

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: )  
)  
WATER QUALITY STANDARDS AND )  
EFFLUENT LIMITATIONS FOR THE ) R08-9  
CHICAGO AREA WATERWAY SYSTEM ) (Rulemaking – Water)  
AND THE LOWER DES PLAINES RIVER: )  
PROPOSED AMENDMENTS TO 35 ILL. )  
Adm. Code Parts 301, 302, 303, and 304 )

**NOTICE OF FILING**

To:

John Therriault, Clerk  
Illinois Pollution Control Board  
James R. Thompson Center  
100 West Randolph St., Suite 11-500  
Chicago, IL 60601

Marie Tipsord, Hearing Officer  
Illinois Pollution Control Board  
James R. Thompson Center  
100 West Randolph St, Suite 11-500  
Chicago, Il 60601

Deborah J. Williams, Assistant Counsel  
Stefanie N. Diers, Assistant Counsel  
Illinois Environmental Protection Agency  
1021 North Grand Avenue East  
P.O. Box 19276  
Springfield, IL 62794-9276

Persons included on the attached  
**SERVICE LIST**

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Pollution Control Board **PRE-FILED TESTIMONY OF DR. DAVID THOMAS** on behalf of Environmental Groups, Environmental Law and Policy Center, Natural Resources Defense Council, Prairie Rivers Network, Sierra Club – Illinois Chapter, Friends of the Chicago River, and Openlands, a copy of which is herewith served upon you.

Respectfully Submitted,



Albert Ettinger  
Senior Staff Attorney  
Environmental Law & Policy Center  
35 E. Wacker Dr. Suite 1300  
Chicago, Il 60601  
(312) 795-3707

DATED: August 4, 2008

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF: )  
)  
WATER QUALITY STANDARDS AND )  
EFFLUENT LIMITATIONS FOR THE ) R08-9  
CHICAGO AREA WATERWAY SYSTEM ) (Rulemaking – Water)  
AND THE LOWER DES PLAINES RIVER: )  
PROPOSED AMENDMENTS TO 35 ILL. )  
Adm. Code Parts 301, 302, 303, and 304 )

**TESTIMONY OF DR. DAVID L. THOMAS**

**I. Summary and Qualifications**

My name is Dr. David L. Thomas. I have been asked to testify today on behalf of the Environmental Law and Policy Center, Natural Resources Defense Council, Prairie Rivers Network, Sierra Club – Illinois Chapter, Friends of the Chicago River, and Openlands in support of the water quality standards regulations proposed by the Illinois Environmental Protection Agency (“IEPA”) upgrading and updating the designated aquatic life uses of the Lower Des Plaines River and the Chicago Area Waterway System (CAWS).

My testimony draws on over forty years of experience in the field of aquatic ecology, Midwest fish populations, and thermal effects from power plant discharges and over ten years as Chief of the Illinois Natural History Survey. I have reviewed the documents upon which IEPA has based the aquatic life use designations in this rulemaking, and I believe that the updated aquatic life use designations for the Lower Des Plaines River and the CAWS are appropriate.

I have experience conducting habitat studies and life history studies of various species of fish on large rivers, including the Kaskaskia River (IL), the lower Delaware River and its tributaries and estuary, and the tidal tributaries, bays, and inshore ocean along the New Jersey

coast. In addition, I have seen much of the system subject to this rulemaking by boat. I have attached a copy of my resume and a short biography as Exhibits 1 and 2.

**II. The Habitat in the Upper Dresden Island Pool is Sufficient to Minimally Attain the Clean Water Act Goal**

As an aquatic ecologist, I believe that it is sensible to determine the highest attainable aquatic life use of a waterway by studying its physical habitat characteristics. I have evaluated fish habitat using many of the parameters of the Qualitative Habitat Evaluation Index (QHEI) and have reviewed how QHEI is being used in Ohio. I believe it is a sound methodology for assessing physical habitat. I find it a reasonable conclusion that a QHEI score of 60 generally indicates that a waterway can attain the Clean Water Act goal of a balanced indigenous population of fish. I also understand the argument that a QHEI score of 45-60 is a range in which waterways may be able to meet the Clean Water Act Goal, depending on the particular characteristics of the area.

QHEI scores give a snapshot of the quality of the available habitat in the area measured, but as with many forms of scientific data there is more to interpretation than simply looking at the hard number generated by the scoring. One must consider the range of scores shown for an area, the predominant habitat characteristics as well as the presence of various micro-habitats, the factors that might be influencing QHEI scores and one's knowledge of the species in the system. Fish do not need a continuous stretch of good habitat to support life functions. Sunfish and bass, for example, will seek out a firm bottom where they can build nest, spawn, and raise their young.<sup>1</sup>

---

<sup>1</sup> The EA ichthyoplankton data (IEPA Attachment LL) indicate that some of these species are spawning in Lower Des Plaines waterways.

I have reviewed the QHEI scores used by IEPA to propose the Upper Dresden Island Pool Aquatic Life Use designation.<sup>2</sup> Scores that indicate a potential to attain the Clean Water Act goal (i.e. scores above 45) seem to predominate, and a number of scores are above the threshold of 60 that indicates locally good quality habitat. I agree with the statement in the Lower Des Plaines River UAA report (Attachment A) that:

the significant Habitat Type effect suggests that habitat improvement in Upper and Lower Dresden could result in improvement of fish communities. However, the significant month effect raises the possibility that either temperature and/or oxygen are potential factors that could be responsible for some of the observed patterns detected in the data.<sup>3</sup>

Based on these scores and my review of the record in this case on habitat, fishes and water quality of the Upper Dresden Island Pool, I believe the Upper Dresden Island Pool can support a more balanced and diverse fish population. By reducing high temperature and low dissolved oxygen stressors to the system, the fish community could be improved in terms of species abundance and diversity. Temperatures present in the Upper Dresden Island Pool at times during the summer are sufficient to cause avoidance and limit the carrying capacity of the system.

Based on my experience with rivers and reservoirs with contaminated sediment, fish in most of these systems show very little accumulation of heavy metals (with the exception of mercury). The Hey report [Attachment A] stated that toxic metals do not appear to be a toxicity problem with the exception of cadmium in the RM 286+ depositional zone.<sup>4</sup> While Burton, in his 2003 review of the Lower Des Plaines River UAA Draft Report states that “depositional sediments throughout the [Upper Illinois Waterway] are contaminated with levels of multiple

---

<sup>2</sup> QHEI scores found in the Lower Des Plaines River Use Attainability Analysis report (Attachment A), the MBI QHEI score summary (Attachment S, as amended in Exhibit 5) and the EA 2004 Lower Des Plaines River Fisheries Investigation RM 274.4 – 285.5 and summarized in Exhibits 30 and 32 in this proceeding.

<sup>3</sup> Hey and Associates, “Lower Des Plaines River Use Attainability Analysis Final Report” at 6-25 (December 2003).

<sup>4</sup> *Id.* at 3-41.

contaminants that, in many locations, pose a hazard to aquatic biota, wildlife and humans”, he also goes on to state that despite the many stressors that exist in this waterway, a thriving fish community exists which runs contrary to the UAA report predictions of lethality (in reference to temperatures).<sup>5</sup> While there is no argument that contamination of the sediments is an issue, and that organic contaminants may pose a particular food chain issue, I have not seen data that demonstrates that sediment toxicity is a major factor limiting the aquatic life potential of this system.

Furthermore, while it may be necessary in the future to remove sediment “hot spots” that are deemed to pose potential environmental and human health effects, I agree with the Lower Des Plaines River UAA Report that habitat improvement in upper and lower Dresden pool could result in improvement of the fish community.<sup>6</sup> Physical habitat can be improved---basically any structure added to water can improve habitat by providing structure for the growth of microbial organisms and macroinvertebrates that can provide food to fish. Many structures will also provide shelter and potential breeding habitat for some fish.

#### *Existing Uses*

I have also reviewed the Representative Aquatic Species Modified Use list that IEPA has used to represent the Upper Dresden Island Pool, found in Chris Yoder’s Temperature Criteria Options for the Lower Des Plaines River Final Report, Table 1 (Exhibit 15). All the species listed under Modified Use have been found in the Lower Dresden pool. In fact, all but four of the species listed under General Use category have been taken in this pool. Some 40 of these species were collected in the Dresden pool by EA in 2004. Another 5 species were reported by EA in collections going back to 1994. The white sucker, which is a temperature-sensitive

---

<sup>5</sup> Attachment A, Comments (Appendix G), Burton, G. Allen, “Review of the Lower Des Plaines River Use Attainability Analysis Draft Report” at 9-10.

species, was collected in the Dresden pool every year since 1994. The logperch, also a temperature-sensitive species, was collected fairly regularly in the pool (EA reported 126 specimens from 1994 through 2002 collections).

There is no question, based on the EA 1994 Ichthyoplankton Investigation (Attachment LL), that spawning takes place in the Upper Dresden Island Pool. The EA study identified 73 potential spawning species in the Upper Illinois Waterway. A total of 21,789 larval and young-of-the-year fish were collected, representing at least 48 species.<sup>7</sup> The authors stated that the spawning and nursery conditions in Upper Dresden Pool were clearly superior to those in Lockport and Brandon Pools, and they collected 37 species in the Dresden Pool.

**III. The CAWS Aquatic Life Use A Waters Can Support Early Life Stages of Tolerant to Intermediately Tolerant Types**

I believe these waterways could support tolerant or intermediately tolerant species, including the early life stages of those species, based on my review of the habitat data used by IEPA and my personal knowledge of the Chicago Area Waterway System. In fact, I would be surprised if spawning does not currently take place in those reaches for those species that are common in the waterways.

I have also reviewed the Representative Aquatic Species "Secondary Contact" list used by IEPA to represent the CAWS-A waterways. All of the representative fish species for Secondary Contact waters are found there.<sup>8</sup> In addition, all but six of the 27 species listed for

---

<sup>6</sup> Hey and Associates [Attachment A] at 6-25.

<sup>7</sup> Because a number of larvae were only identified to the genus or family level there were possibly as many as 62 species collected

<sup>8</sup> Attachment B, CDM report on the Chicago Area Waterway System Use Attainability Analysis.

Modified use waters were also found in one or more of the waterways.<sup>9</sup> The temperature sensitive white sucker was found in the CSSC, North Branch and Cal-Sag Channel.<sup>10</sup>

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Dr. David Thomas". The signature is written in a cursive style with a large initial "D" and "T".

Dr. David Thomas, Ph.D  
Chief Emeritus INHS

---

<sup>9</sup> *Id.*

<sup>10</sup> *Id.*

## **Biography**

David L. Thomas received his BS in Zoology (1965) and MS in Ecology (1967) from the University of Illinois. He received his PhD in Ecology and Systematics (1971) from Cornell University.

From 1970 through early 1985, Dr. Thomas worked for two environmental consulting firms and a Boston-based architect-engineering firm on various environmental projects. From May 1985 through November 1997, Dr. Thomas was the Director of the Illinois Waste Management and Research Center (WMRC), which is a Division within the Illinois Department of Natural Resources (DNR). He oversaw all of the Center's activities, including its pollution prevention program and sponsored research program.

Dr. Thomas has been active both nationally and internationally in the area of pollution prevention and sustainable development. He was on the first Governing Board for the National Pollution Prevention Roundtable from 1990 to 1994 and was Chair of the Board of Directors from October 1993 to September 1994. He represented the Roundtable on EPA's American Institute of Pollution Prevention (AIPP) from 1992 through 1996.

From December 1997 until February 29, 2008 when he retired, David Thomas was Chief of the Illinois Natural History Survey, a Division within DNR and an affiliate agency of the University of Illinois. The Survey is now a part of the Institute of Natural Sciences and Sustainability at the University of Illinois. The Survey has some 400 scientists and support staff doing research on and providing information related to the biota of Illinois. Many of the studies conducted by Survey scientists are contributing to the wise preservation, restoration, management, and utilization of natural resources in the state.

While at the Survey Dr. Thomas had significant involvement in issues related to exotic invasive species. In 2000, he was non-federal co-chair for the Research and Information workgroup for the National Invasive Species Advisory Committee. More recently he was co-chair for DNR's Invasive Species Working Group that addressed research, management and control of invasive species within Illinois. He also served on the state's Aquatic Nuisance Species Steering Committee and worked on issues related to ballast water and invasive species. He was also active on issues related to the restoration of the Illinois River, including serving on the Science Advisory Committee to the Illinois River Advisory Council, and the TNC Science Advisory Committee for restoration of Emiquon. He chaired the American Fisheries Society committee which addressed the Farm Bill 2002 that concluded with a Pending Legislation Opinion in the Nov. 2001 issue of Fisheries. He has been an active member of the Steering Committee for Chicago Wilderness and in mid-2000s became a board member for Chicago Wilderness Trust. He also served on a number of other boards and advisory groups dealing with natural resource issues in Illinois and the Midwest.

**RESUME**

**David L. Thomas**

**EXPERIENCE**

David L. Thomas was Chief of the Illinois Natural History Survey from December 1, 1997 to February 29, 2008 when he retired. In September 2008 the Survey celebrated its 150<sup>th</sup> anniversary, and is the largest (a total staff of about 400) and best known of the various state natural history surveys. From July 1995 through June 2008 it was a Division of the Illinois Department of Natural Resources (DNR), but in July 2008 it became a part of the Institute of Natural Sciences and Sustainability within the University of Illinois. Survey scientists conduct research on all aspects of the biota of Illinois and have research projects that are nationally and internationally recognized. Major research areas include exotic invasive species, watershed management, restoration ecology, wetlands, fish and wildlife management, effects of habitat fragmentation, and economic entomology, to name a few. Many of the studies conducted by Survey scientists are contributing to the wise preservation, management, and utilization of natural resources in the state. In addition, taxonomists at the Survey manage biological collections of national significance.

Since coming to the Survey, Dr. Thomas has had significant involvement in issues related to exotic invasive species. In 2000, he was non-federal co-chair for the Research and Information workgroup for the National Invasive Species Advisory Committee. For the last few years before his retirement he chaired DNR's Invasive Species Working Group that was addressing research, management and control of invasive species within Illinois. He also served on the state's Aquatic Nuisance Species Steering Committee and worked on issues related to ballast water and invasive species. He has been active on issues related to the restoration of the Illinois River, including serving on the Science Advisory Committee to the Illinois River Advisory Council, and the TNC Science Advisory Committee for restoration of Emiquon. He chaired the American Fisheries Society committee which addressed the Farm Bill 2002, that concluded with a Pending Legislation Opinion in the Nov. 2001 issue of Fisheries. He has been an active member of the Steering Committee for Chicago Wilderness. In 2004 he became a board member for the Chicago Wilderness Trust.

**PRIOR HISTORY**

Prior to joining the Survey, Dr. Thomas was Director of the Illinois Waste Management and Research Center from 1985 through November 1997. His responsibilities consisted of directing and managing all Center activities, which included five major programs: research on significant hazardous waste problems in the state; information collection, analyses and dissemination; industrial and technical assistance; data management; pollution prevention; and laboratory services. The latter became a full service when WMRC's Hazardous Materials Laboratory became operational in April 1990.

Dr. Thomas has represented DNR (and before 1996 the Department of Energy and Natural Resources) on the Illinois Hazardous Waste Advisory Council and the Governor's Pollution Prevention Advisory Council. He was also a member of Argonne's Hazardous Materials Program Advisory Committee in 1986, which examined the potential of a national hazardous waste research center at Argonne National Lab. In the summer of 1990, Dr. Thomas was elected as a board member of the National Roundtable of State Pollution Prevention Programs; in the fall of 1992, he became the Chairman of the Board. During 1990 he also was selected as a board member of the non-profit Waste Reduction Institute for Training and Research in Minneapolis, Minnesota. During 1992 and 1993, Dr. Thomas represented the State of Illinois as a member of the Environmental Task Force for the National Council of State Legislators.

From 1991 through 1995, Dr. Thomas represented the State of Illinois on DOE's State and Tribal Government Working Group, overseeing the activities of DOE to clean up contaminated federal facilities. Dr. Thomas has represented the State on numerous other occasions. During November 9-10, 1988, Dr. Thomas was one of about 40 people brought to Washington, D.C. to help USEPA develop its "Five Year Pollution Prevention Research Program." This report went to Congress and established EPA's future research agenda in this area. In April 1987, Dr. Thomas was one of about 50 invited participants at a USEPA workshop entitled, "Should EPA Develop a Clearinghouse on Clean-up Technologies." Also, on October 16, 1990, Dr. Thomas was one of about 20 invited participants at an EPA "Incubators and Test and Evaluation Facilities" workshop, designed to determine how EPA might use fixed facilities such as the WMRC's Hazardous Material Laboratory to promote research on

innovative clean-up technologies. In December 1992, Dr. Thomas participated in a GAO expert panel session on state pollution prevention program implementation and in a USAID workshop on Pollution Prevention, where he represented both his Illinois program and the National Roundtable of State Pollution Prevention programs. During the spring and summer of 1995, Dr. Thomas was on a panel of experts discussing state pollution prevention and technical assistance programs before the Congressional Office of Technology Assessment, and he submitted a 38-page paper on the Illinois program.

Dr. Thomas has participated in state-sponsored waste management conferences in other midwestern states (Wisconsin, Missouri, Indiana, Ohio, Michigan, and Kentucky). He was brought in as an outside expert to help them establish programs similar to WMRC's in Illinois. During 1990 and 1991, Dr. Thomas was on the conference committees for two Engineering Foundation Conferences related to pollution prevention. These meetings brought together recognized experts in the area of pollution prevention to address future directions in this area.

Prior to joining WMRC, Dr. Thomas worked 5 years as Senior Ecologist and Manager of the Ecological Sciences Group for Chas. T. Main's Planning and Scientific Services Division. He was responsible for the Division's efforts in the fields of aquatic and terrestrial ecology, forestry, watershed management, fisheries resource development, and the fate and toxicity of chemicals in the environment. In regards to the latter area, he provided the following:

- 1) Provided ecological input to an EIS for a proposed incinerator (RKI) in upstate New York;
- 2) Reviewed all ecological issues and delineated the major environmental areas of concern for a town in Massachusetts which was considering a proposed hazardous waste facility;
- 3) Studied the fate of toxic chemicals from an industrial facility located on the Catawba River in North Carolina, including toxic effects of leachates on aquatic biota and food chain effects; and
- 4) Determined the ecological effects of dredging and burying a 345kV transmission line under the Hudson River. Provided expert testimony before the Public Utilities Commission on both the environmental effects of the disposal and dredging of bottom sediments, and addressed the potential effects of releases of PCBs, heavy metals and various organic compounds to the water.

Prior to joining MAIN, Dr. Thomas conducted fisheries and aquatic ecology studies of the Kaskaskia River in Illinois, the Delaware River estuary, and the bays and inshore ocean along the New Jersey coast. He was Technical Director and Vice President for a prominent environmental consulting firm conducting ecological evaluations for proposed and operating power plants in Delaware Bay and along the New Jersey coast. The focus of many of the studies he was involved in dealt with potential impacts on fish populations, including the effects of thermal effluents and cooling water intake systems. In addition, as Manager of the Ecological Division of a Philadelphia based consulting firm, he directed the activities of over 80 scientists. Dr. Thomas has prepared numerous environmental reports for clients for submittal to such regulatory groups as USEPA, NRC, and the Army Corps of Engineers.

## **EDUCATION**

Bachelor of Science in Zoology (1964)  
Master of Science in Ecology (1967)  
University of Illinois

Doctor of Philosophy in Ecology and Systematics (1971)  
Cornell University

## **CERTIFICATION**

Certified Fisheries Scientist, American Fisheries Society

**PROFESSIONAL AFFILIATIONS**

Federation of Research Biologists (past member)  
Life Member, American Fisheries Society  
American Association for the Advancement of Science  
North American Lake Management Society (past member)  
Water Pollution Control Federation  
Society of Ichthyologists and Herpetologists (past member)  
Natural Areas Association  
National Audubon Society  
Nature Conservancy  
American Institute of Biological Sciences  
American Birding Association

**COMMITTEES AND BOARDS**

Illinois River Science Advisory Committee (member) - advisory to Illinois River Coordinating Council  
Illinois Nature Preserves Commission (technical advisor and legislative requirement to appt. board members)  
UIUC Arboretum Board of Directors (board member)  
Allerton Policy Advisory Board (past board member)  
Chicago Wilderness Steering Committee and Council (past INHS representative)  
Aquatic Nuisance Species Steering Committee (member)  
TNC Emiquon Science Advisory Committee (member)  
DNR Invasive Species Team (chair)  
Deer-Vehicle Collision Board of Directors (board member)  
Non-Native Species Task Group for the State of the Nation's Ecosystems report - Heinz Center (member)  
Champaign County Board - River Bend Park Advisory Committee (member)  
Chicago Wilderness Trust Board (board member)  
UIUC Sustainable Landscape Committee  
Interagency Committee on Pesticides (legislatively mandated)  
Illinois River Basin Work Group (member)  
TNC's Science Advisory Committee

**PUBLICATIONS**

Thomas, D.L., et al. 2001. Farm Bill 2002: A discussion of the conservation aspects of the Farm Bill from a fisheries perspective. *Fisheries*, 26(11): 36-38.

Post, S.L. and D.L. Thomas. 1999. Illinois Natural History Survey. *The Illinois Steward*, 8(1): 9-16.

Thomas, D.L. 1997. The Future of Pollution Prevention. EPA's Pollution Prevention Report for 1996 (contributed paper).

Lindsey, T., S. Neese, and D. Thomas. 1996. "Implications of Pollution Prevention for Water Pollution Control." *Water Quality International*, March/April 1996, Oxford, UK, p.32-36.

Case, L., L. Mendicino and D. Thomas. 1996. "Developing and Maintaining a Pollution Prevention Program." pages 99-119 in Industrial Pollution Prevention Handbook. Freeman, Harry M., ed. McGraw Hill, Inc., New York, NY.

Thomas, D.L. 1993. "Do We Believe in Pollution Prevention?" Pages 12-23 in **Shaping the Future of Pollution Prevention**. Nashville, TN, Proceedings of the National Roundtable of State Pollution Prevention Programs.

Thomas, D.L. 1993. "No Cost Government Services to Assist Environmental Compliance." pages 931-995 in Proceedings of the Illinois Environmental Regulatory Conference, Institute of Business Law, Chicago, IL.

Thomas, D.L., G.D. Miller, J. Peden, and T. Lindsey. 1993. "Pollution Prevention Research at the Hazardous Waste Research and Information Center." Pages 589-602. In Proceedings of the Sixth Annual Environmental Management and Technology Conference/Central, Chicago, IL.

Thomas, David L. and Gary D. Miller. 1992. "Using Existing Hazardous Waste Databases: Limitations and Future Needs." Hazardous Waste and Hazardous Materials, Mary Ann Liebert, Inc. Publ. 9 (1): 97-111.

Thomas, David L. and Gary D. Miller. 1992. "Illinois' Program to Promote Industrial Waste Reduction." Journal of Hazardous Materials 29: 199-235, Amsterdam.

Thomas, David L. 1992. "Do we really believe in pollution prevention." The Engineering Foundation Conference, Pollution Prevention – Making It Happen. Santa Barbara, CA.

Thomas, David L., Gary D. Miller and Daniel D. Kraybill. 1991. "Illinois' Program to Promote Pollution Prevention." Proceedings of the Fourth Annual Hazardous Materials (HazMat) Management Conference/Central, Rosemont, Illinois, April 4.

Plewa, M.J., R.A. Minear, D. Ades-McInerney, D.L. Thomas, and G.D. Miller. 1989. A Computerized Degree of Hazard Assessment for Evaluation of Wastes: An Innovative Aid to Management of Residuals. Water Science Tech., Vol. 21, Great Britian, pp 821-831.

Kraybill, D.D. and D. L. Thomas. 1988. Waste Audits and the Reduction of Liability for Small Businesses. in Proceedings of the HAZMAT Central >88 Conference, Chicago, Illinois.

Kraybill, D.D. and D.L. Thomas. 1988. Waste Reduction in Illinois: An Overview. in Proceedings of the 42<sup>nd</sup> Industrial Waste Conference, May 12-14, 1986; Purdue University, West Lafayette, Indiana; Lewis Publishers, Inc., Chelsea, Michigan.

Thomas, D.L., D.D. Kraybill and G.D. Miller. 1987. A Waste Reduction Program and Assessment of Current Status for Illinois, pp. 740-949. In DeWaal, K.J.A. and W.J. Van Den Brink. Eds. Environmental Technology. Proc. Second European Conference on Environmental Technology, Amsterdam, The Netherlands, Martinus Nijhoff Publishers.

Thomas, D.L., G.D. Miller, and J.M. Kamin. 1987. Hazardous Waste Management: The Illinois Approach. pp. 265-281, in Karen B. Levitan Ed., Government Infrastructures, Greenwood Press, Westport, Connecticut.

Doll, F.L., D.D. Kraybill, and D.L. Thomas. 1987. Illinois Hazardous Waste Research and Information Center: Development of an Industrial and Technical Assistance Program. pp. 357-364, in Proceedings of the 41<sup>st</sup> Industrial Waste Conference, May 13-15, 1986; Purdue University, West Lafayette, Indiana; Lewis Publishers, Inc., Chelsea, Michigan.

Thomas, D.L., G.D. Miller, D.D. Kraybill. 1987. "A Waste Reduction Program and Assessment of Current Status for Illinois." Proceedings of the National Conference on Hazardous Wastes and Hazardous Materials; 1987 March 16-18; Washington, DC: U.S. Environmental Protection Agency. 402-406.

Tatham, T.R., D.L. Thomas and D.J. Danila. 1984. "Fishes of Barnegat Bay" pages 241-301 in M.J. Kennish and R.A. Lutz (eds.). Ecology of Barnegat Bay, New Jersey. Springer-Verlag, Heidelberg, West Germany. 1984.

Thomas, D.L. 1981. "Comparative Ecology of Drums from the Delaware River Estuary," in Marine Recreational Fisheries, 6. Sport Fishing Institute, Washington, DC. 1981.

Thomas, D.L. 1979. "A Review of Water Intakes Screening Options for Coastal Water Users with Recommendation for Ocean Thermal Energy Conversion (OTEC) Plants," Argonne National Laboratories.

Thomas, D.L. 1978. "Sport and Commercial Fisheries Near the Proposed Atlantic Generating Station," Atlantic States Marine Fisheries Commission.

Thomas, D.L. 1978. "Potential Use of Profile-Wire Screens for OTEC," U.S. Department of Energy.

Tatham, T.R., D.L. Thomas, and G.J. Miller. 1978. "Survival of Fishes and Macroinvertebrates Impinged at Oyster Creek Generating Station." pages 235-244, in L.D. Jensen, Ed., Fourth National Workshop on Entrainment and Impingement. Ecological Associates Communication, Melville, NY.

Co-Author, "Electric Power Generation and Transmission Decisions Affecting Fish and Wildlife Resources," Fish and Wildlife Services/Office of Biological Services. 1978.

Fava, J. and D.L. Thomas. 1978. "Use of Chlorine to Control OTEC Biofouling," Pergamon Press, Ltd., Ocean Engineering.

Thomas, D.L. and G.J. Miller. 1977. "Impingement Studies at the Oyster Creek Generating Station, Forked River, New Jersey from September to December 1975". Pages 317-342, in L.D. Jensen, Ed., Third National Workshop on Entrainment and Impingement, Ecological Analysts, Inc., Melville, NY.

Milstein, C.B. and D.L. Thomas. 1976. Fishes New or Uncommon to the New Jersey Coast. Chesapeake Science, Vol. 17. No. 3, p. 198-204.

Thomas, D.L. and B.A. Smith. 1973. Studies of young of the black drum, Pogonias cromis, in low salinity waters of the Delaware Estuary. Chesapeake Science, Vol. 14, No. 2, p. 124-130.

Thomas, D.L. 1971. The Early Life History and Ecology of Six Species of Drum (Sciaenidae) in the Lower Delaware River, a Brackish Tidal Estuary. Ichthyological Associates, Bull. No. 3, 247p.

Thomas, D.L. 1970. An Ecological study of four darters of the genus Percina (Percidae) in the Kaskaskia River, Illinois. Illinois Natural History Survey Biological Notes No. 70. 18pp.

## **PRESENTATIONS**

From 1985 through 1997, Dr. Thomas averaged about 6-10 presentations a year. The papers above give an indication of some of the topics covered. Since 1997 he has given about 3 presentations a year, including a few keynote addresses:

October 1995 – 20<sup>th</sup> Governor's Conference on the Environment in Lexington, KY, "A look to the future of environmental protection"

April 1999 – National Pollution Prevention Roundtable, Wash. DC, "Building a Sustainable Future: The Chicago Wilderness Model"

June 1999 – Florida Pollution Prevention Roundtable, Keynote Address: "Building a Sustainable Future"

A number of recent talks have dealt with invasive species issues and some examples are given below:

March 2001 – Illinois Renewable Natural Resources Conference, "Illinois' Invasive Species Program".

Sept. 2001 – International Ballast Technology Investment Fair, "Overview of global aquatic invasive species problems".

April 2003 – Keynote address, Illinois State Academy of Sciences, Illinois Invasive Species Symposium, "Illinois Invaded".

## **TESTIMONY**

Testimony before the Illinois Pollution Control Board, Dissolved Oxygen Standards, August 12, 2004

Testimony before the Illinois Pollution Control Board, Outstanding Resource Waters (ORWs),  
David L. Thomas and Kevin S. Cummings. March 2001

Before the Illinois General Assembly's select Joint Committee for the Remediation of Hazardous Waste in the Lake Calumet Area - Testimony on HWRIC's Lake Calumet Studies. August 25, 1988.

Before the Illinois Pollution Control Board - Comments on the Special Waste Categorization Project. May 26, 1987.

Before the Illinois Pollution Control Board - Comments on the Illinois State Chamber of Commerce's (ISC) proposed amendments to Chapter 7 and 9, R84-17, Docket B, 7 pages plus attachment, June 16, 1986.

1981-1984 - As senior ecologist at Chas. T. Main Inc., for the Prattsville Pumped Storage Project, Dr. Thomas was involved in all aspects of the environmental case before Federal Energy Regulatory Commission (FERC). He helped develop testimony, technical position papers, literature support, and hearing support for environmental witnesses. He was involved in the writing of technical arguments for the initial rebuttal and reply briefs. In conjunction with the Prattsville Project, Dr. Thomas provided testimony before the State of New York Energy Planning Board on the environmental compatibility of pumped-storage projects and the maintenance of fisheries resources.

For the Marcy-South transmission line project, Dr. Thomas testified on the environmental effects of dredging and disposal of numerous marine and estuarine species. Of particular concern were the potential effects of PCB's and heavy metals in the sediments and leaks of dielectric fluid.

## **LECTURER**

Laboratory Instructor for Advanced Ichthyology and Biology of Fishes at Cornell University.

## **PROFESSIONAL HISTORY**

December 1997 to date

### **Illinois Natural History Survey**

Chief - Directs and manages the scientific research, monitoring and education and outreach programs of the Survey. The mission of the Survey is to "investigate and document the biological resources of Illinois and other areas, and to acquire and provide natural history information that can be used to promote the common understanding, conservation, and management of these resources."

May 1985 to December 1997

### **Illinois Waste Management and Research Center (formerly the Hazardous Waste Research and Information Center)**

Director - Directs and manages all Center activities including its five major programs: Research, Information Services, Industrial and Technical Assistance, Data Management, and Laboratory Services. Assures that the Center is addressing hazardous-waste issues of most importance to the State and is coordinating its efforts with state and federal agencies and scientists.

1979 to May 1985

### **Chas T. Main, Inc. Boston, Massachusetts**

Manager, Ecological Sciences Group - Provides a review function, impact evaluation, and quality control for a variety of projects including the following: small hydro, tidal power, transmission right-of-ways, and a variety of overseas jobs including hydro development projects and power siting studies.

Senior Ecologist - Responsible for all ecological work and the coordination of this work with MAIN's engineering and licensing efforts for the Power Authority of the State of New York's Prattsville Pumped Storage Project. Provided back-up and support for MAIN's Ecological Consultant for field studies, data analysis, and hearings. Prepared responses to regulatory agencies and helped develop the Brief, discovery requests, and cross examination questions. Helped to develop the mitigation program for the Prattsville Project, New York.

Provided environmental input related to various design features for Public Service Electric and Gas Company of New Jersey, for the Merrill Creek Water Storage Project. Reviewed environmental reports prepared for the project. Provided data interpretation, and helped prepare licensing documentation for environment reports. Provided technical review for all environmental reports, quality assurance for aspects of field work, and assisted in impact evaluations for proposed fossil stations and combustion turbines for Buckeye Power, Inc., Ohio.

1978 to 1979                      **Radiation Management Corporation**  
**Philadelphia, Pennsylvania**

General Manager, Ecological Division - Directed the activities of over 80 scientists at three regional laboratories doing ecological studies for Delmarva Power and Light, Delaware and Philadelphia Electric Company, Pennsylvania.

Consultant - Argonne National Laboratories - Consulted on the use of ocean water intake systems and environmental and biofouling problems for Department of Energy's Ocean Thermal Energy Conversion (OTEC) program.

1970 to 1978                      **Ichthyological Associates, Inc.**  
**Absecon, New Jersey**

Vice-President; Member - Board of Governors

1975 to 1978                      Technical Director, Atlantic Projects - Responsible for projects conducted along the New Jersey coast, including 316b studies for fossil stations on the Raritan River for Jersey Central Power and Light; 316a and 316b studies plus general environmental studies for Public Service Electric and Gas Company of New Jersey, Atlantic Generating Station.

1976 to 1978                      **Frederick R. Harris and Gilbert Associates**  
**Washington, DC**

Consultant - Consulted on biofouling and environmental problems associated with potential OTEC plants.

1976 to 1977                      Senior Ecologist - Responsible for environmental input on a study for the Fish and Wildlife Service, Office of Biological Services, on electric power generation and transmission decisions affecting fish and wildlife resources.

1971 to 1975                      Project Leader - Responsible for environmental research and technical reports for marine studies for Public Service Electric and Gas Company of New Jersey for their proposed Atlantic Generating Station.

1970 to 1971                      Research Biologist - Conducted research on fishes for Public Service Electric and Gas, Salem Nuclear Generating Station, New Jersey.

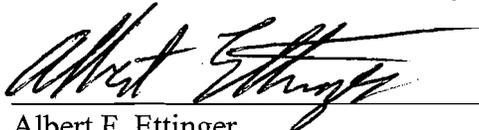
1966 to 1967                      **Illinois Natural History Survey**  
**Champaign, Illinois**

Technical Assistant and Project Assistant - Conducted research on fish, benthos, and invertebrate drift of the Kaskaskia River, Illinois for the Aquatic Biology Section of the Survey.

STATE OF ILLINOIS     )  
  )  
COUNTY OF COOK     )

**PROOF OF SERVICE**

I, Albert Ettinger, on oath state that I have served the attached **PRE-FILED TESTIMONY OF DAVID THOMAS** via U.S. Mail, first class postage prepaid, from 35 East Wacker Drive, Illinois to All Counsel of Record on the attached Service List, on this 4<sup>th</sup> day of August, 2008



Albert F. Ettinger  
Senior Staff Attorney  
Environmental Law & Policy Center  
35 E. Wacker Drive, Suite 1300  
Chicago, IL 60601

Subscribed and sworn to before me  
This 4<sup>th</sup> Day of August, 2008



Notary Public



SERVICE LIST R08-09

Marie Tipsord, Hearing Officer  
Illinois Pollution Control Board  
100 West Randolph St  
Suite 11-500  
Chicago, IL 60601

Frederick Feldman  
Ronald Hill  
Louis Kollias  
Margaret Conway  
Metropolitan Water Reclamation District  
100 East Erie St  
Chicago, IL 60611

Richard Kissel  
Roy Harsch  
DrinkerBiddle  
191 N. Wacker Dr.  
Suite 3700  
Chicago, IL 60606-1698

Claire Manning  
Brown Hay & Stephens LLP  
700 First Mercantile Bank Bldg  
205 S. Fifth St  
Springfield, IL 62705-2459

Deborah J. Williams  
Stefanie N. Diers  
Illinois EPA  
1021 North Grand Avenue  
Springfield, IL 62794-9276

Katherine Hodge  
Monica Rios  
Hodge Dwyer Zeman  
3150 Roland Avenue  
Springfield, IL 62705-5776

Charles Wesselhoft  
James Harrington  
Ross & Hardies  
150 N. Michigan Ave  
Chicago, IL 60601-7567

Dennis L. Duffield  
Director of Public Works & Utilities  
City of Joliet  
921 E. Washington St  
Joliet, IL 60431

Keith Harley  
Elizabeth Schenkier  
Chicago Legal Clinic, Inc.  
205 West Monroe Street  
4<sup>th</sup> Floor  
Chicago, IL 60606

Frederick Keady  
Vermillion Coal Company  
1979 Johns Drive  
Glenview, IL 60025

Fred L. Hubbard  
P.O. Box 12  
16 West Madison  
Danville, IL 61834

Georgia Vlahos  
Naval Training Center  
2601A Paul Jones St  
Great Lakes, IL 60088-2845

W.C. Blanton  
Blackwell Sanders LLP  
4801 Main St  
Suite 1000  
Kansas City, MO 64112

Kay Anderson  
American Bottoms  
One American Bottoms Road  
Sauget, IL 62201

James L. Daugherty  
Thorn Creek Basin Sanitary District  
700 West End Avenue  
Chicago Heights, IL 60411

Jeffrey C. Fort  
Ariel J. Teshner  
Sonnenschein Nath & Rosenthal LLP  
7800 Sears Tower  
233 S. Wacker Drive  
Chicago, IL 60606-6404

Sharon Neal  
Commonwealth Edison  
125 South Clark Street  
Chicago, IL 60603

Dr. Thomas J. Murphy  
2325 N. Clifton St  
Chicago, IL 60614

Tracy Elzemeyer  
American Water Company  
727 Craig Road  
St. Louis, MO 63141

Beth Steinhorn  
2021 Timberbrook  
Springfield, IL 62702

Margaret P. Howard  
Hedinger Law Office  
2601 South Fifth Street  
Springfield, IL 62703

Ann Alexander  
Natural Resources Defense Council  
101 N. Wacker Dr  
Suite 609  
Chicago, IL 60606

Irwin Polls  
Ecological Monitoring and Assessment  
3206 Maple Leaf Drive  
Glenview, IL 60025

Cathy Hudzik  
City of Chicago  
Mayor's Office of Intergovernmental Affairs  
121 North LaSalle Street, Room 406  
Chicago, IL 60602

James Huff  
Huff & Huff, Inc.  
915 Harger Road, Suite 330  
Oak Brook, IL 60523

Traci Barkley  
Prairie Rivers Networks  
1902 Fox Drive, Suite 6  
Champaign, IL 61820

William Richardson  
Chief Legal Counsel  
Illinois Department of Natural Resources  
One Natural Resource Way  
Springfield, IL 62702

Thomas V. Skinner  
Thomas W. Dimond  
Kevin Descharnais  
Mayer Brown LLP  
71 South Wacker Drive  
Chicago, IL 60606

Robert VanGyseghem  
City of Geneva  
1800 South St  
Geneva, IL 60134-2203

Jack Darin  
Sierra Club  
70 E. Lake St  
Suite 1500  
Chicago, IL 60601-7447

Jerry Paulsen  
Cindy Skrukrud  
McHenry County Defenders  
132 Cass Street  
Woodstock, IL 60098

Bob Carter  
Bloomington Normal Water Reclamation  
PO Box 3307  
Bloomington, IL 61702-3307

Matthew Dunn  
Office of the Attorney General  
Environmental Bureau North  
69 West Washington Street  
Suite 1800  
Chicago, IL 60602

Tom Muth  
Fox Metro Water Reclamation District  
682 State Route 31  
Oswego, IL 60543

Albert Ettinger  
Freeman Freeman & Salzman  
401 N. Michigan Ave  
Chicago, IL 60611

Kenneth W. Liss  
Andrews Environmental Engineering  
3300 Ginger Creek Drive  
Springfield, IL 62711

Bernard Sawyer  
Thomas Grant  
Metropolitan Water Reclamation District  
6001 W. Pershing Rd  
Cicero, IL 60650-4112

Albert Ettinger  
Jessica Dexter  
Environmental Law & Policy Center  
35 E. Wacker  
Suite 1300  
Chicago, IL 60601

Lisa Frede  
Chemical Industry Council of Illinois  
2250 E. Devon Ave  
Suite 239  
Des Plaines, IL 60018-4509

Vicky McKinley  
Evanston Environmental Board  
223 Grey Avenue  
Evanston, IL 60202

Fredric Andes  
Erika Powers  
Barnes & Thornburg  
1 North Wacker Dr  
Suite 4400  
Chicago, IL 60606

Marc Miller  
Jamie S. Caston  
Office of Lt. Governor Pat Quinn  
Room 414 State House  
Springfield, IL 62706