUTH BASS	153	45	.	.
LARGEMOUTH BASS	109	16	.	.
LARGEMOUTH BASS	70	5	.	.
LOGPERCH	.	.	1	4
FRESHWATER DRUM	115	17	.	.

SITE: DRESDEN GEAR: ELECTRO DATE: 22SEP14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	170	42	.	.
GIZZARD SHAD	116	16	.	.
GIZZARD SHAD	130	21	.	.
THREADFIN SHAD	78	4	.	.
COMMON CARP	512	1900	.	.
COMMON CARP	492	1510	.	.
EMERALD SHINER	.	.	3	12
SPOTTAIL SHINER	.	.	2	6
SPOTFIN SHINER	.	.	7	11
BLUNTNOSE MINNOW	.	.	2	4
BULLHEAD MINNOW	.	.	2	6
BULLHEAD MINNOW	.	.	1	1
SMALLMOUTH BUFFALO	387	860	.	.
SHORTHEAD REDHORSE	85	7	.	.
SHORTHEAD REDHORSE	99	10	.	.
CHANNEL CATFISH	445	1080	.	.
CHANNEL CATFISH	385	510	.	.
CHANNEL CATFISH	434	920	.	.
BLACKSTRIPE TOPMINNOW	.	.	1	1
ROCK BASS	80	12	.	.
GREEN SUNFISH	78	11	.	.
GREEN SUNFISH	63	5	.	.
GREEN SUNFISH	64	6	.	.
ORANGESPOTTED SUNFISH	48	2	.	.
BLUEGILL	52	3	.	.
BLUEGILL	36	1	.	.
BLUEGILL	59	4	.	.
NORTHERN SUNFISH	77	10	.	.
Lepomis HYBRID	.	.	1	51
SMALLMOUTH BASS	204	103	.	.
SMALLMOUTH BASS	158	43	.	.
SMALLMOUTH BASS	89	9	.	.
LARGEMOUTH BASS	110	19	.	.
LARGEMOUTH BASS	88	9	.	.
LARGEMOUTH BASS	137	30	.	.

EXHIBIT C (CONT.)

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
FRESHWATER DRUM	488	1440	.	.
FRESHWATER DRUM	91	8	.	.
SITE: DRESDEN GEAR: ELECTRO DATE: 22SEP14 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER				
COMMON CARP	405	1050	.	.
COMMON CARP	521	2070	.	.
EMERALD SHINER	.	.	6	15
SPOTTAIL SHINER	.	.	1	3
MIMIC SHINER	.	.	1	1
BULLHEAD MINNOW	.	.	4	8
BULLHEAD MINNOW	.	.	1	1
CHANNEL CATFISH	330	240	.	.
FLATHEAD CATFISH	222	105	.	.
BROOK SILVERSIDE	.	.	1	2
GREEN SUNFISH	146	64	.	.
GREEN SUNFISH	59	5	.	.
BLUEGILL	106	26	.	.
BLUEGILL	119	38	.	.
BLUEGILL	153	88	.	.
BLUEGILL	73	8	.	.
NORTHERN SUNFISH	101	19	.	.
NORTHERN SUNFISH	107	28	.	.
NORTHERN SUNFISH	80	12	.	.
Lepomis HYBRID	.	.	1	75
SMALLMOUTH BASS	282	325	.	.
SMALLMOUTH BASS	315	410	.	.
SMALLMOUTH BASS	170	60	.	.
SMALLMOUTH BASS	270	250	.	.
SMALLMOUTH BASS	240	180	.	.
SMALLMOUTH BASS	71	5	.	.
LARGEMOUTH BASS	119	21	.	.
LARGEMOUTH BASS	92	10	.	.
FRESHWATER DRUM	486	1330	.	.
FRESHWATER DRUM	127	22	.	.
SITE: DRESDEN GEAR: SEINE DATE: 23SEP14 LOCATION: 501 MESOHABITAT: MAIN CHANNEL BORDER				
GIZZARD SHAD	97	10	.	.
GIZZARD SHAD	89	9	.	.
GIZZARD SHAD	76	5	.	.
GIZZARD SHAD	80	6	.	.
GIZZARD SHAD	81	6	.	.
GIZZARD SHAD	83	6	.	.
GIZZARD SHAD	74	4	.	.
GIZZARD SHAD	80	6	.	.
GIZZARD SHAD	91	8	.	.
GIZZARD SHAD	83	6	.	.
GIZZARD SHAD	80	6	.	.
GIZZARD SHAD	82	5	.	.
GIZZARD SHAD	80	5	.	.
GIZZARD SHAD	94	8	.	.
GIZZARD SHAD	82	6	.	.
GIZZARD SHAD	80	6	.	.
GIZZARD SHAD	86	6	.	.
BLUNTNOSE MINNOW	.	.	18	23
CHANNEL CATFISH	565	1780	.	.
BLACKSTRIPE TOPMINNOW	.	.	7	3
PUMPKINSEED	59	5	.	.
PUMPKINSEED	78	11	.	.
BLUEGILL	68	6	.	.
BLUEGILL	53	3	.	.
BLUEGILL	67	6	.	.
BLUEGILL	72	9	.	.
BLUEGILL	65	6	.	.
NORTHERN SUNFISH	37	1	.	.
Lepomis HYBRID	28	1	.	.
SITE: DRESDEN GEAR: SEINE DATE: 23SEP14 LOCATION: 502 MESOHABITAT: .				
GIZZARD SHAD	107	13	.	.
GIZZARD SHAD	82	6	.	.
GIZZARD SHAD	73	4	.	.
PALLID SHINER	.	.	1	2
PALLID SHINER	.	.	1	1
SPOTTAIL SHINER	.	.	2	9
SPOTFIN SHINER	.	.	1	1
MIMIC SHINER	.	.	1	1
BULLHEAD MINNOW	.	.	4	5
BULLHEAD MINNOW	.	.	2	1

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
CHANNEL CATFISH	47	1	.	.
Lepomis sp.	30	1	.	.
SMALLMOUTH BASS	75	6	.	.
LARGEMOUTH BASS	110	20	.	.
ROUND GOBY	44	1	.	.
ROUND GOBY	45	1	.	.

SITE: DRESDEN GEAR: SEINE DATE: 23SEP14 LOCATION: 503 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	86	7	.	.
GIZZARD SHAD	88	6	.	.
GIZZARD SHAD	75	5	.	.
GIZZARD SHAD	74	4	.	.
PALLID SHINER	.	.	1	2
EMERALD SHINER	.	.	16	42
SPOTTAIL SHINER	.	.	12	49
SPOTFIN SHINER	.	.	1	1
SPOTFIN SHINER	.	.	1	1
MIMIC SHINER	.	.	17	19
BLUNTNOSE MINNOW	.	.	19	40
BULLHEAD MINNOW	.	.	8	12
SHORTHEAD REDHORSE	88	8	.	.
BLACKSTRIPE TOPMINNOW	.	.	4	5
BROOK SILVERSIDE	.	.	12	16
ROCK BASS	35	1	.	.
ROCK BASS	33	1	.	.
ROCK BASS	35	1	.	.
BLUEGILL	56	4	.	.
BLUEGILL	83	12	.	.
BLUEGILL	45	1	.	.
Lepomis sp.	23	1	.	.
Lepomis sp.	26	1	.	.
LARGEMOUTH BASS	101	15	.	.
BLACK CRAPPIE	81	6	.	.
BLACK CRAPPIE	71	4	.	.
BLACK CRAPPIE	78	6	.	.
JOHNNY DARTER	.	.	1	1
LOGPERCH	.	.	2	13

SITE: DRESDEN GEAR: SEINE DATE: 23SEP14 LOCATION: 507 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	71	4	.	.
GIZZARD SHAD	80	6	.	.
EMERALD SHINER	.	.	3	5
SPOTTAIL SHINER	.	.	7	28
SPOTFIN SHINER	.	.	2	4
SILVER REDHORSE	115	20	.	.
BROOK SILVERSIDE	.	.	3	3
BLUEGILL	77	10	.	.
LARGEMOUTH BASS	116	23	.	.
LARGEMOUTH BASS	91	11	.	.
LARGEMOUTH BASS	99	13	.	.
LOGPERCH	.	.	2	15

SITE: DRESDEN GEAR: SEINE DATE: 23SEP14 LOCATION: 509 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
GIZZARD SHAD	82	5	.	.
GIZZARD SHAD	81	5	.	.
GIZZARD SHAD	82	4	.	.
GIZZARD SHAD	57	2	.	.
GIZZARD SHAD	70	3	.	.
GIZZARD SHAD	80	4	.	.
GIZZARD SHAD	74	3	.	.
GIZZARD SHAD	81	5	.	.
GIZZARD SHAD	83	5	.	.
GIZZARD SHAD	79	4	.	.
GIZZARD SHAD	54	2	.	.
STRIPED SHINER	.	.	1	2
SPOTTAIL SHINER	.	.	1	4
BLUNTNOSE MINNOW	.	.	2	3
BLUNTNOSE MINNOW	.	.	3	2
CHANNEL CATFISH	83	4	.	.
BANDED KILLIFISH	.	.	3	7
PUMPKINSEED	85	14	.	.
BLUEGILL	84	12	.	.
BLUEGILL	85	13	.	.
BLUEGILL	76	10	.	.
BLUEGILL	72	9	.	.
BLUEGILL	59	4	.	.
BLUEGILL	36	1	.	.

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
BLUEGILL	35	1	.	.
BLUEGILL	35	1	.	.
LARGEMOUTH BASS	100	14	.	.
LARGEMOUTH BASS	81	8	.	.
LARGEMOUTH BASS	93	11	.	.
LARGEMOUTH BASS	72	6	.	.
ROUND GOBY	89	12	.	.

SITE: DRESDEN GEAR: SEINE DATE: 22SEP14 LOCATION: 512 MESOHABITAT: .

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
SPOTTAIL SHINER	.	.	1	3
SPOTFIN SHINER	.	.	8	13
ROUND GOBY	45	2	.	.

SITE: DRESDEN GEAR: SEINE DATE: 22SEP14 LOCATION: 513 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
PALLID SHINER	.	.	1	1
EMERALD SHINER	.	.	1	8
EMERALD SHINER	.	.	13	32
SPOTTAIL SHINER	.	.	45	135
SPOTTAIL SHINER	.	.	1	3
SPOTFIN SHINER	.	.	4	2
SPOTFIN SHINER	.	.	13	16
SAND SHINER	.	.	4	5
BULLHEAD MINNOW	.	.	15	17
BLACKSTRIPE TOPMINNOW	.	.	6	7
BROOK SILVERSIDE	.	.	10	10
SMALLMOUTH BASS	74	5	.	.
LARGEMOUTH BASS	95	11	.	.
LOGPERCH	.	.	1	3

SITE: DRESDEN GEAR: SEINE DATE: 22SEP14 LOCATION: 514 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
PALLID SHINER	.	.	3	3
EMERALD SHINER	.	.	19	43
SPOTTAIL SHINER	.	.	39	130
ROSYFACE SHINER	.	.	1	1
SPOTFIN SHINER	.	.	58	103
SAND SHINER	.	.	1	1
BLUNTNOSE MINNOW	.	.	3	3
BULLHEAD MINNOW	.	.	20	49
BULLHEAD MINNOW	.	.	4	2
BROOK SILVERSIDE	.	.	8	10
ORANGESPOTTED SUNFISH	61	4	.	.
BLUEGILL	58	4	.	.
BLUEGILL	70	6	.	.
BLUEGILL	56	4	.	.
NORTHERN SUNFISH	72	9	.	.
SMALLMOUTH BASS	86	9	.	.
SMALLMOUTH BASS	80	7	.	.
LARGEMOUTH BASS	89	11	.	.
LARGEMOUTH BASS	97	13	.	.
LARGEMOUTH BASS	83	8	.	.
LOGPERCH	.	.	4	19

SITE: DRESDEN GEAR: SEINE DATE: 22SEP14 LOCATION: 515 MESOHABITAT: MAIN CHANNEL BORDER

SPECIES	LENGTH	WEIGHT	PLUS COUNT	BATCH WEIGHT
EMERALD SHINER	.	.	3	4
SPOTTAIL SHINER	.	.	1	3
SPOTFIN SHINER	.	.	25	56
BLUNTNOSE MINNOW	.	.	3	5

EXHIBIT D:

INDEX OF WELL BEING SCORES

EXHIBIT D. INDEX OF WELL BEING (IWB and IWBmod) SUMMARY - DRESDEN STATION FISH STUDY, 2014.

METHOD	DATE	LOCATION	DISTANCE	IWB	IWBMOD	TOTCNT	TOTWGT	INTCNT	INTWGT	DIVERCNT	DIVERWGT
BOAT	22MAY14	501	500	5.883	5.845	32.00	16.854	30.00	16.694	1.581	1.157
BOAT	05JUN14	501	500	7.128	7.053	50.00	23.862	48.00	21.402	1.835	1.751
BOAT	10JUL14	501	500	8.352	7.955	240.00	21.538	170.00	13.730	2.289	1.788
BOAT	24JUL14	501	500	7.687	7.427	342.00	13.504	212.00	12.958	1.915	1.553
BOAT	05AUG14	501	500	7.910	7.786	144.00	13.866	116.00	13.454	2.517	1.593
BOAT	20AUG14	501	500	6.134	5.994	92.00	9.322	74.00	8.764	1.678	1.078
BOAT	11SEP14	501	500	8.044	7.710	148.00	28.440	128.00	16.834	2.087	1.784
BOAT	23SEP14	501	500	7.499	7.288	146.00	27.722	126.00	21.092	1.788	1.558
BOAT	22MAY14	502	500	7.923	7.834	102.00	31.402	86.00	31.134	2.483	1.405
BOAT	05JUN14	502	500	7.080	7.038	76.00	21.606	70.00	21.562	2.406	0.972
BOAT	10JUL14	502	500	7.679	7.515	86.00	16.656	84.00	12.296	2.442	1.604
BOAT	24JUL14	502	500	7.388	7.379	1074.00	12.938	1062.00	12.848	0.942	1.677
BOAT	05AUG14	502	500	8.238	8.189	336.00	10.600	306.00	10.554	2.351	1.798
BOAT	20AUG14	502	500	8.358	8.052	300.00	14.608	278.00	8.544	2.633	1.532
BOAT	11SEP14	502	500	8.729	8.392	328.00	26.146	300.00	14.564	2.656	1.545
BOAT	23SEP14	502	500	7.867	7.845	182.00	9.582	176.00	9.488	2.540	1.595
BOAT	22MAY14	503	500	7.780	7.697	280.00	25.790	238.00	25.712	2.333	1.005
BOAT	05JUN14	503	500	8.294	7.897	176.00	40.874	138.00	23.546	2.419	1.434
BOAT	10JUL14	503	500	7.367	7.264	198.00	11.172	162.00	11.098	2.132	1.385
BOAT	24JUL14	503	500	8.043	7.939	1012.00	19.870	958.00	17.044	1.331	1.758
BOAT	05AUG14	503	500	8.787	8.408	476.00	18.140	406.00	9.966	2.420	1.835
BOAT	20AUG14	503	500	8.508	8.398	358.00	14.542	292.00	14.288	2.243	1.986
BOAT	11SEP14	503	500	9.430	9.219	620.00	26.360	584.00	18.330	2.542	2.038
BOAT	23SEP14	503	500	8.271	8.101	498.00	30.768	456.00	23.950	2.036	1.417
BOAT	22MAY14	506	310	8.806	8.312	280.65	142.261	251.61	59.029	2.118	1.391
BOAT	05JUN14	506	310	5.549	5.410	58.06	13.319	45.16	12.955	1.956	0.268
BOAT	10JUL14	506	310	8.554	8.171	274.19	28.916	151.61	24.339	2.423	1.642
BOAT	24JUL14	506	310	6.133	5.851	174.19	4.739	109.68	4.287	1.895	0.879
BOAT	05AUG14	506	310	7.844	7.730	174.19	14.013	141.94	13.677	2.268	1.676
BOAT	20AUG14	506	310	6.922	6.804	77.42	23.342	61.29	23.274	1.881	1.291
BOAT	11SEP14	506	310	8.725	8.162	267.74	38.477	203.23	16.448	2.428	1.676
BOAT	23SEP14	506	310	7.470	5.647	148.39	80.094	100.00	3.100	2.077	0.702
BOAT	22MAY14	507A	500	5.500	5.500	18.00	15.038	18.00	15.038	1.677	1.023
BOAT	05JUN14	507A	500	3.697	3.697	14.00	0.470	14.00	0.470	1.550	0.828
BOAT	10JUL14	507A	500	7.911	7.747	688.00	10.856	514.00	10.464	1.720	1.731
BOAT	24JUL14	507A	500	8.135	7.951	652.00	3.190	516.00	2.790	2.284	2.031
BOAT	05AUG14	507A	500	7.175	6.863	276.00	11.814	248.00	7.042	1.950	1.180
BOAT	20AUG14	507A	500	6.951	6.867	134.00	4.540	122.00	4.210	2.298	1.448
BOAT	11SEP14	507A	500	7.858	6.909	372.00	21.792	334.00	3.642	2.502	0.855
BOAT	23SEP14	507A	500	7.635	6.714	1436.00	6.824	376.00	4.130	1.199	1.841
BOAT	22MAY14	510	500	6.908	6.908	62.00	8.540	62.00	8.540	1.877	1.895
BOAT	05JUN14	510	500	7.465	7.341	104.00	15.866	90.00	14.310	1.925	1.835
BOAT	11JUL14	510	500	6.779	6.661	196.00	2.678	162.00	2.556	2.165	1.483
BOAT	24JUL14	510	500	7.174	6.993	200.00	13.048	140.00	12.984	2.152	1.089
BOAT	05AUG14	510	500	7.162	6.720	142.00	18.586	118.00	9.230	2.182	1.042
BOAT	20AUG14	510	500	6.116	6.042	116.00	4.892	104.00	4.708	1.745	1.200
BOAT	11SEP14	510	500	7.546	7.131	166.00	13.724	144.00	6.896	2.085	1.596
BOAT	23SEP14	510	500	6.559	6.254	88.00	1.508	72.00	0.960	2.041	2.074
BOAT	23MAY14	512	500	7.249	7.236	80.00	24.316	78.00	24.314	2.192	1.271
BOAT	06JUN14	512	500	7.689	7.526	140.00	17.980	136.00	13.338	2.365	1.409
BOAT	11JUL14	512	500	7.177	7.045	158.00	20.282	122.00	20.174	2.423	0.718
BOAT	25JUL14	512	500	8.114	7.996	132.00	17.294	106.00	16.996	2.765	1.482
BOAT	06AUG14	512	500	8.492	8.482	128.00	22.762	126.00	22.692	2.539	1.964
BOAT	19AUG14	512	500	7.449	7.392	76.00	5.912	68.00	5.888	2.502	1.893
BOAT	12SEP14	512	500	7.122	7.013	102.00	8.082	84.00	7.898	2.704	1.060
BOAT	22SEP14	512	500	7.302	6.930	94.00	11.716	72.00	7.268	2.436	1.364
BOAT	23MAY14	513	500	6.898	6.859	108.00	17.460	100.00	17.450	1.958	1.169
BOAT	06JUN14	513	500	7.632	7.616	126.00	9.970	122.00	9.968	2.224	1.841
BOAT	11JUL14	513	500	8.097	7.840	496.00	5.074	328.00	4.586	2.521	1.661
BOAT	25JUL14	513	500	7.744	7.359	122.00	11.656	112.00	5.868	2.631	1.484
BOAT	06AUG14	513	500	6.686	6.621	102.00	4.892	90.00	4.872	2.248	1.332
BOAT	19AUG14	513	500	6.652	6.652	138.00	12.286	138.00	12.286	1.452	1.482
BOAT	12SEP14	513	500	7.665	7.482	116.00	16.530	98.00	13.568	2.539	1.347
BOAT	22SEP14	513	500	7.407	7.295	102.00	7.654	82.00	7.618	2.751	1.326

EXHIBIT D. (cont.)

METHOD	DATE	LOCATION	DISTANCE	IWB	IWBMOD	TOTCNT	TOTWGT	INTCNT	INTWGT	DIVERCNT	DIVERWGT
BOAT	23MAY14	514	500	8.338	8.204	158.00	52.598	154.00	41.298	2.133	1.692
BOAT	06JUN14	514	500	7.559	7.183	142.00	17.796	126.00	9.450	1.960	1.681
BOAT	11JUL14	514	500	8.588	8.266	302.00	20.546	200.00	16.264	2.214	2.008
BOAT	25JUL14	514	500	7.679	7.299	166.00	10.536	130.00	6.296	2.267	1.678
BOAT	06AUG14	514	500	7.706	7.570	128.00	18.042	98.00	17.950	2.357	1.477
BOAT	19AUG14	514	500	6.591	6.261	42.00	16.392	36.00	9.888	2.137	1.188
BOAT	12SEP14	514	500	8.506	8.258	140.00	38.172	130.00	25.024	2.557	1.657
BOAT	22SEP14	514	500	8.124	7.763	96.00	17.374	78.00	10.392	2.894	1.521
BOAT	23MAY14	515	500	5.831	5.823	124.00	5.292	122.00	5.286	1.138	1.450
BOAT	06JUN14	515	500	7.614	7.563	234.00	23.794	212.00	23.718	2.336	0.966
BOAT	11JUL14	515	500	9.143	8.907	306.00	21.766	194.00	21.426	2.769	1.972
BOAT	25JUL14	515	500	8.092	7.981	466.00	5.704	394.00	5.406	2.277	1.872
BOAT	06AUG14	515	500	6.645	6.613	194.00	4.658	186.00	4.564	1.694	1.547
BOAT	19AUG14	515	500	6.132	6.055	204.00	1.936	192.00	1.762	1.578	1.565
BOAT	12SEP14	515	500	8.838	8.738	216.00	24.302	200.00	21.496	2.698	1.857
BOAT	22SEP14	515	500	7.401	6.980	76.00	12.942	66.00	6.414	2.481	1.474

EXHIBIT E:

RELATIVE WEIGHTS

EXHIBIT E. LINE LISTING OF RELATIVE WEIGHT DATA BY SEGMENT, SPECIES, AND DATE, DRESDEN STATION 2014.

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	503	22MAY14	LONGNOSE GAR	766	1060	77.4
DRESDEN POOL	503	22MAY14	LONGNOSE GAR	310	40	66.1
DRESDEN POOL	506	10JUL14	LONGNOSE GAR	782	910	61.9
DRESDEN POOL	506	10JUL14	LONGNOSE GAR	703	760	74.6
DRESDEN POOL	507A	10JUL14	LONGNOSE GAR	672	680	78.0
DRESDEN POOL	503	24JUL14	LONGNOSE GAR	671	820	94.5
DRESDEN POOL	510	24JUL14	LONGNOSE GAR	208	13	85.1
DRESDEN POOL	503	23SEP14	GIZZARD SHAD	296	270	94.1
DRESDEN POOL	506	23SEP14	GIZZARD SHAD	181	48	79.5
DRESDEN POOL	506	22MAY14	COMMON CARP	531	2190	105.2
DRESDEN POOL	506	22MAY14	COMMON CARP	610	3000	96.2
DRESDEN POOL	501	05JUN14	COMMON CARP	455	1230	92.8
DRESDEN POOL	503	05JUN14	COMMON CARP	592	2810	98.3
DRESDEN POOL	503	05JUN14	COMMON CARP	477	1610	105.8
DRESDEN POOL	503	05JUN14	COMMON CARP	568	2400	94.7
DRESDEN POOL	503	05JUN14	COMMON CARP	537	1820	84.6
DRESDEN POOL	510	05JUN14	COMMON CARP	415	750	74.0
DRESDEN POOL	501	10JUL14	COMMON CARP	378	840	108.9
DRESDEN POOL	501	10JUL14	COMMON CARP	486	1810	112.6
DRESDEN POOL	502	10JUL14	COMMON CARP	542	2180	98.7
DRESDEN POOL	506	10JUL14	COMMON CARP	423	1140	106.4
DRESDEN POOL	503	24JUL14	COMMON CARP	466	1350	95.0
DRESDEN POOL	503	05AUG14	COMMON CARP	641	3160	87.6
DRESDEN POOL	503	05AUG14	COMMON CARP	377	870	113.7
DRESDEN POOL	507A	05AUG14	COMMON CARP	509	2350	127.8
DRESDEN POOL	510	05AUG14	COMMON CARP	691	4600	102.4
DRESDEN POOL	502	20AUG14	COMMON CARP	510	1780	96.2
DRESDEN POOL	502	20AUG14	COMMON CARP	419	1030	98.8
DRESDEN POOL	501	11SEP14	COMMON CARP	453	1510	115.4
DRESDEN POOL	501	11SEP14	COMMON CARP	623	4000	120.5
DRESDEN POOL	501	11SEP14	COMMON CARP	208	140	103.8
DRESDEN POOL	502	11SEP14	COMMON CARP	546	2230	98.8
DRESDEN POOL	502	11SEP14	COMMON CARP	593	3490	121.5
DRESDEN POOL	503	11SEP14	COMMON CARP	623	3960	119.3
DRESDEN POOL	506	11SEP14	COMMON CARP	493	1810	108.0
DRESDEN POOL	506	11SEP14	COMMON CARP	567	2360	93.6
DRESDEN POOL	507A	11SEP14	COMMON CARP	432	1310	115.0
DRESDEN POOL	507A	11SEP14	COMMON CARP	546	2310	102.3
DRESDEN POOL	507A	11SEP14	COMMON CARP	708	5300	109.9
DRESDEN POOL	510	11SEP14	COMMON CARP	226	190	110.6
DRESDEN POOL	510	11SEP14	COMMON CARP	227	180	103.4
DRESDEN POOL	510	11SEP14	COMMON CARP	208	135	100.1
DRESDEN POOL	510	11SEP14	COMMON CARP	573	2870	110.4
DRESDEN POOL	501	23SEP14	COMMON CARP	570	2750	107.4
DRESDEN POOL	501	23SEP14	COMMON CARP	201	138	113.1
DRESDEN POOL	503	23SEP14	COMMON CARP	520	2030	103.7
DRESDEN POOL	503	23SEP14	COMMON CARP	440	1335	111.1
DRESDEN POOL	506	23SEP14	COMMON CARP	525	2020	100.3
DRESDEN POOL	506	23SEP14	COMMON CARP	695	4750	104.0
DRESDEN POOL	506	23SEP14	COMMON CARP	632	3600	104.0
DRESDEN POOL	506	23SEP14	COMMON CARP	455	1510	113.9
DRESDEN POOL	506	23SEP14	COMMON CARP	547	2060	90.8
DRESDEN POOL	506	23SEP14	COMMON CARP	549	2450	106.8
DRESDEN POOL	506	23SEP14	COMMON CARP	460	1420	103.8
DRESDEN POOL	506	23SEP14	COMMON CARP	483	1660	105.2
DRESDEN POOL	510	23SEP14	COMMON CARP	220	190	119.6
DRESDEN POOL	506	22MAY14	RIVER CARPSUCKER	385	780	98.9
DRESDEN POOL	501	05AUG14	RIVER CARPSUCKER	416	910	91.6
DRESDEN POOL	503	05AUG14	RIVER CARPSUCKER	515	1950	103.6
DRESDEN POOL	506	20AUG14	RIVER CARPSUCKER	413	920	94.6
DRESDEN POOL	507A	22MAY14	SMALLMOUTH BUFFALO	546	2620	86.2
DRESDEN POOL	501	05JUN14	SMALLMOUTH BUFFALO	430	1300	92.0
DRESDEN POOL	502	05JUN14	SMALLMOUTH BUFFALO	692	5000	76.9
DRESDEN POOL	502	05JUN14	SMALLMOUTH BUFFALO	505	1925	81.3
DRESDEN POOL	503	05JUN14	SMALLMOUTH BUFFALO	617	3750	83.3
DRESDEN POOL	503	05JUN14	SMALLMOUTH BUFFALO	589	3240	83.6
DRESDEN POOL	510	05JUN14	SMALLMOUTH BUFFALO	523	2620	98.9
DRESDEN POOL	502	10JUL14	SMALLMOUTH BUFFALO	380	845	88.9
DRESDEN POOL	506	10JUL14	SMALLMOUTH BUFFALO	423	1320	98.5
DRESDEN POOL	506	05AUG14	SMALLMOUTH BUFFALO	395	1090	101.3
DRESDEN POOL	507A	05AUG14	SMALLMOUTH BUFFALO	525	2855	106.5
DRESDEN POOL	510	05AUG14	SMALLMOUTH BUFFALO	632	3750	77.1
DRESDEN POOL	502	20AUG14	SMALLMOUTH BUFFALO	558	2680	82.2
DRESDEN POOL	503	20AUG14	SMALLMOUTH BUFFALO	508	1970	81.7
DRESDEN POOL	506	20AUG14	SMALLMOUTH BUFFALO	409	910	75.6
DRESDEN POOL	506	20AUG14	SMALLMOUTH BUFFALO	433	1350	93.4
DRESDEN POOL	506	20AUG14	SMALLMOUTH BUFFALO	429	1280	91.3
DRESDEN POOL	503	11SEP14	SMALLMOUTH BUFFALO	376	790	86.0
DRESDEN POOL	506	11SEP14	SMALLMOUTH BUFFALO	386	860	86.0
DRESDEN POOL	506	11SEP14	SMALLMOUTH BUFFALO	453	1330	79.6
DRESDEN POOL	501	23SEP14	SMALLMOUTH BUFFALO	463	1710	95.5
DRESDEN POOL	501	23SEP14	SMALLMOUTH BUFFALO	465	1500	82.6

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	510	24JUL14	BIGMOUTH BUFFALO	580	3540	100.4
DRESDEN POOL	506	05AUG14	BIGMOUTH BUFFALO	446	1720	110.6
DRESDEN POOL	502	22MAY14	SHORTHEAD REDHORSE	119	18	88.8
DRESDEN POOL	502	22MAY14	SHORTHEAD REDHORSE	118	20	101.2
DRESDEN POOL	510	22MAY14	SHORTHEAD REDHORSE	355	410	79.4
DRESDEN POOL	510	22MAY14	SHORTHEAD REDHORSE	114	17	95.3
DRESDEN POOL	501	22MAY14	SHORTHEAD REDHORSE	122	22	100.8
DRESDEN POOL	501	22MAY14	SHORTHEAD REDHORSE	116	18	95.8
DRESDEN POOL	501	22MAY14	SHORTHEAD REDHORSE	103	12	90.8
DRESDEN POOL	502	11SEP14	SHORTHEAD REDHORSE	105	13	92.9
DRESDEN POOL	503	11SEP14	SHORTHEAD REDHORSE	103	12	90.8
DRESDEN POOL	503	11SEP14	SHORTHEAD REDHORSE	102	13	101.3
DRESDEN POOL	507A	11SEP14	SHORTHEAD REDHORSE	100	11	90.9
DRESDEN POOL	507A	11SEP14	SHORTHEAD REDHORSE	103	12	90.8
DRESDEN POOL	502	23SEP14	SHORTHEAD REDHORSE	105	13	92.9
DRESDEN POOL	503	23SEP14	SHORTHEAD REDHORSE	100	11	90.9
DRESDEN POOL	503	23SEP14	SHORTHEAD REDHORSE	115	17	92.8
DRESDEN POOL	507A	23SEP14	SHORTHEAD REDHORSE	120	16	77.0
DRESDEN POOL	507A	23SEP14	SHORTHEAD REDHORSE	109	14	89.6
DRESDEN POOL	507A	23SEP14	SHORTHEAD REDHORSE	117	18	93.4
DRESDEN POOL	507A	23SEP14	SHORTHEAD REDHORSE	111	15	91.0
DRESDEN POOL	501	22MAY14	YELLOW BULLHEAD	176	80	104.6
DRESDEN POOL	507A	20AUG14	YELLOW BULLHEAD	238	160	78.9
DRESDEN POOL	510	23SEP14	YELLOW BULLHEAD	145	44	107.6
DRESDEN POOL	501	22MAY14	CHANNEL CATFISH	555	1620	93.3
DRESDEN POOL	501	22MAY14	CHANNEL CATFISH	482	1110	101.7
DRESDEN POOL	502	22MAY14	CHANNEL CATFISH	540	1570	98.9
DRESDEN POOL	502	22MAY14	CHANNEL CATFISH	580	1710	85.2
DRESDEN POOL	502	22MAY14	CHANNEL CATFISH	480	950	88.3
DRESDEN POOL	502	22MAY14	CHANNEL CATFISH	505	1170	91.9
DRESDEN POOL	502	22MAY14	CHANNEL CATFISH	455	970	107.5
DRESDEN POOL	503	22MAY14	CHANNEL CATFISH	440	700	86.6
DRESDEN POOL	503	22MAY14	CHANNEL CATFISH	530	1550	103.9
DRESDEN POOL	503	22MAY14	CHANNEL CATFISH	451	850	97.0
DRESDEN POOL	503	22MAY14	CHANNEL CATFISH	502	1170	93.8
DRESDEN POOL	503	22MAY14	CHANNEL CATFISH	675	2840	85.8
DRESDEN POOL	503	22MAY14	CHANNEL CATFISH	486	1220	108.8
DRESDEN POOL	503	22MAY14	CHANNEL CATFISH	550	1160	68.8
DRESDEN POOL	506	22MAY14	CHANNEL CATFISH	495	1290	108.3
DRESDEN POOL	510	22MAY14	CHANNEL CATFISH	476	1200	114.6
DRESDEN POOL	501	05JUN14	CHANNEL CATFISH	444	1050	126.1
DRESDEN POOL	501	05JUN14	CHANNEL CATFISH	427	720	98.3
DRESDEN POOL	502	05JUN14	CHANNEL CATFISH	525	1460	101.0
DRESDEN POOL	502	05JUN14	CHANNEL CATFISH	162	32	106.4
DRESDEN POOL	502	05JUN14	CHANNEL CATFISH	460	970	103.7
DRESDEN POOL	502	05JUN14	CHANNEL CATFISH	408	570	90.4
DRESDEN POOL	503	05JUN14	CHANNEL CATFISH	427	950	129.7
DRESDEN POOL	510	05JUN14	CHANNEL CATFISH	468	1040	105.0
DRESDEN POOL	510	05JUN14	CHANNEL CATFISH	438	820	103.0
DRESDEN POOL	501	10JUL14	CHANNEL CATFISH	563	1920	105.5
DRESDEN POOL	501	10JUL14	CHANNEL CATFISH	253	140	107.2
DRESDEN POOL	501	10JUL14	CHANNEL CATFISH	403	640	105.8
DRESDEN POOL	502	10JUL14	CHANNEL CATFISH	609	2130	90.3
DRESDEN POOL	503	10JUL14	CHANNEL CATFISH	483	1030	93.7
DRESDEN POOL	503	10JUL14	CHANNEL CATFISH	532	1310	86.7
DRESDEN POOL	503	10JUL14	CHANNEL CATFISH	465	890	91.8
DRESDEN POOL	503	10JUL14	CHANNEL CATFISH	314	240	90.2
DRESDEN POOL	506	10JUL14	CHANNEL CATFISH	532	1210	80.1
DRESDEN POOL	506	10JUL14	CHANNEL CATFISH	482	920	84.3
DRESDEN POOL	507A	10JUL14	CHANNEL CATFISH	512	1460	109.7
DRESDEN POOL	501	24JUL14	CHANNEL CATFISH	503	1480	117.8
DRESDEN POOL	501	24JUL14	CHANNEL CATFISH	518	1060	76.6
DRESDEN POOL	502	24JUL14	CHANNEL CATFISH	516	1380	101.0
DRESDEN POOL	503	24JUL14	CHANNEL CATFISH	590	1975	93.0
DRESDEN POOL	501	05AUG14	CHANNEL CATFISH	580	2155	107.3
DRESDEN POOL	501	05AUG14	CHANNEL CATFISH	492	1140	97.6
DRESDEN POOL	502	05AUG14	CHANNEL CATFISH	525	1250	86.4
DRESDEN POOL	506	05AUG14	CHANNEL CATFISH	380	570	114.3
DRESDEN POOL	502	20AUG14	CHANNEL CATFISH	127	17	126.0
DRESDEN POOL	501	11SEP14	CHANNEL CATFISH	451	1040	118.6
DRESDEN POOL	503	11SEP14	CHANNEL CATFISH	533	1340	88.2
DRESDEN POOL	503	11SEP14	CHANNEL CATFISH	462	1010	106.4
DRESDEN POOL	503	11SEP14	CHANNEL CATFISH	146	28	131.2
DRESDEN POOL	502	23SEP14	CHANNEL CATFISH	603	1950	85.4
DRESDEN POOL	503	23SEP14	CHANNEL CATFISH	548	1770	106.3
DRESDEN POOL	503	23SEP14	CHANNEL CATFISH	565	1350	73.3
DRESDEN POOL	503	23SEP14	CHANNEL CATFISH	590	1920	90.4
DRESDEN POOL	503	23SEP14	CHANNEL CATFISH	548	1740	104.5
DRESDEN POOL	503	23SEP14	CHANNEL CATFISH	504	1190	94.1
DRESDEN POOL	503	23SEP14	CHANNEL CATFISH	205	68	104.1
DRESDEN POOL	501	23SEP14	CHANNEL CATFISH	565	1780	96.6
DRESDEN POOL	509	23SEP14	CHANNEL CATFISH	83	4	120.4

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	502	05JUN14	FLATHEAD CATFISH	320	320	90.3
DRESDEN POOL	503	10JUL14	FLATHEAD CATFISH	293	310	116.2
DRESDEN POOL	506	10JUL14	FLATHEAD CATFISH	146	27	96.1
DRESDEN POOL	502	05AUG14	FLATHEAD CATFISH	192	65	95.5
DRESDEN POOL	503	05AUG14	FLATHEAD CATFISH	379	530	86.6
DRESDEN POOL	506	05AUG14	FLATHEAD CATFISH	375	530	89.6
DRESDEN POOL	503	20AUG14	FLATHEAD CATFISH	498	1170	79.1
DRESDEN POOL	506	20AUG14	FLATHEAD CATFISH	468	1050	86.8
DRESDEN POOL	507A	10JUL14	WHITE PERCH	130	34	105.7
DRESDEN POOL	503	20AUG14	WHITE PERCH	100	14	99.1
DRESDEN POOL	502	11SEP14	WHITE PERCH	93	12	106.7
DRESDEN POOL	503	11SEP14	WHITE PERCH	92	12	110.3
DRESDEN POOL	507A	11SEP14	WHITE PERCH	91	12	114.2
DRESDEN POOL	503	11SEP14	YELLOW BASS	216	153	103.0
DRESDEN POOL	503	22MAY14	ROCK BASS	182	130	98.5
DRESDEN POOL	501	05JUN14	ROCK BASS	178	133	107.9
DRESDEN POOL	501	10JUL14	ROCK BASS	80	13	123.3
DRESDEN POOL	507A	24JUL14	ROCK BASS	80	9	85.3
DRESDEN POOL	507A	24JUL14	ROCK BASS	80	11	104.3
DRESDEN POOL	510	24JUL14	ROCK BASS	118	35	100.5
DRESDEN POOL	502	05AUG14	ROCK BASS	104	25	105.8
DRESDEN POOL	503	05AUG14	ROCK BASS	152	69	91.0
DRESDEN POOL	503	20AUG14	ROCK BASS	102	24	107.8
DRESDEN POOL	507A	20AUG14	ROCK BASS	117	38	112.0
DRESDEN POOL	501	11SEP14	ROCK BASS	152	81	106.8
DRESDEN POOL	501	11SEP14	ROCK BASS	173	126	111.6
DRESDEN POOL	506	11SEP14	ROCK BASS	95	19	106.2
DRESDEN POOL	510	11SEP14	ROCK BASS	173	125	110.7
DRESDEN POOL	510	11SEP14	ROCK BASS	186	155	109.9
DRESDEN POOL	502	23SEP14	ROCK BASS	101	22	101.9
DRESDEN POOL	502	22MAY14	GREEN SUNFISH	112	29	105.4
DRESDEN POOL	506	22MAY14	GREEN SUNFISH	129	52	121.9
DRESDEN POOL	506	22MAY14	GREEN SUNFISH	110	33	126.8
DRESDEN POOL	502	05JUN14	GREEN SUNFISH	91	18	124.5
DRESDEN POOL	506	05JUN14	GREEN SUNFISH	122	45	125.4
DRESDEN POOL	506	05JUN14	GREEN SUNFISH	92	18	120.4
DRESDEN POOL	506	05JUN14	GREEN SUNFISH	124	46	121.9
DRESDEN POOL	501	10JUL14	GREEN SUNFISH	131	62	138.6
DRESDEN POOL	501	10JUL14	GREEN SUNFISH	119	47	141.5
DRESDEN POOL	501	10JUL14	GREEN SUNFISH	97	22	124.9
DRESDEN POOL	501	10JUL14	GREEN SUNFISH	118	48	148.4
DRESDEN POOL	501	10JUL14	GREEN SUNFISH	115	42	140.6
DRESDEN POOL	501	10JUL14	GREEN SUNFISH	73	9	123.3
DRESDEN POOL	501	10JUL14	GREEN SUNFISH	119	40	120.4
DRESDEN POOL	501	10JUL14	GREEN SUNFISH	114	38	130.7
DRESDEN POOL	506	10JUL14	GREEN SUNFISH	136	49	97.5
DRESDEN POOL	506	10JUL14	GREEN SUNFISH	100	24	123.9
DRESDEN POOL	506	10JUL14	GREEN SUNFISH	77	10	116.1
DRESDEN POOL	506	10JUL14	GREEN SUNFISH	105	28	124.3
DRESDEN POOL	507A	10JUL14	GREEN SUNFISH	61	5	119.6
DRESDEN POOL	510	11JUL14	GREEN SUNFISH	122	42	117.1
DRESDEN POOL	501	24JUL14	GREEN SUNFISH	127	48	118.1
DRESDEN POOL	501	24JUL14	GREEN SUNFISH	116	34	110.8
DRESDEN POOL	501	24JUL14	GREEN SUNFISH	105	24	106.5
DRESDEN POOL	501	24JUL14	GREEN SUNFISH	134	61	127.1
DRESDEN POOL	501	24JUL14	GREEN SUNFISH	86	12	98.9
DRESDEN POOL	502	24JUL14	GREEN SUNFISH	117	30	95.2
DRESDEN POOL	502	24JUL14	GREEN SUNFISH	60	5	125.9
DRESDEN POOL	506	24JUL14	GREEN SUNFISH	119	35	105.4
DRESDEN POOL	506	24JUL14	GREEN SUNFISH	128	43	103.3
DRESDEN POOL	506	24JUL14	GREEN SUNFISH	60	5	125.9
DRESDEN POOL	507A	24JUL14	GREEN SUNFISH	117	36	114.3
DRESDEN POOL	507A	24JUL14	GREEN SUNFISH	60	5	125.9
DRESDEN POOL	501	05AUG14	GREEN SUNFISH	129	51	119.6
DRESDEN POOL	501	05AUG14	GREEN SUNFISH	129	58	136.0
DRESDEN POOL	506	05AUG14	GREEN SUNFISH	105	24	106.5
DRESDEN POOL	506	05AUG14	GREEN SUNFISH	111	24	89.7
DRESDEN POOL	506	05AUG14	GREEN SUNFISH	103	23	108.4
DRESDEN POOL	506	05AUG14	GREEN SUNFISH	67	7	125.2
DRESDEN POOL	501	20AUG14	GREEN SUNFISH	127	48	118.1
DRESDEN POOL	510	20AUG14	GREEN SUNFISH	87	16	127.3
DRESDEN POOL	501	11SEP14	GREEN SUNFISH	115	36	120.5
DRESDEN POOL	501	11SEP14	GREEN SUNFISH	114	41	141.0
DRESDEN POOL	501	11SEP14	GREEN SUNFISH	126	47	118.5
DRESDEN POOL	501	11SEP14	GREEN SUNFISH	89	18	133.4
DRESDEN POOL	502	11SEP14	GREEN SUNFISH	98	23	126.5
DRESDEN POOL	506	11SEP14	GREEN SUNFISH	60	5	125.9
DRESDEN POOL	506	11SEP14	GREEN SUNFISH	110	32	123.0
DRESDEN POOL	506	11SEP14	GREEN SUNFISH	123	37	100.6
DRESDEN POOL	507A	11SEP14	GREEN SUNFISH	117	28	88.9
DRESDEN POOL	507A	11SEP14	GREEN SUNFISH	63	6	129.8
DRESDEN POOL	507A	11SEP14	GREEN SUNFISH	70	9	140.5

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	507A	11SEP14	GREEN SUNFISH	89	14	103.8
DRESDEN POOL	510	11SEP14	GREEN SUNFISH	75	11	138.6
DRESDEN POOL	510	11SEP14	GREEN SUNFISH	71	9	134.4
DRESDEN POOL	510	11SEP14	GREEN SUNFISH	83	13	119.6
DRESDEN POOL	501	23SEP14	GREEN SUNFISH	135	55	112.0
DRESDEN POOL	502	23SEP14	GREEN SUNFISH	124	39	103.4
DRESDEN POOL	502	23SEP14	GREEN SUNFISH	60	5	125.9
DRESDEN POOL	506	23SEP14	GREEN SUNFISH	139	59	109.7
DRESDEN POOL	506	23SEP14	GREEN SUNFISH	124	36	95.4
DRESDEN POOL	506	23SEP14	GREEN SUNFISH	116	25	81.5
DRESDEN POOL	506	23SEP14	GREEN SUNFISH	85	13	111.1
DRESDEN POOL	506	23SEP14	GREEN SUNFISH	70	8	124.9
DRESDEN POOL	506	23SEP14	GREEN SUNFISH	67	7	125.2
DRESDEN POOL	507A	23SEP14	GREEN SUNFISH	90	16	114.6
DRESDEN POOL	507A	23SEP14	GREEN SUNFISH	75	10	126.0
DRESDEN POOL	507A	23SEP14	GREEN SUNFISH	67	6	107.3
DRESDEN POOL	507A	23SEP14	GREEN SUNFISH	69	7	114.2
DRESDEN POOL	507A	23SEP14	GREEN SUNFISH	76	9	108.9
DRESDEN POOL	507A	23SEP14	GREEN SUNFISH	70	8	124.9
DRESDEN POOL	510	23SEP14	GREEN SUNFISH	84	15	133.0
DRESDEN POOL	510	05JUN14	PUMPKINSEED	134	58	114.0
DRESDEN POOL	510	11JUL14	PUMPKINSEED	122	44	117.2
DRESDEN POOL	501	24JUL14	PUMPKINSEED	160	106	117.4
DRESDEN POOL	501	05AUG14	PUMPKINSEED	56	4	132.5
DRESDEN POOL	501	05AUG14	PUMPKINSEED	55	3	105.3
DRESDEN POOL	510	11SEP14	PUMPKINSEED	143	64	101.9
DRESDEN POOL	501	23SEP14	PUMPKINSEED	89	13	96.1
DRESDEN POOL	507A	23SEP14	PUMPKINSEED	73	9	126.4
DRESDEN POOL	510	23SEP14	PUMPKINSEED	84	13	115.9
DRESDEN POOL	510	23SEP14	PUMPKINSEED	71	8	122.9
DRESDEN POOL	501	23SEP14	PUMPKINSEED	59	5	139.9
DRESDEN POOL	501	23SEP14	PUMPKINSEED	78	11	124.6
DRESDEN POOL	509	23SEP14	PUMPKINSEED	85	14	120.1
DRESDEN POOL	501	22MAY14	BLUEGILL	140	55	99.5
DRESDEN POOL	502	22MAY14	BLUEGILL	127	40	100.0
DRESDEN POOL	502	22MAY14	BLUEGILL	117	31	101.7
DRESDEN POOL	502	22MAY14	BLUEGILL	123	37	102.8
DRESDEN POOL	503	22MAY14	BLUEGILL	114	30	107.3
DRESDEN POOL	503	22MAY14	BLUEGILL	164	90	96.3
DRESDEN POOL	503	22MAY14	BLUEGILL	127	42	105.0
DRESDEN POOL	503	22MAY14	BLUEGILL	115	36	125.0
DRESDEN POOL	503	22MAY14	BLUEGILL	96	17	107.5
DRESDEN POOL	503	22MAY14	BLUEGILL	112	29	109.9
DRESDEN POOL	503	22MAY14	BLUEGILL	88	13	109.7
DRESDEN POOL	503	22MAY14	BLUEGILL	81	10	111.0
DRESDEN POOL	503	22MAY14	BLUEGILL	106	21	95.6
DRESDEN POOL	503	22MAY14	BLUEGILL	111	26	101.6
DRESDEN POOL	503	22MAY14	BLUEGILL	95	16	104.7
DRESDEN POOL	503	22MAY14	BLUEGILL	81	9	99.9
DRESDEN POOL	506	22MAY14	BLUEGILL	137	58	112.7
DRESDEN POOL	506	22MAY14	BLUEGILL	136	55	109.5
DRESDEN POOL	506	22MAY14	BLUEGILL	122	33	94.2
DRESDEN POOL	506	22MAY14	BLUEGILL	121	43	126.2
DRESDEN POOL	506	22MAY14	BLUEGILL	130	42	97.1
DRESDEN POOL	506	22MAY14	BLUEGILL	124	42	113.6
DRESDEN POOL	507A	22MAY14	BLUEGILL	131	47	106.0
DRESDEN POOL	510	22MAY14	BLUEGILL	168	110	108.7
DRESDEN POOL	510	22MAY14	BLUEGILL	121	47	137.9
DRESDEN POOL	510	22MAY14	BLUEGILL	128	37	90.1
DRESDEN POOL	510	22MAY14	BLUEGILL	149	70	103.0
DRESDEN POOL	510	22MAY14	BLUEGILL	130	51	118.0
DRESDEN POOL	510	22MAY14	BLUEGILL	117	33	108.2
DRESDEN POOL	501	22MAY14	BLUEGILL	120	42	126.7
DRESDEN POOL	501	22MAY14	BLUEGILL	119	35	108.5
DRESDEN POOL	501	05JUN14	BLUEGILL	156	99	125.1
DRESDEN POOL	501	05JUN14	BLUEGILL	121	36	105.6
DRESDEN POOL	501	05JUN14	BLUEGILL	114	39	139.4
DRESDEN POOL	502	05JUN14	BLUEGILL	127	47	117.5
DRESDEN POOL	502	05JUN14	BLUEGILL	117	39	127.9
DRESDEN POOL	502	05JUN14	BLUEGILL	105	22	103.3
DRESDEN POOL	502	05JUN14	BLUEGILL	117	36	118.1
DRESDEN POOL	502	05JUN14	BLUEGILL	122	35	99.9
DRESDEN POOL	503	05JUN14	BLUEGILL	118	32	102.0
DRESDEN POOL	503	05JUN14	BLUEGILL	136	45	89.6
DRESDEN POOL	503	05JUN14	BLUEGILL	105	26	122.1
DRESDEN POOL	503	05JUN14	BLUEGILL	99	19	108.4
DRESDEN POOL	503	05JUN14	BLUEGILL	92	19	138.3
DRESDEN POOL	503	05JUN14	BLUEGILL	110	28	112.7
DRESDEN POOL	506	05JUN14	BLUEGILL	125	50	131.7
DRESDEN POOL	506	05JUN14	BLUEGILL	86	16	145.7
DRESDEN POOL	507A	05JUN14	BLUEGILL	87	15	131.4
DRESDEN POOL	510	05JUN14	BLUEGILL	116	33	111.4

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	510	05JUN14	BLUEGILL	86	13	118.3
DRESDEN POOL	510	05JUN14	BLUEGILL	92	16	116.5
DRESDEN POOL	510	05JUN14	BLUEGILL	84	14	137.8
DRESDEN POOL	510	05JUN14	BLUEGILL	92	16	116.5
DRESDEN POOL	501	05JUN14	BLUEGILL	157	79	97.7
DRESDEN POOL	501	05JUN14	BLUEGILL	148	64	96.3
DRESDEN POOL	501	10JUL14	BLUEGILL	131	60	135.3
DRESDEN POOL	501	10JUL14	BLUEGILL	83	12	122.9
DRESDEN POOL	501	10JUL14	BLUEGILL	82	13	138.6
DRESDEN POOL	502	10JUL14	BLUEGILL	138	54	102.5
DRESDEN POOL	502	10JUL14	BLUEGILL	121	36	105.6
DRESDEN POOL	502	10JUL14	BLUEGILL	115	29	100.7
DRESDEN POOL	503	10JUL14	BLUEGILL	138	52	98.7
DRESDEN POOL	503	10JUL14	BLUEGILL	110	30	120.7
DRESDEN POOL	503	10JUL14	BLUEGILL	134	52	108.8
DRESDEN POOL	503	10JUL14	BLUEGILL	110	30	120.7
DRESDEN POOL	503	10JUL14	BLUEGILL	122	37	105.6
DRESDEN POOL	506	10JUL14	BLUEGILL	124	47	127.1
DRESDEN POOL	506	10JUL14	BLUEGILL	104	23	111.5
DRESDEN POOL	507A	10JUL14	BLUEGILL	138	55	104.4
DRESDEN POOL	509	10JUL14	BLUEGILL	164	116	124.2
DRESDEN POOL	509	10JUL14	BLUEGILL	143	68	114.7
DRESDEN POOL	510	11JUL14	BLUEGILL	90	19	148.8
DRESDEN POOL	501	24JUL14	BLUEGILL	118	29	92.5
DRESDEN POOL	501	24JUL14	BLUEGILL	164	99	106.0
DRESDEN POOL	501	24JUL14	BLUEGILL	102	22	113.7
DRESDEN POOL	502	24JUL14	BLUEGILL	125	36	94.8
DRESDEN POOL	503	24JUL14	BLUEGILL	118	30	95.7
DRESDEN POOL	503	24JUL14	BLUEGILL	137	41	79.7
DRESDEN POOL	503	24JUL14	BLUEGILL	110	25	100.6
DRESDEN POOL	503	24JUL14	BLUEGILL	153	72	97.0
DRESDEN POOL	506	24JUL14	BLUEGILL	102	23	118.9
DRESDEN POOL	507A	24JUL14	BLUEGILL	88	12	101.2
DRESDEN POOL	507A	24JUL14	BLUEGILL	83	10	102.4
DRESDEN POOL	507A	24JUL14	BLUEGILL	94	19	128.8
DRESDEN POOL	509	24JUL14	BLUEGILL	162	82	91.4
DRESDEN POOL	509	24JUL14	BLUEGILL	150	60	86.3
DRESDEN POOL	509	24JUL14	BLUEGILL	151	73	102.8
DRESDEN POOL	509	24JUL14	BLUEGILL	144	61	100.5
DRESDEN POOL	509	24JUL14	BLUEGILL	146	61	96.0
DRESDEN POOL	509	24JUL14	BLUEGILL	109	27	112.0
DRESDEN POOL	509	24JUL14	BLUEGILL	81	12	133.2
DRESDEN POOL	501	05AUG14	BLUEGILL	149	72	105.9
DRESDEN POOL	501	05AUG14	BLUEGILL	156	92	116.2
DRESDEN POOL	501	05AUG14	BLUEGILL	131	48	108.2
DRESDEN POOL	501	05AUG14	BLUEGILL	125	40	105.4
DRESDEN POOL	502	05AUG14	BLUEGILL	148	55	82.8
DRESDEN POOL	502	05AUG14	BLUEGILL	151	52	73.2
DRESDEN POOL	503	05AUG14	BLUEGILL	152	65	89.5
DRESDEN POOL	503	05AUG14	BLUEGILL	112	30	113.7
DRESDEN POOL	503	05AUG14	BLUEGILL	143	53	89.4
DRESDEN POOL	506	05AUG14	BLUEGILL	103	23	115.1
DRESDEN POOL	510	05AUG14	BLUEGILL	156	85	107.4
DRESDEN POOL	510	05AUG14	BLUEGILL	101	19	101.5
DRESDEN POOL	501	05AUG14	BLUEGILL	142	75	129.4
DRESDEN POOL	509	05AUG14	BLUEGILL	147	72	110.8
DRESDEN POOL	501	20AUG14	BLUEGILL	172	115	105.1
DRESDEN POOL	502	20AUG14	BLUEGILL	133	52	111.5
DRESDEN POOL	502	20AUG14	BLUEGILL	99	22	125.6
DRESDEN POOL	503	20AUG14	BLUEGILL	141	58	102.5
DRESDEN POOL	503	20AUG14	BLUEGILL	92	16	116.5
DRESDEN POOL	507A	20AUG14	BLUEGILL	103	26	130.1
DRESDEN POOL	510	20AUG14	BLUEGILL	114	32	114.4
DRESDEN POOL	510	20AUG14	BLUEGILL	87	16	140.2
DRESDEN POOL	503	20AUG14	BLUEGILL	87	16	140.2
DRESDEN POOL	501	11SEP14	BLUEGILL	143	62	104.5
DRESDEN POOL	501	11SEP14	BLUEGILL	137	49	95.2
DRESDEN POOL	501	11SEP14	BLUEGILL	93	17	119.4
DRESDEN POOL	502	11SEP14	BLUEGILL	93	19	133.4
DRESDEN POOL	503	11SEP14	BLUEGILL	134	44	92.0
DRESDEN POOL	503	11SEP14	BLUEGILL	122	41	117.1
DRESDEN POOL	506	11SEP14	BLUEGILL	143	63	106.2
DRESDEN POOL	506	11SEP14	BLUEGILL	120	40	120.6
DRESDEN POOL	506	11SEP14	BLUEGILL	121	39	114.4
DRESDEN POOL	506	11SEP14	BLUEGILL	105	26	122.1
DRESDEN POOL	506	11SEP14	BLUEGILL	83	13	133.1
DRESDEN POOL	506	11SEP14	BLUEGILL	104	25	121.2
DRESDEN POOL	507A	11SEP14	BLUEGILL	154	96	126.6
DRESDEN POOL	507A	11SEP14	BLUEGILL	164	106	113.5
DRESDEN POOL	507A	11SEP14	BLUEGILL	126	46	118.0
DRESDEN POOL	507A	11SEP14	BLUEGILL	80	11	127.3
DRESDEN POOL	507A	11SEP14	BLUEGILL	80	11	127.3

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	507A	11SEP14	BLUEGILL	81	10	111.0
DRESDEN POOL	510	11SEP14	BLUEGILL	87	16	140.2
DRESDEN POOL	510	11SEP14	BLUEGILL	80	11	127.3
DRESDEN POOL	509	11SEP14	BLUEGILL	104	21	101.8
DRESDEN POOL	502	23SEP14	BLUEGILL	141	56	98.9
DRESDEN POOL	503	23SEP14	BLUEGILL	155	82	105.8
DRESDEN POOL	503	23SEP14	BLUEGILL	157	89	110.1
DRESDEN POOL	503	23SEP14	BLUEGILL	155	80	103.3
DRESDEN POOL	506	23SEP14	BLUEGILL	155	80	103.3
DRESDEN POOL	506	23SEP14	BLUEGILL	121	35	102.7
DRESDEN POOL	506	23SEP14	BLUEGILL	88	13	109.7
DRESDEN POOL	506	23SEP14	BLUEGILL	120	39	117.6
DRESDEN POOL	506	23SEP14	BLUEGILL	126	42	107.8
DRESDEN POOL	506	23SEP14	BLUEGILL	85	12	113.6
DRESDEN POOL	506	23SEP14	BLUEGILL	96	18	113.8
DRESDEN POOL	510	23SEP14	BLUEGILL	83	11	112.6
DRESDEN POOL	503	23SEP14	BLUEGILL	83	12	122.9
DRESDEN POOL	509	23SEP14	BLUEGILL	84	12	118.1
DRESDEN POOL	509	23SEP14	BLUEGILL	85	13	123.0
DRESDEN POOL	501	22MAY14	SMALLMOUTH BASS	348	530	83.2
DRESDEN POOL	501	22MAY14	SMALLMOUTH BASS	247	215	101.1
DRESDEN POOL	501	22MAY14	SMALLMOUTH BASS	240	210	108.3
DRESDEN POOL	501	22MAY14	SMALLMOUTH BASS	241	200	101.8
DRESDEN POOL	501	22MAY14	SMALLMOUTH BASS	203	83	73.1
DRESDEN POOL	501	22MAY14	SMALLMOUTH BASS	214	127	94.5
DRESDEN POOL	502	22MAY14	SMALLMOUTH BASS	158	45	88.4
DRESDEN POOL	506	22MAY14	SMALLMOUTH BASS	176	54	75.1
DRESDEN POOL	506	22MAY14	SMALLMOUTH BASS	163	50	88.9
DRESDEN POOL	506	22MAY14	SMALLMOUTH BASS	205	98	83.7
DRESDEN POOL	510	22MAY14	SMALLMOUTH BASS	150	45	104.4
DRESDEN POOL	510	22MAY14	SMALLMOUTH BASS	198	85	81.1
DRESDEN POOL	501	05JUN14	SMALLMOUTH BASS	231	195	113.6
DRESDEN POOL	501	05JUN14	SMALLMOUTH BASS	258	260	106.4
DRESDEN POOL	501	05JUN14	SMALLMOUTH BASS	207	135	111.7
DRESDEN POOL	501	05JUN14	SMALLMOUTH BASS	242	225	113.0
DRESDEN POOL	501	05JUN14	SMALLMOUTH BASS	196	88	86.7
DRESDEN POOL	501	05JUN14	SMALLMOUTH BASS	245	220	106.2
DRESDEN POOL	501	05JUN14	SMALLMOUTH BASS	180	66	85.4
DRESDEN POOL	502	05JUN14	SMALLMOUTH BASS	175	60	85.0
DRESDEN POOL	507A	05JUN14	SMALLMOUTH BASS	251	175	78.2
DRESDEN POOL	510	05JUN14	SMALLMOUTH BASS	187	100	114.6
DRESDEN POOL	510	05JUN14	SMALLMOUTH BASS	188	85	95.7
DRESDEN POOL	501	10JUL14	SMALLMOUTH BASS	206	103	86.6
DRESDEN POOL	501	10JUL14	SMALLMOUTH BASS	262	240	93.5
DRESDEN POOL	501	10JUL14	SMALLMOUTH BASS	292	360	99.1
DRESDEN POOL	501	10JUL14	SMALLMOUTH BASS	235	225	124.1
DRESDEN POOL	501	10JUL14	SMALLMOUTH BASS	214	104	77.4
DRESDEN POOL	501	10JUL14	SMALLMOUTH BASS	213	127	95.9
DRESDEN POOL	501	10JUL14	SMALLMOUTH BASS	173	58	85.2
DRESDEN POOL	501	10JUL14	SMALLMOUTH BASS	153	57	124.1
DRESDEN POOL	501	10JUL14	SMALLMOUTH BASS	154	44	93.8
DRESDEN POOL	501	10JUL14	SMALLMOUTH BASS	243	160	79.3
DRESDEN POOL	503	10JUL14	SMALLMOUTH BASS	243	190	94.1
DRESDEN POOL	506	10JUL14	SMALLMOUTH BASS	231	180	104.9
DRESDEN POOL	510	11JUL14	SMALLMOUTH BASS	214	135	100.5
DRESDEN POOL	501	24JUL14	SMALLMOUTH BASS	202	100	89.5
DRESDEN POOL	502	24JUL14	SMALLMOUTH BASS	267	285	104.5
DRESDEN POOL	502	24JUL14	SMALLMOUTH BASS	237	165	88.6
DRESDEN POOL	502	24JUL14	SMALLMOUTH BASS	238	175	92.7
DRESDEN POOL	510	24JUL14	SMALLMOUTH BASS	232	160	92.0
DRESDEN POOL	510	24JUL14	SMALLMOUTH BASS	156	45	92.1
DRESDEN POOL	501	05AUG14	SMALLMOUTH BASS	259	220	88.9
DRESDEN POOL	501	05AUG14	SMALLMOUTH BASS	285	300	89.3
DRESDEN POOL	501	05AUG14	SMALLMOUTH BASS	241	180	91.6
DRESDEN POOL	501	05AUG14	SMALLMOUTH BASS	253	200	87.1
DRESDEN POOL	501	05AUG14	SMALLMOUTH BASS	281	280	87.2
DRESDEN POOL	501	05AUG14	SMALLMOUTH BASS	235	165	91.0
DRESDEN POOL	501	05AUG14	SMALLMOUTH BASS	172	59	88.3
DRESDEN POOL	502	05AUG14	SMALLMOUTH BASS	279	305	97.1
DRESDEN POOL	503	05AUG14	SMALLMOUTH BASS	185	65	77.1
DRESDEN POOL	506	05AUG14	SMALLMOUTH BASS	175	64	90.7
DRESDEN POOL	501	20AUG14	SMALLMOUTH BASS	181	87	110.6
DRESDEN POOL	501	20AUG14	SMALLMOUTH BASS	171	70	106.8
DRESDEN POOL	501	20AUG14	SMALLMOUTH BASS	175	70	99.2
DRESDEN POOL	501	20AUG14	SMALLMOUTH BASS	256	200	83.9
DRESDEN POOL	502	20AUG14	SMALLMOUTH BASS	158	57	112.0
DRESDEN POOL	502	20AUG14	SMALLMOUTH BASS	152	50	111.2
DRESDEN POOL	510	20AUG14	SMALLMOUTH BASS	235	140	77.2
DRESDEN POOL	501	11SEP14	SMALLMOUTH BASS	193	119	123.2
DRESDEN POOL	501	11SEP14	SMALLMOUTH BASS	274	320	108.0
DRESDEN POOL	501	11SEP14	SMALLMOUTH BASS	264	280	106.4
DRESDEN POOL	501	11SEP14	SMALLMOUTH BASS	185	76	90.1

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	501	11SEP14	SMALLMOUTH BASS	293	380	103.5
DRESDEN POOL	502	11SEP14	SMALLMOUTH BASS	263	240	92.3
DRESDEN POOL	506	11SEP14	SMALLMOUTH BASS	306	430	101.9
DRESDEN POOL	506	11SEP14	SMALLMOUTH BASS	284	320	96.3
DRESDEN POOL	506	11SEP14	SMALLMOUTH BASS	328	540	102.5
DRESDEN POOL	506	11SEP14	SMALLMOUTH BASS	172	61	91.3
DRESDEN POOL	506	11SEP14	SMALLMOUTH BASS	176	59	82.1
DRESDEN POOL	506	11SEP14	SMALLMOUTH BASS	178	63	84.5
DRESDEN POOL	506	11SEP14	SMALLMOUTH BASS	177	66	90.2
DRESDEN POOL	510	11SEP14	SMALLMOUTH BASS	254	205	88.2
DRESDEN POOL	501	23SEP14	SMALLMOUTH BASS	219	124	85.7
DRESDEN POOL	501	23SEP14	SMALLMOUTH BASS	174	70	101.0
DRESDEN POOL	502	23SEP14	SMALLMOUTH BASS	296	320	84.3
DRESDEN POOL	502	23SEP14	SMALLMOUTH BASS	174	75	108.2
DRESDEN POOL	502	23SEP14	SMALLMOUTH BASS	418	910	79.5
DRESDEN POOL	506	23SEP14	SMALLMOUTH BASS	171	52	79.3
DRESDEN POOL	506	23SEP14	SMALLMOUTH BASS	188	93	104.8
DRESDEN POOL	510	23SEP14	SMALLMOUTH BASS	167	53	87.2
DRESDEN POOL	503	22MAY14	LARGEMOUTH BASS	217	130	94.3
DRESDEN POOL	503	22MAY14	LARGEMOUTH BASS	198	88	85.5
DRESDEN POOL	506	22MAY14	LARGEMOUTH BASS	422	1060	92.0
DRESDEN POOL	506	22MAY14	LARGEMOUTH BASS	260	230	93.7
DRESDEN POOL	506	22MAY14	LARGEMOUTH BASS	327	570	111.7
DRESDEN POOL	506	22MAY14	LARGEMOUTH BASS	333	480	88.7
DRESDEN POOL	510	22MAY14	LARGEMOUTH BASS	304	385	95.2
DRESDEN POOL	501	05JUN14	LARGEMOUTH BASS	268	290	107.2
DRESDEN POOL	501	05JUN14	LARGEMOUTH BASS	306	410	99.3
DRESDEN POOL	501	05JUN14	LARGEMOUTH BASS	337	570	101.4
DRESDEN POOL	501	05JUN14	LARGEMOUTH BASS	322	570	117.3
DRESDEN POOL	501	05JUN14	LARGEMOUTH BASS	298	395	104.1
DRESDEN POOL	501	05JUN14	LARGEMOUTH BASS	297	430	114.5
DRESDEN POOL	503	05JUN14	LARGEMOUTH BASS	200	100	94.1
DRESDEN POOL	503	05JUN14	LARGEMOUTH BASS	286	320	96.1
DRESDEN POOL	503	05JUN14	LARGEMOUTH BASS	172	62	94.4
DRESDEN POOL	510	05JUN14	LARGEMOUTH BASS	337	660	117.5
DRESDEN POOL	502	10JUL14	LARGEMOUTH BASS	327	510	99.9
DRESDEN POOL	503	10JUL14	LARGEMOUTH BASS	289	360	104.6
DRESDEN POOL	510	11JUL14	LARGEMOUTH BASS	336	600	107.8
DRESDEN POOL	501	24JUL14	LARGEMOUTH BASS	336	635	114.1
DRESDEN POOL	501	24JUL14	LARGEMOUTH BASS	357	605	89.6
DRESDEN POOL	501	24JUL14	LARGEMOUTH BASS	322	505	103.9
DRESDEN POOL	501	24JUL14	LARGEMOUTH BASS	293	385	107.1
DRESDEN POOL	502	24JUL14	LARGEMOUTH BASS	327	505	98.9
DRESDEN POOL	503	24JUL14	LARGEMOUTH BASS	214	120	91.0
DRESDEN POOL	503	24JUL14	LARGEMOUTH BASS	234	185	105.4
DRESDEN POOL	503	24JUL14	LARGEMOUTH BASS	287	340	101.0
DRESDEN POOL	503	24JUL14	LARGEMOUTH BASS	330	490	93.2
DRESDEN POOL	503	24JUL14	LARGEMOUTH BASS	260	260	105.9
DRESDEN POOL	503	24JUL14	LARGEMOUTH BASS	354	595	90.5
DRESDEN POOL	503	24JUL14	LARGEMOUTH BASS	288	380	111.7
DRESDEN POOL	503	24JUL14	LARGEMOUTH BASS	290	350	100.6
DRESDEN POOL	507A	24JUL14	LARGEMOUTH BASS	317	495	107.1
DRESDEN POOL	502	05AUG14	LARGEMOUTH BASS	430	1360	111.2
DRESDEN POOL	502	05AUG14	LARGEMOUTH BASS	283	340	105.6
DRESDEN POOL	503	05AUG14	LARGEMOUTH BASS	250	210	96.9
DRESDEN POOL	503	05AUG14	LARGEMOUTH BASS	215	129	96.3
DRESDEN POOL	510	05AUG14	LARGEMOUTH BASS	318	430	92.1
DRESDEN POOL	501	20AUG14	LARGEMOUTH BASS	270	300	108.3
DRESDEN POOL	503	20AUG14	LARGEMOUTH BASS	265	305	116.9
DRESDEN POOL	507A	20AUG14	LARGEMOUTH BASS	323	500	101.9
DRESDEN POOL	507A	20AUG14	LARGEMOUTH BASS	308	470	111.5
DRESDEN POOL	507A	20AUG14	LARGEMOUTH BASS	184	80	98.2
DRESDEN POOL	503	20AUG14	LARGEMOUTH BASS	255	265	114.8
DRESDEN POOL	501	11SEP14	LARGEMOUTH BASS	364	790	109.9
DRESDEN POOL	501	11SEP14	LARGEMOUTH BASS	326	630	124.6
DRESDEN POOL	501	11SEP14	LARGEMOUTH BASS	208	140	116.2
DRESDEN POOL	501	11SEP14	LARGEMOUTH BASS	186	119	141.1
DRESDEN POOL	501	11SEP14	LARGEMOUTH BASS	175	98	141.2
DRESDEN POOL	501	11SEP14	LARGEMOUTH BASS	176	94	133.0
DRESDEN POOL	501	11SEP14	LARGEMOUTH BASS	153	67	148.2
DRESDEN POOL	501	11SEP14	LARGEMOUTH BASS	153	68	150.4
DRESDEN POOL	502	11SEP14	LARGEMOUTH BASS	336	610	109.6
DRESDEN POOL	502	11SEP14	LARGEMOUTH BASS	152	44	99.4
DRESDEN POOL	506	11SEP14	LARGEMOUTH BASS	376	790	99.1
DRESDEN POOL	506	11SEP14	LARGEMOUTH BASS	184	64	78.6
DRESDEN POOL	506	11SEP14	LARGEMOUTH BASS	165	60	104.3
DRESDEN POOL	507A	11SEP14	LARGEMOUTH BASS	176	74	104.7
DRESDEN POOL	507A	11SEP14	LARGEMOUTH BASS	153	56	123.8
DRESDEN POOL	510	11SEP14	LARGEMOUTH BASS	176	73	103.3
DRESDEN POOL	501	23SEP14	LARGEMOUTH BASS	345	770	127.1
DRESDEN POOL	501	23SEP14	LARGEMOUTH BASS	463	1750	113.0
DRESDEN POOL	501	23SEP14	LARGEMOUTH BASS	415	1160	106.2

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DRESDEN POOL	501	23SEP14	LARGEMOUTH BASS	350	720	113.6
DRESDEN POOL	501	23SEP14	LARGEMOUTH BASS	159	62	121.3
DRESDEN POOL	501	23SEP14	LARGEMOUTH BASS	152	59	133.2
DRESDEN POOL	501	23SEP14	LARGEMOUTH BASS	263	300	117.8
DRESDEN POOL	503	23SEP14	LARGEMOUTH BASS	406	1210	118.8
DRESDEN POOL	503	23SEP14	LARGEMOUTH BASS	332	570	106.4
DRESDEN POOL	506	23SEP14	LARGEMOUTH BASS	174	72	105.6
DRESDEN POOL	506	23SEP14	LARGEMOUTH BASS	164	48	85.1
DRESDEN POOL	506	23SEP14	LARGEMOUTH BASS	240	182	95.7
DRESDEN POOL	506	23SEP14	LARGEMOUTH BASS	181	76	98.3
DRESDEN POOL	503	05JUN14	WHITE CRAPPIE	343	500	78.2
DRESDEN POOL	503	23SEP14	WHITE CRAPPIE	306	460	105.3
DRESDEN POOL	503	11SEP14	BLACK CRAPPIE	223	155	89.8
DRESDEN POOL	507A	23SEP14	YELLOW PERCH	111	16	96.3
DRESDEN POOL	502	22MAY14	WALLEYE	540	1350	78.4
DRESDEN POOL	502	05AUG14	WALLEYE	152	31	101.4
DRESDEN POOL	503	05AUG14	WALLEYE	150	28	95.5
DRESDEN POOL	502	20AUG14	WALLEYE	181	57	107.0
DRESDEN POOL	502	20AUG14	WALLEYE	157	33	97.4
DRESDEN POOL	502	20AUG14	WALLEYE	165	39	98.3
DRESDEN POOL	502	20AUG14	WALLEYE	158	31	89.7
DRESDEN POOL	503	20AUG14	WALLEYE	176	52	106.7
DRESDEN POOL	502	11SEP14	WALLEYE	193	61	93.4
DRESDEN POOL	502	11SEP14	WALLEYE	179	46	89.5
DRESDEN POOL	503	11SEP14	WALLEYE	196	64	93.3
DRESDEN POOL	503	11SEP14	WALLEYE	183	54	97.9
DRESDEN POOL	503	11SEP14	WALLEYE	191	59	93.4
DRESDEN POOL	503	11SEP14	WALLEYE	189	54	88.4
DRESDEN POOL	503	11SEP14	WALLEYE	194	66	99.4
DRESDEN POOL	503	11SEP14	WALLEYE	190	53	85.3
DRESDEN POOL	507A	11SEP14	WALLEYE	206	63	78.4
DRESDEN POOL	503	23SEP14	WALLEYE	212	74	84.0
DRESDEN POOL	501	22MAY14	FRESHWATER DRUM	340	550	111.8
DRESDEN POOL	501	22MAY14	FRESHWATER DRUM	410	1000	111.6
DRESDEN POOL	501	22MAY14	FRESHWATER DRUM	417	970	102.5
DRESDEN POOL	501	22MAY14	FRESHWATER DRUM	495	1540	94.0
DRESDEN POOL	502	22MAY14	FRESHWATER DRUM	549	2410	105.5
DRESDEN POOL	502	22MAY14	FRESHWATER DRUM	298	370	114.8
DRESDEN POOL	502	22MAY14	FRESHWATER DRUM	360	540	91.4
DRESDEN POOL	502	22MAY14	FRESHWATER DRUM	296	405	128.4
DRESDEN POOL	502	22MAY14	FRESHWATER DRUM	331	520	115.2
DRESDEN POOL	506	22MAY14	FRESHWATER DRUM	441	1150	101.6
DRESDEN POOL	506	22MAY14	FRESHWATER DRUM	456	1400	111.1
DRESDEN POOL	506	22MAY14	FRESHWATER DRUM	422	1210	123.1
DRESDEN POOL	506	22MAY14	FRESHWATER DRUM	475	1720	119.8
DRESDEN POOL	506	22MAY14	FRESHWATER DRUM	546	2260	100.7
DRESDEN POOL	507A	22MAY14	FRESHWATER DRUM	544	2900	130.8
DRESDEN POOL	507A	22MAY14	FRESHWATER DRUM	350	540	100.0
DRESDEN POOL	501	05JUN14	FRESHWATER DRUM	452	1280	104.5
DRESDEN POOL	501	05JUN14	FRESHWATER DRUM	427	970	95.0
DRESDEN POOL	501	05JUN14	FRESHWATER DRUM	448	1340	112.6
DRESDEN POOL	503	05JUN14	FRESHWATER DRUM	335	580	123.6
DRESDEN POOL	503	05JUN14	FRESHWATER DRUM	337	600	125.5
DRESDEN POOL	503	05JUN14	FRESHWATER DRUM	387	850	114.1
DRESDEN POOL	506	05JUN14	FRESHWATER DRUM	577	2700	100.8
DRESDEN POOL	506	05JUN14	FRESHWATER DRUM	445	1210	103.9
DRESDEN POOL	510	05JUN14	FRESHWATER DRUM	445	1070	91.8
DRESDEN POOL	501	10JUL14	FRESHWATER DRUM	362	640	106.4
DRESDEN POOL	501	10JUL14	FRESHWATER DRUM	453	970	78.6
DRESDEN POOL	501	10JUL14	FRESHWATER DRUM	376	630	92.8
DRESDEN POOL	507A	10JUL14	FRESHWATER DRUM	514	2030	109.8
DRESDEN POOL	501	24JUL14	FRESHWATER DRUM	431	1000	95.1
DRESDEN POOL	502	24JUL14	FRESHWATER DRUM	442	1120	98.2
DRESDEN POOL	510	24JUL14	FRESHWATER DRUM	457	1170	92.2
DRESDEN POOL	510	24JUL14	FRESHWATER DRUM	476	1200	83.0
DRESDEN POOL	501	05AUG14	FRESHWATER DRUM	370	575	89.2
DRESDEN POOL	502	05AUG14	FRESHWATER DRUM	425	1010	100.5
DRESDEN POOL	503	05AUG14	FRESHWATER DRUM	319	405	101.0
DRESDEN POOL	507A	05AUG14	FRESHWATER DRUM	237	167	107.9
DRESDEN POOL	502	20AUG14	FRESHWATER DRUM	348	600	113.2
DRESDEN POOL	503	20AUG14	FRESHWATER DRUM	437	1110	101.0
DRESDEN POOL	503	20AUG14	FRESHWATER DRUM	357	500	86.9
DRESDEN POOL	506	20AUG14	FRESHWATER DRUM	497	1650	99.4
DRESDEN POOL	507A	20AUG14	FRESHWATER DRUM	352	595	108.2
DRESDEN POOL	510	20AUG14	FRESHWATER DRUM	482	1630	108.3
DRESDEN POOL	501	11SEP14	FRESHWATER DRUM	453	1340	108.6
DRESDEN POOL	502	11SEP14	FRESHWATER DRUM	523	2130	109.0
DRESDEN POOL	503	11SEP14	FRESHWATER DRUM	463	1230	93.0
DRESDEN POOL	503	11SEP14	FRESHWATER DRUM	403	980	115.6
DRESDEN POOL	503	11SEP14	FRESHWATER DRUM	296	350	110.9
DOWNSTREAM DRESDEN DAM	512	23MAY14	LONGNOSE GAR	650	590	75.9
DOWNSTREAM DRESDEN DAM	513	06JUN14	LONGNOSE GAR	761	940	70.2

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DOWNSTREAM DRESDEN DAM	514	11JUL14	LONGNOSE GAR	654	530	66.7
DOWNSTREAM DRESDEN DAM	515	11JUL14	LONGNOSE GAR	773	1030	72.9
DOWNSTREAM DRESDEN DAM	512	25JUL14	LONGNOSE GAR	699	610	61.1
DOWNSTREAM DRESDEN DAM	512	06AUG14	LONGNOSE GAR	752	950	73.9
DOWNSTREAM DRESDEN DAM	514	06AUG14	LONGNOSE GAR	1150	4250	76.4
DOWNSTREAM DRESDEN DAM	512	19AUG14	LONGNOSE GAR	518	270	76.0
DOWNSTREAM DRESDEN DAM	513	12SEP14	LONGNOSE GAR	376	95	80.7
DOWNSTREAM DRESDEN DAM	513	12SEP14	LONGNOSE GAR	412	135	83.7
DOWNSTREAM DRESDEN DAM	514	19AUG14	GIZZARD SHAD	273	210	94.5
DOWNSTREAM DRESDEN DAM	514	19AUG14	GIZZARD SHAD	244	140	90.0
DOWNSTREAM DRESDEN DAM	514	23MAY14	COMMON CARP	612	3000	95.2
DOWNSTREAM DRESDEN DAM	514	23MAY14	COMMON CARP	618	2650	81.8
DOWNSTREAM DRESDEN DAM	514	11JUL14	COMMON CARP	540	2070	94.7
DOWNSTREAM DRESDEN DAM	513	25JUL14	COMMON CARP	612	2890	91.7
DOWNSTREAM DRESDEN DAM	514	25JUL14	COMMON CARP	542	1985	89.8
DOWNSTREAM DRESDEN DAM	514	19AUG14	COMMON CARP	492	1560	93.7
DOWNSTREAM DRESDEN DAM	514	19AUG14	COMMON CARP	503	1690	95.1
DOWNSTREAM DRESDEN DAM	513	12SEP14	COMMON CARP	476	1460	96.5
DOWNSTREAM DRESDEN DAM	514	12SEP14	COMMON CARP	673	4600	110.7
DOWNSTREAM DRESDEN DAM	514	12SEP14	COMMON CARP	523	1940	97.4
DOWNSTREAM DRESDEN DAM	515	12SEP14	COMMON CARP	426	1380	126.2
DOWNSTREAM DRESDEN DAM	512	22SEP14	COMMON CARP	528	2190	107.0
DOWNSTREAM DRESDEN DAM	514	22SEP14	COMMON CARP	512	1900	101.6
DOWNSTREAM DRESDEN DAM	514	22SEP14	COMMON CARP	492	1510	90.7
DOWNSTREAM DRESDEN DAM	515	22SEP14	COMMON CARP	405	1050	111.3
DOWNSTREAM DRESDEN DAM	515	22SEP14	COMMON CARP	521	2070	105.1
DOWNSTREAM DRESDEN DAM	514	06JUN14	RIVER CARPSUCKER	362	630	96.1
DOWNSTREAM DRESDEN DAM	514	11JUL14	RIVER CARPSUCKER	385	740	93.9
DOWNSTREAM DRESDEN DAM	514	11JUL14	RIVER CARPSUCKER	380	740	97.6
DOWNSTREAM DRESDEN DAM	513	06AUG14	RIVER CARPSUCKER	265	300	116.4
DOWNSTREAM DRESDEN DAM	513	19AUG14	RIVER CARPSUCKER	322	520	112.6
DOWNSTREAM DRESDEN DAM	512	12SEP14	RIVER CARPSUCKER	396	660	77.0
DOWNSTREAM DRESDEN DAM	513	12SEP14	RIVER CARPSUCKER	382	720	93.5
DOWNSTREAM DRESDEN DAM	513	12SEP14	RIVER CARPSUCKER	382	750	97.4
DOWNSTREAM DRESDEN DAM	515	12SEP14	RIVER CARPSUCKER	374	730	101.0
DOWNSTREAM DRESDEN DAM	513	23MAY14	SMALLMOUTH BUFFALO	356	780	101.2
DOWNSTREAM DRESDEN DAM	513	23MAY14	SMALLMOUTH BUFFALO	365	730	87.4
DOWNSTREAM DRESDEN DAM	514	23MAY14	SMALLMOUTH BUFFALO	396	975	89.9
DOWNSTREAM DRESDEN DAM	514	23MAY14	SMALLMOUTH BUFFALO	454	1520	90.4
DOWNSTREAM DRESDEN DAM	514	23MAY14	SMALLMOUTH BUFFALO	375	735	80.7
DOWNSTREAM DRESDEN DAM	513	06JUN14	SMALLMOUTH BUFFALO	361	720	89.3
DOWNSTREAM DRESDEN DAM	513	06JUN14	SMALLMOUTH BUFFALO	412	1080	87.7
DOWNSTREAM DRESDEN DAM	512	11JUL14	SMALLMOUTH BUFFALO	362	740	91.0
DOWNSTREAM DRESDEN DAM	514	11JUL14	SMALLMOUTH BUFFALO	428	1210	86.9
DOWNSTREAM DRESDEN DAM	514	11JUL14	SMALLMOUTH BUFFALO	410	910	75.0
DOWNSTREAM DRESDEN DAM	515	11JUL14	SMALLMOUTH BUFFALO	378	690	73.8
DOWNSTREAM DRESDEN DAM	515	11JUL14	SMALLMOUTH BUFFALO	362	640	78.7
DOWNSTREAM DRESDEN DAM	515	11JUL14	SMALLMOUTH BUFFALO	371	810	92.0
DOWNSTREAM DRESDEN DAM	513	25JUL14	SMALLMOUTH BUFFALO	361	700	86.8
DOWNSTREAM DRESDEN DAM	513	25JUL14	SMALLMOUTH BUFFALO	375	720	79.0
DOWNSTREAM DRESDEN DAM	514	06AUG14	SMALLMOUTH BUFFALO	370	720	82.5
DOWNSTREAM DRESDEN DAM	515	06AUG14	SMALLMOUTH BUFFALO	367	620	72.9
DOWNSTREAM DRESDEN DAM	512	12SEP14	SMALLMOUTH BUFFALO	414	1070	85.5
DOWNSTREAM DRESDEN DAM	512	12SEP14	SMALLMOUTH BUFFALO	506	1790	75.2
DOWNSTREAM DRESDEN DAM	513	12SEP14	SMALLMOUTH BUFFALO	409	940	78.1
DOWNSTREAM DRESDEN DAM	513	12SEP14	SMALLMOUTH BUFFALO	408	990	82.9
DOWNSTREAM DRESDEN DAM	513	12SEP14	SMALLMOUTH BUFFALO	403	1020	88.9
DOWNSTREAM DRESDEN DAM	513	12SEP14	SMALLMOUTH BUFFALO	384	830	84.4
DOWNSTREAM DRESDEN DAM	513	12SEP14	SMALLMOUTH BUFFALO	356	640	83.0
DOWNSTREAM DRESDEN DAM	514	12SEP14	SMALLMOUTH BUFFALO	336	540	84.3
DOWNSTREAM DRESDEN DAM	514	12SEP14	SMALLMOUTH BUFFALO	473	1480	77.1
DOWNSTREAM DRESDEN DAM	514	12SEP14	SMALLMOUTH BUFFALO	381	940	98.1
DOWNSTREAM DRESDEN DAM	515	12SEP14	SMALLMOUTH BUFFALO	362	680	83.6
DOWNSTREAM DRESDEN DAM	515	12SEP14	SMALLMOUTH BUFFALO	308	470	97.0
DOWNSTREAM DRESDEN DAM	513	22SEP14	SMALLMOUTH BUFFALO	421	1040	78.8
DOWNSTREAM DRESDEN DAM	513	22SEP14	SMALLMOUTH BUFFALO	429	1230	87.7
DOWNSTREAM DRESDEN DAM	514	22SEP14	SMALLMOUTH BUFFALO	387	860	85.3
DOWNSTREAM DRESDEN DAM	512	06JUN14	SHORTHEAD REDHORSE	177	60	91.3
DOWNSTREAM DRESDEN DAM	512	06JUN14	SHORTHEAD REDHORSE	161	47	94.7
DOWNSTREAM DRESDEN DAM	513	06JUN14	SHORTHEAD REDHORSE	130	20	76.0
DOWNSTREAM DRESDEN DAM	513	06JUN14	SHORTHEAD REDHORSE	132	29	105.3
DOWNSTREAM DRESDEN DAM	514	06JUN14	SHORTHEAD REDHORSE	155	38	85.7
DOWNSTREAM DRESDEN DAM	512	11JUL14	SHORTHEAD REDHORSE	264	240	111.8
DOWNSTREAM DRESDEN DAM	512	06AUG14	SHORTHEAD REDHORSE	351	460	92.2
DOWNSTREAM DRESDEN DAM	512	06AUG14	SHORTHEAD REDHORSE	335	430	98.9
DOWNSTREAM DRESDEN DAM	512	19AUG14	SHORTHEAD REDHORSE	206	105	102.0
DOWNSTREAM DRESDEN DAM	515	12SEP14	SHORTHEAD REDHORSE	283	235	89.1
DOWNSTREAM DRESDEN DAM	513	22SEP14	SHORTHEAD REDHORSE	103	12	90.8
DOWNSTREAM DRESDEN DAM	512	23MAY14	CHANNEL CATFISH	600	2450	109.1
DOWNSTREAM DRESDEN DAM	512	23MAY14	CHANNEL CATFISH	590	2310	108.7
DOWNSTREAM DRESDEN DAM	512	23MAY14	CHANNEL CATFISH	515	1190	87.7
DOWNSTREAM DRESDEN DAM	513	23MAY14	CHANNEL CATFISH	572	1800	93.8

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DOWNSTREAM DRESDEN DAM	513	23MAY14	CHANNEL CATFISH	495	1130	94.9
DOWNSTREAM DRESDEN DAM	513	23MAY14	CHANNEL CATFISH	450	1030	118.3
DOWNSTREAM DRESDEN DAM	513	23MAY14	CHANNEL CATFISH	545	1700	103.9
DOWNSTREAM DRESDEN DAM	514	23MAY14	CHANNEL CATFISH	470	1215	121.0
DOWNSTREAM DRESDEN DAM	514	23MAY14	CHANNEL CATFISH	570	1950	102.8
DOWNSTREAM DRESDEN DAM	514	23MAY14	CHANNEL CATFISH	520	1460	104.2
DOWNSTREAM DRESDEN DAM	514	23MAY14	CHANNEL CATFISH	408	625	99.2
DOWNSTREAM DRESDEN DAM	514	23MAY14	CHANNEL CATFISH	565	1940	105.3
DOWNSTREAM DRESDEN DAM	514	23MAY14	CHANNEL CATFISH	518	1310	94.7
DOWNSTREAM DRESDEN DAM	514	23MAY14	CHANNEL CATFISH	440	930	115.1
DOWNSTREAM DRESDEN DAM	514	23MAY14	CHANNEL CATFISH	452	820	92.9
DOWNSTREAM DRESDEN DAM	515	23MAY14	CHANNEL CATFISH	418	715	104.7
DOWNSTREAM DRESDEN DAM	512	06JUN14	CHANNEL CATFISH	640	2760	99.4
DOWNSTREAM DRESDEN DAM	512	06JUN14	CHANNEL CATFISH	528	1610	109.3
DOWNSTREAM DRESDEN DAM	513	06JUN14	CHANNEL CATFISH	415	720	108.0
DOWNSTREAM DRESDEN DAM	514	06JUN14	CHANNEL CATFISH	391	500	91.3
DOWNSTREAM DRESDEN DAM	514	06JUN14	CHANNEL CATFISH	445	850	101.3
DOWNSTREAM DRESDEN DAM	515	06JUN14	CHANNEL CATFISH	381	600	119.3
DOWNSTREAM DRESDEN DAM	515	06JUN14	CHANNEL CATFISH	530	1500	100.5
DOWNSTREAM DRESDEN DAM	515	06JUN14	CHANNEL CATFISH	572	2360	123.0
DOWNSTREAM DRESDEN DAM	515	06JUN14	CHANNEL CATFISH	360	375	89.9
DOWNSTREAM DRESDEN DAM	515	06JUN14	CHANNEL CATFISH	530	1780	119.3
DOWNSTREAM DRESDEN DAM	515	06JUN14	CHANNEL CATFISH	523	1420	99.4
DOWNSTREAM DRESDEN DAM	515	06JUN14	CHANNEL CATFISH	480	1160	107.8
DOWNSTREAM DRESDEN DAM	512	11JUL14	CHANNEL CATFISH	604	2310	100.7
DOWNSTREAM DRESDEN DAM	512	11JUL14	CHANNEL CATFISH	423	810	114.1
DOWNSTREAM DRESDEN DAM	512	11JUL14	CHANNEL CATFISH	512	1430	107.4
DOWNSTREAM DRESDEN DAM	512	11JUL14	CHANNEL CATFISH	496	1230	102.6
DOWNSTREAM DRESDEN DAM	512	11JUL14	CHANNEL CATFISH	473	1240	120.9
DOWNSTREAM DRESDEN DAM	512	11JUL14	CHANNEL CATFISH	498	1440	118.5
DOWNSTREAM DRESDEN DAM	514	11JUL14	CHANNEL CATFISH	392	610	110.4
DOWNSTREAM DRESDEN DAM	514	11JUL14	CHANNEL CATFISH	405	630	102.4
DOWNSTREAM DRESDEN DAM	514	11JUL14	CHANNEL CATFISH	382	510	100.5
DOWNSTREAM DRESDEN DAM	514	11JUL14	CHANNEL CATFISH	357	415	102.2
DOWNSTREAM DRESDEN DAM	515	11JUL14	CHANNEL CATFISH	568	1710	91.2
DOWNSTREAM DRESDEN DAM	515	11JUL14	CHANNEL CATFISH	364	510	117.8
DOWNSTREAM DRESDEN DAM	515	11JUL14	CHANNEL CATFISH	443	960	116.1
DOWNSTREAM DRESDEN DAM	514	25JUL14	CHANNEL CATFISH	437	680	86.1
DOWNSTREAM DRESDEN DAM	515	25JUL14	CHANNEL CATFISH	507	1140	88.4
DOWNSTREAM DRESDEN DAM	513	25JUL14	CHANNEL CATFISH	71	2	100.7
DOWNSTREAM DRESDEN DAM	512	06AUG14	CHANNEL CATFISH	401	610	102.5
DOWNSTREAM DRESDEN DAM	512	06AUG14	CHANNEL CATFISH	479	900	84.2
DOWNSTREAM DRESDEN DAM	515	06AUG14	CHANNEL CATFISH	351	420	109.4
DOWNSTREAM DRESDEN DAM	515	06AUG14	CHANNEL CATFISH	395	620	109.4
DOWNSTREAM DRESDEN DAM	512	19AUG14	CHANNEL CATFISH	492	965	82.6
DOWNSTREAM DRESDEN DAM	513	19AUG14	CHANNEL CATFISH	328	285	92.8
DOWNSTREAM DRESDEN DAM	514	19AUG14	CHANNEL CATFISH	575	1440	73.8
DOWNSTREAM DRESDEN DAM	514	19AUG14	CHANNEL CATFISH	630	2060	78.1
DOWNSTREAM DRESDEN DAM	514	12SEP14	CHANNEL CATFISH	443	920	111.3
DOWNSTREAM DRESDEN DAM	514	12SEP14	CHANNEL CATFISH	436	930	118.6
DOWNSTREAM DRESDEN DAM	514	12SEP14	CHANNEL CATFISH	412	720	110.6
DOWNSTREAM DRESDEN DAM	514	12SEP14	CHANNEL CATFISH	428	890	120.6
DOWNSTREAM DRESDEN DAM	514	12SEP14	CHANNEL CATFISH	446	980	116.0
DOWNSTREAM DRESDEN DAM	515	12SEP14	CHANNEL CATFISH	396	600	105.0
DOWNSTREAM DRESDEN DAM	515	12SEP14	CHANNEL CATFISH	423	850	119.7
DOWNSTREAM DRESDEN DAM	515	12SEP14	CHANNEL CATFISH	506	1040	81.2
DOWNSTREAM DRESDEN DAM	515	12SEP14	CHANNEL CATFISH	419	700	101.7
DOWNSTREAM DRESDEN DAM	515	12SEP14	CHANNEL CATFISH	526	1680	115.4
DOWNSTREAM DRESDEN DAM	515	12SEP14	CHANNEL CATFISH	476	910	86.9
DOWNSTREAM DRESDEN DAM	512	22SEP14	CHANNEL CATFISH	499	1260	103.0
DOWNSTREAM DRESDEN DAM	512	22SEP14	CHANNEL CATFISH	471	1110	109.7
DOWNSTREAM DRESDEN DAM	513	22SEP14	CHANNEL CATFISH	416	760	113.1
DOWNSTREAM DRESDEN DAM	514	22SEP14	CHANNEL CATFISH	445	1080	128.7
DOWNSTREAM DRESDEN DAM	514	22SEP14	CHANNEL CATFISH	385	510	98.0
DOWNSTREAM DRESDEN DAM	514	22SEP14	CHANNEL CATFISH	434	920	119.1
DOWNSTREAM DRESDEN DAM	515	22SEP14	CHANNEL CATFISH	330	240	76.6
DOWNSTREAM DRESDEN DAM	514	23MAY14	FLATHEAD CATFISH	595	2700	102.7
DOWNSTREAM DRESDEN DAM	513	11JUL14	FLATHEAD CATFISH	308	340	108.5
DOWNSTREAM DRESDEN DAM	515	22SEP14	FLATHEAD CATFISH	222	105	96.5
DOWNSTREAM DRESDEN DAM	513	11JUL14	WHITE PERCH	162	67	104.5
DOWNSTREAM DRESDEN DAM	512	12SEP14	WHITE PERCH	173	76	96.4
DOWNSTREAM DRESDEN DAM	515	12SEP14	WHITE PERCH	94	11	94.6
DOWNSTREAM DRESDEN DAM	512	23MAY14	WHITE BASS	261	200	83.4
DOWNSTREAM DRESDEN DAM	512	23MAY14	WHITE BASS	325	450	95.5
DOWNSTREAM DRESDEN DAM	512	23MAY14	WHITE BASS	362	580	88.3
DOWNSTREAM DRESDEN DAM	512	23MAY14	WHITE BASS	270	260	97.7
DOWNSTREAM DRESDEN DAM	512	23MAY14	WHITE BASS	337	500	94.9
DOWNSTREAM DRESDEN DAM	512	23MAY14	WHITE BASS	335	460	88.9
DOWNSTREAM DRESDEN DAM	512	23MAY14	WHITE BASS	362	530	80.7
DOWNSTREAM DRESDEN DAM	512	23MAY14	WHITE BASS	322	410	89.6
DOWNSTREAM DRESDEN DAM	512	23MAY14	WHITE BASS	345	450	79.5
DOWNSTREAM DRESDEN DAM	513	23MAY14	WHITE BASS	362	530	80.7

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DOWNSTREAM DRESDEN DAM	514	23MAY14	WHITE BASS	358	490	77.2
DOWNSTREAM DRESDEN DAM	514	23MAY14	WHITE BASS	355	490	79.2
DOWNSTREAM DRESDEN DAM	514	23MAY14	WHITE BASS	348	475	81.7
DOWNSTREAM DRESDEN DAM	514	23MAY14	WHITE BASS	276	250	87.8
DOWNSTREAM DRESDEN DAM	514	23MAY14	WHITE BASS	277	240	83.4
DOWNSTREAM DRESDEN DAM	514	23MAY14	WHITE BASS	267	210	81.7
DOWNSTREAM DRESDEN DAM	514	23MAY14	WHITE BASS	284	260	83.6
DOWNSTREAM DRESDEN DAM	515	23MAY14	WHITE BASS	324	390	83.6
DOWNSTREAM DRESDEN DAM	515	23MAY14	WHITE BASS	351	470	78.7
DOWNSTREAM DRESDEN DAM	513	06JUN14	WHITE BASS	193	81	85.6
DOWNSTREAM DRESDEN DAM	515	12SEP14	WHITE BASS	263	220	89.6
DOWNSTREAM DRESDEN DAM	515	25JUL14	ROCK BASS	127	45	103.1
DOWNSTREAM DRESDEN DAM	514	06AUG14	ROCK BASS	139	52	90.2
DOWNSTREAM DRESDEN DAM	514	12SEP14	ROCK BASS	132	46	93.6
DOWNSTREAM DRESDEN DAM	514	22SEP14	ROCK BASS	80	12	113.8
DOWNSTREAM DRESDEN DAM	515	23MAY14	GREEN SUNFISH	63	5	108.2
DOWNSTREAM DRESDEN DAM	514	06JUN14	GREEN SUNFISH	114	33	113.5
DOWNSTREAM DRESDEN DAM	514	06JUN14	GREEN SUNFISH	108	27	109.8
DOWNSTREAM DRESDEN DAM	515	06JUN14	GREEN SUNFISH	66	6	112.4
DOWNSTREAM DRESDEN DAM	513	11JUL14	GREEN SUNFISH	83	13	119.6
DOWNSTREAM DRESDEN DAM	513	11JUL14	GREEN SUNFISH	77	11	127.8
DOWNSTREAM DRESDEN DAM	513	11JUL14	GREEN SUNFISH	66	7	131.1
DOWNSTREAM DRESDEN DAM	515	11JUL14	GREEN SUNFISH	62	5	113.7
DOWNSTREAM DRESDEN DAM	512	25JUL14	GREEN SUNFISH	63	5	108.2
DOWNSTREAM DRESDEN DAM	514	25JUL14	GREEN SUNFISH	107	21	87.9
DOWNSTREAM DRESDEN DAM	514	25JUL14	GREEN SUNFISH	97	17	96.5
DOWNSTREAM DRESDEN DAM	514	25JUL14	GREEN SUNFISH	62	6	136.4
DOWNSTREAM DRESDEN DAM	514	25JUL14	GREEN SUNFISH	62	6	136.4
DOWNSTREAM DRESDEN DAM	514	25JUL14	GREEN SUNFISH	75	9	113.4
DOWNSTREAM DRESDEN DAM	515	25JUL14	GREEN SUNFISH	149	59	88.5
DOWNSTREAM DRESDEN DAM	515	25JUL14	GREEN SUNFISH	98	17	93.5
DOWNSTREAM DRESDEN DAM	515	25JUL14	GREEN SUNFISH	104	21	96.0
DOWNSTREAM DRESDEN DAM	515	25JUL14	GREEN SUNFISH	65	7	137.5
DOWNSTREAM DRESDEN DAM	513	25JUL14	GREEN SUNFISH	63	5	108.2
DOWNSTREAM DRESDEN DAM	514	06AUG14	GREEN SUNFISH	75	9	113.4
DOWNSTREAM DRESDEN DAM	514	06AUG14	GREEN SUNFISH	89	16	118.6
DOWNSTREAM DRESDEN DAM	514	06AUG14	GREEN SUNFISH	61	4	95.7
DOWNSTREAM DRESDEN DAM	514	12SEP14	GREEN SUNFISH	107	27	113.0
DOWNSTREAM DRESDEN DAM	514	12SEP14	GREEN SUNFISH	69	6	97.9
DOWNSTREAM DRESDEN DAM	514	22SEP14	GREEN SUNFISH	78	11	122.7
DOWNSTREAM DRESDEN DAM	514	22SEP14	GREEN SUNFISH	63	5	108.2
DOWNSTREAM DRESDEN DAM	514	22SEP14	GREEN SUNFISH	64	6	123.6
DOWNSTREAM DRESDEN DAM	515	22SEP14	GREEN SUNFISH	146	64	102.2
DOWNSTREAM DRESDEN DAM	512	23MAY14	BLUEGILL	159	112	132.9
DOWNSTREAM DRESDEN DAM	512	23MAY14	BLUEGILL	119	32	99.2
DOWNSTREAM DRESDEN DAM	512	23MAY14	BLUEGILL	117	31	101.7
DOWNSTREAM DRESDEN DAM	512	23MAY14	BLUEGILL	121	37	108.6
DOWNSTREAM DRESDEN DAM	512	23MAY14	BLUEGILL	108	24	102.7
DOWNSTREAM DRESDEN DAM	512	23MAY14	BLUEGILL	140	58	104.9
DOWNSTREAM DRESDEN DAM	512	23MAY14	BLUEGILL	121	35	102.7
DOWNSTREAM DRESDEN DAM	512	23MAY14	BLUEGILL	126	46	118.0
DOWNSTREAM DRESDEN DAM	513	23MAY14	BLUEGILL	126	40	102.6
DOWNSTREAM DRESDEN DAM	513	23MAY14	BLUEGILL	92	13	94.6
DOWNSTREAM DRESDEN DAM	514	23MAY14	BLUEGILL	162	104	116.0
DOWNSTREAM DRESDEN DAM	514	23MAY14	BLUEGILL	128	44	107.1
DOWNSTREAM DRESDEN DAM	514	23MAY14	BLUEGILL	103	27	135.1
DOWNSTREAM DRESDEN DAM	514	23MAY14	BLUEGILL	130	36	83.3
DOWNSTREAM DRESDEN DAM	514	23MAY14	BLUEGILL	121	35	102.7
DOWNSTREAM DRESDEN DAM	514	23MAY14	BLUEGILL	105	20	93.9
DOWNSTREAM DRESDEN DAM	514	23MAY14	BLUEGILL	91	15	113.2
DOWNSTREAM DRESDEN DAM	515	23MAY14	BLUEGILL	168	110	108.7
DOWNSTREAM DRESDEN DAM	512	06JUN14	BLUEGILL	157	95	117.5
DOWNSTREAM DRESDEN DAM	513	06JUN14	BLUEGILL	116	27	91.1
DOWNSTREAM DRESDEN DAM	513	06JUN14	BLUEGILL	125	55	144.9
DOWNSTREAM DRESDEN DAM	514	06JUN14	BLUEGILL	129	50	118.6
DOWNSTREAM DRESDEN DAM	514	06JUN14	BLUEGILL	122	45	128.5
DOWNSTREAM DRESDEN DAM	514	06JUN14	BLUEGILL	110	27	108.7
DOWNSTREAM DRESDEN DAM	514	06JUN14	BLUEGILL	127	32	80.0
DOWNSTREAM DRESDEN DAM	514	06JUN14	BLUEGILL	152	78	107.4
DOWNSTREAM DRESDEN DAM	514	06JUN14	BLUEGILL	105	25	117.4
DOWNSTREAM DRESDEN DAM	514	06JUN14	BLUEGILL	119	34	105.4
DOWNSTREAM DRESDEN DAM	514	06JUN14	BLUEGILL	94	15	101.7
DOWNSTREAM DRESDEN DAM	514	06JUN14	BLUEGILL	83	14	143.4
DOWNSTREAM DRESDEN DAM	514	06JUN14	BLUEGILL	86	14	127.4
DOWNSTREAM DRESDEN DAM	514	06JUN14	BLUEGILL	81	12	133.2
DOWNSTREAM DRESDEN DAM	514	06JUN14	BLUEGILL	107	24	105.9
DOWNSTREAM DRESDEN DAM	515	06JUN14	BLUEGILL	114	30	107.3
DOWNSTREAM DRESDEN DAM	515	06JUN14	BLUEGILL	106	22	100.1
DOWNSTREAM DRESDEN DAM	515	06JUN14	BLUEGILL	109	27	112.0
DOWNSTREAM DRESDEN DAM	515	06JUN14	BLUEGILL	87	14	122.7
DOWNSTREAM DRESDEN DAM	515	06JUN14	BLUEGILL	82	11	117.3
DOWNSTREAM DRESDEN DAM	515	06JUN14	BLUEGILL	91	17	128.3

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DOWNSTREAM DRESDEN DAM	515	06JUN14	BLUEGILL	86	14	127.4
DOWNSTREAM DRESDEN DAM	515	06JUN14	BLUEGILL	82	11	117.3
DOWNSTREAM DRESDEN DAM	512	11JUL14	BLUEGILL	117	37	121.4
DOWNSTREAM DRESDEN DAM	512	11JUL14	BLUEGILL	102	24	124.1
DOWNSTREAM DRESDEN DAM	514	11JUL14	BLUEGILL	146	74	116.5
DOWNSTREAM DRESDEN DAM	514	11JUL14	BLUEGILL	103	21	105.1
DOWNSTREAM DRESDEN DAM	515	11JUL14	BLUEGILL	153	84	113.2
DOWNSTREAM DRESDEN DAM	515	11JUL14	BLUEGILL	143	54	91.1
DOWNSTREAM DRESDEN DAM	515	11JUL14	BLUEGILL	132	56	123.1
DOWNSTREAM DRESDEN DAM	515	11JUL14	BLUEGILL	110	24	96.6
DOWNSTREAM DRESDEN DAM	515	11JUL14	BLUEGILL	95	18	117.8
DOWNSTREAM DRESDEN DAM	515	11JUL14	BLUEGILL	109	31	128.6
DOWNSTREAM DRESDEN DAM	515	11JUL14	BLUEGILL	96	21	132.7
DOWNSTREAM DRESDEN DAM	515	11JUL14	BLUEGILL	138	58	110.0
DOWNSTREAM DRESDEN DAM	512	25JUL14	BLUEGILL	129	46	109.2
DOWNSTREAM DRESDEN DAM	513	25JUL14	BLUEGILL	86	12	109.2
DOWNSTREAM DRESDEN DAM	514	25JUL14	BLUEGILL	146	53	83.4
DOWNSTREAM DRESDEN DAM	514	25JUL14	BLUEGILL	132	53	116.5
DOWNSTREAM DRESDEN DAM	515	25JUL14	BLUEGILL	108	24	102.7
DOWNSTREAM DRESDEN DAM	515	25JUL14	BLUEGILL	142	66	113.9
DOWNSTREAM DRESDEN DAM	515	25JUL14	BLUEGILL	127	53	132.5
DOWNSTREAM DRESDEN DAM	515	25JUL14	BLUEGILL	122	38	108.5
DOWNSTREAM DRESDEN DAM	515	25JUL14	BLUEGILL	122	44	125.6
DOWNSTREAM DRESDEN DAM	515	25JUL14	BLUEGILL	83	11	112.6
DOWNSTREAM DRESDEN DAM	512	06AUG14	BLUEGILL	119	32	99.2
DOWNSTREAM DRESDEN DAM	513	06AUG14	BLUEGILL	111	26	101.6
DOWNSTREAM DRESDEN DAM	513	06AUG14	BLUEGILL	92	15	109.2
DOWNSTREAM DRESDEN DAM	513	06AUG14	BLUEGILL	86	13	118.3
DOWNSTREAM DRESDEN DAM	514	06AUG14	BLUEGILL	155	82	105.8
DOWNSTREAM DRESDEN DAM	514	06AUG14	BLUEGILL	137	57	110.8
DOWNSTREAM DRESDEN DAM	514	06AUG14	BLUEGILL	129	40	94.9
DOWNSTREAM DRESDEN DAM	514	06AUG14	BLUEGILL	124	40	108.2
DOWNSTREAM DRESDEN DAM	515	06AUG14	BLUEGILL	137	52	101.1
DOWNSTREAM DRESDEN DAM	512	19AUG14	BLUEGILL	115	27	93.8
DOWNSTREAM DRESDEN DAM	514	19AUG14	BLUEGILL	131	55	124.0
DOWNSTREAM DRESDEN DAM	514	19AUG14	BLUEGILL	139	53	98.2
DOWNSTREAM DRESDEN DAM	515	19AUG14	BLUEGILL	81	10	111.0
DOWNSTREAM DRESDEN DAM	512	12SEP14	BLUEGILL	132	55	120.9
DOWNSTREAM DRESDEN DAM	512	12SEP14	BLUEGILL	132	56	123.1
DOWNSTREAM DRESDEN DAM	512	12SEP14	BLUEGILL	141	61	107.8
DOWNSTREAM DRESDEN DAM	513	12SEP14	BLUEGILL	136	49	97.6
DOWNSTREAM DRESDEN DAM	513	12SEP14	BLUEGILL	147	64	98.5
DOWNSTREAM DRESDEN DAM	514	12SEP14	BLUEGILL	168	106	104.8
DOWNSTREAM DRESDEN DAM	514	12SEP14	BLUEGILL	116	33	111.4
DOWNSTREAM DRESDEN DAM	514	12SEP14	BLUEGILL	119	40	124.0
DOWNSTREAM DRESDEN DAM	514	12SEP14	BLUEGILL	89	12	97.5
DOWNSTREAM DRESDEN DAM	515	12SEP14	BLUEGILL	163	92	100.5
DOWNSTREAM DRESDEN DAM	515	12SEP14	BLUEGILL	146	64	100.7
DOWNSTREAM DRESDEN DAM	515	12SEP14	BLUEGILL	117	39	127.9
DOWNSTREAM DRESDEN DAM	515	12SEP14	BLUEGILL	108	26	111.2
DOWNSTREAM DRESDEN DAM	515	12SEP14	BLUEGILL	109	27	112.0
DOWNSTREAM DRESDEN DAM	512	22SEP14	BLUEGILL	116	32	108.0
DOWNSTREAM DRESDEN DAM	512	22SEP14	BLUEGILL	119	35	108.5
DOWNSTREAM DRESDEN DAM	515	22SEP14	BLUEGILL	106	26	118.3
DOWNSTREAM DRESDEN DAM	515	22SEP14	BLUEGILL	119	38	117.8
DOWNSTREAM DRESDEN DAM	515	22SEP14	BLUEGILL	153	88	118.6
DOWNSTREAM DRESDEN DAM	512	23MAY14	SMALLMOUTH BASS	477	1200	68.7
DOWNSTREAM DRESDEN DAM	513	23MAY14	SMALLMOUTH BASS	241	180	91.6
DOWNSTREAM DRESDEN DAM	513	23MAY14	SMALLMOUTH BASS	157	47	94.2
DOWNSTREAM DRESDEN DAM	513	23MAY14	SMALLMOUTH BASS	210	115	90.9
DOWNSTREAM DRESDEN DAM	514	23MAY14	SMALLMOUTH BASS	204	92	79.8
DOWNSTREAM DRESDEN DAM	514	23MAY14	SMALLMOUTH BASS	195	66	66.1
DOWNSTREAM DRESDEN DAM	514	23MAY14	SMALLMOUTH BASS	162	48	87.1
DOWNSTREAM DRESDEN DAM	515	23MAY14	SMALLMOUTH BASS	375	680	84.1
DOWNSTREAM DRESDEN DAM	515	23MAY14	SMALLMOUTH BASS	172	56	83.8
DOWNSTREAM DRESDEN DAM	512	06JUN14	SMALLMOUTH BASS	412	810	74.1
DOWNSTREAM DRESDEN DAM	512	06JUN14	SMALLMOUTH BASS	273	300	102.4
DOWNSTREAM DRESDEN DAM	512	06JUN14	SMALLMOUTH BASS	196	105	103.5
DOWNSTREAM DRESDEN DAM	512	06JUN14	SMALLMOUTH BASS	182	71	88.7
DOWNSTREAM DRESDEN DAM	513	06JUN14	SMALLMOUTH BASS	214	124	92.3
DOWNSTREAM DRESDEN DAM	514	06JUN14	SMALLMOUTH BASS	218	140	98.2
DOWNSTREAM DRESDEN DAM	514	06JUN14	SMALLMOUTH BASS	198	91	86.8
DOWNSTREAM DRESDEN DAM	514	06JUN14	SMALLMOUTH BASS	162	54	97.9
DOWNSTREAM DRESDEN DAM	514	06JUN14	SMALLMOUTH BASS	178	59	79.2
DOWNSTREAM DRESDEN DAM	514	06JUN14	SMALLMOUTH BASS	170	56	87.0
DOWNSTREAM DRESDEN DAM	514	06JUN14	SMALLMOUTH BASS	172	60	89.8
DOWNSTREAM DRESDEN DAM	514	06JUN14	SMALLMOUTH BASS	176	61	84.9
DOWNSTREAM DRESDEN DAM	514	06JUN14	SMALLMOUTH BASS	205	95	81.1
DOWNSTREAM DRESDEN DAM	514	06JUN14	SMALLMOUTH BASS	175	54	76.5
DOWNSTREAM DRESDEN DAM	514	06JUN14	SMALLMOUTH BASS	168	56	90.4
DOWNSTREAM DRESDEN DAM	514	06JUN14	SMALLMOUTH BASS	194	85	86.6
DOWNSTREAM DRESDEN DAM	514	06JUN14	SMALLMOUTH BASS	208	97	79.1

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DOWNSTREAM DRESDEN DAM	514	06JUN14	SMALLMOUTH BASS	167	62	102.0
DOWNSTREAM DRESDEN DAM	512	11JUL14	SMALLMOUTH BASS	275	310	103.4
DOWNSTREAM DRESDEN DAM	512	11JUL14	SMALLMOUTH BASS	216	127	91.7
DOWNSTREAM DRESDEN DAM	513	11JUL14	SMALLMOUTH BASS	263	210	80.8
DOWNSTREAM DRESDEN DAM	514	11JUL14	SMALLMOUTH BASS	183	76	93.3
DOWNSTREAM DRESDEN DAM	514	11JUL14	SMALLMOUTH BASS	225	158	100.2
DOWNSTREAM DRESDEN DAM	515	11JUL14	SMALLMOUTH BASS	223	130	84.8
DOWNSTREAM DRESDEN DAM	515	11JUL14	SMALLMOUTH BASS	208	93	75.8
DOWNSTREAM DRESDEN DAM	515	11JUL14	SMALLMOUTH BASS	156	39	79.8
DOWNSTREAM DRESDEN DAM	515	11JUL14	SMALLMOUTH BASS	192	94	99.0
DOWNSTREAM DRESDEN DAM	512	25JUL14	SMALLMOUTH BASS	330	415	77.2
DOWNSTREAM DRESDEN DAM	512	25JUL14	SMALLMOUTH BASS	207	100	82.8
DOWNSTREAM DRESDEN DAM	512	25JUL14	SMALLMOUTH BASS	231	160	93.2
DOWNSTREAM DRESDEN DAM	514	25JUL14	SMALLMOUTH BASS	150	47	109.0
DOWNSTREAM DRESDEN DAM	512	06AUG14	SMALLMOUTH BASS	404	810	78.9
DOWNSTREAM DRESDEN DAM	512	06AUG14	SMALLMOUTH BASS	430	1020	81.4
DOWNSTREAM DRESDEN DAM	512	06AUG14	SMALLMOUTH BASS	236	145	78.9
DOWNSTREAM DRESDEN DAM	513	06AUG14	SMALLMOUTH BASS	165	59	100.9
DOWNSTREAM DRESDEN DAM	513	06AUG14	SMALLMOUTH BASS	152	41	91.2
DOWNSTREAM DRESDEN DAM	513	06AUG14	SMALLMOUTH BASS	152	43	95.6
DOWNSTREAM DRESDEN DAM	514	06AUG14	SMALLMOUTH BASS	221	145	97.3
DOWNSTREAM DRESDEN DAM	514	06AUG14	SMALLMOUTH BASS	204	100	86.7
DOWNSTREAM DRESDEN DAM	514	06AUG14	SMALLMOUTH BASS	162	60	108.8
DOWNSTREAM DRESDEN DAM	514	06AUG14	SMALLMOUTH BASS	152	44	97.8
DOWNSTREAM DRESDEN DAM	514	06AUG14	SMALLMOUTH BASS	155	48	100.3
DOWNSTREAM DRESDEN DAM	514	06AUG14	SMALLMOUTH BASS	171	63	96.1
DOWNSTREAM DRESDEN DAM	515	06AUG14	SMALLMOUTH BASS	261	260	102.5
DOWNSTREAM DRESDEN DAM	512	19AUG14	SMALLMOUTH BASS	265	230	86.4
DOWNSTREAM DRESDEN DAM	512	19AUG14	SMALLMOUTH BASS	186	80	93.2
DOWNSTREAM DRESDEN DAM	512	19AUG14	SMALLMOUTH BASS	161	48	88.8
DOWNSTREAM DRESDEN DAM	512	19AUG14	SMALLMOUTH BASS	180	70	90.6
DOWNSTREAM DRESDEN DAM	513	19AUG14	SMALLMOUTH BASS	194	85	86.6
DOWNSTREAM DRESDEN DAM	513	19AUG14	SMALLMOUTH BASS	160	47	88.7
DOWNSTREAM DRESDEN DAM	515	19AUG14	SMALLMOUTH BASS	247	225	105.8
DOWNSTREAM DRESDEN DAM	513	12SEP14	SMALLMOUTH BASS	271	270	94.4
DOWNSTREAM DRESDEN DAM	513	12SEP14	SMALLMOUTH BASS	236	130	70.7
DOWNSTREAM DRESDEN DAM	513	12SEP14	SMALLMOUTH BASS	184	74	89.3
DOWNSTREAM DRESDEN DAM	514	12SEP14	SMALLMOUTH BASS	423	980	82.4
DOWNSTREAM DRESDEN DAM	514	12SEP14	SMALLMOUTH BASS	346	590	94.4
DOWNSTREAM DRESDEN DAM	514	12SEP14	SMALLMOUTH BASS	276	260	85.7
DOWNSTREAM DRESDEN DAM	514	12SEP14	SMALLMOUTH BASS	268	230	83.3
DOWNSTREAM DRESDEN DAM	514	12SEP14	SMALLMOUTH BASS	256	200	83.9
DOWNSTREAM DRESDEN DAM	514	12SEP14	SMALLMOUTH BASS	257	205	84.9
DOWNSTREAM DRESDEN DAM	514	12SEP14	SMALLMOUTH BASS	246	190	90.5
DOWNSTREAM DRESDEN DAM	515	12SEP14	SMALLMOUTH BASS	268	230	83.3
DOWNSTREAM DRESDEN DAM	515	12SEP14	SMALLMOUTH BASS	264	200	76.0
DOWNSTREAM DRESDEN DAM	515	12SEP14	SMALLMOUTH BASS	264	230	87.4
DOWNSTREAM DRESDEN DAM	512	22SEP14	SMALLMOUTH BASS	170	55	85.5
DOWNSTREAM DRESDEN DAM	512	22SEP14	SMALLMOUTH BASS	370	700	90.3
DOWNSTREAM DRESDEN DAM	513	22SEP14	SMALLMOUTH BASS	166	54	90.6
DOWNSTREAM DRESDEN DAM	514	22SEP14	SMALLMOUTH BASS	204	103	89.3
DOWNSTREAM DRESDEN DAM	514	22SEP14	SMALLMOUTH BASS	158	43	84.5
DOWNSTREAM DRESDEN DAM	515	22SEP14	SMALLMOUTH BASS	282	325	100.0
DOWNSTREAM DRESDEN DAM	515	22SEP14	SMALLMOUTH BASS	315	410	88.6
DOWNSTREAM DRESDEN DAM	515	22SEP14	SMALLMOUTH BASS	170	60	93.3
DOWNSTREAM DRESDEN DAM	515	22SEP14	SMALLMOUTH BASS	270	250	88.4
DOWNSTREAM DRESDEN DAM	515	22SEP14	SMALLMOUTH BASS	240	180	92.8
DOWNSTREAM DRESDEN DAM	512	06JUN14	LARGEMOUTH BASS	316	410	89.6
DOWNSTREAM DRESDEN DAM	514	06JUN14	LARGEMOUTH BASS	370	770	101.7
DOWNSTREAM DRESDEN DAM	515	06JUN14	LARGEMOUTH BASS	224	160	104.8
DOWNSTREAM DRESDEN DAM	514	25JUL14	LARGEMOUTH BASS	392	900	98.9
DOWNSTREAM DRESDEN DAM	513	22SEP14	LARGEMOUTH BASS	150	44	103.6
DOWNSTREAM DRESDEN DAM	513	22SEP14	LARGEMOUTH BASS	153	45	99.5
DOWNSTREAM DRESDEN DAM	512	12SEP14	WALLEYE	182	56	103.3
DOWNSTREAM DRESDEN DAM	514	12SEP14	WALLEYE	203	74	96.5
DOWNSTREAM DRESDEN DAM	515	12SEP14	WALLEYE	362	410	84.9
DOWNSTREAM DRESDEN DAM	513	23MAY14	FRESHWATER DRUM	322	420	101.6
DOWNSTREAM DRESDEN DAM	514	23MAY14	FRESHWATER DRUM	372	620	94.5
DOWNSTREAM DRESDEN DAM	514	23MAY14	FRESHWATER DRUM	398	740	90.8
DOWNSTREAM DRESDEN DAM	513	06JUN14	FRESHWATER DRUM	402	760	90.3
DOWNSTREAM DRESDEN DAM	515	06JUN14	FRESHWATER DRUM	402	940	111.7
DOWNSTREAM DRESDEN DAM	512	11JUL14	FRESHWATER DRUM	154	46	118.3
DOWNSTREAM DRESDEN DAM	513	11JUL14	FRESHWATER DRUM	473	1440	101.7
DOWNSTREAM DRESDEN DAM	514	11JUL14	FRESHWATER DRUM	332	380	83.4
DOWNSTREAM DRESDEN DAM	515	11JUL14	FRESHWATER DRUM	372	680	103.6
DOWNSTREAM DRESDEN DAM	512	25JUL14	FRESHWATER DRUM	378	700	101.3
DOWNSTREAM DRESDEN DAM	512	25JUL14	FRESHWATER DRUM	460	1245	96.1
DOWNSTREAM DRESDEN DAM	512	25JUL14	FRESHWATER DRUM	397	830	102.7
DOWNSTREAM DRESDEN DAM	512	25JUL14	FRESHWATER DRUM	126	25	122.3
DOWNSTREAM DRESDEN DAM	512	25JUL14	FRESHWATER DRUM	347	560	106.7
DOWNSTREAM DRESDEN DAM	512	25JUL14	FRESHWATER DRUM	162	47	102.8
DOWNSTREAM DRESDEN DAM	512	25JUL14	FRESHWATER DRUM	155	41	103.3

EXHIBIT E (cont.)

SEGMENT	LOCATION	DATE	SPECIES	TOTAL LENGTH (mm)	WEIGHT (g)	RELATIVE WEIGHT
DOWNSTREAM DRESDEN DAM	512	25JUL14	FRESHWATER DRUM	120	21	120.1
DOWNSTREAM DRESDEN DAM	513	25JUL14	FRESHWATER DRUM	333	515	111.9
DOWNSTREAM DRESDEN DAM	514	25JUL14	FRESHWATER DRUM	435	1140	105.2
DOWNSTREAM DRESDEN DAM	512	06AUG14	FRESHWATER DRUM	431	880	83.7
DOWNSTREAM DRESDEN DAM	512	06AUG14	FRESHWATER DRUM	375	750	111.4
DOWNSTREAM DRESDEN DAM	512	06AUG14	FRESHWATER DRUM	341	470	94.7
DOWNSTREAM DRESDEN DAM	512	06AUG14	FRESHWATER DRUM	340	540	109.8
DOWNSTREAM DRESDEN DAM	512	06AUG14	FRESHWATER DRUM	390	790	103.5
DOWNSTREAM DRESDEN DAM	514	06AUG14	FRESHWATER DRUM	476	1460	101.0
DOWNSTREAM DRESDEN DAM	514	06AUG14	FRESHWATER DRUM	422	1130	115.0
DOWNSTREAM DRESDEN DAM	512	19AUG14	FRESHWATER DRUM	376	695	102.3
DOWNSTREAM DRESDEN DAM	513	19AUG14	FRESHWATER DRUM	408	940	106.6
DOWNSTREAM DRESDEN DAM	513	19AUG14	FRESHWATER DRUM	418	860	90.2
DOWNSTREAM DRESDEN DAM	513	19AUG14	FRESHWATER DRUM	348	500	94.4
DOWNSTREAM DRESDEN DAM	513	19AUG14	FRESHWATER DRUM	437	925	84.1
DOWNSTREAM DRESDEN DAM	512	12SEP14	FRESHWATER DRUM	108	14	112.2
DOWNSTREAM DRESDEN DAM	514	12SEP14	FRESHWATER DRUM	436	1120	102.6
DOWNSTREAM DRESDEN DAM	514	12SEP14	FRESHWATER DRUM	121	18	100.2
DOWNSTREAM DRESDEN DAM	515	12SEP14	FRESHWATER DRUM	396	840	104.8
DOWNSTREAM DRESDEN DAM	515	12SEP14	FRESHWATER DRUM	196	87	103.3
DOWNSTREAM DRESDEN DAM	515	12SEP14	FRESHWATER DRUM	120	22	125.8
DOWNSTREAM DRESDEN DAM	515	12SEP14	FRESHWATER DRUM	113	18	124.8
DOWNSTREAM DRESDEN DAM	515	12SEP14	FRESHWATER DRUM	104	13	117.6
DOWNSTREAM DRESDEN DAM	513	22SEP14	FRESHWATER DRUM	115	17	111.4
DOWNSTREAM DRESDEN DAM	514	22SEP14	FRESHWATER DRUM	488	1440	92.0
DOWNSTREAM DRESDEN DAM	515	22SEP14	FRESHWATER DRUM	486	1330	86.1
DOWNSTREAM DRESDEN DAM	515	22SEP14	FRESHWATER DRUM	127	22	104.9

EXHIBIT F:

INCIDENCE OF DISEASE, PARASITISM, AND ABNORMALITIES OF FISH

EXHIBIT F

TABLE F-1. NUMBER OF FISH WITH DEFORMITIES IN DRESDEN POOL AND THE PERCENTAGE THAT DEFORMITIES CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, MAY-SEPTEMBER 2014.

SPECIES	TOTAL WITH DEFORMS	TOTAL WITH DELT ANOMALIES	PERCENT WITH DEFORMS
LONGNOSE GAR	1	1	100.0
GAR sp.	--	--	--
SKIPJACK HERRING	--	--	--
GIZZARD SHAD	1	2	50.0
THREADFIN SHAD	--	--	--
GRASS PICKEREL	--	--	--
CENTRAL STONEROLLER	--	--	--
GOLDFISH	--	--	--
GRASS CARP	--	--	--
COMMON CARP	1	14	7.1
CARP X GOLDFISH HYBRID	--	--	--
SILVER CARP	--	--	--
GOLDEN SHINER	--	--	--
PALLID SHINER	--	--	--
EMERALD SHINER	1	1	100.0
GHOST SHINER	--	--	--
STRIPED SHINER	--	--	--
SPOTTAIL SHINER	--	--	--
RED SHINER	--	1	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
SAND SHINER	--	--	--
REDFIN SHINER	--	--	--
MIMIC SHINER	--	--	--
BLUNTNOSE MINNOW	1	1	100.0
FATHEAD MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
QUILLBACK	--	1	--
SMALLMOUTH BUFFALO	2	8	25.0
BIGMOUTH BUFFALO	--	2	--
BLACK BUFFALO	--	--	--
Ictiobus sp.	--	--	--
SPOTTED SUCKER	--	--	--
SILVER REDHORSE	--	--	--
GOLDEN REDHORSE	--	4	--
SHORTHEAD REDHORSE	--	1	--
Moxostoma sp.	1	1	100.0
YELLOW BULLHEAD	--	--	--
CHANNEL CATFISH	1	38	2.6
FLATHEAD CATFISH	--	1	--
TROUT-PERCH	--	--	--
BANDED KILLIFISH	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--
BROOK SILVERSIDE	--	--	--
WHITE PERCH	--	--	--
YELLOW BASS	--	--	--
ROCK BASS	--	--	--
GREEN SUNFISH	--	4	--
PUMPKINSEED	--	--	--
ORANGESPOTTED SUNFISH	--	--	--
BLUEGILL	--	6	--
NORTHERN SUNFISH	--	4	--
Lepomis HYBRID	--	--	--
Lepomis sp.	--	--	--
SMALLMOUTH BASS	--	1	--
LARGEMOUTH BASS	--	13	--
WHITE CRAPPIE	--	--	--
BLACK CRAPPIE	--	--	--
JOHNNY DARTER	--	--	--
YELLOW PERCH	--	--	--
LOGPERCH	--	--	--
WALLEYE	--	1	--
FRESHWATER DRUM	--	18	--
ROUND GOBY	--	--	--
TOTAL FISH	9	123	7.3

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-2. NUMBER OF FISH WITH LESIONS IN DRESDEN POOL AND THE PERCENTAGE THAT LESIONS CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, MAY-SEPTEMBER 2014.

SPECIES	TOTAL WITH LESIONS	TOTAL WITH DELT ANOMALIES	PERCENT WITH LESIONS
LONGNOSE GAR	--	1	--
GAR sp.	--	--	--
SKIPJACK HERRING	--	--	--
GIZZARD SHAD	--	2	--
THREADFIN SHAD	--	--	--
GRASS PICKEREL	--	--	--
CENTRAL STONEROLLER	--	--	--
GOLDFISH	--	--	--
GRASS CARP	--	--	--
COMMON CARP	--	14	--
CARP X GOLDFISH HYBRID	--	--	--
SILVER CARP	--	--	--
GOLDEN SHINER	--	--	--
PALLID SHINER	--	--	--
EMERALD SHINER	--	1	--
GHOST SHINER	--	--	--
STRIPED SHINER	--	--	--
SPOTTAIL SHINER	--	--	--
RED SHINER	--	1	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
SAND SHINER	--	--	--
REDFIN SHINER	--	--	--
MIMIC SHINER	--	--	--
BLUNTNOSE MINNOW	--	1	--
FATHEAD MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
QUILLBACK	--	1	--
SMALLMOUTH BUFFALO	1	8	12.5
BIGMOUTH BUFFALO	1	2	50.0
BLACK BUFFALO	--	--	--
Ictiobus sp.	--	--	--
SPOTTED SUCKER	--	--	--
SILVER REDHORSE	--	--	--
GOLDEN REDHORSE	1	4	25.0
SHORTHEAD REDHORSE	1	1	100.0
Moxostoma sp.	--	1	--
YELLOW BULLHEAD	--	--	--
CHANNEL CATFISH	8	38	21.1
FLATHEAD CATFISH	--	1	--
TROUT-PERCH	--	--	--
BANDED KILLIFISH	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--
BROOK SILVERSIDE	--	--	--
WHITE PERCH	--	--	--
YELLOW BASS	--	--	--
ROCK BASS	--	--	--
GREEN SUNFISH	--	4	--
PUMPKINSEED	--	--	--
ORANGESPOTTED SUNFISH	--	--	--
BLUEGILL	2	6	33.3
NORTHERN SUNFISH	--	4	--
Lepomis HYBRID	--	--	--
Lepomis sp.	--	--	--
SMALLMOUTH BASS	--	1	--
LARGEMOUTH BASS	1	13	7.7
WHITE CRAPPIE	--	--	--
BLACK CRAPPIE	--	--	--
JOHNNY DARTER	--	--	--
YELLOW PERCH	--	--	--
LOGPERCH	--	--	--
WALLEYE	--	1	--
FRESHWATER DRUM	--	18	--
ROUND GOBY	--	--	--
TOTAL FISH	15	123	12.2

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-3. NUMBER OF FISH WITH TUMORS IN DRESDEN POOL AND THE PERCENTAGE THAT TUMORS CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, MAY-SEPTEMBER 2014.

SPECIES	TOTAL WITH TUMORS	TOTAL WITH DELT ANOMALIES	PERCENT WITH TUMORS
LONGNOSE GAR	--	1	--
GAR sp.	--	--	--
SKIPJACK HERRING	--	--	--
GIZZARD SHAD	1	2	50.0
THREADFIN SHAD	--	--	--
GRASS PICKEREL	--	--	--
CENTRAL STONEROLLER	--	--	--
GOLDFISH	--	--	--
GRASS CARP	--	--	--
COMMON CARP	1	14	7.1
CARP X GOLDFISH HYBRID	--	--	--
SILVER CARP	--	--	--
GOLDEN SHINER	--	--	--
PALLID SHINER	--	--	--
EMERALD SHINER	--	1	--
GHOST SHINER	--	--	--
STRIPED SHINER	--	--	--
SPOTTAIL SHINER	--	--	--
RED SHINER	--	1	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
SAND SHINER	--	--	--
REDFIN SHINER	--	--	--
MIMIC SHINER	--	--	--
BLUNTNOSE MINNOW	--	1	--
FATHEAD MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
QUILLBACK	--	1	--
SMALLMOUTH BUFFALO	--	8	--
BIGMOUTH BUFFALO	--	2	--
BLACK BUFFALO	--	--	--
Ictiobus sp.	--	--	--
SPOTTED SUCKER	--	--	--
SILVER REDHORSE	--	--	--
GOLDEN REDHORSE	--	4	--
SHORTHEAD REDHORSE	--	1	--
Moxostoma sp.	--	1	--
YELLOW BULLHEAD	--	--	--
CHANNEL CATFISH	--	38	--
FLATHEAD CATFISH	--	1	--
TROUT-PERCH	--	--	--
BANDED KILLIFISH	--	--	--
BLACKSTRIPE TOPMINNOW	--	--	--
BROOK SILVERSIDE	--	--	--
WHITE PERCH	--	--	--
YELLOW BASS	--	--	--
ROCK BASS	--	--	--
GREEN SUNFISH	--	4	--
PUMPKINSEED	--	--	--
ORANGESPOTTED SUNFISH	--	--	--
BLUEGILL	--	6	--
NORTHERN SUNFISH	--	4	--
Lepomis HYBRID	--	--	--
Lepomis sp.	--	--	--
SMALLMOUTH BASS	--	1	--
LARGEMOUTH BASS	--	13	--
WHITE CRAPPIE	--	--	--
BLACK CRAPPIE	--	--	--
JOHNNY DARTER	--	--	--
YELLOW PERCH	--	--	--
LOGPERCH	--	--	--
WALLEYE	--	1	--
FRESHWATER DRUM	--	18	--
ROUND GOBY	--	--	--
TOTAL FISH	2	123	1.6

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-4. NUMBER OF FISH WITH DEFORMITIES DOWNSTREAM OF DRESDEN LOCK AND DAM AND THE PERCENTAGE THAT DEFORMITIES CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, MAY-SEPTEMBER 2014.

SPECIES	TOTAL WITH DEFORMS	TOTAL WITH DELT ANOMALIES	PERCENT WITH DEFORMS
LONGNOSE GAR	2	2	100.0
SHORTNOSE GAR	--	--	--
SKIPJACK HERRING	--	--	--
GIZZARD SHAD	--	--	--
THREADFIN SHAD	--	--	--
GOLDFISH	--	--	--
GRASS CARP	--	--	--
COMMON CARP	--	6	--
SILVER CARP	--	--	--
PALLID SHINER	--	--	--
EMERALD SHINER	1	1	100.0
GHOST SHINER	--	--	--
SPOTTAIL SHINER	--	--	--
RED SHINER	--	--	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
SAND SHINER	--	--	--
REDFIN SHINER	--	--	--
MIMIC SHINER	--	--	--
Notropis sp.	--	--	--
BLUNTNOSE MINNOW	--	--	--
FATHEAD MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
QUILLBACK	--	--	--
HIGHFIN CARPSUCKER	--	--	--
SMALLMOUTH BUFFALO	--	5	--
SILVER REDHORSE	--	3	--
RIVER REDHORSE	--	--	--
GOLDEN REDHORSE	--	4	--
SHORTHEAD REDHORSE	--	--	--
Moxostoma sp.	--	--	--
CHANNEL CATFISH	--	64	--
FLATHEAD CATFISH	--	1	--
BLACKSTRIPE TOPMINNOW	--	--	--
BROOK SILVERSIDE	--	--	--
WHITE PERCH	--	--	--
WHITE BASS	--	5	--
ROCK BASS	--	--	--
GREEN SUNFISH	--	3	--
ORANGESPOTTED SUNFISH	--	1	--
BLUEGILL	--	7	--
NORTHERN SUNFISH	--	--	--
Lepomis HYBRID	--	--	--
SMALLMOUTH BASS	1	3	33.3
LARGEMOUTH BASS	--	2	--
BLACK CRAPPIE	--	--	--
WESTERN SAND DARTER	--	--	--
JOHNNY DARTER	--	--	--
BANDED DARTER	--	--	--
LOGPERCH	--	--	--
WALLEYE	--	--	--
FRESHWATER DRUM	--	15	--
ROUND GOBY	--	--	--
TOTAL FISH	4	122	3.3

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-5. NUMBER OF FISH WITH LESIONS DOWNSTREAM OF DRESDEN LOCK AND DAM AND THE PERCENTAGE THAT LESIONS CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, MAY-SEPTEMBER 2014.

SPECIES	TOTAL WITH LESIONS	TOTAL WITH DELT ANOMALIES	PERCENT WITH LESIONS
LONGNOSE GAR	--	2	--
SHORTNOSE GAR	--	--	--
SKIPJACK HERRING	--	--	--
GIZZARD SHAD	--	--	--
THREADFIN SHAD	--	--	--
GOLDFISH	--	--	--
GRASS CARP	--	--	--
COMMON CARP	--	6	--
SILVER CARP	--	--	--
PALLID SHINER	--	--	--
EMERALD SHINER	--	1	--
GHOST SHINER	--	--	--
SPOTTAIL SHINER	--	--	--
RED SHINER	--	--	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
SAND SHINER	--	--	--
REDFIN SHINER	--	--	--
MIMIC SHINER	--	--	--
Notropis sp.	--	--	--
BLUNTNOSE MINNOW	--	--	--
FATHEAD MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
QUILLBACK	--	--	--
HIGHFIN CARPSUCKER	--	--	--
SMALLMOUTH BUFFALO	1	5	20.0
SILVER REDHORSE	1	3	33.3
RIVER REDHORSE	--	--	--
GOLDEN REDHORSE	1	4	25.0
SHORTHEAD REDHORSE	--	--	--
Moxostoma sp.	--	--	--
CHANNEL CATFISH	9	64	14.1
FLATHEAD CATFISH	--	1	--
BLACKSTRIPE TOPMINNOW	--	--	--
BROOK SILVERSIDE	--	--	--
WHITE PERCH	--	--	--
WHITE BASS	--	5	--
ROCK BASS	--	--	--
GREEN SUNFISH	--	3	--
ORANGESPOTTED SUNFISH	--	1	--
BLUEGILL	1	7	14.3
NORTHERN SUNFISH	--	--	--
Lepomis HYBRID	--	--	--
SMALLMOUTH BASS	2	3	66.7
LARGEMOUTH BASS	--	2	--
BLACK CRAPPIE	--	--	--
WESTERN SAND DARTER	--	--	--
JOHNNY DARTER	--	--	--
BANDED DARTER	--	--	--
LOGPERCH	--	--	--
WALLEYE	--	--	--
FRESHWATER DRUM	1	15	6.7
ROUND GOBY	--	--	--
TOTAL FISH	16	122	13.1

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-6. NUMBER OF FISH WITH TUMORS DOWNSTREAM OF DRESDEN LOCK AND DAM AND THE PERCENTAGE THAT TUMORS CONTRIBUTED TO ALL DELT ANOMALIES COMBINED, MAY-SEPTEMBER 2014.

SPECIES	TOTAL WITH TUMORS	TOTAL WITH DELT ANOMALIES	PERCENT WITH TUMORS
LONGNOSE GAR	--	2	--
SHORTNOSE GAR	--	--	--
SKIPJACK HERRING	--	--	--
GIZZARD SHAD	--	--	--
THREADFIN SHAD	--	--	--
GOLDFISH	--	--	--
GRASS CARP	--	--	--
COMMON CARP	--	6	--
SILVER CARP	--	--	--
PALLID SHINER	--	--	--
EMERALD SHINER	--	1	--
GHOST SHINER	--	--	--
SPOTTAIL SHINER	--	--	--
RED SHINER	--	--	--
ROSYFACE SHINER	--	--	--
SPOTFIN SHINER	--	--	--
SAND SHINER	--	--	--
REDFIN SHINER	--	--	--
MIMIC SHINER	--	--	--
Notropis sp.	--	--	--
BLUNTNOSE MINNOW	--	--	--
FATHEAD MINNOW	--	--	--
BULLHEAD MINNOW	--	--	--
RIVER CARPSUCKER	--	--	--
QUILLBACK	--	--	--
HIGHFIN CARPSUCKER	--	--	--
SMALLMOUTH BUFFALO	--	5	--
SILVER REDHORSE	--	3	--
RIVER REDHORSE	--	--	--
GOLDEN REDHORSE	--	4	--
SHORTHEAD REDHORSE	--	--	--
Moxostoma sp.	--	--	--
CHANNEL CATFISH	--	64	--
FLATHEAD CATFISH	--	1	--
BLACKSTRIPE TOPMINNOW	--	--	--
BROOK SILVERSIDE	--	--	--
WHITE PERCH	--	--	--
WHITE BASS	--	5	--
ROCK BASS	--	--	--
GREEN SUNFISH	--	3	--
ORANGESPOTTED SUNFISH	--	1	--
BLUEGILL	--	7	--
NORTHERN SUNFISH	--	--	--
Lepomis HYBRID	--	--	--
SMALLMOUTH BASS	--	3	--
LARGEMOUTH BASS	--	2	--
BLACK CRAPPIE	--	--	--
WESTERN SAND DARTER	--	--	--
JOHNNY DARTER	--	--	--
BANDED DARTER	--	--	--
LOGPERCH	--	--	--
WALLEYE	--	--	--
FRESHWATER DRUM	--	15	--
ROUND GOBY	--	--	--
TOTAL FISH	--	122	--

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-7. NUMBER AND PERCENT OF FISH WITH ALL ANOMALIES IN DRESDEN POOL AND DOWNSTREAM OF DRESDEN LOCK AND DAM, MAY-SEPTEMBER 2014.

SPECIES	DRESDEN POOL #	DRESDEN POOL %	DOWNSTREAM DRESDEN DAM #	DOWNSTREAM DRESDEN DAM %	TOTAL NUMBER AFFECTED	TOTAL NUMBER EXAMINED	TOTAL PERCENT AFFECTED
LONGNOSE GAR	3	20.0	4	40.0	7	25	28.0
SHORTNOSE GAR	--	--	--	--	--	1	--
GAR sp.	--	--	--	--	--	1	--
SKIPJACK HERRING	--	--	--	--	--	3	--
GIZZARD SHAD	2	0.1	--	--	2	1882	0.1
THREADFIN SHAD	--	--	--	--	--	822	--
GRASS PICKEREL	1	33.3	--	--	1	3	33.3
CENTRAL STONEROLLER	--	--	--	--	--	6	--
GOLDFISH	--	--	--	--	--	27	--
GRASS CARP	--	--	--	--	--	2	--
COMMON CARP	20	29.0	9	50.0	29	87	33.3
CARP X GOLDFISH HYBRID	--	--	--	--	--	2	--
SILVER CARP	--	--	--	--	--	2	--
GOLDEN SHINER	2	40.0	--	--	2	5	40.0
PALLID SHINER	--	--	--	--	--	106	--
EMERALD SHINER	4	3.7	3	0.6	7	645	1.1
GHOST SHINER	--	--	--	--	--	8	--
STRIPED SHINER	--	--	--	--	--	4	--
SPOTTAIL SHINER	--	--	--	--	--	253	--
RED SHINER	1	100.0	--	--	1	4	25.0
ROSYFACE SHINER	--	--	--	--	--	20	--
SPOTFIN SHINER	10	2.6	5	1.3	15	757	2.0
SAND SHINER	2	11.1	--	--	2	55	3.6
REDFIN SHINER	--	--	--	--	--	6	--
MIMIC SHINER	--	--	--	--	--	196	--
Notropis sp.	--	--	--	--	--	1	--
BLUNTNOSE MINNOW	2	0.5	--	--	2	593	0.3
FATHEAD MINNOW	--	--	--	--	--	2	--
BULLHEAD MINNOW	--	--	--	--	--	508	--
RIVER CARPSUCKER	1	25.0	2	22.2	3	13	23.1
QUILLBACK	3	75.0	--	--	3	10	30.0
HIGHFIN CARPSUCKER	--	--	--	--	--	4	--
SMALLMOUTH BUFFALO	13	48.1	20	60.6	33	60	55.0
BIGMOUTH BUFFALO	2	100.0	--	--	2	2	100.0
BLACK BUFFALO	1	100.0	--	--	1	1	100.0
Ictiobus sp.	--	--	--	--	--	1	--
SPOTTED SUCKER	--	--	--	--	--	1	--
SILVER REDHORSE	2	2.9	5	38.5	7	81	8.6
RIVER REDHORSE	--	--	--	--	--	1	--
GOLDEN REDHORSE	10	22.7	5	9.3	15	98	15.3
SHORTHEAD REDHORSE	3	2.5	1	6.7	4	136	2.9
Moxostoma sp.	1	2.4	--	--	1	45	2.2
YELLOW BULLHEAD	--	--	--	--	--	3	--
CHANNEL CATFISH	44	78.6	66	95.7	110	125	88.0
FLATHEAD CATFISH	1	12.5	1	25.0	2	12	16.7
TROUT-PERCH	--	--	--	--	--	1	--
BANDED KILLIFISH	3	75.0	--	--	3	4	75.0
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	21	--
BROOK SILVERSIDE	--	--	--	--	--	230	--
WHITE PERCH	--	--	--	--	--	11	--
WHITE BASS	--	--	5	23.8	5	21	23.8
YELLOW BASS	--	--	--	--	--	1	--
ROCK BASS	--	--	--	--	--	28	--
GREEN SUNFISH	10	10.6	4	7.1	14	150	9.3
PUMPKINSEED	--	--	--	--	--	10	--
ORANGESPOTTED SUNFISH	--	--	1	5.6	1	50	2.0
BLUEGILL	8	2.6	12	9.9	20	423	4.7
NORTHERN SUNFISH	4	2.0	--	--	4	300	1.3
Lepomis HYBRID	1	16.7	--	--	1	14	7.1
Lepomis sp.	--	--	--	--	--	3	--
SMALLMOUTH BASS	8	6.2	12	7.4	20	291	6.9
LARGEMOUTH BASS	60	12.5	6	15.4	66	518	12.7
WHITE CRAPPIE	--	--	--	--	--	1	--
BLACK CRAPPIE	--	--	--	--	--	4	--
WESTERN SAND DARTER	--	--	--	--	--	1	--
JOHNNY DARTER	--	--	--	--	--	15	--
BANDED DARTER	--	--	--	--	--	3	--
YELLOW PERCH	2	40.0	--	--	2	5	40.0
LOGPERCH	9	7.4	--	--	9	161	5.6
WALLEYE	1	5.3	1	25.0	2	23	8.7
FRESHWATER DRUM	20	37.7	18	39.1	38	99	38.4
ROUND GOBY	--	--	--	--	--	31	--
TOTAL FISH	254	3.9	180	6.9	434	9038	4.8

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-8. NUMBER AND PERCENT OF FISH WITH DELT ANOMALIES, PARASITES, AND “OTHER” ABNORMALITIES IN DRESDEN POOL AND DOWNSTREAM OF DRESDEN LOCK AND DAM, MAY-SEPTEMBER 2014.

SEGMENT: DRESDEN POOL

SPECIES	DELT #	DELT %	PARST #	PARST %	OTHER #	OTHER %	TOTAL NUMBER AFFECTED	TOTAL NUMBER EXAMINED	TOTAL PERCENT AFFECTED
LONGNOSE GAR	1	6.7	--	--	2	13.3	3	15	20.0
GAR sp.	--	--	--	--	--	--	--	1	--
SKIPJACK HERRING	--	--	--	--	--	--	--	1	--
GIZZARD SHAD	2	0.1	--	--	--	--	2	1807	0.1
THREADFIN SHAD	--	--	--	--	--	--	--	707	--
GRASS PICKEREL	--	--	--	--	1	33.3	1	3	33.3
CENTRAL STONEROLLER	--	--	--	--	--	--	--	6	--
GOLDFISH	--	--	--	--	--	--	--	4	--
GRASS CARP	--	--	--	--	--	--	--	1	--
COMMON CARP	14	20.3	--	--	18	26.1	20	69	29.0
CARP X GOLDFISH HYBRID	--	--	--	--	--	--	--	2	--
SILVER CARP	--	--	--	--	--	--	--	1	--
GOLDEN SHINER	--	--	2	40.0	--	--	2	5	40.0
PALLID SHINER	--	--	--	--	--	--	--	97	--
EMERALD SHINER	1	0.9	3	2.8	--	--	4	108	3.7
GHOST SHINER	--	--	--	--	--	--	--	3	--
STRIPED SHINER	--	--	--	--	--	--	--	4	--
SPOTTAIL SHINER	--	--	--	--	--	--	--	199	--
RED SHINER	1	100.0	--	--	1	100.0	1	1	100.0
ROSYFACE SHINER	--	--	--	--	--	--	--	3	--
SPOTFIN SHINER	--	--	9	2.4	1	0.3	10	378	2.6
SAND SHINER	--	--	2	11.1	--	--	2	18	11.1
REDFIN SHINER	--	--	--	--	--	--	--	5	--
MIMIC SHINER	--	--	--	--	--	--	--	68	--
BLUNTNOSE MINNOW	1	0.2	1	0.2	--	--	2	415	0.5
FATHEAD MINNOW	--	--	--	--	--	--	--	1	--
BULLHEAD MINNOW	--	--	--	--	--	--	--	435	--
RIVER CARPSUCKER	--	--	--	--	1	25.0	1	4	25.0
QUILLBACK	1	25.0	--	--	2	50.0	3	4	75.0
SMALLMOUTH BUFFALO	8	29.6	--	--	11	40.7	13	27	48.1
BIGMOUTH BUFFALO	2	100.0	--	--	1	50.0	2	2	100.0
BLACK BUFFALO	--	--	--	--	1	100.0	1	1	100.0
Ictiobus sp.	--	--	--	--	--	--	--	1	--
SPOTTED SUCKER	--	--	--	--	--	--	--	1	--
SILVER REDHORSE	--	--	1	1.5	1	1.5	2	68	2.9
GOLDEN REDHORSE	4	9.1	1	2.3	6	13.6	10	44	22.7
SHORTHEAD REDHORSE	1	0.8	2	1.7	1	0.8	3	121	2.5
Moxostoma sp.	1	2.4	--	--	--	--	1	41	2.4
YELLOW BULLHEAD	--	--	--	--	--	--	--	3	--
CHANNEL CATFISH	38	67.9	19	33.9	15	26.8	44	56	78.6
FLATHEAD CATFISH	1	12.5	--	--	--	--	1	8	12.5
TROUT-PERCH	--	--	--	--	--	--	--	1	--
BANDED KILLIFISH	--	--	3	75.0	--	--	3	4	75.0
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	18	--
BROOK SILVERSIDE	--	--	--	--	--	--	--	149	--
WHITE PERCH	--	--	--	--	--	--	--	7	--
YELLOW BASS	--	--	--	--	--	--	--	1	--
ROCK BASS	--	--	--	--	--	--	--	22	--
GREEN SUNFISH	4	4.3	4	4.3	3	3.2	10	94	10.6
PUMPKINSEED	--	--	--	--	--	--	--	10	--
ORANGESPOTTED SUNFISH	--	--	--	--	--	--	--	32	--
BLUEGILL	6	2.0	1	0.3	1	0.3	8	302	2.6
NORTHERN SUNFISH	4	2.0	--	--	1	0.5	4	205	2.0
Lepomis HYBRID	--	--	1	16.7	--	--	1	6	16.7
Lepomis sp.	--	--	--	--	--	--	--	3	--
SMALLMOUTH BASS	1	0.8	--	--	7	5.4	8	129	6.2
LARGEMOUTH BASS	13	2.7	41	8.6	9	1.9	60	479	12.5
WHITE CRAPPIE	--	--	--	--	--	--	--	1	--
BLACK CRAPPIE	--	--	--	--	--	--	--	3	--
JOHNNY DARTER	--	--	--	--	--	--	--	9	--
YELLOW PERCH	--	--	2	40.0	--	--	2	5	40.0
LOGPERCH	--	--	9	7.4	--	--	9	122	7.4
WALLEYE	1	5.3	1	5.3	--	--	1	19	5.3
FRESHWATER DRUM	18	34.0	3	5.7	4	7.5	20	53	37.7
ROUND GOBY	--	--	--	--	--	--	--	19	--
TOTAL FISH	123	1.9	105	1.6	87	1.4	254	6431	3.9

TABLE F-8 (cont.)

SEGMENT: DOWNSTREAM DRESDEN DAM

SPECIES	DELT #	DELT %	PARST #	PARST %	OTHER #	OTHER %	TOTAL NUMBER AFFECTED	TOTAL NUMBER EXAMINED	TOTAL PERCENT AFFECTED
LONGNOSE GAR	2	20.0	--	--	2	20.0	4	10	40.0
SHORTNOSE GAR	--	--	--	--	--	--	--	1	--
SKIPJACK HERRING	--	--	--	--	--	--	--	2	--
GIZZARD SHAD	--	--	--	--	--	--	--	75	--
THREADFIN SHAD	--	--	--	--	--	--	--	115	--
GOLDFISH	--	--	--	--	--	--	--	23	--
GRASS CARP	--	--	--	--	--	--	--	1	--
COMMON CARP	6	33.3	--	--	8	44.4	9	18	50.0
SILVER CARP	--	--	--	--	--	--	--	1	--
PALLID SHINER	--	--	--	--	--	--	--	9	--
EMERALD SHINER	1	0.2	2	0.4	--	--	3	537	0.6
GHOST SHINER	--	--	--	--	--	--	--	5	--
SPOTTAIL SHINER	--	--	--	--	--	--	--	54	--
RED SHINER	--	--	--	--	--	--	--	3	--
ROSYFACE SHINER	--	--	--	--	--	--	--	17	--
SPOTFIN SHINER	--	--	5	1.3	--	--	5	379	1.3
SAND SHINER	--	--	--	--	--	--	--	37	--
REDFIN SHINER	--	--	--	--	--	--	--	1	--
MIMIC SHINER	--	--	--	--	--	--	--	128	--
Notropis sp.	--	--	--	--	--	--	--	1	--
BLUNTNOSE MINNOW	--	--	--	--	--	--	--	178	--
FATHEAD MINNOW	--	--	--	--	--	--	--	1	--
BULLHEAD MINNOW	--	--	--	--	--	--	--	73	--
RIVER CARPSUCKER	--	--	--	--	2	22.2	2	9	22.2
QUILLBACK	--	--	--	--	--	--	--	6	--
HIGHFIN CARPSUCKER	--	--	--	--	--	--	--	4	--
SMALLMOUTH BUFFALO	5	15.2	--	--	20	60.6	20	33	60.6
SILVER REDHORSE	3	23.1	--	--	3	23.1	5	13	38.5
RIVER REDHORSE	--	--	--	--	--	--	--	1	--
GOLDEN REDHORSE	4	7.4	--	--	2	3.7	5	54	9.3
SHORTHEAD REDHORSE	--	--	--	--	1	6.7	1	15	6.7
Moxostoma sp.	--	--	--	--	--	--	--	4	--
CHANNEL CATFISH	64	92.8	22	31.9	28	40.6	66	69	95.7
FLATHEAD CATFISH	1	25.0	--	--	1	25.0	1	4	25.0
BLACKSTRIPE TOPMINNOW	--	--	--	--	--	--	--	3	--
BROOK SILVERSIDE	--	--	--	--	--	--	--	81	--
WHITE PERCH	--	--	--	--	--	--	--	4	--
WHITE BASS	5	23.8	--	--	1	4.8	5	21	23.8
ROCK BASS	--	--	--	--	--	--	--	6	--
GREEN SUNFISH	3	5.4	--	--	1	1.8	4	56	7.1
ORANGESPOTTED SUNFISH	1	5.6	--	--	--	--	1	18	5.6
BLUEGILL	7	5.8	4	3.3	2	1.7	12	121	9.9
NORTHERN SUNFISH	--	--	--	--	--	--	--	95	--
Lepomis HYBRID	--	--	--	--	--	--	--	8	--
SMALLMOUTH BASS	3	1.9	4	2.5	6	3.7	12	162	7.4
LARGEMOUTH BASS	2	5.1	3	7.7	3	7.7	6	39	15.4
BLACK CRAPPIE	--	--	--	--	--	--	--	1	--
WESTERN SAND DARTER	--	--	--	--	--	--	--	1	--
JOHNNY DARTER	--	--	--	--	--	--	--	6	--
BANDED DARTER	--	--	--	--	--	--	--	3	--
LOGPERCH	--	--	--	--	--	--	--	39	--
WALLEYE	--	--	--	--	1	25.0	1	4	25.0
FRESHWATER DRUM	15	32.6	4	8.7	5	10.9	18	46	39.1
ROUND GOBY	--	--	--	--	--	--	--	12	--
TOTAL FISH	122	4.7	44	1.7	86	3.3	180	2607	6.9

NOTE: SEINE DATA ARE EXCLUDED.

TABLE F-9. NUMBERS OF FISH EXHIBITING SLIGHT, MODERATE, AND SEVERE FIN EROSION IN DRESDEN POOL AND DOWNSTREAM OF DRESDEN LOCK AND DAM AND THE PERCENTAGE THAT EACH CATEGORY OF FIN EROSION CONTRIBUTED TO ALL FIN EROSION COMBINED, MAY-SEPTEMBER 2014.

SEGMENT: DRESDEN POOL

SPECIES	SLIGHT #	MODERATE #	SEVERE #	TOTAL EROSION %	SLIGHT %	MODERATE %	SEVERE %
COMMON CARP	13	0	0	13	100.0	0.0	0.0
RED SHINER	0	1	0	1	0.0	100.0	0.0
QUILLBACK	1	0	0	1	100.0	0.0	0.0
SMALLMOUTH BUFFALO	5	1	1	7	71.4	14.3	14.3
GOLDEN REDHORSE	3	1	0	4	75.0	25.0	0.0
SHORTHEAD REDHORSE	1	0	0	1	100.0	0.0	0.0
CHANNEL CATFISH	13	1	0	13	100.0	7.7	0.0
GREEN SUNFISH	4	0	0	4	100.0	0.0	0.0
BLUEGILL	5	0	0	5	100.0	0.0	0.0
NORTHERN SUNFISH	3	1	0	4	75.0	25.0	0.0
SMALLMOUTH BASS	1	0	0	1	100.0	0.0	0.0
LARGEMOUTH BASS	12	0	0	12	100.0	0.0	0.0
WALLEYE	1	0	0	1	100.0	0.0	0.0
FRESHWATER DRUM	14	4	0	18	77.8	22.2	0.0
TOTAL FISH	76	9	1	85	89.4	10.6	1.2

SEGMENT: DOWNSTREAM DRESDEN DAM

SPECIES	SLIGHT #	MODERATE #	SEVERE #	TOTAL EROSION %	SLIGHT %	MODERATE %	SEVERE %
COMMON CARP	6	0	0	6	100.0	0.0	0.0
SMALLMOUTH BUFFALO	3	0	1	4	75.0	0.0	25.0
SILVER REDHORSE	1	1	0	2	50.0	50.0	0.0
GOLDEN REDHORSE	3	0	0	3	100.0	0.0	0.0
CHANNEL CATFISH	22	0	0	22	100.0	0.0	0.0
FLATHEAD CATFISH	1	0	0	1	100.0	0.0	0.0
WHITE BASS	5	0	0	5	100.0	0.0	0.0
GREEN SUNFISH	2	1	0	3	66.7	33.3	0.0
ORANGESPOTTED SUNFISH	0	1	0	1	0.0	100.0	0.0
BLUEGILL	5	1	0	6	83.3	16.7	0.0
LARGEMOUTH BASS	2	0	0	2	100.0	0.0	0.0
FRESHWATER DRUM	13	1	0	14	92.9	7.1	0.0
TOTAL FISH	63	5	1	69	91.3	7.2	1.4

NOTE: SEINE DATA ARE EXCLUDED.

RAW DATA LISTING OF FISH WITH ANOMALIES, 2014.

TRIP: 22-23 MAY

		LOCATION										
		501	502	503	506	507A	510	512	513	514	515	TOTAL
		#	#	#	#	#	#	#	#	#	#	#
SPECIES	ANOMALY											
LONGNOSE GAR	Deformed body	-	-	1	-	-	-	-	-	-	-	1
	Emaciated	-	-	1	-	-	-	-	-	-	-	1
COMMON CARP	Eroded fin-slight	-	-	-	1	-	-	-	-	2	-	3
	Deformed fin rays	-	-	-	1	-	-	-	-	2	-	3
GOLDEN SHINER	Blackspot	-	-	1	-	-	-	-	-	-	-	1
EMERALD SHINER	Missing body part	-	-	1	-	-	-	-	-	-	-	1
QUILLBACK	Eroded fin-slight	-	-	-	-	1	-	-	-	-	-	1
SMALLMOUTH BUFFALO	Regenerated scales	-	-	-	-	-	-	-	1	2	-	3
GOLDEN REDHORSE	Eroded fin-slight	-	1	-	-	-	1	-	-	-	-	2
	Lesion	-	-	-	-	-	1	-	-	-	-	1
SHORTHEAD REDHORSE	Eroded fin-slight	-	-	-	-	-	1	-	-	-	-	1
	Lesion	-	-	-	-	-	1	-	-	-	-	1
	Fungus	-	-	-	-	-	1	-	-	-	-	1
CHANNEL CATFISH	Eroded fin-slight	-	-	1	-	-	-	1	-	1	1	4
	Parasite	-	2	2	1	-	-	-	1	1	-	7
	Abrasion	-	-	1	-	-	-	-	-	-	-	1
	Lesion	-	-	1	-	-	-	-	1	-	-	2
	Eroded barbels	1	5	2	1	-	1	3	4	7	1	25
	Emaciated	-	-	1	-	-	-	-	-	-	-	1
FLATHEAD CATFISH	Eroded fin-slight	-	-	-	-	-	-	-	-	1	-	1
	Fungus	-	-	-	-	-	-	-	-	1	-	1
	Eroded barbels	-	-	-	-	-	-	-	-	1	-	1
WHITE BASS	Eroded fin-slight	-	-	-	-	-	-	3	-	1	1	5
	Fungus	-	-	-	-	-	-	1	-	-	-	1
BLUEGILL	Eroded fin-slight	-	1	-	3	-	-	-	-	-	-	4
	Lesion	-	-	-	1	-	-	-	-	-	1	2
	Blackspot	-	-	-	-	-	-	1	-	-	-	1
NORTHERN SUNFISH	Eroded fin-slight	-	-	-	-	-	3	-	-	-	-	3
	Eroded fin-moderate	-	-	1	-	-	-	-	-	-	-	1
	Fungus	-	-	-	-	-	1	-	-	-	-	1
SMALLMOUTH BASS	Emaciated	-	-	-	2	-	1	1	-	1	1	6
LARGEMOUTH BASS	Eroded fin-slight	-	-	-	1	-	-	-	-	-	-	1
	Emaciated	-	-	-	1	-	-	-	-	-	-	1
WALLEYE	Eroded fin-slight	-	1	-	-	-	-	-	-	-	-	1
	Parasite	-	1	-	-	-	-	-	-	-	-	1
FRESHWATER DRUM	Eroded fin-slight	-	1	-	1	1	-	-	-	1	-	4
	Eroded fin-moderate	2	-	-	1	-	-	-	-	-	-	3
	Lesion	-	-	-	-	-	-	-	-	1	-	1
	Emaciated	-	-	-	-	-	-	-	-	1	-	1

EXHIBIT F (cont.)

TRIP: 5-6 JUN

		LOCATION									
		501 #	502 #	503 #	506 #	510 #	512 #	513 #	514 #	515 #	TOTAL #
SPECIES	ANOMALY										
COMMON CARP	Eroded fin-slight	1	-	4	-	1	-	-	-	-	6
	Deformed fin rays	1	-	4	-	1	-	-	-	-	6
GOLDEN SHINER	Blackspot	-	-	-	1	-	-	-	-	-	1
EMERALD SHINER	Deformed body	-	-	-	-	-	1	-	-	-	1
	Blackspot	-	-	-	-	-	-	-	-	1	1
SPOTFIN SHINER	Blackspot	-	-	-	-	-	1	1	-	1	3
BLUNTNOSE MINNOW	Blackspot	-	-	-	-	1	-	-	-	1	2
	Scoliosis	-	-	1	-	-	-	-	-	-	1
SMALLMOUTH BUFFALO	Eroded fin-slight	-	-	1	-	-	-	-	-	-	1
	Deformed fin rays	-	-	1	-	-	-	-	-	-	1
	Regenerated scales	-	-	-	-	-	-	2	-	-	2
GOLDEN REDHORSE	Eroded fin-slight	-	-	-	-	-	-	-	-	1	1
CHANNEL CATFISH	Eroded fin-slight	-	1	1	-	1	2	-	1	4	10
	Deformed fin rays	-	-	1	-	1	2	-	-	4	8
	Eroded barbels	1	3	-	-	2	2	1	2	7	18
ROCK BASS	Blackspot	1	-	-	-	-	-	-	-	-	1
GREEN SUNFISH	Eroded fin-slight	-	-	-	-	-	-	-	1	-	1
BLUEGILL	Eroded fin-slight	1	-	-	-	-	-	-	3	1	5
SMALLMOUTH BASS	Eroded fin-slight	1	-	-	-	-	-	-	-	-	1
	Emaciated	-	-	-	-	-	-	1	-	-	1
LARGEMOUTH BASS	Eroded fin-slight	2	-	-	-	1	1	-	1	-	5
	Deformed fin rays	-	-	-	-	-	-	-	1	-	1
	Abrasion	-	-	-	-	-	1	-	-	-	1
	Emaciated	-	-	-	-	-	1	-	-	-	1
FRESHWATER DRUM	Eroded fin-slight	2	-	-	2	1	-	1	-	1	7

EXHIBIT F (cont.)

TRIP: 10-11 JUL

		LOCATION										
		501	502	503	506	507A	510	512	513	514	515	TOTAL
		#	#	#	#	#	#	#	#	#	#	#
SPECIES	ANOMALY											
LONGNOSE GAR	Emaciated	-	-	-	1	-	-	-	-	1	-	2
COMMON CARP	Deformed fin rays	-	-	-	-	-	-	-	-	1	-	1
RED SHINER	Eroded fin-moderate	-	-	-	1	-	-	-	-	-	-	1
	Deformed fin rays	-	-	-	1	-	-	-	-	-	-	1
SPOTFIN SHINER	Blackspot	-	1	-	-	-	-	-	-	-	-	1
SAND SHINER	Blackspot	-	-	-	-	-	-	-	1	-	-	1
SMALLMOUTH BUFFALO	Eroded fin-slight	-	-	-	1	-	-	-	-	-	-	1
	Eroded fin-severe	-	-	-	1	-	-	-	-	-	-	1
	Deformed fin rays	-	1	-	2	-	-	1	-	2	-	6
	Abrasion	-	-	-	-	-	-	-	-	2	-	2
	Lesion	-	-	-	-	-	-	-	-	-	1	1
	Regenerated scales	-	-	-	1	-	-	-	-	-	3	4
	Missing body part	-	-	-	1	-	-	-	-	-	-	1
	Emaciated	-	-	-	-	-	-	-	-	-	1	1
SILVER REDHORSE	Deformed fin rays	-	-	-	-	-	-	-	-	-	1	1
	Lesion	-	-	-	-	-	-	-	-	-	1	1
	Regenerated scales	-	-	-	-	-	-	-	-	-	2	2
GOLDEN REDHORSE	Eroded fin-moderate	-	-	1	-	-	-	-	-	-	-	1
	Deformed fin rays	-	1	-	-	-	-	-	-	-	-	1
	Regenerated scales	-	1	-	-	-	-	-	-	1	-	2
SHORTHEAD REDHORSE	Regenerated scales	-	-	-	-	-	-	1	-	-	-	1
Moxostoma sp.	Missing body part	-	-	-	-	1	-	-	-	-	-	1
CHANNEL CATFISH	Eroded fin-slight	2	-	-	2	1	-	4	-	1	1	11
	Eroded fin-moderate	-	-	-	1	-	-	-	-	-	-	1
	Deformed fin rays	2	1	-	2	1	-	5	-	2	2	15
	Parasite	2	-	3	-	1	-	4	-	3	1	14
	Abrasion	-	-	-	-	-	-	1	-	-	-	1
	Lesion	-	1	1	1	-	-	1	-	1	-	5
	Eroded barbels	2	1	-	2	1	-	6	-	4	3	19
	Other	-	-	1	-	-	-	-	-	-	-	1
	Emaciated	-	-	-	2	-	-	-	-	-	1	3
GREEN SUNFISH	Eroded fin-slight	1	-	-	-	-	1	-	-	-	-	2
	Fungus	-	-	-	-	-	-	-	-	-	1	1
ORANGESPOTTED SUNFISH	Eroded fin-moderate	-	-	-	-	-	-	1	-	-	-	1
BLUEGILL	Eroded fin-slight	-	-	-	-	-	-	-	-	-	1	1
	Deformed fin rays	-	-	-	-	-	-	-	-	-	1	1
	Parasite	-	-	-	-	-	-	1	-	-	1	2
	Abrasion	-	-	-	-	-	-	-	-	1	-	1
Lepomis HYBRID	Blackspot	-	-	-	1	-	-	-	-	-	-	1
SMALLMOUTH BASS	Parasite	-	-	-	-	-	-	1	1	-	-	2
	Other	1	-	-	-	-	-	-	-	-	-	1
LARGEMOUTH BASS	Eroded fin-slight	-	1	-	-	-	-	-	-	-	-	1
	Fungus	-	-	-	-	1	-	-	-	-	-	1
FRESHWATER DRUM	Eroded fin-slight	2	-	-	-	-	-	-	1	-	-	3
	Deformed fin rays	-	-	-	-	1	-	-	-	-	-	1
	Parasite	-	-	-	-	1	-	-	-	-	-	1
	Regenerated scales	1	-	-	-	-	-	-	-	-	-	1
	Emaciated	-	-	-	-	-	-	-	-	1	-	1

TRIP: 24-25 JUL

		LOCATION											
		501	502	503	506	507	509	510	512	513	514	515	TOTAL
		#	#	#	#	#	#	#	#	#	#	#	#
SPECIES	ANOMALY												
LONGNOSE GAR	Emaciated	-	-	-	-	-	-	-	1	-	-	-	1
COMMON CARP	Eroded fin-slight	-	-	-	-	-	-	-	-	-	1	-	1
	Deformed fin rays	-	-	-	-	-	-	-	-	-	1	-	1
	Emaciated	-	-	-	-	-	-	-	-	-	1	-	1
SPOTFIN SHINER	Blackspot	-	-	-	-	-	-	1	1	-	1	-	3
SAND SHINER	Blackspot	-	-	1	-	2	-	-	-	-	-	-	3
SMALLMOUTH BUFFALO	Missing body part	-	-	-	1	-	-	-	-	-	-	-	1
BIGMOUTH BUFFALO	Lesion	-	-	-	-	-	-	1	-	-	-	-	1
SILVER REDHORSE	Eroded fin-moderate	-	-	-	-	-	-	-	1	-	-	-	1
CHANNEL CATFISH	Eroded fin-slight	-	-	1	-	-	-	-	-	-	-	-	1
	Deformed fin rays	-	-	1	-	-	-	-	-	-	-	-	1
	Parasite	2	-	-	-	-	-	-	-	-	-	-	2
	Lesion	1	-	-	-	-	-	-	-	-	-	-	1
	Eroded barbels	2	1	1	-	-	-	-	-	-	1	1	6
GREEN SUNFISH	Eroded fin-moderate	-	-	-	-	-	-	-	-	1	-	-	1
	Blackspot	-	-	-	2	-	-	-	-	-	-	-	2
BLUEGILL	Parasite	-	-	-	-	-	-	-	-	-	1	-	1
SMALLMOUTH BASS	Deformed body	-	-	-	-	-	-	-	-	1	-	-	1
	Parasite	-	-	-	-	-	-	-	-	1	-	-	1
LARGEMOUTH BASS	Eroded fin-slight	2	-	-	-	-	-	-	-	-	-	-	2
	Blackspot	-	-	1	-	-	1	-	-	-	-	-	2
	Emaciated	1	-	1	-	-	-	-	-	-	-	-	2
YELLOW PERCH	Blackspot	-	-	-	-	-	1	-	-	-	-	-	1
LOGPERCH	Blackspot	-	-	1	-	-	-	-	-	-	-	-	1
FRESHWATER DRUM	Eroded fin-slight	1	-	-	-	-	-	-	3	-	1	-	5
	Eroded fin-moderate	-	-	-	-	-	-	1	-	-	-	-	1
	Deformed fin rays	-	-	-	-	-	-	-	1	-	-	-	1
	Parasite	-	-	-	-	-	-	-	-	-	1	-	1

EXHIBIT F (cont.)

TRIP: 5-6 AUG

		LOCATION									
		501	502	503	506	507A	510	512	514	515	TOTAL
		#	#	#	#	#	#	#	#	#	#
SPECIES	ANOMALY										
LONGNOSE GAR	Deformed body	-	-	-	-	-	-	1	-	-	1
GRASS PICKEREL	Emaciated	-	-	-	-	-	1	-	-	-	1
COMMON CARP	Eroded fin-slight	-	-	1	-	-	1	-	-	-	2
	Deformed fin rays	-	-	1	-	-	1	-	-	-	2
	Deformed body	-	-	1	-	-	-	-	-	-	1
EMERALD SHINER	Blackspot	-	1	-	-	-	-	1	-	-	2
SPOTFIN SHINER	Blackspot	-	-	-	1	-	-	-	-	1	2
	Missing scales	-	-	-	1	-	-	-	-	-	1
RIVER CARPSUCKER	Deformed fin rays	-	-	1	-	-	-	-	-	-	1
Carpiodes sp.	Blackspot	-	-	-	-	-	-	-	1	-	1
SMALLMOUTH BUFFALO	Eroded fin-slight	-	-	-	-	1	-	-	-	-	1
	Deformed fin rays	-	-	-	-	1	-	-	-	-	1
	Lesion	-	-	-	-	1	-	-	-	-	1
	Regenerated scales	-	-	-	1	-	-	-	-	-	1
BIGMOUTH BUFFALO	Deformed fin rays	-	-	-	1	-	-	-	-	-	1
	Eroded body part	-	-	-	1	-	-	-	-	-	1
SILVER REDHORSE	Deformed fin rays	-	-	-	-	-	-	1	-	-	1
	Blackspot	-	1	-	-	-	-	-	-	-	1
CHANNEL CATFISH	Eroded fin-slight	2	-	-	-	-	-	1	-	-	3
	Deformed fin rays	1	-	-	-	-	-	-	-	-	1
	Parasite	1	1	-	1	-	-	2	-	-	5
	Lesion	-	1	-	-	-	-	-	-	-	1
	Eroded barbels	2	-	-	1	-	-	1	-	2	6
GREEN SUNFISH	Eroded fin-slight	1	-	-	-	-	-	-	-	-	1
	Fungus	-	-	-	1	-	-	-	-	-	1
	Blackspot	-	-	-	1	-	-	-	-	-	1
	Other	-	-	-	1	-	-	-	-	-	1
BLUEGILL	Lesion	-	-	1	-	-	-	-	-	-	1
SMALLMOUTH BASS	Fungus	-	-	-	-	-	-	-	-	1	1
LARGEMOUTH BASS	Parasite	-	-	1	-	-	-	-	-	-	1
	Lesion	-	1	-	-	-	-	-	-	-	1
	Blackspot	2	-	-	-	1	-	-	-	1	4
YELLOW PERCH	Blackspot	-	-	1	-	-	-	-	-	-	1
FRESHWATER DRUM	Eroded fin-slight	-	-	-	-	-	-	2	1	-	3
	Eroded fin-moderate	-	-	-	-	-	-	-	1	-	1
	Parasite	-	-	-	-	-	-	1	1	-	2
	Emaciated	-	-	-	-	-	-	-	1	-	1

TRIP: 19-20 AUG

		LOCATION											
		501	502	503	506	507A	509	510	512	513	514	515	TOTAL
		#	#	#	#	#	#	#	#	#	#	#	#
SPECIES	ANOMALY												
LONGNOSE GAR	Missing body part	-	-	-	-	-	-	-	1	-	-	-	1
GIZZARD SHAD	Deformed body	-	-	1	-	-	-	-	-	-	-	-	1
	Tumors	-	-	-	-	1	-	-	-	-	-	-	1
COMMON CARP	Eroded fin-slight	1	1	-	-	-	-	1	-	-	1	-	4
	Deformed fin rays	-	1	-	-	-	-	-	-	-	-	-	1
SPOTFIN SHINER	Blackspot	-	-	-	-	-	-	-	-	-	-	1	1
BLUNTNOSE MINNOW	Tumors	-	-	-	-	-	-	-	-	-	1	-	1
SMALLMOUTH BUFFALO	Eroded fin-slight	-	-	-	1	-	-	-	-	-	-	-	1
BLACK BUFFALO	Deformed fin rays	1	-	-	-	-	-	-	-	-	-	-	1
SILVER REDHORSE	Eroded fin-slight	-	-	-	-	-	-	-	1	-	-	-	1
	Regenerated scales	-	1	-	-	-	-	-	-	-	-	-	1
GOLDEN REDHORSE	Eroded fin-slight	-	-	-	-	-	-	-	-	-	1	1	2
SHORTHEAD REDHORSE	Blackspot	-	-	-	-	1	-	-	-	-	-	-	1
CHANNEL CATFISH	Eroded fin-slight	-	-	-	-	-	-	-	-	-	2	-	2
	Parasite	-	-	-	-	-	-	-	1	1	2	-	4
	Lesion	-	-	-	-	-	-	-	-	-	2	-	2
	Eroded barbels	-	-	-	-	-	-	-	1	-	2	-	3
	Emaciated	-	-	-	-	-	-	-	1	-	2	-	3
FLATHEAD CATFISH	Eroded barbels	-	-	1	-	-	-	-	-	-	-	-	1
BLUEGILL	Deformed fin rays	1	-	-	-	-	-	-	-	-	-	-	1
LARGEMOUTH BASS	Eroded fin-slight	-	-	-	-	1	-	-	-	-	-	-	1
	Deformed fin rays	-	-	-	-	1	-	-	-	-	-	-	1
	Blackspot	3	-	2	-	2	2	3	-	-	-	-	12
FRESHWATER DRUM	Eroded fin-slight	-	-	-	1	-	-	-	-	1	-	-	2

TRIP: 11-12 SEP

		LOCATION										
		501 #	502 #	503 #	506 #	507A #	510 #	512 #	513 #	514 #	515 #	TOTAL #
SPECIES	ANOMALY											
COMMON CARP	Deformed fin rays	1	-	1	1	-	-	-	-	1	1	5
	Regenerated scales	-	-	1	-	1	-	-	-	-	1	3
EMERALD SHINER	Blackspot	1	-	-	-	-	-	-	-	-	-	1
SPOTFIN SHINER	Blackspot	-	-	1	-	-	-	-	-	-	-	1
RIVER CARPSUCKER	Deformed fin rays	-	-	-	-	-	-	1	-	-	-	1
	Regenerated scales	-	-	-	-	-	-	1	1	-	-	2
QUILLBACK	Regenerated scales	2	-	-	-	-	-	-	-	-	-	2
SMALLMOUTH BUFFALO	Eroded fin-slight	-	-	-	1	-	-	1	1	-	-	3
	Eroded fin-severe	-	-	-	-	-	-	-	-	1	-	1
	Deformed fin rays	-	-	-	1	-	-	-	1	-	-	2
	Regenerated scales	-	-	1	1	-	-	2	1	1	1	7
	Eroded body part	-	-	-	-	-	-	-	-	1	-	1
	Emaciated	-	-	-	-	-	-	-	-	1	-	1
GOLDEN REDHORSE	Eroded fin-slight	-	-	-	-	-	1	-	-	-	-	1
	Deformed fin rays	-	1	1	-	-	1	-	-	-	-	3
	Parasite	-	1	-	-	-	-	-	-	-	-	1
	Lesion	-	-	-	-	-	-	-	-	1	-	1
	Regenerated scales	-	1	-	-	-	-	-	-	-	-	1
	Missing scales	-	-	-	-	-	-	-	-	1	-	1
SHORTHEAD REDHORSE	Regenerated scales	-	1	-	-	-	-	-	-	-	-	1
CHANNEL CATFISH	Eroded fin-slight	1	-	-	-	-	-	-	-	1	1	3
	Deformed fin rays	1	-	1	-	-	-	-	-	2	5	9
	Parasite	-	-	2	-	-	-	-	-	3	1	6
	Lesion	-	-	1	-	-	-	-	-	1	2	4
	Fungus	-	-	-	-	-	-	-	-	1	-	1
	Eroded barbels	1	-	1	-	-	-	-	-	4	5	11
BANDED KILLIFISH	Blackspot	-	-	-	-	1	-	-	-	-	-	1
GREEN SUNFISH	Eroded fin-slight	1	-	-	-	-	-	-	-	-	-	1
	Blackspot	-	-	-	1	-	-	-	-	-	-	1
	Emaciated	-	-	-	-	1	-	-	-	-	-	1
BLUEGILL	Parasite	-	-	-	1	-	-	-	-	-	-	1
Lepomis sp.	Eroded fin-severe	-	-	1	-	-	-	-	-	-	-	1
SMALLMOUTH BASS	Abrasion	-	-	-	1	-	-	-	-	-	-	1
	Lesion	-	-	-	-	-	-	-	-	1	-	1
	Fungus	-	-	-	1	-	-	-	-	-	-	1
	Regenerated scales	-	-	-	1	-	-	-	-	-	-	1
LARGEMOUTH BASS	Eroded fin-slight	1	-	-	-	-	-	-	-	-	-	1
	Parasite	-	1	-	-	-	-	-	-	-	-	1
	Fungus	2	-	-	-	-	-	-	-	-	-	2
	Blackspot	7	-	2	-	6	1	-	-	-	-	16
	Regenerated scales	2	-	-	-	-	-	-	-	-	-	2
LOGPERCH	Blackspot	-	-	-	-	1	-	-	-	-	-	1
WALLEYE	Abrasion	-	-	-	-	-	-	-	-	1	-	1
FRESHWATER DRUM	Eroded fin-slight	1	-	1	-	-	-	-	-	-	-	2
	Parasite	-	1	1	-	-	-	-	-	-	1	3
	Regenerated scales	1	-	1	-	-	-	-	-	-	-	2

TRIP: 22-23 SEP

		LOCATION											
		501	502	503	506	507	507A	509	512	513	514	515	TOTAL
		#	#	#	#	#	#	#	#	#	#	#	#
SPECIES	ANOMALY												
GIZZARD SHAD	Eroded fin-moderate	1	-	-	-	-	-	-	-	-	-	-	1
COMMON CARP	Eroded fin-slight	-	-	-	1	-	-	-	1	-	1	-	3
	Deformed fin rays	-	-	-	2	-	-	-	1	-	1	-	4
	Regenerated scales	-	-	-	1	-	-	-	-	-	-	-	1
	Tumors	-	-	-	1	-	-	-	-	-	-	-	1
	Emaciated	-	-	-	1	-	-	-	-	-	-	-	1
EMERALD SHINER	Blackspot	-	-	1	-	-	-	-	-	1	-	-	2
SPOTTAIL SHINER	Blackspot	-	-	-	-	-	-	-	-	1	-	-	1
SPOTFIN SHINER	Blackspot	-	1	1	-	-	-	-	-	-	-	-	2
SMALLMOUTH BUFFALO	Eroded fin-slight	-	-	-	-	-	-	-	-	1	-	-	1
	Eroded fin-moderate	1	-	-	-	-	-	-	-	-	-	-	1
	Deformed fin rays	1	-	-	-	-	-	-	-	-	1	-	2
	Regenerated scales	2	-	-	-	-	-	-	-	1	-	-	3
SILVER REDHORSE	Regenerated scales	-	-	-	-	1	-	-	-	-	-	-	1
GOLDEN REDHORSE	Deformed fin rays	-	-	-	-	-	1	-	-	-	-	-	1
SHORTHEAD REDHORSE	Parasite	-	-	-	-	-	1	-	-	-	-	-	1
CHANNEL CATFISH	Eroded fin-slight	-	-	-	-	-	-	-	1	-	-	-	1
	Eroded fin-moderate	1	-	-	-	-	-	-	-	-	-	-	1
	Deformed fin rays	1	-	-	-	-	-	-	-	-	1	-	2
	Deformed body	-	-	1	-	-	-	-	-	-	-	-	1
	Parasite	-	1	-	-	-	-	-	2	-	-	-	3
	Lesion	1	-	1	-	-	-	-	-	-	-	1	3
	Eroded barbels	1	1	3	-	-	-	-	2	1	1	-	9
	Other	1	-	-	-	-	-	-	-	-	-	-	1
	Emaciated	-	-	-	-	-	-	-	-	-	-	1	1
BANDED KILLIFISH	Blackspot	-	-	-	-	-	1	-	-	-	-	-	1
GREEN SUNFISH	Eroded fin-slight	-	-	-	-	-	-	-	-	-	-	1	1
	Fungus	-	-	-	-	-	1	-	-	-	-	-	1
BLUEGILL	Eroded fin-moderate	-	-	-	-	-	-	-	1	-	-	-	1
SMALLMOUTH BASS	Parasite	-	-	-	-	-	-	-	-	-	1	-	1
	Lesion	-	-	-	-	-	-	-	-	-	-	1	1
	Fungus	-	-	-	1	-	-	-	-	-	-	-	1
	Eroded body part	-	-	-	-	-	-	-	-	-	-	1	1
	Missing scales	-	-	-	-	-	-	-	-	-	-	1	1
LARGEMOUTH BASS	Eroded fin-slight	2	-	1	-	-	-	-	-	-	-	-	3
	Fungus	-	-	-	-	-	-	1	1	-	-	-	2
	Blackspot	2	-	-	2	2	5	3	-	2	1	-	17
YELLOW PERCH	Blackspot	-	-	-	-	-	1	-	-	-	-	-	1
LOGPERCH	Blackspot	-	-	1	-	-	1	-	-	-	-	-	2
FRESHWATER DRUM	Eroded fin-slight	-	-	-	-	-	-	-	-	-	-	1	1
	Other	-	-	-	-	-	-	-	-	-	-	1	1

EXHIBIT G:

RAW DATA LISTING - MACROINVERTEBRATES

EXHIBIT G -- EXELON NUCLEAR - 2014 DRESDEN NUCLEAR STATION MACROINVERTEBRATE STUDY - TAXA SUMMARY
PONAR DATA

SAMPLING TRIP= AUGUST 2014,
LOCATION= 501A,
and DATE= 20AUG14

TAXA	REP A #	REP B #	DENSITY #/m2	DENSITY %
Stylaria lacustris	3	1	38.3	0.73
Aulodrilus pigueti	17	1	172.2	3.30
Branchiura sowerbyi	3	0	28.7	0.55
Limnodrilus cervix	6	1	67.0	1.28
Limnodrilus hoffmeisteri	8	1	86.1	1.65
Limnodrilus udekemianus	14	0	133.9	2.57
Imm. tub. w/bifid chaetae	149	7	1,492.5	28.62
Imm. tub. w/hair & pectinate chaetae	66	8	708.0	13.58
Helobdella	1	0	9.6	0.18
Helobdella stagnalis	1	1	19.1	0.37
Erpobdella	1	0	9.6	0.18
Erpobdella microstoma	3	0	28.7	0.55
Hyalella azteca	55	14	660.2	12.66
Gammarus	23	2	239.2	4.59
Hydracarina	0	1	9.6	0.18
Caenis	1	1	19.1	0.37
Enallagma	1	1	19.1	0.37
Cyrnellus fraternus	0	2	19.1	0.37
Oecetis	1	0	9.6	0.18
Tanypus	0	1	9.6	0.18
Procladius	22	4	248.8	4.77
Ablabesmyia	0	2	19.1	0.37
Nilotanypus	0	1	9.6	0.18
Cryptochironomus	8	1	86.1	1.65
Dicrotendipes modestus	5	7	114.8	2.20
Dicrotendipes neomodestus	1	24	239.2	4.59
Dicrotendipes lucifer	0	1	9.6	0.18
Glyptotendipes	1	0	9.6	0.18
Polypedilum halterale grp.	47	11	554.9	10.64
Amnicola	2	2	38.3	0.73
Corbicula fluminea	10	1	105.2	2.02
TOTAL BENTHOS	449	96	5,214.3	100.00

SAMPLING TRIP= AUGUST 2014,
LOCATION= 502,
and DATE= 20AUG14

	REP A	REP B	DENSITY	
	#	#	#/m2	%
TAXA				
Turbellaria	4	0	38.3	0.59
Plumatella	1	0	9.6	0.15
Branchiura sowerbyi	5	2	67.0	1.04
Limnodrilus hoffmeisteri	1	0	9.6	0.15
Limnodrilus udekemianus	7	6	124.4	1.93
Imm. tub. w/bifid chaetae	7	3	95.7	1.48
Imm. tub. w/hair & pectinate chaetae	1	0	9.6	0.15
Hirudinea	0	2	19.1	0.30
Placobdella montifera	1	0	9.6	0.15
Erpobdella microstoma	0	6	57.4	0.89
Gammarus	2	5	67.0	1.04
Hydracarina	9	0	86.1	1.34
Tricorythodes	1	0	9.6	0.15
Caenis	2	2	38.3	0.59
Hexagenia limbata	32	3	334.9	5.19
Corixidae	13	15	267.9	4.15
Cyrnellus fraternus	3	0	28.7	0.45
Hydroptila	0	2	19.1	0.30
Oecetis	4	0	38.3	0.59
Dubiraphia	2	6	76.5	1.19
Tanypus	1	0	9.6	0.15
Procladius	9	24	315.7	4.90
Cricotopus sylvestris grp.	2	0	19.1	0.30
Axarus	1	0	9.6	0.15
Chironomus	86	112	1,894.4	29.38
Cryptochironomus	7	0	67.0	1.04
Dicrotendipes modestus	2	0	19.1	0.30
Dicrotendipes neomodestus	3	13	153.1	2.37
Dicrotendipes simpsoni	0	13	124.4	1.93
Glyptotendipes	5	104	1,042.9	16.17
Parachironomus	0	18	172.2	2.67
Polypedilum flavum	0	16	153.1	2.37
Polypedilum halterale grp.	0	6	57.4	0.89
Polypedilum illinoense	2	0	19.1	0.30
Amnicola	56	20	727.1	11.28
Pleurocera	1	0	9.6	0.15
Ferrissia	0	3	28.7	0.45
Corbicula fluminea	2	0	19.1	0.30
Sphaerium	0	6	57.4	0.89
Pisidium	9	3	114.8	1.78
Leptodea fragilis	0	1	9.6	0.15
Dreissena polymorpha	0	2	19.1	0.30
TOTAL BENTHOS	281	393	6,448.5	100.00

EXHIBIT G -- EXELON NUCLEAR - 2014 DRESDEN NUCLEAR STATION MACROINVERTEBRATE STUDY - TAXA SUMMARY
PONAR DATA

SAMPLING TRIP= AUGUST 2014,
LOCATION= 509,
and DATE= 20AUG14

	REP A	REP B	DENSITY	
	#	#	#/m2	%
TAXA				
Aulodrilus limnobius	0	16	153.1	0.86
Aulodrilus pigueti	0	4	38.3	0.21
Branchiura sowerbyi	0	8	76.5	0.43
Limnodrilus	2	44	440.1	2.47
Limnodrilus cervix	0	8	76.5	0.43
Limnodrilus hoffmeisteri	0	4	38.3	0.21
Limnodrilus udekemianus	58	4	593.2	3.33
Imm. tub. w/bifid chaetae	40	380	4,018.4	22.53
Imm. tub. w/hair & pectinate chaetae	2	40	401.8	2.25
Helobdella	2	0	19.1	0.11
Hyalella azteca	12	64	727.1	4.08
Gammarus	12	12	229.6	1.29
Hydracarina	2	0	19.1	0.11
Enallagma	6	4	95.7	0.54
Oecetis	0	4	38.3	0.21
Stenelmis	2	0	19.1	0.11
Tanypus	6	16	210.5	1.18
Procladius	64	124	1,798.7	10.09
Ablabesmyia mallochi	0	8	76.5	0.43
Cricotopus sylvestris grp.	6	0	57.4	0.32
Chironomus	24	84	1,033.3	5.79
Cryptochironomus	6	8	133.9	0.75
Cryptotendipes	2	0	19.1	0.11
Dicrotendipes neomodestus	54	100	1,473.4	8.26
Glyptotendipes	2	0	19.1	0.11
Polypedilum halterale grp.	20	92	1,071.6	6.01
Tanytarsus	84	340	4,056.6	22.75
Amnicola	8	28	344.4	1.93
Corbicula fluminea	12	24	344.4	1.93
Sphaerium	14	0	133.9	0.75
Pisidium	4	4	76.5	0.43
TOTAL BENTHOS	444	1,420	17,833.9	100.00

EXHIBIT G -- EXELON NUCLEAR - 2014 DRESDEN NUCLEAR STATION MACROINVERTEBRATE STUDY - TAXA SUMMARY
PONAR DATA

SAMPLING TRIP= AUGUST 2014,
LOCATION= 510,
and DATE= 20AUG14

	REP A	REP B	DENSITY	
	#	#	#/m2	%
TAXA				
Turbellaria	0	1	9.6	0.24
Nematoda	1	0	9.6	0.24
Aulodrilus pigueti	1	0	9.6	0.24
Limnodrilus	1	1	19.1	0.47
Limnodrilus cervix	4	0	38.3	0.94
Limnodrilus hoffmeisteri	1	2	28.7	0.71
Limnodrilus udekemianus	2	28	287.0	7.08
Imm. tub. w/bifid chaetae	14	33	449.7	11.08
Imm. tub. w/hair & pectinate chaetae	1	5	57.4	1.42
Hirudinea	1	0	9.6	0.24
Placobdella montifera	1	0	9.6	0.24
Erpobdella microstoma	8	12	191.4	4.72
Hyalella azteca	4	57	583.6	14.39
Gammarus	7	7	133.9	3.30
Baetis intercalaris	1	0	9.6	0.24
Tricorythodes	1	0	9.6	0.24
Enallagma	1	1	19.1	0.47
Hydroptila	5	2	67.0	1.65
Ceratopogonidae	0	17	162.6	4.01
Tanypus	1	0	9.6	0.24
Procladius	39	1	382.7	9.43
Ablabesmyia mallochi	0	1	9.6	0.24
Cricotopus bicinctus grp.	14	1	143.5	3.54
Cricotopus sylvestris grp.	9	1	95.7	2.36
Cryptotendipes	2	0	19.1	0.47
Dicrotendipes modestus	0	1	9.6	0.24
Dicrotendipes neomodestus	5	4	86.1	2.12
Dicrotendipes fumidus	1	0	9.6	0.24
Dicrotendipes simpsoni	1	0	9.6	0.24
Parachironomus	4	0	38.3	0.94
Polypedilum flavum	5	1	57.4	1.42
Polypedilum halterale grp.	3	3	57.4	1.42
Polypedilum illinoense	0	2	19.1	0.47
Micropsectra	0	1	9.6	0.24
Rheotanytarsus	2	0	19.1	0.47
Tanytarsus	0	1	9.6	0.24
Amnicola	43	2	430.5	10.61
Pleurocera	11	0	105.2	2.59
Ferrissia	1	0	9.6	0.24
Corbicula fluminea	23	0	220.1	5.42
Sphaerium	17	3	191.4	4.72
Pisidium	1	0	9.6	0.24
TOTAL BENTHOS	236	188	4,056.6	100.00

EXHIBIT G -- EXELON NUCLEAR - 2014 DRESDEN NUCLEAR STATION MACROINVERTEBRATE STUDY - TAXA SUMMARY
PONAR DATA

SAMPLING TRIP= AUGUST 2014,
LOCATION= 512,
and DATE= 19AUG14

	REP A	REP B	DENSITY	
	#	#	#/m2	%
TAXA				
Nematoda	2	0	19.1	0.42
Pristina osborni	0	1	9.6	0.21
Branchiura sowerbyi	1	7	76.5	1.69
Limnodrilus hoffmeisteri	0	1	9.6	0.21
Limnodrilus udekemianus	7	11	172.2	3.81
Erpobdella microstoma	2	0	19.1	0.42
Hyalella azteca	3	2	47.8	1.06
Gammarus	0	8	76.5	1.69
Apocorophium lacustre	16	23	373.1	8.25
Tricorythodes	0	3	28.7	0.63
Caenis	0	3	28.7	0.63
Enallagma	0	1	9.6	0.21
Gomphus	0	1	9.6	0.21
Stylurus	0	1	9.6	0.21
Hydroptila	3	5	76.5	1.69
Nectopsyche	0	1	9.6	0.21
Oecetis	0	2	19.1	0.42
Dubiraphia	0	5	47.8	1.06
Stenelmis	0	4	38.3	0.85
Procladius	0	4	38.3	0.85
Ablabesmyia mallochi	0	15	143.5	3.17
Cricotopus sylvestris grp.	1	2	28.7	0.63
Chironomus	2	11	124.4	2.75
Cryptochironomus	0	9	86.1	1.90
Dicrotendipes modestus	2	0	19.1	0.42
Dicrotendipes neomodestus	0	63	602.8	13.32
Glyptotendipes	0	6	57.4	1.27
Polypedilum halterale grp.	0	106	1,014.2	22.41
Tanytarsus	0	3	28.7	0.63
Amnicola	1	0	9.6	0.21
Pleurocera	19	0	181.8	4.02
Corbicula fluminea	36	80	1,109.8	24.52
TOTAL BENTHOS	95	378	4,525.4	100.00

EXHIBIT G -- EXELON NUCLEAR - 2014 DRESDEN NUCLEAR STATION MACROINVERTEBRATE STUDY - TAXA SUMMARY
PONAR DATA

SAMPLING TRIP= AUGUST 2014,
LOCATION= 515,
and DATE= 19AUG14

	REP A	REP B	DENSITY	
	#	#	#/m2	%
TAXA				
Nais variabilis	0	1	9.6	1.18
Aulodrilus pigueti	0	1	9.6	1.18
Ilyodrilus templetoni	3	0	28.7	3.53
Limnodrilus cervix	6	6	114.8	14.12
Limnodrilus hoffmeisteri	13	8	200.9	24.71
Limnodrilus udekemianus	2	1	28.7	3.53
Imm. tub. w/bifid chaetae	6	6	114.8	14.12
Imm. tub. w/hair & pectinate chaetae	1	3	38.3	4.71
Corixidae	0	1	9.6	1.18
Cricotopus sylvestris grp.	0	1	9.6	1.18
Chironomus	0	1	9.6	1.18
Dicrotendipes neomodestus	2	0	19.1	2.35
Dicrotendipes lucifer	1	0	9.6	1.18
Polypedilum illinoense	1	0	9.6	1.18
Corbicula fluminea	10	11	200.9	24.71
TOTAL BENTHOS	45	40	813.2	100.00

EXHIBIT G -- EXELON NUCLEAR - 2014 DRESDEN NUCLEAR STATION MACROINVERTEBRATE STUDY - TAXA SUMMARY
HESTER-DENDY DATA

SAMPLING TRIP= AUGUST 2014,
LOCATION= 501A,
and DATE= 20AUG14

	NUMBER	DENSITY	
	#	#/m2	%
TAXA			
Turbellaria	3,008	6,404.0	77.23
Dero	8	17.0	0.21
Nais variabilis	8	17.0	0.21
Pristina leidyi	1	2.1	0.03
Hyalella azteca	16	34.1	0.41
Gammarus	130	276.8	3.34
Baetis intercalaris	8	17.0	0.21
Stenonema femoratum	2	4.3	0.05
Cyrnellus fraternus	42	89.4	1.08
Cheumatopsyche	40	85.2	1.03
Hydropsyche orris	8	17.0	0.21
Hydroptila	40	85.2	1.03
Dubiraphia	24	51.1	0.62
Ablabesmyia	8	17.0	0.21
Ablabesmyia mallochi	16	34.1	0.41
Nanocladius distinctus	96	204.4	2.46
Nanocladius crassicornus/rectinervis	96	204.4	2.46
Dicrotendipes modestus	96	204.4	2.46
Dicrotendipes neomodestus	16	34.1	0.41
Dicrotendipes lucifer	96	204.4	2.46
Parachironomus	8	17.0	0.21
Polypedilum flavum	8	17.0	0.21
Polypedilum illinoense	16	34.1	0.41
Rheotanytarsus	24	51.1	0.62
Ferrissia	8	17.0	0.21
Corbicula fluminea	72	153.3	1.85
TOTAL BENTHOS	3,895	8,292.4	100.00

EXHIBIT G -- EXELON NUCLEAR - 2014 DRESDEN NUCLEAR STATION MACROINVERTEBRATE STUDY - TAXA SUMMARY
HESTER-DENDY DATA

SAMPLING TRIP= AUGUST 2014,
LOCATION= 502,
and DATE= 20AUG14

	NUMBER	DENSITY	
	#	#/m2	%
TAXA			
Turbellaria	92	195.9	2.81
Nematoda	8	17.0	0.24
Gammarus	106	225.7	3.24
Orconectes	1	2.1	0.03
Stenacron	110	234.2	3.36
Maccaffertium integrum	8	17.0	0.24
Stenonema femoratum	16	34.1	0.49
Tricorythodes	32	68.1	0.98
Argia	9	19.2	0.27
Enallagma	16	34.1	0.49
Cyrnellus fraternus	305	649.3	9.32
Dineutus	1	2.1	0.03
Dubiraphia	8	17.0	0.24
Macronychus glabratus	8	17.0	0.24
Stenelmis	8	17.0	0.24
Ablabesmyia mallochi	64	136.3	1.95
Nanocladius crassicornus/rectinervis	64	136.3	1.95
Dicrotendipes modestus	64	136.3	1.95
Dicrotendipes neomodestus	32	68.1	0.98
Dicrotendipes lucifer	32	68.1	0.98
Dicrotendipes simpsoni	64	136.3	1.95
Glyptotendipes	2,016	4,292.0	61.58
Parachironomus	32	68.1	0.98
Amnicola	8	17.0	0.24
Pleurocera	169	359.8	5.16
Physa	1	2.1	0.03
TOTAL BENTHOS	3,274	6,970.3	100.00

EXHIBIT G -- EXELON NUCLEAR - 2014 DRESDEN NUCLEAR STATION MACROINVERTEBRATE STUDY - TAXA SUMMARY
HESTER-DENDY DATA

SAMPLING TRIP= AUGUST 2014,
LOCATION= 509,
and DATE= 20AUG14

	NUMBER	DENSITY	
	#	#/m2	%
TAXA			
Turbellaria	33	70.3	0.69
Nais variabilis	1,120	2,384.4	23.34
Pristina leidyi	1,216	2,588.8	25.34
Gammarus	456	970.8	9.50
Stenacron	12	25.5	0.25
Epitheca (Epicordulia)	1	2.1	0.02
Cyrnellus fraternus	465	990.0	9.69
Dineutus	37	78.8	0.77
Ablabesmyia mallochi	43	91.5	0.90
Nanocladius distinctus	21	44.7	0.44
Nanocladius crassicornus/rectinervis	64	136.3	1.33
Dicrotendipes modestus	21	44.7	0.44
Dicrotendipes neomodestus	192	408.8	4.00
Dicrotendipes fumidus	21	44.7	0.44
Dicrotendipes lucifer	491	1,045.3	10.23
Dicrotendipes simpsoni	491	1,045.3	10.23
Glyptotendipes	85	181.0	1.77
Micropsectra	21	44.7	0.44
Corbicula fluminea	1	2.1	0.02
Sphaerium	6	12.8	0.13
Dreissena polymorpha	1	2.1	0.02
TOTAL BENTHOS	4,798	10,214.8	100.00

EXHIBIT G -- EXELON NUCLEAR - 2014 DRESDEN NUCLEAR STATION MACROINVERTEBRATE STUDY - TAXA SUMMARY
HESTER-DENDY DATA

SAMPLING TRIP= AUGUST 2014,
LOCATION= 510,
and DATE= 20AUG14

TAXA	NUMBER #	DENSITY #/m2	%
Turbellaria	50	106.4	5.63
Dero nivea	8	17.0	0.90
Nais communis	3	6.4	0.34
Nais variabilis	88	187.3	9.91
Pristina leidyi	5	10.6	0.56
Hyalella azteca	139	295.9	15.65
Gammarus	51	108.6	5.74
Orconectes	1	2.1	0.11
Stenacron	2	4.3	0.23
Maccaffertium integrum	1	2.1	0.11
Maccaffertium pulchellum	2	4.3	0.23
Tricorythodes	4	8.5	0.45
Enallagma	1	2.1	0.11
Cyrnellus fraternus	118	251.2	13.29
Hydropsyche orris	1	2.1	0.11
Hydroptila	14	29.8	1.58
Ablabesmyia mallochi	16	34.1	1.80
Nanocladius distinctus	16	34.1	1.80
Nanocladius crassicornus/rectinervis	64	136.3	7.21
Dicrotendipes modestus	144	306.6	16.22
Dicrotendipes neomodestus	40	85.2	4.50
Dicrotendipes lucifer	40	85.2	4.50
Dicrotendipes simpsoni	48	102.2	5.41
Polypedilum flavum	16	34.1	1.80
Polypedilum illinoense	8	17.0	0.90
Ferrissia	8	17.0	0.90
TOTAL BENTHOS	888	1,890.5	100.00

EXHIBIT G -- EXELON NUCLEAR - 2014 DRESDEN NUCLEAR STATION MACROINVERTEBRATE STUDY - TAXA SUMMARY
HESTER-DENDY DATA

SAMPLING TRIP= AUGUST 2014,
LOCATION= 512,
and DATE= 20AUG14

	NUMBER	DENSITY	
	#	#/m2	%
TAXA			
Turbellaria	2	4.3	0.91
Nematoda	1	2.1	0.45
Hyalella azteca	45	95.8	20.45
Gammarus	8	17.0	3.64
Argia	1	2.1	0.45
Cyrnellus fraternus	3	6.4	1.36
Cricotopus sylvestris grp.	42	89.4	19.09
Dicrotendipes modestus	4	8.5	1.82
Dicrotendipes neomodestus	4	8.5	1.82
Dicrotendipes simpsoni	2	4.3	0.91
Glyptotendipes	24	51.1	10.91
Parachironomus	4	8.5	1.82
Polypedilum flavum	2	4.3	0.91
Polypedilum illinoense	78	166.1	35.45
TOTAL BENTHOS	220	468.4	100.00

EXHIBIT G -- EXELON NUCLEAR - 2014 DRESDEN NUCLEAR STATION MACROINVERTEBRATE STUDY - TAXA SUMMARY
HESTER-DENDY DATA

SAMPLING TRIP= AUGUST 2014,
LOCATION= 515,
and DATE= 19AUG14

	NUMBER	DENSITY	
	#	#/m2	%
TAXA			
Nais variabilis	2	4.3	0.25
Pristina leidyi	8	17.0	1.02
Hyalella azteca	10	21.3	1.27
Gammarus	33	70.3	4.19
Apocorophium lacustre	8	17.0	1.02
Maccaffertium integrum	2	4.3	0.25
Cyrnellus fraternus	219	466.2	27.79
Cheumatopsyche	6	12.8	0.76
Dubiraphia	2	4.3	0.25
Macronychus glabratus	2	4.3	0.25
Cricotopus sylvestris grp.	4	8.5	0.51
Nanocladius distinctus	76	161.8	9.64
Nanocladius crassicornus/rectinervis	92	195.9	11.68
Dicrotendipes modestus	148	315.1	18.78
Dicrotendipes neomodestus	20	42.6	2.54
Dicrotendipes lucifer	72	153.3	9.14
Glyptotendipes	4	8.5	0.51
Parachironomus	4	8.5	0.51
Polypedilum illinoense	16	34.1	2.03
Stenochironomus	60	127.7	7.61
TOTAL BENTHOS	788	1,677.6	100.00

APPENDIX H

Supportive Reports:
Dresden Nuclear Station 2014 Mussel Survey
Upper Illinois Waterway
River Mile 270.5 – 273.4

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LIST OF FIGURES

LIST OF TABLES

Freshwater Mussel Survey in the Illinois River near the Dresden Nuclear Station (RM 271-272.5)

***Prepared for*:**

Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, Illinois 60555

***Prepared by*:**

EA Engineering, Science, and Technology, Inc., PBC
444 Lake Cook Road; Suite 18
Deerfield, Illinois 60015

1.0 INTRODUCTION

The Dresden Nuclear Station (DNS) National Pollution Discharge Elimination System (NPDES) Permit (No. IL0002224) was re-issued by the Illinois Environmental Protection Agency (IEPA) 3 November 2011 with an effective date of 1 December 2011. The permit expires 30 November 2016. The current permit contains several special conditions regarding temperature standards, ecological effects, and others. Special Condition 18 states:

Exelon Generation Company, LLC has complied with 35 IAC Code 302.211(f) and Section 316(a) of the Clean Water Act in demonstrating that the thermal discharge from its Dresden Nuclear Power Station has not caused and cannot be reasonably expected to cause significant ecological damage to receiving waters as approved by the Illinois Pollution Control Board in PCB Order 73-359 dated January 17, 1974 and PCB Order 79-134 dated July 9, 1981.

Pursuant to 40 CFR 125.72(c), permittee shall submit an updated §316(a) demonstration with the next permit renewal application.

Exelon Generation Company, LLC (Exelon) is evaluating current and future operating options for DNS. In order to comply with Special Permit Condition 18 for DNS's upcoming NPDES renewal application, EA Engineering, Science, and Technology, Inc., PBC (EA), in support of Exelon, developed a §316(a) Study Plan that includes hydrothermal and biological studies to provide data for examining thermal effects associated with DNS's current as well as potential future operations. This mussel survey was completed as part of the overall §316(a) Study Plan.

EA prepared and submitted the DNS Mussel Survey Work Plan to the U.S. Fish and Wildlife Service (USFWS) on 4 September 2014 to comply with federal threatened and endangered species permit requirements for conducting the survey (Federal Permit No. TE94321A-1). The plan included a description of the survey methodology and reporting schedule. The purpose of the mussel survey was to characterize the unionid mussel assemblage and habitat within the thermal plume upstream of the Dresden Island Lock and Dam and downstream of the dam. The Mussel Survey Work Plan was approved 22 September (Exhibit A).

The survey area included approximately 2,300 meters of the Illinois River (river miles 271-272.5) within the Upper Illinois Waterway (UIW) including approximately 400 meters upstream of the DNS discharge to the Dresden Island Lock and Dam and from the tailwater to Little Dresden Island (Figure H-1). Federally-protected mussels are not known to currently exist within the vicinity of the DNS. The federally endangered sheepnose (*Plethobasus cyphyus*) once existed in the Illinois and Des Plaines Rivers but was last observed in 1940 in the Illinois and 1970 in the Des Plaines. The sheepnose is now believed extirpated from both the Illinois and Des Plaines Rivers. Current observation records suggest the sheepnose maintains a stable population within the Kankakee River from its confluence with the Iroquois River to approximately 30 river miles downstream (Federal Register 2012a). Historical records also exist for the spectaclecase (*Cumberlandia monodonta*) in the Illinois, Des Plaines, and Kankakee Rivers. The spectaclecase is believed extirpated from these rivers and has not been observed since 1914 in the Illinois, 1921 in the Des Plaines and since 1906 in the Kankakee (Federal

Register 2012a). Fresh dead specimens of snuffbox (*Epioblasma triquetra*) were found in the Kankakee River in Will County in 1988 and only relic shells have been found since 1991 (Federal Register 2012b).

2.0 METHODS

The survey used a systematic sampling design employing semi-quantitative transect sampling and timed visual searches. Mussel data included species, age, and size (length and height). Habitat information was collected concurrent with transect mussel sampling and consisted of observations of substrate type, unique conditions (e.g., scour, deposition, and debris), and depth.

2.1 MUSSEL SURVEY

The mussel survey was implemented by Chad Lewis of Lewis Environmental Consulting, LLC, and his team of divers under the direction of an EA scientist. The divers used surface supplied air diving equipment with voice communications. Diver search and navigation efforts during sampling were assisted by underwater lights and survey activities were monitored via audio communications. All species encountered were sent to the boat for identification and measurements, documented with digital photographs, and then returned to the approximate area where they were collected.

2.1.1 Semi-Quantitative Sampling

Semi-quantitative mussel sampling was completed upstream and downstream of the Dresden Island Lock and Dam using transects extending perpendicular to river flow from the left and right descending banks. A total of 30 transects were surveyed and included eight downstream Dresden Island Lock and Dam between the north side of Big Dresden Island and the right descending bank and 22 transects above Dresden Island Lock and Dam extending approximately 400 meters (m) upstream of the DNS discharge (Figure H-2). Each transect was sub-divided into 10 m segments (i.e., 0-10 m, 10-20 m, etc.) and searched within 0.5 m on both sides of the transect line, resulting in a search are of 10 m^2 for each transect segment. Divers searched using visual and tactile cues along the substrate surface as well as approximately within the upper five centimeters of substrate. Divers sent all live mussels encountered within a transect segment to the surface for identification. Data for each segment included the total number of each species, size, and the approximate age of each individual using external shell annuli.

2.1.2 Qualitative Sampling

Qualitative sampling consisted of 15-minute searches between transects that focused on areas where substrate was favorable and/or interpolated from mussel data collected during the adjacent semi-quantitative surveys (Figure H-2). Searches were conducted between transects for a total of 24 qualitative samples. Divers movements were tracked using a GPS to estimate the area searched during each qualitative sample.

2.2 HABITAT ASSESSMENT

The substrate was visually examined by the diver at depth to estimate the percent composition of the major substrate types using the Wentworth scale (e.g., sand, gravel, and cobble) and communicated to the biologist on the boat where the information was recorded in field logbooks. Depth was recorded at the end of each segment.

3.0 RESULTS

The survey was completed 23-27 October 2014 in accordance with the approved work plan using semi-quantitative and qualitative methods to characterize the mussel community and habitat characteristics within the study area (Figure H-3). River conditions including stage, velocity, and clarity were near base flow conditions. A photographic log of the survey results is provided in Exhibit B.

3.1 MUSSELS

A total of 3,349 individuals representing 25 species were collected within the survey area from the semi-quantitative and qualitative sampling efforts (Table H-1); 928 individuals representing 20 species were collected downstream (Table H-2) and 2,421 individuals representing 24 species were collected upstream of Dresden Island Lock and Dam (Table H-3). The most abundant species encountered during the survey was the threeridge (*Amblema plicata*) which represented 57.7 percent of the total followed by mucket (*Actinonaias ligamentina*) with 8.2 percent of the total and pink heelsplitter (*Potamilus alatus*) with 7.8 percent of the total. Each of the other 22 species comprised less than seven percent and collectively comprised 26.3 percent of the total abundance. Those three species were also the most abundant species encountered downstream of Dresden Island Lock and Dam, representing 35.8 percent, 18.1 percent, and 8.7 percent, respectively. The same three species were abundant upstream of Dresden Island Lock and Dam representing, 66.1 percent, 4.3 percent, and 7.5 percent of the total, respectively. Fragile papershell (*Leptodea fragilis*) and mapleleaf (*Quadrula quadrula*) were also abundant upstream with 6.7 percent and 5.1 percent, respectively (Table H-3). *Quadrula quadrula*, *L. fragilis* and pimpleback (*Quadrula pustulosa* were the only other species to comprise more than seven percent of the mussels encountered downstream of Dresden Island Lock and Dam (Table H-2). One species, yellow sandshell (*Lampsilis teres*), was only encountered downstream of the dam. Five species were only encountered upstream of the dam including: rock pocketbook (*Arcidens confragosus*), pink papershell (*Potamilus ohiensis*), giant floater (*Pyganodon grandis*), lilliput (*Toxolasma parvum*), and paper pondshell (*Utterbackia imbecilis*).

Two state threatened species were encountered during the survey, purple wartyback (*Cyclonaias tuberculata*) and black sandshell (*Ligumia recta*). Both species were present upstream and downstream of Dresden Island Lock and Dam. Five adult *C. tuberculata* (mean age = 9.6 years) were collected, including four downstream and one upstream. Four adult *L. recta* (mean age = 9.3 years) were collected, including three downstream and one upstream (Tables H-2 and H-3).

Of the 3,349 mussels collected, 2,271 mussels (68%) were aged. Of those 2,271 mussels, 31 percent were considered juveniles or young individuals (≤ 5years old) and included individuals from 18 of the 25 species encountered during the survey (Table H-1). The remaining 69 percent of aged mussels ranged in age from 6-25 years old. The oldest specimens encountered were washboard (*Megalonaias nervosa*) and included individuals that were 18, 20, and 25 years old. Three species had individuals that were 15 years old or older including *A. ligamentina*, *A. plicata*, and *M. nervosa* (Table H-1). An additional eight species had individuals 10 years old or older including *C. tuberculata*, plain pocketbook (*Lampsilis cardium*), white heelsplitter (*Lasmigona complanata*), *L. recta*, threehorn wartyback (*Obliquaria reflexa*), *P. alatus*, *Q. pustulosa*, and *Q. quadrula*. *Lampsilis cardium* were the oldest on average of all mussels aged at 10.5 years (18 individuals). Adult mussels represented 85 percent of the mussels aged downstream of Dresden Island Lock and Dam compared to 62 percent upstream.

3.1.1 Semi-Quantitative Survey

Surveys conducted at the 30 transects resulted in the collection of 2,305 individuals representing 23 species (Table H-4). Transect surveys resulted in an average of 76.8 mussels per transect (range = 1-238 mussels per transect). Search efforts at Transects 20, 24, and 27-30, all located upstream of Dresden Island Lock and Dam, resulted in less than 10 mussels at each transect. These transects, with the exception of Transect 20, are located on the left descending bank. Transect 20 is located on the right descending bank upstream of the DNS discharge. Search efforts at Transects 10 and 14-16, all located on the right descending bank upstream of Dresden Island Lock and Dam, opposite and downstream of the DNS discharge, resulted in more than 170 mussels per transect. The transect with the most mussels (238 individuals) was located at Transect 16. *A. plicata*, *P. alatus*, and *L. fragilis*, were the most abundant species at the upstream transects with 64.4, 7.9, and 7.3 percent, respectively. *A. plicata*, *P. alatus*, and *Q. quadrula*, were the most abundant species at the downstream transects with 32.9, 8.6, and 8.0 percent, respectively. *C. tuberculata* were collected at Transect 3, 4, 8 and 14 and *L. recta* were collected at Transects 1, 7, and 15 and were not encountered during the qualitative searches.

Mussel densities were highest (greater than four mussels per square meter) along the right descending bank upstream of Dresden Island Lock and Dam within segments of Transects 9, 10, 15, and 16. Transect segments with mussel densities of four mussels per meter or greater also had relatively high species richness (four to ten species per segment). Mussel densities of greater than two mussels per square meter were encountered within segments of transects along the right descending bank downstream of the DNS discharge (Transects 9, 10, 12, and 14-16), transects along the left descending bank upstream of the DNS discharge (Transects 21-22), and downstream of Dresden Island Lock and Dam primarily along Big Dresden Island (Transects 6-8). Low mussel densities (less than one mussel per square meter) were common along the left descending bank (Transects 23-30) downstream of DNS discharge and the right descending bank (Transects 19-20) upstream of DNS discharge.

3.1.2 Qualitative Survey

A total of 24 qualitative searches, totaling six hours of search time, resulted in the collection of 1,044 individuals representing 20 species (Table H-5). The results of the qualitative searches generally confirmed the pattern of abundance and distribution data collected during the transect survey and indicated large mussel concentrations were not missed within the survey area. Twenty of the 24 qualitative searches encountered mussels at low densities (less than one mussel per square meter); 15 of the 24 encountered mussels at densities of less than 0.5 mussels per square meter. The four qualitative search zones (Q5-Q8) with greater than one mussel per square meter were between transects 13 and 17 along the right descending back upstream of Dresden Island Lock and Dam. The higher density of mussels encountered in Q5-Q8 coupled with the high density of mussels encountered at adjacent Transects 12-17, reveals the presence of the largest aggregation of mussels encountered within the study area (Figure H-3).

The most abundant species in the upstream qualitative searches were *A. plicata*, *P. alatus*, and *Q. quadrula* with 69.7, 6.7, and 6.4 percent, respectively. The most abundant species in the downstream qualitative searches were *A. plicata*, *O. reflexa*, and *Q. quadrula* with 43.5, 12.3, and 9.5 percent, respectively. Two species were only encountered during the qualitative searches: *A. confragosus* (1 juvenile) and *P. ohiensis* (1 juvenile).

3.2 HABITAT

Substrate composition was observed and estimated at each 10 m segment during the semi-quantitative transect survey. The substrate types within each segment were grouped and averaged to characterize substrate types per transect (Table H-6). Gravel was the predominant substrate type across all transects, representing 32.3 percent of total substrate followed by silt, sand, and clay at 22.6, 20.4, and 11.2 percent, respectively. Substrate composition differed noticeably upstream and downstream of Dresden Island Lock and Dam. The predominant substrate downstream was gravel (59.0 percent), followed by sand (24.3 percent) and cobble (13.6 percent). The predominant substrate upstream of Dresden Island Lock and Dam consisted of silt (30.9 percent), gravel (22.6 percent), sand (19.0 percent) and clay (14.9 percent).

Substrate at transects with mussel densities greater than two mussels per square meter (Transects 6-10, 12, 14-18, and 21-22) consisted primarily of gravel (35 percent), silt (25 percent), sand (17 percent) and clay (11 percent). Mean substrate composition within segments containing the highest mussel densities (four mussels per square meter or greater) consisted of 60 percent silt, 16.7 percent gravel, 13 percent sand, and 5 percent clay. Substrate at transects with the lowest mussel densities (Transects 19-20 and 23-30) consisted primarily of sand (31 percent), silt (31 percent), clay (17 percent), gravel (9 percent) and cobble (8 percent).

River depth averaged 10.9 feet deep within the study area with a maximum depth of 24 feet. Depths of greater than 20 feet were limited to transects located on the right descending bank upstream of Dresden Island Lock and Dam. Mean depth downstream of Dresden Island Lock and Dam was 4.9 feet whereas mean depth upstream was 12.6 feet. Mean depth was 14.3 feet deep at locations where mussels were encountered at higher densities (two mussels per square meter or greater).

3.3 SUMMARY

A total of 3,349 individuals representing 25 species were collected within the survey area from the semi-quantitative and qualitative sampling efforts. Two state threatened species were encountered upstream and downstream of Dresden Island Lock and Dam during the survey, *C. tuberculata* (five adults) and *L.* (four adults). The most abundant species encountered during the survey was *A. plicata* which comprised over half of the total number collected followed by *A.*

ligamentina and *P. alatus*, each representing less than ten percent. These three species represented approximately 78 percent of the mussels collected upstream of Dresden Island Lock and Dam, and 63 percent downstream.

Approximately one-third of the mussels observed within the study area were juveniles (one to four years old), with individuals from 18 of the 25 species collected. The mussel assemblage upstream of Dresden Island Lock and Dam had almost twice the proportion of juveniles, approximately one third of the sample, compared to a primarily adult (6-25 years old) assemblage downstream.

Substrate downstream of Dresden Island Lock and Dam was generally coarser than upstream and consisted primarily of gravel, sand, and cobble. Substrates upstream of Dresden Island Lock and Dam consisted primarily of silt, gravel, and sand. Mussel densities greater than two mussels per square meter were located in substrates that consisted of a mix of gravel (35 percent), silt (25 percent), sand (17 percent), and clay (11 percent). Higher mussel densities (four mussels per square meter or greater) were present in generally softer substrates consisting of silt (60 percent), gravel (16.7 percent), and sand (13 percent). Average depth within the survey area was 10.9 feet with a maximum depth of 24 feet. Depths of greater than 20 feet were limited to transects located on the right descending bank upstream of Dresden Island Lock and Dam. Mean depth in locations with high mussel densities (two mussels per square meter or greater) was 14.3 feet.

Data were aggregated for groups of transects based on their location to better understand the distribution of mussels within the study area (Figure H-4). Data within transect groups, including numbers of mussels, density, depth, and substrate, were averaged to represent the general condition of each of the following areas: Group A (Transects 1-4) is located along the right descending bank downstream of Dresden Island Lock and Dam; Group B (Transects 5-8) is located along the left descending bank of Big Dresden Island; Group C (Transects 9-18) is located on the right descending bank opposite and downstream of the DNS discharge; Group D (Transects 19-20) is located upstream of Group C and upstream of the DNS discharge; Group E (Transects 21-22) is located upstream of the DNS discharge on the left descending bank; and Group F (Transects 23-30) is located immediately downstream of the DNS discharge along the left descending bank.

Transect groups are described here in order of highest mussel densities to lowest. Group B had the highest mean mussel density of all transect groups at 1.75 mussels per square meter and a mean depth of 5.6 feet; substrate consisted primarily of gravel (46.8 percent), sand (38.8 percent), and cobble (12.5 percent). Group C had the second highest mussel density at 1.3 mussels per square meter and a mean depth of 16.6 feet; substrate consisted primarily of gravel (38 percent), silt (33.3 percent), clay (7.8 percent), and sand (6.9 percent). Group E mussel density was the third highest at 1.1 mussels per square meter and a mean depth of 7.6 feet; substrate consisted primarily of clay (40 percent), sand (20 percent), silt (17.5 percent), gravel (12.5 percent), and cobble (10 percent). Group A had a mean density of 0.9 mussels per square meter and a mean depth of 5.7 feet; substrate consisted primarily of gravel (71.3 percent), cobble (14.6 percent), and sand (10 percent). Group F had the second lowest mussel density at 0.14 mussels per square meter at a mean depth of 9.5 feet; substrate consisted primarily of sand (38.5 percent), silt (37.6 percent), and clay (17.4 percent). Group D had the lowest mean mussel density at 0.1 mussels per square meter and a mean depth of 19.8 feet; substrate consisted primarily of cobble (38.6 percent), gravel (20.5 percent), and clay (15 percent).

4.0 DISCUSSION

The mussel survey was completed 23-27 October 2014 using a systematic sampling design employing semi-quantitative transect sampling and timed visual searches. Results show the presence of a diverse mussel assemblage upstream and downstream of the Dresden Island Lock and Dam. Recruitment was evident throughout the study area although the downstream of Dresden Island Lock and Dam assemblage had a greater proportion of adult mussels than upstream. Two state threatened species, *C. tuberculata* and *L. recta* were encountered within the study area and were slightly more abundant downstream of Dresden Island Lock and Dam. Substrate and depth varied between upstream versus downstream of Dresden Island Lock and Dam but also varied within the upstream study reach. The downstream Dresden Island Lock and Dam study reach was generally shallower (mean depth of approximately five feet) and substrates were coarser (i.e., gravel, sand and cobble). The upstream study reach was typical of an impounded river channel with a mean depth of approximately 13 feet and substrates with a generally larger proportion of finer sediments such as silt, sand and clay in addition to gravel. Depth does not appear to be a contributing factor to density in the study area due to the presence of high mussel densities located both upstream and downstream of Dresden Island Lock and Dam. The highest densities of mussels occurred in areas with a diverse substrate mix of silt, gravel, and sand. The largest concentration and highest densities of mussels occurred along the right descending bank opposite and downstream of the DNS discharge, near the typical path of the DNS thermal plume. Collectively, these results suggest that the DNS discharge is not adversely affecting freshwater mussels in Dresden Pool or downstream of the Dresden Island Lock and Dam.

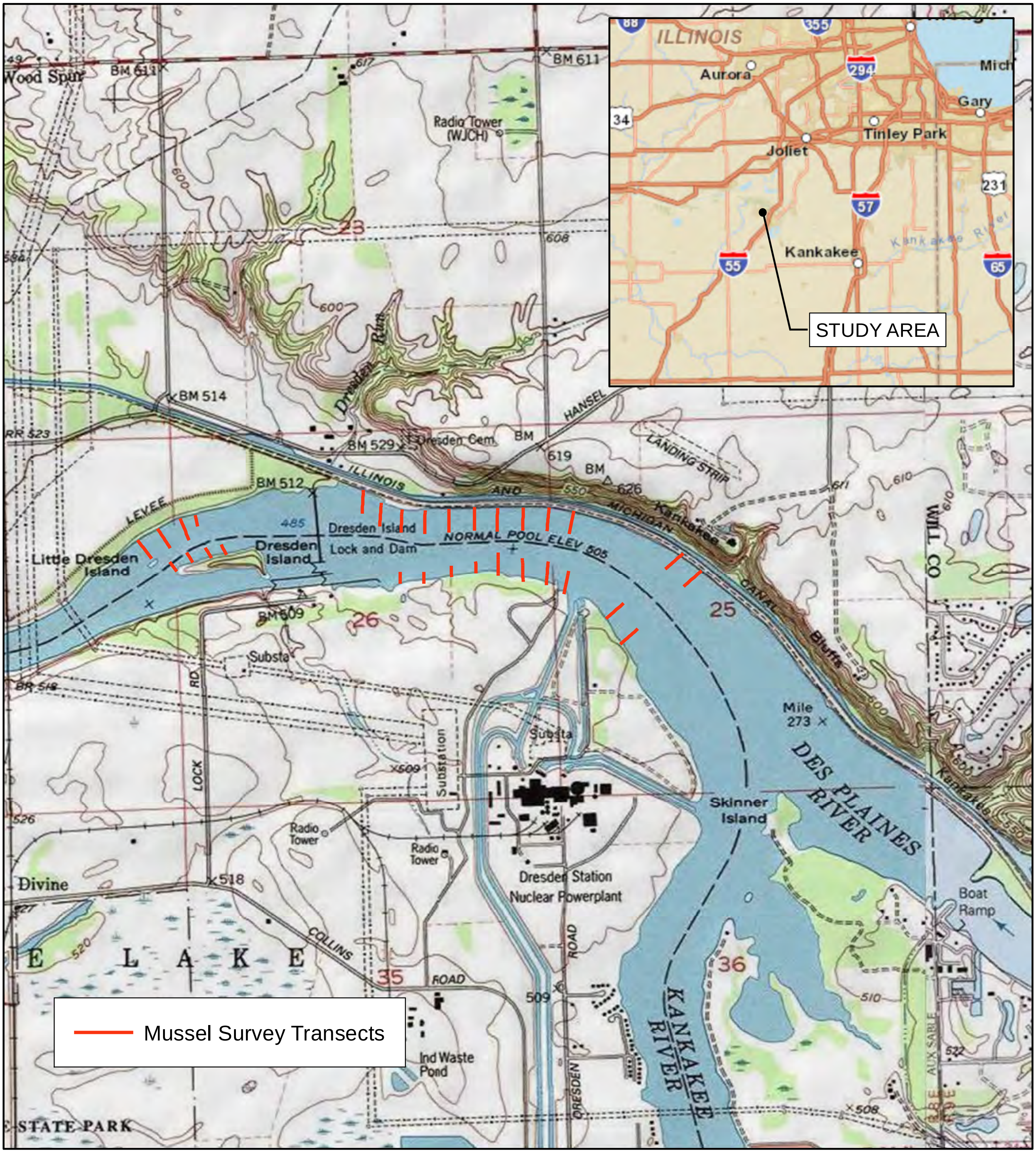
5.0 LITERATURE CITED

U.S. Fish and Wildlife Service (USFWS). 2012a. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Sheepnose and Spectaclecase Mussels Throughout Their Range. Federal Register 77(49):14914-14949.

_____________. 2012b. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Rayed Bean and Snuffbox Mussels Throughout Their Ranges. Federal Register 77(30); 8632-8665.

FIGURES

SOURCE: USA Topo Maps © 2013 National Geographic Society, i-cubed; World Street Map © 2013 Esri et. al



0 2,000 4,000 6,000 8,000 Feet

N

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MUSSEL SURVEY
DRESDEN NUCLEAR STATION
GRUNDY COUNTY, ILLINOIS

SITE LOCATION MAP

Figure H-1

DRAWN BY	PROJECT NO	DATE	SCALE	FIGURE
BJO	15004.04	12/20/2014	1 inch = 2,000 feet	1

SOURCE: BING Maps Hybrid ©2010 Microsoft Corporation and its data suppliers

0 600 1,200 1,800 2,400 Feet

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DRAWN BY	PROJECT NO	DATE
BJO	15004.04	12/21/2014

MUSSEL SURVEY
DRESDEN NUCLEAR STATION
GRUNDY COUNTY, ILLINOIS

SURVEY MAP
Figure H-2

SCALE	FIGURE
1 inch = 600 feet	2

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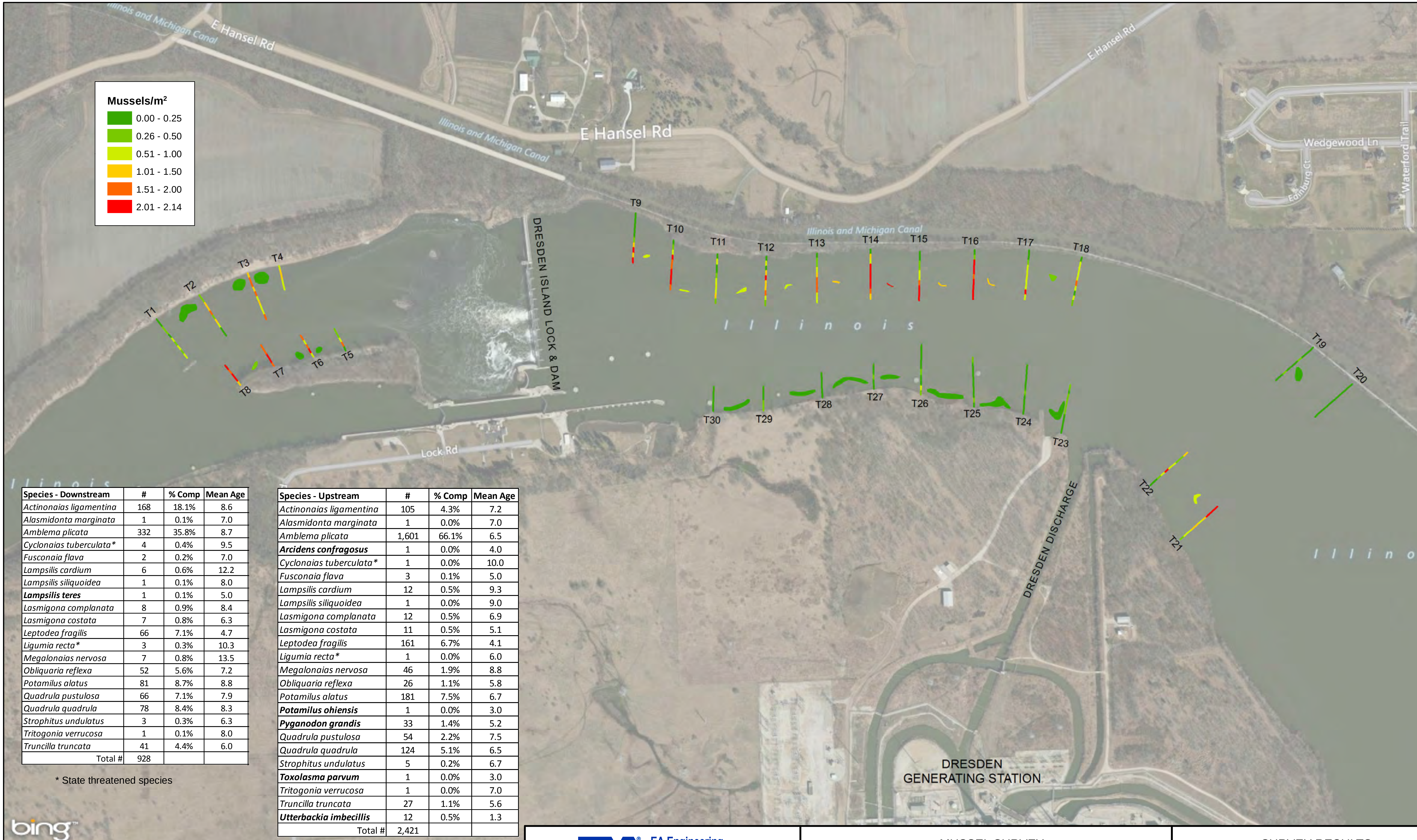
SOURCE: Bing Maps Hybrid ©2010 Microsoft Corporation and its data suppliers



Species - Downstream	#	% Comp	Mean Age
Actinonaias ligamentina	168	18.1%	8.6
Alasmidonta marginata	1	0.1%	7.0
Amblema plicata	332	35.8%	8.7
*Cyclonaias tuberculata**	4	0.4%	9.5
Fusconaia flava	2	0.2%	7.0
Lampsilis cardium	6	0.6%	12.2
Lampsilis siliquoidea	1	0.1%	8.0
Lampsilis teres	1	0.1%	5.0
Lasmigona complanata	8	0.9%	8.4
Lasmigona costata	7	0.8%	6.3
Leptodea fragilis	66	7.1%	4.7
*Ligumia recta**	3	0.3%	10.3
Megalonaias nervosa	7	0.8%	13.5
Obliquaria reflexa	52	5.6%	7.2
Potamilus alatus	81	8.7%	8.8
Quadrula pustulosa	66	7.1%	7.9
Quadrula quadrula	78	8.4%	8.3
Strophitus undulatus	3	0.3%	6.3
Tritogonia verrucosa	1	0.1%	8.0
Truncilla truncata	41	4.4%	6.0
Total #	928		

* State threatened species

Species - Upstream	#	% Comp	Mean Age
Actinonaias ligamentina	105	4.3%	7.2
Alasmidonta marginata	1	0.0%	7.0
Amblema plicata	1,601	66.1%	6.5
Arcidens confragosus	1	0.0%	4.0
*Cyclonaias tuberculata**	1	0.0%	10.0
Fusconaia flava	3	0.1%	5.0
Lampsilis cardium	12	0.5%	9.3
Lampsilis siliquoidea	1	0.0%	9.0
Lasmigona complanata	12	0.5%	6.9
Lasmigona costata	11	0.5%	5.1
Leptodea fragilis	161	6.7%	4.1
*Ligumia recta**	1	0.0%	6.0
Megalonaias nervosa	46	1.9%	8.8
Obliquaria reflexa	26	1.1%	5.8
Potamilus alatus	181	7.5%	6.7
Potamilus ohiensis	1	0.0%	3.0
Pyganodon grandis	33	1.4%	5.2
Quadrula pustulosa	54	2.2%	7.5
Quadrula quadrula	124	5.1%	6.5
Strophitus undulatus	5	0.2%	6.7
Toxolasma parvum	1	0.0%	3.0
Tritogonia verrucosa	1	0.0%	7.0
Truncilla truncata	27	1.1%	5.6
Utterbackia imbecillis	12	0.5%	1.3
Total #	2,421		

0 600 1,200 1,800 2,400 Feet

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MUSSEL SURVEY
DRESDEN NUCLEAR STATION
GRUNDY COUNTY, ILLINOIS

SURVEY RESULTS
FIGURE H-3

DRAWN BY	PROJECT NO	DATE	SCALE	FIGURE
BJO	15004.04	12/21/2014	1 inch = 600 feet	3

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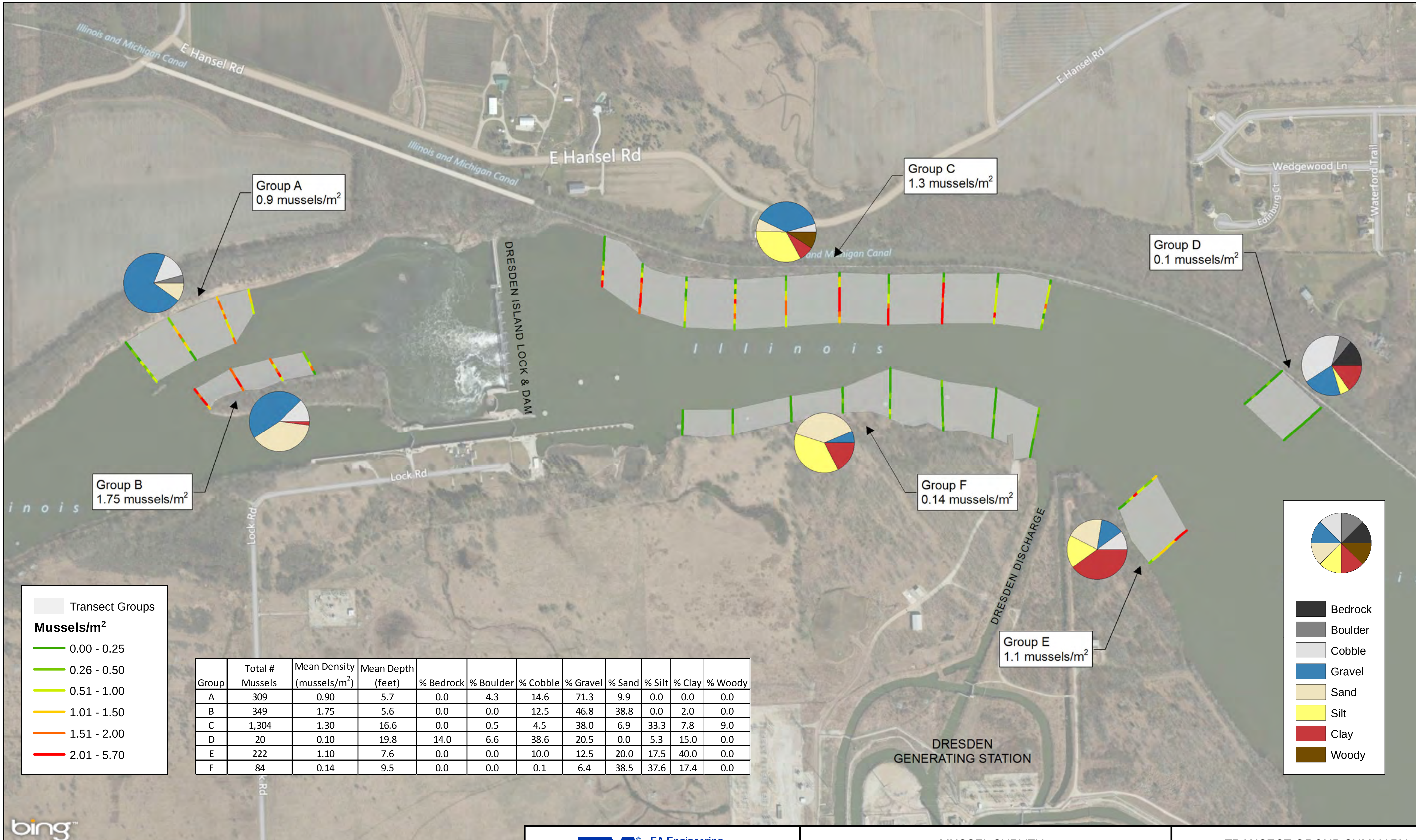
SOURCE: Bing Maps Hybrid ©2010 Microsoft Corporation and its data suppliers



Group	Total # Mussels	Mean Density (mussels/m²)	Mean Depth (feet)	% Bedrock	% Boulder	% Cobble	% Gravel	% Sand	% Silt	% Clay	% Woody
A	309	0.90	5.7	0.0	4.3	14.6	71.3	9.9	0.0	0.0	0.0
B	349	1.75	5.6	0.0	0.0	12.5	46.8	38.8	0.0	2.0	0.0
C	1,304	1.30	16.6	0.0	0.5	4.5	38.0	6.9	33.3	7.8	9.0
D	20	0.10	19.8	14.0	6.6	38.6	20.5	0.0	5.3	15.0	0.0
E	222	1.10	7.6	0.0	0.0	10.0	12.5	20.0	17.5	40.0	0.0
F	84	0.14	9.5	0.0	0.0	0.1	6.4	38.5	37.6	17.4	0.0

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MUSSEL SURVEY
DRESDEN NUCLEAR STATION
GRUNDY COUNTY, ILLINOIS

TRANSECT GROUP SUMMARY
FIGURE H-4

DRAWN BY	PROJECT NO	DATE	SCALE	FIGURE
BJO	15004.04	12/22/2014	1 inch = 600 feet	4

TABLES

Table H-1. Species, composition and age of mussels collected near Dresden Nuclear Station using semi-quantitative and qualitative techniques.
23-27 October 2014

Common Name	Scientific Name	Total #	% Composition	Age Range
Mucket	*Actinonaias ligamentina*	273	8.2%	5-17
Elktoe	*Alasmidonta marginata*	2	0.1%	7
Threeridge	*Amblema plicata*	1933	57.7%	5-17
Rock Pocketbook	*Arcidens confragosus*	1	0.0%	4
Purple Wartyback*	*Cyclonaias tuberculata*	5	0.1%	9-10
Wabash Pigtoe	*Fusconaia flava*	5	0.1%	7
Plain Pocketbook	*Lampsilis cardium*	18	0.5%	6-13
Fatmucket	*Lampsilis siliquoidea*	2	0.1%	8-9
Yellow Sandshell	*Lampsilis teres*	1	0.0%	5
White Heelsplitter	*Lasmigona complanata*	20	0.6%	5-14
Flutedshell	*Lasmigona costata*	18	0.5%	5-7
Fragile Papershell	*Leptodea fragilis*	227	6.8%	5-7
Black Sandshell*	*Ligumia recta*	4	0.1%	6-11
Washboard	*Megalonaias nervosa*	53	1.6%	5-25
Threehorn Wartyback	*Obliquaria reflexa*	78	2.3%	5-10
Pink Heelsplitter	*Potamilus alatus*	262	7.8%	5-14
Pink Papershell	*Potamilus ohiensis*	1	0.0%	3
Giant Floater	*Pyganodon grandis*	33	1.0%	5-9
Pimpleback	*Quadrula pustulosa*	120	3.6%	5-12
Mapleleaf	*Quadrula quadrula*	202	6.0%	5-13
Creeper	*Strophitus undulatus*	8	0.2%	6-7
Lilliput	*Toxolasma parvum*	1	0.0%	3
Pistolgrip	*Tritogonia verrucosa*	2	0.1%	7-8
Deertoe	*Truncilla truncata*	68	2.0%	5-9
Paper Pondshell	*Utterbackia imbecillis*	12	0.4%	1-3
	Total	**3,349**	100%	

* State threatened species

Table H-2. Species, composition and age of mussels collected downstream of Dresden Island Lock and Dam using semi-quantitative and qualitative techniques. 23-27 October 2014

Common Name	Scientific Name	Total #	% Composition	Age Range
Mucket	*Actinonaias ligamentina*	168	18.1%	5-17
Elktoe	*Alasmidonta marginata*	1	0.1%	7
Threeridge	*Amblema plicata*	332	35.8%	5-17
Purple Wartyback*	*Cyclonaias tuberculata*	4	0.4%	9-10
Wabash Pigtoe	*Fusconaia flava*	2	0.2%	7
Plain Pocketbook	*Lampsilis cardium*	6	0.6%	10-13
Fatmucket	*Lampsilis siliquoidea*	1	0.1%	8
Yellow Sandshell	*Lampsilis teres*	1	0.1%	5
White Heelsplitter	*Lasmigona complanata*	8	0.9%	8-12
Flutedshell	*Lasmigona costata*	7	0.8%	5-7
Fragile Papershell	*Leptodea fragilis*	66	7.1%	5-7
Black Sandshell*	*Ligumia recta*	3	0.3%	10-11
Washboard	*Megalonaias nervosa*	7	0.8%	5-25
Threehorn Wartyback	*Obliquaria reflexa*	52	5.6%	5-10
Pink Heelsplitter	*Potamilus alatus*	81	8.7%	5-14
Pimpleback	*Quadrula pustulosa*	66	7.1%	5-12
Mapleleaf	*Quadrula quadrula*	78	8.4%	5-12
Creeper	*Strophitus undulatus*	3	0.3%	6-7
Pistolgrip	*Tritogonia verrucosa*	1	0.1%	8
Deertoe	*Truncilla truncata*	41	4.4%	5-9
	Total	**928**	100%	

* State threatened species

Table H-3. Species, composition and age of mussels collected upstream of Dresden Island Lock and Dam using semi-quantitative and qualitative techniques.
23-27 October 2014

Common Name	Scientific Name	Total #	% Composition	Age Range
Mucket	*Actinonaias ligamentina*	105	8.2%	5-11
Elktoe	*Alasmidonta marginata*	1	0.1%	7
Threeridge	*Amblema plicata*	1601	57.7%	5-16
Rock Pocketbook	*Arcidens confragosus*	1	0.0%	4
Purple Wartyback*	*Cyclonaias tuberculata*	1	0.1%	10
Wabash Pigtoe	*Fusconaia flava*	3	0.1%	7
Plain Pocketbook	*Lampsilis cardium*	12	0.5%	6-12
Fatmucket	*Lampsilis siliquoidea*	1	0.1%	9
White Heelsplitter	*Lasmigona complanata*	12	0.0%	5-14
Flutedshell	*Lasmigona costata*	11	0.6%	6
Fragile Papershell	*Leptodea fragilis*	161	0.5%	5-7
Black Sandshell*	*Ligumia recta*	1	6.8%	6
Washboard	*Megalonaias nervosa*	46	0.1%	5-18
Threehorn Wartyback	*Obliquaria reflexa*	26	1.6%	5-8
Pink Heelsplitter	*Potamilus alatus*	181	2.3%	5-14
Pink Papershell	*Potamilus ohiensis*	1	7.8%	3
Giant Floater	*Pyganodon grandis*	33	0.0%	5-9
Pimpleback	*Quadrula pustulosa*	54	1.0%	5-10
Mapleleaf	*Quadrula quadrula*	124	3.6%	5-13
Creeper	*Strophitus undulatus*	5	6.0%	6-7
Lilliput	*Toxolasma parvum*	1	0.2%	3
Pistolgrip	*Tritogonia verrucosa*	1	0.0%	7
Deertoe	*Truncilla truncata*	27	0.1%	5-7
Paper Pondshell	*Utterbackia imbecillis*	12	2.0%	1-3
	Total	**2,421**	100%	

* State threatened species

Table H-4. Species and composition mussels collected near Dresden Nuclear Station using semi-quantitative techniques.
23-27 October 2014

Common Name	Scientific Name	Total		Downstream		Upstream	
		#	% Comp	#	% Comp	#	% Comp
Mucket	*Actinonaias ligamentina*	247	10.7%	157	23.3%	90	5.5%
Elktoe	*Alasmidonta marginata*	2	0.1%	1	0.1%	1	0.1%
Threeridge	*Amblema plicata*	1272	55.2%	222	32.9%	1050	64.4%
Purple Wartyback*	*Cyclonaias tuberculata*	5	0.2%	4	0.6%	1	0.1%
Wabash Pigtoe	*Fusconaia flava*	2	0.1%	--	--	2	0.1%
Plain Pocketbook	*Lampsilis cardium*	15	0.7%	6	0.9%	9	0.6%
Fatmucket	*Lampsilis siliquoidea*	1	0.0%	1	0.1%	--	--
Yellow Sandshell	*Lampsilis teres*	1	0.0%	1	0.1%	--	--
White Heelsplitter	*Lasmigona complanata*	14	0.6%	4	0.6%	10	0.6%
Flutedshell	*Lasmigona costata*	13	0.6%	6	0.9%	7	0.4%
Fragile Papershell	*Leptodea fragilis*	171	7.4%	52	7.7%	119	7.3%
Black Sandshell*	*Ligumia recta*	4	0.2%	3	0.4%	1	0.1%
Washboard	*Megalonaias nervosa*	42	1.8%	6	0.9%	36	2.2%
Threehorn Wartyback	*Obliquaria reflexa*	37	1.6%	21	3.1%	16	1.0%
Pink Heelsplitter	*Potamilus alatus*	186	8.1%	58	8.6%	128	7.9%
Giant Floater	*Pyganodon grandis*	23	1.0%			23	1.4%
Pimpleback	*Quadrula pustulosa*	80	3.5%	51	7.6%	29	1.8%
Mapleleaf	*Quadrula quadrula*	127	5.5%	54	8.0%	73	4.5%
Creeper	*Strophitus undulatus*	6	0.3%	3	0.4%	3	0.2%
Lilliput	*Toxolasma parvum*	1	0.0%	--	--	1	0.1%
Pistolgrip	*Tritogonia verrucosa*	1	0.0%	--	--	1	0.1%
Deertoe	*Truncilla truncata*	45	2.0%	25	3.7%	20	1.2%
Paper Pondshell	*Utterbackia imbecillis*	10	0.4%	--	--	10	0.6%
	Total	**2,305**	100%	**675**	100%	**1,630**	100%

* State threatened species

Table H-5. Species and composition mussels collected near Dresden Nuclear Station using qualitative searches.
23-27 October 2014

Common Name	Scientific Name	Total		Downstream		Upstream	
		#	% Comp	#	% Comp	#	% Comp
Mucket	*Actinonaias ligamentina*	26	2.5%	11	4.3%	15	1.9%
Threeridge	*Amblema plicata*	661	63.3%	110	43.5%	551	69.7%
Rock Pocketbook	*Arcidens confragosus*	1	0.1%	--	--	1	0.1%
Wabash Pigtoe	*Fusconaia flava*	3	0.3%	2	0.8%	1	0.1%
Plain Pocketbook	*Lampsilis cardium*	3	0.3%	--	--	3	0.4%
Fatmucket	*Lampsilis siliquoidea*	1	0.1%	--	--	1	0.1%
White Heelsplitter	*Lasmigona complanata*	6	0.6%	4	1.6%	2	0.3%
Flutedshell	*Lasmigona costata*	5	0.5%	1	0.4%	4	0.5%
Fragile Papershell	*Leptodea fragilis*	56	5.4%	14	5.5%	42	5.3%
Washboard	*Megalonaias nervosa*	11	1.1%	1	0.4%	10	1.3%
Threehorn Wartyback	*Obliquaria reflexa*	41	3.9%	31	12.3%	10	1.3%
Pink Heelsplitter	*Potamilus alatus*	76	7.3%	23	9.1%	53	6.7%
Pink Papershell	*Potamilus ohiensis*	1	0.1%	--	--	1	0.1%
Giant Floater	*Pyganodon grandis*	10	1.0%	--	--	10	1.3%
Pimpleback	*Quadrula pustulosa*	40	3.8%	15	5.9%	25	3.2%
Mapleleaf	*Quadrula quadrula*	75	7.2%	24	9.5%	51	6.4%
Creeper	*Strophitus undulatus*	2	0.2%	--	--	2	0.3%
Pistolgrip	*Tritogonia verrucosa*	1	0.1%	1	0.4%	--	--
Deertoe	*Truncilla truncata*	23	2.2%	16	6.3%	7	0.9%
Paper Pondshell	*Utterbackia imbecillis*	2	0.2%	--	--	2	0.3%
	Total	**1,044**	100%	**253**	100%	**791**	100%

* State threatened species

Table H-6. Mean composition of sediments from semi-quantitative sampling at Dresden Nuclear Station, October 2014

Transect	% Clay	% Silt	% Sand	% Gravel	% Cobble	% Boulder	% Bedrock	% Wood
T1	--	--	5.0	64.0	26.5	4.5	--	--
T2	--	--	8.0	82.0	8.5	1.5	--	--
T3	--	--	6.5	79.0	8.5	6.0	--	--
T4	--	--	20.0	60.0	15.0	5.0	--	--
T5	--	--	47.0	41.0	12.0	--	--	--
T6	8.0	--	28.0	48.0	16.0	--	--	--
T7	--	--	38.0	50.0	12.0	--	--	--
T8	--	--	42.0	48.0	10.0	--	--	--
T9	--	48.0	6.9	--	--	--	--	52.0
T10	--	70.0	--	22.0	--	--	--	8.0
T11	10.0	1.0	--	67.0	13.0	--	--	9.0
T12	--	47.5	--	41.0	--	--	--	11.5
T13	16.5	47.0	--	26.0	0.5	--	--	10.0
T14	10.0	40.0	--	50.0	--	--	--	--
T15	10.0	17.5	12.5	53.0	2.0	5.0	--	--
T16	27.5	17.5	39.0	16.0	--	--	--	--
T17	2.5	7.0	16.5	72.0	2.0	--	--	--
T18	1.5	37.0	1.5	33.0	27.0	--	--	--
T19	30.0	10.0	--	26.0	34.0	--	--	--
T20	--	0.5	--	15.0	43.1	13.2	28.2	--
T21	50.0	25.0	25.0	--	--	--	--	--
T22	30.0	10.0	15.0	25.0	20.0	--	--	--
T23	39.0	7.0	11.0	--	--	--	--	--
T24	--	--	96.0	4.0	--	--	--	--
T25	--	6.0	94.0	--	--	--	--	--
T26	--	12.0	83.0	4.0	1.0	--	--	--
T27	20.0	80.0	--	--	--	--	--	--
T28	40.0	56.0	4.0	--	--	--	--	--
T29	40.0	60.0	--	--	--	--	--	--
T30	--	80.0	20.0	--	--	--	--	--

Clay: < 0.004 mm; Silt: 0.004-0.06 mm; Sand: 0.06-2 mm; Gravel/Pebble: 2-64 mm; Cobble: 64-256 mm; Boulder: > 256mm

EXHIBITS

EXHIBIT A

Mussel Survey Work Plan

4 September 2014

Ms. Kristen Lundh
U.S. Fish and Wildlife Service
Rock Island Ecological Services Field Office
1511 47th Avenue
Moline, Illinois 61265
Email: Kristen_Lundh@fws.gov

Subject: Mussel Survey Work Plan
Dresden Generating Station
Grundy County, Illinois

Dear Ms. Lundh,

EA Engineering, Science, and Technology, Inc. (EA) is pleased to present this work plan to support NPDES relicensing studies on the lower Des Plaines and Illinois Rivers at the Exelon's Dresden Generating Station in Grundy County, Illinois (Figure 1). The results of this survey will support an evaluation of current and future operating options for Dresden Station as they relate to the ecological effects of its thermal discharge to receiving waters.

A mussel survey of approximately 1,800 meters of the Illinois River will be conducted from approximately 400 meters upstream of the Dresden Station discharge to the Dresden Island Lock and Dam and from below Dresden Island Lock and Dam to Little Dresden Island. The purpose of the survey is to characterize the unionid mussel assemblage and/or habitat that may occur within areas potentially affected by the Dresden Station discharge.

Methods

The survey is proposed for the first week of October and is expected to last 4-5 days; however the start date and length of survey may change based on river conditions. The primary survey method will be through diving operations. All diving will be conducted in accordance with OSHA 1910 Subpart T for Commercial Diving and the crew will include a permitted malacologist (Brian O'Neill; Permit No. TE94321A-1) to oversee implementation of this work plan as well as to complete the sample processing, identification of all mussels collected, and recording all mussel and habitat data.

The survey will use a systematic sampling design using semi-quantitative transect sampling and qualitative timed visual searches. Semi-quantitative sampling will occur upstream and downstream of the Dresden Island Lock and Dam (Figure 1). Transect lines will start from the bank and extend from 50 to 100 meters perpendicular to river flow and will be spaced no greater than 100-meters apart. Approximately 22 transects will be located along the left and right descending banks from approximately 400 meters upstream of the Dresden Station discharge to approximately 200 meters upstream of the Dresden Island Lock and Dam. Approximately eight transects will be located between Big Dresden Island and the right descending bank downstream of the dam. Each transect will be sub-divided into 10-meter segments, with each segment to be searched for a minimum of five minutes. Divers will search within one meter of the transect line, sifting through the upper five centimeters of substrate using visual and tactile cues to find mussels. If unsuitable habitat such as bedrock is dominant within a 10-meter segment, the condition will be noted and the diver will not expend the five-minute search effort.

A minimum of the following data will be recorded for each segment: substrate information (Wentworth size scale), depth, unique conditions (e.g., scour, deposition, and debris), and number of mussels encountered. All mussels encountered within one meter of the transect line, for each 10-meter segment, will be sent to the surface for identification to species by a permitted malacologist. All mussels will be held in mesh bags, suspended in the water, until identified and processed.

The qualitative survey will be completed to supplement semi-quantitative sampling data and to ensure no significant concentrations of mussels are missed between transects. Each qualitative search area will consist of a diver searching for approximately 15 minutes in the direction of highest probability for finding unionid mussels (e.g. preferred substrate, presence of additional mussels). Timed searches will occur in areas identified during the semi-quantitative sampling effort as having relatively high concentrations of mussels. Divers will begin their search in a location where suitable habitat is likely to occur, as inferred from the mussel and habitat data obtained from the transect sampling. All mussels encountered during each of the qualitative searches will be brought to the boat and identified by a permitted malacologist. In addition to timed searches, the river shoreline and banks within the study area will be visually searched for relic shells.

All mussels collected during the semi-quantitative and qualitative searches will be sent to the surface to be identified to species by a permitted malacologist. All unionid mussels will be measured for total length and height, and digital photographs will be taken. Live unionid mussels will be returned close to the area from which they were collected.

If a federally-listed species is encountered, the mussel will be returned to the substrate by a diver, hand-placed as close to the point of capture, and a GPS location will be recorded.

Data analysis will include a characterization of the available habitat as it relates to mussels and visual representations of the location and extent of mussels and potential mussel habitat within the project area using GIS. Within 24 hours of completion of the survey, USFWS and Illinois Department of Natural Resources (ILDNR) will be notified if any protected species or other unusual occurrences were observed during the field effort. A survey report will be submitted to the USFWS and ILDNR prior to January 31, 2015 that includes the number and locations of mussels encountered during the survey, photographs of each species identified, and habitat conditions within the study area.

We respectfully request your approval of this Mussel Survey Work Plan. Please contact me at 847.607.6482 or boneill@eaest.com with any questions or comments regarding this submittal or the overall project.

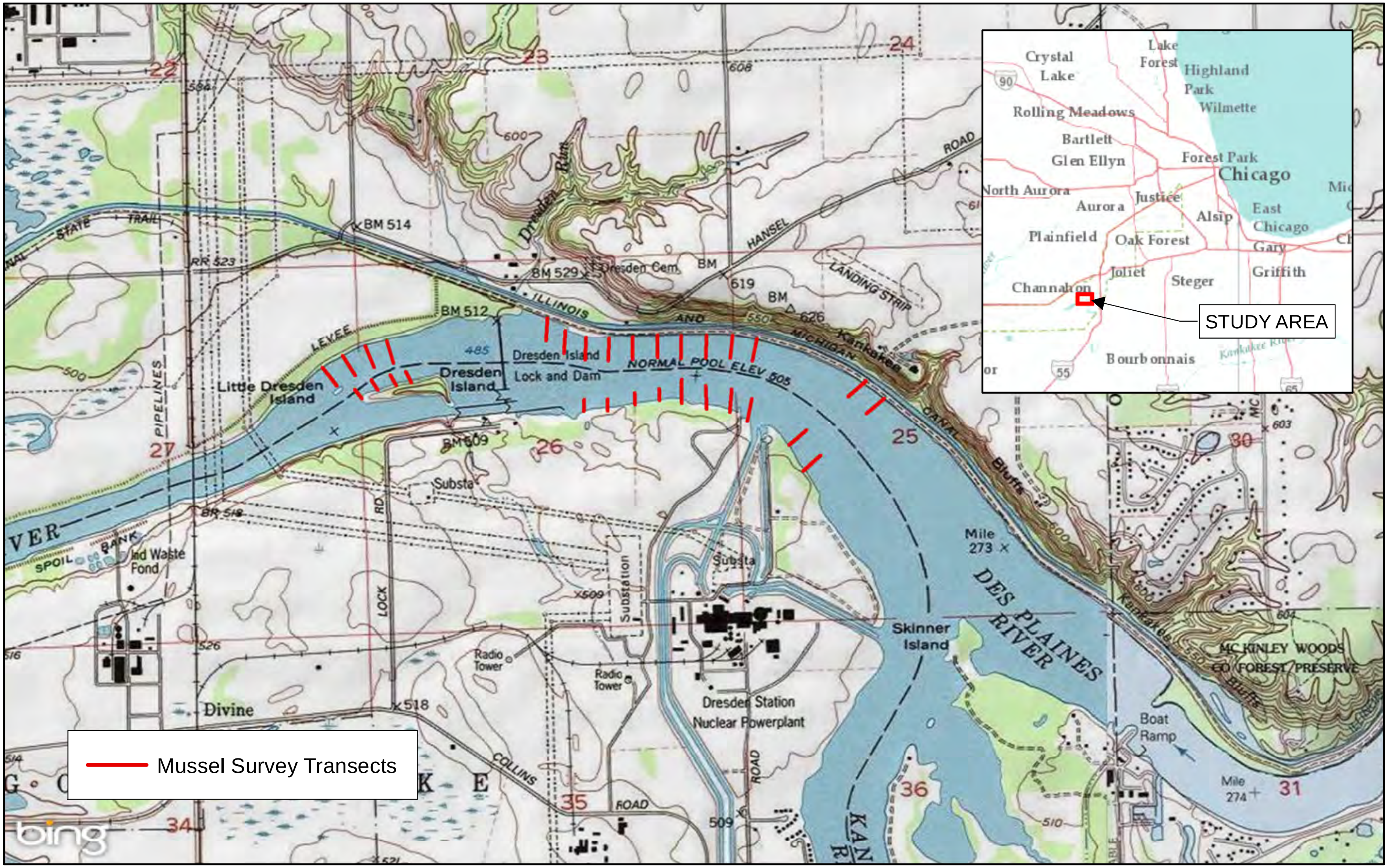
Sincerely,

Brian O'Neill
Senior Scientist

Attachments: Figure 1 – Proposed Mussel Survey Transects

cc: Joe Kath – Illinois Department of Natural Resources (Joe.Kath@illinois.gov)
John Petro – Exelon

SOURCE: USA Topo Maps© 2013 National Geographic Society, i-cubed



NOTE: Qualitative surveys, consisting of timed searches, will be conducted between transects

0 2,000 4,000 6,000 8,000 Feet

EA Engineering, Science, and Technology, Inc.

DRESDEN GENERATING STATION
MUSSEL SURVEY WORK PLAN
GRUNDY COUNTY, ILLINOIS

PROPOSED MUSSEL SURVEY TRANSECTS

DRAWN BY	PROJECT NO	DATE	SCALE	FIGURE
BJO	1500404	8/18/2014	1 inch = 2,000 feet	1

EXHIBIT B

Freshwater Mussel Survey Photographic Record

1. Juvenile Mucket (*Actinonaias ligamentina*).

2. Elktoe (*Alasmidonta marginata*).

3. Threeridge (*Amblema plicata*).

4. Rock pocketbook (*Arcidens confragosus*).

5. Purple waryback (*Cyclonaias tuberculata*).

6. Wabash pigtoe (*Fusconaia flava*).

7. Plain pocketbook (*Lampsilis cardium*).

8. Fatmucket (*Lampsilis siolquoidea*).

9. White heelsplitter (*Lasmigona complanata*).

10. Flutedshell (*Lasmigona costata*).

11. Fragile papershell (*Leptodea fragilis*).

12. Black sandshell (*Ligumia recta*).


13. Washboard (*Megalonaias nervosa*).


14. Threehorn wartyback (*Obliquaria reflexa*).


15. Pink heelsplitter (*Potamilus alatus*).


16. Fragile papaershell (*Potamilus ohiensis*).


17. Giant floater (*Pyganodon grandis*).


18. Pimpleback (*Quadrula pustulosa*).

19. Mapleleaf (*Quadrula quadrula*).

20. Creeper (*Strophitus undulatus*).

21. Lilliput (*Toxolasma parvum*).

22. Pistolgrip (*Tritogonia verrucosa*).

23. Deertoe (*Truncilla truncata*).

24. Paper pondshell (*Utterbackia imbecilis*).