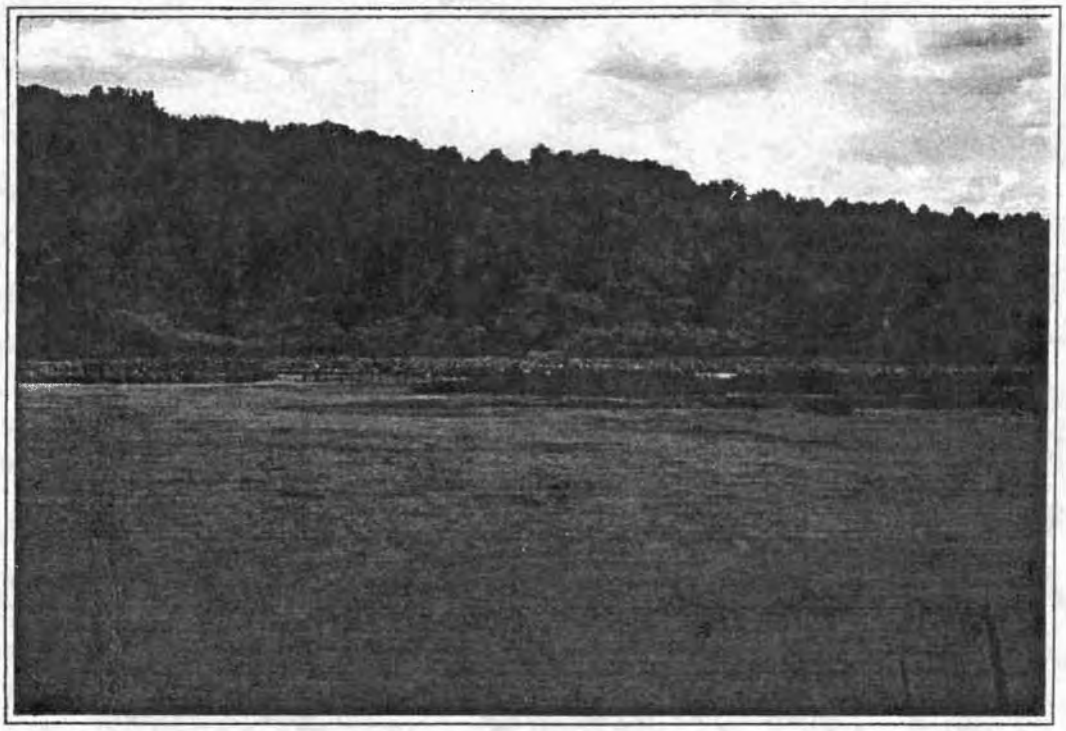
Ohio Water Resource Inventory



Volume 3:
Ohio's Public Lakes, Ponds, & Reservoirs

Division of Surface Water

Bob Davic
Jeff DeShon
Dale Eicher

1994

State of Ohio Environmental Protection Agency

P.O. Box 1049
1800 WaterMark Drive
Columbus, Ohio 43266-0149

OhioEPA

1994 Ohio Water Resource Inventory:
Volume 3: Ohio's Public Lakes, Ponds, & Reservoirs

Ohio EPA Technical Bulletin MAS/1995-7-2-III

Bob Davic
Jeff DeShon
Dale Eicher

July 1, 1995

State Of Ohio Environmental Protection Agency
Division of Surface Water
Monitoring and Assessment Section
1685 Westbelt Drive
Columbus, Ohio 43228

Introduction

A. Background.

Section 305(b) of the Clean Water Act (CWA) requires each state to report on the water quality of its lakes/ponds/reservoirs that are classified under State Water Quality Standards. In addition, Section 314 of the Act (Clean Lakes Program) requires each state to report on the overall condition of its public lakes including trophic state, impaired/threatened uses, impact from toxic chemicals, and status and trends of water quality. This report is submitted to fulfill these requirements and revises the 1980, 1982, 1988, 1990 and 1992 State of Ohio 305(b) lake water quality inventory reports. This report also summarizes data collected by the Ohio EPA in 1992 for a Section 314 Lake Water Quality Assessment grant (see Appendix I).

This report also restates the Ohio Lake Condition Index (Ohio EPA 1988a, 1990b; Davic and DeShon, 1989). The Ohio Lake Condition Index (LCI) was developed by the Ohio EPA for the 1988 305(b) reporting cycle, and is used in this report to: 1) determine if Ohio's public lakes are meeting Clean Water Act goals of fishable and swimmable waters, (2) determine the extent that Ohio's lakes are meeting designated uses under Ohio Water Quality Standards, (3) document temporal changes in the status of lake water quality, and (4) classify the overall ecosystem condition of Ohio's inland lakes. Minor modifications to the original 1988 Ohio LCI were reported in the 1992 305(b) in response to new federal 305(b) guidance. The revised LCI is presented in Appendix A. All lake data used to generate this volume of the 1994 305(b) Report are stored on computer diskettes that are available from the Ohio EPA, Division of Surface Water, 1800 Watermark Drive, Columbus, Ohio 43266-0149, (614) 728-3377.

B. Inventory of Ohio's Public Lakes

According to information provided by the Ohio Department of Natural Resources, there are approximately 50,000 lakes and small ponds in Ohio with a total surface

area of about 200,000 acres (ODNR, unpubl.). About 2200 of these lakes are 5 acres or greater with a total surface area of 134,000 acres (ODNR, 1980). These 2,200 lakes include both public and private lakes. The USEPA estimated (from an electronic file generated from 1:100,000 scale maps) that Ohio has 5,130 lakes totaling 188,461 acres (USEPA 1991). The difference in number of lakes estimated by USEPA and ODNR is likely related to numerous small ponds (high number, small acreage) not detected on the 1:100,000 scale maps.

In the 1992 Ohio 305(b) Report, 450 public lakes over 5 acres were identified by the Ohio EPA. For this 1994 update, 3 lakes were identified as duplicates and were deleted from the inventory. Thus, for this 1994 reporting cycle, 447 public lakes over 5 acres have been identified. These 447 public lakes have a total surface area of 118,801 acres. A summary of classified uses for all of Ohio's public and private lakes, ponds, and reservoirs is shown in Table 1.

Table 1. Summary atlas of classified uses for Ohio's lakes, ponds, and reservoirs (includes public and private lakes of all sizes).

Classified Use	Size Classified for Use (acres)
REC	Primary Contact Use 200,000 [1]
EWH	Aquatic Life Uses 193,903 [2]
PWS	Public Water Supply 118,801 [3]
SRW	State Resource Water 118,801 [3]

[1] Estimated from ODNR (1982), both public and private lakes, all sizes. Lakes are not specifically given a primary contact recreation use in OAC Chapter 3745-1, but this use is assumed.
[2] Does not include upground reservoirs, which are exempt from EWH use.
[3] Only includes public lakes over 5 acres.

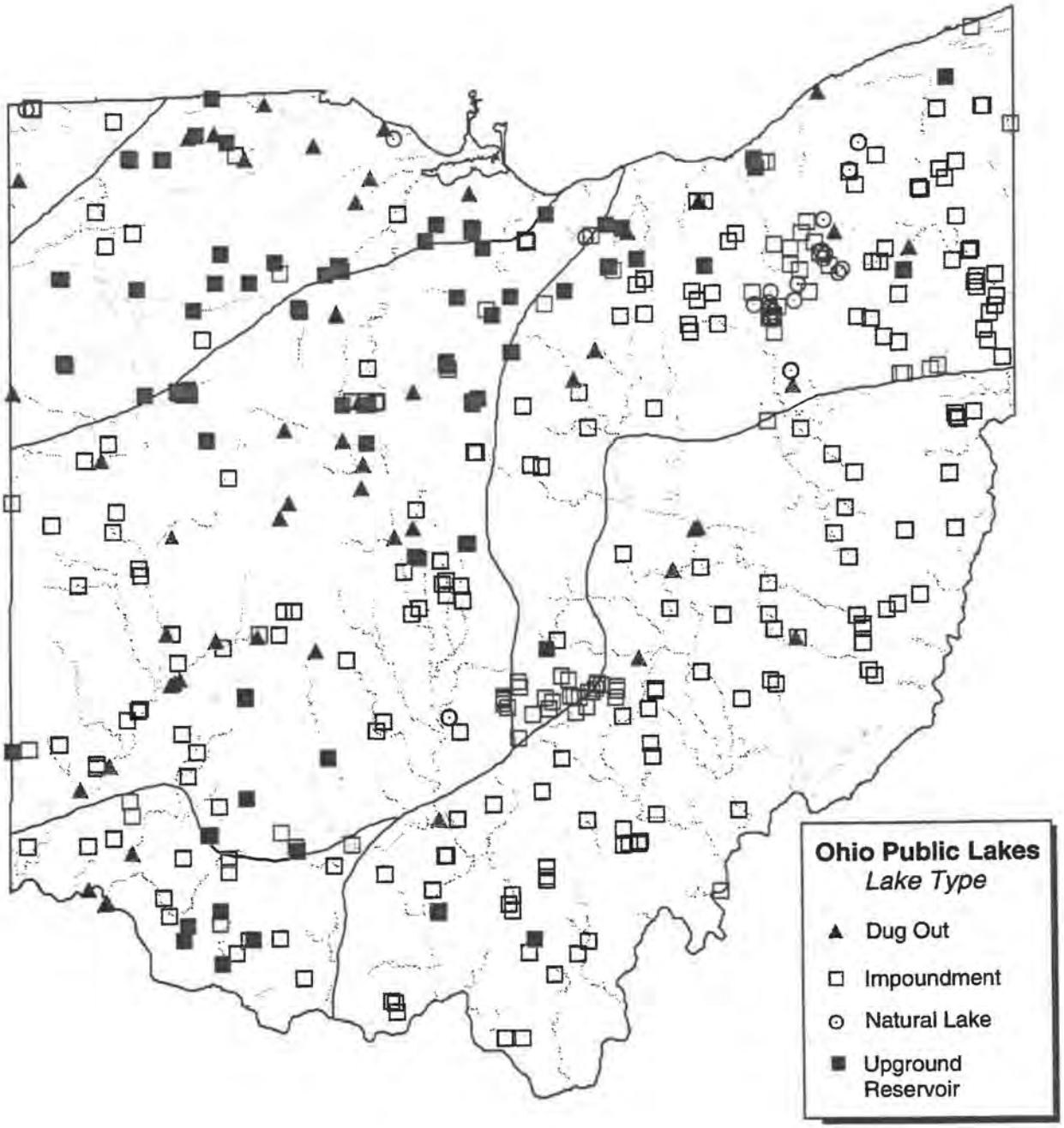
A complete listing of Ohio's 447 public lakes is provided in Appendix B of this report. Private lakes and public lakes under 5 acres surface area are not included in this volume due to a general lack of information. It is anticipated that this list of 447 public lakes will be expanded in future 305(b) reports to include lakes less than 5 acres in surface area. The OLMS/CLIP citizen volunteer monitoring program is expected to significantly increase turbidity data for private lakes. These data will be incorporated into future 305(b) updates.

For the purposes of this report, public lakes are defined as those lakes/ponds/reservoirs, including upground reservoirs, where: (1) public access to the water is either owned, managed or leased by a public entity (i.e., federal, state, county or municipal government agencies; park districts; conservation districts), or (2) the lake water is regulated by the Ohio EPA as a primary or secondary public drinking water supply. For the purposes of the CWA Section 314 program, "Significant Public Lakes" are defined as those public lakes that are freely open to the public for recreation. Significant public lakes are eligible for possible funding under the Clean Water Act Section 314 Clean Lakes Program, which is administered in Ohio by the Ohio EPA, Division of Surface Water. For this 1994 update, 345 (112,281 acres) of Ohio's 447 public lakes greater than 5 acres were identified as "Significant Public Lakes". Significant Public Lakes are listed in Appendix B as recreational use lakes. As of 1994, 6 of Ohio's 345 significant public lakes have been involved in the Section 314 Clean Lakes Program.

For the State of Ohio Water Inventory, stream impoundments not locally recognized as lakes (*e.g.*, low head dams, locks) are classified under impounded stream segments. The condition of these impounded stream segments can be found in Appendix A of Volume I of the 1994 305(b) Report. An inventory of Ohio's wetlands, which often include open water, is being developed by the Ohio Department of Natural Resources.

Two-hundred eighty-one (63%) of Ohio's 447 public lakes are dammed impoundments, 86 (19%) are upground reservoirs, 56 (12.5%) are dug-out lakes, and 24

Map 1. Distribution of Ohio lakes by type of lake.



(5.3%) are natural glacial lakes (Map 1). Table 2 lists the number and total acres of Ohio's public lakes by size classes. Three lakes are over 5000 acres: Grand Lake St. Marys, Auglaize County (12,700 acres); Mosquito Creek Reservoir, Trumbull County (7,850 acres), and Indian Lake, Logan County (5,104 acres). An additional 27 lakes range between 1,000 and 5,000 acres. Together, the 30 lakes over 1000 acres represent 84,336 (71%) of the total acres of public lake water in Ohio. A large number of public lakes (284) are between 5 and 50 acres in size, but these lakes represent only 3.9 %(4632 acres) of the total acres of public water.

C. Water Quality Assessment Process

In general, the overall condition of Ohio's lakes is not well known. The most extensive information available is for chemical water quality especially those parameters related to nutrient enrichment or trophic state such as total phosphorus, chlorophyll-a, and Secchi disk transparency. Little quantitative information is available for biological communities (including fisheries, benthos, plankton, macrophytes), volume loss due to sedimentation, and fish tissue and bottom sediment contamination. Measured loadings of sediment, nutrients, and toxics from lake watersheds are known for only a few of Ohio's public lakes.

Table 2. Number and acres of Ohio's public lakes by size class.

Size (Acres)	Number (%)	Acres (%)
< 5†	Unknown	Unknown
5 to9.9	108 (24%)	717 (0.6%)
10 to 49.9	173 (39%)	3863 (3.3%)
50 to 99.9	49 (11%)	3476 (2.9%)
100 to 499.9	71 (16)	14982 (12.6%)
500 to 999.9	16 (3.5%)	11427 (9.6%)
1000 to 4999.9	27 (6.0%)	58682 (49.4%)
> 5000	3 (0.7%)	25654 (21.6%)

†No inventory exists for public lakes that have less than 5 acres surface area.

For this 1994 report, lakes were assessed using information from a number of sources including: (1) the 1982, 1988, 1990, and 1992 Ohio 305(b) Reports (Youger 1982;

Ohio EPA 1988a, 1990b, 1992), (2) data collected in 1992 by the Ohio EPA under a Section 314 Lake Water Quality Assessment grant (see Appendix I), (4) Secchi disk data collected in 1988 through 1992 by volunteers in the regional planning area of the Northeast Ohio Four County Regional Planning and Development Organization (NEFCO 1990), (5) data from Ohio's 1988 and 1990 Section 319 Nonpoint Source Assessment Reports (Ohio EPA 1988c, 1990a), (6) trophic state data collected by Fulmer and Cooke (1990) for 19 Ohio reservoirs, (7) 1991 and 1992 Secchi disk data collected by volunteers in the newly established Citizen Lake Improvement Program, a citizen project coordinated by the Ohio Lake Management Society and funded by the US EPA and Ohio Department of Natural Resources, and (8) other sources of information (U.S. Geological Survey, Army Corps of Engineers, U.S. Soil Conservation Service, university studies, etc.).

Passage of the 1987 amendments to the Clean Water Act required each State to expand assessment of lake water quality beyond the concept of nutrient enrichment (i.e. trophic state) to include topics such as violations of water quality standards, attainment of designated uses, and identification of lakes threatened by nonpoint and point sources of pollution. In order to comply with these new federal mandates, the Ohio EPA developed a multiparameter lake assessment process called the Ohio Lake Condition Index (Ohio LCI, Davic and DeShon 1989). The Ohio LCI, as revised in 1992 (Ohio EPA 1992), is used in this 305(b) to assess the overall ecosystem condition of Ohio's public lakes. The revised LCI uses information gathered from 14 different parameters to allow a holistic assessment of the overall condition of the lake ecosystem. The revised LCI is found in Appendix A.

D. Trophic Classification

One of the requirements of the 305(b) process is for States to "classify according to trophic state" their public lakes. No federal guidance has been given on a standardized methodology to use, i.e., it is not known if the classification should refer to the open water, the lake or ecosystem as a whole, or some combination of both concepts.

Lake eutrophication (i.e. the process of increasing primary production and decreasing lake depth) is a complex process and attempts to define it have a long history (see literature reviews in Hutchinson 1969; Reckhow and Chapra 1983). The term "trophic", derived from the Greek trophe, is defined by Webster as being "of or pertaining to nutrition; having to do with the process of nutrition". According to Reckhow and Chapra (1983), the terms "oligotrophic" and "eutrophic" were first used by Naumann in 1919 as synonyms for "poor in nutrients" and "rich in nutrients" in the open water of a lake. Thus the original use of the trophic concept in a limnological sense was to classify only the nutritional status of the open water of lakes, especially with respect to phosphorus and nitrogen.

A second concept of trophic state was developed by Thienemann in 1925 (see review in Hutchinson 1969) and was the first attempt to classify the trophic condition of the entire waterbody or ecosystem. Thienemann recognized "synthetic lake types" which were identified based on observed symptoms of the eutrophication process such as high vs low levels of oxygen, shallow vs deep, high vs low biotic diversity, etc. Value judgements were given to the different levels of "trophic state" such that oligotrophic lakes were viewed to be good lakes and eutrophic lakes impaired.

Hutchinson (1969) suggested a third concept such that a lake and its watershed form a "trophic system", which he defined as the total potential concentration of nutrients in the system. A lake may have low phosphorus in the open water but the lake system may be hypereutrophic because the total nutrient pool is locked up somewhere else in the system, perhaps as macrophyte biomass in the littoral zone, in animals, or in the sediment. Others (i.e., Wetzel 1983) define the trophy of a lake as a measure of the rate at which organic matter is supplied to the lake per unit time. Thus at least four different concepts of "trophic state" can be used to report the effects of nutrient enrichment on lake ecosystems.

For the 1994 Ohio 305(b) Lakes WRI Report, a modification of the original trophic concept of Naumann was used to classify the nutrient enrichment of the surface water of Ohio's lakes. Following the procedures used in the 1982 Ohio 305(b) lakes report (Youger 1982), total phosphorus, chlorophyll-a concentrations, and secchi disk measurements were converted to Carlson Trophic State Index (TSI) values (Carlson 1977). Calculation formulas from Reckhow and Chapra (1983) are as follows:

Secchi Disk TSI = 60 - 14.41 ln (SD meters)

Chlorophyll-a TSI = 9.81 ln (Chl-a ug/l) + 30.6

Total Phosphorus TSI = 14.42 ln (TP ug/l) + 4.15

Carlson TSI values for total phosphorus and chlorophyll-a provide a method to quantify the open water "nutrient enrichment" concept of Naumann. Lakes were considered assessed for the 1994 trophic classification if approved data were available for summer chlorophyll-a (July, August, September) or spring total phosphorus (April, May, June).

Carlson (1977) recommends that summer chlorophyll-a may be the best indicator of trophic state and that phosphorus may not be a good indicator in non-phosphorus limited lakes. He also recommends that consideration be given to using spring total phosphorus over summer total phosphorus to determine annual trophic state given a choice between the two types of data. Following these suggestions, the average summer chlorophyll-a TSI and/or the average spring total phosphorus TSI was reported as the Final TSI for any given year. When both sets of data were available, the average of these data was reported as the annual Final TSI. It was believed that use of both summer chlorophyll-a and spring total phosphorus would tend to lessen errors in trophic state determination due to the very small sample sizes that are available for most of Ohio's lakes.

The following TSI ranges taken from the 1982 Ohio 305(b) Report were used to relate Carlson TSI values to standard trophic state terminology: oligotrophic (TSI points <38), mesotrophic (TSI points 38-47), eutrophic (TSI points 48-66), and hypereutrophic (TSI points >66). Asummary of trophic state information for 159 (35.6%) of Ohio's 447 public lakes is provided in Table 3.

It is important to note that the above trophic classification scheme only measures nutrient presence in the water column and does not consider the contribution of nutrients potentially available in the sediment and/or in macrophyte biomass. Ideally, a comprehensive trophic classification protocol would include these other sources of nutrients following the ecosystem approach of Hutchinson (1969).

Table 3. Surface water trophic state classification for 159 public lakes in Ohio, 1994 update. Insufficient data to classify an additional 288 public lakes. Trophic state based on Carlson TP and/or Chl-a TSI values.

Trophic State Lakes Assessed	Number of Assessed	Percentage of Assessed Lakes
Oligotrophic (<38 TSI)	8	5.0%
Mesotrophic (TSI 38-47)	33	20.8%
Eutrophic (TSI 48-66)	90	56.6%
Hypereutrophic (TSI >66)	28	17.6%

As more monitored data become available on nutrient concentrations in plant and animal biomass, and lake sediments, modifications to the above trophic classification may occur in future revisions to the Ohio 305(b) Lakes WRI Report. Regional trophic classification by lake type and ecoregion (see literature review by Heiskary 1989) will also be considered.

Map 2 provides a rough "TSI isopleth" map for Ohio. One pattern that emerges even from the limited data is the distribution of low TSI scores in the relatively nutrient poor WAP ecoregion. Other low TSI values are in upground reservoirs in

other regions that, through their morphology, control runoff. Raw data and final trophic classifications for 159 of Ohio's public lakes are provided in Appendix C.

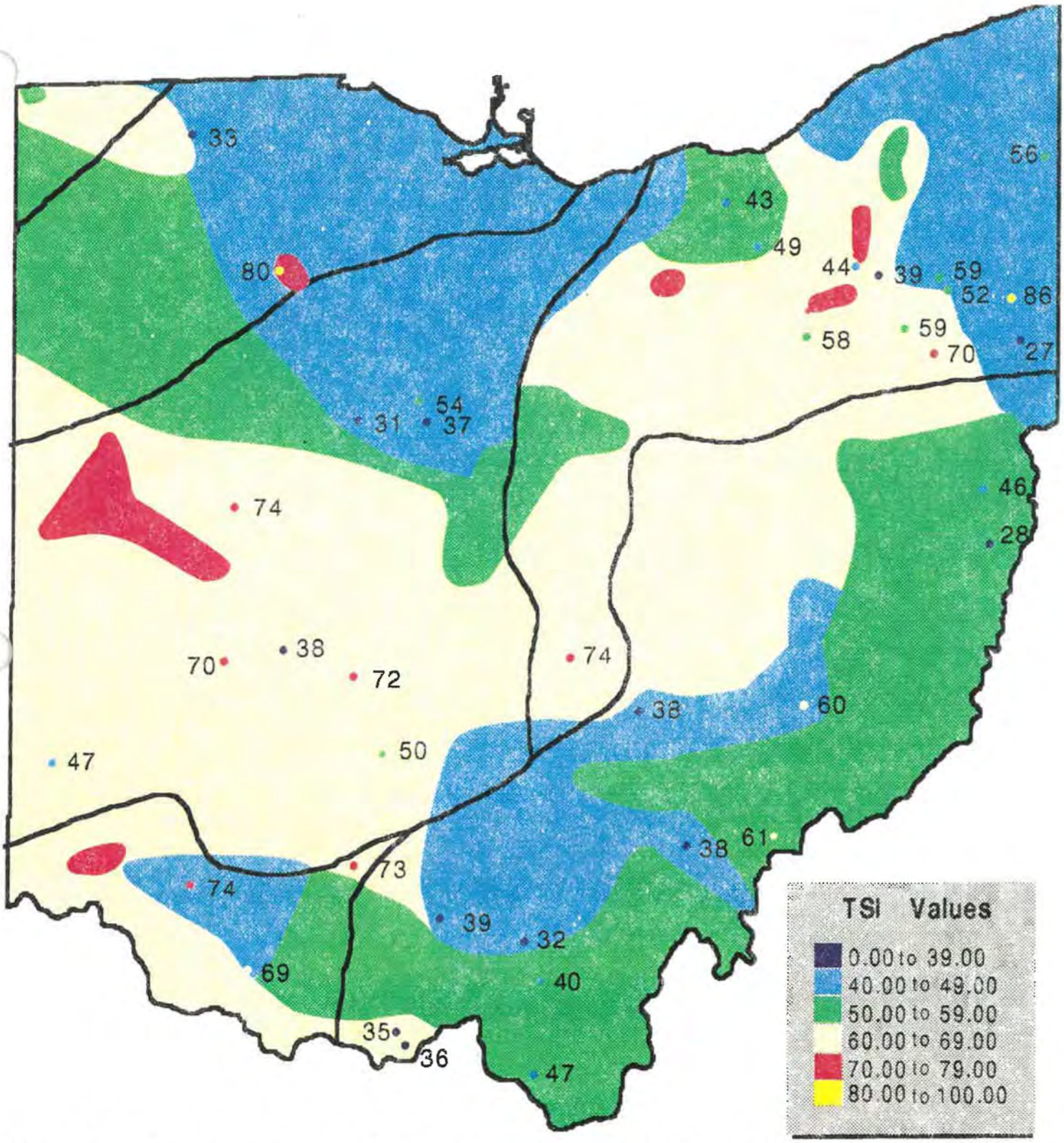
Trophic State vs Use Impairment. Table 4 shows the relationship between surface water trophic state as defined by Carlson TSI values and calculated probability of overall lake use impairment as measured by the Ohio Lake Condition Index.

Table 4. Relationship between surface water (0.5 m) trophic state and probability of lake impairment. N= Number of lakes. Information from lakes sampled prior to 1991.

Use Support	Probability
HYPEREUTROPHIC (N=24; TSI > 66)	
Full Use	8.3 %
Partial Use	33.4 %
Impaired Use	58.3 %
EUTROPHIC (N=63; TSI 48-66)	
Full Use	15.9 %
Partial Use	45.8 %
Impaired Use	38.3 %
MESOTROPHIC/ *OLIGOTROPHIC (N=31; TSI < 48)*	
Full Use	61.3 %
Partial Use	22.6 %
Impaired Use	16.1 %

The most stringent use impairment for each assessed lake was used in the analysis. Although hypereutrophic lakes have a greater probability of having some impaired use than do mesotrophic/oligotrophic lakes, even the latter set of "low nutrient" lakes have a 39% probability of having either partial or impaired uses.

Thus the concept of "trophic state" should not be confused with the concept of "use impairment"--lakes can be impaired for reasons not associated with the concept of nutrient enrichment (e.g., due to toxic chemicals, volume loss, bacteria, acid mine runoff, etc.). Not all eutrophic lakes are impaired, nor are all oligotrophic lakes fully meeting uses. For example, the Ohio DNR has added nutrients to at least two "oligotrophic" lakes in an attempt to increase fish production.



Map 2. Distribution of TSI (Trophic State Index) values in 230 Ohio lakes, ponds and reservoirs. Isopleth values drawn by eye.

Secchi Disk Information. In the 1982 305(b) "Ohio Lakes" report (Youger 1982), TSI values derived from summer chlorophyll-a, spring total phosphorus, and summer Secchi disk depths were summed to arrive at a final trophic state value. However, because Secchi depth readings may be a poor indicator of nutrient enrichment in Ohio's lakes due to non-algal turbidity, the use of Secchi data was eliminated from the "trophic state" assessment process in 1988.

Secchi disk turbidity, which is a measure of all algal and non-algal turbidity, is used in the Ohio LCI process to determine potential impairment of recreational use. Lakes with Secchi disk readings less than 4 foot during the recreational season are judged to have threatened use for swimming. Summer Secchi depth TSI values are also useful if compared against summer chlorophyll-a TSI values. A higher TSI based on Secchi depth may indicate non-algal turbidity and possible light limitation of algal growth. Many lakes in Ohio show summer Secchi disk TSI values well above summer chlorophyll-a TSI values, an indication that non-algal turbidity and not nutrient enrichment, is the cause of elevated TSIs (seeAppendix C). In the volunteer Secchi disk program conducted by NEFCO, it was found that over 50% of observations on water color for lakes reported brown or green-brown water. Brown water caused by silt would tend to inflate TSI values calculated by Secchi disk.

NEFCO has developed a color strip for their citizen volunteer lake monitoring program that can be used to distinguish lakes that have green, yellow, and brown turbidity. In Ohio, the OLMS/CLIP volunteer program is also collecting lake color data using the NEFCO color strip. The use of the NEFCO color strip may provide a way of relating Secchi disk, lake water color, and TSI values in future 305(b) Lakes WRI reports.

E. Monitored vs Evaluated Data

Federal EPA guidance for the 305(b) Report requires each state to distinguish between "monitored" and "evaluated" data used to assess the water quality of lakes. In general, monitored data (i.e., ambient physical/chemical measurements) are

considered to be quantitative, and data collection follows established quality assurance methods. Evaluated data are more subjective and based on best professional judgement. Questionnaire data would be an example of commonly used evaluated data. Federal guidance also requires that historical monitored data (i.e. over five years old) be considered evaluated for the report process. However, adherence to the five year rule suggested by the USEPA was deemed to be overly restrictive for Ohio due to a general lack of recent monitored data.

For the 1994 305(b) update, monitored lake data included all quantitative data collected by Ohio EPA, or other approved sources, from 1973 to 1992. Evaluated data included responses to a questionnaire distributed by the Ohio EPA in 1987 for the State's nonpoint assessment, and responses to a lake questionnaire distributed from 1989 and 1992 as part of Ohio's Section 314 Lake Water Quality Assessment surveys (Appendix D).

F. Historical Lake Monitoring

Twenty-one (21) Ohio lakes were sampled in the early 1970s as part of the National Eutrophication Survey (see literature summary in the 1982 305(b) Report). Prior to the 1970s, lake surveys were generally restricted to university research or unpublished data collected by various local government agencies.

The first major survey of Ohio's lakes was the cooperative lake monitoring program between the Ohio EPA and the U.S. Geological Survey from 1975 to 1980. Eighty five (85) lakes were sampled to provide baseline data for selected chemical, physical, and biological parameters. The results of this program were published in three volumes (Tobin and Youger 1977, 1979; Angelo and Youger 1985), and also summarized in Youger, (1982). Also conducted in the 1970s were US EPA Clean Lakes Program Phase I Demonstration studies on two Summit County lakes (Summit Lake and Meadow Brook Lake); however, Phase II US EPA applications were not submitted. Meadowbrook Lake was dredged in the early 1980s.

Between 1980 and 1981, the Ohio EPA sampled 26 lakes as part of a Section 314 Clean Lakes Assessment Grant. These data are summarized in the 1982 305(b) Report. Between 1982 and 1989 a small number of lakes were sampled during comprehensive water quality surveys of major river basins. In 1989, Ohio EPA received a Section 314 Lake Water Quality Assessment grant to sample an additional 52 lakes in 1989 and 1990. These data were summarized in Appendix I of Volume 3: Ohio's Public Lakes, Ponds, and Reservoirs of the 1992 Ohio Water Resource Inventory (Ohio EPA 1992).

Since 1987 the Ohio EPA has once again become active in the Section 314 Clean Lakes Program. Besides the 1989-1990 LWQA grant and one received for monitoring in 1992, four Clean Lakes Program Phase I projects have been coordinated by the Ohio EPA (Winton Woods Lake, Hamilton County; Indian Lake, Logan County; Sippo Lake, Stark County, and Dillon Reservoir, Muskingum County). Phase I reports have been finalized for the Winton Woods Lake, Indian Lake, and Sippo Lake projects. Indian Lake was the first lake in Ohio to receive Section 314 Phase II (Implementation) funding (1990). The Sippo Lake Phase I project was completed in early 1992 and a Phase II project is being implemented. The Dillon Reservoir Phase I study has been completed and the report is in preparation. In July 1990, the Ohio EPA also received a Clean Lake Program Phase III grant to study the long term effectiveness of alum treatment to control internal release of phosphorus from lake sediments. The grant was issued to Dr. G. Dennis Cooke at Kent State University, Institute of Limnology.

The US EPA Section 314 Phase I projects in Ohio have been among the most comprehensive lake and watershed surveys conducted in the State, pooling resources from numerous local, state, and federal government agencies, lake consultants, and universities. However, given the very small number of public lakes in Ohio that can be addressed by the US EPA Clean Lakes Program, alternative methods of providing diagnostic-feasibility data for lake restoration and protection must be developed.

Lake data available from other sources include the Army Corps of Engineers, who has built 28 dams in Ohio and conducts water quality and sedimentation surveys. Sedimentation surveys have also been conducted by the U.S. Soil Conservation Service (SCS) and the Ohio Department of Natural Resources, Division of Water. Results of all sedimentation surveys in Ohio up to 1975 have been summarized by the U.S. Department of Agriculture (USDA 1975). During the summer of 1988, the SCS conducted detailed sedimentation surveys of 47 lakes in Ohio (SCS 1990). Fulmer and Cooke (1990), working at the Kent State University Institute of Limnology, reported "trophic state" data collected for 19 Ohio reservoirs. These data were used to update the trophic state assessment found in Appendix C of this report.

Table 5. Status of US EPA Section 314 Clean Lake Projects in Ohio.

Lake	Status
Summit Lake (Summit County)	— Phase I demonstration project. 1978. No Phase II application. Fish tissue advisory for PCBs in Carp. City of Akron lake. Urban lake watershed.
Meadowbrook Lake (Summit County)	— Phase I demonstration project. Lake dredged in early 1980s. Summit County SCS follow-up survey in 1991. City of Stow lake. Urban lake watershed.
Winton Woods Lake (Hamilton County)	— Phase I completed 1989, Phase II in progress. Army Corps lake, managed by County Park District. Urban lake watershed.
Indian Lake (Logan County)	— Phase I completed 1989, Phase II in progress. Ongoing dredging by Ohio DNR. Ohio DNR canal lake. Agricultural lake watershed.
Sippo Lake (Stark County)	— Phase I completed 1992. Phase II in progress. County Park District lake. Urban lake watershed.
Dillon Reservoir (Muskingum County)	— Phase I in progress, to be completed by 1994. Dredging scheduled for 1994. Ohio DNR lake. Mixed agricultural-urban lake watershed.

In 1988, the Northeast Ohio Four County Regional Planning and Development Organization (NEFCO) developed a volunteer Secchi depth monitoring program for both public and private lakes in a four county area of northeast Ohio. Data collected for public lakes in 1988 through 1992 are summarized in Appendix C.

In 1991, the Ohio Lake Management Society (OLMS) developed a statewide Citizen Lake Improvement Program (OLMS/CLIP) that included the collection of Secchi disk data by citizen volunteers. This program was funded in part by a US EPA grant through the Ohio EPA, by the Ohio Department of Natural Resources, and the Gund Foundation. Secchi disk data collected on public lakes by the OLMS/CLIP volunteers in 1991 and 1992 are also included in Appendix C.

The NEFCO and CLIP citizen volunteer Secchi depth programs have added new and useful information for over 100 public and private lakes in Ohio. It is anticipated that the type of data being collected by citizens will be expanded to other measures of lake condition and could provide a major source of both monitored and evaluated data for the Ohio LCI assessment process in future 305(b) reports.

G. Lake Pollution Control Procedures

All public and private lakes, except upground reservoirs, are designated as Exceptional Warmwater Habitat in Ohio's Water Quality Standards-Chapter 3745 of the Ohio Administrative Code. Publicly owned lakes are also designated State Resource Waters. All State Resource Waters are protected as potential public water supplies (PWS). In addition, the Ohio EPA Antidegradation Policy applies to State Resource Waters such that present ambient water quality and uses shall be maintained and protected without exception. All lakes have, at a minimum, a primary contact recreational use designation.

In addition to Water Quality Standards, the Ohio EPA has a States Lakes Policy which is used to establish effluent limitations for new or expanding point source discharges to lakes and reservoirs, and to prevent degradation of these multi-use waters. The most recent revision of the Ohio EPA State Lakes Policy is provided in Appendix E.

The Ohio EPA and county game wardens respond to citizen complaints of spills and fish kills in both public and private lakes in Ohio. Use of chemicals in public lakes to control aquatic plants requires prior approval of the Ohio EPA and the Ohio Department of Agriculture.

From 1981 through 1987, the Ohio EPA funded 33 nonpoint source pollution abatement education/demonstration projects (see OEPA 1991). These projects focused on the reduction of nonpoint pollution from agriculture, mining, oil and gas production, urban runoff, and on-site sewage deposal systems. One of the primary goals of five of these projects was to reduce nonpoint source loadings to public lakes. Lakes affected by these watershed projects included Rocky Fork Lake, Highland County (soil erosion); Caesar Creek Reservoir, Warren Co. (sediment erosion); Acton Lake, Butler Co. (sediment and nutrient abatement); C. J. Brown Lake, Clark Co. (sediment and nutrient abatement); Beach City Lake, Tuscarawas Co. (sediment and nutrient abatement); and Lake Hope, Vinton Co. (acid mine abatement). From 1990-1994, 78 projects have been completed or are underway using funding ($8.8 million) provided by the Clean Water Act Section 319 program. A list of projects and their status is available (Ohio EPA 1994).

H. Lake Restoration Procedures

Various lake restoration techniques have been used in Ohio's lakes; however, very little quantitative data has been collected to determine how successful the procedures have been in restoring uses. The Ohio Department of Natural Resources conducts an extensive game fish stocking program in numerous public lakes and reservoirs. Fisheries are managed to provide bass, sunfish, and salmonid recreation. Creel surveys, netting, and fish electroshocking techniques are used to track the status of fish populations over time. Ohio DNR has added nutrients to a few nutrient poor oligotrophic lakes in southeast Ohio in an attempt to stimulate game fish production. The Ohio DNR also conducts a sediment dredging program on a select number of state owned lakes each year. A three year dredging project at Madison Lake, Madison County, resulted in the creation of wetland areas adjacent

to the lake. Lake Newport, a Township Park lake in Mahoning County, was drained in 1991 and is scheduled to be dredged.

The Army Corps of Engineers and the Ohio DNR use lake level drawdown on a number of lakes and reservoirs in Ohio, partly to control aquatic weed growth in shallow areas, and partly as a fish management technique (Cooke 1988, Ohio Shorelines). The use of triploid white amur (grass carp) was legalized in Ohio in 1987 as a method of controlling aquatic plants. The white amur has been added to numerous lakes and ponds throughout Ohio with unknown success. White amur are made available to the public through the County Extension Program and the Soil and Water Conservation Districts. Use of alum to control phosphorus release from lake sediments has been used with success in a natural lake with a high rate of internal phosphorus loading (Twin Lakes, Portage County, Private Lake Association, see Cooke et al. 1986). Alum was added to Congress Lake (Stark County) in 1991 to control algae and phosphorus release from lake sediments. Cooke et al. (1986) listed six lakes in Ohio that have used artificial circulation to increase the oxygen of lake water. At least one lake (Silver Lake, Summit County, Private Lake Association) showed mixed success. Hypolimnetic aeration has been used to reduced taste and odor problems and increase oxygen in Lake Hodgson, a mixed use public water supply and recreational lake in Portage County. An unknown number of lake and pond owners use chemicals to treat algae and aquatic weeds; many of these lakes are used for public or industrial water supply. Aquatic weed harvesters are also used in an unknown number of lakes, both public and private. Conyers and Cooke (1983, reviewed in Cooke *et al.* 1986) compared the costs of harvesting and herbicide treatment in a private natural lake in Portage County (East Twin Lake). Cooke *et al.* (1986) reported that polypropylene cover (Typar) was effective in preventing macrophyte growth in an Ohio lake. They also reported that burlap was used with success in Lake Rockwell (Portage County) to control macrophyte growth, although the material decayed after one year. Many large reservoirs managed by the Army Corps of Engineers have summer hypolimnetic withdrawal of water. The effect on lake and downstream water quality is unknown.

NEFCO (1990) reported on lake management techniques used in a four county area in Ohio. Questionnaires were sent to 63 lake owners/managers. The results of the survey are shown in Table 6. A total of 9 lake management techniques were being used. Eighteen lakes (25%) used a combination of two or more techniques. The most common management technique was lake level drawdown (22% of all lakes), followed by addition of white amur (20.9%), dredging (14.3%), weed harvesting (14.3%) and application of chemicals to control aquatic algae and macrophytes (12.7%). It is clear from this NEFCO information that the legalization of white amur in 1987 has had a significant impact on efforts to restore lake uses in Ohio.

Table 6. Lake restoration management techniques used by 63 lakes in the four county NEFCO area in Ohio. 1990 data.

Management Technique	No. of Lakes	% of Lakes
None reported or known	19	30.1%
At least one technique used	44	69.9%
Lake level drawdown	14	22.2%
white amur (grass carp)	13	20.9%
Weed Harvesting	9	14.3%
Dredging	9	14.3%
Chemicals to control algal and aquatic weeds	8	12.7%
Fish removal, restocking	4	6.3%
Circulation	3	4.8%
Alum to remove phosphorus	1	1.6%
Hypolimnetic aeration	1	1.6%

In summary, most of the standard lake restoration techniques have been attempted in Ohio. However, whether or not these restoration measures have been successful in restoring lake uses is largely unknown due to lack of long term monitoring data.

I. Attainment of Designated Uses

Another requirement of the 305(b) report is for States to provide a list of public lakes for which designated uses are impaired, do not meet State Water Quality

Standards, or require implementation of lake and watershed management programs to maintain compliance with applicable standards.

Federal guidance for the 305(b) report requires that lakes be classified into one of five possible use attainment categories: (1) insufficient data, (2) full use attainment, (3) full use attainment but threatened, (4) partial use, partial attainment, and (5) impaired use, non-attainment.

Many of Ohio's lakes have multiple uses and may show partial use support or impairment for one use but full use for another. For this report, each lake was assessed for all possible uses, whether or not those uses are currently being realized. For each of Ohio's 447 public lakes, separate use assessments were made for: (1) aquatic life use support, (2) recreational use support, (3) public drinking water supply use support and (4) fish tissue consumption use support.

The Ohio LCI assessment process was used to determine use support and CWA goal attainment for Ohio's 447 publicly owned lakes (seeAppendix A for details on use of the LCI assessment process and Appendix H for a summary of LCI parameters for each lake). Table 7 and figure 1 provide a summary of designated use support for Ohio's lakes based on data from the LCI assessment. As shown in Table 7, there is a general lack of sufficient information to assess the majority of Ohio's public lakes. This lack of information represents a deficiency in Ohio's surface water quality monitoring strategy. However, data does exist for most of Ohio's large recreational lakes over 1000 acres; thus, a large percentage of the total surface area of public lakes has been assessed for recreational, aquatic life, and public water supply uses. Fish tissue samples have only been collected from 12 of Ohio's 447 public lakes, thus it is not possible at this time to assess attainment of this Clean Water Act goal. Fish consumption advisories for elevated PCBs in carp do exist at 2 of the 12 public lakes that have been tested, Summit Lake and Nesmith Lake, both in Summit County.

Data from Table 7 also show that the majority of Ohio's lakes that have been assessed fall into the "partial use-partial attainment" CWA category. This is due in part to the rather strict requirement in the LCI assessment process that in order for a lake to be judged meeting "full use" it may not show any "threatened (monitored)" [t(m)] conditions for any of the 14 LCI parameters. Thus, for example, any lake with summer hypolimnetic oxygen levels below 2.0 mg/l at a depth 0.5 m from the lake bottom would be classified as a partial use lake because it would score a t(m) subindex condition for the non-priority pollutant (NP) parameter Given this situation, lakes judged to be meeting "full use" using the LCI assessment process would represent very high quality lakes that should be given high priority for protection from future impacts.

Table 7. Use support summary for Ohio's 447 public lakes, ponds, and reservoirs greater than 5 acres in size.

	Degree of Use Support			
Use Designation	Fully Supports	Fully Supports, Threatened	Partially Supports	Does Not Support
		Aquatic Life (EWH)		
Number:	2	7	53	11
Acres:	271	10,911	41,110	2613
		Fish Consumption		
Number:	10	–	2	–
Acres:	23,499	0	180	0
		Public Water Supply		
Number:	3	2	55	13
Acres:	321	7,867	42,106	4,832
		Recreation		
Number:	7	4	37	25
Acres:	1,864	655	23,957	28,651

Table 8. List of Ohio's public lakes with impaired designated uses as determined by the Ohio LCI process.

Lake	County	Impaired Uses
Acton Lake	Butler	REC; EWH
Baldwin Lake	Cuyahoga	REC, PWS
Buckeye Lake	Licking	REC
C.J. Brown Lake	Clark	REC
Charles Mill Lake	Ashland	REC, PWS
Clouse Pond	Perry	REC, PWS
Coe Lake	Cuyahoga	REC
Cowan Lake	Clinton	REC, PWS
Defiance Power Dam	Defiance	REC, PWS, EWH
Dillon Reservoir	Muskingum	PWS
East Fork Lake	Clermont	REC, PWS, EWH
East Branch Resv.	Geauga	REC, PWS
Essington Lake	Perry	PWS, EWH
Findley Lake	Lorain	REC
Fox Lake Strut. #6	Athens	PWS
Friendship Park Lk	Jefferson	PWS, EWH
Grand Lake St. Marys	Auglaize	REC
Guilford Lake	Columbiana	REC
Harrison Lake	Fulton	PWS
Hinckley Lake	Medina	REC, EWH
Indian Lake	Logan	REC
J. Griggs Resv.	Franklin	EWH
Jackson Lake	Jackson	REC, PWS
Knox Lake	Knox	REC
Lake Aquilla	Geauga	REC, PWS, EWH
Lake Hope	Vinton	PWS, EWH
Lake Logan	Hocking	REC
Lake Rockwell	Portage	REC, PWS, EWH
Lake White Reservoir	Pike	REC, EHW
Madison Lake	Madison	REC, PWS
Meadowbrook Lake	Portage	REC, PWS
Mogadore Reservoir	Portage	REC, PWS
Munroe Basin	Muskingum	REC, PWS
Newport Lake	Mahoning	REC, PWS, EWH
Paint Creek Lake	Highland	REC
Rush Creek Lake (RCCD#64)	Perry	REC, PWS
Rush Run Lake	Preble	REC
Sharon Woods Lake	Hamilton	REC
Shreve Lake	Wayne	REC
Sippo Lake	Stark	REC, PWS
Spring Valley Lake	Warren	REC, EWH
Stonelick Lake	Clermont	REC, PWS
Sunny Lake	Portage	REC
Swift Run Lake	Miami	REC, PWS
Van Buren Lake	Hancock	PWS
Veto Lake	Washington	REC
Wauseon Reservoir#2	Fulton	REC
Waynoka Retention Dam	Brown	REC, PWS
Westville Lake	Columbiana	REC
Winton Woods Lake	Hamilton	REC, PWS, EWH
Wills Creek Reservoir	Coshocton	REC

Impaired Lakes. Table 8 lists public lakes with at least one impaired use as judged by the Ohio LCI assessment process. These lakes represent high priority lakes for Section 314 Clean Lake Program Phase I studies. The most significant problems with Ohio's lakes and those causing considerable non-support of beneficial uses continue to be volume loss due to sedimentation, aesthetics, nuisance growths of macrophytes, and organic and nutrient enrichment. Turbidity, as determined by Secchi disk transparency, is also a concern in numerous lakes and is probably a reflection of the other problem parameters. Major sources and causes of non-support are shown in Appendices F-1 and F-2.

Major and moderate sources of non-support are primarily nonpoint in origin. Agricultural nonpoint sources are by far having the greatest influence with major and moderate effects on over 54,000 acres. Other nonpoint sources with major and moderate magnitude impacts include urban runoff (> 19,000 acres) and septic tanks (27,000 acres). Point sources (all categories) have moderate impacts on greater than 32,000 acres of Ohio lakes.

Ohio LCI Classification. One useful feature of the Ohio LCI is its ability to provide a final Lake Condition Index score that can be used to rank the relative resource condition or health of different lakes in Ohio. This aspect of the LCI was not used in previous 305(b) reports due to insufficient data. For this 1992 update, sufficient data were available to calculate and rank final LCI scores for 40 of Ohio's 447 public lakes as shown in Table 9.

Only those lakes with either monitored or evaluated data for at least 12 of the 14 total LCI parameters are included in Table 9. A slight modification was made in the method of calculating a final LCI score -- the mean coefficient of lake condition was multiplied by 10 to yield a scale ranging from 10 to 100, with a LCI value of 100 representing the highest level of overall lake impairment.

A discussion of the method used to calculate final LCI scores is found in Appendix A of this report. As additional information is made available it is anticipated that

other lakes will be added to Table 9, with the ultimate goal of ranking the resource condition of all of Ohio's 447 public lakes.

Table 9. Final Lake Condition Index scores for 40 public lakes in Ohio. Only lakes assessed for at least 12 LCI parameters are included. Trophic state from Appendix C and only from lakes sampled prior to 1991.

Lake	Final LCI Score	Lake Trophic State
100 % Impairment Probability		
Winton Woods Lake	56.92	H
Newport Lake	44.29	H
Indian Lake	39.29	E-H
Charles Mill Lake	37.69	H
Stonelick Lake	35.83	H
J. Griggs Reservoir	34.17	E
Lake Rockwell	34.17	E
Acton Lake	33.85	E
Findley Lake	33.33	E
Lake Loramie	33.08	H
Defiance Power Dam	33.08	E
Lake Nesmith	31.43	H
Meadowbrook Lake	30.83	E
Sippo Lake	30.77	M-E
Guilford Lake	30.77	E
Berlin Reservoir	30.00	E-H
Dillon Reservoir	30.00	E-H
Buckeye Lake	28.57	H
Lake Logan	28.33	E
Hinckley Lake	28.33	M
Summit Lake	27.86	E
Lake Hope	27.69	M
Lake Milton	27.50	E
Kiser Lake	26.15	H
0 % Impairment Probability		
Eastwood Lake	25.00	E
Rush Run Lake	25.00	M
Deer Creek Lake	24.17	E
Punderson Lake	24.16	E
Rocky Fork Lake	23.57	E
Lake La Su An	23.33	E
Bresler Reservoir	22.31	E
Jefferson Lake	21.67	M
Mosquito Creek Lake	21.43	E
Dow Lake	20.77	M
Metzger Reservoir	20.00	E
Oberlin Reservoir	18.33	M
Hargus Lake	15.71	M-E
Beaver Creek Reservoir	13.85	M
Killdeer Reservoir	13.33	O
Lake La Comte	13.33	M

Preliminary data indicates that lakes in Table 9 with final LCI scores above 30.00 show 100.0% probability of having an impaired use for at least one of three designated uses (i.e., aquatic life, recreation, or public drinking water supply). Lakes with LCI scores below 25.00 show 0.0% probability of having an impaired use. Additional information on a wider range of lakes will be required to see if these relationships can be applied statewide.

J. Acid Mine Effected Lakes. Another requirement of the 305(b) report is for States to identify those lakes in which water quality has deteriorated as a result of high acidity that may be due to acid mine drainage. The Ohio LCI assessment uses the Acid Mine Drainage (M) parameter to identify lakes that are potentially impacted by acid mine chemicals such as low pH, high iron, sulfates, and manganese. Water quality criteria for this parameter are found in Appendix A.

As shown in Table 12, 121 of Ohio's 447 public lakes have been assessed for potential acid mine effects with only 3 showing impaired chemical conditions; Friendship Park Lake, Jefferson Co.; Essington Lake, Perry Co.; and Lake Hope, Vinton Co. For the most part, lakes potentially affected by acid mine drainage in Ohio are found only in the unglaciated Western Allegheny Plateau ecoregion of southeast Ohio where extensive resource extraction (coal mining) occurs.

K. Status and Trends of Lake Water Quality. Tables 10 through 13 provide a summary of the status and trends of water quality information for Ohio's public lakes from 1988, 1990, 1992, and 1994. The data for these tables were obtained using the Ohio LCI assessment process. The most significant increase in available information has been for the IBI, fish tissue, sediment contamination, and volume loss parameters. These increases in data were primarily the result of the Ohio EPA 1989-90 and 1992 Section 314 Lake Water Quality Assessment grants and the 1988 SCS sedimentation survey. Beginning with the 1992 Lake WRI, a significant number of lakes moved from full use to partial use for the non-priority pollutant (NP) LCI parameter due to the addition of a 2.0 mg/l hypolimnetic oxygen criterion.

The inclusion of this oxygen criterion results in a more realistic assessment of the overall health of the lake resource.

Perhaps the most obvious conclusion from the data in Tables 10 through 12 and Figure 2 is the fact that a significant number of lakes have not been assessed for most of the 14 Ohio LCI parameters. This represents a deficiency in the Ohio's water quality assessment process. In addition, much of the assessed data are evaluated rather than monitored data. Evaluated data are the only type of data used to assess two LCI parameters– Index of Biotic Integrity (IBI) and nuisance growths of macrophytes.

II. Nonpoint Source Lake Assessment

Section 319 of the Clean Water Act requires each state to report the extent that nonpoint sources of pollution effect waters of the State. The Ohio EPA completed a nonpoint source assessment in 1988, which was updated in 1989 (Ohio EPA 1988b,1990a). As part of this NPS assessment process, a procedure was developed to "target" public lakes with potential nonpoint source pollution problems. This procedure uses 8 of the 14 Ohio LCI parameters as being indicative of nonpoint source pollution: 1) productivity based on summer chlorophyll-a, 2) nutrients based on spring total phosphorus, 3) volume loss due to sedimentation, 4) fecal coliform bacteria, 5) acid mine drainage, 6) aesthetics (fish kills, algae blooms, etc.), 7) priority pollutant metals, and 8) presence of nuisance macrophytes. A lake was targeted as being NPS impacted if four or more of these eight parameters indicate that full use (fu) was not being attained, regardless of whether the data was monitored or evaluated.

A list of 69 NPS targeted lakes is provided in Appendix G. These lakes are associated with watersheds that have been given a high priority for nonpoint source implementation control measures. Additional details are given in the 1990 State of Ohio Nonpoint Source Assessment (Ohio EPA 1990a).

III. 1994 Recommendations

Efforts since 1988 by the Ohio EPA and other agencies to assess the overall condition of Ohio's lakes should be continued and expanded. Additional data are needed on volume loss due to sedimentation, fish tissue and sediment contamination, and overall health of the biological resource (e.g. through development of biocriteria or assessment criteria for fish, plankton, macrophytes, etc.). Besides continuing to obtain Section 314 Phase I and II grants for intensive monitoring of specific lakes, a state funded inland lake monitoring program needs to be initiated to collect baseline and long-term chemical, physical, and biological data for all of Ohio's 447 public lakes. More lakes need to be sampled more often to determine trends in resource condition. A select set of ambient lake stations needs to be established to determine long term trends of lake ecosystem condition, both by ecoregion and lake type. Resources directed to development of lake wetland habitat monitoring procedures and assessment criteria should also be given a high priority

The volunteer citizen monitoring program established by NEFCO and OLMS/CLIP should be continued and expanded. Resources should be made available to include chlorophyll-a and total phosphorus measurements along with Secchi depth as the minimum monitoring components.A pilot project adding these two parameters was undertaken by NEFCO in 1991 and 1992; another pilot is currently underway in the CLIP program for 1994.

Table 10. 1988 305(b) summary of Lake Condition Index (LCI) parameters for Ohio's 417 public lakes.

		IBI	NM	A	NP	PPO	PPM	P	N	F	V	S	B	M
Lakes	No.	—	166	185	92	28	97	125	125	5	164	2	86	100
Assessed	Acres	—	99,895	101,971	88,153	9,741	91,226	86,399	102,029	545	99,012	180	89,995	91,179
Not	No.	417	251	232	325	389	330	292	292	412	253	415	331	317
Assessed	Acres	117,323	17,428	15,353	29,170	107,852	26,097	30,924	15,295	116,778	18,311	117,143	27,328	26,144
Full Use	No.	—	—	33	67	1	56	15	29	3	—	1	75	98
Monitored	Acres	—	—	12,413	58,411	100	61,498	3,536	17,585	365	—	80	86,335	91,036
Full Use	No.	—	92	51	—	—	—	—	—	—	15	—	—	—
Evaluated	Acres.	—	60,110	19,352	—	—	—	—	—	—	5,828	—	—	—
Partial Use	No.	—	—	39	—	—	26	—	—	2	—	1	7	—
Monitored	Acres.	—	—	37,350	—	—	22,890	—	—	180	—	100	1,620	—
Partial Use	No.	—	74	60	3	27	—	19	34	—	149	—	2	—
Evaluated	Acres.	—	39,785	27,662	3,630	9,731	—	5,901	4,509	—	93,184	—	1,752	—
Impaired Use	No.	—	—	2	2	—	5	—	—	—	—	—	2	2
Monitored	Acres.	—	—	5,194	36	—	6,839	—	—	—	—	—	288	143
Eutrophic	No.	—	—	—	—	—	—	48	33	—	—	—	—	—
Monitored	Acres.	—	—	—	—	—	—	32,681	40,289	—	—	—	—	—
Hypereutrophic	No.	—	—	—	—	—	—	43	29	—	—	—	—	—
Monitored	Acres.	—	—	—	—	—	—	44,282	41,446	—	—	—	—	—

LCI parameter abbreviations: IBI = Ohio EPA Index of BIotic Integrity; NM = Nuisance growths of macrophytes; A = Aesthetics; NP = Non-priority pollutants; PPO = Priority organics (toxics); PPM - Priority metals (toxics); P = Productivity (summer chlorophyll-a); N = Nutrients (spring total phosphorus), F = Fish tissue contamination, V = Volume loss due to sedimentation; B = Fecal coliform bacteria, M = Acid mine drainage.

Table 11. 1990 305(b) summary of Lake Condition Index (LCI) parameters for Ohio's 417 public lakes.

		IBI	NM	A	NP	PPO	PPM	P	N	F	V	S	B	M	SD
Lakes	No.	25	173	191	103	47	99	130	134	14	180	40	89	111	140
Assessed	Acres	26,802	100,437	102,497	88,926	39,078	92,087	86,868	103,306	27,614	102,751	33,524	90,733	91,952	103,055
Not	No.	392	244	226	314	370	318	287	283	403	237	377	328	306	277
Assessed	Acres	90,559	16,924	14,864	28,435	82,283	25,274	30,493	14,055	89,747	14,610	83,837	26,628	25,409	14,306
Full Use	No.	—	—	37	74	5	75	16	36	12	12	34	78	109	26
Monitored	Acres	—	—	13,158	51,772	13,230	77,315	3,679	22,423	27,434	10,837	32,686	88,362	91,809	5,759
Full Use	No.	10	100	52	—	13	—	—	—	—	23	—	—	—	23
Evaluated	Acres.	17,007	70,839	21,472	—	8,117	—	—	—	—	13,880	—	—	—	13,456
Partial Use	No.	—	1	45	24	—	21	—	—	2	29	6	8	—	58
Monitored	Acres.	—	183	41,371	33,488	—	14,456	—	—	180	18,532	838	2,016	—	37,469
Partial Use	No.	10	68	51	3	29	—	17	31	—	113	—	1	—	33
Evaluated	Acres.	9,407	29,202	20,951	3,630	13,731	—	5,825	4,343	—	59,276	—	67	—	46,371
Impaired Use	No.	—	—	6	2	—	3	—	—	—	2	—	2	2	—
Monitored	Acres.	—	—	5,545	36	—	316	—	—	—	194	—	288	143	—
Eutrophic	No.	—	—	—	—	—	—	53	40	—	—	—	—	—	—
Monitored	Acres.	—	—	—	—	—	—	39,997	38,907	—	—	—	—	—	—
Hypereutr.	No.		—	—	—	—	—	44	27	—	—	—	—	—	—
Monitored	Acres.	—	—	—	—	—	—	37,367	37,633	—	—	—	—	—	—

LCI parameter abbreviations: IBI = Ohio EPA Index of BIotic Integrity; NM = Nuisance growths of macrophytes; A = Aesthetics; NP = Non-priority pollutants; PPO = Priority organics (toxics); PPM - Priority metals (toxics); P = Productivity (summer chlorophyll-a); N = Nutrients (spring total phosphorus), F = Fish tissue contamination, V = Volume loss due to sedimentation; B = Fecal coliform bacteria, M = Acid mine drainage; SD = Secchi disk.

Table 12. 1992 305(b) summary of Lake Condition Index (LCI) parameters for Ohio's 450 public lakes.

		IBI	NM	A	NP	PPO	PPM	P	N	F	V	S	B	M	SD
Lakes	No.	49	178	194	120	61	111	144	148	16	182	46	96	121	151
Assessed	Acres	34,774	102,562	103,542	94,804	41,387	94,424	89,284	105,701	27,838	103,611	36,177	94,023	95,399	105,223
Not	No.	401	272	255	330	389	338	306	302	434	268	404	354	329	299
Assessed	Acres	84,081	16,293	14,413	24.050	77,468	23,106	29,571	13,154	91,017	15,244	82,678	24,831	23,456	13,632
Full Use	No.	0	2	44	21	8	91	20	37	14	12	41	84	118	34
Monitored	Acres	0	764	16,923	17,754	14,611	81,196	2,695	22,317	27,658	10,837	35,159	89,512	95,170	7,437
Full Use	No.	26	105	55	—	22	—	—	—	—	29	—	—	—	19
Evaluated	Acres.	23,610	75,068	23,022	—	9,428	—	—	—	—	15,364	—	—	—	9,422
Partial Use	No.	—	1	45	96	—	18	—	—	2	30	5	9	—	77
Monitored	Acres.	—	183	38,415	76,595	—	13,116	—	—	180	18,631	1,018	4,157	—	51,662
Partial Use	No.	17	66	44	1	31	—	12	28	—	108	—	1	—	21
Evaluated	Acres.	10,671	26,334	18,377	420	17,348	—	2,332	2,558	—	58,553	—	67	—	36,701
Impaired Use	No.	—	1	6	2	—	2	—	—	—	2	—	2	23	—
Monitored	Acres.	—	88	6,805	36	—	112	—	—	—	194	—	288	228	—
Impaired Use	No.	6	3	—	—	—	—	—	—	—	1	—	—	—	—
Evaluated	Acres.	493	125	—	—	—	—±	—	—	—	32	—	—	—	—
Eutrophic	No.	—	—	—	—	—	—	72	56	—	—	—	—	—	—
Monitored	Acres.	—	—	—	—	—	—	47,605	45,222	—	—	—	—	—	—
Hypereutr.	No.	—	—	—	—		—	40	27	—	—	—	—	—	—
Monitored	Acres.	—	—	—	—	—	—	36,651	35,603	—	—	—	—	—	—

LCI parameter abbreviations: IBI = Ohio EPA Index of BIotic Integrity; NM = Nuisance growths of macrophytes; A = Aesthetics; NP = Non-priority pollutants; PPO = Priority organics (toxics); PPM - Priority metals (toxics); P = Productivity (summer chlorophyll-a); N = Nutrients (spring total phosphorus), F = Fish tissue contamination, V = Volume loss due to sedimentation; B = Fecal coliform bacteria, M = Acid mine drainage; SD = Secchi disk.

Table 13. 1994 305(b) summary of Lake Condition Index (LCI) parameters for Ohio's 447 public lakes.

		IBI	NM	A	NP	PPO	PPM	P	N	F	V	S	B	M	SD
Lakes	#	64	190	154	134	66	125	156	162	16	191	62	105	134	161
Assessed	ac	50,561	103,489	104,119	95,486	40,627	95,105	90,760	106,381	27,838	104,337	51,626	94,599	95,179	105,714
Not	#	383	257	293	313	381	322	291	285	431	256	385	342	313	286
Assessed	ac	68,240	15,312	14,682	23,315	78,174	23,696	28,041	12,420	90,963	14,464	67,175	24,202	23,622	13,087
Full Use	#	–	2	52	23	14	103	25	45	14	12	52	90	131	35
Monitored	ac	–	764	17,461	21,981	15,041	81,859	3,174	22,606	27,658	10,837	49,364	89,067	94,951	7,717
Full Use	#	38	112	51	–	22	–	–	–	–	36	–	–	–	16
Evaluated	ac	31,186	82,054	21,748	–	9,428	–	–	–	–	16,138	–	–	–	8,666
Part. Use	#	–	2	53	108	–	20	–	–	2	30	10	11	–	93
Monitored	ac	–	231	41,012	73,049	–	13,134	–	–	180	18,631	2,262	4,877	–	67,526
Part. Use	#	26	69	42	1	30	–	11	28	–	110	–	1	–	17
Evaluated	ac	19,735	20,214	17,081	420	16,158	–	1,142	2,558	–	58,505	–	67	–	21,805
Impaired	#	–	1	7	2	-	2	–	–	–	2	–	3	3	–
Monitored	ac	–	88	6,817	36	–	112	–	–	–	194	–	588	228	–
Impaired	#	–	4	–	–	–	–	–	–	–	1	–	–	–	–
Evaluated	ac	–	137	–	–	–	–	–	–	–	32	–	–	–	–
Eutrophic	#	–	–	–	–	-	–	79	65	–	–	–	–	–	–
Monitored	ac	–	–	–	–	–	–	48,495	64,645	–	–	–	–	–	–
Hypereutr.	#	–	–	–	–	–	–	41	24	–	–	–	–	–	–
Monitored	ac	–	–	–	–	–	–	37,949	16,572	–	–	–	–	–	–

IV. Appendix Tables.

1. Appendix A. Revised Ohio Lake Condition Index assessment process.

2. Appendix B. List of Ohio's public lakes/reservoirs/ponds greater than 5 acres surface area.

3. Appendix C. Trophic state classification and TSI data for public lakes greater than 5 acres surface area.

4. Appendix D. Ohio Lake Condition Index questionnaire.

5. Appendix E. Ohio State Lakes Policy.

6. Appendix F-1. Relative assessment of causes of impairment (acres) causing partial and non-support of designated uses in lakes, ponds, and reservoirs in Ohio.

7. Appendix F-2. Relative assessment of sources of impairment (acres) causing partial and non-support of designated uses in lakes, ponds, and reservoirs in Ohio.

8. Appendix G. List of nonpoint source targeted lakes.

9. Appendix H. Summary of LCI parameters for Ohio's 447 public lakes.

10. Appendix I. Report on Ohio EPA's 1992 Lake Water Quality Assessment grant.

11. Appendix J. Literature Cited.

APPENDIX A

Revised Ohio Lake Condition Index (LCI)

The Ohio Lake Condition Index (Ohio LCI) was developed by the Ohio EPA for the 1988 305(b) reporting cycle. The LCI is a multiparameter (14 metrics in the 1992 revision) lake classification scheme that is used to quantify the overall condition or ecosystem health of Ohio's public lakes, as required by Sections 305 and 314 of the CleanWater Act. Specifically, it is used to (1) determine if water quality standards are being realized in Ohio's public lakes, (2) to evaluate attainment of designated uses and the fishable and swimmable goals of the Clean Water Act, (3) to rank the relative condition or health of Ohio's public lakes, and (4) to "target" lakes potentially effected by nonpoint source pollutants as required by Section 319 of the Clean Water Act.

The Ohio LCI was developed with sufficient flexibility to meet expected revisions in federal EPA guidance for the 305(b) Report. The original 1988 Ohio LCI protocol (Ohio EPA 1988a) was revised and published in 1989 (Davic and DeShon 1989) and modifications were made for the 1990 Ohio 305(b) report cycle (Ohio EPA 1990b). Further revisions, in response to changes in federal EPA guidance, were subsequently made for the 1992 reporting cycle.

A. Assessment of designated uses and level of lake impairment.

Federal guidance for the 1992 305(b) Report for lakes required each State to summarize, at a minimum, the degree of impairment for the following designated uses: (1) aquatic life, (2) public drinking water, (3) recreation, i.e., the "swimmable goal of the CleanWater Act", and (4) fish consumption. For each designated use (EWH, REC, TISSUE, PWS), four levels of attainment are allowed as shown below:

Full Use, Full Attainment
Threatened Use, Attainment
Partial Use, Partial Attainment
Impaired Use, Non-Attainment

The Ohio LCI uses different sets of parameters or metrics to evaluate attainment of designated uses. For example, to determine attainment for "recreational use (REC)", eight LCI metrics are assessed (e.g., Secchi Disk (SD); Index of Biotic Integrity (IBI); Nuisance growths of Macrophytes (NM); Aesthetics (A); Algal Production (P); Volume loss due to sedimentation (V); Sediment contamination (S); and fecal coliform bacteria (B)). More than 50% of the required LCI metrics must have either monitored (m) or evaluated (bpj) data--this is

called the 50% rule. If sufficient data are not available, then the lake is added to the State's continuing assessment process and it is reported in the 305(b) Report that the lake in question could not be assessed for that specific designated use due to lack of data.

For the 1992 305(b) Report, minor changes were made to the sets of LCI metrics that are used to determine attainment for each designated use. These 1992 revisions are shown in Figure 1, Appendix A. Changes in federal guidance also resulted in the use of both monitored and evaluated to determine attainment of designated uses for aquatic life and public drinking water supply, however, greater weight is given to monitored data in the assessment process and calculation of final LCI scores.

B. Calculation of final LCI scores.

Calculation of a final LCI score provides a method for ranking the relative condition or ecosystem health of different lakes. The protocol used to calculate a final LCI ranking is presented in Davic and DeShon (1989), with some minor modifications added for this 1992 report. The final LCI score is calculated as the sum of subindex points, divided by the total number of parameters assessed (either 12, 13, or 14), multiplied by a factor of 10. This results in a mean coefficient of lake condition with a potential range of values from 10 to 100, with 100 representing the highest level of ecosystem impairment. The following points are assigned to each subindex condition:

ne:	not assessed (0 subindex points)
t-bpj:	threatened condition, evaluated data (2 points)
t-m:	threatened condition, monitored data (5 points)
i-bpj:	impaired condition, evaluated data (5 points)
i-m:	impaired condition, monitored data (10 points)
f-bpj:	full use condition, evaluated data (1 point)
f-m:	full use condition, monitored data (1 point)
t-e(m):	monitored eutrophic condition (5 points)
t-h(m):	monitored hypereutrophic condition (10 points)

Because a single score can be ambiguous in a multiparameter index with missing data, it is recommended that final LCI scores only be calculated if data are available for at least 12 of the 14 total LCI parameters under consideration. Table 9 in this report lists final LCI scores for 40 public lakes. It is important to note that the long term goal of the Ohio EPA is to have monitored (m) data for all 14 parameters for all of Ohio's 447 public lakes greater than 5 acres, however, attainment of this goal will require a significant increase in the amount of

funds spent on lake water quality assessments. Lack of monitored data that can be used in the LCI represents a deficiency in Ohio's surface water quality assessment process.

C. LCI parameter criteria.

The Ohio Lake Condition Index assessment process uses either monitored (m) or evaluated (bpj) data to measure the condition of 14 parameters or metrics. Raw data are converted into the following subindex conditions: f(m) = full use based on monitored data; f(bpj) = full use based on best professional judgement; t(m) = threatened use based on monitored data; t(bpj) = threatened use based on best professional judgement; i(bpj) = impaired use, best professional judgement, and i(m) = impaired use based on monitored data. Responses to a LCI questionnaire represent the (bpj) data for the 1992 assessment. A revised LCI questionnaire is provided in Appendix D. Where available, subindex determinations are based on state water quality standards or criteria.

I. BIOLOGICAL EVALUATION OF LAKE CONDITION

Index of Biotic Integrity-Fish (IBI)

a) Monitored data (m). The Ohio EPA developed an Index of Biotic Integrity to assess the overall health of fish communities in streams and rivers. The concept has not yet been adapted for lake habitats. The necessary developmental work will have to take place prior to any use of this index in the Ohio LCI assessment process.

b) Evaluated data (bpj). In the 1990 revision to the LCI, questionnaire data was used to evaluate the condition of fish communities in lakes. The following two questions are asked:

1. Does the lake support a well balanced mix of sport and forage fish, or do a few species dominate (circle one)?

Insufficient data; Well balanced fishery;
Partially balanced fishery; Impaired fishery

2. How would you rate the fishing in this lake?

Excellent; Good; Acceptable; Marginal; Poor

Responses to these questions were used to make an evaluated (bpj) assessment of the lake fishery for the 1992 LCI assessment process.

Nuisance Growths of Macrophytes (NM)

Based on potential impact on recreational boating, shoreline fishing, and decay to release organic matter. No standards or criteria exist. Data may be monitored (m) or evaluated (bpj).

Raw	Data Condition
< 25% lake area affected	f(m); f(bpj)
25% to 50% affected	t(m); t(bpj)
> 50% affected	i(m); i(bpj)

Fecal Coliform Bacteria Contamination (B)

Based on state water quality standards. Only monitored (m) data are used to assess this parameter.

Raw Data	Condition
< 200/100 ml	f(m)
Between 200-1000/100 ml	t(m)
>1000/100 ml	i(m)

Algal Production based on Chlorophyll-a (P)

Based on surface water samples (0.5 m depth). Only monitored (m) data are used.

Raw Data		Condition
0.3 - 2.0 ug/l	Oligotrophic	f(m)
2.0 - 6.0	Mesotrophic	f(m)
6.0 - 40.0	Eutrophic	t-e(m)
>40.0	Hypereutrophic	t-h(m)

Fish Tissue Contamination (F)

Raw Data	Condition
No fish consumption advisory issued	f(m)
Fish advisory for bottom feeders (carp, catfish).	t(m)
Fish advisory for game species	i(m)

II. CHEMICAL EVALUATION OF LAKE CONDITION

Nonpriority Pollutants (NP)

Based on State water quality standards. Only monitored (m) data are used.

Raw Data (surface or bottom)	# of Measures Above WQS	Condition
Any Nonpriority metals	0	f(m)
pH > 9.5	1 or 2	t(m)
Sulfates > 250 < 960 mg/l	> 2	i(m)
TDS > 1500 mg/l		
Ammonia, pH & Temp. Dependent		
D.O. < 6.0 mg/l (surface)		
D.O. < 2.0 mg/l (bottom)		

Priority Organics (PPO) and Priority Metals (PPM)

Based on U. S. EPA federal register list of 126 priority pollutants. Only monitored (m) data are used.

# Exceeding Chronic Criteria (surface or bottom)	Condition
0	f(m)
1	t(m)
> 1	i(m)

Nutrients based on Spring T-Phosphorus (N)

Based on surface water samples (0.5 m depth). Only monitored (m) data are used.

Raw Data	Trophic State	Condition
3 -9 ug/l	Oligotrophic	f(m)
9 - 24	Mesotrophic	f(m)
24 - 75	Eutrophic	e(m)
> 75	Hypereutrophic	t-h(m)

Sediment Contamination (S)

Metals based on Illinois EPA lake sediment criteria (Kelly *et al.*, 1984). Concentrations represent twice standard deviations from 273 individual lake sediment samples collected from 63 Illinois lakes. The following priority metals are used: Only monitored (m) data are used.

Raw Data	Criteria	Condition
Arsenic	> 41 (mg/kg)	None over criteria f(m)
Cadmium	> 2.6	1 over criteria ... t(m)
Chromium	> 38	2 over criteria ... i(m)
Copper	> 150	
Lead	> 150	
Mercury	> 0.40	
Zinc	> 250	
Oil-Grease	> 1000 (based on fed. crit)	
Total PCB's	> 50 (based on fed crit)	
TCLP (old EP Toxic) Waste		

Acid Mine Drainage (M)

pH from Ohio WQS. Other parameters from Ohio DNR, Division of Mine Reclamation criteria. Only monitored (m) data are used.

Raw Data	# of Violations	Conditions
pH < 6.5	0	f(m)
TDS > 1500 mg/l	1	t(m)
Mn > 4.0 mg/l	2	i(m)
Fe > 10.0 mg/l		
SO_4 > 960 mg/l		

Secchi Disk Transparency (SD)

Based on State of Illinois (Illinois EPA 1988) four foot minimum transparency recommended for bathing beaches. Only monitored (m) data are used.

Raw Data	Condition
Greater than 4 foot Secchi depth	f(m)
Less than 4 foot depth	t(m)

III. PHYSICAL EVALUATION OF LAKE CONDITION

Volume Loss Due To Sedimentation (V)

Based on an expected 40% reduction in useful life. Either monitored (m) or evaluated (bpj) data can be used.

Raw Data	Condition
< 10 % volume loss	f(m); f(bpj)
10% - 40 % loss	t(m); t(bpj)
> 40% loss	i(m); i(bpj)

IV. PUBLIC PERCEPTION OF LAKE CONDITION

Aesthetics (A)

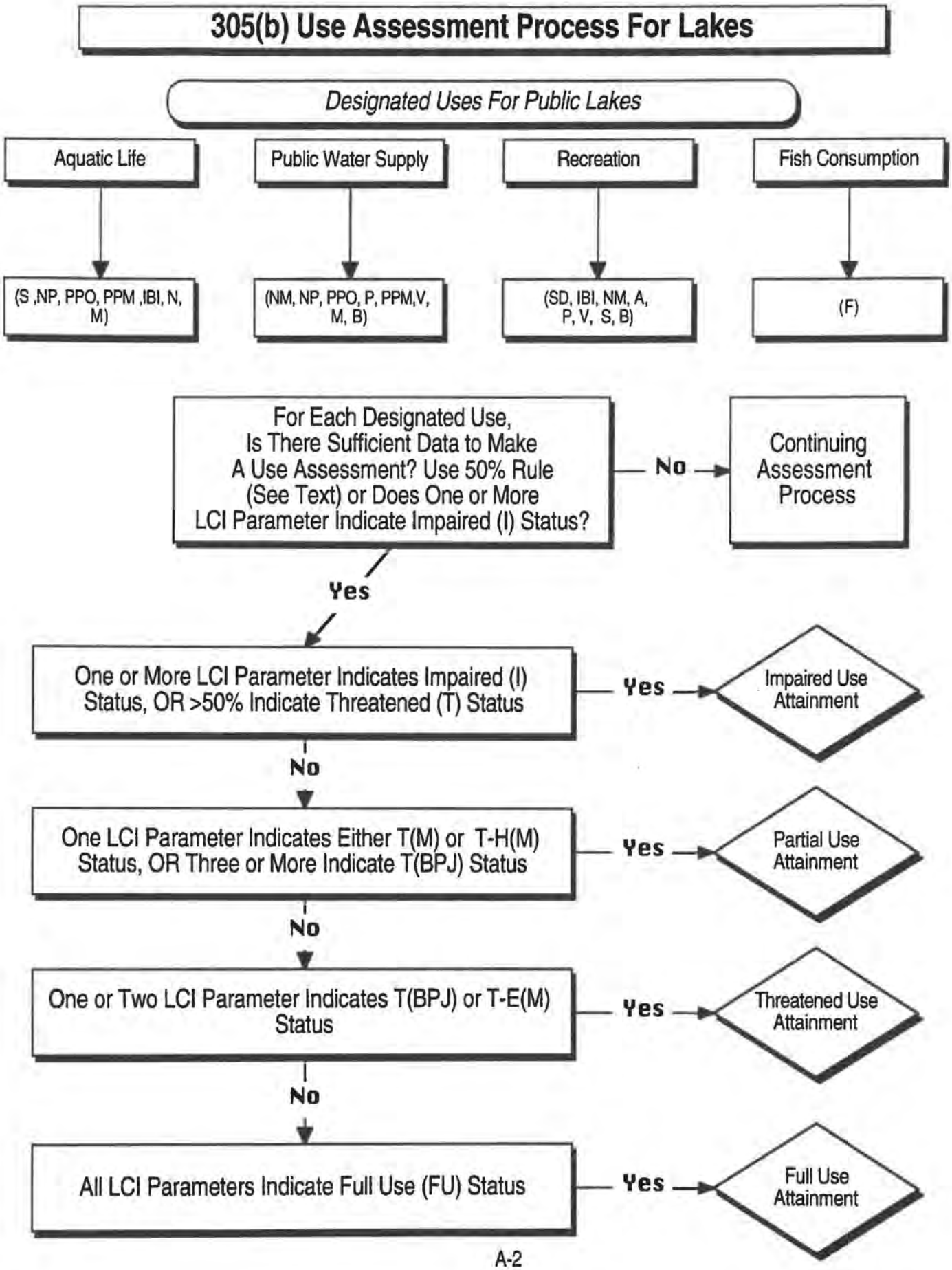
Based on responses to the following question on the Ohio LCI questionnaire:

On a scale of 1 - 10 (1 = no problem, 10 = extreme problem), please rank the following summer aesthetic conditions at this lake:

1. Algae blooms (pea green water)	1-2-3-4-5-6-7-8-9-10
2. Floating algae scums	1-2-3-4-5-6-7-8-9-10
3. Fish Kills (more than 200 fish at a time)	1-2-3-4-5-6-7-8-9-10
4. Odors	1-2-3-4-5-6-7-8-9-10
5. Duckweed	1-2-3-4-5-6-7-8-9-10
6. Muddy (brown) water	1-2-3-4-5-6-7-8-9-10
7 Taste and Odor Problems (if a water supply)	1-2-3-4-5-6-7-8-9-10
8. THM (Trihalomethane) Problems (if a water supply)	1-2-3-4-5-6-7-8-9-10
9. Other (name)	1-2-3-4-5-6-7-8-9-10

Responses to these questions were used to make a monitored (m) assessment of the public's overall perception of lake aesthetics.

Appendix A. Figure 1



Appendix B. List of Ohio's publicly owned lakes/ponds/reservoirs with greater than > 5 acres surface area.

Waterbody ID #	Lake	County	Surface Area (Acres)	Lake Uses:	Lake Type:
OH61 23- 48	ACTON LAKE	Butler	604.0	WS R	DPI
OH48 13- 1	ADAMS LAKE	Adams	37.0	R	DPI
OH88 1-369	ALDER POND	Summit	15.0	R	NL
OH78 4-336	ALDRICH POND	Sandusky	34.0	R	DO
OH38 5-102	ALUM CREEK LAKE	Delaware	3387.0	WS R FC	DPI
OH36 35-268	AMANN RESERVOIR	Morrow	24.0	WS R	DPI
OH36 35-269	AMICKS RESERVOIR	Morrow	51.0	WS R	UP
OH72 18-139	ARCHBOLD RESERVOIR #1	Fulton	20.0	WS R	UP
OH72 18-140	ARCHBOLD RESERVOIR #2	Fulton	49.0	WS R	UP
OH92 28- 16	ASHTABULA CO. METRO PARKS LAKE #1	Ashtabula	5.5	R	DPI
OH92 28- 17	ASHTABULA CO. METRO PARKS LAKE #2	Ashtabula	6.0	R	DPI
OH45 21-303	ATOMIC ENERGY COMM. LAKE #1	Pike	13.8	C	DPI
OH45 21-304	ATOMIC ENERGY COMM. LAKE #2	Pike	17.0	C	UP
OH81 18-344	ATTICA RESERVOIR	Seneca	5.2	WS	UP
OH12 5-383	ATWOOD RESERVOIR	Tuscarawas	1540.0	R FC	DPI
OH87 4- 88	BALDWIN LAKE	Cuyahoga	32.0	WS R	DPI
H90 19- 95	BALDWIN RESERVOIR	Cuyahoga	6.0	WS	UP
OH82 1-337	BALLVILLE RESERVOIR	Sandusky	89.0	WS	DPI
OH10 28-367	BARBERTON RESERVOIR (WOLF CR.	Summit	196.0	WS	DPI
OH 7 36- 36	BARNESVILLE RESERVOIR #1	Belmont	35.0	WS R	DPI
OH 7 36- 37	BARNESVILLE RESERVOIR #2	Belmont	11.3	WS R	DPI
OH 7 44- 35	BARNESVILLE RESERVOIR #3	Belmont	98.0	WS R	DPI
OH53 -418	BATAVIA WATER SUPPLY RESERVOIR	Clermont	14.0	WS	DPI
OH13 1-384	BEACH CITY LAKE	Tuscarawas	420.0	R FC	DPI
OH82 2-342	BEAVER CREEK RESERVOIR	Seneca	110.0	WS R	UP
OH 2 5- 78	BEAVER LAKE	Columbiana	103.0	WS	DPI
OH84 25-194	BELLEVUE RESERVOIR #1,2	Huron	14.2	WS R	UP
OH84 25-193	BELLEVUE RESERVOIR #3	Huron	14.0	WS R	UP
OH83 3-192	BELLEVUE RESERVOIR #4	Huron	31.0	WS R	UP
OH84 12-201	BELLEVUE RESERVOIR #5	Huron	87.0	WS R	UP
OH 6 19- 30	BELMONT LAKE	Belmont	117.0	R	DPI
OH84 24-110	BERLIN HEIGHTS RESERVOIR	Erie	5.0	WS	UP
OH 1 24-307	BERLIN RESERVOIR	Portage	3590.0	WS R FC	DPI
H53 31- 60	BETHEL RESERVOIR	Clermont	5.5	WS	UP

Uses: WS - Water Supply, R - Recreation, FC - Flood Control

Appendix B. List of Ohio's publicly owned lakes/ponds/reservoirs with greater than > 5 acres surface area.

Waterbody ID #	Lake	County	Surface Area (Acres)	Lake Uses:	Lake Type:
OH53 25-419	BETHEL UPGROUND RESERVOIR #2	Clermont	6.0	WS	UP
OH 7 24- 32	BETHESDA RESERVOIR	Belmont	13.0	WS	DPI
OH77 10-422	BGSU GOLF COURSE LAKE	Wood	7.0	R	DO
OH34 -420	BIG ISLAND WILDLIFE AREA UPGR.	Marion	382.0	R	UP
OH52 4- 61	BLANCHESTER RESERVOIR #1	Clinton	7.1	WS	UP
OH52 4- 62	BLANCHESTER RESERVOIR #2	Clinton	7.1	WS	UP
OH52 4- 63	BLANCHESTER RESERVOIR #3	Clinton	11.4	WS	DPI
OH52 4- 64	BLANCHESTER RESERVOIR #4	Clinton	11.4	WS	UP
OH52 4- 65	BLANCHESTER RESERVOIR #5	Clinton	17.9	WS	UP
OH36 2-421	BLUE LIMESTONE PARK QUARRY LAKE	Delaware	6.8	R	DO
OH23 3-275	BLUE ROCK STATE PARK LAKE (CUTLER	Muskingum	18.0	WS R	DPI
OH77 10-423	BOWLING GREEN UPGROUND RESERVOIR	Wood	20.5	WS	DO
OH88 8-313	BRADY LAKE	Portage	70.0	R	NL
OH70 13- 4	BRESLER RESERVOIR	Allen	582.0	WS R	UP
OH22 59-212	BUCKEYE LAKE	Licking	3136.0	WS R	DPI
OH80 17- 83	BUCYRUS RESERVOIR #1	Crawford	36.0	WS R	DPI
OH80 17- 86	BUCYRUS RESERVOIR #2	Crawford	31.0	WS R	DPI
OH80 17- 87	BUCYRUS RESERVOIR #4 (Outhwaite Res.)	Crawford	150.0	WS	UP
OH 2 5-236	BURGESS LAKE	Mahoning	20.0	WS	DPI
OH26 20- 23	BURR OAK LAKE (T. JENKINS RESV.)	Athens	664.0	WS R FC	DPI
OH58 18- 55	C. J. BROWN LAKE	Clark	2120.0	R FC	DPI
OH51 1-393	CAESAR CREEK RESERVOIR	Warren	2830.0	WS R FC	DPI
OH 9 34-278	CALDWELL LAKE	Noble	51.0	WS R FC	DPI
OH86 16-424	CALEY WOODS WILDLIFE LAKE	Lorain	8.5	R	DPI
OH21 43-158	CAMBRIDGE RESERVOIR	Guernsey	26.0	WS R	DPI
OH85 8-215	CAMDEN RESERVOIR	Lorain	9.0	R	NL
OH56 2-261	CARRIAGE HILL RESERVE LAKE	Montgomery	14.1	R	DPI
OH50 15-157	CEDARVILLE COLLEGE LAKE	Greene	6.0	R	DPI
OH50 15-155	CEDARVILLE RESERVOIR	Greene	5.0	WS R	UP
OH84 19- 82	CELERYVILLE RESERVOIR	Crawford	75.0	WS R	UP
OH16 21- 13	CHARLES MILL LAKE	Ashland	1350.0	R FC	DPI
OH10 -425	CHIPPEWA CR. STRUCTURE 5-C	Wayne	8.5	FC	DPI
OH10 -426	CHIPPEWA CR. STRUCTURE 5-D	Wayne	6.7	R FC	DPI
OH10 19-398	CHIPPEWA CR. STRUCTURE 7-C	Wayne	34.0	FC	DPI

Uses: WS - Water Supply, R - Recreation, FC - Flood Control

Appendix B. List of Ohio's publicly owned lakes/ponds/reservoirs with greater than > 5 acres surface area.

Waterbody ID #	Lake	County	Surface Area (Acres)	Lake Uses:	Lake Type:
OH10 24-243	CHIPPEWA CREEK STRUCTURE 2-A	Medina	12.0	FC	DPI
OH10 22-244	CHIPPEWA CREEK STRUCTURE 3-A	Medina	20.0	R FC	DPI
OH10 16-242	CHIPPEWA CREEK STRUCTURE 7-C	Medina	23.0	FC	DPI
OH54 1-163	CINCINNATI WATERWORKS LAKE #1	Hamilton	18.0	R	DO
OH54 1-164	CINCINNATI WATERWORKS LAKE #2	Hamilton	19.0	R	DO
OH17 10- 14	CINNAMON LAKE	Ashland	131.0	WS	DPI
OH17 23- 10	CITY OF ASHLAND LAKE	Ashland	6.0	R	DO
OH58 1-258	CITY OF DAYTON LAKE #1	Montgomery	10.0	R	DO
OH 1 20-373	CITY OF NEWTON FALLS LAKE	Trumbull	12.5	R	DO
OH76 20-404	CITY OF PERRYSBURG LAKE	Wood	6.5	R	DO
OH30 18-205	CITY OF WELLSTON LAKE	Jackson	11.0	WS	DPI
OH58 17- 54	CLARK LAKE	Clark	100.0	R	DPI
OH16 15-328	CLEAR FORK RESERVOIR	Richland	1010.0	WS R	DPI
OH14 20-182	CLENDENING LAKE	Harrison	1800.0	R FC	DPI
OH52 -427	CLINTON COUNTY DAM #1	Clinton	10.0	FC	DPI
OH25 21-292	CLOUSE POND (CLOUSE LAKE)	Perry	41.0	R C	DPI
H87 5- 90	COE LAKE	Cuyahoga	23.0	WS R	DO
OH25 15-122	COLFAX LAKE (RCCD STRUCTURE 7-A)	Fairfield	22.0	R FC	DPI
OH61 30-322	COLLEGE CORNER RESERVOIR	Preble	5.0	R	UP
OH26 23-296	CORNING RESERVOIR	Perry	15.5	WS R	DPI
OH52 11- 66	COWAN LAKE	Clinton	688.0	R	DPI
OH23 44-263	CROOKSVILLE LOWER RESERVOIR #1	Morgan	7.5	WS	DPI
OH23 45-286	CROOKSVILLE RESERVOIR #3	Perry	15.0	WS	DPI
OH23 44-264	CROOKSVILLE UPPER RESERVOIR #2	Morgan	5.0	WS R	DPI
OH 1 14-311	CRYSTAL LAKE	Portage	25.0	R	NL
OH23 2-270	CUTLER LAKE (BLUE ROCK STATE PARK	Muskingum	18.2	WS R	DPI
OH 1 29-349	DALE WALBURN RESERVOIR	Stark	670.0	WS	DPI
OH57 24- 98	DARKE WILDLIFE AREA LAKE	Darke	21.0	R	DPI
OH41 16-297	DEER CREEK CAMPGROUND LAKE	Pickaway	8.0	R C	DPI
OH41 15-298	DEER CREEK LAKE	Pickaway	1277.0	R FC C	DPI
OH 1 24-348	DEER CREEK RESERVOIR	Stark	313.0	WS R	DPI
OH71 19-417	DEFIANCE POWER DAM RESERVOIR	Defiance	679.0	R	DPI
OH36 1-103	DELAWARE LAKE	Delaware	1300.0	R FC	DPI
H37 15-428	DELCO UPGROUND RESERVOIR #2	Delaware	30.5	WS R	UP

Uses: WS - Water Supply, R - Recreation, FC - Flood Control

Appendix B. List of Ohio's publicly owned lakes/ponds/reservoirs with greater than > 5 acres surface area.

Waterbody ID #	Lake	County	Surface Area (Acres)	Lake Uses:	Lake Type:
OH37 15-107	DELCO WATER COMPANY LAKE	Delaware	6.0	WS	UP
OH73 2-144	DELTA POND	Fulton	11.0	R	DO
OH73 2-142	DELTA RESERVOIR	Fulton	39.0	WS R	UP
OH73 2-145	DELTA RESERVOIR #2	Fulton	50.0	WS	UP
OH74 8-184	DESHLER RESERVOIR	Henry	23.0	WS R	UP
OH22 5-272	DILLON RESERVOIR	Muskingum	1325.0	R FC	DPI
OH27 49- 21	DOW LAKE	Athens	161.0	R	DPI
OH -429	DUGOUT POND (ODOT)	Wood	8.5	R	DO
OH88 18-152	EAST BRANCH RESERVOIR	Geauga	416.0	WS	DPI
OH58 -430	EAST FK. BUCK CR. STRUCTURE 1-B	Champaign	6.3	FC	DPI
OH58 -431	EAST FK. BUCK CR. STRUCTURE 4-A	Champaign	21.5	FC	DPI
OH53 20- 58	EAST FORK LAKE	Clermont	2160.0	WS R FC	DPI
OH 4 8- 72	EAST PALESTINE RESERVOIR	Columbiana	5.0	WS R	DPI
OH10 33-359	EAST RESERVOIR	Summit	201.0	R	NL
OH58 1-257	EASTWOOD LAKE	Montgomery	170.0	R	DO
OH56 12-252	ECHO LAKE	Miami	14.5	WS R	DPI
OH62 32-162	EDEN PARK POND	Hamilton	6.0	R	DO
OH23 45-285	ESSINGTON LAKE	Perry	16.0	R C	DPI
OH 2 5-239	EVANS LAKE	Mahoning	566.0	WS R	DPI
OH75 9-226	EVERGREEN LAKE	Lucas	8.5	R	DPI
OH90 20- 94	FAIRMOUNT RESERVOIR	Cuyahoga	8.0	WS	UP
OH43 48-188	FALLSVILLE WILDLIFE AREA LAKE	Highland	11.0	R C	DPI
OH68 18- 5	FERGUSON RESERVOIR	Allen	305.0	WS R	UP
OH66 13-170	FINDLAY RESERVOIR #1	Hancock	186.0	WS R	UP
OH66 13-171	FINDLAY RESERVOIR #2	Hancock	650.0	WS R	UP
OH86 16-217	FINDLEY LAKE	Lorain	83.0	R	DPI
OH10 33-354	FIRESTONE RESERVOIR	Summit	83.0	WS R	DPI
OH28 63-248	FORKED RUN LAKE	Meigs	104.0	R	DPI
OH64 18- 29	FORTY ACRE POND	Auglaize	70.0	R C	DPI
OH26 5- 27	FOX LAKE STRUCTURE #6	Athens	47.0	R FC	DPI
OH56 12-253	FRANZ POND	Miami	6.0	WS R	DPI
OH 5 8-207	FRIENDSHIP PARK LAKE	Jefferson	85.0	R	DPI
OH75 11-138	FULTON POND	Fulton	15.0	R C	DO
OH49 48- 42	GEORGETOWN VILLAGE RESERVOIR	Brown	11.8	WS R	UP

Uses: WS - Water Supply, R - Recreation, FC - Flood Control

Appendix B. List of Ohio's publicly owned lakes/ponds/reservoirs with greater than > 5 acres surface area.

Waterbody ID #	Lake	County	Surface Area (Acres)	Lake Uses:	Lake Type:
OH 2 22-380	GIRARD LAKE	Trumbull	185.0	WS R	DPI
OH86 5-221	GRAFTON UPGROUND RESERVOIR	Lorain	7.0	WS	UP
OH63 14- 28	GRAND LAKE ST. MARYS	Auglaize	12700.0	WS R	DPI
OH91 29-375	GRAND RIVER WILDLIFE AREA LAKE	Trumbull	11.2	R	DPI
OH -450	GRANGER POND	Lake	30.0	R	DO
OH49 55- 39	GRANT LAKE	Brown	181.0	R	DPI
OH50 7-156	GREENE CO. PARKS LAKE (FISH POND #2)	Greene	5.0	R	DPI
OH25 26-112	GREENFIELD LAKE (HUNTERS RUN #R-63)	Fairfield	13.5	R FC	DPI
OH85 14-191	GREENWICH RESERVOIR	Huron	6.5	WS R	DPI
OH 4 34- 74	GUILFORD LAKE	Columbiana	396.0	R	DPI
OH44 17-203	HAMMERTOWN LAKE (JACKSON CITY	Jackson	186.0	WS R	DPI
OH41 39-299	HARGUS LAKE	Pickaway	130.0	R C	DPI
OH72 29-141	HARRISON LAKE	Fulton	96.0	R	DPI
OH22 59-213	HEBRON FISH HATCHERY LAKE	Licking	75.0	C	UP
OH78 5-335	HELENA LAKE	Sandusky	15.0	R	DO
OH 1 16-318	HICKORY LAKE	Portage	6.0	R	DPI
H 5 84- 75	HIGHLANDTOWN LAKE	Columbiana	170.0	R	DPI
OH 5 85- 76	HIGHLANDTOWN WILDLIFE AREA POND	Columbiana	7.0	R C	DPI
OH43 49-187	HILLSBORO RESERVOIR	Highland	22.0	WS R	DPI
OH43 49-433	HILLSBORO UPGROUND RESERVOIR	Highland	19.8	WS	UP
OH87 4-246	HINCKLEY LAKE	Medina	88.0	R	DPI
OH44 30-189	HOCKING HILLS RESERVOIR	Hocking	21.0	WS R	DPI
OH38 22-131	HOOVER RESERVOIR	Franklin	3000.0	WS R	DPI
OH58 11- 56	HOSTERMAN LAKE	Clark	9.2	R	DPI
OH88 18-357	HOWER LAKE	Summit	23.0	R	DPI
OH25 27-116	HRCD STRUCTURE 1	Fairfield	5.0	FC	DPI
OH25 27-117	HRCD STRUCTURE 2	Fairfield	8.9	FC	DPI
OH25 26-114	HRCD STRUCTURE 5	Fairfield	7.1	FC	DPI
OH25 26-115	HRCD STRUCTURE 8	Fairfield	7.5	FC	DPI
OH25 27-118	HRCD STRUCTURE R-21	Fairfield	5.3	FC C	DPI
OH89 9-371	HUDSON SPRINGS LAKE	Summit	45.0	R	DPI
OH73 26-100	INDEPENDENCE DAM RESERVOIR	Defiance	605.0	R	DPI
OH53 50- 38	INDIAN CREEK WILDLIFE AREA PONDS	Brown	56.0	R	DPI
I55 40-214	INDIAN LAKE	Logan	5104.0	R	DPI

Uses: WS - Water Supply, R - Recreation, FC - Flood Control

Appendix B. List of Ohio's publicly owned lakes/ponds/reservoirs with greater than > 5 acres surface area.

Waterbody ID #	Lake	County	Surface Area (Acres)	Lake Uses:	Lake Type:
OH 5 84-434	ISMOND POND	Columbiana	7.5	R	DPI
OH37 19-132	J. GRIGGS RESERVOIR	Franklin	385.0	WS R	DPI
OH32 35-202	JACKSON LAKE	Jackson	243.0	R	DPI
OH 5 56-206	JEFFERSON LAKE	Jefferson	25.0	R	DPI
OH44 16-416	JISCO LAKE	Jackson	54.0	R	DPI
OH89 9-320	KENT BOARD OF TRUSTEES LAKE	Portage	10.0	C	DPI
OH79 1-406	KILLDEER RESERVOIR	Wyandot	253.0	R C	UP
OH80 12-407	KILLDEER WILDLIFE POND #1	Wyandot	9.0	R C	DO
OH79 22-408	KILLDEER WILDLIFE POND #2	Wyandot	45.0	R C	DPI
OH80 12-409	KILLDEER WILDLIFE POND #3	Wyandot	9.0	R C	DPI
OH80 12-410	KILLDEER WILDLIFE POND #4	Wyandot	8.0	R C	DPI
OH79 24-411	KILLDEER WILDLIFE POND #5	Wyandot	18.0	R C	DO
OH80 12-412	KILLDEER WILDLIFE POND #6	Wyandot	15.0	R C	DO
OH80 11-413	KILLDEER WILDLIFE POND #7	Wyandot	225.0	R C	UP
OH80 11-414	KILLDEER WILDLIFE POND #8	Wyandot	373.0	R C	DPI
OH80 11-415	KILLDEER WILDLIFE POND #9	Wyandot	225.0	R C	UP
OH21 43-435	KILLIANY LAKE	Guernsey	5.4	R	DPI
OH85 8-216	KIPTON RESERVOIR	Lorain	20.0	WS R	DPI
OH56 40- 52	KISER LAKE	Champaign	380.0	R	DPI
OH18 29-208	KNOX LAKE	Knox	474.0	R	DPI
OH30 17-391	LAKE ALMA	Vinton	63.0	WS R	DPI
OH10 28-351	LAKE ANNA	Summit	12.0	R	NL
OH88 16-151	LAKE AQUILLA	Geauga	27.0	R	NL
OH45 62-330	LAKE CALDWELL	Ross	9.6	R	DPI
OH 2 12-234	LAKE COHASSET	Mahoning	27.0	R	DPI
OH77 8-177	LAKE DAUGHTERY	Hancock	12.0	WS R	UP
OH88 11-315	LAKE GEORGE	Portage	12.0	R	NL
OH 2 12-233	LAKE GLACIER	Mahoning	43.0	R	DPI
OH 2 5-235	LAKE HAMILTON	Mahoning	104.0	WS R	DPI
OH88 8-310	LAKE HODGSON	Portage	190.0	WS R	DPI
OH30 56-390	LAKE HOPE	Vinton	127.0	WS R	DPI
OH54 7-168	LAKE ISABELLA	Hamilton	23.0	R	DO
OH87 - 96	LAKE ISSAC	Cuyahoga	11.0	R	DPI
OH44 15-204	LAKE KATHARINE	Jackson	42.0	R	DPI

Uses: WS - Water Supply, R - Recreation, FC - Flood Control

Appendix B. List of Ohio's publicly owned lakes/ponds/reservoirs with greater than > 5 acres surface area.

Waterbody ID #	Lake	County	Surface Area (Acres)	Lake Uses:	Lake Type:
OH65 38-399	LAKE LA SU AN	Williams	134.0	R	DPI
OH77 8-176	LAKE LAMBERJACK	Hancock	45.0	WS R	UP
OH65 39-400	LAKE LAVERE	Williams	11.1	R	DPI
OH26 44-190	LAKE LOGAN (HOCKING LAKE)	Hocking	354.0	R	DPI
OH56 32-345	LAKE LORAMIE	Shelby	785.0	R	DPI
OH25 23-119	LAKE LORETTA	Fairfield	5.0	R	DPI
OH77 8-174	LAKE LaCOMTE (FOSTORIA RESERVOIR	Hancock	128.0	WS R	UP
OH87 15-240	LAKE MEDINA	Medina	109.0	WS R	UP
OH 1 22-230	LAKE MILTON	Mahoning	1685.0	WS R	DPI
OH77 8-175	LAKE MOSIER	Hancock	88.0	WS R	UP
OH77 8-178	LAKE MOTRAM	Hancock	18.0	WS R	UP
OH10 33-355	LAKE NESMITH	Summit	80.0	R	NL
OH 1 30-231	LAKE PARK	Mahoning	20.0	R	DPI
OH88 11-314	LAKE PIPPEN	Portage	143.0	WS	NL
OH88 11-308	LAKE ROCKWELL	Portage	539.0	WS	DPI
OH25 7-120	LAKE ROMONA	Fairfield	5.0	R FC	DPI
OH30 17-392	LAKE RUPERT	Vinton	325.0	WS R	DPI
OH26 2- 22	LAKE SNOWDEN (MARGARET CR. C.D.	Athens	131.0	WS R	DPI
OH45 62-331	LAKE STEWART	Ross	7.5	R	DPI
OH65 39-401	LAKE SUE	Williams	10.5	R	DPI
OH33 81-210	LAKE VESUVIUS	Lawrence	105.0	R	DPI
OH45 34-302	LAKE WHITE	Pike	337.0	R	DPI
OH92 23- 19	LAMPSON RESERVOIR (JEFFERSON	Ashtabula	20.0	WS R	UP
OH34 13-436	LARUE PARK POND	Marion	5.0	R	DO
OH12 16- 51	LEESVILLE LAKE	Carroll	1000.0	R FC	DPI
OH56 26-437	LEIGHTY LAKE	Shelby	12.8	R	DPI
OH74 11-325	LEIPSIC RESERVOIR	Putnam	27.0	R	UP
OH 2 22-379	LIBERTY LAKE	Trumbull	99.0	WS R	DPI
OH68 17- 9	LIMA RESERVOIR	Allen	84.0	WS R	UP
OH15 32-382	LIME KILN LAKE	Tuscarawas	29.0	R	DPI
OH88 18-438	LITTLE PUNDERSON LAKE	Geauga	24.0	R	DPI
OH41 28-229	LONDON FISH HATCHERY LAKE	Madison	7.0	C	DO
OH10 33-358	LONG LAKE	Summit	180.0	WS R	NL
OH68 17- 6	LOST CREEK RESERVOIR	Allen	121.0	WS R	UP

Uses: WS - Water Supply, R - Recreation, FC - Flood Control

Appendix B. List of Ohio's publicly owned lakes/ponds/reservoirs with greater than > 5 acres surface area.

Waterbody ID #	Lake	County	Surface Area (Acres)	Lake Uses:	Lake Type:
OH90 20- 92	LOWER SHAKER LAKE	Cuyahoga	16.7	R	DPI
OH88 15-150	LaDUE RESERVOIR	Geauga	1500.0	WS R	DPI
OH86 15-223	LaGRANGE WATER WORKS LAKE	Lorain	6.0	WS	DO
OH41 30-228	MADISON LAKE	Madison	106.0	R	DPI
OH26 2- 26	MARGARET CREEK CONS. DIST. LAKE #1	Athens	16.0	FC	DPI
OH26 2- 25	MARGARET CREEK CONS. DIST. LAKE #4	Athens	28.0	FC	DPI
OH26 5- 24	MARGARET CREEK CONS. DIST. LAKE #5	Athens	8.3	FC	DPI
OH23 22-274	MAYSVILLE REG. WATER DIST. LAKE	Muskingum	45.0	WS R	DO
OH89 30-368	MEADOWBROOK LAKE	Summit	24.0	R	DPI
OH 2 23-378	MEANDER CREEK RESERVOIR	Trumbull	2010.0	WS C	DPI
OH75 18-143	METAMORA RESERVOIR	Fulton	7.0	WS R	DO
OH75 18-439	METAMORA RESERVOIR #1	Fulton	6.0	WS	UP
OH68 17- 3	METZGER RESERVOIR	Allen	157.0	WS R	UP
OH58 5-154	MIAMI CONS. DIST. LAKE (HUFFMAN	Greene	43.0	R	DO
OH62 5-165	MIAMI WHITEWATER LAKE	Hamilton	85.0	R	DPI
OH 1 14-309	MICHAEL J. KIRWIN RESV. (WEST BR.	Portage	2650.0	WS R FC	DPI
OH37 9-133	MILLER ANTRIM LAKE	Franklin	37.0	R	DO
OH10 33-362	MILLER LAKE	Summit	28.0	R	DPI
OH65 26-440	MILLER PARK LAKE	Williams	7.5	R	DO
OH38 4-441	MINERVA PARK LAKE	Franklin	5.5	R	DPI
OH88 4-312	MOGADORE RESERVOIR	Portage	900.0	WS R	DPI
OH75 18-227	MOLANDER PARK LAKE	Lucas	20.0	R	DO
OH 7 10-255	MONROE LAKE	Monroe	39.0	R C	DPI
OH 2 31-381	MOSQUITO CREEK RESERVOIR	Trumbull	7850.0	WS R FC	DPI
OH48 43- 45	MOUNT ORAB RESERVOIR #2	Brown	5.6	WS	UP
OH36 16-266	MT. GILEAD LAKE (LOWER)	Morrow	11.0	WS R	DPI
OH18 38-265	MT. GILEAD LAKE (UPPER-MAPLE GROVE	Morrow	7.0	R	DPI
OH10 33-365	MUD LAKE	Summit	85.0	R	NL
OH15 1- 81	MUDPORT BASIN LAKE	Coshocton	9.0	R	DO
OH20 22-271	MUNROE BASIN LAKE	Muskingum	17.0	R	DO
OH88 8-319	MUZZY LAKE	Portage	82.0	WS	NL
OH77 5-172	McCOMB RESERVOIR #1	Hancock	6.0	WS R	UP
OH67 1-173	McCOMB RESERVOIR #2	Hancock	20.0	WS R	UP
OH 2 9-238	McKELVEY LAKE	Mahoning	133.0	WS R	DPI

Uses: WS - Water Supply, R - Recreation, FC - Flood Control

Appendix B. List of Ohio's publicly owned lakes/ponds/reservoirs with greater than > 5 acres surface area.

Waterbody ID #	Lake	County	Surface Area (Acres)	Lake Uses:	Lake Type:
OH65 36-402	NETTLE LAKE	Williams	94.0	R	NL
OH21 36-273	NEW CONCORD RESERVOIR	Muskingum	9.6	WS R	DPI
OH25 20-283	NEW LEXINGTON RESERVOIR #1	Perry	44.0	WS R FC	DPI
OH25 20-284	NEW LEXINGTON RESERVOIR #2	Perry	27.0	WS R	DPI
OH85 12-196	NEW LONDON RESERVOIR	Huron	221.0	WS R	UP
OH60 38-442	NEWFIELDS DEVELOPMENT LAKE	Montgomery	7.0	R	DPI
OH 2 12-232	NEWPORT LAKE	Mahoning	105.0	R	DPI
OH10 12-360	NIMISILA RESERVOIR	Summit	825.0	WS R	DPI
OH77 4-403	NORTH BALTIMORE RESERVOIR	Wood	29.0	WS R	UP
OH18 27-209	NORTH BRANCH KOKOSING RIVER LAKE	Knox	154.0	R FC	DPI
OH93 5- 18	NORTH KINGSVILLE RESERVOIR	Ashtabula	7.3	R	DPI
OH10 33-356	NORTH RESERVOIR	Summit	160.0	R	NL
OH84 5-197	NORWALK LOWER RESERVOIR	Huron	31.0	WS R	DPI
OH84 5-199	NORWALK MEMORIAL RESERVOIR	Huron	97.0	WS R	DPI
OH84 5-198	NORWALK UPPER RESERVOIR	Huron	50.0	WS R	DPI
OH75 6-443	NOVA FRANCE RECREATION CENTER	Lucus	12.0	R	DO
H37 25-101	O'SHAUGHNESSY RESERVOIR	Delaware	920.0	WS R	DPI
OH32 -444	OAK HILL RESERVOIR	Jackson	20.2	WS	UP
OH25 17-124	OAK THORPE RESERVOIR (RCCD STRUC.	Fairfield	43.0	R FC C	DPI
OH86 14-224	OBERLIN OLD UPGROUND RESERVOIR	Lorain	10.0	WS	UP
OH86 16-218	OBERLIN RESERVOIR	Lorain	56.0	WS R	UP
OH24 80-262	OHIO POWER RECREATION LAKES	Morgan	2000.0	R	DPI
OH58 16- 53	OLD REID PARK LAKE	Clark	15.0	R	DO
OH60 34-259	OPOSSUM CREEK LAKE #1	Montgomery	5.0	R	DPI
OH60 34-260	OPOSSUM CREEK LAKE #2	Montgomery	18.0	R	DPI
OH37 10-135	OSU GOLF COURSE LAKE	Franklin	8.6	WS R	DPI
OH76 11-279	OTTAWA NATIONAL WILDLIFE REFUGE	Ottawa	8.0	C	DO
OH67 6-324	OTTAWA RESERVOIR	Putnam	20.0	WS	UP
OH72 6- 99	OXBOW LAKE	Defiance	40.0	R	DPI
OH42 1-186	PAINT CREEK LAKE	Highland	1190.0	WS R FC	DPI
OH88 5-366	PARK LAKE (MONROE FALLS LAKE)	Summit	13.0	R	DPI
OH71 15-282	PAULDING PONDS	Paulding	6.0	R	UP
OH71 15-281	PAULDING RESERVOIR	Paulding	67.0	WS R	UP
H76 23-445	PEARSON PARK PONDS	Lucus	10.0	R	DO

Uses: WS - Water Supply, R - Recreation, FC - Flood Control

Appendix B. List of Ohio's publicly owned lakes/ponds/reservoirs with greater than > 5 acres surface area.

Waterbody ID #	Lake	County	Surface Area (Acres)	Lake Uses:	Lake Type:
OH23 28-291	PERRY RECLAMATION POND (PERRY DAM	Perry	8.0	R	DPI
OH11 6-350	PETROS LAKE	Stark	12.0	R	DO
OH14 33-181	PIEDMONT LAKE	Harrison	2310.0	R FC	DPI
OH45 13-301	PIKE LAKE	Pike	13.0	R	DPI
OH33 55-211	PINE CREEK STRUCTURE #8	Lawrence	8.8	FC	DPI
OH - 67	PINE HILL LAKE	Warren	5.0	R	DPI
OH 2 5-237	PINE LAKE	Mahoning	474.0	R	DPI
OH44 25-329	PINE LAKE	Ross	14.0	R FC	DPI
OH16 1- 11	PLEASANT HILL LAKE	Ashland	850.0	R FC	DPI
OH47124-341	POND LICK LAKE	Scioto	5.4	R	DPI
OH88 11-317	PORTAGE CO. COMM. LAKE	Portage	5.0	C	DO
OH36 35- 85	POWERS RESERVOIR	Crawford	29.0	WS R	UP
OH88 13-153	PUNDERSON LAKE	Geauga	101.0	R	NL
OH 3 14- 15	PYMATUNING RESERVOIR	Ashtabula	3580.0	WS R FC	DPI
OH83 11-334	RACCOON CREEK RESERVOIR	Sandusky	34.0	WS R	UP
OH 1 7-316	RAVENNA ORDINANCE PLANT POND	Portage	12.0	C	DPI
OH25 21-294	RCCD STRUCTURE 3-A	Perry	13.0	R FC	DPI
OH25 21-293	RCCD STRUCTURE 3-B	Perry	13.0	R FC C	DPI
OH25 20-125	RCCD STRUCTURE 5-A	Fairfield	20.0	FC	DPI
OH25 21-126	RCCD STRUCTURE 5-B	Fairfield	12.1	FC	DPI
OH25 21-127	RCCD STRUCTURE 5-C	Fairfield	13.0	FC	DPI
OH25 15-113	RCCD STRUCTURE 7-C	Fairfield	43.0	FC	DPI
OH25 15-123	RCCD STRUCTURE 7-D	Fairfield	15.0	R FC	DPI
OH25 15-128	RCCD STRUCTURE 7-E	Fairfield	9.9	FC	DPI
OH83 4-109	RESTHAVEN WILDLIFE AREA PONDS	Erie	200.0	R C	DO
OH10 33-363	REX LAKE	Summit	48.0	R	DPI
OH35 30-386	RICHWOOD PARK LAKE	Union	16.0	R	DO
OH80 20- 84	RILEY RESERVOIR (BUCYRUS RESERVOIR	Crawford	28.0	WS R	UP
OH31 51-148	RIO GRANDE RESERVOIR	Gallia	7.2	WS	DPI
OH91 1- 20	ROAMING ROCK LAKE	Ashtabula	464.0	WS	DPI
OH25 27-111	ROCK MILL LAKE (HRCD STRUCTURE #9)	Fairfield	19.8	R FC C	DPI
OH43 44-185	ROCKY FORK LAKE	Highland	2080.0	R	DPI
OH47127-340	ROOSEVELT LAKE	Scioto	16.0	R	DPI
OH41 2-333	ROSS LAKE	Ross	140.0	R	DPI

Uses: WS - Water Supply, R - Recreation, FC - Flood Control

Appendix B. List of Ohio's publicly owned lakes/ponds/reservoirs with greater than > 5 acres surface area.

Waterbody ID #	Lake	County	Surface Area (Acres)	Lake Uses:	Lake Type:
OH11 30-447	RUFF POND	Columbiana	6.0	R	DPI
OH25 16-289	RUSH CREEK LAKE (RCCD STRUCTURE	Fairfield	300.0	R FC	DPI
OH61 14-321	RUSH RUN LAKE	Preble	54.0	R	DPI
OH47 45- 40	RUSSELLVILLE RESERVOIR	Brown	11.0	WS	DPI
OH 4 35- 70	SALEM RESERVOIR	Columbiana	97.0	WS R	DPI
OH21 19-159	SALT FORK RESERVOIR	Guernsey	2952.0	WS R	DPI
OH21 19-121	SALT FORK WILDLIFE AREA POND #2	Guernsey	10.0	R	DPI
OH34 26-179	SAULIS BERRY PARK LAKE	Hardin	50.0	R	DO
OH68 17- 8	SCHOONOVER LAKE	Allen	22.0	WS R	DPI
OH38 4-134	SCHROCK LAKE	Franklin	12.0	R C	DPI
OH60 19- 46	SEBALD POND #1	Butler	5.5	R	DPI
OH60 19- 47	SEBALD POND #2	Butler	5.4	R	DPI
OH21 46-160	SENECAVILLE LAKE	Guernsey	3550.0	R FC C	DPI
OH21 46-161	SENECAVILLE NATIONAL FISH	Guernsey	20.0	C	DO
OH54 26-395	SHADOW LAKE	Warren	6.0	WS	DPI
OH62 29-167	SHARON WOODS LAKE	Hamilton	38.0	R	DPI
H16 28-326	SHELBY RESERVOIR #1	Richland	29.0	WS R	UP
OH16 21-327	SHELBY RESERVOIR #2	Richland	12.0	WS R	UP
OH19 35-397	SHREVE LAKE	Wayne	56.0	R	DPI
OH88 5-448	SILVER CREEK LAKE	Summit	47.0	R C	DPI
OH10 6-347	SIPPO LAKE	Stark	88.0	R	NL
OH16 21-449	SITES LAKE	Richland	7.0	R	DO
OH60 20- 50	SMITH PARK LAKE	Butler	7.0	R	DO
OH91 6-372	SNIDER DITCH LAKE	Trumbull	245.0	R	DPI
OH58 15- 57	SNYDER PARK LAKE	Clark	5.9	R	DO
OH25 21-295	SOMERSET RESERVOIR	Perry	7.5	WS	DPI
OH33 10-338	SOUTH WEBSTER RESERVOIR	Scioto	5.5	WS	DPI
OH 6 71-183	SPARROW RESERVOIR	Harrison	17.2	WS	DPI
OH86 9-241	SPENCER LAKE	Medina	51.0	R	DPI
OH86 9-247	SPENCER RESERVOIR	Medina	8.5	WS	DPI
OH50 1-394	SPRING VALLEY LAKE	Warren	58.0	R	DPI
OH88 2-370	SPRINGFIELD LAKE	Summit	200.0	R	NL
OH -267	SPRINGVILLE MARSH STATE NAT. AREA	Seneca	5.0	C	DO
H61 11- 49	ST. CLAIR RECREATION AREA LAKE	Butler	10.0	R	DO

Uses: WS - Water Supply, R - Recreation, FC - Flood Control

Appendix B. List of Ohio's publicly owned lakes/ponds/reservoirs with greater than > 5 acres surface area.

Waterbody ID #	Lake	County	Surface Area (Acres)	Lake Uses:	Lake Type:
OH 6 5- 33	ST. CLAIRSVILLE RESERVOIR #1	Belmont	10.0	WS	DPI
OH 6 32- 34	ST. CLAIRSVILLE RESERVOIR #2	Belmont	6.0	WS	DPI
OH25 21-290	ST. JOSEPH'S LAKE (RCCD STRUCTURE	Perry	60.0	WS R FC	DPI
OH53 53- 41	ST. MARTIN RESERVOIR	Brown	6.0	WS	DPI
OH40 2-300	STAGE'S POND	Pickaway	30.0	C	NL
OH64 25-149	STATE FISH HATCHERY LAKE	Auglaize	52.0	C	DO
OH91 14-377	STATE OF OHIO LAKE #1	Trumbull	35.0	C	DPI
OH91 14-374	STATE OF OHIO LAKE #2	Trumbull	5.5	C	DPI
OH91 14-376	STATE OF OHIO LAKE #3	Trumbull	21.0	C	DPI
OH66 14-343	STATE OF OHIO LAKE #4	Seneca	5.0	C	DO
OH53 8- 59	STONELICK RESERVOIR	Clermont	160.0	R	DPI
OH10 33-352	SUMMIT LAKE	Summit	100.0	R	NL
OH38 30-104	SUNBURY RESERVOIR #1	Delaware	6.9	WS	UP
OH38 30-108	SUNBURY RESERVOIR #2	Delaware	18.8	WS	UP
OH90 10-305	SUNNY LAKE (HARMON'S POND)	Portage	63.0	R	NL
OH75 12-225	SWANTON RESERVOIR	Lucas	25.0	WS	UP
OH56 19-251	SWIFT RUN LAKE	Miami	40.0	WS R	DPI
OH14 2-180	TAPPAN LAKE	Harrison	2350.0	R FC	DPI
OH56 39-346	TAWAWA LAKE	Shelby	8.0	R	?
OH38 20-130	THOREAU POND	Franklin	10.7	R C	DPI
OH89 9-306	TINKERS CREEK STATE PARK LAKE	Portage	5.0	R	DPI
OH76 4-280	TOUSSAINT CREEK WILDLIFE AREA LAKE	Ottawa	5.0	R C	NL
OH47115-339	TURKEY CREEK LAKE	Scioto	51.0	R	DPI
OH10 33-364	TURKEYFOOT LAKE	Summit	318.0	R	NL
OH15 -254	TURNING BASIN LAKE	Coshocton	11.0	R	DO
OH25 20-288	TWIN CHURCH LAKE (RCCD STRUCTURE	Perry	49.0	R FC	DPI
OH68 17- 7	TWIN LAKES RESERVOIR	Allen	26.0	WS R	UP
OH31 49-147	TYCOON LAKE	Gallia	204.0	R	DPI
OH80 9-405	UPPER SANDUSKY RESERVOIR	Wyandot	36.0	WS R	DPI
OH90 19- 93	UPPER SHAKER LAKE	Cuyahoga	11.4	R	DPI
OH63 19- 80	UPPER WABASH STRUCTURE #2	Mercer	6.0	FC	DPI
OH63 - 12	UPPER WABASH STRUCTURE #3	Mercer	77.8	FC	DPI
OH88 11-245	USA DEPARTMENT OF LABOR LAKE	Medina	7.0	C	DPI
OH77 4-169	VAN BUREN LAKE	Hancock	53.0	R	DPI

Uses: WS - Water Supply, R - Recreation, FC - Flood Control

Appendix B. List of Ohio's publicly owned lakes/ponds/reservoirs with greater than > 5 acres surface area.

Waterbody ID #	Lake	County	Surface Area (Acres)	Lake Uses:	Lake Type:
OH69 15-387	VAN WERT RESERVOIR #1	Van Wert	60.0	WS R	UP
OH69 15-388	VAN WERT RESERVOIR #2	Van Wert	60.0	WS R	UP
OH77 -432	VETERANS MEM. RESV. (FOSTORIA RESV.	Hancock	165.0	WS R	UP
OH27 63-396	√ VETO LAKE	Washington	160.0	R	DPI
OH14 44- 31	VILLAGE OF BARNESVILLE LAKE	Belmont	7.7	R	DPI
OH70 2-323	VILLAGE OF CONTINENTAL LAKE	Putnam	5.0	R	UP
OH56 10-249	VILLAGE OF TIPP CITY LAKE #1	Miami	7.0	R	DPI
OH56 10-250	VILLAGE OF TIPP CITY LAKE #2	Miami	14.0	R	DO
OH89 21-353	VIRGINIA KENDALL PARK LAKE	Summit	14.0	R	DPI
OH63 19- 97	√ WABASH CONS. DIST. RESERVOIR #1	Darke	57.0	R FC	DPI
OH87 4- 89	WALLACE LAKE	Cuyahoga	15.8	WS R	DPI
OH42 35-129	WASHINGTON COURTHOUSE RESERVOIR	Fayette	37.0	WS R	UP
OH73 11-137	√ WAUSEON RESERVOIR #1	Fulton	17.0	WS R	UP
OH73 16-136	WAUSEON RESERVOIR #2	Fulton	49.0	WS R	UP
OH32 36-146	WAYNE NATIONAL FOREST LAKE	Gallia	7.0	R	DPI
OH34 37-287	WAYNESFIELD RESERVOIR	Auglaize	5.0	WS	UP
H47 18- 43	WAYNOKA RESERVOIR	Brown	11.6	WS	DPI
OH49 69- 44	WAYNOKA UPGROUND RESERVOIR	Brown	11.8	WS	UP
OH86 18-219	WELLINGTON RESERVOIR	Lorain	21.0	WS R	DPI
OH86 18-220	WELLINGTON UPGROUND RESERVOIR	Lorain	160.0	WS	UP
OH 5 84- 73	WELLSVILLE RESERVOIR	Columbiana	25.0	WS R	DPI
OH10 33-361	√ WEST RESERVOIR	Summit	104.0	R	NL
OH38 4-105	WESTERVILLE RESERVOIR	Delaware	53.0	WS	DPI
OH 1 30- 71	WESTVILLE LAKE	Columbiana	90.0	WS R	DPI
OH35 12-106	√ WHITE SULPHUR LAKE	Delaware	39.0	WS R	DO
OH84 18-195	WILLARD CITY RESERVOIR	Huron	200.0	WS R	UP
OH84 19-200	WILLARD MARSH AREA LAKE	Huron	6.3	R C	DPI
OH21 1- 79	√ WILLS CREEK RESERVOIR	Coshocton	900.0	R FC	DPI
OH64 2-389	WILLSHIRE LAKE	Van Wert	7.0	WS	DO
OH52 13- 69	√ WILMINGTON RESERVOIR #1	Clinton	16.0	WS	UP
OH52 11- 68	WILMINGTON RESERVOIR #2	Clinton	54.0	WS	UP
OH48 30- 2	WINCHESTER LAKE	Adams	10.0	WS R	DPI
OH62 26-166	WINTON WOODS LAKE (W.FK. MILL CK.	Hamilton	183.0	R FC	DPI
I 9 27-277	WOLF RUN RESERVOIR	Noble	209.0	WS R FC	DPI

Uses: WS - Water Supply, R - Recreation, FC - Flood Control

Appendix B. List of Ohio's publicly owned lakes/ponds/reservoirs with greater than > 5 acres surface area.

Waterbody ID #	Lake	County	Surface Area (Acres)	Lake Uses:	Lake Type:
OH89 2- 91	WOODLAND HILLS PARK LAKE	Cuyahoga	5.0	R	UP
OH 7 5-256	WOODSFIELD RESERVOIR	Monroe	7.0	WS R	DPI
OH41 1-332	YOUCTANGEE PARK LAKE	Ross	6.0	R	DO
OH23 50-276	ZANESVILLE STATE NURSERY LAKE	Muskingum	10.0	C	?
OH11 30- 77	ZEPPERNICK LAKE	Columbiana	41.0	R	DPI

Uses: WS - Water Supply, R - Recreation, FC - Flood Control

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
ACTON LAKE										
S-1	1991			(N=6)	71.0					CLIP/OLMS
L-1	09-Aug-89	32.6	65.00	0.95	61.0	61.00	63.0			FULMER/COOKE
L-1	21-Aug-89	19.4	60.00	0.51	70.0	70.00	65.0			OEPA,314 GRANT
L-1	26-Apr-89			0.61	67.0					OEPA,314 GRANT
L-3	10-Jly-89	34.5	65.00	0.24	81.0	116.00	73.0	**66.0**	L3-Eutrophic	FULMER/COOKE
L-3	09-Aug-89	41.5	67.00	0.38	74.0	94.00	70.0			FULMER/COOKE
L-1	10-Aug-81	121.7	78.00	0.52	69.0	90.00	69.0	78 (1981)		OEPA,1982 305(B)
L-1	09-Sep-75			0.71	65.0	60.00	63.0	63 (1975)		OEPA,1982 305(B)
L-1	30-Apr-75			0.13	89.0	210.00	81.0			OEPA,1982 305(B)
L-1	18-Aug-60			0.51	70.0					OEPA,1982 305(B)
L-1	22-Apr-60			1.60	53.0					OEPA,1982 305(B)
S-1	1992			(N=14)	71.0					CLIP/OLMS
S-2	1992			(N-14)	76.0					CLIP/OLMS
ADAMS LAKE										
L-1	18-Aug-80	9.3	52.00	0.76	64.0	40.00	57.0	**57.0**	Eutrophic	OEPA,1982 305(B)
L-1	01-May-80	8.2	51.00	0.33	76.0	60.00	63.0			OEPA,1982 305(B)
ALUM CREEK LAKE										
S-3	1991			(N=6)	63.0					CLIP/OLMS
L-1	23-Aug-89	3.5	43	1.95	50.0	11.00	39.0	**44.0**	L1-Mesotrophic	OEPA,314 GRANT
L-1	03-May-89			0.75	64.0	16.00	44.0			OEPA,314 GRANT
L-2	03-May-89	5.3	47	0.70	65.0	60.00	63.0	**55.0**	L2-Eutrophic	OEPA,314 GRANT
L-2	23-Aug-89			2.02	50.0	9.00	36.0			OEPA,314 GRANT
L-1	13-Apr-76			2.60	46.0	30.00	53.0	53 (1976)		OEPA,1982 305(B)
L-1	27-Aug-76			3.40	42.0	40.00	57.0			OEPA,1982 305(B)
S-1	1992			(N=1)	64.0					CLIP/OLMS
ATWOOD RESERVOIR										
L-1	17-May-76			1.20	57.0	30.00	53.0	53.0	Eutrophic	OEPA,1982 305(B)
L-1	30-Aug-76			0.91	61.0	40.00	57.0			OEPA,1982 305(B)
L-1	30-Jul-73	8.1	51.00	1.20	57.0	20.00	47.0			OEPA,1982 305(B)
L-1	20-Apr-73	10.3	53.00	1.70	52.0	20.00	47.0	49 (1973)		OEPA,1982 305(B)
S-1	1992			(N=6)	68.0					CLIP/OLMS
S-2	1992			(N=7)	64.0					CLIP/OLMS
BALDWIN LAKE										
L-1	23-Aug-77	10.9	54.00	0.10	93.0	340.00	88.0	**54.0**	Eutrophic	OEPA,1982 305(B)
BARBERTON RESERVOIR										
L-1	1992			(N=11)	63.0					NEFCO
L-3	1992			(N=11)	63.0					NEFCO

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
BARNESVILLE RESERVOIR #3										
L-1	21-Aug-80	17.1	58.00	1.20	57.0	40.00	57.0	**55.0**	Eutrophic	OEPA,1982 305(B)
L-1	15-May-80	8.5	52.00	0.96	61.0	30.00	53.0			OEPA,1982 305(B)
BEACH CITY LAKE										
L-1	20-Apr-73	4.3	45.00	0.30	77.0	90.00	69.0	**64.0**	Eutrophic	OEPA,1982 305(B)
L-1	30-Jul-73	19.4	60.00	0.20	83.0	280.00	85.0			OEPA,1982 305(B)
BEAVER CREEK RESERVOIR										
L-1	15-May-90			3.00	44.0	13.00	41.0	**45.0**	Mesotrophic	OEPA,314 GRANT
L-1	23-Aug-90	6.3	49.00	2.50	47.0	130.00	74.0			OEPA,314 GRANT
BELMONT LAKE										
L-1	29-Jun-89	16.3	58.00	1.12	58.0	33.00	55.0	**54.0**	L1-Eutrophic	FULMER/COOKE
L-1	31-Jly-89	7.4	50.00	1.62	53.0	26.00	51.0			FULMER/COOKE
L-2	29-Jun-89	17.4	59.00	1.06	59.0	34.00	55.0	**56.0**	L2-Eutrophic	FULMER/COOKE
L-2	31-Jly-89	9.8	53.00	1.40	55.0	48.00	60.0			FULMER/COOKE
L-1	08-May-80	15.4	57.00	1.10	59.0	20.00	47.0	58 (1 [illegible])		OEPA,1982 305(B)
L-1	07-Aug-80	49.7	69.00	0.86	62.0	90.00	69.0			OEPA,1982 305(B)
BERLIN RESERVOIR										
S-1	1991			(N=3)	66.0					CLIP/OLMS
S-2	1991			(N=4)	64.0					CLIP/OLMS
S-3	1991			(N=5)	66.0					CLIP/OLMS
L-1	13-Apr-89			1.03	60.0		43.0	**59.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	10-Aug-89	18.8	59.00	0.90	62.0	15.00				OEPA,314 GRANT
L-1	02-Aug-89			0.75	64.0	24.00	50.0			OEPA,314 GRANT
L-2	02-Aug-89			0.90	61.0	33.00	55.0	**69.0**	L2-Hypereutrophic	OEPA,314 GRANT
L-2	13-Apr-89			0.83	63.0	90.00	69.0			OEPA,314 GRANT
L-1	28-May-75			0.49	70.0	20.00	47.0	[illegible]		OEPA,1982 305(B)
L-1	27-Aug-75			0.76	64.0	30.00	53.0			OEPA,1982 305(B)
L-1	20-Apr-73	14.7	57.00	0.94	61.0	30.00	53.0	54 (1 [illegible])		OEPA,1982 305(B)
L-1	30-Jul-73	12.2	55.00	0.97	60.0	30.00	53.0			OEPA,1982 305(B)
BERLIN RESERVOIR (EAST BASIN)										
VLMP	1989			(N=5)	62.0					NEFCO
VLMP	1988			(N=5)	63.0					NEFCO
BERLIN RESERVOIR (WEST BASIN)										
VLMP	1989			(N=7)	74.0					NEFCO
VLMP	1989			(N=9)	80.0					NEFCO
BRADY LAKE										
L-1	08-Aug-80	98.5	76.00	0.91	61.0	150.00	76.0	**76.0**	Hypereutrophic	OEPA,1982 305(B)
L-1	1992			(N=2)	61.0					NEFCO

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
BRESLER RESERVOIR										
L-1	23-Apr-90			6.50	33.0	28.00	52.0	**56.0**	Eutrophic	OEPA,314 GRANT
L-1	20-Aug-90	18.4	59.00	2.00	50.0	60.00	63.0			OEPA,314 GRANT
BUCKEYE LAKE										
L-1	24-Aug-89	274.3	86.00	0.30	77.0	170.00	78.0	**74.0**	Hypereutrophic	OEPA,314 GRANT
L-1	08-May-89			0.36	75.0	60.00	63.0			OEPA,314 GRANT
L-1	16-May-78	92.2	75.00	0.55	69.0	150.00	76.0	74 (1978)		OEPA,1982 305(B)
L-1	22-Aug-78	60.8	71.00	1.10	59.0	100.00	71.0			OEPA,1982 305(B)
L-1	16-Aug-75			0.43	72.0	100.00	71.0			OEPA,1982 305(B)
L-1	02-May-75			1.50	54.0	100.00	71.0	71 (1975)		OEPA,1982 305(B)
L-1	04-Apr-73	258.6	85.00	0.20	83.0	150.00	76.0			OEPA,1982 305(B)
L-1	07-Jul-73	161.9	81.00	0.30	77.0	150.00	76.0	79 (1973)		OEPA,1982 305(B)
S-1	1992			(N=6)	77.0					CLIP/OLMS
S-2	1992			(N=6)	83.0					CLIP/OLMS
S-6	1992			(N=9)	79.0					CLIP/OLMS
S-7	1992			(N=9)	78.0					CLIP/OLMS
BURR OAK LAKE (T. JENKINS RESV.)										
L-1	22-Apr-76			2.00	50.0	30.00	53.0	**53.0**	Eutrophic	OEPA,1982 305(B)
L-1	30-Sep-76			1.40	55.0	50.00	61.0			OEPA,1982 305(B)
C. J. BROWN LAKE										
S-1	1991			(N=5)	59.0					CLIP/OLMS
S-2	1991			(N=4)	62.0					CLIP/OLMS
S-3	1991			(N=6)	59.0					CLIP/OLMS
L-1	07-Apr-77			1.20	57.0	40.00	57.0	**61.0**	Eutrophic	OEPA,1982 305(B)
L-1	02-Aug-77	32.3	65.00	1.50	54.0	40.00	57.0			OEPA,1982 305(B)
C.J.BROWN LAKE										
S-1	1992			(N=3)	61.0					CLIP/OLMS
CAESAR CREEK RESERVOIR										
L-1	26-Aug-78	8.5	52.00	4.30	39.0	10.00	37.0	**62.0**	Eutrophic	OEPA,1982 305(B)
L-1	25-Apr-78	5.1	47.00	1.50	54.0	120.00	73.0			OEPA,1982 305(B)
CALDWELL LAKE										
L-1	1987		60.00		50.0			**60.0**	Eutrophic	OEPA, UNPUBL
CHARLES MILL LAKE										
L-1	21-May-90			0.50	70.0	60.00	63.0	**67.0**	L1-Hypereutrophic	OEPA,314 GRANT
L-1	11-Sep-90	61.6	71.00	0.25	80.0	80.00	67.0			OEPA,314 GRANT
L-2	21-May-90			0.25	80.0	60.00	63.0	**66.0**	L2-Hypereutrophic	OEPA,314 GRANT
L-2	11-Sep-90	43.3	68.00	0.25	80.0	80.00	67.0			OEPA,314 GRANT
L-1	08-Aug-78	68.8	72.00	0.34	76.0	140.00	75.0			OEPA,1982 305(B)

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-1	12-May-78	90.2	75.00	0.46	71.0	110.00	72.0			OEPA,1982 305(B)
L-1	20-Apr-73	41.7	67.00	0.61	67.0	60.00	63.0			OEPA,1982 305(B)
L-1	27-Jul-73	85.5	74.00	0.30	77.0	170.00	78.0			OEPA,1982 305(B)
CINNAMON LAKE										
S-1	1991			(N=6)	49.0				Insuff. Data	CLIP/OLMS
S-2	1991			(N=6)	50.0					CLIP/OLMS
S-3	1991			(N=6)	48.0					CLIP/OLMS
S-4	1991			(N=6)	48.0					CLIP/OLMS
S-1	1992			(N=12)	48.0					CLIP/OLMS
S-2	1992			(N=12)	44.0					CLIP/OLMS
S-3	1992			(N=12)	50.0					CLIP/OLMS
S-4	1992			(N=12)	49.0					CLIP/OLMS
CLARK LAKE										
L-1	29-May-79	11.2	54.00	1.70	52.0	10.00	37.0	**38.0**	Mesotrophic	OEPA,1982 305(B)
L-1	13-Aug-79	2.4	39.00	2.10	49.0	10.00	37.0			OEPA,1982 305(B)
CLEAR FORK RESERVOIR										
S-1	1991			(N=5)	65.0					CLIP/OLMS
L-1	20-Aug-75			1.00	60.0	30.00	53.0	**57.0**	Eutrophic	OEPA,1982 305(B)
L-1	23-May-75			1.00	60.0	40.00	57.0			OEPA,1982 305(B)
S-1	1992			(N=12)	62.0					CLIP/OLMS
CLENDENING LAKE										
L-1	27-Apr-76			1.00	60.0	40.00	57.0	**57.0**	Eutrophic	OEPA,1982 305(B)
L-1	03-Sep-76			1.00	60.0	60.00	63.0			OEPA,1982 305(B)
CLOUSE POND										
L-1	29-May-80	20.3	60.00	0.86	62.0	40.00	57.0	**62.0**	Eutrophic	OEPA,1982 305(B)
L-1	05-Aug-80	46.6	68.00	0.41	73.0	70.00	65.0			OEPA,1982 305(B)
COE LAKE										
L-1	07-Jun-93			0.57	68.0	20.00	47.0	**57.0**	Eutrophic	OEPA,314 GRANT
L-1	24-Aug-92	42.87	67.00	0.58	68.0	63.00	64.0			OEPA,314 GRANT
L-1	04-Aug-92	14.22	57.00	0.22	81.0	80.00	67.0			OEPA,314 GRANT
COWAN LAKE										
S-1	1991			(N=3)	69.0					CLIP/OLMS
S-2	1991			(N=2)	70.0					CLIP/OLMS
S-3	1991			(N=2)	70.0					CLIP/OLMS
L-1	11-Jly-89	10.5	54.00	0.79	63.0	45.00	59.0	**58.0**	L1-Eutrophic	FULMER/COOKE
L-1	08-Aug-89	21.9	61.00	0.93	61.0	38.00	56.0			FULMER/COOKE
L-2	11-Jly-89	13.5	56.00	0.80	63.0	63.00	64.0	**60.0**	L2-Eutrophic	FULMER/COOKE
L-2	08-Aug-89	33.4	65.00	0.74	64.0	75.00	66.0			FULMER/COOKE
L-3	11-Jly-89	15.00	57.00	0.38	74.0	65.00	64.0	**60.0**	L2-Eutrophic	FULMER/COOKE

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-3	08-Aug-89	29.9	64.00	0.61	67.0	73.00	66.0			FULMER/COOKE
L-1	10-Sep-75			0.58	68.0	60.00	63.0			OEPA,1982 305(B)
L-1	29-Apr-75			0.28	78.0	120.00	73.0			OEPA,1982 305(B)
CRYSTAL LAKE (RAVENNA)										
VLMP	09-Jun-90	1.1	32.00	2.74	46.0	25.00	42.0	**39.0**	Mesotrophic	NEFCO/KSU
VLMP	28-Jun-90	2.00	38.00	4.27	39.0	25.00	47.0			NEFCO/KSU
VLMP	18-Jly-90	2.00	38.00	3.66	41.0	42.00	58.0			NEFCO/KSU
VLMP	09-Aug-90	2.4	39.00	3.81	41.0	15.00	44.0			NEFCO/KSU
VLMP	30-Aug-90	1.1	32.00	3.76	41.0	22.00	49.0			NEFCO/KSU
VLMP	21-Sep-90	1.8	37.00	4.65	38.0	15.00	43.0			NEFCO/KSU
VLMP	1990			(N=8)	41.0					NEFCO
VLMP	1989			(N=6)	43.0					NEFCO
L-1	1992			(N=6)	39.0					NEFCO
CUTLER LAKE										
L-1	22-Jul-81	35.9	66.00	0.55	69.0	40.00	57.0	**66.0**	Eutrophic	OEPA,1982 305(B)
DALE WALBURN RESERVOIR										
VLMP	1989			(N=4)	72.0					NEFCO
L-1	03-May-89			0.74	64.0	50.00	61.0	**61.0**	Eutrophic	OEPA,314 GRANT
ER CREEK LAKE										
L-1	27-Apr-90			1.00	60.0	22.00	49.0	**57.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	20-Aug-90	34.3	65.00	1.20	57.0	50.00	61.0			OEPA,314 GRANT
L-2	27-Apr-90			1.05	59.0	58.00	63.0	**63.0**	L2-Eutrophic	OEPA,314 GRANT
L-2	20-Aug-90	28.5	63.00	0.85	62.0	29.00	53.0			OEPA,314 GRANT
L-1	12-Sep-75			0.46	71.0	60.00	63.0			OEPA,1982 305(B)
L-1	25-Apr-75			0.48	71.0	70.00	65.0			OEPA,1982 305(B)
L-1	28-Apr-73	14.4	57.00	0.45	72.0	100.00	71.0			OEPA,1982 305(B)
L-1	01-Aug-73	9.9	53.00	1.20	57.0	40.00	57.0			OEPA,1982 305(B)
S-1	1992			(N=10)	65.0					CLIP/OLMS
DEER CREEK RESERVOIR										
VLMP	1990			(N=7)	68.0					NEFCO
VLMP	1989			(N=7)	66.0					NEFCO
L-1	23-Apr-77			0.91	61.0	40.00	57.0	**59.0**	Eutrophic	OEPA,1982 305(B)
L-1	16-Aug-77	25.00	62.00	0.73	65.0	30.00	53.0			OEPA,1982 305(B)
DEFIANCE POWER DAM RESERVOIR										
L-1	26-Apr-90			0.25	80.0	60.00	63.0	**58.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	12-Sep-90	9.9	53.00	0.10	93.0	1340.0				OEPA,314 GRANT
L-2	26-Apr-90			0.25	80.0	70.00	65.0	**56.0**	L2-Eutrophic	OEPA,314 GRANT
L-2	12-Sep-90	5.4	47.00	0.10	93.0	990.00				OEPA,314 GRANT

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
DELAWARE LAKE										
S-1	1991				69.0					CLIP/OLMS
L-1	26-Apr-90			0.35	75.0	80.00	67.0	**66.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	22-Aug-90	38.5	66.00	0.90	62.0	40.00	57.0			OEPA,314 GRANT
L-1	11-Jly-89	35.1	66.00	0.70	65.0	57.00	62.0			FULMER/COOKE
L-1	14-Aug-89	32.1	65.00	0.71	65.0	51.00	61.0			FULMER/COOKE
L-2	11-Jly-89	34.00	65.00	0.68	66.0	72.00	66.0	**67.0**	L2-Hypereutrophic	FULMER/COOKE
L-2	14-Aug-89	55.1	70.00	0.70	65.0	73.00	66.0			FULMER/COOKE
L-1	26-Apr-73	14.9	57.00	0.61	67.0	80.00	67.0			OEPA,1982 305(B)
L-1	01-Aug-73	4.1	44.00	0.46	71.0	70.00	65.0			OEPA,1982 305(B)
DELAWARE RESERVOIR										
S-1	1992			(N=4)	60.0					CLIP/OLMS
DELTA RESERVOIR #2										
L-1	17-May-93			3.90	40.0	6.0	30.0	**33.0**	Oligotrophic	OEPA,314 GRANT
L-1	17-Sep-92	2.89	41.00	3.10	44.0					OEPA,314 GRANT
L-1	18-Aug-92	0.765	28.00	6.50	33.0	<5.0	26.0			OEPA,314 GRANT
DILLON RESERVOIR										
L-1	14-May-90			0.50	70.0	80.00	67.0	**61.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	11-Sep-90	12.5	55.00	0.70	65.0	60.00	63.0			OEPA,314 GRANT
L-2	14-May-90			0.20	83.0	140.00	75.0	**69.0**	L2-Hypereutrophic	OEPA,314 GRANT
L-2	11-Sep-90	25.9	63.00	0.50	70.0					OEPA,314 GRANT
L-1	12-Aug-77	40.9	67.00	0.67	66.0	70.00	65.0			OEPA,1982 305(B)
L-1	11-Apr-77			0.46	71.0	90.00	69.0			OEPA,1982 305(B)
L-1	30-Jul-73	20.00	60.00	0.61	67.0	110.00	72.0			OEPA,1982 305(B)
L-1	26-Apr-73	25.9	63.00	0.51	70.0	120.00	73.0			OEPA,1982 305(B)
S-1	1992			(N=11)	63.0					CLIP/OLMS
S-3	1992			(N=1)	63.0					CLIP/OLMS
S-4	1992			(N=11)	66.0					CLIP/OLMS
S-5	1992			(N=10)	66.0					CLIP/OLMS
S-6	1992			(N=8)	66.0					CLIP/OLMS
S-7	1992			(N=6)	67.0					CLIP/OLMS
DOLLAR LAKE										
L-1	1992			(N=10)	47.0					NEFCO
DOW LAKE										
L-1	27-Apr-90			2.25	48.0	10.00	37.0	**38.0**	L1-Mesotrophic	OEPA,314 GRANT
L-1	22-Aug-90	6.2	48.00	2.50	47.0	7.00	32.0			OEPA,314 GRANT
L-1	19-Jun-89	1.6	35.00	2.76	45.0	27.00	52.0			FULMER/COOKE
L-1	04-Aug-89	1.00	31.00	3.16	43.0	11.00	39.0			FULMER/COOKE
L-2	19-Jun-89	3.2	42.00	2.51	47.0	32.00	54.0	**43.0**	L2-Mesotrophic	FULMER/COOKE

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-2	04-Aug-89	1.2	32.00	3.10	44.0	33.00	54.0			FULMER/COOKE
L-3	19-Jun-89	2.1	38.00	2.14	49.0	20.00	47.0	**42.0**	L3-Mesotrophic	FULMER/COOKE
L-3	04-Aug-89	2.00	37.00	2.68	46.0	19.00	46.0			FULMER/COOKE
L-1	31-Aug-78	6.2	48.00	3.00	44.0					OEPA,1982 305(B)
L-1	08-May-78	9.9	53.00	1.70	52.0	10.00	37.0			OEPA,1982 305(B)
EAST BRANCH RESERVOIR										
L-1	26-Apr-77			0.85	62.0	40.00	57.0	**60.0**	Eutrophic	OEPA,1982 305(B)
L-1	15-Aug-77	28.8	64.00	0.91	61.0	50.00	61.0			OEPA,1982 305(B)
EAST FORK LAKE										
L-1	21-Aug-79	47.00	68.00	1.10	59.0	40.00	57.0	**67.0**	Hypereutrophic	OEPA,1982 305(B)
L-1	01-Jun-79	8.5	52.00	1.20	57.0	80.00	67.0			OEPA,1982 305(B)
S-1	1992			(N=12)	55.0					CLIP/OLMS
EAST RESERVOIR										
VLMP	10-Jun-90	22.00	61.00	0.91	61.0	79.00	65.0	**62.0**	Eutrophic	NEFCO/KSU
VLMP	03-Jly-90	6.6	49.00	1.22	57.0	25.00	47.0			NEFCO/KSU
VLMP	12-Aug-90	19.3	60.00	0.94	61.0	82.00	68.0			NEFCO/KSU
VLMP	18-Aug-90	12.1	55.00	0.71	65.0	72.00	66.0			NEFCO/KSU
VLMP	31-Aug-90	58.3	71.00	0.91	61.0	89.00	69.0			NEFCO/KSU
VLMP	22-Sep-90	57.8	70.00	0.91	61.0	81.00	68.0			NEFCO/KSU
VLMP	1990			(N=18)	60.0					NEFCO
VLMP	1989			(N=21)	59.0					NEFCO
VLMP	1988			(N=6)	58.0					NEFCO
L-1	23-May-80	85.00	74.00	0.76	64.0	60.00	63.0	**65.0**	Eutrophic	OEPA,1982 305(B)
L-1	02-Sep-80	46.9	68.00	1.00	60.0	140.00	75.0			OEPA,1982 305(B)
L-1	1992			(N=5)	60.0					NEFCO
EASTWOOD LAKE										
L-1	14-Aug-89	46.4	68.00	0.46	71.0	35.00	55.0	**61.0**	Eutrophic	OEPA,314 GRANT
L-1	24-Apr-89					32.00	54.0			OEPA,314 GRANT
ESSINGTON LAKE										
L-1	23-Jul-81	2.1	38.00	3.50	42.0	20.00	47.0	**38.0**	Mesotrophic	OEPA,1982 305(B)
EVANS LAKE										
S-1	1992			(N=9)	52.0					CLIP/OLMS
FERGUSON RESERVOIR										
L-1	24-Apr-90			6.50	33.0	24.00	50.0	**50.0**	Eutrophic	OEPA,314 GRANT
L-1	22-Aug-90	6.9	49.00	2.50	47.0	200.00	81.0			OEPA,314 GRANT
FINDLAY RESERVOIR #2										
L-1	31-Aug-79	18.3	59.00	1.50	54.0	30.00	53.0	**47.0**	Mesotrophic	OEPA,1982 305(B)
L-1	27-Jun-79	3.9	44.00	3.40	42.0	10.00	37.0			OEPA,1982 305(B)

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
FINDLEY LAKE										
L-1	30-Aug-89	267.3	85.00	0.46	71.0	67.00	65.0	**66.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	08-May-89			2.82	45.0	16.00	44.0			OEPA,314 GRANT
L-1	19-Jly-89	20.00	60.00	1.28	56.0	33.00	55.0			FULMER/COOKE
L-1	21-Aug-89	58.5	71.00	0.91	61.0	59.00	63.0			FULMER/COOKE
L-2	19-Jly-89	23.8	62.00	1.21	57.0	87.00	69.0	**65.0**	L2-Eutrophic	FULMER/COOKE
L-2	21-Aug-89	45.6	68.00	0.90	62.0	74.00	66.0			FULMER/COOKE
L-3	19-Jly-89	23.7	62.00	1.05	59.0	87.00	69.0	**65.0**	L3-Eutrophic	FULMER/COOKE
L-3	21-Aug-89	48.00	69.00	0.76	64.0	153.00	77.0			FULMER/COOKE
L-1	03-Jun-80	4.2	45.00	3.40	42.0	70.00	65.0			OEPA,1982 305(B)
L-1	12-Aug-80	33.8	65.00	1.50	54.0	30.00	53.0			OEPA,1982 305(B)
L-1	16-Aug-77	44.6	68.00	1.20	57.0	70.00	65.0			OEPA,1982 305(B)
FIRESTONE RESERVOIR										
L-1	14-Jul-81	55.2	70.00	0.70	65.0	10.00	37.0	**70.0**	Hypereutrophic	OEPA,1982 305(B)
FORKED RUN LAKE										
L-1	19-Jun-89	2.3	39.00	2.02	50.0	33.00	55.0	**43.0**	L1-Mesotrophic	FULMER/COOKE
L-1	24-Jly-89	1.00	31.00	2.59	46.0	6.00	30.0			FULMER/COOKE
L-2	19-Jun-89	2.7	40.00	1.88	51.0	38.00	57.0	**45.0**	L2-Mesotrophic	FULMER/COOKE
L-2	24-Jly-89	1.3	33.00	1.73	52.0	7.00	33.0			FULMER/COOKE
L-3	19-Jun-89	3.8	44.00	1.52	54.0	30.00	53.0	**47.0**	L3-Mesotrophic	FULMER/COOKE
L-3	24-Jly-89	2.9	41.00	1.43	55.0	9.00	35.0			FULMER/COOKE
L-1	25-Aug-78			2.30	48.0	10.00	37.0			OEPA,1982 305(B)
L-1	04-May-78	3.7	43.00	1.40	55.0	10.00	37.0			OEPA,1982 305(B)
FORTY ACRE POND										
L-1	29-Jul-81	127.6	78.00			30.00	53.0	**78.0**	Hypereutrophic	OEPA,1982 305(B)
FOX LAKE STRUCTURE #6										
L-1	19-Aug-80	17.5	59.00	1.60	53.0	100.00	71.0	**53.0**	Eutrophic	OEPA,1982 305(B)
L-1	02-May-80	3.3	42.00	2.10	49.0	20.00	47.0			OEPA,1982 305(B)
FRIENDSHIP PARK LAKE										
L-1	16-May-90			2.25	48.0	5.00	27.0	**28.0**	Oligotrophic	OEPA,314 GRANT
L-1	12-Sep-90	0.7	28.00	6.00	34.0					OEPA,314 GRANT
GRAFTON WATER SUPPLY LAKE										
L-1	07-Jun-93			0.84	62.0	50.00	61.0	**57.0**	Eutrophic	OEPA,314 GRANT
L-1	14-Sep-92	16.67	58.00	0.88	62.0	70.00	65.0			OEPA,314 GRANT
L-1	13-Aug-92	9.61	53.00	0.90	62.0	37.00	56.0			OEPA,314 GRANT
GRAND LAKE ST. MARYS										
L-1	16-May-75			0.43	72.0	150.00	76.0	**76.0**	Hypereutrophic	OEPA,1982 305(B)
L-1	12-Aug-75			0.33	76.0	130.00	74.0			OEPA,1982 305(B)

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-1	04-May-73	127.3	78.00	0.08	96.0	300.00	86.0			OEPA,1982 305(B)
L-1	01-Aug-73	69.7	72.00	0.46	71.0	130.00	74.0			OEPA,1982 305(B)
S-2	1992			(N=11)	78.0					CLIP/OLMS
S-3	1992			(N=12)	83.0					CLIP/OLMS
S-4	1992			(N=2)	80.0					CLIP/OLMS
S-5	1992			(N=6)	79.0					CLIP/OLMS
S-6	1992			(N=11)	84.0					CLIP/OLMS
S-7	1992			(N=1)	77.0					CLIP/OLMS
S-8	1992			(N=3)	78.0					CLIP/OLMS
S-10	1992			(N=3)	78.0					CLIP/OLMS
S-13	1992			(N=4)	79.0					CLIP/OLMS
S-14	1992			(N=11)	77.0					CLIP/OLMS
S-15	1992			(N=4)	78.0					CLIP/OLMS
S-16	1992			(N=4)	78.0					CLIP/OLMS
L-1	20-May-93			0.40	73.0	37.00	56.0	**71.0**	L1-Hypereutrophic	OEPA,314 GRANT
L-1	19-Aug-92	119.63	78.00	0.25	80.0	120.00	73.0			OEPA,314 GRANT
L-1	11-Sep-92	124.06	78.00	0.30	77.0	110.00	72.0			OEPA,314 GRANT
L-2	20-May-93			0.35	75.0	30.00	53.0	**69.0**	L2-Hypereutrophic	OEPA,314 GRANT
L-2	19-Aug-92	126.15	78.00	0.25	80.0	240.00	83.0			OEPA,314 GRANT
L-2	11-Sep-92	119.09	77.00	0.30	77.0	60.00	63.0			OEPA,314 GRANT
L-3	20-May-93			0.32	76.0	66.00	65.0	**73.0**	L3-Hypereutrophic	OEPA,314 GRANT
L-3	19-Aug-92	115.54	77.00	0.25	80.0	120.00	73.0			OEPA,314 GRANT
L-3	11-Sep-92	127.81	78.00	0.30	77.0	150.00	76.0			OEPA,314 GRANT
GRANT LAKE										
L-1	01-Aug-73	45.2	68.00	0.45	72.0	130.00	74.0	**68.0**	Hypereutrophic	OEPA,1982 305(B)
GREENFIELD LAKE (HUNTERS RUN #R-63)										
L-1	09-Jun-93			0.85	62.0	23.00	49.0	**59.0**	Eutrophic	OEPA,314 GRANT
L-1	12-Aug-92	60.53	71.00	0.33	76.0	90.00	69.0			OEPA,314 GRANT
L-1	09-Sep-92	14.84	57.00	0.80	63.0	57.00	62.0			OEPA,314 GRANT
GRIGGS RESERVOIR										
S-1	1991			(N=2)	66.0					CLIP/OLMS
GUILFORD LAKE										
S-1	1991			(N=6)	68.0					CLIP/OLMS
S-2	1991			(N=6)	77.0					CLIP/OLMS
S-3	1991			(N=6)	71.0					CLIP/OLMS
L-1	08-Aug-89	60.7	71.00	0.69	65.0	60.00	63.0	**65.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	17-Mar-89			0.86	62.0	50.00	61.0			OEPA,314 GRANT
L-1	07-Jun-89	33.7	65.00	0.68	66.0	52.00	61.0			FULMER/COOKE
L-1	16-Aug-89	42.00	67.00	0.66	66.0	59.00	63.0			FULMER/COOKE

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-2	07-Jun-89	37.8	66.00	0.62	67.0	44.00	59.0	**64.0**	L2-Eutrophic	FULMER/COOKE
L-2	16-Aug-89	52.6	69.00	0.68	66.0	65.00	64.0			FULMER/COOKE
L-3	07-Jun-89	36.00	66.00	0.62	67.0	60.00	63.0	**65.0**	L3-Eutrophic	FULMER/COOKE
L-3	16-Aug-89	47.00	68.00	0.73	65.0	82.00	68.0			FULMER/COOKE
L-4	07-Jun-89	33.6	65.00	0.72	65.0	46.00	59.0	**63.0**	L4-Eutrophic	FULMER/COOKE
L-4	16-Aug-89	46.3	68.00	0.89	62.0	51.00	61.0			FULMER/COOKE
L-1	24-Aug-81	62.9	71.00	0.73	65.0	50.00	61.0			OEPA,1982 305(B)
L-1	26-Aug-75			0.91	61.0	50.00	61.0			OEPA,1982 305(B)
L-1	21-May-75			0.86	62.0	40.00	57.0			OEPA,1982 305(B)
S-1	1992			(N=12)	68.0					CLIP/OLMS
S-2	1992			(N=12)	72.0					CLIP/OLMS
S-3	1992			(N-12)	70.0					CLIP/OLMS
HAMMERTON LAKE (JACKSON CITY R.)										
L-1	14-Jun-79	3.2	42.00	4.90	37.0			**40.0**	Mesotrophic	OEPA,1982 305(B)
L-1	06-Aug-79	2.7	40.00	4.80	37.0	10.00	37.0			OEPA,1982 305(B)
HARGUS LAKE										
L-1	24-Apr-90			1.75	52.0	18.00	46.0	**44.0**	L1-Mesotrophic	OEPA,314 GRANT
L-1	23-Aug-90	2.9	41.00	1.20	57.0	110.00	72.0			OEPA,314 GRANT
L-1	22-Jun-89	9.6	53.00	1.66	53.0	19.00	46.0			FULMER/COOKE
L-1	27-Jly-89	3.00	41.00	2.20	49.0	12.00	40.0			FULMER/COOKE
L-2	22-Jun-89	12.5	55.00	1.24	57.0	37.00	56.0	**49.0**	L2-Eutrophic	FULMER/COOKE
L-2	27-Jly-89	2.9	41.00	1.93	51.0	14.00	42.0			FULMER/COOKE
L-3	22-Jun-89	10.00	53.00	1.47	54.0	40.00	57.0			FULMER/COOKE
L-3	27-Jly-89	3.3	42.00	1.85	51.0	11.00	39.0	**49.0**	L3-Eutrophic	FULMER/COOKE
L-1	04-Aug-78	3.6	43.00	1.80	52.0	10.00	37.0			OEPA,1982 305(B)
L-1	20-Apr-78	8.6	52.00	1.10	59.0	50.00	61.0			OEPA,1982 305(B)
S-1	1992			(N=7)	46.0					CLIP/OLMS
S-2	1992			(N=12)	49.0					CLIP/OLMS
HARRISON LAKE										
L-1	25-Apr-90			0.50	70.0	60.00	63.0	**64.0**	Eutrophic	OEPA,314 GRANT
L-1	10-Sep-90	30.8	64.00	0.50	70.0	60.00	63.0			OEPA,314 GRANT
L-1	19-Aug-81	23.9	62.00	0.55	69.0	80.00	67.0			OEPA,1982 305(B)
L-1	22-Aug-75			0.51	70.0	50.00	61.0			OEPA,1982 305(B)
L-1	30-May-75			0.64	66.0	90.00	69.0			OEPA,1982 305(B)
S-1	1992			(N=5)	72.0					CLIP/OLMS
HIGHLANDTOWN LAKE										
L-1	15-May-78	7.5	50.00	1.80	52.0	20.00	47.0	**57.0**	Eutrophic	OEPA,1982 305(B)
L-1	21-Aug-78	42.5	67.00	1.80	52.0	10.00	37.0			OEPA,1982 305(B)

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
HILLSBORO RESERVOIR										
L-1	28-Aug-89	9.5	53.00	0.81	63.0	17.00	45.0	**45.0**	Mesotrophic	OEPA,314 GRANT
L-1	17-May-89			0.91	61.0	10.00	37.0			OEPA,314 GRANT
HINCKLEY LAKE										
L-1	20-Apr-89			0.51	70.0	18.00	46.0	**49.0**	Eutrophic	OEPA,314 GRANT
L-1	12-Jul-89	8.0	51.00	0.72	65.0	50.00	61.0			OEPA,314 GRANT
L-1	19-Aug-77	30.8	64.00	0.30	77.0	180.00	79.0			OEPA,1982 305(B)
HOOVER RESERVOIR										
L-1	04-May-89			0.50	70.0	24.00	50.0	**50.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	25-Aug-89	7.8	51.00	1.30	56.0	17.00	45.0			OEPA,314 GRANT
L-2	25-Aug-89	33.9	65.00	0.65	66.0	56.00	62.0	**63.0**	L2-Eutrophic	OEPA,314 GRANT
L-2	04-May-89			0.30	77.0	47.00	60.0			OEPA,314 GRANT
L-1	09-May-75			0.46	71.0	100.00	71.0			OEPA,1982 305(B)
L-1	29-Aug-75			1.20	57.0	30.00	53.0			OEPA,1982 305(B)
L-1	01-Aug-73	7.6	50.00	0.93	61.0	30.00	53.0			OEPA,1982 305(B)
L-1	26-Apr-73	36.3	66.00	0.91	61.0	50.00	61.0			OEPA,1982 305(B)
HOSTERMAN LAKE										
L-1	17-Jul-81	58.1	70.00	0.70	65.0	80.00	67.0	**70.0**	Hypereutrophic	OEPA,1982 305(B)
OWER LAKE										
VLMP	1990			(N=10)	58.0				Insuff. Data	NEFCO
VLMP	1989			(N=7)	50.0					NEFCO
VLMP	1988			(N=6)	50.0					NEFCO
L-1	1992			(N=7)	52.0					NEFCO
HUDSON SPRINGS LAKE										
VLMP	11-Jun-90	9.9	53.00	1.07	59.0	58.00	60.0	**60.0**	Eutrophic	NEFCO/KSU
VLMP	29-Jun-90	22.5	61.00	0.84	63.0	46.00	58.0			NEFCO/KSU
VLMP	18-Jly-90	5.5	47.00	1.50	54.0	45.00	58.0			NEFCO/KSU
VLMP	09-Aug-90	30.8	64.00	1.55	54.0	62.00	64.0			NEFCO/KSU
VLMP	30-Aug-90	28.00	63.00	0.99	60.0	33.00	55.0			NEFCO/KSU
VLMP	20-Sep-90	49.5	69.00	1.27	57.0	59.00	63.0			NEFCO/KSU
VLMP	1990			(N=39)	58.0					NEFCO
VLMP	1989			(N=33)	60.0					NEFCO
INDIAN LAKE										
S-5	1991				77.0					CLIP/OLMS
S-9	1991				77.0					CLIP/OLMS
S-10	1991				78.0					CLIP/OLMS
S-14	1991				81.0					CLIP/OLMS
L-1	27-Sep-89					70.00	65.0	**70.0**	Hypereutrophic	OEPA, PHASE I
L-1	24-Aug-89	74.3	73.00	0.25	80.0	50.00	61.0			OEPA, PHASE I

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-1	10-Jul-89					90.00	69.0			OEPA, PHASE I
L-1	21-Jun-89			0.36	75.0	70.00	65.0			OEPA, PHASE I
L-1	07-Jun-89			0.32	77.0					OEPA, PHASE I
L-1	24-May-89			0.23	81.0	76.00	67.0			OEPA, PHASE I
L-1	20-Apr-89			0.25	80.0					OEPA, PHASE I
L-1	22-Nov-88			0.34	76.0					OEPA, PHASE I
L-1	09-Nov-88			0.43	72.0					OEPA, PHASE I
L-1	27-Oct-88			0.34	76.0					OEPA, PHASE I
L-1	13-Oct-88			0.31	77.0	70.00	65.0			OEPA, PHASE I
L-1	29-Sep-88			0.15	87.0	80.00	67.0			OEPA, PHASE I
L-1	13-Sep-88			0.24	80.0					OEPA, PHASE I
L-1	30-Aug-88			0.21	82.0	100.00	71.0			OEPA, PHASE I
L-1	18-Aug-88			0.15	87.0	130.00	74.0			OEPA, PHASE I
L-1	02-Aug-88			0.15	87.0	120.00	73.0			OEPA, PHASE I
L-1	21-Jul-88	107.4	76.00	0.24	80.0	170.00	78.0			OEPA, PHASE I
L-1	06-Jul-88			0.31	77.0	110.00	72.0			OEPA, PHASE I
L-2	27-Sep-89					97.00	70.0			OEPA, PHASE I
L-2	24-Aug-89	77.3	73.00	0.31	77.0	90.00	69.0	**65.0**	Eutrophic	OEPA, PHASE I
L-2	10-Jul-89					43.00	58.0			OEPA, PHASE I
L-2	21-Jun-89			0.48	70.0	66.00	65.0			OEPA, PHASE I
L-2	07-Jun-89			0.32	77.0	59.00	63.0			OEPA, PHASE I
L-2	24-May-89			0.28	78.0	58.00	63.0			OEPA, PHASE I
L-2	20-Apr-89			0.25	80.0					OEPA, PHASE I
L-2	22-Nov-88			0.46	71.0	70.00	65.0			OEPA, PHASE I
L-2	09-Nov-88			0.46	71.0					OEPA, PHASE I
L-2	29-Sep-88			0.24	80.0					OEPA, PHASE I
L-2	27-Oct-88			0.31	77.0					OEPA, PHASE I
L-2	13-Oct-88			0.34	76.0	50.00	61.0			OEPA, PHASE I
L-2	13-Sep-88			0.24	80.0					OEPA, PHASE I
L-2	30-Aug-88			0.21	82.0	80.00	67.0			OEPA, PHASE I
L-2	18-Aug-88					120.00	73.0			OEPA, PHASE I
L-2	02-Aug-88			0.24	80.0	50.00	61.0			OEPA, PHASE I
L-2	21-Jul-88	72.1	73.00	0.24	80.0	70.00	65.0			OEPA, PHASE I
L-2	06-Jul-88			0.37	74.0	60.00	63.0			OEPA, PHASE I
L-3	27-Sep-89					50.00	61.0	**63.0**	Eutrophic	OEPA, PHASE I
L-3	24-Aug-89	79.2	73.00	0.36	75.0	80.00	67.0			OEPA, PHASE I
L-3	10-Jul-89					70.00	65.0			OEPA, PHASE I
L-3	21-Jun-89			0.46	71.0	35.00	55.0			OEPA, PHASE I
L-3	07-Jun-89			0.32	77.0					OEPA, PHASE I
L-3	24-May-89			0.28	78.0	52.00	61.0			OEPA, PHASE I

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-3	20-Apr-89			0.25	80.0	59.00	63.0			OEPA, PHASE I
L-3	22-Nov-88			0.43	72.0					OEPA, PHASE I
L-3	09-Nov-88			0.43	72.0	170.00	78.0			OEPA, PHASE I
L-3	27-Oct-88			0.31	77.0					OEPA, PHASE I
L-3	29-Sep-88			0.24	80.0					OEPA, PHASE I
L-3	13-Sep-88			0.24	80.0	200.00	81.0			OEPA, PHASE I
L-3	30-Aug-88			0.21	82.0	90.00	69.0			OEPA, PHASE I
L-3	18-Aug-88					60.00	63.0			OEPA, PHASE I
L-3	02-Aug-88			0.27	79.0					OEPA, PHASE I
L-3	21-Jul-88	73.00	73.00	0.24	80.0	90.00	69.0			OEPA, PHASE I
L-3	06-Jul-88			0.31	77.0	120.00	73.0			OEPA, PHASE I
L-4	18-Aug-77	92.5	75.00	0.46	71.0	100.00	71.0	**74.0**	Hypereutrophic	OEPA,1982 305(B)
L-4	21-Apr-77	71.6	72.00	0.55	69.0	120.00	73.0			OEPA,1982 305(B)
L-4	02-Aug-73	114.2	77.00	0.43	72.0	150.00	76.0			OEPA,1982 305(B)
L-4	04-May-73	59.4	71.00	0.22	82.0	50.00	61.0			OEPA,1982 305(B)
S-2	1992			(N=8)	79.0					CLIP/OLMS
S-3	1992			(N=8)	74.0					CLIP/OLMS
S-4	1992			(N=7)	75.0					CLIP/OLMS
S-5	1992			(N=11)	74.0					CLIP/OLMS
S-6	1992			(N=12)	77.0					CLIP/OLMS
S-9	1992			(N=9)	74.0					CLIP/OLMS
S-10	1992			(N=5)	76.0					CLIP/OLMS
S-11	1992			(N=12)	75.0					CLIP/OLMS
S-12	1992			(N=7)	78.0					CLIP/OLMS
S-18	1992			(N=4)	74.0					CLIP/OLMS
S-20	1992			(N=7)	78.0					CLIP/OLMS
S-21	1992			(N=7)	78.0					CLIP/OLMS
S-22	1992			(N=10)	75.0					CLIP/OLMS
L-1	27-May-93			0.66	66.0	50.00	61.0	**68.0**	L1-Hypereutrophic	OEPA,314 GRANT
L-1	02-Aug-92	89.39	75.00	0.23	81.0	80.00	67.0			OEPA,314 GRANT
L-1	24-Aug-92	43.83	68.00	0.25	80.0	110.00	72.0			OEPA,314 GRANT
L-3	27-May-93			1.50	54.0	60.00	63.0	**68.0**	L3-Hypereutrophic	OEPA,314 GRANT
L-3	02-Aug-92	65.53	72.00	0.23	81.0	70.00	65.0			OEPA,314 GRANT
L-3	24-Aug-92	64.74	70.00	0.25	80.0	80.00	67.0			OEPA,314 GRANT
J. GRIGGS RESERVOIR										
L-1	26-Apr-90			0.40	73.0	100.00	71.0	**65.0**	Eutrophic	OEPA,314 GRANT
L-1	24-Aug-90	9.1	52.00	0.50	69.0	90.00	69.0			OEPA,314 GRANT
L-1	29-Aug-89	61.7	71.00							OEPA,314 GRANT
L-1	24-May-79			0.91	61.0					OEPA,1982 305(B)
L-1	06-Aug-79			0.66	66.0					OEPA,1982 305(B)

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
LGRIGGS RESERVOIR										
S-0	1992			(N=2)	84.0					CLIP/OLMS
S-1	1992			(N=4)	64.0					CLIP/OLMS
S-2	1992			(N=5)	71.0					CLIP/OLMS
S-3	1992			(N=2)	68.0					CLIP/OLMS
S-4	1992			(N=2)	63.0					CLIP/OLMS
S-5	1992			(N=2)	69.0					CLIP/OLMS
JACKSON LAKE										
L-1	20-Jun-89	18.6	59.00	1.49	54.0	18.00	46.0	**47.0**	L1-Mesotrophic	FULMER/COOKE
L-1	25-Jly-89	5.9	48.00	1.65	53.0	11.00	39.0			FULMER/COOKE
L-2	20-Jun-89	11.1	54.00	1.23	57.0	34.00	55.0	**52.0**	L2-Eutrophic	FULMER/COOKE
L-2	25-Jly-89	6.4	49.00	1.53	54.0	20.00	47.0			FULMER/COOKE
L-1	18-Aug-78	10.2	53.00	1.10	59.0	30.00	53.0			OEPA,1982 305(B)
L-1	01-May-78	15.8	58.00	1.50	54.0	20.00	47.0			OEPA,1982 305(B)
JEFFERSON LAKE										
S-1	1991			(N=6)	47.0					CLIP/OLMS
L-1	16-May-90			1.15	58.0	10.00	37.0	**46.0**	Mesotrophic	OEPA,314 GRANT
L-1	12-Sep-90	10.6	54.00	1.50	54.0	360.00	89.0			OEPA,314 GRANT
L-1	09-May-80	3.4	43.00	1.70	52.0	10.00	37.0			OEPA,1982 305(B)
L-1	08-Aug-80	10.6	54.00	1.50	54.0	30.00	53.0			OEPA,1982 305(B)
S-1	1992			(N=11)	49.0					CLIP/OLMS
JISCO LAKE										
L-1	26-Apr-90			3.25	43.0	6.00	30.0	**32.0**	Oligotrophic	OEPA,314 GRANT
L-1	23-Aug-90	1.3	33.00	3.25	43.0	6.00	30.0			OEPA,314 GRANT
KILLDEER RESERVOIR										
L-1	14-May-90			1.50	54.0	8.00	34.0	**31.0**	Oligotrophic	OEPA,314 GRANT
L-1	13-Sep-90	0.8	28.00	3.00	44.0					OEPA,314 GRANT
L-1	05-May-77			5.80	35.0	10.00	37.0			OEPA,1982 305(B)
L-1	04-Aug-77	5.4	47.00	1.90	51.0	10.00	37.0			OEPA,1982 305(B)
KISER LAKE										
L-1	20-Apr-89			0.31	77.0	36.00	56.0	**69.0**	L1-Hypereutrophic	OEPA,314 GRANT
L-1	17-Aug-89	79.1	73.00	0.33	76.0	60.00	63.0			OEPA,314 GRANT
L-1	14-Jun-89	20.6	60.00	0.56	68.0	106.00	71.0			FULMER/COOKE
L-1	08-Aug-89	109.4	77.00	0.51	70.0	128.00	74.0			FULMER/COOKE
L-2	14-Jun-89	26.6	63.00	0.57	68.0	107.00	72.0	**75.0**	L2-Hypereutrophic	FULMER/COOKE
L-2	08-Aug-89	122.4	78.00	0.39	74.0	157.00	77.0			FULMER/COOKE
L-1	22-Apr-77	39.00	67.00	0.64	66.0	70.00	65.0			OEPA,1982 305(B)
L-1	19-Aug-77	149.00	80.00	0.37	74.0	120.00	73.0			OEPA,1982 305(B)

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

ite	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
KNOX LAKE										
S-1	1991			(N=5)	61.0					CLIP/OLMS
S-2	1992			(N=4)	67.0					CLIP/OLMS
L-1	21-Aug-89	54.1	70.0	0.60	67.0	90.00	69.0	**61.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	11-May-89			0.62	67.0	29.00	53.0			OEPA,314 GRANT
L-2	11-May-89			0.40	73.0	47.00	60.0	**68.0**	L2-Hypereutrophic	OEPA,314 GRANT
L-2	21-Aug-89	99.2	76.00	0.37	74.0	120.00	73.0			OEPA,314 GRANT
L-1	30-Aug-77	35.3	66.00	0.61	67.0	80.00	67.0			OEPA,1982 305(B)
L-1	03-May-77			0.88	62.0	30.00	53.0			OEPA,1982 305(B)
S-1	1992			(N=3)	63.0					CLIP/OLMS
LAKE ALMA										
L-1	18-Aug-80	6.2	48.00	2.00	50.0	20.00	47.0	**42.0**	Mesotrophic	OEPA,1982 305(B)
L-1	01-May-80	9.6	53.00	4.40	39.0	10.00	37.0			OEPA,1982 305(B)
LAKE AQUILLA										
L-1	27-Apr-89			2.81	45.0	16.00	44.0	**53.0**	Eutrophic	OEPA,314 GRANT
L-1	23-Aug-89	27.7	63.00	2.08	49.0	25.00	51.0			OEPA,314 GRANT
L-1	23-Aug-77			0.10	93.0					OEPA,1982 305(B)
LAKE HODGSON										
LMP	09-Jun-90	24.8	62.00	1.02	60.0	68.00	62.0	**63.0**	Eutrophic	NEFCO/KSU
VLMP	28-Jun-90	29.2	64.00	0.76	64.0	40.00	56.0			NEFCO/KSU
VLMP	19-Jly-90	29.2	64.00	0.94	61.0	58.00	62.0			NEFCO/KSU
VLMP	09-Aug-90	33.00	65.00	1.09	59.0	50.00	61.0			NEFCO/KSU
VLMP	30-Aug-90	20.3	60.00	1.32	56.0	45.00	59.0			NEFCO/KSU
VLMP	21-Sep-90	20.3	60.00	1.37	55.0	44.00	59.0			NEFCO/KSU
VLMP	1990			(N=27)	58.0					NEFCO
VLMP	1989			(N=12)	59.0					NEFCO
VLMP	1988			(N=8)	61.0					NEFCO
L-1	12-Aug-77	5.8	48.00	1.90	51.0	120.00	73.0			OEPA,1982 305(B)
L-1	1992			(N=7)	54.0					NEFCO
LAKE HOPE										
L-1	25-Apr-90			1.80	52.0	9.00	36.0	**43.0**	L1-Mesotrophic	OEPA,314 GRANT
L-1	22-Aug-90	6.6	49.00	2.60	46.0	12.00	40.0			OEPA,314 GRANT
L-1	21-Jun-89	8.00	51.00	0.87	62.0	21.00	48.0			FULMER/COOKE
L-1	26-Jly-89	1.9	37.00	1.65	53.0	5.00	27.0			FULMER/COOKE
L-2	21-Jun-89	8.4	51.00	0.81	63.0	25.00	50.0	**46.0**	L2-Mesotrophic	FULMER/COOKE
L-2	26-Jly-89	3.8	43.00	1.73	52.0	5.00	27.0			FULMER/COOKE
L-1	27-Apr-78	2.3	39.00	2.70	46.0					OEPA,1982 305(B)
L-1	01-Aug-78	30.1	64.00	0.76	64.0	10.00	37.0			OEPA,1982 305(B)
-1	03-Sep-75			2.90	45.0	30.00	53.0			OEPA,1982 305(B)

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-1	14-May-75			1.00	60.0	10.00	37.0			OEPA,1982 305(B)
LAKE ISABELLA										
L-1	08-Jul-81	3.3	42.00	4.80	37.0	30.00	53.0	**42.0**	Mesotrophic	OEPA,1982 305(B)
LAKE KATHARINE										
L-1	22-Mar-79	6.1	48.00	1.20	57.0				Insuff. Data	OEPA,1982 305(B)
LAKE LA SU AN										
L-1	25-Apr-90					22.00	49.0	**51.0**	Eutrophic	OEPA,314 GRANT
L-1	10-Sep-90	9.4	53.00	1.00	60.0	70.00	65.0			OEPA,314 GRANT
LAKE LOGAN (HOCKING LAKE)										
L-1	24-Apr-90			0.75	64.0	29.00	53.0	**56.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	20-Aug-90	32.5	65.00	0.70	65.0	60.00	63.0			OEPA,314 GRANT
L-2	24-Apr-90			0.70	65.0	19.00	47.0			OEPA,314 GRANT
L-2	20-Aug-90	25.1	62.00	0.55	69.0	34.00	55.0	**55.0**	L2-Eutrophic	OEPA,314 GRANT
L-1	21-Jun-89	31.6	64.00	0.67	66.0	20.00	47.0			FULMER/COOKE
L-1	26-Jly-89	20.1	60.00	0.77	64.0	21.00	48.0			FULMER/COOKE
L-2	21-Jun-89	33.7	65.00	0.64	66.0	28.00	52.0			FULMER/COOKE
L-2	26-Jly-89	20.8	60.00	0.76	64.0	25.00	51.0			FULMER/COOKE
L-3	21-Jun-89	40.5	67.00	0.58	68.0	32.00	54.0	**58.0**	L3-Eutrophic	FULMER/COOKE
L-3	26-Jly-89	25.6	62.00	0.62	67.0	37.00	56.0			FULMER/COOKE
L-1	15-Apr-76			1.10	59.0	40.00	57.0			OEPA,1982 305(B)
L-1	14-Sep-76			0.61	67.0	110.00	72.0			OEPA,1982 305(B)
LAKE LORAMIE										
S-1	1991			(N=6)	81.0					CLIP/OLMS
L-1	25-Apr-89			0.38	74.0	44.00	59.0	**71.0**	L1-Hypereutrophic	OEPA,314 GRANT
L-1	29-Aug-89			0.28	78.0	190.00	80.0			OEPA,314 GRANT
L-1	10-Jly-89	96.2	75.00	0.30	77.0	200.00	81.0			FULMER/COOKE
L-1	08-Aug-89	146.7	80.00	0.24	81.0	166.00	78.0			FULMER/COOKE
L-2	10-Jly-89	95.5	75.00	0.31	77.0	231.00	83.0	**76.0**	L2-Hypereutrophic	FULMER/COOKE
L-2	08-Aug-89	131.1	78.00	0.30	77.0	189.00	80.0			FULMER/COOKE
L-1	29-Jul-81	71.2	72.00	0.27	79.0	170.00	78.0			OEPA,1982 305(B)
L-1	13-Aug-75			0.20	83.0	230.00	83.0			OEPA,1982 305(B)
L-1	17-May-75			0.28	78.0	240.00	83.0			OEPA,1982 305(B)
L-1	04-May-73	50.6	69.00	0.15	87.0	180.00	79.0			OEPA,1982 305(B)
L-1	01-Aug-73	104.2	76.00	0.15	87.0	210.00	81.0			OEPA,1982 305(B)
S-1	1992			(N=9)	76.0					CLIP/OLMS
S-2	1992			(N=12)	83.0					CLIP/OLMS
LAKE LaCOMTE										
L-1	15-May-90			1.50	54.0	18.00	46.0	**45.0**	Mesotrophic	OEPA,314 GRANT
L-1	23-Aug-90	3.4	43.00	0.75	64.0	13.00	41.0			OEPA,314 GRANT

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
LAKE MILTON										
L-1	25-Jul-89			1.00	60.0	35.00	55.0	**59.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	04-May-89			1.27	57.0	27.00	52.0			OEPA,314 GRANT
L-1	10-Aug-89	41.9	67.00	0.94	61.0	35.00	55.0			OEPA,314 GRANT
L-2	04-May-89			1.13	58.0	28.00	52.0	**52.0**	L2-Eutrophic	OEPA,314 GRANT
L-2	25-Jul-89			0.98	60.0	60.00	63.0			OEPA,314 GRANT
L-1	16-Aug-79	15.4	57.00	1.10	59.0	20.00	47.0			OEPA,1982 305(B)
L-1	21-Jun-79	9.3	52.00	1.60	53.0	20.00	47.0			OEPA,1982 305(B)
LAKE NESMITH										
VLMP	1990			(N=12)	69.0					NEFCO
L-1	30-Jul-86			0.75	64.0	170.00	78.0			OEPA, UNPUBL
L-1	14-Aug-86			0.70	65.0	140.00	75.0			OEPA, UNPUBL
L-1	04-Nov-86			0.65	66.0	240.00	83.0			OEPA, UNPUBL
L-1	26-Sep-79	83.00	74.00	0.82	63.0	20.00	47.0	**68.0**	Hypereutrophic	OEPA,1982 305(B)
L-1	11-Apr-79	63.9	71.00	0.82	63.0	60.00	63.0			OEPA,1982 305(B)
LAKE PARK										
L-1	15-Jul-81	26.00	63.00	0.34	76.0	160.00	77.0	**63.0**	Eutrophic	OEPA,1982 305(B)
AKE PIPPEN										
L-1	18-May-89			3.71	41.0	14.00	42.0	**44.0**	Mesotrophic	OEPA,314 GRANT
L-1	09-Aug-89	5.0	46.00	3.54	42.0	13.00	41.0			OEPA,314 GRANT
LAKE ROCKWELL										
L-1	Sum-1984	26.9	63.00	1.20	57.0			**63.0**	Eutrophic	KSU, CITY
L-1	Sum-1983	21.00	60.00	1.70	52.0					KSU, CITY
L-1	Sum-1981	18.1	59.00	1.30	56.0					KSU, CITY
L-1	11-May-76			1.20	57.0	50.00	61.0			OEPA,1982 305(B)
L-1	20-Aug-76			1.00	60.0	60.00	63.0			OEPA,1982 305(B)
LAKE RUPERT										
L-1	15-Jun-79	3.5	43.00	2.10	49.0	10.00	37.0	**43.0**	Mesotrophic	OEPA,1982 305(B)
L-1	04-Sep-79	7.3	50.00	1.60	53.0	10.00	37.0			OEPA,1982 305(B)
L-1	24-May-93			1.15	58.0	8.00	34.0	**40.0**	Mesotrophic	OEPA,314 GRANT
L-1	04-Aug-92			1.09	59.0					OEPA,314 GRANT
L-1	26-Aug-92	4.25	45.00	1.73	52.0	60.00	63.0			OEPA,314 GRANT
LAKE SNOWDEN (Structure #2)										
L-1	05-Sep-79	17.00	58.00	1.80	52.0	20.00	47.0	**47.0**	Mesotrophic	OEPA,1982 305(B)
L-1	08-Jun-79			3.20	43.0	10.00	37.0			OEPA,1982 305(B)
S-1	1992			(N=1)	49.0					CLIP/OLMS
S-3	1992			(N=12)	53.0					CLIP/OLMS
KE VESUVIUS										

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-1	13-May-75			0.81	63.0	20.00	47.0	**47.0**	Mesotrophic	OEPA,1982 305(B)
L-1	02-Sep-75			2.80	45.0	20.00	47.0			OEPA,1982 305(B)
LAKE WHITE RESERVOIR										
L-1	20-Jun-89	1.7	36.00			10.00	37.0	**39.0**	L1-Mesotrophic	FULMER/COOKE
L-1	25-Jly-89	2.8	41.00	2.24	48.0	10.00	37.0			FULMER/COOKE
L-2	20-Jun-89	3.2	42.00	1.05	59.0	14.00	42.0	**45.0**	L2-Mesotrophic	FULMER/COOKE
L-2	25-Jly-89	6.00	48.00	0.87	62.0	14.00	42.0			FULMER/COOKE
L-3	20-Jun-89	5.5	47.00			15.00	43.0			FULMER/COOKE
L-3	25-Jly-89	9.8	53.00	0.50	70.0	24.00	50.0	**48.0**	L3-Eutrophic	FULMER/COOKE
L-1	20-Aug-79	10.3	53.00	1.60	53.0	10.00	37.0			OEPA,1982 305(B)
L-1	31-May-79	3.9	44.00	1.30	56.0	10.00	37.0			OEPA,1982 305(B)
L-1	24-May-93			1.10	59.0	8.00	34.0	**49.0**	Eutrophic	OEPA,314 GRANT
L-1	04-Aug-92	22.51	61.00	0.35	75.0	70.00	65.0			OEPA,314 GRANT
L-1	26-Aug-92	9.42	53.00	0.77	64.0	19.00	47.0			OEPA,314 GRANT
LEESVILLE LAKE										
L-1	31-Aug-76			1.60	53.0	40.00	57.0	**53.0**	Eutrophic	OEPA,1982 305(B)
L-1	18-May-76			1.40	55.0	30.00	53.0			OEPA,1982 305(B)
LONG LAKE										
VLMP	10-Jun-90	45.1	68.00	0.58	68.0	100.00	69.0	**64.0**	Eutrophic	NEFCO/KSU
VLMP	30-Jun-90	20.9	60.00	0.94	61.0	57.00	62.0			NEFCO/KSU
VLMP	22-Jly-90	47.9	69.00	0.61	67.0	89.00	69.0			NEFCO/KSU
VLMP	12-Aug-90	48.9	69.00	0.58	68.0	74.00	66.0			NEFCO/KSU
VLMP	03-Sep-90	11.00	54.00	0.66	66.0	97.00	70.0			NEFCO/KSU
VLMP	23-Sep-90	16.00	58.00	0.58	68.0	89.00	69.0			NEFCO/KSU
VLMP	1990			(N=27)	72.0					NEFCO
VLMP	1989			(N=11)	63.0					NEFCO
VLMP	1988			(N=5)	69.0					NEFCO
L-1	19-Apr-77	77.3	73.00	0.85	62.0	70.00	65.0			OEPA,1982 305(B)
L-1	09-Aug-77	62.7	71.00	0.73	65.0	60.00	63.0			OEPA,1982 305(B)
L-1	1992			(N=12)	64.0					NEFCO
LOWER SHAKER LAKE										
L-1	17-Aug-77	21.6	61.00	0.60	67.0	170.00	78.0	**61.0**	Eutrophic	OEPA,1982 305(B)
LaDUE RESERVOIR										
L-1	07-Aug-78	11.1	54.00	1.80	52.0	20.00	47.0	**57.0**	Eutrophic	OEPA,1982 305(B)
L-1	11-May-78	7.6	50.00	1.70	52.0	50.00	61.0			OEPA,1982 305(B)
MADISON LAKE										
L-1	14-Jun-89	46.3	68.00	0.39	74.0	109.00	72.0	**68.0**	L1-Hypereutrophic	FULMER/COOKE
L-1	08-Aug-89	28.6	63.00	0.49	70.0	66.00	65.0			FULMER/COOKE
L-2	14-Jun-89	38.7	66.00	0.37	74.0	97.00	70.0	**67.0**	L2-Hypereutrophic	FULMER/COOKE

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-2	08-Aug-89	34.6	65.00	0.49	70.0	78.00	67.0			FULMER/COOKE
L-3	14-Jun-89	8.3	51.00	0.23	81.0	194.00	80.0	**72.0**	L3-Hypereutrophic	FULMER/COOKE
L-3	08-Aug-89	32.8	65.00	0.28	78.0	114.00	72.0			FULMER/COOKE
L-1	05-Jun-79	47.3	68.00	0.36	75.0	90.00	69.0			OEPA,1982 305(B)
L-1	07-Aug-79	26.3	63.00	0.51	70.0	80.00	67.0			OEPA,1982 305(B)
L-1	07-Jun-93			0.50	70.0	59.00	63.0	**68.0**	Hypereutrophic	OEPA,314 GRANT
L-1	13-Aug-92	73.39	73.00	0.35	75.0	69.00	65.0			OEPA,314 GRANT
L-1	10-Sep-92	44.03	68.00	0.20	83.0	80.00	67.0			OEPA,314 GRANT
MEADOWBROOK LAKE										
VLMP	11-Jun-90	10.4	54.00	0.36	75.0	106.00	70.0	**60.0**	Eutrophic	NEFCO/KSU
VLMP	29-Jun-90	11.00	54.00	0.64	67.0	59.00	62.0			NEFCO/KSU
VLMP	07-Jly-90	7.7	51.00	0.84	63.0	71.00	65.0			NEFCO/KSU
VLMP	09-Aug-90	6.1	48.00	0.30	77.0	79.00	67.0			NEFCO/KSU
VLMP	30-Aug-90	20.9	60.00	0.79	63.0	40.00	57.0			NEFCO/KSU
VLMP	20-Sep-90	51.7	69.00	0.36	75.0	73.00	66.0			NEFCO/KSU
VLMP	1990			(N=34)	76.0					NEFCO
VLMP	1989			(N=4)	66.0					NEFCO
L-1	29-Aug-80	58.9	71.00	1.20	57.0	130.00	74.0			OEPA,1982 305(B)
L-1	02-Jun-80	25.00	62.00	1.20	57.0	110.00	72.0			OEPA,1982 305(B)
L-1	1992			(N=7)	71.0					NEFCO
L-2	1992			(N=7)	70.0					NEFCO
L-3	1992			(N=7)	70.0					NEFCO
MEANDER CREEK RESERVOIR										
L-1	17-Aug-79	9.7	53.00	1.70	52.0	10.00	37.0	**45.0**	Mesotrophic	OEPA,1982 305(B)
L-1	22-Jun-79	3.9	44.00	2.10	49.0	10.00	37.0			OEPA,1982 305(B)
METAMORA RESERVOIR #1										
L-1	17-May-93			2.10	49.0	10.00	37.0	**48.0**	Eutrophic	OEPA,314 GRANT
L-1	18-Aug-92	9.39	53.00	1.22	57.0	9.00	36.0			OEPA,314 GRANT
L-2	18-Aug-92	9.59	53.00	1.10	59.0					OEPA,314 GRANT
METZGER RESERVOIR										
L-1	24-Apr-90			2.00	50.0	36.00	56.0	**55.0**	Eutrophic	OEPA,314 GRANT
L-1	22-Aug-90	9.8	53.00	3.50	42.0	80.00	67.0			OEPA,314 GRANT
MIAMI WHITEWATER LAKE										
L-1	07-Jul-81	21.5	61.00	0.73	65.0	70.00	65.0	**61.0**	Eutrophic	OEPA,1982 305(B)
MICHAEL J. KIRWIN RESERVOIR										
L-1	1989			(N=1)	63.0					NEFCO
L-1	29-Aug-77	6.4	49.00	1.40	55.0	10.00	37.0			OEPA,1982 305(B)
L-1	18-Apr-77	4.6	46.00	1.10	59.0	10.00	37.0	**43.0**	Mesotrophic	OEPA,1982 305(B)
L-1	1992			(N=12)	57.0					NEFCO

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
MUD LAKE										
VLMP	1989			(N=10)	57.0				Insuff. Data	NEFCO
VLMP	1988			(N=3)	56.0					NEFCO
L-1	1992			(N=7)	60.0					NEFCO
L-1	08-Jun-93			1.18	58.0	160.00	77.0	**65.0**	Eutrophic	OEPA,314 GRANT
L-1	03-Aug-92	19.24	60.00	1.07	59.0	42.00	58.0			OEPA,314 GRANT
L-1	08-Aug-92	17.33	59.00	1.12	58.0	60.00	63.0			OEPA,314 GRANT
MUNROE BASIN										
L-1	14-May-90			0.62	67.0	35.00	55.0	**61.0**	Eutrophic	OEPA,314 GRANT
L-1	13-Sep-90	35.9	66.00	0.30	77.0	50.00	61.0			OEPA,314 GRANT
MUNROE FALLS LAKE										
L-1	1992			(N=12)	49.0					NEFCO
MUZZY LAKE										
VLMP	11-Jun-90	39.00	67.00	0.66	66.0	112.00	71.0	**63.0**	Eutrophic	NEFCO/KSU
VLMP	02-Jly-90	23.80	62.00	1.19	57.0	61.00	63.0			NEFCO/KSU
VLMP	23-Jly-90	42.40	67.00	0.74	64.0	190.00	81.0			NEFCO/KSU
VLMP	12-Aug-90	36.30	66.00	0.76	64.0	100.00	71.0			NEFCO/KSU
VLMP	03-Sep-90	12.30	55.00			105.00	71.0			NEFCO/KSU
VLMP	22-Sep-90	17.6	59.00	0.91	61.0	88.00	69.0			NEFCO/KSU
S-1	1991			(N=6)	64.0					CLIP/OLMS
VLMP	1990			(N=7)	63.0					NEFCO
VLMP	1989			(N=10)	62.0					NEFCO
VLMP	1988			(N=7)	60.0					NEFCO
S-1	1992			(N=12)	63.0					CLIP/OLMS
NESMITH LAKE										
L-1	1992			(N=10)	68.0					NEFCO
NETTLE LAKE										
L-1	22-May-78	19.5	60.00	1.10	59.0	40.00	57.0	**58.0**	Eutrophic	OEPA,1982 305(B)
L-1	14-Aug-78	19.5	60.00	1.20	57.0	40.00	57.0			OEPA,1982 305(B)
S-1	1992			(N=10)	65.0					CLIP/OLMS
S-2	1992			(N=7)	65.0					CLIP/OLMS
S-3	1992			(N=9)	65.0					CLIP/OLMS
L-2	19-May-93			0.90	61.0	19.00	47.0	**65.0**	Eutrophic	OEPA,314 GRANT
L-2	17-Aug-92	116.11	77.00	0.69	65.0					OEPA,314 GRANT
L-2	16-Sep-92	69.18	72.00	0.69	65.0	69.00	65.0			OEPA,314 GRANT
NEW LEXINGTON RESERVOIR #2 Old										
L-1	06-May-80	6.8	49.00	1.40	55.0	20.00	47.0	**46.0**	Mesotrophic	OEPA,1982 305(B)
L-1	04-Aug-80	4.3	45.00	1.20	57.0	30.00	53.0			OEPA,1982 305(B)

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-2	1992			(N=12)	63.0					NEFCO
MILLER ANTRIM LAKE										
L-1	1987		54.00		43.0			**54.0**	Eutrophic	OEPA, UNPUBL
MILLER ANTRIM LAKE										
L-1	11-Jun-93			4.00	40.0	7.00	32.0	**37.0**	Oligotrophic	OEPA,314 GRANT
L-1	12-Aug-92	2.29	39.00	5.50	35.0					OEPA,314 GRANT
L-1	10-Sep-92	2.58	40.00	3.60	42.0	12.00	40.0			OEPA,314 GRANT
MOGADORE RESERVOIR										
VLMP	10-Jun-90	20.30	60.00	1.83	51.0	75.00	64.0	**72.0**	Hypereutrophic	NEFCO/KSU
VLMP	01-Jly-90	19.80	60.00	0.53	69.0	54.00	61.0			NEFCO/KSU
VLMP	22-Jly-90	212.30	83.00	0.41	73.0	184.00	80.0			NEFCO/KSU
VLMP	13-Aug-90	106.20	76.00	0.36	75.0	134.00	75.0			NEFCO/KSU
VLMP	03-Sep-90	62.70	71.00	0.46	71.0	105.00	71.0			NEFCO/KSU
VLMP	20-Sep-90	104.5	76.00	0.97	61.0	133.00	75.0			NEFCO/KSU
VLMP	1990			(N=16)	59.0					NEFCO
VLMP	1989			(N=22)	56.0					NEFCO
L-1	23-Aug-76			1.60	53.0	30.00	53.0			OEPA,1982 305(B)
L-1	04-May-76			6.40	33.0	30.00	53.0			OEPA,1982 305(B)
L-1	1992			(N=6)	55.0					NEFCO
L-2	1992			(N=6)	56.0					NEFCO
MONROE LAKE										
L-1	22-Aug-80	16.00	58.00	1.80	52.0	20.00	47.0	**52.0**	Eutrophic	OEPA,1982 305(B)
L-1	16-May-80	4.9	46.00	1.50	54.0	20.00	47.0			OEPA,1982 305(B)
MOSQUITO CREEK RESERVOIR										
L-1	10-Jul-89			0.65	66.0	32.00	54.0			OEPA,314 GRANT
L-1	10-Aug-89	28.8	64.00	0.67	66.0	37.00	56.0	**55.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	25-Apr-89			0.71	65.0	18.00	46.0			OEPA,314 GRANT
L-1	24-Aug-76			0.61	67.0	70.00	65.0			OEPA,1982 305(B)
L-2	25-Apr-89			0.61		70.00	47.0	**47.0**	L2-Mesotrophic	OEPA,1982 305(B)
L-1	12-May-76			0.82	63.0	60.00	63.0			OEPA,1982 305(B)
L-1	30-Jul-73	40.2	67.00	0.81	63.0	50.00	61.0			OEPA,1982 305(B)
L-1	21-Apr-73	25.7	62.00	0.99	60.0	30.00	53.0			OEPA,1982 305(B)
S-1	1992			(N=8)	66.0					CLIP/OLMS
S-2	1992			(N=8)	73.0					CLIP/OLMS
S-3	1992			(N=8)	76.0					CLIP/OLMS
MT. GILEAD LAKE #1 (UPPER)										
L-1	04-Aug-80	17.6	59.00			270.00	85.0	**59.0**	Eutrophic	OEPA,1982 305(B)
T. GILEAD LAKE #2 (LOWER)										
L-1	04-Aug-80	2.6	40.00	0.12	91.0	220.00	82.0	**40.0**	Mesotrophic	OEPA,1982 305(B)

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
NEWPORT LAKE										
L-1	28-Aug-80	155.2	80.00	0.56	68.0	230.00	83.0	**86.0**	Hypereutrophic	OEPA,1982 305(B)
L-1	22-May-80	73.2	73.00	0.41	73.0	430.00	92.0			OEPA,1982 305(B)
NIMISILA RESERVOIR										
VLMP	1990			(N=6)	65.0					NEFCO
L-1	06-Jly-89	8.7	52.00	1.35	56.0	36.00	56.0	**57.0**	L1-Eutrophic	FULMER/COOKE
L-1	06-Sep-89	21.8	61.00	1.09	59.0	56.00	62.0			FULMER/COOKE
L-2	06-Jly-89	8.5	52.00	1.25	57.0	42.00	58.0	**59.0**	L2-Eutrophic	FULMER/COOKE
L-2	06-Sep-89	37.1	66.00	1.09	59.0	69.00	65.0			FULMER/COOKE
L-3	06-Jly-89	8.3	51.00	1.46	55.0	43.00	58.0	**57.0**	L3-Eutrophic	FULMER/COOKE
L-3	06-Sep-89	26.9	63.00	1.05	59.0	59.00	63.0			FULMER/COOKE
VLMP	1988			(N=6)	60.0					NEFCO
L-1	02-May-77	41.4	67.00	0.67	66.0	50.00	61.0			OEPA,1982 305(B)
L-1	08-Aug-77	43.6	68.00	0.91	61.0	50.00	61.0			OEPA,1982 305(B)
NORTH BRANCH KOKOSING RIVER LAKE										
L-1	25-Apr-90			0.50		80.00	67.0	**59.0**	Eutrophic	OEPA,314 GRANT
L-1	22-Aug-90	7.8	51.00	0.50	70.0	70.00				OEPA,314 GRANT
L-1	14-Aug-79	48.4	69.00	0.51	70.0	60.00	63.0			OEPA,1982 305(B)
L-1	12-Jun-79	14.1	57.00	0.51	70.0	40.00	57.0			OEPA,1982 305(B)
NORTH RESERVOIR										
VLMP	1990			(N=20)	66.0					NEFCO
L-1	06-Jly-89	25.1	62.00	0.84	63.0	82.00	68.0	**69.0**	L1-Hypereutrophic	FULMER/COOKE
L-1	06-Sep-89	88.2	75.00	0.51	70.0	127.00	74.0			FULMER/COOKE
L-2	06-Jly-89	27.00	63.00	0.83	63.0	75.00	66.0	**69.0**	L2-Hypereutrophic	FULMER/COOKE
L-2	06-Sep-89	91.8	75.00	0.48	71.0	140.00	75.0			FULMER/COOKE
L-3	06-Jly-89	30.8	64.00	0.83	63.0	95.00	70.0	**69.0**	L3-Hypereutrophic	FULMER/COOKE
L-3	06-Sep-89	90.5	75.00	0.50	70.0	140.00	75.0			FULMER/COOKE
VLMP	1989			(N=7)	66.0					NEFCO
VLMP	1988			(N=6)	69.0					NEFCO
L-1	1992			(N=5)	71.0					NEFCO
'SHAUGHNESSY RESERVOIR										
S-1	1991			(N=5)	67.0					CLIP/OLMS
S-2	1991			(N=4)	67.0					CLIP/OLMS
L-1	26-Apr-73	9.6	53.00	0.46	71.0	170.00	78.0	**60.0**	Eutrophic	OEPA,1982 305(B)
L-1	02-Aug-73	3.5	43.00	0.46	71.0	220.00	82.0			OEPA,1982 305(B)
S-1	1992			(N=12)	63.0					CLIP/OLMS
S-2	1992			(N=8)	65.0					CLIP/OLMS
BERLIN RESERVOIR										
L-1	30-May-89			2.74	45.0	18.00	46.0	**46.0**	Mesotrophic	OEPA,314 GRANT

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-1	06-Sep-89			1.16	58.0	70.00	65.0			OEPA,314 GRANT
PAINT CREEK LAKE										
L-1	06-May-75			0.66	66.0	140.00	75.0	**75.0**	Hypereutrophic	OEPA,1982 305(B)
L-1	02-Oct-75			0.91	61.0	40.00	57.0			OEPA,1982 305(B)
L-1	25-May-93			0.61	67.0	51.00	61.0	**69.0**	L1-Hypereutrophic	OEPA,314 GRANT
L-1	04-Aug-92	127.26	78.00	0.61	67.0	110.00	72.0			OEPA,314 GRANT
L-1	25-Aug-92	41.21	67.00	0.61	67.0					OEPA,314 GRANT
L-2	25-May-93			0.46	71.0	82.00	68.0	**71.0**	L2-Hypereutrophic	OEPA,314 GRANT
L-2	04-Aug-92			0.61	67.0	70.00	65.0			OEPA,314 GRANT
L-2	25-Aug-92	93.06	75.00	0.46	71.0	70.00	65.0			OEPA,314 GRANT
PETROS LAKE										
VLMP	1989			(N=2)	63.0				Insuff. Data	NEFCO
VLMP	1988			(N=6)	53.0					NEFCO
PIEDMONT LAKE										
L-1	12-Apr-77	16.1	58.00	1.40	55.0	20.00	47.0	**56.0**	Eutrophic	OEPA,1982 305(B)
L-1	11-Aug-77	33.3	65.00	0.85	62.0	20.00	47.0			OEPA,1982 305(B)
PINE LAKE										
L-1	12-Mar-80	1.6	35.00			5.00	27.0	**27.0**	Oligotrophic	OEPA,1982 305(B)
S-0	1992			(N=1)	65.0					CLIP/OLMS
S-1	1992			(N=8)	65.0					CLIP/OLMS
PLEASANT HILL LAKE										
S-1	1991				63.0					CLIP/OLMS
L-1	30-Jul-73	10.00	53.00	1.10	59.0	20.00	47.0	**55.0**	Eutrophic	OEPA,1982 305(B)
L-1	20-Apr-73	41.7	67.00	1.40	55.0	40.00	57.0			OEPA,1982 305(B)
S-1	1992			(N=6)	62.0					CLIP/OLMS
PUNDERSON LAKE										
L-1	19-Apr-89			2.13	49.0	42.00	58.0	**56.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	29-Aug-89	11.7	55.00	1.44	55.0	60.00	63.0			OEPA,314 GRANT
L-2	07-Jul-80	9.8	53.00	2.10	49.0	40.00	57.0	**53.0**	L2-Eutrophic	OEPA,1982 305(B)
L-2	19-Aug-75			1.30	56.0	30.00	53.0			OEPA,1982 305(B)
L-2	27-May-75			2.30	48.0	30.00	53.0			OEPA,1982 305(B)
PYMATUNING RESERVOIR										
L-1	31-Jul-73	43.1	68.00	0.61	67.0	50.00	61.0	**56.0**	Eutrophic	OEPA,1982 305(B)
L-1	21-Apr-73	7.7	51.00	1.70	52.0	20.00	47.0			OEPA,1982 305(B)
REX LAKE										
L-1	08-Jun-93			1.12	58.0	50.00	61.0	**60.0**	Eutrophic	OEPA,314 GRANT
L-1	03-Aug-92	21.73	61.00	0.98	60.0	90.00	69.0			OEPA,314 GRANT
L-1	25-Aug-92	35.06	65.00	1.03	60.0	70.00	65.0			OEPA,314 GRANT

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
RICHWOOD PARK LAKE										
L-1	31-Jul-80	21.8	61.00	0.91	61.0	60.00	63.0	**61.0**	Eutrophic	OEPA,1982 305(B)
ROAMING ROCK LAKE										
S-1	1991			(N=6)	54.0				Insuff. Data	CLIP/OLMS
S-2	1991			(N=6)	55.0					CLIP/OLMS
S-1	1992			(N=12)	56.0					CLIP/OLMS
S-2	1992			(N=11)	56.0					CLIP/OLMS
ROCKY FORK LAKE										
L-1	01-May-89			0.41	73.0	60.00	63.0	**66.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	22-Aug-89	46.2	68.00	0.71	65.0	38.00	57.0			OEPA,314 GRANT
L-2	22-Aug-89	37.3	66.00	0.51	70.0	50.00	61.0	**59.0**	L2-Eutrophic	OEPA,314 GRANT
L-2	01-May-89			0.10	93.0	25.00	51.0			OEPA,314 GRANT
L-1	12-Aug-81	83.9	74.00	0.79	63.0	40.00	57.0			OEPA,1982 305(B)
L-1	07-May-75			0.64	66.0	40.00	57.0			OEPA,1982 305(B)
L-1	06-Sep-75			0.86	62.0	50.00	61.0			OEPA,1982 305(B)
L-1	01-Aug-73	41.6	67.00	0.86	62.0	60.00	63.0			OEPA,1982 305(B)
L-1	28-Apr-73	74.4	73.00	0.71	65.0	60.00	63.0			OEPA,1982 305(B)
ROOSEVELT LAKE										
S-1	1991			(N=6)	55.0					CLIP/OLMS
L-1	1987	31.0	64.00		56.0			**64.0**	Eutrophic	OEPA, UNPUBL
S-1	1992			(N=12)	49.0					CLIP/OLMS
L-1	25-May-93			2.60	46.0	8.00	34.0	**35.0**	Oligotrophic	OEPA,314 GRANT
L-1	05-Aug-92			0.75	64.0	15.00	15.0			OEPA,314 GRANT
L-1	27-Aug-92	1.69	36.00	3.50	42.0	10.00	37.0			OEPA,314 GRANT
ROSS LAKE										
L-1	10-Aug-79	4.4	45.00	3.10	44.0	10.00	37.0	**46.0**	Mesotrophic	OEPA,1982 305(B)
L-1	07-Jun-79			2.00	50.0	20.00	47.0			OEPA,1982 305(B)
RUSH CREEK LAKE (RCCD STRUC. 6-A)										
L-1	08-Jun-93			2.10	49.0	60.00	63.0	**65.0**	Eutrophic	OEPA,314 GRANT
L-1	14-Aug-92	28.68	64.00	0.75	64.0	41.00	58.0			OEPA,314 GRANT
L-1	09-Sep-92	44.31	68.00	0.75	64.0	60.00	63.0			OEPA,314 GRANT
RUSH RUN LAKE										
L-1	21-Aug-89	6.1	48.00	1.02	60.0	50.00	61.0	**47.0**	Mesotrophic	OEPA,314 GRANT
L-1	26-Apr-89			1.37	55.0	19.00	47.0			OEPA,314 GRANT
SALT FORK RESERVOIR										
L-1	20-May-75			1.60	53.0	20.00	47.0	**47.0**	Mesotrophic	OEPA,1982 305(B)
L-1	15-Aug-75			0.91	61.0	30.00	53.0			OEPA,1982 305(B)

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
SENECAVILLE RESERVOIR										
L-1	20-Apr-76			0.98	60.0	40.00	57.0	**57.0**	Eutrophic	OEPA,1982 305(B)
L-1	17-Aug-76			0.79	63.0	40.00	57.0			OEPA,1982 305(B)
SHARON WOODS LAKE										
L-1	08-Jul-81	64.6	71.00	0.53	69.0	660.00	98.0	**71.0**	Hypereutrophic	OEPA,1982 305(B)
SHREVE LAKE										
L-1	11-May-89			0.84	63.0	28.00	52.0	**59.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	28-Aug-89	23.2	61.00	1.08	59.0	48.00	60.0			OEPA,314 GRANT
L-1	19-Jly-89	38.7	66.00			59.00	63.0			FULMER/COOKE
L-1	21-Aug-89	15.4	57.00	0.97	60.0	59.00	63.0			FULMER/COOKE
L-2	19-Jly-89	34.00	65.00			64.00	64.0	**60.0**	L2-Eutrophic	FULMER/COOKE
L-2	21-Aug-89	12.8	56.00	1.08	59.0	32.00	54.0			FULMER/COOKE
SILVER CREEK LAKE										
L-1	1992			(N=13)	52.0					NEFCO
L-2	1992			(N=12)	52.0					NEFCO
L-3	1992			(N=7)	56.0					NEFCO
SIPPO LAKE										
L-1	18-Apr-90			1.37	55.0	30.00	53.0	**60.0**	L1-Eutrophic	PHASE I GRANT
L-1	24-May-90			1.83	51.0	60.00	63.0			PHASE I GRANT
L-1	13-Jun-90			2.30	48.0	90.00	69.0			PHASE I GRANT
L-1	18-Jly-90			2.30	48.0	40.00	57.0			PHASE I GRANT
L-1	22-Aug-90			0.97	60.0	50.00	61.0			PHASE I GRANT
L-1	26-Sep-90			1.83	51.0	43.00	58.0			PHASE I GRANT
L-2	18-Apr-90			1.16	58.0	40.00	57.0	**58.0**	L2-Eutrophic	PHASE I GRANT
L-2	24-May-90			2.46	47.0	70.00	65.0			PHASE I GRANT
L-2	13-Jun-90			2.30	48.0	80.00	67.0			PHASE I GRANT
L-2	18-Jly-90			2.00	50.0	70.00	65.0			PHASE I GRANT
L-2	22-Aug-90	24.0	61.00	0.75	64.0	70.00	65.0			PHASE I GRANT
L-2	31-Aug-90			1.50	54.0					PHASE I GRANT
L-2	26-Sep-90	9.0	52.00	1.52	54.0	48.00	60.0			PHASE I GRANT
VLMP	1990				52.0					NEFCO
L-1	12-Jul-89			1.52	54.0	43.00	58.0			OEPA,314 GRANT
L-1	05-Sep-89	13.5	56.00	1.47	54.0	70.00	65.0			OEPA,314 GRANT
L-2	05-Sep-89	4.9	46.00	2.46	47.0	32.00	54.0			OEPA,314 GRANT
VLMP	1989			(N=6)	58.0					NEFCO
VLMP	1988			(N=4)	54.0					NEFCO
L-1	15-Jul-81	23.3	61.00	0.82	63.0	80.00	67.0			OEPA,1982 305(B)
L-1	1992			(N=9)	54.0					NEFCO
L-2	1992			(N=4)	53.0					NEFCO

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
SNYDER PARK LAKE										
L-1	10-Jul-81	17.5	59.00	0.61	67.0	50.00	61.0	**59.0**	Eutrophic	OEPA,1982 305(B)
SPENCER RESERVOIR										
L-1	29-Aug-77	58.9	71.00	0.40	73.0	310.00	87.0	**71.0**	Hypereutrophic	OEPA,1982 305(B)
SPRING VALLEY LAKE										
L-1	08-May-89			1.22	57.0	29.00	53.0	**50.0**	Eutrophic	OEPA,314 GRANT
L-1	14-Aug-89	6.1	48.00	1.37	55.0	26.00	51.0			OEPA,314 GRANT
SPRINGFIELD LAKE										
VLMP	10-Jun-90	26.40	63.00	1.09	59.0	62.00	61.0	**56.0**	Eutrophic	NEFCO/KSU
VLMP	01-Jly-90	13.80	56.00	1.52	54.0	33.00	52.0			NEFCO/KSU
VLMP	22-Jly-90	4.40	45.00	1.02	60.0	40.00	56.0			NEFCO/KSU
VLMP	08-Aug-90	23.10	61.00	1.22	57.0	39.00	57.0			NEFCO/KSU
VLMP	01-Sep-90	5.60	49.00	0.86	62.0	40.00	57.0			NEFCO/KSU
VLMP	23-Sep-90	28.1	63.00	0.86	62.0	38.00	57.0			NEFCO/KSU
VLMP	1990			(N=16)	56.0					NEFCO
VLMP	1989			(N=21)	48.0					NEFCO
VLMP	1988			(N=7)	54.0					NEFCO
L-1	04-Aug-81	50.4	69.00	0.82	63.0	40.00	57.0			OEPA,1982 305(B)
L-1	1992			(N=6)	57.0				(volunteer #1)	NEFCO
L-1	1992			(N=12)	60.0				(volunteer #2)	NEFCO
L-2	1992			(N=12)	58.0					NEFCO
STONELICK RESERVOIR										
S-1	1991			(N=5)	70.0					CLIP/OLMS
S-2	1991			(N=5)	73.0					CLIP/OLMS
S-3	1991			(N=5)	74.0					CLIP/OLMS
S-4	1991			(N=5)	81.0					CLIP/OLMS
L-3	10-May-89			0.15	87.0	130.00	74.0	**74.0**	Hypereutrophic	OEPA,314 GRANT
L-3	30-Aug-89			0.36	75.0	150.00	76.0			OEPA,314 GRANT
L-1	14-Apr-77	53.7	70.00	0.24	81.0	130.00	74.0			OEPA,1982 305(B)
L-1	01-Sep-77	21.2	61.00	1.10	59.0	60.00	63.0			OEPA,1982 305(B)
S-1	1992			(N=7)	73.0					CLIP/OLMS
S-2	1992			(N=7)	74.0					CLIP/OLMS
S-3	1992			(N=7)	77.0					CLIP/OLMS
S-4	1992			(N=7)	82.0					CLIP/OLMS
SUMMIT LAKE										
L-2	24-Apr-86			0.65	66.0	80.00	67.0	**67.0**	L-2 Hypereutrophic	OEPA, UNPUBL
L-2	30-Jul-86			1.00	60.0	50.00	61.0			OEPA, UNPUBL
L-2	14-Aug-86			0.60	67.0					OEPA, UNPUBL
L-1	24-Apr-86			0.65	66.0	80.00	67.0	**67.0**	L-1 Hypereutrophic	OEPA, UNPUBL

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

ite	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-1	30-Jul-86			1.00	60.0	70.00	65.0			OEPA, UNPUBL
L-1	14-Aug-86			0.60	67.0	50.00	61.0			OEPA, UNPUBL
L-3	14-Aug-86			0.80	63.0	80.00	67.0	**61.0**	L-3 Eutrophic	OEPA, UNPUBL
L-3	30-Jul-86			0.90	62.0	80.00	67.0			OEPA, UNPUBL
L-3	24-Apr-86			0.65	66.0	50.00	61.0			OEPA, UNPUBL
L-2	05-Aug-81	36.8	66.00	0.82	63.0	70.00	65.0			OEPA,1982 305(B)
L-2	19-Aug-76			0.64	66.0	90.00	69.0			OEPA,1982 305(B)
L-2	03-May-76			0.85	62.0	70.00	65.0			OEPA,1982 305(B)
SUNNY LAKE (HARMON'S POND)										
VLMP	1990			(N=10)	74.0					NEFCO
VLMP	1989			(N=9)	74.0					NEFCO
L-1	07-Aug-80	54.1	70.00	0.61	67.0	240.00	83.0	**70.0**	Hypereutrophic	OEPA,1982 305(B)
L-1	1992			(N=2)	73.0					NEFCO
SWIFT RUN LAKE										
L-1	25-Apr-89			0.56	68.0	50.00	61.0	**64.0**	Eutrophic	OEPA,314 GRANT
L-1	17-Aug-89	40.5	67.00	0.41	73.0	70.00	65.0			OEPA,314 GRANT
TAPPAN LAKE										
L-1	02-Sep-76			1.10	59.0	50.00	61.0	**57.0**	Eutrophic	OEPA,1982 305(B)
L-1	26-Apr-76			1.10	59.0	40.00	57.0			OEPA,1982 305(B)
L-1	21-Apr-73	28.3	63.00	0.97	60.0	20.00	47.0			OEPA,1982 305(B)
L-1	30-Jul-73	27.4	63.00	0.99	60.0	30.00	53.0			OEPA,1982 305(B)
TAPPEN LAKE										
S-1	1992			(N=3)	60.0					CLIP/OLMS
TINKERS CREEK ST PK LAKE										
L-1	1991			(N=11)	48.0					NEFCO
L-1	1991			(N=8)	47.0				Insuff. Data	NEFCO
L-1	1992			(N=11)	45.0					NEFCO
TURKEY CREEK LAKE										
S-1	1991			(N=6)	46.0					CLIP/OLMS
S-2	1992			(N=6)	46.0					CLIP/OLMS
L-1	1987		63.00		42.0			**63.0**	Eutrophic	OEPA, UNPUBL
S-1	1992			(N=12)	72.0					CLIP/OLMS
S-2	1992			(N=12)	72.0					CLIP/OLMS
L-1	25-May-93			4.11	40.0	8.00	34.0	**36.0**	Oligotrophic	OEPA,314 GRANT
L-1	05-Aug-92			1.90	33.0	12.00	40.0			OEPA,314 GRANT
L-1	27-Aug-92	2.22	38.00	3.44	42.0	8.00	34.0			OEPA,314 GRANT
TURKEYFOOT LAKE										
VLMP	1990			(N=18)	60.0					NEFCO
VLMP	1989			(N=21)	60.0					NEFCO

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
VLMP	1988			(N=6)	58.0					NEFCO
L-1	19-Apr-77	62.1	71.00	0.64	66.0	90.00	69.0	**67.0**	Hypereutrophic	OEPA,1982 305(B)
L-1	09-Aug-77	33.6	65.00	1.10	59.0	50.00	61.0			OEPA,1982 305(B)
L-1	1992			(N=3)	59.0					NEFCO
L-2	1992			(N=3)	63.0					NEFCO
L-3	1992			(N=3)	62.0					NEFCO
L-1	08-Jun-93			1.03	60.0	70.00	65.0	**64.0**	Eutrophic	OEPA,314 GRANT
L-1	03-Aug-92	35.34	66.00	0.98	60.0	70.00	65.0			OEPA,314 GRANT
L-1	25-Aug-92	23.16	61.00	1.01	60.0	60.00	63.0			OEPA,314 GRANT
TYCOON LAKE										
L-1	26-Apr-90			1.33	56.0	50.00	61.0	**58.0**	Eutrophic	OEPA,314 GRANT
L-1	24-Aug-90	11.1	54.00	1.70	52.0	23.00	49.0			OEPA,314 GRANT
L-1	24-Aug-78	10.1	53.00	1.80	52.0	20.00	47.0			OEPA,1982 305(B)
L-1	02-May-78	6.7	49.00	2.00	50.0	20.00	47.0			OEPA,1982 305(B)
VAN BUREN LAKE										
L-1	08-Jun-89	69.3	72.00	0.30	77.0	144.00	76.0	**76.0**	L1-Hypereutrophic	FULMER/COOKE
L-1	07-Aug-89	108.8	77.00	0.28	78.0	110.00	72.0			FULMER/COOKE
L-2	08-Jun-89	84.2	74.00	0.21	82.0	228.00	82.0	**80.0**	L2-Hypereutrophic	FULMER/COOKE
L-2	07-Aug-89	132.6	79.00	0.22	82.0	189.00	80.0			FULMER/COOKE
L-3	08-Jun-89	27.7	63.00	0.10	93.0	144.00	76.0	**76.0**	L3-Hypereutrophic	FULMER/COOKE
L-3	07-Aug-89	106.4	76.00	0.21	82.0	189.00	80.0			FULMER/COOKE
L-1	29-Apr-80	76.00	73.00	0.33	76.0	80.00	67.0			OEPA,1982 305(B)
L-1	11-Aug-80	6.4	49.00	0.10	93.0	210.00	81.0			OEPA,1982 305(B)
VETO LAKE										
L-1	15-May-90			0.70	65.0	27.00	52.0	**61.0**	Eutrophic	OEPA,314 GRANT
L-1	10-Sep-90	51.1	69.00	0.60	67.0	60.00	63.0			OEPA,314 GRANT
L-1	17-Aug-78	14.4	57.00	0.46	71.0	50.00	61.0			OEPA,1982 305(B)
L-1	09-May-78	20.1	60.00	0.46	71.0	50.00	61.0			OEPA,1982 305(B)
S-1	1992			(N=12)	67.0					CLIP/OLMS
VIRGINIA KENDALL LAKE										
VLMP	1988			(N=7)	55.0				Insuff. Data	NEFCO
VABASH CONS. DIST. RESV. #1										
L-1	29-Aug-89			0.20	83.0	90.00	69.0	**76.0**	Hypereutrophic	OEPA,314 GRANT
L-1	25-Apr-89			0.15	87.0	150.00	76.0			OEPA,314 GRANT
VALLACE LAKE										
L-1	29-Aug-77	3.5	43.00	2.00	50.0	22.00	49.0	**43.0**	Mesotrophic	OEPA,1982 305(B)
VAUSEON RESERVOIR #2										
L-1	19-May-93			1.00	60.0	37.00	56.0	**60.0**	Eutrophic	OEPA,314 GRANT
L-1	17-Aug-92	15.53	58.00	0.91	62.0	41.00	58.0			OEPA,314 GRANT

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-1	16-Sep-92	39.82	67.00	0.91	62.0	230.00	83.0			OEPA,314 GRANT
WEST RESERVOIR										
VLMP	09-Jun-90	6.1	48.00	1.17	58.0	77.00	67.0	**58.0**	Eutrophic	NEFCO/KSU
VLMP	29-Jun-90	5.5	47.00	1.07	59.0	48.00	59.0			NEFCO/KSU
VLMP	21-Jly-90	25.3	62.00	1.22	57.0	73.00	66.0			NEFCO/KSU
VLMP	09-Aug-90	24.8	62.00	0.81	63.0	74.00	66.0			NEFCO/KSU
VLMP	31-Aug-90	6.3	49.00	0.91	61.0	64.00	64.0			NEFCO/KSU
VLMP	15-Sep-90	10.5	54.00	0.74	64.0	72.00	65.0			NEFCO/KSU
VLMP	1990			(N=16)	61.0					NEFCO
VLMP	1989			(N=19)	60.0					NEFCO
VLMP	1988			(N=8)	60.0					NEFCO
L-1	1992			(N=5)	57.0					NEFCO
WESTERVILLE RESERVOIR										
L-1	01-Apr-80	17.6	59.00	0.91	61.0	40.00	57.0	**57.0**	Eutrophic	OEPA,1982 305(B)
WESTVILLE LAKE										
L-3	20-Jly-87	53.70	70.00	0.50	70.0			**70.0**	Hypereutrophic	OEPA, NEDO
WILLARD CITY RESERVOIR										
L-1	30-Aug-79	8.8	52.00	1.60	53.0	10.00	37.0	**44.0**	Mesotrophic	OEPA,1982 305(B)
L-1	22-Jun-79	1.9	37.00	6.50	33.0	10.00	37.0			OEPA,1982 305(B)
WILLS CREEK RESERVOIR										
L-1	06-May-76			0.46	71.0	80.00	67.0	**67.0**	Hypereutrophic	OEPA,1982 305(B)
L-1	07-Sep-76			0.46	71.0	80.00	67.0			OEPA,1982 305(B)
L-1	26-May-93			0.48	71.0	60.00	63.0	**58.0**	L1-Eutrophic	OEPA,314 GRANT
L-1	06-Aug-92	15.16	57.00	0.19	75.0	43.00	58.0			OEPA,314 GRANT
L-1	31-Aug-92	9.45	53.00	0.22	82.0	70.00	65.0			OEPA,314 GRANT
L-2	26-May-93			0.32	76.0	80.00	67.0	**61.0**	L2-Eutrophic	OEPA,314 GRANT
L-2	06-Aug-92	17.59	59.00	0.25	80.0	41.00	58.0			OEPA,314 GRANT
L-2	31-Aug-92	14.23	57.00	0.35	75.0	380.00	90.0			OEPA,314 GRANT
WINTON WOODS LAKE (W.FK.MILL CK.)										
L-1	29-Apr-87	25.8	62.00	0.41	73.0	32.00	54.0	**77.0**	Hypereutrophic	PHASE I GRANT
L-1	13-May-87	32.4	65.00	0.40	73.0	754.00	100.0			PHASE I GRANT
L-1	27-May-87	55.2	70.00	0.33	76.0	167.00	78.0			PHASE I GRANT
L-1	10-Jun-87	27.00	63.00	0.30	77.0	169.00	78.0			PHASE I GRANT
L-1	24-Jun-87	22.7	61.00	0.30	77.0	129.00	74.0			PHASE I GRANT
L-1	01-Jul-87	119.8	78.00							PHASE I GRANT
L-1	08-Jul-87	64.6	71.00	0.35	75.0	116.00	73.0			PHASE I GRANT
L-1	22-Jul-87	26.9	63.00	0.35	75.0					PHASE I GRANT
L-1	29-Jul-87	56.9	70.00							PHASE I GRANT
L-1	05-Aug-87	63.00	71.00	0.34	76.0					PHASE I GRANT

Appendix C. Trophic state classification, TSI data, and trends in trophic state for publicly-owned lakes greater than 5 acres.

Site	Date	CH-a (µg/l)	TSI CH-a	SD(m) Raw Data	TSI SD	TP (µg/l)	TSI' TP	Final TSI	Trophic Classification	Data Source
L-1	12-Aug-87	43.7	68.00							PHASE I GRANT
L-1	19-Aug-87	50.9	69.00	0.40	73.0					PHASE I GRANT
L-1	26-Aug-87	60.2	71.00							PHASE I GRANT
L-1	02-Sep-87	72.7	73.00							PHASE I GRANT
L-1	09-Sep-87	33.4	65.00							PHASE I GRANT
L-1	16-Sep-87	48.4	69.00	0.40	73.0					PHASE I GRANT
L-1	24-Apr-78	62.2	71.00	0.61	67.0	110.00	72.0			OEPA,1982 305(B)
L-1	25-Jul-78	35.7	66.00	0.56	68.0	160.00	77.0			OEPA,1982 305(B)
WOLF RUN RESERVOIR										
L-1	29-Jun-89	2.00	37.00	2.60	46.0	16.00	44.0	**40.0**	L1-Mesotrophic	FULMER/COOKE
L-1	31-Jly-89	1.5	35.00	3.31	43.0	11.00	38.0			FULMER/COOKE
L-2	29-Jun-89	3.5	43.00	1.02	60.0	23.00	49.0	**48.0**	L2-Eutrophic	FULMER/COOKE
L-2	31-Jly-89	5.2	47.00	2.50	47.0	26.00	51.0			FULMER/COOKE
L-3	29-Jun-89	6.3	49.00	0.55	69.0	53.00	61.0	**49.0**	L3-Eutrophic	FULMER/COOKE
L-3	31-Jly-89	2.1	38.00	1.15	58.0	26.00	51.0			FULMER/COOKE
L-1	13-Aug-81	2.9	41.00	2.90	45.0	20.00	47.0			OEPA,1982 305(B)
L-1	19-Apr-76			2.00	50.0	20.00	47.0			OEPA,1982 305(B)
L-1	16-Aug-76			3.40	42.0	10.00	37.0			OEPA,1982 305(B)
WYNOKA RETENTION DAM										
L-2	26-May-93			0.53	69.0	120.00	73.0	**69.0**	Hypereutrophic	OEPA,314 GRANT
L-2	05-Aug-92	20.03	74.00	1.00	60.0	100.00	71.0			OEPA,314 GRANT
L-2	26-Aug-92	7.3	59.00	1.84	51.0					OEPA,314 GRANT
WYNOKA UPGROUND RESERVOIR										
L-1	26-May-93			0.82	63.0	12.00	40.0	**46.0**	Mesotrophic	OEPA,314 GRANT
L-1	05-Aug-92	9.47	53.00	0.78	64.0	50.00	61.0			OEPA,314 GRANT
L-1	26-Aug-92	4.76	46.00	0.91	61.0					OEPA,314 GRANT
ZEPPERNICK LAKE										
S-1	1992			(N=11)	64.0					CLIP/OLMS

Appendix D

State of Ohio Environmental Protection Agency
Division of Surface Water

LAKE CONDITION QUESTIONNAIRE

This questionnaire should be completed by one who is familiar with lake conditions over the past two years. If monitored data are not available, please use your best judgement. Please attach a copy of any raw data that were collected over the past two years. This information will be used by the Ohio EPA to update the State of Ohio's 305(b) Lake Water Quality Inventory Report that is submitted to the USEPA. Any comments or questions may be directed to: Bob Davic, Ohio EPA, Northeast District Office, 2110 E. Aurora Rd., Twinsburg, Ohio 44087. Phone (216)425-9171, Fax (216)487-0769. Please return completed questionnaires to the above address.

---

1. INLAKE CONDITIONS.

a. Does the lake support a well-balanced mix of sport and forage fish, or do few fish species exist?

Insufficient Data	Well-balanced Fishery	Partially Balanced	Partially Impaired	Impaired Fishery

b. How would you rate the fishing in this lake? (Circle one).

Insufficient Data	Excellent	Good	Acceptable	Marginal	Very Poor

c. If *marginal* or *very poor* please indicate reasons why.

_____ Poor water chemistry
_____ Too many aquatic plants
_____ Turbidity
_____ Overfishing
_____ Fish populations with stunted growth
_____ Physical characteristics of the lake
_____ Other (Please specify) _____

d. If *excellent* or *good*, please indicate reasons why.

_____

e. Please list the types and numbers of fish that have been stocked in the lake during the past two years (if any). Please include white amur.

_____
_____

f. What species of fish are most frequently caught in the lake?

_____Largemouth Bass	_____Crappie	_____Bluegill
_____Catfish	_____Other Sunfish	_____Walleye
_____Saugeye	_____Perch	_____Other Sunfish
	_____Other (Specify)	

g. Is fish tissue data available? Yes _____No_____. If available, please attach a copy of the raw data.

h. Has the bottom sediment been chemically tested? Yes_____No_____. If yes, please attach a copy of the raw data.

i. Has any sediment been dredged or removed from the lake? Yes_____ No_____.

j. Based on your best judgement, how much of the original lake volume has been lost due to sedimentation from the upstream watershed?

<10% 10-25% 25-50% 50-75% 75-100%

k. Has a recent survey (since 1980) been conducted to document the extent of volume loss? Yes_____No_____. If yes, what percent capacity was lost? _____%.

l. Have any chemical tests (nutrients, fecal bacterial, heavy metals, etc.) been conducted on the lake water during the past two years? Yes_____No_____. If available, please attach a copy of the raw data.

m. Are there ongoing water quality surveys in this lake? Yes_____No_____.

n. During the summer months, to what extent do aquatic weeds cover the shoreline of the lake? (Circle one).

<10% 10-25% 25-50% 50-75% 75-100%

o. Has a survey of the types and abundance of aquatic vegetation been conducted for the lake? Yes_____No_____. If available, please attach a copy of the raw data.

p. During the past two summers, how would you rate the water quality of this lake?

Excellent Good Acceptable Marginal Poor

q. Problem evaluation: Please circle the number that you feel best describes summer Lake conditions.
(1)No problem (2)Minimal problems (3)Do not know (4)problem (5)Major problem

1.Algae blooms (pea green water)
1 ----- 2 ----- 3 ----- 4 ----- 5

2.Floating scum
1 ----- 2 ----- 3 ----- 4 ----- 5

3.Fish kills (more than 200 fish at one time)
1 ----- 2 ----- 3 ----- 4 ----- 5

4. Odors
1 ----- 2 ----- 3 ----- 4 ----- 5

5.Duckweed
1 ----- 2 ----- 3 ----- 4 ----- 5

6.Muddy brown water
1 ----- 2 ----- 3 ----- 4 ----- 5

7.Aquatic plants (macrophytes) in shallow areas
1 ----- 2 ----- 3 ----- 4 ----- 5

8.Other problems (list and rank)

r. Is the lake water used as a source of public drinking water? Yes_____No_____. If yes, please answer the following questions:

1. Taste and odor problems
1 ----- 2 ----- 3 ----- 4 ----- 5

2.THM (Trihalomethane) problems
1 ----- 2 ----- 3 ----- 4 ----- 5

3.Other problems. (List_____).

s. In the space below, indicate your general impression of the overall health or condition of this lake, and what steps you feel are necessary to protect and/ or restore lake uses.

_____

_____

_____

2. LAKE USES.

Please indicate all of the types of uses supported by the lake.

_____Agricultural water supply
_____Boating - motorized
_____Boating - nonmotorized
_____Camping/Picnicking
_____Conservation
_____Fishing (from shore)
_____Fishing (from boats)
_____Flood control
_____Industrial water supply
_____Public water supply (back-up)
_____Public water supply (primary)
_____Stormwater management
_____Swimming
_____Water skiing
_____Others (name) _____

3. INLAKE TREATMENTS.

Please indicate the types of lake management techniques that have been used in the lake over the past two years.

_____Circulation/aeration
_____Copper sulphate treatment
_____Dilution/flushing
_____Dredging
_____Fish removal
_____Grass carp (white amur)
_____Hypolimnetic aeration
_____Lake level drawdown
_____Nutrient inactivation (alum)
_____Sediment covers
_____Weed (macrophyte) harvesting
_____Others_____
_____Herbicides/algacides other than copper sulphate, name_____

_____

4. MISCELLANEOUS INFORMATION.

a. Would local funds (either in dollars or woman/man hours) be available in the next two years to match a potential $50,000 federal EPA Clean Lake Program grant to conduct a detailed study of lake and watershed conditions.
_____yes _____No _____Not sure.

b. Do you think there is enough local support in the area to encourage and assist the development of a lake protection or restoration project?
Yes_____No_____Not sure_____
Please name a contact person(s) or group with phone number and address.

_____

_____

5. CAUSES OF LAKE PROBLEM

On a scale of 1 to 5 (1=very high magnitude, 2=moderate, 3=do not know, 4=slight, 5=no problem), please rank the importance of the following **causes of potential problems** in this lake.

Code	*Cause*	*Rank*				
01	Cause unknown----------	1	2	3	4	5
02	Unknown toxicity----------	1	2	3	4	5
03	Pesticides----------	1	2	3	4	5
04	Priority organics (i.e, PCB's)----------	1	2	3	4	5
05	Nonpriority organics----------	1	2	3	4	5
06	Metals----------	1	2	3	4	5
07	Ammonia----------	1	2	3	4	5
08	Chlorine----------	1	2	3	4	5
09	Other inorganics----------	1	2	3	4	5
10	Nutrients----------	1	2	3	4	5
11	pH----------	1	2	3	4	5
12	Siltation----------	1	2	3	4	5
13	Organic enrichment/low D.O.----------	1	2	3	4	5
14	Salinity/TDS/chlorides----------	1	2	3	4	5
15	Thermal modifications----------	1	2	3	4	5
16	Flow alterations----------	1	2	3	4	5
17	Other habitat alterations----------	1	2	3	4	5
18	Pathogenic indicators----------	1	2	3	4	5
19	Radiation----------	1	2	3	4	5
20	Oil and grease----------	1	2	3	4	5
21	Taste and odor----------	1	2	3	4	5
22	Suspended solids----------	1	2	3	4	5
23	Noxious aquatic plants----------	1	2	3	4	5
24	Filling and draining----------	1	2	3	4	5
25	Total toxics----------	1	2	3	4	5
26	Turbidity----------	1	2	3	4	5
27	Exotic Species----------	1	2	3	4	5
28	Other (specify)_____	1	2	3	4	5

6. WHICH CONTROL AND LAKE RESTORATION EFFORTS HAVE BEEN USED AT THIS LAKE OR IN ITS BASIN?

Control activities

_____10 Point source controls
_____11 Industrial point source permit
_____12 Municipal point source permit
_____13 Point source diversion
_____14 Other point source controls
_____20 Nonpoint source controls BMP
_____21 Conservation tillage
_____22 Integrated pest management
_____23 Animal waste management
_____24 porous pavement
_____25 Road/skid trail managemnt
_____26 Land surface roughening

Control activities

_____27 Stormwater management
_____28 Bank stabilization
_____29 Riprapping
_____30 Detention/sedimentation basins
_____31 Runoff diversion
_____32 Redesigned streets/parking
_____33 Other BMP's
_____40 NPS land use Ords. or Regs.
_____50 Functional NPS control
_____60 Functional state lake mngt. prgs.
_____70 Emission control programs
_____80 Other NPS controls

Restoration activities

_____01 Phosphorus precipitation
_____02 Sedimentation removal/dredging
_____03 Dilution
_____04 Biological controls
_____05 Aquatic macrophyte harvesting
_____06 Artificial circulation
_____07 Hypolimnetic aeration
_____08 Food chain manipulation
_____09 Chemical controls
_____10 Diversion
_____11 Sediment basin/traps
_____12 Drawdown

Restoration activities

_____13 Shading/sediment cover
_____14 Sediment oxidation
_____15 Hypolimnetic withdrawl
_____16 Invasion of non-native species
_____17 Herbicide application
_____18 Destratification
_____19 Sand filters for clarification
_____20 Shoreline erosion control
_____21 Parking lot redesign
_____22 Local lake management program
_____23 Public information/education programs

7. SOURCES OF LAKE POLLUTION

On a scale of 1-5 (1=very high magnitude, 2=moderate, 3=do not know, 4=slight, 5=no problem), Please rank the importance of the following **sources** of pollution loading to this lake.

Code	*Source*	*Rank*				
00	**Point sources:**					
	01 Industrial----------	1	2	3	4	5
	02 Municipal----------	1	2	3	4	5
	03 Municipal pretreatment----------	1	2	3	4	5
	04 Combined sewer overflow------	1	2	3	4	5
	05 Storm sewers----------	1	2	3	4	5
10	**Agricultural:**					
	11 Non-irrigated crop production---	1	2	3	4	5
	12 Irrigated crop production---------	1	2	3	4	5
	13 Truck farming - orchards---------	1	2	3	4	5
	14 Pasture lands----------	1	2	3	4	5
	15 Range lands----------	1	2	3	4	5
	16 Feed lots----------	1	2	3	4	5
	17 Aquaculture----------	1	2	3	4	5
	18 Animal holding areas----------	1	2	3	4	5

20	**Silviculture:**					
	21 Tree harvesting----------	1	2	3	4	5
	22 Forest management----------	1	2	3	4	5
	23 Road construction----------	1	2	3	4	5
30	**Construction:**					
	31 Highway construction----------	1	2	3	4	5
	32 Land development----------	1	2	3	4	5
40	**Urban Runoff:**					
	41 Storm sewers----------	1	2	3	4	5
	42 Combined sewer overflows-----	1	2	3	4	5
	43 Surface runoff (paved areas)----	1	2	3	4	5
50	**Mining:**					
	51 Surface mining----------	1	2	3	4	5
	52 Subsurface mining----------	1	2	3	4	5
	53 Placer mining----------	1	2	3	4	5
	54 Dredge mining----------	1	2	3	4	5
	55 Petroleum activities----------	1	2	3	4	5
	56 mill tailings----------	1	2	3	4	5
	57 Mine tailings----------	1	2	3	4	5
60	**Land disposal:**					
	61 Sludge----------	1	2	3	4	5
	62 Wastewater----------	1	2	3	4	5
	63 Landfills----------	1	2	3	4	5
	64 Industrial----------	1	2	3	4	5
	65 Septic tank----------	1	2	3	4	5
	66 Hazardous waste----------	1	2	3	4	5
70	**Habitat degradation:**					
	71 Stream channelization----------	1	2	3	4	5
	72 In-lake dredging----------	1	2	3	4	5
	73 Dam construction----------	1	2	3	4	5
	74 Flow regulation----------	1	2	3	4	5
	75 Bridge construction----------	1	2	3	4	5
	76 Riparian (shoreline removal)-----	1	2	3	4	5
	77 Streambank modification----------	1	2	3	4	5
80	**Other:**					
	81 Atmospheric deposition----------	1	2	3	4	5
	84 Spills----------	1	2	3	4	5
	85 In-place contaminants----------	1	2	3	4	5
	86 Natural aging----------	1	2	3	4	5
90	Source Unknown----------	1	2	3	4	5

Thank you very much for responding to this questionnaire!

(Please complete respondent identification on last page)

Respondent Identification:

Name: _____

Title: _____

Address: _____

City: _____ Zip_____

Telephone ( ) -

APPENDIX E

Ohio EPA State Lakes Policy

Policy No. 1.05
Effictive: August 1, 1988
Revised: Feb. 22, 1989

Subject: National Pollutant Discharge Elimination System; State Lakes

---

The State Lakes Policy applies to point source discharges to all publicly owned lakes and reservoirs and tributary streams within three miles of lakes or reservoirs and establishes effluent limitations for new, existing, or expanded wastewater treatment facilities. This policy is not applicable to upground storage reservoirs, point source dischargers into Lake Erie or privately owned lakes.

Discharges into streams tributary to lakes and reservoirs shall have limitations as stringent as if the discharge were occurring directly into the lake or reservoir except where a stream assimilation study has been done. For lakes whose depth is varied seasonally, such as for flood control purposes, the lake boundary shall be taken at the water surface of the summer low water level.

This policy is to be applied to three different categories of discharge.

Category 1. All new point sources discharging directly into a lake, reservoir, or into streams tributary (within three stream miles) to the lake or reservoir will be assigned the following effluent limitations:

Total discharge volume of facility greater than or equal to 0.1 MGD

$CBOD_5$		3.0 mg/l
NH_3-N	(Summer)	1.5 mg/l or present ambient standard for toxicity, whichever is more stringent.
	(Winter)	Present ambient standard for toxicity.
T-Phosphorus		1.0 mg/l
Dissolved Oxygen		6.0 mg/l
TRC	(Summer Only)	11.0 ug/l
Fecal Coliform	(Summer Only)	Bathing waters 200/100 ml Other areas 1000/100 ml

Total discharge volume of facility less than 0.1 MGD

$CBOD_5$		8.0 mg/l
NH_3-N	(Summer)	1.5 mg/l or present ambient standard for toxicity, whichever is less stringent.
	(Winter)	Present ambient standard for toxicity.
T-Phosphorus		0.83 lbs/day
Dissolved Oxygen		6.0 mg/l
TRC	(Summer Only)	11.0 ug/l
Fecal Coliform	(Summer Only)	Bathing waters 200/100 ml Other areas 1000/100 ml

Category 2. All existing point source discharges directly into a lake, reservoir, or into streams tributary (within three stream miles) to the lake or reservoir will be assigned the following effluent limitations:

$CBOD_5$		10.0 mg/l
NH_3-N	(Summer)	2.0 mg/l or present ambient standard for toxicity, whichever is less stringent; if discharge is into a tributary stream, a wasteload allocation may be considered.
	(Winter)	Monitor. Note: If design flow is less than 0.01 MGD, neither monitoring nor a NH_3N limitation is required.
T-Phosphorus		If less than 0.2 MGD design flow, no limit or monitoring required. If greater than or equal to 0.2 MGD design flow, use 8.34 lbs/day or 1 mg/l, whichever is less stringent.
Dissolved Oxygen		6.0 mg/l
TRC	(Summer Only)	0.5 ug/l
Fecal Coliform	(Summer Only)	Bathing waters 200/100 ml Other areas 1000/100 ml

Category 3. All point source discharges from expanded facilities discharging directly into a lake, reservoir, or stream tributary (within three stream miles) to the lake or reservoir will be asigned limitations using the following formula in combination with limitations listed to applicable parts of Category 1. The formula develops limitations for Category 3 dischargers by prorating the existing and additional design flows and existing and more stringent effluent limitations. The existing permit limits or the existing effluent quality 95 percent confidenct interval, whichever is most stringent, along with the limitations shown in Category 1 which are applicable to the additional flow, should b eused when developing limitations for Category 3 discharges.

*

$$L_N = \frac{(PF_o \times L_o) + (PF_1 \times L_1)}{PF_o + PF_1}$$

L_N = new permit limit
L_o = The limits from Category 2 or existing permit limit/ existing effluent quality 95 percent confidence interval when these are more stringent than Category 2 limits
L_1 = limits for expanded capacity as taken from this policy
PF_o = design flow of existing portion of the WWTP
PF_1 = design flow of expanded portion of the WWTP

* This formula should not be applied to fecal coliform, TRC, or D.O.

All other possible alternatives should be considered prior to approving a new direct discharge to a lake or reservoir. On-lot wastewater disposal may be feasible where suitable subsoils exist. In some cases, it may be possible to direct the discharge to a stream not tributary to the lake or reservoir. If a direct discharge to a lake or reservoir is the only viable alternative, the Ohio EPA will require public ownership of the treatment facility.

NOTE:

The feasibility of a controlled discharge lagoon discharge to a lake, reservoir, or stream tributary (within three stream miles) to the lake or reservoir that is included in the criteria described above will be assessed on a case-by-case basis. If approved, effluent limitations will be set based upon the Ohio EPA Lagoons Policy. Additional effluent limitations (i.e., phosphorus) may be required as necessary to assure continued high water quality.

Appendix F-1. Relative assessment of causes of impairment (i.e. acres[1]) causing partial and non-attainment of designated uses in lakes, ponds, and reservoirs in Ohio. Major, moderate, and minor impacts refer to the high, moderate, and slight magnitude codes specified by the U.S. EPA guidance for the 305(b) report.

	1988-1992 305(b) Cycles		
Causes	Major Cause	Moderate Cause	Minor Cause
Nutrients	16631.1	5964.0	752.0
Turbidity	15629.0	4669.0	582.0
Siltation	15444.1	2589.0	2037.0
Habitat Alterations	12700.0	17.8	869.0
Organic Enrichment/ Dissolved Oxygen	8739.0	2202.5	852.0
Noxious Aq. Plants	343.0	1955.0	365.8
Pathogens	300.0	994.0	1350.0
Ammonia	168.6	474.0	1277.0
Other Inorganics	85.0	1573.4	1624.0
pH	83.0	–	1190.0
Pesticides	57.0	860.0	4033.5
Low Nutrients	50.0	–	–
Metals	34.8	1196.0	1317.0
Thermal Modifications	23.0	–	11.8
Exotic Species	–	–	–
Total Toxics	–	–	–
Filling & Draining	–	–	–
Suspended Solids	–	2356.0	1284.0
Taste and Odor	–	23.4	17.0
Oil & Grease	–	1868.0	679.0
Radiation	–	–	17.0
Flow Alteration	–	57.0	679.0
Salinity/TSD/Chlorides	–	83.0	23.0
Chlorine	–	–	–
Non-Priority Organics	–	340.0	679.0
Priority Organics	–	40.0	2004.0
Unknown	–	–	786.6

Appendix F-2. Relative assessment of sources of impacts (i.e. acres[1]) causing non-support of aquatic life uses in Ohio lakes, ponds, and reservoirs. Major, moderate, and minor impacts refer to the high, moderate, and slight magnitude codes specified by the U.S. EPA guidance for the 305(b) report.

Sources	Major Source	Moderate Source	Minor Source
POINT SOURCES	***1518.0***	***30513.0***	***5355.0***
Industrial	–	13002.0	4544.0
Municipal	1190.0	30491.0	2815.0
Combined Sewers	–	–	1350.0
Stormwater Sewers	277.0	1717.0	4033.0
Package Plants	94.0	1350.0	–
Wastewater Lagoon	51.0	–	–
AGRICULTURE	***29712.5***	***24993.5***	***4448.1***
Agriculture	25597.5	8325.0	310.0
Non-irrigated Crops	17470.0	2674.5	1371.0
Irrigated Crops	1350.0	785.0	1297.0
Specialty Crops	–	–	110.0
Pasture Land	1406.0	3740.5	1376.0
Feedlots	3418.0	12796.0	2724.5
Animal Holding	1954.0	13113.0	1234.1
SILVICULTURE	***255.0***	***2384.0***	***635.0***
Silviculture	51.0	2384.0	304.0
Timber Harvesting	204.0	–	127.0
Forest Management	–	–	427.0
Timber Harv. Roads	–	–	96.0
CONSTRUCTION	***677.0***	***14212.0***	***2205.6***
Construction	101.0	14152.0	1325.0
Highway Constr.	37.0	12700.0	773.0
Land Development	539.0	12760.0	201.6
URBAN RUNOFF/ STORM SEWERS (NPS)	***740.0***	***18531.0***	***2341.0***
Urban Runoff	55.0	13063.0	1535.0
Storm Sewers	197.0	5634.0	2004.0
Industrial Runoff	–	1533.0	–
Surface Runoff	677.0	4099.0	2131.0
MINING	***270.0***	***2079.0***	***3005.0***
Mining	85.0	–	419.0
Surface Mining	85.0	539.0	361.0
Subsurface Mining	185.0	–	–
Petroleum Activities	–	1540.0	1325.0
Acid Mine Drainage	–	–	900.0
LAND DISPOSAL	***15016.0***	***12667.0***	***5068.0***
Land Disposal	–	–	10.0
Sludge Disposal	–	–	157.0
Landfills	–	123.0	2974.0
Industrial Land Treat.	–	–	1507.0
Septic Tanks	15016.0	12667.0	3455.0
HAB. MODIFICATION	***1094.8***	***19445.0***	***4768.0***
Hydromodification	900.0	5909.0	385.0
Channelization	–	679.0	2138.0
Dredging	–	–	604.0
Dam Construction	–	–	157.0

Appendix F-2. continued.

Sources	Major Source	Moderate Source	Minor Source
Flow Regulation	–	157.0	2480.0
Riparian Destruction	194.8	12700.0	2707.0
Streambank Disturb.	183.0	12700.0	2382.0
OTHER	***109.0***	***30991.6***	***2506.5***
Atmos. Deposition	–	6854.0	–
Highway maintenance	–	–	23.0
Spills	–	3874.0	451.0
In-place contaminants	–	775.0	1482.0
Natural Conditions	109.0	29170.6	550.5
Recreational Activities	–	396.0	–
SOURCE UNKNOWN	***221.0***	–	–

[1] Acres counted add to more than total acres because more than one source can be major, moderate, or minor in a segment.

Appendix G

List of Nonpoint Source Targeted Lakes

Lake	Acres	County (at dam)
Acton Lake	604	Butler
Berlin Reservoir	3590	Portage
Brady Lake	70	Portage
Buckeye Lake	3136	Licking
C. J. Brown Lake	2120	Clark
Celeryville Reservoir	75	Crawford
Cinnamon Lake	131	Ashland
Clouse Pond	41	Perry
Cowan Lake	688	Clinton
Cutler Lake	18	Muskingum
Deer Creek Lake	1277	Pickaway
Deer Creek Reservoir	313	Stark
Dillon Reservoir	1325	Muskingum
Dow Lake	161	Athens
East Branch Reservoir	416	Geauga
East Fork Lake	2160	Clermont
Findley Lake	83	Lorain
Fox Lake Structure #6	47	Athens
Fulton Pond	15	Fulton
Girard Lake	185	Trumbull
Grand Lake St. Marys	12700	Auglaize
Guilford Lake	396	Columbiana
Harrison Lake	96	Fulton
Highlandtown Lake	170	Columbiana
Hinckley Lake	88	Medina
Hoover Reservoir	3000	Franklin
Indian Lake	5104	Logan
Jackson Lake	243	Jackson
Jefferson Lake	25	Jefferson
Knox Lake	474	Knox
Lake Alma	63	Vinton
Lake Aquilla	27	Geauga
Lake Hope	127	Vinton
Lake Logan (Hocking Lake)	354	Hocking
Lake Loramie	785	Shelby

Lake	Acres	County (at dam)
Lake Nesmith	80	Summit
Lake Rockwell	539	Portage
Lake Rupert	325	Vinton
Liberty Lake	99	Trumbull
LaDue Reservoir	1500	Geauga
Madison Lake	106	Madison
Meadow Brook Lake	24	Summit
Metzger Reservoir	157	Allen
Miami Whitewater Lake	85	Hamilton
Mogadore Reservoir	900	Portage
Monroe Lake	39	Monroe
Mt Gilead Lake (Upper)	11	Morrow
Nettle Lake	94	Williams
Newport Lake	105	Mahoning
Paint Creek Lake	1190	Highland
Punderson Lake	101	Geauga
Pymatuning Reservoir	3580	Ashtabula
Riley Reservoir	28	Crawford
Roaming Rock Lake	464	Ashtabula
Sharon Woods Lake	38	Hamilton
Shreve Lake	58	Wayne
Springfield Lake	200	Summit
Spring Valley Lake	58	Warren
Stonelick Lake	160	Clermont
Sunny Lake (Harmons Pond)	63	Portage
Swanton Reservoir	25	Lucus
Swift Run Lake	40	Miami
Van Buren Lake	53	Hancock
Veto Lake	160	Washington
Wauseon Reservoir #1	49	Fulton
Wellington Reservoir (Upper)	21	Lorain
Westville Lake	90	Columbiana
Willard Marsh Area Lake	6.3	Huron
Winton Woods Lake	183	Hamilton

[1]Lakes were targeted if they indicated less than full use (fu) attainment for 4 or more of the following Ohio LCI parameters: productivity (P); nutrients (N); volume loss (V); fecal coliform bacteria (B); acid mine drainage (M); aesthetics (A); priority metals (PPM); nuisance levels of macrophytes (NM). See Appendix F for targeted parameters.

[2]Lakes not included in this list either had insufficient data to be assessed or did not meet the targeting criteria.

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
ACTON LAKE (Butler)															
1988		ne	ne	t(bpj)	t(m)	t(m)	t(bpj)	t(m)	t-h(m	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1990		t(m)	t(bpj)	fu(bpj)	t(m)	fu(m)	t(bpj)	fu(m)	t-e(m	t-h(m	ne	fu(m)	fu(m)	fu(m)	t(b
1992	604.00	t(m)	t(bpj)	fu(bpj)	t(m)	t(m)	t(bpj)	fu(m)	t-e(m)	t-h(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
ADAMS LAKE (Adams)															
1988	37.00	t(m)	ne	fu(bpj)	fu(m)	t(m)	ne	fu(m)	t-e(m)	t-h(m)	ne	ne	fu(m)	fu(m)	fu(m)
ALDER POND (Summit)															
1988	15.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ALDRICH POND (Sandusky)															
1988	34.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ALUM CREEK LAKE (Delaware)															
1988		ne	ne	fu(bpj)	fu(bpj)	fu(m)	ne	i(m)	ne	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1990		fu(m)	ne	fu(bpj)	fu(bpj)	fu(m)	fu(bpj)	fu(m)	ne	t-e(m	fu(m)	ne	fu(m)	fu(m)	t(b
1992	3387.00	fu(m)	ne	fu(bpj)	fu(bpj)	t(m)	fu(bpj)	fu(m)	ne	t-e(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)
AMANN RESERVOIR (Morrow)															
1988	24.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
AMICKS RESERVOIR (Morrow)															
1988	51.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ARCHBOLD RESERVOIR #1 (Fulton)															
1988	20.00	ne	ne	fu(bpj)	fu(bpj)	ne	t(bpj)	ne	ne	t(bpj)	ne	ne	ne	ne	ne
ARCHBOLD RESERVOIR #2 (Fulton)															
1988	49.00	ne	ne	fu(bpj)	fu(bpj)	ne	t(bpj)	ne	ne	t(bpj)	ne	ne	ne	ne	ne
ASTABULA CO. METRO PARKS LAKE #1 (Ashtabula)															
1988	5.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ASTABULA CO. METRO PARKS LAKE #2 (Ashtabula)															
1988	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ATOMIC ENERGY COMM. LAKE #1 (Pike)															
1988	13.80	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ATOMIC ENERGY COMM. LAKE #2 (Pike)															
1988	17.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ATTICA RESERVOIR (Seneca)															
1988	5.20	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ATWOOD RESERVOIR (Tuscarawas)															
1988		t(bpj)	ne	fu(bpj)	fu(m)	t(m)	ne	fu(m)	t-e(m	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1990		t(bpj)	ne	fu(bpj)	fu(m)	t(m)	ne	fu(m)	t-e(m	t-e(m	ne	ne	fu(m)	fu(m)	fu(
1992	1540.00	t(m)	ne	fu(bpj)	fu(m)	t(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
BALDWIN LAKE (Cuyahoga)															
1988		t(bpj)	ne	fu(bpj)	fu(m)	ne	ne	ne	t-e(m	ne	ne	ne	ne	ne	t(b

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1990	32.00	t(bpj)	i(bpj)	fu(bpj)	t(m)	ne	ne	ne	t-e(m)	ne	ne	ne	ne	ne	ne
BALDWIN RESERVOIR (Cuyahoga)															
1988	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BALLVILLE DAM (Sandusky)															
1988	89.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BARNESVILLE RESERVOIR #1 (Belmont)															
1988	35.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BARNESVILLE RESERVOIR #2 (Belmont)															
1988	11.30	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BARNESVILLE RESERVOIR #3 (Belmont)															
1988		fu(m)	ne	ne	t(m)	fu(m)	ne	fu(m)	t-h(m	t-h(m	ne	ne	ne	fu(m)	ne
1992	98.00	fu(m)	ne	ne	t(m)	t(m)	ne	fu(m)	t-h(m)	t-h(m)	ne	ne	ne	fu(m)	fu(m)
BATAVIA WATER SUPPLY RESERVOIR (Clermont)															
1992	14.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BEACH CITY LAKE (Tuscarawas)															
1988	420.00	t(bpj)	ne	fu(bpj)	t(bpj)	t(bpj)	ne	ne	t-e(m)	t-h(m)	ne	ne	ne	ne	ne
BEAVER CREEK RESERVOIR (Seneca)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1992	110.00	fu(m)	fu(bpj)	fu(bpj)	fu(m)	t(m)	t(bpj)	fu(m)	fu(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
BEAVER LAKE (Columbiana)															
1988	103.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BELLEVUE RESERVOIR #1,#2 (Huron)															
1988	14.20	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne
BELLEVUE RESERVOIR #3 (Huron)															
1988	14.00	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne
BELLEVUE RESERVOIR #4 (Huron)															
1988	31.00	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne
BELLEVUE RESERVOIR #5 (Huron)															
1988	87.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BELMONT LAKE (Belmont)															
1988		t(m)	ne	fu(bpj)	t(m)	ne	ne	ne	t-h(m	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1992	117.00	t(m)	ne	fu(bpj)	t(m)	t(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
BERLIN HEIGHTS RESERVOIR (Erie)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BERLIN RESERVOIR (Portage)															
1988		ne	ne	t(bpj)	t(bpj)	fu(m)	ne	t(m)	t-e(m	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1990		t(m)	fu(bpj)	fu(bpj)	t(m)	fu(m)	t(bpj)	fu(m)	t-e(m	t-h(m	fu(m)	ne	fu(m)	fu(m)	fu(
1992	3590.00	t(m)	fu(bpj)	fu(bpj)	t(m)	t(m)	t(bpj)	fu(m)	t-e(m)	t-h(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
BETHEL RESERVOIR (Clermont)															
1988	5.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BETHEL UPGROUND RESV #2 (Clermont)															
1992	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BETHESDA RESERVOIR (Belmont)															
1988	13.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BIG ISL. WLDLF. AREA UPGR. RES. (Marion)															
1992	382.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BLANCHESTER RESERVOIR # 1 (Clinton)															
1988	7.10	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BLANCHESTER RESERVOIR # 2 (Clinton)															
1988	7.10	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BLANCHESTER RESERVOIR # 3 (Clinton)															
1988	11.40	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BLANCHESTER RESERVOIR # 4 (Clinton)															
1988	11.40	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BLANCHESTER RESERVOIR # 5 (Clinton)															
1988	17.90	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BLUE LIMESTONE PARK QUARRY PIT (Delaware)															
1992	6.80	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BLUE ROCK STATE PARK LAKE (Muskingum)															
1988	18.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BOWLING GREEN G. C. LAKE (Wood)															
1992	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BOWLING GREEN UPGROUND RESERVOIR (Wood)															
1992	20.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BRADY LAKE (Portage)															
1988		t(m)	ne	t(bpj)	t(bpj)	ne	ne	ne	t-h(m	t(bpj	ne	ne	ne	fu(m)	fu(
1992	70.00	t(m)	ne	t(bpj)	t(bpj)	t(m)	ne	ne	t-h(m)	t(bpj)	ne	ne	ne	fu(m)	fu(m)
BRESLER RESERVOIR (Allen)															
1988		ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	t(bpj	ne	ne	ne	ne	ne	t(b
1992	582.00	t(m)	fu(bpj)	fu(bpj)	fu(m)	t(m)	t(bpj)	fu(m)	t-e(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
BUCKEYE LAKE (Licking)															
1988		ne	ne	t(bpj)	t(m)	fu(m)	ne	i(m)	t-h(m	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1990	3136.00	t(m)	t(bpj)	fu(bpj)	t(m)	fu(m)	fu(bpj)	fu(m)	t-h(m)	t-e(m)	fu(m)	fu(m)	fu(m)	fu(m)	fu(m)
BUCYRUS RESERVOIR # 4 (Crawford)															
1988	150.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BUCYRUS RESERVOIR #1 (Crawford)															

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1988	36.00	ne	ne	t(bpj)	t(bpj)	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne	ne
BUCYRUS RESERVOIR #2 (Crawford)															
1988	31.00	ne	ne	t(bpj)	t(bpj)	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne	ne
BURGESS LAKE (Mahoning)															
1988	20.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
BURR OAK LAKE (T. JENKINS RESV.) (Athens)															
1988		fu(bpj)	ne	t(bpj)	fu(bpj)	fu(m)	ne	fu(m)	ne	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1992	664.00	fu(bpj)	ne	t(bpj)	fu(bpj)	t(m)	ne	fu(m)	ne	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
C. J. BROWN LAKE (Clark)															
1988		fu(bpj)	ne	t(bpj)	t(m)	fu(m)	ne	fu(m)	t-h(m	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1992	2120.00	t(m)	ne	t(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
CAESAR CREEK RESERVOIR (Warren)															
1988		fu(bpj)	ne	fu(bpj)	fu(m)	fu(m)	ne	fu(m)	t-e(m	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1992	2830.00	fu(bpj)	ne	fu(bpj)	fu(m)	t(m)	ne	fu(m)	t-e(m)	t-h(m)	ne	ne	fu(m)	fu(m)	fu(m)
CALDWELL LAKE (Noble)															
1988	51.00	fu(m)	ne	fu(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CALEY WOODS WILDLIFE LAKE (Lorain)															
1992	8.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CAMBRIDGE RESERVOIR (Guernsey)															
1988	26.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CAMDEN RESERVOIR (Lorain)															
1988	9.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CARRIAGE HILL RESERVOIR (Montgomery)															
1988	14.10	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CEDARVILLE COLLEGE LAKE (Greene)															
1988	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CEDARVILLE RESERVOIR (Greene)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CELERYVILLE RESERVOIR (Crawford)															
1988	75.10	ne	ne	t(bpj)	fu(bpj)	ne	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne
CHARLES MILL LAKE (Ashland)															
1988		t(bpj)	ne	t(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1992	1350.00	t(m)	fu(bpj)	fu(bpj)	i(m)	t(m)	t(bpj)	fu(m)	t-h(m)	t-e(m)	ne	fu(m)	t(m)	fu(m)	fu(m)
CHIPPEWA CREEK STRUCTURE 2-A (Medina)															
1988	12.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CHIPPEWA CREEK STRUCTURE 3-A (Medina)															
1988	20.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CHIPPEWA CREEK STRUCTURE 5-C (Wayne)															

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1992	8.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CHIPPEWA CREEK STRUCTURE 5-D (Wayne)															
1992	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CHIPPEWA CREEK STRUCTURE 7-C (Wayne)															
1988	34.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CINCINNATI WATERWORKS LAKE #1 (Hamilton)															
1988	18.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CINCINNATI WATERWORKS LAKE #2 (Hamilton)															
1988	19.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CINNAMON LAKE (Ashland)															
1988		ne	ne	t(bpj)	t(bpj)	ne	ne	ne	t(bpj	ne	ne	ne	ne	ne	t(b
1992	131.00	fu(m)	ne	t(bpj)	t(bpj)	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne	ne
CITY OF ASHLAND LAKE (Ashland)															
1988	6.00	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CITY OF DAYTON LAKE #1 (Montgomery)															
1988	10.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CITY OF NEWTON FALLS LAKE (Trumbull)															
1988	12.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CITY OF PERRYSBURG LAKE (Wood)															
1988	6.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CITY OF WELLSTON LAKE (Jackson)															
1988	11.00	ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne
CLARK LAKE (Clark)															
1988		fu(bpj)	ne	t(bpj)	fu(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1992	100.00	fu(bpj)	ne	t(bpj)	fu(m)	t(m)	ne	fu(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
CLEAR FORK RESERVOIR (Richland)															
1988		t(bpj)	ne	fu(bpj)	fu(bpj)	ne	ne	t(m)	ne	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1992	1010.00	t(m)	ne	fu(bpj)	fu(bpj)	ne	ne	t(m)	ne	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
CLENDENING LAKE (Harrison)															
1988		t(bpj)	ne	fu(bpj)	fu(bpj)	fu(m)	ne	fu(m)	ne	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1992	1800.00	t(bpj)	ne	fu(bpj)	fu(bpj)	fu(m)	ne	fu(m)	ne	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
CLINTON COUNTY TRIB #1 LAKE (Clinton)															
1988	10.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CLOUSE POND (Perry)															
1988		t(m)	ne	t(bpj)	t(m)	fu(m)	ne	fu(m)	t-h(m	t-e(m	ne	ne	t(m)	fu(m)	t(b
1992	41.50	t(m)	ne	t(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m)	t-e(m)	ne	ne	t(m)	fu(m)	fu(m)
COE LAKE (Cuyahoga)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1994	23.00	t(m)	t(bpj)	t(bpj)	t(m)	t(m)	fu(m)	fu(m)	t-e(m)	fu(m)	ne	t(m)	ne	fu(m)	fu(m)
COLLEGE CORNER RESERVOIR (Preble)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CORNING RESERVOIR (Perry)															
1988	15.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
COWAN LAKE (Clinton)															
1988		t(bpj)	ne	t(bpj)	fu(bpj)	fu(m)	t(bpj)	fu(m)	ne	t-h(m	ne	ne	t(m)	fu(m)	t(b
1992	688.00	t(m)	ne	t(bpj)	fu(bpj)	t(m)	t(bpj)	fu(m)	t-e(m)	t-h(m)	ne	ne	t(m)	fu(m)	fu(m)
CROOKSVILLE LOWER RESERVOIR (Morgan)															
1988	7.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CROOKSVILLE RESERVOIR # 3 (Perry)															
1988	15.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CROOKSVILLE UPPER RESERVOIR (Morgan)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
CRYSTAL LAKE (Portage)															
1988		fu(m)	ne	t(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	t(b
1992	25.00	fu(m)	ne	t(bpj)	fu(bpj)	ne	ne	ne	fu(m)	fu(m)	ne	ne	ne	ne	ne
CUTLER LAKE (Muskingum)															
1988		t(m)	ne	t(bpj)	fu(m)	ne	ne	ne	t-e(m	t(bpj	ne	ne	ne	fu(m)	t(b
1992	18.20	t(m)	ne	t(bpj)	fu(m)	t(m)	ne	fu(m)	t-e(m)	t(bpj)	ne	ne	ne	fu(m)	fu(m)
DALE WALBURN RESERVOIR (Stark)															
1988		t(m)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990	670.00	t(m)	ne	ne	ne	ne	ne	ne	ne	t-e(m)	ne	ne	ne	ne	ne
DARKE WILDLIFE AREA LAKE (Darke)															
1988	21.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
DEER CREEK CAMPGROUND LAKE (Pickaway)															
1988	8.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
DEER CREEK LAKE (Pickaway)															
1988		t(bpj)	ne	fu(bpj)	t(bpj)	t(m)	ne	t(m)	t-e(m	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1992	1277.00	t(m)	fu(bpj)	fu(bpj)	fu(m)	t(m)	fu(m)	fu(m)	t-e(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
DEER CREEK RESERVOIR (Stark)															
1988	313.00	t(m)	ne	fu(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
DEFIANCE POWER DAM RESERVOIR (Delaware)															
1992	679.00	t(m)	t(bpj)	fu(m)	t(m)	t(m)	t(bpj)	fu(m)	t-e(m)	t-e(m)	ne	fu(m)	t(m)	fu(m)	fu(m)
DELAWARE LAKE (Delaware)															
1988		t(bpj)	ne	fu(bpj)	t(bpj)	ne	ne	ne	fu(m)	t-h(m	ne	ne	ne	ne	t(b
1990		t(bpj)	ne	fu(bpj)	t(bpj)	ne	ne	ne	fu(m)	t-h(m	ne	fu(m)	ne	ne	t(m
1992	1300.00	t(m)	ne	fu(bpj)	t(bpj)	ne	ne	ne	t-e(m)	t-h(m)	ne	fu(m)	ne	ne	ne

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
DELCO UPGROUND RESV. #2 (Delaware)															
1992	30.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
DELCO WATER COMPANY LAKE (Delaware)															
1988	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
DELTA POND (Fulton)															
1988	11.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
DELTA RESERVOIR (Fulton)															
1988	39.00	ne	ne	fu(bpj)	fu(bpj)	ne	t(bpj)	ne	ne	t(bpj)	ne	ne	ne	ne	ne
DELTA RESERVOIR # 2 (Fulton)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1994	50.00	fu(m)	t(bpj)	fu(bpj)	fu(m)	t(m)	fu(m)	fu(m)	fu(m)	fu(m)	ne	fu(m)	ne	fu(m)	fu(m)
DESHLER RESERVOIR (Henry)															
1988	23.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
DILLON RESERVOIR (Muskingum)															
1988		t(bpj)	ne	t(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1990		t(bpj)	ne	t(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m	t-h(m	ne	fu(m)	fu(m)	fu(m)	t(m
1992	1325.00	t(m)	fu(bpj)	fu(bpj)	fu(m)	t(m)	t(bpj)	t-e(m)	t-h(m)	t-h(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
DOW LAKE (Athens)															
1988															
1990		fu(bpj)	ne	t(bpj)	fu(m)	fu(m)	ne	t(m)	t-e(m	fu(m)	ne	fu(m)	fu(m)	fu(m)	t(m
1992	161.00	fu(m)	t(bpj)	t(bpj)	fu(m)	t(m)	fu(bpj)	fu(m)	t-e(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
DUGOUT POND (ODOT) (Wood)															
1992	8.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
EAST BRANCH RESERVOIR (Geauga)															
1988		t(bpj)	ne	t(bpj)	t(bpj)	fu(m)	ne	fu(m)	t-e(m	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1990		t(bpj)	ne	t(bpj)	t(bpj)	fu(m)	ne	fu(m)	t-e(m	t-e(m	ne	fu(m)	fu(m)	fu(m)	t(m
1992	416.00	t(bpj)	ne	t(bpj)	t(bpj)	t(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
EAST FORK BUCK CREEK STRUC. 1-B (Champaign)															
1992	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
EAST FORK BUCK CREEK STRUC. 4-A (Champaign)															
1992	22.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
EAST FORK LAKE (Clermont)															
1988		t(bpj)	ne	t(bpj)	t(m)	fu(m)	t(bpj)	t(m)	t-h(m	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1992	2160.00	t(bpj)	ne	t(bpj)	t(m)	t(m)	t(bpj)	t(m)	t-h(m)	t-h(m)	ne	ne	fu(m)	fu(m)	fu(m)
EAST PALESTINE RESERVOIR (Columbiana)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
EAST RESERVOIR (Summit)															
1988		ne	ne	ne	t(m)	fu(m)	ne	fu(m)	t-h(m	t-e(m	ne	ne	fu(m)	fu(m)	ne

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1990		t(m)	ne	ne	t(m)	fu(m)	ne	fu(m)	t-h(m	t-e(m	ne	ne	fu(m)	fu(m)	ne
1992	201.00	t(m)	ne	ne	t(m)	t(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
EASTWOOD LAKE (Montgomery)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990		t(m)	t(bpj)	fu(bpj)	fu(m)	fu(m)	fu(bpj)	fu(m)	t-h(m	t-e(m	ne	ne	ne	fu(m)	fu(
1992	170.00	t(m)	t(bpj)	fu(bpj)	fu(m)	fu(m)	fu(bpj)	fu(m)	t-h(m)	t-e(m)	fu(m)	ne	ne	fu(m)	fu(m)
ECHO LAKE (Miami)															
1988	14.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
EDEN PARK POND (Hamilton)															
1988	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ESSINGTON LAKE (Perry)															
1988	16.00	fu(m)	ne	ne	fu(m)	i(m)	ne	i(m)	fu(m)	ne	ne	ne	ne	i(m)	i(m)
EVANS LAKE (Mahoning)															
1988	566.00	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
EVERGREEN LAKE (Lucas)															
1988	8.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
FAIRMOUNT RESERVOIR (Cuyahoga)															
1988	8.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
FALLSVILLE WILDLIFE AREA LAKE (Highland)															
1988	11.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
FERGUSON RESERVOIR (Allen)															
1988	305.00	ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	t(bpj)	t(bpj)	ne	ne	ne	ne	ne
FINDLAY RESERVOIR #1 (Hancock)															
1988	186.00	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne
FINDLAY RESERVOIR #2 (Hancock)															
1988	650.00	fu(bpj)	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne
FINDLEY LAKE (Lorain)															
1988		ne	ne	t(bpj)	t(m)	fu(m)	t(bpj)	fu(m)	t-h(m	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1990		t(m)	t(bpj)	t(bpj)	i(m)	t(m)	fu(bpj)	fu(m)	t-h(m	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1992	83.00	t(m)	t(bpj)	t(bpj)	i(m)	t(m)	fu(bpj)	fu(m)	t-e(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
FIRESTONE RESERVOIR (Summit)															
1988		t(m)	ne	ne	t(m)	fu(m)	ne	ne	t-h(m	ne	ne	ne	ne	ne	ne
1992	83.00	t(m)	ne	ne	t(m)	t(m)	ne	ne	t-h(m)	ne	ne	ne	ne	ne	ne
FORKED RUN LAKE (Meigs)															
1988		fu(bpj)	ne	fu(bpj)	fu(bpj)	ne	ne	t(m)	ne	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1990		fu(bpj)	ne	fu(bpj)	fu(bpj)	ne	ne	t(m)	ne	fu(m)	ne	fu(m)	fu(m)	fu(m)	fu(
1992	104.00	fu(bpj)	ne	fu(bpj)	fu(bpj)	t(m)	ne	t(m)	fu(m)	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
FORTY ACRE POND (Auglaize)															

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1988	70.00	ne	ne	fu(bpj)	t(m)	ne	ne	ne	t-h(m)	ne	ne	ne	ne	fu(m)	fu(m)
FOSTORIA UPGROUND RESV. #6 (Hancock)															
1992	161.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
FOX LAKE STRUCTURE #6 (Athens)															
1988		fu(m)	ne	t(bpj)	fu(m)	fu(m)	ne	t(m)	t-e(m	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1992	47.50	fu(m)	ne	t(bpj)	fu(m)	t(m)	ne	t(m)	t-e(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
FRANZ POND (Miami)															
1988	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
FRIENDSHIP PARK (Jefferson)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1992	85.40	fu(m)	ne	fu(m)	fu(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)	ne	ne	ne	i(m)	i(m)
FULTON POND (Fulton)															
1988	15.00	ne	ne	t(bpj)	t(bpj)	ne	t(bpj)	ne	t(bpj)	t(bpj)	ne	ne	ne	ne	ne
GEORGETOWN VILLAGE RESERVOIR (Brown)															
1988	11.80	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
GIRARD LAKE (Trumbull)															
1988	185.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
GRAFTON WATER SUPPLY LAKE (Lorain)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1994	10.00	t(m)	ne	t(bpj)	t(m)	t(m)	fu(m)	fu(m)	t-e(m)	t-e(m)	ne	fu(m)	ne	fu(m)	fu(m)
GRAND LAKE ST. MARYS (Auglaize)															
1988		t(bpj)	ne	fu(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m)	t-h(m)	ne	ne	fu(m)	fu(m)	fu(m)
1994	12700.0	t(m)	t(bpj)	fu(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m)	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
GRAND RIVER WILDLIFE AREA LAKE (Trumbull)															
1988	11.20	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
GRANGER POND (Lake)															
1992	30.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
GRANT LAKE (Brown)															
1988		t(bpj)	ne	fu(bpj)	t(m)	ne	ne	ne	t-h(m	ne	ne	ne	ne	ne	t(b
1990	181.00	t(bpj)	ne	fu(bpj)	t(m)	ne	ne	ne	t-h(m)	ne	ne	fu(m)	ne	ne	ne
GREENE COUNTY PARKS LAKE (Greene)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
GREENFIELD LAKE (Fairfield)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1994	14.00	t(m)	fu(bpj)	fu(bpj)	t(m)	t(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
GREENWICH RESERVOIR (Huron)															
1988	6.50	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
GUILFORD LAKE (Columbiana)															

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1988		ne	ne	t(bpj)	t(m)	fu(m)	ne	t(m)	t-h(m	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1990		t(m)	fu(bpj)	t(bpj)	t(m)	fu(m)	fu(bpj)	fu(m)	t-h(m	t-e(m	ne	fu(m)	t(m)	fu(m)	fu(
1992	396.00	t(m)	fu(bpj)	t(bpj)	t(m)	t(m)	fu(bpj)	fu(m)	t-h(m)	t-e(m)	ne	fu(m)	t(m)	fu(m)	fu(m)
HAMMERTOWN LAKE (JACKSON CITY RESV.) (Jackson)															
1988		fu(bpj)	ne	ne	fu(m)	fu(m)	ne	t(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	ne
1992	186.00	fu(bpj)	ne	ne	fu(m)	t(m)	ne	t(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
HARGUS LAKE (Pickaway)															
1988		fu(bpj)	ne	fu(bpj)	fu(m)	fu(m)	ne	t(m)	fu(m)	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1990		fu(bpj)	ne	fu(bpj)	fu(m)	fu(m)	ne	t(m)	fu(m)	t-e(m	ne	fu(m)	fu(m)	fu(m)	fu(
1992	130.00	fu(bpj)	ne	fu(bpj)	fu(m)	fu(m)	ne	t(m)	fu(m)	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
HARRISON LAKE (Fulton)															
1988		t(m)	ne	t(bpj)	t(bpj)	t(m)	t(bpj)	i(m)	t-e(m	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1990	96.00	t(m)	ne	t(bpj)	t(bpj)	t(m)	t(bpj)	i(m)	t-e(m)	t-h(m)	ne	ne	fu(m)	fu(m)	fu(m)
HEBRON FISH HATCHERY LAKE (Licking)															
1988	75.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
HELENA LAKE (Sandusky)															
1988	15.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
HICKORY LAKE (Portage)															
1988	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
HIGHLANDTOWN LAKE (Columbiana)															
1988		fu(bpj)	ne	t(bpj)	t(m)	fu(m)	ne	fu(m)	t-h(m	fu(m)	fu(m)	ne	fu(m)	fu(m)	t(b
1992	170.00	fu(bpj)	ne	t(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m)	fu(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)
HIGHLANDTOWN WILDLIFE AREA POND (Columbiana)															
1988	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
HILLSBORO RESERVOIR (Highland)															
1988		ne	ne	t(bpj)	t(bpj)	ne	t(bpj)	ne	t(bpj	t(bpj	ne	ne	ne	ne	t(b
1990		t(m)	t(bpj)	fu(bpj)	t(m)	fu(m)	fu(bpj)	t(m)	t-e(m	fu(m)	ne	ne	ne	fu(m)	fu(
1992	22.00	t(m)	t(bpj)	fu(bpj)	t(m)	t(m)	fu(bpj)	t(m)	t-e(m)	fu(m)	ne	ne	ne	fu(m)	fu(m)
HILLSBORO UPGROUND RESERVOIR (Highland)															
1992	20.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
HINCKLEY LAKE (Medina)															
1988		ne	ne	fu(bpj)	t(m)	ne	t(bpj)	ne	t-e(m	t(bpj	ne	ne	ne	ne	t(b
1990	88.00	t(m)	i(bpj)	fu(bpj)	t(m)	fu(m)	fu(m)	fu(m)	t-e(m)	fu(m)	ne	fu(m)	ne	fu(m)	fu(m)
HOCKING HILLS RESERVOIR (Hocking)															
1988	21.10	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
HOOVER RESERVOIR (Franklin)															
1988		ne	ne	fu(bpj)	t(bpj)	fu(m)	ne	t(m)	t-e(m	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1990		t(m)	ne	fu(bpj)	t(bpj)	fu(m)	ne	t(m)	t-e(m	t-e(m	ne	fu(m)	fu(m)	fu(m)	t(b

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1992	3000.00	t(m)	ne	fu(bpj)	t(bpj)	t(m)	ne	t(m)	t-e(m)	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
HOSTERMAN LAKE (Clark)															
1988	9.20	t(m)	ne	ne	t(m)	fu(m)	ne	ne	t-h(m)	ne	ne	ne	ne	fu(m)	fu(m)
HOWER RESERVOIR (Summit)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990		fu(m)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1992	23.00	fu(m)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
HRCD STRUCTURE 1 (Fairfield)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
HRCD STRUCTURE 2 (Fairfield)															
1988	8.90	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
HRCD STRUCTURE 5 (Fairfield)															
1988	7.10	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
HRCD STRUCTURE 8 (Fairfield)															
1988	7.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
HRCD STRUCTURE R-21 (Fairfield)															
1988	5.30	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
HUDSON SPRINGS LAKE (Summit)															
1988		ne	ne	t(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	t(b
1990		t(m)	ne	t(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	t(b
1992	45.00	t(m)	ne	t(bpj)	t(bpj)	ne	ne	ne	t-e(m)	t-e(m)	ne	ne	ne	ne	ne
INDEPENDENCE DAM (Defiance)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990	605.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
INDIAN CR. WILDLIFE AREA PONDS (Brown)															
1988	56.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
INDIAN LAKE (Logan)															
1988		ne	ne	t(bpj)	i(m)	t(m)	ne	fu(m)	t-h(m	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1990		t(m)	t(bpj)	t(bpj)	i(m)	t(m)	fu(m)	fu(m)	t-h(m)	t-h(m)	fu(m)	fu(m)	fu(m)	fu(m)	fu(m)
1994	5104.00	t(m)	fu(bpj)	fu(bpj)	i(m)	fu(m)	fu(m)	fu(m)	t-h(m)	t-e(m)	fu(m)	fu(m)	fu(m)	fu(m)	fu(m)
ISMOND POND (Columbiana)															
1992	8.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
J. GRIGGS RESERVOIR (Franklin)															
1990		t(bpj)	ne	fu(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m	t-e(m	ne	ne	fu(m)	fu(m)	fu(
1992	385.00	t(m)	fu(bpj)	fu(bpj)	fu(m)	t(m)	ne	t(m)	t-e(m)	t-h(m)	ne	t(m)	fu(m)	fu(m)	fu(m)
JACKSON LAKE (Jackson)															
1988		t(bpj)	ne	t(bpj)	t(bpj)	fu(m)	ne	t(m)	t-e(m	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1990		t(bpj)	ne	t(bpj)	t(bpj)	fu(m)	ne	t(m)	t-e(m	fu(m)	ne	fu(m)	fu(m)	fu(m)	t(m

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1992	243.00	t(bpj)	ne	t(bpj)	t(bpj)	fu(m)	ne	t(m)	t-e(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
JEFFERSON LAKE (Jefferson)															
1988		fu(m)	ne	t(bpj)	t(bpj)	fu(m)	ne	fu(m)	t-e(m	fu(m)	ne	ne	t(m)	fu(m)	t(b
1990		fu(m)	ne	t(bpj)	t(bpj)	fu(m)	ne	fu(m)	t-e(m	fu(m)	ne	t(m)	t(m)	fu(m)	t(m
1992	25.00	fu(m)	t(bpj)	t(bpj)	t(m)	fu(m)	ne	fu(m)	t-e(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
JISCO LAKE (Jackson)															
1992	54.00	fu(m)	fu(bpj)	fu(bpj)	fu(m)	t(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)
KENT BOARD OF TRUSTEES LAKE (Portage)															
1988	10.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
KILLDEER RESERVOIR (Wyandot)															
1988		fu(bpj)	ne	fu(bpj)	t(bpj)	fu(m)	ne	fu(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1992	253.00	fu(m)	fu(bpj)	fu(bpj)	fu(bpj)	fu(m)	fu(bpj)	fu(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
KILLDEER WILDLIFE POND #1 (Wyandot)															
1988	9.00	ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
KILLDEER WILDLIFE POND #2 (Wyandot)															
1988	45.00	ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
KILLDEER WILDLIFE POND #3 (Wyandot)															
1988	9.00	ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
KILLDEER WILDLIFE POND #4 (Wyandot)															
1988	8.00	ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
KILLDEER WILDLIFE POND #5 (Wyandot)															
1988	18.00	ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
KILLDEER WILDLIFE POND #6 (Wyandot)															
1988	15.00	ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
KILLDEER WILDLIFE POND #7 (Wyandot)															
1988	225.00	ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
KILLDEER WILDLIFE POND #8 (Wyandot)															
1988	373.00	ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
KILLDEER WILDLIFE POND #9 (Wyandot)															
1988	225.00	ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
KILLIANY LAKE (Guernsey)															
1992	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
KIPTON RESERVOIR (Lorain)															
1988	20.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
KISER LAKE (Champaign)															
1988		t(m)	ne	t(bpj)	t(m)	fu(m)	ne	fu(m)	t-h(m	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1990	380.00	t(m)	fu(bpj)	fu(bpj)	fu(m)	fu(m)	fu(bpj)	fu(m)	t-h(m)	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
KNOX LAKE (Knox)															

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1988		ne	ne	fu(bpj)	t(bpj)	fu(m)	ne	fu(m)	t-e(m	t-e(m	ne	ne	t(m)	fu(m)	t(b
1990	474.00	t(m)	ne	fu(bpj)	t(bpj)	fu(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	fu(m)	t(m)	fu(m)	fu(m)
LAKE ALMA (Vinton)															
1988		fu(m)	ne	t(bpj)	fu(m)	fu(m)	ne	t(m)	t-e(m	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1990		fu(m)	ne	t(bpj)	fu(m)	fu(m)	ne	t(m)	t-e(m	fu(m)	ne	fu(m)	fu(m)	fu(m)	fu(
1992	63.00	fu(m)	ne	t(bpj)	fu(m)	t(m)	ne	t(m)	t-e(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
LAKE ANNA (Summit)															
1988	12.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LAKE AQUILLA (Geauga)															
1988		ne	ne	t(bpj)	t(bpj)	ne	ne	ne	t-e(m	ne	ne	ne	ne	ne	t(b
1990		fu(m)	i(bpj)	i(bpj)	i(m)	fu(m)	fu(bpj)	fu(m)	t-e(m	fu(m)	ne	ne	ne	fu(m)	t(b
1992	27.00	fu(m)	i(bpj)	i(bpj)	i(m)	t(m)	fu(bpj)	fu(m)	t-e(m)	fu(m)	ne	ne	ne	fu(m)	fu(m)
LAKE CALDWELL (Ross)															
1988	9.60	ne	ne	ne	t(m)	ne	ne .	ne	t-h(m)	ne	ne	ne	ne	ne	ne
LAKE COHASSET (Mahoning)															
1988	27.00	ne	ne	fu(bpj)	fu(bpj)	t(m)	ne	t(m)	ne	ne	ne	ne	fu(m)	fu(m)	fu(m)
LAKE DAUGHTERY (Hancock)															
1988	12.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LAKE GEORGE (Portage)															
1988	12.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LAKE GLACIER (Mahoning)															
1988	43.00	ne	ne	fu(bpj)	fu(bpj)	t(m)	ne	fu(m)	ne	ne	ne	ne	, t(m)	fu(m)	fu(m)
LAKE HAMILTON (Mahoning)															
1988	104.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LAKE HODGSON (Portage)															
1988		ne	ne	t(bpj)	t(bpj)	ne	t(bpj)	ne	fu(m)	ne	ne	ne	ne	ne	t(b
1990		t(m)	ne	t(bpj)	t(bpj)	ne	t(bpj)	ne	fu(m)	ne	ne	ne	ne	ne	t(b
1992	190.00	t(m)	ne	t(bpj)	fu(bpj)	ne	fu(bpj)	ne	t-e(m)	t-e(m)	ne	ne	ne	ne	ne
LAKE HOPE (Vinton)															
1988		t(bpj)	ne	t(bpj)	fu(m)	t(m)	ne	t(m)	t-e(m	fu(m)	ne	ne	fu(m)	i(m)	t(b
1990		t(bpj)	ne	t(bpj)	fu(m)	t(m)	ne	t(m)	t-e(m	fu(m)	ne	fu(m)	fu(m)	i(m)	t(m
1992	127.00	fu(m)	t(bpj)	t(bpj)	fu(m)	t(m)	fu(bpj)	fu(m)	t-e(m)	fu(m)	ne	fu(m)	fu(m)	i(m)	i(m)
LAKE ISABELLA (Hamilton)															
1988	23.00	fu(m)	ne	t(bpj)	fu(m)	ne	ne	ne	fu(m)	ne	ne	ne	ne	fu(m)	fu(m)
LAKE ISSAC (Cuyahoga)															
1988	15.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LAKE KATHARINE (Jackson)															
1988	42.00	fu(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
LAKE LA SU AN (Williams)															
1988		ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	fu(
1992	134.00	t(m)	fu(bpj)	fu(bpj)	fu(bpj)	t(m)	fu(bpj)	fu(m)	t-e(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
LAKE LAMBERJACK (Hancock)															
1988	45.00	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne
LAKE LAVERE (Williams)															
1988	11.10	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LAKE LOGAN (HOCKING LAKE) (Hocking)															
1988		t(bpj)	ne	t(bpj)	t(bpj)	fu(m)	ne	fu(m)	t(bpj	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1990		t(bpj)	ne	t(bpj)	t(bpj)	fu(m)	ne	fu(m)	t(bpj	t-e(m	ne	fu(m)	fu(m)	fu(m)	t(m
1992	354.00	t(m)	fu(bpj)	t(bpj)	t(bpj)	t(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
LAKE LORAMIE (Shelby)															
1988		ne	ne	t(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1990	785.00	t(m)	fu(bpj)	fu(bpj)	t(m)	t(m)	t(bpj)	fu(m)	t-h(m)	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
LAKE LORETTA (Fairfield)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LAKE LaCOMTE (FOSTORIA RES. #5) (Hancock)															
1988		ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	t(bpj	ne	ne	ne	ne	t(b
1992	128.00	t(m)	fu(bpj)	fu(bpj)	fu(bpj)	fu(m)	fu(bpj)	fu(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
LAKE MEDINA (Medina)															
1988	109.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LAKE MILTON (Mahoning)															
1988		ne	ne	fu(bpj)	fu(bpj)	fu(m)	ne	t(m)	t-e(m	fu(m)	ne	ne	t(bpj)	fu(m)	fu(
1990		t(m)	fu(bpj)	fu(bpj)	fu(bpj)	fu(m)	ne	fu(m)	t-h(m	t-e(m	fu(m)	ne	fu(m)	fu(m)	fu(
1992	1685.00	t(m)	fu(bpj)	fu(bpj)	fu(bpj)	t(m)	ne	fu(m)	t-h(m)	t-e(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)
LAKE MOSIER (Hancock)															
1988	88.00	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne
LAKE MOTRAM (Hancock)															
1988	18.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LAKE NESMITH (Summit)															
1988		t(m)	ne	fu(bpj)	t(m)	fu(m)	ne	ne	t-h(m	t-e(m	t(m)	fu(m)	ne	fu(m)	t(b
1992	80.00	t(m)	fu(bpj)	fu(bpj)	t(m)	t(m)	fu(m)	fu(m)	t-h(m)	t-e(m)	t(m)	fu(m)	ne	fu(m)	fu(m)
LAKE PARK (Mahoning)															
1988	20.00	t(m)	ne	ne	fu(m)	i(m)	ne	ne	t-e(m)	ne	ne	ne	ne	fu(m)	fu(m)
LAKE PIPPEN (Portage)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990		fu(m)	ne	t(bpj)	fu(m)	fu(m)	fu(bpj)	fu(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(
1992	143.00	fu(m)	ne	t(bpj)	fu(m)	t(m)	fu(bpj)	fu(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
LAKE ROCKWELL (Portage)															
1988		t(m)	ne	t(bpj)	t(bpj)	fu(m)	t(bpj)	t(m)	t-h(m	t-h(m	ne	ne	ne	fu(m)	t(b
1990		t(m)	ne	t(bpj)	t(m)	fu(m)	t(bpj)	t(m)	t-e(m	t-e(m	ne	fu(m)	fu(m)	fu(m)	t(m
1992	539.00	t(m)	ne	t(bpj)	t(m)	t(m)	t(bpj)	t(m)	t-e(m)	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
LAKE ROMONA DAM (Fairfield)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LAKE RUPERT (Vinton)															
1988		fu(bpj)	ne	t(bpj)	fu(m)	fu(m)	ne	fu(m)	t-e(m	fu(m)	ne	ne	t(m)	fu(m)	t(b
1990		fu(bpj)	ne	t(bpj)	fu(m)	fu(m)	ne	fu(m)	t-e(m	fu(m)	ne	fu(m)	t(m)	fu(m)	fu(
1992		fu(bpj)	ne	t(bpj)	fu(m)	t(m)	ne	fu(m)	t-e(m)	fu(m)	ne	fu(m)	t(m)	fu(m)	fu(m)
1994	325.00	fu(m)	fu(bpj)	fu(bpj)	fu(m)	t(m)	ne	fu(m)	fu(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
LAKE SNOWDEN (STRUCTURE #2) (Athens)															
1988	131.30	fu(bpj)	ne	fu(bpj)	fu(m)	fu(m)	ne	fu(m)	t-e(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
LAKE STEWART (Ross)															
1988		ne	ne	ne	t(m)	ne	ne	ne	t-h(m	ne	ne	ne	ne	ne	ne
1992	7.50	ne	ne	ne	t(m)	t(m)	ne	ne	t-h(m)	ne	ne	ne	ne	ne	ne
LAKE SUE (Williams)															
1988	10.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LAKE VESUVIUS (Lawrence)															
1988		fu(bpj)	ne	ne	ne	t(m)	ne	t(m)	ne	fu(m)	ne	ne	fu(m)	fu(m)	ne
1990	105.00	fu(bpj)	ne	ne	ne	t(m)	ne	t(m)	ne	fu(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
LAKE WHITE RESERVOIR (Pike)															
1988		fu(bpj)	ne	fu(bpj)	fu(bpj)	fu(m)	ne	fu(m)	t-e(m	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1990		fu(bpj)	ne	fu(bpj)	fu(bpj)	fu(m)	ne	fu(m)	t-e(m	fu(m)	ne	t(m)	fu(m)	fu(m)	t(m
1992		fu(bpj)	ne	fu(bpj)	fu(bpj)	t(m)	ne	fu(m)	t-e(m)	fu(m)	ne	t(m)	fu(m)	fu(m)	fu(m)
1994	337.00	t(m)	fu(bpj)	fu(bpj)	t(m)	t(m)	ne	fu(m)	t-e(m)	fu(m)	ne	i(m)	fu(m)	fu(m)	fu(m)
LAMPSON RESV. (JEFFERSON RESV.) (Ashtabula)															
1988	20.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LARUE PARK POND (Marion)															
1992	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LEESVILLE LAKE (Carroll)															
1988		fu(bpj)	ne	ne	ne	fu(m)	ne	fu(m)	ne	t-e(m	ne	ne	fu(m)	fu(m)	ne
1990		fu(bpj)	ne	ne	ne	fu(m)	ne	fu(m)	ne	t-e(m	ne	fu(m)	fu(m)	fu(m)	fu(
1992	1000.00	fu(bpj)	ne	fu(bpj)	fu(bpj)	fu(m)	ne	fu(m)	ne	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
LEIGHTY LAKE (Shelby)															
1992	13.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LEIPSIC RESERVOIR (Putnam)															
1988	27.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
LIBERTY LAKE (Trumbull)															
1988	99.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LIMA RESERVOIR (Allen)															
1988	84.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LIME KILN LAKE (Tuscarawas)															
1988	28.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LITTLE PUNDERSON LAKE (Geauga)															
1992	24.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LONDON FISH HATCHERY LAKE (Madison)															
1988	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LONG LAKE (Summit)															
1988		ne	ne	ne	t(m)	fu(m)	ne	fu(m)	t-h(m	t-e(m	ne	ne	fu(m)	fu(m)	ne
1990		t(m)	ne	ne	t(m)	fu(m)	ne	fu(m)	t-h(m	t-e(m	ne	t(m)	fu(m)	fu(m)	t(m
1992	180.00	t(m)	ne	fu(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m)	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
LOST CREEK RESERVOIR (Allen)															
1988	121.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
LOWER SHAKER LAKE (Cuyahoga)															
1988	16.70	t(bpj)	ne	ne	fu(bpj)	ne	ne	ne	t-e(m)	ne	ne	ne	ne	ne	ne
LaDUE RESERVOIR (Geauga)															
1988		fu(bpj)	ne	t(bpj)	t(bpj)	ne	ne	ne	t(bpj	t(bpj	ne	ne	ne	ne	t(b
1992	1500.00	fu(m)	ne	t(bpj)	t(bpj)	t(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
LaGRANGE WATER WORKS LAKE (Lorain)															
1988	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
M. OLANDER PARK LAKE (Lucas)															
1988	20.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
MADISON LAKE (Madison)															
1988		t(bpj)	ne	t(bpj)	t(bpj)	fu(m)	ne	fu(m)	t-e(m	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1990		t(bpj)	ne	t(bpj)	t(bpj)	fu(m)	ne	fu(m)	t-e(m	t-h(m	ne	t(m)	fu(m)	fu(m)	i(m
1992		t(bpj)	ne	t(bpj)	t(bpj)	t(m)	ne	fu(m)	t-e(m)	t-h(m)	ne	t(m)	fu(m)	fu(m)	fu(m)
1994	106.00	t(m)	t(bpj)	t(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m)	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
MAPLE GROVE LAKE (Morrow)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
MARGARET CR. CONS. DIST. #1 (Athens)															
1988	16.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
MARGARET CR. CONS. DIST. #4 (Athens)															
1988	28.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
MARGARET CR. CONS. DIST. #5 (Athens)															
1988	8.30	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
MAYSVILLE REG. WATER DIST. LAKE (Muskingum)															
1988	45.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
MEADOW BROOK LAKE (Summit)															
1988		ne	ne	t(bpj)	t(m)	fu(m)	ne	fu(m)	t-h(m	t-h(m	ne	ne	t(m)	fu(m)	t(b
1990		t(m)	ne	t(bpj)	t(m)	fu(m)	ne	fu(m)	t-h(m	t-h(m	ne	ne	t(m)	fu(m)	t(b
1992	23.80	t(m)	t(bpj)	t(bpj)	t(m)	t(m)	fu(m)	fu(m)	t-e(m)	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
MEANDER CREEK RESERVOIR (Trumbull)															
1988		fu(bpj)	ne	fu(bpj)	fu(bpj)	ne	ne	t(m)	t-e(m	fu(m)	ne	ne	fu(m)	fu(m)	fu(
1992	2010.00	fu(bpj)	ne	fu(bpj)	fu(bpj)	t(m)	ne	t(m)	t-e(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
METAMORA RESERVOIR #1 (Fulton)															
1992		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1994	6.00	fu(m)	t(bpj)	ne	fu(m)	fu(m)	ne	t(m)	t-e(m)	fu(m)	ne	t(m)	ne	fu(m)	fu(m)
METAMORA RESERVOIR #2 (Fulton)															
1988	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
METZGER RESERVOIR (Allen)															
1988		ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	t(bpj	t(bpj	ne	ne	ne	ne	t(b
1992	157.00	fu(m)	fu(bpj)	fu(bpj)	fu(m)	t(m)	fu(bpj)	fu(m)	t-e(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
MIAMI CONS. DIST. LAKE (HUFFMAN POND) (Greene)															
1988	43.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
MIAMI WHITEWATER LAKE (Hamilton)															
1988		t(m)	ne	fu(bpj)	t(bpj)	fu(m)	ne	ne	t-e(m	t(bpj	ne	ne	ne	fu(m)	t(b
1992	85.00	t(m)	ne	fu(bpj)	t(bpj)	t(m)	ne	ne	t-e(m)	t(bpj)	ne	ne	ne	fu(m)	fu(m)
MICHAEL J. KIRWIN RESERVOIR (Portage)															
1988		ne	ne	t(bpj)	fu(m)	fu(m)	ne	fu(m)	t-e(m	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1990		t(m)	ne	t(bpj)	fu(m)	fu(m)	ne	fu(m)	t-e(m	fu(m)	ne	ne	fu(m)	fu(m)	fu(
1992	2650.00	t(m)	ne	t(bpj)	fu(m)	t(m)	ne	fu(m)	t-e(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
MILLER ANTRIM LAKE (Franklin)															
1988		fu(m)	ne	ne	fu(bpj)	ne	ne	ne	t-h(m)	ne	ne	ne	ne	ne	ne
1994	37.00	fu(m)	fu(bpj)	fu(bpj)	fu(m)	t(m)	ne	fu(m)	fu(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
MILLER LAKE (Summit)															
1988	28.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
MILLER PARK LAKE (Williams)															
1992	8.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
MINERVA PARK LAKE (Franklin)															
1992	8.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
MOGADORE RESERVOIR (Portage)															
1988		ne	ne	t(bpj)	t(m)	fu(m)	t(bpj)	fu(m)	t(bpj	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1990		fu(m)	ne	t(bpj)	0.00	fu(m)	t(bpj)	fu(m)	t(bpj	t-e(m	ne	ne	fu(m)	fu(m)	t(b

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1992	900.00	t(m)	ne	t(bpj)	0.00	t(m)	t(bpj)	fu(m)	t-h(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
MONROE FALLS LAKE (Summit)															
1992	13.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
MONROE LAKE (Monroe)															
1988	39.00	fu(m)	ne	t(bpj)	t(bpj)	ne	ne	fu(m)	t-e(m)	fu(m)	ne	ne	fu(m)	ne	ne
MOSQUITO CREEK RESERVOIR (Trumbull)															
1988		ne	ne	fu(bpj)	t(m)	fu(m)	ne	fu(m)	t-h(m	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1990	7850.00	t(m)	fu(bpj)	fu(bpj)	t(m)	t(m)	fu(m)	fu(m)	t-e(m)	fu(m)	fu(m)	fu(m)	fu(m)	fu(m)	fu(m)
MOUNT ORAB RESERVOIR # 2 (Brown)															
1988	5.60	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
MT. GILEAD LAKE (LOWER) (Morrow)															
1988	11.00	t(m)	ne	ne	fu(m)	ne	ne	ne	fu(m)	ne	ne	ne	ne	fu(m)	fu(m)
MT. GILEAD LAKE (UPPER) (Morrow)															
1988	7.00	ne	ne	t(bpj)	t(bpj)	t(m)	ne	ne	t-e(m)	ne	ne	ne	ne	fu(m)	fu(m)
MUD LAKE (Summit)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990		fu(m)	ne	ne	ne	ne	ne	ne	ne	ne	ne	fu(m)	ne	ne	ne
1994	85.00	t(m)	fu(bpj)	t(bpj)	fu(m)	t(m)	ne	fu(m)	t-e(m)	t-h(m)	ne	t(m)	fu(m)	fu(m)	fu(m)
MUDPORT BASIN (Coshocton)															
1988	9.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
MUNROE BASIN (Muskingum)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1992	17.00	t(m)	ne	t(bpj)	t(bpj)	t(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	ne	ne	fu(m)	fu(m)
MUZZY LAKE (Portage)															
1988		ne	ne	t(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	t(b
1990		t(m)	ne	t(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	t(b
1992	82.00	t(m)	ne	t(bpj)	fu(bpj)	ne	ne	ne	t-e(m)	t-h(m)	ne	ne	ne	ne	ne
MWCD STRUCTURE 7-C (Medina)															
1988	23.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
McCOMB RESERVOIR #1 (Hancock)															
1988	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
McCOMB RESERVOIR #2 (Hancock)															
1988	20.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
McKELVEY LAKE (Mahoning)															
1988	133.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
NETTLE LAKE (Williams)															
1988		fu(bpj)	ne	t(bpj)	fu(m)	fu(m)	ne	fu(m)	t-e(m	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1992		fu(bpj)	ne	t(bpj)	fu(m)	t(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1994	94.00	t(m)	fu(bpj)	t(bpj)	fu(m)	t(m)	ne	fu(m)	t-h(m)	fu(m)	ne	fu(m)	t(m)	fu(m)	fu(m)
NEW CONCORD RESERVOIR (Muskingum)															
1988	9.60	ne	ne	t(bpj)	fu(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
NEW LEXINGTON RESERVOIR #1, NEW (Perry)															
1988	44.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
NEW LEXINGTON RESERVOIR #2, OLD (Perry)															
1988		fu(m)	ne	fu(bpj)	fu(m)	fu(m)	ne	t(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(
1992	27.00	fu(m)	ne	fu(bpj)	fu(m)	t(m)	ne	t(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
NEW LONDON RESERVOIR (Huron)															
1988	221.00	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
NEW WILMINGTON RESERVOIR (#2) (Clinton)															
1988	54.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
NEWFIELDS DEVELOPMENT LAKE (Montgomery)															
1992	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
NEWPORT LAKE (Mahoning)															
1988		t(m)	ne	fu(bpj)	t(m)	ne	ne	t(m)	t-h(m	t-h(m	fu(m)	ne	i(m)	fu(m)	t(b
1992	105.00	t(m)	i(bpj)	fu(bpj)	t(m)	t(m)	fu(bpj)	t(m)	t-h(m)	t-h(m)	fu(m)	fu(m)	i(m)	fu(m)	fu(m)
NIMISILA RESERVOIR (Summit)															
1988		ne	ne	ne	t(m)	fu(m)	ne	fu(m)	t-h(m	t-e(m	ne	ne	fu(m)	fu(m)	ne
1990		t(m)	ne	ne	t(m)	fu(m)	ne	fu(m)	t-h(m	t-e(m	ne	ne	fu(m)	fu(m)	ne
1992	825.00	t(m)	ne	ne	t(m)	t(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
NORTH BALTIMORE RESERVOIR (Wood)															
1988	29.00	ne	ne	fu(bpj)	fu(bpj)	ne	t(bpj)	ne	ne	t(bpj)	ne	ne	ne	ne	ne
NORTH BRANCH KOKOSING LAKE (Knox)															
1988		t(bpj)	ne	fu(bpj)	t(m)	fu(m)	ne	fu(m)	t-h(m	t-e(m	ne	ne	fu(m)	fu(m)	fu(
1992	154.00	t(m)	fu(bpj)	t(bpj)	fu(m)	t(m)	ne	fu(m)	t-e(m)	t-h(m)	ne	ne	fu(m)	fu(m)	fu(m)
NORTH KINGSVILLE RESERVOIR (Ashtabula)															
1988	7.30	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
NORTH RESERVOIR (Summit)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1992	160.00	t(m)	ne	ne	ne	ne	ne	ne	t-h(m)	ne	ne	ne	ne	ne	ne
NORWALK LOWER RESERVOIR (Huron)															
1988	30.70	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne
NORWALK MEMORIAL RESERVOIR (Huron)															
1988	97.00	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne
NORWALK UPPER RESERVOIR (Huron)															
1988	50.00	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne
NOVA FRANCE REC. CTR. LAKE (Lucus)															

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1992	12.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
O'SHAUGHNESSY RESERVOIR (Delaware)															
1988		t(bpj)	ne	fu(bpj)	t(bpj)	ne	ne	ne	fu(m)	t-h(m	ne	ne	ne	ne	t(b
1990	920.00	t(bpj)	ne	fu(bpj)	t(bpj)	ne	ne	ne	fu(m)	t-h(m)	ne	fu(m)	ne	ne	ne
OAK HILL UPGROUND RESERVOIR (Jackson)															
1992	20.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
OAK THORPE RESERVOIR (RCCD #6D) (Fairfield)															
1988	43.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
OBERLIN OLD UPGROUND RESERVOIR (Lorain)															
1988	10.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
OBERLIN RESERVOIR (Lorain)															
1988		ne	ne	fu(bpj)	t(bpj)	ne	t(bpj)	ne	t(bpj	t(bpj	ne	ne	ne	ne	t(b
1990		t(m)	ne	fu(bpj)	fu(bpj)	fu(m)	t(bpj)	fu(m)	t(bpj	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1992	56.00	t(m)	fu(bpj)	fu(bpj)	fu(bpj)	t(m)	fu(bpj)	fu(m)	t(bpj)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
OHIO POWER REC. LAKE (Morgan)															
1988	2000.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
OLD REID PARK LAKE (Clark)															
1988	15.00	ne	ne	ne	fu(m)	fu(m)	ne	ne	fu(m)	ne	ne	ne	ne	ne	ne
OPOSSUM CREEK LAKE #1 (Montgomery)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
OPOSSUM CREEK LAKE #2 (Montgomery)															
1988	18.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
OSU GOLF COURSE LAKE (Franklin)															
1988	8.60	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
OTTAWA NATIONAL WILDLIFE REFUGE LAKE (Ottawa)															
1988	8.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
OTTAWA RESERVOIR (Putnam)															
1988	20.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
OXBOW LAKE (Defiance)															
1988	40.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
PAINT CREEK LAKE (Highland)															
1988		t(bpj)	ne	t(bpj)	t(bpj)	fu(m)	t(bpj)	fu(m)	t(bpj	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1992		t(bpj)	ne	t(bpj)	t(bpj)	t(m)	t(bpj)	fu(m)	t(bpj)	t-h(m)	ne	ne	fu(m)	fu(m)	fu(m)
1994	1190.00	t(m)	fu(bpj)	fu(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m)	t-h(m)	ne	t(m)	fu(m)	fu(m)	fu(m)
PARK LAKE (Summit)															
1988	13.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
PAULDING PONDS (Paulding)															
1988	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
PAULDING RESERVOIR (Paulding)															
1988	67.00	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	t(bpj)	ne	ne	t(bpj)	ne	ne
PEARSON PARK PONDS (Lucus)															
1992	10.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
PERRY RECLAMATION DAM #3 (Perry)															
1992	8.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
PETROS LAKE (Stark)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990	12.00	t(m)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
PIEDMONT LAKE (Harrison)															
1988		t(bpj)	ne	fu(bpj)	t(bpj)	t(bpj)	ne	fu(m)	t-e(m	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1992	2310.00	t(bpj)	ne	fu(bpj)	t(bpj)	t(m)	ne	fu(m)	t-e(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
PIKE LAKE RESERVOIR (Pike)															
1988	13.00	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
PINE CREEK STRUCTURE # 8 (Lawrence)															
1988	8.80	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
PINE LAKE (Mahoning)															
1988	474.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1988		ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	fu(m)	ne	ne	ne	ne	t(b
1990	14.00	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	fu(m)	ne	fu(m)	ne	ne	ne
PLEASANT HILL LAKE (Ashland)															
1988		t(bpj)	ne	fu(bpj)	fu(bpj)	ne	ne	fu(m)	t-e(m	fu(m)	ne	ne	ne	ne	ne
1990	850.00	t(bpj)	ne	fu(bpj)	fu(bpj)	ne	ne	fu(m)	t-e(m)	fu(m)	ne	fu(m)	ne	ne	ne
POND LICK LAKE (Scioto)															
1988	5.40	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
PORTAGE CO. COMM. LAKE (Portage)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
POWERS RESERVOIR (Crawford)															
1988	29.00	ne	ne	t(bpj)	fu(bpj)	ne	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne
PUNDERSON LAKE (Geauga)															
1988		ne	ne	t(bpj)	fu(m)	fu(m)	ne	t(m)	t-e(m	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1990		fu(m)	fu(bpj)	t(bpj)	t(m)	fu(m)	fu(bpj)	fu(m)	t-e(m	t-e(m	ne	ne	fu(m)	fu(m)	fu(
1992	101.00	fu(m)	fu(bpj)	t(bpj)	t(m)	t(m)	fu(bpj)	fu(m)	t-e(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
PYMATUNING RESERVOIR (Ashtabula)															
1988	3580.00	t(bpj)	ne	fu(bpj)	t(bpj)	ne	ne	ne	t-e(m)	t-e(m)	ne	ne	ne	ne	ne
RACCOON CREEK RESERVOIR (Sandusky)															
1988	34.40	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
RAVENNA ORD. PLANT LAKE (Portage)															

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1988	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
RCCD STRUCTURE 3-B (Perry)															
1988	13.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
RCCD STRUCTURE 4-C (Perry)															
1988	49.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
RCCD STRUCTURE 5-A (Fairfield)															
1988	20.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
RCCD STRUCTURE 5-B (Fairfield)															
1988	12.10	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
RCCD STRUCTURE 5-C (Fairfield)															
1988	13.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
RCCD STRUCTURE 7-A (Fairfield)															
1988	22.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
RCCD STRUCTURE 7-D (Fairfield)															
1988	15.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
RCCD STRUCTURE 7-E (Fairfield)															
1988	9.90	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
RCCD STRUCTURE 7C (Fairfield)															
1988	42.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
RCCD STRYCTURE 3-A (Perry)															
1988	13.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
RESTHAVEN WILDLIFE AREA PONDS (Erie)															
1988	200.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
REX LAKE (Summit)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1994	48.00	t(m)	fu(bpj)	t(m)	fu(m)	t(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	t(m)	fu(m)	fu(m)	fu(m)
RICHWOOD PARK LAKE (Union)															
1988		t(m)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990	16.00	t(m)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
RILEY RESERVOIR (BUCYRUS RESV. #3) (Crawford)															
1988	28.00	ne	ne	t(bpj)	t(bpj)	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne	ne
RIO GRANDE RESERVOIR (Gallia)															
1988	7.20	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ROAMING ROCK LAKE (Ashtabula)															
1988	464.00	ne	ne	t(bpj)	t(bpj)	ne	ne	ne	t(bpj)	t(bpj)	ne	ne	ne	ne	ne
ROCK MILL LAKE IX (HRCD STRUCTURE 9) (Fairfield)															
1988	19.80	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ROCKY FORK LAKE (Highland)															

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1988		ne	ne	t(bpj)	t(bpj)	fu(m)	t(bpj)	t(m)	t-h(m	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1990	2080.00	t(m)	fu(bpj)	fu(bpj)	fu(bpj)	fu(m)	t(bpj)	fu(m)	t-h(m)	t-e(m)	fu(m)	fu(m)	fu(m)	fu(m)	fu(m)
ROOSEVELT LAKE (Scioto)															
1988		fu(m)	ne	fu(bpj)	t(m)	ne	ne	ne	t-h(m)	ne	ne	ne	ne	ne	ne
1994	16.00	t(m)	t(bpj)	fu(bpj)	t(m)	t(m)	ne	fu(m)	fu(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
ROSS LAKE (Ross)															
1988		fu(bpj)	ne	t(bpj)	fu(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(
1992	140.00	fu(bpj)	ne	t(bpj)	fu(m)	t(m)	ne	fu(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
RUFF POND (Columbiana)															
1992	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
RUSH CREEK LAKE (RCCD #6A) (Perry)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1994	300.00	t(m)	t(bpj)	fu(bpj)	fu(m)	t(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	fu(m)	i(m)	fu(m)	fu(m)
RUSH RUN LAKE (Preble)															
1988		ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	t(bpj	ne	ne	ne	ne	ne	t(b
1990		t(m)	t(bpj)	t(bpj)	t(m)	fu(m)	fu(bpj)	fu(m)	t-e(m	fu(m)	fu(m)	ne	ne	fu(m)	fu(
1992	54.00	t(m)	t(bpj)	t(bpj)	t(m)	t(m)	fu(bpj)	fu(m)	t-e(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)
RUSSELLVILLE RESERVOIR (Brown)															
1988	11.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SALEM RESERVOIR (Columbiana)															
1988	97.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SALT FORK RESERVOIR (Guernsey)															
1988		t(bpj)	ne	t(bpj)	fu(bpj)	fu(m)	ne	t(m)	ne	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1992	2952.00	t(bpj)	ne	t(bpj)	fu(bpj)	fu(m)	ne	t(m)	ne	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
SAULIS BERRY PARK LAKE (Hardin)															
1988	50.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SCHOONOVER LAKE (Allen)															
1988	22.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SCHROCK LAKE (Franklin)															
1988	12.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SEBALD POND #1 (Butler)															
1988	5.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SEBALD POND #2 (Butler)															
1988	5.40	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SENECAVILLE LAKE (Guernsey)															
1988	3550.00	t(bpj)	ne	ne	ne	fu(m)	ne	fu(m)	ne	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
SENECAVILLE NATIONAL FISH HATCHERY (Guernsey)															
1988	20.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
SHADOW LAKE (Warren)															
1988	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SHARON WOODS LAKE (Hamilton)															
1988	38.00	t(m)	ne	t(bpj)	t(m)	t(m)	ne	ne	t-h(m)	t-h(m)	ne	ne	ne	fu(m)	fu(m)
SHELBY RESERVOIR #1 (Richland)															
1988	29.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SHELBY RESERVOIR #2 (Richland)															
1988	12.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SHREVE LAKE (Wayne)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990	58.00	t(m)	t(bpj)	t(bpj)	t(m)	t(m)	fu(bpj)	fu(m)	t-e(m)	t-e(m)	ne	ne	ne	fu(m)	fu(m)
SILVER CREEK LAKE (Summit)															
1992	47.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SIPPO LAKE (Stark)															
1988		ne	ne	t(bpj)	fu(m)	fu(m)	ne	ne	t-e(m	ne	ne	ne	fu(m)	fu(m)	t(b
1990		fu(m)	ne	i(bpj)	t(m)	t(m)	fu(m)	fu(m)	t-e(m	ne	ne	fu(m)	fu(m)	fu(m)	i(m
1992	88.00	fu(m)	t(bpj)	i(m)	t(m)	t(m)	fu(m)	fu(m)	t-e(m)	t-e(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
SITES LAKE (Richland)															
1992	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SMITH PARK LAKE (Butler)															
1988	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SNIDER DITCH LAKE (Trumbull)															
1988	245.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SNYDER PARK LAKE (Clark)															
1988	5.90	t(m)	ne	ne	fu(m)	ne	ne	ne	t-e(m)	ne	ne	ne	ne	fu(m)	fu(m)
SOMERSET RESERVOIR (Perry)															
1988	7.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SOUTH WEBSTER RESERVOIR (Scioto)															
1988	5.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SPARROW RESERVOIR (Harrison)															
1988	17.20	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SPENCER LAKE (Medina)															
1988	51.00	ne	ne	ne	t(m)	ne	ne	ne	t-h(m)	ne	ne	ne	ne	ne	ne
SPENCER RESERVOIR (Medina)															
1988	8.50	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SPRING VALLEY LAKE (Warren)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990	58.00	fu(m)	i(bpj)	i(bpj)	i(m)	t(m)	t(bpj)	fu(m)	t-e(m)	t-e(m)	ne	ne	ne	fu(m)	fu(m)

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
SPRINGFIELD LAKE (Summit)															
1988		ne	ne	t(bpj)	t(m)	fu(m)	ne	ne	t-h(m	ne	ne	ne	ne	fu(m)	t(b
1990		fu(m)	ne	t(bpj)	t(m)	fu(m)	ne	ne	t-h(m	ne	ne	ne	ne	fu(m)	t(b
1992	200.00	fu(m)	ne	t(bpj)	t(m)	t(m)	ne	ne	t-e(m)	t-e(m)	ne	ne	ne	fu(m)	fu(m)
ST. CLAIR REC. AREA LAKE (Butler)															
1988	10.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ST. CLAIRSVILLE RESERVOIR #1 (Belmont)															
1988	10.00	ne	ne	fu(bpj)	fu(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ST. CLAIRSVILLE RESERVOIR #2 (Belmont)															
1988	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ST. JOSEPH'S LAKE (RCCD #3E) (Perry)															
1988	60.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ST. MARTIN RESERVOIR (Brown)															
1988	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
STAGE'S POND (Pickaway)															
1988	30.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
STATE FISH HATCHERY LAKE (Auglaize)															
1992	52.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
STATE OF OHIO LAKE (Seneca)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
STATE OF OHIO LAKE (NO NAME) (Trumbull)															
1988	21.00	ne	ne	ne	ne	ne	ne	ne	ne	nc	ne	ne	ne	ne	ne
1988	5.50	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	nc
1988	35.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	nc	ne	ne
STONELICK RESERVOIR (Clermont)															
1988		ne	ne	t(bpj)	t(bpj)	t(m)	t(bpj)	fu(m)	t-e(m	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1990		t(m)	t(bpj)	t(bpj)	fu(m)	fu(m)	fu(bpj)	fu(m)	t-e(m	t-h(m	ne	ne	fu(m)	fu(m)	t(m
1992	160.00	t(m)	t(bpj)	t(bpj)	fu(m)	t(m)	fu(bpj)	fu(m)	t-e(m)	t-h(m)	ne	ne	t(m)	fu(m)	fu(m)
SUMMIT LAKE (Summit)															
1988		t(m)	ne	fu(bpj)	fu(bpj)	fu(m)	fu(m)	fu(m)	t-e(m	t-e(m	t(m)	t(m)	fu(m)	fu(m)	t(b
1992	100.00	t(m)	fu(bpj)	fu(bpj)	fu(bpj)	t(m)	fu(m)	fu(m)	t-e(m)	t-e(m)	t(m)	t(m)	fu(m)	fu(m)	fu(m)
SUNBURY RESERVOIR # 2 (Delaware)															
1988	18.80	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	nc
SUNBURY RESERVOIR #1 (Delaware)															
1988	6.90	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
SUNNY LAKE (HARMONS POND) (Portage)															
1988		ne	ne	t(bpj)	t(m)	ne	ne	ne	t-h(m	t(bpj	ne	ne	ne	ne	t(b
1990	63.00	t(m)	ne	t(bpj)	t(m)	ne	ne	ne	t-h(m)	t(bpj)	ne	ne	ne	ne	ne

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
SWANTON RESERVOIR (Lucas)															
1988	25.00	ne	ne	t(bpj)	t(bpj)	ne	ne	ne	ne	t(bpj)	ne	ne	ne	ne	ne
SWIFT RUN LAKE (Miami)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990	40.00	t(m)	fu(bpj)	i(bpj)	fu(m)	t(m)	t(bpj)	fu(m)	t-h(m)	t-e(m)	ne	ne	ne	fu(m)	fu(m)
TAPPEN LAKE (Harrison)															
1988	2350.00	t(bpj)	ne	fu(bpj)	fu(m)	t(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
TAWAWA LAKE (Shelby)															
1988	8.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
THOREAU POND (BLENDON WOODS) (Franklin)															
1988	10.70	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
TINKERS CREEK STATE PARK LAKE (Portage)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990	5.00	fu(m)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
TOUSSAINT CR. WILDLIFE AREA LAKE (Ottawa)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
TURKEY CREEK LAKE (Scioto)															
1988		fu(m)	ne	fu(bpj)	t(m)	ne	ne	ne	t-h(m)	ne	ne	ne	ne	ne	ne
1994	51.00	fu(m)	t(bpj)	t(bpj)	t(m)	t(m)	ne	fu(m)	fu(m)	fu(m)	ne	fu(m)	t(m)	fu(m)	fu(m)
TURKEY FOOT LAKE (Summit)															
1988		ne	ne	ne	fu(m)	fu(m)	ne	fu(m)	t-e(m	t-h(m	ne	ne	fu(m)	fu(m)	ne
1990		t(m)	ne	ne	fu(m)	t(m)	ne	fu(m)	t-e(m)	t-h(m)	ne	ne	fu(m)	fu(m)	fu(m)
TURKEYFOOT LAKE (Summit)															
1994	318.00	t(m)	fu(bpj)	t(bpj)	fu(m)	t(m)	fu(m)	fu(m)	t-e(m)	t-e(m)	ne	t(m)	fu(m)	fu(m)	fu(m)
TURNING BASIN LAKE (Coshocton)															
1992	11.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
TWIN LAKES RESERVOIR (Allen)															
1988	26.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
TYCOON LAKE (Gallia)															
1988		fu(bpj)	ne	t(bpj)	fu(m)	fu(m)	ne	i(m)	t-e(m	fu(m)	ne	ne	fu(m)	fu(m)	fu(
1992	204.00	fu(bpj)	fu(bpj)	fu(bpj)	t(m)	fu(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
UPPER SANDUSKY RESERVOIR (Wyandot)															
1988	36.00	ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
UPPER SHAKER LAKE (Cuyahoga)															
1988	11.40	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
UPPER WABASH STRUCTURE #2 (Mercer)															
1992	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
UPPER WABASH STRUCTURE #3 (Mercer)															

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1992	78.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
USA DEPT. LABOR LAKE (Medina)															
1988	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
VA. KENDALL PARK LAKE (Summit)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990	14.00	fu(m)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
VAN BUREN LAKE (Hancock)															
1988		t(m)	ne	t(bpj)	fu(m)	t(m)	t(bpj)	fu(m)	t-e(m	t-h(m	ne	ne	fu(m)	fu(m)	t(b
1992	53.00	t(m)	ne	t(bpj)	fu(m)	t(m)	t(bpj)	fu(m)	t-h(m)	t-h(m)	ne	ne	fu(m)	fu(m)	fu(m)
VAN WERT RESERVOIR #1 (Van Wert)															
1988	60.00	ne	ne	fu(bpj)	t(bpj)	ne	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne
VAN WERT RESERVOIR #2 (Van Wert)															
1988	60.00	ne	ne	fu(bpj)	t(bpj)	ne	t(bpj)	ne	ne	ne	ne	ne	ne	ne	ne
VETO LAKE (Washington)															
1988		t(bpj)	ne	t(bpj)	fu(m)	fu(m)	ne	t(m)	t-e(m	t-e(m	ne	ne	fu(m)	fu(m)	t(b
1992	160.00	t(m)	t(bpj)	fu(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m)	t-e(m)	ne	ne	fu(m)	fu(m)	fu(m)
VILLAGE OF BARNESVILLE LAKE (Belmont)															
1988	7.70	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
VILLAGE OF CONTINENTAL LAKE (Putnam)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
VILLAGE OF GRAFTON LAKE (#2) (Lorain)															
1988	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
VILLAGE OF TIPP CITY LAKE #1 (Miami)															
1988	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
VILLAGE OF TIPP CITY LAKE #2 (Miami)															
1988	14.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
WABASH CONS. DIST. RESV. #1 (Darke)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990	57.00	t(m)	ne	t(bpj)	fu(m)	t(m)	t(bpj)	fu(m)	ne	t-h(m)	ne	ne	ne	fu(m)	fu(m)
WALLACE LAKE (Cuyahoga)															
1988		t(bpj)	ne	ne	fu(bpj)	ne	ne	ne	fu(m)	ne	ne	ne	ne	ne	ne
1990	15.80	t(bpj)	t(bpj)	fu(bpj)	fu(m)	ne	ne	ne	fu(m)	ne	ne	ne	ne	ne	ne
WASHINGTON C.H. RESERVOIR (Fayette)															
1988	37.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
WAUSEON RESERVOIR #1 (Fulton)															
1988	49.00	ne	ne	t(bpj)	t(bpj)	ne	t(bpj)	ne	t(bpj)	t(bpj)	ne	ne	ne	ne	ne
WAUSEON RESERVOIR #2 (Fulton)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1994	17.00	t(m)	t(bpj)	fu(bpj)	t(m)	fu(m)	fu(m)	fu(m)	t-e(m)	t-e(m)	ne	t(m)	ne	fu(m)	fu(m)
WAYNE NATIONAL FOREST LAKE (Gallia)															
1988	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
WAYNESFIELD UPGROUND RESERVOIR (Auglaize)															
1992	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
WAYNOKA RESERVOIR (Brown)															
1988	11.80	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
WAYNOKA RETENTION DAM (Brown)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1994	12.00	t(m)	fu(bpj)	i(bpj)	i(m)	t(m)	fu(m)	fu(m)	t-h(m)	t-h(m)	ne	fu(m)	fu(m)	fu(m)	fu(m)
WAYNOKA UPGROUND RESERVOIR (Brown)															
1994	12.00	t(m)	fu(bpj)	t(bpj)	fu(m)	t(m)	ne	t(m)	t-e(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
WELLINGTON RESERVOIR (LOWER) (Lorain)															
1988	160.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
WELLINGTON RESERVOIR (UPPER) (Lorain)															
1988	21.00	ne	ne	ne	t(bpj)	ne	t(bpj)	ne	t(bpj)	t(bpj)	ne	ne	ne	ne	ne
WELLSVILLE RESERVOIR (Columbiana)															
1988	25.00	ne	ne	t(bpj)	fu(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
WEST RESERVOIR (Summit)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990	104.00	t(m)	ne	ne	ne	ne	ne	ne	t-e(m)	t-e(m)	ne	ne	ne	ne	ne
WESTERVILLE RESERVOIR (Delaware)															
1988	52.70	t(m)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
WESTVILLE LAKE (Columbiana)															
1988		ne	ne	t(bpj)	i(m)	fu(m)	ne	fu(m)	t-h(m	ne	fu(m)	ne	fu(m)	fu(m)	t(b
1990		ne	ne	t(bpj)	i(m)	fu(m)	ne	fu(m)	t-h(m	ne	fu(m)	t(m)	fu(m)	fu(m)	t(m
1992	90.00	t(m)	ne	t(bpj)	t(m)	t(m)	ne	fu(m)	t-h(m)	ne	fu(m)	t(m)	fu(m)	fu(m)	fu(m)
WHITE SULPHUR LAKE (Delaware)															
1988	39.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
WILDLIFE POND #2 (Guernsey)															
1992	10.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
WILLARD CITY RESERVOIR (Huron)															
1988		fu(bpj)	ne	fu(bpj)	fu(m)	fu(m)	ne	fu(m)	t-e(m	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1992	200.00	fu(bpj)	ne	fu(bpj)	fu(m)	t(m)	ne	fu(m)	t-e(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
WILLARD MARSH AREA (Huron)															
1988	6.30	ne	ne	fu(bpj)	t(bpj)	ne	ne	ne	t(bpj)	t(bpj)	ne	ne	ne	ne	ne
WILLS CREEK RESERVOIR (Coshocton)															
1988		t(bpj)	ne	fu(bpj)	fu(bpj)	t(bpj)	ne	fu(m)	ne	t-h(m	ne	ne	fu(m)	fu(m)	t(b

Appendix H. Summary of the LCI parameters for Ohio's 450 public lakes. See text for explanation of parameters.

Year Assessed	Surface Area	SD	IBI	NM	A	NP	PPO	PPM	P	N	F	S	B	M	V
1992		t(bpj)	ne	fu(bpj)	fu(bpj)	fu(m)	ne	fu(m)	ne	t-h(m)	ne	ne	fu(m)	fu(m)	fu(m)
1994	900.00	t(m)	t(bpj)	fu(bpj)	t(m)	t(m)	ne	fu(m)	t-e(m)	t-e(m)	ne	fu(m)	t(m)	f(m)	f(m)
WILLSHIRE QUARRY LAKE (Van Wert)															
1988	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
WILMINGTON RESERVOIR (Clinton)															
1988	16.00	ne	ne	fu(bpj)	fu(bpj)	ne	t(bpj)	ne	ne	t(bpj)	ne	ne	ne	ne	ne
WINCHESTER LAKE (Adams)															
1988	10.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
WINTON WOODS LAKE (W.FK.MILL CK.) (Hamilton)															
1988		t(m)	ne	t(bpj)	t(bpj)	fu(m)	ne	fu(m)	t-e(m	t-h(m	ne	ne	i(m)	fu(m)	t(b
1990		t(m)	i(bpj)	t(m)	i(m)	fu(m)	ne	fu(m)	t-h(m	t-h(m	fu(m)	fu(m)	i(m)	fu(m)	t(m
1992	183.00	t(m)	i(bpj)	t(m)	i(m)	t(m)	ne	fu(m)	t-h(m)	t-h(m)	fu(m)	fu(m)	i(m)	fu(m)	fu(m)
WOLF CREEK RESERVOIR (BARBERTON RESV) (Summit)															
1988		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
1990	196.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	fu(m)	ne	ne	ne
WOLF RUN RESERVOIR (Noble)															
1988		fu(m)	ne	t(bpj)	fu(m)	fu(m)	ne	fu(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	t(b
1992	209.00	fu(m)	ne	t(bpj)	fu(m)	t(m)	ne	fu(m)	fu(m)	fu(m)	ne	ne	fu(m)	fu(m)	fu(m)
WOODLAND HILLS PARK LAKE (Cuyahoga)															
1988	5.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
WOODSFIELD RESERVOIR (Monroe)															
1988	7.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
YOUCTANGEE PARK LAKE (Ross)															
1988	6.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ZANESVILLE STATE NURSERY LAKE (Muskingum)															
1988	10.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ZEPPERNICK LAKE (Columbiana)															
1988	41.00	ne	ne	t(bpj)	fu(bpj)	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
ZOAR LAKE WILDLIFE AREA (Tuscarawas)															
1988	28.00	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne

APPENDIX I

Report On:
Ohio EPA's Lake Water Quality Assessment Grant
FFY 1992

Introduction

Ohio has classified 447 publicly owned lakes and reservoirs with a surface area of five acres or greater of which 345 are freely open to the public for recreational activities. Lakes with a recreational use are listed in the 1992 Ohio Water Resource Inventory (Vol. III, *Ohio's Lakes, Ponds, and Reservoirs*) as significant publicly owned lakes (Ohio EPA 1992). Section 314 of the 1987 Water Quality Act Amendments requires each State to classify their significant publicly owned lakes according to trophic condition, to develop a list of threatened and impaired lakes, and to assess the status and trends of lake water quality. In an attempt to gather the necessary information in order to fulfill these mandates, the Ohio EPA applied for and received a Lake Water Quality Assessment (LWQA) grant to sample Ohio lakes during FFY 1992.

During the sampling cycle of 1992 (two summer visits) and 1993 (one spring visit), the Ohio EPA collected resource information at a total of 28 locations spread over 23 lakes. The sampled lakes and additional pertinent information are listed in Table 1. These lakes were selected based on information from two Ohio EPA documents. Volume III of the 1992 Ohio Water Quality Inventory, *Ohio's Lakes, Ponds, and Reservoirs* (Ohio EPA 1992), included a list of impaired and threatened lakes. This list was developed utilizing a "Lake Condition Index" (Davic and DeShon 1989) that summarized impaired and threatened conditions for a variety of parameters including aesthetics, productivity, excessive nutrients, volume loss, toxic pollutants, acidity, bacterial contamination, contaminated sediments, and fish tissue. The 1990 *Ohio Nonpoint Source Assessment Report* (Ohio EPA 1990) targeted specific lakes where nonpoint issues were a major concern. Priority was given to lakes which had never been sampled by the Ohio EPA as well as select lakes that had been previously sampled in the late 1970s and early 1980s.

The specific objective of the 1992 sampling program was:

> To further improve Ohio's ability to classify lakes, to identify impaired and threatened lakes, and to establish consistent databases for future assessments of trends in lake water quality.

Methods

Each lake listed in Table 1 was sampled at one or more locations (based on lake size) three times during the sampling season, once in the spring and twice in midsummer. At each location, water column samples were collected at the surface and near the bottom and were analyzed for nutrients, heavy metals, and miscellaneous other parameters. Additionally, full water column profiles of basic field parameters (temperature, dissolved oxygen, pH, and conductivity) were collected on each visit. One sediment grab sample was collected at one location in 22 of the 23 lakes during the spring 1993 sampling run. Sediment samples were analyzed for nutrients (phosphorus) and metals; additionally, priority pollutant organochlorine pesticides, PCBs, cyanide, ammonia, % total solids, % volatile solids, % moisture, and particle size were collected at 16 of the 23 lakes. At the sediment sampling locations in 5 water supply lakes, upper and lower water column samples were analyzed for organochlorine pesticides and PCBs. Parametric coverage for all types of chemical sampling is listed in Tables 2 and 3 (conventionals) and Table 4 (organics). In addition to the chemical sampling listed above, duplicate samples for plankton chlorophyll-a were collected at each surface location during each summer sampling run and Secchi depth measurements were taken during all visits. All chemical, physical, and biological field, laboratory, data processing, and data analysis methods and procedures adhered to those specified in the *Manual of Ohio EPA Surveillance Methods and Quality Assurance Practices* (Ohio EPA 1989).

Results

Summary information for the 23 subject lakes with regards to lake sizes, lake types, geographic location (*i.e.*, by ecoregion) and lake uses is listed in Table 1 and depicted in Figures 1 and 2. An attempt was made to sample a wide variety of lake sizes and types in the different ecoregions of Ohio. With some exceptions, the lake selection procedure was successful, although the overall size of the database was too small for sophisticated data analysis procedures. Raw water column chemical data collected from all 23 lakes are tabulated in Appendix Tables 1 (field parameter profiles) and 2 (nutrients, metals, and other parameters). Important results are summarized in Tables 5 and 6. Upper and lower water column sampling results from five water supply lakes analyzed for priority pollutant organochlorine pesticides and PCBs are compiled in Table 7. Surficial sediment data from 22 lakes are compiled in Table 8 (total phosphorus and metals), Table 9.(organochlorine pesticides and PCBs), and Table 10 (miscellaneous other parameters). Results of chlorophyll-a analyses and tabulation of the Trophic State Index (TSI) (Carlson 1977) for summer chlorophyll-a, spring total phosphorus, and summer Secchi depth at sites at each of the 23 lakes are compiled in Table 11. The breakdown of new or reevaluated trophic state assessments for the 23 lakes is depicted in Figure 3. Comparisons of the trophic state assessments from lake sampling covering the previous twenty years are depicted in Figures 4 and 5.

Water Column Sampling

◊ Water column samples collected near the surface were used to compare results with Ohio's Water Quality Standards (WQS) criteria (OAC Chapter 3745-1) for the protection of the Exceptional Warmwater Habitat (EWH) aquatic life use assigned to all Ohio public lakes. One of the most commonly occuring violations was dissolved oxygen (D.O.) at levels less than the EWH minimum of 6.0 mg/l in some portion of the water column (Appendix Table 1). Bottom water violations of this criterion during midsummer were recorded in most lakes. However, there were no surface water violations of this criterion in any sampled lake.

◊ Minor exceedences of the total recoverable iron criterion for the prevention of chronic aquatic life toxicity were recorded in surface water samples from four lakes (Table 5). Exceedences of the iron criterion in Ohio surface waters are very common because of high naturally occurring levels found in Ohio soils. Of more importance were the violations of the maximum allowable copper criterion for the prevention of aquatic life lethality which occurred in two water supply lakes, Metamora Reservoir #1 and Waynoka Upground Reservoir. In both lakes, the violations were well above the maximum allowable criterion as determined by water hardness. The source of these high copper levels may be due to the routine application of copper based algacides to protect drinking water from the adverse impacts of algal blooms.

◊ Other elevated concentrations of note included nitrate (>10.0 mg/l) in one of the two summer Metamora Reservoir #1 surface water samples. Metamora Reservoir #1, an upground water supply reservoir, obtains its water by pumping an adjacent creek during high flow storm events. This creek is situated in an agricultural watershed and is undoubtedly contributing nitrogen to the lake. Because the reservoir maintains dissolved oxygen levels greater than 9.0 mg/l through the water column, the nitrogen is probably being oxidized by nitrifying bacteria to nitrate at a higher than normal rate. Ordinarily, nitrate would be assimilated by algae but elevated concentrations of copper found in the lake sediment and water column suggest that copper based algacides are being applied to the lake. Under these conditions, the nitrate concentation in Metamora Reservoir #1 (one sample >10.0 mg/l and the other two between 9.0 and 10.0 mg/l) exceeds the 30-day average criterion for the protection of human health. Nitrate advisories for potable water supplies are usually issued for young children and individuals on nitrate restricted diets when finished water concentrations exceed 10.0 mg/l for two consecutive samples.

◊ Another elevated parameter of some importance was summer ammonia in the lower water column of two lakes. Ammonia concentrations >2.2 mg/l were recorded in Nettle Lake and Greenfield Lake. Ammonia at this concentration was an exceedence of the chronic aquatic life criterion as determined by each lakes' pH and temperature near the bottom. During the summer, each of these lakes was thermally stratified and exhibited hypolimnions with near anoxic conditions. Under these conditions, the elevated ammonia levels were probably not a serious concern to aquatic life and, at fall turnover, would have been rapidly nitrified into nitrite and nitrate.

◊ Many of the 23 lakes exhibited some degree of thermal stratification during the summer. Of these, 14 lakes suffered severe oxygen depletion (*i.e.*, D.O. <2.0 mg/l) in the hypolimnion with some having significant zones of D.O. levels less than 0.5 mg/l (Table 6). Percent of total lake depth affected by the low D.O. levels ranged from about 10% in lakes that were deep but unproductive (Miller Antrim Lake and Delta Reservoir #2) to near 70% in some of the deeper, more productive lakes (Mud Lake and Turkeyfoot Lake).

Lower Water Column Organics Sampling

◊ Summer sampling of priority pollutant organochlorine pesticides in five water supply lakes revealed the presence of a number of compounds in surface water and/or the lower water column in close proximity to the sediment/water interface (Table 7). Compounds detected included aldrin (one lake), dieldrin (four lakes), endrin (two lakes), endosulfan I (two lakes), endosulfan II (three lakes), heptachlor epoxide (three lakes), isomers of hexachlorocyclohexane, a-BHC and/or d-BHC (four lakes), DDT (one lake), and methoxychlor (one lake). Lakes with the most recorded detections included Coe Lake with five compounds and Grafton Upground Reservoir and Turkeyfoot Lake with four compounds each. The presence of some of the compounds in the lower water column correlated well with the same or similar compounds in the sediments from the same lake. For instance, most lakes with isomers of hexachlorocyclohexane in the sediments had measurable amounts detected in the lower water column. Conversely, there were a few other pesticides (*i.e.*, aldrin and heptachlor epoxide) in the lower water column that were not detected in the sediment.

◊ Comparison of the concentrations of the detected pesticides with Ohio WQS revealed that many of the recorded values for aldrin, dieldrin, endosulfan, and, to a lesser extent, endrin and hexachlorocyclohexane, were exceedences of the 30-day average aquatic life criterion and/or the 30-day average human health criterion. However, as with the metal exceedences, these should not be construed as violations but should be used to flag lakes that need more intensive sampling throughout the water column to more adequately define the situation. Follow-up is especially necessary since the pesticides, in some cases, were detected in both summer surface and lower water column samples. Some of the lakes were thermally stratified and exhibited near anoxic conditions in the hypolimnion while others were shallow reservoirs that did not stratify and maintained adequate levels of dissolved oxygen. The relationship between ambient environmental conditions and the observed pesticide concentrations and the risk, if any, to human health and aquatic life are not well documented for Ohio lakes.

Sediment Sampling

◊ Of the 12 heavy metals and other ions analyzed, only six were detected in concentrations considered elevated or highly elevated based on a surficial lake sediment classification system described by Kelly, Hite, and Rogers (1984) for Illinois lakes (Table 8). Chromium was highly elevated in three lakes (Lake White, Madison Lake and Mud Lake) and elevated in six lakes (Coe Lake, Grand Lake St. Marys, Paint Creek Lake, Rusk Creek Lake, Nettle Lake, and Turkeyfoot

Lake). Arsenic was highly elevated in two lakes (Rex Lake and Turkeyfoot Lake) and elevated in one lake (Lake White). Copper was highly elevated in two lakes (Metamora Reservoir #1 and Wauseon Reservoir #2) and elevated in one lake (Grafton Upground Reservoir). Zinc was highly elevated in one lake (Lake White) and elevated in four lakes (Coe Lake, Madison Lake, Mud Lake, and Rex Lake). With the exception of a highly elevated cadmium concentration in the Lake White sample and elevated lead concentrations in the Rex Lake and Turkeyfoot Lake samples, all other parameter concentrations were classified as normal or below normal in sediments of each lake.

◊ The importance of higher than normal results in several lakes for arsenic, chromium, copper, and zinc was not readily apparent and probably will not be until sediment criteria are promulgated. It is interesting to note that more than half of the elevated levels for these parameters were at the low end of the specific assessment category and not far removed from normal measurements while the highly elevated measurements were at the high end of the category. This discrepancy may lead one to conclude that highly elevated concentrations in lakes might be due to anthropogenic sources. Examples of possible anthropogenic pollution impacts could explain the highly elevated arsenic levels in Rex Lake and elevated copper concentrations in three upground reservoirs. In Rex Lake, one of a series of three interconnected glacial lakes, arsenic levels were three to ten times higher than the arsenic levels reported for the two adjacent lakes (Turkeyfoot Lake and Mud Lake). Since arsenic occurs naturally in the surrounding bedrock, one could conclude that sediment arsenic levels between these interconnected lakes would exhibit little variability. The fact that additional sediment sampling conducted by the Ohio EPA in 1993 near Rex Lake exhibited extremely elevated arsenic, lead, and zinc levels suggests the possibility of heavy metal contamination in the area as a result of human activities. A much more obvious cause and source identification can be found regarding the copper levels in the three upground reservoirs used as municipal water supplies. The elevated copper levels found in Grafton Upground Reservoir, Metamora Reservoir #1, and Wauseon Reservoir #2 are probably attributable to the continued use of algacides containing copper sulfate. Copper containing algacides are routinely applied to surface waters used for public drinking water supplies because there are no time restrictions on water use following treatment.

◊ Sediment phosphorus results from 20 lakes indicated most had normal or below normal concentrations, but two lakes Coe Lake and Paint Creek Lake fell into the elevated range based on the Illinois classification (Table 8). Coe Lake is a 23 acre dugout lake situated in a small urban watershed while Paint Creek Lake is a 1190 acre dammed impoundment located in a large rural watershed. It is possible that different mechanisms are governing the phosphorus loadings of these two lakes (*e.g.*, internal recycling versus external loading). The spatial and temporal heterogeneity of lakes should be a major consideration when establishing a lake database for comparison purposes.

◊ Sediment organic sampling detected thirteen priority pollutant organochlorine pesticides, one or more of which were present in the sediment of the 16 lakes sampled (Table 9). The thirteen pesticides included dieldrin, endrin, heptachlor epoxide, endosulfan II, hexachlorobenzene, hexachlorocyclohexane isomers (a-BHC, b-BHC, y-BHC and d-BHC), methoxychlor, and DDT and two DDT degradation products, DDD and DDE. Concentrations were generally less than 10

micrograms per kilogram (ug/kg = ppb) and were not considered to be at significant levels. There were no polychlorinated biphenyl (PCB) arochlors detected in sediments of any of the 16 lakes sampled for organic compounds.

Fish Tissue Sampling

◊ Fish tissue samples were collected from a number of Ohio lakes in 1991-92 under a state funded comprehensive tissue program jointly coordinated by the Ohio EPA, the Ohio DNR, the Ohio Department of Health, and the Ohio Department of Agriculture. Lakes sampled included Berlin Reservoir, Buckeye Lake, Charles Mill Lake, Dillon Reservoir, Griggs Reservoir, Indian Lake, Nesmith Lake, O'Shaughnessy Reservoir, Summit Lake, and Turkeyfoot Lake. Specific results of these analyses are pending or are reported in the 1994 Ohio Water Resource Inventory Volume 2: Fish Tissue Contamination Monitoring Program (Ohio EPA 1994).

◊ Previous reporting of fish tissue analyses from Ohio Lakes (Ohio EPA 1992) indicated a number of organic chemicals detected in fish tissue samples from these lakes. Results were in low concentrations and well below the widely used FDA levels of concern with regards to consumption. However, risk based models currently being tested and refined may result in a significant lowering of many criteria by targeting fish with lower levels of contamination and defining the risk involved with their consumption. Because of this and because safe levels and body burdens of many of these compounds are simply not known, practices to decrease the risk of exposure to these chemicals by consumption of contaminated fish should always be encouraged. Practices generally recommended include: 1) eat only fish skinned and boned, and remove as much fat as possible, 2) roast, grill, broil, or bake fish; do not boil, fry, or microwave, and 3) do not eat or reuse juices or fat cooked out of fish.

Trophic State Assessments

◊ Carlson's Trophic State Index (TSI) values were calculated for all lake sampling locations using each of the three available parameters - mean chlorophyll-a concentration of the two summer surface samples, total phosphorus concentration of the spring surface sample, and Secchi depth measurement from the summer sampling runs (Table 11). For each location, a final TSI was determined by taking the mean of the two chlorophyll-a TSIs and the total phosphorus TSI. The Secchi depth TSIs were not utilized since they often are abnormally high because of light attenuating substances other than algal particles. This is an especially important consideration in Ohio which has many reservoirs and shallow lakes with high suspended sediment loads. However, the Secchi depth TSI can often clarify observed relationships between the two other TSI values. Trophic state assessments for each lake were determined using the final TSI scaled as follows: oligotrophic - final TSI <38, mesotrophic - final TSI 38-47, eutrophic - final TSI 48-66, and hypereutrophic - final TSI >66.

◊ Final TSI values for the 23 lakes ranged from 33 for Delta Reservoir in northwest Ohio to 73 for Grand Lake St. Marys in west central Ohio. As seen in the previous lake sampling of 1989 and 1990, most lake fell into the 48 to 66 TSI range (eutrophic) which indicated that enriched,

productive conditions continue to be the norm for Ohio's lakes. Breakdown of the 23 lakes by trophic state tallied four lakes (17%) rated oligotrophic, two lakes (9%) rated mesotrophic, twelve lakes (52%) rated eutrophic, and five lakes (22%) rated hypereutrophic (Figure 3).

◊ Differences between the four oligotrophic lakes (Delta Reservoir #2, Miller Antrim Lake, Roosevelt Lake, and Turkey Creek Lake) and the five hypereutrophic lakes (Grand Lake St. Marys, Indian Lake, Madison Lake, Paint Creek Lake, and Wynoka Reservoir) were dramatic. In the oligotrophic lakes, summer total phosphorus and summer chlorophyll-a concentrations were very low with values in most lakes less than 12.0 ug/l and 2.29 ug/l, respectively. Conversely, the hypereutrophic lakes had concentrations of phosphorus 10 to 20 times higher than their oligotrophic counterparts (69 to 240 ug/l). This translated into summer chlorophyll concentrations from over 26 to nearly 240 times higher than the oligotrophic lakes (20 to 127 ug/l). The hypereutrophic lakes as a group had much more variable phosphorus and chlorophyll concentrations which is probably an additional indication of the highly productive, but unstable nature of these lakes.

◊ An attempt was made to determine the major nutrient that would limit the growth of algae in the sampled lakes. Knowledge of the limiting nutrient can be an important factor in the final selection of possible lake restoration techniques (*e.g.*, use of alum to bind phosphorus). Two methods that are commonly used to determine limiting nutrients in lakes are the ratio of total nitrogen to total phosphorus (TN/TP) and algal bioassays using the green algae Selenastrum capricornutum. As a preliminary screening process, only summer TN/TP ratios were used to determine the limiting nutrient for the 1992 lakes. Smith (1982) reports that TN/TP ratios above 17:1 usually indicate that phosphorus is the important nutrient limiting the growth of algae. Others have suggested that ratios less than 7:1 suggest nitrogen limitation. For the 23 lakes sampled during 1992, 13 (56%) had TN/TP ratios ranging between 18 and 1233 which suggested these lakes are limited by phosphorus. Only three lakes (13%) had ratios less than 7:1. These lakes, Rex Lake, Miller Antrim Lake, and Lake Rupert are lakes that appear to be limited by total nitrogen. The remaining seven lakes (30%) had ratios falling between 7:1 and 17:1 and, thus, some uncertainty exists as to the limiting nutrient. For these lakes and others with ratios close to either limit, algal bioassay procedures should be used to verify the limiting nutrient prior to any restoration activities.

Historical Perspectives

◊ Considerable lake sampling was undertaken in the late 70s and early 80s by the Ohio EPA and the U.S. Geological Survey. Over this time frame, well over 100 lakes were monitored with a sampling intensity much like that allocated to the 1992 program. Results of that monitoring have been reported in several publications (Tobin and Youger 1977, Tobin and Youger 1979, Angelo and Youger 1985) and summarized in the 1982 305(b) Report in the volume titled *Ohio's Lakes* (Youger 1982). Based on this monitoring, 119 Ohio lakes were classified according to trophic state using Carlson's TSI values. Of these lakes, 16% were classified as mesotrophic, 73% as eutrophic, and 11% as hypereutrophic. There were no lakes classified as oligotrophic. Under a 1989-90 LWQA grant, the Ohio EPA sampled 52 lakes, again with an effort similar to the 1992 sampling (Ohio EPA

1992). Breakdown of these 52 lakes by trophic state tallied 3 lakes (5.8%) rated oligotrophic, 11 lakes (21.1%) rated mesotrophic, 34 lakes (65.4%) rated eutrophic, and 4 lakes (7.7%) rated hypereutrophic.

◊ A frequency histogram of the trophic state for lakes over the past two decades of sampling surveys (Figures 4 and 5) fails to show any marked departure of TSI distribution over the years. There seems to be a slight increase in the number of lakes being classified as hypereutrophic during the late 1980s and early 1990s. The reason for this increase is unknown, but it should be noted that all the 1992 lakes classified as hypereutrophic were dam impoundments. As a group, impoundments (particularly the large ones with large upstream watersheds) appear to be somewhat more productive than other lake types. This is probably due to differences in watershed size and fertility between impoundments and the other lake types.

◊ Six lakes were sampled in 1992 that were previously assessed in the late 1970s or early 1980s. Examination of paired TSI values of these lakes failed to show any meaningful trends over the years. It is obvious the a much larger database of paired data is needed in order to carry out any appropriate statistical trend analyses.

Table 1. List of Ohio public lakes and reservoirs sampled during 1992.

WaterBody ID#	Lake Name	County	Eco-region	Surface Area (acres)	Lake Uses	Lake Type
OH87 5- 90	Coe Lake	Cuyahoga	3	23.0	WS R	DO
OH73 2-145	Delta Reservoir #2	Fulton	1	50.0	WS	UP
OH86 5-221	Grafton Upground Reservoir	Lorain	3	7.0	WS	UP
OH63 14- 28	Grand Lake St. Marys (3 sites)	Auglaize	5	12700.0	WS R	DPI
OH25 26-112	Greenfield Lake	Fairfield	5	13.5	R FC	DPI
OH55 40-214	Indian Lake (2 sites)	Logan	5	5104.0	R	DPI
OH30 17-392	Lake Rupert	Vinton	4	325.0	WS R	DPI
OH45 34-302	Lake White	Pike	4	337.0	R	DPI
OH41 30-228	Madison Lake	Madison	5	106.0	R	DPI
OH75 18-439	Metamora Reservoir #1	Fulton	1	6.0	WS	UP
OH37 9-133	Miller Antrim Lake	Franklin	5	37.0	R	DO
OH10 33-365	Mud Lake	Summit	3	85.0	R	NL
OH65 35-402	Nettle Lake	Williams	5	94.0	R	NL
OH42 1-186	Paint Creek Lake (2 sites)	Highland	5	1190.0	WS R FC	DPI
OH10 33-363	Rex Lake	Summit	3	48.0	R	DPI
OH47127-340	Roosevelt Lake	Scioto	4	16.0	R	DPI
OH25 16-289	Rush Creek Lake	Fairfield	3	300.0	R FC	DPI
OH47115-339	Turkey Creek Lake	Scioto	4	51.0	R	DPI
OH10 33-364	Turkeyfoot Lake	Summit	3	318.0	R	NL
OH73 16-136	Wauseon Reservoir #2	Fulton	1	49.0	WS R	UP
OH47 18- 43	Waynoka Reservoir	Brown	2	11.6	WS	DPI
OH49 69- 44	Waynoka Upground Reservoir	Brown	2	11.8	WS	UP
OH21 1- 79	Wills Creek Reservoir (2 sites)	Coshocton	4	900.0	R FC	DPI

Ecoregion:
1 - Huron/Erie Lake Plain
2 - Interior Plateau
3 - Erie/Ontario Lake Plain
4 - Western Allegheny Plateau
5 - Eastern Corn Belt Plains

Lake Type:
DO - Dugout Reservoir
DPI - Dammed Impoundment
NL - Natural Lake
UP - Upground Reservoir

Lake Uses:
WS - Water Supply
R - Recreation
FC - Flood Control
C - Conservation

Table 2. List of conventional parameters (nutrients, metals, *etc.*) analyzed in water column samples collected from Ohio public lakes, 1992.

Field Parameter Profiles	Metals
Conductivity	Arsenic
Dissolved Oxygen	Cadmium
pH	Calcium
Temperature	Chromium
	Copper
Nutrients, *etc.*	Iron
	Lead
Alkalinity	Magnesium
Biochemical Oxygen Demand	Manganese
Total Phosphorus	Strontium
Total Dissolved Solids	Zinc
Total Suspended Solids	
Hardness	Other
Sulfate	
Ammonia	Chlorophyll a
Nitrate-Nitrite	Secchi Depth
Nitrite	
Total Kjeldahl Nitrogen	

Table 3. List of conventional parameters (nutrients, metals, *etc.*) analyzed in sediment samples collected from Ohio public lakes, 1992. Those parameters in boldface were analyzed in select lakes only.

Metals	Nutrients
Arsenic	Phosphorus
Cadmium	**Ammonia**
Chromium	
Copper	Others
Lead	
Manganese	**% Residue**
Mercury	**% Volatile Solids**
Nickel	**% Moisture**
Selenium	**Particle Size**
Strontium	**Cyanide**
Zinc	

Table 4. List of priority pollutant organochlorine pesticides and polychlorinated biphenyls (PCBs) analyzed in sediment and water column samples collected from select Ohio public lakes, 1992.

Chemical Abstracts Service (CAS) No.	Compound
319-84-6	a-BHC
319-85-7	b-BHC
58-89-9	y-BHC
319-86-8	d-BHC
309-00-2	Aldrin
60-57-1	Dieldrin
76-44-8	Heptachlor
1024-57-3	Heptachlor epoxide
959-98-8	Endosulfan I
33212-65-9	Endosulfan II
1031-07-8	Endosulfan sulfate
72-20-8	Endrin
7421-93-4	Endrin aldehyde
72-54-8	4,4'-DDD
72-55-9	4,4'-DDE
50-29-3	4,4'-DDT
72-43-5	Methoxychlor
2385-85-5	Mirex
118-74-1	Hexachlorobenzene*
57-74-9	Chlordane*
8001-35-2	Toxaphene*
12674-11-2	PCB-1016
11104-28-2	PCB-1221
11141-16-5	PCB-1232
53469-21-9	PCB-1242
12672-29-6	PCB-1248
11097-69-1	PCB-1254
11096-82-5	PCB-1260

* Sediment samples only.

Table 5. Exceedences or violations of the Ohio EPA Exceptional Warmwater Habitat criteria (OAC Chapter 3745-1) for chemical/physical parameters measured in surface water column samples collected from Ohio public lakes, 1992 (units are µg/l). All sampling locations were L-1 sites unless otherwise indicated.

Lake Name	Season (Sp,Su1,Su2)	Exceedence or Violation: Parameter (value)
Coe Lake	Su1, Su2	Iron (2930*, 3610*)
Grand Lake St. Marys (L-2)	Sp, Su1	Iron (1027*, 1110*)
Grand Lake St. Marys (L-3)	Su1, Su2	Iron (1040*, 1040*)
Madison Lake	Su2	Iron (3660*)
Metamora Reservoir #1	Sp, Su1, Su2	Copper (139**, 384**, 281**)
Waynoka Upground Reservoir	Su1	Copper (72**)
Wills Creek Reservoir	Su2	Iron (2520*)
Wills Creek Reservoir (L-2)	Sp, Su2	Iron (1740*, 3480*)

Sp - Spring Visit Su1 - Summer Visit #1 Su2 - Summer Visit #2

* indicates an exceedence (30 day average) of the numerical criterion for the prevention of chronic aquatic life toxicity (CAC).

** indicates a violation (maximum at any time) of the numerical criterion for the prevention of aquatic life lethality (FAV).

Table 6. Lakes with hypolimnetic dissolved oxygen (D.O.) levels falling below 2.0 mg/l during at least one summer sampling visit, 1992. All sampling locations were L-1 sites unless otherwise indicated.

Lake	Minimum D.O. Recorded (mg/l)		Lake Depth <2.0 mg/l (m)		Total Lake Depth (m)
	Su1	Su2	Su1	Su2	
Coe Lake*	0.3	0.1	2.0	4.0	6.0
Delta Reservoir #2	6.4	0.6	0.0	3.0	15.0
Greenfield Lake*	0.8	0.0	2.0	2.0	4.0
Lake Rupert	0.0	0.0	2.0	2.0	6.0
Lake White	0.1	0.0	2.0	3.0	7.0
Miller Antrim Lake*	1.8	0.5	1.5	0.5	9.5
Mud Lake*	0.1	0.1	8.5	10.0	13.5
Nettle Lake*	0.3	0.2	4.0	4.0	9.0
Paint Creek Lake	2.0	0.0	0.0	4.5	8.0
Paint Creek Lake (L-2)	4.8	0.9	0.0	1.0	5.5
Rex Lake*	0.1	0.1	2.0	3.5	6.0
Rush Creek Lake*	0.4	0.3	7.0	6.0	10.0
Turkey Creek Lake	0.0	0.1	4.0	4.0	8.0
Turkeyfoot Lake*	0.1	0.1	8.5	11.0	14.5
Waynoka Reservoir*	0.0	0.0	2.0	1.0	4.0

Su1 - Summer Visit #1 Su2 - Summer Visit #2

* Spring sample also with low hypolimnetic D.O. levels.

Table 7. Concentrations (ug/l = ppb) of priority pollutant organochlorine pesticides detected in upper and lower water column samples collected from Ohio public lakes, 1992.* All sampling locations were L-1 sites unless otherwise indicated.

		Concentration (ug/l)									
Lake	Depth(m)	a-BHC	d-BHC	4,4'-DDT	Aldrin	Heptachlor epoxide	Endo-sulfan I	Dieldrin	Endrin	Endo-sulfan II	Methoxy-chlor
Coe Lake	0.5	0.006	**	**	0.016	0.007	0.003	0.004	**	**	**
	6.0	0.005	**	**	0.016	0.008	0.004	0.007	**	**	**
Delta Reservoir #2	0.5	0.006	0.002	**	**	**	**	**	0.006	0.003	**
	9.5	**	**	**	**	**	**	0.004	**	0.002	**
Grafton Upgr. Resv.	0.5	0.006	0.003	**	**	0.003	**	**	**	**	**
	2.5	0.005	0.003	**	**	0.004	**	0.002	**	**	**
Turkeyfoot Lake	0.5	0.005	0.004	**	**	0.003	**	**	**	**	**
	15.0	**	0.006	**	**	0.007	0.005		**	**	0.021
Wauseon Resv. #2	0.5	**	**	0.007	**	**	**	0.005	0.002	0.006	**
	5.0	**	**	**	**	**	**	0.003	**	**	**

* Compounds listed are those that were measured above corrected method detection limits in at least one sample from the sampled lakes; compounds from Table 3 not listed here were not detected above corrected method detection limits in any lake sample.

** Concentration less than corrected method detection limit.

Table 8. Concentrations (mg/kg = ppm) of total phosphorus and metals in surficial sediment samples collected from Ohio public lakes, 1992.* All sampling locations were L-1 sites unless otherwise indicated.

	Sediment Concentration (mg/kg dry weight)											
Lake	P	Ar	Cd	Cr	Cu	Pb	Mn	Hg	Ni	Se	Sr	Zn
Coe Lake	1600	18.4	0.650	34.6	42.5	61.3	482	.0979	47.2	0.123	19.0	207
Delta Reservoir #2	50	2.3	0.061	7.2	6.9	2.6	138	<.0122	9.3	<0.062	20.9	24
Grafton Upground Reservoir	484	14.5	0.219	28.8	116.0	29.5	334	<.0196	45.6	<0.992	22.1	93
Grand Lake St. Marys (L-2)	618	11.4	0.522	33.3	32.1	46.7	539	.0160	46.7	0.366	78.7	146
Greenfield Lake	817	13.8	0.318	23.8	22.8	29.3	728	.0328	35.6	0.186	9.5	118
Indian Lake	38	8.7	0.380	29.6	24.4	35.4	405	.0627	36.3	<0.506	157.0	108
Lake Rupert	80	9.5	0.318	24.8	20.4	34.0	1500	.0380	50.8	<1.130	9.1	124
Lake White	536	28.8	3.970	47.9	48.6	81.5	1280	.0280	130.0	<1.480	17.8	428
Madison Lake	-	16.9	0.415	38.3	36.2	50.0	651	.0550	50.0	<0.111	381.0	179
Metamora Reservoir #1	493	8.5	0.207	19.3	227.0	26.8	475	.0176	35.7	<0.765	112.0	55
Miller Antrim Quarry	669	18.6	0.800	20.5	39.6	53.0	754	.0382	53.0	<0.816	216.0	162
Mud Lake	-	18.6	0.646	54.1	43.7	67.6	1510	<.0321	83.4	<0.751	33.8	250
Nettle Lake (L-2)	1016	14.6	0.532	35.7	31.7	39.9	794	.0196	44.0	<0.665	59.9	145
Paint Creek Lake	1350	17.9	0.535	39.6	35.4	54.6	728	.0460	49.3	<0.546	251.0	139
Rex Lake	770	174.0	1.020	25.7	49.7	123.0	2160	.1030	45.4	<0.274	80.8	209
Roosevelt Lake	276	11.2	0.536	17.2	12.5	32.3	311	.0457	27.9	<0.462	7.9	97
Rush Creek Lake	1140	20.7	0.452	33.6	35.3	46.9	1300	.0397	52.5	<1.170	20.5	174
Turkey Creek Lake	428	16.8	0.500	29.3	18.2	35.0	326	.0477	43.4	<2.000	9.0	134
Turkeyfoot Lake	1017	65.4	0.650	26.0	33.2	138.0	2810	<.0659	32.9	<1.720	115.0	172
Wauseon Reservoir #2	963	7.8	0.773	38.0	427.0	44.1	532	.0824	43.4	0.308	128.0	132
Waynoka Reservoir	342	10.1	0.281	37.4	33.8	41.6	389	.0709	33.7	<1.040	21.3	119
Wills Creek Reservoir	968	8.2	0.070	6.9	5.9	40.0	1160	.0580	10.2	<0.571	84.0	18

* Parameter concentrations, excluding magnesium, nickel, selenium, and strontium are ranked based on a surficial lake sediment classification system described by Kelly, Hite, and Rogers (1984) for 63 Illinois lakes. Sediment results are classified as:

Below Normal,
Normal,
Elevated, or
Highly Elevated.

Table 9. Concentrations (ug/kg = ppb) of priority pollutant organochlorine pesticides and polychlorinated biphenyls (PCBs) detected in surficial sediment samples collected from Ohio public lakes, 1992.* All sampling locations were L-1 sites unless otherwise indicated.

Lake	Sediment Concentration (ug/kg dry weight)												
	a-BHC	b-BHC	y-BHC	d-BHC	Heptachlor epoxide	4,4'DDE	Dieldrin	Endrin	Endo-sulfan II	4,4'DDD	4,4'DDT	Methoxy-chlor	Hexachloro-benzene
Coe Lake	1.38	**	1.18	**	**	2.71	1.55	2.69	**	**	**	**	1.39
Grafton Lake	**	2.74	**	**	**	2.90	**	**	1.43	**	**	**	**
Grand Lake St. Marys (L-2)	**	2.03	**	17.78	**	1.94	**	**	1.79	**	**	**	**
Greenfield Lake	**	2.03	**	11.34	1.04	1.67	**	**	3.23	3.34	5.32	**	**
Indian Lake	1.14	**	**	5.71	**	**	**	**	1.35	**	**	**	**
Lake White	1.36	**	1.24	**	**	2.23	**	**	1.27	**	**	**	**
Madison Lake	**	1.84	**	17.15	**	**	2.07	**	2.40	**	**	8.54	**
Mud Lake	**	**	**	**	**	**	**	**	2.55	**	**	**	**
Nettle Lake (L-2)	2.81	1.65	**	18.07	**	**	2.36	**	**	**	**	**	**
Paint Creek Lake	1.39	**	**	8.51	**	**	3.03	**	**	**	**	**	**
Rex Lake	3.39	**	3.84	**	**	5.15	**	**	**	**	**	**	**
Roosevelt Lake	0.98	**	**	9.56	**	**	**	**	**	**	**	5.09	**
Turkeyfoot Lake	**	**	**	**	**	**	**	**	7.05	**	**	**	**
Wauseon Reservoir #2	**	**	**	**	**	2.50	3.72	**	**	**	**	**	**
Waynoka Reservoir	**	**	1.45	**	**	**	**	**	**	**	**	**	**
Wills Creek Reservoir	**	**	**	7.97	**	**	**	**	2.28	**	**	**	**

* Compounds listed are those that were measured above corrected method detection limits in at least one sediment sample from the sampled lakes; compounds from Table 3 not listed here were not detected above corrected method detection limits in any lake sediment sample.

** Concentration less than corrected method detection limit.

Table 10. Concentrations (mg/kg = ppm) or percent composition of miscellaneous parameters analyzed in surficial sediment samples collected from Ohio public lakes, 1992. All sampling locations were L-1 sites unless otherwise indicated.

Lake	Sediment Concentration or Percent Composition							
	CN (mg/kg)	NH_3 (mg/kg)	% Total Solids	% Volatile Solids	% Moisture	%Particle Size Sand	Silt	Clay
Coe Lake	<0.228	493	39.7	7	60.3	10.3	51.9	37.8
Grafton Lake	<0.176	407	25.1	5	74.9	6.0	38.6	55.4
Grand Lake St. Marys (L-2)	<0.129	74	25.2	9	74.8	0.0	57.8	42.2
Greenfield Lake	<0.292	192	42.9	5	57.1	45.2	38.8	16.0
Indian Lake	<0.291	68	40.4	6	59.6	35.4	29.2	35.4
Lake White	<0.287	115	46.8	5	53.2	11.8	36.0	52.2
Madison Lake	<0.355	350	35.6	8	64.4	7.4	40.0	52.6
Mud Lake	<0.184	30	29.0	6	71.0	41.8	44.2	14.0
Nettle Lake (L-2)	<0.178	214	29.4	10	70.6	8.9	39.0	52.1
Paint Creek Lake	<0.226	538	38.1	9	61.9	11.5	20.3	68.2
Rex Lake	<0.926	133	13.4	21	86.6	42.5	43.1	14.4
Roosevelt Lake	<0.291	38	42.7	6	57.3	46.2	28.3	25.5
Turkeyfoot Lake	<1.880	300	8.6	16	91.4	36.8	53.2	10.0
Wauseon Reservoir #2	<0.116	50	34.5	6	65.5	15.0	41.2	43.8
Waynoka Reservoir	<0.336	262	36.3	8	63.7	46.5	19.7	33.8
Wills Creek Reservoir	<0.332	307	31.0	6	69.0	5.4	39.9	54.7

Table 11. Results of chlorophyll-a analyses and tabulation of Carlson's Trophic State Index (TSI) using summer chlorophyll-a (Chl-a), spring total phosphorus (TP), and summer Secchi depth (SD) in Ohio public lakes, 1992.

Lake	Location	Date	Depth (m)	Chl-a Duplicates 1 (ug/l)	Chl-a Duplicates 2 (ug/l)	Mean Chl-a (ug/l)	TSI Chl-A	TSI SD	TSI TP	Final TSI	Trop Stat
COE LAKE	L-1	08/04/92	0.5	14.30	14.13	14.22	57	82			
		08/24/92	0.5	43.24	42.49	42.87	67	68			
		06/07/93	0.5						47	57	E
DELTA RESERVOIR #2	L-1	08/18/92	0.5	0.81	0.72	0.77	28	33			
		09/17/92	0.5	2.99	2.78	2.89	41	44			
		05/17/93	0.5						30	33	O
GRAFTON UPGROUND RESERVOIR	L-1	08/13/92	0.5	9.61		9.61	53	62			
		09/14/92	0.5	15.01	18.32	16.67	58	62			
		06/07/93	0.5						61	57	E
GRAND LAKE ST. MARYS	L-1	08/19/92	0.5	121.72	117.54	119.63	78	80			
		09/11/92	0.5	128.48	119.64	124.06	78	77			
		05/20/93	0.5						56	71	H
	L-2	08/19/92	0.5	139.65	112.65	126.15	78	80			
		09/11/92	0.5	119.61	118.56	119.09	77	77			
		05/20/93	0.5						53	69	H
	L-3	08/19/92	0.5	114.50	116.57	115.54	77	80			
		09/11/92	0.5	132.61	123.01	127.81	78	77			
		05/20/93	0.5						65	73	H
GREENFIELD LAKE	L-1	08/12/92	0.5	66.18	54.89	60.53	71	76			
		09/09/92	0.5	16.29	13.39	14.84	57	63			
		06/09/93	0.5						49	59	E
INDIAN LAKE	L-1	08/02/92	0.5	83.01	95.78	89.39	75	81			
		08/24/92	0.5	40.41	47.25	43.83	68	80			
		05/27/93	0.5						61	68	H
	L-3	08/02/92	0.5	65.53	79.20	72.37	73	81			
		08/24/92	0.5	64.74	42.40	53.57	70	80			
		05/27/93	0.5						63	69	H
LAKE RUPERT	L-1	08/04/92	0.5					59			
		08/26/92	0.5	4.13	4.36	4.25	45	52			
		05/24/93	0.5						34	40	M
LAKE WHITE	L-1	08/04/92	0.5	22.71	22.30	22.51	61	75			
		08/26/92	0.5	10.07	8.77	9.42	53	64			
		05/24/93	0.5						34	49	E
MADISON LAKE	L-1	08/13/92	0.5	76.62	70.16	73.39	73	75			
		09/10/92	0.5	42.07	45.99	44.03	68	83			
		06/07/93	0.5						63	68	H

(O: Oligotrophic - TSI <38; M: Mesotrophic - TSI 38-47; E: Eutrophic - TSI 48-66; H: Hypereutrophic - TSI >66)

Table 11. (continued)

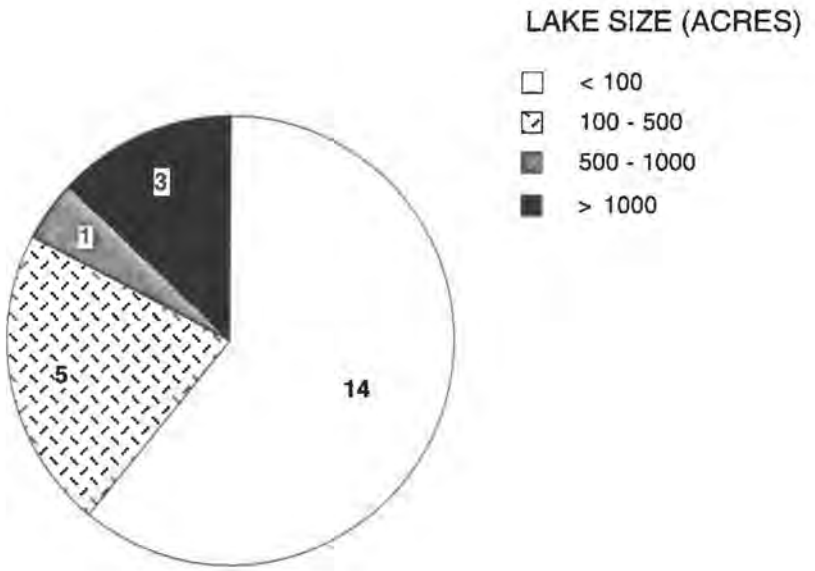
Lake	Location	Date	Depth (m)	Chl-a Duplicates 1 (ug/l)	2 (ug/l)	Mean Chl-a (ug/l)	TSI Chl-A	TSI SD	TSI TP	Final TSI	Trophic State
METAMORA RESERVOIR #1	L-1	08/18/92	0.5	9.35	9.42	9.39	53	57			
			0.5	10.09	9.09	9.59	53	59			
		05/17/93	0.5						37	48	E
MILLER ANTRIM LAKE	L-1	08/12/92	0.5	2.64	1.94	2.29	39	35			
		09/10/92	0.5	2.66	2.49	2.58	40	42			
		06/11/93	0.5						32	37	O
MUD LAKE	L-1	08/03/92	0.5	19.05	19.43	19.24	60	59			
		08/25/92	0.5	18.33	16.33	17.33	59	58			
		06/08/93	0.5						77	65	E
NETTLE LAKE	L-2	08/17/92	0.5	116.87	115.36	116.11	77	65			
		09/16/92	0.5	64.73	73.64	69.18	72	65			
		05/19/93	0.5						47	65	E
PAINT CREEK LAKE	L-1	08/04/92	0.5	123.29	131.23	127.26	78	67			
		08/25/92	0.5	40.27	42.16	41.21	67	67			
		05/25/93	0.5						61	69	H
	L-2	08/04/92	0.5					67			
		08/25/92	0.5	91.06	93.05	93.06	75	71			
		05/25/93	0.5						68	71	H
REX LAKE	L-1	08/03/92	0.5	21.73		21.73	61	60			
		08/25/92	0.5	40.72	29.40	35.06	65	60			
		06/08/93	0.5						61	62	E
ROOSEVELT LAKE	L-1	08/05/92	0.5					64			
		08/27/92	0.5	1.74	1.63	1.69	36	42			
		05/25/93	0.5						34	35	O
RUSH CREEK LAKE	L-1	08/14/92	0.5	27.67	29.69	28.68	64	64			
		09/09/92	0.5	44.67	43.95	44.31	68	64			
		06/08/93	0.5						63	65	E
TURKEY CREEK LAKE	L-1	08/05/92	0.5					33			
		08/27/92	0.5	2.26	2.18	2.22	38	42			
		05/25/93	0.5						34	36	O
TURKEYFOOT LAKE	L-1	08/03/92	0.5	41.35	29.33	35.34	66	60			
		08/25/92	0.5	22.29	24.02	23.16	61	60			
		06/08/93	0.5						65	64	E
WAUSEON RESERVOIR #2	L-1	08/17/92	0.5	15.80	15.26	15.53	58	62			
		09/16/92	0.5	38.99	40.65	39.82	67	62			

(O: Oligotrophic - TSI (38; M: Mesotrophic - TSI 38-47; E: Eutrophic - TSI 48-66; H: Hypereutrophic - TSI)66)

Table 11. (continued)

Lake	Location	Date	Depth (m)	Chl-a Duplicates 1 (ug/l)	Chl-a Duplicates 2 (ug/l)	Mean Chl-a (ug/l)	TSI Chl-A	TSI SD	TSI TP	Final TSI	Tro Sta
WAUSEON RESERVOIR #2	L-1	05/19/93	0.5						56	60	E
WAYNOKA RESERVOIR	L-1	08/05/92	0.5	17.98	22.08	20.03	74	60			
		08/26/92	0.5	7.33	7.27	7.30	59	51			
		05/26/93	0.5						73	69	H
WAYNOKA UPGROUND RESERVOIR	L-1	08/05/92	0.5	9.94	8.99	9.47	53	64			
		08/26/92	0.5	4.76	4.76	4.76	46	61			
		05/26/93	0.5						40	46	M
WILLS CREEK RESERVOIR	L-1	08/06/92	0.5		23.57	23.57	62	75			
		08/31/92	0.5	9.62	9.28	9.45	53	82			
		05/26/93	0.5						63	59	E
	L-2	08/06/92	0.5	17.79	17.39	17.59	59	80			
		08/31/92	0.5	12.85	15.61	14.23	57	84			
		05/26/93	0.5						67	61	E

(O: Oligotrophic - TSI <38; M: Mesotrophic - TSI 38-47; E: Eutrophic - TSI 48-66; H: Hypereutrophic - TSI >66)



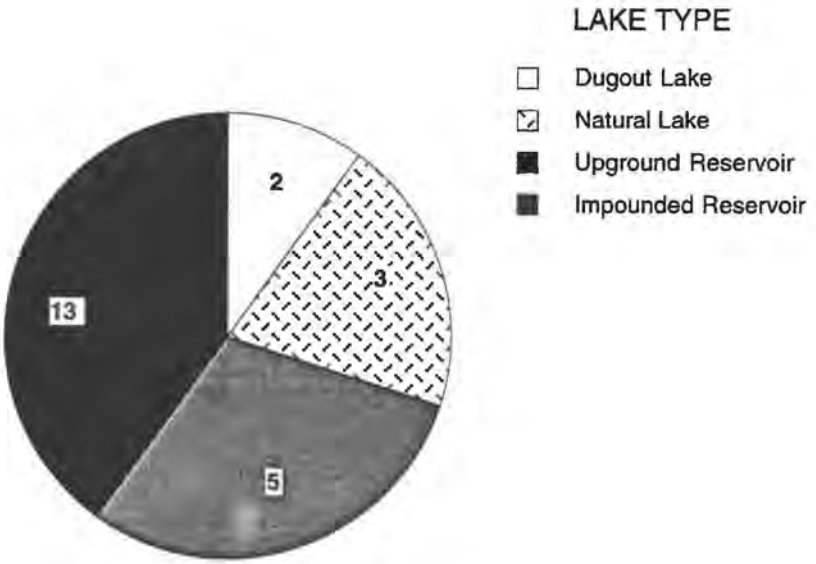
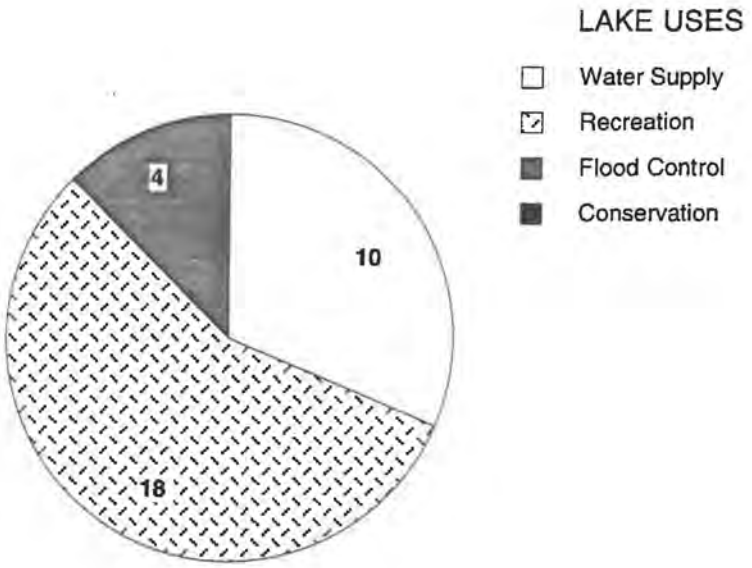


Figure 1. Breakdown by size and type of the 23 lakes sampled by the Ohio EPA, 1992.



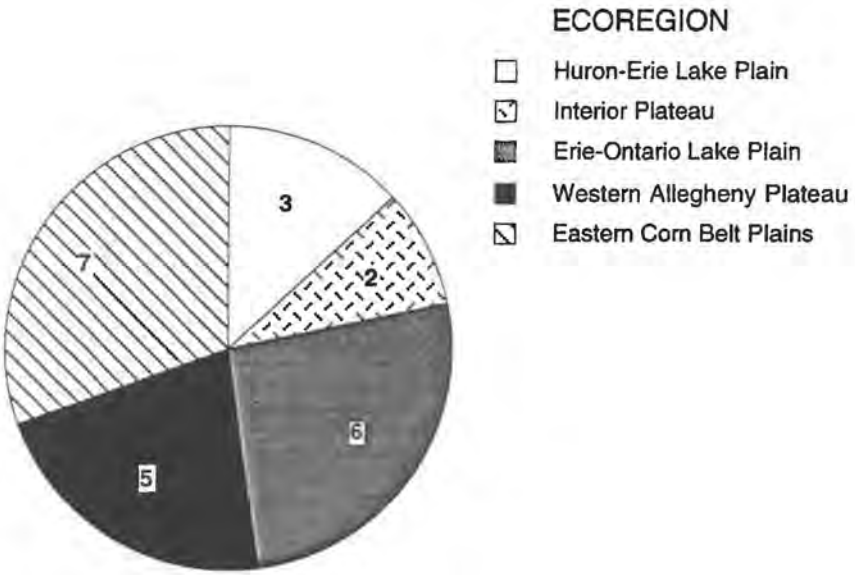


Figure 2. Breakdown by use and geographic location (ecoregion) of the 23 lakes sampled by the Ohio EPA, 1992. Each lake may have more than one use.

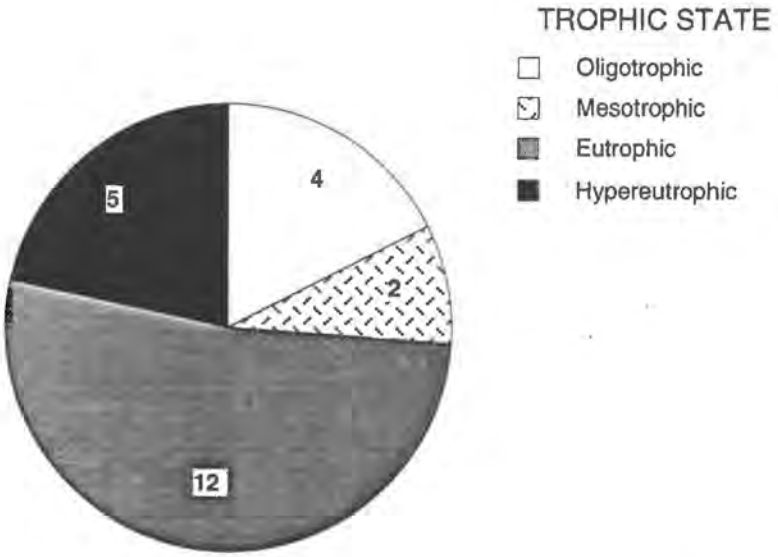
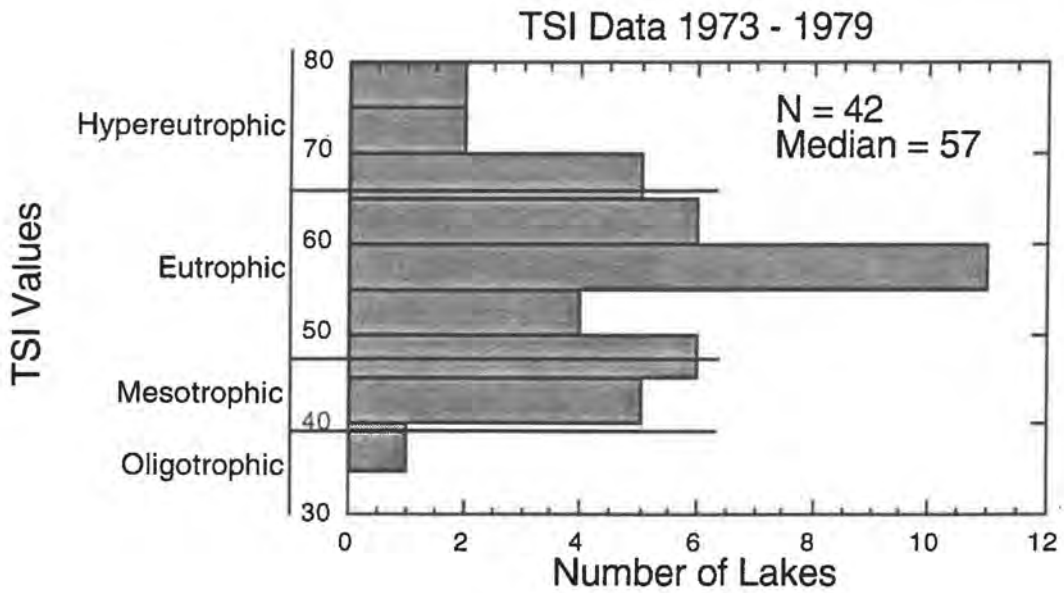


Figure 3. Breakdown by trophic state of the 23 lakes sampled by the Ohio EPA, 1992.



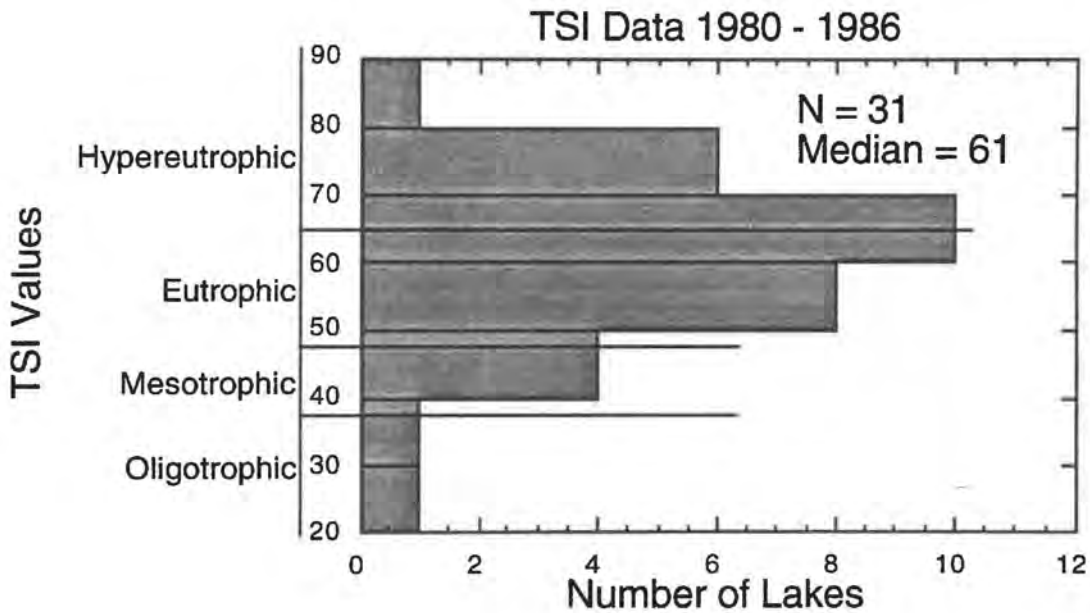
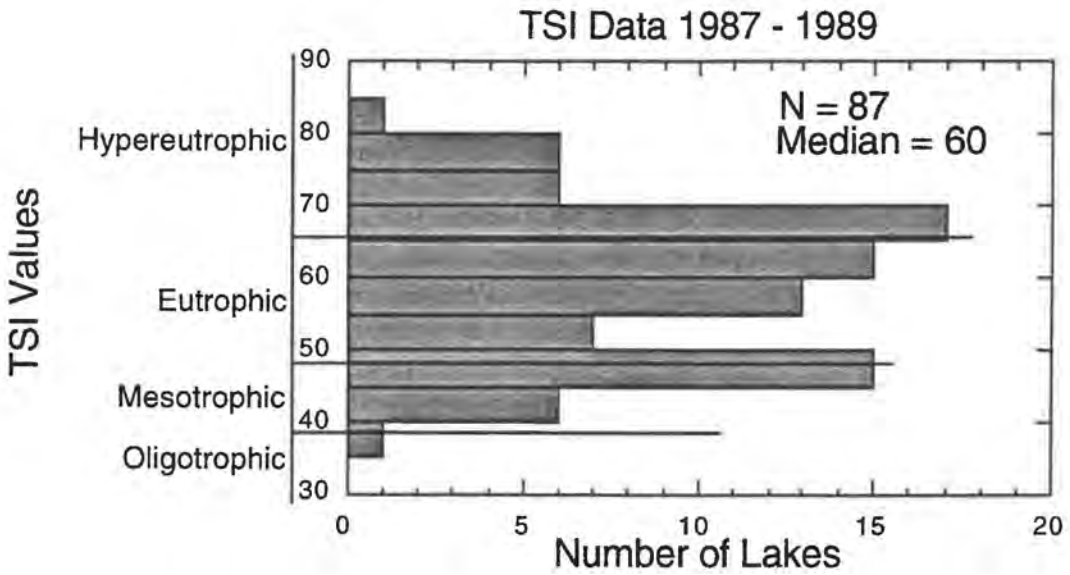


Figure 4. Frequency histogram of Ohio lakes classified according to trophic state using Carlson TSI values.from the 1970s to the mid 1980s.



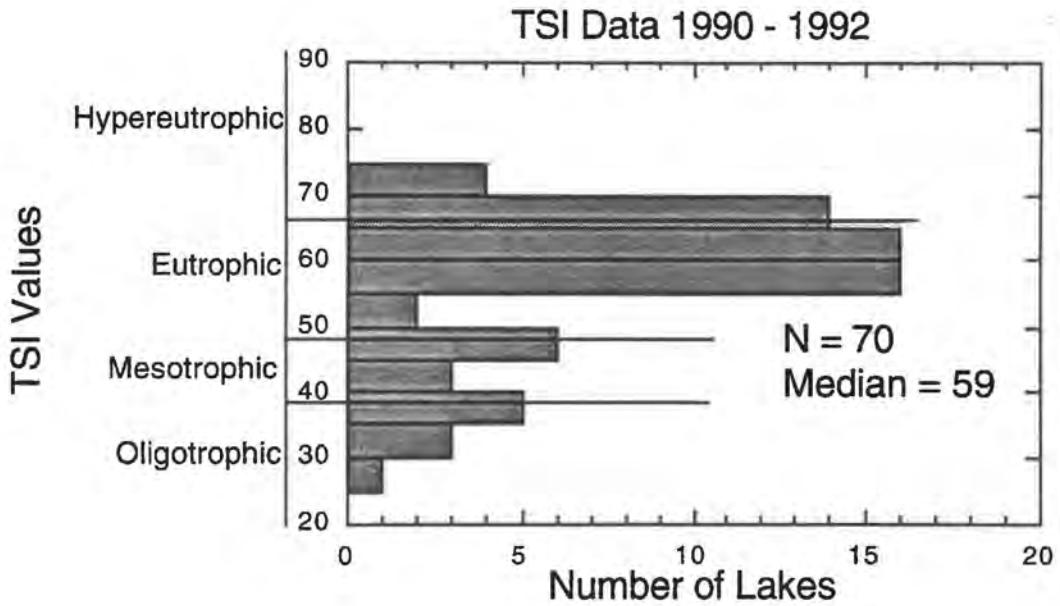


Figure 5. Frequency histogram of Ohio lakes classified according to trophic state using Carlson TSI values from the mid 1980s to 1992.

APPENDIX TABLE I-1

Results of water column chemical/physical sampling
(field parameter profiles and Secchi depths)
in Ohio public lakes, 1992

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (m
COE LAKE	L-1	08/04/92	0.5	23.0	7.0	6.70	378	0.22
			1.0	20.0	4.0		346	
			1.5	19.0	3.8		420	
			2.0	18.0	3.3		400	
			2.5	18.0	2.6		340	
			3.0	18.0	2.0		340	
			3.5	18.0	2.0		340	
			4.0	18.0	1.5		340	
			4.5	18.0	1.5		340	
			5.0	18.0	1.3		350	
			5.5	18.0	0.4	6.80	350	
			6.0	18.0	0.3		350	
		08/24/92	0.5	24.3	14.0	8.20	515	0.58
			1.0	23.2	11.0		505	
			1.5	21.6	8.0		495	
			2.0	20.2	1.9		495	
			2.5	20.0	0.1		495	
			3.0	19.4	0.1	6.90	485	
			3.2	19.7	0.1		487	
		06/07/93	0.5	20.1	8.6	7.90	936	0.57
			1.0	18.5	8.1		888	
			1.5	17.2	6.9		840	
			2.0	16.8	4.7		852	
			2.5	16.1	3.1		840	
			3.0	15.5	0.0		828	
			3.5	13.6	0.0		756	
			4.0	11.5	0.0		732	
			4.5	10.0	0.0		732	
			5.0	9.1	0.0		780	
			5.5	8.9	0.0	7.30	828	
			6.0	8.5	0.0		828	
DELTA RESERVOIR #2	L-1	08/18/92	0.5	22.2	8.3	8.90	550	6.70
			1.0	22.2	8.4	8.90	550	
			2.0	22.2	8.4	8.90	550	
			3.0	22.2	8.4	8.90	550	
			4.0	22.2	8.4	8.90	550	
			5.0	22.2	8.4	8.90	550	
			6.0	22.1	8.2	8.90	550	
			7.0	22.0	8.3	8.80	550	
			8.0	20.6	7.0	8.60	550	7.00
			9.0	15.8	6.4	8.40	500	
			9.5	13.8	6.5	8.20	440	
		09/17/92	0.5	21.9	9.0	8.60	550	3.10
			1.0	21.9	8.9	8.70	550	
			2.0	21.9	8.9	8.70	550	
			3.0	21.9	8.9	8.70	550	
			4.0	21.9	8.8	8.70	550	
			5.0	21.6	9.0	8.70	550	

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (r
DELTA RESERVOIR #2	L-1	09/17/92	6.0	21.3	9.1	8.70	550	
			7.0	21.2	8.8	8.70	550	
			8.0	21.0	8.4	8.60	550	
			9.0	18.6	4.8	7.90	550	
			10.0	14.1	4.5	7.60	465	
			11.0	12.1	2.8	7.50	450	
			12.0	11.1	1.5	7.40	440	
			13.0	10.7	0.9	7.40	435	
			14.0	10.2	0.9	7.40	430	
			15.0	10.0	0.6	7.30	430	
		05/17/93	0.5	17.0	10.2	8.35	475	3.90
			1.0	17.0	10.4	8.32	475	
			2.0	17.0	10.4	8.33	475	
			3.0	16.9	10.3	8.34	475	
			4.0	16.9	10.2	8.35	475	
			5.0	16.9	10.2	8.35	475	
			6.0	13.1	13.2	8.41	430	
			7.0	11.4	13.4	8.37	415	
			8.0	10.7	13.2	8.40	410	
			9.0	10.3	12.9	8.44	405	
			10.0	9.9	12.0	8.54	400	
			11.0	9.7	11.4	8.52	400	
			12.0	9.4	10.8	8.48	400	
			13.0	9.2	9.6	8.35	400	
GRAFTON UPGROUND RESERVOIR	L-1	08/13/92	0.5	26.5	8.1	7.70	612	0.90
			1.0	26.0	7.9		612	
			1.5	26.0	7.8		612	
			2.0	26.0	7.4	8.00	612	
			2.5	26.0	7.5	8.00	612	
		09/14/92	0.5	22.1	7.7	8.00	555	0.88
			1.0	22.1	7.7		555	
			1.5	22.1	7.8		555	
			2.0	22.1	7.8		555	
			2.3	22.0	7.9	8.10	570	
		06/07/93	0.5	22.0	9.3	8.10	612	0.85
			1.0	20.5	9.3		612	
			1.5	18.6	9.2		600	
			2.0	18.0	8.5		594	
			2.5	17.8	5.7	8.30	594	
			3.0	17.6	0.1		589	
GRAND LAKE ST. MARYS	L-1	08/19/92	0.5	21.8	6.9	8.40	400	0.25
			1.0	21.8	6.5	8.30	400	
			1.5	21.8	6.2	8.30	405	
			2.0	21.8	5.9	8.20	405	
		09/11/92	0.5	20.5	8.0	8.60	390	0.30
			1.0	20.5	7.8	8.50	390	
			1.5	20.4	7.4	8.40	390	

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (m
GRAND LAKE ST. MARYS	L-1	09/11/92	2.0	20.3	7.0	8.30	390	
			2.5	20.4	6.9	8.30	390	
		05/20/93	0.5	16.7	9.1	8.19	390	0.40
			1.0	15.9	8.5	8.04	385	
			1.25	15.7	8.1	7.82	385	
			1.5	15.7	8.1	7.92	385	
			2.0	15.7	7.6	7.78	390	
	L-2	08/19/92	0.5	21.7	7.6	8.80	395	0.25
			1.0	21.7	7.4	8.70	395	
			1.5	21.6	7.2	8.60	395	
			2.0	21.5	6.4	8.50	390	
			2.5	21.4	5.2	8.30	390	
		09/11/92	0.5	20.8	8.3	8.70	390	0.30
			1.0	20.7	7.3	8.40	390	
			1.5	20.6	6.9	8.40	390	
			2.0	20.6	6.6	8.30	390	
			2.5	20.6	5.9	8.20	390	
		05/20/93	0.5	16.5	8.6	8.31	400	0.35
			1.0	16.3	8.3	8.28	400	
			1.5	16.3	7.9	8.21	400	
			2.0	15.8	7.6	8.12	400	
	L-3	08/19/92	0.5	21.6	6.0	8.30	405	0.03
			1.0	21.6	6.5	8.40	405	
			1.25	21.6	6.4	8.30	405	
			1.5	21.6	6.0	8.20	405	
			2.0	21.6	5.8	8.30	405	
		09/11/92	0.5	20.2	7.9	8.50	390	0.30
			1.0	20.2	7.7	8.50	390	
			1.5	20.2	7.0	8.40	390	
			2.0	20.2	7.1	8.40	390	
		05/20/93	0.5	16.2	9.0	8.16	390	0.03
			1.0	15.8	8.8	8.10	390	
			1.25	15.7	8.4	8.02	385	
			1.5	15.7	8.2	8.00	385	
			2.0	15.7	7.6	7.91	385	
GREENFIELD LAKE	L-1	08/12/92	0.5	24.0	7.6	8.59	230	0.33
			1.0	24.0	6.8	8.15	230	
			1.5	23.8	2.1	7.35	230	
			2.0	22.6	1.7	7.23	210	
			2.5	22.0	1.1	7.14	210	
			3.0	21.0	0.9	6.96	250	
			3.5	21.0	0.8	6.92	250	
			4.0	19.5	0.8	6.70	450	
		09/09/92	0.5	24.3	7.6	8.57	245	0.80
			1.0	24.1	7.0	8.27	245	
			1.5	23.8	4.5	7.65	245	
			2.0	23.4	1.4	7.35	240	
			2.5	22.4	0.1	7.20	240	

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (m)
GREENFIELD LAKE	L-1	09/09/92	3.0	21.5	0.0	7.31	260	
			3.5	20.5	0.1	7.04	320	
		06/09/93	0.5	23.8	7.6	7.98	302	0.85
			1.0	22.2	7.6	7.95	290	
			1.5	22.0	7.6	7.93	290	
			2.0	18.7	7.6	7.80	271	
			2.5	17.9	5.4	7.53	261	
			3.0	16.3	2.8	7.32	262	
			3.5	15.1	0.7	7.23	263	
INDIAN LAKE	L-1	08/02/92	0.1	21.5	10.4	8.59	325	0.23
			0.3	21.5	10.3	8.60	362	
			0.6	21.8	9.2	8.56	370	
			0.9	22.0	8.9	8.56	374	
			1.2	21.8	7.4	8.62	376	
			1.5	22.2	8.1	8.59	378	
			1.8	21.3	9.0	8.48	405	
			2.1	21.1	8.8	8.49	407	
			2.4	20.8	8.6	8.56	410	
		08/24/92	0.25	22.8	7.2	8.50	385	0.25
			0.5	22.8	7.4	9.40	380	
			0.75	22.2	7.5	8.45	385	
			1.0	22.2	7.0	8.45	395	
			1.25	22.8	6.3	8.35	389	
		05/29/93	0.25	19.0	8.8	6.54	390	0.66
			0.5	19.0	9.4	7.78	400	
			0.75	19.0	9.4	7.78	400	
			1.0	19.0	9.4	7.42	400	
			1.25	18.5	9.6	7.38	400	
	L-3	08/02/92	0.1	22.4	9.2	8.65	338	0.23
			0.3	22.0	9.2	8.64	343	
			0.6	22.5	8.2	8.80	346	
			0.9	22.2	9.6	8.81	344	
			1.2	21.8	9.6	8.79	342	
			1.4	21.2	8.4	8.78	344	
		08/24/92	0.25	22.2	9.0	8.65	352	
			0.5	23.0	8.0	8.63	355	
			0.75	22.5	8.4	8.64	355	
			1.0	23.0	7.8	8.64	355	
			1.25	22.5	8.0	8.63	355	
			1.5	22.8	7.8	8.63	352	
		05/29/93	0.25	18.0	8.6	6.45	360	1.50
			0.50	18.0	8.6	6.41	355	
			0.75	17.5	8.6	6.59	360	
			1.0	17.5	8.6	6.49	360	
			1.25	17.5	8.6	6.50	360	
			1.50	17.5	7.8	6.54	350	
LAKE RUPERT	L-1	08/04/92	0.5	24.0	7.6	7.85	165	1.09

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (m
LAKE RUPERT	L-1	08/04/92	1.0	23.9	7.6	7.85	163	
			2.0	23.9	7.5	7.85	163	
			3.0	23.6	7.4	7.74	164	
			4.0	20.8	0.2	7.66	168	
			5.0	15.7	0.0	7.62	165	
			5.6	14.6	0.1	7.57	162	
			6.0	14.2	0.3	7.53	162	
		08/26/92	0.5	25.8	9.2	8.44	165	1.73
			1.0	25.5	9.4	8.38	168	
			2.0	24.5	8.0	8.00	168	
			3.0	22.6	2.9	8.08	160	
			4.0	20.8	0.1	8.10	168	
			5.0	15.7	0.0	8.06	180	
			6.0	14.4	0.1	7.94	185	
		05/24/93	0.5	17.9	8.5	7.22	119	1.15
			1.0	17.8	8.4	7.17	119	
			2.0	17.4	7.8	7.12	119	
			3.0	16.8	6.6	7.06	115	
			4.0	15.3	4.0	7.05	110	
LAKE WHITE	L-1	08/04/92	0.5	26.0	8.7	7.41	170	0.34
			1.0	25.2	8.4	7.08	168	
			2.0	24.5	7.9	7.05	168	
			3.0	23.3	4.9	7.08	160	
			4.0	21.3	2.3	7.19	124	
			5.0	18.6	0.1	7.36	150	
			6.0	16.6	0.1	7.33	180	
			6.75	15.7	0.1	7.32	175	
			7.0	15.6	0.2	7.59	175	
		08/26/92	0.5	28.8	9.3	8.25	180	0.77
			1.0	27.0	9.6	8.17	175	
			2.0	24.9	9.3	7.82	165	
			3.0	23.0	5.4	7.77	159	
			4.0	21.5	0.2	7.88	148	
			5.0	19.6	0.1	7.91	143	
			6.0	17.1	0.0	7.91	160	
			6.75	16.6	0.0	7.71	161	
			7.0	16.4	0.1	8.00	164	
		05/24/93	0.5	18.8	8.7	6.91	160	1.10
			1.0	18.8	8.7	6.92	159	
			2.0	18.8	8.5	6.94	159	
			3.0	18.8	8.6	6.94	159	
			4.0	18.8	8.7	6.75	159	
			5.0	18.6	8.4	6.96	153	
MADISON LAKE	L-1	08/13/92	0.5	25.1	11.2	8.24	510	0.35
			1.0	25.1	10.4	8.19	510	
			1.5	25.0	10.1	8.15	510	
			2.0	25.0	9.8	8.11	510	

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (m)
MADISON LAKE	L-1	08/13/92	2.5	25.0	9.6	8.08	510	
		09/10/92	0.5	23.9	6.6	8.71	500	0.20
			0.75	23.9	6.4	8.69	500	
			1.0	23.9	6.1	8.67	500	
			1.25	23.8	5.8	8.65	500	
			1.5	23.8	5.6	8.64	500	
		06/07/93	0.5	18.8	12.8	8.72	440	0.50
			1.0	17.2	8.0	8.02	455	
			1.5	17.0	6.0	7.81	451	
			2.0	16.8	4.3	7.68	452	
			2.5	16.8	4.2	7.64	455	
METAMORA RESERVOIR #1	L-1	08/18/92	0.5	22.0	9.3	9.10	550	1.22
			1.0	22.0	9.4	9.20	550	
			2.0	22.0	9.4	9.20	550	
			3.0	21.9	9.5	9.10	550	
			4.0	21.7	9.6	9.20	550	
			5.0	20.5	9.3	9.10	500	
		09/17/92	0.5	21.9	9.3	9.10	550	1.10
			1.0	21.9	9.3	9.20	550	
			2.0	21.8	9.3	9.20	550	
			3.0	21.2	10.0	9.30	490	
			4.0	20.3	9.7	9.20	490	
			5.0	19.7	7.2	8.80	495	
			6.0	19.3	5.5	8.60	495	
		05/17/93	0.5	17.7	11.0	8.57	430	2.10
			1.0	17.7	11.0	8.56	430	
			2.0	17.6	11.1	8.57	430	
			3.0	17.5	11.2	8.59	430	
			4.0	17.3	11.3	8.61	425	
			5.0	17.2	11.5	8.64	425	
			6.0	14.5	18.6	8.92	390	
			6.5	13.6	17.8	8.76	385	
MILLER ANTRIM LAKE	L-1	08/12/92	0.5	27.5	8.6	8.46	500	5.50
			1.0	27.0	8.5	8.44	400	
			1.5	26.8	8.4	8.45	420	
			2.0	26.5	8.8	8.46	390	
			2.5	26.5	8.8	8.46	400	
			3.0	26.5	8.5	8.46	370	
			3.5	26.5	8.7	8.44	400	
			4.0	26.2	8.5	8.43	410	
			4.5	26.0	8.5	8.28	410	
			5.0	25.0	8.1	8.17	450	
			5.5	23.8	7.8	8.06	400	
			6.0	22.0	7.5	7.94	480	
			6.5	20.8	7.3	7.88	390	
			7.0	18.3	5.6	7.67	410	
			7.5	17.0	2.5	7.44	410	

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (m
MILLER ANTRIM LAKE	L-1	08/12/92	8.0	16.1	1.8	7.40	390	
			8.5	14.3	0.7	7.36	400	
		09/10/92	0.5	24.4	8.3	8.42	490	3.60
			1.0	24.4	8.2	8.41	490	
			2.0	24.4	8.0	8.41	490	
			3.0	24.4	8.3	8.40	490	
			4.0	24.4	8.2	8.38	490	
			5.0	24.4	8.2	8.33	490	
			6.0	23.0	8.0	8.20	490	
			7.0	20.5	8.0	8.21	490	
			8.0	16.7	4.8	7.55	490	
			8.5	15.1	2.1	7.48	475	
			9.0	13.4	0.5	7.12	470	
		06/11/93	0.5	23.9	8.4	8.16	530	3.96
			1.0	23.5	8.4	8.12	510	
			2.0	22.1	8.6	8.10	500	
			3.0	20.0	9.1	8.13	490	
			4.0	18.9	9.0	8.03	480	
			5.0	16.2	9.6	7.89	458	
			6.0	13.4	8.8	7.62	431	
			7.0	10.9	5.6	7.14	414	
			8.0	10.0	2.4	6.92	410	
			9.0	9.1	1.1	6.77	411	
			9.5	9.0	0.4	6.73	411	
MUD LAKE	L-1	08/03/92	0.5	24.2	9.8	8.80	520	1.07
			1.0	24.0	9.8		520	
			2.0	24.0	9.8		520	
			3.0	22.8	4.5		510	
			4.0	21.5	2.5		520	
			5.0	17.8	0.4		520	
			6.0	16.0	0.1		510	
			7.0	11.3	0.1		500	
			8.0	9.0	0.1		460	
			9.0	7.9	0.1		450	
			10.0	7.5	0.1		450	
			11.0	6.5	0.1		450	
			12.0	6.3	0.1	7.90	440	
			12.5	6.2	0.1		450	
		08/25/92	0.5	26.6	10.4	8.50	525	
			1.5	26.0	10.0		525	
			2.5	22.5	6.4		515	
			3.5	21.2	1.0		515	
			4.5	18.2	0.1		515	
			5.5	14.4	0.1		515	
			6.5	10.2	0.1		495	
			7.5	8.8	0.1		455	
			8.5	8.0	0.1		455	
			9.5	7.9	0.1		444	

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (m)
MUD LAKE	L-1	08/25/92	10.5	7.2	0.1		434	
			11.5	7.0	0.1		434	
			12.5	6.8	0.1	7.80	434	
			13.5	6.8	0.1		434	
		06/08/93	0.5	21.5	9.5	8.10	660	1.18
			1.0	21.5	9.5		660	
			2.0	19.0	8.9		624	
			3.0	18.0	6.9		612	
			4.0	17.0	3.7		600	
			5.0	15.0	0.3		600	
			6.0	12.0	0.3		540	
			7.0	8.0	0.3		540	
			8.0	6.5	0.3		492	
			9.0	6.0	0.3		480	
			10.0	5.5	0.3		480	
			11.0	5.0	0.3	7.50	480	
			12.0	5.0	0.3		480	
NETTLE LAKE	L-2	08/17/92	0.5	22.0	13.0	8.80	420	0.68
			1.0	21.8	12.4	8.80	420	
			2.0	21.5	9.4	8.50	420	
			3.0	21.2	7.7	8.30	425	
			4.0	20.8	5.0	8.00	440	
			5.0	19.4	0.7	7.80	440	
			6.0	17.1	0.3	7.60	450	
			7.0	14.2	0.3	7.40	460	
			8.0	11.7	0.3	7.30	460	
			9.0	10.5	0.3	7.10	470	
		09/16/92	0.5	22.2	11.9	8.70	420	0.69
			1.0	22.2	12.2	8.70	420	
			2.0	21.8	11.1	8.60	420	
			3.0	21.1	8.0	8.10	440	
			4.0	20.4	4.0	7.70	425	
			5.0	19.8	0.8	7.50	430	
			6.0	18.4	0.2	7.30	450	
			7.0	15.6	0.2	7.10	485	
			8.0	13.1	0.2	7.20	550	
			9.0	11.7	0.2	7.20	550	
		05/19/93	0.5	16.7	9.6	8.46	370	0.90
			1.0	16.7	9.5	8.42	370	
			2.0	16.6	9.1	8.41	370	
			3.0	16.0	5.5	8.15	375	
			4.0	15.5	1.6	7.82	375	
			5.0	13.8	0.2	7.71	350	
			6.0	11.6	0.1	7.60	330	
			7.0	9.9	0.1	7.45	320	
			8.0	8.2	0.1	7.28	325	
			9.0	7.6	0.1	7.21	340	

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (
PAINT CREEK LAKE	L-1	08/04/92	0.2	24.0	17.5	8.98	370	0.61
			0.3	24.0	18.0	9.07	368	
			0.6	23.5	16.0	8.94	382	
			0.9	24.0	15.0	8.90	380	
			1.2	23.8	13.2	8.84	382	
			1.5	23.5	12.6	8.80	382	
			1.8	23.5	11.2	8.62	390	
			2.1	23.0	9.6	8.53	392	
			2.4	23.0	9.7	8.22	402	
			2.7	22.5	6.2	8.00	410	
			3.0	21.5	4.2	7.96	425	
			3.4	21.8	3.0	7.89	430	
			3.7	21.2	3.1	7.86	438	
			4.0	22.0	3.5	7.84	442	
			4.3	21.5	3.8	7.75	445	
			4.6	21.0	2.0	7.72	440	
			4.9	21.0	2.5	7.72	450	
			5.2	21.0	3.0	7.73	460	
			5.5	20.5	2.8	7.75	468	
			5.8	20.5	3.6	7.83	475	
			6.1	20.5	3.3	7.83	480	
			6.4	20.2	3.6	7.84	485	
			6.7	20.2	3.9	7.85	485	
			7.0	20.2	4.2	7.90	482	
		08/25/92	0.5	23.5	13.7	8.67	390	0.61
			1.0	23.0	12.0	8.55	410	
			1.5	23.5	9.3	8.35	420	
			2.0	22.5	7.1	8.14	430	
			2.5	22.8	5.5	8.02	438	
			3.0	22.0	3.2	7.84	448	
			3.5	22.0	1.4	7.72	465	
			4.0	22.0	0.0	7.66	480	
			4.5	21.2	0.0	7.65	495	
			5.0	21.5	0.0	7.60	495	
			5.5	21.0	0.0	7.60	510	
			6.0	20.8	0.0	7.61	500	
			6.5	19.9	0.0	7.62	500	
			7.0	20.0	0.0	7.62	500	
			7.5	20.0	0.0	7.87	500	
		05/25/93	0.5	18.5	9.5	7.68	415	0.61
			1.0	18.5	9.2	7.78	420	
			1.5	18.5	10.2	7.85	420	
			2.0	18.0	9.0	7.89	425	
			2.5	18.0	8.8	7.89	425	
			3.0	18.0	9.2	7.91	425	
			3.5	18.0	9.2	7.94	425	
			4.0	18.0	8.9	7.93	428	
			4.5	18.0	9.0	7.95	428	
			5.0	17.8	9.2	7.96	437	

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (-
PAINT CREEK LAKE	L-1	05/25/93	5.5	17.8	8.6	7.95	432	
			6.0	17.2	7.6	7.92	450	
			6.5	17.0	6.5	7.85	460	
			7.0	16.5	5.5	7.79	465	
			7.5	16.2	5.5	7.76	470	
			8.0	16.2	5.5	7.75	470	
	L-2	08/04/92	0.2	23.5	13.6	8.86	397	0.61
			0.3	23.5	13.4	8.88	399	
			0.6	23.0	13.8	8.89	400	
			0.9	23.5	13.9	8.88	400	
			1.2	23.5	13.4	8.88	399	
			1.5	23.0	14.6	8.88	398	
			1.8	23.5	13.0	8.81	401	
			2.1	23.0	12.4	8.80	409	
			2.4	23.0	10.0	8.63	410	
			2.7	22.0	6.6	8.22	425	
			3.0	21.5	6.1	8.16	442	
			3.4	21.5	7.3	8.22	470	
			3.7	21.9	5.1	8.17	467	
			4.0	21.5	6.2	8.18	470	
			4.3	21.5	6.9	8.13	480	
			4.6	21.0	6.8	8.09	481	
			4.9	21.0	7.0	7.88	499	
			5.2	20.0	6.9	8.09	500	
			5.5	20.0	4.8	8.05	500	
			5.8	20.0	5.5	8.10	500	
			6.1	20.1	5.1	7.96	510	
		08/25/92	0.5	23.8	16.5	8.81	390	0.46
			1.0	24.5	14.0	8.73	390	
			1.5	24.0	13.6	8.63	390	
			2.0	23.2	11.8	8.44	402	
			2.5	23.0	8.0	8.13	425	
			3.0	22.2	6.8	7.97	435	
			3.5	22.2	4.0	7.84	445	
			4.0	21.5	2.5	7.71	462	
			4.5	21.5	0.9	7.64	480	
			5.0	20.8	2.0	7.62	500	
			5.5	20.8	1.0	7.62	500	
		05/25/93	0.5	19.0	13.0	7.99	180	1.50
			1.0	18.8	12.6	8.08	215	
			1.5	18.5	11.9	8.13	220	
			2.0	18.5	11.3	8.16	235	
			2.5	18.5	11.0	8.14	260	
			3.0	18.2	10.5	8.10	260	
			3.5	18.2	10.5	8.14	262	
			4.0	18.2	10.5	8.17	270	
			4.5	18.0	9.8	8.24	390	
			5.0	16.8	8.0	8.06	430	
			5.5	16.5	7.4	7.99	435	

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (
REX LAKE	L-1	08/03/92	0.5	25.0	9.3	8.70	530	0.98
			1.0	24.9	9.2		530	
			2.0	24.7	8.8		530	
			3.0	24.0	4.1		530	
			4.0	23.0	0.6		530	
			5.0	17.4	0.1	8.10	520	
			6.0	13.1	0.1		510	
		08/25/92	0.5	26.6	12.3	8.50	515	1.03
			1.5	26.1	10.8		525	
			2.5	23.2	0.7		515	
			3.5	22.9	0.1		515	
			4.5	20.2	0.1	7.80	515	
			5.0	20.0	0.1		515	
		06/08/93	0.5	20.5	9.2	8.20	660	1.12
			1.0	20.1	8.5		624	
			2.0	18.1	4.6		612	
			3.0	17.5	3.5		612	
			4.0	17.0	0.2		612	
			5.0	16.9	0.3	7.80	612	
ROOSEVELT LAKE	L-1	08/05/92	0.5	20.9	7.9	7.63	78	0.75
			1.0	19.6	7.7	7.67	70	
			2.0	18.8	7.0	7.64	65	
			2.5	17.5	7.0	7.68	70	
		08/27/92	0.5	26.7	7.7	7.05	100	2.64
			1.0	25.8	8.1	6.89	98	
			2.0	21.4	8.3	6.90	85	
			2.75	20.4	3.9	7.13	80	
			3.0	19.0	0.9	6.96	80	
		05/25/93	0.5	19.0	10.3	6.83	79	2.60
			1.0	18.0	10.7	6.84	79	
			2.0	15.8	12.6	6.84	68	
			3.0	14.6	12.7	6.59	61	
RUSH CREEK LAKE	L-1	08/14/92	0.5	24.8	11.8	9.25	280	0.75
			1.0	24.5	11.3	9.26	280	
			2.0	24.2	10.8	9.13	280	
			3.0	21.5	0.7	7.24	280	
			4.0	20.1	4.5	7.08	280	
			5.0	17.5	0.5	7.11	300	
			6.0	15.0	0.4	7.16	310	
			7.0	13.4	0.4	7.15	310	
		09/09/92	0.5	23.9	10.2	9.20	300	0.75
			1.0	23.6	10.4	9.26	300	
			2.0	23.8	10.4	9.27	300	
			3.0	22.8	4.0	8.05	310	
			4.0	20.9	0.3	7.52	320	
			5.0	17.7	0.3	7.31	330	

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (r
RUSH CREEK LAKE	L-1	09/09/92	6.0	15.3	0.3	7.23	360	
			6.5	14.4	0.3	7.28	360	
		06/08/93	0.5	21.4	7.6	8.20	323	2.13
			1.0	21.2	7.6	8.18	321	
			2.0	19.0	7.6	8.09	309	
			3.0	18.0	6.6	7.87	300	
			4.0	16.4	5.3	7.41	278	
			5.0	12.8	1.3	7.19	220	
			6.0	10.9	0.5	6.98	210	
			7.0	9.8	0.4	6.98	212	
			8.0	8.7	0.4	7.05	245	
			9.0	8.0	0.4	7.10	255	
			10.0	7.8	0.3	7.03	261	
TURKEY CREEK LAKE	L-1	08/05/92	0.5	24.1	9.0	7.18	93	1.90
			1.0	23.7	9.1	7.15	90	
			2.0	22.5	9.6	7.14	90	
			3.0	20.9	4.1	7.18	72	
			4.0	16.8	0.6	7.39	70	
			5.0	12.7	0.0	7.44	70	
			6.0	10.6	0.0	7.46	70	
			6.75	9.8	0.0	7.72	78	
		08/27/92	0.5	27.4	8.9	7.47	100	3.44
			1.0	26.5	9.7	7.20	100	
			2.0	24.6	10.4	7.12	95	
			3.0	22.3	11.6	7.07	90	
			4.0	17.3	0.4	7.19	70	
			5.0	13.5	0.2	7.19	75	
			6.0	10.7	0.3	7.14	75	
			7.0	9.7	0.3	6.84	85	
			8.0	8.9	0.1	8.04	85	
		05/25/93	0.5	19.5	9.3	7.76	75	4.11
			1.0	19.3	9.2	7.74	78	
			2.0	19.2	9.4	7.71	75	
			3.0	19.0	9.6	7.69	71	
			4.0	14.4	12.4	7.63	65	
			5.0	10.6	10.9	7.59	61	
			6.0	7.8	9.0	7.54	61	
			7.0	8.1	4.7	7.56	61	
			8.0	7.5	4.1	7.75	55	
TURKEYFOOT LAKE	L-1	08/03/92	0.5	24.0	9.0	8.70	530	0.98
			1.0	24.0	9.0		520	
			2.0	24.0	8.9		520	
			3.0	23.8	8.6		520	
			4.0	23.8	8.3		520	
			5.0	23.0	3.4		520	
			6.0	21.0	0.6		510	
			7.0	17.6	0.1		520	

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secch Depth
TURKEYFOOT LAKE	L-1	08/03/92	8.0	14.8	0.1		500	
			9.0	10.8	0.1		490	
			10.0	8.4	0.1		450	
			11.0	8.0	0.1		450	
			12.0	7.1	0.1		450	
			13.0	7.0	0.1		430	
			14.0	6.3	0.1	8.00	430	
		08/25/92	0.5	25.5	9.9	8.30	535	1.01
			1.5	25.4	9.7		525	
			2.5	24.5	6.3		525	
			3.5	21.7	0.2		515	
			4.5	15.5	0.1		505	
			5.5	12.1	0.1		485	
			6.5	9.0	0.1		455	
			7.5	8.2	0.1		424	
			8.5	7.5	0.1		424	
			9.5	7.0	0.1		424	
			10.5	6.9	0.1		414	
			11.5	6.8	0.1		414	
			12.5	6.9	0.1		414	
			13.5	6.8	0.1		414	
			14.5	6.8	0.1	7.60	414	
		06/08/93	0.5	20.5	9.5	8.30	550	1.02
			1.0	20.2	9.4		550	
			2.0	20.1	9.4		540	
			3.0	18.5	8.8		520	
			4.0	17.8	6.5		510	
			5.0	17.0	3.2		510	
			6.0	14.9	0.3		490	
			7.0	10.5	0.2		480	
			8.0	8.9	0.2		410	
			10.0	6.9	0.2		400	
			12.0	6.1	0.2	7.50	400	
	L-2	08/03/92	0.5	24.7	8.7			0.92
			1.0	24.5	8.6			
			2.0	24.5	8.3			
			3.0	24.2	6.5			
			4.0	23.4	1.1			
			5.0	21.6	0.1			
			6.0	21.0	0.1			
WAUSEON RESERVOIR #2	L-1	08/17/92	0.5	21.8	7.3	8.70	500	0.91
			1.0	21.8	7.3	8.70	500	
			2.0	21.7	7.3	8.60	500	
			3.0	21.7	7.1	8.60	490	
			4.0	21.7	7.1	8.60	495	
			5.0	21.6	7.1	8.60	495	
		09/16/92	0.5	21.5	10.6	9.10	490	0.91
			1.0	21.5	10.4	9.10	490	

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (r
WAUSEON RESERVOIR #2	L-1	09/16/92	2.0	21.5	10.3	9.10	490	
			3.0	21.5	10.2	9.10	490	
			4.0	20.5	5.8	8.50	490	
			5.0	20.4	5.4	8.40	480	
		05/19/93	0.5	16.4	9.0	8.53	440	1.00
			1.0	16.4	9.1	8.55	435	
			2.0	16.3	9.1	8.54	435	
			3.0	16.2	9.0	8.53	435	
			4.0	16.2	9.0	8.54	435	
			5.0	16.2	9.0	8.56	435	
WAYNOKA RESERVOIR	L-1	08/05/92	0.1	24.0	10.5	7.36	230	1.00
			0.3	24.5	9.0	7.44	231	
			0.6	24.0	10.0	7.54	230	
			0.9	24.0	9.0	7.54	230	
			1.2	24.0	8.9	7.65	230	
			1.5	24.0	8.3	7.64	230	
			1.8	23.0	5.0	7.57	225	
			2.1	22.8	0.0	7.49	220	
			2.4	21.0	0.0	7.31	220	
			2.7	20.0	0.0	6.88	220	
		08/26/92	0.5	25.5	8.2	8.32	210	1.80
			1.0	25.2	8.0	8.33	210	
			1.5	23.9	8.1	8.12	220	
			2.0	23.0	3.9	7.87	225	
			2.5	21.5	2.9	7.70	235	
			3.0	19.9	0.0	7.05	250	
			3.5	17.0	0.0	6.93	270	
			4.0	15.0	0.0	6.81	290	
		05/26/93	0.25	22.1	17.2	8.85	170	0.53
			0.5	21.0	17.6	9.04	165	
			0.75	20.0	16.5	9.12	162	
			1.0	19.0	11.2	8.70	160	
			1.25	19.0	9.4	8.26	160	
			1.5	18.0	5.0	7.48	160	
			1.75	16.5	1.2	7.29	155	
			2.0	15.0	0.4	7.06	150	
			2.25	14.0	0.2	6.82	140	
			2.5	13.0	0.2	6.26	140	
			2.75	12.0	0.2	5.57	140	
			3.0	11.2	0.2	4.95	140	
			3.25	10.0	0.2	4.80	148	
			3.5	9.8	0.2	4.87	150	
			3.75	9.5	0.2	5.36	150	
WAYNOKA UPGROUND RESERVOIR	L-1	08/05/92	0.1	24.0	7.2	8.84	208	0.76
			0.3	24.0	7.0	8.81	205	
			0.6	23.5	7.4	8.95	209	
			0.9	23.8	6.8	8.96	209	

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (m)
WAYNOKA UPGROUND RESERVOIR	L-1	08/05/92	1.2	23.5	7.2	8.97	209	
			1.5	23.8	6.5	8.99	209	
			1.8	23.8	7.0	9.00	209	
			2.1	23.8	7.0	9.00	209	
			2.4	23.8	7.0	9.00	210	
			2.7	23.8	7.0	9.00	210	
			3.0	23.5	3.5	8.45	215	
			3.3	23.0	0.2	7.95	230	
		08/26/92	0.5	25.9	10.2	8.84	200	0.91
			1.0	25.2	9.3	8.88	205	
			1.5	24.0	11.0	9.03	205	
			2.0	23.0	9.0	8.88	220	
			2.5	22.5	6.9	8.90	220	
			3.0	22.0	2.0	8.22	225	
		05/26/93	0.25	19.8	8.0	7.10	200	2.50
			0.5	19.8	8.0	7.40	200	
			0.75	19.5	8.0	7.48	200	
			1.0	19.5	8.0	7.53	200	
			1.25	19.5	8.0	7.56	200	
			1.5	19.7	8.0	7.61	200	
			1.75	19.5	8.1	7.68	200	
			2.0	19.5	8.1	7.70	200	
			2.25	19.5	8.1	7.72	200	
			2.5	19.5	8.1	7.75	200	
			2.75	19.5	8.1	7.67	200	
			3.0	19.5	8.1	7.74	200	
			3.25	19.5	8.1	7.78	200	
WILLS CREEK RESERVOIR	L-1	08/06/92	0.5	23.1	7.0	7.88	355	0.35
			1.0	22.8	7.0	7.90	351	
			2.0	22.1	5.7	7.97	349	
			3.0	21.9	5.4	8.01	348	
			4.0	21.8	5.4	8.06	348	
		08/31/92	0.5	21.0	6.3	7.63	330	0.22
			1.0	20.4	6.2	7.62	322	
			2.0	20.4	6.1	7.64	322	
			3.0	20.2	6.1	7.73	322	
			4.0	20.2	5.8	7.98	320	
		05/26/93	0.5	17.3	13.7	8.62	379	0.48
			1.0	16.3	10.9	8.01	371	
			2.0	16.3	9.7	8.03	370	
			3.0	16.0	8.4	7.30	360	
			3.5	16.0	8.6	7.11	361	
			4.0	15.7	4.8	6.87	359	
	L-2	08/06/92	0.5	22.4	6.0	7.66	343	0.25
			1.0	22.3	5.9	7.68	345	
			2.0	22.0	5.8	7.70	342	
			3.0	22.0	5.8	7.71	340	
		08/31/92	0.5	20.1	6.2	7.64	360	0.19

Lake	Location	Date	Depth (m)	Temp (C)	DO (mg/l)	pH (SU)	Conductivity (umhos/cm)	Secchi Depth (m)
WILLS CREEK RESERVOIR	L-2	08/31/92	1.0	20.1	6.2	7.63	360	
			2.0	20.1	6.3	7.66	360	
			3.0	20.1	6.2	7.63	360	
			3.5	20.0	6.2	7.58	360	
			4.0	20.1	6.2	7.78	350	
		05/26/93	0.5	16.5	9.8	7.80	327	0.32
			1.0	15.8	8.5	7.42	319	
			2.0	15.7	7.8	7.33	313	
			2.5	15.7	7.8	7.22	309	

APPENDIX TABLE I-2

Results of water column chemical/physical sampling
(nutrients, metals, and miscellaneous parameters)
in Ohio public lakes, 1992

/TYPA/AMBNT/LAKE/BIO

OH2705-090L-1
41 21 43.0 081 51 02.0 2
COE LAKE L-1
39035 OHIO CUYAHOGA
LAKE ERIE 060500
ROCKY RIVER
210HIO 940219 04110002
0000 FEET DEPTH

INITIAL DATE				92/08/04	92/08/04	92/08/24	92/08/24	92/08/25	93/06/07	93/06/07	93/06/07
INITIAL TIME				1300	1315	1050	1110	1300	0930	0945	0955
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	9	1.5	9		1.5	9	
00010	WATER	TEMP	CENT	23.0	18.0	24.3	19.4		20.1	8.9	
00011	WATER	TEMP	FAHN	73.4S	64.4S	75.7S	66.9S		68.2S	48.0S	
00094	CNDUCTVY	FIELD	MICROMHO	378	350	515	485		936	828	
00299	DO	PROBE	MG/L	7.0	.4	14.0	.1		8.6	.0	
00301	DO	SATUR	PERCENT	80.5S	4.2S	164.8S	1.1S		93.5S	.0S	
00310	BOD	5 DAY	MG/L	1.9	1.5	3.2	4.5		2.6	2.2	
00400	PH		SU	6.70	6.80	8.20	6.90		7.90	7.30	
00410	T ALK	CACO3	MG/L	76	86		96		165	165	
00530	RESIDUE	TOT NFLT	MG/L	22	38	75	15		6	7	
00610	NH3+NH4-	N TOTAL	MG/L	.200	.430	.050K	.590		.050K	.050K	
00612	UN-IONZD	NH3-N	MG/L	.0005S	.0009S	.004S	.002S		.002S	.0002S	
00615	NO2-N	TOTAL	MG/L	.060	.070	.060	.050		.020K	.020K	
00619	UN-IONZD	NH3-NH3	MG/L	.0006S	.001S	.005S	.002S		.002S	.0002S	
00625	TOT KJEL	N	MG/L	.800	.890	.900	1.000		.300	.300	
00630	NO2&NO3	N-TOTAL	MG/L	9.95	.94	1.02	1.12		.10K	.10K	
00665	PHOS-TOT		MG/L P	.080	.130	.063	.060		.020	.029	
00900	TOT HARD	CACO3	MG/L	116	125	154	154		252	252	
00916	CALCIUM	CA-TOT	MG/L	35.0	37.0	45.0	45.0K		68.0	68.0	
00927	MGNSIUM	MG,TOT	MG/L	7.0	8.0	10.0	10.0		20.0	20.0	
00940	CHLORIDE	TOTAL	MG/L	33	34	60	60				
00945	SULFATE	SO4-TOT	MG/L	56	59	57	80		99	100	
01002	ARSENIC	AS,TOT	UG/L	3	2	2	2K		2K	2K	
01003	ARSENIC	SEDMG/KG	DRY WGT					16.10			18.40
01007	BARIUM	BA,TOT	UG/L			58	26				
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K		.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD					.63			.65
01029	CHROMIUM	SEDMG/KG	DRY WGT					35.30			34.60
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K		30K	30K	
01042	COPPER	CU,TOT	UG/L	5	6	16	12		4	4	
01043	COPPER	SEDMG/KG	DRY WGT					48.30			42.50
01045	IRON	FE,TOT	UG/L	2930	4880	3610	547		155	200	
01051	LEAD	PB,TOT	UG/L	3	4	4	2K		2K	2K	
01052	LEAD	SEDMG/KG	DRY WGT					59.90			61.30
01053	MN MUD	DRY WGT	MG/KG-MN								482.00

(SAMPLE CONTINUED ON NEXT PAGE)

OH4705-390L-1
41 21 43.0 081 51 02.0 2
COE LAKE L-1
39035 OHIO CUYAHOGA
LAKE ERIE 060500
/TYPA/AMBNT/LAKE/BIO ROCKY RIVER
210HIO 940219 04110002
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

INITIAL DATE				92/08/04	92/08/04	92/08/24	92/08/24	92/08/25	93/06/07	93/06/07	93/06/07
INITIAL TIME				1300	1315	1050	1110	1300	0930	0945	0955
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	9	1.5	9		1.5	9	
01055	MANGNESE	MN	UG/L	243.0	355.0	449.0	189.0		39.0	42.0	
01068	NICKEL	SEDMG/KG	DRY WGT					49.30			47.20
01082	STRONTUM	SR,TOT	UG/L	120	127	173	164		243	262	
01083	SR MUD	DRY WGT	MG/KG-SR								19.00
01092	ZINC	ZN,TOT	UG/L	10K	14	26	12		10K	10K	
01093	ZINC	SEDMG/KG	DRY WGT					259.00			207.00
01148	SELENIUM	SEDMG/KG	DRY WGT								.12
01170	FE MUD	DRY WGT,	MG/KG-FE					31400.00			
46570	CAL HARD	CA MG	MG/L	116$	125$	154$	154$		252$	252$	
70300	RESIDUE	DISS-180 C	MG/L	272	266	326	320		264	349	
71921	MERCURY	SEDMG/KG	DRY WGT								.10
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225	940225	940225

/TYPA/AMBNT/LAKE/BIO

OH7302-145L-1
41 35 32.0 084 00 52.0 2
DELTA RESERVOIR #2 L-1
39051 OHIO FULTON
LAKE ERIE 050100
MAUMEE RIVER
210HIO 940219 04100009
0000 FEET DEPTH

INITIAL DATE				92/08/18	92/08/18	92/09/17	92/09/17	93/05/17	93/05/17	93/05/17
INITIAL TIME				1110	1155	0945	1015	1300	1340	1400
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				29	1.5	1.5	45	1.5	40	
00010	WATER	TEMP	CENT	13.8	22.2	21.9	10.0	17.0	9.2	
00011	WATER	TEMP	FAHN	56.2S	72.0S	71.4S	50.0S	62.6S	48.6S	
00094	CNDUCTVY	FIELD	MICROMHO	440	550	550	430	475	400	
00299	DO	PROBE	MG/L	6.5	8.3	9.0	.6	10.2	9.6	
00301	DO	SATUR	PERCENT	62.5S	94.3S	102.3S	5.3S	105.2S	82.8S	
00310	BOD	5 DAY	MG/L	1.0K	1.0K	1.0K	1.4	1.0K	1.0	
00400	PH		SU	8.20	8.90	8.60	7.30	8.35	8.35	
00403	PH	LAB	SU					8.5	8.6	
00410	T ALK	CACO3	MG/L	140	130	125	154	135	95	
00530	RESIDUE	TOT NFLT	MG/L	5K	5K	5K	5K	5K	5K	
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.050K	.050K	.250	.050K	.050K	
00612	UN-IONZD	NH3-N	MG/L	.002S	.013S	.002S	.0009S	.003S	.002S	
00615	NO2-N	TOTAL	MG/L	.040	.040	.030	.050	.020K	.020K	
00619	UN-IONZD	NH3-NH3	MG/L	.002S	.016S	.009S	.001S	.004S	.002S	
00625	TOT KJEL	N	MG/L	.480	.600	.400		.400	.400	
00630	NO2&NO3	N-TOTAL	MG/L	2.82		335.00	3.47	2.87	2.72	
00665	PHOS-TOT		MG/L P	.008	.005K	.050K		.006	.010	
00900	TOT HARD	CACO3	MG/L	254	249	266	246	256	256	
00916	CALCIUM	CA-TOT	MG/L	57.0	65.0	72.0	64.0	68.0	68.0	
00927	MGNSIUM	MG,TOT	MG/L	21.0	21.0	21.0	21.0	21.0	21.0	
00945	SULFATE	SO4-TOT	MG/L	93	90	82	83	79	80	
01002	ARSENIC	AS,TOT	UG/L	2K	2K	2K	2K	2K	2K	
01003	ARSENIC	SEDMG/KG	DRY WGT							2.32
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01026	CD MUD	DRY WGT	MG/KG-CD							.06
01029	CHROMIUM	SEDMG/KG	DRY WGT							7.18
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	12	8	10	10K	18	18	
01043	COPPER	SEDMG/KG	DRY WGT							6.89
01045	IRON	FE,TOT	UG/L	52	50K	50K	50K	10K	50K	
01051	LEAD	PB,TOT	UG/L	2K	2K	2K	2K	2	2K	
01052	LEAD	SEDMG/KG	DRY WGT							2.60
01053	MN MUD	DRY WGT	MG/KG-MN							138.00
01055	MANGNESE	MN	UG/L	10.0K	10.0K	714.0	10.0K	10.0K	10.0K	

(SAMPLE CONTINUED ON NEXT PAGE)

OH7302-145L-1
41 35 32.0 084 00 52.0 2
DELTA RESERVOIR #2 L-1
39051 OHIO FULTON
LAKE ERIE 060100
/TYPA/AMBNT/LAKE/BIO MAUMEE RIVER
21OHIO 940219 04100009
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

	INITIAL DATE			92/08/18	92/08/18	92/09/17	92/09/17	93/05/17	93/05/17	93/05/17
	INITIAL TIME			1110	1155	0945	1015	1300	1340	1400
	MEDIUM			WATER	WATER	WATER	WATER	WATER	WATER	WATER
	DEPTH-FT(SMK)			29	1.5	1.5	45	1.5	40	
01068	NICKEL	SEDMG/KG	DRY WGT							9.27
01082	STRONTUM	SR,TOT	UG/L	398	391	437	387	375	385	
01083	SR MUD	DRY WGT	MG/KG-SR							20.90
01092	ZINC	ZN,TOT	UG/L	10K	10K	10K	10K	10K	10K	
01093	ZINC	SEDMG/KG	DRY WGT							24.00
01148	SELENIUM	SEDMG/KG	DRY WGT							.06K
46570	CAL HARD	CA MG	MG/L	254S	249S	266S	246S	256S	256S	
70300	RESIDUE	DISS-180 C	MG/L	382	368	356	372	344	360	
71921	MERCURY	SEDMG/KG	DRY WGT							.01K
74041	WQF	SAMPLE	UPDATED	940809	940809	940809	940809	940225	940824	940225

/TYPA/AMBNT/LAKE/BIO

OH8608-221L-1
41 16 01.0 082 02 48.0 2
GRAFTON WATER SUPPLY LAKE L-1
39093 OHIO LORAIN
LAKE ERIE 060500
BLACK RIVER
210HIO 940219 04110001
0000 FEET DEPTH

	INITIAL DATE			92/09/13	92/09/13	92/09/14	92/09/14	93/06/07	93/06/07	93/06/07
	INITIAL TIME			1135	1155	1045	1100	1300	1315	1330
	MEDIUM			WATER	WATER	WATER	WATER	WATER	WATER	WATER
	DEPTH-FT(SMK)			1.5	8	1.5	7.5	1.5	7.5	
00010	WATER	TEMP	CENT	26.5	26.0	22.1	22.0	22.0	17.8	
00011	WATER	TEMP	FAHN	79.7$	78.8$	71.8$	71.6$	71.6$	64.0$	
00094	CNDUCTVY	FIELD	MICROMHO	612	612	555	570	612	554	
00299	DO	PROBE	MG/L	8.1	7.5	7.8	7.9	9.3	5.7	
00301	DO	SATUR	PERCENT	98.8$	90.9$	88.6$	89.8$	105.7$	60.0$	
00310	BOD	5 DAY	MG/L	3.4	2.7	2.3	2.0	3.0	3.9	
00400	PH		SU	7.70	8.00	8.00	8.10	8.10	8.30	
00410	T ALK	CACO3	MG/L	126	123	150	159	110	148	
00530	RESIDUE	TOT NFLT	MG/L	8	8	5K	5K	7	20	
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.050K	.100	.100	.420	2.740	
00612	UN-IONZD	NH3-N	MG/L	.002$	.003$	.004$	.005$	.023$	.173$	
00615	NO2-N	TOTAL	MG/L	.020K	.020K	.020K	.020K	.070	.030	
00619	UN-IONZD	NH3-NH3	MG/L	.002$	.003$	.005$	.007$	.028$	.210$	
00625	TOT KJEL	N	MG/L	.800	.800	.700	.600	1.100	3.200	
00630	NO2&NO3	N-TOTAL	MG/L	.10K	.10K	.10K	.10K	1.42	.28	
00665	PHOS-TOT		MG/L P	.037	.030	.070	.560	.050	.080	
00900	TOT HARD	CACO3	MG/L	226	221	242	240	229	223	
00916	CALCIUM	CA-TOT	MG/L	56.0	54.0	64.0	63.0	62.0	63.0	
00927	MGNSIUM	MG,TOT	MG/L	21.0	21.0	20.0	20.0	18.0	16.0	
00945	SULFATE	SO4-TOT	MG/L	109	112	100	104	123	100	
01002	ARSENIC	AS,TOT	UG/L	5	3	3	3	2K	11	
01003	ARSENIC	SEDMG/KG	DRY WGT							14.50
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							.22
01029	CHROMIUM	SEDMG/KG	DRY WGT							28.80
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	6	5	3	3	3	2K	
01043	COPPER	SEDMG/KG	DRY WGT							116.00
01045	IRON	FE,TOT	UG/L	249	239	173	164	764	5240	
01051	LEAD	PB,TOT	UG/L	2K	2K	2K	2K	2	3	
01052	LEAD	SEDMG/KG	DRY WGT							29.50
01053	MN MUD	DRY WGT	MG/KG-MN							334.00
01055	MANGNESE	MN	UG/L	87.0	67.0	55.0	46.0	366.0	2120.0	
01068	NICKEL	SEDMG/KG	DRY WGT							45.60

(SAMPLE CONTINUED ON NEXT PAGE)

OH3608-221L-1
41 16 01.0 082 02 45.0 2
GRAFTON WATER SUPPLY LAKE L-1
39093 OHIO LORAIN
LAKE ERIE 060500
/TYP4/AMBNT/LAKE/BIO BLACK RIVER
210HIO 940219 04110001
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

INITIAL DATE				92/08/13	92/08/13	92/09/14	92/09/14	93/06/07	93/06/07	93/06/07
INITIAL TIME				1135	1155	1045	1100	1300	1315	1330
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	8	1.5	7.5	1.5	7.5	
01082	STRONTUM	SR,TOT	UG/L			299	279	210	214	
01083	SR MUD	DRY WGT	MG/KG-SR							22.10
01092	ZINC	ZN,TOT	UG/L	10K	10K	10K	10K	23	16	
01093	ZINC	SEDMG/KG	DRY WGT							93.00
01148	SELENIUM	SEDMG/KG	DRY WGT							.49K
46570	CAL HARD	CA MG	MG/L	226$	221$	242$	240$	229$	223$	
70300	RESIDUE	DISS-180 C	MG/L	402	402	384	374	512	484	
71921	MERCURY	SEDMG/KG	DRY WGT							.02K
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225	940225

/TYPA/AMBNT/LAKE/RIO

OH6314-02RL-1
40 31 26.0 084 29 16.0 2
GRAND LAKE ST. MARYS L-1
39011 OHIO AUGLAIZE
OHIO RIVER 051700
WABASH RIVER
210HIO 940219 04120101
0000 FEET DEPTH

INITIAL DATE				92/09/19	92/08/19	92/09/11	92/09/11	93/05/20	93/05/20	93/05/20
INITIAL TIME				1040	1110	1035	1050	1140	1155	1305
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	5	1.5	5	1.5	4	
00010	WATER	TEMP	CENT	21.8	21.8	20.5	20.4	16.7	15.7	
00011	WATER	TEMP	FAHN	71.2S	71.2S	68.9S	68.7S	62.1S	60.3S	
00094	CNDUCTVY	FIELD	MICROMHO	400	405	390	390	390	385	
00299	DO	PROBE	MG/L	6.9	6.2	8.0	7.4	9.1	8.1	
00301	DO	SATUR	PERCENT	78.4S	70.5S	87.0S	80.4S	93.8S	81.0S	
00310	BOD	5 DAY	MG/L	11.0	9.7	4.7	4.3	4.1	4.1	
00400	PH		SU	8.40	8.30	8.60	8.40	8.19	7.82	
00403	PH	LAB	SU					8.3	8.2	
00410	T ALK	CACO3	MG/L	125	124	120	119	126	128	
00530	RESIDUE	TOT NFLT	MG/L	41	43	33	39	34	41	
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.050K	.360	.400	.050K	.050K	
00612	UN-IONZD	NH3-N	MG/L	.005S	.004S	.051S	.037S	.002S	.0009S	
00615	NO2-N	TOTAL	MG/L			.030	.030	.020K	.020K	
00619	UN-IONZD	NH3-NH3	MG/L	.006S	.005S	.062S	.045S	.003S	.001S	
00625	TOT KJEL	N	MG/L	1.400	1.510	1.600	1.700	.400	.400	
00630	NO2&NO3	N-TOTAL	MG/L			.10K	.10K	.10K	.10K	
00665	PHOS-TOT		MG/L P	.120	.120	.110	.120	.037	.035	
00900	TOT HARD	CACO3	MG/L	177	177	176	173	211	216	
00916	CALCIUM	CA-TOT	MG/L	38.0	38.0	39.0	38.0	45.0	47.0	
00927	MGNSIUM	MG,TOT	MG/L	20.0	20.0	19.0	19.0	24.0	24.0	
00945	SULFATE	SO4-TOT	MG/L	48	56	37	37	73	75	
01002	ARSENIC	AS,TOT	UG/L	2	2	3	3	2K	2K	
01003	ARSENIC	SEDMG/KG	DRY WGT							11.40
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							.52
01029	CHROMIUM	SEDMG/KG	DRY WGT							33.30
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	2K	2K	10K	10K	2K	2K	
01043	COPPER	SEDMG/KG	DRY WGT							32.10
01045	IRON	FE,TOT	UG/L	979	1140	971	1020	902	1130	
01051	LEAD	PB,TOT	UG/L	2K	2K	2K	2K	4	2K	
01052	LEAD	SEDMG/KG	DRY WGT							46.70
01053	MN MUD	DRY WGT	MG/KG-MN							539.00
01055	MANGNESE	MN	UG/L	110.0	112.0	83.0	85.0	149.0	155.0	

(SAMPLE CONTINUED ON NEXT PAGE)

OH6314-028L-1
40 31 26.0 084 29 16.0 2
GRAND LAKE ST. MARYS L-1
39011 OHIO AUGLAIZE
OHIO RIVER 051700
WABASH RIVER
210HIO 940219 04120101
0000 FEET DEPTH

/TYPA/AMBNT/LAKE/EIO

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

	INITIAL DATE			92/08/19	92/08/19	92/09/11	92/09/11	93/05/20	93/05/20	93/05/20
	INITIAL TIME			1040	1110	1035	1050	1140	1155	1305
	MEDIUM			WATER	WATER	WATER	WATER	WATER	WATER	WATER
	DEPTH-FT(SMK)			1.5	5	1.5	5	1.5	4	
01068	NICKEL	SEDMG/KG	DRY WGT							45.70
01082	STRONTUM	SR,TOT	UG/L	406	399	434	435	457	453	
01083	SR MUD	DRY WGT	MG/KG-SR							78.70
01092	ZINC	ZN,TOT	UG/L	10K	10K	10K	10K	10K	10K	
01093	ZINC	SEDMG/KG	DRY WGT							146.00
01148	SELENIUM	SEDMG/KG	DRY WGT							.37
31616	FEC COLI	MFM-FCBR	/100ML	10K		10K				
46570	CAL HARD	CA MG	MG/L	177$	177$	176$	173$	211$	216$	
70300	RESIDUE	DISS-180	C . MG/L	254	280	286	296	322	320	
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225	940824
75049	MERCURY	SED,DRY	WT,UG/KG							.016

OH6314-023L-2
40 31 34.0 084 33 21.0 2
GRAND LAKE ST. MARYS L-2
39011 OHIO AUGLAIZE
OHIO RIVER 051700
/TYPA/AMENT/LAKE/BIO WABASH RIVER
210HIO 940903 04120101
0000 FEET DEPTH

INITIAL DATE				92/08/18	92/08/19	92/09/11	93/05/20	93/05/20	93/05/20
INITIAL TIME				1140	1120	1115	1235	1250	1305
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				5	1.5	1.5	1.5	5	
00010	WATER	TEMP	CENT	21.6	21.7	20.8	16.5	16.3	
00011	WATER	TEMP	FAHN	70.9$	71.1$	69.4$	61.7$	61.3$	
00094	CNDUCTVY	FIELD	MICROMHO	395	395	390	400	400	
00299	DO	PROBE	MG/L	7.2	7.6	8.3	8.6	7.9	
00301	DO	SATUR	PERCENT	81.8$	86.4$	92.2$	86.0$	79.0$	
00310	BOD	5 DAY	MG/L	10.0	6.6	5.5	4.0	3.9	
00400	PH		SU	8.60	8.80	8.70	8.31	8.21	
00403	PH	LAB	SU				8.4		
00410	T ALK	CACO3	MG/L	127	129	122	132	133	
00530	RESIDUE	TOT NFLT	MG/L	43	42	33	34	38	
00610	NH3+NH4-	N TOTAL	MG/L	.140	.080	.230	.050K	.050K	
00612	UN-IONZD	NH3-N	MG/L	.021$	.018$	.040$	.003$	.002$	
00615	NO2-N	TOTAL	MG/L	.100	.100	.030	.020K	.020K	
00619	UN-IONZD	NH3-NH3	MG/L	.026$	.021$	.049$	.004$	.003$	
00625	TOT KJEL	N	MG/L	2.300	1.700	1.000	.500	.400	
00630	NO2&NO3	N-TOTAL	MG/L	3.04	.16	.10K	.10K	.10K	
00665	PHOS-TOT		MG/L P	.180	.200	.060	.030	.027	
00900	TOT HARD	CACO3	MG/L	175	172	171	221	228	
00916	CALCIUM	CA-TOT	MG/L	37.0	36.0	37.0	49.0	50.0	
00927	MGNSIUM	MG,TOT	MG/L	20.0	20.0	19.0	24.0	25.0	
00945	SULFATE	SO4-TOT	MG/L	52	53	37	76	74	
01002	ARSENIC	AS,TOT	UG/L	3	3	3	2K	2K	
01003	ARSENIC	SEDMG/KG	DRY WGT						11.40
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD						.52
01029	CHROMIUM	SEDMG/KG	DRY WGT						33.30
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	2K	2K	10K	4	2K	
01043	COPPER	SEDMG/KG	DRY WGT						32.10
01045	IRON	FE,TOT	UG/L	1140	1110	967	1027	1190	
01051	LEAD	PB,TOT	UG/L	2K	2K	2K	2K	2K	
01052	LEAD	SEDMG/KG	DRY WGT						46.70
01053	MN MUD	DRY WGT	MG/KG-MN						539.00
01055	MANGNESE	MN	UG/L	153.0	154.0	75.0	153.0	159.0	

(SAMPLE CONTINUED ON NEXT PAGE)

OH6314-028L-2
40 31 34.0 084 33 21.0 2
GRAND LAKE ST. MARYS L-2
39011 OHIO AUGLAIZE
OHIO RIVER 051700
/TYPA/AMBNT/LAKE/BIO WABASH RIVER
210HIO 940903 04120101
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

INITIAL DATE			92/08/18	92/08/19	92/09/11	93/05/20	93/05/20	93/05/20
INITIAL TIME			1140	1120	1115	1235	1250	1305
MEDIUM			WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)			5	1.5	1.5	1.5	5	
01068 NICKEL	SEDMG/KG	DRY WGT						46.70
01082 STRONTUM	SR,TOT	UG/L	397	406	423	470	480	
01083 SR MUD	DRY WGT	MG/KG-SR						78.70
01092 ZINC	ZN,TOT	UG/L	10K	10K	10K	10K	10K	
01093 ZINC	SEDMG/KG	DRY WGT						146.00
01148 SELENIUM	SEDMG/KG	DRY WGT						.37
31616 FEC COLI	MFM-FCBR	/100ML		10K	10K			
46570 CAL HARD	CA MG	MG/L	175$	172$	171$	221$	228$	
70300 RESIDUE	DISS-180	C MG/L	260	266	282	320	326	
74041 WQF	SAMPLE	UPDATED	940902	940902	940902	940902	940902	940902
75049 MERCURY	SED,DRY	WT,UG/KG						.016

THAT'S ALL FOLKS

/TYPA/AMBNT/LAKE/RIO

OH0314-028L-3
40 31 45.0 084 25 54.0 2
GRAND LAKE ST. MARYS L-3
39011 OHIO AUGLAIZE
LAKE ERIE 060100
MAUMEE RIVER
210410 940219 04100004
0000 FEET DEPTH

INITIAL DATE				92/08/19	92/08/19	92/09/11	92/09/11	93/05/20	93/05/20
INITIAL TIME				0948	1013	1015	1023	1050	1105
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	4	1.5	4.5	1.5	4
00010	WATER	TEMP	CENT	21.6	21.6	202.0	20.2	16.2	15.7
00011	WATER	TEMP	FAHN	70.9S	70.9S	395.6S	68.4S	61.2S	60.3S
00094	CNDUCTVY	FIELD	MICROMHO	450	405	390	390	390	385
00299	DO	PROBE	MG/L	6.0	6.4	7.9	7.0	9.0	8.4
00301	DO	SATUR	PERCENT	68.2S	72.7S		76.1S	90.0S	84.0S
00310	BOD	5 DAY	MG/L	10.0	10.0	3.7	3.9	4.0	4.0
00400	PH		SU	8.50	8.30	8.50	8.40	8.16	8.02
00403	PH	LAB	SU					8.3	8.3
00410	T ALK	CACO3	MG/L	129	137	128	132	114	117
00530	RESIDUE	TOT NFLT	MG/L	40	42	38	43	32	35
00610	NH3+NH4-	N TOTAL	MG/L	.050K		.280	.280	.050K	.050K
00612	UN-IONZD	NH3-N	MG/L	.008S		.279S	.026S	.002S	.001S
00615	NO2-N	TOTAL	MG/L			.030	.030	.020K	.020K
00619	UN-IONZD	NH3-NH3	MG/L	.009S		.339S	.031S	.003S	.002S
00625	TOT KJEL	N	MG/L	1.700	2.000	1.600	1.400	.400	.500
00630	NO2&NO3	N-TOTAL	MG/L			.10	.10K	.10K	.10K
00665	PHOS-TOT		MG/L P	.120	.140	.150	.110	.066	.050K
00900	TOT HARD	CACO3	MG/L	177	177	180	180	214	214
00916	CALCIUM	CA-TOT	MG/L	38.0	38.0	39.0	39.0	46.0	46.0
00927	MGNSIUM	MG,TOT	MG/L	20.0	20.0	20.0	20.0	24.0	24.0
00945	SULFATE	SO4-TOT	MG/L	54	58	47	38	77	75
01002	ARSENIC	AS,TOT	UG/L	2K	3	3	3	2	2
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K
01042	COPPER	CU,TOT	UG/L	2K	2K	11	10K	2K	2K
01045	IRON	FE,TOT	UG/L	1040	1060	1040	1160	761	915
01051	LEAD	PB,TOT	UG/L	2K	2K	4	2	2K	2K
01055	MANGNESE	MN	UG/L	103.0	101.0	88.0	89.0	159.0	160.0
01082	STRONTUM	SR,TOT	UG/L	407	407	449	436	462	472
01092	ZINC	ZN,TOT	UG/L	10K	10K	10K	10K	10K	10K
31616	FEC COLI	MFM-FCBR	/100ML	10K		10K			
46570	CAL HARD	CA MG	MG/L	177S	177S	180S	180S	214S	214S
70300	RESIDUE	DISS-180 C	MG/L	272	272	260	284	318	314
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225

/TYPA/AMBNT/LAKE/RIO

OH2526-112L-1
39 46 18.0 082 37 57.0 2
GREENFIELD LAKE L-1
39045 OHIO FAIRFIELD
OHIO RIVER 050600
HOCKING RIVER
21OHIO 940219 05030204
0000 FEET DEPTH

	INITIAL DATE			92/08/12	92/08/12	92/09/09	92/09/09	93/05/26	93/06/09	93/06/09
	INITIAL TIME			1110	1150	1230	1245	1130	0815	0830
	MEDIUM			WATER	WATER	WATER	WATER	WATER	WATER	WATER
	DEPTH-FT(SMK)			1.5	12	1.5	10.5		1.5	10.5
00010	WATER	TEMP	CENT			24.3	20.2			
00011	WATER	TEMP	FAHN			75.7$	68.4$			
00094	CNDUCTVY	FIELD	MICROMHO			245	320			
00299	DO	PROBE	MG/L			7.6	.1			
00301	DO	SATUR	PERCENT			89.4$	1.1$			
00310	BOD	5 DAY	MG/L	6.9	17.0	3.6	4.9		1.2	3.2
00400	PH		SU			8.57	7.04			
00410	T ALK	CACO3	MG/L	88	244	96	170		123	131
00530	RESIDUE	TOT NFLT	MG/L	23	45	11	33		7	26
00610	NH3+NH4-	N TOTAL	MG/L	.050K	7.050	.050K	3.600		.050K	.900
00612	UN-IONZD	NH3-N	MG/L			.008$	.016$			
00615	NO2-N	TOTAL	MG/L	.030	.030	.020K	.020K		.020	.020
00619	UN-IONZD	NH3-NH3	MG/L			.010$	.019$			
00625	TOT KJEL	N	MG/L	.700	7.000	.500	3.800		.300	1.000
00630	NO2&NO3	N-TOTAL	MG/L	.10K	.10K	.10K	.10K		.28	.10K
00665	PHOS-TOT		MG/L P	.090	.060	.057			.023	.050
00900	TOT HARD	CACO3	MG/L	91	197	112	143		140	140
00916	CALCIUM	CA-TOT	MG/L	25.0	54.0	30.0	39.0		38.0	38.0
00927	MGNSIUM	MG,TOT	MG/L	7.0	15.0	9.0	11.0		11.0	11.0
00945	SULFATE	SO4-TOT	MG/L	22	11	15	5K		26	23
01002	ARSENIC	AS,TOT	UG/L	3	40	3	25		2K	6
01003	ARSENIC	SEDMG/KG	DRY WGT					13.80		
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K		.2K	.2K
01028	CD MUD	DRY WGT	MG/KG-CD					.32		
01029	CHROMIUM	SEDMG/KG	DRY WGT					23.80		
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K		30K	30K
01042	COPPER	CU,TOT	UG/L	10K	10K	10K	2K		2K	10K
01043	COPPER	SEDMG/KG	DRY WGT					22.80		
01045	IRON	FE,TOT	UG/L						618	2120
01051	LEAD	PB,TOT	UG/L	4	2	2K			2	2K
01052	LEAD	SEDMG/KG	DRY WGT					29.30		
01053	MN MUD	DRY WGT	MG/KG-MN					728.00		
01055	MANGNESE	MN	UG/L	77.0	7470.0	92.0	6320.0		127.0	3470.0
01068	NICKEL	SEDMG/KG	DRY WGT					35.60		

(SAMPLE CONTINUED ON NEXT PAGE)

OH2526-112L-1
39 46 18.0 082 37 57.0 2
GREENFIELD LAKE L-1
39045 OHIO FAIRFIELD
OHIO RIVER 050600
/TYPA/AMJNT/LAKE/BIO HOCKING RIVER
210HIO 940219 05030204
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

	INITIAL DATE			92/08/12	92/08/12	92/09/09	92/09/09	93/05/26	93/06/09	93/06/09
	INITIAL TIME			1110	1150	1230	1245	1130	0315	0830
	MEDIUM			WATER	WATER	WATER	WATER	WATER	WATER	WATER
	DEPTH-FT(SMK)			1.5	12	1.5	10.5		1.5	10.5
01082	STRONTUM	SR,TOT	UG/L	52	125	59	81		74	78
01083	SR MUD	DRY WGT	MG/KG-SR					9.52		
01092	ZINC	ZN,TOT	UG/L	79	57	10K	10K		10K	10K
01093	ZINC	SEDMG/KG	DRY WGT					118.00		
01148	SELENIUM	SEDMG/KG	DRY WGT					.19		
31616	FEC COLI	MFM-FCBR	/100ML	50		60			20	
31648	E.COLI	MTEC-MF	NO/100ML						10	
46570	CAL HARD	CA MG	MG/L	91$	197$	112$	143$		140$	140$
70300	RESIDUE	DISS-180	C MG/L	132	254	130	192		182	184
71921	MERCURY	SEDMG/KG	DRY WGT					.03		
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940301	940301

CH554C-214L-1
40 28 06.0 083 52 33.0 2
INDIAN LAKE L-1
39091 OHIO LOGAN
OHIO RIVER 051300
/TYPA/AMBNT/LAKE/HIO GREAT MIAMI RIVER
21OHIO 940219 05080001
0000 FEET DEPTH

INITIAL DATE				92/08/02	92/08/02	92/08/24	92/08/24	93/05/27	93/05/27	93/05/27
INITIAL TIME				1130	1345	1115	1130	1315	1400	1400
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	7	1.5	4	1.5	3.75	
00010	WATER	TEMP	CENT			22.8				
00011	WATER	TEMP	FAHN			73.0S				
00299	DO	PROBE	MG/L			7.2				
00301	DO	SATUR	PERCENT			82.8S				
00310	BOD	5 DAY	MG/L	4.7	4.2			1.9	6.3	
00400	PH		SU			8.50				
00410	T ALK	CACO3	MG/L	131	144	127	121	167	176	
00530	RESIDUE	TOT NFLT	MG/L	34	71			6	127	
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.050K	.050K	.050K	.530	.490	
00612	UN-IONZD	NH3-N	MG/L			.007S				
00615	NO2-N	TOTAL	MG/L	.040	.040	.020	.020	.020K	.070	
00619	UN-IONZD	NH3-NH3	MG/L			.008S				
00625	TOT KJEL	N	MG/L	.800	1.100	1.500	1.200	1.500	1.400	
00630	NO2&NO3	N-TOTAL	MG/L	.37	.67	.10K	.10K	.12	.14	
00665	PHOS-TOT		MG/L P	.080	.080	.110	.270	.050	.050	
00900	TOT HARD	CACO3	MG/L	196	236			247	254	
00916	CALCIUM	CA-TOT	MG/L	49.0	60.0	46.0	48.0	56.0	57.0	
00927	MGNSIUM	MG,TOT	MG/L	18.0	21.0			26.0	27.0	
00945	SULFATE	SO4-TOT	MG/L	63	67			60	64	
01002	ARSENIC	AS,TOT	UG/L	3	3	3	4	2K	2	
01003	ARSENIC	SEDMG/KG	DRY WGT							8.71
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							.38
01029	CHROMIUM	SEDMG/KG	DRY WGT							29.60
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	10K	10K	10K	10K	10K	10K	
01043	COPPER	SEDMG/KG	DRY WGT							24.40
01051	LEAD	PB,TOT	UG/L	4	5	2	2	2K	2K	
01052	LEAD	SEDMG/KG	DRY WGT							35.40
01053	MN MUD	DRY WGT	MG/KG-MN							405.00
01055	MANGNESE	MN	UG/L	90.0	130.0			13.0		
01066	NICKEL	SEDMG/KG	DRY WGT							36.30
01082	STRONTUM	SR,TOT	UG/L	924	1070			1170	1220	
01083	SR MUD	DRY WGT	MG/KG-SR							157.00

(SAMPLE CONTINUED ON NEXT PAGE)

04554C-214L-1
40 28 06.0 083 52 33.0 2
INDIAN LAKE L-1
39091 OHIO LOGAN
OHIO RIVER 051300
/TYPA/AMBNT/LAKE/BIO GREAT MIAMI RIVER
210HIO 940219 05080001
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

INITIAL DATE				92/08/02	92/08/02	92/08/24	92/08/24	93/05/27	93/05/27	93/05/27
INITIAL TIME				1130	1345	1115	1130	1315	1400	1400
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	7	1.5	4	1.5	3.75	
01092	ZINC	ZN,TOT	UG/L	10K	34	10K	10K	10K	23	
01093	ZINC	SEDMG/KG	DRY WGT							108.00
01148	SELENIUM	SEDMG/KG	DRY WGT							.51K
31616	FEC COLI	MFM-FCBR	/100ML	90		50				
46570	CAL HARD	CA MG	MG/L	196$	236$			247$	254$	
70300	RESIDUE	DISS-180 C	MG/L	288	320			576	308	
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225	940811
75049	MERCURY	SED,DRY	WT,UG/KG							.063

OH5540-214L-3
40 30 37.0 083 53 09.0 2
INDIAN LAKE L-3
39091 OHIO LOGAN
OHIO RIVER 051300
GREAT MIAMI RIVER
210HIO 940219 05080001
0000 FEET DEPTH

/TYPA/AMHNT/LAKE/RIO

INITIAL DATE				92/08/02	92/08/02	92/08/24	92/08/24	93/05/27	93/05/27
INITIAL TIME				1300	1415	1205	1220	1130	1200
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	4.5	1.5	4.5	1.5	4.5
00010	WATER	TEMP	CENT			22.2			
00011	WATER	TEMP	FAHN			72.0$			
00299	DO	PROBE	MG/L			9.0			
00301	DO	SATUR	PERCENT			102.3$			
00310	BOD	5 DAY	MG/L	4.9	4.6			1.5	2.1
00400	PH		SU			8.65			
00410	T ALK	CACO3	MG/L	116	110	114	107	140	143
00530	RESIDUE	TOT NFLT	MG/L	41	57			16	14
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.050K	.050K	.050K	.680	.690
00612	UN-IONZD	NH3-N	MG/L			.009$			
00615	NO2-N	TOTAL	MG/L	.030	.020	.030	.020	.020K	.020K
00619	UN-IONZD	NH3-NH3	MG/L			.010$			
00625	TOT KJEL	N	MG/L	.900	.080	1.700	1.100	1.600	1.900
00630	NO2&NO3	N-TOTAL	MG/L	.10K	.10K	.10	.10K	.13	.12
00665	PHOS-TOT		MG/L P	.070	.050	.080	.140	.060	.080
00900	TOT HARD	CACO3	MG/L	176	176			224	224
00916	CALCIUM	CA-TOT	MG/L	41.0	41.0	40.0	40.0	50.0	50.0
00927	MGNSIUM	MG,TOT	MG/L	18.0	18.0			24.0	24.0
00945	SULFATE	SO4-TOT	MG/L	60	58			57	54
01002	ARSENIC	AS,TOT	UG/L	4	5	5	5	2K	5
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K
01042	COPPER	CU,TOT	UG/L	10K	10K	10K	10K	10K	10K
01051	LEAD	PB,TOT	UG/L	3	3	2	2	2K	2K
01055	MANGNESE	MN	UG/L	143.0	152.0			20.0	23.0
01082	STRONTUM	SR,TOT	UG/L	812	826			917	920
01092	ZINC	ZN,TOT	UG/L	10K	10K	10K	15	10K	10K
31616	FEC COLI	MFM-FCBR	/100ML	170		10		10K	
46570	CAL HARD	CA MG	MG/L	177$	177$			224$	224$
70300	RESIDUE	DISS-180 C	MG/L	280	280			230	278
74041	WGF	SAMPLE	UPDATED	940301	940301	940225	940225	940225	940225

/TYPA/AMBNT/LAKE/RIO

OH3017-392L-1
39 10 39.0 082 31 13.0 2
LAKE RUPERT L-1
39163 OHIO VINTON
OHIO RIVER 052100
SOUTHEAST OHIO RIVER TRIBUTARIES
210HIO 940219 05090101
0000 FEET DEPTH

INITIAL DATE				92/08/04	92/08/04	92/08/26	92/08/26	93/05/24	93/05/24	93/05/24
INITIAL TIME				1025	1039	1010	1036	1028	1100	1158
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				21	1.5	18	1.5	13.5	1.5	
00010	WATER	TEMP	CENT	14.6	24.0	14.4	25.8	13.7	17.9	
00011	WATER	TEMP	FAHN	58.3$	75.2$	57.9$	78.4$	56.7$	64.2$	
00094	CNDUCTVY	FIELD	MICROMHO	162	165	185	165	98	119	
00299	DO	PROBE	MG/L	.1	7.6	.1	9.2	3.3	8.5	
00301	DO	SATUR	PERCENT	1.0$	89.4$	1.0$	112.2$	31.7$	89.5$	
00310	BOD	5 DAY	MG/L	1.3	2.3	3.8	1.0K	1.0K	1.1	
00400	PH		SU	7.57	7.85	7.94	8.44	7.26	7.22	
00410	T ALK	CACO3	MG/L	26	24	92	27	18	17	
00530	RESIDUE	TOT NFLT	MG/L	34	20	5K	5K	6	5	
00610	NH3+NH4-	N TOTAL	MG/L	.600	.050K	1.460	.050K	.050	.050K	
00612	UN-IONZD	NH3-N	MG/L	.006$	.002$	.032$	.007$	.0002$	.0003$	
00615	NO2-N	TOTAL	MG/L	.030	.040	.020K	.020K	.020K	.020K	
00619	UN-IONZD	NH3-NH3	MG/L	.007$	.002$	.039$	.009$	.0003$	.0003$	
00620	NO3-N	TOTAL	MG/L				10.000K			
00625	TOT KJEL	N	MG/L	.700	.200K	1.700	.500	.200	.200K	
00630	NO2&NO3	N-TOTAL	MG/L	.10K	.23	.10K	.10K	.15	.10K	
00665	PHOS-TOT		MG/L P	.060	.480	.050K	.060	.010	.008	
00900	TOT HARD	CACO3	MG/L	76	60	61	61	56	62	
00916	CALCIUM	CA-TOT	MG/L	14.0	11.0	16.0	16.0	14.0	15.0	
00927	MGNSIUM	MG,TOT	MG/L	10.0	8.0	5.0	5.0	5.0	6.0	
00945	SULFATE	SO4-TOT	MG/L	49	47	32	52	45	48	
01002	ARSENIC	AS,TOT	UG/L	4	2K	3	2K	2K	2K	
01003	ARSENIC	SEDMG/KG	DRY WGT							9.53
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							.32
01029	CHROMIUM	SEDMG/KG	DRY WGT							24.80
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	2	2	2K	2K	2K	2K	
01043	COPPER	SEDMG/KG	DRY WGT							20.40
01045	IRON	FE,TOT	UG/L			67	64	252	181	
01051	LEAD	PB,TOT	UG/L	2K	2K	2K	2K	2K	2K	
01052	LEAD	SEDMG/KG	DRY WGT							34.00
01053	MN MUD	DRY WGT	MG/KG-MN							1500.00
01055	MANGNESE	MN	UG/L	4610.0	80.0	21000.0	77.0	485.0	189.0	

(SAMPLE CONTINUED ON NEXT PAGE)

OH3017-392L-1
39 10 39.0 082 31 13.0 2
LAKE RUPERT L-1
39163 OHIO VINTON
OHIO RIVER 052100
/TYPA/AMBNT/LAKE/RIO SOUTHEAST OHIO RIVER TRIBUTARIES
210HIO 940219 05090101
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

INITIAL DATE				92/08/04	92/08/04	92/08/26	92/08/26	93/05/24	93/05/24	93/05/24
INITIAL TIME				1025	1039	1010	1036	1028	1100	1158
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				21	1.5	18	1.5	13.5	1.5	
01068	NICKEL	SEDMG/KG	DRY WGT							50.90
01082	STRONTUM	SR,TOT	UG/L	64	54	60	55	48	48	
01083	SR MUD	DRY WGT	MG/KG-SR							9.08
01092	ZINC	ZN,TOT	UG/L	12	10K	21	50	45	43	
01093	ZINC	SEDMG/KG	DRY WGT							124.00
01105	ALUMINUM	AL,TOT	UG/L					200K	200K	
01148	SELENIUM	SEDMG/KG	DRY WGT							1.13K
31616	FEC COLI	MFM-FCBR	/100ML		10					
46570	CAL HARD	CA MG	MG/L	76$	60$	61$	61$	56$	62$	
70300	RESIDUE	DISS-180 C	MG/L	144	128	146	126	106	106	
71921	MERCURY	SEDMG/KG	DRY WGT							.04
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940301	940225

OH4534-302L-1
39 06 17.0 083 00 40.0 2
LAKE WHITE RESERVOIR L-1
39131 OHIO PIKE
OHIO RIVER 051000
SCIOTO RIVER
210HIO 940226 05060002
0000 FEET DEPTH

/TYPA/AMBNT/LAKE/SIO

INITIAL DATE				92/08/04	92/08/09	92/08/26	92/08/26	93/05/24	93/05/24	93/05/24
INITIAL TIME				1356	1334	1245	1300	1358	1415	1510
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	24	20	1.5	15	1.5	
00010	WATER	TEMP	CENT	26.0	15.7	16.4	28.8	18.6	18.8	
00011	WATER	TEMP	FAHN	78.8$	60.3$	61.5$	83.8$	65.5$	65.8$	
00094	CNDUCTVY	FIELD	MICROMHO	170	175	164	180	153	160	
00299	DO	PROBE	MG/L	8.7	.1	.1	9.2	8.4	8.7	
00301	DO	SATUR	PERCENT	106.1$	1.0$	1.0$	117.9$	89.4$	92.6$	
00310	BOD	5 DAY	MG/L	1.2	1.8	2.2	1.2	1.0K	1.0K	
00400	PH		SU	7.41	7.32	8.00	8.25	6.96	6.91	
00410	T ALK	CACO3	MG/L	47	64	63	29	22	24	
00530	RESIDUE	TOT NFLT	MG/L	5K	5K	30	6	12	6	
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.790	.850	.050K	.050K	.050K	
00612	UN-IONZD	NH3-N	MG/L	.0008$	.005$	.025$	.006$	.0002$	.0001$	
00615	NO2-N	TOTAL	MG/L	.020K	.020K		.020K	.020K	.020K	
00619	UN-IONZD	NH3-NH3	MG/L	.0009$	.006$	.030$	.007$	.0002$	.0002$	
00620	NO3-N	TOTAL	MG/L				10.000K			
00625	TOT KJEL	N	MG/L	.200	1.100	.900	.300	.200K	.200	
00630	NO2&NO3	N-TOTAL	MG/L	.10K	.10K	.10K	.19	.39	.42	
00665	PHOS-TOT		MG/L P	.070	.050K	.640	.019	.050K	.008	
00900	TOT HARD	CACO3	MG/L	61	61	70	60	78	78	
00916	CALCIUM	CA-TOT	MG/L	16.0	16.0	13.0	11.0	13.0	13.0	
00927	MGNSIUM	MG,TOT	MG/L	5.0	5.0	9.0	8.0	11.0	11.0	
00945	SULFATE	SO4-TOT	MG/L	46	38	44	50	63	64	
01002	ARSENIC	AS,TOT	UG/L	2K	2K	12	2K	2K	2K	
01003	ARSENIC	SEDMG/KG	DRY WGT							28.80
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							3.97
01029	CHROMIUM	SEDMG/KG	DRY WGT							47.90
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	2K		2	2K	2K	2K	
01043	COPPER	SEDMG/KG	DRY WGT							48.60
01045	IRON	FE,TOT	UG/L			5800	788	1190	349	
01051	LEAD	PB,TOT	UG/L	2K	2K	3	2K	2K	2K	
01052	LEAD	SEDMG/KG	DRY WGT							81.50
01053	MN MUD	DRY WGT	MG/KG-MN							1280.00
01055	MANGNESE	MN	UG/L	159.0	12500.0	3730.0	51.0	114.0	28.0	

(SAMPLE CONTINUED ON NEXT PAGE)

/TYPA/AMBNT/LAKE/BIO

044534-302L-1
39 06 17.0 083 00 40.0 2
LAKE WHITE RESERVOIR L-1
39131 OHIO PIKE
OHIO RIVER 051000
SCIOTO RIVER
21OHIO 940226 05060002
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

INITIAL DATE				92/08/04	92/08/09	92/08/26	92/08/26	93/05/24	93/05/24	93/05/24
INITIAL TIME				1356	1334	1245	1300	1358	1415	1510
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	24	20	1.5	15	1.5	
01068	NICKEL	SEDMG/KG	DRY WGT							130.00
01082	STRONTUM	SR,TOT	UG/L	64	67	68	41	52	64	
01083	SR MUD	DRY WGT	MG/KG-SR							17.80
01092	ZINC	ZN,TOT	UG/L	10K	10K	39	21	13	10K	
01093	ZINC	SEDMG/KG	DRY WGT							428.00
01105	ALUMINUM	AL,TOT	UG/L					768	262	
01148	SELENIUM	SEDMG/KG	DRY WGT							1.48K
31616	FEC COLI	MFM-FCBR	/100ML	10K						
46570	CAL HARD	CA MG	MG/L	61$	61$	70$	60$	78$	78$	
70300	RESIDUE	DISS-180 C	MG/L	122	138	140	118	146	146	
71921	MERCURY	SEDMG/KG	DRY WGT							.06
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225	940225

/TYPA/AMBNT/LAKE/RIC

C44130-228L-1
39 52 04.0 083 22 35.0 2
MADISON LAKE L-1
39097 OHIO MADISON
OHIO RIVER 051000
SCIOTO RIVER
21OHIO 940219 05060002
0000 FEET DEPTH

INITIAL DATE				92/08/13	92/08/13	92/09/10	92/09/10	93/05/25	93/06/07	93/06/07
INITIAL TIME				1020	1100	1000	1015	1430	1004	1030
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	7	7	1.5		1.5	7
00010	WATER	TEMP	CENT	25.1	25.0	23.9	23.8			
00011	WATER	TEMP	FAHN	77.2S	77.0S	75.0S	74.8S			
00094	CNDUCTVY	FIELD	MICROMHO	510	510	500	500			
00299	DO	PROBE	MG/L	11.2	9.8	6.6	5.6			
00301	DO	SATUR	PERCENT	133.3S	116.7S	77.6S	65.9S			
00310	BOD	5 DAY	MG/L	6.2	5.6	3.6	3.2		11.0	6.2
00400	PH		SU	8.24	8.11	8.71	8.64			
00410	T ALK	CACO3	MG/L	192	201	194	196		197	217
00530	RESIDUE	TOT NFLT	MG/L	34	183	66	84		32	61
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.050K	.070	.080		.050K	.050K
00612	UN-IONZD	NH3-N	MG/L	.005S	.003S	.015S	.015S			
00615	NO2-N	TOTAL	MG/L	.060	.070	.030	.030		.020	.030
00619	UN-IONZD	NH3-NH3	MG/L	.005S	.004S	.018S	.018S			
00625	TOT KJEL	N	MG/L	.900	8.400	.600	1.000		.300	.200
00630	NO2&NO3	N-TOTAL	MG/L	.74	.78	.67	.10K		.10K	.30
00665	PHOS-TOT		MG/L P	.069	.140	.080	.080		.059	.057
00900	TOT HARD	CACO3	MG/L	260	301	265	263		256	280
00916	CALCIUM	CA-TOT	MG/L	53.0	66.0	55.0			48.0	56.0
00927	MGNSIUM	MG,TOT	MG/L	31.0	33.0	31.0	30.0		33.0	34.0
00945	SULFATE	SO4-TOT	MG/L	61	57	49	52		65	71
01002	ARSENIC	AS,TOT	UG/L	2K	3	3	3		2	2
01003	ARSENIC	SEDMG/KG	DRY WGT					16.90		
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K		.2K	.2K
01028	CD MUD	DRY WGT	MG/KG-CD					.42		
01029	CHROMIUM	SEDMG/KG	DRY WGT					38.30		
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K		30K	30K
01042	COPPER	CU,TOT	UG/L	10K	23	2	3		10K	10K
01043	COPPER	SEDMG/KG	DRY WGT					36.20		
01045	IRON	FE,TOT	UG/L			2820	3660		582	1150
01051	LEAD	PB,TOT	UG/L	2K	6	3	2		3	2K
01052	LEAD	SEDMG/KG	DRY WGT					50.00		
01053	MN MUD	DRY WGT	MG/KG-MN					651.00		
01055	MANGNESE	MN	UG/L	63.0	219.0	97.0	110.0		95.0	62.0
01068	NICKEL	SEDMG/KG	DRY WGT					50.00		

(SAMPLE CONTINUED ON NEXT PAGE)

C94130-228L-1
39 52 04.0 083 22 35.0 2
MADISON LAKE L-1
39097 OHIO MADISON
OHIO RIVER 051000
SCIOTO RIVER
21OHIO 940219 05060002
0000 FEET DEPTH

/TYPA/AMBNT/LAKE/BIO

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

INITIAL DATE				92/08/13	92/08/13	92/09/10	92/09/10	93/05/25	93/06/07	93/06/07
INITIAL TIME				1020	1100	1000	1015	1430	1004	1030
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	7	7	1.5		1.5	7
01082	STRONTUM	SR,TOT	UG/L	3340	3640	3410	3330		3190	3370
01083	SR MUD	DRY WGT	MG/KG-SR					381.00		
01092	ZINC	ZN,TOT	UG/L	31	68	12	10K		13	10K
01093	ZINC	SEDMG/KG	DRY WGT					179.00		
01148	SELENIUM	SEDMG/KG	DRY WGT					.11K		
31616	FEC COLI	MFM-FCBR	/100ML	10K		30			15	
31648	E.COLI	MTEC-MF	NO/100ML						10	
46570	CAL HARD	CA MG	MG/L	260$	301$	265$			256$	280$
70300	RESIDUE	DISS-180 C	MG/L	314	330	312	312		300	326
71921	MERCURY	SEDMG/KG	DRY WGT					.06		
74041	WQF	SAMPLE	UPDATED	940225	940225	940301	940225	940225	940225	940225

/TYPA/AMBNT/LAKE/BIO

OH7518-439L-1
41 42 46.0 083 56 10.0 2
METAMORA RESERVOIR #1 L-1
39051 OHIO FULTON
LAKE ERIE 060400
OTTAWA RIVER (MAUMEE BAY)
210HIO 940219 04100001
0000 FEET DEPTH

INITIAL DATE				92/08/18	92/08/18	92/09/17	92/09/17	93/05/17	93/05/17	93/05/17
INITIAL TIME				1335	1345	1210	1225	1535	1550	1600
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	12	1.5	12	1.5	19.5	
00010	WATER	TEMP	CENT	22.0	21.7	21.9	19.5	17.7	13.6	
00011	WATER	TEMP	FAHN	71.6S	71.1S	71.4S	67.1S	63.9S	56.5S	
00094	CNDUCTVY	FIELD	MICROMHO	550	550	550	495	430	385	
00299	DO	PROBE	MG/L	9.3	9.6	9.3	6.1	11.0	17.8	
00301	DO	SATUR	PERCENT	105.7S	109.1S	105.7S	64.9S	115.8S	171.2S	
00310	BOD	5 DAY	MG/L	1.8	2.2	2.4	3.6	1.4	2.2	
00400	PH		SU	9.10	9.20	9.10	8.70	8.57	8.76	
00403	PH	LAB	SU					8.4	8.8	
00410	T ALK	CACO3	MG/L	118	119	116	131	110	111	
00530	RESIDUE	TOT NFLT	MG/L	6	6	5K	5	5K	5	
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.050K	.050K	.100	.050K	.050K	
00612	UN-IONZD	NH3-N	MG/L	.018S	.021S	.018S	.016S	.006S	.006S	
00615	NO2-N	TOTAL	MG/L	.070	.070	.060	.060	.040	.020	
00619	UN-IONZD	NH3-NH3	MG/L	.022S	.025S	.022S	.020S	.007S	.008S	
00625	TOT KJEL	N	MG/L	.900	1.100	.900	.900	.600	.700	
00630	NO2&NO3	N-TOTAL	MG/L	10.20	9.88	9.63	8.62	7.37	6.39	
00665	PHOS-TOT		MG/L P	.009	.010	.050K	.050K	.010	.011	
00900	TOT HARD	CACO3	MG/L	256	261	258	268	234	234	
00916	CALCIUM	CA-TOT	MG/L	71.0	73.0	72.0	76.0	64.0	64.0	
00927	MGNSIUM	MG,TOT	MG/L	19.0	19.0	19.0	19.0	18.0	18.0	
00945	SULFATE	SO4-TOT	MG/L	80	80	74	71	67	64	
01002	ARSENIC	AS,TOT	UG/L	2K	2K	2K	2K	2K	2K	
01003	ARSENIC	SEDMG/KG	DRY WGT							8.49
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							.21
01029	CHROMIUM	SEDMG/KG	DRY WGT							19.30
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	334	360	281	249	139	142	
01043	COPPER	SEDMG/KG	DRY WGT							2.27
01045	IRON	FE,TOT	UG/L	50K	50K	50K	120	50K	50K	
01051	LEAD	PB,TOT	UG/L	2	2K	2K	2K	2K	2K	
01052	LEAD	SEDMG/KG	DRY WGT							26.80
01053	MN MUD	DRY WGT	MG/KG-MN							475.00
01055	MANGNESE	MN	UG/L	10.0K	13.0	10.0K	10.0K	10.0K	10.0K	

(SAMPLE CONTINUED ON NEXT PAGE)

OH751R-439L-1
41 42 46.0 083 56 10.0 2
METAMORA RESERVOIR #1 L-1
39051 OHIO FULTON
LAKE ERIE 060400
/TYPA/AMBNT/LAKE/BIO OTTAWA RIVER (MAUMEE BAY)
21OHIO 940219 04100001
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

	INITIAL DATE			92/08/18	92/08/18	92/09/17	92/09/17	93/05/17	93/05/17	93/05/17
	INITIAL TIME			1335	1345	1210	1225	1535	1550	1600
	MEDIUM			WATER	WATER	WATER	WATER	WATER	WATER	WATER
	DEPTH-FT(SMK)			1.5	12	1.5	12	1.5	19.5	
01068	NICKEL	SEDMG/KG	DRY WGT							35.70
01082	STRONTUM	SR,TOT	UG/L	390	379	395	393	354	369	
01083	SR MUD	DRY WGT	MG/KG-SR							112.00
01092	ZINC	ZN,TOT	UG/L	10K	10K	36	10K	10K	10K	
01093	ZINC	SEDMG/KG	DRY WGT							54.70
01148	SELENIUM	SEDMG/KG	DRY WGT							.77K
46570	CAL HARD	CA MG	MG/L	256$	261$	258$	268$	234$	234$	
70300	RESIDUE	DISS-180	C MG/L	400	402	370	372	350	336	
71921	MERCURY	SEDMG/KG	DRY WGT							.02
74041	WQF	SAMPLE	UPDATED	940225	940225	940818	940818	940225	940225	940225

OH3709-133L-1
40 04 49.0 083 01 59.0 2
MILLER ANTRIM QUARRY LAKE L-1
39049 OHIO FRANKLIN
OHIO RIVER 051000
SCIOTO RIVER
21OHIO 940219 05060001
0000 FEET DEPTH

/TYPA/AMBNT/LAKE/BIO

INITIAL DATE				92/08/12	92/08/12	92/09/10	92/09/10	93/05/24	93/06/11	93/06/11
INITIAL TIME				1345	1500	1225	1310	1200	1130	1215
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	29	1.5	25.5		29	1.5
00010	WATER	TEMP	CENT			24.4	15.1			
00011	WATER	TEMP	FAHN			75.9$	59.2$			
00094	CNDUCTVY	FIELD	MICROMHO			490	475			
00299	DO	PROBE	MG/L			8.3	2.1			
00301	DO	SATUR	PERCENT			97.6$	20.6$			
00310	BOD	5 DAY	MG/L	1.0K	2.2	1.0K	1.6		1.1	1.4
00400	PH		SU			8.42	7.48			
00403	PH	LAB	SU	8.5	7.7					
00410	T ALK	CACO3	MG/L	120	175	111	171		132	171
00530	RESIDUE	TOT NFLT	MG/L	5K	16	5K	8		5K	8
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.180	.050K	.050K		.050K	.230
00612	UN-IONZD	NH3-N	MG/L			.006$	.0004$			
00615	NO2-N	TOTAL	MG/L	.020K	.020K	.020K	.020K		.020K	.020K
00619	UN-IONZD	NH3-NH3	MG/L			.008$	.0005$			
00625	TOT KJEL	N	MG/L	.300	.800	.400	.500		.200K	.400
00630	NO2&NO3	N-TOTAL	MG/L	.10K	.10K	.10K	.10K		.10K	.10K
00665	PHOS-TOT		MG/L P	1.900	.050	.012	.037		.007	.019
00900	TOT HARD	CACO3	MG/L	189	240	184			212	239
00916	CALCIUM	CA-TOT	MG/L	41.0	58.0	39.0			47.0	56.0
00927	MGNSIUM	MG,TOT	MG/L	21.0	23.0	21.0	23.0		23.0	24.0
00945	SULFATE	SO4-TOT	MG/L	70	66	59	51			
01002	ARSENIC	AS,TOT	UG/L	2K	2K	2K	2K		2K	2K
01003	ARSENIC	SEDMG/KG	DRY WGT					18.60		
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K		.2K	.2K
01028	CD MUD	DRY WGT	MG/KG-CD					.80		
01029	CHROMIUM	SEDMG/KG	DRY WGT					20.50		
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K		30K	30K
01042	COPPER	CU,TOT	UG/L	10K	10K	2K	2K		2K	2K
01043	COPPER	SEDMG/KG	DRY WGT					39.60		
01045	IRON	FE,TOT	UG/L			54	330		50K	685
01051	LEAD	PB,TOT	UG/L	2K	2K	2K	2K		2K	2K
01052	LEAD	SEDMG/KG	DRY WGT					53.00		
01053	MN MUD	DRY WGT	MG/KG-MN					754.00		
01055	MANGNESE	MN	UG/L	10.0K	702.0	10.0K	639.0		10.0K	1030.0

(SAMPLE CONTINUED ON NEXT PAGE)

/TYPA/AMBNT/LAKE/RIO

OH3709-133L-1
40 04 49.0 083 01 59.0 2
MILLER ANTRIM QUARRY LAKE L-1
39049 OHIO FRANKLIN
OHIO RIVER 051000
SCIOTO RIVER
210HIO 940219 05060001
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

INITIAL DATE				92/08/12	92/08/12	92/09/10	92/09/10	93/05/24	93/06/11	93/06/11
INITIAL TIME				1345	1500	1225	1310	1200	1130	1215
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	29	1.5	25.5		29	1.5
01068	NICKEL	SEDMG/KG	DRY WGT					53.00		
01082	STRONTUM	SR,TOT	UG/L	1710	2060	1620	1990		1760	
01083	SR MUD	DRY WGT	MG/KG-SR					216.00		
01092	ZINC	ZN,TOT	UG/L	10K	10K	10K	10K		10K	10K
01093	ZINC	SEDMG/KG	DRY WGT					162.00		
01148	SELENIUM	SEDMG/KG	DRY WGT					.82K		
31616	FEC COLI	MFM-FCBR	/100ML	10		80			10K	
31648	E.COLI	MTEC-MF	NO/100ML						10K	
46570	CAL HARD	CA MG	MG/L	189S	240S	184S			212S	239S
70300	RESIDUE	DISS-180	C MG/L	290	356	304	336		366	382
71921	MERCUPY	SEDMG/KG	DRY WGT					.04		
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225	940225

JH1033-365L-1
40 58 13.0 081 31 52.0 2
MUD LAKE L-1
39153 OHIO SUMMIT
OHIO RIVER 050400
/TYPA/AMBNT/LAKE/BIO MUSKINGUM RIVER
210HIO 940226 05040001
0000 FEET DEPTH

INITIAL DATE				92/08/03	92/08/03	92/08/25	92/08/25	93/06/08	93/06/08	93/06/08
INITIAL TIME				1200	1215	1100	1115	1150	1205	1215
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	37.5	1.5	40.5	1.5	35	
00010	WATER	TEMP	CENT	24.2	6.2	26.6	6.8	21.5	5.0	
00011	WATER	TEMP	FAHN	75.6S	43.2S	79.9S	44.2S	70.7S	41.0S	
00094	CNDUCTVY	FIELD	MICROMHO	520	450	525	434	660	480	
00299	DO	PROBE	MG/L	9.8	.1	10.4	.1	9.5	.3	
00301	DO	SATUR	PERCENT	115.3S	.8S	128.4S	.8S	105.6S	2.0S	
00310	BOD	5 DAY	MG/L	3.3	5.2	3.1	9.5		2.2	
00400	PH		SU	8.20	7.90	8.50	7.80	8.10	7.50	
00410	T ALK	CACO3	MG/L	101	177	102	172		156	
00530	RESIDUE	TOT NFLT	MG/L	6	6	5K	8		5K	
00610	NH3+NH4-	N TOTAL	MG/L	.050K	1.510	.050K	1.700	.050K	.750	
00612	UN-IONZD	NH3-N	MG/L	.013S	.016S	.008S	.015S	.003S	.003S	
00615	NO2-N	TOTAL	MG/L	.020K	.020K	.020K	.020		.020K	
00619	UN-IONZD	NH3-NH3	MG/L	.015S	.020S	.010S	.019S	.003S	.004S	
00625	TOT KJEL	N	MG/L	.500	1.700	.700	2.200	.300	1.100	
00630	NO2&NO3	N-TOTAL	MG/L	.10K	.10K	.10K		.10K	.10K	
00665	PHOS-TOT		MG/L P	.042	1.090	.060	.400	.050	.160	
00900	TOT HARD	CACO3	MG/L	155	207	150	210	193	203	
00916	CALCIUM	CA-TOT	MG/L	44.0	60.0	42.0	61.0	56.0	60.0	
00927	MGNSIUM	MG,TOT	MG/L	11.0	14.0	11.0	14.0	13.0	13.0	
00945	SULFATE	SO4-TOT	MG/L	41	42	51	46		40	
01002	ARSENIC	AS,TOT	UG/L	5	10	5	11	2	3	
01003	ARSENIC	SEDMG/KG	DRY WGT							18.60
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							.65
01029	CHROMIUM	SEDMG/KG	DRY WGT							54.10
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	2K	2K	3	2K	2K	2K	
01043	COPPER	SEDMG/KG	DRY WGT							43.70
01045	IRON	FE,TOT	UG/L	50K	260	50K	382	30K	50K	
01051	LEAD	PB,TOT	UG/L	2K	2K	2K	2K	2K	2K	
01052	LEAD	SEDMG/KG	DRY WGT							67.60
01053	MN MUD	DRY WGT	MG/KG-MN							1510.00
01055	MANGNESE	MN	UG/L	52.0	2350.0		2400.0	95.0	1890.0	
01068	NICKEL	SEDMG/KG	DRY WGT							86.40

(SAMPLE CONTINUED ON NEXT PAGE)

OH1033-305L-1
40 58 13.0 021 31 52.0 2
MUD LAKE L-1
39153 OHIO SUMMIT
OHIO RIVER 050400
/TYPA/AMBNT/LAKE/BIO MUSKINGUM RIVER
21OHIO 940226 05040001
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

	INITIAL DATE			92/08/03	92/08/03	92/08/25	92/08/25	93/06/08	93/06/08	93/06/08
	INITIAL TIME			1200	1215	1100	1115	1150	1205	1215
	MEDIUM			WATER	WATER	WATER	WATER	WATER	WATER	WATER
	DEPTH-FT(SMK)			1.5	37.5	1.5	40.5	1.5	35	
01082	STRONTUM	SR,TOT	UG/L	99	130	79	111		117	
01083	SR MUD	DRY WGT	MG/KG-SR							33.80
01092	ZINC	ZN,TOT	UG/L	10K	10K	10K	10K	10K	10K	
01093	ZINC	SEDMG/KG	DRY WGT							250.00
01148	SELENIUM	SEDMG/KG	DRY WGT							.75K
46570	CAL HARD	CA MG	MG/L	155$	207$	150$	210$	193$	203$	
70300	RESIDUE	DISS-180	C MG/L	340	396	324	382		354	
74041	WQF	SAMPLE	UPDATED	940301	940301	940301	940301	940301	940301	940811
75049	MERCURY	SED,DRY	WT,UG/KG							.032K

OH4201-156L-1
39 14 15.0 083 21 25.0 2
PAINT CREEK LAKE L-1
39071 OHIO HIGHLAND
OHIO RIVER 051000
/TYPA/AMBNT/LAKE/BIO
SCIOTO RIVER
210HIO 940219 05060003
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

INITIAL DATE				92/08/03	92/08/03	92/08/25	92/08/25	93/05/25	93/05/25	93/05/25
INITIAL TIME				1030	1045	1015	1110	0945	1030	1100
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	23	1.5	22.5	1.5	24	
01083	SR MUD	DRY WGT	MG/KG-SR							251.00
01092	ZINC	ZN,TOT	UG/L	10K	10K	10K	10K	49	16	
01093	ZINC	SEDMG/KG	DRY WGT							139.00
01148	SELENIUM	SEDMG/KG	DRY WGT							.55K
31616	FEC COLI	MFM-FCBR	/100ML	15		20		10K		
31648	E.COLI	MTEC-MF	NO/100ML					10K		
46570	CAL HARD	CA MG	MG/L	201S	269S			244S	258S	
70300	RESIDUE	DISS-180	C MG/L	284	342			290	292	
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225	940811
75049	MERCURY	SED,DRY	WT,UG/KG							.046

044201-186L-1
39 14 15.0 083 21 25.0 2
PAINT CREEK LAKE L-1
39071 OHIO HIGHLAND
OHIO RIVER 051000
SCIOTO RIVER
21OHIO 940219 05060003
0000 FEET DEPTH

/TYPA/AMONT/LAKE/BIO

INITIAL DATE				92/08/03	92/08/03	92/08/25	92/08/25	93/05/25	93/05/25	93/05/25
INITIAL TIME				1030	1045	1015	1110	0945	1030	1100
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	23	1.5	22.5	1.5	24	
00010	WATER	TEMP	CENT	24.0	20.2	23.0				
00011	WATER	TEMP	FAHN	75.2$	68.4$	73.4$				
00094	CNDUCTVY	FIELD	MICROMHO	368	482					
00299	DO	PROBE	MG/L	18.0	4.2	12.0				
00301	DO	SATUR	PERCENT	211.8$	45.7$	137.9$				
00310	BOD	5 DAY	MG/L	10.0	1.0K			2.2	1.8	
00400	PH		SU	9.07	7.90	8.58				
00410	T ALK	CACO3	MG/L	148	216	192	257	176	206	
00530	RESIDUE	TOT NFLT	MG/L	15	20			12	12	
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.080	.050K	.640	.050K	.230	
00612	UN-IONZD	NH3-N	MG/L	.019$	.002$	.008$				
00615	NO2-N	TOTAL	MG/L	.110	.100	.130	.200	.060	.080	
00619	UN-IONZD	NH3-NH3	MG/L	.023$	.003$	.010$				
00625	TOT KJEL	N	MG/L	1.300	.600	.800	1.100	.800	.800	
00630	NO2&NO3	N-TOTAL	MG/L	3.53	499.00	2.95	2.85	5.57	6.09	
00665	PHOS-TOT		MG/L P	.110	.100	.050K	.050K	.051	.070	
00900	TOT HARD	CACO3	MG/L	201	269			244	288	
00916	CALCIUM	CA-TOT	MG/L	46.0	65.0	45.0	72.0	55.0	66.0	
00927	MGNSIUM	MG,TOT	MG/L	21.0	26.0			26.0	30.0	
00945	SULFATE	SO4-TOT	MG/L					42	49	
01002	ARSENIC	AS,TOT	UG/L	2K		2K	2K	2K	2K	
01003	ARSENIC	SEDMG/KG	DRY WGT							17.90
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							.54
01029	CHROMIUM	SEDMG/KG	DRY WGT							39.60
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	10K	10K	10K	10K	10K	10K	
01043	COPPER	SEDMG/KG	DRY WGT							35.40
01051	LEAD	PB,TOT	UG/L	2K	2K	2K	2K	2K	2K	
01052	LEAD	SEDMG/KG	DRY WGT							54.60
01053	MN MUD	DRY WGT	MG/KG-MN							728.00
01055	MANGNESE	MN	UG/L	15.0	70.0			17.0	54.0	
01068	NICKEL	SEDMG/KG	DRY WGT							49.30
01082	STRONTUM	SR,TOT	UG/L	740	990			909	1120	

(SAMPLE CONTINUED ON NEXT PAGE)

OH0535-402L-2
41 40 58.0 084 43 34.0 2
NETTLE LAKE L-2
39171 OHIO WILLIAMS
LAKE ERIE 050100
/TYPA/AMBNT/LAKE/BIO MAUMEE RIVER
210HIO 940730 04100003
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

INITIAL DATE				92/08/17	92/08/17	92/09/16	92/09/16	93/05/17	93/05/17	93/05/19
INITIAL TIME				1315	1330	1200	1225	1055	1115	1120
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	24	1.5	24	1.5	24	
01068	NICKEL	SEDMG/KG	DRY WGT							44.00
01082	STRONTUM	SR,TOT	UG/L	220	319	237	362	178	135	
01083	SR MUD	DRY WGT	MG/KG-SR							59.90
01092	ZINC	ZN,TOT	UG/L	10K	10K	10K	11	10K	10K	
01093	ZINC	SEDMG/KG	DRY WGT							145.00
01148	SELENIUM	SEDMG/KG	DRY WGT							.67K
46570	CAL HARD	CA MG	MG/L	235$	310$	225$	317$	229$	243$	
70300	RESIDUE	DISS-180 C	MG/L	318	370	362	384	272	468	
71900	MERCURY	HG,TOTAL	UG/L					.2K		
74041	WQF	SAMPLE	UPDATED	940728	940803	940803	940803	940803	940803	940824
75049	MERCURY	SED,DRY	WT,UG/KG							.020

/TYPA/AMENT/LAKE/BIO

OM6535-402L-2
41 40 58.0 084 43 34.0 2
NETTLE LAKE L-2
39171 OHIO WILLIAMS
LAKE ERIE 060100
MAUMEE RIVER
21OHIO 940730 04100003
0000 FEET DEPTH

INITIAL DATE				92/08/17	92/08/17	92/09/16	92/09/16	93/05/17	93/05/17	93/05/19
INITIAL TIME				1315	1330	1200	1225	1055	1115	1120
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	24	1.5	24	1.5	24	
00010	WATER	TEMP	CENT	22.0	11.7	22.2	11.7	16.7	8.2	
00011	WATER	TEMP	FAHN	71.6S	53.1S	72.0S	53.1S	62.1S	46.8S	
00094	CNDUCTVY	FIELD	MICROMHO	420	460	420	550	370	325	
00299	DO	PROBE	MG/L	13.0	.3	11.9	.2	9.6	.2	
00301	DO	SATUR	PERCENT	147.7S	2.8S	135.2S	1.9S	99.0S	1.3S	
00310	BOD	5 DAY	MG/L	13.0	10.0	5.6	20.7	8.5	4.4	
00400	PH		SU	8.30	7.30	8.70	7.20		7.28	
00403	PH	LAB	SU					8.4	7.5	
00410	T ALK	CACO3	MG/L	177	304	186	333	201	236	
00530	RESIDUE	TOT NFLT	MG/L	15	16	10	19	8	20	
00610	NH3+NH4-	N TOTAL	MG/L		4.560	.050K	5.890	.050K	1.640	
00612	UN-IONZD	NH3-N	MG/L		.019S	.009S	.020S	.004S	.005S	
00615	NO2-N	TOTAL	MG/L	.080	.020	.020K	.020K	.020	.020	
00619	UN-IONZD	NH3-NH3	MG/L		.023S	.011S	.024S	.004S	.006S	
00625	TOT KJEL	N	MG/L		.500	.500	6.700	.300	1.900	
00630	NO2&NO3	N-TOTAL	MG/L		.10K	.10K	.10K	.10K	.10K	
00665	PHOS-TOT		MG/L P		.160	.069	.080	.019	.045	
00900	TOT HARD	CACO3	MG/L	235	310	225	317	229	243	
00916	CALCIUM	CA-TOT	MG/L	66.0	91.0	62.0	94.0	67.0	71.0	
00927	MGNSIUM	MG,TOT	MG/L	17.0	20.0	17.0	20.0	15.0	16.0	
00945	SULFATE	SO4-TOT	MG/L	57	34	61	15	35	31	
01002	ARSENIC	AS,TOT	UG/L	2K	7	3	6	2	5	
01003	ARSENIC	SEDMG/KG	DRY WGT							14.60
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							.53
01029	CHROMIUM	SEDMG/KG	DRY WGT							35.70
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	2K	2K	10K	10K	2K	2K	
01043	COPPER	SEDMG/KG	DRY WGT							31.70
01045	IRON	FE,TOT	UG/L	183	2750	159	3810	133	2150	
01051	LEAD	PB,TOT	UG/L	2K	2K	2	2K	2	2K	
01052	LEAD	SEDMG/KG	DRY WGT							39.90
01053	MN MUD	DRY WGT	MG/KG-MN							794.00
01055	MANGNESE	MN	UG/L	43.0	3990.0	64.0	4470.0	93.0	1770.0	

(SAMPLE CONTINUED ON NEXT PAGE)

/TYPA/AMBNT/LAKE/BIO

OH4201-186L-2
39 16 01.0 083 23 32.0 2
PAINT CREEK LAKE L-2
39071 OHIO HIGHLAND
OHIO RIVER 051000
SCIOTO RIVER
210HIO 940219 05060003
0000 FEET DEPTH

INITIAL DATE				92/08/03	92/09/03	92/08/25	92/08/25	93/05/25	93/05/25
INITIAL TIME				1200	1220	1145	1230	1145	1220
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	20	1.5	16.5	1.5	16.5
00010	WATER	TEMP	CENT	23.5	20.5	24.5			
00011	WATER	TEMP	FAHN	74.3S	68.9S	76.1S			
00094	CNDUCTVY	FIELD	MICROMHO	397	590				
00299	DO	PROBE	MG/L	13.6	5.4	14.0			
00301	DO	SATUR	PERCENT	156.3S	58.7S	164.7S			
00310	BOD	5 DAY	MG/L	4.3	1.4			5.4	1.5
00400	PH		SU	8.86	7.96	8.73			
00410	T ALK	CACO3	MG/L	168	247	150	225	178	229
00530	RESIDUE	TOT NFLT	MG/L	11	95			24	23
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.100	.050K	.310	.050K	.120
00612	UN-IONZD	NH3-N	MG/L	.013S	.004S	.011S			
00615	NO2-N	TOTAL	MG/L	.100	.080	.110	.110	.070	.070
00619	UN-IONZD	NH3-NH3	MG/L	.016S	.004S	.014S			
00625	TOT KJEL	N	MG/L	.800	.500	.800	.800	.600	.700
00630	NO2&NO3	N-TOTAL	MG/L	3.77	5.37	2.68	2.28	5.57	5.63
00665	PHOS-TOT		MG/L P	.070	.110	.070	.090	.082	.090
00900	TOT HARD	CACO3	MG/L	215	320			263	300
00916	CALCIUM	CA-TOT	MG/L	50.0	77.0	40.0	63.0	59.0	69.0
00927	MGNSIUM	MG,TOT	MG/L	22.0	31.0			28.0	31.0
00945	SULFATE	SO4-TOT	MG/L					36	42
01002	ARSENIC	AS,TOT	UG/L	2K	2	2K	2	2K	2K
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K
01042	COPPER	CU,TOT	UG/L	10K	10K	10K	10K	10K	10K
01051	LEAD	PB,TOT	UG/L	2K	3	2K	2K	2K	2K
01055	MANGNESE	MN	UG/L	11.0	139.0			31.0	52.0
01082	STRONTUM	SR,TOT	UG/L	764	1290			981	1110
01092	ZINC	ZN,TOT	UG/L	10K	12	10K	19	10K	117
31616	FEC COLI	MFM-FCBR	/100ML			10K		10	
31648	E.COLI	MTEC-MF	NO/100ML					10	
46570	CAL HARD	CA MG	MG/L	215S	320S			263S	300S
70300	RESIDUE	DISS-180 C	MG/L	292	366			342	336
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225

OH1C33-353L-1
41 01 04.0 081 33 17.0 2
REX LAKE L-1
39153 OHIO SUMMIT
OHIO RIVER 050400
MUSKINGUM RIVER
21OHIO 940219 05040001
0000 FEET DEPTH

/TYPA/AMBNT/LAKE/PIO

INITIAL DATE				92/08/03	92/08/03	92/08/25	92/08/25	93/06/08	93/06/08	93/06/08
INITIAL TIME				1030	1045	1145	1200	1000	1015	1030
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	18	1.5	15	1.5	15	
00010	WATER	TEMP	CENT	25.0	13.1	26.6	20.0	20.5	16.9	
00011	WATER	TEMP	FAHN	77.0S	55.6S	79.9S	68.0S	68.9S	62.4S	
00094	CNDUCTVY	FIELD	MICROMHO	530	510	515	575	660	612	
00299	DO	PROBE	MG/L	9.3	.1	12.3	.1	9.2	.3	
00301	DO	SATUR	PERCENT	110.7S	.9S	151.9S	1.1S	100.0S	2.6S	
00310	BOD	5 DAY	MG/L	3.3	4.3	3.7	4.5	3.1	1.9	
00400	PH		SU	8.70	8.10	8.50	7.80	8.20	7.80	
00410	T ALK	CACO3	MG/L	125	160	107	134	141	138	
00530	RESIDUE	TOT NFLT	MG/L	8	8	5	11	5	6	
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.430	.050K	.050K	.050K	.050K	
00612	UN-IONZD	NH3-N	MG/L	.011S	.012S	.008S	.001S	.003S	.0010S	
00615	NO2-N	TOTAL	MG/L	.020K	.020K	.020K	.020	.020K	.020K	
00619	UN-IONZD	NH3-NH3	MG/L	.013S	.015S	.010S	.001S	.004S	.001S	
00625	TOT KJEL	N	MG/L	.500	1.000	.300	.700	.400	.300	
00630	NO2&NO3	N-TOTAL	MG/L	.10K	.10K	.10K	.10K	.10K	.10K	
00665	PHOS-TOT		MG/L P	.090		.070	.100	.050	.033	
00900	TOT HARD	CACO3	MG/L	173	191	152	178	196	191	
00916	CALCIUM	CA-TOT	MG/L	48.0	55.0	41.0	50.0	57.0	55.0	
00927	MGNSIUM	MG,TOT	MG/L	13.0	13.0	12.0	13.0	13.0	13.0	
00945	SULFATE	SO4-TOT	MG/L	46	42	44	38	47	46	
01002	ARSENIC	AS,TOT	UG/L	18	49	16	22	4	6	
01003	ARSENIC	SEDMG/KG	DRY WGT							174.00
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							1.02
01029	CHROMIUM	SEDMG/KG	DRY WGT							25.70
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	2K	2K	2K	2K	2K	2K	
01043	COPPER	SEDMG/KG	DRY WGT							49.70
01045	IRON	FE,TOT	UG/L	50K	152	50K	162	50K	93	
01051	LEAD	PB,TOT	UG/L	2K	2K	2K	2K	2K	2K	
01052	LEAD	SEDMG/KG	DRY WGT							123.00
01053	MN MUD	DRY WGT	MG/KG-MN							2160.00
01055	MANGNESE	MN	UG/L				1910.0	110.0	248.0	
01068	NICKEL	SEDMG/KG	DRY WGT							45.40

(SAMPLE CONTINUED ON NEXT PAGE)

OH1033-363L-1
41 01 04.0 081 33 17.0 2
REX LAKE L-1
39153 OHIO SUMMIT
OHIO RIVER 050400
/TYPA/AMBNT/LAKE/BIO MUSKINGUM RIVER
210HIO 940219 05040001
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

INITIAL DATE				92/08/03	92/08/03	92/08/25	92/08/25	93/06/08	93/06/08	93/06/08
INITIAL TIME				1030	1045	1145	1200	1000	1015	1030
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	18	1.5	15	1.5	15	
01032	STRONTUM	SR,TOT	UG/L	108	125	81	92	111	106	
01083	SR MUD	DRY WGT	MG/KG-SR							80.80
01092	ZINC	ZN,TOT	UG/L	10K	10K	10K	10K	10K	33	
01093	ZINC	SEDMG/KG	DRY WGT							209.00
01148	SELENIUM	SEDMG/KG	DRY WGT							.27K
46570	CAL HARD	CA MG	MG/L	173S	191S	152S	178S	196S	191S	
70300	RESIDUE	DISS-180 C	MG/L	341	366	322	336	346	338	
71921	MERCURY	SEDMG/KG	DRY WGT							.1
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225	940301

0947127-340L-1
38 43 46.0 083 10 34.0 2
ROOSEVELT LAKE L-1
39145 OHIO SCIOTO
OHIO RIVER 052100
/TYPA/AMBNT/LAKE/RIO SOUTHWEST OHIO RIVER TRIBUTARIES
21OHIO 940219 05090201
0000 FEET DEPTH

INITIAL DATE				92/08/05	92/08/05	92/08/27	92/08/27	93/05/25	93/05/25	93/05/25
INITIAL TIME				1210	1250	1315	1320	1308	1333	1415
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				7.5	1.5	10.5	10.5	9	1.5	
00010	WATER	TEMP	CENT	17.5	20.8	20.4	26.7	14.6	19.0	
00011	WATER	TEMP	FAHN	63.5$	69.4$	68.7$	80.1$	58.3$	66.2$	
00094	CNDUCTVY	FIELD	MICROMHO	70	78	80	100	61	79	
00299	DO	PROBE	MG/L	7.0	7.9	3.9	7.7	12.7	10.3	
00301	DO	SATUR	PERCENT	72.2$	87.8$	42.4$	95.1$	124.5$	109.6$	
00310	BOD	5 DAY	MG/L	1.3	1.1	1.0	1.0K	4.3	1.0K	
00400	PH		SU	7.68	7.63	7.13	7.05	6.59	6.83	
00410	T ALK	CACO3	MG/L	29	17	32	21	16	16	
00530	RESIDUE	TOT NFLT	MG/L	10	5K	5K	5K	9	5K	
00610	NH3+NH4-	N TOTAL	MG/L	.290	.050K	.090	.050K	.050K	.050K	
00612	UN-IONZD	NH3-N	MG/L	.005$	.0009$	.0005$	.0004$	.00005$	.0001$	
00615	NO2-N	TOTAL	MG/L	.020	.020	.020K	.020K	.020K	.020K	
00619	UN-IONZD	NH3-NH3	MG/L	.005$	.001$	.0006$	.0004$	.00006$	.0002$	
00620	NO3-N	TOTAL	MG/L		10.000K		10.000K			
00625	TOT KJEL	N	MG/L	.700	.400	.400	.200	.200	.200K	
00630	NO2&NO3	N-TOTAL	MG/L	.10K	.10K	.12	.10K	.13	.11	
00665	PHOS-TOT		MG/L P	.030	.015	.015	.010	.030	.008	
00900	TOT HARD	CACO3	MG/L	29	29	26		26	33	
00916	CALCIUM	CA-TOT	MG/L	5.0	5.0	4.0	5.0	4.0	5.0	
00927	MGNSIUM	MG,TOT	MG/L	4.0	4.0	4.0	4.0	4.0	5.0	
00945	SULFATE	SO4-TOT	MG/L	18	25	5K	24	36	24	
01002	ARSENIC	AS,TOT	UG/L	3	2K	2K	2K	2K	2K	
01003	ARSENIC	SEDMG/KG	DRY WGT							11.20
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							.54
C1029	CHROMIUM	SEDMG/KG	DRY WGT							17.20
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
C1042	COPPER	CU,TOT	UG/L	2K	2K	2K	2	10K	10K	
01043	COPPER	SEDMG/KG	DRY WGT							12.50
01045	IRON	FE,TOT	UG/L			621	436	420	216	
01051	LEAD	PB,TOT	UG/L	2K	2K	2K	2K	2	2K	
01052	LEAD	SEDMG/KG	DRY WGT							32.30
01053	MN MUD	DRY WGT	MG/KG-MN							311.00
01055	MANGNESE	MN	UG/L	2260.0	17.0	453.0	35.0	60.0	34.0	

(SAMPLE CONTINUED ON NEXT PAGE)

0447127-340L-1
38 43 45.0 083 10 34.0 2
ROOSEVELT LAKE L-1
39145 OHIO SCIOTO
OHIO RIVER 052100
/TYPA/AMBNT/LAKE/BIO SOUTHWEST OHIO RIVER TRIBUTARIES
210HIO 94C219 05090201
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

	INITIAL DATE			92/08/05	92/08/05	92/08/27	92/08/27	93/05/25	93/05/25	93/05/25
	INITIAL TIME			1210	1250	1315	1320	1308	1333	1415
	MEDIUM			WATER	WATER	WATER	WATER	WATER	WATER	WATER
	DEPTH-FT(SMK)			7.5	1.5	10.5	10.5	9	1.5	
01063	NICKEL	SEDMG/KG	DRY WGT							27.90
01082	STRONTUM	SR,TOT	UG/L	36	36	30K	30K	30K	30	
01083	SR MUD	DRY WGT	MG/KG-SR							7.85
01092	ZINC	ZN,TOT	UG/L	10K	10K	41	40	10K	10K	
01093	ZINC	SEDMG/KG	DRY WGT							97.00
01105	ALUMINUM	AL,TOT	UG/L					200K	200K	
01148	SELENIUM	SEDMG/KG	DRY WGT							.66K
46570	CAL HARD	CA MG	MG/L	29$	29$	26$	29$	26$	33$	
70300	RESIDUE	DISS-180	C . MG/L	78	68	68	64	74	76	
71921	MERCURY	SEDMG/KG	DRY WGT							.05
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225	940225

OH2516-239L-1
39 20 00.0 082 25 00.0 2
RUSH CREEK LAKE L-1
39127 OHIO PERRY
OHIO RIVER 050600
HOCKING RIVER
210HIO 940219 05030204
0000 FEET DEPTH

/TYPA/AMOUNT/LAKE/SIO

INITIAL DATE				92/08/14	92/08/14	92/09/09	92/09/09	93/05/25	93/06/08	93/06/08
INITIAL TIME				1040	1110	0945	1010	1145	0815	0851
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	19.5	1.5	19.5		1.5	29
00010	WATER	TEMP	CENT	24.8	13.4	23.9	14.4		21.4	7.8
00011	WATER	TEMP	FAHN	76.6$	56.1$	75.0$	57.9$		70.5$	46.0$
00094	CNDUCTVY	FIELD	MICROMHO	280	310	300	360		323	258
00299	DO	PROBE	MG/L	11.8	.4	10.2	.3		7.6	.4
00301	DO	SATUR	PERCENT	140.5$	3.8$	120.0$	2.9$		84.4$	2.9$
00310	BOD	5 DAY	MG/L	3.1	1.2	3.5	8.3		1.1	5.4
00400	PH		SU	9.25	7.15	9.22	7.28		8.20	7.00
00410	T ALK	CACO3	MG/L	106	173	110	167		112	151
00530	RESIDUE	TOT NFLT	MG/L	5K	133	9	10		5K	14
00610	NH3+NH4-	N TOTAL	MG/L	.050K	1.880	.050K	2.510		.050K	2.690
00612	UN-IONZD	NH3-N	MG/L	.025$	.006$	.023$	.012$		.003$	.004$
00615	NO2-N	TOTAL	MG/L	.080	.030	.050	.020K		.050	.020K
00619	UN-IONZD	NH3-NH3	MG/L	.030$	.008$	.028$	.015$		.004$	.005$
00620	NO3-N	TOTAL	MG/L				36.000			
00625	TOT KJEL	N	MG/L	1.100	212.000	.700	2.600		.400	2.700
00630	NO2&NO3	N-TOTAL	MG/L	2.11	.10K	.81	.10K		2.51	.40
00665	PHOS-TOT		MG/L P	.041	.100	.060	.036		.060	.080
00900	TOT HARD	CACO3	MG/L	133	184		198		168	173
00916	CALCIUM	CA-TOT	MG/L	35.0	49.0	36.0	53.0		44.0	46.0
00927	MGNSIUM	MG,TOT	MG/L	11.0	15.0	12.0	16.0		14.0	14.0
00945	SULFATE	SO4-TOT	MG/L	34	39	29	30		39	27
01002	ARSENIC	AS,TOT	UG/L	2	4	2K	7		2K	5
01003	ARSENIC	SEDMG/KG	DRY WGT					20.70		
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K		.2K	.2K
01028	CD MUD	DRY WGT	MG/KG-CD					.45		
01029	CHROMIUM	SEDMG/KG	DRY WGT					33.60		
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K		30K	30K
01042	COPPER	CU,TOT	UG/L	10K	10K	2K	2K		2K	3
01043	COPPER	SEDMG/KG	DRY WGT					35.30		
01045	IRON	FE,TOT	UG/L						225	1460
01051	LEAD	PB,TOT	UG/L	2K	2K	2K	2K		3	2K
01052	LEAD	SEDMG/KG	DRY WGT					46.90		
01053	MN MUD	DRY WGT	MG/KG-MN					1300.00		
01055	MANGNESE	MN	UG/L	11.0	2710.0	17.0	4330.0		11.0	5450.0

(SAMPLE CONTINUED ON NEXT PAGE)

OH2516-229L-1
39 20 00.0 082 25 00.0 2
RUSH CREEK LAKE L-1
39127 OHIO PERRY
OHIO RIVER 050600
/TYPA/AMBNT/LAKE/BIO HOCKING RIVER
21OHIO 940219 05030204
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

	INITIAL DATE			92/08/14	92/08/14	92/09/09	92/09/09	93/05/25	93/06/08	93/06/08
	INITIAL TIME			1040	1110	0945	1010	1145	0815	0851
	MEDIUM			WATER	WATER	WATER	WATER	WATER	WATER	WATER
	DEPTH-FT(SMK)			1.5	19.5	1.5	19.5		1.5	29
01068	NICKEL	SEDMG/KG	DRY WGT					52.50		
01082	STRONTUM	SR,TOT	UG/L	166	268	176	260		178	176
01083	SR MUD	DRY WGT	MG/KG-SR					20.50		
01092	ZINC	ZN,TOT	UG/L	22	10K	10K	10K		10K	10K
01093	ZINC	SEDMG/KG	DRY WGT					174.00		
01148	SELENIUM	SEDMG/KG	DRY WGT					1.17K		
31616	FEC COLI	MFM-FCBR	/100ML	11500		5700			10K	
31648	E.COLI	MTEC-MF	NO/100ML						10K	
46570	CAL HARD	CA MG	MG/L	133$	184$	139$	198$		168$	173$
70300	RESIDUE	DISS-180 C	MG/L	186	252	210	262			244
71921	MERCURY	SEDMG/KG	DRY WGT					.04		
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225	940225

OH47115-SSPL-1
38 44 02.0 083 11 24.0 2
TURKEY CREEK LAKE L-1
39145 OHIO SCIOTO
OHIO RIVER 052100
/TYPA/AMBNT/LAKE/BIO SOUTHWEST OHIO RIVER TRIBUTARIES
210HIC 940219 05090201
0000 FEET DEPTH

INITIAL DATE				92/08/05	92/08/05	92/08/27	92/08/27	93/05/25	93/05/25	93/05/25
INITIAL TIME				1115	1130	1135	1210	1115	1128	1220
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				21	1.5	24	1.5	24	1.5	
00010	WATER	TEMP	CENT	9.8	24.1	8.9	27.4	7.5	19.5	
00011	WATER	TEMP	FAHN	49.6S	75.4S	48.0S	81.3S	45.5S	67.1S	
00094	CNDUCTVY	FIELD	MICROMHO	78	93	370	100	55	75	
00299	DO	PROBE	MG/L	.0	9.0	.1	8.9	4.1	9.3	
00301	DO	SATUR	PERCENT	.0S	105.9S	.9S	109.9S	33.6S	98.9S	
00310	BOD	5 DAY	MG/L	1.0K	1.0K	2.8	1.0K	1.0K	1.0K	
00400	PH		SU	7.72	7.18	8.04	7.47	7.75	7.76	
00410	T ALK	CACO3	MG/L	17	16	40	20	12	11	
00530	RESIDUE	TOT NFLT	MG/L	5K	5K	8	5K	5K	5K	
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.050K	1.000	.050K	.150	.050K	
00612	UN-IONZD	NH3-N	MG/L	.0005S	.0004S	.018S	.0010S	.001S	.001S	
00615	NO2-N	TOTAL	MG/L	.020	.030	.020K	.020K	.020K	.020K	
00619	UN-IONZD	NH3-NH3	MG/L	.0006S	.0005S	.022S	.001S	.002S	.001S	
00625	TOT KJEL	N	MG/L	.200	.300	1.300	.200	.400	.200	
00630	NO2&NO3	N-TOTAL	MG/L	.28	.16	.10K	.10K	.23	.10	
00665	PHOS-TOT		MG/L P	.011	.012K	.028	.008	.008	.008	
00900	TOT HARD	CACO3	MG/L	26	26	29	29	26	26	
00916	CALCIUM	CA-TOT	MG/L	4.0	4.0	5.0	5.0	4.0	4.0	
00927	MGNSIUM	MG,TOT	MG/L	4.0	4.0	4.0	4.0	4.0	4.0	
00945	SULFATE	SO4-TOT	MG/L	18	18	16	26	12	22	
01002	ARSENIC	AS,TOT	UG/L	2K	2K	8	2K	2K	2K	
01003	ARSENIC	SEDMG/KG	DRY WGT							16.80
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							.50
01029	CHROMIUM	SEDMG/KG	DRY WGT							29.30
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	2K	2K	2K	2K	2K	2K	
01043	COPPER	SEDMG/KG	DRY WGT							18.20
01045	IRON	FE,TOT	UG/L			12700	177	278	99	
01051	LEAD	PB,TOT	UG/L	2K	3K	2K	2K	2K	2K	
01052	LEAD	SEDMG/KG	DRY WGT							35.00
01053	MN MUD	DRY WGT	MG/KG-MN							326.00
01055	MANGNESE	MN	UG/L	119.0	94.0	2410.0	12.0	469.0	34.0	
01068	NICKEL	SEDMG/KG	DRY WGT							43.40

(SAMPLE CONTINUED ON NEXT PAGE)

CH47115-339L-1
38 44 02.0 083 11 24.0 2
TURKEY CREEK LAKE L-1
39145 OHIO SCIOTO
OHIO RIVER 052100
/TYPA/AMBNT/LAKE/BIO SOUTHWEST OHIO RIVER TRIBUTARIES
21OHIO 940219 05090201
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

INITIAL DATE				92/08/05	92/08/05	92/08/27	92/08/27	93/05/25	93/05/25	93/05/25
INITIAL TIME				1115	1130	1135	1210	1115	1128	1220
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				21	1.5	24	1.5	24	1.5	
01082	STRONTUM	SR,TOT	UG/L	33	32	30K	30K	30K	30K	
01083	SR MUD	DRY WGT	MG/KG-SR							9.00
01092	ZINC	ZN,TOT	UG/L	10K	10K	65	19	10K	10K	
01093	ZINC	SEDMG/KG	DRY WGT							134.00
01105	ALUMINUM	AL,TOT	UG/L					200K	200K	
01148	SELENIUM	SEDMG/KG	DRY WGT							2.00K
31616	FEC COLI	MFM-FCBR	/100ML	520			10K			
46570	CAL HARD	CA MG	MG/L	26$	26$	29$	29$	26$	26$	
70300	RESIDUE	DISS-180	C MG/L	58	64	90	66	64	74	
71921	MERCURY	SEDMG/KG	DRY WGT							.05
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225	940301

OH1033-364L-1
40 57 45.0 081 32 17.0 2
TURKEYFOOT LAKE L-1
39153 OHIO SUMMIT
OHIO RIVER 050400
MUSKINGUM RIVER
21OHIO 940219 05040001
0000 FEET DEPTH

/TYPA/AMBNT/LAKE/RIO

	INITIAL DATE			92/08/03	92/08/03	92/08/25	92/08/25	93/06/08	93/06/09	93/06/08
	INITIAL TIME			1130	1145	1000	1015	1045	1100	1115
	MEDIUM			WATER	WATER	WATER	WATER	WATER	WATER	WATER
	DEPTH-FT(SMK)			1.5	45	1.5	45	1.5	45	
00010	WATER	TEMP	CENT	24.0	6.3	25.5	6.8	20.5	6.1	
00011	WATER	TEMP	FAHN	75.2$	43.3$	77.9$	44.2$	68.9$	43.0$	
00094	CNDUCTVY	FIELD	MICROMHO	530	430	535	414	660	480	
00299	DO	PROBE	MG/L	9.0	.1	9.9	.1	9.5	.2	
00301	DO	SATUR	PERCENT	105.9$	.8$	117.9$	.8$	103.3$	1.6$	
00310	BOD	5 DAY	MG/L	3.9	3.3	3.1	4.2	3.5	1.2	
00400	PH		SU	8.70	3.00	8.50	7.60	8.30	7.50	
00410	T ALK	CACO3	MG/L	116	163	114	163	141	144	
00530	RESIDUE	TOT NFLT	MG/L	6	6	5K	5	5	5	
00610	NH3+NH4-	N TOTAL	MG/L	.050K	1.280	.050K	1.290	.050K	.050K	
00612	UN-IONIZD	NH3-N	MG/L	.010$	.017$	.005$	.007$	.004$	.0002$	
00615	NO2-N	TOTAL	MG/L	.020K	.020K	.020K	.020	.020K	.040	
00619	UN-IONZD	NH3-NH3	MG/L	.013$	.021$	.006$	.009$	.005$	.0003$	
00625	TOT KJEL	N	MG/L	.800	1.500	.600	1.600	.500	.300	
00630	NO2&NO3	N-TOTAL	MG/L	.10K	.10K	.10K	.10K	.10K	.10K	
00665	PHOS-TOT		MG/L P	.070	.290	.060	.340	.070	.060	
00900	TOT HARD	CACO3	MG/L	444	205	162	210	193	198	
00916	CALCIUM	CA-TOT	MG/L	46.0	59.0	45.0	61.0	56.0	38.0	
00927	MGNSIUM	MG,TOT	MG/L	12.0	14.0	12.0	14.0	13.0	13.0	
00945	SULFATE	SO4-TOT	MG/L	47	44		48	44	39	
01002	ARSENIC	AS,TOT	UG/L	7	9	7	10	2	2	
01003	ARSENIC	SEDMG/KG	DRY WGT							65.40
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							.65
01029	CHROMIUM	SEDMG/KG	DRY WGT							26.00
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	2K	2K	2K	2K	2K	2K	
01043	COPPER	SEDMG/KG	DRY WGT							33.20
01045	IRON	FE,TOT	UG/L	50K	240	59	372	55	50K	
01051	LEAD	PB,TOT	UG/L	2K	2K	2K	2K	2K	2K	
01052	LEAD	SEDMG/KG	DRY WGT							135.00
01053	MN MUD	DRY WGT	MG/KG-MN							2810.00
01055	MANGNESE	MN	UG/L	80.0	2150.0	50.0	2190.0	96.0	790.0	
01068	NICKEL	SEDMG/KG	DRY WGT							32.90

(SAMPLE CONTINUED ON NEXT PAGE)

OH1033-364L-1
40 57 45.0 081 32 17.0 2
TURKEYFOOT LAKE L-1
39153 OHIO SUMMIT
OHIO RIVER 057400
/TYPA/AMBNT/LAKE/BIO MUSKINGUM RIVER
210HIO 940219 05040001
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

INITIAL DATE				92/08/03	92/08/03	92/08/25	92/08/25	93/06/08	93/06/08	93/06/08
INITIAL TIME				1130	1145	1000	1015	1045	1100	1115
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	45	1.5	45	1.5	45	
01082	STRONTUM	SR,TOT	UG/L	105	131	97	107	114	105	
01033	SR MUD	DRY WGT	MG/KG-SR							115.00
01092	ZINC	ZN,TOT	UG/L	10K	40	10K	10K	10K	10K	
01093	ZINC	SEDMG/KG	DRY WGT							172.00
01148	SELENIUM	SEDMG/KG	DRY WGT							1.72K
46570	CAL HARD	CA MG	MG/L	164S	205S	162S	210S	193S	198S	
70300	RESIDUE	DISS-180 C	MG/L	336	386	328	380	344	371	
71921	MERCURY	SEDMG/KG	DRY WGT							.07K
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225	940301

OH7311-137L-1
41 30 49.0 084 08 51.0 2
WAUSEON RESERVOIR #2 L-1
39051 OHIO FULTON
LAKE ERIE 060100
MAUMEE RIVER
21OHIO 940219 04100009
0000 FEET DEPTH

/TYPA/AMONT/LAKE/BIO

INITIAL DATE				92/08/17	92/08/17	92/09/16	92/09/16	93/05/19	93/05/19	93/05/19
INITIAL TIME				1020	1029	0945	0955	1350	1405	1410
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	15	1.5	13.5	1.5	12	
00010	WATER	TEMP	CENT	21.9	21.6	21.5	20.4	16.4	16.2	
00011	WATER	TEMP	FAHN	71.2S	70.9S	70.7S	68.7S	61.5S	61.2S	
00094	CNDUCTVY	FIELD	MICROMHO	500	495	490	480	440	435	
00299	DO	PROBE	MG/L	7.3	7.1	10.6	5.4	9.0	9.0	
00301	DO	SATUR	PERCENT	83.0S	80.7S	117.8S	58.7S	90.0S	90.0S	
00310	BOD	5 DAY	MG/L	1.5	1.2	2.1	1.0	1.6	1.6	
00400	PH		SU	8.70	8.60	9.10	8.40	8.53	8.54	
00403	PH	LAB	SU					8.4	8.4	
00410	T ALK	CACO3	MG/L	134	131	122	130	155	155	
00530	RESIDUE	TOT NFLT	MG/L	8	10	9	24	10	12	
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.050K	.050K	.090	.050K	.050K	
00612	UN-IONZD	NH3-N	MG/L	.009S	.008S	.018S	.008S	.005S	.005S	
00615	NO2-N	TOTAL	MG/L	.080	.080	.060	.060	.030	.040	
00619	UN-IONZD	NH3-NH3	MG/L	.011S	.009S	.022S	.010S	.006S	.006S	
00625	TOT KJEL	N	MG/L	.800	.800	.200	.400	.700	.600	
00630	NO2&NO3	N-TOTAL	MG/L	2.94	2.93	1.88	1.83	1.95	1.94	
00665	PHOS-TOT		MG/L P	.041	.040	.230	.110	.037	.044	
00930	TOT HARD	CACO3	MG/L	225	236	224	226	237	235	
00916	CALCIUM	CA-TOT	MG/L	57.0	60.0	55.0	56.0	62.0	61.0	
00927	MGNSIUM	MG,TOT	MG/L	20.0	21.0	21.0	21.0	20.0	20.0	
00945	SULFATE	SO4-TOT	MG/L	77	82	80	77	59	58	
01002	ARSENIC	AS,TOT	UG/L	2K	2K	2K	2K	2K	2K	
01003	ARSENIC	SEDMG/KG	DRY WGT							7.83
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							.77
01029	CHROMIUM	SEDMG/KG	DRY WGT							38.00
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	9	11	10K	10	13	13	
01043	COPPER	SEDMG/KG	DRY WGT							427.00
01045	IRON	FE,TOT	UG/L	149	329	179	810	297	312	
01051	LEAD	PB,TOT	UG/L	13	3	4	2	2K	2K	
01052	LEAD	SEDMG/KG	DRY WGT							44.10
01053	MN MUD	DRY WGT	MG/KG-MN							532.00
01055	MANGNESE	MN	UG/L	12.0	15.0	14.0	36.0	15.0	14.0	

(SAMPLE CONTINUED ON NEXT PAGE)

OH7311-137L-1
41 30 49.0 084 08 51.0 2
WAUSEON RESERVOIR #2 L-1
39051 OHIO FULTON
LAKE ERIE 060100
/TYPA/AMBNT/LAKE/BIO MAUMEE RIVER
210HIO 940219 04100009
0000 FEET DEPTH

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

INITIAL DATE				92/08/17	92/08/17	92/09/16	92/09/16	93/05/19	93/05/19	93/05/19
INITIAL TIME				1020	1029	0945	0955	1350	1405	1410
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	15	1.5	13.5	1.5	12	
01068	NICKEL	SEDMG/KG	DRY WGT							43.40
01082	STRONTUM	SR,TOT	UG/L	416	423	424	432	364	361	
01083	SR MUD	DRY WGT	MG/KG-SR							128.00
01092	ZINC	ZN,TOT	UG/L	10K	10K	10K	10K	10K	10K	
01093	ZINC	SEDMG/KG	DRY WGT							132.00
01148	SELENIUM	SEDMG/KG	DRY WGT							.31
46570	CAL HARD	CA MG	MG/L	2235	2368	2248	2269	2375	2356	
70300	RESIDUE	DISS-180 C	MG/L	342	342	344	356	344	340	
71921	MERCURY	SEDMG/KG	DRY WGT							.08
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225	940504

/PA/AMBNT/LAKE/BIO

OH4969-044L-1
38 56 23.0 083 48 04.0 2
WAYNOKA UPGROUND RESERVOIR L-1
39015 OHIO BROWN
OHIO RIVER 052100
SOUTHWEST OHIO RIVER TRIBUTARIES
210HIO 940219 05090201
0000 FEET DEPTH

INITIAL DATE				92/08/05	92/03/05	92/08/26	92/08/26	93/05/26	93/05/26
INITIAL TIME				1100	1130	1130	1215	1115	1200
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	33	1.5	9	1.5	10.5
00010	WATER	TEMP	CENT	24.0					
00011	WATER	TEMP	FAHN	75.2$					
00299	DO	PROBE	MG/L	7.2					
00301	DO	SATUR	PERCENT	84.7$					
00310	BOD	5 DAY	MG/L	2.1	3.4			1.4	1.5
00400	PH		SU	8.34					
00410	T ALK	CACO3	MG/L	86	90	84	89	82	86
00530	RESIDUE	TOT NFLT	MG/L	5	10			5K	5K
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.140	.050K	.050K	.030K	.050K
00612	UN-IONZD	NH3-N	MG/L	.013$					
00615	NO2-N	TOTAL	MG/L	.020	.020	.020K	.020K	.020K	.020K
00619	UN-IONZD	NH3-NH3	MG/L	.015$					
00625	TOT KJEL	N	MG/L	.700	1.100	.400	.600	.500	.500
00630	NO2&NO3	N-TOTAL	MG/L	.10K	.10K	.10K	.10K	.10K	.10K
00665	PHOS-TOT		MG/L P	.050	.080	.050K	.050K	.012	.012
00900	TOT HARD	CACO3	MG/L	95	98			107	107
00916	CALCIUM	CA-TOT	MG/L	25.0	26.0	26.0	26.0	28.0	28.0
00927	MGNSIUM	MG,TOT	MG/L	8.0	8.0			9.0	9.0
00945	SULFATE	SO4-TOT	MG/L					24	30
01002	ARSENIC	AS,TOT	UG/L	9	3	2	2K	2K	2K
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K
01042	COPPER	CU,TOT	UG/L	72	104	23	36	10	15
01051	LEAD	PB,TOT	UG/L	2K	2K	2K	2K	2K	2K
01055	MANGNESE	MN	UG/L	245.0	973.0			28.0	32.0
01082	STRONTUM	SR,TOT	UG/L	124	128			125	128
01092	ZINC	ZN,TOT	UG/L	10K	10K	10K	10K	10K	19
31616	FEC COLI	MFM-FCBR	/100ML	10K		10K		10K	
31643	E.COLI	MTEC-MF	NO/100ML					10K	
46570	CAL HARD	CA MG	MG/L	95$	98$			107$	107$
70300	RESIDUE	DISS-180	C MG/L	126	116			148	148
74041	WQF	SAMPLE	UPDATED	940728	940728	940728	940728	940728	940728

OH4713-043L-1
39 56 31.0 083 48 12.0 2
WAYNOKA RESERVOIR L-1
39015 OHIO BROWN
OHIO RIVER 052100
/TYPA/AMBNT/LAKE/BIO SOUTHWEST OHIO RIVER TRIBUTARIES
210HIO 940730 05090201
0000 FEET DEPTH

INITIAL DATE				92/08/05	92/08/05	92/08/26	92/08/26	93/05/26	93/05/26	93/05/26
INITIAL TIME				1215	1300	1020	1045	1300	1400	1400
MEDIUM				WATER	WATER	WATER	WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				1.5	27	1.5	12	1.5	11.5	
00010	WATER	TEMP	CENT	24.0			25.5			
00011	WATER	TEMP	FAHN	75.2S			77.9S			
00094	CNDUCTVY	FIELD	MICROMHO	230						
00299	DO	PROBE	MG/L	10.5			8.2			
00301	DO	SATUR	PERCENT	123.5S			97.6S			
00310	BOD	5 DAY	MG/L	4.1	12.0			16.0	11.0	
00400	PH		SU	7.36			8.32			
00410	T ALK	CACO3	MG/L	71	98	77	141	65	82	
00530	RESIDUE	TOT NFLT	MG/L	5K	12			19	28	
00610	NH3+NH4-	N TOTAL	MG/L	.050K	2.200	.060	5.410	.050K	.290	
00612	UN-IONZD	NH3-N	MG/L	.0006S			.592S			
00615	NO2-N	TOTAL	MG/L	.020	.020	.020K	.020K	.020K	.020K	
00619	UN-IONZD	NH3-NH3	MG/L	.0007S			.719S			
00625	TOT KJEL	N	MG/L	1.200	3.400	.900	6.600	1.900	1.100	
00630	NO2&NO3	N-TOTAL	MG/L	.10K	.10K	.10K	.10K	.10K	.10K	
00665	PHOS-TOT		MG/L P	.100	.790	.050K	2.360	.120	.690	
00900	TOT HARD	CACO3	MG/L	95	91			81	93	
00916	CALCIUM	CA-TOT	MG/L	25.0	25.0	25.0	31.0	21.0	24.0	
00927	MGNSIUM	MG,TOT	MG/L	8.0	7.0			7.0	8.0	
00945	SULFATE	SO4-TOT	MG/L					21	24	
01002	ARSENIC	AS,TOT	UG/L	3	3	2	5	3	8	
01003	ARSENIC	SEDMG/KG	DRY WGT							10.10
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K	.2K	.2K	
01028	CD MUD	DRY WGT	MG/KG-CD							.28
01029	CHROMIUM	SEDMG/KG	DRY WGT							37.40
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K	30K	30K	
01042	COPPER	CU,TOT	UG/L	10K	10K	10K	10K	10K	10K	
01043	COPPER	SEDMG/KG	DRY WGT							33.80
01051	LEAD	PB,TOT	UG/L	2K	2K	2K	2K	2K	2K	
01052	LEAD	SEDMG/KG	DRY WGT							41.60
01053	MN MUD	DRY WGT	MG/KG-MN							389.00
01055	MANGNESE	MN	UG/L	162.0	2030.0			219.0	1560.0	
01068	NICKEL	SEDMG/KG	DRY WGT							33.70
01082	STRONTUM	SR,TOT	UG/L	116	111			90	104	

(SAMPLE CONTINUED ON NEXT PAGE)

```
                                                    042101-079L-1
                                                    40 09 18.0 081 51 01.0 2
                                                    WILLS CREEK LAKE L-1
                                                    39119   OHIO                MUSKINGUM
                                                    OHIO RIVER                  050400
/TYPA/AMBNT/LAKE/BIO                                MUSKINGUM RIVER
                                                    210HIO    940219                05040005
                                                    0000 FEET DEPTH
```

(SAMPLE CONTINUED FROM PREVIOUS PAGE)

	INITIAL DATE			92/08/06	92/08/06	92/08/31	92/08/31	93/05/26	93/05/26	93/05/26
	INITIAL TIME			1135	1143	1300	1315	1425	1440	1440
	MEDIUM			WATER	WATER	WATER	WATER	WATER	WATER	WATER
	DEPTH-FT(SMK)			12	1.5	12	1.5	10.5	1.5	
01068	NICKEL	SEDMG/KG	DRY.WGT							10.20
01082	STRONTUM	SR,TOT	UG/L	195	190	179	176	387	374	
01083	SR MUD	DRY WGT	MG/KG-SR							84.00
01092	ZINC	ZN,TOT	UG/L	10K	10K	136	37	22	12	
01093	ZINC	SEDMG/KG	DRY WGT							18.00
01105	ALUMINUM	AL,TOT	UG/L					1060	577	
01147	SELENIUM	SE,TOT	UG/L					2K	10K	
01148	SELENIUM	SEDMG/KG	DRY WGT							.57K
31616	FEC COLI	MFM-FCBR	/100ML		40		380			
46570	CAL HARD	CA MG	MG/L	154$	157$	144$	144$	318$	300$	
70300	RESIDUE	DISS-180 C	MG/L	220	226	272	260	472	454	
71921	MERCURY	SEDMG/KG	DRY WGT							.06
74041	WQF	SAMPLE	UPDATED	940225	940225	940225	940225	940225	940225	940301

THAT'S ALL FOLKS

OH2101-079L-2
40 09 47.0 081 47 00.0 2
WILLS CREEK LAKE L-2
39119 OHIO MUSKINGUM
OHIO RIVER 050400
MUSKINGUM RIVER
210HIO 940903 05040005
0000 FEET DEPTH

/TYPA/AMBNT/LAKE/RIO

INITIAL DATE				92/08/06	92/08/06	92/08/31	92/08/31
INITIAL TIME				1305	1315	1347	1400
MEDIUM				WATER	WATER	WATER	WATER
DEPTH-FT(SMK)				11	1.5	11	1.5
00010	WATER	TEMP	CENT	22.0	22.4	20.0	20.1
00011	WATER	TEMP	FAHN	71.6$	72.3$	68.0$	68.2$
00094	CNDUCTVY	FIELD	MICROMHO	340	343	360	360
00299	DO	PROBE	MG/L	5.8	6.0	6.2	6.2
00301	DO	SATUR	PERCENT	65.9$	68.2$	67.4$	67.4$
00310	BOD	5 DAY	MG/L	1.5	1.5	1.7	1.7
00400	PH		SU	7.71	7.66	7.58	7.64
00410	T ALK	CACO3	MG/L	81	77	86	87
00530	RESIDUE	TOT NFLT	MG/L	66	50	76	81
00610	NH3+NH4-	N TOTAL	MG/L	.050K	.050K	.050K	.050K
00612	UN-IONZD	NH3-N	MG/L	.001$	.001$	.0007$	.0009$
00615	NO2-N	TOTAL	MG/L	.040	.040	.020	.020
00619	UN-IONZD	NH3-NH3	MG/L	.001$	.001$	.0009$	.001$
00625	TOT KJEL	N	MG/L	.300	.200K	.300	1.400
00630	NO2&NO3	N-TOTAL	MG/L	.22	.21	.57	.57
00665	PHOS-TOT		MG/L P	.070	.410	.060	.380
00900	TOT HARD	CACO3	MG/L	154	152	158	158
00916	CALCIUM	CA-TOT	MG/L	42.0	41.0	42.0	42.0
00927	MGNSIUM	MG,TOT	MG/L	12.0	12.0	13.0	13.0
00945	SULFATE	SO4-TOT	MG/L	90	85	104	102
01002	ARSENIC	AS,TOT	UG/L	2K	2K	2K	2K
01027	CADMIUM	CD,TOT	UG/L	.2K	.2K	.2K	.2K
01034	CHROMIUM	CR,TOT	UG/L	30K	30K	30K	30K
01042	COPPER	CU,TOT	UG/L	2	2K	3	3
01045	IRON	FE,TOT	UG/L			3570	3480
01051	LEAD	PB,TOT	UG/L	3	2	4	4
01055	MANGNESE	MN	UG/L	398.0	381.0	278.0	272.0
01082	STRONTUM	SR,TOT	UG/L	191	190	217	217
01092	ZINC	ZN,TOT	UG/L	10K	10K	37	48
31616	FEC COLI	MFM-FCBR	/100ML		100		600
46570	CAL HARD	CA MG	MG/L	154$	152$	158$	158$
70300	RESIDUE	DISS-180 C	MG/L	224	228	270	282
74041	WQF	SAMPLE	UPDATED	940902	940902	940902	940902

Appendix J — REFERENCES

Angelo, C. G. and J. D. Youger. 1985. Chemical and biological quality of selected lakes in Ohio- 1978 and 1979. USGS Open File Report No. 84-249.

Carlson, R. E. 1977. A trophic state index for lakes. Limnol. Oceangr.22: 361-369.

Cooke, G.D., E.B. Welch, S. A. Peterson, and P. R. Newroth. 1986. Lake and reservoir restoration. Butterworth Publishing Company.

Davic, R. D. and J. E. DeShon. 1989. The Ohio lake condition index: A new multi-parameter approach to lake classification. Lake and Reservoir Manage. 5(1): 1-6.

Fulmer, D. G. and G. D. Cooke. 1990. Evaluating the restoration potential of 19 Ohio reservoirs. Lake and Reservoir Manage.6(2): 197-206.

Heiskary, S. A. 1989. Lake assessment program: A cooperative lake study program. Lake and Reservoir Manage. 5(1): 85-94.

Hutchinson, G. E. 1969. Eutrophication: Past and present. P. 17-23 *in* Eutrophication: Causes, consequences, and correctives. Natl. Acad. Sci., Publ 1700.

Illinios EPA. 1988. Illinios Water Quality Report, 1986-1987. Division of Water Pollution Control.

Karr, J. R. 1981. Assessment of biotic integrity using fish communities. Fisheries 6(6): 21-27.

Kelly, M., R. Hite, and K. Rogers. 1984. Analysis of surficial sediment from 63 Illinois lakes. NALMS Journal. Third Annual Conference. pp. 248-253.

NEFCO. 1990. Volunteer lake monitoring program: Lake data summaries. Unpublished Report. 108 pp.

Ohio EPA. 1988a. Ohio's publicly owned lakes/ponds/reservoirs. 1988 Water Quality Inventory [305(b) Report], Volume III.

Ohio EPA. 1988b. Revisions to the State of Ohio Water Quality Standards. Chapter 3745-1 of The Ohio Administrative Code.

Ohio EPA. 1988c. State of Ohio Nonpoint Source Assessment. Division of Water Quality Planning and Assessment.

Ohio EPA. 1989. Manual of Ohio EPA surveillance methods and quality assurance practices. Division of Environmental Services.