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Distribution of Phytoplankton in Indiana Lakes

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DISTRIBUTION OF PHYTOPLANKTON IN INDIANA LAKES

by

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FOREWORD

Protection of the environment requires effective regulatory actions which are based on sound technical and scientific information. This information must include the quantitative description and linking of pollutant sources, transport mechanisms, interactions, and resulting effects on man and his environment. Because of the complexities involved, assessment of specific pollutants in the environment requires a total systems approach which transcends the media of air, water, and land. The Environmental Monitoring and Support Laboratory-Las Vegas contributes to the formation and enhancement of a sound monitoring data base for exposure assessment through programs designed to:

- develop and optimize systems and strategies for monitoring pollutants and their impact on the environment
- demonstrate new monitoring systems and technologies by applying them to fulfill special monitoring needs of the Agency's operating programs

This report presents the species and abundance of phytoplankton in the 27 lakes sampled by the National Eutrophication Survey in the State of Indiana, along with results from the calculation of several commonly used biological indices of water quality and community structure. These data can be used to biologically characterize the study lakes, and as baseline data for future investigations. This report was written for use by Federal, State, and local governmental agencies concerned with water quality analysis, monitoring, and/or regulation. Private industry and individuals similarly involved with the biological aspects of water quality will find the document useful. For further information contact the Water and Land Quality Branch, Monitoring Operations Division.

George B. Morgan
Director
Environmental Monitoring and Support Laboratory
Las Vegas

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INTRODUCTION

The collection and analysis of phytoplankton data were included in the National Eutrophication Survey in an effort to determine relationships between algal characteristics and trophic status of individual lakes.

During spring, summer, and fall of 1973, the Survey sampled 250 lakes in 17 States. Over 700 algal species and varieties were identified and enumerated from the 743 water samples examined.

This report presents the species and abundance of phytoplankton in the 27 lakes sampled in the State of Indiana (Table 1). The Nygaard's Trophic State (Nygaard 1949), Palmer's Organic Pollution (Palmer 1969), and species diversity and abundance indices are also included.

TABLE 1. LAKES SAMPLED IN THE STATE OF INDIANA

STORET #	LAKE NAME	COUNTY
1805	Cataract Lake	Putnam, Owen
1811	Geist Reservoir	Marion, Hamilton
1817	James Lake	Kosciusko
1827	Mississinewa Reservoir	Miami, Wabash, Grant
1828	Monroe Reservoir	Jackson, Monroe, Brown
1829	Morse Reservoir	Hamilton
1836	Wawasee Lake	Kosciusko
1837	Webster Lake	Kosciusko
1839	Whitewater Lake	Union
1840	Winona Lake	Kosciusko
1841	Westler Lake	Lagrange
1842	Witmer Lake	Lagrange
1843	Lake Maxinkuckee	Marshall

(Continued)

TABLE 1. LAKES SAMPLED IN THE STATE OF INDIANA (Continued)

STORET #	LAKE NAME	COUNTY
1844	Tippecanoe Lake	Kosciusko
1845	Dallas Lake	Lagrange
1846	Olin Lake	Lagrange
1847	Oliver Lake	Lagrange
1848	Sylvan Lake	Noble
1849	Hovey Lake	Posey
1850	Versailles Lake	Ripley
1851	Bass Lake	Starke
1852	Crooked Lake	Steuben
1853	Lake James	Steuben
1854	Long Lake	Steuben
1855	Pigeon Lake	Steuben
1856	Marsh Lake	Steuben
1857	Hamilton Lake	Steuben

MATERIALS AND METHODS

LAKE AND SITE SELECTION

Lakes and reservoirs included in the Survey were selected through discussions with State water pollution agency personnel and U.S. Environmental Protection Agency Regional Offices (U.S. Environmental Protection Agency 1975). Screening and selection strongly emphasized lakes with actual or potential accelerated eutrophication problems. As a result, the selection was limited to lakes:

(1) impacted by one or more municipal sewage treatment plant outfalls either directly into the lake or by discharge to an inlet tributary within approximately 40 kilometers of the lake;

(2) 40 hectares or larger in size; and

(3) with a mean hydraulic retention time of at least 30 days.

Specific selection criteria were waived for some lakes of particular State interest.

Sampling sites for a lake were selected based on available information on lake morphometry, potential major sources of nutrient input, and on-site judgment of the field limnologist (U.S. Environmental Protection Agency 1975). Primary sampling sites were chosen to reflect the deepest portion of each major basin in a test lake. Where many basins were present, selection was guided by nutrient source information on hand. At each sampling site, a depth-integrated phytoplankton sample was taken. Depth-integrated samples were uniform mixtures of water from the surface to a depth of 15 feet (4.6 meters) or from the surface to the lower limit of the photic zone representing 1 percent of the incident light, whichever was greater. If the depth at the sampling site was less than 15 feet (4.6 meters), the sample was taken from just off the bottom to the surface. Normally, a lake was sampled three times in 1 year, providing information on spring, summer, and fall conditions.

SAMPLE PREPARATION

To preserve the sample 4 milliliters (ml) of Acid-Lugol's solution (Prescott 1970) were added to each 130-ml sample from each site at the time of collection. The samples were shipped to the Environmental Monitoring and Support Laboratory, Las Vegas, Nevada, where equal volumes from each site were mixed to form two 130-ml composite samples for a given lake. One composite sample was put into storage and the other was used for the examination.

Prior to examination, the composite samples were concentrated by the settling method. Solids were allowed to settle for at least 24 hours prior to siphoning off the supernate. The volume of the removed supernate and the volume of the remaining concentrate were measured and concentrations determined. A small (8-ml) library subsample of the concentrate was then taken. The remaining concentrate was gently agitated to resuspend the plankton and poured into a capped, graduated test tube. If a preliminary examination of a sample indicated the need for a more concentrated sample, the contents of the test tube were further concentrated by repeating the settling method. Final concentrations varied from 15 to 40 times the original.

Permanent slides were prepared from concentrated samples after analysis was complete. A drop of superconcentrate from the bottom of the test tube was placed in a ring of clear Karo® Corn Syrup with phenol (a few crystals of phenol were added to each 100 ml of syrup) on a glass slide, thoroughly mixed, and topped with a coverglass. After the syrup at the edges of the coverglass had hardened, the excess was scraped away and the mount was sealed with clear fingernail polish. Permanent diatom slides were prepared by drying sample material on a coverglass, heating in a muffle furnace at 400° C for 45 minutes, and mounting in Hyrax®. Finally, the mounts were sealed with clear fingernail polish.

Backup samples, library samples, permanent sample slides, and Hyrax®mounted diatom slides are being stored and maintained at the Environmental Monitoring and Support Laboratory-Las Vegas.

EXAMINATION

The phytoplankton samples were examined with the aid of binocular compound microscopes. A preliminary examination was performed to precisely identify and list all forms encountered. The length of this examination varied depending on the complexity of the sample. An attempt was made to find and identify all of the forms present in each sample. Often forms were observed which could not be identified to species or to genus. Abbreviated descriptions were used to keep a record of these forms (e.g., lunate cell, blue-green filament, Navicula #1). Diatom slides were examined using a standard light microscope. If greater resolution was essential to accurately identify the diatoms, a phase-contrast microscope was used.

After the species list was compiled, phytoplankton were enumerated using a Neubauer Counting Chamber with a 40X objective lens and a 10X ocular lens. All forms within each field were counted. The count was continued until a minimum of 100 fields had been viewed, or until the dominant form had been observed a minimum of 100 times.

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QUALITY CONTROL

Internal quality control intercomparisons on species identifications and counts were performed on a regular basis among project phycologists at the rate of 7 percent. Although an individual had primary responsibility for analyzing a sample, taxonomic problems were discussed among the phycologists.

Additional quality control checks were performed on the Survey samples by Dr. G. W. Prescott of the University of Montana at the rate of 5 percent. Quality control checks were made on 75 percent of these samples to verify species identifications while checks were made on the remaining 25 percent of the samples to verify genus counts. Presently, the agreement between quality control checks for species identification and genus enumerations is satisfactory.

RESULTS

The Appendix summarizes all of the phytoplankton data collected from the State by the Survey. It is organized by lake and includes an alphabetical phytoplankton species list with concentrations for individual species given by sampling date. Results from the application of several indices are presented (Nygaard's Trophic State, Palmer's Organic Pollution, and species diversity and abundance). Each lake has been assigned a four-digit STORET number. [STORET (STOrage and RETrieval) is the U.S. Environmental Protection Agency's computer system which processes and maintains water quality data.] The first two digits of the STORET number identify the State; the last two digits identify the lake.

NYGAARD'S TROPHIC STATE INDICES

Five indices devised by Nygaard (1949) were proposed under the assumption that certain algal groups are indicative of levels of nutrient enrichment. These indices were calculated in order to aid in determining the surveyed lakes' trophic status. As a general rule, Cyanophyta, Euglenophyta, centric diatoms, and members of the Chlorococcales are found in waters that are eutrophic (rich in nutrients), while desmids and many pennate diatoms generally cannot tolerate high nutrient levels and so are found in oligotrophic waters (poor in nutrients).

In applying the indices to the Survey data, the number of taxa in each major group was determined from the species list for each sample. The ratios of these groups give numerical values which can be used as a biological index of water richness. The five indices and the ranges of values established for Danish lakes by Nygaard for each trophic state are presented in Table 2. The appropriate symbol, (E) eutrophic and (O) oligotrophic, follows each calculated value in the tables in the Appendix. A question mark (?) following a calculated value in these tables was entered when that value was within the range of both classifications.

PALMER'S ORGANIC POLLUTION INDICES

Palmer (1969) analyzed reports from 165 authors and developed algal pollution indices for use in rating water samples with high organic pollution. Two lists of organic-pollution-tolerant forms were prepared, one containing 20 genera, the other, 20 species (Tables 3 and 4). Each form was assigned a pollution index number ranging from 1 for moderately tolerant forms to 6 for extremely tolerant forms. Palmer based the index numbers on occurrence records and/or where emphasized by the authors as being especially tolerant of organic pollution.

TABLE 2. NYGAARD'S TROPHIC STATE INDICES ADAPTED FROM HUTCHINSON (1967)

Index	Calculation	Oligotrophic	Eutrophic
Myxophycean	Myxophyceae / Desmideae	0.0-0.4	0.1-3.0
Chlorophycean	Chlorococcales / Desmideae	0.0-0.7	0.2-9.0
Diatom	Centric Diatoms / Pennate Diatoms	0.0-0.3	0.0-1.75
Euglenophyte	Euglenophyta / Myxophyceae + Chlorococcales	0.0-0.2	0.0-1.0
Compound	Myxophyceae + Chlorococcales + Centric Diatoms + Euglenophyta / Desmideae	0.0-1.0	1.2-25

TABLE 3. ALGAL GENUS POLLUTION INDEX (Palmer 1969)

Genus	Pollution Index
Anacystis	1
Ankistrodesmus	2
Chlamydomonas	4
Chlorella	3
Closterium	1
Cyclotella	1
Euglena	5
Gomphonema	1
Lepocinclis	1
Melosira	1
Micractinium	1
Navicula	3
Nitzschia	3
Oscillatoria	5
Pandorina	1
Phacus	2
Phormidium	1
Scenedesmus	4
Stigeoclonium	2
Synedra	2

TABLE 4. ALGAL SPECIES POLLUTION INDEX (Palmer 1969)

Species	Pollution Index
Ankistrodesmus falcatus	3
Arthrospira jenneri	2
Chlorella vulgaris	2
Cyclotella meneghiniana	2
Euglena gracilis	1
Euglena viridis	6
Gomphonema parvulum	1
Melosira varians	2
Navicula cryptocephala	1
Nitzschia acicularis	1
Nitzschia palea	5
Oscillatoria chlorina	2
Oscillatoria limosa	4
Oscillatoria princeps	1
Oscillatoria putrida	1
Oscillatoria tenuis	4
Pandorina morum	3
Scenedesmus quadricauda	4
Stigeoclonium tenue	3
Syndra ulna	3

In analyzing a water sample, any of the 20 genera or species of algae present in concentrations of 50 per milliliter or more are recorded. The pollution index numbers of the algae present are totaled, providing a genus score and a species score. Palmer determined that a score of 20 or more for either index can be taken as evidence of high organic pollution, while a score of 15 to 19 is taken as probable evidence of high organic pollution. Lower figures suggest that the organic pollution of the sample is not high, that the sample is not representative, or that some substance or factor interfering with algal persistence is present and active.

SPECIES DIVERSITY AND ABUNDANCE INDICES

"Information content" of biological samples is being used commonly by biologists as a measure of diversity. Diversity in this connection means the degree of uncertainty attached to the specific identity of any randomly selected individual. The greater the number of taxa and the more equal their proportions, the greater the uncertainty, and hence, the diversity (Pielou 1966). There are several methods of measuring diversity, e.g., the formulas given by Brillouin (1962) and Shannon and Weaver (1963). The method which is appropriate depends on the type of biological sample on hand.

Pielou (1966) classifies the types of biological samples and gives the measure of diversity appropriate for each type. The Survey phytoplankton samples are what she classifies as larger samples (collections in Pielou's terminology) from which random subsamples can be drawn. According to Pielou, the average diversity per individual (H) for these types of samples can be estimated from the Shannon-Wiener formula (Shannon and Weaver 1963):

$$H = -\sum_{i=1}^{S} P_i \log_x P_i$$

where P is the proportion of the ith taxon in the sample, which is calculated from n_i/N; n_i is the number of individuals per milliliter of the ith taxon; N is the total number of individuals per ml; and S is the total number of taxa.

However, Basharin (1959) and Pielou (1966) have pointed out that H calculated from the subsample is a biased estimator of the sample H, and if this bias is to be accounted for, we must know the total number of taxa present in the sample since the magnitude of this bias depends on it.

Pielou (1966) suggests that if the number of taxa in the subsample falls only slightly short of the number in the larger sample, no appreciable error will result in considering S, estimated from the subsample, as being equal to the sample value. Even though considerable effort was made to find and identify all taxa, the Survey samples undoubtedly contain a fair number of rare phytoplankton taxa which were not encountered.

In the Shannon-Wiener formula, an increase in the number of taxa and/or an increase in the evenness of the distribution of individuals among taxa will increase the average diversity per individual from its minimal value of zero. Sager and Hasler (1969) found that the richness of taxa was of minor importance in determination of average diversity per individual for phytoplankton and they concluded that phytoplankton taxa in excess of the 10 to 15 most abundant ones have little effect on H. This was verified by our own calculations. Our counts are in number per milliliter and since logarithms to the base 2 were used in our calculations, H is expressed in units of bits per individual. When individuals of a taxon were so rare that they were not counted, a value of 1/130 per milliliter or 0.008 per milliliter was used in the calculations since at least one individual of the taxon must have been present in the collection.

A Survey sample for a given lake represents a composite of all phytoplankton collected at different sampling sites on a lake during a given sampling period. Since the number of samples (M) making up a composite is a function of both the complexity of the lake sampled and its size, it should affect the richness-of-taxa component of the diversity of our phytoplankton collections. The maximum diversity (MaxH) (i.e., when the individuals are distributed among the taxa as evenly as possible) was estimated from $\log_2 S$, the total diversity (D) was calculated from HN, and the evenness component of diversity (J) was estimated from H/MaxH (Pielou 1966). Also given in the Appendix are L (the mean number of individuals per taxa per milliliter) and K (the number of individuals per milliliter of the most abundant taxon in the sample).

Zand (1976) suggests that diversity indices be expressed in units of "sits", i.e., in logarithms to base S (where S is the total number of taxa in the sample) instead of in "bits", i.e., in logarithms to base 2. Zand points out that the diversity index in sits per individual is a normalized number ranging from 1 for the most evenly distributed samples to 0 for the least evenly distributed samples. Also, it can be used to compare different samples, independent of the number of taxa in each. The diversity in bits per individual should not be used in direct comparisons involving various samples which have different numbers of species. Since MaxH equals log S, the expression in sits is equal to $\log_S S$, or 1. Therefore diversity in sits per individual is numerically equivalent to J, the evenness component for the Shannon-Wiener formula.

SPECIES OCCURRENCE AND ABUNDANCE

The alphabetic phytoplankton species list for each lake, presented in the Appendix, gives the concentrations of individual species by sampling date. Concentrations are in cells, colonies, or filaments (CEL, COL, FIL) per milliliter. An "X" after a species name indicates the species identified in the preliminary examination was in such a low concentration that it did not appear in the count. A blank space indicates that the organism was not found in the sample collected on that date. Column S is used to designate the examiner's subjective opinion of the five dominant taxa in a sample, based upon relative size and concentration of the organism. The percent column (%C) presents, by abundance, the percentage composition of each taxon.

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APPENDIX. SUMMARY OF PHYTOPLANKTON DATA

This appendix was generated by computer. Because it was only possible to use upper case letters in the printout, all scientific names are printed in upper case and are not italicized.

The alphabetic phytoplankton lists include taxa without species names (e.g., EUNOTIA, EUNOTIA #1, FLAGELLATE, FLAGELLATES, MICROCYSTIS INCERTA ?, CHLOROPHYTAN COCCOID CELLED COLONY). When species determinations were not possible, symbols or descriptive phrases were used to separate taxa for enumeration purposes. Each name on a list, however, represents a unique species different from any other name on the same list, unless otherwise noted, for counting purposes.

Numbers were used to separate unidentified species of the same genus. A generic name listed alone is also a unique species. A question mark (?) is placed immediately after the portion of a name which was assigned with uncertainty. Numbered, questioned, or otherwise designated taxa were established on a lake-by-lake basis; therefore NAVICULA #2 from lake A cannot be compared to NAVICULA #2 from lake B. Pluralized categories (e.g., FLAGELLATES, CENTRIC DIATOMS, SPP.) were used for counting purposes when taxa could not be properly differentiated on the counting chamber.

LAKE NAME: CATARACT LAKE
STORET NUMBER: 1805

NYGAARD TROPHIC STATE INDICES

DATE	05 10 73	08 08 73	10 10 73
MYXOPHYCEAN	1.00 E	6.00 E	2.33 E
CHLOROPHYCEAN	3.00 E	3.00 E	1.67 E
EUGLENOPHYTE	0.25 E	0.22 E	0.42 E
DIATOM	0.37 E	0.50 E	3.00 E
COMPOUND	8.00 E	16.0 E	6.67 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 10 73	08 08 73	10 10 73
GENUS	05	06	07
SPECIES	01	04	04

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 10 73	08 08 73	10 10 73
AVERAGE DIVERSITY	H	0.78	3.13	2.36
NUMBER OF TAXA	S	27.00	30.00	27.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	3.00	3.00
MAXIMUM DIVERSITY	MAXH	4.75	4.91	4.75
TOTAL DIVERSITY	D	7144.80	5583.92	9527.32
TOTAL NUMBER OF INDIVIDUALS/ML	N	9160.00	1784.00	4037.00
EVENESS COMPONENT	J	0.16	0.64	0.50
MEAN NUMBER OF INDIVIDUALS/TAXA	L	339.26	59.47	149.52
NUMBER/ML OF MOST ABUNDANT TAXON	K	8153.00	430.00	1957.00

LAKE NAME: CATARACT LAKE
STORET NUMBER: 1805

CONTINUED

TAXA	FORM	05 10 73 S	05 10 73 %C	05 10 73 ALGAL UNITS PER ML	08 08 73 S	08 08 73 %C	08 08 73 ALGAL UNITS PER ML	10 10 73 S	10 10 73 %C	10 10 73 ALGAL UNITS PER ML
ACHNANTHES LANCEOLATA V. DUBIA	CEL						X			
ANABAENA #1	FIL				5	6.2	111	4	6.4	260
ANABAENA #2	FIL				1	20.5	366	3	12.9	520
ANABAENA #3	FIL									X
ANKISTRODESMUS	CEL								0.9	35
APHANIZOMENON FLOS-AQUAE	FIL				4	12.5	223	1	48.5	1957
ASTERIONELLA FORMOSA	CEL	3	2.8	256						
BOTRYOCOCCUS BRAUNII	COL									X
CENTRIC DIATOMS	CEL	1	89.0	8153						
CERATIUM HIRUNDINELLA	CEL									X
CLOSTERIUM #1	CEL			X						
CLOSTERIUM #2	CEL								1.3	52
COCCOID COLONY	COL			X						
COCCONEIS PLACENTULA V. EUGLYPTA	CEL						X			
COELASTRUM RETICULATUM	COL						X			X
COELOSPHAERIUM NAEGELIANUM	COL									X
COSMARIUM	CEL									X
CRUCIGENIA APICULATA	COL			X						
CRYPTOMONAS	CEL	4	2.0	183		0.9	16			
CYCLOTELLA MENEGHINIANA	CEL						X			
CYCLOTELLA STELLIGERA	CEL						X		2.6	104
DINOBRYON BAVARICUM	CEL			X						
DINOBRYON DIVERGENS	CEL			X						
DINOFLAGELLATE	CEL			X			X		0.9	35
EUDORINA ELEGANS	CEL			X						
EUGLENA	CEL									X
EUGLENA ACUS	CEL									X
FLAGELLATE #3	CEL			X						
FLAGELLATE #9	CEL	5	1.0	92						
FLAGELLATES	CEL	2	3.2	293		3.6	64	5	4.7	191
FRAGILARIA	CEL			X						
GOMPHONEMA	CEL						X			
GYROSIGMA SCALPROIDES	CEL						X			
LYNGBYA	FIL			X						
MELOSIRA	CEL									X
MELOSIRA GRANULATA	CEL				3	14.3	255		0.9	35
MELOSIRA GRANULATA V. ANGUSTISSIMA	CEL			X		7.1	127			
MELOSIRA VARIANS	CEL			X						
MICROCYSTIS AERUGINOSA	COL						X			
NAVICULA	CEL			X						
NAVICULA RHYNCHOCEPHALA V. GERMAINII	CEL						X			
NITZSCHIA	CEL						X			
NITZSCHIA #1	CEL					0.9	16			
NITZSCHIA ACICULARIS	CEL		1.0	92		1.8	32			
OOCYSTIS	CEL			X						
OSCILLATORIA LIMNETICA	FIL								1.7	69
OSCILLATORIA LIMNETICA ?	FIL					2.7	48			
OSCILLATORIA TENUIS	FIL				2	24.1	430	2	18.5	745
PANDORINA MORUM	COL		0.2	18						
PEDIASTRUM DUPLEX V. RETICULATUM	COL						X			
PENNATE	CEL					1.8	32			
PENNATE DIATOM	CEL			X						
PHACUS	CEL									X
PHACUS ACUMINATUS	CEL						X			
PHACUS HELIKOIDES	CEL									X
RHOICOSPHENIA CURVATA	CEL			X						
SCENEDESMUS	COL					0.9	16			
SCENEDESMUS ECORNIS V. DISCIFORMIS	COL									X
SPHAEROCYSTIS SCHROETERI	COL								0.4	17
STAURASTRUM #1	CEL					0.9	16			X
STEPHANODISCUS	CEL					1.8	32			
SYNEDRA #2	CEL		0.6	55						
SYNEDRA DELICATISSIMA	CEL		0.2	18			X		0.4	17
TETRASTRUM STAUROGENIAEFORME	COL			X						
TRACHELOMONAS	CEL			X						
TRACHELOMONAS PULCHELLA	CEL									X
TRACHELOMONAS URCEOLATA	CEL						X			
TOTAL				9160			1784			4037

LAKE NAME: GEIST RES.
STORET NUMBER: 1811

NYGAARD TROPHIC STATE INDICES

DATE	05 10 73	08 02 73	10 15 73
MYXOPHYCEAN	6.00 E	7.00 E	6.50 E
CHLOROPHYCEAN	16.0 E	15.0 E	10.5 E
EUGLENOPHYTE	0.14 ?	0.36 E	0.21 E
DIATOM	0.38 E	1.29 E	1.50 E
COMPOUND	30.0 E	39.0 E	25.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 10 73	08 02 73	10 15 73
GENUS	22	22	29
SPECIES	04	03	04

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 10 73	08 02 73	10 15 73
AVERAGE DIVERSITY	H	4.28	2.79	3.27
NUMBER OF TAXA	S	55.00	55.00	66.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY	MAXH	5.78	5.78	6.04
TOTAL DIVERSITY	D	48351.16	88691.31	116670.33
TOTAL NUMBER OF INDIVIDUALS/ML	N	11297.00	31789.00	35679.00
EVENESS COMPONENT	J	0.74	0.48	0.54
MEAN NUMBER OF INDIVIDUALS/TAXA	L	205.40	577.98	540.59
NUMBER/ML OF MOST ABUNDANT TAXON	K	1277.00	11605.00	14908.00

LAKE NAME: GEIST RES.
STORET NUMBER: 1811

CONTINUED

TAXA	FORM	05 10 73 S	05 10 73 %C	05 10 73 ALGAL UNITS PER ML	08 02 73 S	08 02 73 %C	08 02 73 ALGAL UNITS PER ML	10 15 73 S	10 15 73 %C	10 15 73 ALGAL UNITS PER ML
ACHNANTHES MICROCEPHALA	CEL								0.1	50
ACTINASTRUM GRACILIMUM	CEL		2.0	225						
ANABAENA	FIL					0.6	189		0.8	298
ANABAENOPSIS PHILIPPINENSIS	FIL								1.3	447
ANKISTRODESMUS	CEL								0.8	298
ANKISTRODESMUS ?	CEL		1.9	210						
ANKISTRODESMUS FALCATUS	CEL					0.4	142			
APHANIZOMENON FLOS-AQUAE	FIL									X
ASTERIONELLA FORMOSA	CEL	1	8.4	947						
CENTRIC DIATOMS	CEL				2	36.5	11605	1	41.8	14908
CERATIUM HIRUNDINELLA F. BRACHYCERAS	CEL				5	0.9	284		0.3	99
CHLOROGONIUM ELONGATUM	CEL									X
CHRYSOCOCCUS	COL						X			
CLOSTERIUM	CEL			X					0.3	99
COCCONEIS PLACENTULA	CEL									X
COCCONEIS PLACENTULA V. EUGLYPTA	CEL						X			
COELASTRUM CAMBRICUM V. INTERMEDIUM	COL								0.4	149
COELASTRUM MICROPORUM	COL		0.4	45						
COELASTRUM RETICULATUM	COL									X
COELASTRUM SPHAERICUM	COL					0.1	47			
COSCINODISCUS	CEL									X
COSMARIUM	CEL						X			
COSMARIUM #1	CEL									X
CRUCIGENIA APICULATA	COL									X
CRUCIGENIA QUADRATA	COL			X						
CRUCIGENIA TETRAPEDIA	COL		0.1	15		0.6	189		0.3	99
CRYPTOMONAS	CEL	5	3.3	376		0.3	95			
CRYPTOMONAS EROSA	CEL			X						
CYCLOTELLA	CEL		11.3	1277			X			X
CYCLOTELLA MENEGHINIANA	CEL						X			X
CYCLOTELLA STELLIGERA	CEL						X			X
CYMBELLA	CEL		0.1	15						X
CYMBELLA TURGIDA	CEL						X			
DACTYLOCOCCOPSIS	CEL		9.8	992		0.4	142			X
DACTYLOCOCCOPSIS IRREGULARIS	CEL								1.8	646
DICTYOSPHAERIUM PULCHELLUM	COL						X		1.1	398
DINOBRYON	CEL	4	5.9	661						
DINOBRYON SOCIALE V. AMERICANUM	CEL			X						
DINOFLAGELLATE CYST	CEL		0.4	45						
EUGLENA	CEL								0.7	248
EUGLENA #1	CEL					0.6	189			
EUGLENA #2	CEL					1.2	379			
EUGLENA ACUS	CEL						X			
EUGLENA ELASTICA	CEL			X						
FILAMENT	FIL			X						
FLAGELLATE #1	CEL		2.9	331	3	23.7	7531			
FLAGELLATE #2	CEL		2.1	240					1.1	398
FLAGELLATES	CEL				4	5.4	2048	3	9.8	3479
FRAGILARIA CAPUCINA	CEL		2.5	285						
GLENODINIUM GYMNODINIUM V. BISCUTELLIFORME	CEL					0.4	142			
GLENODINIUM PENARDIFORME	CEL					0.9	284		0.3	99
GOMPHONEMA	CEL		0.1	15			X			
GOMPHONEMA ANGUSTATUM V. PRODUCTA	CEL			X						
GOMPHOSPHAERIA LACUSTRIS	COL									X
GYMNODINIUM	CEL		0.3	30						
KIRCHNERIELLA	COL		3.9	436					0.1	50
LAGERHEIMIA	CEL									X
LAGERHEIMIA CILIATA	CEL		0.1	15						

LAKE NAME: GEIST RES.
STORET NUMBER: 1811

CONTINUED

TAXA	FORM	05 10 73 S	05 10 73 %C	05 10 73 ALGAL UNITS PER ML	08 02 73 S	08 02 73 %C	08 02 73 ALGAL UNITS PER ML	10 15 73 S	10 15 73 %C	10 15 73 ALGAL UNITS PER ML
LAGERHEIMIA QUADRISETA	CEL			X						
LEPOCINCLIS	CEL									X
LYNGBYA	FIL		3.2	361						
LYNGBYA LIMNETICA	FIL								3.8	1342
MALLOMONAS	CEL		0.5	60						
MALLOMONAS ACAROIDES	CEL									X
MELOSIRA #4	CEL		4.7	526					0.3	99
MELOSIRA DISTANS	CEL	3	10.9	1232		4.3	1374	2	13.2	4721
MELOSIRA GRANULATA	CEL		0.4	45			X			X
MELOSIRA GRANULATA V. ANGUSTISSIMA	CEL						X			
MELOSIRA ITALICA	CEL				1	17.3	5494			
MERISMOPEDIA TENUISSIMA	COL		1.5	165		0.3	95	4	5.3	1888
MESOSTIGMA	CEL								0.1	50
MICRACTINIUM PUSILLUM	COL									X
MICROCYSTIS	COL					0.3	95			
MICROCYSTIS INCERTA	COL		0.9	105			X		1.0	348
MOUGEOTIA	FIL								0.4	149
NAVICULA	CEL						X		0.1	50
NAVICULA #2	CEL			X						
NAVICULA #3	CEL			X						
NAVICULA SPP.	CEL		0.7	75						
NITZSCHIA	CEL		5.5	616			X		1.5	547
NITZSCHIA #1	CEL			X						
NITZSCHIA #2	CEL			X						
NITZSCHIA HOLSATICA	CEL			X						
OSCILLATORIA	FIL			X						
OSCILLATORIA #1	FIL						X		1.7	596
OSCILLATORIA #2	FIL								2.8	994
OSCILLATORIA #3	FIL					0.3	95		2.1	745
OSCILLATORIA LIMNETICA	FIL		0.9	105						
PEDIASTRUM DUPLEX V. ?	COL					0.1	47			
PEDIASTRUM DUPLEX V. RETICULATUM	COL									X
PEDIASTRUM SIMPLEX V. DUODENARIUM	COL						X			
PENNATE DIATOMS	CEL					0.6	189			
PERIDINIUM	CEL					0.1	47			
PHACUS	CEL						X			
PHACUS ACUMINATUS	CEL			X					0.1	50
PHACUS HELIKOIDES	CEL						X			
PHACUS PYRUM	CEL					0.6	189			X
RAPHIDIOPSIS CURVATA	FIL								1.3	447
SCENEDESMUS	COL					0.1	47			
SCENEDESMUS ABUNDANS	COL					0.3	95		0.1	50
SCENEDESMUS ARCUATUS V. PLATYDISCA	COL									X
SCENEDESMUS BICAUDATUS	COL			X						X
SCENEDESMUS BIJUGA	COL		0.9	105						X
SCENEDESMUS DENTICULATUS	COL					0.1	47			
SCENEDESMUS DIMORPHUS	COL			X			X			X
SCENEDESMUS PROTUBERANS	COL					0.4	142		0.3	99
SCENEDESMUS QUADRICAUDA	COL		0.8	90		0.1	47		0.7	248
SCHROEDERIA SETIGERA	CEL			X			X			
STEPHANODISCUS	CEL	2	7.4	841			X			X
SYNEDRA	CEL							5	4.0	1441
SYNEDRA ACUS ?	CEL					1.3	426			
SYNEDRA SPP.	CEL		6.6	751						
SYNEDRA ULNA	CEL			X						
TETRAEDRON	CEL									X
TETRAEDRON ?	CEL						X			
TETRAEDRON MINIMUM	CEL					0.1	47			X
TETRAEDRON MINIMUM V. SCROBICULATUM	CEL		0.1	15						X
TETRASTRUM STAUROGENIAEFORME	COL		0.4	45						X
TRACHELOMONAS PULCHELLA	CEL			X			X			X
TRACHELOMONAS URCEOLATA	CEL					0.1	47		0.1	50
TRACHELOMONAS VOLVOCINA	CEL									X
TREUBARIA SETIGERUM	CEL			X						
TOTAL				11257			31789			35679

LAKE NAME: JAMES LAKE
STORET NUMBER: 1817

NYGAARD TROPHIC STATE INDICES

DATE	08 04 73	10 13 73
MYXOPHYCEAN	5.00 E	2.33 E
CHLOROPHYCEAN	3.50 E	4.00 E
EUGLENOPHYTE	0/17 ?	0.16 ?
DIATOM	0.75 E	1.33 E
COMPOUND	10.0 E	8.67 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	08 04 73	10 13 73
GENUS	17	12
SPECIES	00	04

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		08 04 73	10 13 73
AVERAGE DIVERSITY	H	3.84	3.07
NUMBER OF TAXA	S	34.00	42.00
NUMBER OF SAMPLES COMPOSITED	M	1.00	1.00
MAXIMUM DIVERSITY	MAXH	5.09	5.39
TOTAL DIVERSITY	D	16730.88	7791.66
TOTAL NUMBER OF INDIVIDUALS/ML	N	4357.00	2538.00
EVENESS COMPONENT	J	0.75	0.57
MEAN NUMBER OF INDIVIDUALS/TAXA	L	128.15	60.43
NUMBER/ML OF MOST ABUNDANT TAXON	K	685.00	984.00

LAKE NAME: JAMES LAKE
STORET NUMBER: 1817

CONTINUED

TAXA	FORM	08 04 73 S	08 04 73 %C	08 04 73 ALGAL UNITS PER ML	10 13 73 S	10 13 73 %C	10 13 73 ALGAL UNITS PER ML
ANABAENA	FIL		0.8	35		1.4	35
ANKISTRODESMUS	CEL						X
APHANIZOMENON FLOS-AQUAE	FIL	1	15.7	685		1.4	35
APHANOTHECE	CEL		1.2	53			
APHANOTHECE NIDULANS	CEL			X			
ASTERIONELLA FORMOSA	CEL			X			
BOTRYOCOCCUS BRAUNII	COL						X
CENTRIC DIATOM	CEL						X
CERATIUM HIRUNDINELLA	CEL			X			X
CHLAMYDOMONAS	CEL			X			X
CLOSTERIUM	CEL		0.4	18		1.4	35
COELASTRUM RETICULATUM	COL			X			
COSMARIUM	CEL		2.0	88		0.7	17
CRUCIGENIA APICULATA	COL						X
CRUCIGENIA TETRAPEDIA	COL		4.8	211		0.7	17
CRYPTOMONAS	CEL		2.8	123		3.4	86
CRYPTOMONAS EROSA	CEL			X			
CYCLOTELLA	CEL	5	10.5	457			
CYCLOTELLA MENEGHINIANA	CEL			X			
DICTYOSPHAERIUM PULCHELLUM	COL						X
DINOBRYON BAVARICUM	CEL		4.4	193			
DINOBRYON SOCIALE V. AMERICANUM							
ELAKATOTHRIX	CEL				3	10.2	259
EUGLENA	COL					0.7	17
FLAGELLATE #1	CEL						X
FLAGELLATE #2	CEL				1	38.8	984
FLAGELLATE #9	CEL		5.6	246			
GOMPHOSPHAERIA	CEL					0.7	17
GOMPHOSPHAERIA LACUSTRIS	COL		2.0	88			
GOMPHOSPHAERIA LACUSTRIS ? V. COMPACTA	COL						X
LAGERHEIMIA	COL			X			
LAGERHEIMIA LONGISETA	CEL						X
LEPOCINCLIS	CEL		0.8	35			
LYNGBYA	CEL						X
LYNGBYA BIRGEI	FIL	3	7.7	334	2	15.6	397
MALLOMONAS	FIL					0.7	17
MELOSIRA #4	CEL		0.8	35			
MELOSIRA ITALICA	CEL		4.8	211			
MICROCYSTIS AERUGINOSA	CEL				5	4.8	121
MICROCYSTIS INCERTA	COL						X
MOUGEOTIA	COL	2	13.7	597			
NAVICULA	FIL						X
OOCYSTIS	CEL		1.2	53			X
OPHIOCYTIUM	CEL		0.8	35			X
OSCILLATORIA	CEL						X
OSCILLATORIA TENUIS	FIL		1.6	70			
OSCILLATORIA TENUIS ?	FIL					6.1	155
PERIDINIUM	FIL			X			
PERIDINIUM INCONSPICUUM	CEL		0.4	18			
PERIDINIUM QUADRIDENS	CEL					1.4	35
PHACUS PYRUM	CEL					0.7	17
SCENEDESMUS BIJUGA	CEL						X
SCENEDESMUS QUADRICAUDA	COL	4	12.5	544		4.8	121
SCENEDESMUS QUADRICAUDA V. PARVUS	COL						X
STAURASTRUM	COL			X			
STEPHANODISCUS #1	CEL						X
STEPHANODISCUS #2	CEL					2.0	52
SYNEDRA	CEL						X
SYNEDRA ?	CEL						X
SYNEDRA #1	CEL		4.4	193			
SYNEDRA ULNA	CEL					4.8	121
TETRAEDRON MINIMUM V. SCROBICULATUM	CEL			X			
TREUBARIA TRIAPPENDICULATA	CEL		0.8	35			X
	CEL						X
TOTAL				4357			2538

LAKE NAME: MISSISSINEWA RES.
STORET NUMBER: 1827

NYGAARD TROPHIC STATE INDICES

DATE	05 03 73	08 03 73	10 15 73
MYXOPHYCEAN	2.00 E	01/0 E	4.00 E
CHLOROPHYCEAN	2.00 E	02/0 E	4.00 E
EUGLENOPHYTE	0.50 E	0.67 E	0.25 E
DIATOM	0.23 ?	1.00 E	1.00 E
COMPOUND	9.00 E	10/0 E	16.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 03 73	08 03 73	10 15 73
GENUS	04	08	09
SPECIES	02	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 03 73	08 03 73	10 15 73
AVERAGE DIVERSITY	H	2.72	3.01	1.50
NUMBER OF TAXA	S	31.00	19.00	24.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	3.00	3.00
MAXIMUM DIVERSITY	MAXH	4.95	4.25	4.58
TOTAL DIVERSITY	D	6196.16	2411.01	19119.00
TOTAL NUMBER OF INDIVIDUALS/ML	N	2278.00	801.00	12746.00
EVENESS COMPONENT	J	0.55	0.71	0.33
MEAN NUMBER OF INDIVIDUALS/TAXA	L	73.48	42.16	531.08
NUMBER/ML OF MOST ABUNDANT TAXON	K	619.00	256.00	8752.00

LAKE NAME: MISSISSINEWA RES. CONTINUED
STORET NUMBER: 1827

TAXA	FORM	05 03 73 S	05 03 73 %C	05 03 73 ALGAL UNITS PER ML	08 03 73 S	08 03 73 %C	08 03 73 ALGAL UNITS PER ML	10 15 73 S	10 15 73 %C	10 15 73 ALGAL UNITS PER ML
ANKISTRODESMUS	CEL							5	2.4	304
ANKISTRODESMUS FALCATUS	CEL			X		2.1	17			
ASTERIONELLA FORMOSA	CEL	3	14.6	332						
CERATIUM HIRUNDINELLA F. BRACHYCERAS	CEL						X			
CHRYSOPHYTAN CYST #1	CEL						X			
CLOSTERIUM	CEL			X						X
CRUCIGENIA TETRAPEDIA	COL					2.1	17			
CRYPTOMONAS CURVATA	CEL		2.0	45						
CRYPTOMONAS EROSA	CEL	1	27.2	619					0.4	57
CRYPTOMONAS EROSA V. REFLEXA	CEL			X						
CYCLOTELLA MENEGHINIANA	CEL	2	20.5	468						
CYCLOTELLA STELLIGERA	CEL								1.8	228
CYMBELLA VENTRICOSA	CEL			X						
DACTYLOCOCCOPSIS IRREGULARIS	CEL		1.3	30						X
DIATOMA VULGARE	CEL						X			
DINOBRYON DIVERGENS	CEL			X						
EUGLENA	CEL		0.7	15						
EUGLENA #1	CEL			X						
EUGLENA #2	CEL					4.2	34	4	1.8	228
EUGLENA OXYURIS	CEL						X			
EUNOTIA CURVATA	CEL			X						
FLAGELLATE #1	CEL	5	22.5	513						
FLAGELLATE #2	CEL			X						
GLENODINIUM OCULATUM	CEL						X			
GOMPHONEMA CLIVACEUM	CEL			X						
GYMNODINIUM ALBULUM	CEL		4.0	91						
LYNGBYA LIMNETICA	FIL			X						
MALLOMONAS ACAROIDES	CEL					4.2	34			
MELOSIRA #4	CEL		1.3	30	2	17.1	137	1	68.7	8752
MELOSIRA DISTANS	CEL		1.3	30		4.2	34	2	18.7	2378
MELOSIRA DISTANS V. LIMNETICA	CEL									X
MELOSIRA GRANULATA	CEL				5	4.2	34		0.3	38
MERISMOPEDIA TENUISSIMA	COL								0.3	38
MICROCYSTIS INCERTA	COL									X
NAVICULA #1	CEL			X						X
NAVICULA #2	CEL			X						
NAVICULA #3	CEL			X						X
NAVICULA CRYPTOCEPHALA	CEL									X
NITZSCHIA	CEL		0.7	15						
NITZSCHIA #1	CEL			X						X
NITZSCHIA HUNGARICA	CEL						X			X
OSCILLATORIA AMPHIBIA	FIL				4	10.6	85			
OSCILLATORIA LIMNETICA	FIL									X
PANDORINA MORUM	COL			X						
PEDIASTRUM TETRAS	COL									X
PENNATE DIATOMS	CEL					4.2	34			
SCENEDESMUS ACUMINATUS	COL									X
SCENEDESMUS DIMORPHUS	COL			X						
SCENEDESMUS QUADRICAUDA	COL								0.1	19
STAURONEIS FLUMINEA	CEL			X						
STEPHANODISCUS INVISITATUS	CEL						X	3	5.4	685
STEPHANODISCUS NIAGARAE	CEL				1	32.0	256			
SURIRELLA OVATA	CEL			X						
SYNEDRA #1	CEL	4	3.3	75	3	12.7	102			
SYNEDRA ULNA	CEL		0.7	15					0.1	19
TABELLARIA FENESTRATA	CEL					2.1	17			
TRACHELOMONAS URCEOLATA	CEL									X
TOTAL				2278			801			12746

LAKE NAME: MONROE RES.
STORET NUMBER: 1828

NYGAARD TROPHIC STATE INDICES

DATE	05 10 73	08 06 73	10 10 73
MYXOPHYCEAN	3.00 E	8.00 E	7.00 E
CHLOROPHYCEAN	2.00 E	3.00 E	2.00 E
EUGLENOPHYTE	0.20 ?	0.55 E	0.44 E
DIATOM	0.33 E	0.40 E	1.50 E
COMPOUND	9.00 E	19.0 E	16.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 10 73	08 06 73	10 10 73
GENUS	02	10	02
SPECIES	03	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 10 73	08 06 73	10 10 73
AVERAGE DIVERSITY	H	2.56	2.93	3.57
NUMBER OF TAXA	S	25.00	29.00	22.00
NUMBER OF SAMPLES COMPOSITED	M	5.00	5.00	5.00
MAXIMUM DIVERSITY	MAXH	4.64	4.86	4.46
TOTAL DIVERSITY	D	5332.48	9704.16	4983.72
TOTAL NUMBER OF INDIVIDUALS/ML	N	2083.00	3312.00	1396.00
EVENESS COMPONENT	J	0.55	0.60	0.80
MEAN NUMBER OF INDIVIDUALS/TAXA	L	83.32	114.21	63.45
NUMBER/ML OF MOST ABUNDANT TAXON	K	1092.00	1306.00	289.00

LAKE NAME: MONROE RES.
STORET NUMBER: 1828

CONTINUED

TAXA	FORM	05 10 73 S	05 10 73 %C	05 10 73 ALGAL UNITS PER ML	08 06 73 S	08 06 73 %C	08 06 73 ALGAL UNITS PER ML	10 10 73 S	10 10 73 %C	10 10 73 ALGAL UNITS PER ML
ANABAENA	FIL				3	1.5	50	3	10.4	145
APHANIZOMENON FLOS-AQUAE	FIL				2	5.0	165			
ASTERIONELLA FORMOSA	CEL	3	9.2	191						
CERATIUM HIRUNDINELLA F. GRACILIS	CEL						X			
CHLAMYDOMONAS	CEL									X
CHLOROGONIUM	CEL			X						
CLOSTERIUM	CEL			X						
COCCONEIS	CEL					0.5	17			
COELOSPHAERIUM	COL						X		6.6	92
CRYPTOMONAS	CEL					1.5	50		5.7	79
CRYPTOMONAS EROSA	CEL	2	9.7	203			X			
CYANOPHYTAN FILAMENT	FIL		1.1	23					3.8	53
CYCLOTELLA BODANICA	CEL			X						
DACTYLOCOCCOPSIS	CEL		3.8	79		1.0	33	5	9.5	132
DICTYOSPHAERIUM	COL					0.5	17			
DINOBRYON SOCIALE	CEL	1	52.4	1092		1.5	50			
DINOFLAGELLATE	CEL		1.6	34						
EUGLENA ACUTISSIMA	CEL						X			
EUGLENA SPP.	CEL					1.5	50			
EUNOTIA CURVATA	CEL			X						
FLAGELLATE #1	CEL							4	9.5	132
FLAGELLATE #2	CEL	5	4.8	101						
FRAGILARIA CONSTRUENS	CEL		0.5	11						
FRAGILARIA CROTONENSIS	CEL	4	6.5	135	1	39.4	1306			
FRAGILARIA INTERMEDIA ?	CEL					3.6	118			
FRAGILARIA LEPTOSTAURON	CEL		2.2	45						
GYROSIGMA	CEL			X			X			
LYNGBYA BIRGEI	FIL				4	1.5	50			
LYNGBYA SUBTILIS	FIL					3.0	99			
MALLOMONAS	CEL			X						
MELOSIRA DISTANS	CEL					4.5	149	2	13.2	184
MELOSIRA GRANULATA	CEL				5	25.0	827			X
MELOSIRA ISLANDICA	CEL			X						
MERISMOPEDIA TENUISSIMA	COL					3.0	99		3.8	53
MICROCYSTIS	COL									X
MICROCYSTIS INCERTA	COL					2.0	66	1	20.7	289
NAVICULA	CEL			X		2.5	83		1.9	26
NITZSCHIA FILIFORMIS	CEL									X
OOCYSTIS	CEL		2.2	45			X		3.8	53
OOCYSTIS PARVA	CEL									X
OSCILLATORIA	FIL		1.6	34						
PHACUS ACUMINATUS	CEL						X		0.9	13
SCENEDESMUS QUADRICAUDA	COL			X						
SCHROEDERIA SETIGERA	CEL					1.5	50			
STAURASTRUM	CEL						X		0.9	13
STEPHANODISCUS	CEL		1.6	34					3.8	53
SYNEDRA ACUS	CEL			X						
SYNEDRA ULNA	CEL		2.7	56						
TRACHELOMONAS	CEL								3.8	53
TRACHELOMONAS HISPIDA	CEL						X			
TRACHELOMONAS PULCHELLA	CEL			X					1.9	26
TRACHELOMONAS URCEOLATA	CEL						X			
TRACHELOMONAS VOLVOCINA	CEL					1.0	33			X
TOTAL				2083			3312			1396

LAKE NAME: MORSE RES.
STORET NUMBER: 1829

NYGAARD TROPHIC STATE INDICES

DATE	05 10 73	08 02 73	10 15 73
MYXOPHYCEAN	02/0 E	6.00 E	8.00 E
CHLOROPHYCEAN	05/0 E	9.00 E	11.0 E
EUGLENOPHYTE	0.29 E	0.07 ?	0.11 ?
DIATOM	0.44 E	0.20 ?	0.25 ?
COMPOUND	13/0 E	17.0 E	23.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 10 73	08 02 73	10 15 73
GENUS	24	18	25
SPECIES	07	05	04

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 10 73	08 02 73	10 15 73
AVERAGE DIVERSITY	H	2.59	1.80	3.33
NUMBER OF TAXA	S	28.00	27.00	36.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	3.00	3.00
MAXIMUM DIVERSITY	MAXH	4.81	4.75	5.17
TOTAL DIVERSITY	D	44123.24	176409.00	73346.58
TOTAL NUMBER OF INDIVIDUALS/ML	N	17036.00	98005.00	22026.00
EVENESS COMPONENT	J	0.54	0.38	0.64
MEAN NUMBER OF INDIVIDUALS/TAXA	L	608.43	3629.81	611.83
NUMBER/ML OF MOST ABUNDANT TAXON	K	7769.00	56584.00	8377.00

LAKE NAME: MORSE RES.
STORET NUMBER: 1829

CONTINUED

TAXA	FORM	05 10 73 S	05 10 73 %C	05 10 73 ALGAL UNITS PER ML	08 02 73 S	08 02 73 %C	08 02 73 ALGAL UNITS PER ML	10 15 73 S	10 15 73 %C	10 15 73 ALGAL UNITS PER ML
ACHNANTHES MICROCEPHALA	CEL						X			X
ANABAENOPSIS	FIL								0.4	96
ANKISTRODESMUS FALCATUS V. MIRABILIS	CEL		1.7	288						
ASTERIONELLA FORMOSA	CEL			X						
CHLAMYDOMONAS	CEL	3	9.1	1554					2.0	431
CHLAMYDOMONAS ?	CEL						X			
CHLOROGONIUM	CEL			X						
CLOSTERIUM	CEL								0.4	96
COCCOID COLONY	COL			X						
COELASTRUM MICROPORUM	COL					0.1	143			X
COSMARIUM	CEL					0.1	143			
CRUCIGENIA TETRAPEDIA	COL			X					0.7	144
CRYPTOMONAS	CEL					0.3	268			
CRYPTOMONAS EROSA	CEL		2.4	403				2	3.9	862
CYCLOTELLA MENEGHINIANA	CEL					2.2	2143			
CYMBELLA	CEL									X
DACTYLOCOCCOPSIS	CEL	5	5.1	863					2.4	527
DIATOMA	CEL		0.3	58						
DIATOMA VULGARE	CEL			X						
DICTYOSPHAERIUM	COL						X			
DINOBRYON	CEL			X						
ELAKATOTHRIX GELATINOSA	COL								0.4	96
EUGLENA	CEL		1.4	230		0.1	143		0.4	96
FLAGELLATE #1	CEL					0.6	572		2.0	431
FLAGELLATE #2	CEL						X		0.7	144
FRANCEIA	CEL			X		0.1	143			
GYMNODINIUM	CEL		0.3	58						
LYNGBYA	FIL				5	3.5	3429	5	6.7	1484
MELOSIRA #4	CEL	4	12.2	2072						
MELOSIRA DISTANS	CEL	1	45.6	7769						
MELOSIRA ISLANDICA	CEL			X						X
MERISMOPEDIA	COL								2.8	622
MERISMOPEDIA TENUISSIMA	COL				4	2.2	2143		2.6	575
MICROCYSTIS INCERTA	COL				3	3.2	3144		2.8	622
NAVICULA	CEL						X		0.2	48
NAVICULA #1	CEL		0.7	115						
NAVICULA #2	CEL		0.3	58						
NITZSCHIA	CEL			X			X		1.3	287
NITZSCHIA HOLSATICA	CEL		0.3	58			X		0.9	192
OOCYSTIS	CEL								0.7	144
OSCILLATORIA	FIL			X						
OSCILLATORIA LIMNETICA	FIL				2	27.6	27006	1	38.0	8377
PHACUS ACUMINATUS	CEL			X						X
PHORMIDIUM MUCICOLA	COL						X			
RAPHIDIOPSIS CURVATA	FIL				1	57.7	56584	2	13.9	3064
RHOICOSPHENIA CURVATA	CEL		1.4	230						X
SCENEDESMUS ARCUATUS V. PLATYDISCA	COL								0.2	48
SCENEDESMUS BICAUDATUS	COL			X			X		0.2	48
SCENEDESMUS BIJUGA	COL					0.4	429			
SCENEDESMUS DENTICULATUS	COL						X		0.4	95
SCENEDESMUS DIMORPHUS	COL						X		0.7	144
SCENEDESMUS QUADRICAUDA	COL		1.4	230			X		2.2	479
SCHROEDERIA SETIGERA	CEL								0.2	48
STEPHANODISCUS	CEL	2	15.9	2705				3	10.4	2298
SYNEDRA	CEL		2.0	345					2.0	431
SYNEDRA RUMPENS	CEL									X
SYNEDRA ULNA	CEL					1.6	1572			
TETRAEDRON	CEL					0.1	143			
TETRAEDRON MINIMUM	CEL								0.4	96
TOTAL				17036			98005			22026

LAKE NAME: WAWASEE LAKE
STORET NUMBER: 1836

NYGAARD TROPHIC STATE INDICES

DATE	05 03 73	08 04 73	10 15 73
MYXOPHYCEAN	04/0 E	07/0 E	05/0 E
CHLOROPHYCEAN	06/0 E	05/0 E	03/0 E
EUGLENOPHYTE	0/10 ?	0/12 ?	0/08 ?
DIATOM	0.22 ?	1.00 E	0.71 E
COMPOUND	12/0 E	15/0 E	13/0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 03 73	08 04 73	10 15 73
GENUS	02	08	02
SPECIES	00	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 03 73	08 04 73	10 15 73
AVERAGE DIVERSITY	H	3.09	3.06	2.91
NUMBER OF TAXA	S	28.00	24.00	26.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY	MAXH	4.81	4.58	4.70
TOTAL DIVERSITY	D	6365.40	6704.46	3841.20
TOTAL NUMBER OF INDIVIDUALS/ML	N	2060.00	2191.00	1320.00
EVENESS COMPONENT	J	0.64	0.67	0.62
MEAN NUMBER OF INDIVIDUALS/TAXA	L	73.57	91.29	50.77
NUMBER/ML OF MOST ABUNDANT TAXON	K	380.00	547.00	407.00

LAKE NAME: WAWASEE LAKE CONTINUED
STORET NUMBER: 1836

TAXA	FORM	05 03 73 S	05 03 73 %C	05 03 73 ALGAL UNITS PER ML	08 04 73 S	08 04 73 %C	08 04 73 ALGAL UNITS PER ML	10 15 73 S	10 15 73 %C	10 15 73 ALGAL UNITS PER ML
ANABAENA	FIL					2.6	58			X
APHANIZOMENON FLOS-AQUAE	FIL						X			
APHANOTHECE	COL			X						
APHANOTHECE CLATHRATA ?	COL								3.3	44
ASTERIONELLA FORMOSA	CEL		4.7	97						
CELL	CEL		0.5	10						
CENTRIC DIATOM	CEL								3.3	44
CERATIUM HIRUNDINELLA	CEL									X
CERATIUM HIRUNDINELLA F. GRACILIS	CEL						X			
CHLOROGONIUM ?	CEL		0.5	10						
COCCONEIS	CEL			X						X
COELASTRUM RETICULATUM	COL								0.8	11
COELOSPHAERIUM NAEGELIANUM	COL									X
CRYPTOMONAS	CEL								5.0	66
CRYPTOMONAS CURVATA	CEL		1.4	29						
CRYPTOMONAS EROSA	CEL	2	4.7	97	5	7.9	173			
CYANOPHYTAN COCCOID CELLED COLONY	CEL			X						
CYCLOTELLA	CEL	3	18.0	371					0.8	11
CYCLOTELLA ?	CEL						X			
CYCLOTELLA COMPTA	CEL					5.2	115			
CYMBELLA	CEL									X
CYMBELLA AFFINIS	CEL			X						
DACTYLOCOCCOPSIS SMITHII	CEL					2.6	58			
DINOBRYON	CEL		1.0	20						
DINOBRYON BAVARICUM	CEL								0.8	11
DINOBRYON DIVERGENS	CEL					1.3	29			X
FLAGELLATE #1	CEL		17.5	361		1.3	29			
FLAGELLATES	CEL							4	30.8	407
FRAGILARIA CROTONENSIS	CEL	5	11.4	234			X	5	17.5	231
GOMPHONEMA LACUSTRIS	CEL				3	23.7	519			
GOMPHOSPHAERIA	COL			X						
GOMPHOSPHAERIA LACUSTRIS	COL						X	2	5.8	77
KIRCHNERIELLA	CEL		0.5	10						
LYNGBYA BIRGEI	FIL						X			
MALLOMONAS	CEL			X					0.8	11
MELOSIRA #4	CEL								3.3	44
MELOSIRA GRANULATA	CEL							1	20.8	275
MELOSIRA ITALICA	CEL	1	17.5	361	4	10.5	230			
MERISMOPEDIA TENUISSIMA	COL		0.5	10						
MICROCYSTIS AERUGINOSA	COL				1	13.1	288			
MICROCYSTIS INCERTA	COL				2	25.0	547	3	5.8	77
NAVICULA	CEL		0.5	10						X
NAVICULA #1	CEL						X			
NAVICULA PUPULA V. ?	CEL									X
NITZSCHIA	CEL									X
OOCYSTIS	CEL	4	18.4	380		2.6	58			X
PENNATE DIATOM	CEL		1.0	20						
PERIDINIUM INCONSPICUUM	CEL					1.3	29			
PERIDINIUM WISCONSINENSE ?	CEL						X			
RHIZOSOLENIA	CEL								0.8	11
SCENEDESMUS BALATONICUS	COL									X
SCENEDESMUS BIJUGA	COL		1.0	20		1.3	29			
SCENEDESMUS DENTICULATUS V. LINEARIS	COL			X						
SCENEDESMUS QUADRICAUDA	COL		0.5	10		1.3	29			
SPHAEROCYSTIS ?	COL		0.5	10						
SYNEDRA	CEL			X						
SYNEDRA DELICATISSIMA V. ANGUSTISSIMA	CEL			X						X
SYNEDRA ULNA	CEL			X						
TETRAEDRON MINIMUM	CEL						X			
TETRASTRUM HETERACANTHUM	COL						X			
TOTAL				2060			2191			1320

LAKE NAME: WEBSTER LAKE
STORET NUMBER: 1837

NYGAARD TROPHIC STATE INDICES

DATE	08 04 73	10 15 73
MYXOPHYCEAN	7.00 E	2.33 E
CHLOROPHYCEAN	14.0 E	4.33 E
EUGLENOPHYTE	0/21 ?	0/20 ?
DIATOM	0.80 E	0.50 E
COMPOUND	25.0 E	7.33 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	08 04 73	10 15 73
GENUS	14	10
SPECIES	06	05

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		08 04 73	10 15 73
AVERAGE DIVERSITY	H	3.18	3.82
NUMBER OF TAXA	S	41.00	33.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00
MAXIMUM DIVERSITY	MAXH	5.36	5.04
TOTAL DIVERSITY	D	44520.00	24115.66
TOTAL NUMBER OF INDIVIDUALS/ML	N	14000.00	6313.00
EVENESS COMPONENT	J	0.59	0.76
MEAN NUMBER OF INDIVIDUALS/TAXA	L	341.46	191.30
NUMBER/ML OF MOST ABUNDANT TAXON	K	6703.00	1606.00

LAKE NAME: WEBSTER LAKE
STORET NUMBER: 1837

CONTINUED

TAXA	FORM	08 04 73 S	08 04 73 %C	08 04 73 ALGAL UNITS PER ML	10 15 73 S	10 15 73 %C	10 15 73 ALGAL UNITS PER ML
ACHNANTHES MICROCEPHALA	CEL		0.7	99			
ANABAENA #1	FIL		0.7	99		0.3	21
ANABAENA #2	FIL			X		1.0	64
ANKISTRODESMUS FALCATUS	CEL		0.3	49		0.3	21
APHANIZOMENON FLOS-AQUAE	FIL			X		0.3	21
CERATIUM HIRUNDINELLA F. GRACILIS	CEL			X			
CHRYSOPHYTAN COCCOID CELL	CEL		1.1	148			
CLOSTERIUM	CEL					2.0	128
COCCONEIS	CEL			X			X
COELASTRUM CAMBRICUM V. INTERMEDIUM	COL		1.1	148			
COSMARIUM	CEL	5	4.6	641	3	7.8	492
CRUCIGENIA CRUCIFERA	COL		1.8	246			
CRUCIGENIA QUADRATA	COL			X			X
CRUCIGENIA TETRAPEDIA	COL		0.7	99		3.7	236
CRYPTOMONAS EROSA	CEL		1.8	246		6.1	385
CYCLOTELLA MENEGHINIANA	CEL	3	5.6	789	5	6.8	428
DICTYOSPHAERIUM EHRENBERGIANUM	COL		4.6	641		0.7	43
DINOBRYON BAVARICUM	CEL		1.1	148			
DINOBRYON SOCIALE	CEL		1.1	148		0.3	21
ELAKATOTHRIX GELATINOSA	COL		0.3	49		1.0	64
FLAGELLATE #1	CEL		0.3	49		2.7	171
FRAGILARIA CROTONENSIS	CEL	2	7.0	986		0.7	43
GOLENKINIA RADIATA	CEL			X		0.7	43
KIRCHNERIELLA ELONGATA	CEL			X			
LYNGBYA LIMNETICA	FIL		1.1	148		6.4	407
MALLOMONAS ACAROIDES	CEL		0.3	49			
MALLOMONAS CAUDATA	CEL		1.1	148			
MELOSIRA #1	CEL		0.7	99			
MELOSIRA #4	CEL			X			
MELOSIRA GRANULATA	CEL		0.3	49			
MELOSIRA ITALICA	CEL				4	7.5	471
MICROCYSTIS AERUGINOSA	COL		2.1	296		3.1	193
MICROCYSTIS INCERTA	COL	1	47.9	6703	1	25.4	1606
MOUGEOTIA	FIL			X		0.3	21
NAVICULA ELGINENSIS	CEL						X
OOCYSTIS PUSILLA	CEL		1.8	246		4.4	278
OSCILLATORIA	FIL						X
OSCILLATORIA LIMNETICA	FIL		2.1	296			
PEDIASTRUM BORYANUM	COL						X
PEDIASTRUM DUPLEX V. GRACILIMUM	COL			X			X
PERIDINIUM QUADRIDENS	CEL			X			
SCENEDESMUS BIJUGA	COL		4.6	641		4.1	257
SCENEDESMUS BIJUGA V. FLEXUOSUS	COL			X			
SCENEDESMUS QUADRICAUDA	COL		0.7	99		1.4	86
SCHROEDERIA SETIGERA	CEL					0.7	43
STAURASTRUM	CEL					1.7	107
SYNEDRA	CEL	4	4.6	641			
SYNEDRA #1	CEL			X	2	10.2	642
TETRASTRUM STAUROGENIAEFORME	COL					0.3	21
TOTAL				14000			6313

LAKE NAME: WHITEWATER LAKE
STORET NUMBER: 1839

NYGAARD TROPHIC STATE INDICES

DATE	04 29 73	08 02 73	10 10 73
MYXOPHYCEAN	0/0 C	05/0 E	07/0 E
CHLOROPHYCEAN	01/0 E	02/0 E	04/0 E
EUGLENOPHYTE	1.00 E	0.57 E	0.27 E
DIATOM	1.50 E	1.00 E	1.00 E
COMPOUND	05/0 E	14/0 E	18/0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	04 29 73	08 02 73	10 10 73
GENUS	01	13	11
SPECIES	00	00	03

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		04 29 73	08 02 73	10 10 73
AVERAGE DIVERSITY	H	1.35	1.71	3.15
NUMBER OF TAXA	S	12.00	22.00	29.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY	MAXH	3.58	4.46	4.86
TOTAL DIVERSITY	D	39630.60	37782.45	273111.30
TOTAL NUMBER OF INDIVIDUALS/ML	N	29356.00	22095.00	86702.00
EVENESS COMPONENT	J	0.38	0.38	0.65
MEAN NUMBER OF INDIVIDUALS/TAXA	L	2446.33	1004.32	2989.72
NUMBER/ML OF MOST ABUNDANT TAXON	K	14936.00	14849.00	24194.00

LAKE NAME: WHITEWATER LAKE CONTINUED
STORET NUMBER: 1839

TAXA	FORM	04 29 73 S	04 29 73 %C	04 29 73 ALGAL UNITS PER ML	08 02 73 S	08 02 73 %C	08 02 73 ALGAL UNITS PER ML	10 10 73 S	10 10 73 %C	10 10 73 ALGAL UNITS PER ML
ACHNANTHES MICROCEPHALA	CEL									X
ANKISTRODESMUS FALCATUS V. TUMIDUS	CEL								1.3	1134
CENTRIC DIATOM	CEL	5	2.4	691			X			X
CHLOROPHYTAN COCCOID CELL	CEL									X
CHLOROPHYTAN COCCOID CELLED COLONY	CEL						X			
CHRYSOPHYTAN COCCOID CELL	CEL							1	27.9	24194
CRYPTOMONAS	CEL							5	1.6	1386
CRYPTOMONAS CURVATA ?	CEL			X						
CRYPTOMONAS EROSA	CEL			X		0.4	80			
CYCLOTELLA	CEL								6.1	5292
CYCLOTELLA COMPTA ?	CEL									X
DACTYLOCOCCOPSIS IRREGULARIS	CEL				3	9.5	2110	3	13.1	11341
DINOBRYON DIVERGENS	CEL		0.2	46						
EUGLENA	CEL		0.1	38		0.7	159			
EUGLENA GRACILIS ?	CEL									X
EUGLENA MINUTA	CEL									X
FLAGELLATE ?	CEL									X
FLAGELLATE #1	CEL	1	50.9	14936				4	10.3	8947
GLENODINIUM	CEL									X
GLENODINIUM EDAX	CEL					0.7	159			
LYNGBYA LIMNETICA	FIL								1.5	1260
MALLOMONAS ACAROIDES	CEL					1.1	239			X
MELOSIRA DISTANS	CEL	2	43.2	12677			X			X
MELOSIRA ITALICA ?	CEL	3	3.0	876						
MERISMOPEDIA PUNCTATA	COL								3.8	3276
MERISMOPEDIA TENUISSIMA	COL					0.5	119		1.5	1260
MICROACTINIUM PUSILLUM	COL		0.2	46						
MICROCYSTIS INCERTA	COL				4	4.0	876		8.0	6930
NAVICULA #1	CEL									X
NAVICULA #2	CEL									X
NITZSCHIA #1	CEL						X			
OSCILLATORIA ANGUSTA	FIL							2	15.6	13483
OSCILLATORIA LIMNETICA	FIL				1	67.2	14849			
PENNATE DIATOM	CEL	4	0.2	46						
PENNATE DIATOMS	CEL					0.2	40			
PERIDINIUM	CEL			X						
PERIDINIUM INCONSPICUUM	CEL					0.2	40			
PHACUS ACUMINATUS	CEL					0.2	40			
PHACUS NORDSTEDTII	CEL						X			
RAPHIDIOPSIS CURVATA	FIL						X		6.4	5544
SCENEDESMUS ACUMINATUS	COL						X			
SCENEDESMUS OPOLIENSIS	COL									X
SCENEDESMUS QUADRICAUDA	COL					0.2	40			
SCHROEDERIA ?	CEL									X
STEPHANODISCUS INVISITATUS	CEL				5	2.5	557			
SURIRELLA OVATA	CEL			X						
SYNEDRA #1	CEL								0.4	387
SYNEDRA ACUS V. RADIANS	CEL				2	12.6	2787			
TETRAEDRON MINIMUM	CEL									X
TRACHELOMONAS ?	CEL								2.6	2268
TRACHELOMONAS SCABRA ?	CEL						X			
TOTAL				29356			22095			86702

LAKE NAME: WINONA LAKE
STORET NUMBER: 1840

NYGAARD TROPHIC STATE INDICES

DATE	05 04 73	08 04 73	10 13 73
MYXOPHYCEAN	03/0 E	6.00 E	8.00 E
CHLOROPHYCEAN	04/0 E	4.00 E	8.00 E
EUGLENOPHYTE	0/07 ?	0.40 E	0.06 ?
DIATOM	0.45 E	1.25 E	1.00 E
COMPOUND	12/0 E	19.0 E	21.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 04 73	08 04 73	10 13 73
GENUS	04	07	05
SPECIES	00	04	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 04 73	08 04 73	10 13 73
AVERAGE DIVERSITY	H	3.05	2.75	2.66
NUMBER OF TAXA	S	28.00	31.00	38.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	3.00	3.00
MAXIMUM DIVERSITY	MAXH	4.81	4.95	5.25
TOTAL DIVERSITY	D	7875.10	48977.50	22931.86
TOTAL NUMBER OF INDIVIDUALS/ML	N	2582.00	17810.00	8621.00
EVENESS COMPONENT	J	0.63	0.56	0.51
MEAN NUMBER OF INDIVIDUALS/TAXA	L	92.21	574.52	226.87
NUMBER/ML OF MOST ABUNDANT TAXON	K	975.00	5559.00	3942.00

LAKE NAME: WINONA LAKE
STORET NUMBER: 1840

CONTINUED

TAXA	FORM	05 04 73 S	05 04 73 %C	05 04 73 ALGAL UNITS PER ML	08 04 73 S	08 04 73 %C	08 04 73 ALGAL UNITS PER ML	10 13 73 S	10 13 73 %C	10 13 73 ALGAL UNITS PER ML
ACHNANTHES MICROCEPHALA	CEL				3	17.5	3108	2	12.7	1099
APHANIZOMENON FLOS-AQUAE	FIL	4	6.6	171	1	31.2	5559		1.8	157
ASTERIONELLA FORMOSA	CEL	5	8.6	222						
CARTERIA ?	CEL									X
CENTRIC DIATOM	CEL		10.6	274		2.0	360		0.7	63
CERATIUM HIRUNDINELLA	CEL						X			
CERATIUM HIRUNDINELLA F. AUSTRIACUM	CEL									X
CERATIUM HIRUNDINELLA F. CARINTHIACEUM	CEL									X
CHLAMYDOMONAS	CEL									X
CHLAMYDOMONAS ?	CEL					0.3	45			
CHROOCOCCUS DISPERSUS	COL					0.3	45			
CHROOMONAS NORDSTEDTII	CEL			X						
CLOSTERIUM	CEL						X		0.4	31
COCCOID CELL	CEL							3	12.6	1084
COCCOID CELL #1	CEL	2	10.6	274						
COELASTRUM MICROPORUM	COL		0.7	17						
CRUCIGENIA TETRAPEDIA	COL					0.8	135		0.5	47
CRYPTOMONAS EROSA	CEL		2.0	51		1.5	270		0.7	63
CRYPTOMONAS REFLEXA	CEL		0.7	17						
CYCLOTELLA STELLIGERA	CEL						X			
CYMBELLA	CEL			X						
CYMBELLA #1	CEL			X						
CYMBELLA #2	CEL			X						
DACTYLOCOCCOPSIS IRREGULARIS	CEL				5	4.3	766	4	9.8	848
DICTYOSPHAERIUM PULCHELLUM	COL						X			
DINOBRYON SOCIALE	CEL						X		0.7	63
EUGLENA	CEL								0.2	16
EUGLENA #2	CEL						X			
EUGLENA MINUTA	CEL						X			
FLAGELLATE #1	CEL	1	37.8	975		0.5	90		1.3	110
FRAGILARIA #1	CEL			X						
FRAGILARIA #2	CEL		2.6	68						
FRAGILARIA CROTONENSIS	CEL						X			
FRAGILARIA VIRESCENS ?	CEL		1.3	34						
GLENODINIUM OCULATUM ?	CEL									X
GYMNODINIUM ALBULUM	CEL								0.4	31
LYNGBYA LIMNETICA	FIL		2.0	51	2	23.3	4144	5	6.9	597
MALLOMONAS ACAROIDES	CEL					0.3	45			X
MELOSIRA DISTANS	CEL		3.3	86			X			X
MELOSIRA GRANULATA	CEL						X			
MELOSIRA ITALICA	CEL	3	9.3	240						
MELOSIRA ITALICA ?	CEL								0.2	16
MELOSIRA VARIANS	CEL			X						
MERISMOPEDIA TENUISSIMA	COL					1.3	225			X
MICROCYSTIS INCERTA	COL		1.3	34		4.0	721		0.4	31
NAVICULA #2	CEL		2.0	51						
NAVICULA GASTRUM	CEL			X			X			X
NITZSCHIA #1	CEL		0.7	17						
OSCILLATORIA LIMNETICA	FIL							1	45.7	3942
OSCILLATORIA LIMOSA	FIL								0.4	31
PEDIASTRUM BORYANUM	COL			X						
PEDIASTRUM SIMPLEX	COL						X			X
PENNATE DIATOM #1	CEL			X						
PERIDINIUM CUNNINGTONII ?	CEL						X			
PERIDINIUM INCONSPICUUM	CEL								0.2	16
PHACUS ORBICULARIS	CEL						X			
RAPHIDIOPSIS CURVATA	FIL								3.5	298
SCENEDESMUS ABUNDANS	COL									X
SCENEDESMUS BIJUGA	COL								0.2	16
SCENEDESMUS BIJUGA V. ALTERNANS	COL									X
SCENEDESMUS DIMORPHUS	COL									X
SCENEDESMUS QUADRICAUDA	COL			X		1.3	225		0.4	31
SPHAEROCYSTIS SCHROETERI	COL			X						
STEPHANODISCUS NIAGARAE	CEL			X		0.3	45			X
SYNEDRA	CEL				4	11.1	1982		0.4	31
TABELLARIA FENESTRATA	CEL									X
TRACHELOMONAS PULCHELLA	CEL					0.3	45			
TROCHISCIA	CEL									X
TOTAL				2582			17810			8621

LAKE NAME: WESTLER LAKE
STORET NUMBER: 1841

NYGAARD TROPHIC STATE INDICES

DATE	05 03 73	08 03 73	10 12 73
MYXOPHYCEAN	03/0 E	07/0 E	7.00 E
CHLOROPHYCEAN	01/0 E	02/0 E	3.00 E
EUGLENOPHYTE	0/04 ?	0.11 ?	0/10 ?
DIATOM	0.57 E	0.50 E	0.75 E
COMPOUND	08/0 E	11/0 E	13.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 03 73	08 03 73	10 12 73
GENUS	07	06	07
SPECIES	04	04	04

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 03 73	08 03 73	10 12 73
AVERAGE DIVERSITY	H	2.06	2.31	2.56
NUMBER OF TAXA	S	17.00	15.00	21.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	2.00	3.00
MAXIMUM DIVERSITY	MAXH	4.09	3.91	4.39
TOTAL DIVERSITY	D	8044.30	3074.61	4359.68
TOTAL NUMBER OF INDIVIDUALS/ML	N	3905.00	1331.00	1703.00
EVENESS COMPONENT	J	0.50	0.59	0.58
MEAN NUMBER OF INDIVIDUALS/TAXA	L	229.71	88.73	81.10
NUMBER/ML OF MOST ABUNDANT TAXON	K	2045.00	663.00	715.00

LAKE NAME: WESTLER LAKE
STORET NUMBER: 1841

CONTINUED

TAXA	FORM	05 03 73 S	05 03 73 %C	05 03 73 ALGAL UNITS PER ML	08 03 73 S	08 03 73 %C	08 03 73 ALGAL UNITS PER ML	10 12 73 S	10 12 73 %C	10 12 73 ALGAL UNITS PER ML
ANABAENA	FIL						X	5	4.3	74
APHANIZOMENON FLOS-AQUAE	FIL	5	5.0	196	4	13.2	176	1	42.0	715
APHANOCAPSA ?	CEL									X
ASTERIONELLA FORMOSA	CEL	2	24.1	943						
BOTRYOCOCCUS ?	COL									X
CERATIUM HIRUNDINELLA	CEL					3.0	40			
CLOSTERIUM	CEL								4.3	74
COCCONEIS	CEL			X						
COELASTRUM	COL			X		1.0	13		1.5	25
COELASTRUM RETICULATUM	COL						X			
COELOSPHAERIUM NAEGELIANUM	COL			X						X
CYCLOTELLA COMPTA	CEL		2.8	110			X			X
CYMBELLA	CEL									X
DINOBRYON BAVARICUM	CEL									X
DINOBRYON DIVERGENS	CEL		0.6	24					1.5	25
EUGLENA	CEL					1.0	13			
FLAGELLATES	CEL	3	8.1	318	3	10.0	133	3	13.0	222
FRAGILARIA	CEL		0.6	24						
FRAGILARIA CROTONENSIS	CEL	1	52.4	2045			X	4	5.8	99
GOMPHOSPHAERIA LACUSTRIS	COL				2	14.0	186		1.5	25
GYROSIGMA	CEL			X						
MELOSIRA	CEL		2.2	86						
MELOSIRA VARIANS	CEL			X						
MERISMOPEDIA TENUISSIMA	COL					2.0	27			
MICROCYSTIS AERUGINOSA	COL						X			
MICROCYSTIS INCERTA	COL				5	4.0	53		4.3	74
NAVICULA	CEL			X						
OSCILLATORIA TENUIS	FIL	4	3.8	147	1	49.8	663	2	20.3	345
RHIZOSOLENIA	CEL								1.5	25
STEPHANODISCUS	CEL		0.3	12						X
SYNEDRA ULNA										
V. CHASEANA	CEL			X						X
TABELLARIA FENESTRATA	CEL					2.0	27			X
TETRAEDRON MINIMUM	CEL									X
TOTAL				3905			1331			1703

LAKE NAME: WITMER LAKE
STORET NUMBER: 1842

NYGAARD TROPHIC STATE INDICES

DATE	08 03 73	10 12 73
MYXOPHYCEAN	09/0 E	2.50 E
CHLOROPHYCEAN	06/0 E	1.50 E
EUGLENOPHYTE	0/15 ?	0/08 ?
DIATOM	1.50 E	0/06 ?
COMPOUND	18/0 E	4.00 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	08 03 73	10 12 73
GENUS	06	06
SPECIES	04	04

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		08 03 73	10 12 73
AVERAGE DIVERSITY	H	2.87	2.64
NUMBER OF TAXA	S	24.00	24.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00
MAXIMUM DIVERSITY	MAXH	4.58	4.58
TOTAL DIVERSITY	D	3960.60	6829.68
TOTAL NUMBER OF INDIVIDUALS/ML	N	1380.00	2587.00
EVENESS COMPONENT	J	0.63	0.58
MEAN NUMBER OF INDIVIDUALS/TAXA	L	57.50	107.79
NUMBER/ML OF MOST ABUNDANT TAXON	K	522.00	882.00

LAKE NAME: WITMER LAKE CONTINUED
STORET NUMBER: 1842

TAXA	FORM	08 03 73 S	08 03 73 %C	08 03 73 ALGAL UNITS PER ML	10 12 73 S	10 12 73 %C	10 12 73 ALGAL UNITS PER ML
ANABAENA	FIL		3.0	42		2.3	60
APHANIZOMENON FLOS-AQUAE	FIL	1	37.8	522	1	34.1	882
BOTRYOCOCCUS BRAUNII	COL			X			
CENTRIC DIATOM	CEL			X			
CERATIUM HIRUNDINELLA	CEL			X			X
CHLAMYDOMONAS	CEL						X
CLOSTERIUM	CEL						X
CLOSTERIUM #1	CEL					2.9	75
COCCOID COLONY	COL			X			
COELASTRUM MICROPORUM	COL		1.0	14			
COELASTRUM RETICULATUM	COL						X
COELOSPHAERIUM NAEGELIANUM	CEL			X			
CRUCIGENIA APICULATA	COL			X			X
CRYPTOMONAS	CEL		4.1	56	5	4.6	120
DACTYLOCOCCOPSIS ?	CEL		1.0	14			
DICTYOSPHAERIUM PULCHELLUM	COL		1.0	14			
DINOBRYON #1	CEL					1.7	45
DINOBRYON BAVARICUM	CEL						X
FLAGELLATE #1	CEL		1.0	14			X
FLAGELLATE #9	CEL						X
FLAGELLATES	CEL				3	16.7	433
FRAGILARIA	CEL						X
FRAGILARIA CROTONENSIS	CEL					4.6	120
GOMPHOSPHAERIA LACUSTRIS	COL	4	12.2	169			
LYNGBYA	FIL		2.0	28	4	14.5	374
MELOSIRA	CEL			X			
MICROCYSTIS AERUGINOSA	COL		1.0	14			X
MICROCYSTIS INCERTA	COL		3.0	42			
NAVICULA GASTRUM	CEL						X
OOCYSTIS	CEL	5	6.2	85			
OSCILLATORIA TENUIS	FIL	2	14.3	197	2	17.9	463
SCENEDESMUS DENTICULATUS	COL			X			
SCENEDESMUS INTERMEDIUS V. BICAUDATUS	COL					0.6	15
STEPHANODISCUS	CEL			X			
SYNEDRA #1	CEL						X
SYNEDRA ULNA V. CHASEANA	CEL			X			X
TABELLARIA FENESTRATA	CEL	3	12.2	169			X
TOTAL				1380			2587

LAKE NAME: LAKE MAXINKUCKEE
STORET NUMBER: 1843

NYGAARD TROPHIC STATE INDICES

DATE	05 02 73	08 03 73	10 13 73
MYXOPHYCEAN	3.00 E	6.00 E	10/0 E
CHLOROPHYCEAN	5.00 E	5.00 E	03/0 E
EUGLENOPHYTE	0/08 ?	0.09 ?	0/13 ?
DIATOM	0.29 ?	0.43 E	0.20 ?
COMPOUND	10.0 E	15.0 E	15/0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 02 73	08 03 73	10 13 73
GENUS	01	03	01
SPECIES	00	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 02 73	08 03 73	10 13 73
AVERAGE DIVERSITY	H	2.66	3.25	1.05
NUMBER OF TAXA	S	23.00	28.00	29.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY	MAXH	4.52	4.81	4.86
TOTAL DIVERSITY	D	3298.40	3360.50	4208.40
TOTAL NUMBER OF INDIVIDUALS/ML	N	1240.00	1034.00	4008.00
EVENESS COMPONENT	J	0.59	0.68	0.22
MEAN NUMBER OF INDIVIDUALS/TAXA	L	53.91	36.93	138.21
NUMBER/ML OF MOST ABUNDANT TAXON	K	510.00	340.00	3406.00

LAKE NAME: LAKE MAXINKUCKEE CONTINUED
STORET NUMBER: 1843

TAXA	FORM	05 02 73 S	05 02 73 %C	05 02 73 ALGAL UNITS PER ML	08 03 73 S	08 03 73 %C	08 03 73 ALGAL UNITS PER ML	10 13 73 S	10 13 73 %C	10 13 73 ALGAL UNITS PER ML
ANABAENA	FIL								0.5	22
ANKISTRODESMUS SPIRALIS	CEL									X
ASTERIONELLA FORMOSA	CEL		4.0	49						
BOTRYOCOCCUS BRAUNII	COL			X						
CERATIUM HIRUNDINELLA	CEL						X			X
CHLOROPHYTAN FILAMENT	FIL	4	11.8	146						
CHROOCOCCUS LIMNETICUS	COL			X						
COCCOID COLONY	COL					1.9	20			
COCCONEIS PLACENTULA V. EUGLYPTA	CEL			X						X
COELASTRUM RETICULATUM	COL									X
COELOSPHAERIUM	COL									X
COSMARIUM	CEL		4.0	49		1.9	20			
CRUCIGENIA APICULATA	COL						X			
CRYPTOMONAS	CEL		1.9	24					1.6	65
CYCLOTELLA COMPTA	CEL	2	19.6	243		1.9	20		0.5	22
CYMBELLA #1	CEL						X			X
CYMBELLA #2	CEL									X
CYMBELLA #3	CEL						X			
CYMBELLA CISTULA	CEL			X						
CYMBELLA TUMIDA	CEL			X						
DICTYOSPHAERIUM PULCHELLUM	COL									X
DINOBRYON BAVARICUM	CEL			X						
DINOBRYON DIVERGENS	CEL			X						
DINOBRYON SOCIALE V. AMERICANUM	CEL									X
ELAKATOTHRIX	COL		1.9	24						
EPITHEMIA	CEL									X
FLAGELLATES	CEL	5	5.9	73	4	32.9	340	5	2.7	109
FRAGILARIA CROTONENSIS	CEL	1	41.1	510			X	2	3.3	131
GLENODINIUM	CEL					1.9	20			
GOMPHONEMA OLIVACEUM	CEL									X
GOMPHOSPHAERIA LACUSTRIS	COL			X	3	9.7	100	3	2.7	109
LYNGBYA	FIL					5.8	60			
LYNGBYA #1	FIL							1	85.0	3406
LYNGBYA #2	FIL						X		1.6	65
LYNGBYA BIRGEI	FIL					1.9	20			X
MELOSIRA ITALICA	CEL	3	4.0	49	1	11.6	120			X
MERISMOPEDIA PUNCTATA	COL									X
MERISMOPEDIA TENUISSIMA	COL					1.4	14			
MICROCYSTIS AERUGINOSA	COL					1.9	20	4	1.4	57
MICROCYSTIS INCERTA	COL									X
NAVICULA	CEL			X						X
NITZSCHIA	CEL									X
OOCYSTIS LACUSTRIS	CEL			X			X			
OSCILLATORIA TENUIS	FIL		1.9	24						X
PEDIASTRUM BORYANUM	COL			X						
PEDIASTRUM DUPLEX V. RETICULATUM	COL					1.9	20			
PENNATE DIATOM #1	CEL		4.0	49						
PENNATE DIATOM #2	CEL						X			
PENNATE DIATOM #3	CEL						X			
PENNATE DIATOM #4	CEL						X			
PERIDINIUM WISCONSINENSE	CEL						X			
PHACUS	CEL						X			
PINNULARIA	CEL									X
SCENEDESMUS ARMATUS	COL			X						
SCENEDESMUS QUADRICAUDA	COL					3.9	40			
STEPHANODISCUS	CEL				2	11.6	120			
SYNEDRA #1	CEL				5	7.7	80			
SYNEDRA #2	CEL								0.5	22
TETRASTRUM STAUROGENIAEFORME	COL					1.9	20			
TOTAL				1240			1034			4008

LAKE NAME: TIPPECANOE LAKE
STORET NUMBER: 1844

NYGAARD TROPHIC STATE INDICES

DATE	05 03 73	08 04 73	10 13 73
MYXOPHYCEAN	04/0 E	9.00 E	06/0 E
CHLOROPHYCEAN	05/0 E	5.00 E	05/0 E
EUGLENOPHYTE	0/09 ?	0.07 ?	0/11 ?
DIATOM	0.40 E	0.43 E	1.00 E
COMPOUND	13/0 E	18.0 E	16/0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 03 73	08 04 73	10 13 73
GENUS	04	13	08
SPECIES	02	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 03 73	08 04 73	10 13 73
AVERAGE DIVERSITY	H	3.45	3.32	3.08
NUMBER OF TAXA	S	27.00	31.00	29.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY	MAXH	4.75	4.95	4.86
TOTAL DIVERSITY	D	8059.20	15912.76	4894.12
TOTAL NUMBER OF INDIVIDUALS/ML	N	2336.00	4793.00	1589.00
EVENESS COMPONENT	J	0.73	0.67	0.63
MEAN NUMBER OF INDIVIDUALS/TAXA	L	86.52	154.61	54.79
NUMBER/ML OF MOST ABUNDANT TAXON	K	627.00	1339.00	682.00

LAKE NAME: TIPPECANOE LAKE CONTINUED
STORET NUMBER: 1844

TAXA	FORM	05 03 73 S	05 03 73 %C	05 03 73 ALGAL UNITS PER ML	08 04 73 S	08 04 73 %C	08 04 73 ALGAL UNITS PER ML	10 13 73 S	10 13 73 %C	10 13 73 ALGAL UNITS PER ML
ACHNANTHES	CEL						X			
ACHNANTHES MICROCEPHALA	CEL		1.9	44			X	5	5.3	85
AMPHIPRORA	CEL			X						
ANABAENA	FIL					0.8	39		0.9	14
APHANIZOMENON	FIL			X						
APHANIZOMENON FLOS-AQUAE	FIL		3.8	88		2.4	116	2	11.6	185
APHANOTHECE	CEL						X			
ASTERIONELLA FORMOSA	CEL	2	12.5	292						
CERATIUM HIRUNDINELLA										
F. FURCOIDES	CEL					0.4	19			
COCCONEIS	CEL			X						
COELOSPHAERIUM	COL					0.8	39			
CRUCIGENIA TETRAPEDIA	COL					1.6	78		1.8	28
CRUCIGENIA TRUNCATA	COL						X			
CRYPTOMONAS	CEL					2.8	136			
CRYPTOMONAS EROSA	CEL	4	8.7	204					0.9	14
CYANOMONAS ? AMERICANUM ?	CEL									X
CYANOPHYTAN FILAMENT	FIL									X
CYCLOTELLA	CEL				1	27.9	1339		1.8	28
CYCLOTELLA MENEGHINIANA	CEL		2.5	58						
CYCLOTELLA STELLIGERA	CEL									X
CYMBELLA	CEL			X			X			
DICTYOSPHAERIUM	COL		1.2	29						
DINOBRYON	CEL			X		2.0	97	3	5.3	85
DINOBRYON SOCIALE										
V. AMERICANUM	CEL									X
FLAGELLATE #1	CEL	5	12.5	292						
FLAGELLATE #2	CEL		5.0	117		4.9	233			X
FLAGELLATES	CEL								4.5	71
FRAGILARIA	CEL						X			
FRAGILARIA CONSTRUENS	CEL			X						
FRAGILARIA CROTONENSIS	CEL	1	26.8	627					4.5	71
GLENODINIUM	CEL									X
LAGERHEIMIA	CEL									X
LAGERHEIMIA QUADRISETA	CEL						X			
LYNGBYA	FIL		2.5	58	2	17.8	854	1	42.9	682
MALLOMONAS	CEL					0.4	19			
MELOSIRA GRANULATA	CEL		0.6	15		0.8	39			X
MELOSIRA ITALICA	CEL	3	11.9	277						X
MELOSIRA SPP.	CEL								3.6	57
MERISMOPEDIA TENUISSIMA	COL					0.4	19		2.7	43
MICROCYSTIS #2	COL					3.2	155			
MICROCYSTIS INCERTA	COL				4	8.9	427		1.8	28
NAVICULA	CEL		1.9	44		0.4	19			
NAVICULA CRYPTOCEPHALA	CEL								1.8	28
NAVICULA EXIGUA	CEL								1.8	28
OOCYSTIS	CEL		1.2	29						X
OSCILLATORIA	FIL				3	12.6	602			
PHACUS	CEL					0.4	19			
RAPHIDIOPSIS CURVATA	FIL		1.2	29						
SCENEDESMUS BIJUGA	COL		0.6	15		4.5	214	4	7.2	114
SCENEDESMUS LONGUS										
V. MINUTUS	COL			X						
SCENEDESMUS QUADRICAUDA	COL		0.6	15		0.4	19			X
STAURASTRUM	CEL						X			
STEPHANODISCUS	CEL		1.9	44			X		0.9	14
SYNEDRA	CEL		1.9	44						
SYNEDRA #1	CEL						X			
SYNEDRA #2	CEL				5	6.5	311			
SYNEDRA ULNA	CEL								0.9	14
SYNEDRA ULNA										
V. CHASEANA	CEL		0.6	15						
TOTAL				2336			4793			1589

LAKE NAME: DALLAS LAKE
STORET NUMBER: 1845

NYGAARD TROPHIC STATE INDICES

DATE	05 04 73	08 03 73	10 12 73
MYXOPHYCEAN	01/0 E	07/0 E	4.00 E
CHLOROPHYCEAN	0/0 O	05/0 E	4.00 E
EUGLENOPHYTE	0/01 ?	0/12 ?	0/08 ?
DIATOM	0.57 E	0.60 E	1.33 E
COMPOUND	05/0 E	15/0 E	12.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 04 73	08 03 73	10 12 73
GENUS	06	06	05
SPECIES	04	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 04 73	08 03 73	10 12 73
AVERAGE DIVERSITY	H	2.90	3.31	2.85
NUMBER OF TAXA	S	16.00	26.00	25.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY	MAXH	4.00	4.70	4.64
TOTAL DIVERSITY	D	8195.40	7785.12	4272.15
TOTAL NUMBER OF INDIVIDUALS/ML	N	2826.00	2352.00	1499.00
EVENESS COMPONENT	J	0.73	0.70	0.61
MEAN NUMBER OF INDIVIDUALS/TAXA	L	176.63	90.46	59.96
NUMBER/ML OF MOST ABUNDANT TAXON	K	706.00	551.00	485.00

LAKE NAME: DALLAS LAKE CONTINUED
STORET NUMBER: 1845

TAXA	FORM	05 04 73 S	05 04 73 %C	05 04 73 ALGAL UNITS PER ML	08 03 73 S	08 03 73 %C	08 03 73 ALGAL UNITS PER ML	10 12 73 S	10 12 73 %C	10 12 73 ALGAL UNITS PER ML
AMPHIPRORA	CEL			X						
ANABAENA	FIL					7.0	164		1.9	29
ANABAENA SCHEREMETIEVI	FIL						X			
APHANIZOMENON FLOS-AQUAE	FIL				1	23.4	551	1	32.4	485
ASTERIONELLA FORMOSA	CEL	3	15.1	426						
CERATIUM	CEL						X			
CERATIUM HIRUNDINELLA F. GRACILIS	CEL									X
CHLAMYDOMONAS	CEL							4	6.7	100
CLOSTERIUM	CEL									X
COCCONEIS	CEL						X			
CRUCIGENIA TETRAPEDIA	COL								3.8	57
CRYPTOMONAS	CEL		2.6	74		3.8	89	3	6.7	100
CYCLOTELLA	CEL								3.8	57
CYCLOTELLA BODANICA	CEL			X						
CYCLOTELLA GLOMERATA	CEL									X
CYCLOTELLA MICHIGANIANA	CEL						X			
CYMBELLA	CEL			X			X			
DICTYOSPHAERIUM	COL				2	15.2	357			
DINOBRYON	CEL					3.8	89			
DINOBRYON BAVARICUM	CEL						X			X
DINOBRYON DIVERGENS	CEL									X
DINOBRYON SOCIALE	CEL	5	6.3	177						
DINOBRYON SPP.	CEL							5	6.7	100
FLAGELLATE	CEL					8.2	193	2	27.6	414
FLAGELLATE #1	CEL		2.6	74						X
FLAGELLATE #2	CEL									X
FLAGELLATES	CEL		3.1	88						
FRAGILARIA	CEL					0.6	15			
FRAGILARIA CONSTRUENS	CEL						X			
FRAGILARIA CROTONENSIS	CEL		5.2	147						X
FRAGILARIA INTERMEDIA	CEL	2	24.0	677						
GOMPHOSPHAERIA ? APONINA	COL						X			
GYMNODINIUM	CEL					1.9	45			
LAGERHEIMIA QUADRISETA	CEL								1.9	29
LYNGBYA	FIL				5	8.2	193		3.8	57
MELOSIRA #4	CEL	4	11.5	324						
MELOSIRA DISTANS	CEL						X			
MELOSIRA ITALICA	CEL			X						X
MICROCYSTIS INCERTA	COL				4	10.1	238		2.9	43
NAVICULA	CEL									X
NAVICULA EXIGUA	CEL					0.6	15			
OOCYSTIS	CEL						X		0.9	14
OOCYSTIS SUBMARINA	CEL					1.9	45			
OSCILLATORIA	FIL				3	12.7	298			
OSCILLATORIA TENUIS	FIL	1	25.0	706						
SCENEDESMUS BIJUGA	COL					1.3	30			
STEPHANODISCUS	CEL						X		0.9	14
STEPHANODISCUS NIAGARAE	CEL		4.2	118						
SYNEDRA ACUS	CEL		0.5	15						X
TABELLARIA FENESTRATA	CEL			X						
TETRASTRUM	COL									X
TETRASTRUM STAUROGENIAEFORME	COL					1.3	30			
TOTAL				2826			2352			1499

LAKE NAME: CLIN LAKE
STORET NUMBER: 1846

NYGAARD TROPHIC STATE INDICES

DATE	08 06 73	10 11 73
MYXOPHYCEAN	06/0 E	07/0 E
CHLOROPHYCEAN	03/0 E	01/0 E
EUGLENOPHYTE	0/09 ?	0/08 ?
DIATOM	1.50 E	01/0 E
COMPOUND	12/0 E	09/0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	08 06 73	10 11 73
GENUS	03	00
SPECIES	02	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		08 06 73	10 11 73
AVERAGE DIVERSITY	H	2.76	2.50
NUMBER OF TAXA	S	20.00	16.00
NUMBER OF SAMPLES COMPOSITED	M	1.00	1.00
MAXIMUM DIVERSITY	MAXH	4.32	4.00
TOTAL DIVERSITY	D	5586.24	1580.00
TOTAL NUMBER OF INDIVIDUALS/ML	N	2024.00	632.00
EVENESS COMPONENT	J	0.64	0.63
MEAN NUMBER OF INDIVIDUALS/TAXA	L	101.20	39.50
NUMBER/ML OF MOST ABUNDANT TAXON	K	586.00	227.00

LAKE NAME: CLIN LAKE
STORET NUMBER: 1846

CONTINUED

TAXA	FORM	08 06 73 S	08 06 73 %C	08 06 73 ALGAL UNITS PER ML	10 11 73 S	10 11 73 %C	10 11 73 ALGAL UNITS PER ML
ANABAENA	FIL			X			X
APHANIZOMENON FLOS-AQUAE	FIL	3	9.6	195	4	9.3	59
CERATIUM HIRUNDINELLA F. GRACILIS	CEL			X			X
CHROCOCCUS DISPERSUS	COL			X			
COCCOID CELL	CEL				3	35.9	227
COELOSPHAERIUM NAEGELIANUM	COL				1	10.9	69
CRYPTOMONAS EROSA	CEL		2.4	49	5	6.2	39
CYCLOTELLA	CEL					1.6	10
CYCLOTELLA MENEGHINIANA	CEL	4	8.4	171			
CYCLOTELLA MICHIGANIANA	CEL	1	29.0	586			
DICTYOSPHAERIUM EHRENBERGIANUM	COL		1.1	23			
DINOBRYON DIVERGENS	CEL			X			
DINOBRYON SOCIALE	CEL						X
FLAGELLATE	CEL						X
FLAGELLATE #1	CEL	5	10.9	220	2	28.2	178
FRAGILARIA CROTONENSIS	CEL			X			
LAGERHEIMIA QUADRISETA	CEL					1.6	10
LYNGBYA	FIL						X
LYNGBYA BIRGEI	FIL			X			
LYNGBYA CONTORTA	FIL					3.2	20
LYNGBYA LIMNETICA	FIL		4.8	98			X
MALLOMONAS ACAROIDES	CEL					1.6	10
MELOSIRA #4	CEL	2	25.3	512			
MICROCYSTIS INCERTA	COL		7.2	146			
NITZSCHIA #1	CEL			X			
OSCILLATORIA #1	FIL					1.6	10
PERIDINIUM	CEL			X			
PERIDINIUM INCONSPICUUM	CEL			X			
SCENEDESMUS BIJUGA	COL			X			
SCHROEDERIA SETIGERA	CEL		1.2	24			
TOTAL				2024			632

LAKE NAME: CLIVER LAKE
STORET NUMBER: 1847

NYGAARD TROPHIC STATE INDICES

DATE	08 06 73	10 11 73
MYXOPHYCEAN	03/0 E	09/0 E
CHLOROPHYCEAN	01/0 E	02/0 E
EUGLENOPHYTE	0.25 E	0.09 ?
DIATOM	0.75 E	0.25 ?
COMPOUND	08/0 E	13/0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	08 06 73	10 11 73
GENUS	00	00
SPECIES	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		08 06 73	10 11 73
AVERAGE DIVERSITY	H	2.54	3.45
NUMBER OF TAXA	S	19.00	23.00
NUMBER OF SAMPLES COMPOSITED	M	1.00	1.00
MAXIMUM DIVERSITY	MAXH	4.25	4.52
TOTAL DIVERSITY	D	2420.62	1342.05
TOTAL NUMBER OF INDIVIDUALS/ML	N	953.00	389.00
EVENESS COMPONENT	J	0.60	0.76
MEAN NUMBER OF INDIVIDUALS/TAXA	L	50.16	16.91
NUMBER/ML OF MOST ABUNDANT TAXON	K	456.00	53.00

LAKE NAME: OLIVER LAKE CONTINUED
STORET NUMBER: 1847

TAXA	FORM	08 06 73 S	08 06 73 %C	08 06 73 ALGAL UNITS PER ML	10 11 73 S	10 11 73 %C	10 11 73 ALGAL UNITS PER ML
ANABAENA	FIL		2.1	20			X
ANKISTRODESMUS	CEL						X
APHANIZOMENON FLOS-AQUAE	FIL					4.6	18
BOTRYOCOCCUS BRAUNII	COL						X
CERATIUM HIRUNDINELLA	CEL		2.1	20			X
COELOSPHAERIUM NAEGELIANUM	COL					4.6	18
CRYPTOMONAS	CEL					4.6	18
CYCLOTELLA BODANICA	CEL			X			
CYCLOTELLA COMPTA	CEL					9.0	35
CYMBELLA	CEL			X			
DACTYLOCOCCOPSIS SMITHII	CEL						X
DINOBRYON	CEL		2.1	20	2	13.6	53
DINOFLAGELLATE	CEL				5	9.0	35
EUGLENA	CEL					4.6	18
FLAGELLATE #1	CEL		4.2	40	3	13.6	53
FLAGELLATE #9	CEL		2.1	20			X
FLAGELLATES	CEL	2	18.7	178			
FRAGILARIA CROTONENSIS	CEL			X	1	13.6	53
GOMPHONEMA ACUMINATUM	CEL						X
GOMPHOSPHAERIA LACUSTRIS	COL	5	4.2	40	4	9.0	35
LYNGBYA	FIL		2.1	20		4.6	18
LYNGBYA BIRGEI	FIL						X
MALLOMONAS ACAROIDES	CEL		2.1	20			
MELOSIRA ITALICA	CEL			X			
MICROCYSTIS INCERTA	COL					9.0	35
NAVICULA	CEL			X			X
OOCYSTIS	CEL	3	8.3	79			
OSCILLATORIA	FIL						X
PERIDINIUM WISCONSINENSE	CEL	4	4.2	40			
STEPHANODISCUS	CEL	1	47.8	456			
SYNEDRA	CEL			X			X
TRACHELOMONAS	CEL			X			
TOTAL				953			389

LAKE NAME: SYLVAN LAKE
STORET NUMBER: 1848

NYGAARD TROPHIC STATE INDICES

DATE	05 10 73	08 03 73	10 12 73
MYXOPHYCEAN	3.00 E	0.83 E	1.60 E
CHLOROPHYCEAN	19.0 E	3.83 E	5.80 E
EUGLENOPHYTE	0.09 ?	0.14 ?	0.08 ?
DIATOM	1.17 E	2.00 E	02/0 E
COMPOUND	31.0 E	5.67 E	8.40 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 10 73	08 03 73	10 12 73
GENUS	15	09	13
SPECIES	06	04	04

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 10 73	08 03 73	10 12 73
AVERAGE DIVERSITY	H	4.08	2.70	2.75
NUMBER OF TAXA	S	42.00	45.00	52.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY	MAXH	5.39	5.49	5.70
TOTAL DIVERSITY	D	75994.08	27307.80	32227.25
TOTAL NUMBER OF INDIVIDUALS/ML	N	18626.00	10114.00	11719.00
EVENESS COMPONENT	J	0.76	0.49	0.48
MEAN NUMBER OF INDIVIDUALS/TAXA	L	443.48	224.76	225.37
NUMBER/ML OF MOST ABUNDANT TAXON	K	2984.00	5216.00	6612.00

LAKE NAME: SYLVAN LAKE
STORET NUMBER: 1848

CONTINUED

TAXA	FORM	05 10 73 S	05 10 73 %C	05 10 73 ALGAL UNITS PER ML	08 03 73 S	08 03 73 %C	08 03 73 ALGAL UNITS PER ML	10 12 73 S	10 12 73 %C	10 12 73 ALGAL UNITS PER ML
ACTINASTRUM HANTZSCHII	CEL		0.2	34						
ANABAENA	FIL				2	9.5	965			X
ANKISTRODESMUS	CEL		0.2	34						
APHANIZOMENON FLOS-AQUAE	FIL				3	12.4	1250		0.3	37
ASTERIONELLA FORMOSA	CEL		2.8	515						
CENTRIC DIATOM	CEL								0.6	73
CERATIUM HIRUNDINELLA	CEL						X			
CLOSTERIUM #1	CEL		0.4	69			X		1.3	147
CLOSTERIUM #2	CEL						X		0.3	37
COELASTRUM MICROPORUM	COL								1.3	147
COELASTRUM RETICULATUM	COL						X		2.8	331
COELASTRUM SPHAERICUM	COL			X		1.1	107			
COELOSPHAERIUM NAEGELIANUM	COL						X			
COSMARIUM	CEL								0.3	37
COSMARIUM #1	CEL						X			
COSMARIUM #2	CEL					0.4	36			
COSMARIUM BIPUNCTATUM	CEL					1.1	107			X
CRUCIGENIA APICULATA	COL					0.4	36		1.3	147
CRUCIGENIA TETRAPEDIA	COL						X			
CRYPTOMONAS	CEL	2	16.0	2984	5	3.2	322			
CRYPTOMONAS EROSA	CEL							5	3.8	441
CYCLOTELLA MENEGHINIANA	CEL		3.7	686						
CYMATOPLEURA	CEL						X			
CYMBELLA	CEL			X						
DICTYOSPHAERIUM PULCHELLUM	COL		1.1	206		0.4	36		0.3	37
DINOFLAGELLATE	CEL								0.3	37
EUGLENA	CEL			X		0.4	36			X
FLAGELLATE #1	CEL		4.2	789						
FLAGELLATES	CEL	5	6.4	1201		1.4	143		3.1	367
FRAGILARIA	CEL			X						
FRANCEIA	CEL		1.5	274		0.4	36		0.3	37
GOMPHOSPHAERIA LACUSTRIS	COL			X		0.4	36		0.6	73
KIRCHNERIELLA	CEL								1.9	220
KIRCHNERIELLA LUNARIS V. DIANAE	CEL									X
LAGERHEIMIA	CEL		0.2	34			X			
LYNGBYA LAGERHEIMII	FIL									X
MALLOMONAS	CEL								0.3	37
MELOSIRA #2	CEL		0.7	137						
MELOSIRA #4	CEL		4.2	789						
MELOSIRA GRANULATA V. ANGUSTISSIMA	CEL	4	5.2	961		0.4	36	2	6.6	771
MELOSIRA VARIANS	CEL			X						
MERISMOPEDIA TENUISSIMA	COL									X
MICRACTINIUM PUSILLUM	COL		3.5	652						X
MICROCYSTIS AERUGINOSA	COL									X
MICROCYSTIS INCERTA	COL		0.2	34						X
MOUGEOTIA	FIL						X			X
OOCYSTIS	CEL							4	6.6	771
OOCYSTIS CRASSA ?	CEL		2.6	480	4	6.0	607			X
OSCILLATORIA AMOENA	FIL							1	56.4	6612
OSCILLATORIA AMOENA ?	FIL	1	13.1	2436	1	51.6	5216			
PEDIASTRUM BORYANUM	COL		0.2	34			X			X
PEDIASTRUM DUPLEX V. RETICULATUM	COL		0.2	34			X		0.3	37
PEDIASTRUM SIMPLEX	COL								0.3	37
PEDIASTRUM TETRAS	COL			X						X
PEDIASTRUM TETRAS V. TETRADON	COL						X			
PENNATE DIATOM	CEL		0.6	103						
PERIDINIUM	CEL			X						
PHACUS	CEL						X		0.3	37
PHACUS HELIKOIDES	CEL					0.4	36		1.3	147
PHACUS PYRUM	CEL		0.2	34			X			
SCENEDESMUS #1	COL						X		2.2	257
SCENEDESMUS #2	COL									X
SCENEDESMUS ACUMINATUS	COL		2.0	377						
SCENEDESMUS ARCUATUS	COL									X
SCENEDESMUS BICAUDATUS	COL		0.2	34						
SCENEDESMUS BIJUGA	COL						X			
SCENEDESMUS BIJUGA V. FLEXUOSUS	COL		0.6	103			X			X
SCENEDESMUS DIMORPHUS	COL					0.4	36		0.3	37
SCENEDESMUS OPOLIENSIS	COL		4.2	789				3	4.4	514
SCENEDESMUS PROTUBERANS	COL					2.8	286			
SCENEDESMUS QUADRICAUDA	COL	3	10.5	1955		1.8	179		0.9	110
SCHROEDERIA SETIGERA	CEL						X			
STAURASTRUM #1	CEL					0.7	71		0.3	37
STEPHANODISCUS	CEL		7.4	1372		1.4	143			
STEPHANODISCUS ASTRAEA	CEL			X						
SYNEDRA #1	CEL		1.7	309						
SYNEDRA #2	CEL		0.9	172						
TETRAEDRON CAUDATUM	CEL			X			X			X

LAKE NAME: SYLVAN LAKE
STORET NUMBER: 1848

CONTINUED

TAXA	FORM	05 10 73 S	05 10 73 %C	05 10 73 ALGAL UNITS PER ML	08 03 73 S	08 03 73 %C	08 03 73 ALGAL UNITS PER ML	10 12 73 S	10 12 73 %C	10 12 73 ALGAL UNITS PER ML
TETRAEDRON CONSTRICTUM	CEL					0.4	36			X
TETRAEDRON MINIMUM	CEL		0.2	34						X
TETRAEDRON TRIGONUM	CEL					0.4	36		1.3	147
TETRASTRUM HETERACANTHUM	COL									X
TETRASTRUM STAUROGENIAEFORME	COL		5.2	961		2.8	286			X
TREUBARIA TRIAPPENDICULATA	CEL					0.4	36			
TREUBARIA TRIAPPENDICULATA ?	CEL									X
TROCHISCIA	CEL									X
TOTAL				18626			10114			11719

LAKE NAME: HOVEY LAKE
STORET NUMBER: 1849

NYGAARD TROPHIC STATE INDICES

DATE	08 11 73	10 19 73
MYXOPHYCEAN	9.00 E	3.50 E
CHLOROPHYCEAN	15.0 E	10.5 E
EUGLENOPHYTE	0.46 E	0.18 ?
DIATOM	0.50 E	0.60 E
COMPOUND	38.0 E	18.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	08 11 73	10 19 73
GENUS	23	20
SPECIES	07	04

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		08 11 73	10 19 73
AVERAGE DIVERSITY	H	2.94	3.17
NUMBER OF TAXA	S	55.00	51.00
NUMBER OF SAMPLES COMPOSITED	M	1.00	1.00
MAXIMUM DIVERSITY	MAXH	5.78	5.67
TOTAL DIVERSITY	D	454644.54	418218.10
TOTAL NUMBER OF INDIVIDUALS/ML	N	154641.00	131930.00
EVENESS COMPONENT	J	0.51	0.56
MEAN NUMBER OF INDIVIDUALS/TAXA	L	2811.65	2586.86
NUMBER/ML OF MOST ABUNDANT TAXON	K	70272.00	35107.00

LAKE NAME: HOVEY LAKE CONTINUED
STORET NUMBER: 1849

TAXA	FORM	08 11 73 S	08 11 73 %C	08 11 73 ALGAL UNITS PER ML	10 19 73 S	10 19 73 %C	10 19 73 ALGAL UNITS PER ML
ACTINASTRUM GRACILIMUM	CEL		0.8	1208			
ACTINASTRUM HANTZSCHII	CEL					1.1	1478
ANABAENA	FIL			X			
ANABAENOPSIS CIRCULARIS	FIL	2	8.2	12685			
ANABAENOPSIS ELENKINII	FIL					1.5	2033
ANABAENOPSIS PHILIPPINENSIS	FIL					2.2	2956
ANKISTRODESMUS	CEL					0.6	739
ANKISTRODESMUS FALCATUS	CEL		2.6	4027			
CARTERIA	CEL						X
CHLAMYDOMONAS ?	CEL			X			
CHLOROGONIUM	CEL		0.8	1208		2.0	2587
CHRYSOCOCCUS	CEL					0.1	185
CLOSTERIUM	CEL		0.8	1208		0.1	185
COELASTRUM SPHAERICUM	COL						X
COSMARIUM	CEL						X
CRUCIGENIA APICULATA	COL						X
CRUCIGENIA TETRAPEDIA	COL			X			
CRYPTOMONAS	CEL					0.7	924
CRYPTOMONAS EROSA	CEL	4	4.4	6846			
CRYPTOMONAS OVATA	CEL						X
CYANOPHYTAN COCCOID CELLED COLONY	CEL						X
CYCLOTELLA	CEL		2.0	3020			
DICTYOSPHAERIUM PULCHELLUM	COL					0.3	370
DINOFLAGELLATE	CEL					0.3	370
EUGLENA	CEL			X	5	3.8	4989
EUGLENA ACUS	CEL			X			
EUGLENA FLAVA ?	CEL			X			
EUGLENA SPIROGYRA	CEL			X			
EUGLENA SPP.	CEL	5	2.6	4027			
FLAGELLATES	CEL					2.1	2772
FRUSTULIA RHOMBOIDES	CEL						X
GLENODINIUM	CEL		0.3	403			
GYMNODINIUM	CEL			X			
KIRCHNERIELLA	CEL		0.9	1410			X
MALLOMONAS	CEL			X			
MELOSIRA #4	CEL						X
MELOSIRA DISTANS	CEL					0.3	370
MELOSIRA GRANULATA	CEL			X			
MERISMOPEDIA	COL		1.3	2014			
MERISMOPEDIA TENUISSIMA	COL		1.7	2618		4.2	5543
MESOSTIGMA	CEL					0.4	554
MICROCYSTIS INCERTA	COL		0.3	403			
NAVICULA	CEL			X			X
NEIDIUM ?	CEL						X
NITZSCHIA	CEL			X			X
NITZSCHIA HOLSATICA	CEL			X			
OOCYSTIS	CEL		0.3	403			
OSCILLATORIA	FIL					0.3	370
OSCILLATORIA GEMINATA	FIL				2	18.3	24205
OSCILLATORIA LIMNETICA	FIL			X			
OSCILLATORIA SPP.	FIL	1	45.4	70272			
PEDIASTRUM DUPLEX	COL			X			
PENNATE DIATOM	CEL	3	18.0	27787		16.0	21064
PERIDINIUM	CEL		0.1	201			
PHACUS	CEL					0.1	185
PHACUS ACUMINATUS	CEL			X			
PHACUS PYRUM	CEL			X			X
PHACUS SPP.	CEL		1.0	1611			
PHACUS TRIQUETER	CEL			X			
QUADRIGULA ?	CEL						X
RAPHIDIOPSIS CURVATA	FIL		2.5	3826	1	26.6	35107
SCENEDESMUS ABUNDANS	COL						X
SCENEDESMUS ACUTUS	COL					0.4	554
SCENEDESMUS ARCUATUS	COL					0.1	185
SCENEDESMUS BICAUDATUS	COL			X			
SCENEDESMUS BIJUGA	COL			X			
SCENEDESMUS DIMORPHUS	COL		0.4	604		1.0	1293
SCENEDESMUS INTERMEDIUS	COL						X
SCENEDESMUS QUADRICAUDA	COL		0.4	604		0.3	370
SCENEDESMUS SPINOSUS V. BICAUDATUS	COL						X
SCHROEDERIA SETIGERA	CEL		0.7	1007		0.6	739
SPIRULINA SPIRULINOIDES	CEL		0.4	604			
STEPHANODISCUS	CEL		0.7	1007	3	16.0	21064
SYNEDRA	CEL		2.3	3624			
SYNEDRA ULNA	CEL			X			
TETRAEDRON CAUDATUM	CEL						X
TETRAEDRON MINIMUM	CEL			X			

LAKE NAME: HOVEY LAKE
STORET NUMBER: 1849

CONTINUED

TAXA	FORM	09 11 73 S	09 11 73 %C	09 11 73 ALGAL UNITS PER ML	10 19 73 S	10 19 73 %C	10 19 73 ALGAL UNITS PER ML
TETRAEDRON MINIMUM							
V. SCROBICULATUM	CEL			X			X
TETRAEDRON NUTICUM	CEL						X
TETRAEDRON PENTAEDRICUM	CEL						X
TETRAEDRON REGULARE							
V. INCUS	CEL						X
TETRAEDRON TRIGONUM	CEL			X			
TETRASTRUM STAUROGENIAEFORME	COL			X		0.4	554
TRACHELOMONAS	CEL					0.1	185
TRACHELOMONAS HISPIDA	CEL			X			
TRACHELOMONAS SCABRA	CEL			X			
TRACHELOMONAS SPP.	CEL		0.9	1410			
TRACHELOMONAS URCEOLATA	CEL		0.4	604			
TRACHELOMONAS VOLVOCINA	CEL			X			
TRACHELOMONAS VOLVOCINA							
V. PUNCTATA	CEL						X
TOTAL				154641			131930

LAKE NAME: VERSAILLES LAKE
STORET NUMBER: 1850

NYGAARD TROPHIC STATE INDICES

DATE	04 29 73	08 02 73	10 10 73
MYXOPHYCEAN	01/0 E	3.50 E	3.50 E
CHLOROPHYCEAN	0/0 C	5.50 E	5.00 E
EUGLENOPHYTE	0/01 ?	0.61 E	0.47 E
DIATOM	0.33 E	0.50 E	2.00 E
COMPOUND	04/0 E	16.0 E	14.5 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	04 29 73	08 02 73	10 10 73
GENUS	05	12	21
SPECIES	00	1	07

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		04 29 73	08 02 73	10 10 73
AVERAGE DIVERSITY	H	1.43	2.72	2.89
NUMBER OF TAXA	S	16.00	54.00	36.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	3.00	3.00
MAXIMUM DIVERSITY	MAXH	4.00	5.75	5.17
TOTAL DIVERSITY	D	3103.10	26658.72	69498.72
TOTAL NUMBER OF INDIVIDUALS/ML	N	2170.00	9801.00	24048.00
EVENESS COMPONENT	J	0.36	0.47	0.56
MEAN NUMBER OF INDIVIDUALS/TAXA	L	135.63	181.50	668.00
NUMBER/ML OF MOST ABUNDANT TAXON	K	1223.00	4946.00	10228.00

LAKE NAME: VERSAILLES LAKE CONTINUED
STORET NUMBER: 1950

TAXA	FORM	04 29 73 S	04 29 73 %C	04 29 73 ALGAL UNITS PER ML	08 02 73 S	08 02 73 %C	08 02 73 ALGAL UNITS PER ML	10 10 73 S	10 10 73 %C	10 10 73 ALGAL UNITS PER ML
ANKISTRODESMUS ?	CEL						X			
ANKISTRODESMUS FALCATUS	CEL								1.1	276
APHANIZOMENON FLOS-AQUAE	FIL					0.5	49			X
CENTRIC DIATOM	CEL	4	2.4	52				2	10.7	2580
CHLAMYDOMONAS GLOBOSA	CEL					0.5	49			
CHLOROGONIUM MINIMUM	CEL				4	5.5	539			
CHLOROPHYTAN COCCOID COLONY	COL						X			
CHROOMONAS	CEL				3	14.0	1377			
CHRYSOPHYTAN COCCOID CELL	CEL									X
CLOSTERIUM	CEL					1.0	98			X
CLOSTERIUM #1	CEL						X			
COELASTRUM MICROPORUM	COL						X			
COSMARIUM	CEL									X
CRUCIGENIA TETRAPEDIA	COL								0.4	92
CRYPTOMONAS CURVATA ?	CEL	3	3.2	69						
CRYPTOMONAS EROSA	CEL	1	56.4	1223		1.0	98	5	6.9	1659
CYANOPHYTAN COCCOID CELLED COLONY	COL						X			
CYCLOTELLA	CEL						X		1.9	461
CYCLOTELLA MENEGHINIANA	CEL			X						
CYMBELLA VENTRICOSA	CEL						X			
CYMBELLA VENTRICOSA ?	CEL			X						
DACTYLOCOCCOPSIS	CEL					1.0	98			
DACTYLOCOCCOPSIS IRREGULARIS	CEL								3.8	921
EUGLENA #1	CEL								6.5	1566
EUGLENA #2	CEL									X
EUGLENA #3	CEL						X			
EUGLENA #4	CEL						X			
EUGLENA GRACILIS	CEL					1.0	98			
EUGLENA OXYURIS	CEL									X
FLAGELLATE #3	CEL				2	10.0	979			
FLAGELLATE #4	CEL						X			
GLENODINIUM	CEL									X
GLOEOCYSTIS GIGAS	COL						X			
GYMNODINIUM ORDINATUM	CEL					2.0	196			
GYROSIGMA	CEL			X						
LEPOCINCLIS FUSIFORMIS	CEL						X			
LYNGBYA LIMNETICA	FIL								1.1	276
MALLAMONAS ACAROIDES	CEL						X			
MELOSIRA #4	CEL					2.0	196		2.3	553
MELOSIRA DISTANS	CEL			X				3	10.7	2580
MERISMOPEDIA TENUISSIMA	COL					2.0	196	4	7.7	1843
MESOSTIGMA VIRIDIS	CEL					1.0	98			
MICROCYSTIS AERUGINOSA	COL						X			
MICROCYSTIS INCERTA	COL						X		0.4	92
NAVICULA	CEL									X
NAVICULA #1	CEL		0.8	17			X			
NAVICULA #2	CEL			X			X			
NAVICULA #3	CEL			X						
NAVICULA DUBIUM	CEL			X						
NITZSCHIA #1	CEL			X						
NITZSCHIA #2	CEL					0.5	49			
NITZSCHIA #3	CEL					2.5	245			
OSCILLATORIA	FIL					0.5	49	1	42.5	10228
OSCILLATORIA LIMNETICA	FIL	2	35.7	775						X
PANDORINA MORUM	COL			X						
PEDIASTRUM BORYANUM	COL									X
PEDIASTRUM DUPLEX V. RETICULATUM	COL						X			
PERIDINIUM	CEL						X			
PERIDINIUM QUADRIDENS	CEL						X			
PHACUS CAUDATUS	CEL									X
PHACUS CURVICAUDA	CEL					0.5	49			
PHACUS LONGICAUDA	CEL						X			
PHACUS PSEUDONORDSTEDTII	CEL						X			
PHACUS PYRUM	CEL									X
PHACUS TORTUS	CEL									X
SCENEDESMUS	COL						X			
SCENEDESMUS ACUMINATUS	COL						X			
SCENEDESMUS ARCUATUS	COL									X
SCENEDESMUS DENTICULATUS	COL						X			
SCENEDESMUS DIMORPHUS	COL						X		0.4	92
SCENEDESMUS ECORNIS V. DISCIFORMIS	COL					0.5	49			
SCENEDESMUS INTERMEDIUS	COL									X
SCENEDESMUS QUADRICAUDA	COL					0.5	49		0.4	92
SPERMATOZOOPSIS EXALTANS	CEL						X			
SPHAERELLOPSIS ? FLUVIATILIS	CEL					0.5	49			
STEPHANODISCUS	CEL				1	50.5	4946			

LAKE NAME: VERSAILLES LAKE CONTINUED
STORET NUMBER: 1850

TAXA	FORM	04 29 73 S	04 29 73 %C	04 29 73 ALGAL UNITS PER ML	08 02 73 S	08 02 73 %C	08 02 73 ALGAL UNITS PER ML	10 10 73 S	10 10 73 %C	10 10 73 ALGAL UNITS PER ML
SURIRELLA	CEL			X						
SYNEDRA	CEL				5	2.0	196		2.3	553
SYNEDRA #1	CEL	5	1.6	34						
TETRAEDRON MINIMUM	CEL									X
TETRASTRUM GLABRUM	COL					0.5	49			
TETRASTRUM STAUROGENIAEFORME	COL									X
TRACHELOMONAS BULLA	CEL						X			
TRACHELOMONAS CREBEA	CEL						X			
TRACHELOMONAS FLUVIATILIS	CEL						X			
TRACHELOMONAS PULCHELLA	CEL								0.8	184
TRACHELOMONAS URCEOLATA	CEL									X
TRACHELOMONAS VOLVOCINA	CEL						X			
TREUBARIA TRIAPPENDICULATA	CEL									X
TOTAL				2170			9801			24048

LAKE NAME: BASS LAKE
STORET NUMBER: 1851

NYGAARD TROPHIC STATE INDICES

DATE	05 02 73	08 03 73	10 13 73
MYXOPHYCEAN	5.67 E	3.75 E	2.40 E
CHLOROPHYCEAN	5.67 E	3.50 E	1.40 E
EUGLENOPHYTE	0/34 ?	0.07 ?	0.11 ?
DIATOM	0.12 ?	0.25 ?	0.07 ?
COMPOUND	12.0 E	8.25 E	4.40 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 02 73	08 03 73	10 13 73
GENUS	07	11	12
SPECIES	04	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 02 73	08 03 73	10 13 73
AVERAGE DIVERSITY	H	3.91	3.11	1.75
NUMBER OF TAXA	S	61.00	50.00	46.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	3.00	3.00
MAXIMUM DIVERSITY	MAXH	5.93	5.64	5.52
TOTAL DIVERSITY	D	32656.32	35892.51	70063.00
TOTAL NUMBER OF INDIVIDUALS/ML	N	8352.00	11541.00	40036.00
EVENESS COMPONENT	J	0.66	0.55	0.32
MEAN NUMBER OF INDIVIDUALS/TAXA	L	136.92	230.82	870.35
NUMBER/ML OF MOST ABUNDANT TAXON	K	1420.00	5138.00	24890.00

LAKE NAME: BASS LAKE
STORET NUMBER: 1851

CONTINUED

TAXA	FORM	05 02 73 S	05 02 73 %C	05 02 73 ALGAL UNITS PER ML	08 03 73 S	08 03 73 %C	08 03 73 ALGAL UNITS PER ML	10 13 73 S	10 13 73 %C	10 13 73 ALGAL UNITS PER ML
ACHNANTHES	CEL			X						
ACHNANTHES ?	CEL									X
ANABAENA	FIL			X	3	2.1	246			X
ANABAENA #1	FIL					0.6	70			
ANABAENA #2	FIL								0.2	78
ANABAENA WISCONSINENSE ?	FIL								0.6	235
APHANIZOMENON ?	FIL			X						
APHANOCAPSA ELACHISTA	CEL			X					0.2	78
APHANOCAPSA ELACHISTA ?	CEL					2.7	317			
APHANOCAPSA SPP.	CEL		3.6	304						
APHANOTHECE	CEL		0.8	68						
APHANOTHECE CASTAGNEI ?	COL									X
APHANOTHECE GELATINOSA ?	CEL			X						
APHANOTHECE NIDULANS	CEL		1.6	135		3.0	352			
BOTRYOCOCCUS	COL			X						
CERATIUM HIRUNDINELLA F. FURCOIDES	CEL						X			X
CHLOROPHYTAN FILAMENT	FIL			X						
CHROOCOCCUS	COL					0.3	35		0.6	235
CHROOCOCCUS DISPERSUS	COL		0.8	68						
CHROOCOCCUS LIMNETICUS	COL			X						
CLOSTERIUM	CEL									X
COCCONEIS	CEL									X
COCCONEIS PLACENTULA V. LINEATA	CEL			X			X			
COELASTRUM CAMBRICUM	COL			X						
COELASTRUM SPHAERICUM ?	COL						X			
COSMARIUM	CEL								0.2	78
COSMARIUM #1	CEL		0.8	68						
COSMARIUM #2	CEL		1.6	135						
COSMARIUM #3	CEL					0.3	35			
CRUCIGENIA QUADRATA	COL		0.4	34						
CRYPTOMONAS EROSA	CEL	2	4.9	406						
CYANOPHYTAN COCCOID CELLED COLONY	CEL			X						
CYANOPHYTAN FILAMENT	FIL				5	9.5	1091			
CYCLOTELLA BODANICA	CEL			X						
CYMBELLA	CEL			X						
CYMBELLA CISTULA	CEL									X
CYMBELLA LAEVIS	CEL			X			X			
CYMBELLA TURGIDA	CEL			X						
DACTYLOCOCCOPSIS	CEL		1.2	101						X
DICTYOSPHAERIUM PULCHELLUM	COL					0.3	35			
DINOBRYON SOCIALE	CEL		1.2	101						
ELAKATOTHRIX	COL			X						
EPITHEMIA	CEL			X						
EUGLENA	CEL					0.3	35			X
EUNOTIA	CEL			X						
EUNOTIA ARCUS ?	CEL									X
EUNOTIA PECTINALIS V. MINOR	CEL						X			
FLAGELLATE #1	CEL								0.2	78
FLAGELLATES	CEL		8.1	676	2	4.6	528		0.6	235
FRAGILARIA CONSTRUENS V. VENTER	CEL			X						
FRAGILARIA CROTONENSIS	CEL			X		0.6	70			
FRAGILARIA LEPTOSTAURON	CEL		3.2	270		0.3	35		0.4	157
GLENODINIUM	CEL							4	0.2	78
GLENODINIUM OCULATUM	CEL			X						
GOLENKINIA	CEL						X			
GOMPHONEMA ACUMINATUM	CEL									X
GOMPHOSPHAERIA LACUSTRIS V. COMPACTA	COL					1.8	211			X
GYROSIGMA	CEL			X						
HOLOPEDIUM ?	COL					0.3	35			
LYNGBYA	FIL							2	20.6	8244
LYNGBYA CONTORTA	FIL	1	15.0	1251	4	9.5	1091		2.4	942
LYNGBYA LIMNETICA	FIL				1	44.5	5138			
LYNGBYA LIMNETICA ?	FIL		6.9	575						
MALLOMONAS	CEL						X			
MELOSIRA	CEL					0.9	106			
MELOSIRA ITALICA	CEL			X						X
MERISMOPEDIA PUNCTATA	COL					1.2	141			
MICROCYSTIS	COL						X			
MICROCYSTIS AERUGINOSA	COL			X		1.2	141	3	0.2	78
MICROCYSTIS INCERTA	COL			X						
NAVICULA	CEL			X			X			X
NAVICULA AURORA	CEL			X						
NAVICULA AURORA ?	CEL									X
NAVICULA PUPULA V. RECTANGULARIS	CEL									X
NITZSCHIA	CEL					1.2	141			X
OOCYSTIS	CEL		2.8	237		1.2	141			

LAKE NAME: BASS LAKE
STORET NUMBER: 1851

CONTINUED

TAXA	FORM	05 02 73 S	05 02 73 %C	05 02 73 ALGAL UNITS PER ML	08 03 73 S	08 03 73 %C	08 03 73 ALGAL UNITS PER ML	10 13 73 S	10 13 73 %C	10 13 73 ALGAL UNITS PER ML
OSCILLATORIA LIMNETICA	FIL							1	62.2	24890
OSCILLATORIA LIMOSA	FIL	4	0.4	34			X			
PEDIASTRUM ANGULOSUM ?	COL			X						
PEDIASTRUM BORYANUM	COL		0.8	68		0.3	35			X
PEDIASTRUM DUPLEX	COL						X			
PEDIASTRUM INTEGRUM	COL						X			
PEDIASTRUM KAWRAISKY	COL			X						
PEDIASTRUM SIMPLEX V. DUODENARIUM	COL									X
PENNATE DIATOM	CEL		1.6	135						
PENNATE DIATOMS	CEL								0.6	235
PERIDINIUM	CEL					0.3	35			
PHACUS PYRUM	CEL						X			
PHORMIDIUM MUCICOLA	COL					0.3	35			
PINNULARIA	CEL									X
PINNULARIA VIRIDIS	CEL									X
RAPHIDIOPSIS	FIL			X						
RHOICOSPHENIA CURVATA	CEL			X						
SCENEDESMUS ABUNDANS	COL		4.0	338		0.6	70			X
SCENEDESMUS ACUTIFORMIS	COL			X						
SCENEDESMUS BALATONICUS	COL									X
SCENEDESMUS BIJUGA	COL	5	11.7	981			X		0.4	157
SCENEDESMUS DENTICULATUS V. LINEARIS	COL			X						
SCENEDESMUS OPOLIENSIS	COL		0.4	34						
SCENEDESMUS PROTUBERANS	COL					0.6	70			
SCENEDESMUS QUADRICAUDA	COL		1.2	101		0.3	35			X
SCENEDESMUS SPP.	COL		7.3	609		0.9	106			
SELENASTRUM	CEL						X			
STAURASTRUM #1	CEL						X			X
STAURASTRUM #2	CEL						X			X
STAURASTRUM #3	CEL						X			
STAURASTRUM TETRACERUM	CEL			X					0.2	78
STEPHANODISCUS	CEL						X			
SUPIRELLA	CEL									X
SYNEDRA	CEL	3	17.0	1420		9.8	1126			
SYNEDRA RADIANS ?	CEL							5	10.0	4004
TETRAEDRON CAUDATUM	CEL			X					0.2	78
TETRAEDRON CAUDATUM V. LONGISPINUM	CEL		2.0	169			X			
TETRAEDRON MINIMUM	CEL		0.4	34						
TETRAEDRON MINIMUM V. SCROBICULATUM	CEL					0.3	35			
TRACHELOMONAS	CEL								0.2	78
TOTAL				8352			11541			40036

LAKE NAME: CROOKED LAKE
STORET NUMBER: 1852

NYGAARD TROPHIC STATE INDICES

DATE	05 03 73	08 04 73	10 15 73
MYXOPHYCEAN	05/0 E	2.67 E	05/0 E
CHLOROPHYCEAN	04/0 E	2.00 E	03/0 E
EUGLENOPHYTE	0.11 ?	0.14 ?	0/08 ?
DIATOM	0.37 E	0.50 E	0.11 ?
COMPOUND	13/0 E	6.33 E	09/0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 03 73	08 04 73	10 15 73
GENUS	11	07	01
SPECIES	00	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 03 73	08 04 73	10 15 73
AVERAGE DIVERSITY	H	3.55	3.96	3.01
NUMBER OF TAXA	S	27.00	34.00	25.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	3.00	3.00
MAXIMUM DIVERSITY	MAXH	4.75	5.09	4.64
TOTAL DIVERSITY	D	10078.45	15851.88	5405.96
TOTAL NUMBER OF INDIVIDUALS/ML	N	2839.00	4003.00	1796.00
EVENESS COMPONENT	J	0.75	0.78	0.65
MEAN NUMBER OF INDIVIDUALS/TAXA	L	105.15	117.74	71.84
NUMBER/ML OF MOST ABUNDANT TAXON	K	571.00	509.00	480.00

LAKE NAME: CROOKED LAKE CONTINUED
STORET NUMBER: 1852

TAXA	FORM	05 03 73 S	05 03 73 %C	05 03 73 ALGAL UNITS PER ML	08 04 73 S	08 04 73 %C	08 04 73 ALGAL UNITS PER ML	10 15 73 S	10 15 73 %C	10 15 73 ALGAL UNITS PER ML
ANABAENA	FIL					4.6	185		1.7	31
APHANIZOMENON FLOS-AQUAE	FIL		7.4	210	1	12.7	509		0.9	16
APHANOCAPSA	CEL						X			
APHANOTHECE	CEL									X
ASTERIONELLA FORMOSA	CEL	3	10.6	301						X
BOTRYOCOCCUS	COL		0.5	15						
CHLAMYDOMONAS	CEL			X						
CHROOCOCCUS	COL					5.2	208			
CLOSTERIUM	CEL					0.6	23			
COCCOID CELL	CEL								3.5	62
COCCONEIS	CEL						X			
COELASTRUM MICROPORUM	COL						X			
COELOSPHAERIUM	COL			X		0.6	23		1.7	31
COSMARIUM	CEL						X			
CRUCIGENIA TETRAPEDIA	COL					3.5	139			
CRYPTOMONAS	CEL		4.2	120		2.9	116	2	18.9	340
CRYPTOMONAS EROSA	CEL						X			
CYANOPHYTAN FILAMENT	FIL	2	13.2	376						X
CYCLOTELLA	CEL						X			
CYMBELLA	CEL			X					0.9	16
DINOBRYON	CEL	1	20.1	571					1.7	31
DINOBRYON SOCIALE	CEL									X
DINOBRYON SOCIALE ?	CEL				4	11.6	463			
EUGLENA #1	CEL					0.6	23			
FLAGELLATE #1	CEL	4	9.0	255				3	22.4	402
FLAGELLATE #2	CEL		2.6	75				1	26.7	480
FLAGELLATES	CEL					2.9	116			
FRAGILARIA CONSTRUENS	CEL				5	6.9	278			X
FRAGILARIA CROTONENSIS	CEL		6.9	195		4.0	162	4	7.7	139
FRAGILARIA INTERMEDIA	CEL									X
GYMNODINIUM ALBULUM	CEL		1.6	45						
GYROSIGMA KUTZINGII	CEL									X
LAGERHEIMIA QUADRISETA	CEL					5.2	208			
LYNGBYA	FIL			X		5.2	208			
MALLOMONAS	CEL			X				5	2.6	46
MELOSIRA	CEL	5	10.1	286						
MELOSIRA GRANULATA	CEL					1.1	46			
MELOSIRA ISLANDICA	CEL								5.2	93
MICROCYSTIS INCERTA	COL				3	11.6	463			
NAVICULA	CEL						X			
NAVICULA SPP.	CEL		2.1	60						
NITZSCHIA SIGMOIDEA	CEL			X						
OOCYSTIS	CEL			X						
OOCYSTIS SUBMARINA	CEL								1.7	31
OSCILLATORIA	FIL		3.7	105						
OSCILLATORIA LIMOSA	FIL						X			
PERIDINIUM INCONSPICUUM	CEL						X			
PERIDINIUM PENARCIFORME	CEL					0.6	23			
PHACUS ?	CEL			X						
PINNULARIA	CEL									X
SCENEDESMUS ABUNDANS	COL			X						
SCENEDESMUS BIJUGA	COL					2.3	00093			
SCENEDESMUS QUADRICAUDA	COL			X		0.6	23			X
SCHROEDERIA	CEL								3.5	62
STAURASTRUM	CEL					0.6	23			
STEPHANODISCUS	CEL			X						
STEPHANODISCUS DUBIUS	CEL					0.6	23			
STEPHANODISCUS NIAGARAE	CEL		1.1	30						
SYNEDRA #1	CEL		2.6	75		2.9	116			
SYNEDRA #2	CEL		4.2	120	2	12.7	509			
SYNEDRA ULNA	CEL								0.9	16
TABELLARIA FENESTRATA	CEL									X
TETRAEDRON MINIMUM	CEL					0.6	23			
TRACHELOMONAS VOLVOCINA	CEL						X			
TOTAL				2839			4003			1796

LAKE NAME: LAKE JAMES
STORET NUMBER: 1853

NYGAARD TROPHIC STATE INDICES

DATE	05 02 73	08 04 73	10 15 73
MYXOPHYCEAN	1.00 E	09/0 E	04/0 E
CHLOROPHYCEAN	3.00 E	04/0 E	02/0 E
EUGLENOPHYTE	0/04 ?	0/13 ?	0/06 ?
DIATOM	0.33 E	0.50 E	2.00 E
COMPOUND	6.00 E	14/0 E	08/0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 02 73	08 04 73	10 15 73
GENUS	01	02	01
SPECIES	00	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 02 73	08 04 73	10 15 73
AVERAGE DIVERSITY	H	2.63	3.39	2.88
NUMBER OF TAXA	S	16.00	22.00	16.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	3.00	3.00
MAXIMUM DIVERSITY	MAXH	4.00	4.46	4.00
TOTAL DIVERSITY	D	4975.96	4986.69	3257.28
TOTAL NUMBER OF INDIVIDUALS/ML	N	1892.00	1471.00	1131.00
EVENESS COMPONENT	J	0.66	0.76	0.72
MEAN NUMBER OF INDIVIDUALS/TAXA	L	118.25	66.86	70.69
NUMBER/ML OF MOST ABUNDANT TAXON	K	496.00	218.00	337.00

LAKE NAME: LAKE JAMES
STORET NUMBER: 1853

CONTINUED

TAXA	FORM	05 02 73 S	05 02 73 %C	05 02 73 ALGAL UNITS PER ML	08 04 73 S	08 04 73 %C	08 04 73 ALGAL UNITS PER ML	10 15 73 S	10 15 73 %C	10 15 73 ALGAL UNITS PER ML
ANABAENA	FIL					2.4	36			X
APHANIZOMENON FLOS-AQUAE	FIL	5	6.6	124	4	5.0	73		1.8	20
ASTERIONELLA FORMOSA	CEL	1	26.2	495						
CERATIUM HIRUNDINELLA F. AUSTRIACUM	CEL						X			
CHLAMYDOMONAS ?	CEL								3.5	40
CHLOROPHYTAN COCCOID CELL	CEL			X						
CLOSTERIUM	CEL			X						
COCCONEIS	CEL			X						
COELOSPHAERIUM	COL						X	1	8.8	99
CRYPTOMONAS	CEL					3.7	54	4	8.8	99
CRYPTOMONAS EROSA	CEL	2	9.8	186						
CYANOPHYTAN COCCOID CELLED COLONY	CEL						X			X
CYCLOTELLA	CEL					7.4	109		7.0	79
CYCLOTELLA COMPTA	CEL		3.3	62						
CYCLOTELLA STELLIGERA	CEL									X
CYMBELLA	CEL			X		1.2	18			
DICTYOSPHAERIUM	COL			X						
DINOBRYON SOCIALE	CEL							2	29.8	337
DINOBRYON SOCIALE V. AMERICANUM	CEL					12.4	182			
FLAGELLATE	CEL									X
FLAGELLATE #1	CEL	4	18.0	341	2	13.6	200			
FLAGELLATE #2	CEL				3	13.6	200	3	22.8	258
FRAGILARIA CROTONENSIS	CEL		8.2	155		5.0	73			
FRAGILARIA INTERMEDIA	CEL			X						
GLENODINIUM	CEL							5	3.5	40
LAGERHEIMIA LONGISETA	CEL						X			
LYNGBYA BIRGEI	FIL						X			
LYNGBYA SUBTILIS ?	FIL					8.6	127			
MALLOMONAS ALPINA	CEL									X
MERISMOPEDIA TENUISSIMA	COL				5	11.1	163			
MICROCYSTIS	COL				1	14.8	218			
MICROCYSTIS INCERTA	COL						X			
OOCYSTIS	CEL						X			
PENNATE DIATOM	CEL								10.5	119
PERIDINIUM INCONSPICUUM	CEL						X			
SCENEDESMUS BIJUGA	COL					1.2	18		1.8	20
SCHROEDERIA	CEL	3	25.4	491						
SPHAEROCYSTIS SCHROETERI	COL			X						
STEPHANODISCUS	CEL			X						
TABELLARIA FENESTRATA	CEL		2.5	47						
TETRAEDRON MINIMUM	CEL						X		1.8	20
TOTAL				1892			1471			1131

LAKE NAME: LONG LAKE
STORET NUMBER: 1854

NYGAARD TROPHIC STATE INDICES

DATE	08 06 73	10 13 73
MYXOPHYCEAN	02/0 E	01/0 E
CHLOROPHYCEAN	03/0 E	03/0 E
EUGLENOPHYTE	0.20 ?	0/04 ?
DIATOM	0.50 E	0.75 E
COMPOUND	07/0 E	07/0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	08 06 73	10 13 73
GENUS	01	00
SPECIES	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		08 06 73	10 13 73
AVERAGE DIVERSITY	H	1.32	2.67
NUMBER OF TAXA	S	11.00	15.00
NUMBER OF SAMPLES COMPOSITED	M	1.00	1.00
MAXIMUM DIVERSITY	MAXH	3.46	3.91
TOTAL DIVERSITY	D	5177.04	1188.15
TOTAL NUMBER OF INDIVIDUALS/ML	N	3922.00	445.00
EVENESS COMPONENT	J	0.38	0.68
MEAN NUMBER OF INDIVIDUALS/TAXA	L	356.55	29.67
NUMBER/ML OF MOST ABUNDANT TAXON	K	2961.00	159.00

LAKE NAME: LONG LAKE
STORET NUMBER: 1854

CONTINUED

TAXA	FORM	08 06 73 S	08 06 73 %C	08 06 73 ALGAL UNITS PER ML	10 13 73 S	10 13 73 %C	10 13 73 ALGAL UNITS PER ML
AMPHORA	CEL						X
APHANIZOMENON FLOS-AQUAE	FIL		0.6	25			
ASTERIONELLA FORMOSA	CEL						X
CERATIUM HIRUNDINELLA	CEL				3	10.8	48
COELASTRUM RETICULATUM	COL				5	7.2	32
COELOSPHAERIUM NAEGELIANUM	COL						X
CRYPTOMONAS	CEL	4	1.9	76	2	14.2	63
CYANOPHYTAN FILAMENT	FIL		6.5	253			
CYCLOTELLA	CEL						X
EUGLENA ACUTISSIMA	CEL			X			
FLAGELLATE #1	CEL				1	35.7	159
FRAGILARIA CROTONENSIS	CEL	1	75.5	2961		7.2	32
FRAGILARIA PINNATA	CEL			X			
MALLOMONAS	CEL	5	1.3	51	4	14.2	63
MELOSIRA	CEL					3.6	16
MELOSIRA GRANULATA	CEL	2	11.6	455			X
NAVICULA	CEL						X
PEDIASTRUM DUPLEX	COL						X
SCENEDESMUS ARCUATUS	COL			X			
SCHROEDERIA SETIGERA	CEL		1.9	76		7.2	32
TETRASTRUM STAUROGENIAEFORME	COL		0.6	25			
TOTAL				3922			445

LAKE NAME: PIGEON LAKE
STORET NUMBER: 1855

NYGAARD TROPHIC STATE INDICES

DATE	05 03 73	08 06 73	10 15 73
MYXOPHYCEAN	01/0 E	2.00 E	5.00 E
CHLOROPHYCEAN	0/0 O	0/01 O	8.00 E
EUGLENOPHYTE	2.00 E	0/02 ?	0.23 E
DIATOM	0/05 ?	1.00 E	0.50 E
COMPOUND	03/0 E	3.00 E	18.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 03 73	08 06 73	10 15 73
GENUS	00	01	12
SPECIES	00	00	09

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 03 73	08 06 73	10 15 73
AVERAGE DIVERSITY	H	2.01	0.81	3.52
NUMBER OF TAXA	S	14.00	9.00	39.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY	MAXH	3.81	3.17	5.29
TOTAL DIVERSITY	D	2528.58	3428.73	12893.76
TOTAL NUMBER OF INDIVIDUALS/ML	N	1258.00	4233.00	3663.00
EVENESS COMPONENT	J	0.53	0.26	0.67
MEAN NUMBER OF INDIVIDUALS/TAXA	L	89.86	470.33	93.92
NUMBER/ML OF MOST ABUNDANT TAXON	K	687.00	3696.00	1071.00

LAKE NAME: PIGEON LAKE
STORET NUMBER: 1855

CONTINUED

TAXA	FORM	05 03 73 S	05 03 73 %C	05 03 73 ALGAL UNITS PER ML	08 05 73 S	08 05 73 %C	08 05 73 ALGAL UNITS PER ML	10 15 73 S	10 15 73 %C	10 15 73 ALGAL UNITS PER ML
ANABAENA	FIL									X
ANKISTRODESMUS FALCATUS	CEL								3.1	113
APHANIZOMENON	FIL									X
APHANIZOMENON FLOS-AQUAE	FIL				3	1.3	55		1.9	70
ASTERIONELLA FORMOSA	CEL	4	9.1	114						
CERATIUM HIRUNDINELLA	CEL									X
CERATIUM HIRUNDINELLA F. AUSTRIACUM	CEL								1.1	42
CERATIUM HIRUNDINELLA F. PIBURGENSE	CEL				2	7.0	296			
CHLAMYDOMONAS	CEL									X
CHLORELLA VULGARIS	CEL								10.0	366
CHLOROGONIUM	CEL			X						
CLOSTERIUM	CEL					0.4	19			X
COCCONEIS	CEL						X		0.8	28
COELASTRUM RETICULATUM	COL									X
CRYPTOMONAS	CEL				5	0.9	37			
CRYPTOMONAS CURVATA	CEL								3.1	113
CRYPTOMONAS EROSA	CEL	2	14.8	186						X
CRYPTOMONAS SPP.	CEL							1	29.2	1071
CYANOPHYTAN FILAMENT	FIL		1.1	14						
CYCLOTELLA	CEL							2	11.5	423
DINOBRYON	CEL				4	1.7	74	3	9.2	338
DINOBRYON SOCIALE	CEL			X						X
FLAGELLATE #1	CEL	1	54.6	687						X
FLAGELLATE #2	CEL	3	13.7	172						
FRAGILARIA CROTONENSIS	CEL							4	7.3	268
FRAGILARIA INTERMEDIA	CEL			X						X
FUSIFORM CELL	CEL								0.8	28
GOMPHONEMA	CEL			X						
GYMNODINIUM	CEL								3.1	113
GYMNODINIUM ALBULUM	CEL		1.1	14						
LEPOCINCLIS FUSIFORMIS V. MAJOR	CEL									X
LYNGBYA	FIL								0.4	14
MALLOMONAS ACAROIDES	CEL									X
MALLOMONAS ALPINA	CEL									X
MALLOMONAS CAUDATA	CEL									X
MALLOMONAS SPP.	CEL							5	5.8	211
MELOSIRA GRANULATA	CEL				1	97.3	3596		2.7	99
NAVICULA	CEL		1.1	14					0.8	28
NITZSCHIA	CEL			X						
OSCILLATORIA	FIL					0.4	19			
OSCILLATORIA TENUIS	FIL								3.5	127
PERIDINIUM	CEL					0.9	37			
PERIDINIUM PUSILLUM	CEL								1.1	42
PHACUS LONGICAUDA	CEL									X
PHACUS ORBICULARIS	CEL			X						
SCENEDESMUS	COL									X
SCENEDESMUS ARCUATUS	COL									X
SCENEDESMUS INTERMEDIUS V. BICAUDATUS	COL								0.8	28
SCHROEDERIA	CEL									X
SPHAEROCYSTIS SCHROETERI	COL								0.4	14
TRACHELOMONAS	CEL								3.5	127
TRACHELOMONAS PULCHELLA	CEL	5	4.5	57						
TOTAL				1258			4233			3663

LAKE NAME: MARSH LAKE
STORET NUMBER: 1855

NYGAARD TROPHIC STATE INDICES

DATE	08 06 73	10 15 73
MYXOPHYCEAN	5.00 E	4.00 E
CHLOROPHYCEAN	1.00 E	2.00 E
EUGLENOPHYTE	0/06 ?	0/06 ?
DIATOM	1.00 E	0.50 E
COMPOUND	7.00 E	7.00 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	08 06 73	10 15 73
GENUS	06	05
SPECIES	00	04

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		08 06 73	10 15 73
AVERAGE DIVERSITY	H	2.56	0.80
NUMBER OF TAXA	S	12.00	16.00
NUMBER OF SAMPLES COMPOSITED	M	1.00	1.00
MAXIMUM DIVERSITY	MAXH	3.58	4.00
TOTAL DIVERSITY	D	1016.32	9180.00
TOTAL NUMBER OF INDIVIDUALS/ML	N	397.00	11475.00
EVENESS COMPONENT	J	0.72	0.20
MEAN NUMBER OF INDIVIDUALS/TAXA	L	33.08	717.19
NUMBER/ML OF MOST ABUNDANT TAXON	K	124.00	9824.00

LAKE NAME: FARSO LAKE
STORET NUMBER: 1856

CONTINUED

TAXA	FORM	08 06 73 S	08 06 73 %C	08 06 73 ALGAL UNITS PER ML	10 15 73 S	10 15 73 %C	10 15 73 ALGAL UNITS PER ML
ANABAENA #1	FIL	4	12.6	50	5	0.2	22
APHANIZOMENON FLOS-AQUAE	FIL		6.3	25	2	8.9	1027
CERATIUM HIRUNDINELLA	CEL						X
CLOSTERIUM	CEL			X			X
CRYPTOMONAS EROSA	CEL				3	4.1	469
DICTYOSPHAERIUM PULCHELLUM	COL						X
FRAGILARIA CROTONENSIS	CEL			X	1	85.6	9824
FUSIFORM CELL	CEL						X
GLOEOCYSTIS AMPLA	COL	1	31.2	124			
GLOEOCYSTIS GIGAS ?	COL					0.2	22
MALLOMONAS ACARCIDES	CEL	5	6.3	25			
MALLOMONAS APOCHROMATICA	CEL						X
MALLOMONAS CAUDATA	CEL			X		0.2	22
MELOSIRA GRANULATA	CEL						X
MELOSIRA ITALICA	CEL	2	19.6	74			
MICROCYSTIS INCERTA	COL		6.3	25			
NAVICULA GASTRUM	CEL						X
OOCYSTIS	CEL					0.2	22
OOCYSTIS BORGEI	CEL			X			
OSCILLATORIA	FIL	3	18.6	74			
OSCILLATORIA #1	FIL						X
OSCILLATORIA TENUIS	FIL				4	0.6	67
OSCILLATORIA TENUIS ?	FIL			X			
TOTAL				357			11475

LAKE NAME: HAMILTON LAKE
STORET NUMBER: 1857

NYGAARD TROPHIC STATE INDICES

DATE	05 03 73	08 04 73	10 13 73
MYXOPHYCEAN	01/0 E	9.00 E	5.00 E
CHLOROPHYCEAN	02/0 E	3.00 E	2.00 E
EUGLENOPHYTE	0/03 ?	0.33 E	0/07 ?
DIATOM	0.43 E	0.33 E	0.22 ?
COMPOUND	06/0 E	17.0 E	9.00 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 03 73	08 04 73	10 13 73
GENUS	01	08	01
SPECIES	00	04	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		05 03 73	08 04 73	10 13 73
AVERAGE DIVERSITY	H	2.50	3.14	3.18
NUMBER OF TAXA	S	18.00	29.00	24.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY	MAXH	4.17	4.86	4.58
TOTAL DIVERSITY	D	1460.00	10581.80	3443.94
TOTAL NUMBER OF INDIVIDUALS/ML	N	584.00	3370.00	1083.00
EVENESS COMPONENT	J	0.60	0.65	0.69
MEAN NUMBER OF INDIVIDUALS/TAXA	L	32.44	116.21	45.13
NUMBER/ML OF MOST ABUNDANT TAXON	K	195.00	995.00	244.00

LAKE NAME: HAMILTON LAKE CONTINUED
STORET NUMBER: 1857

TAXA	FORM	05 03 73 S	05 03 73 %C	05 03 73 ALGAL UNITS PER ML	08 04 73 S	08 04 73 %C	08 04 73 ALGAL UNITS PER ML	10 13 73 S	10 13 73 %C	10 13 73 ALGAL UNITS PER ML
ACHNANTHES MICROCEPHALA	CEL								4.2	46
ANABAENA	FIL					1.0	35		4.2	46
ANKISTRODESMUS FALCATUS	CEL									X
APHANIZOMENON FLOS-AQUAE	FIL	1	33.4	195		3.1	105	4	9.9	107
ARTHROSPIRA GOMONTIANA	FIL						X			
ASTERIONELLA FORMOSA	CEL	5	5.5	32						X
CERATIUM HIRUNDINELLA	CEL									X
CERATIUM HIRUNDINELLA F. GRACILIS	CEL						X			
CHROOCOCCUS DISPERSUS	COL							5	8.4	91
CHRYSOPHYTAN COCCOID CELL	CEL						X			
CLOSTERIUM	CEL									X
COCCOID CELL	CEL	4	13.9	81	2	26.4	890			
COCCONEIS	CEL			X						X
CRUCIGENIA TETRAPEDIA	COL					1.0	35			
CRYPTOMONAS EROSA	CEL			X		2.1	70		5.6	61
CYCLOTELLA	CEL			X						
CYMBELLA #1	CEL									X
CYMBELLA #2	CEL									X
CYMBELLA ASPERA	CEL			X						
CYMBELLA VENTRICOSA	CEL			X						
DICTYOSPHAERIUM PULCHELLUM	COL								5.6	61
DINOBRYON BAVARICUM	CEL						X			
DINOBRYON SOCIALE	CEL									X
EPITHEMIA	CEL									X
EUGLENA	CEL						X			
EUGLENA SPIROGYRA V. ELEGANS	CEL						X			
FLAGELLATE #1	CEL	3	19.5	114		2.1	70		4.2	46
FLAGELLATE #9	CEL									X
FRAGILARIA	CEL			X						X
FRAGILARIA CROTONENSIS	CEL				3	5.7	192	2	18.3	198
GLENODINIUM EDAX	CEL					1.0	35			
GYMNODINIUM ALBULUM	CEL		2.7	16						
LYNGBYA LIMNETICA	FIL							1	22.5	244
MALLOMONAS ACAROIDES	CEL					0.5	17			
MELOSIRA ITALICA	CEL	2	19.5	114			X		4.2	46
MERISMOPEDIA TENUISSIMA	COL				5	7.2	244			
MICROCYSTIS AERUGINOSA	COL				4	5.2	175			
MICROCYSTIS INCERTA	COL					2.1	70	3	12.7	137
MICROSPORA ? STAGNORUM	FIL			X						
NAVICULA #1	CEL			X						
NITZSCHIA #1	CEL		2.7	16						
OSCILLATORIA #1	FIL					5.2	175			
OSCILLATORIA LIMOSA	FIL					0.5	17			
OSCILLATORIA TENUIS	FIL				1	29.5	995			
PEDIASTRUM BORYANUM	COL			X						
PEDIASTRUM DUPLEX	COL						X			
PENNATE DIATOM	CEL					4.2	140			
PHACUS #1	CEL					1.0	35			
RHOPALODIA GIBBA	CEL									X
SCENEDESMUS QUADRICAUDA	COL			X			X			
STAURASTRUM	CEL						X			
STEPHANODISCUS	CEL									X
STEPHANODISCUS NIAGARAE	CEL		2.7	16						
SYNEDRA	CEL					2.1	70			
TRACHELOMONAS URCEOLATA	CEL						X			
TOTAL				584			3370			1083

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15. SUPPLEMENTARY NOTES

16. ABSTRACT

This is a data report presenting the species and abundance of phytoplankton in the 27 lakes sampled by the National Eutrophication Survey in the State of Indiana. Results from the calculation of several water quality indices are also included (Nygaard's Trophic State Index, Palmer's Organic Pollution Index, and species diversity and abundance indices).

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
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