Marion Power Plant 316(b) Impingement Mortality Characterization Study Report

Submitted in Support of
Compliance with
Section 316 (b) Phase II Rules
(Pursuant to 40 CFR 125.95(b)(3))

Prepared for:

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List of Abbreviations and Acronyms

BPJ	Best Professional Judgment
BTA	Best Technology Available
CFB	circulating fluidized bed
CFR	Code of Federal Regulations
cfs	cubic feet per second
CPUE	catch per unit effort
CWA	Clean Water Act
CWIS	cooling water intake structures
DO	dissolved oxygen
°F	degrees Fahrenheit
IM	impingement mortality
IM&E	Impingement Mortality and Entrainment
m^3	cubic meter
MGD	million gallons per day
µm	micrometer
mm	millimeter
MSL	mean sea level
MW	megawatts
NPDES	National Pollutant Discharge Elimination System
PIC	Proposal for Information Collection
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
SIPC	Southern Illinois Power Company
SIU	Southern Illinois University
SOP	Standard Operating Procedure
TL	total length
TWS	traveling water screens
USEPA	United States Environmental Protection Agency

1.0 Introduction

1.1 Regulatory Background and Need

Power plants and other types of industrial facilities that withdraw large volumes of water from rivers, lakes, estuaries, oceans, or other waters of the United States for cooling purposes are regulated by the United States Environmental Protection Agency (USEPA) under the Federal Clean Water Act (CWA). Section 316(b) of the CWA requires USEPA to ensure that the location, design, construction and capacity of cooling water intake structures (CWIS) reflect the Best Technology Available (BTA) for minimizing adverse environmental impacts.

Potential impacts of CWISs on aquatic biota can be characterized and assessed in terms of impingement and/or entrainment as defined below.

- √ **Impingement.** Fish and other larger aquatic organisms drawn into facility intake structures become entrapped on the screening system that is designed to keep trash and other floating debris from entering the cooling water system. As a result of being entrapped, these organisms may suffocate because the strength of the intake current may keep their gill covers from opening. Such organisms may also be subjected to other physical stresses and damage that may lead to their mortality. Impingement also includes injury to fish from the screens and related equipment.
- √ **Entrainment.** Small aquatic organisms such as fish and shellfish eggs and larvae contained in the cooling water enter the facility through the cooling water intake. As these organisms pass through the facility's condenser cooling system, they are subjected to abrupt temperature and pressure increases. In addition, they are exposed to the physical stresses from contact with pumps, impellers and piping, as well as shear forces associated with complex water flows. USEPA generally assumes that entrainment results in complete mortality (i.e., 100 percent) of entrained organisms.

Historically (i.e., 1970s), the electric utilities were required to sample, evaluate, and address all trophic levels of the aquatic community, including phytoplankton, zooplankton, periphyton, benthos, fishes, and other aquatic organisms and all life stages of each group. One of the lessons learned from that work was that the biotic potential (reproductive capability) of the lower trophic levels (e.g., phytoplankton, zooplankton, periphyton) was high enough to replace entrainment losses within hours. As a result, impingement and entrainment sampling and evaluation under the new rule is more focused as only applying to the various life stages of fish and shellfish.

Under the terms of an Amended Consent Decree in *Riverkeeper, et al. versus Whitman*, USEPA has developed regulations to this end. On July 9, 2004 the USEPA published its final Phase II rules of this regulatory initiative that establishes national performance standards for the reduction of impingement mortality for existing power plants that withdraw more than 50 million gallons per day (MGD).

In the July 9 rule, USEPA grouped surface waters into five categories:

- Freshwater Rivers and Streams,
- Lakes and Reservoirs,
- Great Lakes,

- Estuaries and Tidal Rivers, and
- Oceans.

Different regulatory requirements are established for each body of water, with the stringency of the requirements based on the sensitivity and/or biological productivity of the body of water (Table 1-1).

Table 1-1. Phase II Existing Facilities Performance Standards

Type of Water Body	Condition	Impingement Mortality	Entrainment
Freshwater River or Stream	Facilities with capacity utilization rate <15% or intake flow <5% of annual mean flow of river or stream	Reduce by 80-95%	No Requirement
	Facilities with capacity utilization rate = >15% or intake flow >5% of annual mean flow of river or stream	Reduce by 80-95%	Reduce by 60-90%
Lake or Reservoir	Increase in design intake flow can not disrupt natural thermal stratification or turnover pattern.	Reduce by 80-95%	No Requirement
Great Lake	Facilities with capacity utilization rate <15%	Reduce by 80-95%	No Requirement
	Facilities with capacity utilization rate = >15%	Reduce by 80-95%	Reduce by 60-90%
Tidal Rivers, Estuaries, and Oceans	Facilities with capacity utilization rate <15%	Reduce by 80-95%	No Requirement
	Facilities with capacity utilization rate = >15%	Reduce by 80-95%	Reduce by 60-90%
Note: Gray shading indicates applicable performance standards for the Marion Power Plant.			

The final Phase II rules establish national performance standards for the reduction of impingement and entrainment for existing power plants that:

a. have a CWIS that is permitted under the National Pollutant Discharge Elimination System (NPDES),
b. have a design withdrawal capacity more than 50 MGD, and
c. use more than 25 percent of the withdrawn water for cooling purposes.

Southern Illinois Power Cooperative's (SIPC) Marion Power Plant (NPDES permit IL-0004316) meets all three of the above criteria and therefore is obligated to comply with the requirements of the new Section 316(b) rule. Additionally, because the retention time of the lake is greater than 7 days (see Appendix A), it is only subject to the impingement performance standards.

As required by 40 Code of Federal Regulations (CFR) 125.95(b)(3) of the Rule, SIPC is obligated to prepare and submit an Impingement Mortality Characterization Study. Specific required elements of this study are to:

i. Provide taxonomic identifications of all life stages of fish, shellfish, and any species protected under Federal, State, or Tribal Law that are in the vicinity of the cooling water intake structures and are susceptible to impingement and entrainment.

ii. *Characterize all life stages of fish, shellfish, and any species protected under Federal, State, or Tribal Law identified by the previous step, including a description of the abundance and temporal and spatial characteristics in the vicinity of the cooling water intake structures, based on sufficient data to characterize annual, seasonal, and diel variations in impingement and entrainment.*

iii. *Document the current impingement of all life stages of fish, shellfish, and any species protected under Federal, State or Tribal Law identified by the previous steps and provide an estimate of impingement and entrainment to be used as the calculation baseline. Any impingement or entrainment sampling will be collected during periods of representative operational flows for the cooling water intake structure and the flows associated with the samples will be documented.*

The above-referenced regulations were challenged by industry and environmental and arguments were heard in the Second Circuit Court. The Court's decision Riverkeeper, Inc. versus USEPA, 475 F.3d 83, (2d Circuit, 2007) resulted in the remand of several provisions of the Phase II rule:

- USEPA's determination of the BTA under section 316(b);
- The rule's performance standard ranges;
- The cost-cost and cost-benefit compliance alternatives;
- The Technology Installation and Operation Plan provision;
- The restoration provision; and
- The "independent supplier'' provision.

As a result of this significant decision, the USEPA Assistant Administrator for Water issued a memorandum on March 20, 2007, announcing USEPA's intention to suspend the Phase II rule. Effective July 9, 2007, 40 CFR 122.21(r)(1)(ii) and (5), 125.90(a), (c) and (d) and 125.91 through 125.99 in Subpart J were suspended (FR July 9, 2007 (Volume 72, Number 130), Pages 37107-37109).

While the above-referenced action effectively suspended the Rule, USEPA indicated that permits for existing Phase II facilities should be considered using "Best Professional Judgment" (BPJ) on a case-by-case basis.

This report is submitted to provide information to support the determination of BPJ decisions for the Marion Power Plant pursuant to Section 316(b) of the Clean Water Act. The report presents aquatic biological information including results of impingement studies conducted at the Marion Power Plant from 2005 to 2007. *Note: Because the Rule has been suspended, this report does not present a value for calculation baseline which may be developed in consideration of as built or proposed operational or structural characteristics of the CWIS.*

1.2 Description of the Marion Power Plant

Southern Illinois Power Cooperative (SIPC) is a consumer-owned generation and transmission cooperative headquartered in Marion, Illinois (Figure 1-1). The Marion Power Plant is composed of one 109 megawatt (MW) net circulating fluidized bed (CFB) boiler and one 173 MW net cyclone boiler. The cyclone boiler came on line in 1978, whereas the CFB came on line in mid-2003. The CFB provides steam to three small turbines while the cyclone boiler provides steam to one large turbine. All four turbines use once through cooling with a common intake and discharge. SIPC draws water from the Lake of Egypt, which SIPC

originally completed in 1963 for the three cyclone units that were replaced by the CFB in mid-2003. The once through cooling water discharges back into the Lake of Egypt.

SIPC owns the land around the lake up to the 50-year flood high water elevation, but does allow both shoreline residents and others access to the lake for fishing and recreation activities.

The CWIS at the Marion Power Plant consists of four pump units (total pumping capacity of 282 MGD), each equipped with 3/8-inch mesh traveling screens. Trash screens and traveling water screens protect the four intake bays. SIPC operates the traveling water screens on a weekly basis.

Residence time for the Lake of Egypt is greater than 7 days (Appendix A). This value is notably greater than the 7-day retention time as defined for reservoirs or lakes under 40 CFR Part 125.93. As a result, the source water body is correctly classified as a lake and is therefore, only subject to the impingement mortality performance standards.

2.0 Taxonomic List of Species in the Vicinity of the CWIS

In accordance with 40 CFR Section 125.95(b)(3)(i), SIPC is required to compile a list of all fish and shellfish occurring in the vicinity of the CWIS of the Marion Power Plant. This section presents that taxonomic list and includes information available from published and unpublished data, and findings from the impingement mortality study.

Based on a review of existing information, fish and shellfish species previously recorded in the vicinity of the CWIS of the Marion Power Plant are presented in Tables 2-1 and 2-2, respectively.

Table 2-1. List of Fish Documented in the Vicinity of the SIPC Marion Power Plant CWIS

Common Name	Scientific Name	SIU 1997-1999 [a]	MACTEC 2005-2007 [b]
Gizzard shad	*Dorosoma cepedianum*	X	X
Threadfin shad	*Dorosoma petenense*	X	X
Common carp	*Cyprinus carpio*	X	X
Blackstripe topminnow	*Fundulus notatus*	X	X
Western mosquitofish	*Gambusia affinis*	X	X
Fathead minnow	*Pimephales promelas*		X
Pugnose minnow	*Opsopoedus emiliae*		X
Golden shiner	*Notemigonus crysoleucus*	X	X
Spotted sucker	*Minytrema melanops*	X	X
Channel catfish	*Ictalurus punctatus*	X	X
Flathead catfish	*Pylodictis olivaris*		X
Black bullhead	*Ameiurus melas*	X	X
Yellow bullhead	*Ictalurus natalis*	X	X
Tadpole madtom	*Noturus gyrinus*		X
Brook silverside	*Labidesthes sicculus*	X	
Inland silverside	*Menidia beryllina*	X	X
Hybrid striped bass	*Morone saxatilis x M. chrysops*	X	
White bass	*Morone chrysops*	X	X
Spotted bass	*Micropterus punctatus*	X	
Largemouth bass	*Micropterus salmoides*	X	X
Smallmouth bass	*Micropterus dolemieu*	X	
Warmouth	*Chaenobryttus gulosus*	X	X
Green sunfish	*Lepomis cyanellus*	X	X
Bluegill	*Lepomis macrochirus*	X	X
Bluegill x Green sunfish hybrid	*Lepomis macrochirus x L. cyanellus*		X
Longear sunfish	*Lepomis megalotis*	X	X
Redear sunfish	*Lepomis microlophus*	X	X
Orangespotted sunfish	*Lepomis humilis*	X	X
Black crappie	*Pomoxis nigromaculatus*	X	X
White crappie	*Pomoxis annularis*	X	X
Walleye	*Sander vitreum*	X	
Chain pickerel	*Esox niger*	X	
Grass pickerel	*Esox americanus*		X
Darter sp.	*Percina* sp.	X	
Fantail darter	*Etheostoma flabellare*		X

Note: Threadfin Shad were stocked in the Lake of Egypt in 1971.

[a] Source: Heidinger, et. al 2000

[b] Includes gill netting, electrofishing, seining, and impingement fish sampling.

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Table 2-2. List of Shellfish Impinged in the Vicinity of the SIPC Marion Power Plant CWIS, May 2005-April 2007

Common Name	Scientific Name
Asiatic clam	*Corbicula fluminea*
Rusty Crayfish	*Orconectes rusticus*
Crayfish sp.	*Orconectes sp.*
Freshwater shrimp	*Palaemonetes sp.*
Total Number of Taxa	**4**

Source: MACTEC, 2008

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The use of multiple gear types at a range of habitats and over varying seasons and years provides for the collection of a wide range of aquatic biota that are representative of that occurring in the vicinity of the Marion Power Plant CWIS.

Fish surveys have been conducted during selected years in the area of the Marion Power Plant since 1977. The majority of these prior fisheries investigations conducted on Lake of Egypt within the past 30 years have focused on gamefish and issues relating to recreational fishing. Dr. Roy Heidinger of Southern Illinois University (SIU) conducted periodic assessments of the quality of the fishery. These studies focused on game fish and their forage base and were used to support management recommendations for the fishery (Heidinger, 1977; Heidinger, 1986; Heidinger, 1988; Heidinger, 1990; and Heidinger, 1995). Data contained in these studies include general population assessments for each target sport fish species (i.e., largemouth bass, crappie, hybrid striped bass, bluegill, and channel catfish) as well as age and growth characteristics.

Southern Illinois University-Carbondale performed the most extensive investigation of the aquatic biota of the lake between 1997 and 1999 (Heidinger et al, 2000). The sampling methods for this investigation are summarized in Table 2-3.

In accordance with the Proposal for Information Collection (MACTEC, 2005a) quarterly fish surveys were also conducted as part of the Impingement Characterization Study in 2005, 2006, and 2007. Methods for these quarterly fish surveys included electrofishing and gillnetting to collect large fish, while seining was used to collect small fish. Impingement studies were also conducted in 2005-2007. All these studies were reviewed to compile a comprehensive list of fish species potentially occurring in the vicinity of the CWIS. A total of 35 taxa of fish have been collected from the previously mentioned studies over a period spanning 30 years (see Table 2-1).

The 35 taxa collected represent 9 families and 23 genera. The families Cyprinidae (carps and minnows), Ictaluridae (catfishes), and Centrarchidae (sunfishes), accounted for 23 of the collected taxa (66%), with 12 of these taxa being Centrarchidae. From a sport fishing perspective, these taxa can be categorized as forage, game, and rough fish. Forage fish are often used as bait fish or serve as prey for game species. Game species are those species that are preferred by fishermen for consumption. Rough fish are primarily considered undesirable for consumption, even though they may be sought after by some fishermen. A total of 20, 14, and one taxa of forage, game, and rough fish were collected in the vicinity of the Marion Power Plant from 1977 to 2007.

Table 2-3. Summary of 1997-1999 Lake of Egypt Study Components

Study Purpose	Year(s)	Collection Method	Frequency	Species Targeted/Scope of Work
YOY and Recruitment	1997-1999	Shoreline seining using 30-foot long, 6-foot deep, 0.25-inch bar mesh bag seine.	Once in Aug 1997; bimonthly during spring and summer of 1998-1999	All fish targeted in littoral zone (taxa list provided); however only bluegill and largemouth bass studied for reproduction/recruitment
Ichthyoplankton	1997-1999	Two, 500 µm conical plankton nets, Night sampling using four floating light traps.	Once in Aug 1997; bimonthly from March to July (1998 and 99), monthly from August until larval fish capture ceased (1998 and 99)	All larval fish targeted in both littoral and pelagic zones (taxa list provided); data used to evaluate relative abundance and temporal and spatial distribution of larval fishes in Lake of Egypt
Age, Growth, and Mortality	1997-1999	Electrofishing, minimum 4 hours each event	Once in November 1997, then monthly during fall 1998 and 1999	Game fish; LMB*, BG*, CC*, crappie, and white bass; 100 of each collected to estimate annual mortality, age and growth, and relative weight
Food Habits	1997-1999	Electrofishing	Monthly from Sept 1997-December 1999	Game fish; LMB, CC, and BG stomach contents analyzed for diet composition to determine feeding habits
Fish Health	1998 -1999	Electrofishing	Sampling in both 1998 and 1999 occurred in spring before spawning throughout the lake, and also during warmest part of year (July/August) in warmest areas of lake (mostly in immediate vicinity of thermal discharge)	Game fish; LMB, CC, and BG; health assessment to determine impact of stressors in lake (elevated temperature, low dissolved oxygen, etc.) done by examining physiological responses to stress.
Spatial Movement	1997-1999	Electrofishing or hoop netting; Sonic Transmitters surgically implanted to track movement	Implanted in October 1997; monthly tracking October to March (1998 and 99), weekly tracking April to September (1998 and 99).	LMB and CC tracked to assess habitat utilization. Diel movement monitored to assess seasonal changes
Depth, Temperature, Oxygen Profile	1997	Dissolved oxygen/temperature meter and temperature loggers	Began Sept 1997; bimonthly dissolved oxygen and temperature profiles during summer months (June, July, and August); also temperature loggers calculated hourly temperature	Temperature and DO taken at 0.5 m intervals at midpoint of Segments 1 and 2 of Lake of Egypt. Temperature loggers deployed at surface, 1.5 m, 3.0 m, and 4.5 m in Segments 1 and 2 to establish temperature and dissolved oxygen profile.

** LMB = Largemouth bass; BG = Bluegill; CC = Channel Catfish*
Source: Heidinger, et. al, 2000

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The list of shellfish potentially occurring in the vicinity of the Marion Power Plant is limited to those taxa identified during the course of the 2005-2007 Impingement Characterization Study. The three discrete taxa represented included Rusty crayfish, Asiatic clam, and Freshwater shrimp (see Table 2-2).

With respect to listed species, no federally listed species were collected at the Marion Power Plant over the course of the field sampling program. Furthermore, no species listed by the State of Illinois as Endangered or Threatened were collected.

3.0 Source Water body Biological Characterization

SIPC is also obligated to characterize the distribution of all life stages of fish and shellfish [as identified pursuant to 40 CFR Section 125.95(b)(3)(i)] in the vicinity of the CWIS of the Marion Power Plant in accordance with 40 CFR Section 125.95(b)(3)(ii). This characterization is presented in this section and focuses on those species and life stages that are susceptible to impingement. This section includes a description of the abundance and temporal (annual, seasonal, diel) and spatial variation of those species vulnerable to impingement.

Lake of Egypt, in the area of the Marion Power Plant, is comprised of a variety of different types of aquatic habitats including a peninsula, shallow water areas, backwater areas, and deeper open water. The construction of the impoundment of Lake of Egypt in the early 1960s has created this habitat variability. The multiple habitats and fair water quality enable this area to support a quality fish community.

3.1 Source Water Body Studies

Historical Studies

Historical data were obtained from SIU (Heidinger et al. 2000). In a multi-year study sponsored by AmerenUE of several cooling lakes in southern Illinois, SIU performed an intensive survey of Lake of Egypt from 1997-1999 sampling fish populations in using electrofishing, seining, hoop-netting, and plankton net methods (see Table 2-3). These multi-year studies were primarily focused on evaluating thermal effects of power plant operation on the fish communities in Lake of Egypt, but were also used to evaluate the overall health and condition of the fishery. The sampling locations for the SIU data were broken into certain segments of the lake; however, the segment nearest the Marion Power Plant still encompassed portions of the lake that were not in the vicinity of the plant. The sampling conducted in areas outside the immediate vicinity of the power plant may explain any differences in fish species richness and abundances compared to the sampling conducted from 2005-2007 only in the vicinity of the power plant.

The historical data compiled provides a comprehensive species list (see Table 2-1), providing information on the annual variation of the ecosystem. The results of sampling efforts from the Impingement Mortality Characterization Study that included quarterly electrofishing, gill netting, and seining, are the primary data source used to characterize the seasonal patterns of fish abundance with respect to the CWIS of the Marion Power Plant.

Recent Studies

As was described in the Proposal for Information Collection (PIC) SIPC utilized gill nets variably spaced (horizontally and vertically), electrofishing, and bag seining within the vicinity of the CWIS (Figure 3-1).

To evaluate spatial differences in the resident fish community according to depth, two separate gill net locations were established in the vicinity of CWIS. At each location, a floating gill net was set at the surface, and a second sinking gill net was set on the bottom. Each gill net was set on a quarterly basis for two consecutive 24-hour sampling periods. At the end of each sampling period, gill nets were retrieved and the fish removed for processing.

Additionally, in order to evaluate horizontal variation in the fish communities between nearshore and "offshore" locations, two additional gill net locations were established in the nearshore littoral zone habitat. As with the other sampling locations, each gill net was set for two consecutive 24-hour sampling periods. At the end of each sampling period, gill nets were retrieved and the fish removed for processing.

Sampling to evaluate temporal differences at depth and between nearshore and "offshore" habitats was conducted seasonally, once per quarter. Nearshore fisheries were also evaluated using shoreline electrofishing and bag seining techniques at each of the shoreline sampling locations during each season (four sampling events). A minimum of four seine hauls were made, one per location, during each netting field sampling period. Similarly, a minimum of four 15-minute electrofishing runs were made in representative habitats in the vicinity of the CWIS during each sampling event.

Processing of fish for electrofishing, gill netting, and seining entailed identifying each specimen, and recording length and weight information using the same methodology as that used for impingement sampling (see Section 4.1). Additional physical data collected at the time each location was sampled included temperature and dissolved oxygen.

Results of this source water body sampling were used to meet the requirements of 40 CFR 125.95(b)(3) to not only provide taxonomic identifications but to also characterize all life stages of fish in the vicinity of the CWIS that are potentially vulnerable to impingement.

3.2 Temporal Characteristics

3.2.1 Annual Variation

Many methods have been used in the monitoring conducted by SIU and by MACTEC to characterize the aquatic ecosystem of the Lake of Egypt. These sources provide data with which to document the fish biota in the vicinity of the CWIS.

In electrofishing surveys conducted in the vicinity of the Marion Power Plant in 1997 (SIU), 1998 (SIU), 2005 (MACTEC), and 2006 (MACTEC), total catch per unit effort (CPUE) expressed as fish per hour ranged from 114 (2005) to 320 (1997). Total richness varied between 9 (2006) and 20 (1997) species. Electrofishing was the only comparable method between years (Table 3-1). In order to make the comparisons between years more valid, the electrofishing data used in Table 3-1 was only compared for sampling conducted in the fall months from each respective year.

Bluegill was the most abundant species captured in all years. Largemouth bass was the second most abundant species throughout all study years followed by redear sunfish. Species observed in the 2005 or 2006 surveys that were not observed in the 1997 and 1998 surveys included yellow bullhead, inland silverside, blackstripe topminnow, and fantail darter. Longear sunfish, warmouth, green sunfish, and common carp were collected in all study years and were occasionally abundant in the four years of the studies spanning an 11-year period. There were 11 species captured in the 1997 and 1998 sampling that were not captured in the 2005 and 2006 surveys. These species included gizzard shad, threadfin shad, golden shiner, bluntnose minnow, spotted sucker, channel catfish, brook silverside, hybrid striped bass, orangespotted sunfish, hybrid sunfish, and white crappie (see Table 3-1). Although these species captured from 1997 and 1998 were not captured in the fall electrofishing for 2005 and 2006, the majority

of these species were observed in the winter, spring, or summer electrofishing or with other methods (gill netting, seining) in 2005 and 2006. Based on the above referenced data from 1997, 1998, 2005, and 2006, the fish community in the Lake of Egypt near the Marion Power Plant has shown no considerable changes since 1997 as reflected by a general stability in the more dominant taxa. Fish species abundances between years have gone through normal year to year fluctuations.

Table 3-1. Electrofishing CPUE of Species by Year in the Vicinity of the Marion Power Plant during the Fall Season

Common Name	CPUE (# fish per hour)			
	SIU 1997	SIU 1998	MACTEC 2005	MACTEC 2006
Gizzard shad	19.2	15.9		
Threadfin shad	0.2	1.3		
Common carp	1.2	1.4	2.0	4.0
Golden shiner	1.2	0.5		
Bluntnose minnow	0.2			
Spotted sucker	0.2	0.70		
Yellow bullhead	0.5	1.1		2.0
Channel catfish	1	0.7		
Brook silverside	0.2	1.4		
Inland silverside			1.0	4.0
Blackstripe topminnow			3.0	
White bass	0.3		1.0	
Hybrid striped bass	0.2			
Green sunfish	11.2	1.3	1.0	3.0
Warmouth	1	1.1	3.0	2.0
Orangespotted sunfish	1.2			
Bluegill	130.1	93	56.0	100.0
Longear sunfish	23	9.5	4.0	2.0
Redear sunfish	56.1	39.8	20.0	46.0
Hybrid sunfish		1.3		
Largemouth bass	65.7	56.1	21.0	67.0
White crappie	4.8	0.5		
Black crappie	2.5	3.8	1.0	
Fantail darter			1.0	
Total CPUE	320.0	229.4	114.0	230.0

Note: In order to make a more valid comparison, all electrofishing data represented above included only the results from sampling conducted in the fall and in the sampling segment nearest the CWIS.

Sources: MACTEC, 2008, Heidinger et. al, 2000.

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3.2.2 Seasonal Variation

The source water body biological studies (gill netting, electrofishing) performed at the Marion Power Plant from May 2005 to May 2007 were performed on a seasonal basis (nine sampling events) and are used to reflect seasonal variability in the abundance of fish in the source water body. [Results of the 2005-2006 impingement sampling program are also used to reflect seasonal variability—see Section 4.3.1.2.] Based on total CPUE (fish per hour), the top four

seasons with the highest electrofishing abundance was spring 2006, summer 2006, spring 2007, and fall 2006 at the Marion Power Plant, followed by spring 2005, summer 2005, winter 2006, winter 2007, and then fall 2005 (Table 3-2). For each year the spring season was characterized as having the highest CPUE followed by, summer, fall, and winter. The higher catch rates observed in the spring is a direct result of fish reproductive behavior in that these fish move to shallow water to feed and spawn. As summer arrives there are less fish species reproducing and due to the increasing water temperatures, fish move to deeper water where capture methods are not as effective resulting in lower catch rates in the summer compared to the spring season.

In each season, the community patterns were almost entirely attributable to larger numbers of bluegill. In the spring, summer, and fall 2005 bluegill accounted for 49, 72, and 49 percent, respectively. In the winter, spring, summer, and fall 2006 bluegill accounted for 39, 58, 67, and 44 percent, respectively. In the winter and spring 2007 bluegill accounted for 43 and 60 percent, respectively. There were four other species that were captured in every season: largemouth bass, redear sunfish, warmouth, and yellow bullhead. Longear sunfish was captured in every season except for winter 2007. Other common species captured in at least four of the nine seasons in the study were orangespotted sunfish, green sunfish, blackstripe topminnow, common carp, and gizzard shad. The seasonal pattern in gill netting CPUE (fish/net-hour) differed than that of electrofishing. For gill netting, spring 2005 represented the greatest CPUE (4.25) followed by, winter 2007 (3.68), spring 2006 (3.09), winter 2006 (1.91), fall 2005 (1.57), winter 2007 (0.78), fall 2006 (0.70), summer 2005 (0.61), summer 2006 (0.33) (Table 3-3).

3.3 Spatial Characteristics

The spatial variability of the juvenile and adult fish community in the Lake of Egypt in the vicinity of the Marion Power Plant is sufficiently characterized by the vertically (surface, bottom) and horizontally (nearshore, offshore) spaced gill net sampling conducted in 2005, 2006, and 2007. Based on total CPUE (fish per net-hour), offshore-surface gill nets collected more than twice as many fish as the nearshore gill nets and more than 4 times as many as the offshore-bottom gill nets at the Marion Power Plant (Table 3-4). In each location, the community patterns were almost entirely attributable to larger numbers of gizzard shad and threadfin shad. For the nearshore, offshore-surface, and offshore-bottom locations gizzard shad and threadfin shad together accounted for 64, 92, and 67 percent, respectively. Other than gizzard shad and threadfin shad, there were seven other species that were captured at every location: yellow bullhead, channel catfish, bluegill, redear sunfish, largemouth bass, spotted sucker, and black crappie. Other species captured in two of the three locations in the surveys were white bass, and warmouth. Common carp, golden shiner, and white crappie were the only species captured offshore that were not captured nearshore. White bass and golden shiner were the only species captured on the offshore-surface that was not captured in the offshore-bottom location. There were three species captured on the offshore-bottom that were not captured on the offshore-surface location: common carp, warmouth, and white crappie.

Table 3-2. Electrofishing CPUE of Species by Season in the Vicinity of the SIPC Marion Power Plant

Common Name	CPUE (fish per hour)								
	Spring 2005	Summer 2005	Fall 2005	Winter 2006	Spring 2006	Summer 2006	Fall 2006	Winter 2007	Spring 2007
Gizzard shad	2				10			9	2
Threadfin shad		2							
Common carp			2	6	9	1	4		3
Golden shiner					2	1			
Pugnose minnow									2
Fathead minnow	6								
Yellow bullhead	9	2	1	11	15	5	2	5	3
Channel catfish		1			3				1
Grass pickerel				2	1				
Inland silverside					2	7	4		
Blackstripe topminnow	8	2	3			1			
Western mosquitofish						2			
White bass			1						
Hybrid sunfish	1								
Green sunfish	2		1		5	3	3	1	2
Warmouth	9	2	3	5	6	9	2	4	3
Orangespotted sunfish				1	2	19		3	1
Bluegill	110	116	56	59	395	208	100	59	162
Longear sunfish	19	7	4	2	90	9	2		17
Redear sunfish	34	14	20	35	42	23	46	33	25
Largemouth bass	23	15	21	27	97	24	67	22	50
White crappie		1							
Black crappie			1	2					1
Fantail darter			1						
Total CPUE	223	162	114	150	679	312	230	136	272

Source: MACTEC, 2008

Prepared by: AFW/11-20-20007
Checked by: MCB/11-28-2007

Table 3-3. Gill Netting CPUE by Season and Location in the Vicinity of the SIPC Marion Power Plant

Common Name	CPUE (fish per net-hour)								
	Spring 2005	Summer 2005	Fall 2005	Winter 2006	Spring 2006	Summer 2006	Fall 2006	Winter 2007	Spring 2007
Nearshore	2.02	0.27	0.24	0.23	0.21	0.02	0.28	0.45	0.71
Off shore, surface	1.70	0.18	0.90	1.18	2.89	0.18	0.20	0.27	2.90
Off shore, bottom	0.53	0.17	0.44	0.50	0.00	0.14	0.22	0.06	0.07
Total	4.25	0.61	1.57	1.91	3.09	0.33	0.70	0.78	3.68

Source: MACTEC, 2008

Prepared by: AFW/11-20-20007
Checked by: MCB/11-28-2007

Table 3-4. Gill Netting CPUE of Species by Location in the Vicinity of the SIPC Marion Power Plant

Common Name	CPUE (fish per net-hour)		
	Nearshore	Offshore, surface	Offshore, bottom
Gizzard shad	0.206	0.201	0.100
Threadfin shad	0.110	0.862	0.059
Common carp			0.001
Yellow bullhead	0.020	0.001	0.007
Channel catfish	0.024	0.019	0.019
White bass	0.010	0.003	
Warmouth	0.002		0.001
Bluegill	0.034	0.009	0.012
Redear sunfish	0.003	0.003	0.014
Largemouth bass	0.036	0.023	0.006
Spotted sucker	0.015	0.001	0.006
Striped bass	0.001		
Golden shiner		0.014	
White crappie			0.002
Black crappie	0.030	0.015	0.012
Total CPUE	**0.492**	**1.153**	**0.237**

Source: MACTEC, 2008

Prepared by: AFW/11-20-20007
Checked by: MCB/11-28-2007

4.0 Impingement Characterization

4.1 Impingement Sampling Methods

4.1.1 Study Methodology

Impingement sampling at the Marion Power Plant was conducted on a weekly basis for a two-year period from May 2005 through May 2007. Procedures utilized by field crews for sampling followed the *"Standard Operating Procedures for the Marion Power Plant, Southern Illinois Power Cooperative 316(b) Program Field Sampling and Analysis"* (MACTEC, 2005b). As a component of this sampling program, SIPC field crews coordinated daily with plant operational personnel with regard to plant and CWIS operations.

Subsequent to initial coordination with plant operations personnel, the traveling screens were operated and backwashed to remove any trash or debris that may have accumulated on the screens or in the screen wash trough. Sluices were inspected prior to (and periodically during) sampling events to ensure that they are not blocked or obstructed with debris.

Impingement samples were collected on a weekly basis at the CWIS. Depending on the debris and fish load, the collection basket was emptied in accordance with normal screen wash operations or at the end of the 24-hour sampling period. In most cases screens were washed once per shift. Subsequent to each screen washing, the collection basket was retrieved and samples were processed as described in the *"Standard Operating Procedures for the Southern Illinois Power Cooperative 316(b) Program Field Sampling and Analysis"* (MACTEC, 2005b).

4.1.2 Sampling Methods

Impingement samples were collected weekly for each 24-hour sampling event. Samples were obtained using a collection basket having a 3/8-inch mesh. A basket was placed under a diversion trough installed on the screen wash discharge outside of the CWIS. At the on-set of each 24-hour sampling event, the 3/8-inch mesh collection basket was installed. Fish were removed from the collection basket after each screen wash. In all cases, the fish collection basket was left in place to ensure that the water was continuously filtered.

Sampling date, start time, and stop time was recorded for all samples. Additionally, daily plant operational information (pump operation, traveling water screen operation, inlet water temperature) was also obtained and used to adjust daily catch information to flow-based catch rates.

4.1.3 Diel Sampling

Diel sampling was built-in to the design of the overall impingement monitoring program. Diel sampling was conducted once per quarter/season (4 events/year). Sub-samples were obtained during each six-hour interval (four times a day) which allowed for the characterization of diel variation in impingement.

4.1.4 Processing of Samples

SIPC personnel collected the impingement samples and recorded all of the appropriate information onto data sheets as described in Section 4.1.2. SIPC personnel sent all aquatic biota collected in the impingement samples to MACTEC's laboratory for processing. Competent fisheries biologists processed the impingement samples. Each sample was processed by counting and identifying all fish to the lowest practicable taxonomic level.

4.1.5 Fish Sorting and Subsampling

Fish removed from the sampling apparatus were sorted by species and size category. Following sorting, the specimens within each size category were mixed by hand. Specimens selected from the mixed batch of each size grouping were picked using a random selection process.

4.1.6 Measurement of Length and Weight

Fish total length (TL) was measured to the nearest millimeter (mm) using a measuring board. Weight was measured to the nearest gram using a digital scale. If partial fish were present in the sample (head only, tail only), measurements were accompanied by a description of the fish body part.

4.1.7 Batch Samples

In some cases, the number of specimens in the sample for a particular species and size category was large. In such cases the species/size category count was estimated by sub-sampling. A sub-sample of 100 individuals was weighed and the total sample was weighed. The number of individuals in the whole sample was then estimated from the ratio of the total sample weight to the sub-sample weight total and the count within the sub-sample. Lengths were measured for 50 randomly chosen individuals in the sub-sample.

4.1.8 Collection of Non-Fish Organisms

Shellfish found in the impingement sample, such as native freshwater mussels, Asiatic clams, and crayfish, were identified to the lowest practicable taxonomic level and were counted (in the case of few specimens such as native freshwater mussels or crayfish) or weighed in bulk (in the case of numerous Asiatic clams). In addition, other biological taxa found in impingement samples (i.e., not fish or shellfish) were also recorded.

4.1.9 Abnormalities

Abnormalities of collected fish were also noted. Abnormalities that typically occur in fish include the following:

- Missing fins;
- Eroded fins or tail;
- Ulcerated skin;
- Spinal abnormalities;
- Head/mouth abnormalities;

- Fishing injuries (hook scars);
- Diseases (fungus); and
- Parasites (black spot, lamprey wounds, etc.).

4.1.10 Water Quality Measurement

Water quality parameters of temperature and dissolved oxygen (DO) were measured for each sampling event at each location. Parameters were measured by lowering a YSI Temperature/DO meter probe into the source water for a single reading (1-meter depth) during each sampling event.

4.2 Program Quality Control

All field sampling and analyses of fisheries data in support of the IM study were conducted under the direction of SIPC's designated consulting representative, MACTEC Engineering and Consulting, Inc. (MACTEC). Accordingly, sample collection, processing, and data analyses were subject to MACTEC's Corporate Quality Assurance/Quality Control (QA/QC) program and in accordance with the *Quality Assurance Project Plan for the Marion Power Plant, Southern Illinois Power Cooperative 316(b) Program Field Sampling and Analysis* (MACTEC, 2005c). This project-specific Quality Assurance Project Plan (QAPP) is a multi-faceted project plan that encompasses all phases of project management and performance. Major components of this program that were specifically adapted to ensure proper sampling procedures and data integrity of the work performed at the Marion Plant as described below.

Field Sampling Protocols. Clearly written field sampling protocols and procedures were provided to all sampling personnel. All 316(b) related work was performed in accordance with *Standard Operating Procedures for the Marion Power Plant, Southern Illinois Power Cooperative 316(b) Program: Field Sampling and Analysis* (MACTEC, 2006b). Protocols were developed to ensure that field personnel accurately and consistently perform specimen identification and processing, and that appropriate ancillary measurements/data are taken and properly recorded (e.g., pumping rates, screen operation, water quality data, etc.). Dedicated sampling data sheets were included in the protocols for use in recording field data. Data sheets provided for recording of sampling gear type, date, time, weather, sampling technician, water quality measurements, depth, and information for each fish specimen collected (name, length, weight, condition).

Field/Office Audits. MACTEC conducted a total of 6 random, field sampling audits. These audits were part of the Southern Illinois Power Cooperative 316(b) program to ensure that field sampling protocols were properly followed. MACTEC also performed random database/datasheet and laboratory audits by the Program QA Officer to ensure that data were properly recorded and entered and that voucher specimens were correctly labeled and entered into logbooks as specified in the SOP. All aspects of field sampling were observed and evaluated for conformance with established project protocols. Results of field audits were recorded on a separate field audit evaluation form. Audit findings included recommendations to sampling crews regarding specimen handling, processing, and data recording (e.g., proper entry of data codes on field forms, etc.), but no quality affecting deficiencies were recorded over the course of the sampling program.

Data Analysis. Proper QA/QC of data entry and analysis is also an important part of ensuring overall data integrity. Field data packets were entered into the project database and were reviewed by a second data entry technician to ensure accurate data entry. Additionally, all entered data were subjected to final review and validation by the Program QA Officer before being uploaded to the project database.

4.3 Results and Discussion for Impingement Sampling

4.3.1 Taxonomic Overview

During the Year 1 weekly impingement sampling program from May 2005 through April 2006, a total of 13 distinct species and 1 hybrid were collected at the Marion Power Plant (Table 4-1). Additionally, two shellfish taxa were encountered in the Year 1 impingement samples (Table 4-2). Weekly event totals were converted to a rate (number per million gallons of water pumped) in order to estimate impingement based on actual plant water use over the course of the sampling period. The resulting value was then applied to actual daily water use over the sampling interval (typically 1 week). Of the estimated 22,883 fish collected in Year 1 impingement samples, the dominant species by number were threadfin shad and bluegill. These accounted for 66 and 31 percent of the total catch and 22 and 49 percent of the total biomass, respectively (Table 4-3). No other fish species represented more than 1 percent of total catch. Other common species (i.e., those representing more than 1 percent of the total biomass) included largemouth bass (9.8 percent), black bullhead (4.4 percent), yellow bullhead (3.5 percent), redear sunfish (3.0 percent), gizzard shad (2.5 percent), warmouth (2.2 percent), and black crappie (2.1 percent). Of the estimated 652 shellfish collected during the Year 1 impingement sampling, Asiatic clams and rusty crayfish were the only two species collected at the Marion Power Plant comprising 94 percent and 6 percent of the total catch, respectively (Table 4-4).

Table 4-1. Taxonomic List of Fish Impinged at the Marion Power Plant SIPC, May 2005-April 2007

Fish Common Name	Scientific Name	Year 1	Year 2
Gizzard shad	*Dorosoma cepedianum*	X	X
Threadfin shad	*Dorosoma petenense*	X	X
Black bullhead	*Ictalurus melas*	X	X
Yellow bullhead	*Ictalurus natalis*	X	X
Channel catfish	*Ictalurus punctatus*		X
Flathead catfish	*Pylodictis olivaris*	X	
Tadpole madtom	*Noturus gyrinus*		X
Green sunfish	*Lepomis cyanellus*	X	X
Warmouth	*Lepomis gulosus*	X	X
Orangespotted sunfish	*Lepomis humilis*		X
Bluegill	*Lepomis macrochirus*	X	X
Hybrid sunfish	*L. macrochirus x L. cyanellus*	X	
Longear sunfish	*Lepomis megalotis*	X	X
Redear sunfish	*Lepomis microlophus*	X	X
Largemouth bass	*Micropterus salmoides*	X	X
White crappie	*Pomoxis annularis*	X	X
Black crappie	*Pomoxis nigromaculatus*	X	X
No. Distinct Species		**13**	**15**
No. Generic Representatives		**0**	**0**
No. Hybrids		**1**	**0**

Source: MACTEC, 2008

Prepared by: AFW/10-8-2007
Checked by: MCB/10-16-2007

Table 4-2. Taxonomic List of Shellfish Impinged at the Marion Power Plant SIPC, May 2005-April 2007

Common Name	Scientific Name	Year 1	Year 2
Asiatic clam	*Corbicula fluminea*	X	
Freshwater shrimp	*Palaemonetes sp.*		X
Rusty crayfish	*Orconectes rusticus*		X
Crayfish sp.	*Orconectes sp.*	X	X
Total Number of Taxa		**2**	**3**

Source: MACTEC, 2008

Prepared by: AFW/10-8-2007
Checked by: MCB/10-16-2007

Table 4-3. Year 1 Flow-Adjusted Estimate of Fish Collected in Impingement Samples at the Marion Power Plant SIPC, May 2005-April 2006

Fish Common Name	Scientific Name	Number	% Number	Weight (kg)	% Weight
Threadfin shad	*Dorosoma petenense*	15,179	66.33	17.95	21.70
Bluegill	*Lepomis macrochirus*	7,017	30.66	40.78	49.29
Black crappie	*Pomoxis nigromaculatus*	158	0.69	1.72	2.08
Warmouth	*Lepomis gulosus*	144	0.63	1.81	2.19
White crappie	*Pomoxis annularis*	98	0.43	0.39	0.47
Redear sunfish	*Lepomis microlophus*	84	0.37	2.45	2.96
Gizzard shad	*Dorosoma cepedianum*	50	0.22	2.03	2.45
Largemouth bass	*Micropterus salmoides*	40	0.17	8.10	9.80
Longear sunfish	*Lepomis megalotis*	35	0.15	0.57	0.69
Green sunfish	*Lepomis cyanellus*	21	0.09	0.11	0.14
Flathead catfish	*Pylodictis olivaris*	19	0.08	0.15	0.18
Yellow bullhead	*Ictalurus natalis*	18	0.08	2.90	3.51
Black bullhead	*Ictalurus melas*	13	0.06	3.66	4.43
Hybrid sunfish	*L. macrochirus x L. cyanellus*	7	0.03	0.09	0.11
Total Number		**22,883**	**100**	**82.74**	**100**

Source: MACTEC, 2008

Prepared by: AFW/10-8-2007
Checked by: WJE/10-9-2007

Table 4-4. Year 1 Flow-Adjusted Estimate of Shellfish Collected in Impingement Samples at the Marion Power Plant SIPC, May 2005-April 2006

Common Name	Scientific Name	Number	% Number	Weight (kg)	% Weight
Asiatic clam	*Corbicula fluminea*	614	94.2	0.81	72.0
Crayfish sp.	*Orconectes sp.*	38	5.8	0.31	28.0
Total Number		**652**	**100**	**1.12**	**100**

Source: MACTEC, 2008

Prepared by: AFW 12/12/2007
Checked by: WJE 12/12/2007

During the Year 2 weekly impingement sampling program from May 2006 through April 2007, a total of 15 distinct species were collected at the Marion Power Plant (see Table 4-1). Additionally, three shellfish taxa were encountered in the Year 2 impingement samples (see Table 4-2). Of the estimated 24,644 fish collected in the Year 2 impingement samples, the

dominant species by number were threadfin shad and bluegill. These accounted for 78 and 19 percent of the total catch and 31 and 32 percent of the total biomass, respectively (Table 4-5). Black crappie is the only other fish species that represented more than 1 percent of total catch. Other common species (i.e., those representing more than 1 percent of the total biomass) included largemouth bass (20.6 percent), yellow bullhead (4.6 percent), gizzard shad (3.7 percent), redear sunfish (2.4 percent), black crappie (1.3 percent), warmouth (1.2 percent), and black bullhead (1.0 percent). Of the estimated 12 shellfish collected during the Year 2 impingement sampling, rusty crayfish, unidentified crayfish, and freshwater shrimp contributed 31, 38, and 31 percent, respectively (Table 4-6).

Table 4-5. Year 2 Flow-Adjusted Estimate of Fish Collected in Impingement Samples at the Marion Power Plant SIPC, May 2006-April 2007

Fish Common Name	Scientific Name	Number	% Number	Weight (kg)	% Weight
Threadfin shad	*Dorosoma petenense*	19,127	77.61	32.46	31.38
Bluegill	*Lepomis macrochirus*	4,593	18.64	33.36	32.25
Black crappie	*Pomoxis nigromaculatus*	282	1.14	1.38	1.34
Warmouth	*Lepomis gulosus*	169	0.69	1.22	1.18
Largemouth bass	*Micropterus salmoides*	146	0.59	21.27	20.56
Redear sunfish	*Lepomis microlophus*	137	0.55	2.52	2.44
Longear sunfish	*Lepomis megalotis*	65	0.26	1.00	0.96
Yellow bullhead	*Ictalurus natalis*	35	0.14	4.79	4.63
Orangespotted sunfish	*Lepomis humilis*	26	0.11	0.38	0.37
White crappie	*Pomoxis annularis*	20	0.08	0.05	0.05
Green sunfish	*Lepomis cyanellus*	14	0.05	0.12	0.11
Gizzard shad	*Dorosoma cepedianum*	10	0.04	3.79	3.66
Tadpole madtom	*Noturus gyrinus*	7	0.03	0.02	0.02
Channel catfish	*Ictalurus punctatus*	7	0.03	0.03	0.03
Black bullhead	*Ictalurus melas*	7	0.03	1.06	1.02
Total Number		**24,644**	**100**	**103.45**	**100**

Source: MACTEC, 2008

Prepared by: AFW 10/31/2007
Checked by: WJE 10/31/2007

Table 4-6. Year 2 Flow-Adjusted Estimate of Shellfish Collected in Impingement Samples at the Marion Plant SIPC, May 2006-April 2007

Common Name	Scientific Name	Number	% Number	Weight (kg)	% Weight
Rusty Crayfish	*Orconectes rusticus*	6	30.8	0.012	17.1
Crayfish sp.	*Orconectes sp.*	7	38.4	0.057	79.7
Freshwater shrimp	*Palaemonetes sp.*	6	30.8	0.002	3.1
Total Number		**18**	**100**	**0.072**	**100**

Source: MACTEC, 2008

Prepared by: AFW 12/12/2007
Checked by: WJE 12/12/2007

Fish taxa of importance as sportfish that were captured at the Marion Power Plant in Year 1 included black crappie (158), white crappie (98), largemouth bass (40), flathead catfish (19), yellow bullhead (18), and black bullhead (13) (see Tables 4-1 and 4-3). Sportfish captured in Year 2 included black crappie (282), largemouth bass (146), yellow bullhead (35), white crappie

(20), channel catfish (7), and black bullhead (7) (see Tables 4-1 and 4-5). Prey/forage species captured in the impingement samples in Year 1 included threadfin shad (15,179), bluegill (7,017), warmouth (144), redear sunfish (84), gizzard shad (50), longear sunfish (35), green sunfish (21), and hybrid sunfish (7) (see Tables 4-1 and 4-3). Prey/forage species captured in the impingement samples in Year 2 included threadfin shad (19,127), bluegill (4,593), warmouth (169), redear sunfish (137), longear sunfish (65), orangespotted sunfish (26), green sunfish (14), and gizzard shad (10) (see Tables 4-1 and 4-5).

With respect to listed species, no federally listed species were collected at the Marion Power Plant over the course of the field sampling program. Furthermore, no species listed by the State of Illinois as Endangered or Threatened were collected.

4.3.2 Summary of Impingement Rates

Year 1

The total annual impingement for the Year 1 impingement survey period was estimated to be 22,883 fish weighing 83 kilograms (Tables 4-7 and 4-8). By number, the major species in impingement samples were threadfin shad (15,179 per year) and bluegill (7,017 per year). Bluegill and threadfin shad were also the major species with regard to biomass, contributing 40.8 and 18.0 kilograms, respectively per year.

Year 1 monthly variations in impingement rates of fish, in terms of numbers and biomass, are summarized in Tables 4-7 and 4-8, and in Figure 4-1. Total numbers of impinged fish were greatest in January, March, and April 2006, in which over 4,000 fish were impinged in each of those months (see Table 4-7 and Figure 4-1). Threadfin shad comprised 99 percent of the total catch for January, 43 percent for March, and 53 percent for April. Bluegill was a dominant species in March and April comprising 55 and 45 percent, respectively. This high impingement in the late fall/winter months (Figure 4-2) coincided with low water temperatures. Previous studies have shown temperature induced threadfin shad mortality during winter months. Up to 100 percent mortality can occur when these fish are held at prolonged water temperatures at or below 45°F (Pflieger, 1997). The high bluegill impingement in the spring is likely the cause of reproduction from spring spawning.

In contrast to the seasonal pattern evident for numbers, total biomass for Year 1 impingement was greatest in March (18.3 kg) and April 2006 (20.7 kg) (see Table 4-8, Figure 4-1). Bluegill was the dominant species in May 2005, November 2005, March 2006, and April 2006 contributing 51, 70, 68, and 70 percent to the monthly biomass, respectively. Threadfin shad accounted for much of the biomass totals in December 2005 (67 percent) and January 2006 (85 percent).

Impingement of shellfish in Year 1 was generally low throughout the survey period (Tables 4-9 and 4-10, Figure 4-3). The two taxa present in the impingement samples, Asiatic clam and crayfish sp. represented 94 and 6 percent of the total catch, respectively. June 2005 contributed 44 percent of the total annual Year 1 shellfish impingement. Asiatic clams represented 92 percent of the June 2005 catch. All of the shellfish were captured between May and November 2005.

Year 2

The total annual impingement for the Year 2 impingement survey period was estimated to be 24,644 fish weighing 103 kilograms (Tables 4-11 and 4-12). By number, the major species in impingement samples were threadfin shad (19,127 per year) and bluegill (4,593 per year).

Bluegill and threadfin shad were also the major species with regard to biomass, contributing 33.4 and 32.5 kilograms, respectively per year.

Year 2 monthly variations in impingement rates of fish, in terms of numbers and biomass, are summarized in Tables 4-11 and 4-12, and in Figure 4-4. Total numbers of impinged fish were greatest in December 2006, January, 2007, and February 2007 in which over 4,000 fish were impinged in each of those months (see Table 4-11, Figure 4-4). Threadfin shad comprised 99 percent of the total catch for December, 99 percent for January, and 98 percent for February. Bluegill was a dominant species in May 2006, June 2006, July 2006, August 2006, September 2006, November 2006, and March 2007 comprising 90, 81, 49, 42, 62, 62, and 61 percent, respectively. Similar to the Year 1 impingement, the high impingement in the late winter months (see Figure 4-2) coincided with low water temperatures. [See threadfin shad mortality discussion in the above Year 1 impingement section]. The high bluegill impingement in the spring is likely the cause of reproduction from spring spawning.

In contrast to the seasonal pattern evident for numbers, total biomass for Year 2 impingement was greatest in May 2006 (12.9 kg), July 2006 (12.0 kg), August 2006 (18.2 kg), September 2006 (11.9 kg), December 2006 (11.1 kg), February 2006 (13.4 kg) (see Table 4-12 and Figure 4-4). Bluegill was the dominant species in May and July 2006 contributing 86 and 36 percent to the monthly biomass, respectively. Largemouth bass contributed most of the biomass in August and September 2006 representing 56 and 73 percent to the monthly biomass totals, respectively. Threadfin shad accounted for much of the biomass totals in December 2006 (94 percent) and February 2007 (89 percent).

Impingement of shellfish in Year 2 was very low throughout the survey period (Tables 4-13 and 4-14, Figure 4-5). The three taxa present in the impingement samples, Rusty crayfish, other crayfish sp., and freshwater shrimp represented 31, 38, and 31 percent of the total catch, respectively. Of the 18 shellfish captured during the entire Year 2 impingement study period, 11 of the individuals (61 percent) were captured in May 2006 while the other 7 individuals were collected in January 2007.

4.3.3 Impingement of Representative Species

Threadfin Shad – Threadfin shad is a primary forage species within the Lake of Egypt that was stocked in the lake in 1971 as a management technique to increase the forage base for predator species (i.e., striped bass, largemouth bass, and crappies). Threadfin shad accounted for the greatest component of the annual estimate of total catch in both Year 1 and Year 2 impingement studies (66 percent for Year 1 and 78 percent for Year 2) (see Tables 4-7 and 4-11). Based on the annual estimate from Year 1, impingement of threadfin shad varied throughout the sampling period with a low estimated catch of zero individuals occurring in June and July 2005 and the largest estimated catch of 5,262 individuals occurring in January 2006 (see Table 4-7). During Year 2 impingement the lowest estimated catch of zero individuals occurred in June 2006 and the highest catch of 7,788 individuals occurred in December 2006 (see Table 4-11). Based on the length-frequency distributions of threadfin shad captured during the Year 1 and Year 2 impingement at the Marion Power Plant, most individuals were captured in the 51 to 100 mm length group, indicating that primarily young-of-the-year and age 1+ fish were captured during impingement sampling (Figures 4-6 and 4-7).

Table 4-7. Year 1 Flow-Adjusted Estimate of Fish Impinged Monthly at the Marion Power Plant SIPC, May 2005-April 2006

Fish Common Name	Scientific Name	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total	Percent
Threadfin shad	*Dorosoma petenense*	62			14	35	691	1,832	1,424	5,262	1,057	2,289	2,513	15,179	66.3
Bluegill	*Lepomis macrochirus*	89	149	53	28	39	191	1,238	122	35	63	2,912	2,098	7,017	30.7
Black crappie	*Pomoxis nigromaculatus*				70	17	26	24	14			7		158	0.7
Warmouth	*Lepomis gulosus*	14					18					77	36	144	0.6
White crappie	*Pomoxis annularis*			7		14	28	28				7	14	98	0.4
Redear sunfish	*Lepomis microlophus*	35				7				7		7	28	84	0.4
Gizzard shad	*Dorosoma cepedianum*		7	7	7	11		18						50	0.2
Largemouth bass	*Micropterus salmoides*	7	7	12			14							40	0.2
Longear sunfish	*Lepomis megalotis*	14	7									7	7	35	0.2
Flathead catfish	*Pylodictis olivaris*	7	6						7					19	0.1
Yellow bullhead	*Ictalurus natalis*		7			11								18	0.1
Green sunfish	*Lepomis cyanellus*					7						14		21	0.1
Black bullhead	*Ictalurus melas*			13										13	0.1
Bluegill x Green sunfish	*L. macrochirus x L. cyanellus*				7									7	0.0
Monthly Totals by Number		**227**	**183**	**92**	**126**	**141**	**968**	**3,140**	**1,566**	**5,304**	**1,120**	**5,320**	**4,696**	**22,883**	
Monthly Totals by Percent		**0.99**	**0.80**	**0.40**	**0.55**	**0.62**	**4.23**	**13.72**	**6.84**	**23.18**	**4.89**	**23.25**	**20.52**		**100**

Source: MACTEC, 2008

Prepared by: AFW/10-8-2007
Checked by: MCB/10-9-2007

Table 4-8. Year 1 Flow-Adjusted Estimate of Fish Biomass (kg) Impinged Monthly at the Marion Power Plant SIPC, May 2005-April 2006

Fish Common Name	Scientific Name	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total	Percent
Bluegill	*Lepomis macrochirus*	1.39	3.66	1.63	0.12	1.00	0.73	4.01	0.34	0.23	0.74	12.46	14.48	40.78	49.3
Threadfin shad	*Dorosoma petenense*	0.35			0.01	0.04	0.50	1.38	1.03	5.56	0.96	3.08	5.04	17.95	21.7
Largemouth bass	*Micropterus salmoides*	0.01	4.45	0.96			2.69							8.10	9.8
Black bullhead	*Ictalurus melas*			3.66										3.66	4.4
Yellow bullhead	*Ictalurus natalis*		0.72			2.19								2.90	3.5
Redear sunfish	*Lepomis microlophus*	0.59				0.52				0.80		0.10	0.45	2.45	3.0
Gizzard shad	*Dorosoma cepedianum*		0.77	0.01	1.11	0.04		0.10						2.03	2.4
Warmouth	*Lepomis gulosus*	0.13					0.07					1.05	0.57	1.82	2.2
Black crappie	*Pomoxis nigromaculatus*				0.07	0.04	0.07	0.12	0.07			1.35		1.72	2.1
Longear sunfish	*Lepomis megalotis*	0.21	0.15									0.13	0.09	0.57	0.7
White crappie	*Pomoxis annularis*			0.04		0.01	0.08	0.09				0.09	0.08	0.39	0.5
Flathead catfish	*Pylodictis olivaris*	0.04	0.02						0.08					0.15	0.2
Green sunfish	*Lepomis cyanellus*					0.03						0.08		0.11	0.1
Bluegill x Green sunfish	*L. macrochirus x L. cyanellus*				0.09									0.09	0.1
Monthly Totals by Number		**2.72**	**9.76**	**6.30**	**1.40**	**3.88**	**4.14**	**5.69**	**1.53**	**6.58**	**1.70**	**18.33**	**20.70**	**82.74**	
Monthly Totals by Percent		**3.3**	**11.8**	**7.6**	**1.7**	**4.7**	**5.0**	**6.9**	**1.8**	**8.0**	**2.1**	**22.2**	**25.1**		**100**

Source: MACTEC, 2008

Prepared by: AFW/10-8-2007
Checked by: MCB/10-9-2007

Table 4-9. Year 1 Flow-Adjusted Estimate of Shellfish Impinged Monthly at the Marion Power Plant SIPC, May 2005-April 2006

Fish Common Name	Scientific Name	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total	Percent
Asiatic clam	*Corbicula fluminea*	110	264	165	27	7	35	6	0	0	0	0	0	614	94.2
Crayfish sp.	*Orconectes sp.*	14	24	0	0	0	0	0	0	0	0	0	0	38	5.8
Monthly Totals by Number		**124**	**288**	**165**	**27**	**7**	**35**	**6**	**0**	**0**	**0**	**0**	**0**	**652**	
Monthly Totals by Percent		**19.0**	**44.2**	**25.3**	**4.1**	**1.1**	**5.4**	**0.9**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**100**

Source: MACTEC, 2008

Prepared by: AFW/10-8-2007
Checked by: MCB/10-9-2007

Table 4-10. Year 1 Flow-Adjusted Estimate of Shellfish Biomass (kg) Impinged Monthly at the Marion Power Plant SIPC, May 2005-April 2006

Fish Common Name	Scientific Name	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total	Percent
Asiatic clam	*Corbicula fluminea*	0.14	0.34	0.21	0.04	0.01	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.81	72.0
Crayfish sp.	*Orconectes sp.*	0.11	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	28.0
Monthly Totals by Number		**0.25**	**0.55**	**0.21**	**0.04**	**0.01**	**0.06**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.12**	
Monthly Totals by Percent		**22.5**	**48.7**	**19.0**	**3.1**	**0.8**	**5.1**	**0.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**		**100**

Source: MACTEC, 2008

Prepared by: AFW/12-12-2007
Checked by: MCB/12-12-2007

Table 4-11. Year 2 Flow-Adjusted Estimate of Fish Impinged Monthly at the Marion Power Plant SIPC, May 2006-April 2007

Fish Common Name	Scientific Name	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total	Percent
Threadfin shad	*Dorosoma petenense*	28		7	7	17	10	307	7,788	4,333	5,187	469	974	19,127	77.61
Bluegill	*Lepomis macrochirus*	1,312	299	296	128	332	8	537	63	21	42	756	799	4,593	18.64
Black crappie	*Pomoxis nigromaculatus*	11		59	20	143		13	14			7	7	275	1.11
Warmouth	*Lepomis gulosus*	46	18	15	81	9								169	0.69
Largemouth bass	*Micropterus salmoides*			95	34	17								146	0.59
Redear sunfish	*Lepomis microlophus*	33	25	53		19							7	137	0.55
Longear sunfish	*Lepomis megalotis*		19	46										65	0.26
Yellow bullhead	*Ictalurus natalis*			22	7								7	35	0.14
Orangespotted sunfish	*Lepomis humilis*	20	6											26	0.11
White crappie	*Pomoxis annularis*				14			7						20	0.08
Gizzard shad	*Dorosoma cepedianum*				7		3							10	0.04
Green sunfish	*Lepomis cyanellus*	6											14	20	0.08
Black bullhead	*Ictalurus melas*				7									7	0.03
Channel catfish	*Ictalurus punctatus*			7										7	0.03
Tadpole madtom	*Noturus gyrinus*			7										7	0.03
Monthly Totals by Number		**1,457**	**367**	**606**	**304**	**537**	**22**	**863**	**7,864**	**4,354**	**5,229**	**1,232**	**1,808**	**24,644**	
Monthly Totals by Percent		**5.9**	**1.5**	**2.5**	**1.2**	**2.2**	**0.1**	**3.5**	**31.9**	**17.7**	**21.2**	**5.0**	**7.3**		**100.0**

Source: MACTEC, 2008

Prepared by: AFW/10-31-2007
Checked by: MCB/10-31-2007

Table 4-12. Year 2 Flow-Adjusted Estimate of Fish Biomass (kg) Impinged Monthly at the Marion Power Plant SIPC, May 2006-April 2007

Fish Common Name	Scientific Name	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total	Percent
Bluegill	*Lepomis macrochirus*	11.18	2.99	4.29	2.54	1.80	0.25	2.01	0.59	0.08	1.46	2.81	3.37	33.36	32.25
Threadfin shad	*Dorosoma petenense*	0.15		0.01	0.01	0.89	0.01	0.32	10.49	5.91	11.95	0.79	1.96	32.47	31.38
Largemouth bass	*Micropterus salmoides*			2.30	10.22	8.75								21.27	20.56
Yellow bullhead	*Ictalurus natalis*			3.07	1.11								0.62	4.79	4.63
Gizzard shad	*Dorosoma cepedianum*				2.53		1.26							3.79	3.66
Redear sunfish	*Lepomis microlophus*	0.71	0.50	1.07		0.11							0.14	2.52	2.44
Black bullhead	*Ictalurus melas*				1.06									1.06	1.02
Warmouth	*Lepomis gulosus*	0.34	0.07	0.08	0.70	0.02								1.22	1.18
Black crappie	*Pomoxis nigromaculatus*	0.11		0.40	0.03	0.35		0.31	0.05			0.04	0.08	1.38	1.34
Longear sunfish	*Lepomis megalotis*		0.26	0.73										1.00	0.96
Orangespotted sunfish	*Lepomis humilis*	0.28	0.10											0.38	0.37
Green sunfish	*Lepomis cyanellus*	0.10											0.01	0.11	0.11
White crappie	*Pomoxis annularis*				0.02			0.03						0.05	0.05
Channel catfish	*Ictalurus punctatus*			0.03										0.03	0.03
Tadpole madtom	*Noturus gyrinus*			0.02										0.02	0.02
Monthly Totals by Number		**12.88**	**3.92**	**12.00**	**18.21**	**11.92**	**1.52**	**2.67**	**11.13**	**5.99**	**13.41**	**3.64**	**6.18**	**103.45**	
Monthly Totals by Percent		**12.4**	**3.8**	**11.6**	**17.6**	**11.5**	**1.5**	**2.6**	**10.8**	**5.8**	**13.0**	**3.5**	**6.0**		**100**

Source: MACTEC, 2008

Prepared by: AFW/10-31-2007
Checked by: MCB/10-31-2007

Table 4-13. Year 2 Flow-Adjusted Estimate of Fish Impinged Monthly at the Marion Power Plant SIPC, May 2006-April 2007.

Fish Common Name	Scientific Name	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total	Percent
Rusty Crayfish	*Orconectes rusticus*	6	0	0	0	0	0	0	0	0	0	0	0	6	30.8
Crayfish sp.	*Orconectes sp.*	0	0	0	0	0	0	0	0	7	0	0	0	7	38.4
Freshwater shrimp	*Palaemonetes sp.*	6	0	0	0	0	0	0	0	0	0	0	0	6	30.8
Monthly Totals by Number		**11**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**0**	**0**	**18**	
Monthly Totals by Percent		**61.6**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**38.4**	**0.0**	**0.0**	**0.0**		**100**

Source: MACTEC, 2008

Prepared by: AFW/12-12-2007
Checked by: MCB/12-12-2007

Table 4-14. Year 2 Flow-Adjusted Estimate of Fish Biomass (kg) Impinged Monthly at the Marion Power Plant SIPC, May 2006-April 2007

Fish Common Name	Scientific Name	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total	Percent
Rusty Crayfish	*Orconectes rusticus*	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	17.1
Crayfish sp.	*Orconectes sp.*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.06	79.7
Freshwater shrimp	*Palaemonetes sp.*	0.002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.002	3.1
Monthly Totals by Number		**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.06**	**0.00**	**0.00**	**0.00**	**0.07**	
Monthly Totals by Percent		**20.3**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**79.7**	**0.0**	**0.0**	**0.0**		**100**

Source: MACTEC, 2008

Prepared by: AFW/12-12-2007
Checked by: MCB/12-12-2007

Bluegill – Bluegill is also a primary forage (at the juvenile stage) species within the Lake of Egypt and at the adult stage is also considered to be a desirable species by anglers. It is a widely distributed omnivorous fish that inhabits the shallow, shoreline littoral zones of nearly any type of water body and waterway (Smith, 2002). Bluegill represented 30.7 percent of the annual estimated impingement catch and 49.3 percent of the annual estimated impingement weight for Year 1 impingement (see Tables 4-7 and 4-8). For Year 2 impingement, bluegill represented 18.6 percent of the annual estimated impingement catch and 32.3 percent of the annual estimated weight (see Tables 4-11 and 4-12). Based on the Year 1 annual estimate, impingement of bluegill varied throughout the sampling period with 28 individuals (0.12 kg) being captured in the month of August 2005 and 2,098 individuals (14.5 kg) occurring in April 2006 (see Tables 4-7 and 4-8). For Year 2 the lowest estimated monthly impingement of 8 individuals occurred in October 2006 while the highest estimated impingement of 1,312 individuals occurred in May 2006 (see Tables 4-11 and 4-12). Based on the length-frequency distributions of bluegill captured during the Year 1 and Year 2 impingement at the Marin Power Plant, most individuals were young-of-year fish as reflected by the numbers represented in the 51 to 100 mm length category (Figures 4-8 and 4-9). The largest bluegill specimens captured were in the 151 to 200 mm length group during Year 1 impingement.

Gizzard Shad – Gizzard shad is another forage species within the Lake of Egypt. Gizzard shad accounted for 0.2 and 2.4 percent of the Year 1 annual impingement estimate of total catch and total weight, respectively (see Tables 4-7 and 4-8). For Year 2 impingement, gizzard shad represented 0.04 percent of the annual estimated impingement catch and 3.7 percent of the annual estimated weight (see Tables 4-11 and 4-12). Based on the Year 1 annual impingement estimate, impingement of gizzard shad varied throughout the sampling period with a low estimated catch of zero individuals occurring in May 2005, October 2005, and December 2005-April 2006 and the largest estimated catch of 18 individuals occurring in November 2005 (see Tables 4-7 and 4-8). In Year 2 of the impingement study, gizzard shad were only captured in August (7 individuals) and October 2006 (3 individuals) (see Tables 4-11 and 4-12). Based on the length-frequency distributions of gizzard shad captured during the Year 1 and Year 2 impingement at the Marion Power Plant, most individuals were captured in the 51 to 100 length group for Year 1 and in the 301 to 350 and 351-400 mm length groups for Year 2 (Figures 4-10 and 4-11).

Warmouth – Warmouth is another forage fish similar in habit and diet to the bluegill that has historically been captured in the vicinity of the Marion Power Plant. Warmouth represented 0.6 percent of the Year 1 annual estimated impingement catch and 2.2 percent of the annual estimated impingement weight (see Tables 4-7 and 4-8). Warmouth represented 0.7 percent of the Year 2 annual estimated impingement catch and 1.2 percent of the annual estimated impingement weight (see Tables 4-11 and 4-12). Based on the Year 1 annual estimate, impingement varied at low levels with catches occurring only in May (14 individuals) and October 2005 (18 individuals) and March (77 individuals) and April 2006 (36 individuals). Based on the Year 2 annual estimate, all of the warmouth were collected from May-September 2006. The highest Year 2 impingement was estimated at 81 individuals (August 2006) (Tables 4-11 and 4-12). Based on the length-frequency distributions of warmouth captured during the Year 1 and Year 2 impingement sampling, most individuals were captured in the 51 to 100 mm length category indicating that primarily young-of-year and age 1+ fish were captured during the impingement sampling program. The largest warmouth specimens were captured in the 101 to 150 mm length group (Figures 4-12 and 4-13).

Largemouth Bass – Largemouth bass is the primary predator species within the Lake of Egypt and is a highly sought after sport fish. During the Year 1 impingement, largemouth bass represented 0.2 percent of the annual estimated catch and 9.8 percent of the annual estimated weight (see Tables 4-7, 4-8). Largemouth bass represented 0.6 of the Year 2 annual estimated impingement catch and 20.6 percent of the annual estimated biomass (see Tables 4-11 and 4-12). Based on the Year 1 annual estimate of catch, impingement of largemouth bass was low throughout the sampling period with catches only occurring in the months of May (7 individuals), June (7 individuals), July (12 individuals), and October 2005 (14 individuals) (see Table 4-7). For the Year 2 estimated impingement, largemouth bass were only collected in July (95 individuals), August (34 individuals), and September 2006 (17 individuals). Based on the length-frequency distributions of largemouth bass captured during the Year 1 and Year 2 impingement at the Marion Power Plant, individuals were distributed evenly across several length groups with the smallest specimens occurring in the 0-50 mm length group and the largest specimens occurring in the 351 to 400 mm length group (Figures 4-14 and 4-15).

Black Crappie – Black crappie is an abundant and widespread fish that in lakes and reservoirs like the Lake of Egypt inhabits areas with standing timber or other submerged cover (Smith, 2002). Black crappie is also a popular game and food fish because it reaches a relatively large size and is readily caught. Black crappie represented only 0.7 percent of the Year 1 annual estimate of catch and 2.1 percent of the estimated annual weight (see Tables 4-7 and 4-8). Of the Year 2 annual impingement estimate, black crappie represented 1.1 percent of the annual estimated catch and 1.3 percent of the estimated annual biomass (see Tables 4-11 and 4-12). Based on the Year 1 annual estimate, impingement of these species was low with catches occurring in half of the 12-month sampling program (see Table 4-7). The highest estimated impingement during Year 1 occurred in August (70 estimated individuals). For Year 2 the lowest estimated monthly impingement of zero individuals occurred in June and October 2006 and January and February 2007 while the highest estimated impingement of 143 individuals occurred in September 2006 (see Tables 4-11 and 4-12). Based on the length-frequency distributions of black crappie captured during the impingement program at the Marion Power Plant, most individuals were young-of-year fish as reflected by their representation in the 51-100 mm length category (Figures 4-16 and 4-17). The largest black crappie specimens captured were in the 251 to 300 mm length group during Year 1 impingement.

4.3.4 Diel Impingement Sampling

The diel impingement collection did not indicate that impingement was consistently greater at any certain time of the day. In January 2006, rates were slightly greater during the night collections (i.e., the 6 p.m. to 12 a.m. and the 12 a.m. to 6 a.m. periods). Samples in the February 2007 and April 2007 indicated much greater impingement collection across all time periods compared to all other times of the year. In contrast, summer samples (August 2005, August 2006) were distinguished by low impingement in all time periods. In November 2005 (fall sample) the greatest impingement occurred in the noon to 6 p.m. period, with the other fall collection (November 2006) showing the greatest impingement during the 4 p.m. to 10 p.m. time period (Figure 4-18).

4.3.5 Overview of Fish Condition from Impingement

Based on the Year 1 impingement at the Marion Power Plant, 1.4 percent of the impinged fish were observed to be live, 0.2 percent moribund, and 98.4 percent dead. When the condition of the numerically dominant fish impinged is considered for Year 1 impingement, 0 percent of the threadfin shad were live, 0 percent moribund, and 100 percent dead. Similarly, for the bluegill impinged, 3.5 percent were live, 0.7 percent moribund, and 95.8 percent dead. Based on the Year 2 impingement, 1.9 percent of the impinged fish were observed to be live, 0 percent moribund, and 98.1 percent dead. When the condition of the numerically dominant fish impinged is considered for Year 2 impingement, 0 percent of the threadfin shad were live, 0 percent moribund, and 100 percent dead. Similarly, for the bluegill impinged, 10 percent were live, 0 percent moribund, and 90 percent dead.

Among the shellfish impinged during Year 1 impingement, 22 percent were live, 0 percent moribund, and 78 percent dead. Among the shellfish impinged during Year 2 impingement, 33 percent were live, 0 percent moribund, and 67 percent dead.

5.0 Summary of Plant Operations

Selected plant operational information was used in conjunction with the fisheries data to extrapolate impingement rates. During the course of the impingement sampling program, SIPC personnel recorded inlet water temperatures and circulating water pump operation on a daily basis. Traveling water screens (TWS) were typically operated once per shift except during times of the year when debris loading was higher or during extremely cold weather to prevent freezing. At these times TWS operation was more frequent or in some cases continual.

Plant river water intake volumes (MGD), are summarized in Figures 5-1 (Year 1) and 5-2 (Year 2). Overall during the Year 1 sampling period, the daily intake volumes ranged from 120 MGD in October 2005 to 291 MGD in many portions of the year (May 2005-January 2006). Similar to the pattern in the Year 1, during the Year 2 impingement sampling daily intake volumes ranged from 107 MGD in October 2006 to 291 MGD in many portions of the year (June-September 2006, November and December 2006, April 2007). With all four circulating water pumps in operation for 24 hours a day, 291 MGD is the maximum intake rate for the Marion Power Plant CWIS.

6.0 Summary of Physical Conditions during IM Sampling Period

Impingement sampling was conducted at the Marion Power Plant from May 2005 through April 2007. During this period lake level and river inlet temperature were recorded by plant personnel. Lake level was only recorded intermittently from July 2005 through May 2007; however, given that the lake levels are controlled by a dam, there are usually only small fluctuations in lake level. Thus, SIPC believes that the intermittently recorded lake levels fully characterize the fluctuations that occur in lake level during the course of the impingement sampling.

The daily lake levels near the Marion Power Plant are shown in Figure 6-1. The lowest lake level occurred in October 2005. Lake level for this day was 488 feet. The highest lake level occurred in March 2006, in which a lake level of 501 feet was recorded.

Daily inlet water temperatures are summarized in Figure 6-2. The lowest inlet temperatures occurred during December 2005 and February 2006 where inlet temperatures reached 14°F. The highest inlet temperatures occurred during June 2005 and July 2006 where inlet temperatures reached 98°F and 88°F, respectively.

7.0 Evaluation of Adverse Effects of Water Use on Resident Biological Community

Evaluation of the impact of fish losses due to IM can be evaluated in terms of (a) absolute impact (i.e., direct losses as summarized by calculation baseline) and (b) relative impact of these losses on overall ecosystem health and the condition of the standing stocks of fish and shellfish populations in the source water body in the vicinity of the CWIS. This section addresses both of these issues.

7.1 Determination of Calculation Baseline

As specified in the Rule, calculation baseline is that impingement mortality and/or entrainment rate that assumes that:

> *"the cooling water system has been designed as a once-through system; the opening of the cooling water intake structure is located at, and the face of the standard 3/8-inch mesh traveling screen is oriented parallel to, the shoreline near the surface of the source waterbody; and the baseline practices, procedures, and structural configuration are those that your facility would maintain in the absence of any structural or operational controls, including flow or velocity reductions, implemented in whole or in part for the purposes of reducing impingement mortality and entrainment. You may also choose to use the current level of impingement mortality and entrainment as the calculation baseline..."*
>
> *(40 CFR Section 125.93)*

As specified by The Rule, SIPC may elect to use the levels of impingement mortality documented in this study (see Sections 4.3.1) as the basis of calculation baseline. Documented levels of impingement at the Marion Power Plant over the course of the Year 1 and Year 2 study period were low. Total annual impingement was estimated to be approximately 22,883 fish for Year 1 and 24,644 fish for Year 2.

The use of the 2005-2006 and/or the 2006-2007 IM values as calculation baseline does not provide the opportunity of taking advantage of the existing "as built" condition of the Marion Power Plant (both in terms of technology and operational measures), nor does it provide the potential advantages of modifying the observed rates based on specialized pilot studies. As stated above, we believe that there are several opportunities for modifying the documented impingement rates to derive a calculation baseline in a manner that provides advantages to the overall compliance strategy for the Marion Power Plant. These adjustments would further demonstrate the above assertion of low impact on the resident aquatic communities of the source water body. The following represent considerations that may be discussed further by the project team as it relates to the development of calculation baseline.

1. **Modification of impingement mortality (IM) by crediting potential beneficial effects of "as built" features.** The Marion Power Plant has as-built characteristics that may be considered as potential IM reducing technologies. First, the CWIS is not a typical baseline configuration, in that it is located offshore and subsurface, rather than near the shoreline and at the surface. The structural configuration of the CWIS (offshore, subsurface) could potentially reduce impingement mortality. The as-built structural

configuration of the CWIS will have to be evaluated based on the specialized source water body fish sampling and the results of the Year 2 and Year 2 impingement results (see Section 7.2).

Second, a screen wash return trough conveys fish and debris washed off of the traveling screens back to the source water body. This return may be considered an as-built technology that may offer advantages in reducing IM. Its effectiveness has been evaluated in a specialized pilot study and is discussed in Section 7.3. Note that the effectiveness of this as-built technology would be dependent on continuous screen operations during at least a portion of the year where IM is the greatest.

2. **Modification of impingement mortality by crediting potential benefits of increased screen operations.** The Marion Power Plant CWIS screen operations have been increased when debris loading occurs during the leaf fall or when winter freezing weather conditions exist. Increased screen operations have been shown to be effective in increasing the survival of robust fish taxa, relative to the existing condition. A pilot study has been conducted at the Marion Power Plant to quantify the potential benefits of such a measure (see Section 7.3). Data developed from this pilot study can then be used to support the use of increased screen operations as a potential impingement mortality reduction measure as part of a site-specific BTA under an Option 5 approach.

3. **Development of calculation baseline using a "full flow" approach.** The Marion Power Plant operates four circulating water pumps; however, only during a portion of the year are all four pumps operating. If the IEPA supports the use of full design flow as a basis for establishing calculation baseline (which has not yet been determined), SIPC will have a number of options available to demonstrate reduced flow including:
    - Demonstrated benefits of reduced pump operation during outages or periods of reduced demand, and
    - Seasonal restrictions on pump operations.

    Using the "full flow" method to establish calculation baseline would provide credits against SIPC's need to meet the impingement mortality performance standard. The only uncertainty associated with this approach is that it is not known if IEPA will support a "full flow" approach or if it will require the use of historical flow data in establishing calculation baseline.

4. **Annual variability assessment.** Results of the 2005-2006 and 2006-2007 IM study present an estimated value of annual impingement and at the Marion Power Plant. Although levels in impingement are moderate, inherent year to year variability in biological population levels and environmental conditions may cause related variability in impingement. In the establishment of calculation baseline (and future performance criteria), some additional consideration must be given to the annual variability in impingement.

7.1.1 Evaluation of As-Built Structural Configuration of CWIS

7.1.1.1 Configuration of Marion Power Plant CWIS

As defined in Section 7.1, a baseline CWIS is one that withdraws water near the shoreline and near the surface. Based on the as-built structural configuration of the CWIS at the Marion Power Plant, the CWIS is non-baseline due to the vertical and horizontal position within the source water body. The CWIS at the Marion Power Plant is non-baseline because of (1) the location of the intake structure away from the shoreline of the lake (i.e., not a shoreline facility), and (2) the subsurface sluice gate/subsurface water withdrawal system (i.e., not a surface water intake).

7.1.1.2 Methods for Evaluating Potential Benefits of the As-Built Configuration

These non-baseline characteristics of the intake structure at the Marion Power Plant may provide benefits in reducing impingement mortality. In order to evaluate the potential benefits of the as-built configuration in reducing impingement mortality, SIPC collected additional fisheries data from the source water body on a quarterly basis during periods of time that were concurrent with impingement mortality sampling.

Modification of Raw Impingement Mortality Calculation Baseline. To evaluate the potential benefit in reducing impingement mortality, gill nets were utilized variably spaced (both horizontally and vertically) within the vicinity of the CWIS as is illustrated in Figure 3-1. This effort entailed the use of paired experimental gill nets that allowed for the comparison of catch rates to evaluate:

1.) Differences at depth, and

2.) Differences between nearshore habitats and "offshore" locations.

For the analysis of differences at depth, that portion of the variability between the gill net collections that may be attributable to the depth variable was used as a factor to appropriately modify the calculation baseline to adjust for a subsurface opening:

$$\textbf{Adjusted Impingement Calculation Baseline} = \frac{\text{CPUE Gill Netting Surface Habitats}}{\text{CPUE Gill Netting Bottom Habitats}} \times \text{Raw IM Rate at intake screens}$$

Similarly, the variability in the gill net collections that may be attributable to the horizontal variable was used to appropriately modify the calculation baseline to adjust for the "offshore" location of the CWIS:

$$\textbf{Adjusted Impingement Calculation Baseline} = \frac{\text{CPUE Gill Netting Nearshore Habitats}}{\text{CPUE Gill Netting Offshore Habitats}} \times \text{IM Rate at intake screens}$$

It should be noted that the CPUE of gill net collections used in the above equations was modified by conducting a length-frequency analysis to remove those individuals that are clearly not vulnerable to impingement (e.g., large specimens that are strong swimmers and capable of overcoming intake velocities). Additionally, only similar taxa that were found in both the impingement and gill netting catch were used in this analysis. The results of the impingement sampling effort were used in conjunction with gill net results to identify these individuals. Adjustments from the seasonal gill netting data were also applied to the impingement data on a seasonal basis.

7.1.1.3 Potential Benefits of As-Built CWIS Configuration

Potential Benefits in Reducing Impingement Mortality. The length-frequency analysis between seasonal impingement catch and seasonal gill netting catch showed vulnerable fish primarily to be bluegill, threadfin shad, gizzard shad, largemouth bass, and other sunfish species. Based on the gill netting species that were vulnerable to impingement, the seasonal adjustment from the horizontal configuration of the intake structure may be characterized as variable, as shown in Figure 7-1. Spring (April-June) 2005, Summer (July-September) 2005, and Winter (January-March) 2007 showed a horizontal percent reduction in terms of both numbers and biomass. In addition, Fall (October-December) 2005 and Fall 2006 each showed a horizontal percent reduction only in terms of biomass. However, the other four seasons (Winter 2006, Spring 2006, Summer 2006, and Spring 2007) did not show a benefit from the horizontal configuration of the intake structure. When all nine seasons are taken into account the annual percent adjustment to impingement, weighted by the seasonal impingement catch, shows a **33 percent** reduction for fish numbers and an **81 percent** reduction for fish biomass from the horizontal configuration of the intake structure.

The seasonal adjustment from the vertical configuration of the intake structure is shown in Figure 7-2. By comparison, this as built feature demonstrates a more consistent benefit (reduction in impingement) as compared to a surface water intake structure. Spring (April-June) 2005, Winter (January-March) 2006, Spring 2006, Summer (July-September) 2006, and Spring 2007 showed a vertical percent reduction in terms of both numbers and biomass. In addition, Summer 2005, Fall (October-December) 2005, and Fall 2006 each showed a vertical percent reduction only in terms of number. Only one season (Winter 2007) did not show a benefit from the vertical configuration of the intake structure. The annual percent reduction in impingement, weighted by the impingement catch, shows a **98 percent** reduction for fish numbers and a **99 percent6** reduction for fish biomass from the vertical configuration of the intake structure.

The percentages from the structural horizontal and vertical benefits of the as built conditions of the intake structure could potentially be used by SIPC as a credit towards compliance with the impingement mortality performance standard for the Marion Power Plant.

7.1.2 Pilot Study to Evaluate Impingement Survival from Continuous Screen Operation

The Marion Power Plant currently rotates its traveling screens once per day. For an impinged fish to survive, it has to contend with the stress of constant screen velocities until the traveling screens are rotated again. If the screens are continuously rotated, those fish may have a greater chance of survival due to the reduced stress of dealing with the screen velocities for a shorter period of time before they are washed back into the source water body.

The purpose of the pilot study was to quantify the potential benefit (credit) in reducing impingement at the Marion Power Plant that may be gained by implementing continuous screen rotation during times of the year when impingement is the greatest. This operational measure may be used as a reduction in impingement that would be credited against Section 316(b) Phase II Rules performance standards.

7.1.2.1 Pilot Study Objectives

Specific objectives of this study plan included the following:

- √ Identify the number of live and dead fish that were subject to impingement after 24 hours of continuous traveling screen operation at the Marion Power Plant,
- √ Of those live fish, document and evaluate the number of those fish that survived a hold time of 48 hours,
- √ Apply the survival rate to the annual estimate of impingement (calculation baseline) to provide SIPC with an additional credit for complying with Section 316(b) Phase II Rules.

7.1.2.2 Pilot Study Methodology

The Impingement Mortality Pilot Study at the Marion Power Plant was conducted with five equally spaced events during the months of November, 2006-April, 2007 and coincided with the normal impingement sampling. The study was performed on any live fish specimens that were collected over the 24-hour impingement sampling period. Study procedures were conducted using the protocol provided below:

1) Each study was initiated by conducting a 24-hour continuous screen operation.
2) Fish collected during the 24 hour continuous screen operation were held in the impingement collection basket, which was submerged to a depth of three feet in the source water body.
3) After the 24 hour screen wash the basket was elevated to a shallow water depth (three to five inches), dead fish were collected from the basket, and then re-deployed to the holding depth of 3 feet.
4) At the start of the study period the number of live fish, species, water temperature, and dissolved oxygen was recorded.
5) Condition (live, moribund, dead) was monitored and recorded during three observation periods: start, middle, and end of the 48 hour test period.
6) At the middle observation period the basket was again elevated to a shallow water depth (three to five inches), dead fish were collected from the basket, and then re-deployed to the holding depth of three feet.
7) Fish were recorded as dead if they had no operculum movement, were not swimming, and/or had clouded eyes.

8) Fish were recorded as moribund if they could not maintain equilibrium and had occasional fin and operculum movement.

9) Fish were recorded as live if they had active operculum movement, were swimming upright, and/or had pink gills.

10) The holding basket was monitored every 8 hours to ensure that it was properly set in the water.

11) At the end of the 48 hour hold, the basket was elevated and fish were collected from the basket, and any live fish were returned to the source water body after processing.

12) Any fish removed had their total length, total weight, and any abnormalities recorded immediately after they were removed.

13) The study was conducted by qualified field personnel through the conclusion of the study period.

MACTEC believes that 48 hours was an adequate time period to evaluate if an impinged fish that was live at the time of capture would survive without the meticulous requirements of feeding and the stress involved with confining the fish for longer hold times. We also believe that the stress or mortality from being impinged on the traveling screens would have been evident during the 48 hour hold time.

Holding the fish in the collection basket provides adequate swimming space for the fish and provides the same environmental conditions (temperature, dissolved oxygen, pH, conductivity) that the fish encountered if they were released directly into the source water body compared to holding them in tanks with aerators.

7.1.2.3 Pilot Study Results

Over the course of the five pilot study events, the highest impingement after the 24-hour continuous screen operation occurred during the December 2006 study event (523 fish) and the lowest impingement occurred during the May 2007 study event (6 fish). During the December 2006 event, 98 percent of the fish were threadfin shad. For each of the five pilot study events, no threadfin shad were live after the 24-hour continuous screen wash. Based on the five study events, the survival of the total impingement sample ranged from 0.6 percent (February 2007) to 77.5 percent (April 2007).

In contrast to the results observed in threadfin shad, sunfish were consistently observed to be live after the 24-hour continuous screen operation. The survival of sunfish species (Centrachidae) ranged from 56 percent in the December 2006 study event to 100 percent in the February 2007 study event (Table 7-1). The average survival of sunfish during the five pilot study events was **83 percent**. All sunfish that were live after the 24 hour continuous screen operation were live after the 48-hour hold (i.e., no fish mortality during the test period). Shellfish were captured in only one of the five study events. The survival of shellfish was 100 percent in that event (February 2007).

The results of the pilot study demonstrated high survival of sunfish species, thus the survival rates of sunfish could be applied seasonally to reduce impingement at the Marion Power Plant. In order for SIPC to use the benefits from the pilot study as a reduction from calculation baseline that would be credited against Section 316(b) Phase II Rules performance standards,

continuous screen operation would need to be implemented as an operational measure during times of the year when impingement of sunfishes is the highest (Spring).

Table 7-1. Continuous Screen Operation Pilot Study at the SIPC Marion Power Plant.

Study Date	% Survival of Total IM Sample	% Survival of Sunfish Species	% Survival of Shellfish Species
11/15/2006	73.68	96.55	---
12/19/2006	0.97*	55.56	---
2/21/2007	0.55*	100.00	100.00
4/24/2007	77.50	93.94	---
5/7/2007	66.67	66.67	---
Average	43.87	**82.54**	100.00

** Low survival reflects high number of threadfin shad.*

Note: All fish that were live after the 24 hr continuous screen wash were live at the end of the 48 hr hold - no mortality during the test period.

7.2 Evaluation of Affects of IM Losses on Ecosystem Health

As was discussed in Section 7.1, the total annual impingement at the Marion Power Plant is estimated to be typically low (approximately 22,883 fish for Year 1 and 24,644 fish for Year 2). The potential effects of these losses on ecosystem health can be viewed in several ways:

- **Assessment of losses in terms of natural mortality and trophic energy transfer.** The observed overall impingement rates are not likely to have result in a significant adverse effect on the resident aquatic communities by virtue of both the intrinsic natural mortality that occurs within the fish populations. For example, a major portion of the impingement catch in both Year 1 and Year 2 were bluegill (30.7 and 18.6 percent of the total, respectively). Bluegill are also noted to have a high natural mortality rate, particularly between the juvenile, Age 1+, and subsequent life stages. Applying the instantaneous mortality rates from USEPA 316(b) technical documents (USEPA, 2004), it is estimated that only one bluegill out of the estimated 7,017 collected during Year 1 impingement would survive to a harvestable age (Age 3+). Similarly, for the Year 2 impingement, only one bluegill of the estimated 4,593 would survive to a harvestable age.

  Additionally, the screen wash return trough of the Marion Power Plant CWIS is configured to returns impinged fish back to the source water body. While these fish may be dead, their biomass can be transferred to other components of the trophic system (scavengers, benthic invertebrates, plankton), resulting in no real net loss in productivity within the system.

  Therefore, based on the inherent “no net loss” of biomass within the ecosystem, coupled with the very low numbers of bluegill or other recreational species that would normally survive to a harvestable age, it is concluded that the impingement mortality incurred by the CWIS of the Marion Power Plant does not have an adverse effect on resident fish populations within Lake of Egypt.

- **Consideration of SIPC’s Prior Efforts to Establish Lake of Egypt and its Associated Aquatic Resources**. The Marion Power Plant uses Lake of Egypt as a source of cooling water, and was responsible for its initial construction in 1963. Subsequently the lake has developed a valuable fishery and is used regionally as a destination by anglers. At 500 feet MSL, the lake covers 2,300 acres and has a storage volume of 41,000 acre feet (and an average depth of 17.81 feet). This large area represents an aquatic resource with a

sizeable standing stock of fish (forage fish and sport fish) that did not exist prior to the data of the plant's construction. Consequently, the potential loss of fish due to the operation of the CWIS is not significant relative to the annual production of fish and other aquatic biota that is provided by Lake of Egypt.

- **Consideration of SIPC's Prior Efforts to Enhance the Fishery of Lake of Egypt.** SIPC has not only constructed Lake of Egypt, but has also been engaged in sponsoring restoration efforts within Lake of Egypt for a number of years. Restoration measures utilized have entailed the periodic stocking of game fish as is presented in Table 7-2.

Table 7-2. Summary of Game Fish Stocked in Lake of Egypt

Year	SIPC Sponsorship	Fish Stocked	Number
1971	Yes	Threadfin shad	2, 300 adults
1985	Yes	Walleye	8,000 4"-6" fingerlings
1986	Yes	Hybrid Striped Bass	250,000 fry 500 1"-2" fingerlings
1987	Yes	Hybrid Striped Bass	15,000 1.5"-2" fingerlings
1987	Yes	Inland silverside	500 adults
1988	Yes	Hybrid Striped Bass	15,000 1"-2" fingerlings
1989	Yes	Hybrid Striped Bass	15,000 1"-2" fingerlings
1990	Yes	Hybrid Striped Bass	15,000 1"-2" fingerlings

Source: Heidinger, 1990; SIPC

Prepared by/Date: WJE/10-4-04
Checked by/Date: SRC/10-4-04

Indeed, such measures are on going as SIPC anticipates stocking 1,000 fingerlings (three- to five-inch length) of hybrid striped bass in the near future within Lake of Egypt. The beneficial effects of these restoration measures further compensate for impingement mortality incurred by the operation of the CWIS.

SIPC has also supported the historical introduction of a forage fish species into Lake of Egypt that is an important aspect of the overall productivity of the fishery of the lake. After consultation with Dr. Roy Heidinger of SIU in the 1970s, threadfin shad were introduced into the lake to improve the forage base and expand the productivity of the fishery. While the initial stocking of threadfin shad was not funded by SIPC, SIPC's operation of the Marion Power Plant has provided thermally enriched water within the lake that is essential to the survival of threadfin shad over winter. SIPC believes that the very operation of the power plant is enhancing the fishery of the lake via the sustenance of the threadfin shad forage population.

8.0 References

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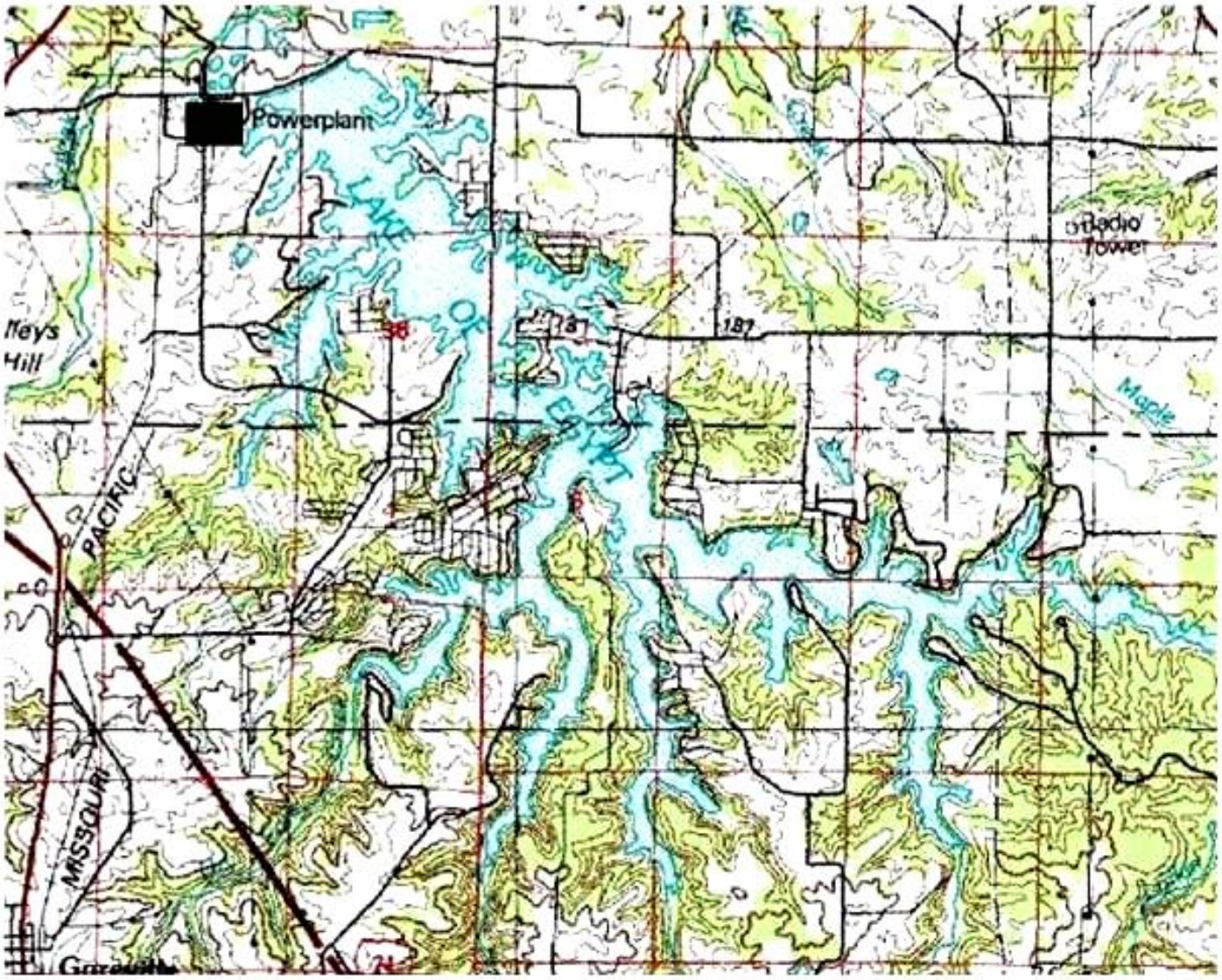
Figures



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	PROJECT NO.:	3250045102

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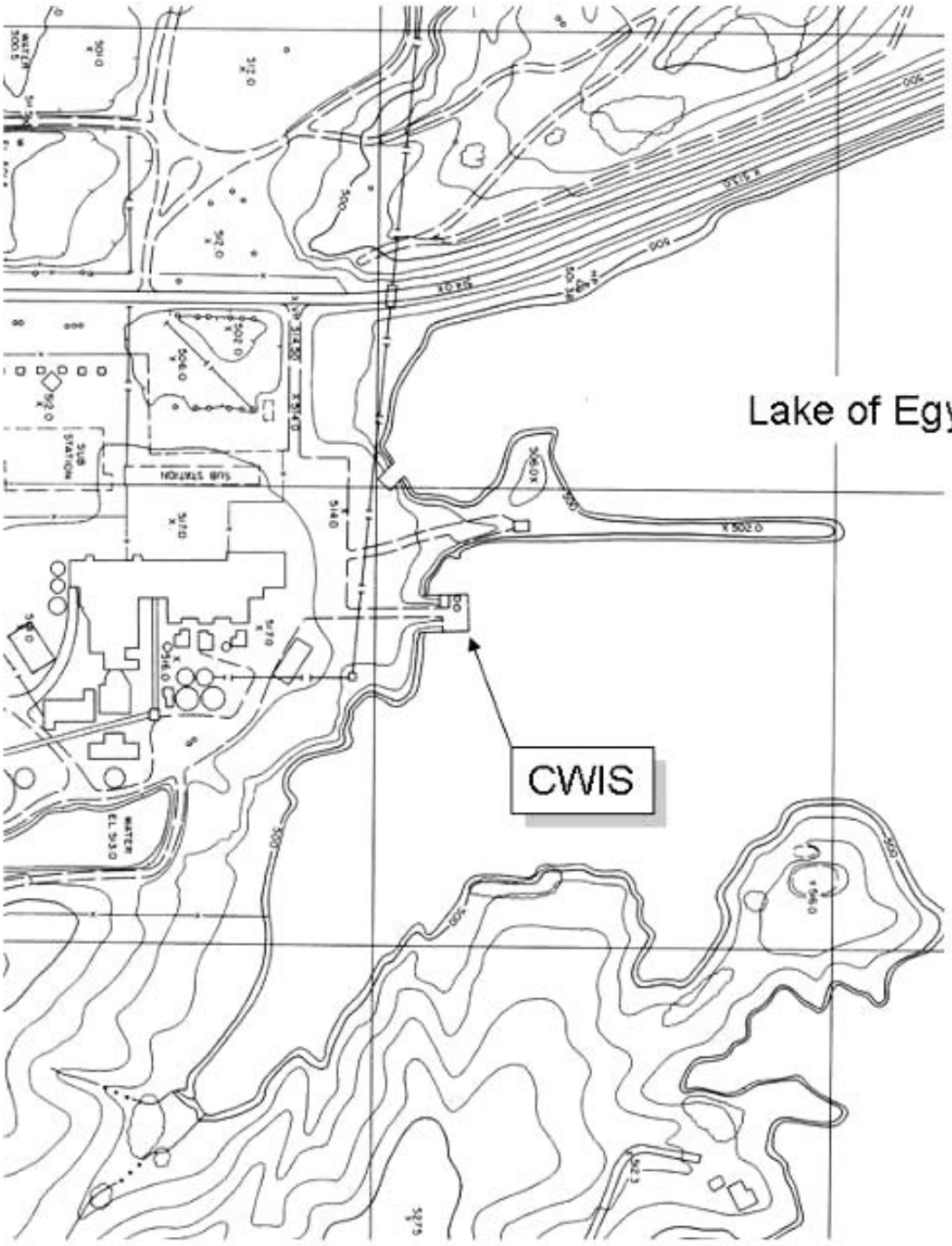
Figure 1-1
Marion Power Plant
Project Location



Source: SIPC March 1, 1987

Approximate Scale			
200 0 200 feet	DRAWN BY:	WJE	Figure 1-2. Marion Power Plant Plan View
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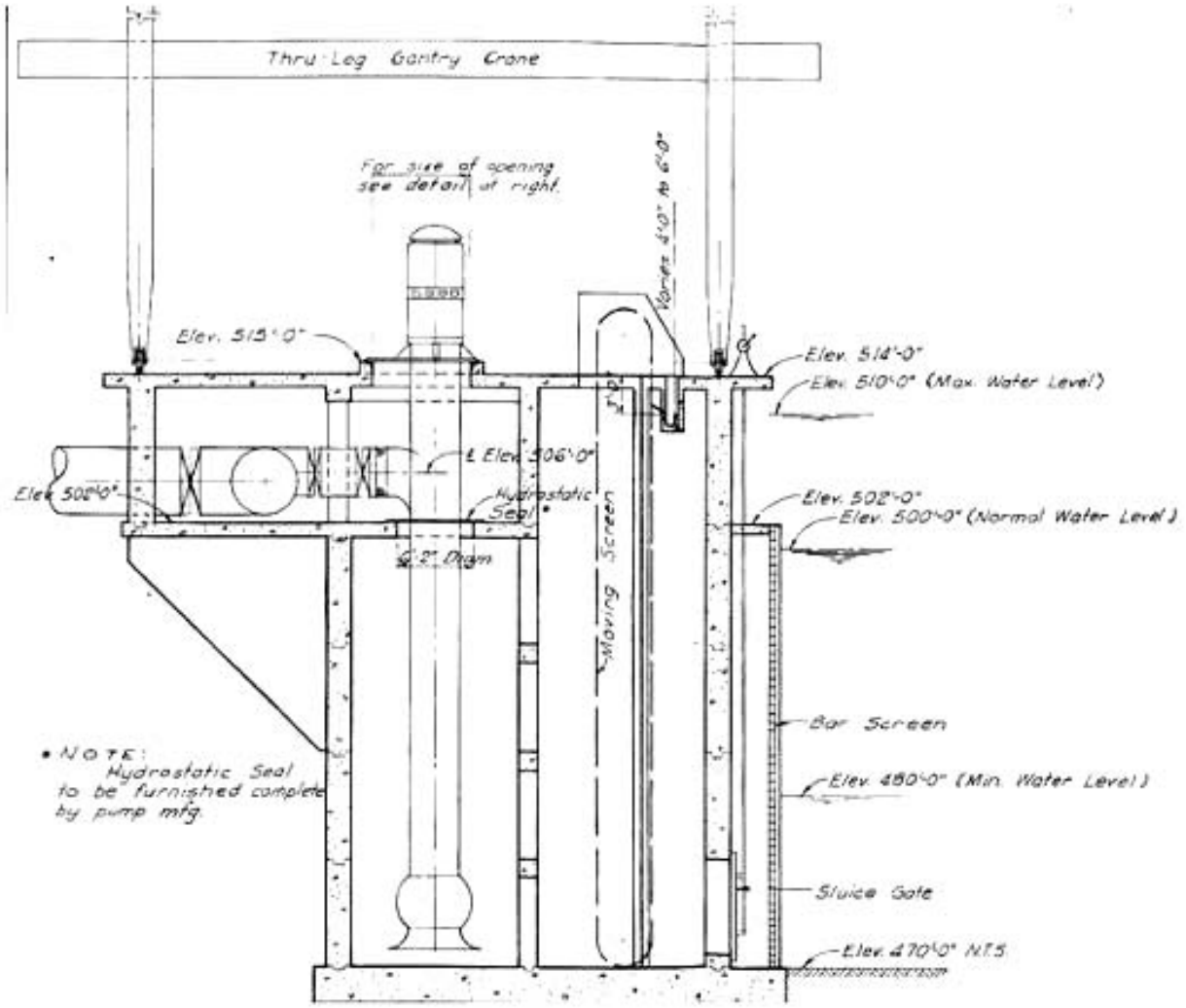
	PROJECT NO.:	3250045102	



Source: Burns & McDonnell, 1960

Not to Scale	DRAWN BY:	WJE	MACTEC	Figure 1-3. Marion Power Plant CWIS Side View
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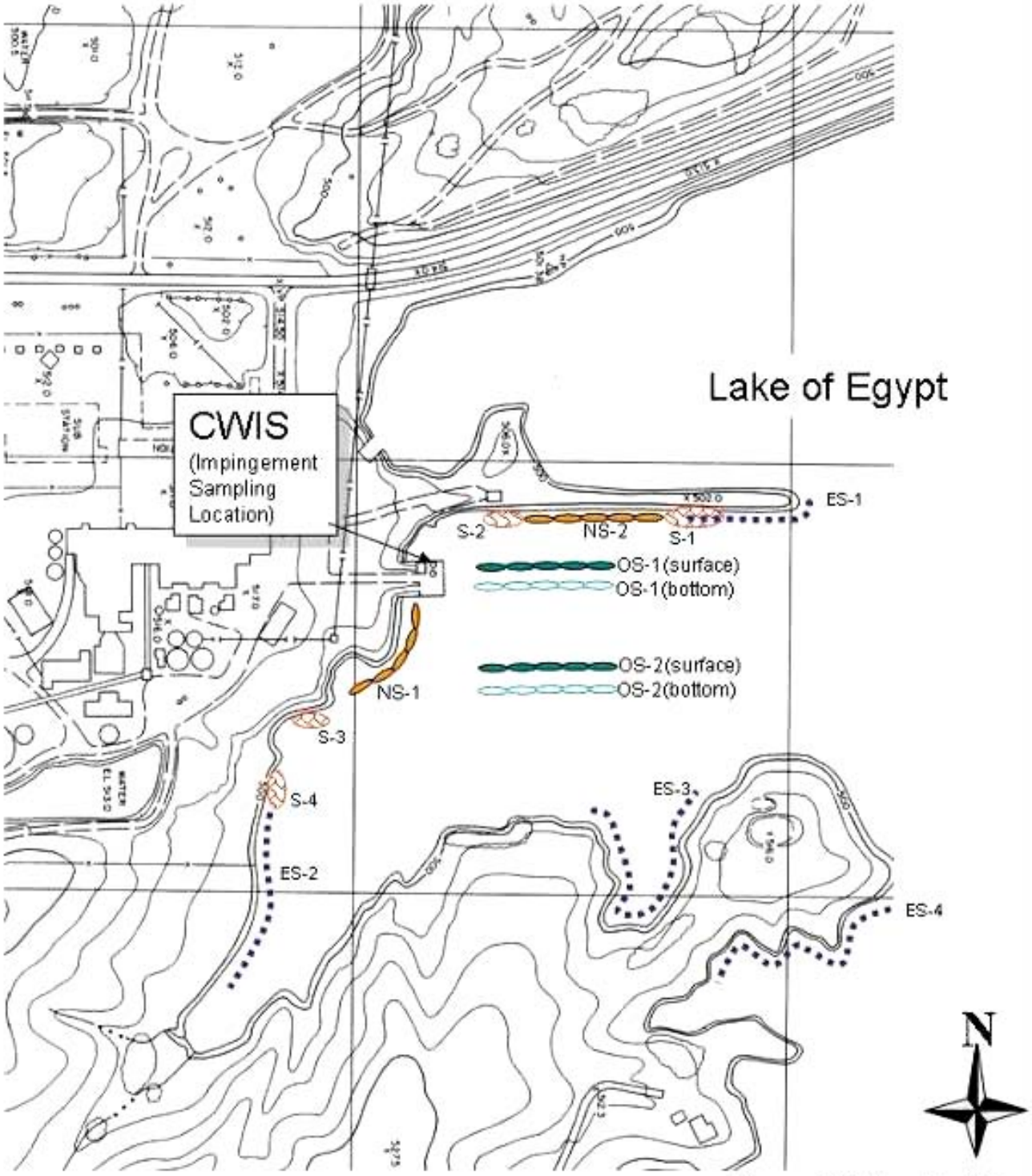

Source: SIPC March 1, 1987

Approximate Scale.
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feet

Offshore net location
Nearshore net location
Electrofishing location
Seine location

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Figure 3-1. Marion Power Plant Sampling Locations

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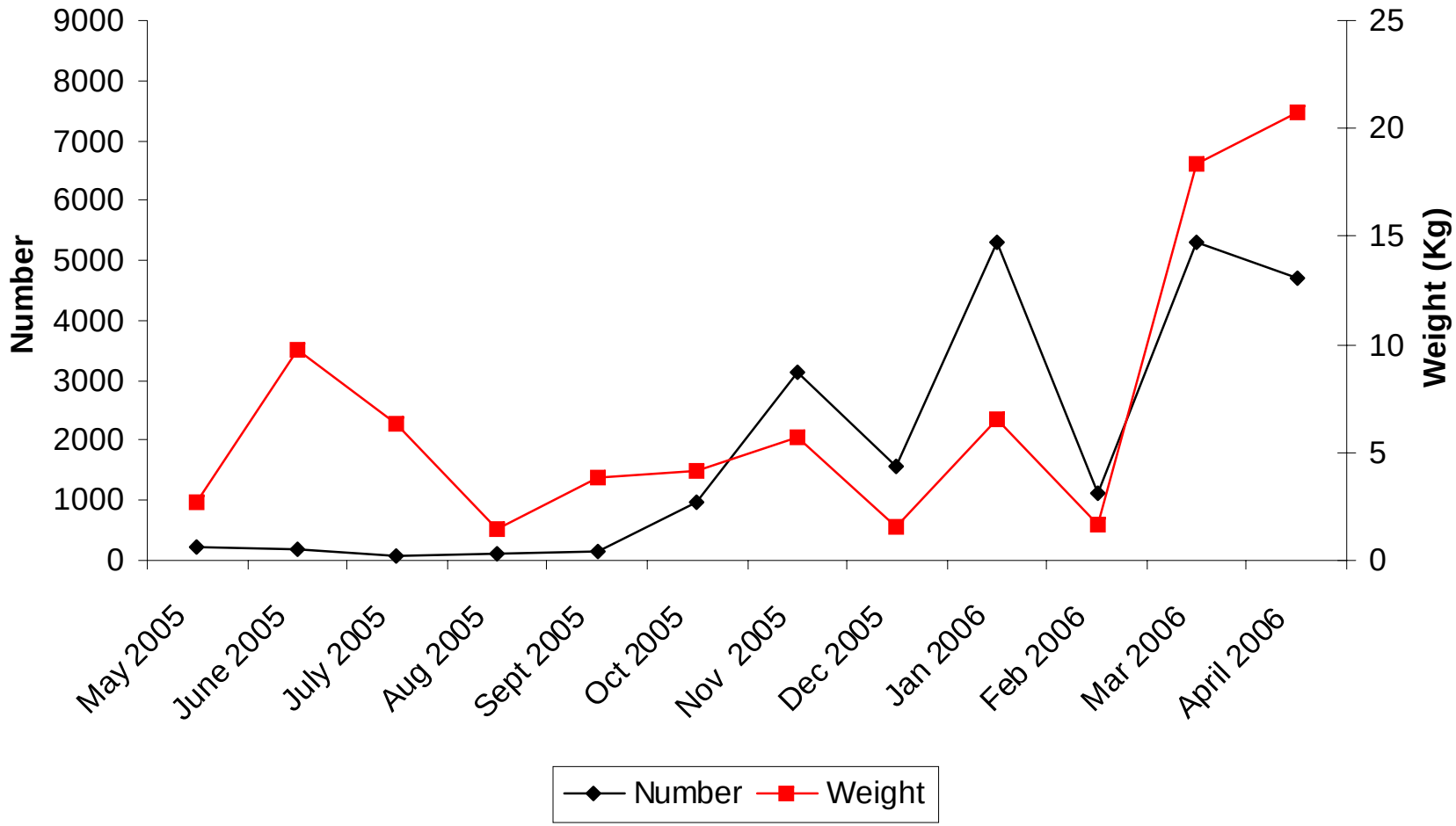

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Figure 4-1. Year-1 Flow-Adjusted Number and Weight of Fish Impinged at the Marion Plant from May 2005-April 2006

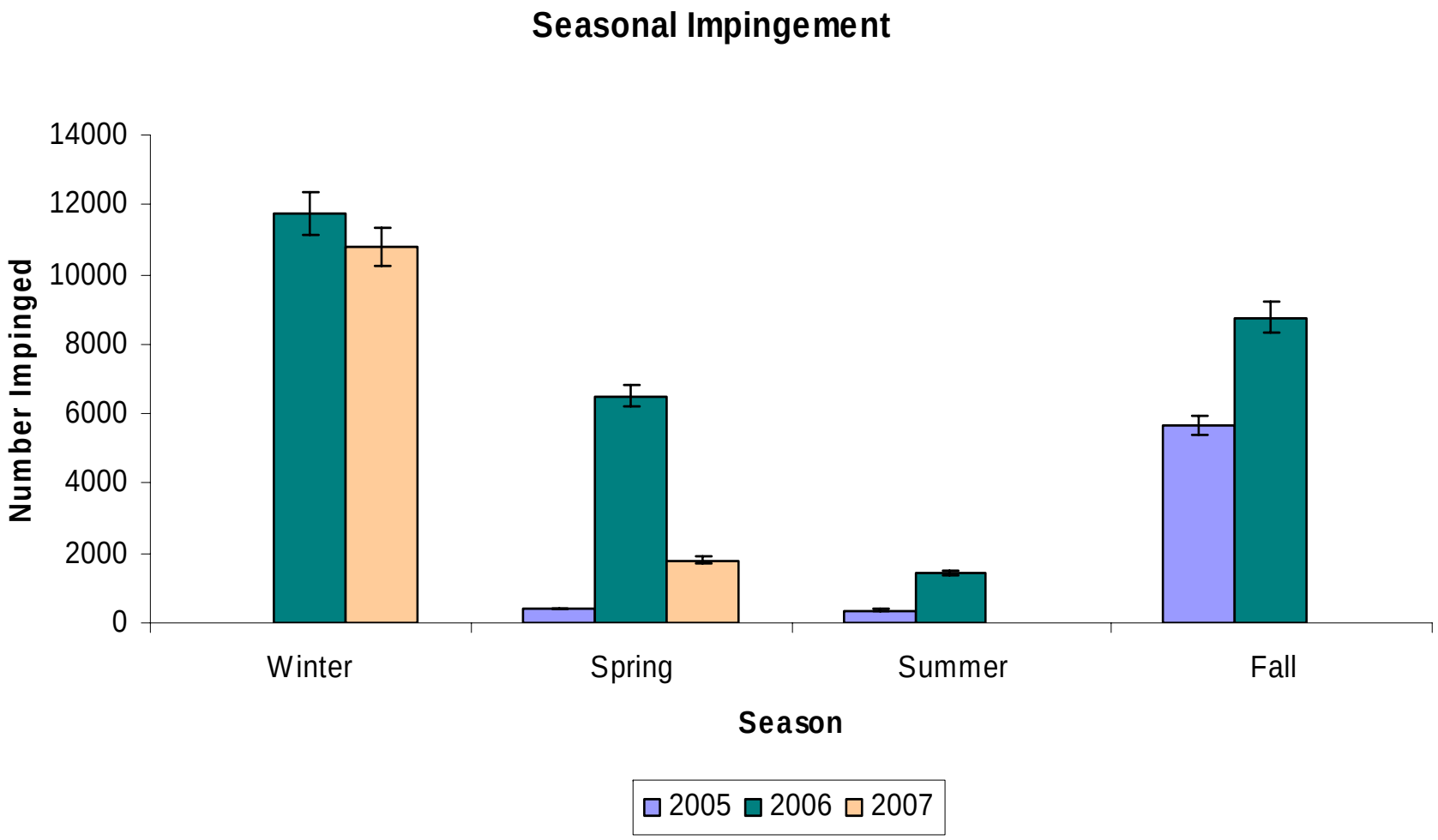

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Figure 4-2. Seasonal Variation in Impingement Samples at the Marion Plant from May 2005-April 2007

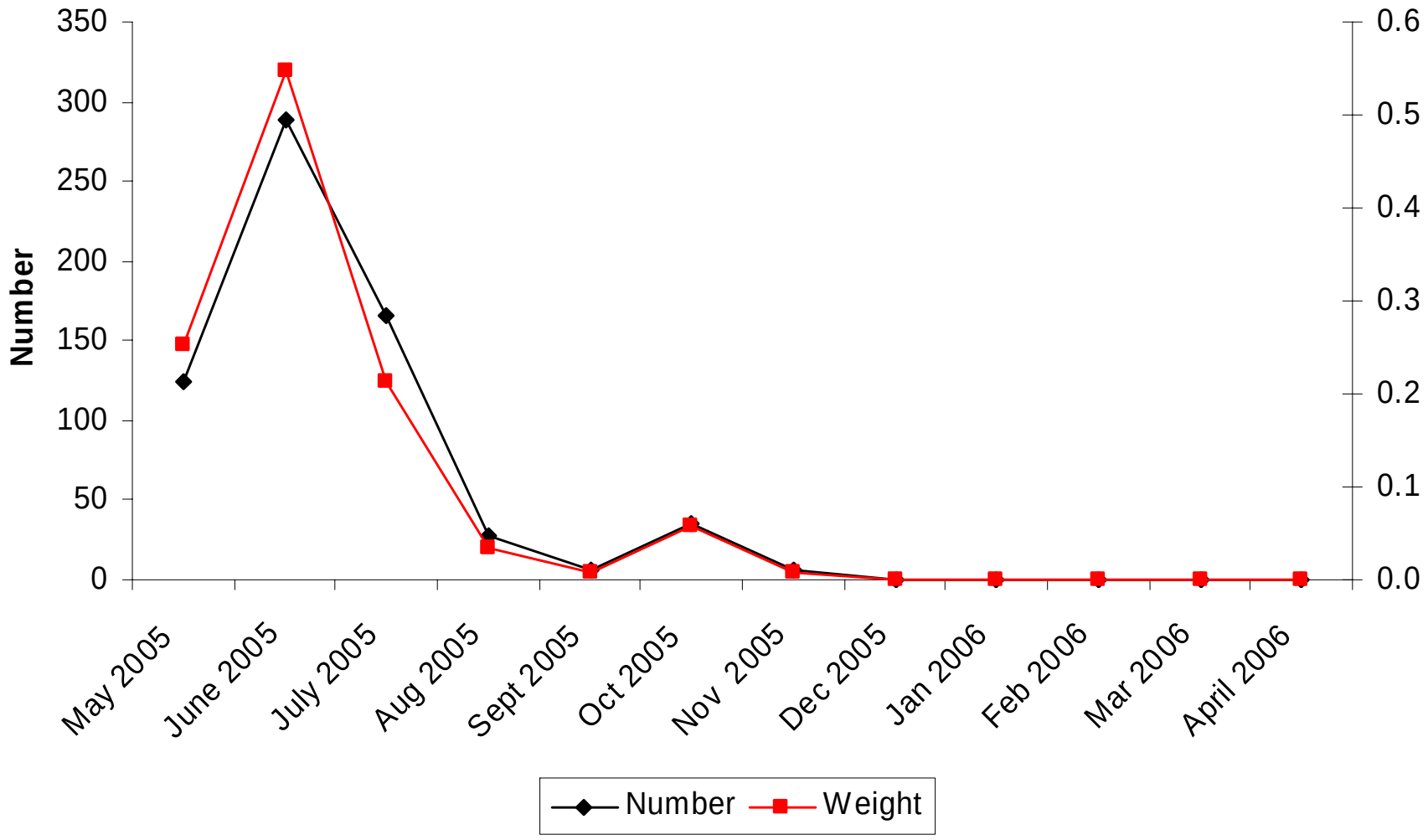

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Figure 4-3. Year-1 Flow-Adjusted Number and Weight of Shellfish Impinged at the Marion Plant from May 2005-April 2006

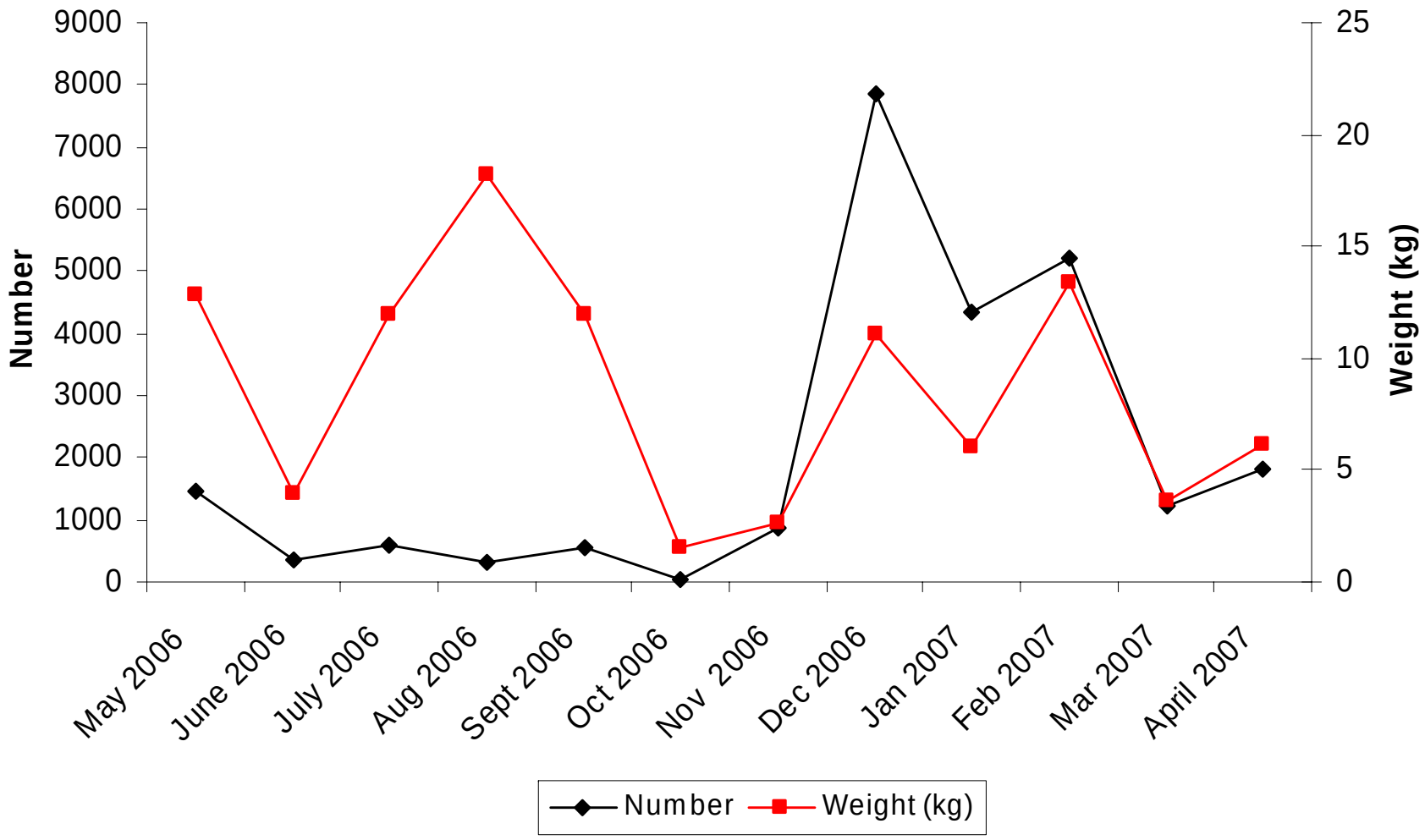

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Figure 4-4. Year-2 Flow-Adjusted Number and Weight of Fish Impinged at the Marion Plant from May 2006-April 2007

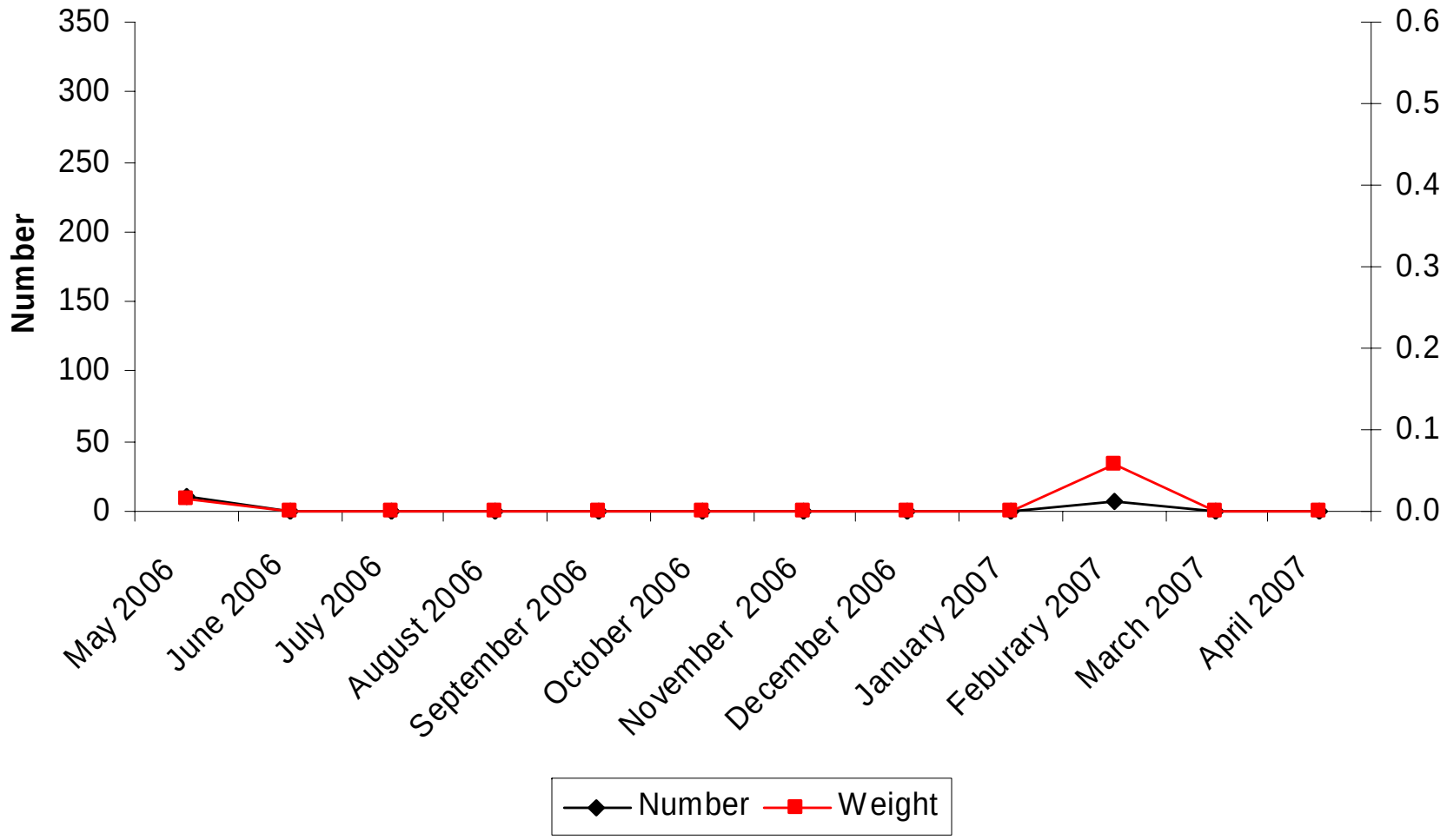

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Figure 4-5. Year-2 Flow-Adjusted Number and Weight of Shellfish Impinged at the Marion Plant from May 2006-April 2007

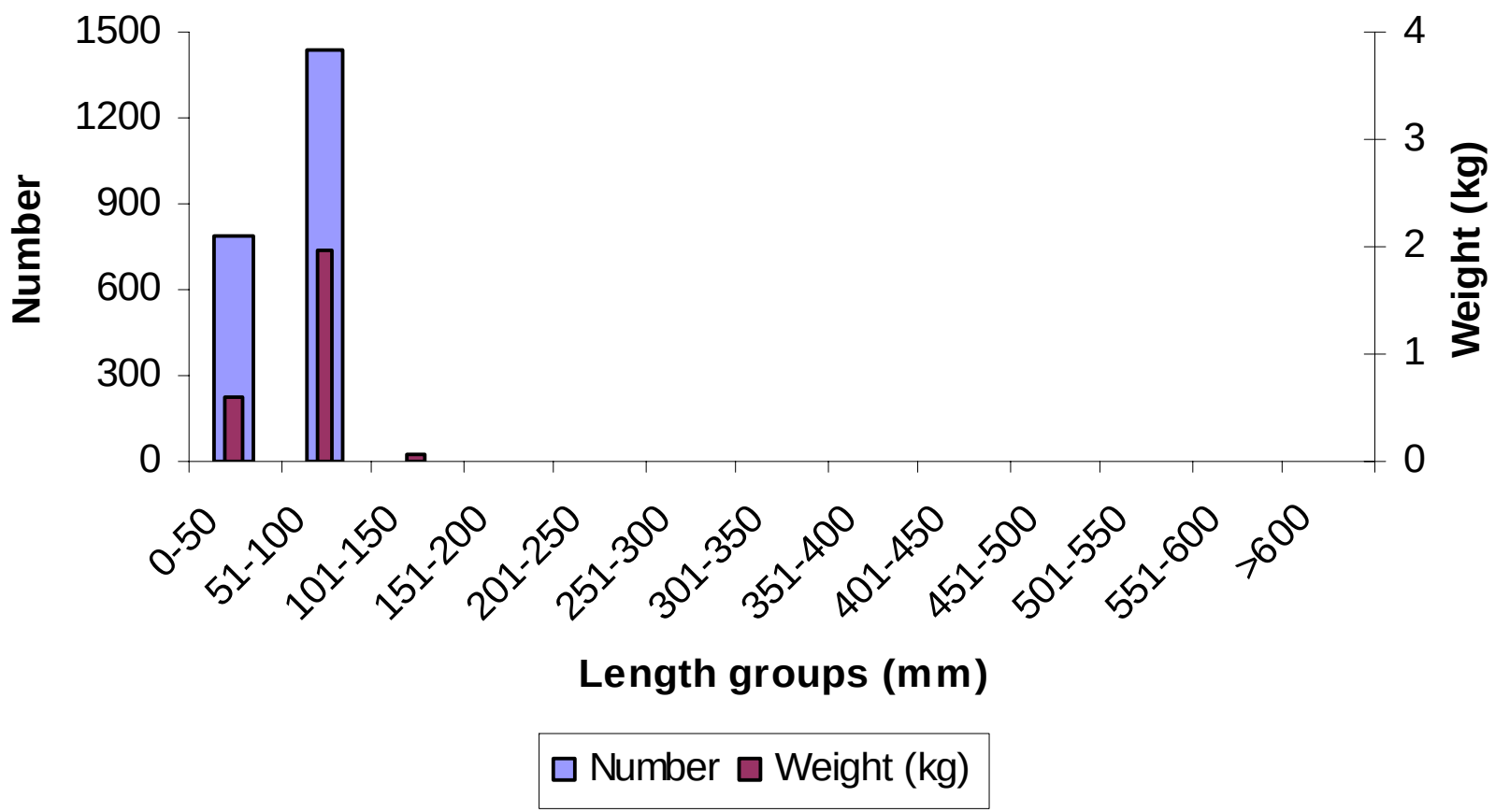

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Figure 4-6. Year-1 Number and Weight per Length Group of Threadfin Shad Impinged at the Marion Plant from May 2005-April 2006

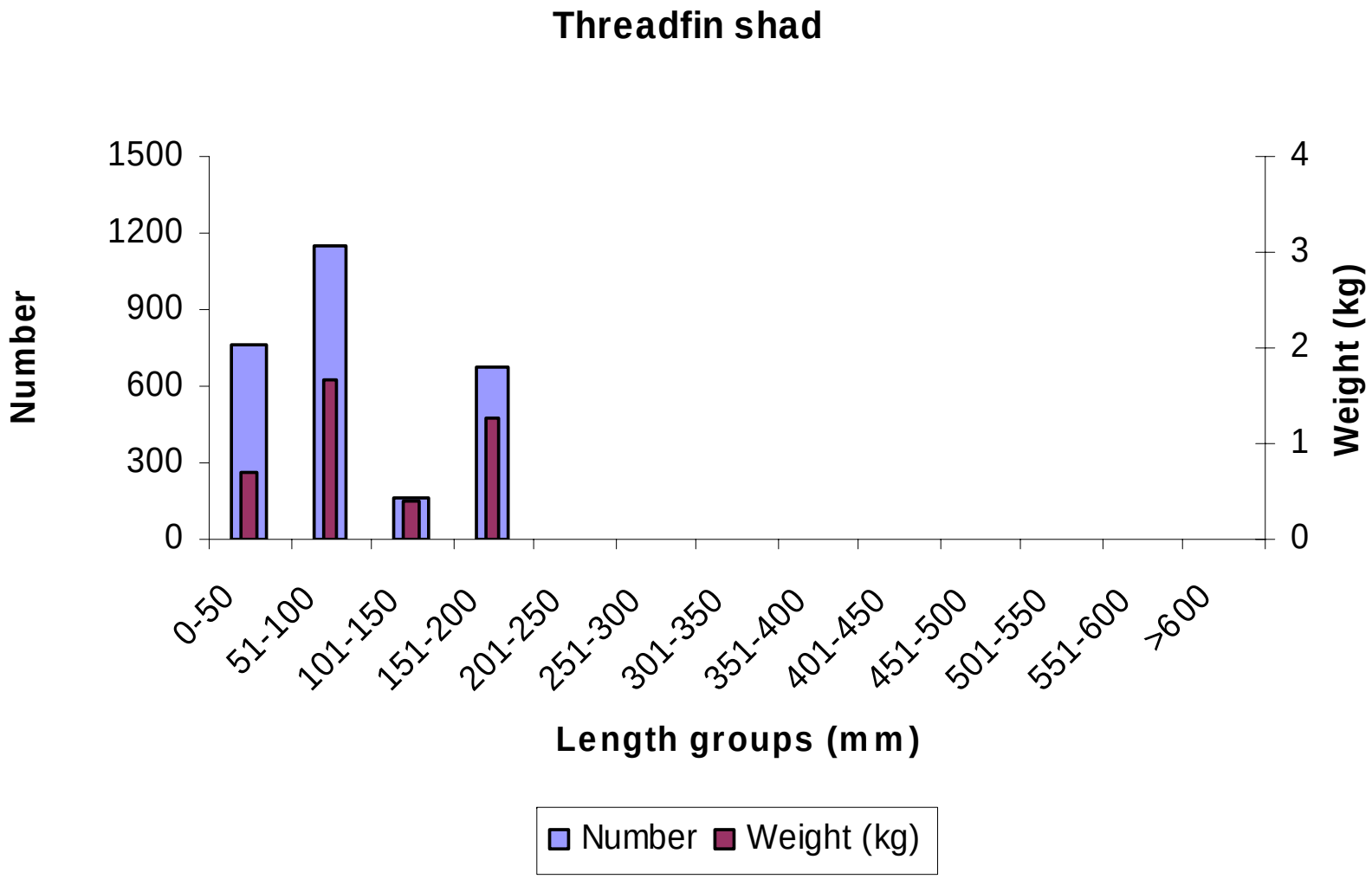

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Figure 4-7. Year-2 Number and Weight per Length Group of Threadfin Shad Impinged at the Marion Plant from May 2006-April 2007

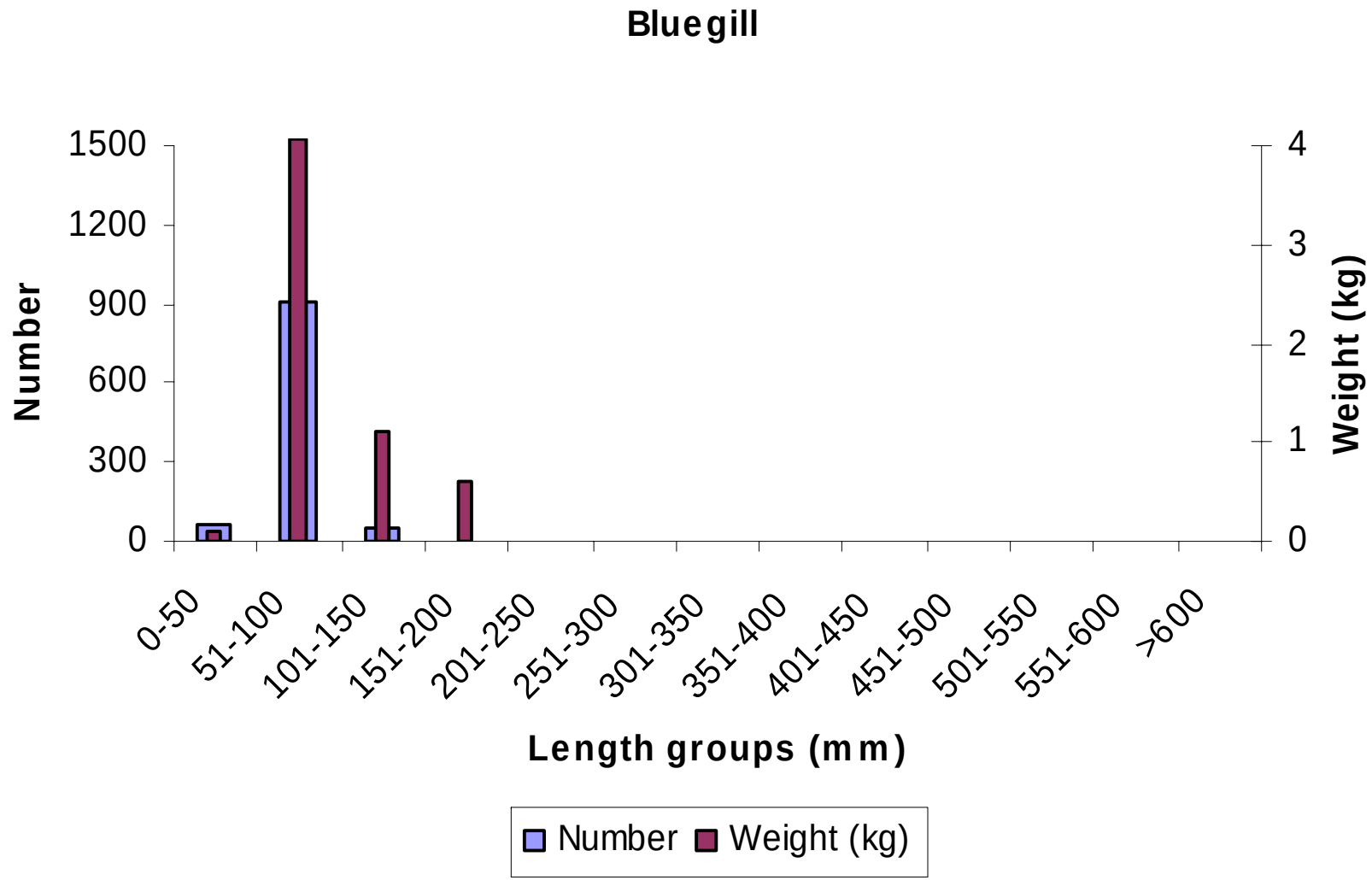

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Figure 4-8. Year-1 Number and Weight per Length Group of Bluegill Impinged at the Marion Plant from May 2005-April 2006

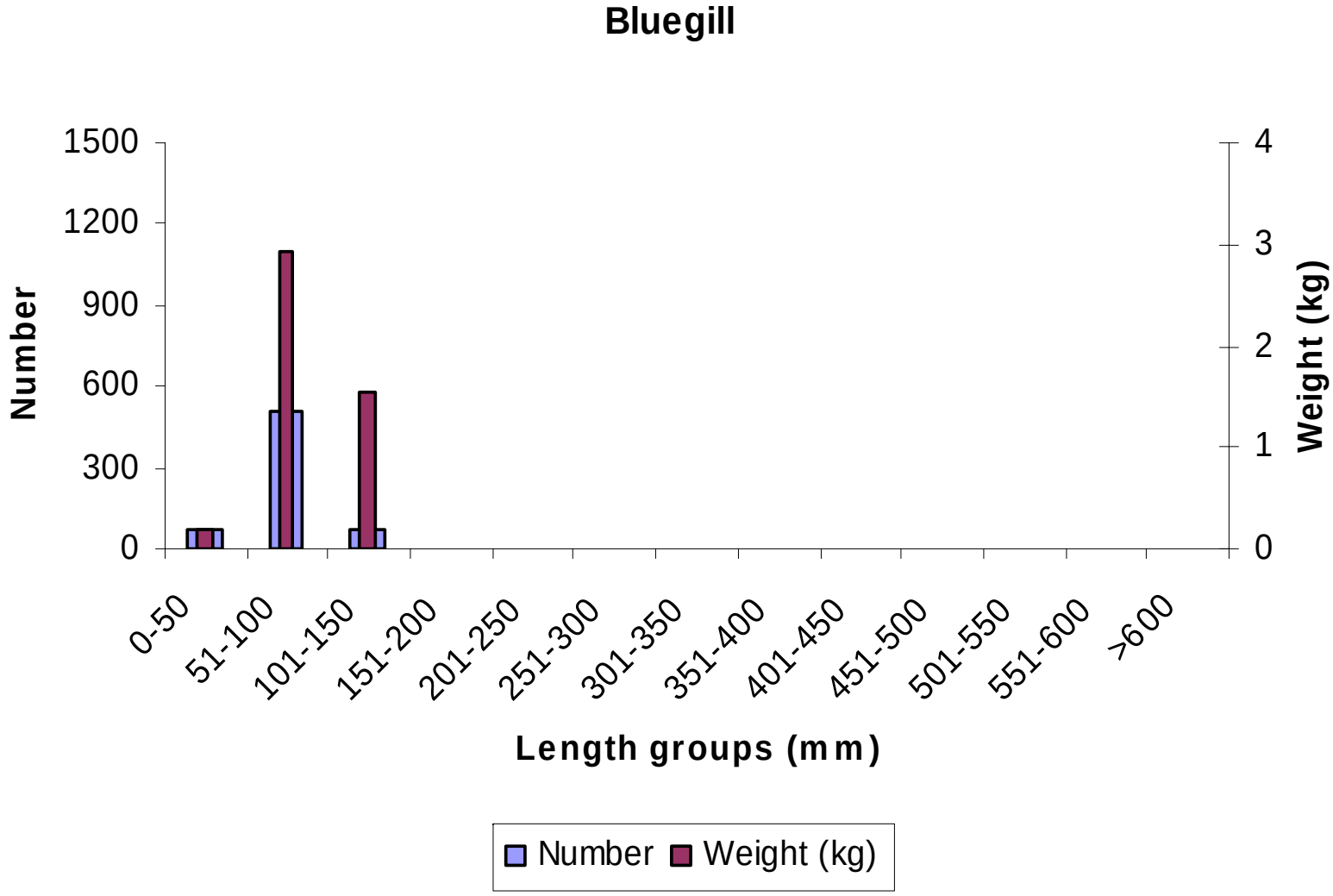

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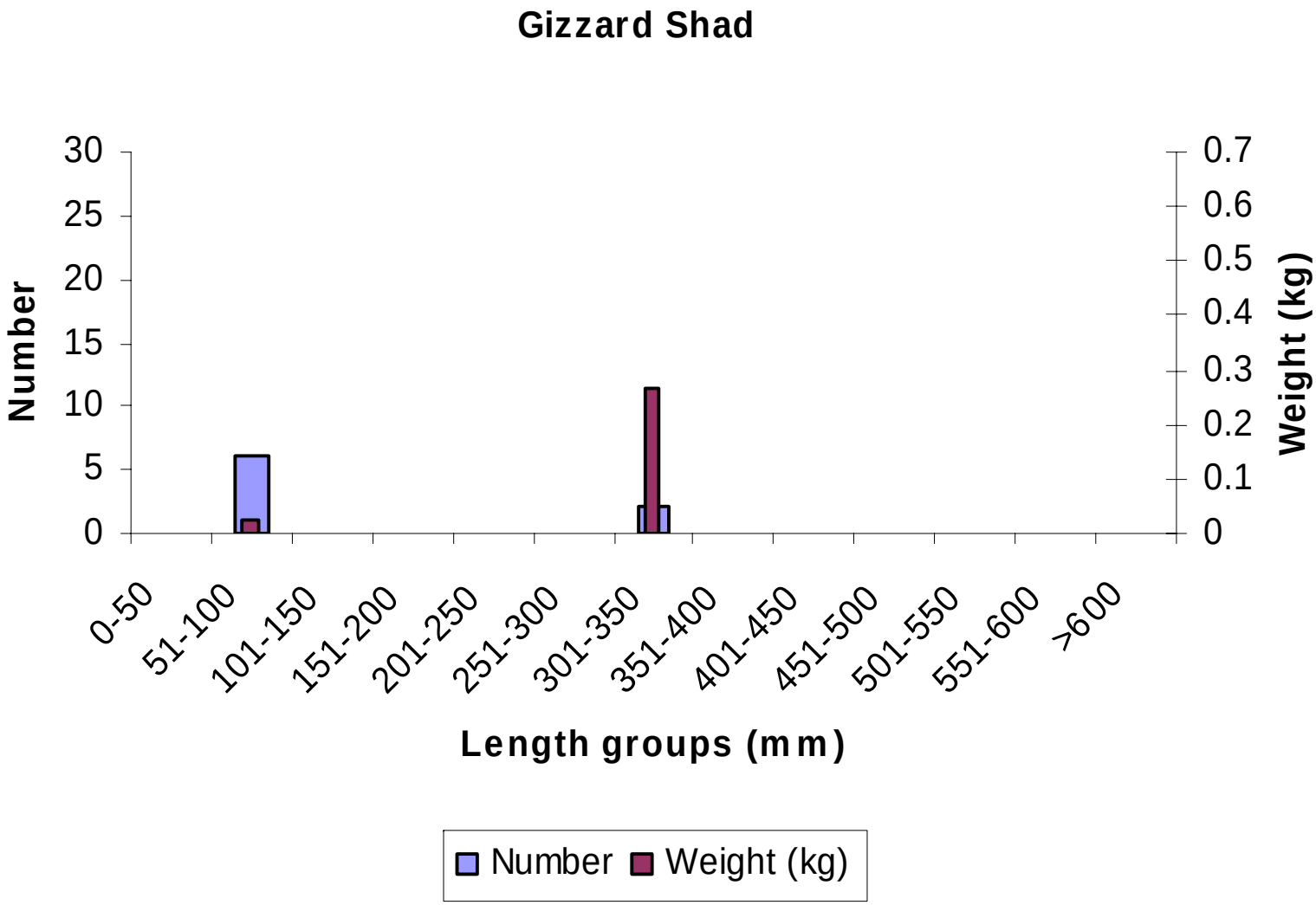
Figure 4-9. Year-2 Number and Weight per Length Group of Bluegill Impinged at the Marion Plant from May 2006-April 2007



DRAWN BY:	MCB
CHECKED BY:	WJE
DATE:	10/31/2007
PROJECT NO.:	3250045102

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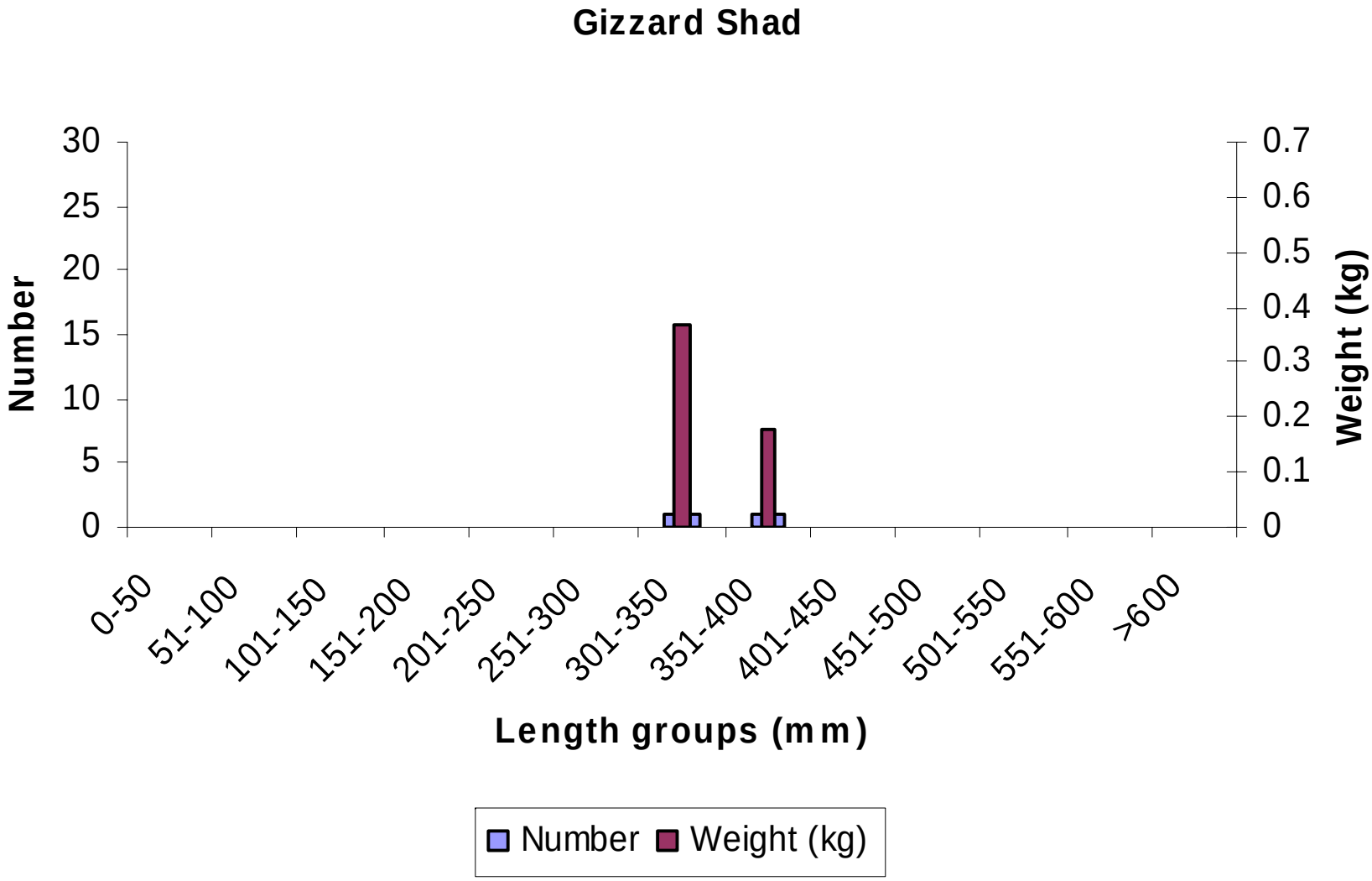
Figure 4-10. Year-1 Number and Weight per Length Group of Gizzard Shad Impinged at the Marion Plant from May 2005-April 2006



DRAWN BY:	MCB
CHECKED BY:	WJE
DATE:	10/31/2007
PROJECT NO.:	3250045102

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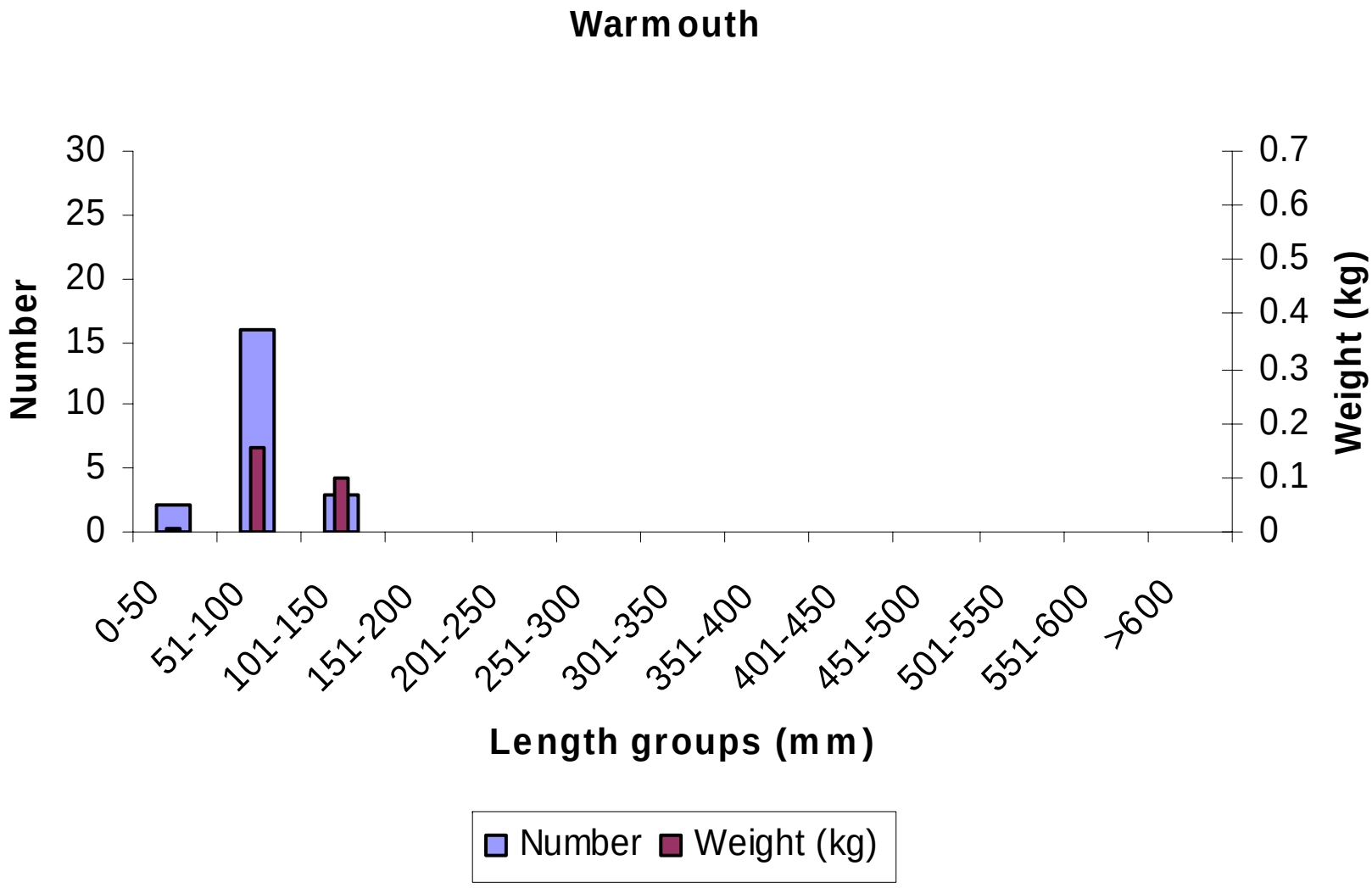
Figure 4-11. Year-2 Number and Weight per Length Group of Gizzard Shad Impinged at the Marion Plant from May 2006-April 2007



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DATE:	10/31/2007
PROJECT NO.:	3250045102

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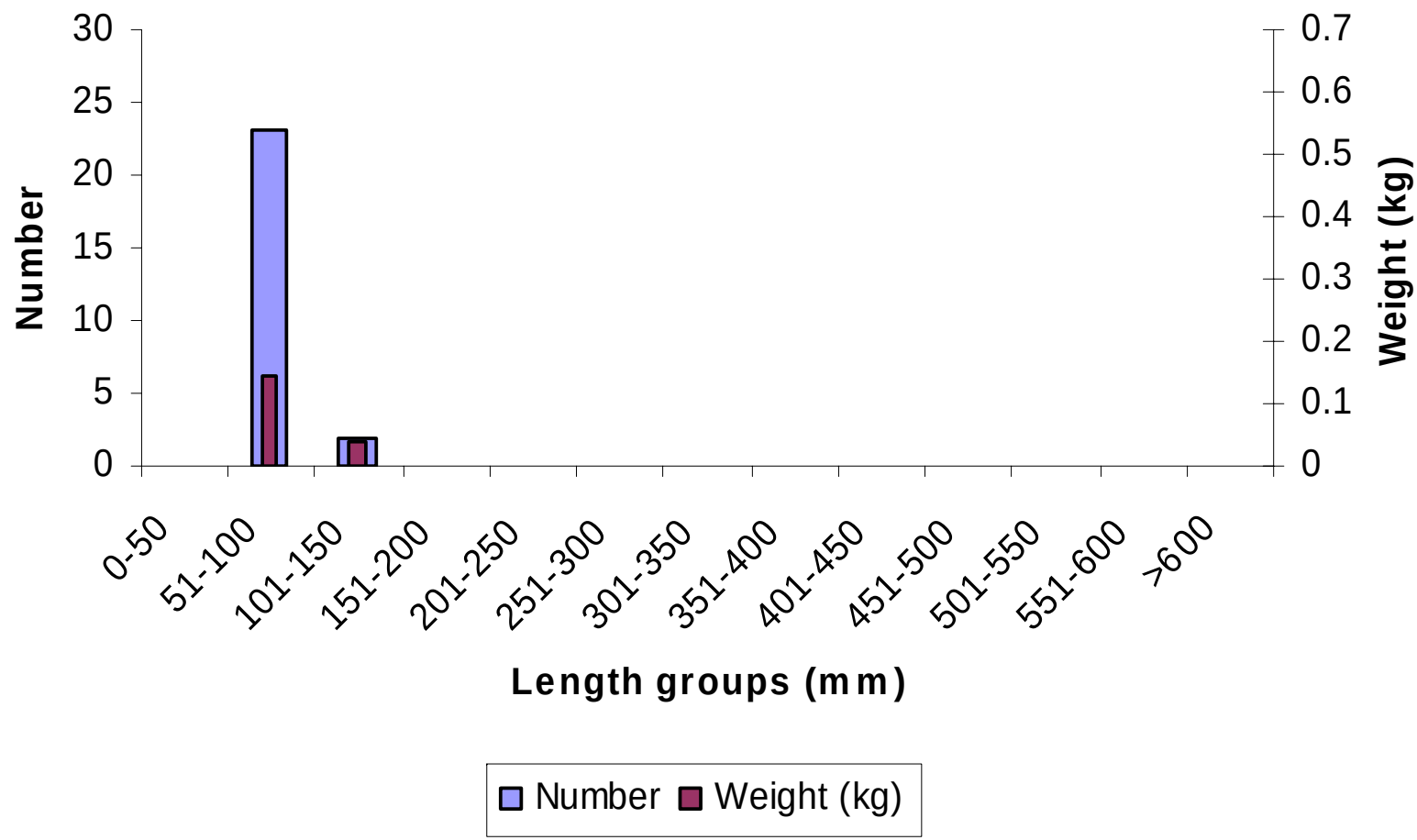
Figure 4-12. Year-1 Number and Weight per Length Group of Warmouth Impinged at the Marion Plant from May 2005-April 2006



DRAWN BY:	MCB
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DATE:	10/31/2007
PROJECT NO.:	3250045102

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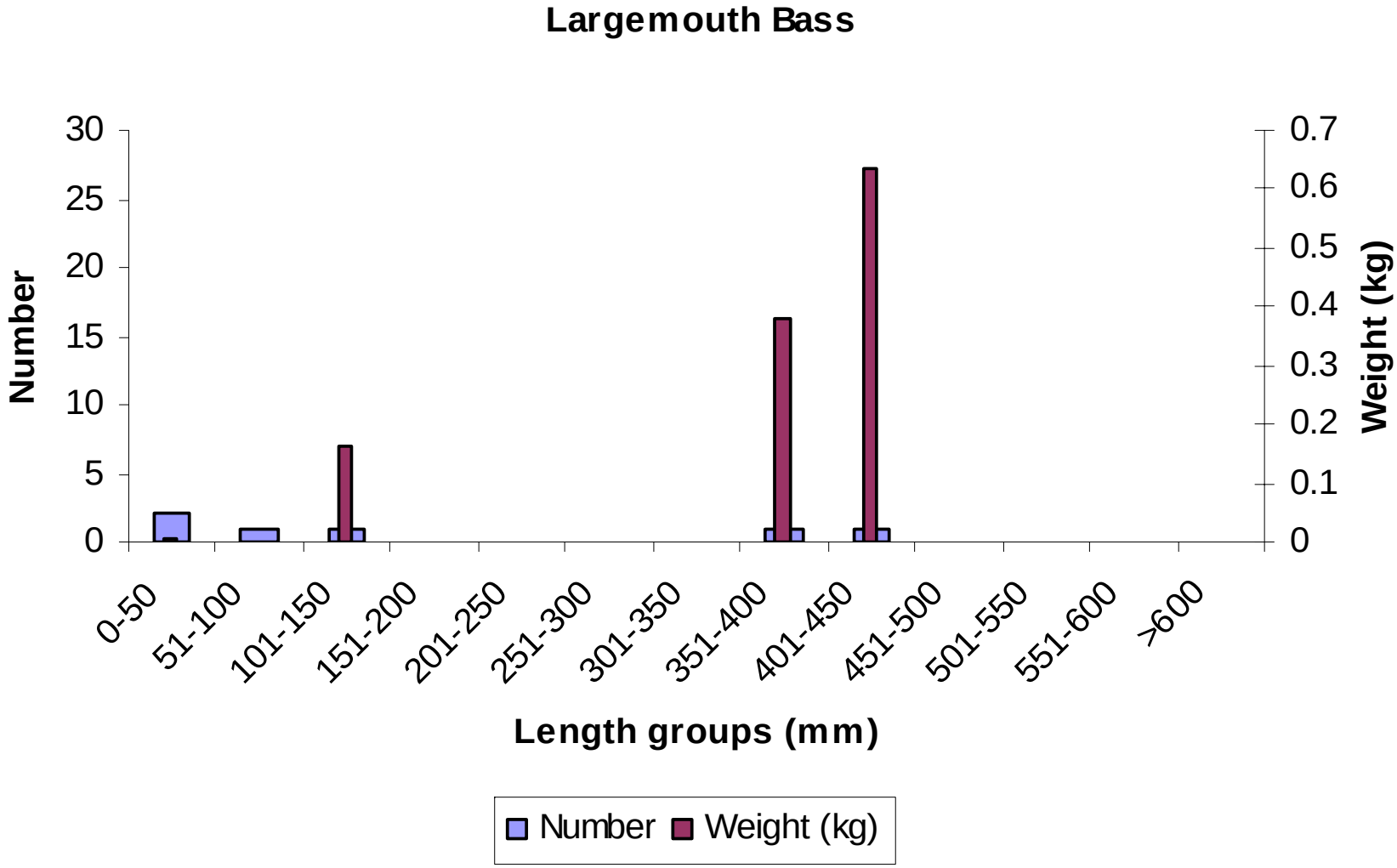
Figure 4-13. Year-2 Number and Weight per Length Group of Warmouth Impinged at the Marion Plant from May 2006-April 2007



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CHECKED BY:	WJE	
DATE:	10/31/2007	
PROJECT NO.:	3250045102	

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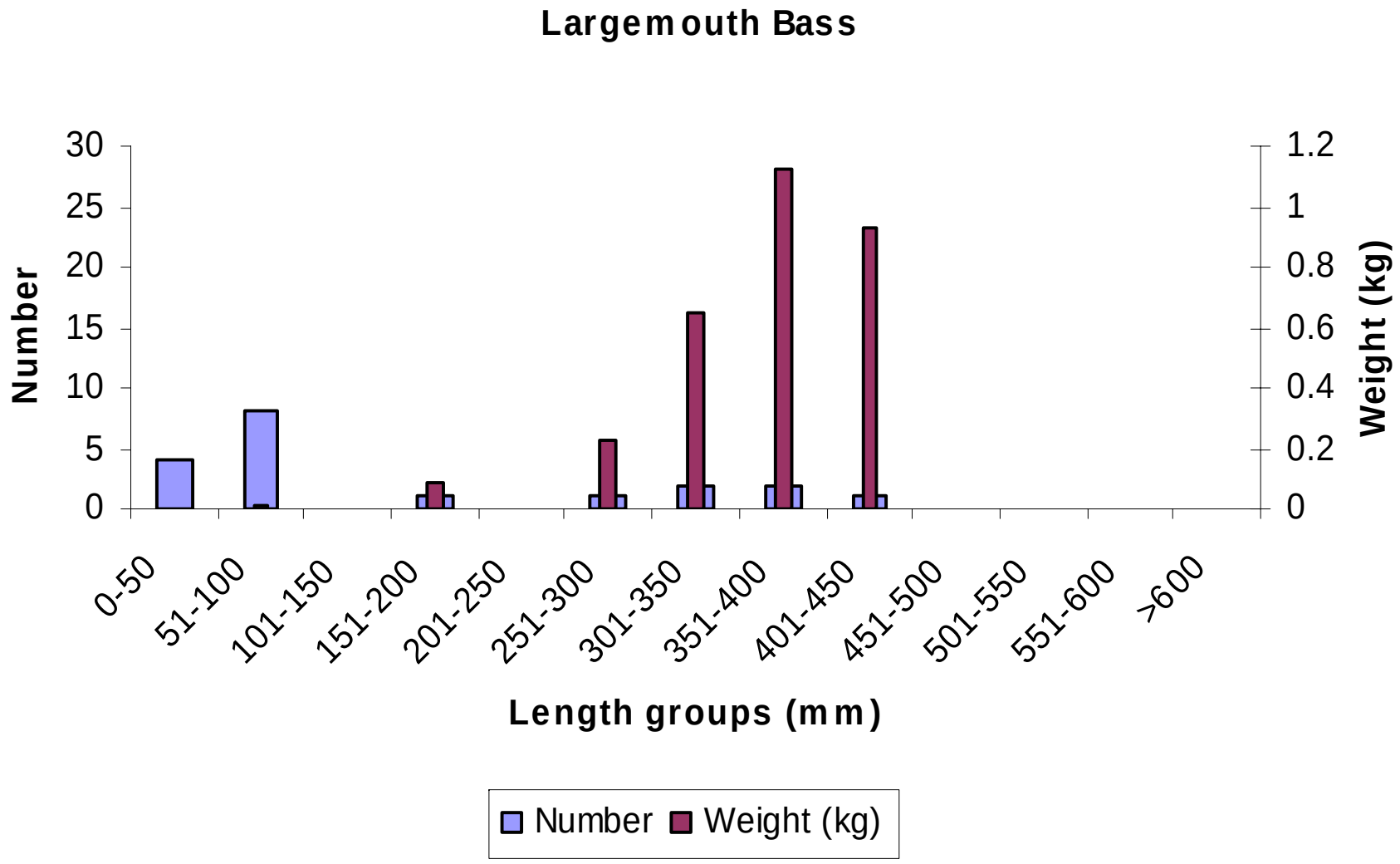
Figure 4-14. Year-1 Number and Weight per Length Group of Largemouth Bass Impinged at the Marion Plant from May 2005-April 2006



DRAWN BY:	MCB	
CHECKED BY:	WJE	
DATE:	10/31/2007	
PROJECT NO.:	3250045102	

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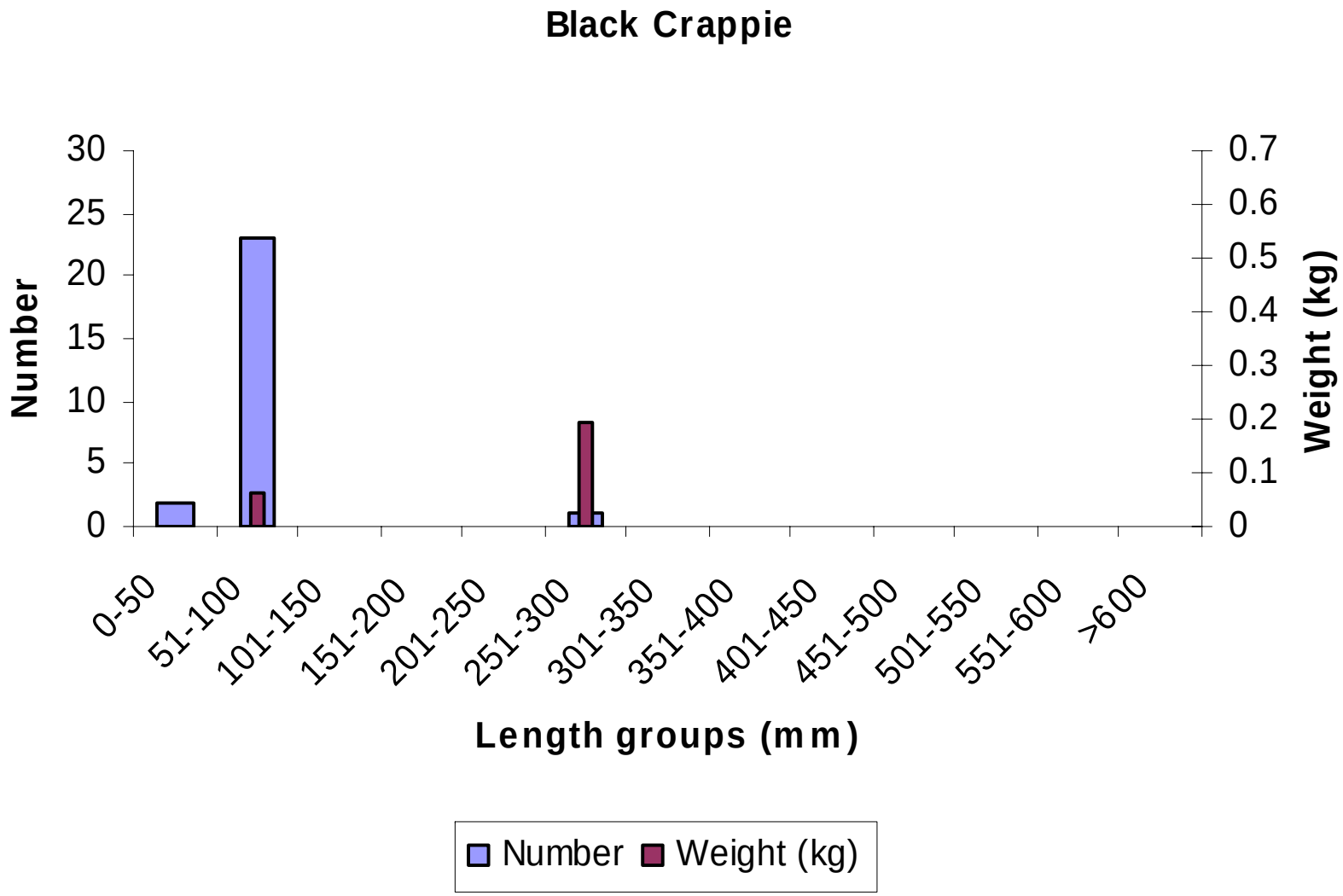
Figure 4-15. Year-2 Number and Weight per Length Group of Largemouth Bass Impinged at the Marion Plant from May 2006-April 2007



DRAWN BY:	MCB
CHECKED BY:	WJE
DATE:	10/31/2007
PROJECT NO.:	3250045102

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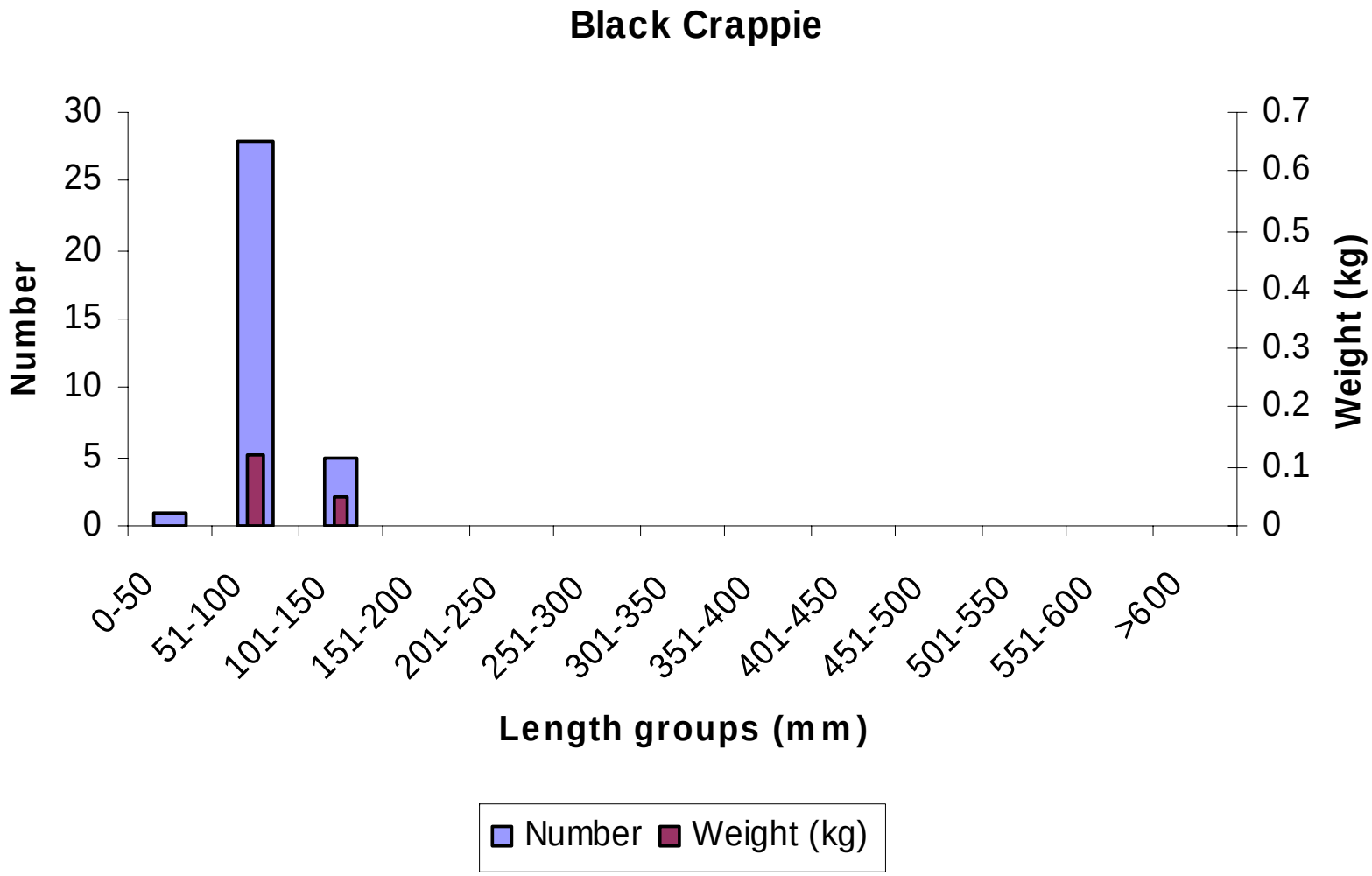
Figure 4-16. Year-1 Number and Weight per Length Group of Black Crappie Impinged at the Marion Plant from May 2005-April 2006



DRAWN BY:	MCB
CHECKED BY:	WJE
DATE:	10/31/2007
PROJECT NO.:	3250045102

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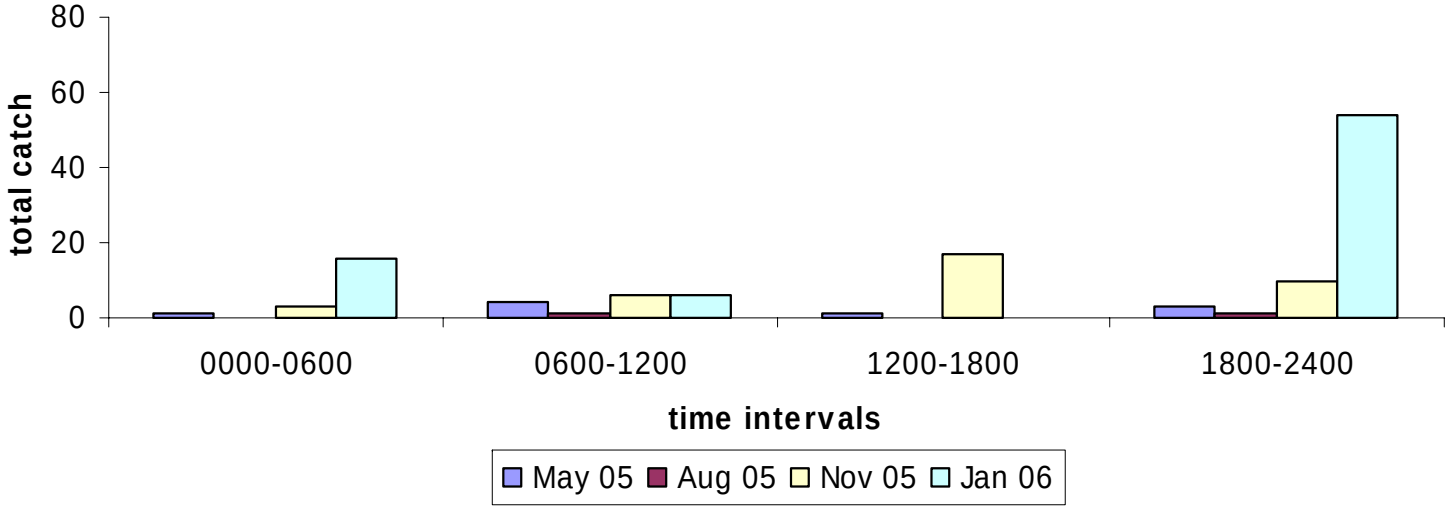
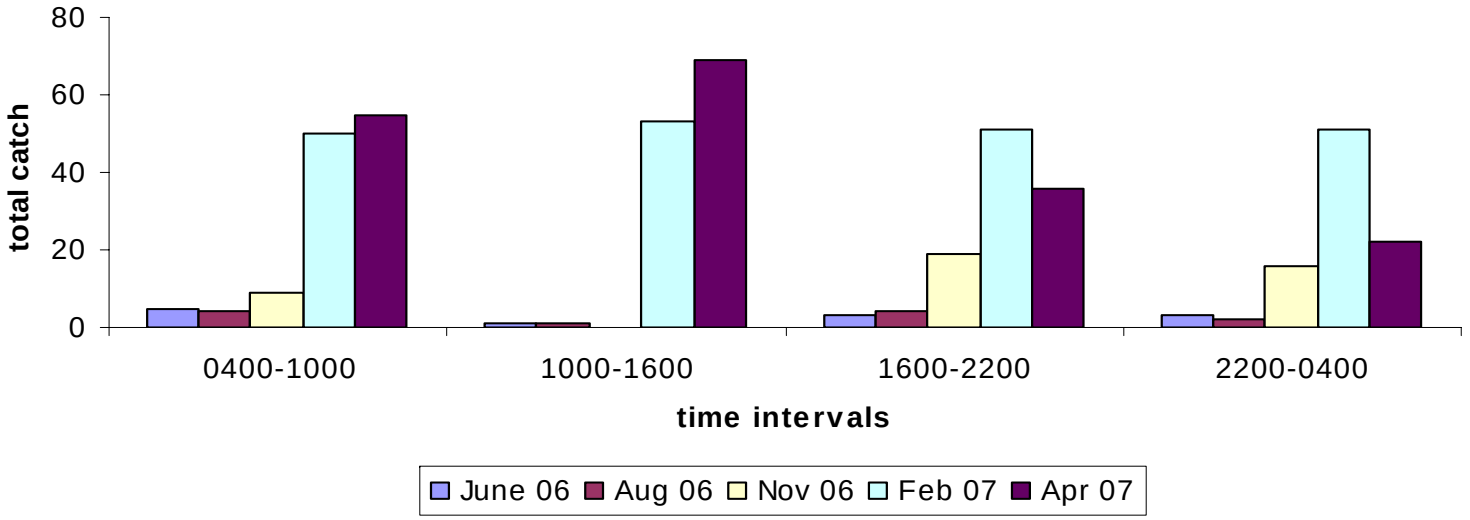
Figure 4-17. Year-2 Number and Weight per Length Group of Black Crappie Impinged at the Marion Plant from May 2006-April 2007





DRAWN BY:	AFW
CHECKED BY:	WJE
DATE:	10/31/2007
PROJECT NO.:	3250045102

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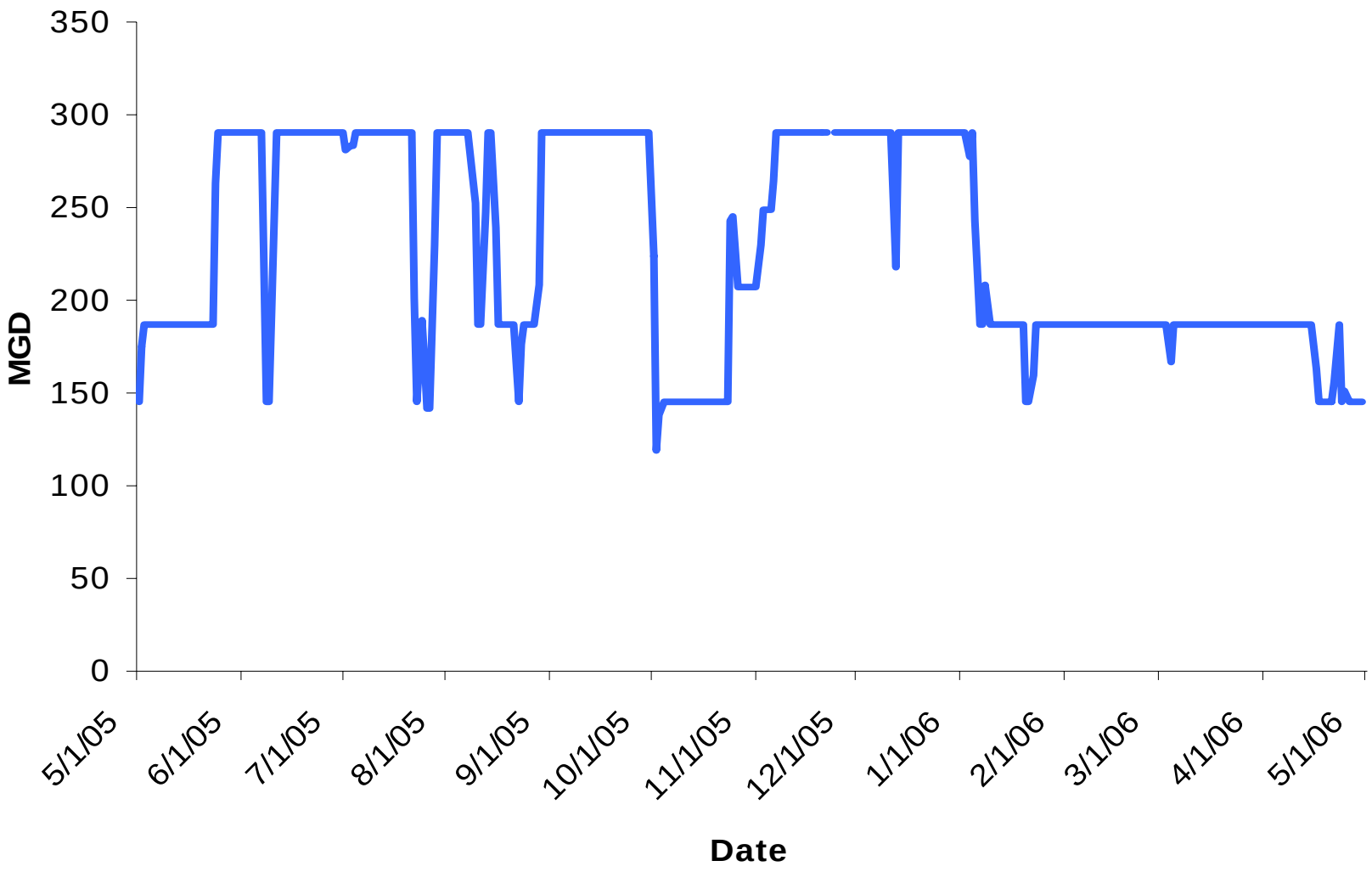
Figure 4-18. Diel Variation in Impingement Samples at the Marion Plant from May 2005-April 2007



DRAWN BY:	AFW
CHECKED BY:	WJE
DATE:	10/31/2007
PROJECT NO.:	3250045102

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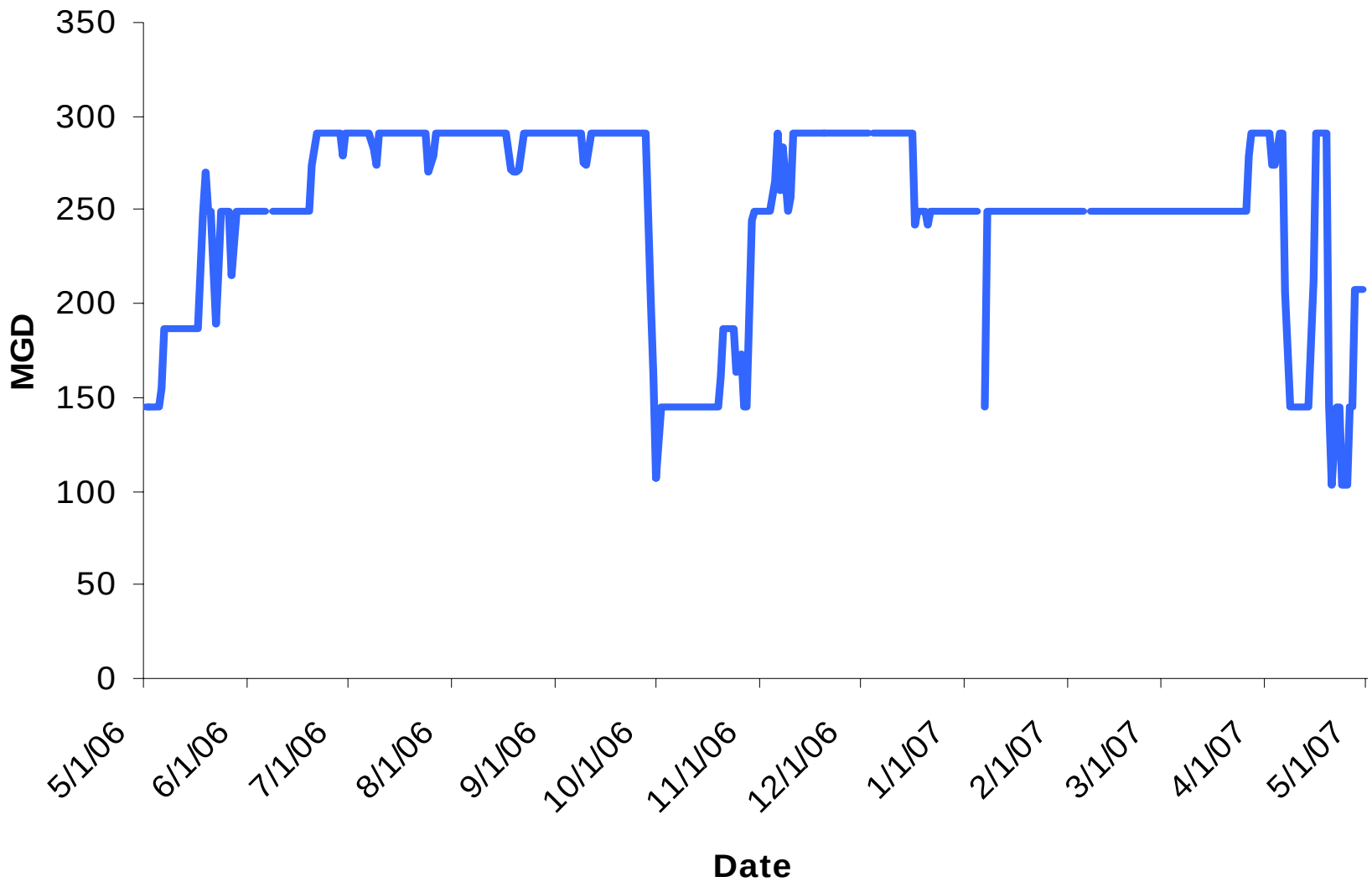
SIPC

Figure 5-1. Year-1 Total Intake Flow from May 2005-April 2006 at the Marion Power Plant



DRAWN BY:	AFW
CHECKED BY:	WJE
DATE:	10/31/2007
PROJECT NO.:	3250045102

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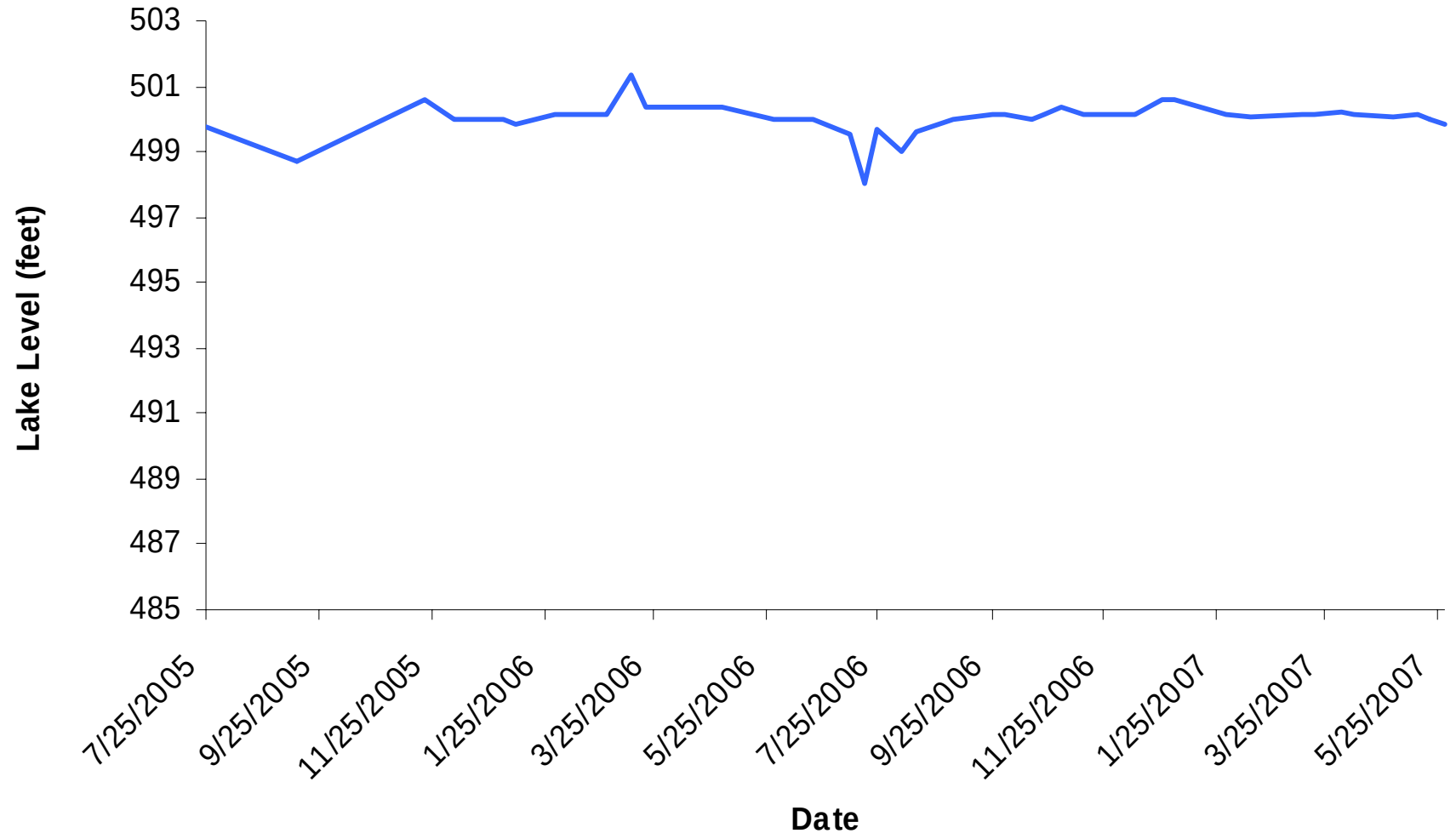
Figure 5-2. Year-2 Total Intake Flow from May 2006-May 2007 at the Marion Power Plant



DRAWN BY:	AFW
CHECKED BY:	WJE
DATE:	10/31/2007
PROJECT NO.:	3250045102

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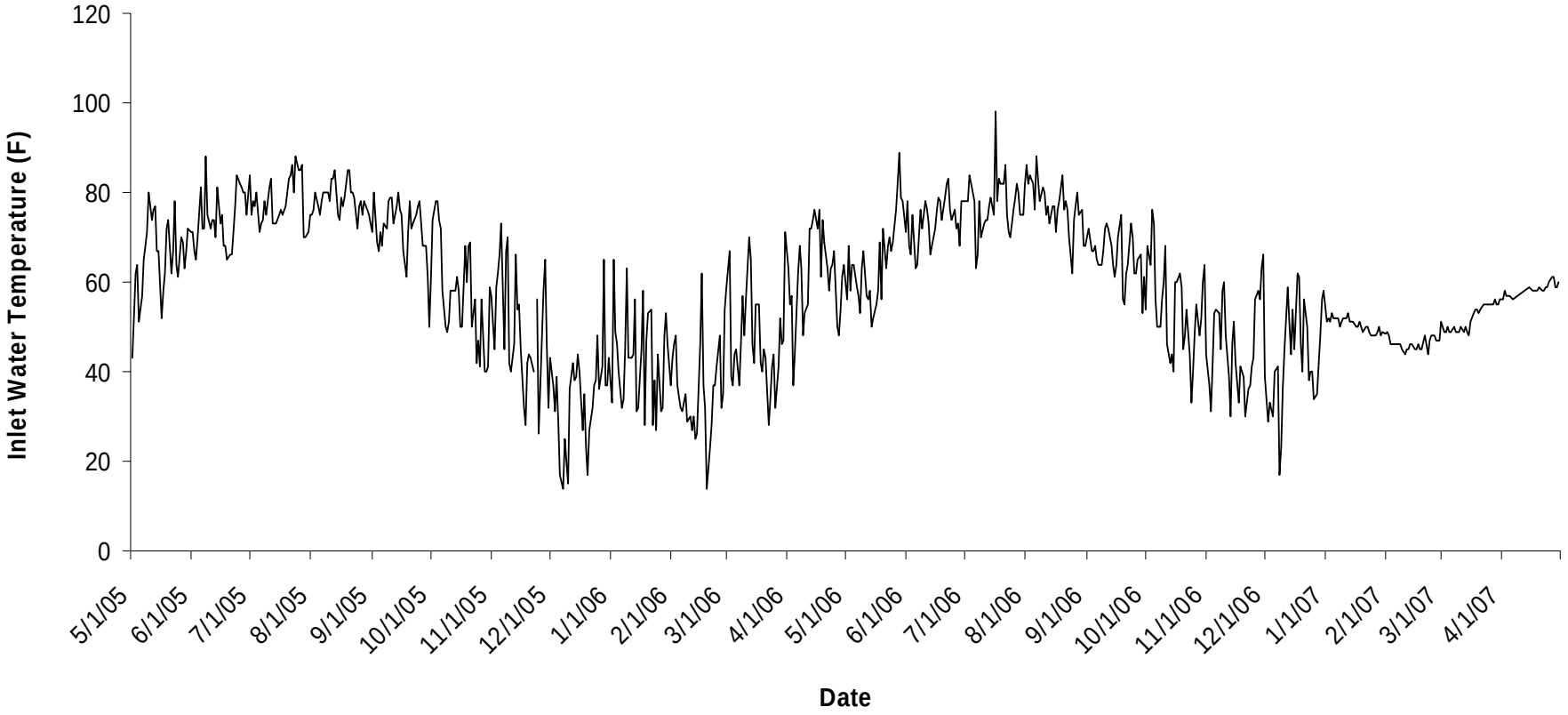
Figure 6-1. Lake of Egypt Level near the Marion Power Plant, May 2005-April 2007



DRAWN BY:	AFW
CHECKED BY:	WJE
DATE:	10/31/2007
PROJECT NO.:	3250045102

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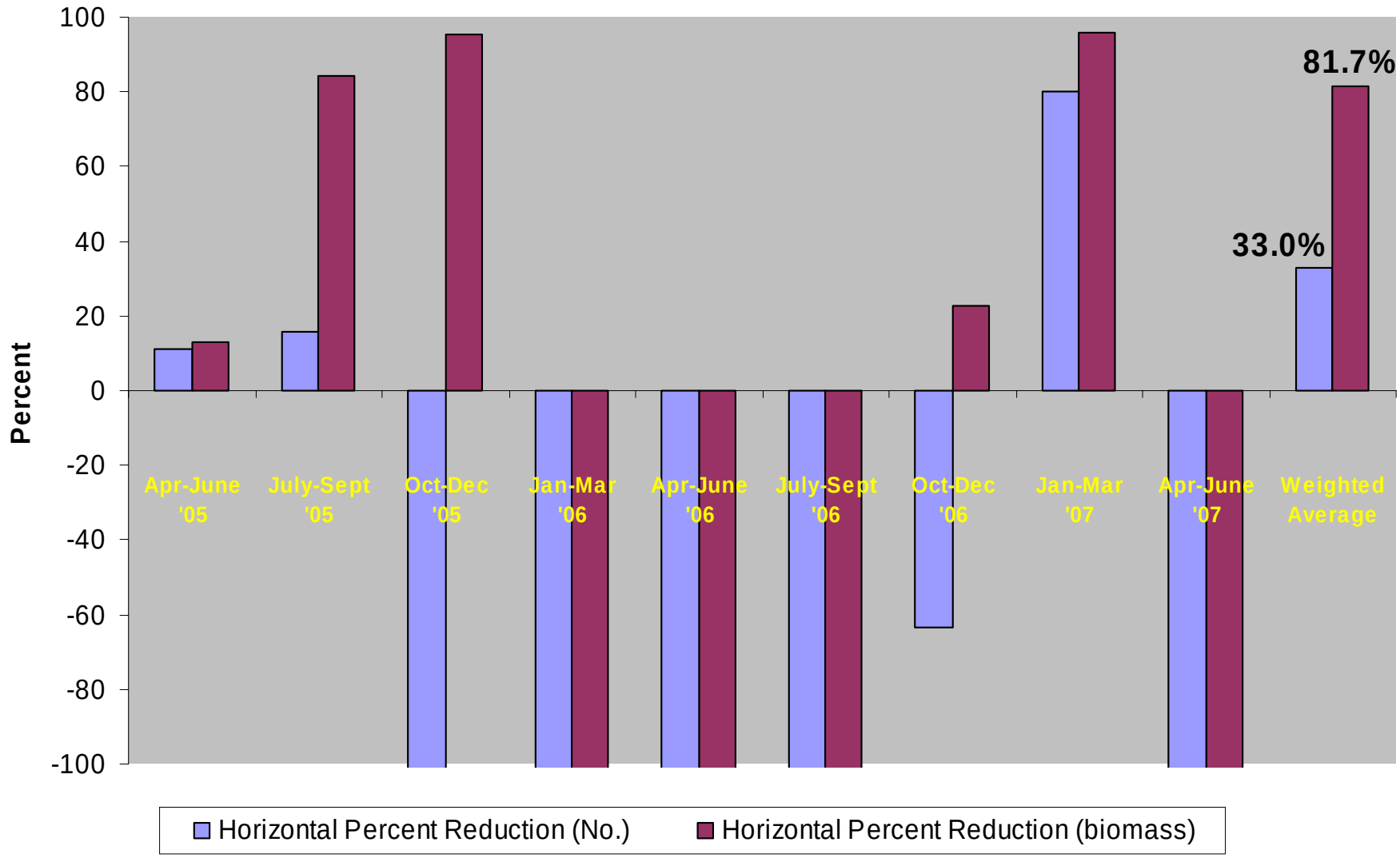
Figure 6-2. Inlet Water Temperature from May 2005 to April 2007 at the Marion Power Plant



DRAWN BY:	MCB
CHECKED BY:	WJE
DATE:	12/10/2007
PROJECT NO.:	3250045102

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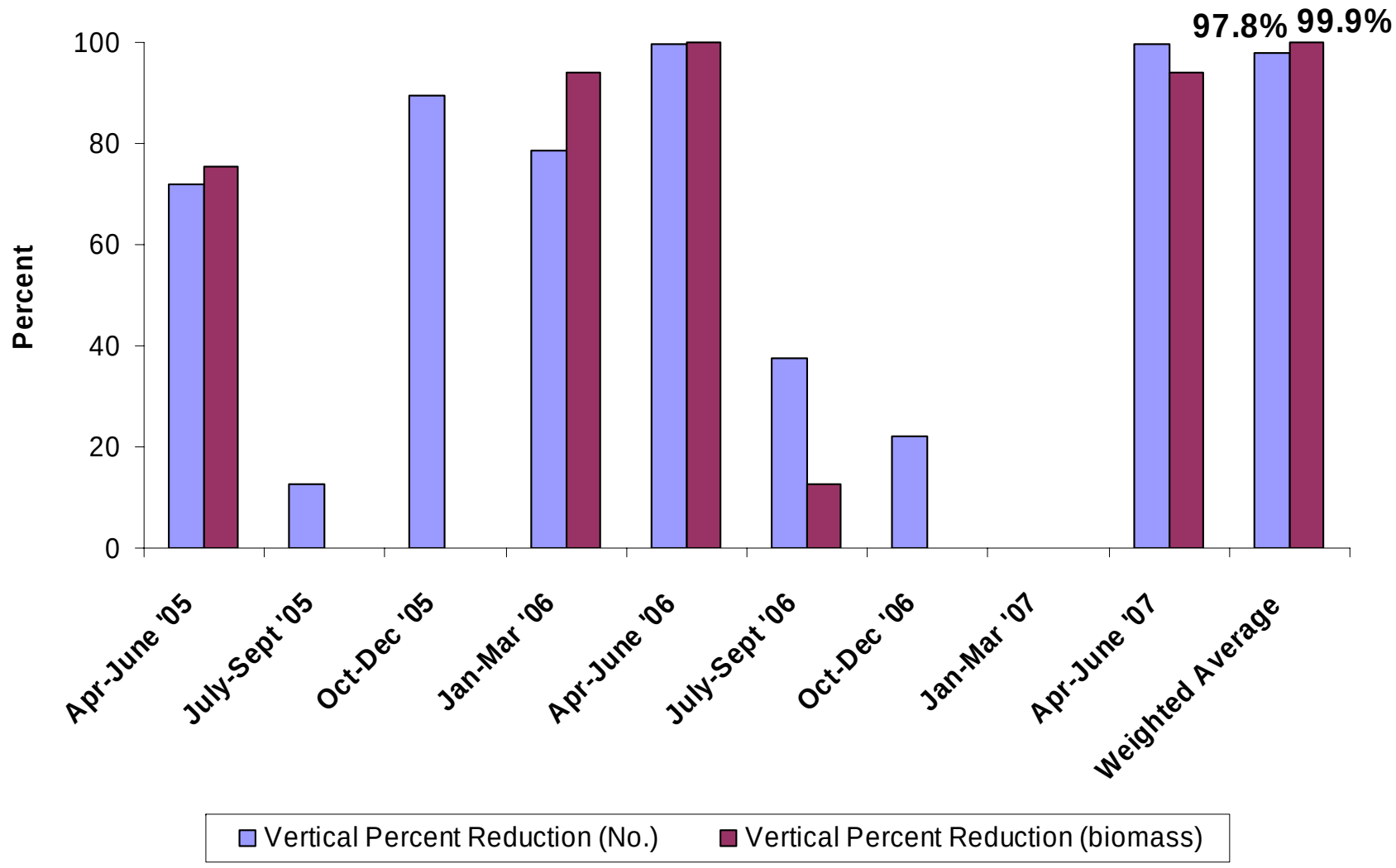
Figure 7-1. Seasonal Adjustment in Impingement from Corrected Calculation Baseline-Horizontal Adjustment



DRAWN BY:	MCB
CHECKED BY:	WJE
DATE:	12/10/2007
PROJECT NO.:	3250045102

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SIPC

Figure 7-2. Seasonal Adjustment in Impingement from Corrected Calculation Baseline-Vertical Adjustment

Appendix A

Retention Time Analysis

INTEROFFICE MEMORANDUM

DATE: November 12, 2004
TO: Bill Elzinga/MACTEC
File
FROM: Rick Marotte./MACTEC
Wayne Ingram, P.E./MACTEC - Illinois Licensed Professional Engineer No. 062-048607
SUBJECT: Lake of Egypt Average Retention Time

As Part of the 316(b) Source Water Characterization for the Southern Illinois Power Cooperative Marion Steam Plant, a source water physical and hydraulic characterization is needed. Part of this characterization requires documentation that the source water body, which for the Marion Steam Plant is Lake of Egypt, is a lake. To meet the definition of a lake, the source water body must have an average 7 day retention time and meet the additional definition requirements. The 316(b) regulations [40 CFR 125.93] define a lake or reservoir as:

> *"… any inland body of open water with some minimum surface area free of rooted vegetation and with an average hydraulic retention time of more than 7 days. Lakes or reservoirs might be natural water bodies or impounded streams, usually fresh, surrounded by land or by land and a man-made retainer (e.g., a dam). Lakes or reservoirs might be fed by rivers, streams, springs, and/or local precipitation."*

Lake of Egypt meets this definition. The lake is an open body of water as shown in the aerial photograph Figure 1. Figure 2 shows a topographic map of the lake and vicinity, to scale. This lake covers approximately 2300 acres (3.59 sq miles), depending on lake stage. The watershed for the lake totals approximately 34.1 square miles. The lake is surrounded by over 1,000 private residences.

The Lake of Egypt is part of the Saline River Basin. It is owned by Southern Illinois Power Cooperative and was created by constructing a dam and spillway adjacent to the power plant. The lake is the only water body in the watershed and is fed by direct runoff and numerous intermittent creeks. The spillway discharges into Little Saline Creek which discharges into the South Fork of the Saline River.

Since this lake is not fed by a river, the flow from the watershed had to be estimated. Three different approaches were used to estimate this flow. One source of information was *Summary Report Southern Illinois Power Cooperative Lake of Egypt Water Yield Analysis* prepared by Reynolds, Smith and Hills Architects, Engineers, Planners, Inc., dated November 12, 1979 (Reynolds, Smith and Hills report). This report presented the results of a hydrologic simulation of runoff model based on rainfall estimates in the area. Based on this model, the average annual runoff volume entering Lake of Egypt was estimated at 20,172 acre feet per year or 27.9 cubic feet per second. Normalizing this on a per square mile of drainage basis, the area yield is 591.6 acre feet per square mile per year, or 11.1 inches per year.

The second two sources of information were data from U.S. Geological Survey (USGS) Stream Gauging Stations acquired from the USGS web site (http://nwis.waterdata.usgs.gov). The Carrier Mills Gauging Station is located approximately 30 miles downstream of Lake of Egypt. It measures flow from a drainage basin of 147 square miles. The period of record available was 1966 to 2002 and indicated an average annual flow of 165.8 cubic feet per second or 120,033 acre feet per year. Normalizing this on a per square mile of drainage basis, the area yields 816.6 acre feet per square mile per year, or 15.3 inches per year, a relatively high runoff rate.

The Crab Orchard Gauging station is located near Marion, IL. It is not located in the Saline River drainage basin but it is in the vicinity of the plant. The period of record from this station is 1952-2002 and indicated an average annual flow of 28.9 cubic feet per second or 20,923 acre feet per year. The drainage area covered by this gauging station is 31.7 square miles. Normalizing this on a per square mile of drainage basis, the area yields 660 acre feet per square mile per year, or 12.4 inches per year.

The shortest and most conservative lake retention time would occur with the highest flow. This highest flow can be based on the highest per square mile yield. The highest yield is 816.6 acre feet per square mile per year at the Carrier Mills Gauging Station. Multiplying this yield by the Lake of Egypt drainage area (34.1 square miles) gives an average annual flow of 27,846 acre feet per year or 38.5 cubic feet per second.

The normal water level for Lake of Egypt is 500 feet MSL. This level is controlled by the lake spillway. The Reynolds, Smith and Hills Report provides storage and area curves for Lake of Egypt as a function of lake stage elevation. At 500 feet MSL, the lake covers 2,300 acres and has a storage volume of 41,000 acre feet (and an average depth of 17.81 feet).

Based on a conservative assumption for the flow into the lake and a volume of 41,000 acre feet, the lake has an average retention time of 537 days which more than meets the retention time requirement to be considered a lake.

This mean hydraulic retention, or detention, time corresponds closely to the typical value of 844 days determined by regression equation estimate for northern U.S. lakes and reservoirs by Bartsch and Gakstatter (1978) as reported by R.V. Thomann and J.A. Mueller (Principles of Surface Water Quality Modeling and Control, 1987):

$$\log_{10}(HDT) = -1.177 \log_{10}(DA/SA) + 4.077$$

For DA= 34.1 sq miles and SA=3.59 sq miles, HDT = 844 days

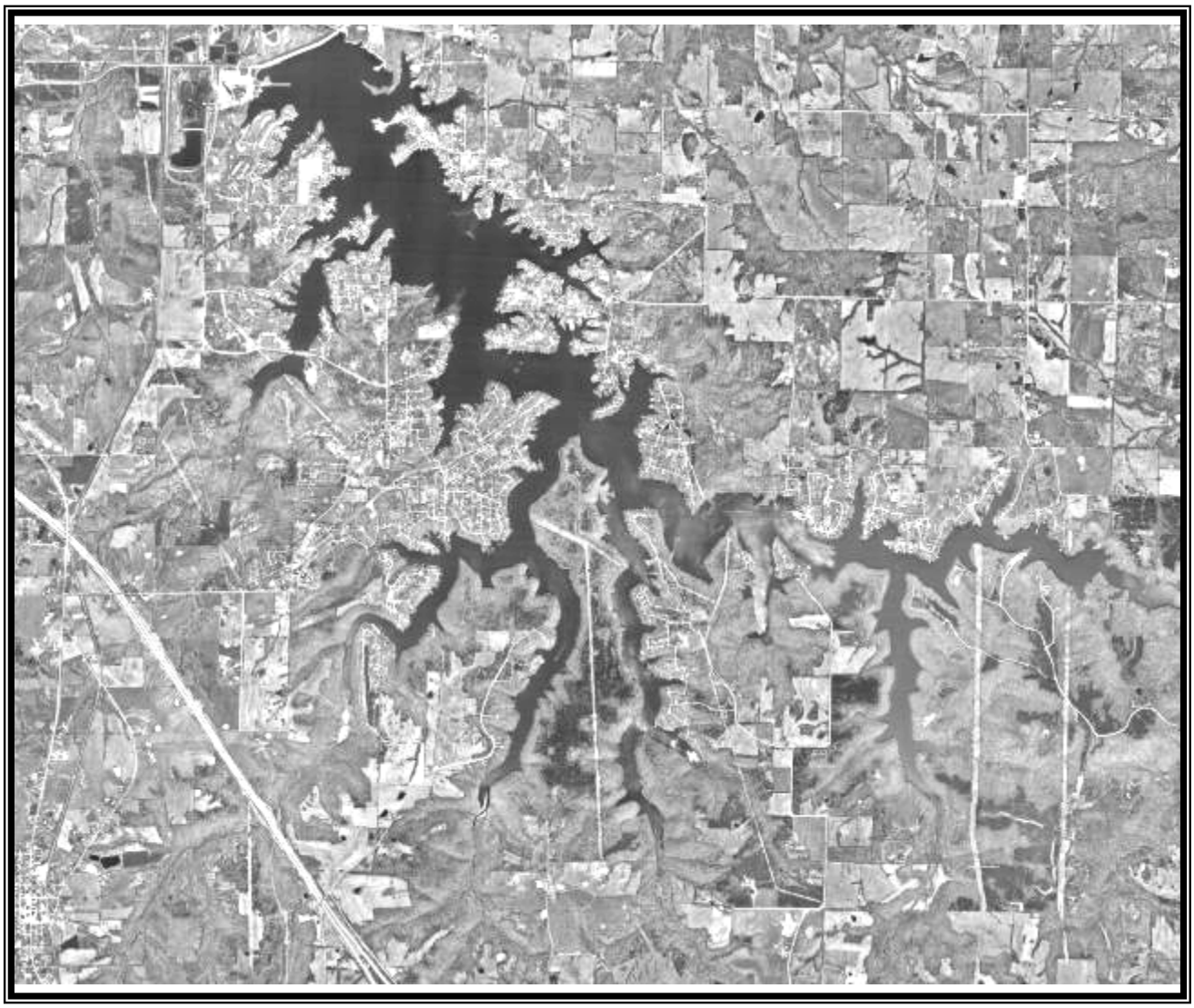


Figure 1
Lake of Egypt Aerial Photograph
(U.S. Geological Survey)

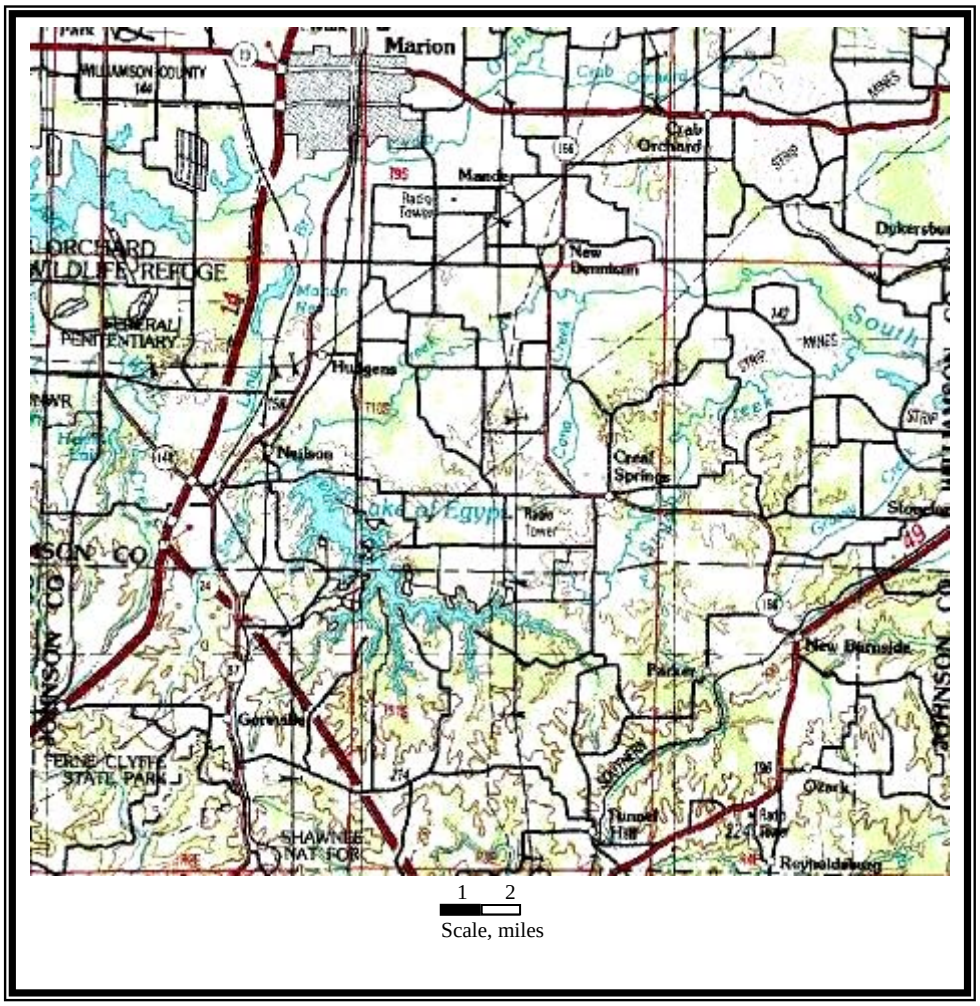


Figure 2
Lake of Egypt Topographic Map
(U.S. Geological Survey)

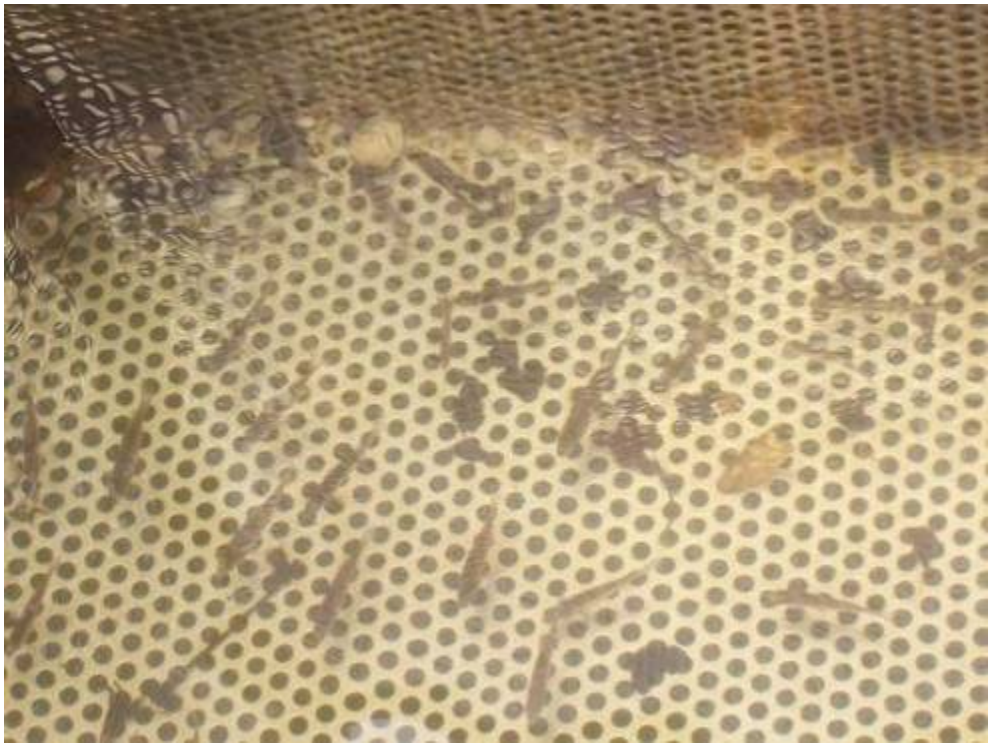
Appendix B

Sampling Photos

1. View of impingement sampling apparatus during pilot study screen wash.

2. View of partial impingement sample.

3. View of surface gill net set near the CWIS.



4. View of live fish in the collection basket following a continuous screen operation pilot study.

Appendix C

Database Output

Sample Naming Convention

A naming convention was used to properly identify and track samples throughout the impingement sampling program from collection to processing and data management. The following presents a description of the sample naming convention used and is provided for use in interpretation of data tables in this appendix. Fields and their respective defined attributes are as follows:

"MAR" = Three letter acronym for the Marion Power Plant site. The first three letters are used for the plant.

"I" = Single letter designating type of sample: "I" for Impingement.

"#" = Single numeric code representing the unit or units being sampled. For the Marion Power Plant this was "0" as there is a single CWIS.

"###" = Three digit numeric code representing the sampling event.

"##" = Double digit numeric code representing the first two digits of the **beginning** of the 6-hour time interval during diel impingement collections: **24**00-0600, **06**00-1200, **12**00-1800, **18**00-2400 or **04**00-1000, **10**00-1600, **16**00-2200, **22**00-0400. When diel sampling was not being conducted, this field was assigned as "**00**" to designate a 24-hr sampling event.

Example:

Sample ID = MAR-I-0-01-00 = Marion Power Plant, Impingement Sampling, All Units, Sampling Event 01, 24-hour sampling event.

Marion Station

MAR-I-0-001-00 1/31/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Threadfin shad	Dorosoma petenense	75		Dead	3	4	>50 mm and <99.9 m

MAR-I-0-002-00 2/28/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Threadfin shad	Dorosoma petenense	75		Dead	11	16	>50 mm and <99.9 m

MAR-I-0-003-00 4/18/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Threadfin shad	Dorosoma petenense	91	8	Dead			
Threadfin shad	Dorosoma petenense	59	2	Dead			

MAR-I-0-004-00 4/27/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill x Green sunfish	L. macrochirus x L. cyanellus	73	5	Live			
Bluegill x Green sunfish	L. macrochirus x L. cyanellus	73	4	Dead			
Threadfin shad	Dorosoma petenense	70	2	Dead			
White crappie	Pomoxis annularis	210	113	Dead			

MAR-I-0-005-00 5/4/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	74	8	Dead			
Bluegill	Lepomis macrochirus	81	10	Dead			
Bluegill	Lepomis macrochirus	97	12	Dead			
Bluegill	Lepomis macrochirus	85	10	Live			
Bluegill	Lepomis macrochirus	74	10	Live			
Redear sunfish	Lepomis microlophus	100	12	Dead			
Threadfin shad	Dorosoma petenense	75		Dead	4	8	>50 mm and <99.9 m
Warmouth	Lepomis gulosus	85	12	Dead			

MAR-I-0-007-12 5/17/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	127	38	Dead			

MAR-I-0-007-18 5/17/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	79	9	Live			
Longear sunfish	Lepomis megalotis	79	10	Live			
Longear sunfish	Lepomis megalotis	108	20	Dead			

MAR-I-0-007-24 5/17/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Threadfin shad	Dorosoma petenense	93	8	Dead			

MAR-I-0-007-00 5/18/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Warmouth	Lepomis gulosus	66	7	Dead			

MAR-I-0-007-06 5/18/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Threadfin shad	Dorosoma petenense	102	10	Dead			
Threadfin shad	Dorosoma petenense	98	8	Dead			
Threadfin shad	Dorosoma petenense	86	6	Dead			
Threadfin shad	Dorosoma petenense	95	10	Dead			

MAR-I-0-008-00 5/24/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	90	12	Dead			
Bluegill	Lepomis macrochirus	90	10	Dead			
Largemouth bass	Micropterus salmoides	38	1	Live			

MAR-I-0-009-00 5/31/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	103	19	Live			
Bluegill	Lepomis macrochirus	113	24	Dead			
Bluegill	Lepomis macrochirus	106	19	Dead			
Bluegill	Lepomis macrochirus	86	20	Dead			
Flathead catfish	Pylodictis olivaris	82	6	Live			

Redear sunfish	Lepomis microlophus	97	17	Dead
Redear sunfish	Lepomis microlophus	92	18	Dead
Redear sunfish	Lepomis microlophus	97	18	Live
Redear sunfish	Lepomis microlophus	98	20	Live

MAR-I-0-010-00 6/7/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	84	10	Live			
Bluegill	Lepomis macrochirus	113	21	Dead			
Bluegill	Lepomis macrochirus	98	13	Dead			
Bluegill	Lepomis macrochirus	84	10	Dead			
Flathead catfish	Pylodictis olivaris	66	4	Dead			

MAR-I-0-011-00 6/14/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	110	22	Moribund			
Bluegill	Lepomis macrochirus	85	12	Moribund			
Bluegill	Lepomis macrochirus	109	21	Moribund			
Bluegill	Lepomis macrochirus	71	3	Live			
Bluegill	Lepomis macrochirus	197	110	Moribund			
Bluegill	Lepomis macrochirus	93	16	Moribund			
Bluegill	Lepomis macrochirus	93	4	Dead			
Bluegill	Lepomis macrochirus	126	37	Moribund			
Bluegill	Lepomis macrochirus	178	104	Moribund			

Largemouth bass	Micropterus salmoides	448	636	Moribund			

MAR-I-0-012-00 6/21/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	84	5	Dead			
Bluegill	Lepomis macrochirus	80	4	Dead			
Bluegill	Lepomis macrochirus	125	24	Dead			

MAR-I-0-013-00 6/29/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	121	21	Dead			
Bluegill	Lepomis macrochirus	118	22	Dead			
Bluegill	Lepomis macrochirus	72	8	Dead			
Bluegill	Lepomis macrochirus	121	32	Dead			
Bluegill	Lepomis macrochirus	100	18	Dead			
Bluegill	Lepomis macrochirus	92	16	Dead			
Gizzard shad	Dorosoma cepedianum	348	110	Dead			
Longear sunfish	Lepomis megalotis	115	21	Dead			
Yellow bullhead	Ictalurus natalis	217	103	Dead			

MAR-I-0-014-00 7/6/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black bullhead	Ictalurus melas	287	421	Dead			
Bluegill	Lepomis macrochirus	96	16	Dead			

Bluegill	Lepomis macrochirus	146	65	Dead			
Bluegill	Lepomis macrochirus	82	14	Dead			
Bluegill	Lepomis macrochirus	90	18	Dead			

MAR-I-0-015-00 7/14/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Gizzard shad	Dorosoma cepedianum	55	2	Dead			
White crappie	Pomoxis annularis	50	5	Live			

MAR-I-0-016-00 7/21/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black bullhead	Ictalurus melas	256	126	Dead			
Bluegill	Lepomis macrochirus	52	1	Dead			
Bluegill	Lepomis macrochirus	76	2	Dead			
Largemouth bass	Micropterus salmoides	120	163	Dead			
Largemouth bass	Micropterus salmoides	82	1	Dead			

MAR-I-0-017-00 7/28/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	176	101	Dead			

MAR-I-0-018-00 8/4/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	109	21	Dead			

MAR-I-0-020-06 8/16/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	95	11	Dead			

MAR-I-0-020-18 8/16/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill x Green sunfish	L. macrochirus x L. cyanellus	117	14	Dead			

MAR-I-0-022-00 9/1/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Black crappie	Pomoxis nigromaculatus	62	1	Dead			
Black crappie	Pomoxis nigromaculatus	61	1	Dead			
Black crappie	Pomoxis nigromaculatus	55	1	Dead			
Black crappie	Pomoxis nigromaculatus	57	1	Dead			
Black crappie	Pomoxis nigromaculatus	55	1	Dead			
Black crappie	Pomoxis nigromaculatus	59	1	Dead			
Black crappie	Pomoxis nigromaculatus	36	1	Dead			
Black crappie	Pomoxis nigromaculatus	56	1	Dead			
Black crappie	Pomoxis nigromaculatus	59	1	Dead			
Black crappie	Pomoxis nigromaculatus	56	1	Dead			
Bluegill	Lepomis macrochirus	87	4	Dead			
Bluegill	Lepomis macrochirus	48	1	Dead			
Bluegill	Lepomis macrochirus	54	1	Dead			

Gizzard shad	Dorosoma cepedianum	320	158	Dead
Threadfin shad	Dorosoma petenense	50	1	Dead
Threadfin shad	Dorosoma petenense	54	1	Dead

MAR-I-0-024-00 9/15/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	105	6	Dead			
Bluegill	Lepomis macrochirus	55	2.2	Dead			
Green sunfish	Lepomis cyanellus	71	4.6	Dead			
White crappie	Pomoxis annularis	62	0.9	Dead			
White crappie	Pomoxis annularis	62	1.1	Dead			

MAR-I-0-025-00 9/21/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	174	73.3	Dead			
Bluegill	Lepomis macrochirus	133	34.8	Dead			
Redear sunfish	Lepomis microlophus	192	74.3	Dead			
Threadfin shad	Dorosoma petenense	59	1.4	Dead			
Threadfin shad	Dorosoma petenense	62	1.6	Dead			
Threadfin shad	Dorosoma petenense	64	2	Dead			
Threadfin shad	Dorosoma petenense	34	0.4	Dead			
Threadfin shad	Dorosoma petenense	41	0.5	Dead			

MAR-I-0-026-00 9/29/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Black crappie	Pomoxis nigromaculatus	65	1.7	Dead			
Black crappie	Pomoxis nigromaculatus		3.8	Dead			
Black crappie	Pomoxis nigromaculatus	69	2.8	Dead			
Bluegill	Lepomis macrochirus	115	14.4	Dead			
Bluegill	Lepomis macrochirus	92	18.5	Dead			
Gizzard shad	Dorosoma cepedianum	84	6.3	Dead			
Gizzard shad	Dorosoma cepedianum	58	1.4	Dead			
Yellow bullhead	Ictalurus natalis	296	225.8	Dead			
Yellow bullhead	Ictalurus natalis	265	160.7	Dead			

MAR-I-0-027-00 10/6/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	122	27.7	Dead			
Bluegill	Lepomis macrochirus	55	2.5	Dead			
Bluegill	Lepomis macrochirus	52	1.8	Dead			
Warmouth	Lepomis gulosus	69	5.3	Dead			

MAR-I-0-028-00 10/13/2005 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Black crappie	Pomoxis nigromaculatus	65	1.3	Dead			
Black crappie	Pomoxis nigromaculatus	70	3.6	Dead			

Bluegill	Lepomis macrochirus	100	15.3	Dead
Bluegill	Lepomis macrochirus	42	1.2	Dead
Bluegill	Lepomis macrochirus	50	2.6	Dead
Bluegill	Lepomis macrochirus	45	1.4	Dead
Bluegill	Lepomis macrochirus	44	1.5	Dead
Threadfin shad	Dorosoma petenense	32	0.5	Dead
Threadfin shad	Dorosoma petenense	41	0.7	Dead
Threadfin shad	Dorosoma petenense	38	0.6	Dead
Threadfin shad	Dorosoma petenense	32	0.4	Dead
Threadfin shad	Dorosoma petenense	30	0.3	Dead
Threadfin shad	Dorosoma petenense	53	1.4	Dead
Threadfin shad	Dorosoma petenense	36	0.5	Dead
Warmouth	Lepomis gulosus	49	2.7	Dead
Warmouth	Lepomis gulosus	48	2.1	Dead

MAR-I-0-029-00 l0/19/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	79	3.4	Dead			
Black crappie	Pomoxis nigromaculatus	47	1.2	Dead			
Bluegill	Lepomis macrochirus	50	1.2	Dead			
Bluegill	Lepomis macrochirus	56	1.9	Dead			
Bluegill	Lepomis macrochirus	42	1	Dead			
Threadfin shad	Dorosoma petenense	46	0.6	Dead			
Threadfin shad	Dorosoma petenense	66	1.4	Dead			

Threadfin shad	Dorosoma petenense	68	1.7	Dead			
Threadfin shad	Dorosoma petenense	59	1.2	Dead			
Threadfin shad	Dorosoma petenense	40	0.4	Dead			
Threadfin shad	Dorosoma petenense	38	0.4	Dead			

MAR-I-0-030-00 l0/26/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	54	1.8	Dead			
Bluegill	Lepomis macrochirus	65	3.5	Dead			
Bluegill	Lepomis macrochirus	52	2.1	Dead			
Bluegill	Lepomis macrochirus	64	3.1	Dead			
Largemouth bass	Micropterus salmoides	36	2.6	Dead			
Threadfin shad	Dorosoma petenense	78	3.9	Dead			
Threadfin shad	Dorosoma petenense	45	0.9	Dead			
Threadfin shad	Dorosoma petenense	40	0.3	Dead			
Threadfin shad	Dorosoma petenense	38	0.4	Dead			
Threadfin shad	Dorosoma petenense	65	2.1	Dead			
Threadfin shad	Dorosoma petenense	50	0.6	Dead			
Threadfin shad	Dorosoma petenense	52	1.3	Dead			
Threadfin shad	Dorosoma petenense	66	1.8	Dead			
Threadfin shad	Dorosoma petenense	56	0.9	Dead			
Threadfin shad	Dorosoma petenense	32	0.6	Dead			
Threadfin shad	Dorosoma petenense	50	0.5	Dead			
Threadfin shad	Dorosoma petenense	42	0.5	Dead			

Threadfin shad	Dorosoma petenense	48	0.7	Dead				
Threadfin shad	Dorosoma petenense	38	0.4	Dead				
Threadfin shad	Dorosoma petenense	46	0.7	Dead				
Threadfin shad	Dorosoma petenense	47	0.9	Dead				
Threadfin shad	Dorosoma petenense	48	0.7	Dead				
Threadfin shad	Dorosoma petenense	48	0.8	Dead				
Threadfin shad	Dorosoma petenense	59	1.4	Dead				
Threadfin shad	Dorosoma petenense	50	2.2	Dead				
Threadfin shad	Dorosoma petenense	41	0.3	Dead				
Threadfin shad	Dorosoma petenense	49	0.6	Dead				
Threadfin shad	Dorosoma petenense	50	0.9	Dead				
Threadfin shad	Dorosoma petenense	30	0.5	Dead				
Threadfin shad	Dorosoma petenense	48	0.7	Dead				
Threadfin shad	Dorosoma petenense	44	0.6	Dead				
Threadfin shad	Dorosoma petenense	55	0.9	Dead				
Threadfin shad	Dorosoma petenense	40	0.5	Dead				
Threadfin shad	Dorosoma petenense	42	0.4	Dead				
Threadfin shad	Dorosoma petenense	60	1.7	Dead				
Threadfin shad	Dorosoma petenense	46	0.6	Dead				
Threadfin shad	Dorosoma petenense	65	2.2	Dead				
Threadfin shad	Dorosoma petenense	44	0.6	Dead				

MAR-I-0-031-00 **11/3/2005** **Impingement**

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*

Bluegill	Lepomis macrochirus	65	3.4	Dead
Bluegill	Lepomis macrochirus	62	2.6	Dead
Bluegill	Lepomis macrochirus	60	2	Dead
Bluegill	Lepomis macrochirus	52	1.7	Dead
Bluegill	Lepomis macrochirus	66	3.6	Dead
Bluegill	Lepomis macrochirus	65	4.1	Dead
Bluegill	Lepomis macrochirus	55	2.6	Dead
Bluegill	Lepomis macrochirus	55	2.7	Dead
Bluegill	Lepomis macrochirus	69	4.4	Dead
Bluegill	Lepomis macrochirus	47	1.4	Dead
Bluegill	Lepomis macrochirus	52	1.9	Dead
Bluegill	Lepomis macrochirus	50	1.5	Dead
Bluegill	Lepomis macrochirus	51	2.4	Dead
Largemouth bass	Micropterus salmoides	365	382	Live
Threadfin shad	Dorosoma petenense	46	0.4	Dead
Threadfin shad	Dorosoma petenense	42	0.4	Dead
Threadfin shad	Dorosoma petenense	46	0.6	Dead
Threadfin shad	Dorosoma petenense	45	0.5	Dead
Threadfin shad	Dorosoma petenense	52	0.8	Dead
Threadfin shad	Dorosoma petenense	47	0.5	Dead
Threadfin shad	Dorosoma petenense	50	0.8	Dead
Threadfin shad	Dorosoma petenense	45	0.5	Dead
Threadfin shad	Dorosoma petenense	49	0.7	Dead
Threadfin shad	Dorosoma petenense	36	0.3	Dead

Threadfin shad	Dorosoma petenense	38	0.3	Dead			
Threadfin shad	Dorosoma petenense	49	0.8	Dead			
Threadfin shad	Dorosoma petenense	42	0.4	Dead			
Threadfin shad	Dorosoma petenense	42	0.4	Dead			
Threadfin shad	Dorosoma petenense	43	0.4	Dead			
Threadfin shad	Dorosoma petenense	41	0.4	Dead			
Threadfin shad	Dorosoma petenense	47	0.5	Dead			
Threadfin shad	Dorosoma petenense	30	0.2	Dead			
Threadfin shad	Dorosoma petenense	40	0.4	Dead			
Threadfin shad	Dorosoma petenense	46	0.5	Dead			
Threadfin shad	Dorosoma petenense	45	0.5	Dead			
Threadfin shad	Dorosoma petenense	42	0.3	Dead			
Threadfin shad	Dorosoma petenense	25		Dead	3	1.2	<49.9 mm
Threadfin shad	Dorosoma petenense	45	0.6	Dead			
Threadfin shad	Dorosoma petenense	43	0.4	Dead			
Threadfin shad	Dorosoma petenense	38	0.3	Dead			
Threadfin shad	Dorosoma petenense	38	0.2	Dead			
Threadfin shad	Dorosoma petenense	40	0.4	Dead			
Threadfin shad	Dorosoma petenense	60	1.3	Dead			
Threadfin shad	Dorosoma petenense	42	0.4	Dead			
Threadfin shad	Dorosoma petenense	53	0.9	Dead			
Threadfin shad	Dorosoma petenense	54	1.2	Dead			
Threadfin shad	Dorosoma petenense	45	0.5	Dead			
Threadfin shad	Dorosoma petenense	49	0.7	Dead			

Threadfin shad	Dorosoma petenense	41	0.4	Dead				
Threadfin shad	Dorosoma petenense	42	0.4	Dead				
Threadfin shad	Dorosoma petenense	50	0.6	Dead				
Threadfin shad	Dorosoma petenense	40	0.3	Dead				
Threadfin shad	Dorosoma petenense	30	0.2	Dead				
Threadfin shad	Dorosoma petenense	31	0.2	Dead				
Threadfin shad	Dorosoma petenense	47	0.6	Dead				
Threadfin shad	Dorosoma petenense	50	0.7	Dead				
Threadfin shad	Dorosoma petenense	50	0.7	Dead				
Threadfin shad	Dorosoma petenense	59	1.1	Dead				
Threadfin shad	Dorosoma petenense	50	0.8	Dead				
Threadfin shad	Dorosoma petenense	42	0.4	Dead				
Threadfin shad	Dorosoma petenense	40	0.4	Dead				
Threadfin shad	Dorosoma petenense	59	1.1	Dead				
Threadfin shad	Dorosoma petenense	47	0.7	Dead				
Threadfin shad	Dorosoma petenense	35	0.3	Dead				
Threadfin shad	Dorosoma petenense	55	0.9	Dead				
White crappie	Pomoxis annularis	68	2.5	Dead				
White crappie	Pomoxis annularis	68	3.3	Dead				
White crappie	Pomoxis annularis	73	3.3	Dead				
White crappie	Pomoxis annularis	65	2.6	Dead				

MAR-I-0-032-12 11/4/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*

Bluegill	Lepomis macrochirus	64	3.2	Live
Bluegill	Lepomis macrochirus	59	2.4	Live
Bluegill	Lepomis macrochirus	55	1.6	Live
Bluegill	Lepomis macrochirus	60	3	Live
Threadfin shad	Dorosoma petenense	41	0.4	Dead
Threadfin shad	Dorosoma petenense	51	0.8	Dead
Threadfin shad	Dorosoma petenense	43	0.5	Dead
Threadfin shad	Dorosoma petenense	41	0.4	Dead
Threadfin shad	Dorosoma petenense	44	0.4	Dead
Threadfin shad	Dorosoma petenense	49	0.8	Dead
Threadfin shad	Dorosoma petenense	41	0.5	Dead
Threadfin shad	Dorosoma petenense	49	0.6	Dead
Threadfin shad	Dorosoma petenense	47	0.5	Dead
Threadfin shad	Dorosoma petenense	41	0.4	Dead
Threadfin shad	Dorosoma petenense	45	0.6	Dead
White crappie	Pomoxis annularis	66	2.4	Dead
White crappie	Pomoxis annularis	74	3.2	Dead

MAR-I-0-032-18 11/4/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	47	1.3	Dead			
Bluegill	Lepomis macrochirus	52	1.9	Live			
Bluegill	Lepomis macrochirus	60	2.7	Dead			
Bluegill	Lepomis macrochirus	65	3.7	Live			

Bluegill	Lepomis macrochirus	79	5.4	Live			
Bluegill	Lepomis macrochirus	63	3.3	Live			
Bluegill	Lepomis macrochirus	54	1.9	Live			
Bluegill	Lepomis macrochirus	64	3.1	Live			
Threadfin shad	Dorosoma petenense	40	0.4	Dead			
Threadfin shad	Dorosoma petenense	48	0.6	Dead			

MAR-I-0-032-00 11/5/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	73	5.1	Dead			
Bluegill	Lepomis macrochirus	120	23	Dead			
Threadfin shad	Dorosoma petenense	54	0.9	Dead			

MAR-I-0-032-06 11/5/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	63	3.3	Dead			
Bluegill	Lepomis macrochirus	57	2.3	Dead			
Bluegill	Lepomis macrochirus	62	2.6	Dead			
Bluegill	Lepomis macrochirus	56	2.2	Dead			
Bluegill	Lepomis macrochirus	56	2.4	Dead			
Threadfin shad	Dorosoma petenense	52	0.7	Dead			

MAR-I-0-033-00 11/8/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*

Black crappie	Pomoxis nigromaculatus	72	3.2	Dead
Black crappie	Pomoxis nigromaculatus	79	4.2	Dead
Bluegill	Lepomis macrochirus	66	3.1	Dead
Bluegill	Lepomis macrochirus	60	2.1	Dead
Bluegill	Lepomis macrochirus	58	2.3	Dead
Bluegill	Lepomis macrochirus	52	2.3	Dead
Bluegill	Lepomis macrochirus	54	1.8	Dead
Bluegill	Lepomis macrochirus	60	3.4	Dead
Bluegill	Lepomis macrochirus	60	2.8	Dead
Bluegill	Lepomis macrochirus	52	2.6	Dead
Bluegill	Lepomis macrochirus	46	1.5	Dead
Bluegill	Lepomis macrochirus	48	1.5	Dead
Bluegill	Lepomis macrochirus	66	3.3	Dead
Bluegill	Lepomis macrochirus	64	3.3	Dead
Bluegill	Lepomis macrochirus	55	2.3	Dead
Bluegill	Lepomis macrochirus	44	1.2	Dead
Bluegill	Lepomis macrochirus	48	1.6	Dead
Bluegill	Lepomis macrochirus	63	3.3	Dead
Bluegill	Lepomis macrochirus	70	3.9	Dead
Bluegill	Lepomis macrochirus	62	3.2	Dead
Bluegill	Lepomis macrochirus	51	1.6	Dead
Bluegill	Lepomis macrochirus	68	3.9	Dead
Bluegill	Lepomis macrochirus	60	2.7	Dead
Bluegill	Lepomis macrochirus	57	2.4	Dead

Bluegill	Lepomis macrochirus	64	3.1	Dead			
Bluegill	Lepomis macrochirus	61	2.9	Dead			
Bluegill	Lepomis macrochirus	60	2.5	Dead			
Threadfin shad	Dorosoma petenense	44	0.4	Dead			
Threadfin shad	Dorosoma petenense	44	0.4	Dead			
Threadfin shad	Dorosoma petenense	40	0.4	Dead			
Threadfin shad	Dorosoma petenense	38	0.3	Dead			
Threadfin shad	Dorosoma petenense	39	0.3	Dead			
Threadfin shad	Dorosoma petenense	75	2.3	Dead			
Threadfin shad	Dorosoma petenense	53	0.8	Dead			
Threadfin shad	Dorosoma petenense	44	0.6	Dead			
Threadfin shad	Dorosoma petenense	45	0.3	Dead			
Threadfin shad	Dorosoma petenense	50	0.7	Dead			
Threadfin shad	Dorosoma petenense	44	0.4	Dead			
Threadfin shad	Dorosoma petenense	39	0.2	Dead			
Threadfin shad	Dorosoma petenense	44	0.7	Dead			
Threadfin shad	Dorosoma petenense	25		Dead	34	23.8	<49.9 mm
Threadfin shad	Dorosoma petenense	44	0.4	Dead			
Threadfin shad	Dorosoma petenense	54	0.6	Dead			
Threadfin shad	Dorosoma petenense	42	0.3	Dead			
Threadfin shad	Dorosoma petenense	46	0.6	Dead			
Threadfin shad	Dorosoma petenense	43	0.4	Dead			
Threadfin shad	Dorosoma petenense	41	0.2	Dead			
Threadfin shad	Dorosoma petenense	51	0.6	Dead			

Threadfin shad	Dorosoma petenense	33	0.3	Dead
Threadfin shad	Dorosoma petenense	48	0.6	Dead
Threadfin shad	Dorosoma petenense	38	0.1	Dead
Threadfin shad	Dorosoma petenense	50	0.6	Dead
Threadfin shad	Dorosoma petenense	42	0.3	Dead
Threadfin shad	Dorosoma petenense	50	0.7	Dead
Threadfin shad	Dorosoma petenense	52	0.7	Dead
Threadfin shad	Dorosoma petenense	56	1.5	Dead
Threadfin shad	Dorosoma petenense	50	0.7	Dead
Threadfin shad	Dorosoma petenense	72	1.9	Dead
Threadfin shad	Dorosoma petenense	40	0.4	Dead
Threadfin shad	Dorosoma petenense	43	0.4	Dead
Threadfin shad	Dorosoma petenense	56	1.1	Dead
Threadfin shad	Dorosoma petenense	52	1	Dead
Threadfin shad	Dorosoma petenense	50	0.8	Dead
Threadfin shad	Dorosoma petenense	44	0.2	Dead
Threadfin shad	Dorosoma petenense	41	0.2	Dead
Threadfin shad	Dorosoma petenense	40	0.3	Dead
Threadfin shad	Dorosoma petenense	47	0.5	Dead
Threadfin shad	Dorosoma petenense	43	0.4	Dead
Threadfin shad	Dorosoma petenense	50	0.5	Dead
Threadfin shad	Dorosoma petenense	44	0.3	Dead
Threadfin shad	Dorosoma petenense	46	0.5	Dead
Threadfin shad	Dorosoma petenense	50	0.7	Dead

Threadfin shad	Dorosoma petenense	42	0.3	Dead			
Threadfin shad	Dorosoma petenense	46	0.5	Dead			
Threadfin shad	Dorosoma petenense	55	1.3	Dead			
Threadfin shad	Dorosoma petenense	44	0.6	Dead			
Threadfin shad	Dorosoma petenense	57	1.1	Dead			

MAR-I-0-034-00 l1/17/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	63	2.4	Dead			
Black crappie	Pomoxis nigromaculatus	81	5.7	Dead			
Black crappie	Pomoxis nigromaculatus	93	8.1	Dead			
Black crappie	Pomoxis nigromaculatus	72	3.6	Dead			
Bluegill	Lepomis macrochirus	61	3.2	Dead			
Bluegill	Lepomis macrochirus	64	4.2	Dead			
Bluegill	Lepomis macrochirus	54	2.2	Dead			
Bluegill	Lepomis macrochirus	70	4	Dead			
Bluegill	Lepomis macrochirus	66	3.9	Dead			
Bluegill	Lepomis macrochirus	49	5.3	Dead			
Bluegill	Lepomis macrochirus	60	2.9	Dead			
Bluegill	Lepomis macrochirus	62	3	Dead			
Bluegill	Lepomis macrochirus	65	3.8	Dead			
Bluegill	Lepomis macrochirus	52	5.7	Dead			
Bluegill	Lepomis macrochirus	66	4.1	Dead			
Bluegill	Lepomis macrochirus	55	2.6	Dead			

Bluegill	Lepomis macrochirus	62	3.5	Dead			
Bluegill	Lepomis macrochirus	65	3.9	Dead			
Bluegill	Lepomis macrochirus	56	2.7	Dead			
Bluegill	Lepomis macrochirus	48	1.4	Dead			
Bluegill	Lepomis macrochirus	50	1.7	Dead			
Bluegill	Lepomis macrochirus	50	1.7	Dead			
Bluegill	Lepomis macrochirus	56	4.1	Dead			
Bluegill	Lepomis macrochirus	54	3.6	Dead			
Bluegill	Lepomis macrochirus	50	1.6	Dead			
Bluegill	Lepomis macrochirus	75		Dead	91	272.4	>50 mm and <99.9 m
Bluegill	Lepomis macrochirus	59	2.5	Dead			
Bluegill	Lepomis macrochirus	65	3.6	Live			
Bluegill	Lepomis macrochirus	52	2.1	Dead			
Bluegill	Lepomis macrochirus	53	2.3	Dead			
Bluegill	Lepomis macrochirus	66	4.3	Live			
Bluegill	Lepomis macrochirus	85	7.3	Live			
Bluegill	Lepomis macrochirus	71	5.1	Live			
Bluegill	Lepomis macrochirus	74	5.4	Live			
Bluegill	Lepomis macrochirus	56	2.6	Live			
Bluegill	Lepomis macrochirus	65	3.3	Live			
Bluegill	Lepomis macrochirus	65	3.5	Live			
Bluegill	Lepomis macrochirus	63	3.5	Live			
Bluegill	Lepomis macrochirus	69	4.2	Live			
Bluegill	Lepomis macrochirus	60	3	Live			

Bluegill	Lepomis macrochirus	74	6	Live
Bluegill	Lepomis macrochirus	60	3	Dead
Bluegill	Lepomis macrochirus	104	14.7	Live
Bluegill	Lepomis macrochirus	52	3	Live
Bluegill	Lepomis macrochirus	52	2.2	Dead
Bluegill	Lepomis macrochirus	57	2.7	Dead
Bluegill	Lepomis macrochirus	52	1.9	Dead
Bluegill	Lepomis macrochirus	72	5	Dead
Bluegill	Lepomis macrochirus	65	4.2	Dead
Bluegill	Lepomis macrochirus	61	3.3	Dead
Bluegill	Lepomis macrochirus	55	2.3	Dead
Bluegill	Lepomis macrochirus	60	2.7	Dead
Bluegill	Lepomis macrochirus	60	2.9	Dead
Bluegill	Lepomis macrochirus	70	4.4	Dead
Bluegill	Lepomis macrochirus	66	4.3	Live
Gizzard shad	Dorosoma cepedianum	91	5.2	Dead
Gizzard shad	Dorosoma cepedianum	80	5	Dead
Gizzard shad	Dorosoma cepedianum	90	5.9	Dead
Threadfin shad	Dorosoma petenense	40	0.3	Dead
Threadfin shad	Dorosoma petenense	41	0.3	Dead
Threadfin shad	Dorosoma petenense	42	0.4	Dead
Threadfin shad	Dorosoma petenense	70	1.9	Dead
Threadfin shad	Dorosoma petenense	57	0.7	Dead
Threadfin shad	Dorosoma petenense	40	0.2	Dead

Threadfin shad	Dorosoma petenense	51	0.9	Dead			
Threadfin shad	Dorosoma petenense	50	0.9	Dead			
Threadfin shad	Dorosoma petenense	53	1	Dead			
Threadfin shad	Dorosoma petenense	43	0.4	Dead			
Threadfin shad	Dorosoma petenense	47	0.6	Dead			
Threadfin shad	Dorosoma petenense	46	0.5	Dead			
Threadfin shad	Dorosoma petenense	58	1.2	Dead			
Threadfin shad	Dorosoma petenense	57	1.1	Dead			
Threadfin shad	Dorosoma petenense	43	0.4	Dead			
Threadfin shad	Dorosoma petenense	52	1.1	Dead			
Threadfin shad	Dorosoma petenense	63	1.2	Dead			
Threadfin shad	Dorosoma petenense	61	1.3	Dead			
Threadfin shad	Dorosoma petenense	25		Dead	120	100.7	<49.9 mm
Threadfin shad	Dorosoma petenense	42	0.3	Dead			
Threadfin shad	Dorosoma petenense	50	0.9	Dead			
Threadfin shad	Dorosoma petenense	50	1	Dead			
Threadfin shad	Dorosoma petenense	40	0.3	Dead			
Threadfin shad	Dorosoma petenense	51	1	Dead			
Threadfin shad	Dorosoma petenense	53	1.1	Dead			
Threadfin shad	Dorosoma petenense	40	0.4	Dead			
Threadfin shad	Dorosoma petenense	43	0.4	Dead			
Threadfin shad	Dorosoma petenense	51	0.9	Dead			
Threadfin shad	Dorosoma petenense	56	1.2	Dead			
Threadfin shad	Dorosoma petenense	40	0.3	Dead			

Threadfin shad	Dorosoma petenense	50	0.8	Dead				
Threadfin shad	Dorosoma petenense	43	0.3	Dead				
Threadfin shad	Dorosoma petenense	66	1.6	Dead				
Threadfin shad	Dorosoma petenense	60	1.7	Dead				
Threadfin shad	Dorosoma petenense	51	1.2	Dead				
Threadfin shad	Dorosoma petenense	44	0.4	Dead				
Threadfin shad	Dorosoma petenense	41	0.3	Dead				
Threadfin shad	Dorosoma petenense	55	1.1	Dead				
Threadfin shad	Dorosoma petenense	43	0.4	Dead				
Threadfin shad	Dorosoma petenense	55	0.9	Dead				
Threadfin shad	Dorosoma petenense	70	1.9	Dead				
Threadfin shad	Dorosoma petenense	60	1.2	Dead				
Threadfin shad	Dorosoma petenense	66	1.4	Dead				
Threadfin shad	Dorosoma petenense	43	0.3	Dead				
Threadfin shad	Dorosoma petenense	64	1.4	Dead				
Threadfin shad	Dorosoma petenense	63	1.3	Dead				
Threadfin shad	Dorosoma petenense	70	1.8	Dead				
Threadfin shad	Dorosoma petenense	72	1.7	Dead				
Threadfin shad	Dorosoma petenense	63	1.6	Dead				
Threadfin shad	Dorosoma petenense	53	0.8	Dead				
Threadfin shad	Dorosoma petenense	51	1	Dead				

MAR-I-0-035-00 l1/23/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*

Bluegill	Lepomis macrochirus	52	1.6	Dead
Bluegill	Lepomis macrochirus	100	14.4	Dead
Bluegill	Lepomis macrochirus	50	1.5	Dead
Bluegill	Lepomis macrochirus	66	3.2	Dead
Bluegill	Lepomis macrochirus	60	2.4	Dead
Bluegill	Lepomis macrochirus	57	2.4	Dead
Bluegill	Lepomis macrochirus	49	1.6	Dead
Bluegill	Lepomis macrochirus	65	3.7	Dead
Bluegill	Lepomis macrochirus	59	2.2	Dead
Bluegill	Lepomis macrochirus	57	2.2	Dead
Bluegill	Lepomis macrochirus	57	2.5	Dead
Bluegill	Lepomis macrochirus	71	4.6	Dead
Threadfin shad	Dorosoma petenense	41	0.4	Dead
Threadfin shad	Dorosoma petenense	50	0.8	Dead
Threadfin shad	Dorosoma petenense	43	0.3	Dead
Threadfin shad	Dorosoma petenense	45	0.5	Dead
Threadfin shad	Dorosoma petenense	52	0.6	Dead
Threadfin shad	Dorosoma petenense	47	0.6	Dead
Threadfin shad	Dorosoma petenense	45	0.4	Dead
Threadfin shad	Dorosoma petenense	46	0.6	Dead
Threadfin shad	Dorosoma petenense	50	0.9	Dead
Threadfin shad	Dorosoma petenense	42	0.3	Dead
Threadfin shad	Dorosoma petenense	48	0.6	Dead
Threadfin shad	Dorosoma petenense	47	0.4	Dead

Threadfin shad	Dorosoma petenense	51	1	Dead
Threadfin shad	Dorosoma petenense	43	0.4	Dead
Threadfin shad	Dorosoma petenense	47	0.4	Dead
Threadfin shad	Dorosoma petenense	39	0.4	Dead
Threadfin shad	Dorosoma petenense	42	0.7	Dead
Threadfin shad	Dorosoma petenense	42	0.4	Dead

MAR-I-0-036-00 l1/30/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	82	5	Dead			
Bluegill	Lepomis macrochirus	69	4.1	Dead			
Bluegill	Lepomis macrochirus	60	3.2	Dead			
Bluegill	Lepomis macrochirus	59	2.3	Dead			
Bluegill	Lepomis macrochirus	70	4.5	Dead			
Bluegill	Lepomis macrochirus	59	2.4	Dead			
Bluegill	Lepomis macrochirus	57	2.1	Dead			
Bluegill	Lepomis macrochirus	70	4.4	Dead			
Bluegill	Lepomis macrochirus	51	1.6	Dead			
Bluegill	Lepomis macrochirus	61	2.7	Dead			
Bluegill	Lepomis macrochirus	61	3.4	Dead			
Bluegill	Lepomis macrochirus	39	0.3	Dead			
Bluegill	Lepomis macrochirus	68	4.2	Dead			
Bluegill	Lepomis macrochirus	55	2	Dead			
Bluegill	Lepomis macrochirus	70	1.4	Dead			

Bluegill	Lepomis macrochirus	52	1.7	Dead
Bluegill	Lepomis macrochirus	71	4.1	Dead
Bluegill	Lepomis macrochirus	65	3.1	Dead
Flathead catfish	Pylodictis olivaris	109	12.2	Dead
Threadfin shad	Dorosoma petenense	44	0.5	Dead
Threadfin shad	Dorosoma petenense	37	0.2	Dead
Threadfin shad	Dorosoma petenense	46	0.6	Dead
Threadfin shad	Dorosoma petenense	46	0.7	Dead
Threadfin shad	Dorosoma petenense	40	0.8	Dead
Threadfin shad	Dorosoma petenense	50	0.7	Dead
Threadfin shad	Dorosoma petenense	60	1.2	Dead
Threadfin shad	Dorosoma petenense	51	0.9	Dead
Threadfin shad	Dorosoma petenense	58	1.2	Dead
Threadfin shad	Dorosoma petenense	47	0.6	Dead
Threadfin shad	Dorosoma petenense	57	1.3	Dead
Threadfin shad	Dorosoma petenense	51	0.8	Dead
Threadfin shad	Dorosoma petenense	49	0.6	Dead
Threadfin shad	Dorosoma petenense	55	1.2	Dead

MAR-I-0-037-00 12/8/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	65	3.1	Dead			
Threadfin shad	Dorosoma petenense	46	0.5	Dead			
Threadfin shad	Dorosoma petenense	45	0.4	Dead			

Threadfin shad	Dorosoma petenense	48	0.7	Dead			
Threadfin shad	Dorosoma petenense	47	0.5	Dead			

MAR-I-0-038-00 12/14/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	79	4.8	Dead			
Threadfin shad	Dorosoma petenense	45	0.7	Dead			
Threadfin shad	Dorosoma petenense	45	0.5	Dead			
Threadfin shad	Dorosoma petenense	42	0.4	Dead			
Threadfin shad	Dorosoma petenense	40	0.6	Dead			
Threadfin shad	Dorosoma petenense	48	0.8	Dead			
Threadfin shad	Dorosoma petenense	47	0.6	Dead			
Threadfin shad	Dorosoma petenense	42	0.5	Dead			
Threadfin shad	Dorosoma petenense	51	0.8	Dead			
Threadfin shad	Dorosoma petenense	42	0.4	Dead			
Threadfin shad	Dorosoma petenense	40	0.5	Dead			
Threadfin shad	Dorosoma petenense	42	0.5	Dead			
Threadfin shad	Dorosoma petenense	52	1	Dead			
Threadfin shad	Dorosoma petenense	45	0.4	Dead			
Threadfin shad	Dorosoma petenense	41	0.3	Dead			
Threadfin shad	Dorosoma petenense	48	0.7	Dead			
Threadfin shad	Dorosoma petenense	48	0.7	Dead			
Threadfin shad	Dorosoma petenense	41	0.4	Dead			
Threadfin shad	Dorosoma petenense	45	0.7	Dead			

Threadfin shad	Dorosoma petenense	49	0.8	Dead			
Threadfin shad	Dorosoma petenense	41	0.5	Dead			
Threadfin shad	Dorosoma petenense	45	0.6	Dead			
Threadfin shad	Dorosoma petenense	75		Dead	111	88.3	Young of Year
Threadfin shad	Dorosoma petenense	46	0.6	Dead			
Threadfin shad	Dorosoma petenense	45	0.6	Dead			
Threadfin shad	Dorosoma petenense	42	0.5	Dead			
Threadfin shad	Dorosoma petenense	48	0.7	Dead			
Threadfin shad	Dorosoma petenense	46	0.6	Dead			
Threadfin shad	Dorosoma petenense	45	0.5	Dead			
Threadfin shad	Dorosoma petenense	51	0.9	Dead			
Threadfin shad	Dorosoma petenense	47	0.5	Dead			
Threadfin shad	Dorosoma petenense	45	0.6	Dead			
Threadfin shad	Dorosoma petenense	47	0.7	Dead			
Threadfin shad	Dorosoma petenense	50	0.9	Dead			
Threadfin shad	Dorosoma petenense	45	0.6	Dead			
Threadfin shad	Dorosoma petenense	42	0.5	Dead			
Threadfin shad	Dorosoma petenense	48	0.7	Dead			
Threadfin shad	Dorosoma petenense	40	0.4	Dead			
Threadfin shad	Dorosoma petenense	47	0.5	Dead			
Threadfin shad	Dorosoma petenense	48	0.8	Dead			
Threadfin shad	Dorosoma petenense	44	0.4	Dead			
Threadfin shad	Dorosoma petenense	46	0.6	Dead			
Threadfin shad	Dorosoma petenense	41	0.4	Dead			

Threadfin shad	Dorosoma petenense	41	0.4	Dead
Threadfin shad	Dorosoma petenense	47	0.7	Dead
Threadfin shad	Dorosoma petenense	51	0.9	Dead
Threadfin shad	Dorosoma petenense	49	0.7	Dead
Threadfin shad	Dorosoma petenense	47	0.6	Dead
Threadfin shad	Dorosoma petenense	48	0.8	Dead
Threadfin shad	Dorosoma petenense	39	0.3	Dead
Threadfin shad	Dorosoma petenense	42	0.5	Dead
Threadfin shad	Dorosoma petenense	52	0.8	Dead

MAR-I-0-039-00 l2/21/2005 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Threadfin shad	Dorosoma petenense	49	0.5	Dead			
Threadfin shad	Dorosoma petenense	45	0.5	Dead			
Threadfin shad	Dorosoma petenense	47	0.7	Dead			
Threadfin shad	Dorosoma petenense	45	0.5	Dead			
Threadfin shad	Dorosoma petenense	46	0.6	Dead			
Threadfin shad	Dorosoma petenense	49	0.8	Dead			
Threadfin shad	Dorosoma petenense	46	0.7	Dead			
Threadfin shad	Dorosoma petenense	47	0.7	Dead			
Threadfin shad	Dorosoma petenense	41	0.4	Dead			
Threadfin shad	Dorosoma petenense	43	0.4	Dead			
Threadfin shad	Dorosoma petenense	42	0.5	Dead			
Threadfin shad	Dorosoma petenense	47	0.7	Dead			

Threadfin shad	Dorosoma petenense	40	0.5	Dead
Threadfin shad	Dorosoma petenense	44	0.6	Dead
Threadfin shad	Dorosoma petenense	45	0.6	Dead
Threadfin shad	Dorosoma petenense	43	0.5	Dead
Threadfin shad	Dorosoma petenense	38	0.3	Dead
Threadfin shad	Dorosoma petenense	42	0.4	Dead
Threadfin shad	Dorosoma petenense	40	0.7	Dead
Threadfin shad	Dorosoma petenense	40	0.4	Dead
Threadfin shad	Dorosoma petenense	44	0.6	Dead
Threadfin shad	Dorosoma petenense	47	0.7	Dead
Threadfin shad	Dorosoma petenense	50	0.8	Dead
Threadfin shad	Dorosoma petenense	41	0.6	Dead
Threadfin shad	Dorosoma petenense	40	0.5	Dead
Threadfin shad	Dorosoma petenense	39	0.5	Dead
Threadfin shad	Dorosoma petenense	51	0.9	Dead
Threadfin shad	Dorosoma petenense	40	0.4	Dead
Threadfin shad	Dorosoma petenense	55	1.1	Dead
Threadfin shad	Dorosoma petenense	45	0.6	Dead
Threadfin shad	Dorosoma petenense	48	0.8	Dead
Threadfin shad	Dorosoma petenense	53	1	Dead
Threadfin shad	Dorosoma petenense	50	0.9	Dead
Threadfin shad	Dorosoma petenense	56	1.4	Dead
Threadfin shad	Dorosoma petenense	47	0.8	Dead
Threadfin shad	Dorosoma petenense	50	0.9	Dead

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Threadfin shad	Dorosoma petenense	52	1	Dead			
Threadfin shad	Dorosoma petenense	55	1.1	Dead			
Threadfin shad	Dorosoma petenense	56	1.4	Dead			
Threadfin shad	Dorosoma petenense	50	0.7	Dead			
Threadfin shad	Dorosoma petenense	53	1	Dead			
Threadfin shad	Dorosoma petenense	61	1.7	Dead			
Threadfin shad	Dorosoma petenense	60	2	Dead			
Threadfin shad	Dorosoma petenense	68	2.9	Dead			
Threadfin shad	Dorosoma petenense	70	2.8	Dead			
Threadfin shad	Dorosoma petenense	62	2.1	Dead			
Threadfin shad	Dorosoma petenense	52	0.8	Dead			
Threadfin shad	Dorosoma petenense	62	1.8	Dead			
Threadfin shad	Dorosoma petenense	63	2	Dead			
Threadfin shad	Dorosoma petenense	65	2.1	Dead			
Threadfin shad	Dorosoma petenense	65	2.5	Dead			
Threadfin shad	Dorosoma petenense	65	1.6	Dead			
Threadfin shad	Dorosoma petenense	60	1.7	Dead			
Threadfin shad	Dorosoma petenense	64	2	Dead			
Threadfin shad	Dorosoma petenense	73	3.7	Dead			
Threadfin shad	Dorosoma petenense	55	1.4	Dead			
Threadfin shad	Dorosoma petenense	48	0.6	Dead			

Threadfin shad	Dorosoma petenense	58	1.4	Dead			
Threadfin shad	Dorosoma petenense	51	0.9	Dead			
Threadfin shad	Dorosoma petenense	51	1.3	Dead			
Threadfin shad	Dorosoma petenense	75		Dead	50	81.7	Young of Year
Threadfin shad	Dorosoma petenense	45	0.8	Dead			
Threadfin shad	Dorosoma petenense	69	2.7	Dead			
Threadfin shad	Dorosoma petenense	53	1.1	Dead			
Threadfin shad	Dorosoma petenense	65	2.5	Dead			
Threadfin shad	Dorosoma petenense	88	5.2	Dead			
Threadfin shad	Dorosoma petenense	73	3.3	Dead			
Threadfin shad	Dorosoma petenense	46	0.6	Dead			
Threadfin shad	Dorosoma petenense	62	1.6	Dead			
Threadfin shad	Dorosoma petenense	55	1.1	Dead			
Threadfin shad	Dorosoma petenense	55	1.1	Dead			
Threadfin shad	Dorosoma petenense	55	1	Dead			
Threadfin shad	Dorosoma petenense	55	10	Dead			
Threadfin shad	Dorosoma petenense	61	1.9	Dead			
Threadfin shad	Dorosoma petenense	54	1.2	Dead			
Threadfin shad	Dorosoma petenense	51	0.9	Dead			
Threadfin shad	Dorosoma petenense	51	0.8	Dead			
Threadfin shad	Dorosoma petenense	57	1.4	Dead			
Threadfin shad	Dorosoma petenense	55	1.1	Dead			
Threadfin shad	Dorosoma petenense	53	1.1	Dead			
Threadfin shad	Dorosoma petenense	62	2	Dead			

Threadfin shad	Dorosoma petenense	39	0.6	Dead
Threadfin shad	Dorosoma petenense	71	3.2	Dead
Threadfin shad	Dorosoma petenense	55	1.2	Dead
Threadfin shad	Dorosoma petenense	57	0.8	Dead
Threadfin shad	Dorosoma petenense	68	2.4	Dead
Threadfin shad	Dorosoma petenense	59	1.6	Dead
Threadfin shad	Dorosoma petenense	63	1.9	Dead
Threadfin shad	Dorosoma petenense	51	2.4	Dead

MAR-I-0-041-00 1/4/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	66	3.9	Dead			
Threadfin shad	Dorosoma petenense	45	0.4	Dead			
Threadfin shad	Dorosoma petenense	45	0.5	Dead			
Threadfin shad	Dorosoma petenense	48	0.9	Dead			
Threadfin shad	Dorosoma petenense	49	0.7	Dead			
Threadfin shad	Dorosoma petenense	32	0.6	Dead			
Threadfin shad	Dorosoma petenense	45	0.7	Dead			
Threadfin shad	Dorosoma petenense	45	0.5	Dead			
Threadfin shad	Dorosoma petenense	50	0.6	Dead			
Threadfin shad	Dorosoma petenense	52	0.8	Dead			
Threadfin shad	Dorosoma petenense	51	0.7	Dead			
Threadfin shad	Dorosoma petenense	43	0.5	Dead			
Threadfin shad	Dorosoma petenense	45	0.9	Dead			

Threadfin shad	Dorosoma petenense	52	0.6	Dead				
Threadfin shad	Dorosoma petenense	49	0.9	Dead				
Threadfin shad	Dorosoma petenense	51	0.6	Dead				
Threadfin shad	Dorosoma petenense	42	0.4	Dead				
Threadfin shad	Dorosoma petenense	55	0.8	Dead				
Threadfin shad	Dorosoma petenense	45	0.7	Dead				
Threadfin shad	Dorosoma petenense	51	0.5	Dead				
Threadfin shad	Dorosoma petenense	55	1.1	Dead				
Threadfin shad	Dorosoma petenense	50	0.8	Dead				
Threadfin shad	Dorosoma petenense	46	0.6	Dead				
Threadfin shad	Dorosoma petenense	52	1.3	Dead				
Threadfin shad	Dorosoma petenense	45	0.4	Dead				
Threadfin shad	Dorosoma petenense	67	1.9	Dead				
Threadfin shad	Dorosoma petenense	52	1	Dead				
Threadfin shad	Dorosoma petenense	45	1.6	Dead				
Threadfin shad	Dorosoma petenense	46	0.5	Dead				
Threadfin shad	Dorosoma petenense	45	0.5	Dead				
Threadfin shad	Dorosoma petenense	47	0.7	Dead				
Threadfin shad	Dorosoma petenense	62	1.3	Dead				
Threadfin shad	Dorosoma petenense	42	0.5	Dead				

MAR-I-0-043-06 **1/17/2006** **Impingement**

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Threadfin shad	Dorosoma petenense	58	1.1	Dead			

Threadfin shad	Dorosoma petenense	48	0.7	Dead			
Threadfin shad	Dorosoma petenense	52	0.9	Dead			
Threadfin shad	Dorosoma petenense	51	1.1	Dead			
Threadfin shad	Dorosoma petenense	58	1.2	Dead			
Threadfin shad	Dorosoma petenense	48	0.7	Dead			

MAR-I-0-043-18 1/17/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	68	3.6	Dead			
Bluegill	Lepomis macrochirus	65	3.8	Dead			
Threadfin shad	Dorosoma petenense	56	1.1	Dead			
Threadfin shad	Dorosoma petenense	54	1.2	Dead			
Threadfin shad	Dorosoma petenense	56	1	Dead			
Threadfin shad	Dorosoma petenense	47	0.7	Dead			
Threadfin shad	Dorosoma petenense	50	0.8	Dead			
Threadfin shad	Dorosoma petenense	55	0.9	Dead			
Threadfin shad	Dorosoma petenense	55	1.3	Dead			
Threadfin shad	Dorosoma petenense	40	0.4	Dead			
Threadfin shad	Dorosoma petenense	51	0.8	Dead			
Threadfin shad	Dorosoma petenense	75		Dead	313	319	Young of Year
Threadfin shad	Dorosoma petenense	49	0.8	Dead			
Threadfin shad	Dorosoma petenense	47	1	Dead			
Threadfin shad	Dorosoma petenense	65	1.9	Dead			
Threadfin shad	Dorosoma petenense	56	1.1	Dead			

Threadfin shad	Dorosoma petenense	47	0.5	Dead			
Threadfin shad	Dorosoma petenense	52	1.2	Dead			
Threadfin shad	Dorosoma petenense	55	1.2	Dead			
Threadfin shad	Dorosoma petenense	40	0.4	Dead			
Threadfin shad	Dorosoma petenense	57	1.1	Dead			
Threadfin shad	Dorosoma petenense	53	1.2	Dead			
Threadfin shad	Dorosoma petenense	49	0.7	Dead			
Threadfin shad	Dorosoma petenense	45	0.7	Dead			
Threadfin shad	Dorosoma petenense	75		Dead	100	102	Young of Year
Threadfin shad	Dorosoma petenense	47	0.6	Dead			
Threadfin shad	Dorosoma petenense	56	1.1	Dead			
Threadfin shad	Dorosoma petenense	52	0.7	Dead			
Threadfin shad	Dorosoma petenense	50	0.8	Dead			
Threadfin shad	Dorosoma petenense	50	0.7	Dead			
Threadfin shad	Dorosoma petenense	48	0.6	Dead			
Threadfin shad	Dorosoma petenense	48	0.7	Dead			
Threadfin shad	Dorosoma petenense	51	0.8	Dead			
Threadfin shad	Dorosoma petenense	47	0.9	Dead			
Threadfin shad	Dorosoma petenense	55	1	Dead			
Threadfin shad	Dorosoma petenense	56	1	Dead			
Threadfin shad	Dorosoma petenense	65	1.9	Dead			
Threadfin shad	Dorosoma petenense	53	1	Dead			
Threadfin shad	Dorosoma petenense	54	1	Dead			
Threadfin shad	Dorosoma petenense	55	1.1	Dead			

Threadfin shad	Dorosoma petenense	52	0.9	Dead
Threadfin shad	Dorosoma petenense	56	1.1	Dead
Threadfin shad	Dorosoma petenense	62	1.6	Dead
Threadfin shad	Dorosoma petenense	60	1.3	Dead
Threadfin shad	Dorosoma petenense	48	0.8	Dead
Threadfin shad	Dorosoma petenense	51	0.8	Dead
Threadfin shad	Dorosoma petenense	63	1.4	Dead
Threadfin shad	Dorosoma petenense	54	1.1	Dead
Threadfin shad	Dorosoma petenense	48	0.5	Dead
Threadfin shad	Dorosoma petenense	56	1	Dead
Threadfin shad	Dorosoma petenense	48	0.7	Dead
Threadfin shad	Dorosoma petenense	56	0.8	Dead
Threadfin shad	Dorosoma petenense	46	0.9	Dead
Threadfin shad	Dorosoma petenense	46	0.6	Dead

MAR-I-0-043-24 1/17/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Threadfin shad	Dorosoma petenense	47	1	Dead			
Threadfin shad	Dorosoma petenense	53	0.9	Dead			
Threadfin shad	Dorosoma petenense	46	0.7	Dead			
Threadfin shad	Dorosoma petenense	49	0.9	Dead			
Threadfin shad	Dorosoma petenense	50	1.1	Dead			
Threadfin shad	Dorosoma petenense	51	0.9	Dead			
Threadfin shad	Dorosoma petenense	65	2	Dead			

Threadfin shad	Dorosoma petenense	42	0.6	Dead
Threadfin shad	Dorosoma petenense	54	1.1	Dead
Threadfin shad	Dorosoma petenense	46	0.7	Dead
Threadfin shad	Dorosoma petenense	59	1.4	Dead
Threadfin shad	Dorosoma petenense	55	1.1	Dead
Threadfin shad	Dorosoma petenense	58	1.2	Dead
Threadfin shad	Dorosoma petenense	52	0.8	Dead
Threadfin shad	Dorosoma petenense	57	1.6	Dead
Threadfin shad	Dorosoma petenense	43	0.5	Dead

MAR-I-0-044-00 1/26/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	62	2.8	Dead			
Bluegill	Lepomis macrochirus	110	18.6	Dead			
Redear sunfish	Lepomis microlophus	193	113.6	Dead			
Threadfin shad	Dorosoma petenense	41	0.5	Dead			
Threadfin shad	Dorosoma petenense	49	0.6	Dead			
Threadfin shad	Dorosoma petenense	47	0.5	Dead			
Threadfin shad	Dorosoma petenense	52	0.7	Dead			
Threadfin shad	Dorosoma petenense	50	0.7	Dead			
Threadfin shad	Dorosoma petenense	53	0.8	Dead			
Threadfin shad	Dorosoma petenense	50	1.1	Dead			
Threadfin shad	Dorosoma petenense	47	0.5	Dead			
Threadfin shad	Dorosoma petenense	42	0.6	Dead			

Threadfin shad	Dorosoma petenense	48	0.6	Dead			
Threadfin shad	Dorosoma petenense	40	0.5	Dead			
Threadfin shad	Dorosoma petenense	55	0.8	Dead			
Threadfin shad	Dorosoma petenense	48	0.8	Dead			
Threadfin shad	Dorosoma petenense	45	0.8	Dead			
Threadfin shad	Dorosoma petenense	66	1.9	Dead			
Threadfin shad	Dorosoma petenense	52	0.7	Dead			
Threadfin shad	Dorosoma petenense	49	0.8	Dead			
Threadfin shad	Dorosoma petenense	55	1	Dead			
Threadfin shad	Dorosoma petenense	48	0.8	Dead			
Threadfin shad	Dorosoma petenense	46	0.6	Dead			
Threadfin shad	Dorosoma petenense	52	0.8	Dead			
Threadfin shad	Dorosoma petenense	75		Dead	100	89	Young of Year
Threadfin shad	Dorosoma petenense	75		Dead	3	3	Young of Year
Threadfin shad	Dorosoma petenense	75		Dead	3	3	Young of Year
Threadfin shad	Dorosoma petenense	46	0.5	Dead			
Threadfin shad	Dorosoma petenense	49	0.6	Dead			
Threadfin shad	Dorosoma petenense	50	1.8	Dead			
Threadfin shad	Dorosoma petenense	53	0.7	Dead			
Threadfin shad	Dorosoma petenense	62	1.2	Dead			
Threadfin shad	Dorosoma petenense	54	0.7	Dead			
Threadfin shad	Dorosoma petenense	54	1.1	Dead			
Threadfin shad	Dorosoma petenense	56	1	Dead			
Threadfin shad	Dorosoma petenense	50	0.7	Dead			

Threadfin shad	Dorosoma petenense	58	1.2	Dead
Threadfin shad	Dorosoma petenense	51	0.8	Dead
Threadfin shad	Dorosoma petenense	46	0.6	Dead
Threadfin shad	Dorosoma petenense	56	0.8	Dead
Threadfin shad	Dorosoma petenense	45	0.5	Dead
Threadfin shad	Dorosoma petenense	55	0.7	Dead
Threadfin shad	Dorosoma petenense	49	0.8	Dead
Threadfin shad	Dorosoma petenense	50	0.7	Dead
Threadfin shad	Dorosoma petenense	55	1.1	Dead
Threadfin shad	Dorosoma petenense	44	0.4	Dead
Threadfin shad	Dorosoma petenense	54	0.7	Dead
Threadfin shad	Dorosoma petenense	41	0.4	Dead
Threadfin shad	Dorosoma petenense	55	0.8	Dead
Threadfin shad	Dorosoma petenense	61	1.5	Dead
Threadfin shad	Dorosoma petenense	47	0.5	Dead
Threadfin shad	Dorosoma petenense	56	1	Dead
Threadfin shad	Dorosoma petenense	52	0.8	Dead
Threadfin shad	Dorosoma petenense	51	0.7	Dead
Threadfin shad	Dorosoma petenense	46	0.5	Dead
Threadfin shad	Dorosoma petenense	54	0.9	Dead

MAR-I-0-045-00 **2/2/2006** **Impingement**

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	62	3.3	Dead			

Threadfin shad	Dorosoma petenense	63	1.6	Dead
Threadfin shad	Dorosoma petenense	59	1.1	Dead
Threadfin shad	Dorosoma petenense	42	0.4	Dead
Threadfin shad	Dorosoma petenense	58	1	Dead
Threadfin shad	Dorosoma petenense	50	0.9	Dead
Threadfin shad	Dorosoma petenense	51	0.7	Dead
Threadfin shad	Dorosoma petenense	42	0.4	Dead
Threadfin shad	Dorosoma petenense	50	0.8	Dead
Threadfin shad	Dorosoma petenense	46	0.5	Dead
Threadfin shad	Dorosoma petenense	60	1.4	Dead
Threadfin shad	Dorosoma petenense	46	0.6	Dead
Threadfin shad	Dorosoma petenense	56	0.9	Dead
Threadfin shad	Dorosoma petenense	50	0.8	Dead
Threadfin shad	Dorosoma petenense	45	0.6	Dead
Threadfin shad	Dorosoma petenense	52	1	Dead
Threadfin shad	Dorosoma petenense	46	0.6	Dead
Threadfin shad	Dorosoma petenense	72	2.3	Dead
Threadfin shad	Dorosoma petenense	51	0.8	Dead
Threadfin shad	Dorosoma petenense	53	0.8	Dead
Threadfin shad	Dorosoma petenense	43	0.5	Dead
Threadfin shad	Dorosoma petenense	47	0.7	Dead
Threadfin shad	Dorosoma petenense	48	0.6	Dead
Threadfin shad	Dorosoma petenense	40	0.4	Dead
Threadfin shad	Dorosoma petenense	46	0.5	Dead

Threadfin shad	Dorosoma petenense	46	0.3	Dead			
Threadfin shad	Dorosoma petenense	49	0.6	Dead			
Threadfin shad	Dorosoma petenense	58	1.1	Dead			
Threadfin shad	Dorosoma petenense	60	1.2	Dead			
Threadfin shad	Dorosoma petenense	36	0.5	Dead			
Threadfin shad	Dorosoma petenense	44	0.6	Dead			
Threadfin shad	Dorosoma petenense	43	0.5	Dead			
Threadfin shad	Dorosoma petenense	50	0.5	Dead			
Threadfin shad	Dorosoma petenense	57	1	Dead			
Threadfin shad	Dorosoma petenense	45	0.4	Dead			
Threadfin shad	Dorosoma petenense			Dead	32	25.8	Young of Year
Threadfin shad	Dorosoma petenense	83	4.8	Dead			
Threadfin shad	Dorosoma petenense	65	0.9	Dead			
Threadfin shad	Dorosoma petenense	35	0.6	Dead			
Threadfin shad	Dorosoma petenense	42	0.3	Dead			
Threadfin shad	Dorosoma petenense	46	0.6	Dead			
Threadfin shad	Dorosoma petenense	36	0.4	Dead			
Threadfin shad	Dorosoma petenense	46	0.6	Dead			
Threadfin shad	Dorosoma petenense	55	0.9	Dead			
Threadfin shad	Dorosoma petenense	46	0.6	Dead			
Threadfin shad	Dorosoma petenense	51	0.6	Dead			
Threadfin shad	Dorosoma petenense	47	0.4	Dead			
Threadfin shad	Dorosoma petenense	51	0.7	Dead			
Threadfin shad	Dorosoma petenense	50	0.6	Dead			

Threadfin shad	Dorosoma petenense	51	0.8	Dead			
Threadfin shad	Dorosoma petenense	47	0.7	Dead			
Threadfin shad	Dorosoma petenense	52	1.1	Dead			

MAR-I-0-046-00 2/10/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	64	4.4	Dead			
Bluegill	Lepomis macrochirus	58	2.8	Dead			
Bluegill	Lepomis macrochirus	91	9.9	Dead			
Threadfin shad	Dorosoma petenense	54	0.9	Dead			
Threadfin shad	Dorosoma petenense	96	6.3	Dead			
Threadfin shad	Dorosoma petenense	43	0.4	Dead			
Threadfin shad	Dorosoma petenense	50	0.5	Dead			
Threadfin shad	Dorosoma petenense	45	0.4	Dead			
Threadfin shad	Dorosoma petenense	59	0.9	Dead			

MAR-I-0-047-00 2/15/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	163	74.6	Dead			
Bluegill	Lepomis macrochirus	60	2.9	Dead			
Bluegill	Lepomis macrochirus	61	3.1	Dead			
Bluegill	Lepomis macrochirus	48	0.8	Dead			
Bluegill	Lepomis macrochirus	68	3.9	Dead			
Threadfin shad	Dorosoma petenense	61	1.4	Dead			

Threadfin Shad	Dorosoma petenense	57	1	Dead
Threadfin shad	Dorosoma petenense	53	0.8	Dead
Threadfin shad	Dorosoma petenense	48	0.7	Dead
Threadfin Shad	Dorosoma petenense	54	1	Dead
Threadfin shad	Dorosoma petenense	45	0.6	Dead
Threadfin shad	Dorosoma petenense	47	0.7	Dead
Threadfin shad	Dorosoma petenense	45	0.7	Dead
Threadfin shad	Dorosoma petenense	55	1.1	Dead
Threadfin shad	Dorosoma petenense	50	0.8	Dead
Threadfin shad	Dorosoma petenense	53	1	Dead
Threadfin shad	Dorosoma petenense	54	1	Dead
Threadfin shad	Dorosoma petenense	54	0.9	Dead
Threadfin shad	Dorosoma petenense	46	0.6	Dead
Threadfin shad	Dorosoma petenense	50	0.9	Dead
Threadfin shad	Dorosoma petenense	55	1.3	Dead
Threadfin shad	Dorosoma petenense	57	0.8	Dead
Threadfin shad	Dorosoma petenense	46	0.6	Dead
Threadfin Shad	Dorosoma petenense	45	0.6	Dead
Threadfin shad	Dorosoma petenense	47	0.8	Dead
Threadfin shad	Dorosoma petenense	50	0.7	Dead
Threadfin Shad	Dorosoma petenense	53	1	Dead
Threadfin shad	Dorosoma petenense	51	0.8	Dead
Threadfin Shad	Dorosoma petenense	60	1.2	Dead
Threadfin shad	Dorosoma petenense	62	1.6	Dead

Threadfin shad	Dorosoma petenense	46	0.6	Dead
Threadfin shad	Dorosoma petenense	73	2.4	Dead
Threadfin shad	Dorosoma petenense	54	1	Dead
Threadfin shad	Dorosoma petenense	42	0.5	Dead
Threadfin Shad	Dorosoma petenense	50	0.9	Dead
Threadfin shad	Dorosoma petenense	54	0.9	Dead
Threadfin shad	Dorosoma petenense	56	0.8	Dead
Threadfin shad	Dorosoma petenense	52	0.9	Dead
Threadfin shad	Dorosoma petenense	51	0.9	Dead
Threadfin shad	Dorosoma petenense	60	1.5	Dead
Threadfin shad	Dorosoma petenense	56	1.1	Dead
Threadfin shad	Dorosoma petenense	52	0.8	Dead
Threadfin shad	Dorosoma petenense	55	1	Dead
Threadfin shad	Dorosoma petenense	61	1.4	Dead
Threadfin shad	Dorosoma petenense	50	0.8	Dead
Threadfin shad	Dorosoma petenense	31	0.8	Dead
Threadfin shad	Dorosoma petenense	55	0.9	Dead
Threadfin shad	Dorosoma petenense	48	0.8	Dead
Threadfin shad	Dorosoma petenense	45	0.9	Dead
Threadfin shad	Dorosoma petenense	47	0.5	Dead
Threadfin shad	Dorosoma petenense	56	1.1	Dead
Threadfin shad	Dorosoma petenense	55	1.2	Dead
Threadfin shad	Dorosoma petenense	60	1.3	Dead
Threadfin shad	Dorosoma petenense	51	0.6	Dead

Threadfin shad	Dorosoma petenense	26	0.7	Dead
Threadfin shad	Dorosoma petenense	50	0.8	Dead
Threadfin shad	Dorosoma petenense	56	1.2	Dead
Threadfin shad	Dorosoma petenense	52	0.8	Dead
Threadfin shad	Dorosoma petenense	52	1.1	Dead
Threadfin shad	Dorosoma petenense	60	1.1	Dead
Threadfin shad	Dorosoma petenense	50	1	Dead
Threadfin shad	Dorosoma petenense	52	0.9	Dead
Threadfin shad	Dorosoma petenense	57	1.3	Dead
Threadfin shad	Dorosoma petenense	60	1.2	Dead
Threadfin shad	Dorosoma petenense	62	1.5	Dead
Threadfin shad	Dorosoma petenense	57	1.2	Dead
Threadfin shad	Dorosoma petenense	58	1.2	Dead
Threadfin shad	Dorosoma petenense	51	0.9	Dead

MAR-I-0-049-00 3/1/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	58	2.8	Dead			
Bluegill	Lepomis macrochirus	73	4.2	Dead			
Bluegill	Lepomis macrochirus	70	4.1	Dead			
Bluegill	Lepomis macrochirus	64	3.3	Dead			
Threadfin shad	Dorosoma petenense	45	0.9	Dead			
Threadfin shad	Dorosoma petenense	61	1.6	Dead			
Threadfin shad	Dorosoma petenense	47	1	Dead			

Threadfin shad	Dorosoma petenense	46	0.9	Dead
Threadfin shad	Dorosoma petenense	49	1	Dead
Threadfin shad	Dorosoma petenense	53	1.2	Dead
Threadfin shad	Dorosoma petenense	60	1.6	Dead
Threadfin shad	Dorosoma petenense	60	1.6	Dead

MAR-I-0-049-06 3/1/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Threadfin shad	Dorosoma petenense	62	1.3	Dead			
Threadfin shad	Dorosoma petenense	46	0.9	Dead			
Threadfin shad	Dorosoma petenense	50	1.2	Dead			
Threadfin shad	Dorosoma petenense	61	1.1	Dead			
Threadfin shad	Dorosoma petenense	57	1	Dead			
Threadfin shad	Dorosoma petenense	59	1	Dead			
Threadfin shad	Dorosoma petenense	63	1.3	Dead			
Threadfin shad	Dorosoma petenense	62	1.2	Dead			
Threadfin shad	Dorosoma petenense	60	1.1	Dead			
Threadfin shad	Dorosoma petenense	51	1	Dead			
Threadfin shad	Dorosoma petenense	49	1	Dead			
Threadfin shad	Dorosoma petenense	59	1	Dead			
Threadfin shad	Dorosoma petenense	52	1.2	Dead			
Threadfin shad	Dorosoma petenense	48	0.9	Dead			
Threadfin shad	Dorosoma petenense	60	1.4	Dead			
Threadfin shad	Dorosoma petenense	61	1.5	Dead			

Threadfin shad	Dorosoma petenense	60	1.4	Dead		
Threadfin shad	Dorosoma petenense	56	1.2	Dead		
Threadfin shad	Dorosoma petenense	48	0.9	Dead		
Threadfin shad	Dorosoma petenense			Dead	100	96
Threadfin shad	Dorosoma petenense			Dead	77	69
Threadfin shad	Dorosoma petenense	68	1.7	Dead		
Threadfin shad	Dorosoma petenense	60	1.4	Dead		
Threadfin shad	Dorosoma petenense	49	0.9	Dead		
Threadfin shad	Dorosoma petenense	47	1.1	Dead		
Threadfin shad	Dorosoma petenense	45	0.9	Dead		
Threadfin shad	Dorosoma petenense	53	1.3	Dead		
Threadfin shad	Dorosoma petenense	60	1.1	Dead		
Threadfin shad	Dorosoma petenense	49	1.1	Dead		
Threadfin shad	Dorosoma petenense	49	1	Dead		
Threadfin shad	Dorosoma petenense	50	1.1	Dead		
Threadfin shad	Dorosoma petenense	48	1	Dead		
Threadfin shad	Dorosoma petenense	56	1.3	Dead		
Threadfin shad	Dorosoma petenense	47	0.9	Dead		
Threadfin shad	Dorosoma petenense	53	1.2	Dead		
Threadfin shad	Dorosoma petenense	61	1.2	Dead		
Threadfin shad	Dorosoma petenense	63	1.4	Dead		
Threadfin shad	Dorosoma petenense	57	1.1	Dead		
Threadfin shad	Dorosoma petenense	53	1.2	Dead		
Threadfin shad	Dorosoma petenense	52	1.1	Dead		

Threadfin shad	Dorosoma petenense	63	1.2	Dead
Threadfin shad	Dorosoma petenense	60	1.3	Dead
Threadfin shad	Dorosoma petenense	49	0.9	Dead
Threadfin shad	Dorosoma petenense	51	1.2	Dead
Threadfin shad	Dorosoma petenense	56	1.1	Dead

MAR-I-0-050-00 3/8/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	39	1.7	Dead			
Bluegill	Lepomis macrochirus	64	4	Dead			
Bluegill	Lepomis macrochirus	45	1.6	Dead			
Bluegill	Lepomis macrochirus	63	4.4	Dead			
Bluegill	Lepomis macrochirus	61	3.9	Dead			
Bluegill	Lepomis macrochirus	66	5.6	Dead			
Bluegill	Lepomis macrochirus	48	1.5	Dead			
Bluegill	Lepomis macrochirus	50	2.4	Dead			
Bluegill	Lepomis macrochirus	44	2	Dead			
Bluegill	Lepomis macrochirus	47	2.4	Dead			
Bluegill	Lepomis macrochirus	81	8.3	Dead			
Bluegill	Lepomis macrochirus	55	2.8	Dead			
Bluegill	Lepomis macrochirus	56	3	Dead			
Threadfin shad	Dorosoma petenense	72	2.5	Dead			
Threadfin shad	Dorosoma petenense	54	1.2	Dead			
Threadfin shad	Dorosoma petenense	54	1	Dead			

Threadfin shad	Dorosoma petenense	51	1.3	Dead
Threadfin shad	Dorosoma petenense	59	1.5	Dead
Threadfin shad	Dorosoma petenense	54	1.2	Dead
Threadfin shad	Dorosoma petenense	61	1.7	Dead
Threadfin shad	Dorosoma petenense	56	1.4	Dead
Threadfin shad	Dorosoma petenense	61	1.6	Dead
Threadfin shad	Dorosoma petenense	56	1.3	Dead
Threadfin shad	Dorosoma petenense	51	1.1	Dead
Threadfin shad	Dorosoma petenense	46	0.8	Dead
Threadfin shad	Dorosoma petenense	52	1.2	Dead
Threadfin shad	Dorosoma petenense	60	1.6	Dead
Threadfin shad	Dorosoma petenense	68	2.3	Dead
Threadfin shad	Dorosoma petenense	53	2	Dead
Threadfin shad	Dorosoma petenense	61	1.6	Dead
Threadfin shad	Dorosoma petenense	61	1.7	Dead
Threadfin shad	Dorosoma petenense	50	1.1	Dead
Threadfin shad	Dorosoma petenense	52	1.1	Dead
Threadfin shad	Dorosoma petenense	54	1.2	Dead
Threadfin shad	Dorosoma petenense	55	1.3	Dead
Threadfin shad	Dorosoma petenense	50	1.9	Dead
Threadfin shad	Dorosoma petenense	52	1.1	Dead
Threadfin shad	Dorosoma petenense	53	1.3	Dead
Threadfin shad	Dorosoma petenense	64	1.7	Dead

MAR-I-0-051-00 3/16/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	216	192.5	Dead			
Bluegill	Lepomis macrochirus	50	1.7	Dead			
Bluegill	Lepomis macrochirus	62	3.3	Dead			
Bluegill	Lepomis macrochirus	63	3.7	Dead			
Bluegill	Lepomis macrochirus	65	3.2	Dead			
Bluegill	Lepomis macrochirus	45	1.4	Dead			
Bluegill	Lepomis macrochirus	50	1.8	Dead			
Bluegill	Lepomis macrochirus	63	3.8	Dead			
Bluegill	Lepomis macrochirus	55	2.4	Dead			
Bluegill	Lepomis macrochirus	61	3	Dead			
Bluegill	Lepomis macrochirus	56	1.9	Dead			
Bluegill	Lepomis macrochirus	58	2.7	Dead			
Bluegill	Lepomis macrochirus	56	1.9	Dead			
Bluegill	Lepomis macrochirus	65	3.6	Dead			
Bluegill	Lepomis macrochirus	59	3.1	Dead			
Bluegill	Lepomis macrochirus	74	6.1	Dead			
Bluegill	Lepomis macrochirus	64	4.2	Dead			
Bluegill	Lepomis macrochirus	60	2.8	Dead			
Bluegill	Lepomis macrochirus	68	4.2	Dead			
Bluegill	Lepomis macrochirus	62	3.4	Dead			
Bluegill	Lepomis macrochirus	73	5	Dead			

Bluegill	Lepomis macrochirus	60	2.7	Dead
Bluegill	Lepomis macrochirus	67	4.6	Dead
Bluegill	Lepomis macrochirus	58	3	Dead
Bluegill	Lepomis macrochirus	55	3.3	Dead
Bluegill	Lepomis macrochirus	57	2.9	Dead
Bluegill	Lepomis macrochirus	57	1.7	Dead
Bluegill	Lepomis macrochirus	56	3	Dead
Bluegill	Lepomis macrochirus	63	3.8	Dead
Bluegill	Lepomis macrochirus	57	3	Dead
Bluegill	Lepomis macrochirus	58	1.9	Dead
Bluegill	Lepomis macrochirus	61	3.4	Dead
Bluegill	Lepomis macrochirus	60	2.5	Dead
Bluegill	Lepomis macrochirus	50	1.5	Dead
Bluegill	Lepomis macrochirus	63	3.2	Dead
Bluegill	Lepomis macrochirus	52	2.7	Dead
Bluegill	Lepomis macrochirus	65	5	Dead
Bluegill	Lepomis macrochirus	52	1.7	Dead
Bluegill	Lepomis macrochirus	71	5.1	Dead
Bluegill	Lepomis macrochirus	70	5.7	Dead
Bluegill	Lepomis macrochirus	50	1.2	Dead
Bluegill	Lepomis macrochirus	53	2	Dead
Bluegill	Lepomis macrochirus	58	2.9	Dead
Bluegill	Lepomis macrochirus	57	1.8	Dead
Bluegill	Lepomis macrochirus	60	3.3	Dead

Bluegill	Lepomis macrochirus	60	3.2	Dead
Bluegill	Lepomis macrochirus	58	2.4	Dead
Bluegill	Lepomis macrochirus	56	2.2	Dead
Bluegill	Lepomis macrochirus	64	3.6	Dead
Bluegill	Lepomis macrochirus	47	1.6	Dead
Bluegill	Lepomis macrochirus	65	4.4	Dead
Bluegill	Lepomis macrochirus	65	4.3	Dead
Bluegill	Lepomis macrochirus	67	3.8	Dead
Bluegill	Lepomis macrochirus	50	1.9	Dead
Bluegill	Lepomis macrochirus	61	2.8	Dead
Bluegill	Lepomis macrochirus	55	2.6	Dead
Bluegill	Lepomis macrochirus	63	4.3	Dead
Bluegill	Lepomis macrochirus	72	4.7	Dead
Bluegill	Lepomis macrochirus	58	2.8	Dead
Bluegill	Lepomis macrochirus	60	3	Dead
Bluegill	Lepomis macrochirus	52	2	Dead
Bluegill	Lepomis macrochirus	60	2.8	Dead
Bluegill	Lepomis macrochirus	67	3.3	Dead
Bluegill	Lepomis macrochirus	57	2.7	Dead
Bluegill	Lepomis macrochirus	61	3.3	Dead
Bluegill	Lepomis macrochirus	69	4.5	Dead
Bluegill	Lepomis macrochirus	70	4.4	Dead
Bluegill	Lepomis macrochirus	56	2.3	Dead
Bluegill	Lepomis macrochirus	57	2.5	Dead

Bluegill	Lepomis macrochirus	50	2.1	Dead
Bluegill	Lepomis macrochirus	68	3.8	Dead
Bluegill	Lepomis macrochirus	57	3.4	Dead
Bluegill	Lepomis macrochirus	52	1.9	Dead
Bluegill	Lepomis macrochirus	62	3.8	Dead
Bluegill	Lepomis macrochirus	62	3.1	Dead
Bluegill	Lepomis macrochirus	62	4	Dead
Bluegill	Lepomis macrochirus	60	3.1	Dead
Bluegill	Lepomis macrochirus	57	2.4	Dead
Bluegill	Lepomis macrochirus	59	4.1	Dead
Bluegill	Lepomis macrochirus	69	5.3	Dead
Bluegill	Lepomis macrochirus	59	2.3	Dead
Bluegill	Lepomis macrochirus	63	4	Dead
Bluegill	Lepomis macrochirus	61	3.6	Dead
Bluegill	Lepomis macrochirus	62	3.6	Dead
Bluegill	Lepomis macrochirus	63	3.2	Dead
Bluegill	Lepomis macrochirus	54	2	Dead
Bluegill	Lepomis macrochirus	76	5.9	Dead
Bluegill	Lepomis macrochirus	67	4.5	Dead
Bluegill	Lepomis macrochirus	68	4.3	Dead
Bluegill	Lepomis macrochirus	92	12.6	Dead
Bluegill	Lepomis macrochirus	68	4.9	Dead
Bluegill	Lepomis macrochirus	46	1.4	Dead
Bluegill	Lepomis macrochirus	60	2.4	Dead

Bluegill	Lepomis macrochirus	81	7.2	Dead
Bluegill	Lepomis macrochirus	61	3.5	Dead
Bluegill	Lepomis macrochirus	62	3.5	Dead
Bluegill	Lepomis macrochirus	61	2.7	Dead
Bluegill	Lepomis macrochirus	57	2.9	Dead
Bluegill	Lepomis macrochirus	69	4.8	Dead
Bluegill	Lepomis macrochirus	51	2.1	Dead
Bluegill	Lepomis macrochirus	65	4.1	Dead
Bluegill	Lepomis macrochirus	51	1.8	Dead
Bluegill	Lepomis macrochirus	62	3.7	Dead
Bluegill	Lepomis macrochirus	60	3.7	Dead
Bluegill	Lepomis macrochirus	80	7.4	Dead
Bluegill	Lepomis macrochirus	90	10.6	Dead
Bluegill	Lepomis macrochirus	51	2.3	Dead
Bluegill	Lepomis macrochirus	50	2	Dead
Bluegill	Lepomis macrochirus	52	2	Dead
Bluegill	Lepomis macrochirus	60	2.6	Dead
Bluegill	Lepomis macrochirus	63	3.5	Dead
Bluegill	Lepomis macrochirus	72	5.2	Dead
Bluegill	Lepomis macrochirus	64	3.8	Dead
Bluegill	Lepomis macrochirus	60	3.1	Dead
Bluegill	Lepomis macrochirus	49	1.8	Dead
Bluegill	Lepomis macrochirus	63	3.3	Dead
Bluegill	Lepomis macrochirus	68	4.7	Dead

Bluegill	Lepomis macrochirus	47	1.4	Dead
Bluegill	Lepomis macrochirus	61	3.2	Dead
Bluegill	Lepomis macrochirus	65	3.4	Dead
Bluegill	Lepomis macrochirus	56	2.3	Dead
Bluegill	Lepomis macrochirus	60	3	Dead
Bluegill	Lepomis macrochirus	60	3.4	Dead
Bluegill	Lepomis macrochirus	67	4	Dead
Bluegill	Lepomis macrochirus	60	2.5	Dead
Bluegill	Lepomis macrochirus	62	3.3	Dead
Bluegill	Lepomis macrochirus	58	2.6	Dead
Bluegill	Lepomis macrochirus	62	3.5	Dead
Bluegill	Lepomis macrochirus	50	1.9	Dead
Bluegill	Lepomis macrochirus	55	2.8	Dead
Bluegill	Lepomis macrochirus	62	3.3	Dead
Bluegill	Lepomis macrochirus	51	1.6	Dead
Bluegill	Lepomis macrochirus	60	2.6	Dead
Bluegill	Lepomis macrochirus	51	1.8	Dead
Bluegill	Lepomis macrochirus	75	4.1	Dead
Bluegill	Lepomis macrochirus	60	2.9	Dead
Bluegill	Lepomis macrochirus	57	2.8	Dead
Bluegill	Lepomis macrochirus	63	3.6	Dead
Bluegill	Lepomis macrochirus	61	3.3	Dead
Bluegill	Lepomis macrochirus	59	2.8	Dead
Bluegill	Lepomis macrochirus	52	2.5	Dead

Bluegill	Lepomis macrochirus	62	3.4	Dead
Bluegill	Lepomis macrochirus	65	3.4	Dead
Bluegill	Lepomis macrochirus	70	5.7	Dead
Bluegill	Lepomis macrochirus	51	2.5	Dead
Bluegill	Lepomis macrochirus	70	4.6	Dead
Bluegill	Lepomis macrochirus	70	5	Dead
Bluegill	Lepomis macrochirus	59	2.8	Dead
Bluegill	Lepomis macrochirus	60	3.2	Dead
Bluegill	Lepomis macrochirus	69	4.6	Dead
Bluegill	Lepomis macrochirus	58	2.8	Dead
Bluegill	Lepomis macrochirus	58	3	Dead
Bluegill	Lepomis macrochirus	70	4.2	Dead
Bluegill	Lepomis macrochirus	55	2.1	Dead
Bluegill	Lepomis macrochirus	60	2.8	Dead
Bluegill	Lepomis macrochirus	65	3.6	Dead
Bluegill	Lepomis macrochirus	62	3.4	Dead
Bluegill	Lepomis macrochirus	60	3.1	Dead
Bluegill	Lepomis macrochirus	56	2.1	Dead
Bluegill	Lepomis macrochirus	63	3.9	Dead
Bluegill	Lepomis macrochirus	46	1.6	Dead
Bluegill	Lepomis macrochirus	59	1.9	Dead
Bluegill	Lepomis macrochirus	76	6	Dead
Bluegill	Lepomis macrochirus	75	5.5	Dead
Bluegill	Lepomis macrochirus	73	5.3	Dead

Bluegill	Lepomis macrochirus	61	3.1	Dead
Bluegill	Lepomis macrochirus	57	2.8	Dead
Bluegill	Lepomis macrochirus	57	2.9	Dead
Bluegill	Lepomis macrochirus	77	6.7	Dead
Bluegill	Lepomis macrochirus	55	2.1	Dead
Bluegill	Lepomis macrochirus	64	3.6	Dead
Bluegill	Lepomis macrochirus	70	5.2	Dead
Bluegill	Lepomis macrochirus	72	4.9	Dead
Bluegill	Lepomis macrochirus	73	8.2	Dead
Bluegill	Lepomis macrochirus	68	5	Dead
Bluegill	Lepomis macrochirus	65	3.4	Dead
Bluegill	Lepomis macrochirus	47	1.3	Dead
Bluegill	Lepomis macrochirus	60	2.9	Dead
Bluegill	Lepomis macrochirus	59	2.6	Dead
Bluegill	Lepomis macrochirus	59	3.2	Dead
Bluegill	Lepomis macrochirus	58	2.5	Dead
Bluegill	Lepomis macrochirus	56	2.6	Dead
Bluegill	Lepomis macrochirus	62	3.7	Dead
Bluegill	Lepomis macrochirus	50	1.5	Dead
Bluegill	Lepomis macrochirus	46	2.5	Dead
Bluegill	Lepomis macrochirus	64	3.1	Dead
Bluegill	Lepomis macrochirus	56	2.7	Dead
Bluegill	Lepomis macrochirus	52	3	Dead
Bluegill	Lepomis macrochirus	102	20	Dead

Bluegill	Lepomis macrochirus	96	12.6	Dead
Bluegill	Lepomis macrochirus	46	1.5	Dead
Bluegill	Lepomis macrochirus	56	2.2	Dead
Bluegill	Lepomis macrochirus	60	2.6	Dead
Bluegill	Lepomis macrochirus	61	3.1	Dead
Bluegill	Lepomis macrochirus	50	1.6	Dead
Bluegill	Lepomis macrochirus	46	1.6	Dead
Bluegill	Lepomis macrochirus	68	4.2	Dead
Bluegill	Lepomis macrochirus	69	4.7	Dead
Bluegill	Lepomis macrochirus	68	5.3	Dead
Bluegill	Lepomis macrochirus	55	3.4	Dead
Bluegill	Lepomis macrochirus	66	4	Dead
Bluegill	Lepomis macrochirus	67	3.7	Dead
Bluegill	Lepomis macrochirus	65	3.8	Dead
Bluegill	Lepomis macrochirus	56	2.8	Dead
Bluegill	Lepomis macrochirus	74	5.4	Dead
Bluegill	Lepomis macrochirus	73	5.3	Dead
Bluegill	Lepomis macrochirus	59	2.9	Dead
Bluegill	Lepomis macrochirus	63	3.7	Dead
Bluegill	Lepomis macrochirus	68	4.7	Dead
Bluegill	Lepomis macrochirus	56	3.3	Dead
Bluegill	Lepomis macrochirus	64	3.9	Dead
Bluegill	Lepomis macrochirus	54	2	Dead
Bluegill	Lepomis macrochirus	54	2.3	Dead

Bluegill	Lepomis macrochirus	64	3	Dead
Bluegill	Lepomis macrochirus	63	3.6	Dead
Bluegill	Lepomis macrochirus	48	2.5	Dead
Bluegill	Lepomis macrochirus	58	2.8	Dead
Bluegill	Lepomis macrochirus	49	1.7	Dead
Bluegill	Lepomis macrochirus	82	8.7	Dead
Bluegill	Lepomis macrochirus	65	4.5	Dead
Bluegill	Lepomis macrochirus	61	2.9	Dead
Bluegill	Lepomis macrochirus	60	3.5	Dead
Bluegill	Lepomis macrochirus	61	3.6	Dead
Bluegill	Lepomis macrochirus	59	3.2	Dead
Bluegill	Lepomis macrochirus	91	10.3	Dead
Bluegill	Lepomis macrochirus	79	7.1	Dead
Bluegill	Lepomis macrochirus	47	1.5	Dead
Bluegill	Lepomis macrochirus	57	2.7	Dead
Bluegill	Lepomis macrochirus	82	6.8	Dead
Bluegill	Lepomis macrochirus	70	4.6	Dead
Bluegill	Lepomis macrochirus	65	3.5	Dead
Bluegill	Lepomis macrochirus	56	1.8	Dead
Bluegill	Lepomis macrochirus	55	2.3	Dead
Bluegill	Lepomis macrochirus	61	4.4	Dead
Bluegill	Lepomis macrochirus	66	3.9	Dead
Bluegill	Lepomis macrochirus	50	1.6	Dead
Bluegill	Lepomis macrochirus	61	3.1	Dead

Bluegill	Lepomis macrochirus	66	4	Dead
Bluegill	Lepomis macrochirus	66	4.6	Dead
Bluegill	Lepomis macrochirus	71	5.5	Dead
Bluegill	Lepomis macrochirus	62	3.7	Dead
Bluegill	Lepomis macrochirus	72	4.6	Dead
Bluegill	Lepomis macrochirus	76	6.3	Dead
Bluegill	Lepomis macrochirus	56	2.6	Dead
Bluegill	Lepomis macrochirus	60	2.9	Dead
Bluegill	Lepomis macrochirus	38	2.5	Dead
Bluegill	Lepomis macrochirus	57	2.5	Dead
Bluegill	Lepomis macrochirus	62	3.4	Dead
Bluegill	Lepomis macrochirus	61	3.2	Dead
Bluegill	Lepomis macrochirus	60	2.9	Dead
Bluegill	Lepomis macrochirus	73	5.3	Dead
Bluegill	Lepomis macrochirus	66	4.2	Dead
Bluegill	Lepomis macrochirus	62	3.5	Dead
Bluegill	Lepomis macrochirus	63	3.3	Dead
Bluegill	Lepomis macrochirus	57	2.6	Dead
Bluegill	Lepomis macrochirus	65	3.1	Dead
Bluegill	Lepomis macrochirus	62	3.1	Dead
Bluegill	Lepomis macrochirus	70	4.9	Dead
Bluegill	Lepomis macrochirus	56	2.2	Dead
Bluegill	Lepomis macrochirus	53	2.1	Dead
Bluegill	Lepomis macrochirus	81	8.8	Dead

Bluegill	Lepomis macrochirus	59	2.9	Dead
Bluegill	Lepomis macrochirus	71	4.8	Dead
Bluegill	Lepomis macrochirus	62	3.5	Dead
Bluegill	Lepomis macrochirus	56	1.7	Dead
Bluegill	Lepomis macrochirus	61	3.3	Dead
Bluegill	Lepomis macrochirus	64	3.5	Dead
Bluegill	Lepomis macrochirus	66	3.7	Dead
Bluegill	Lepomis macrochirus	61	3.2	Dead
Bluegill	Lepomis macrochirus	62	4.3	Dead
Bluegill	Lepomis macrochirus	60	3	Dead
Bluegill	Lepomis macrochirus	71	5.6	Dead
Bluegill	Lepomis macrochirus	69	4.3	Dead
Bluegill	Lepomis macrochirus	69	4.3	Dead
Bluegill	Lepomis macrochirus	55	3.1	Dead
Green sunfish	Lepomis cyanellus	82	8.3	Dead
Green sunfish	Lepomis cyanellus	61	3.5	Dead
Longear sunfish	Lepomis megalotis	107	18.4	Dead
Redear sunfish	Lepomis microlophus	92	13.7	Dead
Threadfin shad	Dorosoma petenense	55	1	Dead
Threadfin shad	Dorosoma petenense	56	1	Dead
Threadfin shad	Dorosoma petenense	60	1.2	Dead
Threadfin shad	Dorosoma petenense	57	0.8	Dead
Threadfin shad	Dorosoma petenense	60	1.3	Dead
Threadfin shad	Dorosoma petenense	45	0.6	Dead

Threadfin shad	Dorosoma petenense	123	12.4	Dead			
Threadfin shad	Dorosoma petenense	96	6.9	Dead			
Threadfin shad	Dorosoma petenense	98	6.8	Dead			
Threadfin shad	Dorosoma petenense	88	4.3	Dead			
Warmouth	Lepomis gulosus	86	10.8	Dead			
Warmouth	Lepomis gulosus	91	13.1	Dead			
Warmouth	Lepomis gulosus	81	9.3	Dead			
Warmouth	Lepomis gulosus	81	7.9	Dead			
Warmouth	Lepomis gulosus	88	11.3	Dead			
Warmouth	Lepomis gulosus	91	10	Dead			

MAR-I-0-052-00 3/22/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	81	7.9	Dead			
Bluegill	Lepomis macrochirus	69	4.4	Dead			
Bluegill	Lepomis macrochirus	85	8.6	Dead			
Bluegill	Lepomis macrochirus	65	4.1	Dead			
Bluegill	Lepomis macrochirus	70	5.7	Dead			
Bluegill	Lepomis macrochirus	81	8.6	Dead			
Bluegill	Lepomis macrochirus	89	9.8	Dead			
Bluegill	Lepomis macrochirus	70	5	Dead			
Bluegill	Lepomis macrochirus	93	3.2	Dead			
Bluegill	Lepomis macrochirus	90	10.6	Dead			
Bluegill	Lepomis macrochirus	117	22.9	Dead			

Bluegill	Lepomis macrochirus	75	6.8	Dead
Bluegill	Lepomis macrochirus	91	11.1	Dead
Bluegill	Lepomis macrochirus	67	4.4	Dead
Bluegill	Lepomis macrochirus	60	3.2	Dead
Bluegill	Lepomis macrochirus	77	7.4	Dead
Bluegill	Lepomis macrochirus	70	5.5	Dead
Bluegill	Lepomis macrochirus	92	13.1	Dead
Bluegill	Lepomis macrochirus	126	32.3	Dead
Bluegill	Lepomis macrochirus	80	7.9	Dead
Bluegill	Lepomis macrochirus	101	16.7	Dead
Bluegill	Lepomis macrochirus	84	9	Dead
Bluegill	Lepomis macrochirus	97	13.7	Dead
Bluegill	Lepomis macrochirus	63	3.7	Dead
Bluegill	Lepomis macrochirus	100	13.5	Dead
Bluegill	Lepomis macrochirus	80	8.7	Dead
Bluegill	Lepomis macrochirus	71	5.7	Dead
Bluegill	Lepomis macrochirus	90	11.5	Dead
Bluegill	Lepomis macrochirus	88	10.1	Dead
Bluegill	Lepomis macrochirus	65	5	Dead
Bluegill	Lepomis macrochirus	61	3.4	Live
Bluegill	Lepomis macrochirus	67	4.4	Live
Bluegill	Lepomis macrochirus	75	5.6	Live
Bluegill	Lepomis macrochirus	57	3.2	Live
Bluegill	Lepomis macrochirus	128	36.8	Live

Bluegill	Lepomis macrochirus			Dead	70	295.3
Bluegill	Lepomis macrochirus	59	3.6	Dead		
Bluegill	Lepomis macrochirus	63	4	Dead		
Bluegill	Lepomis macrochirus	65	4.5	Dead		
Bluegill	Lepomis macrochirus	52	2.6	Dead		
Bluegill	Lepomis macrochirus	73	6.4	Dead		
Bluegill	Lepomis macrochirus	90	12	Dead		
Bluegill	Lepomis macrochirus	59	3.3	Dead		
Bluegill	Lepomis macrochirus	77	7.9	Dead		
Bluegill	Lepomis macrochirus	79	6.6	Dead		
Bluegill	Lepomis macrochirus	72	6.1	Dead		
Bluegill	Lepomis macrochirus	90	10.5	Dead		
Bluegill	Lepomis macrochirus	73	6.5	Dead		
Bluegill	Lepomis macrochirus	64	3.7	Dead		
Bluegill	Lepomis macrochirus	52	2.9	Dead		
Bluegill	Lepomis macrochirus	56	3.5	Dead		
Bluegill	Lepomis macrochirus	86	8.6	Dead		
Bluegill	Lepomis macrochirus	66	4.9	Dead		
Bluegill	Lepomis macrochirus	79	7.3	Dead		
Bluegill	Lepomis macrochirus	64	4.5	Dead		
Bluegill	Lepomis macrochirus	75	8	Dead		
Threadfin shad	Dorosoma petenense	96	4.7	Dead		
Threadfin shad	Dorosoma petenense			Dead	4	5
Threadfin shad	Dorosoma petenense	71	2	Dead		

Threadfin shad	Dorosoma petenense	75	2.6	Dead
Threadfin shad	Dorosoma petenense	62	1.4	Dead
Threadfin shad	Dorosoma petenense	39	0.9	Dead
Threadfin shad	Dorosoma petenense	60	2	Dead
Threadfin shad	Dorosoma petenense	61	1.6	Dead
Threadfin shad	Dorosoma petenense	66	1.5	Dead
Threadfin shad	Dorosoma petenense	70	1.9	Dead
Threadfin shad	Dorosoma petenense	57	1.6	Dead
Threadfin shad	Dorosoma petenense	66	2	Dead
Threadfin shad	Dorosoma petenense	68	2.7	Dead
Threadfin shad	Dorosoma petenense	70	3.2	Dead
Threadfin shad	Dorosoma petenense	61	1.4	Dead
Threadfin shad	Dorosoma petenense	64	1.5	Dead
Threadfin shad	Dorosoma petenense	54	1.6	Dead
Threadfin shad	Dorosoma petenense	60	1.7	Dead
Threadfin shad	Dorosoma petenense	52	1.2	Dead
Threadfin shad	Dorosoma petenense	100	6.6	Dead
Threadfin shad	Dorosoma petenense	99	8.4	Dead
Threadfin shad	Dorosoma petenense	57	1.6	Dead
Threadfin shad	Dorosoma petenense	58	1.3	Dead
Threadfin shad	Dorosoma petenense	55	1.2	Dead
Threadfin shad	Dorosoma petenense	64	1.8	Dead
Threadfin shad	Dorosoma petenense	54	1.1	Dead
Threadfin shad	Dorosoma petenense	54	1.2	Dead

Threadfin shad	Dorosoma petenense	84	6.8	Dead			
Threadfin shad	Dorosoma petenense	70	1.6	Dead			
Threadfin shad	Dorosoma petenense	58	1.3	Dead			
Threadfin shad	Dorosoma petenense	52	1	Dead			
Threadfin shad	Dorosoma petenense	70	3.3	Dead			
Threadfin shad	Dorosoma petenense	91	5.5	Dead			
Threadfin shad	Dorosoma petenense	77	3	Dead			
Threadfin shad	Dorosoma petenense	65	2.1	Dead			
Threadfin shad	Dorosoma petenense	73	3.7	Dead			
Threadfin shad	Dorosoma petenense	76	2.8	Dead			
Threadfin shad	Dorosoma petenense	52	1	Dead			
Threadfin shad	Dorosoma petenense	75	2.6	Dead			
Threadfin shad	Dorosoma petenense			Dead	9	11.8	Young of Year
Threadfin shad	Dorosoma petenense	81	2.7	Dead			
Threadfin shad	Dorosoma petenense	75	2.5	Dead			
Threadfin shad	Dorosoma petenense	67	2.4	Dead			
Threadfin shad	Dorosoma petenense	106	7	Dead			
Threadfin shad	Dorosoma petenense	71	1.8	Dead			
Threadfin shad	Dorosoma petenense	57	1.4	Dead			
Threadfin shad	Dorosoma petenense	55	1.3	Dead			
Threadfin shad	Dorosoma petenense	56	1.1	Dead			
Threadfin shad	Dorosoma petenense	52	1.2	Dead			
Threadfin shad	Dorosoma petenense	55	1.8	Dead			
Threadfin shad	Dorosoma petenense	101	6.2	Dead			

Threadfin shad	Dorosoma petenense	61	2	Dead
Warmouth	Lepomis gulosus	84	9.9	Dead
Warmouth	Lepomis gulosus	91	12.6	Live
Warmouth	Lepomis gulosus	105	23.9	Live
Warmouth	Lepomis gulosus	81	9.9	Dead
Warmouth	Lepomis gulosus	121	30.7	Live
White crappie	Pomoxis annularis	100	12.8	Dead

MAR-I-0-053-00 3/31/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	60	3.9	Dead			
Bluegill	Lepomis macrochirus	66	3.8	Dead			
Bluegill	Lepomis macrochirus	71	5.6	Dead			
Bluegill	Lepomis macrochirus	70	5.2	Dead			
Bluegill	Lepomis macrochirus	60	3.7	Dead			
Bluegill	Lepomis macrochirus	62	2.9	Dead			
Bluegill	Lepomis macrochirus	100	15.6	Dead			
Bluegill	Lepomis macrochirus	64	3.7	Dead			
Bluegill	Lepomis macrochirus	70	4.6	Dead			
Bluegill	Lepomis macrochirus	61	3.4	Dead			
Bluegill	Lepomis macrochirus	64	4.3	Dead			
Bluegill	Lepomis macrochirus	55	2.6	Dead			
Bluegill	Lepomis macrochirus	81	9	Dead			
Bluegill	Lepomis macrochirus	93	10.8	Dead			

Bluegill	Lepomis macrochirus	60	3.3	Dead
Bluegill	Lepomis macrochirus	61	3.5	Dead
Bluegill	Lepomis macrochirus	60	4.8	Dead
Bluegill	Lepomis macrochirus	80	7.3	Dead
Bluegill	Lepomis macrochirus	81	8.6	Dead
Bluegill	Lepomis macrochirus	69	4.8	Dead
Bluegill	Lepomis macrochirus	62	3.2	Dead
Bluegill	Lepomis macrochirus	105	19.6	Dead
Bluegill	Lepomis macrochirus	120	38	Dead
Bluegill	Lepomis macrochirus	140	61.6	Dead
Bluegill	Lepomis macrochirus	138	41.3	Dead
Bluegill	Lepomis macrochirus	60	3.2	Dead
Bluegill	Lepomis macrochirus	71	5.6	Dead
Bluegill	Lepomis macrochirus	60	3.8	Dead
Bluegill	Lepomis macrochirus	94	13.5	Dead
Bluegill	Lepomis macrochirus	70	5.1	Dead
Bluegill	Lepomis macrochirus	107	17.9	Dead
Bluegill	Lepomis macrochirus	68	4.4	Dead
Bluegill	Lepomis macrochirus	66	4.1	Dead
Bluegill	Lepomis macrochirus	73	6.1	Dead
Bluegill	Lepomis macrochirus	115	19.6	Dead
Bluegill	Lepomis macrochirus	70	5.2	Dead
Bluegill	Lepomis macrochirus	59	3.1	Dead
Bluegill	Lepomis macrochirus	82	9.2	Dead

Bluegill	Lepomis macrochirus	74	6.4	Dead
Bluegill	Lepomis macrochirus	97	14.7	Dead
Bluegill	Lepomis macrochirus	72	5.6	Dead
Bluegill	Lepomis macrochirus	90	11.6	Dead
Bluegill	Lepomis macrochirus	99	13.9	Dead
Bluegill	Lepomis macrochirus	102	16.7	Dead
Longear sunfish	Lepomis megalotis	93	12.6	Dead
Redear sunfish	Lepomis microlophus	103	16.8	Dead
Threadfin shad	Dorosoma petenense	64	1.7	Dead
Threadfin shad	Dorosoma petenense	65	1.6	Dead
Threadfin shad	Dorosoma petenense	94	4.5	Dead
Threadfin shad	Dorosoma petenense	65	2	Dead
Threadfin shad	Dorosoma petenense	63	1.8	Dead
Threadfin shad	Dorosoma petenense	58	0.9	Dead
Threadfin shad	Dorosoma petenense	62	1.4	Dead
Threadfin shad	Dorosoma petenense	70	2	Dead
Threadfin shad	Dorosoma petenense	75	2	Dead
Threadfin shad	Dorosoma petenense	65	1.8	Dead
Threadfin shad	Dorosoma petenense	58	1.4	Dead
Threadfin shad	Dorosoma petenense	57	1.2	Dead
Threadfin shad	Dorosoma petenense	63	1.5	Dead
Threadfin shad	Dorosoma petenense	61	1.6	Dead
Threadfin shad	Dorosoma petenense	72	1.8	Dead
Threadfin shad	Dorosoma petenense	74	2.1	Dead

Threadfin shad	Dorosoma petenense	60	1.3	Dead		
Threadfin shad	Dorosoma petenense	73	2.6	Dead		
Threadfin shad	Dorosoma petenense	68	1.7	Dead		
Threadfin shad	Dorosoma petenense			Dead	100	213.6
Threadfin shad	Dorosoma petenense			Dead	107	227.6
Threadfin shad	Dorosoma petenense	60	1.8	Dead		
Threadfin shad	Dorosoma petenense	57	1.4	Dead		
Threadfin shad	Dorosoma petenense	60	1.4	Dead		
Threadfin shad	Dorosoma petenense	62	1.9	Dead		
Threadfin shad	Dorosoma petenense	56	1	Dead		
Threadfin shad	Dorosoma petenense	50	1	Dead		
Threadfin shad	Dorosoma petenense	65	1.6	Dead		
Threadfin shad	Dorosoma petenense	90	3.7	Dead		
Threadfin shad	Dorosoma petenense	60	1.2	Dead		
Threadfin shad	Dorosoma petenense	65	1.9	Dead		
Threadfin shad	Dorosoma petenense	55	0.8	Dead		
Threadfin shad	Dorosoma petenense	69	1.8	Dead		
Threadfin shad	Dorosoma petenense	52	1	Dead		
Threadfin shad	Dorosoma petenense	50	1.3	Dead		
Threadfin shad	Dorosoma petenense	61	1.6	Dead		
Threadfin shad	Dorosoma petenense	52	1	Dead		
Threadfin shad	Dorosoma petenense	48	0.9	Dead		
Threadfin shad	Dorosoma petenense	66	2.4	Dead		
Threadfin shad	Dorosoma petenense	64	1.4	Dead		

Threadfin shad	Dorosoma petenense	55	1.4	Dead
Threadfin shad	Dorosoma petenense	60	1.7	Dead
Threadfin shad	Dorosoma petenense	60	1.5	Dead
Threadfin shad	Dorosoma petenense	70	1.8	Dead
Threadfin shad	Dorosoma petenense	75	2.5	Dead
Threadfin shad	Dorosoma petenense	79	3.2	Dead
Threadfin shad	Dorosoma petenense	67	1.8	Dead
Threadfin shad	Dorosoma petenense	55	1.2	Dead
Threadfin shad	Dorosoma petenense	70	2.2	Dead
Threadfin shad	Dorosoma petenense	59	1.3	Dead
Threadfin shad	Dorosoma petenense	75	2.7	Dead
Threadfin shad	Dorosoma petenense	58	1.3	Dead
Warmouth	Lepomis gulosus	92	12.2	Dead
White Crappie	Pomoxis annularis	81	5.6	Dead

MAR-I-0-054-00 4/6/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	72	5.3	Dead			
Bluegill	Lepomis macrochirus	91	10.1	Dead			
Bluegill	Lepomis macrochirus	56	2	Dead			
Bluegill	Lepomis macrochirus	68	4	Dead			
Bluegill	Lepomis macrochirus	61	2.4	Dead			
Bluegill	Lepomis macrochirus	70	4.7	Dead			
Bluegill	Lepomis macrochirus	51	2.7	Dead			

Bluegill	Lepomis macrochirus	90	11.4	Dead
Bluegill	Lepomis macrochirus	73	4.3	Dead
Bluegill	Lepomis macrochirus	64	3.2	Dead
Bluegill	Lepomis macrochirus	65	3.3	Dead
Bluegill	Lepomis macrochirus	55	1.5	Dead
Bluegill	Lepomis macrochirus	69	3.8	Dead
Bluegill	Lepomis macrochirus	60	3.2	Dead
Bluegill	Lepomis macrochirus	67	3.6	Dead
Bluegill	Lepomis macrochirus	65	3.6	Dead
Bluegill	Lepomis macrochirus	101	15	Dead
Bluegill	Lepomis macrochirus	75	5.5	Dead
Bluegill	Lepomis macrochirus	69	4.5	Dead
Bluegill	Lepomis macrochirus	58	4.1	Dead
Bluegill	Lepomis macrochirus	50	2.3	Dead
Bluegill	Lepomis macrochirus	50	2.5	Dead
Bluegill	Lepomis macrochirus	91	9.1	Dead
Bluegill	Lepomis macrochirus	61	2.8	Dead
Bluegill	Lepomis macrochirus	195	158	Dead
Bluegill	Lepomis macrochirus	63	3.1	Dead
Bluegill	Lepomis macrochirus	99	14.2	Dead
Bluegill	Lepomis macrochirus	71	5.3	Dead
Bluegill	Lepomis macrochirus	55	4.5	Dead
Threadfin shad	Dorosoma petenense	59	0.7	Dead
Threadfin shad	Dorosoma petenense	60	1.1	Dead

Threadfin shad	Dorosoma petenense	62	1.6	Dead		
Threadfin shad	Dorosoma petenense	74	2.6	Dead		
Threadfin shad	Dorosoma petenense	68	1.8	Dead		
Threadfin shad	Dorosoma petenense	58	1.2	Dead		
Threadfin shad	Dorosoma petenense	63	1.5	Dead		
Threadfin shad	Dorosoma petenense	73	1.9	Dead		
Threadfin shad	Dorosoma petenense	62	1.2	Dead		
Threadfin shad	Dorosoma petenense	70	2.4	Dead		
Threadfin shad	Dorosoma petenense	101	7.3	Dead		
Threadfin shad	Dorosoma petenense	70	1.9	Dead		
Threadfin shad	Dorosoma petenense	68	2	Dead		
Threadfin shad	Dorosoma petenense	60	1.3	Dead		
Threadfin shad	Dorosoma petenense	70	1.5	Dead		
Threadfin shad	Dorosoma petenense	65	1.6	Dead		
Threadfin shad	Dorosoma petenense	53	1.2	Dead		
Threadfin shad	Dorosoma petenense	72	2.2	Dead		
Threadfin shad	Dorosoma petenense	70	2	Dead		
Threadfin shad	Dorosoma petenense	64	1.5	Dead		
Threadfin shad	Dorosoma petenense	63	1.4	Dead		
Threadfin shad	Dorosoma petenense	63	1.6	Dead		
Threadfin shad	Dorosoma petenense	58	1.2	Dead		
Threadfin shad	Dorosoma petenense			Dead	19	24.1
Threadfin shad	Dorosoma petenense	59	1	Dead		
Threadfin shad	Dorosoma petenense	94	5.5	Dead		

Threadfin shad	Dorosoma petenense	71	2	Dead
Threadfin shad	Dorosoma petenense	61	1.1	Dead
Threadfin shad	Dorosoma petenense	70	2.5	Dead
Threadfin shad	Dorosoma petenense	66	1.4	Dead
Threadfin shad	Dorosoma petenense	60	1.5	Dead
Threadfin shad	Dorosoma petenense	60	1.2	Dead
Threadfin shad	Dorosoma petenense	67	1.6	Dead
Threadfin shad	Dorosoma petenense	67	1.9	Dead
Threadfin shad	Dorosoma petenense	64	1.4	Dead
Threadfin shad	Dorosoma petenense	65	1.3	Dead
Threadfin shad	Dorosoma petenense	98	5.2	Dead
Threadfin shad	Dorosoma petenense	80	2.9	Dead
Threadfin shad	Dorosoma petenense	56	1.4	Dead
Threadfin shad	Dorosoma petenense	84	3.9	Dead
Threadfin shad	Dorosoma petenense	60	1.2	Dead
Threadfin shad	Dorosoma petenense	50	0.8	Dead
Threadfin shad	Dorosoma petenense	59	1.1	Dead
Threadfin shad	Dorosoma petenense	72	1.8	Dead
Threadfin shad	Dorosoma petenense	64	2.3	Dead
Threadfin shad	Dorosoma petenense	70	1.6	Dead
Threadfin shad	Dorosoma petenense	60	1.4	Dead
Threadfin shad	Dorosoma petenense	71	2.3	Dead
Threadfin shad	Dorosoma petenense	72	2.2	Dead
Threadfin shad	Dorosoma petenense	62	1.2	Dead

Threadfin shad	Dorosoma petenense	78	2.4	Dead			
Warmouth	Lepomis gulosus	78	7	Dead			

MAR-I-0-055-00 4/14/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	66	4.1	Dead			
Bluegill	Lepomis macrochirus	62	2.4	Dead			
Bluegill	Lepomis macrochirus	101	15.6	Dead			
Bluegill	Lepomis macrochirus	86	7.8	Dead			
Bluegill	Lepomis macrochirus	69	4.6	Dead			
Bluegill	Lepomis macrochirus	58	2.6	Dead			
Bluegill	Lepomis macrochirus	72	4.8	Dead			
Bluegill	Lepomis macrochirus	70	5.8	Dead			
Bluegill	Lepomis macrochirus	74	5.1	Dead			
Bluegill	Lepomis macrochirus	109	19.6	Dead			
Bluegill	Lepomis macrochirus	64	3.3	Dead			
Bluegill	Lepomis macrochirus	65	3.5	Dead			
Bluegill	Lepomis macrochirus	62	3.5	Dead			
Bluegill	Lepomis macrochirus	66	4	Dead			
Bluegill	Lepomis macrochirus	120	23.6	Dead			
Bluegill	Lepomis macrochirus	69	3.2	Dead			
Bluegill	Lepomis macrochirus	63	3.4	Dead			
Bluegill	Lepomis macrochirus	88	9.4	Dead			
Bluegill	Lepomis macrochirus	70	4	Dead			

Bluegill	Lepomis macrochirus	63	3.7	Dead
Bluegill	Lepomis macrochirus	66	3.7	Dead
Bluegill	Lepomis macrochirus	100	13.5	Dead
Bluegill	Lepomis macrochirus	70	5.4	Dead
Bluegill	Lepomis macrochirus	56	2.5	Dead
Bluegill	Lepomis macrochirus	62	4.3	Dead
Bluegill	Lepomis macrochirus	71	5.2	Dead
Bluegill	Lepomis macrochirus	64	4.3	Dead
Bluegill	Lepomis macrochirus	71	5.1	Dead
Bluegill	Lepomis macrochirus	60	2.6	Dead
Bluegill	Lepomis macrochirus	64	4.4	Dead
Bluegill	Lepomis macrochirus	71	4	Dead
Bluegill	Lepomis macrochirus	66	4.2	Dead
Bluegill	Lepomis macrochirus	60	3.4	Dead
Bluegill	Lepomis macrochirus	84	8.4	Dead
Bluegill	Lepomis macrochirus	86	8.8	Dead
Bluegill	Lepomis macrochirus	70	3.8	Dead
Bluegill	Lepomis macrochirus	97	12.8	Dead
Bluegill	Lepomis macrochirus	80	7.4	Dead
Bluegill	Lepomis macrochirus	107	18.8	Dead
Bluegill	Lepomis macrochirus	79	7.4	Dead
Bluegill	Lepomis macrochirus	54	2.4	Dead
Bluegill	Lepomis macrochirus	60	3.2	Dead
Bluegill	Lepomis macrochirus	61	3.2	Dead

Bluegill	Lepomis macrochirus	81	8.4	Dead
Bluegill	Lepomis macrochirus	70	5.2	Dead
Bluegill	Lepomis macrochirus	63	3.4	Dead
Bluegill	Lepomis macrochirus	76	5.5	Dead
Bluegill	Lepomis macrochirus	90	9.7	Dead
Bluegill	Lepomis macrochirus	72	5.4	Dead
Bluegill	Lepomis macrochirus	70	4.7	Dead
Bluegill	Lepomis macrochirus	63	3.5	Dead
Bluegill	Lepomis macrochirus	69	5.1	Dead
Bluegill	Lepomis macrochirus	71	4.5	Dead
Bluegill	Lepomis macrochirus	61	3	Dead
Bluegill	Lepomis macrochirus	60	2.3	Dead
Bluegill	Lepomis macrochirus	62	4.3	Dead
Bluegill	Lepomis macrochirus	70	4.4	Dead
Bluegill	Lepomis macrochirus	55	2.5	Dead
Bluegill	Lepomis macrochirus	66	4	Dead
Bluegill	Lepomis macrochirus	72	5.7	Dead
Bluegill	Lepomis macrochirus	66	3.4	Dead
Bluegill	Lepomis macrochirus	70	4.3	Dead
Bluegill	Lepomis macrochirus	64	3.7	Dead
Bluegill	Lepomis macrochirus	65	4.4	Dead
Bluegill	Lepomis macrochirus	99	13.1	Dead
Bluegill	Lepomis macrochirus	101	14.5	Dead
Bluegill	Lepomis macrochirus	90	10.4	Dead

Bluegill	Lepomis macrochirus	68	3.2	Dead
Bluegill	Lepomis macrochirus	100	13.9	Dead
Bluegill	Lepomis macrochirus	68	4.2	Dead
Bluegill	Lepomis macrochirus	72	4.9	Dead
Bluegill	Lepomis macrochirus	61	3.7	Dead
Bluegill	Lepomis macrochirus	69	4.7	Dead
Bluegill	Lepomis macrochirus	87	10.7	Dead
Bluegill	Lepomis macrochirus	60	3.1	Dead
Bluegill	Lepomis macrochirus	80	7.8	Dead
Bluegill	Lepomis macrochirus	105	15.8	Dead
Bluegill	Lepomis macrochirus	60	3.1	Dead
Bluegill	Lepomis macrochirus	70	4.4	Dead
Bluegill	Lepomis macrochirus	96	14.8	Dead
Bluegill	Lepomis macrochirus	64	3.6	Dead
Bluegill	Lepomis macrochirus	82	7.9	Dead
Bluegill	Lepomis macrochirus	69	3.8	Dead
Bluegill	Lepomis macrochirus	50	1.5	Dead
Bluegill	Lepomis macrochirus	91	12.2	Dead
Redear sunfish	Lepomis microlophus	99	13	Dead
Threadfin shad	Dorosoma petenense	54	0.9	Dead
Threadfin shad	Dorosoma petenense	57	1.2	Dead
Threadfin shad	Dorosoma petenense	71	2.1	Dead
Threadfin shad	Dorosoma petenense	61	1.6	Dead
Threadfin shad	Dorosoma petenense	60	1.5	Dead

Threadfin shad	Dorosoma petenense	66	1.6	Dead
Threadfin shad	Dorosoma petenense	64	1.6	Dead
Threadfin shad	Dorosoma petenense	52	1.1	Dead
Threadfin shad	Dorosoma petenense	60	1.5	Dead
Threadfin shad	Dorosoma petenense	59	1.3	Dead
Threadfin shad	Dorosoma petenense	63	2	Dead
Threadfin shad	Dorosoma petenense	65	1.3	Dead
Threadfin shad	Dorosoma petenense	61	1.3	Dead
Threadfin shad	Dorosoma petenense	60	1.6	Dead
Threadfin shad	Dorosoma petenense	51	0.7	Dead
Threadfin shad	Dorosoma petenense	93	7	Dead
Threadfin shad	Dorosoma petenense	65	1.5	Dead
Threadfin shad	Dorosoma petenense	50	0.9	Dead
Threadfin shad	Dorosoma petenense	90	3.3	Dead
Threadfin shad	Dorosoma petenense	65	2.2	Dead
Threadfin shad	Dorosoma petenense	72	1.8	Dead
Threadfin shad	Dorosoma petenense	60	1.5	Dead
Threadfin shad	Dorosoma petenense	52	0.9	Dead

MAR-I-0-056-00 4/20/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	102	17.2	Dead			
Bluegill	Lepomis macrochirus	62	3.5	Dead			
Bluegill	Lepomis macrochirus	100	13.1	Dead			

Bluegill	Lepomis macrochirus	99	12.4	Dead
Bluegill	Lepomis macrochirus	77	6.4	Dead
Bluegill	Lepomis macrochirus	66	4.7	Dead
Bluegill	Lepomis macrochirus	71	4.9	Dead
Bluegill	Lepomis macrochirus	60	2.6	Dead
Bluegill	Lepomis macrochirus	60	3	Dead
Bluegill	Lepomis macrochirus	69	4.2	Dead
Bluegill	Lepomis macrochirus	61	3.2	Dead
Bluegill	Lepomis macrochirus	66	3.6	Dead
Bluegill	Lepomis macrochirus	70	5	Dead
Bluegill	Lepomis macrochirus	76	7	Dead
Bluegill	Lepomis macrochirus	60	2.5	Dead
Bluegill	Lepomis macrochirus	62	3.3	Dead
Bluegill	Lepomis macrochirus	52	1.6	Dead
Bluegill	Lepomis macrochirus	70	4.6	Dead
Bluegill	Lepomis macrochirus	71	4.9	Dead
Bluegill	Lepomis macrochirus	73	6	Dead
Bluegill	Lepomis macrochirus	69	5.6	Dead
Bluegill	Lepomis macrochirus	53	4.3	Dead
Bluegill	Lepomis macrochirus	68	3.7	Dead
Bluegill	Lepomis macrochirus	54	1.7	Dead
Bluegill	Lepomis macrochirus	60	2.7	Dead
Bluegill	Lepomis macrochirus	66	4	Dead
Bluegill	Lepomis macrochirus	65	3.2	Dead

Bluegill	Lepomis macrochirus	55	2.3	Dead
Bluegill	Lepomis macrochirus	66	2.7	Dead
Bluegill	Lepomis macrochirus	71	5.4	Dead
Bluegill	Lepomis macrochirus	84	8.9	Dead
Bluegill	Lepomis macrochirus	60	3.3	Dead
Bluegill	Lepomis macrochirus	58	2.3	Dead
Bluegill	Lepomis macrochirus	61	2.9	Dead
Bluegill	Lepomis macrochirus	71	4.3	Dead
Bluegill	Lepomis macrochirus	83	6.8	Dead
Bluegill	Lepomis macrochirus	64	3.4	Dead
Bluegill	Lepomis macrochirus	105	17.5	Dead
Bluegill	Lepomis macrochirus	75	6.2	Dead
Bluegill	Lepomis macrochirus	66	3.9	Dead
Bluegill	Lepomis macrochirus	94	13.2	Dead
Bluegill	Lepomis macrochirus	64	3.4	Dead
Bluegill	Lepomis macrochirus	59	2.8	Dead
Bluegill	Lepomis macrochirus	60	2.6	Dead
Bluegill	Lepomis macrochirus	109	18.9	Dead
Bluegill	Lepomis macrochirus	71	5.4	Dead
Bluegill	Lepomis macrochirus	60	3.1	Dead
Bluegill	Lepomis macrochirus	60	3.4	Dead
Bluegill	Lepomis macrochirus	101	14.8	Dead
Bluegill	Lepomis macrochirus	105	17.7	Dead
Bluegill	Lepomis macrochirus	75	5.7	Dead

Bluegill	Lepomis macrochirus	61	3.5	Dead
Bluegill	Lepomis macrochirus	72	5.5	Dead
Bluegill	Lepomis macrochirus	60	3.3	Dead
Bluegill	Lepomis macrochirus	79	8.1	Dead
Bluegill	Lepomis macrochirus	65	3.9	Dead
Bluegill	Lepomis macrochirus	69	5.1	Dead
Bluegill	Lepomis macrochirus	60	2.7	Dead
Bluegill	Lepomis macrochirus	74	6.8	Dead
Bluegill	Lepomis macrochirus	60	3.4	Dead
Bluegill	Lepomis macrochirus	70	11.6	Dead
Bluegill	Lepomis macrochirus	61	3	Dead
Bluegill	Lepomis macrochirus	63	3.2	Dead
Bluegill	Lepomis macrochirus	71	5	Dead
Bluegill	Lepomis macrochirus	64	4	Dead
Bluegill	Lepomis macrochirus	56	2	Dead
Bluegill	Lepomis macrochirus	55	2.3	Dead
Bluegill	Lepomis macrochirus	68	4.6	Dead
Bluegill	Lepomis macrochirus	66	3.5	Dead
Bluegill	Lepomis macrochirus	61	2.9	Dead
Bluegill	Lepomis macrochirus	62	3.5	Dead
Bluegill	Lepomis macrochirus	52	2.2	Dead
Bluegill	Lepomis macrochirus	71	4.9	Dead
Bluegill	Lepomis macrochirus	63	3.7	Dead
Bluegill	Lepomis macrochirus	66	3.8	Dead

Bluegill	Lepomis macrochirus	69	4.4	Dead
Bluegill	Lepomis macrochirus	70	4.2	Dead
Bluegill	Lepomis macrochirus	83	7.7	Dead
Bluegill	Lepomis macrochirus	100	14.9	Dead
Bluegill	Lepomis macrochirus	78	4.1	Dead
Bluegill	Lepomis macrochirus	92	11.6	Dead
Bluegill	Lepomis macrochirus	66	4	Dead
Bluegill	Lepomis macrochirus	75	7.1	Dead
Bluegill	Lepomis macrochirus	70	4.9	Dead
Bluegill	Lepomis macrochirus	80	7.1	Dead
Bluegill	Lepomis macrochirus	63	3.3	Dead
Threadfin shad	Dorosoma petenense	100	7.6	Dead
Threadfin shad	Dorosoma petenense	75	3.3	Dead
Threadfin shad	Dorosoma petenense	66	1.4	Dead
Threadfin shad	Dorosoma petenense	67	2	Dead
Threadfin shad	Dorosoma petenense	102	7.7	Dead
Threadfin shad	Dorosoma petenense	51	0.6	Dead
Warmouth	Lepomis gulosus	90	13.7	Dead
Warmouth	Lepomis gulosus	126	41.9	Dead
White crappie	Pomoxis annularis	82	5.4	Dead

MAR-I-0-057-00 4/27/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	59	3	Dead			

Bluegill	Lepomis macrochirus	90	11.2	Dead
Bluegill	Lepomis macrochirus	63	4.6	Dead
Bluegill	Lepomis macrochirus	71	6	Dead
Bluegill	Lepomis macrochirus	60	2.4	Dead
Bluegill	Lepomis macrochirus	64	3.7	Dead
Bluegill	Lepomis macrochirus	61	3.8	Dead
Bluegill	Lepomis macrochirus	69	4.3	Dead
Bluegill	Lepomis macrochirus	60	3.9	Dead
Bluegill	Lepomis macrochirus	80	7.1	Dead
Bluegill	Lepomis macrochirus	71	5.1	Dead
Bluegill	Lepomis macrochirus	70	4.8	Dead
Bluegill	Lepomis macrochirus	72	5.5	Dead
Bluegill	Lepomis macrochirus	72	6	Dead
Bluegill	Lepomis macrochirus	64	4.5	Dead
Bluegill	Lepomis macrochirus	75	5.5	Dead
Bluegill	Lepomis macrochirus	63	3.2	Dead
Bluegill	Lepomis macrochirus	80	8.7	Dead
Bluegill	Lepomis macrochirus	66	5.3	Dead
Bluegill	Lepomis macrochirus	74	5.5	Dead
Bluegill	Lepomis macrochirus	66	4.6	Dead
Bluegill	Lepomis macrochirus	68	4.1	Dead
Bluegill	Lepomis macrochirus	57	2.2	Dead
Bluegill	Lepomis macrochirus	74	5.8	Dead
Bluegill	Lepomis macrochirus	82	7.8	Dead

Bluegill	Lepomis macrochirus	69	4.9	Dead
Bluegill	Lepomis macrochirus	59	3.4	Dead
Bluegill	Lepomis macrochirus	70	4.8	Dead
Bluegill	Lepomis macrochirus	69	4.3	Dead
Bluegill	Lepomis macrochirus	70	5.2	Dead
Bluegill	Lepomis macrochirus	72	6.1	Dead
Bluegill	Lepomis macrochirus	73	6.5	Dead
Bluegill	Lepomis macrochirus	72	5.1	Dead
Bluegill	Lepomis macrochirus	68	4.4	Dead
Bluegill	Lepomis macrochirus	74	5.9	Dead
Bluegill	Lepomis macrochirus	66	3.6	Dead
Bluegill	Lepomis macrochirus	72	5.6	Dead
Bluegill	Lepomis macrochirus	72	6.6	Dead
Bluegill	Lepomis macrochirus	65	4.1	Dead
Bluegill	Lepomis macrochirus	119	28.2	Dead
Bluegill	Lepomis macrochirus	64	3.6	Dead
Bluegill	Lepomis macrochirus	66	4.2	Dead
Bluegill	Lepomis macrochirus	97	13.5	Dead
Bluegill	Lepomis macrochirus	58	2.6	Dead
Bluegill	Lepomis macrochirus	54	2	Dead
Bluegill	Lepomis macrochirus	69	4.1	Dead
Bluegill	Lepomis macrochirus	78	7.6	Dead
Bluegill	Lepomis macrochirus	79	6.2	Dead
Bluegill	Lepomis macrochirus	76	6.6	Dead

Redear sunfish	Lepomis microlophus	104	16.6	Dead
Redear sunfish	Lepomis microlophus	103	17.2	Dead
Threadfin shad	Dorosoma petenense	54	1	Dead
Threadfin shad	Dorosoma petenense	75	3.4	Dead
Threadfin shad	Dorosoma petenense	60	1.2	Dead
Warmouth	Lepomis gulosus	61	3.8	Dead

MAR-I-0-058-00 5/4/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	92	10.4	Dead			
Bluegill	Lepomis macrochirus	70	4.2	Dead			
Bluegill	Lepomis macrochirus	79	7.1	Dead			
Bluegill	Lepomis macrochirus	67	4.4	Dead			
Bluegill	Lepomis macrochirus	84	8.6	Dead			
Bluegill	Lepomis macrochirus	80	7.8	Dead			
Bluegill	Lepomis macrochirus	70	5.4	Dead			
Bluegill	Lepomis macrochirus	65	4	Dead			
Bluegill	Lepomis macrochirus	91	11.8	Dead			
Bluegill	Lepomis macrochirus	72	5.3	Dead			
Bluegill	Lepomis macrochirus	90	11.8	Dead			
Bluegill	Lepomis macrochirus	104	16.7	Dead			
Bluegill	Lepomis macrochirus	84	8.3	Dead			
Bluegill	Lepomis macrochirus	60	2.9	Dead			
Bluegill	Lepomis macrochirus	75	6.2	Dead			

Bluegill	Lepomis macrochirus	116	24.7	Dead
Bluegill	Lepomis macrochirus	70	5	Dead
Bluegill	Lepomis macrochirus	71	5.6	Dead
Bluegill	Lepomis macrochirus	60	3.4	Dead
Bluegill	Lepomis macrochirus	82	8	Dead
Bluegill	Lepomis macrochirus	80	6.7	Dead
Bluegill	Lepomis macrochirus	72	6.5	Dead
Bluegill	Lepomis macrochirus	95	13.6	Dead
Bluegill	Lepomis macrochirus	74	4.4	Dead
Bluegill	Lepomis macrochirus	70	5.6	Dead
Bluegill	Lepomis macrochirus	68	4.9	Dead
Bluegill	Lepomis macrochirus	110	23.4	Dead
Bluegill	Lepomis macrochirus	67	4.6	Dead
Bluegill	Lepomis macrochirus	68	4.7	Dead
Bluegill	Lepomis macrochirus	76	5.6	Dead
Bluegill	Lepomis macrochirus	65	4.3	Dead
Bluegill	Lepomis macrochirus	74	7	Dead
Bluegill	Lepomis macrochirus	104	18.4	Dead
Bluegill	Lepomis macrochirus	70	5.4	Dead
Bluegill	Lepomis macrochirus	83	7.6	Dead
Bluegill	Lepomis macrochirus	70	5.6	Dead
Bluegill	Lepomis macrochirus	70	4.9	Dead
Bluegill	Lepomis macrochirus	70	4.9	Dead
Orangespotted sunfish	Lepomis humilis	99	16.2	Dead

Threadfin shad	Dorosoma petenense	59	1.3	Dead			
Threadfin shad	Dorosoma petenense	82	5.1	Dead			
Threadfin shad	Dorosoma petenense	82	6.4	Dead			
Warmouth	Lepomis gulosus	60	3.7	Dead			

MAR-I-0-059-00 5/11/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	96	9.5	Dead			
Black crappie	Pomoxis nigromaculatus	99	10.4	Dead			
Bluegill	Lepomis macrochirus	78	7.6	Dead			
Bluegill	Lepomis macrochirus	70	4.8	Dead			
Bluegill	Lepomis macrochirus	89	9.9	Dead			
Bluegill	Lepomis macrochirus	81	8.1	Dead			
Bluegill	Lepomis macrochirus	60	3.5	Dead			
Bluegill	Lepomis macrochirus	115	24.6	Dead			
Bluegill	Lepomis macrochirus	67	5	Dead			
Bluegill	Lepomis macrochirus	72	6.3	Dead			
Bluegill	Lepomis macrochirus	75	6.4	Dead			
Bluegill	Lepomis macrochirus	76	6.7	Dead			
Bluegill	Lepomis macrochirus	64	4.4	Dead			
Bluegill	Lepomis macrochirus	73	6.2	Dead			
Bluegill	Lepomis macrochirus	70	5.4	Dead			
Bluegill	Lepomis macrochirus	69	4.4	Dead			
Bluegill	Lepomis macrochirus	92	11	Dead			

Bluegill	Lepomis macrochirus	90	10.7	Dead		
Bluegill	Lepomis macrochirus	75	6.5	Dead		
Bluegill	Lepomis macrochirus	105	17.2	Dead		
Bluegill	Lepomis macrochirus	88	9.4	Dead		
Bluegill	Lepomis macrochirus	65	4.2	Dead		
Bluegill	Lepomis macrochirus	79	6.7	Dead		
Bluegill	Lepomis macrochirus	74	5.5	Dead		
Bluegill	Lepomis macrochirus	65	3.8	Dead		
Bluegill	Lepomis macrochirus	82	7.7	Dead		
Bluegill	Lepomis macrochirus	75	5.4	Dead		
Bluegill	Lepomis macrochirus	80	6.9	Dead		
Bluegill	Lepomis macrochirus	86	8.6	Dead		
Bluegill	Lepomis macrochirus	75	6.5	Dead		
Bluegill	Lepomis macrochirus	81	7.1	Dead		
Bluegill	Lepomis macrochirus			Dead	47	374
Bluegill	Lepomis macrochirus	76	6.7	Dead		
Bluegill	Lepomis macrochirus	96	13.2	Dead		
Bluegill	Lepomis macrochirus	98	15.2	Dead		
Bluegill	Lepomis macrochirus	91	10.6	Dead		
Bluegill	Lepomis macrochirus	118	25.6	Dead		
Bluegill	Lepomis macrochirus	71	4.8	Dead		
Bluegill	Lepomis macrochirus	74	5.3	Dead		
Bluegill	Lepomis macrochirus	62	3.8	Dead		
Bluegill	Lepomis macrochirus	73	4.5	Dead		

Bluegill	Lepomis macrochirus	76	7	Dead
Bluegill	Lepomis macrochirus	102	17.2	Dead
Bluegill	Lepomis macrochirus	80	7.8	Dead
Bluegill	Lepomis macrochirus	76	6	Dead
Bluegill	Lepomis macrochirus	100	13.3	Dead
Bluegill	Lepomis macrochirus	82	8.2	Dead
Bluegill	Lepomis macrochirus	66	3.4	Dead
Bluegill	Lepomis macrochirus	70	5.7	Dead
Bluegill	Lepomis macrochirus	76	6.2	Dead
Bluegill	Lepomis macrochirus	70	5.6	Dead
Bluegill	Lepomis macrochirus	77	7.2	Dead
Bluegill	Lepomis macrochirus	71	5.6	Dead
Redear sunfish	Lepomis microlophus	134	42.7	Dead
Warmouth	Lepomis gulosus	88	11.6	Dead
Warmouth	Lepomis gulosus	80	7.8	Dead
Warmouth	Lepomis gulosus	90	15.5	Dead
Warmouth	Lepomis gulosus	61	4.3	Dead
Warmouth	Lepomis gulosus	62	4.6	Dead
Warmouth	Lepomis gulosus	65	5.2	Dead
Warmouth	Lepomis gulosus	74	6.9	Dead

MAR-I-0-060-00 5/18/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	67	5	Dead			

Bluegill	Lepomis macrochirus	125	53.4	Dead
Bluegill	Lepomis macrochirus	99	13.2	Dead
Bluegill	Lepomis macrochirus	71	5.4	Dead
Bluegill	Lepomis macrochirus	75	6.5	Dead
Bluegill	Lepomis macrochirus	74	4.9	Dead
Bluegill	Lepomis macrochirus	73	5.1	Dead
Bluegill	Lepomis macrochirus	67	3.7	Dead
Bluegill	Lepomis macrochirus	72	5.3	Dead
Bluegill	Lepomis macrochirus	106	17.1	Dead
Bluegill	Lepomis macrochirus	82	7.7	Dead
Bluegill	Lepomis macrochirus	80	7.2	Dead
Bluegill	Lepomis macrochirus	104	17.4	Dead
Bluegill	Lepomis macrochirus	104	16.7	Dead
Bluegill	Lepomis macrochirus	76	6.2	Dead
Bluegill	Lepomis macrochirus	83	10	Dead
Bluegill	Lepomis macrochirus	67	3.6	Dead
Bluegill	Lepomis macrochirus	105	16.8	Dead
Bluegill	Lepomis macrochirus	66	3.9	Dead
Bluegill	Lepomis macrochirus	72	5.8	Dead
Bluegill	Lepomis macrochirus	73	6.4	Dead
Bluegill	Lepomis macrochirus	91	12.7	Dead
Bluegill	Lepomis macrochirus	105	15.5	Dead
Bluegill	Lepomis macrochirus	78	7.7	Dead
Bluegill	Lepomis macrochirus	72	5.5	Dead

Bluegill	Lepomis macrochirus	73	4.9	Dead
Bluegill	Lepomis macrochirus	71	5.4	Dead
Bluegill	Lepomis macrochirus	120	26.9	Dead
Bluegill	Lepomis macrochirus	94	12.1	Dead
Bluegill	Lepomis macrochirus	70	5.1	Dead
Bluegill	Lepomis macrochirus	88	10.7	Dead
Bluegill	Lepomis macrochirus	79	7.4	Dead
Bluegill	Lepomis macrochirus	76	6.8	Dead
Bluegill	Lepomis macrochirus	90	12.1	Dead
Bluegill	Lepomis macrochirus	102	16.4	Dead
Bluegill	Lepomis macrochirus	82	8.3	Dead
Bluegill	Lepomis macrochirus	67	4.6	Dead
Bluegill	Lepomis macrochirus	96	14.3	Dead
Bluegill	Lepomis macrochirus	94	11.1	Dead
Bluegill	Lepomis macrochirus	94	12	Dead
Bluegill	Lepomis macrochirus	70	4.4	Dead
Bluegill	Lepomis macrochirus	66	4	Dead
Bluegill	Lepomis macrochirus	92	12	Dead
Bluegill	Lepomis macrochirus	65	3.6	Dead
Bluegill	Lepomis macrochirus	85	8.5	Dead
Bluegill	Lepomis macrochirus	62	3.5	Dead
Bluegill	Lepomis macrochirus	80	7.7	Dead
Bluegill	Lepomis macrochirus	71	5.1	Dead
Bluegill	Lepomis macrochirus	62	3.4	Dead

Bluegill	Lepomis macrochirus	73	5.5	Dead
Bluegill	Lepomis macrochirus	76	7	Dead
Bluegill	Lepomis macrochirus	107	17.4	Dead
Bluegill	Lepomis macrochirus	70	5.3	Dead
Bluegill	Lepomis macrochirus	71	5	Dead
Bluegill	Lepomis macrochirus	90	10.6	Dead
Bluegill	Lepomis macrochirus	72	5.2	Dead
Bluegill	Lepomis macrochirus	65	5.5	Dead
Bluegill	Lepomis macrochirus	122	54.5	Dead
Bluegill	Lepomis macrochirus	55	3.5	Dead
Green sunfish	Lepomis cyanellus	99	15.7	Dead
Orangespotted sunfish	Lepomis humilis	93	9.9	Dead
Orangespotted sunfish	Lepomis humilis	96	15.9	Dead
Redear sunfish	Lepomis microlophus	106	18.5	Dead
Redear sunfish	Lepomis microlophus	109	15.7	Dead

MAR-I-0-061-00 5/24/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	72	5.4	Dead			
Bluegill	Lepomis macrochirus	67	4.5	Dead			
Bluegill	Lepomis macrochirus	83	10.1	Dead			
Bluegill	Lepomis macrochirus	72	6.1	Dead			
Bluegill	Lepomis macrochirus	78	7.2	Dead			
Bluegill	Lepomis macrochirus	61	3.2	Dead			

Bluegill	Lepomis macrochirus	87	9.3	Dead
Bluegill	Lepomis macrochirus	66	3.9	Dead
Bluegill	Lepomis macrochirus	96	10.4	Dead
Bluegill	Lepomis macrochirus	100	17.6	Dead
Bluegill	Lepomis macrochirus	84	9.4	Dead
Bluegill	Lepomis macrochirus	72	5.8	Dead
Bluegill	Lepomis macrochirus	90	9	Dead
Bluegill	Lepomis macrochirus	75	6.2	Dead
Bluegill	Lepomis macrochirus	77	6.5	Dead
Bluegill	Lepomis macrochirus	74	5.9	Dead
Bluegill	Lepomis macrochirus	66	4.1	Dead
Redear sunfish	Lepomis microlophus	108	20.6	Dead
Redear sunfish	Lepomis microlophus	98	15	Dead
Threadfin shad	Dorosoma petenense	99	8.7	Dead

MAR-I-0-062-00 6/1/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	82	8.6	Dead			
Bluegill	Lepomis macrochirus	101	14.8	Dead			
Bluegill	Lepomis macrochirus	92	14.2	Dead			
Bluegill	Lepomis macrochirus	121	28	Dead			
Bluegill	Lepomis macrochirus	83	10.1	Dead			
Bluegill	Lepomis macrochirus	116	25.4	Dead			
Orangespotted sunfish	Lepomis humilis	100	17.1	Dead			

Redear sunfish	Lepomis microlophus	121	24.7	Dead			

MAR-I-0-063-00 6/8/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	75	7.7	Dead			
Bluegill	Lepomis macrochirus	83	6.9	Dead			
Bluegill	Lepomis macrochirus	101	14.8	Dead			
Bluegill	Lepomis macrochirus	92	11.4	Dead			
Bluegill	Lepomis macrochirus	104	24.8	Dead			
Bluegill	Lepomis macrochirus	102	17.7	Dead			
Bluegill	Lepomis macrochirus	115	25.6	Dead			
Bluegill	Lepomis macrochirus	82	8.3	Dead			
Bluegill	Lepomis macrochirus	102	15.9	Dead			
Bluegill	Lepomis macrochirus	62	4.9	Dead			
Bluegill	Lepomis macrochirus	76	8.1	Dead			
Bluegill	Lepomis macrochirus	57	4.4	Dead			
Bluegill	Lepomis macrochirus	100	15.7	Dead			
Bluegill	Lepomis macrochirus	86	8.8	Dead			
Bluegill	Lepomis macrochirus	69	4.7	Dead			
Bluegill	Lepomis macrochirus	65	5.4	Dead			
Bluegill	Lepomis macrochirus	88	10.3	Dead			
Bluegill	Lepomis macrochirus	60	3.1	Dead			
Longear sunfish	Lepomis megalotis	112	23.6	Dead			
Redear sunfish	Lepomis microlophus	121	26.5	Dead			

Warmouth	Lepomis gulosus	68	5.5	Dead				
Warmouth	Lepomis gulosus	66	4.6	Dead				

MAR-I-0-064-04 6/14/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	93	12.5	Dead			
Bluegill	Lepomis macrochirus	114	22.8	Dead			
Bluegill	Lepomis macrochirus	91	11.8	Dead			
Bluegill	Lepomis macrochirus	101	12	Dead			
Bluegill	Lepomis macrochirus	111	9.3	Dead			

MAR-I-0-064-10 6/14/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Redear sunfish	Lepomis microlophus	118	24.3	Dead			

MAR-I-0-064-16 6/14/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	115	30.1	Dead			
Bluegill	Lepomis macrochirus	91	12.3	Dead			
Longear sunfish	Lepomis megalotis	98	14.7	Dead			

MAR-I-0-064-20 6/14/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	114	21.1	Dead			
Bluegill	Lepomis macrochirus	73	6	Dead			

Bluegill	Lepomis macrochirus	95	10.7	Dead			

MAR-I-0-065-00 7/6/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	101	11	Dead			
Black crappie	Pomoxis nigromaculatus	102	9.8	Dead			
Black crappie	Pomoxis nigromaculatus	104	8.8	Dead			
Bluegill	Lepomis macrochirus	129	33.1	Dead			
Bluegill	Lepomis macrochirus	89	11.4	Dead			
Bluegill	Lepomis macrochirus	117	21.1	Dead			
Bluegill	Lepomis macrochirus	89	9	Dead			
Bluegill	Lepomis macrochirus	122	21.4	Dead			
Bluegill	Lepomis macrochirus	115	15.4	Dead			
Bluegill	Lepomis macrochirus	92	10.1	Dead			
Bluegill	Lepomis macrochirus	105	16.6	Dead			
Bluegill	Lepomis macrochirus	87	8	Dead			
Bluegill	Lepomis macrochirus	95	11.1	Dead			
Bluegill	Lepomis macrochirus	103	17.9	Dead			
Bluegill	Lepomis macrochirus	81	4.3	Dead			
Bluegill	Lepomis macrochirus	126	30.9	Dead			
Largemouth bass	Micropterus salmoides	54	1.7	Dead			
Largemouth bass	Micropterus salmoides	54	1.6	Dead			
Largemouth bass	Micropterus salmoides	53	1.6	Dead			
Longear sunfish	Lepomis megalotis	120	27.4	Dead			

Longear sunfish	Lepomis megalotis	113	16.6	Dead			
Longear sunfish	Lepomis megalotis	105	13	Dead			
Redear sunfish	Lepomis microlophus	91	8.2	Dead			
Redear sunfish	Lepomis microlophus	110	12.1	Dead			
Redear sunfish	Lepomis microlophus	110	16.2	Dead			

MAR-I-0-066-00 7/7/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	103	10.2	Dead			
Bluegill	Lepomis macrochirus	103	7.2	Dead			
Bluegill	Lepomis macrochirus	123	27.1	Dead			
Bluegill	Lepomis macrochirus	91	7.1	Dead			
Bluegill	Lepomis macrochirus	63	4	Dead			
Bluegill	Lepomis macrochirus	102	11.7	Dead			
Bluegill	Lepomis macrochirus	93	6.7	Dead			
Largemouth bass	Micropterus salmoides	69	3	Dead			
Largemouth bass	Micropterus salmoides	47	1.1	Dead			
Largemouth bass	Micropterus salmoides	187	83.4	Dead			
Largemouth bass	Micropterus salmoides	63	1.7	Dead			
Longear sunfish	Lepomis megalotis	95	7.8	Dead			
Redear sunfish	Lepomis microlophus	120	17.8	Dead			
Redear sunfish	Lepomis microlophus	112	12.3	Dead			
Tadpole madtom	Noturus gyrinus	64	2.4	Dead			
Warmouth	Lepomis gulosus	76	7	Dead			

Warmouth	Lepomis gulosus	65	4.9	Dead
Yellow bullhead	Ictalurus natalis	242	202.3	Dead
Yellow bullhead	Ictalurus natalis	226	99.9	Dead

MAR-I-0-067-00 7/12/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	110	8.3	Dead			
Black crappie	Pomoxis nigromaculatus	46	1	Dead			
Bluegill	Lepomis macrochirus	130	30.8	Dead			
Bluegill	Lepomis macrochirus	87	9.4	Dead			
Bluegill	Lepomis macrochirus	113	22.1	Dead			
Bluegill	Lepomis macrochirus	110	21.3	Dead			
Bluegill	Lepomis macrochirus	103	12.1	Dead			
Bluegill	Lepomis macrochirus	131	36.4	Dead			
Bluegill	Lepomis macrochirus	104	14.2	Dead			
Bluegill	Lepomis macrochirus	72	4.5	Dead			
Bluegill	Lepomis macrochirus	111	17.5	Dead			
Largemouth bass	Micropterus salmoides	50	1.3	Dead			
Largemouth bass	Micropterus salmoides	49	1.3	Dead			
Largemouth bass	Micropterus salmoides	46	1.6	Dead			
Longear sunfish	Lepomis megalotis	153	40.6	Dead			
Yellow bullhead	Ictalurus natalis	252	139	Dead			

MAR-I-0-068-00 7/19/2006 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	127	25.4	Dead			
Bluegill	Lepomis macrochirus	129	33.7	Dead			
Bluegill	Lepomis macrochirus	109	19.2	Dead			
Bluegill	Lepomis macrochirus	120	26.7	Dead			
Channel catfish	Ictalurus punctatus	70	4.7	Dead			
Largemouth bass	Micropterus salmoides	62	2.3	Dead			
Largemouth bass	Micropterus salmoides	258	228.2	Dead			

MAR-I-0-069-00 7/27/2006 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Black crappie	Pomoxis nigromaculatus	94	9.1	Dead			
Bluegill	Lepomis macrochirus	82	9.3	Dead			
Bluegill	Lepomis macrochirus	71	5.2	Dead			
Bluegill	Lepomis macrochirus	93	12.5	Dead			
Bluegill	Lepomis macrochirus	148	42.1	Dead			
Redear sunfish	Lepomis microlophus	200	87.9	Dead			
Threadfin shad	Dorosoma petenense	53	1.2	Dead			

MAR-I-0-070-04 8/1/2006 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Black crappie	Pomoxis nigromaculatus	51	1.3	Dead			

Bluegill	Lepomis macrochirus	112	17	Dead			
Largemouth bass	Micropterus salmoides	54	0.3	Dead			
Largemouth bass	Micropterus salmoides	354	518	Dead			

MAR-I-0-070-10 8/1/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Warmouth	Lepomis gulosus	102	16	Live			

MAR-I-0-070-16 8/1/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	43	1.2	Dead			
Bluegill	Lepomis macrochirus	121	27.6	Dead			
Bluegill	Lepomis macrochirus	110	18.1	Dead			
Largemouth bass	Micropterus salmoides	58	1.6	Dead			

MAR-I-0-070-22 8/1/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Warmouth	Lepomis gulosus	70	5.8	Dead			
Warmouth	Lepomis gulosus	123	23.6	Dead			

MAR-I-0-071-00 8/9/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	58	1.5	Dead			
Bluegill	Lepomis macrochirus	103	14.1	Dead			
Bluegill	Lepomis macrochirus	132	30.8	Dead			

Bluegill	Lepomis macrochirus	151	46	Dead
Bluegill	Lepomis macrochirus	155	59.5	Dead
Bluegill	Lepomis macrochirus	96	5.9	Dead
Largemouth bass	Micropterus salmoides	392	605	Dead

MAR-I-0-072-00 8/16/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	54	1.5	Dead			
Bluegill	Lepomis macrochirus	76	4.3	Dead			
Bluegill	Lepomis macrochirus	69	3.2	Dead			
Bluegill	Lepomis macrochirus	98	11.4	Dead			
Bluegill	Lepomis macrochirus	121	15.3	Dead			
Largemouth bass	Micropterus salmoides	340	319	Dead			
Threadfin shad	Dorosoma petenense	52	1.3	Dead			
Warmouth	Lepomis gulosus	71	6	Dead			
Yellow bullhead	Ictalurus natalis	231	150.7	Dead			

MAR-I-0-073-00 8/24/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black bullhead	Ictalurus melas	246	154.3	Dead			
Bluegill	Lepomis macrochirus	59	1.5	Dead			
Bluegill	Lepomis macrochirus	64	3.9	Dead			
Gizzard shad	Dorosoma cepedianum	370	368.1	Dead			

MAR-I-0-074-00 8/30/2006 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	189	69.7	Dead			
Bluegill	Lepomis macrochirus	98	9.2	Dead			
Bluegill	Lepomis macrochirus	120	20.3	Dead			
Bluegill	Lepomis macrochirus	49	1.7	Dead			
Warmouth	Lepomis gulosus	63	3.8	Dead			
Warmouth	Lepomis gulosus	84	9.2	Dead			
Warmouth	Lepomis gulosus	72	6	Dead			
Warmouth	Lepomis gulosus	84	8	Dead			
Warmouth	Lepomis gulosus	67	5.4	Dead			
Warmouth	Lepomis gulosus	74	5.9	Dead			
Warmouth	Lepomis gulosus	70	4.7	Dead			
Warmouth	Lepomis gulosus	71	5.8	Dead			
White Crappie	Pomoxis annularis	60	2.2	Dead			
White Crappie	Pomoxis annularis	55	1.1	Dead			

MAR-I-0-075-00 9/6/2006 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	111	20.1	Dead			
Bluegill	Lepomis macrochirus	109	16.7	Dead			
Bluegill	Lepomis macrochirus	75	5.9	Dead			
Bluegill	Lepomis macrochirus	109	16.2	Dead			

Bluegill	Lepomis macrochirus	99	15.3	Dead			
Bluegill	Lepomis macrochirus	48	2	Dead			
Warmouth	Lepomis gulosus	66	3.4	Dead			

MAR-I-0-076-00 9/20/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	60	2	Dead			
Bluegill	Lepomis macrochirus	71	5.4	Dead			
Bluegill	Lepomis macrochirus	126	23.3	Dead			
Bluegill	Lepomis macrochirus	42	1.5	Dead			
Bluegill	Lepomis macrochirus	62	4.3	Dead			
Bluegill	Lepomis macrochirus	59	1.8	Dead			
Largemouth bass	Micropterus salmoides	310	328	Dead			
Threadfin shad	Dorosoma petenense	59	128	Dead			

MAR-I-0-077-00 9/22/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	65	2.6	Dead			
Black crappie	Pomoxis nigromaculatus	60	2.3	Dead			
Bluegill	Lepomis macrochirus	55	1.9	Dead			
Bluegill	Lepomis macrochirus	72	4.3	Dead			
Bluegill	Lepomis macrochirus	42	1.5	Dead			
Bluegill	Lepomis macrochirus	58	2.2	Dead			
Largemouth bass	Micropterus salmoides	405	925	Dead			

Threadfin shad	Dorosoma petenense	41	0.5	Dead			

MAR-I-0-078-00 9/27/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	62	4	Dead			
Black crappie	Pomoxis nigromaculatus	70	4.9	Dead			
Black crappie	Pomoxis nigromaculatus	58	3.6	Dead			
Black crappie	Pomoxis nigromaculatus	61	4	Dead			
Black crappie	Pomoxis nigromaculatus	61	3.7	Dead			
Black crappie	Pomoxis nigromaculatus	70	4.7	Dead			
Black crappie	Pomoxis nigromaculatus	61	3.5	Dead			
Black crappie	Pomoxis nigromaculatus	61	3.2	Dead			
Black crappie	Pomoxis nigromaculatus	70	4.2	Dead			
Black crappie	Pomoxis nigromaculatus	53	2	Dead			
Black crappie	Pomoxis nigromaculatus	54	4.1	Dead			
Black crappie	Pomoxis nigromaculatus	72	4.8	Dead			
Black crappie	Pomoxis nigromaculatus	69	4	Dead			
Bluegill	Lepomis macrochirus	50	5.3	Dead			
Bluegill	Lepomis macrochirus	55	5.4	Dead			
Bluegill	Lepomis macrochirus	50	4.9	Dead			
Bluegill	Lepomis macrochirus	55	5.7	Dead			
Bluegill	Lepomis macrochirus	60	6.1	Dead			
Bluegill	Lepomis macrochirus	53	5	Dead			
Bluegill	Lepomis macrochirus	60	6.1	Dead			

Bluegill	Lepomis macrochirus	52	4.8	Dead
Bluegill	Lepomis macrochirus	50	5.1	Dead
Bluegill	Lepomis macrochirus	53	5.5	Dead
Bluegill	Lepomis macrochirus	56	5.6	Dead
Bluegill	Lepomis macrochirus	52	4.6	Dead
Bluegill	Lepomis macrochirus	60	5.8	Dead
Bluegill	Lepomis macrochirus	110	19.9	Dead
Bluegill	Lepomis macrochirus	52	4.7	Dead
Bluegill	Lepomis macrochirus	56	5.2	Dead
Bluegill	Lepomis macrochirus	72	7.9	Dead
Bluegill	Lepomis macrochirus	59	5.2	Dead
Bluegill	Lepomis macrochirus	109	19.5	Dead
Bluegill	Lepomis macrochirus	45	4.8	Dead
Bluegill	Lepomis macrochirus	89	12.2	Dead
Redear sunfish	Lepomis microlophus	86	12.4	Dead
Redear sunfish	Lepomis microlophus	75	4.8	Dead

MAR-I-0-079-00 10/4/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	139	34.9	Dead			
Threadfin shad	Dorosoma petenense	33	0.8	Dead			
Threadfin shad	Dorosoma petenense	35	0.2	Dead			

MAR-I-0-080-00 10/10/2006 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	52	2.1	Dead			
Gizzard shad	Dorosoma cepedianum	335	179.9	Dead			

MAR-I-0-081-00 11/8/2006 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Black crappie	Pomoxis nigromaculatus	66	3.5	Dead			
Black crappie	Pomoxis nigromaculatus	68	3.2	Dead			
Bluegill	Lepomis macrochirus	60	2.8	Dead			
Bluegill	Lepomis macrochirus	50	1.7	Dead			
Bluegill	Lepomis macrochirus	49	2	Dead			
Bluegill	Lepomis macrochirus	60	3.7	Dead			
Bluegill	Lepomis macrochirus	71	5.8	Dead			
Bluegill	Lepomis macrochirus	60	3.2	Dead			
Bluegill	Lepomis macrochirus	56	3.5	Dead			
Bluegill	Lepomis macrochirus	50	1.4	Dead			
Bluegill	Lepomis macrochirus	60	3	Dead			
Bluegill	Lepomis macrochirus	47	1.7	Dead			
Bluegill	Lepomis macrochirus	56	2.8	Dead			
Bluegill	Lepomis macrochirus	62	3.8	Dead			
Bluegill	Lepomis macrochirus	52	1.9	Dead			
Bluegill	Lepomis macrochirus	65	3.9	Dead			

Threadfin shad	Dorosoma petenense	52	1	Dead
Threadfin shad	Dorosoma petenense	46	0.8	Dead
Threadfin shad	Dorosoma petenense	40	0.6	Dead
Threadfin shad	Dorosoma petenense	45	0.9	Dead
Threadfin shad	Dorosoma petenense	52	1.2	Dead
Threadfin shad	Dorosoma petenense	42	0.8	Dead
Threadfin shad	Dorosoma petenense	40	0.5	Dead
Threadfin shad	Dorosoma petenense	42	0.8	Dead
Threadfin shad	Dorosoma petenense	56	1.7	Dead
Threadfin shad	Dorosoma petenense	72	2.8	Dead
Threadfin shad	Dorosoma petenense	51	0.4	Dead
Threadfin shad	Dorosoma petenense	40	0.9	Dead

MAR-I-0-082-00 l1/15/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	52	3.3	Previously D			
Bluegill	Lepomis macrochirus	61	3.5	Dead			
Bluegill	Lepomis macrochirus	51	2.3	Dead			
Bluegill	Lepomis macrochirus	56	2.6	Dead			
Bluegill	Lepomis macrochirus	54	2.1	Dead			
Bluegill	Lepomis macrochirus	49	2	Previously D			
Bluegill	Lepomis macrochirus	70	5.4	Previously D			
Bluegill	Lepomis macrochirus	52	3.2	Previously D			
Bluegill	Lepomis macrochirus	56	2.3	Previously D			

Bluegill	Lepomis macrochirus	64	3.7	Previously D
Bluegill	Lepomis macrochirus	66	4.3	Previously D
Bluegill	Lepomis macrochirus	45	2.2	Previously D
Bluegill	Lepomis macrochirus	60	3.3	Previously D
Bluegill	Lepomis macrochirus	53	2.5	Previously D
Sunfishes	Centrarchidae	16		Previously D
Threadfin shad	Dorosoma petenense	61	2.1	Dead
Threadfin shad	Dorosoma petenense	40	0.8	Dead
Threadfin shad	Dorosoma petenense	50	1.6	Dead
Threadfin shad	Dorosoma petenense	62	2	Dead
Threadfin shad	Dorosoma petenense	60	1.8	Dead
Threadfin shad	Dorosoma petenense	40	1.6	Dead
Threadfin shad	Dorosoma petenense	36	0.5	Dead
Threadfin shad	Dorosoma petenense	51	1.1	Dead
Threadfin shad	Dorosoma petenense	56	0.9	Dead
White crappie	Pomoxis annularis	71	4.1	Dead

MAR-I-0-082-00 l1/17/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	60	3.6	Live			
Bluegill	Lepomis macrochirus	64	3.6	Live			
Bluegill	Lepomis macrochirus	66	3.7	Live			
Bluegill	Lepomis macrochirus	63	3.2	Live			
Bluegill	Lepomis macrochirus	60	2.9	Live			

Bluegill	Lepomis macrochirus	59	2.7	Live
Bluegill	Lepomis macrochirus	67	3.7	Live
Bluegill	Lepomis macrochirus	62	3.1	Live
Bluegill	Lepomis macrochirus	61	3	Live
Bluegill	Lepomis macrochirus	69	4.3	Live
Bluegill	Lepomis macrochirus	50	1.9	Live
Bluegill	Lepomis macrochirus	60	2.1	Live
Bluegill	Lepomis macrochirus	49	1.3	Live
Bluegill	Lepomis macrochirus	82	7.3	Live
Bluegill	Lepomis macrochirus	59	2.8	Live
Bluegill	Lepomis macrochirus	62	2.7	Live
Bluegill	Lepomis macrochirus	95	11.1	Live
Bluegill	Lepomis macrochirus	65	3.5	Live
Bluegill	Lepomis macrochirus	65	3.1	Live
Bluegill	Lepomis macrochirus	64	3.5	Live
Bluegill	Lepomis macrochirus	71	4.5	Live
Bluegill	Lepomis macrochirus	73	4.6	Live
Bluegill	Lepomis macrochirus	78	6.1	Live
Bluegill	Lepomis macrochirus	66	3.5	Live
Bluegill	Lepomis macrochirus	73	5.4	Live
Bluegill	Lepomis macrochirus	66	3.3	Live
Bluegill	Lepomis macrochirus	76	5.4	Live
Bluegill	Lepomis macrochirus	114	21.8	Live

MAR-I-0-083-09 L1/20/2006 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	39	1.7	Dead			
Bluegill	Lepomis macrochirus	60	2.7	Dead			
Bluegill	Lepomis macrochirus	74	5.9	Dead			
Bluegill	Lepomis macrochirus	80	7.5	Dead			
Bluegill	Lepomis macrochirus	58	2.3	Dead			
Bluegill	Lepomis macrochirus	63	4.1	Dead			
Bluegill	Lepomis macrochirus	60	3.3	Dead			
Bluegill	Lepomis macrochirus	50	1.7	Dead			
Bluegill	Lepomis macrochirus	42	1.4	Dead			
Bluegill	Lepomis macrochirus	59	3.1	Dead			

MAR-I-0-083-21 L1/20/2006 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	54	2	Dead			
Bluegill	Lepomis macrochirus	61	3	Dead			
Bluegill	Lepomis macrochirus	61	3.3	Dead			
Bluegill	Lepomis macrochirus	56	2.2	Dead			
Bluegill	Lepomis macrochirus	58	3.2	Dead			
Bluegill	Lepomis macrochirus	67	4.1	Dead			
Bluegill	Lepomis macrochirus	68	4	Dead			
Bluegill	Lepomis macrochirus	62	3.7	Dead			

Bluegill	Lepomis macrochirus	64	3.9	Dead			
Bluegill	Lepomis macrochirus	59	2.9	Dead			
Bluegill	Lepomis macrochirus	57	3	Dead			
Bluegill	Lepomis macrochirus	62	3.6	Dead			
Threadfin shad	Dorosoma petenense	47	0.9	Dead			
Threadfin shad	Dorosoma petenense	48	0.9	Dead			
Threadfin shad	Dorosoma petenense	43	0.9	Dead			
Threadfin shad	Dorosoma petenense	42	0.6	Dead			
Threadfin shad	Dorosoma petenense	44	0.7	Dead			
Threadfin shad	Dorosoma petenense	56	1.4	Dead			
Threadfin shad	Dorosoma petenense	50	1.1	Dead			
Threadfin shad	Dorosoma petenense	44	0.8	Dead			

MAR-I-0-083-03 l1/21/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	57	2.9	Dead			
Bluegill	Lepomis macrochirus	56	2.1	Dead			
Threadfin shad	Dorosoma petenense	48	1	Dead			
Threadfin shad	Dorosoma petenense	70	2.4	Dead			
Threadfin shad	Dorosoma petenense	54	0.7	Dead			
Threadfin shad	Dorosoma petenense	50	0.9	Dead			
Threadfin shad	Dorosoma petenense	42	0.6	Dead			
Threadfin shad	Dorosoma petenense	62	1.3	Dead			
Threadfin shad	Dorosoma petenense	45	0.6	Dead			

Threadfin shad	Dorosoma petenense	41	0.5	Dead
Threadfin shad	Dorosoma petenense	40	0.5	Dead
Threadfin shad	Dorosoma petenense	47	0.7	Dead
Threadfin shad	Dorosoma petenense	41	0.5	Dead
Threadfin shad	Dorosoma petenense	44	0.7	Dead
Threadfin shad	Dorosoma petenense	46	0.6	Dead
Threadfin shad	Dorosoma petenense	48	0.8	Dead
Threadfin shad	Dorosoma petenense	50	1	Dead
Threadfin shad	Dorosoma petenense	42	0.4	Dead

MAR-I-0-084-00 ŀ1/29/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Threadfin shad	Dorosoma petenense	43	0.3	Dead			

MAR-I-0-085-00 12/7/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Threadfin shad	Dorosoma petenense	41	0.8	Dead			
Threadfin shad	Dorosoma petenense	45	0.8	Dead			
Threadfin shad	Dorosoma petenense	40	0.8	Dead			
Threadfin shad	Dorosoma petenense	51	1.1	Dead			
Threadfin shad	Dorosoma petenense	45	0.9	Dead			
Threadfin shad	Dorosoma petenense	45	1	Dead			
Threadfin shad	Dorosoma petenense	46	0.9	Dead			
Threadfin shad	Dorosoma petenense	40	0.7	Dead			

Threadfin shad	Dorosoma petenense	55	1.4	Dead
Threadfin shad	Dorosoma petenense	51	1.2	Dead
Threadfin shad	Dorosoma petenense	47	1	Dead
Threadfin shad	Dorosoma petenense	44	0.8	Dead
Threadfin shad	Dorosoma petenense	50	1.1	Dead
Threadfin shad	Dorosoma petenense	52	1.3	Dead
Threadfin shad	Dorosoma petenense	60	1.7	Dead
Threadfin shad	Dorosoma petenense	46	1.1	Dead
Threadfin shad	Dorosoma petenense	44	0.9	Dead
Threadfin shad	Dorosoma petenense	43	0.9	Dead
Threadfin shad	Dorosoma petenense	50	1	Dead
Threadfin shad	Dorosoma petenense	40	0.9	Dead
Threadfin shad	Dorosoma petenense	45	0.8	Dead
Threadfin shad	Dorosoma petenense	50	1.2	Dead
Threadfin shad	Dorosoma petenense	42	0.8	Dead
Threadfin shad	Dorosoma petenense	49	1	Dead
Threadfin shad	Dorosoma petenense	45	0.8	Dead
Threadfin shad	Dorosoma petenense	51	1.1	Dead
Threadfin shad	Dorosoma petenense	50	0.7	Dead
Threadfin shad	Dorosoma petenense	50	0.9	Dead
Threadfin shad	Dorosoma petenense	46	0.7	Dead
Threadfin shad	Dorosoma petenense	41	0.6	Dead
Threadfin shad	Dorosoma petenense	55	1.1	Dead
Threadfin shad	Dorosoma petenense	43	0.7	Dead

Threadfin shad	Dorosoma petenense	51	0.9	Dead
Threadfin shad	Dorosoma petenense	49	0.8	Dead
Threadfin shad	Dorosoma petenense	51	0.9	Dead
Threadfin shad	Dorosoma petenense	42	0.6	Dead
Threadfin shad	Dorosoma petenense	46	0.8	Dead
Threadfin shad	Dorosoma petenense	56	1.2	Dead
Threadfin shad	Dorosoma petenense	51	1.1	Dead
Threadfin shad	Dorosoma petenense	42	0.6	Dead
Threadfin shad	Dorosoma petenense	50	1	Dead
Threadfin shad	Dorosoma petenense	46	0.9	Dead
Threadfin shad	Dorosoma petenense	47	1	Dead
Threadfin shad	Dorosoma petenense	56	1.5	Dead
Threadfin shad	Dorosoma petenense	61	1.6	Dead
Threadfin shad	Dorosoma petenense	42	0.7	Dead
Threadfin shad	Dorosoma petenense	57	1.4	Dead
Threadfin shad	Dorosoma petenense	41	0.9	Dead
Threadfin shad	Dorosoma petenense	46	0.9	Dead
Threadfin shad	Dorosoma petenense	52	1.1	Dead

MAR-I-0-086-00 l2/13/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	52	2.2	Dead			
Bluegill	Lepomis macrochirus	59	2.9	Dead			
Threadfin shad	Dorosoma petenense	45	0.8	Dead			

Threadfin shad	Dorosoma petenense	51	1.1	Dead		
Threadfin shad	Dorosoma petenense	44	0.7	Dead		
Threadfin shad	Dorosoma petenense	43	0.7	Dead		
Threadfin shad	Dorosoma petenense	45	0.7	Dead		
Threadfin shad	Dorosoma petenense	46	0.8	Dead		
Threadfin shad	Dorosoma petenense	59	1.6	Dead		
Threadfin shad	Dorosoma petenense	51	1	Dead		
Threadfin shad	Dorosoma petenense	55	1.3	Dead		
Threadfin shad	Dorosoma petenense	50	0.9	Dead		
Threadfin shad	Dorosoma petenense	45	0.8	Dead		
Threadfin shad	Dorosoma petenense	45	0.9	Dead		
Threadfin shad	Dorosoma petenense	50	0.8	Dead		
Threadfin shad	Dorosoma petenense	56	1.3	Dead		
Threadfin shad	Dorosoma petenense	49	0.8	Dead		
Threadfin shad	Dorosoma petenense	48	0.9	Dead		
Threadfin shad	Dorosoma petenense			Dead	109	108
Threadfin shad	Dorosoma petenense	49	1	Dead		
Threadfin shad	Dorosoma petenense	48	0.8	Dead		
Threadfin shad	Dorosoma petenense	50	0.9	Dead		
Threadfin shad	Dorosoma petenense	50	0.8	Dead		
Threadfin shad	Dorosoma petenense	55	1.3	Dead		
Threadfin shad	Dorosoma petenense	44	0.7	Dead		
Threadfin shad	Dorosoma petenense			Dead	100	92.2
Threadfin shad	Dorosoma petenense	50	1.3	Dead		

Threadfin shad	Dorosoma petenense	58	1.4	Dead
Threadfin shad	Dorosoma petenense	60	1.6	Dead
Threadfin shad	Dorosoma petenense	76	3.1	Dead
Threadfin shad	Dorosoma petenense	72	2.8	Dead
Threadfin shad	Dorosoma petenense	52	0.8	Dead
Threadfin shad	Dorosoma petenense	46	0.8	Dead
Threadfin shad	Dorosoma petenense	45	0.8	Dead
Threadfin shad	Dorosoma petenense	45	0.7	Dead
Threadfin shad	Dorosoma petenense	55	1.4	Dead
Threadfin shad	Dorosoma petenense	50	0.9	Dead
Threadfin shad	Dorosoma petenense	46	0.8	Dead
Threadfin shad	Dorosoma petenense	44	0.6	Dead
Threadfin shad	Dorosoma petenense	50	1	Dead
Threadfin shad	Dorosoma petenense	50	1	Dead
Threadfin shad	Dorosoma petenense	47	0.7	Dead
Threadfin shad	Dorosoma petenense	52	1.2	Dead
Threadfin shad	Dorosoma petenense	50	0.9	Dead
Threadfin shad	Dorosoma petenense	44	0.7	Dead
Threadfin shad	Dorosoma petenense	45	0.6	Dead
Threadfin shad	Dorosoma petenense	40	0.6	Dead
Threadfin shad	Dorosoma petenense	53	1.1	Dead
Threadfin shad	Dorosoma petenense	46	0.8	Dead
Threadfin shad	Dorosoma petenense	51	0.8	Dead
Threadfin shad	Dorosoma petenense	60	1.7	Dead

Threadfin shad	Dorosoma petenense	52	1.1	Dead
Threadfin shad	Dorosoma petenense	46	0.8	Dead
Threadfin shad	Dorosoma petenense	51	1	Dead

MAR-I-0-087-00 l2/18/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	67	3.2	Dead			
Black crappie	Pomoxis nigromaculatus	71	3.4	Dead			
Bluegill	Lepomis macrochirus	58	7.9	Live			
Bluegill	Lepomis macrochirus	72	4.9	Live			
Bluegill	Lepomis macrochirus	61	2.8	Live			
Bluegill	Lepomis macrochirus	60	3.4	Live			
Bluegill	Lepomis macrochirus	64	3.6	Dead			
Bluegill	Lepomis macrochirus	74	6.1	Live			
Sunfishes	Centrarchidae	34	1	Dead			
Threadfin shad	Dorosoma petenense	53	1.9	Dead			
Threadfin shad	Dorosoma petenense	94	5.7	Dead			
Threadfin shad	Dorosoma petenense	90	4.3	Dead			
Threadfin shad	Dorosoma petenense	56	0.7	Dead			
Threadfin shad	Dorosoma petenense	37	0.3	Dead			
Threadfin shad	Dorosoma petenense	35	0.4	Dead			
Threadfin shad	Dorosoma petenense	46	0.8	Dead			
Threadfin shad	Dorosoma petenense	52	0.7	Dead			
Threadfin shad	Dorosoma petenense	33	0.4	Dead			

Threadfin shad	Dorosoma petenense	77	3.4	Dead			
Threadfin shad	Dorosoma petenense	74	3	Dead			
Threadfin shad	Dorosoma petenense	58	1.8	Dead			
Threadfin shad	Dorosoma petenense	49	1.4	Dead			
Threadfin shad	Dorosoma petenense	59	1.4	Dead			
Threadfin shad	Dorosoma petenense	47	0.9	Dead			
Threadfin shad	Dorosoma petenense	53	1.1	Dead			
Threadfin shad	Dorosoma petenense	52	0.7	Dead			
Threadfin shad	Dorosoma petenense	50	1	Dead			
Threadfin shad	Dorosoma petenense	51	1.2	Dead			
Threadfin shad	Dorosoma petenense	53	1	Dead			
Threadfin shad	Dorosoma petenense			Dead	100	167	>150 mm and <199.9
Threadfin shad	Dorosoma petenense			Dead	362	604	>150 mm and <199.9
Threadfin shad	Dorosoma petenense	58	1.7	Dead			
Threadfin shad	Dorosoma petenense	50	0.6	Dead			
Threadfin shad	Dorosoma petenense	50	1.5	Dead			
Threadfin shad	Dorosoma petenense	66	3.4	Dead			
Threadfin shad	Dorosoma petenense	104	8.4	Dead			
Threadfin shad	Dorosoma petenense	46	0.7	Dead			
Threadfin shad	Dorosoma petenense	78	3.1	Dead			
Threadfin shad	Dorosoma petenense	65	2	Dead			
Threadfin shad	Dorosoma petenense	54	1.1	Dead			
Threadfin shad	Dorosoma petenense	49	1	Dead			
Threadfin shad	Dorosoma petenense	55	0.8	Dead			

Threadfin shad	Dorosoma petenense	49	0.5	Dead			
Threadfin shad	Dorosoma petenense	57	1.1	Dead			
Threadfin shad	Dorosoma petenense	53	0.9	Dead			
Threadfin shad	Dorosoma petenense	51	0.8	Dead			
Threadfin shad	Dorosoma petenense	65	1.6	Dead			
Threadfin shad	Dorosoma petenense	58	1.2	Dead			
Threadfin shad	Dorosoma petenense	63	2	Dead			
Threadfin shad	Dorosoma petenense	55	1.1	Dead			
Threadfin shad	Dorosoma petenense	56	0.9	Dead			
Threadfin shad	Dorosoma petenense	57	0.8	Dead			
Threadfin shad	Dorosoma petenense	56	2.3	Dead			
Threadfin shad	Dorosoma petenense	56	0.4	Dead			
Threadfin shad	Dorosoma petenense	51	0.7	Dead			
Threadfin shad	Dorosoma petenense	50	0.9	Dead			
Threadfin shad	Dorosoma petenense	47	0.5	Dead			
Threadfin shad	Dorosoma petenense	56	1.3	Dead			
Threadfin shad	Dorosoma petenense	54	1.7	Dead			
Threadfin shad	Dorosoma petenense	52	1.4	Dead			
Threadfin shad	Dorosoma petenense	44	1	Dead			
Threadfin shad	Dorosoma petenense	61	1.4	Dead			
Threadfin shad	Dorosoma petenense	57	1.7	Dead			

MAR-I-0-088-00 12/27/2006 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*

Bluegill	Lepomis macrochirus	52	1.8	Dead		51.2
Threadfin shad	Dorosoma petenense	54	0.9	Dead		
Threadfin shad	Dorosoma petenense	44	0.5	Dead		
Threadfin shad	Dorosoma petenense	47	0.5	Dead		
Threadfin shad	Dorosoma petenense	44	0.5	Dead		
Threadfin shad	Dorosoma petenense	51	0.7	Dead		
Threadfin shad	Dorosoma petenense	55	0.9	Dead		
Threadfin shad	Dorosoma petenense	49	0.8	Dead		
Threadfin shad	Dorosoma petenense	46	0.6	Dead		
Threadfin shad	Dorosoma petenense	45	0.5	Dead		
Threadfin shad	Dorosoma petenense	52	1	Dead		
Threadfin shad	Dorosoma petenense	53	0.7	Dead		
Threadfin shad	Dorosoma petenense	55	0.9	Dead		
Threadfin shad	Dorosoma petenense	45	0.5	Dead		
Threadfin shad	Dorosoma petenense	60	1.4	Dead		
Threadfin shad	Dorosoma petenense	53	0.7	Dead		
Threadfin shad	Dorosoma petenense	46	0.6	Dead		
Threadfin shad	Dorosoma petenense	49	0.6	Dead		
Threadfin shad	Dorosoma petenense	63	1.6	Dead		51.2
Threadfin shad	Dorosoma petenense	52	0.8	Dead		
Threadfin shad	Dorosoma petenense	49	0.5	Dead		
Threadfin shad	Dorosoma petenense	46	0.6	Dead		
Threadfin shad	Dorosoma petenense			Dead	100	88
Threadfin shad	Dorosoma petenense			Dead	93	80.8

Threadfin shad	Dorosoma petenense			Dead	57	100.9
Threadfin shad	Dorosoma petenense	49	0.7	Dead		
Threadfin shad	Dorosoma petenense	50	0.7	Dead		
Threadfin shad	Dorosoma petenense	59	1.4	Dead		
Threadfin shad	Dorosoma petenense	51	0.7	Dead		
Threadfin shad	Dorosoma petenense	47	0.6	Dead		
Threadfin shad	Dorosoma petenense	51	0.8	Dead		
Threadfin shad	Dorosoma petenense	57	1.4	Dead		
Threadfin shad	Dorosoma petenense	47	0.6	Dead		
Threadfin shad	Dorosoma petenense	46	0.6	Dead		
Threadfin shad	Dorosoma petenense	52	1	Dead		
Threadfin shad	Dorosoma petenense	52	0.8	Dead		
Threadfin shad	Dorosoma petenense	54	0.8	Dead		
Threadfin shad	Dorosoma petenense	53	0.9	Dead		
Threadfin shad	Dorosoma petenense	49	0.7	Dead		
Threadfin shad	Dorosoma petenense	54	0.8	Dead		
Threadfin shad	Dorosoma petenense	53	0.8	Dead		
Threadfin shad	Dorosoma petenense	49	0.5	Dead		
Threadfin shad	Dorosoma petenense	52	0.6	Dead		
Threadfin shad	Dorosoma petenense	49	0.9	Dead		
Threadfin shad	Dorosoma petenense	46	0.6	Dead		
Threadfin shad	Dorosoma petenense	51	0.9	Dead		
Threadfin shad	Dorosoma petenense	52	0.8	Dead		
Threadfin shad	Dorosoma petenense	47	0.8	Dead		

Threadfin shad	Dorosoma petenense	52	0.7	Dead			
Threadfin shad	Dorosoma petenense	52	1.2	Dead			
Threadfin shad	Dorosoma petenense	49	0.9	Dead			
Threadfin shad	Dorosoma petenense	50	0.7	Dead			
Threadfin shad	Dorosoma petenense	55	1.1	Dead			
Threadfin shad	Dorosoma petenense	65	1.7	Dead			
Threadfin shad	Dorosoma petenense	48	0.5	Dead			

MAR-I-0-089-00 1/4/2007 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	55	2.1	Dead			
Bluegill	Lepomis macrochirus	58	2.7	Dead			
Threadfin shad	Dorosoma petenense	54	0.9	Dead			
Threadfin shad	Dorosoma petenense	51	0.9	Dead			
Threadfin shad	Dorosoma petenense	57	1.2	Dead			
Threadfin shad	Dorosoma petenense	50	0.6	Dead			
Threadfin shad	Dorosoma petenense	53	0.9	Dead			
Threadfin shad	Dorosoma petenense	39	0.2	Dead			
Threadfin shad	Dorosoma petenense	56	0.9	Dead			
Threadfin shad	Dorosoma petenense	55	0.8	Dead			
Threadfin shad	Dorosoma petenense	50	0.7	Dead			
Threadfin shad	Dorosoma petenense	54	0.9	Dead			
Threadfin shad	Dorosoma petenense	56	0.8	Dead			
Threadfin shad	Dorosoma petenense			Dead	112	100.9	

Threadfin shad	Dorosoma petenense	54	0.9	Dead		
Threadfin shad	Dorosoma petenense	64	1.5	Dead		
Threadfin shad	Dorosoma petenense	54	0.8	Dead		
Threadfin shad	Dorosoma petenense	52	0.9	Dead		
Threadfin shad	Dorosoma petenense	53	1.3	Dead		
Threadfin shad	Dorosoma petenense	55	1.1	Dead		
Threadfin shad	Dorosoma petenense	57	1.1	Dead		
Threadfin shad	Dorosoma petenense	88	4.9	Dead		
Threadfin shad	Dorosoma petenense	65	1.7	Dead		
Threadfin shad	Dorosoma petenense	59	1.3	Dead		
Threadfin shad	Dorosoma petenense	76	2.5	Dead		
Threadfin shad	Dorosoma petenense			Dead	100	88
Threadfin shad	Dorosoma petenense			Dead	90	80.8
Threadfin shad	Dorosoma petenense	51	0.7	Dead		
Threadfin shad	Dorosoma petenense	49	0.8	Dead		
Threadfin shad	Dorosoma petenense	57	1.1	Dead		
Threadfin shad	Dorosoma petenense	51	0.7	Dead		
Threadfin shad	Dorosoma petenense	54	0.8	Dead		
Threadfin shad	Dorosoma petenense	60	1.3	Dead		
Threadfin shad	Dorosoma petenense	61	1.2	Dead		
Threadfin shad	Dorosoma petenense	63	1.6	Dead		
Threadfin shad	Dorosoma petenense	52	0.7	Dead		
Threadfin shad	Dorosoma petenense	57	1	Dead		
Threadfin shad	Dorosoma petenense	57	1	Dead		

Threadfin shad	Dorosoma petenense	53	0.9	Dead			
Threadfin shad	Dorosoma petenense	57	1.1	Dead			
Threadfin shad	Dorosoma petenense	54	1.1	Dead			
Threadfin shad	Dorosoma petenense	48	0.8	Dead			
Threadfin shad	Dorosoma petenense	58	1	Dead			
Threadfin shad	Dorosoma petenense	53	0.9	Dead			
Threadfin shad	Dorosoma petenense	55	1	Dead			
Threadfin shad	Dorosoma petenense	54	0.9	Dead			
Threadfin shad	Dorosoma petenense	53	0.8	Dead			
Threadfin shad	Dorosoma petenense	56	1.1	Dead			
Threadfin shad	Dorosoma petenense	54	1	Dead			
Threadfin shad	Dorosoma petenense	65	1	Dead			
Threadfin shad	Dorosoma petenense	53	0.9	Dead			
Threadfin shad	Dorosoma petenense	44	0.5	Dead			
Threadfin shad	Dorosoma petenense	45	0.6	Dead			
Threadfin shad	Dorosoma petenense	51	0.9	Dead			
Threadfin shad	Dorosoma petenense	52	0.8	Dead			
Threadfin shad	Dorosoma petenense	48	0.7	Dead			
Threadfin shad	Dorosoma petenense			Dead	151	135.9	
Threadfin shad	Dorosoma petenense			Dead	69	62	

MAR-I-0-090-00 **1/30/2007** **Impingement**

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	191	159	Dead			

Threadfin shad	Dorosoma petenense	38	0.7	Dead
Threadfin shad	Dorosoma petenense	50	0.9	Dead
Threadfin shad	Dorosoma petenense	38	0.5	Dead
Threadfin shad	Dorosoma petenense	55	1.5	Dead
Threadfin shad	Dorosoma petenense	45	0.7	Dead
Threadfin shad	Dorosoma petenense	50	1	Dead
Threadfin shad	Dorosoma petenense	54	1.4	Dead
Threadfin shad	Dorosoma petenense	51	1	Dead
Threadfin shad	Dorosoma petenense	42	1.1	Dead
Threadfin shad	Dorosoma petenense	50	1	Dead
Threadfin shad	Dorosoma petenense	48	1.2	Dead
Threadfin shad	Dorosoma petenense	49	0.7	Dead
Threadfin shad	Dorosoma petenense	43	0.9	Dead
Threadfin shad	Dorosoma petenense	52	1.2	Dead
Threadfin shad	Dorosoma petenense	45	0.7	Dead
Threadfin shad	Dorosoma petenense	34	0.7	Dead
Threadfin shad	Dorosoma petenense	35	0.7	Dead
Threadfin shad	Dorosoma petenense	40	0.8	Dead
Threadfin shad	Dorosoma petenense	34	0.7	Dead
Threadfin shad	Dorosoma petenense	33	0.9	Dead
Threadfin shad	Dorosoma petenense	40	0.9	Dead
Threadfin shad	Dorosoma petenense	33	1	Dead
Threadfin shad	Dorosoma petenense	41	0.6	Dead
Threadfin shad	Dorosoma petenense	54	0.9	Dead

Threadfin shad	Dorosoma petenense	52	0.8	Dead
Threadfin shad	Dorosoma petenense	48	0.7	Dead
Threadfin shad	Dorosoma petenense	48	0.7	Dead
Threadfin shad	Dorosoma petenense	49	1.5	Dead
Threadfin shad	Dorosoma petenense	50	0.9	Dead
Threadfin shad	Dorosoma petenense	53	1.1	Dead
Threadfin shad	Dorosoma petenense	48	1.3	Dead
Threadfin shad	Dorosoma petenense	42	1.1	Dead
Threadfin shad	Dorosoma petenense	60	1.3	Dead
Threadfin shad	Dorosoma petenense	36	0.9	Dead
Threadfin shad	Dorosoma petenense	43	0.8	Dead
Threadfin shad	Dorosoma petenense	51	1.3	Dead
Threadfin shad	Dorosoma petenense	57	1.2	Dead
Threadfin shad	Dorosoma petenense	38	0.5	Dead
Threadfin shad	Dorosoma petenense	39	0.5	Dead
Threadfin shad	Dorosoma petenense	36	0.8	Dead
Threadfin shad	Dorosoma petenense	58	1.3	Dead
Threadfin shad	Dorosoma petenense	44	1.2	Dead
Threadfin shad	Dorosoma petenense	56	1.5	Dead
Threadfin shad	Dorosoma petenense	38	0.8	Dead
Threadfin shad	Dorosoma petenense	52	1.4	Dead
Threadfin shad	Dorosoma petenense	50	1.1	Dead

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Threadfin shad	Dorosoma petenense	50	0.6	Dead			
Threadfin shad	Dorosoma petenense	50	0.4	Dead			
Threadfin shad	Dorosoma petenense	62	1.1	Dead			
Threadfin shad	Dorosoma petenense	50	0.5	Dead			
Threadfin shad	Dorosoma petenense	54	0.8	Dead			
Threadfin shad	Dorosoma petenense	53	0.7	Dead			
Threadfin shad	Dorosoma petenense	55	0.8	Dead			
Threadfin shad	Dorosoma petenense	52	0.8	Dead			
Threadfin shad	Dorosoma petenense	58	1.8	Dead			
Threadfin shad	Dorosoma petenense	56	0.9	Dead			
Threadfin shad	Dorosoma petenense	50	1.3	Dead			
Threadfin shad	Dorosoma petenense	47	0.8	Dead			
Threadfin shad	Dorosoma petenense	54	0.8	Dead			
Threadfin shad	Dorosoma petenense	59	0.7	Dead			
Threadfin shad	Dorosoma petenense	56	0.8	Dead			
Threadfin shad	Dorosoma petenense	43	0.5	Dead			
Threadfin shad	Dorosoma petenense			Dead	9	8.9	
Threadfin shad	Dorosoma petenense	60	0.6	Dead			
Threadfin shad	Dorosoma petenense	54	0.7	Dead			
Threadfin shad	Dorosoma petenense	61	1	Dead			
Threadfin shad	Dorosoma petenense	59	0.6	Dead			

Threadfin shad	Dorosoma petenense	61	0.8	Dead
Threadfin shad	Dorosoma petenense	54	0.6	Dead
Threadfin shad	Dorosoma petenense	53	0.3	Dead
Threadfin shad	Dorosoma petenense	53	0.5	Dead
Threadfin shad	Dorosoma petenense	76	1.5	Dead
Threadfin shad	Dorosoma petenense	48	0.3	Dead
Threadfin shad	Dorosoma petenense	69	1	Dead
Threadfin shad	Dorosoma petenense	60	0.8	Dead
Threadfin shad	Dorosoma petenense	48	0.7	Dead
Threadfin shad	Dorosoma petenense	67	1.3	Dead
Threadfin shad	Dorosoma petenense	51	0.5	Dead
Threadfin shad	Dorosoma petenense	72	1.5	Dead
Threadfin shad	Dorosoma petenense	62	0.8	Dead
Threadfin shad	Dorosoma petenense	54	0.7	Dead
Threadfin shad	Dorosoma petenense	55	0.3	Dead
Threadfin shad	Dorosoma petenense	52	0.6	Dead
Threadfin shad	Dorosoma petenense	57	0.5	Dead
Threadfin shad	Dorosoma petenense	52	0.5	Dead
Threadfin shad	Dorosoma petenense	50	0.4	Dead
Threadfin shad	Dorosoma petenense	62	0.8	Dead
Threadfin shad	Dorosoma petenense	44	0.5	Dead
Threadfin shad	Dorosoma petenense	56	0.4	Dead
Threadfin shad	Dorosoma petenense	47	1.6	Dead
Threadfin shad	Dorosoma petenense	62	0.8	Dead

Threadfin shad	Dorosoma petenense	36	0.5	Dead
Threadfin shad	Dorosoma petenense	51	0.7	Dead
Threadfin shad	Dorosoma petenense	62	1.2	Dead
Threadfin shad	Dorosoma petenense	64	1.2	Dead
Threadfin shad	Dorosoma petenense	52	0.4	Dead
Threadfin shad	Dorosoma petenense	53	0.5	Dead

MAR-I-0-092-09 2/14/2007 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	200	186.8	Dead			
Threadfin shad	Dorosoma petenense	56	1.5	Dead			
Threadfin shad	Dorosoma petenense	61	1.6	Dead			
Threadfin shad	Dorosoma petenense	63	1.8	Dead			
Threadfin shad	Dorosoma petenense	72	2.5	Dead			
Threadfin shad	Dorosoma petenense	52	1.3	Dead			
Threadfin shad	Dorosoma petenense	61	1.4	Dead			
Threadfin shad	Dorosoma petenense	43	0.8	Dead			
Threadfin shad	Dorosoma petenense	50	1.1	Dead			
Threadfin shad	Dorosoma petenense	77	3.2	Dead			
Threadfin shad	Dorosoma petenense	53	1.2	Dead			
Threadfin shad	Dorosoma petenense	52	1.1	Dead			
Threadfin shad	Dorosoma petenense	56	1.6	Dead			
Threadfin shad	Dorosoma petenense	51	0.9	Dead			
Threadfin shad	Dorosoma petenense	52	1	Dead			

Threadfin shad	Dorosoma petenense	56	1.2	Dead		
Threadfin shad	Dorosoma petenense	51	0.9	Dead		
Threadfin shad	Dorosoma petenense	90	2.8	Dead		
Threadfin shad	Dorosoma petenense	56	1	Dead		
Threadfin shad	Dorosoma petenense	57	1.2	Dead		
Threadfin shad	Dorosoma petenense	54	1.1	Dead		
Threadfin shad	Dorosoma petenense	61	1.7	Dead		
Threadfin shad	Dorosoma petenense	61	2	Dead		
Threadfin shad	Dorosoma petenense	59	1.4	Dead		
Threadfin shad	Dorosoma petenense	55	1	Dead		
Threadfin shad	Dorosoma petenense	41	0.8	Dead		
Threadfin shad	Dorosoma petenense			Dead	30	36.3
Threadfin shad	Dorosoma petenense	55	1.2	Dead		
Threadfin shad	Dorosoma petenense	50	1.2	Dead		
Threadfin shad	Dorosoma petenense	56	1.5	Dead		
Threadfin shad	Dorosoma petenense	52	1.1	Dead		
Threadfin shad	Dorosoma petenense	52	1.1	Dead		
Threadfin shad	Dorosoma petenense	57	1.5	Dead		
Threadfin shad	Dorosoma petenense	47	1.1	Dead		
Threadfin shad	Dorosoma petenense	62	1.8	Dead		
Threadfin shad	Dorosoma petenense	50	1.1	Dead		
Threadfin shad	Dorosoma petenense	49	1.1	Dead		
Threadfin shad	Dorosoma petenense	51	1.2	Dead		
Threadfin shad	Dorosoma petenense	61	1.9	Dead		

Threadfin shad	Dorosoma petenense	51	1	Dead
Threadfin shad	Dorosoma petenense	56	1.5	Dead
Threadfin shad	Dorosoma petenense	55	1.4	Dead
Threadfin shad	Dorosoma petenense	61	1.8	Dead
Threadfin shad	Dorosoma petenense	56	2.1	Dead
Threadfin shad	Dorosoma petenense	52	1.1	Dead
Threadfin shad	Dorosoma petenense	57	1.6	Dead
Threadfin shad	Dorosoma petenense	52	1.1	Dead
Threadfin shad	Dorosoma petenense	56	1.5	Dead
Threadfin shad	Dorosoma petenense	57	1.4	Dead
Threadfin shad	Dorosoma petenense	54	1.3	Dead
Threadfin shad	Dorosoma petenense	55	1.4	Dead

MAR-I-0-092-15 2/14/2007 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	50	1.4	Dead			
Bluegill	Lepomis macrochirus	56	2.1	Dead			
Threadfin shad	Dorosoma petenense	60	1.3	Dead			
Threadfin shad	Dorosoma petenense	56	1.1	Dead			
Threadfin shad	Dorosoma petenense	53	1	Dead			
Threadfin shad	Dorosoma petenense	62	1.7	Dead			
Threadfin shad	Dorosoma petenense	60	1.4	Dead			
Threadfin shad	Dorosoma petenense	77	3.5	Dead			
Threadfin shad	Dorosoma petenense	55	1.1	Dead			

Threadfin shad	Dorosoma petenense	68	2	Dead
Threadfin shad	Dorosoma petenense	57	1.1	Dead
Threadfin shad	Dorosoma petenense	52	0.7	Dead
Threadfin shad	Dorosoma petenense	60	1.3	Dead
Threadfin shad	Dorosoma petenense	60	1.2	Dead
Threadfin shad	Dorosoma petenense	52	1.2	Dead
Threadfin shad	Dorosoma petenense	53	0.9	Dead
Threadfin shad	Dorosoma petenense	51	1.1	Dead
Threadfin shad	Dorosoma petenense	64	0.9	Dead
Threadfin shad	Dorosoma petenense	63	1.9	Dead
Threadfin shad	Dorosoma petenense	49	0.8	Dead
Threadfin shad	Dorosoma petenense	59	1.3	Dead
Threadfin shad	Dorosoma petenense	57	1.6	Dead
Threadfin shad	Dorosoma petenense	54	1.2	Dead
Threadfin shad	Dorosoma petenense	58	1.2	Dead
Threadfin shad	Dorosoma petenense	62	1.9	Dead
Threadfin shad	Dorosoma petenense	45	0.9	Dead
Threadfin shad	Dorosoma petenense	50	0.7	Dead
Threadfin shad	Dorosoma petenense	56	1.3	Dead
Threadfin shad	Dorosoma petenense	45	0.7	Dead
Threadfin shad	Dorosoma petenense	53	1.1	Dead
Threadfin shad	Dorosoma petenense	46	0.6	Dead
Threadfin shad	Dorosoma petenense	53	1.1	Dead
Threadfin shad	Dorosoma petenense	59	1.3	Dead

Threadfin shad	Dorosoma petenense	56	1.2	Dead			
Threadfin shad	Dorosoma petenense	69	2.5	Dead			
Threadfin shad	Dorosoma petenense	64	2	Dead			
Threadfin shad	Dorosoma petenense	52	1.1	Dead			
Threadfin shad	Dorosoma petenense	54	1.2	Dead			
Threadfin shad	Dorosoma petenense	61	1.5	Dead			
Threadfin shad	Dorosoma petenense	55	1.1	Dead			
Threadfin shad	Dorosoma petenense			Dead	78	93.9	
Threadfin shad	Dorosoma petenense	60	1.3	Dead			
Threadfin shad	Dorosoma petenense	64	2.2	Dead			
Threadfin shad	Dorosoma petenense	62	1.6	Dead			
Threadfin shad	Dorosoma petenense	50	1.1	Dead			
Threadfin shad	Dorosoma petenense	50	0.8	Dead			
Threadfin shad	Dorosoma petenense	62	1.7	Dead			
Threadfin shad	Dorosoma petenense	52	1.1	Dead			
Threadfin shad	Dorosoma petenense	57	1.4	Dead			
Threadfin shad	Dorosoma petenense	56	1.3	Dead			
Threadfin shad	Dorosoma petenense	55	1.2	Dead			
Threadfin shad	Dorosoma petenense	59	1.5	Dead			
Threadfin shad	Dorosoma petenense	70	2	Dead			

MAR-I-0-092-21 2/14/2007 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	51	1.7	Dead			

Threadfin shad	Dorosoma petenense	55	1.3	Dead
Threadfin shad	Dorosoma petenense	57	1.7	Dead
Threadfin shad	Dorosoma petenense	60	1.5	Dead
Threadfin shad	Dorosoma petenense	52	1.2	Dead
Threadfin shad	Dorosoma petenense	58	1.3	Dead
Threadfin shad	Dorosoma petenense	56	1.2	Dead
Threadfin shad	Dorosoma petenense	60	1.5	Dead
Threadfin shad	Dorosoma petenense	61	1.6	Dead
Threadfin shad	Dorosoma petenense	56	1.5	Dead
Threadfin shad	Dorosoma petenense	61	1.7	Dead
Threadfin shad	Dorosoma petenense	52	1.3	Dead
Threadfin shad	Dorosoma petenense	61	1.9	Dead
Threadfin shad	Dorosoma petenense	60	1.4	Dead
Threadfin shad	Dorosoma petenense	56	1.6	Dead
Threadfin shad	Dorosoma petenense	50	1.2	Dead
Threadfin shad	Dorosoma petenense	54	1.6	Dead
Threadfin shad	Dorosoma petenense	51	1.2	Dead
Threadfin shad	Dorosoma petenense	94	7.3	Dead
Threadfin shad	Dorosoma petenense	55	1.5	Dead
Threadfin shad	Dorosoma petenense	48	1.1	Dead
Threadfin shad	Dorosoma petenense	49	1.1	Dead
Threadfin shad	Dorosoma petenense	56	1.9	Dead
Threadfin shad	Dorosoma petenense	63	2.4	Dead
Threadfin shad	Dorosoma petenense	58	1.7	Dead

Threadfin shad	Dorosoma petenense	59	1.4	Dead		
Threadfin shad	Dorosoma petenense			Dead	14	17
Threadfin shad	Dorosoma petenense	50	0.8	Dead		
Threadfin shad	Dorosoma petenense	62	1.4	Dead		
Threadfin shad	Dorosoma petenense	54	1.1	Dead		
Threadfin shad	Dorosoma petenense	63	1.8	Dead		
Threadfin shad	Dorosoma petenense	60	1.5	Dead		
Threadfin shad	Dorosoma petenense	52	1.1	Dead		
Threadfin shad	Dorosoma petenense	61	1.5	Dead		
Threadfin shad	Dorosoma petenense	51	0.7	Dead		
Threadfin shad	Dorosoma petenense	54	1.3	Dead		
Threadfin shad	Dorosoma petenense	59	1.6	Dead		
Threadfin shad	Dorosoma petenense	52	0.9	Dead		
Threadfin shad	Dorosoma petenense	64	2.3	Dead		
Threadfin shad	Dorosoma petenense	48	1.2	Dead		
Threadfin shad	Dorosoma petenense	52	1.3	Dead		
Threadfin shad	Dorosoma petenense	53	1.3	Dead		
Threadfin shad	Dorosoma petenense	61	1.4	Dead		
Threadfin shad	Dorosoma petenense	57	1.3	Dead		
Threadfin shad	Dorosoma petenense	52	1.2	Dead		
Threadfin shad	Dorosoma petenense	55	1.3	Dead		
Threadfin shad	Dorosoma petenense	52	1.1	Dead		
Threadfin shad	Dorosoma petenense	62	2	Dead		
Threadfin shad	Dorosoma petenense	60	1.7	Dead		

Threadfin shad	Dorosoma petenense	59	1.6	Dead			
Threadfin shad	Dorosoma petenense	59	1.5	Dead			
Threadfin shad	Dorosoma petenense	56	1.2	Dead			

MAR-I-0-092-03 2/15/2007 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Threadfin shad	Dorosoma petenense	52	1.2	Dead			
Threadfin shad	Dorosoma petenense	49	0.8	Dead			
Threadfin shad	Dorosoma petenense	60	1.3	Dead			
Threadfin shad	Dorosoma petenense	59	1.7	Dead			
Threadfin shad	Dorosoma petenense	52	1.4	Dead			
Threadfin shad	Dorosoma petenense	62	1.8	Dead			
Threadfin shad	Dorosoma petenense	50	0.9	Dead			
Threadfin shad	Dorosoma petenense	60	1.4	Dead			
Threadfin shad	Dorosoma petenense	52	0.9	Dead			
Threadfin shad	Dorosoma petenense	54	1.1	Dead			
Threadfin shad	Dorosoma petenense	53	1.2	Dead			
Threadfin shad	Dorosoma petenense	66	1.9	Dead			
Threadfin shad	Dorosoma petenense	60	1.5	Dead			
Threadfin shad	Dorosoma petenense	61	1.6	Dead			
Threadfin shad	Dorosoma petenense	51	1.2	Dead			
Threadfin shad	Dorosoma petenense	56	1.2	Dead			
Threadfin shad	Dorosoma petenense	57	1.3	Dead			
Threadfin shad	Dorosoma petenense	56	1.3	Dead			

Threadfin shad	Dorosoma petenense	53	1.4	Dead
Threadfin shad	Dorosoma petenense	61	1.5	Dead
Threadfin shad	Dorosoma petenense	59	1.5	Dead
Threadfin shad	Dorosoma petenense	44	0.7	Dead
Threadfin shad	Dorosoma petenense	56	1.1	Dead
Threadfin shad	Dorosoma petenense	100	7.5	Dead
Threadfin shad	Dorosoma petenense	96	7.1	Dead
Threadfin shad	Dorosoma petenense	67	2.1	Dead
Threadfin shad	Dorosoma petenense	120	14	Dead
Threadfin shad	Dorosoma petenense	62	1.6	Dead
Threadfin shad	Dorosoma petenense	54	1.2	Dead
Threadfin shad	Dorosoma petenense	54	1.2	Dead
Threadfin shad	Dorosoma petenense	61	1.6	Dead
Threadfin shad	Dorosoma petenense	57	1.2	Dead
Threadfin shad	Dorosoma petenense	55	1.3	Dead
Threadfin shad	Dorosoma petenense	54	1.1	Dead
Threadfin shad	Dorosoma petenense	72	2.9	Dead
Threadfin shad	Dorosoma petenense	52	1	Dead
Threadfin shad	Dorosoma petenense	52	1.1	Dead
Threadfin shad	Dorosoma petenense	56	1.3	Dead
Threadfin shad	Dorosoma petenense	59	1.2	Dead
Threadfin shad	Dorosoma petenense	100	7.5	Dead
Threadfin shad	Dorosoma petenense	56	1.1	Dead
Threadfin shad	Dorosoma petenense	62	1.6	Dead

Threadfin shad	Dorosoma petenense			Dead	11	18.2	
Threadfin shad	Dorosoma petenense	70	2.2	Dead			
Threadfin shad	Dorosoma petenense	57	1.3	Dead			
Threadfin shad	Dorosoma petenense	56	1.1	Dead			
Threadfin shad	Dorosoma petenense	54	1.1	Dead			
Threadfin shad	Dorosoma petenense	58	1.2	Dead			
Threadfin shad	Dorosoma petenense	56	1	Dead			
Threadfin shad	Dorosoma petenense	53	1	Dead			
Threadfin shad	Dorosoma petenense	61	1.4	Dead			

MAR-I-0-093-00 2/21/2007 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	95	14.1	Live			
Bluegill	Lepomis macrochirus	61	2.6	Live			
Threadfin shad	Dorosoma petenense	62	1.9	Dead			
Threadfin shad	Dorosoma petenense	56	1.1	Dead			
Threadfin shad	Dorosoma petenense	62	1.3	Dead			
Threadfin shad	Dorosoma petenense	43	1	Dead			
Threadfin shad	Dorosoma petenense	56	1.3	Dead			
Threadfin shad	Dorosoma petenense	43	0.9	Dead			
Threadfin shad	Dorosoma petenense	55	1.3	Dead			
Threadfin shad	Dorosoma petenense	55	1.6	Dead			
Threadfin shad	Dorosoma petenense	66	2.3	Dead			
Threadfin shad	Dorosoma petenense	63	1.9	Dead			

Threadfin shad	Dorosoma petenense	65	1.9	Dead			
Threadfin shad	Dorosoma petenense	62	2.1	Dead			
Threadfin shad	Dorosoma petenense	67	1.5	Dead			
Threadfin shad	Dorosoma petenense	60	1.6	Dead			
Threadfin shad	Dorosoma petenense	87	5.8	Dead			
Threadfin shad	Dorosoma petenense	56	1.5	Dead			
Threadfin shad	Dorosoma petenense	55	1.3	Dead			
Threadfin shad	Dorosoma petenense	64	1.6	Dead			
Threadfin shad	Dorosoma petenense	60	1.4	Dead			
Threadfin shad	Dorosoma petenense	58	1.7	Dead			
Threadfin shad	Dorosoma petenense	53	1.6	Dead			
Threadfin shad	Dorosoma petenense			Dead	50	121.5	Young of Year
Threadfin shad	Dorosoma petenense			Dead	210	487	Young of Year
Threadfin shad	Dorosoma petenense	59	0.9	Dead			
Threadfin shad	Dorosoma petenense	61	1.5	Dead			
Threadfin shad	Dorosoma petenense			Dead	50	110.7	Young of Year
Threadfin shad	Dorosoma petenense	81	3.8	Dead			
Threadfin shad	Dorosoma petenense	57	0.9	Dead			
Threadfin shad	Dorosoma petenense	105	8.5	Dead			
Threadfin shad	Dorosoma petenense	65	1.5	Dead			
Threadfin shad	Dorosoma petenense	106	8.1	Dead			
Threadfin shad	Dorosoma petenense	50	0.9	Dead			
Threadfin shad	Dorosoma petenense	82	3.1	Dead			
Threadfin shad	Dorosoma petenense	44	0.6	Dead			

Threadfin shad	Dorosoma petenense	76	2.5	Dead
Threadfin shad	Dorosoma petenense	60	1	Dead
Threadfin shad	Dorosoma petenense	59	1.2	Dead
Threadfin shad	Dorosoma petenense	60	1.2	Dead
Threadfin shad	Dorosoma petenense	60	1.4	Dead
Threadfin shad	Dorosoma petenense	60	1.9	Dead
Threadfin shad	Dorosoma petenense	61	1.3	Dead
Threadfin shad	Dorosoma petenense	76	3.2	Dead
Threadfin shad	Dorosoma petenense	55	1.4	Dead
Threadfin shad	Dorosoma petenense	55	1.3	Dead
Threadfin shad	Dorosoma petenense	58	1.5	Dead
Threadfin shad	Dorosoma petenense	59	1.9	Dead
Threadfin shad	Dorosoma petenense	47	2.6	Dead
Threadfin shad	Dorosoma petenense	54	0.4	Dead
Threadfin shad	Dorosoma petenense	63	1.4	Dead
Threadfin shad	Dorosoma petenense	54	1.3	Dead
Threadfin shad	Dorosoma petenense	67	2.2	Dead
Threadfin shad	Dorosoma petenense	66	2	Dead
Threadfin shad	Dorosoma petenense	57	2.1	Dead

MAR-I-0-094-00 **3/2/2007** **Impingement**

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Threadfin shad	Dorosoma petenense	56	0.8	Dead			
Threadfin shad	Dorosoma petenense	62	1.8	Dead			

Threadfin shad	Dorosoma petenense	54	1.9	Dead
Threadfin shad	Dorosoma petenense	56	2	Dead
Threadfin shad	Dorosoma petenense	59	1.7	Dead
Threadfin shad	Dorosoma petenense	47	1.2	Dead
Threadfin shad	Dorosoma petenense	47	0.9	Dead
Threadfin shad	Dorosoma petenense	83	4.1	Dead
Threadfin shad	Dorosoma petenense	55	1.4	Dead
Threadfin shad	Dorosoma petenense	66	1.8	Dead
Threadfin shad	Dorosoma petenense	59	2.4	Dead
Threadfin shad	Dorosoma petenense	47	0.4	Dead

MAR-I-0-095-00 3/7/2007 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	63	3.2	Dead			
Bluegill	Lepomis macrochirus	42	1.1	Dead			
Threadfin shad	Dorosoma petenense	76	3.8	Dead			
Threadfin shad	Dorosoma petenense	60	1.6	Dead			
Threadfin shad	Dorosoma petenense	54	0.8	Dead			

MAR-I-0-096-00 3/15/2007 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	61	2.8	Dead			
Threadfin shad	Dorosoma petenense	54	1.7	Dead			
Threadfin shad	Dorosoma petenense	66	2.1	Dead			

Threadfin shad	Dorosoma petenense	56	1.4	Dead			
Threadfin shad	Dorosoma petenense	52	1.4	Dead			
Threadfin shad	Dorosoma petenense	56	1.5	Dead			
Threadfin shad	Dorosoma petenense	60	1.6	Dead			
Threadfin shad	Dorosoma petenense	66	2.3	Dead			
Threadfin shad	Dorosoma petenense	52	1.2	Dead			
Threadfin shad	Dorosoma petenense	74	2.6	Dead			
Threadfin shad	Dorosoma petenense	56	1.4	Dead			
Threadfin shad	Dorosoma petenense	60	1.5	Dead			
Threadfin shad	Dorosoma petenense	57	1.4	Dead			
Threadfin shad	Dorosoma petenense	67	2.1	Dead			
Threadfin shad	Dorosoma petenense	55	1.3	Dead			
Threadfin shad	Dorosoma petenense	56	1	Dead			
Threadfin shad	Dorosoma petenense	53	1.4	Dead			
Threadfin shad	Dorosoma petenense	56	1.4	Dead			

MAR-I-0-097-00 3/23/2007 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	55	2.5	Dead			
Bluegill	Lepomis macrochirus	73	5.5	Dead			
Bluegill	Lepomis macrochirus	54	2.3	Dead			
Bluegill	Lepomis macrochirus	61	3.4	Dead			
Bluegill	Lepomis macrochirus	59	2.7	Dead			
Bluegill	Lepomis macrochirus	57	2.3	Dead			

Bluegill	Lepomis macrochirus	66	3.8	Dead			
Bluegill	Lepomis macrochirus	88	9.9	Dead			
Bluegill	Lepomis macrochirus	66	3.7	Dead			
Bluegill	Lepomis macrochirus	75	6.5	Dead			
Bluegill	Lepomis macrochirus	56	2.5	Dead			
Bluegill	Lepomis macrochirus			Dead	44	123.4	YOY
Bluegill	Lepomis macrochirus	56	2.7	Dead			
Bluegill	Lepomis macrochirus	59	3	Dead			
Bluegill	Lepomis macrochirus	66	4	Dead			
Bluegill	Lepomis macrochirus	59	2.8	Dead			
Bluegill	Lepomis macrochirus	59	2.9	Dead			
Bluegill	Lepomis macrochirus	70	5	Dead			
Bluegill	Lepomis macrochirus	63	3.4	Dead			
Bluegill	Lepomis macrochirus	59	3	Dead			
Bluegill	Lepomis macrochirus	65	3.7	Dead			
Bluegill	Lepomis macrochirus	60	2.8	Dead			
Bluegill	Lepomis macrochirus	66	3.9	Dead			
Bluegill	Lepomis macrochirus	61	3.1	Dead			
Bluegill	Lepomis macrochirus	62	3.6	Dead			
Bluegill	Lepomis macrochirus	60	3	Dead			
Bluegill	Lepomis macrochirus	58	2.5	Dead			
Bluegill	Lepomis macrochirus	94	13.4	Dead			
Bluegill	Lepomis macrochirus	104	16.8	Dead			
Bluegill	Lepomis macrochirus	49	1.9	Dead			

Bluegill	Lepomis macrochirus	65	4.1	Dead
Bluegill	Lepomis macrochirus	62	2.9	Dead
Bluegill	Lepomis macrochirus	69	4	Dead
Bluegill	Lepomis macrochirus	64	3.7	Dead
Bluegill	Lepomis macrochirus	62	4.3	Dead
Bluegill	Lepomis macrochirus	74	5.2	Dead
Bluegill	Lepomis macrochirus	66	4.6	Dead
Bluegill	Lepomis macrochirus	64	3.5	Dead
Bluegill	Lepomis macrochirus	51	1.8	Dead
Bluegill	Lepomis macrochirus	72	5	Dead
Bluegill	Lepomis macrochirus	55	2.3	Dead
Bluegill	Lepomis macrochirus	69	5.5	Dead
Bluegill	Lepomis macrochirus	67	4.4	Dead
Bluegill	Lepomis macrochirus	71	5.7	Dead
Bluegill	Lepomis macrochirus	65	3.9	Dead
Bluegill	Lepomis macrochirus	78	6.2	Dead
Bluegill	Lepomis macrochirus	55	2.9	Dead
Bluegill	Lepomis macrochirus	64	4.2	Dead
Bluegill	Lepomis macrochirus	66	4	Dead
Bluegill	Lepomis macrochirus	57	3.1	Dead
Bluegill	Lepomis macrochirus	66	4	Dead
Threadfin shad	Dorosoma petenense	62	1.4	Dead
Threadfin shad	Dorosoma petenense	70	2.2	Dead
Threadfin shad	Dorosoma petenense	64	1.3	Dead

Threadfin shad	Dorosoma petenense	61	1.1	Dead
Threadfin shad	Dorosoma petenense	76	2.4	Dead
Threadfin shad	Dorosoma petenense	57	1	Dead
Threadfin shad	Dorosoma petenense	60	1.1	Dead
Threadfin shad	Dorosoma petenense	62	1.2	Dead
Threadfin shad	Dorosoma petenense	60	1	Dead
Threadfin shad	Dorosoma petenense	60	1.1	Dead
Threadfin shad	Dorosoma petenense	61	1.4	Dead
Threadfin shad	Dorosoma petenense	66	1.4	Dead
Threadfin shad	Dorosoma petenense	59	1.3	Dead
Threadfin shad	Dorosoma petenense	60	1.3	Dead
Threadfin shad	Dorosoma petenense	60	1.1	Dead
Threadfin shad	Dorosoma petenense	60	1.1	Dead
Threadfin shad	Dorosoma petenense	59	1.1	Dead
Threadfin shad	Dorosoma petenense	66	2	Dead
Threadfin shad	Dorosoma petenense	50	1.1	Dead
Threadfin shad	Dorosoma petenense	62	1.8	Dead
Threadfin shad	Dorosoma petenense	61	1.3	Dead
Threadfin shad	Dorosoma petenense	43	1.1	Dead
Threadfin shad	Dorosoma petenense	60	1.4	Dead
Threadfin shad	Dorosoma petenense	57	1.1	Dead
Threadfin shad	Dorosoma petenense	57	1.1	Dead
Threadfin shad	Dorosoma petenense	61	1.7	Dead
Threadfin shad	Dorosoma petenense	62	1.9	Dead

MAR-I-0-098-00 3/29/2007 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Black crappie	Pomoxis nigromaculatus	90	6.2	Dead			
Bluegill	Lepomis macrochirus	67	4.5	Dead			
Bluegill	Lepomis macrochirus	61	3.1	Dead			
Bluegill	Lepomis macrochirus	89	9.9	Dead			
Bluegill	Lepomis macrochirus	96	13.5	Dead			
Bluegill	Lepomis macrochirus	70	4.6	Dead			
Bluegill	Lepomis macrochirus	61	3.2	Dead			
Bluegill	Lepomis macrochirus	72	4.1	Dead			
Bluegill	Lepomis macrochirus	71	5	Dead			
Bluegill	Lepomis macrochirus	73	4.9	Dead			
Bluegill	Lepomis macrochirus	57	2.5	Dead			
Bluegill	Lepomis macrochirus	61	3.4	Dead			
Threadfin shad	Dorosoma petenense	86	3.6	Dead			
Threadfin shad	Dorosoma petenense	75	2.9	Dead			
Threadfin shad	Dorosoma petenense	74	2.3	Dead			
Threadfin shad	Dorosoma petenense	69	2	Dead			
Threadfin shad	Dorosoma petenense	55	1.1	Dead			
Threadfin shad	Dorosoma petenense	62	1.4	Dead			
Threadfin shad	Dorosoma petenense	91	5.5	Dead			
Threadfin shad	Dorosoma petenense	75	2.5	Dead			

MAR-I-0-099-00 4/4/2007 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Black crappie	Pomoxis nigromaculatus	75	4.6	Dead			
Black crappie	Pomoxis nigromaculatus	86	7.3	Dead			
Bluegill	Lepomis macrochirus	61	3.8	Dead			
Bluegill	Lepomis macrochirus	60	2.7	Dead			
Bluegill	Lepomis macrochirus	39	0.8	Dead			
Bluegill	Lepomis macrochirus	79	7.2	Dead			
Bluegill	Lepomis macrochirus	66	3.9	Dead			
Bluegill	Lepomis macrochirus	96	12.3	Dead			
Bluegill	Lepomis macrochirus	67	3.8	Dead			
Green sunfish	Lepomis cyanellus	44	1.9	Dead			
Threadfin shad	Dorosoma petenense	61	1.2	Dead			

MAR-I-0-100-00 4/13/2007 Impingement

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	60	3	Dead			
Bluegill	Lepomis macrochirus	64	3.4	Dead			
Bluegill	Lepomis macrochirus	80	6.5	Dead			
Bluegill	Lepomis macrochirus	56	2.2	Dead			
Bluegill	Lepomis macrochirus	55	2.2	Dead			

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	61	3.1	Dead			
Bluegill	Lepomis macrochirus	65	3.6	Dead			
Bluegill	Lepomis macrochirus	51	2.1	Dead			
Bluegill	Lepomis macrochirus	68	4.4	Dead			
Bluegill	Lepomis macrochirus	65	4.4	Dead			
Bluegill	Lepomis macrochirus	67	4.3	Dead			
Bluegill	Lepomis macrochirus	55	2.4	Dead			
Bluegill	Lepomis macrochirus	66	4.4	Dead			
Bluegill	Lepomis macrochirus	61	3.4	Dead			
Bluegill	Lepomis macrochirus	55	2.8	Dead			
Bluegill	Lepomis macrochirus	50	1.9	Dead			
Bluegill	Lepomis macrochirus	62	3.9	Dead			
Bluegill	Lepomis macrochirus	55	2.5	Dead			
Bluegill	Lepomis macrochirus	62	3.6	Dead			
Bluegill	Lepomis macrochirus	70	4.7	Dead			
Bluegill	Lepomis macrochirus	64	3.7	Dead			
Bluegill	Lepomis macrochirus	63	3.7	Dead			
Bluegill	Lepomis macrochirus	56	3.1	Dead			
Threadfin shad	Dorosoma petenense	60	1.6	Dead			
Threadfin shad	Dorosoma petenense	56	1.8	Dead			
Threadfin shad	Dorosoma petenense	70	2.5	Dead			

Threadfin shad	Dorosoma petenense	60	1.6	Dead
Threadfin shad	Dorosoma petenense	56	1.8	Dead
Threadfin shad	Dorosoma petenense	84	6.6	Dead
Threadfin shad	Dorosoma petenense	57	1.6	Dead
Threadfin shad	Dorosoma petenense	58	1.6	Dead
Threadfin shad	Dorosoma petenense	61	1.9	Dead
Threadfin shad	Dorosoma petenense	59	2.1	Dead
Threadfin shad	Dorosoma petenense	60	1.6	Dead
Threadfin shad	Dorosoma petenense	61	1.6	Dead
Threadfin shad	Dorosoma petenense	60	1.9	Dead
Threadfin shad	Dorosoma petenense	54	1.5	Dead
Threadfin shad	Dorosoma petenense	63	2	Dead
Threadfin shad	Dorosoma petenense	67	1.9	Dead
Threadfin shad	Dorosoma petenense	59	1.3	Dead
Threadfin shad	Dorosoma petenense	61	2.1	Dead
Threadfin shad	Dorosoma petenense	57	1.6	Dead
Threadfin shad	Dorosoma petenense	56	1.7	Dead
Threadfin shad	Dorosoma petenense	50	1.3	Dead
Threadfin shad	Dorosoma petenense	70	2.2	Dead
Threadfin shad	Dorosoma petenense	58	1.7	Dead
Threadfin shad	Dorosoma petenense	60	1.7	Dead
Threadfin shad	Dorosoma petenense	54	1.5	Dead
Threadfin shad	Dorosoma petenense	68	2.3	Dead
Threadfin shad	Dorosoma petenense	58	1.7	Dead

Threadfin shad	Dorosoma petenense	60	2	Dead
Threadfin shad	Dorosoma petenense	52	1.6	Dead
Threadfin shad	Dorosoma petenense	56	2	Dead
Threadfin shad	Dorosoma petenense	60	1.7	Dead
Threadfin shad	Dorosoma petenense	57	1.5	Dead
Threadfin shad	Dorosoma petenense	73	2.7	Dead
Threadfin shad	Dorosoma petenense	62	2.3	Dead
Threadfin shad	Dorosoma petenense	70	2.2	Dead
Threadfin shad	Dorosoma petenense	55	1.9	Dead
Threadfin shad	Dorosoma petenense	58	1.8	Dead
Threadfin shad	Dorosoma petenense	58	1.7	Dead
Threadfin shad	Dorosoma petenense	55	1.4	Dead
Threadfin shad	Dorosoma petenense	57	1.6	Dead
Threadfin shad	Dorosoma petenense	79	3.6	Dead
Threadfin shad	Dorosoma petenense	52	1.5	Dead
Threadfin shad	Dorosoma petenense	58	1.5	Dead
Threadfin shad	Dorosoma petenense	60	1.5	Dead
Threadfin shad	Dorosoma petenense	60	1.7	Dead
Threadfin shad	Dorosoma petenense	59	1.4	Dead
Threadfin shad	Dorosoma petenense	72	3.1	Dead
Threadfin shad	Dorosoma petenense	73	2.4	Dead
Threadfin shad	Dorosoma petenense	50	1.3	Dead
Threadfin shad	Dorosoma petenense	60	1.6	Dead
Threadfin shad	Dorosoma petenense	53	1.8	Dead

Fish Common Name	Scientific Name	Length (mm)	Weight (gm)	Condition	Batch Count	Batch Weight (gm)	Batch Length Category
Bluegill	Lepomis macrochirus	61	4	Dead			
Bluegill	Lepomis macrochirus	56	3.4	Dead			
Bluegill	Lepomis macrochirus	61	3.8	Dead			
Bluegill	Lepomis macrochirus	88	11	Dead			
Bluegill	Lepomis macrochirus	55	2.9	Dead			
Bluegill	Lepomis macrochirus	60	3.6	Dead			
Bluegill	Lepomis macrochirus	67	4.7	Dead			
Bluegill	Lepomis macrochirus	61	4	Dead			
Bluegill	Lepomis macrochirus	52	2.2	Dead			
Bluegill	Lepomis macrochirus	56	3	Dead			
Bluegill	Lepomis macrochirus	65	3.9	Dead			
Bluegill	Lepomis macrochirus	75	6.7	Dead			
Bluegill	Lepomis macrochirus	92	11	Dead			
Bluegill	Lepomis macrochirus	59	3.3	Dead			
Bluegill	Lepomis macrochirus	55	3	Dead			
Bluegill	Lepomis macrochirus	86	6.3	Dead			
Bluegill	Lepomis macrochirus	69	5.1	Dead			
Bluegill	Lepomis macrochirus	60	4.3	Dead			
Bluegill	Lepomis macrochirus	54	3.2	Dead			
Threadfin shad	Dorosoma petenense	60	1.8	Dead			
Threadfin shad	Dorosoma petenense	61	1.9	Dead			

Threadfin shad	Dorosoma petenense	54	1.5	Dead
Threadfin shad	Dorosoma petenense	60	1.9	Dead
Threadfin shad	Dorosoma petenense	61	1.8	Dead
Threadfin shad	Dorosoma petenense	53	1.6	Dead
Threadfin shad	Dorosoma petenense	60	1.9	Dead
Threadfin shad	Dorosoma petenense	58	1.9	Dead
Threadfin shad	Dorosoma petenense	56	1.7	Dead
Threadfin shad	Dorosoma petenense	57	1.8	Dead
Threadfin shad	Dorosoma petenense	61	2	Dead
Threadfin shad	Dorosoma petenense	72	2.7	Dead
Threadfin shad	Dorosoma petenense	62	2	Dead
Threadfin shad	Dorosoma petenense	60	1.8	Dead
Threadfin shad	Dorosoma petenense	62	2.2	Dead
Threadfin shad	Dorosoma petenense	60	1.9	Dead
Threadfin shad	Dorosoma petenense	61	2.2	Dead

MAR-I-0-101-02 4/19/2007 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	56	3.9	Dead			
Bluegill	Lepomis macrochirus	65	4.7	Dead			
Bluegill	Lepomis macrochirus	51	2.8	Dead			
Bluegill	Lepomis macrochirus	62	4.3	Dead			
Threadfin shad	Dorosoma petenense	60	2.1	Dead			
Threadfin shad	Dorosoma petenense	61	1.7	Dead			

Threadfin shad	Dorosoma petenense	90	7.1	Dead
Threadfin shad	Dorosoma petenense	71	2.7	Dead
Threadfin shad	Dorosoma petenense	62	1.8	Dead
Threadfin shad	Dorosoma petenense	66	1.9	Dead
Threadfin shad	Dorosoma petenense	60	1.8	Dead
Threadfin shad	Dorosoma petenense	62	2.3	Dead
Threadfin shad	Dorosoma petenense	66	2.3	Dead
Threadfin shad	Dorosoma petenense	62	2.1	Dead
Threadfin shad	Dorosoma petenense	69	2.5	Dead
Threadfin shad	Dorosoma petenense	60	2.1	Dead
Threadfin shad	Dorosoma petenense	60	2	Dead
Threadfin shad	Dorosoma petenense	64	2.3	Dead
Threadfin shad	Dorosoma petenense	61	1.8	Dead
Threadfin shad	Dorosoma petenense	70	3.3	Dead
Threadfin shad	Dorosoma petenense	66	2.2	Dead
Threadfin shad	Dorosoma petenense	65	1.9	Dead

MAR-I-0-101-08 4/19/2007 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	51	1.8	Dead			
Bluegill	Lepomis macrochirus	62	3.5	Dead			
Bluegill	Lepomis macrochirus	56	2.6	Dead			
Bluegill	Lepomis macrochirus	50	1.7	Dead			
Bluegill	Lepomis macrochirus	58	2.9	Dead			

Bluegill	Lepomis macrochirus	62	3.5	Dead
Bluegill	Lepomis macrochirus	66	4	Dead
Bluegill	Lepomis macrochirus	65	4.1	Dead
Threadfin shad	Dorosoma petenense	61	1.2	Dead
Threadfin shad	Dorosoma petenense	71	2.2	Dead
Threadfin shad	Dorosoma petenense	52	1	Dead
Threadfin shad	Dorosoma petenense	73	4	Dead
Threadfin shad	Dorosoma petenense	61	0.9	Dead
Threadfin shad	Dorosoma petenense	65	1.6	Dead
Threadfin shad	Dorosoma petenense	63	1.6	Dead
Threadfin shad	Dorosoma petenense	64	1.2	Dead
Threadfin shad	Dorosoma petenense	60	1.4	Dead
Threadfin shad	Dorosoma petenense	67	1.5	Dead
Threadfin shad	Dorosoma petenense	61	1.4	Dead
Threadfin shad	Dorosoma petenense	63	1.5	Dead
Threadfin shad	Dorosoma petenense	52	1.3	Dead
Threadfin shad	Dorosoma petenense	56	1.1	Dead
Threadfin shad	Dorosoma petenense	55	1.4	Dead
Threadfin shad	Dorosoma petenense	56	1.1	Dead
Threadfin shad	Dorosoma petenense	111	12.6	Dead
Threadfin shad	Dorosoma petenense	60	1.2	Dead
Threadfin shad	Dorosoma petenense	67	2	Dead
Threadfin shad	Dorosoma petenense	53	0.9	Dead
Threadfin shad	Dorosoma petenense	60	1.3	Dead

Threadfin shad	Dorosoma petenense	66	1.7	Dead
Threadfin shad	Dorosoma petenense	51	0.8	Dead
Threadfin shad	Dorosoma petenense	70	2	Dead
Threadfin shad	Dorosoma petenense	66	1.9	Dead
Threadfin shad	Dorosoma petenense	61	1.8	Dead
Threadfin shad	Dorosoma petenense	59	1.5	Dead
Threadfin shad	Dorosoma petenense	62	1.7	Dead
Threadfin shad	Dorosoma petenense	54	1.4	Dead
Threadfin shad	Dorosoma petenense	55	1.7	Dead
Threadfin shad	Dorosoma petenense	56	1.5	Dead
Threadfin shad	Dorosoma petenense	56	1.4	Dead
Threadfin shad	Dorosoma petenense	72	3.2	Dead
Threadfin shad	Dorosoma petenense	56	1.4	Dead
Threadfin shad	Dorosoma petenense	66	1.6	Dead
Threadfin shad	Dorosoma petenense	57	1.4	Dead
Threadfin shad	Dorosoma petenense	62	1.4	Dead
Threadfin shad	Dorosoma petenense	61	1.5	Dead
Threadfin shad	Dorosoma petenense	69	2.5	Dead
Threadfin shad	Dorosoma petenense	55	1.2	Dead
Threadfin shad	Dorosoma petenense	62	1.9	Dead
Threadfin shad	Dorosoma petenense	62	1.8	Dead
Threadfin shad	Dorosoma petenense	62	1.7	Dead
Threadfin shad	Dorosoma petenense	61	1.4	Dead
Threadfin shad	Dorosoma petenense	62	1.4	Dead

Threadfin shad	Dorosoma petenense	57	1.2	Dead			
Threadfin shad	Dorosoma petenense	56	1.4	Dead			

MAR-I-0-102-00 4/23/2007 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*
Bluegill	Lepomis macrochirus	61	3.6	Live			
Bluegill	Lepomis macrochirus	57	2.8	Live			
Bluegill	Lepomis macrochirus	58	2.2	Live			
Bluegill	Lepomis macrochirus	54	3.2	Live			
Bluegill	Lepomis macrochirus	52	3.7	Live			
Bluegill	Lepomis macrochirus	63	4.3	Live			
Bluegill	Lepomis macrochirus	68	3.6	Live			
Bluegill	Lepomis macrochirus	62	3.7	Live			
Bluegill	Lepomis macrochirus	57	3.6	Live			
Bluegill	Lepomis macrochirus	60	2.8	Live			
Bluegill	Lepomis macrochirus	62	1.9	Live			
Bluegill	Lepomis macrochirus	57	2.9	Live			
Bluegill	Lepomis macrochirus	63	4.3	Live			
Bluegill	Lepomis macrochirus	81	7.4	Live			
Bluegill	Lepomis macrochirus	69	4.8	Live			
Bluegill	Lepomis macrochirus	62	3.5	Live			
Bluegill	Lepomis macrochirus	64	1.7	Live			
Bluegill	Lepomis macrochirus	63	2.2	Live			
Bluegill	Lepomis macrochirus	87	8.1	Live			

Bluegill	Lepomis macrochirus	96	12.7	Live			
Bluegill	Lepomis macrochirus	96	12.9	Live			
Bluegill	Lepomis macrochirus	62	4.3	Live			
Bluegill	Lepomis macrochirus	61	3.3	Dead			
Bluegill	Lepomis macrochirus	65	3.4	Dead			
Bluegill	Lepomis macrochirus	66	4.2	Live			
Bluegill	Lepomis macrochirus	61	2.8	Live			
Bluegill	Lepomis macrochirus	61	3.6	Live			
Bluegill	Lepomis macrochirus	66	1.6	Live			
Bluegill	Lepomis macrochirus	60	2.7	Live			
Bluegill	Lepomis macrochirus	50	1.6	Live			
Bluegill	Lepomis macrochirus	70	4.9	Live			
Bluegill	Lepomis macrochirus	60	3.9	Live			
Redear sunfish	Lepomis microlophus	112	20.2	Live			
Threadfin shad	Dorosoma petenense	52	0.7	Dead			
Threadfin shad	Dorosoma petenense	95	7.4	Dead			
Threadfin shad	Dorosoma petenense	90	7.7	Dead			
Threadfin shad	Dorosoma petenense	66	1.8	Dead			
Threadfin shad	Dorosoma petenense	50	0.6	Dead			
Threadfin shad	Dorosoma petenense	70	2.1	Dead			
Yellow bullhead	Ictalurus natalis	181	88.2	Dead			

MAR-I-0-103-00 5/2/2007 Impingement

Fish Common Name	*Scientific Name*	*Length (mm)*	*Weight (gm)*	*Condition*	*Batch Count*	*Batch Weight (gm)*	*Batch Length Category*

Bluegill	Lepomis macrochirus	65	4.3	Dead
Bluegill	Lepomis macrochirus	62	3.6	Dead
Bluegill	Lepomis macrochirus	50	2.3	Dead
Bluegill	Lepomis macrochirus	111	24	Dead
Bluegill	Lepomis macrochirus	69	5.5	Dead
Bluegill	Lepomis macrochirus	62	4.2	Dead
Bluegill	Lepomis macrochirus	62	4	Dead
Bluegill	Lepomis macrochirus	61	4.2	Dead
Bluegill	Lepomis macrochirus	57	3	Dead
Bluegill	Lepomis macrochirus	55	2.6	Dead
Bluegill	Lepomis macrochirus	61	3.4	Dead
Bluegill	Lepomis macrochirus	71	5.2	Dead
Bluegill	Lepomis macrochirus	66	4.8	Dead
Bluegill	Lepomis macrochirus	70	4.8	Dead
Bluegill	Lepomis macrochirus	66	4.6	Dead
Bluegill	Lepomis macrochirus	60	3.2	Dead
Bluegill	Lepomis macrochirus	89	10.7	Dead
Bluegill	Lepomis macrochirus	59	3.1	Dead
Bluegill	Lepomis macrochirus	69	3.9	Dead
Bluegill	Lepomis macrochirus	40	1.4	Dead
Bluegill	Lepomis macrochirus	61	4	Dead
Bluegill	Lepomis macrochirus	63	3.5	Dead