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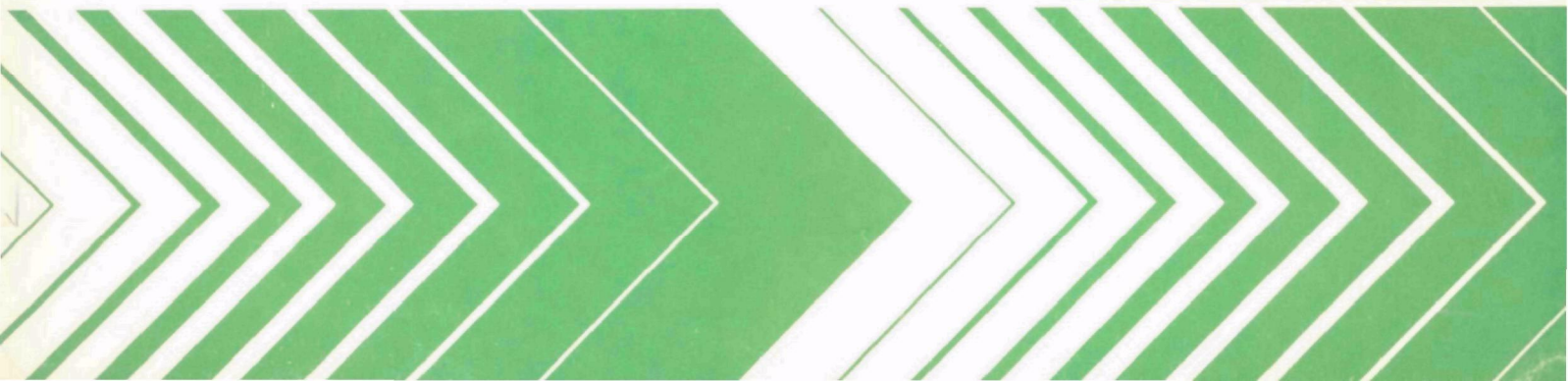
Distribution of Phytoplankton in Arkansas Lakes



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DISTRIBUTION OF PHYTOPLANKTON IN ARKANSAS 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 16 lakes sampled by the National Eutrophication Survey in the State of Arkansas, 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 1974, the Survey sampled 179 lakes in 10 States. Over 700 algal species and varieties were identified and enumerated from the 573 water samples examined.

This report presents the species and abundance of phytoplankton in the 16 lakes sampled in the State of Arkansas (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 ARKANSAS

STORET	LAKE NAME	COUNTY
0501	Beaver Lake	Benton, Carroll, Washington
0502	Blackfish Lake	Crittenden, St. Francis
0503	Blue Mountain Lake	Logan, Yell
0504	Bull Shoals Lake	Baxter, Boone, Marion (Taney, Ozark in MO)
0505	Lake Catherine	Garland, Hot Spring
0506	Lake Chicot	Chicot
0507	DeGray Lake	Clark, Hot Spring
0508	Lake Erling	Lafayette
0509	Grand Lake	Chicot
0510	Lake Hamilton	Garland
0511	Millwood Lake	Hempstead, Howard, Little River, Sevier

(Continued)

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

STORET	LAKE NAME	COUNTY
0512	Nimrod Lake	Perry, Yell
0513	Norfolk Lake	Baxter, Fulton (Ozark in MO)
0514	Lake Ouachita	Garland, Montgomery
0515	Table Rock Lake	Boone, Carroll (Barry, Taney in MO)
0516	Greer's Ferry Lake	Van Buren, Cleburne

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 ring of clear Karo® corn syrup with phenol (a few crystals of phenol were added to each 100 ml of syrup) was placed on a glass slide. A drop of superconcentate from the bottom of the test tube was placed in the ring. This solution was 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

Project phycologists performed internal quality control intercomparisons regularly on 7 percent of the species identifications and counts. 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

A phytoplankton species list for the State is presented in Appendix A. Appendix B summarizes all of the phytoplankton data collected from the State by the Survey. The latter 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 Appendix B. 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

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

Index	Calculation	Oligotrophic	Eutrophic
Myxophycean	$\frac{\text{Myxophyceae}}{\text{Desmideae}}$	0.0-0.4	0.1-3.0
Chlorophycean	$\frac{\text{Chlorococcales}}{\text{Desmideae}}$	0.0-0.7	0.2-9.0
Diatom	$\frac{\text{Centric Diatoms}}{\text{Pennate Diatoms}}$	0.0-0.3	0.0-1.75
Euglenophyte	$\frac{\text{Euglenophyta}}{\text{Myxophyceae + Chlorococcales}}$	0.0-0.2	0.0-1.0
Compound	$\frac{\text{Myxophyceae + Chlorococcales + Centric Diatoms + Euglenophyta}}{\text{Desmideae}}$	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
Synedra ulna	3

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.

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 the 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 $\log_2 S$ (Pielou 1966), while the minimum diversity (MinH), was estimated from the formula:

$$\text{MinH} = -\frac{S-1}{N}\log_2\frac{1}{N} - \left[\frac{N-(S-1)}{N}\right]\log_2\left[\frac{N-(S-1)}{N}\right]$$

given by Zand (1976). The total diversity (D) was calculated from HN (Pielou 1966). Also given in Appendix B 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).

The evenness component of diversity (J) was estimated from H/MaxH (Pielou 1966). Relative evenness (RJ) was calculated from the formula:

$$\text{RJ} = \frac{\text{H-MinH}}{\text{MaxH-MinH}}$$

given by Zand (1976). Zand suggests that RJ be used as a substitute for both J and the redundancy expression given by Wilhm and Dorris (1968). As pointed out by Zand, the redundancy expression given by Wilhm and Dorris does not properly express what it is intended to show, i.e., the position of H in the range between MaxH and MinH. RJ may range from 0 to 1; being 1 for the most even samples and 0 for the least even samples.

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 taxa. 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 Appendix B, 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 that 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 A

PHYTOPLANKTON SPECIES FOR THE STATE OF ARKANSAS.

Achnanthes lanceolata
Achnanthes lanceolata
v. *dubia*
Achnanthes microcephala
Actinastrum gracilimum
Actinastrum hantzschii
v. *fluviatile*
Anabaena planctonica
Anabaenopsis sp.
Anabaenopsis circularis
Anabaenopsis elenkinii
Anabaenopsis raciborskii ?
Ankistrodesmus falcatus
Ankistrodesmus falcatus
v. *acicularis*
Ankistrodesmus falcatus
v. *mirabilis*
Aphanizomenon flos-aquae
Aphanocapsa sp.
Aphanothece sp.
Arthrodesmus minor ?
Asterionella formosa
Attheya sp.
Binuclearia sp.
Caloneis lewisii
Capartogramma crucicula
Carteria klebsii
Centritractus sp.
Ceratium hirundinella
Ceratium hirundinella
f. *brachyceras*
Ceratium hirundinella
f. *furcoides*
Ceratium hirundinella
f. *robustum*
Chlamydomonas globusa
Chlorogonium sp.
Chroococcus dispersus
Chroococcus limneticus
Chroomonas acuta
Closteriopsis sp.
Closterium sp.
Cocconeis sp.
Coelastrum cambricum
v. *intermedium*
Coelastrum microporum
Coelastrum proboscideum
Coelastrum reticulatum
Coelastrum reticulatum
v. *polychordon*
Coelastrum sphaericum
Coelosphaerium naegelianum
Cosmarium clepsydra
v. *nanum*
Crucigenia apiculata
Crucigenia crucifera
Crugigenia fenestrata
Crugigenia quadrata
Crucigenia tetrapedia
Crucigenia truncata
Cryptomonas erosa
Cryptomonas marssonii
Cryptomonas reflexa
Cyclotella comta
Cyclotella meneghiniana
Cyclotella michiganiana
Cyclotella stelligera
Cymatopleura elliptica
Cymatopleura solea
Cymbella minuta
Cymbella tumidula
Cymbella ventricosa
Dactylococcopsis irregularis
Diatoma tenue
v. *elongatum*
Diatoma vulgare
v. *breve*
Dictyosphaerium pulchellum
Dinobryon bavaricum
Dinobryon cylindricum
Dinobryon divergens
Dinobryon sociale
Elakatothrix gelatinosa
Entomoneis ornata
Euastrum denticulatum
Eudorina elegans
Euglena acus
Euglena gracilis
Euglena limnophila
v. *lemmermannii ?*
Euglena oxyuris
v. *minor*
Euglena tripteris
Eunotia pectinalis
v. *minor* f. *impressa*
Eunotia pectinalis
v. *ventricosa*
Fragilaria crotonensis
Franceia ovalis ?
Glenodinium gymnodinium
Glenodinium gymnodinium
v. *biscutelliforme*
Glenodinium kulczynskii
Glenodinium oculatum

Glenodinium penardiforme
Glenodinium quadridens
Gloeocystis sp.
Golenkinia radiata
v. *brevispina*
Gomphonema gracile
Gomphonema parvulum
Gomphonema truncatum
v. *capitatum*
Gonatozygon montaenium
Gonium pectorale
Gymnodinium albulum
Gymnodinium ordinatum
Gyrosigma sp.
Hantzschia sp.
Kirchneriella contorta
Lagerheimia ciliata
Lagerheimia quadriseta
Lagerheimia subsalsa
Lepocinclis sp.
Lyngbya birgei
Lyngbya contorta
Lyngbya hieronymusii
Lyngbya limnetica
Mallomonas acaroides
Mallomonas pseudocoronata
Melosira distans
Melosira granulata
Melosira granulata
v. *angustissima*
Melosira granulata
v. *angustissima* f. *spiralis*
Melosira italica
Melosira varians
Merismopedia glauca
Merismopedia minima
Merismopedia punctata
Merismopedia tenuissima
Mesostigma viridis
Micractinium pusillum
Microcystis aeruginosa
Microcystis incerta
Mougeotia sp.
Navicula capitata
Navicula cuspidata
Navicula salinarum
v. *intermedia*
Navicula viridula
v. *linearis*
Nephrocytium sp.
Nitzschia acicularis
Nitzschia holsatica
Nitzschia vermicularis
Oocystis sp.
Ophiocytium capitatum
Oscillatoria lacustris
Oscillatoria limnetica
Pandorina morum
Pediastrum biradiatum
Pediastrum biradiatum
v. *longecornutum*
Pediastrum boryanum
Pediastrum duplex
Pediastrum duplex
v. *reticulatum*
Pediastrum simplex
Pediastrum simplex
v. *duodenarium*
Pediastrum tetras
v. *tetraodon*
Peridinium inconspicuum
Peridinium munusculum
Peridinium quadridens
Peridinium umbonatum
Peridinium willei
Phacus acuminatus
Phacus caudatus
Phacus chloroplastes
Phacus longicauda
Phacus megalopsis
Phacus pleuronectes ?
Phacus pseudonordstedtii
Phacus tortus
Phacus triqueter
Phormidium mucicola
Pinnularia mesolepta
Pteromonas aculeata
Pteromonas angulosa
Pteromonas cordiformis
Quadrigula sp.
Raphidiopsis curvata
Rhizosolenia sp.
Rhoicosphenia curvata
Scenedesmus abundans
Scenedesmus acuminatus
Scenedesmus arcuatus
v. *platydisca*
Scenedesmus armatus
v. *?*
Scenedesmus bicaudatus
Scenedesmus bijuga
Scenedesmus brevispina

Scenedesmus denticulatus
Scenedesmus dimorphus
Scenedesmus intermedius
Scenedesmus intermedius
v. *bicaudatus*
Scenedesmus ovalternus
v. *graevenitzii*
Scenedesmus protuberans
Scenedesmus quadricauda
Scenedesmus quadricauda
v. *quadrispina* f. *spinosus*
Schroederia setigera
Scytonema sp.
Selenastrum minutum
Skeletonema potamos
Spermatozoopsis sp.
Staurastrum cuspidatum
Staurastrum tetracerum
Stephanodiscus astraea
v. *minutula*
Stephanodiscus niagarae
Stipitococcus sp.
Surirella angusta
Surirella tenera
Synedra acus
Synedra capitata
Synedra delicatissima
Synedra delicatissima
v. *angustissima*
Synedra rumpens
Synedra ulna
Synura uvella
Tabellaria fenestrata
Tetraedron caudatum
Tetraedron caudatum
v. *longispinum*
Tetraedron constrictum
Tetraedron gracile
Tetraedron limneticum
Tetraedron minimum
Tetraedron minimum
v. *scrobiculatum*
Tetraedron muticum
Tetraedron regulare
Tetraedron trigonum
Tetraedron trigonum
v. *gracile*
Tetrastrum elegans
Tetrastrum heteracanthum
Tetrastrum staurogeniaeforme
Trachelomonas bulla
Trachelomonas fluviatilis
Trachelomonas gibberosa
Trachelomonas hispida
Trachelomonas intermedia
Trachelomonas lacustris
Trachelomonas longicauda
Trachelomonas scabra
Trachelomonas scabra
v. *cordata*
Trachelomonas scabra
v. *longicollis*
Trachelomonas schauinslandii
Trachelomonas volvocina
Treubaria setigerum

APPENDIX B. 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: BEAVER LAKE
STORET NUMBER: 0501

NYGAARD TROPHIC STATE INDICES

DATE	04 05 74	08 30 74	10 09 74
MYXOPHYCEAN	02/) E	3.50 E	5.)) E
CHLOROPHYCEAN	02/) E	6.50 E	7.00 E
EUGLENOPHYTE	0.5) E	0.30 E	0.67 E
DIATOM	0.83 E	0.50 E	1.40 E
COMPOUND	11/) E	14.5 E	27.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	04 05 74	08 30 74	10 09 74
GENUS	01	10	01
SPECIES	02	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

		DATE	04 05 74	08 30 74	10 09 74
AVERAGE DIVERSITY	H		2.91	3.38	3.10
NUMBER OF TAXA	S		23.00	51.00	39.00
NUMBER OF SAMPLES COMPOSITED	M		6.))	6.))	6.))
MAXIMUM DIVERSITY	MAXH		4.52	5.67	5.29
MINUMUM DIVERSITY	MINH		0.16	0.22	0.57
TOTAL DIVERSITY	D		4888.8)	9886.5)	2235.1)
TOTAL NUMBER OF INDIVIDUALS/ML	N		1680.00	2925.00	721.00
EVENESS COMPONENT	J		0.64	0.60	0.59
RELATIVE EVENESS	RJ		0.64	0.58	0.54
MEAN NUMBER OF INDIVIDUALS/TAXA	L		73.04	57.35	18.49
NUMBER/ML OF MOST ABUNDANT TAXON	K		475.))	549.))	172.))

LAKE NAME: BEAVER LAKE
STORET NUMBER: 3501

CONTINUED

TAXA	FORM	04 05 74 S	04 05 74 %C	04 05 74 ALGAL UNITS PER ML	08 30 74 S	08 30 74 %C	08 30 74 ALGAL UNITS PER ML	10 09 74 S	10 09 74 %C	10 09 74 ALGAL UNITS PER ML
ACHNANTHES	CEL				1	4.2	122			
ANABAENA	FIL				1	2.1	61			X
ANABAENOPSIS RACIBORSKII ?	FIL				1	1.0	30			
ANKISTRODESMUS FALCATUS V. ACICULARIS	CEL	1	1.9	32						
ASTERIONELLA FORMOSA	CEL			X						
CENTRIC DIATOM	CEL							1	23.3	172
CERATIUM HIRUNDINELLA F. BRACHYCERAS	CEL						X			X
CHLAMYDOMONAS	CEL						X	1	4.7	34
CHLOROGONIUM	CEL						X			
CHROOMONAS ACUTA	CEL	12	22.6	380	12	11.5	335			
CLOSTERIUM	CEL						X			
COELASTRUM MICROPORUM	COL						X			
COELASTRUM RETICULATUM V. POLYCHORDON	COL						X			
COELOSPHAERIUM NAEGELIANUM	COL						X			
CRYPTOMONAS EROSA	CEL	11	28.3	475			X	4	9.6	69
CRYPTOMONAS REFLEXA	CEL			X	1	1.0	30			
DACTYLOCOCCOPSIS	CEL	1	5.7	95	1	4.2	122	1	4.7	34
DACTYLOCOCCOPSIS IRREGULARIS	CEL									X
DINOBRYON DIVERGENS	CEL									X
EUASTRUM DENTICULATUM	CEL									X
EUGLENA	CEL						X			X
EUGLENA GRACILIS	CEL	1	1.9	32						X
EUGLENA OXYURIS V. MINOR	CEL						X			X
FRAGILARIA CROTONENSIS	CEL			X	1	6.3	193			X
FRANCEIA	CEL						X			
GLENODINIUM	CEL						X			
GLENODINIUM OCULATUM	CEL	1	1.9	32			X			
GOMPHONEMA PARVULUM	CEL						X			
GYMNODINIUM ALBULUM	CEL						X			
LEPOCINCLIS	CEL						X			
LYNGBYA	FIL				4	18.8	549			
MALLOMONAS ACAROIDES	CEL						X			
MELOSIRA DISTANS	CEL	5	7.6	127	1	8.3	244	2	14.3	103
MELOSIRA GRANULATA	CEL							5	9.6	69
MELOSIRA GRANULATA V. ANGUSTISSIMA	CEL	4	9.4	158			X			X
MELOSIRA VARIANS	CEL	3	7.6	127						
MESOSTIGMA VIRIDIS	CEL						X			
MOUGEOTIA	FIL						X			
NAVICULA	CEL			X						
NITZSCHIA	CEL				1	11.5	335			X
NITZSCHIA #1	CEL							1	4.7	34
OSCILLATORIA	FIL			X			X			X
OSCILLATORIA #1	FIL						X			X
PANDORINA MORUM	COL	1	1.9	32			X			
PEDIASTRUM BIRADIATUM V. LONGECORNUTUM	COL						X			
PEDIASTRUM SIMPLEX V. DUODENARIUM	COL						X			X
PEDIASTRUM TETRAS V. TETRAODON	COL						X			X
PENNATE DIATOM	CEL			X						
PERIDINIUM	CEL									X
PERIDINIUM INCONSPICUUM	CEL									X
PERIDINIUM QUADRIDENS	CEL						X			
PHACUS CAUDATUS	CEL						X			X
SCENEDESMUS DENTICULATUS	COL				1	1.0	30			X
SCENEDESMUS DIMORPHUS	COL						X			X
SCENEDESMUS INTERMEDIUS	COL						X			
SCENEDESMUS QUADRICAUDA	COL				1	1.0	30			X
SCHROEDERIA SETIGERA	CEL			X			X			
SKELETONEMA POTAMOS	CEL							3	14.3	103
STAURASTRUM	CEL						X			
STEPHANODISCUS	CEL									X
STEPHANODISCUS #1	CEL			X						
STEPHANODISCUS ASTRAEA V. MINUTULA	CEL	1	11.3	190	5	6.3	193			X
SYNEDRA #1	CEL				3	18.8	549			
SYNEDRA #2	CEL			X						
SYNEDRA #3	CEL			X				1	4.7	34
SYNEDRA ULNA	CEL						X			X
SYNURA	CEL			X						
TETRAEDRON CONSTRICTUM	CEL									X
TETRAEDRON MINIMUM V. SCROBICULATUM	CEL						4.2	122		9.6	69
TRACHELOMONAS	CEL						X			
TRACHELOMONAS BULLA	CEL						X			
TRACHELOMONAS BULLA ?	CEL									X
TRACHELOMONAS HISPIDA	CEL									X
TRACHELOMONAS INTERMEDIA	CEL			X						X
TRACHELOMONAS SCHAUINSLANDII	CEL									X
TREUBARIA SETIGERUM	CEL						X			
TOTAL				1690			2925			721

LAKE NAME: BLACKFISH LAKE
STORET NUMBER: 0502

NYGAARD TROPHIC STATE INDICES

DATE	03 26 74	06 04 74	10 16 74
MYXOPHYCEAN	01/0 E	02/0 E	03/0 E
CHLOROPHYCEAN	0/0 O	02/0 E	05/0 E
EUGLENOPHYTE	5.00 E	2.00 E	1.25 E
DIATOM	0.17 ?	0.50 E	0.75 E
COMPOUND	07/0 E	13/0 E	21/0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 26 74	06 04 74	10 16 74
GENUS	08	08	22
SPECIES	00	00	02

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		03 26 74	06 04 74	10 16 74
AVERAGE DIVERSITY	H	2.76	2.35	4.11
NUMBER OF TAXA	S	17.00	17.00	36.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	3.00	3.00
MAXIMUM DIVERSITY	MAXH	4.09	4.09	5.17
MINIMUM DIVERSITY	MINH	0.34	0.16	0.05
TOTAL DIVERSITY	D	1344.12	2650.80	47351.31
TOTAL NUMBER OF INDIVIDUALS/ML	N	487.00	1128.00	11521.00
EVENESS COMPONENT	J	0.67	0.57	0.79
RELATIVE EVENESS	RJ	0.65	0.56	0.80
MEAN NUMBER OF INDIVIDUALS/TAXA	I	28.65	66.35	320.03
NUMBER/ML OF MOST ABUNDANT TAXON	K	116.00	475.00	1767.00

LAKE NAME: BLACKFISH LAKE
STORET NUMBER: 0502

CONTINUED

TAXA	FORM	03 26 74 S	03 26 74 %	03 26 74 ALGAL UNITS PER ML	06 04 74 S	06 04 74 %	06 04 74 ALGAL UNITS PER ML	10 14 74 S	10 14 74 %	10 14 74 ALGAL UNITS PER ML
CHLAMYDOMONAS	CEL							3	1.7	1346
CHLAMYDOMONAS GLOBOSA	CEL								3.4	49
CHROOMONAS ACUTA	CEL	3	19.1	93						
COELOSPHAERIUM NAEGELIANUM	COL								0.4	49
CRYPTOMONAS	CEL			X						
CRYPTOMONAS EROSA	CEL	4	14.4	70	11	42.1	475	2	12.9	1477
CRYPTOMONAS REFLEXA	CEL								0.7	86
CYCLOTELLA MENEGHINIANA	CEL								1.8	210
DACTYLOCOCCOPSIS	CEL						X		5.5	631
EUGLENA #1	CEL				5	5.2	59	4	5.5	631
EUGLENA #2	CEL						X		3.2	370
EUGLENA #3	CEL									X
EUGLENA #4	CEL								3.4	49
EUGLENA #5	CEL			X						
EUGLENA ACUS	CEL						X		0.7	86
EUGLENA SPP.	CEL	11	23.8	116						
EUGLENOPHYTAN CELL	CEL			X						
FLAGELLATE #2	CEL				3	21.1	238		6.5	757
FLAGELLATE #4	CEL								1.8	206
FLAGELLATE #5	CEL								0.4	49
GOMPHONEMA	CEL									X
GYROSIGMA	CEL		4.7	23						X
KIRCHNERIELLA	CEL								1.8	206
LEPOCINCLIS	CEL				1	5.2	59	11	8.3	935
LYNGBYA CONTORTA	FIL						X			
MELOSIRA DISTANS	CEL								1.1	126
MELOSIRA GRANULATA	CEL			X						
MELOSIRA GRANULATA V. ANGUSTISSIMA	CEL						X			
MERISMOPEDIA MINIMA	COL								0.4	49
MESOSTIGMA VIRIDES	CEL								1.1	126
NAVICULA	CEL								1.1	126
NAVICULA #1	CEL			X						
NAVICULA #3	CEL			X						
NAVICULA CUSPIDATA	CEL			X						
NITZSCHIA	CEL			X			X			
NITZSCHIA #2	CEL							11	15.3	1767
NITZSCHIA HOLSATICA	CEL						X			
NITZSCHIA SPP.	CEL	3	19.1	93						
PHACUS MEGALOPSIS	CEL				1	5.2	59		0.4	49
PHACUS TRIQUETER	CEL									X
PHORMIDIUM	FIL		9.4	46						
PTEROMONAS ANGULOSA	CEL								1.8	210
PTEROMONAS CORDIFORMIS	CEL								3.4	396
SCENEDESMUS ABUNDANS	COL						X			
SCENEDESMUS BIJUGA	COL								1.5	168
SCENEDESMUS QUADRICAUDA	COL						X		3.4	49
SKELETONEMA POTAMOS	CEL								6.2	715
SPERMATOZOOPSIS	CEL									X
TETRASTRUM ELEGANS	COL								1.7	86
TETRASTRUM HETERACANTHUM	COL								0.4	49
TRACHELOMONAS GIBBEROSA	CEL		4.7	23						
TRACHELOMONAS HISPIDA	CEL	5	4.7	23						
TRACHELOMONAS HISPIDA V. ?	CEL				4	10.5	119			
TRACHELOMONAS INTERMEDIA	CEL			X			X	5	2.9	336
TRACHELOMONAS LONGICAUDA	CEL				2	10.5	119			
TRACHELOMONAS VOLVOCINA	CEL								1.1	126
TOTAL				487			1128			11521

LAKE NAME: BLUF MOUNTAIN LAKE
STORET NUMBER: 0503

NYGAARD TROPHIC STATE INDICES

DATE	03 28 74	06 06 74	10 18 74
MYXOPHYCEAN	02/0 E	02/0 E	4.00 E
CHLOROPHYCEAN	02/0 E	02/0 E	15.0 E
EUGLENOPHYTE	0.25 E	1.50 E	0.26 E
DIATOM	0.33 E	1.00 E	0.80 E
COMPOUND	07/0 E	12/0 E	28.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 28 74	06 06 74	10 18 74
GENUS	04	09	14
SPECIES	00	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		03 28 74	06 06 74	10 18 74
AVERAGE DIVERSITY	H	2.41	0.55	2.81
NUMBER OF TAXA	S	18.00	17.00	45.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY	MAXH	4.17	4.09	5.49
MINUMUM DIVERSITY	MINH	0.05	0.05	0.16
TOTAL DIVERSITY	D	11688.50	2217.05	10287.41
TOTAL NUMBER OF INDIVIDUALS/ML	N	4850.00	4031.00	3661.00
EVENESS COMPONENT	J	0.58	0.13	0.51
RELATIVE EVENESS	RJ	0.58	0.13	0.50
MEAN NUMBER OF INDIVIDUALS/TAXA	L	269.44	237.12	81.36
NUMBER/ML OF MOST ABUNDANT TAXON	K	1973.00	3742.00	998.00

LAKE NAME: BLUE MOUNTAIN LAKE CONTINUED
STORET NUMBER: 0503

TAXA	FORM	08 28 74 %S	08 28 74 %C	08 28 74 ALGAL UNITS PER ML	09 16 74 %S	09 16 74 %C	09 16 74 ALGAL UNITS PER ML	10 19 74 %S	10 19 74 %C	10 19 74 ALGAL UNITS PER ML
ANABAENA	FIL				12	0.7	29			X
ANKISTRODESMUS	COL									X
ANKISTRODESMUS FALCATUS	COL			X			X			
ASTERIONELLA FORMOSA	COL	14	3.4	164						
CALONEIS LEWISII	COL									X
CAPARTOGRAMMA CRUCICULA	COL			X						
CARTERIA	COL									X
CERATIUM HIRUNDINELLA	COL									X
CERATIUM HIRUNDINELLA F. BRACHYCERAS	COL									X
CERATIUM HIRUNDINELLA F. FURCOIDES	COL						X			
CHLAMYDOMONAS	COL							14	9.1	333
CHROOMONAS ACUTA	COL	12	22.0	1069					1.1	42
CLOSTERIUM	COL									X
COELASTRUM MICROPORUM	COL									X
CRUCIGENIA APICULATA	COL								2.3	83
CRUCIGENIA TETRAPEDIA	COL				5	0.7	29			
CRYPTOMONAS	COL									X
CRYPTOMONAS EROSA	COL							5	2.3	83
CRYPTOMONAS MARSSONII	COL	13	5.1	247						
DACTYLOCOCCOPSIS	COL		16.1	781		0.7	29			
DACTYLOCOCCOPSIS IRREGULARIS	COL								4.5	166
DICTYOSPHAERIUM PULCHELLUM	COL			X						
DINOBRYON PAVARICUM	COL			X			X			
EUGLENA #1	COL			X	13	1.4	58			
EUGLENA #2	COL						X			
EUGLENA #3	COL									X
FLAGELLATE	COL			X						
GYMNODINIUM ALBULUM	COL									X
LEPOCINCLIS	COL									X
MALLOMONAS ACAROIDES	COL									X
MELOSIRA DISTANS	COL	15	6.8	329	14	2.1	86	12	22.7	833
MELOSIRA GRANULATA	COL	11	40.7	1973	11	92.8	3742	11	27.3	999
MELOSIRA GRANULATA V. ANGUSTISSIMA	COL									X
MICROCYSTIS AERUGINOSA	COL									X
NAVICULA	COL		2.5	123						
NAVICULA CAPITATA	COL									X
NITZSCHIA #1	COL					1.4	58		1.1	42
OPHIOCYTIUM CAPITATUM	COL									X
OSCILLATORIA	FIL			X					4.5	166
PANDORINA MORUM	COL						X			
PEDIASTRUM BIRADIATUM V. LONGECORNUTUM	COL									X
PEDIASTRUM DUPLEX V. RETICULATUM	COL									X
PEDIASTRUM TETRAS V. TETRAODON	COL									X
PENNATE DIATOM #1	COL		0.8	41						
PENNATE DIATOM #2	COL		2.5	123						
PHACUS	COL						X			
PHACUS MEGALOPSIS	COL						X			
PHACUS TORTUS	COL									X
PINNULARIA MESOLEPTA	COL									X
PTEROMONAS ANGULOSA	COL									X
SCENEDESMUS ABUNDANS	COL									X
SCENEDESMUS BICAUDATUS	COL									X
SCENEDESMUS DENTICULATUS	COL								1.1	42
SCENEDESMUS DIMORPHUS	COL									X
SCENEDESMUS INTERMEDIUS	COL								1.1	42
SCENEDESMUS PROTUBERANS	COL									X
SCENEDESMUS QUADRICAUDA	COL									X
STEPHANODISCUS ASTRAEA V. MINUTULA	COL							13	21.6	799
SYNEDRA	COL									X
SYNEDRA #1	COL			X						
SYNEDRA ULNA	COL			X						
TABELLARIA FENESTRATA	COL						X			
TETRAEDRON TRIGONUM	COL									X
TETRASTRUM HETERACANTHUM	COL									X
TRACHELOMONAS	COL									X
TRACHELOMONAS #1	COL						X			
TRACHELOMONAS FLUVIATILIS	COL						X			
TRACHELOMONAS VOLVOCINA	COL								1.1	42
TOTAL				4850			4031			3661

LAKE NAME: BULL SHOALS LAKE
STORET NUMBER: 0504

NYGAARD TROPHIC STATE INDICES

DATE	04 06 74	06 20 74	09 05 74	10 15 74
MYXOPHYCEAN	04/0 E	4.00 E	2.33 E	06/0 E
CHLOROPHYCEAN	04/0 E	5.00 E	0.67 ?	05/0 E
EUGLENOPHYTE	0.12 ?	0/18 ?	0/09 ?	0/11 ?
DIATOM	0.67 E	0/03 ?	0.50 E	1.50 E
COMPOUND	17/0 E	9.00 E	3.33 E	14/0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	04 06 74	06 20 74	09 05 74	10 15 74
GENUS	08	01	00	02
SPECIES	00	00	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		04 06 74	06 20 74	09 05 74	10 15 74
AVERAGE DIVERSITY	H	3.03	2.26	2.29	2.71
NUMBER OF TAXA	S	36.00	31.00	22.00	21.00
NUMBER OF SAMPLES COMPOSITED	M	8.00	8.00	8.00	8.00
MAXIMUM DIVERSITY	MAXH	5.17	4.95	4.46	4.39
MINUMUM DIVERSITY	MINH	0.20	0.22	0.46	0.25
TOTAL DIVERSITY	D	6641.76	3812.62	1076.30	2471.52
TOTAL NUMBER OF INDIVIDUALS/ML	N	2192.00	1687.00	470.00	912.00
EVENESS COMPONENT	J	0.59	0.46	0.51	0.62
RELATIVE EVENESS	RJ	0.57	0.44	0.46	0.60
MEAN NUMBER OF INDIVIDUALS/TAXA	L	60.89	54.42	21.36	43.43
NUMBER/ML OF MOST ABUNDANT TAXON	K	620.00	927.00	181.00	252.00

LAKE NAME: BULL SHOALS LAKE
STORET NUMBER: 0504

CONTINUED

TAXA	FORM	04 06 74 S	04 06 74 %C	04 06 74 ALGAL UNITS PER ML	06 20 74 S	06 20 74 %C	06 20 74 ALGAL UNITS PER ML	09 25 74 S	09 25 74 %C	09 25 74 ALGAL UNITS PER ML	12 15 74 S	12 15 74 %C	12 15 74 ALGAL UNITS PER ML
ACHNANTHES LANCEOLATA V. DUBIA	CEL			X									
ANABAENA	FIL			X			X	1	7.7	36			
ANKISTRODESMUS FALCATUS	CEL									X			
APHANIZOMENON FLOS-AQUAE	FIL				2	7.8	132	2	7.7	36			
APHANOCAPSA	COL						X			X			X
APHANOTHECE	COL					3.9	66			X	1	3.4	31
ASTERIONELLA FORMOSA	CEL			X		2.0	33						
CENTRIC DIATOM	CEL			X									
CERATIUM HIRUNDINELLA	CEL						X			X			
CERATIUM HIRUNDINELLA F. BRACHYCERAS	CEL									X			
CERATIUM HIRUNDINELLA F. FURCOIDES	CEL						X						
CHROOCOCCUS LIMNETICUS	COL						X						
CHROOMONAS ACUTA	CEL	4	17.1	375		13.8	232	5	38.5	181	4	27.6	252
CLOSTERIUM #1	CEL									X			
CLOSTERIUM #2	CEL						X						
COELASTRUM RETICULATUM V. POLYCHORDON	COL						X						
COELASTRUM SPHAERICUM	COL				5	2.0	33						
COELOSPHAERIUM NAEGELIANUM	COL						X						
COSMARIUM	CEL						X						
COSMARIUM CLEPSYDRA V. NANUM	CEL									X			
CRYPTOMONAS EROSA	CEL	3	13.0	285	3	7.8	132	3	15.3	72			X
CRYPTOMONAS MARSSONII	CEL					2.0	33						
CRYPTOMONAS SPP.	CEL										2	13.8	126
CYCLOTELLA	CEL											6.9	63
CYMATOPLEURA SOLEA	CEL			X									
DIATOMA TENUE V. ELONGATUM	CEL		1.4	30									
DIATOMA VULGARE V. BREVE	CEL			X									
DICTYOSPHAERIUM PULCHELLUM	COL						X						
DINOBRYON DIVERGENS	CEL				4	3.9	66						
DINOBRYON SOCIALE	CEL									X			
FRAGILARIA	CEL			X									
FRAGILARIA CROTONENSIS	CEL		7.5	165	11	54.9	927			X	3	13.8	126
GLENODINIUM KULCZYNSKII	CEL			X									
GYMNODINIUM	CEL			X									
LAGERHEIMIA CILIATA	CEL						X						
LAGERHEIMIA SUBSALSA	CEL					2.0	33						X
LYNGBYA HIERONYMUSII	FIL												X
LYNGBYA LIMNETICA	FIL									X			
MALLOMONAS	CEL									X			
MELOSIRA	CEL									X			
MELOSIRA DISTANS	CEL		2.7	60									
MELOSIRA GRANULATA	CEL			X							11	20.7	189
MELOSIRA GRANULATA V. ANGUSTISSIMA	CEL			X									
MELOSIRA ITALICA	CEL	2	28.3	620									
MELOSIRA VARIANS	CEL			X									
MICROCYSTIS AERUGINOSA	COL						X	4	7.7	36			X
MOUGEOTIA	CEL			X					23.1	109			
NAVICULA SALINARUM V. INTERMEDIA	CEL			X									
NITZSCHIA VERMICULARIS	CEL			X									
OOCYSTIS	CEL						X						X
OSCILLATORIA #1	FIL		0.7	15			X			X			X
OSCILLATORIA #2	FIL		2.1	45								3.4	31
OSCILLATORIA LIMNETICA	FIL			X									
PANDORINA MORUM	COL						X						
PEDIASTRUM BORYANUM	COL			X									
PEDIASTRUM SIMPLEX V. DUODENARIUM	COL			X			X						X
PEDIASTRUM TETRAS V. TETRADON	COL						X						
PENNATE DIATOM	CEL			X									
PERIDINIUM	CEL			X									
PERIDINIUM #2	CEL			X									
PERIDINIUM QUADRIDENS	CEL												X
PERIDINIUM WILLEI	CEL						X						X
PHACUS PSEUDONORDSTEDTII	CEL			X									
QUADRIGULA	COL												X
SCENEDESMUS	COL			X									
SCENEDESMUS BIJUGA	COL						X						
SCENEDESMUS QUADRICAUDA	COL		1.4	30									
STAURASTRUM	CEL									X			

LAKE NAME: BULL SHOALS LAKE CONTINUED
STORET NUMBER: 3504

TAXA	FORM	04 06 74 S	04 06 74 %C	04 06 74 ALGAL UNITS PER ML	06 20 74 S	06 20 74 %C	06 20 74 ALGAL UNITS PER ML	09 05 74 S	09 05 74 %C	09 05 74 ALGAL UNITS PER ML	10 15 74 S	10 15 74 %C	10 15 74 ALGAL UNITS PER ML
STEPHANODISCUS ASTRAEA V. MINUTULA	CEL		6.1	134									
STEPHANODISCUS NIAGARAE	CEL	1	10.2	223									X
SYNEDRA #2	CEL		0.7	15									
SYNEDRA DELICATISSIMA	CEL	5	8.9	195			X			X			X
TETRAEDRON MINIMUM	CEL						X					13.3	94
TETRAEDRON MINIMUM V. SCROBICULATUM	CEL									X			
TOTAL				2192			1687			470			912

LAKE NAME: LAKE CATHERINE
STORET NUMBER: 0505

NYGAARD TROPHIC STATE INDICES

DATE	03 26 74	06 05 74	10 15 74
MYXOPHYCEAN	01/0 E	03/0 E	2.00 E
CHLOROPHYCEAN	06/0 E	08/0 E	8.50 E
EUGLENOPHYTE	0/07 ?	0.18 ?	0.14 ?
DIATOM	0.83 E	0.57 E	0.33 E
COMPOUND	12/0 E	17/0 E	13.5 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 26 74	06 05 74	10 15 74
GENUS	11	03	08
SPECIES	03	00	04

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		03 26 74	06 05 74	10 15 74
AVERAGE DIVERSITY	H	3.01	1.69	3.57
NUMBER OF TAXA	S	25.00	33.00	46.00
NUMBER OF SAMPLES COMPOSITED	M	4.00	4.00	4.00
MAXIMUM DIVERSITY	MAXH	4.64	5.04	5.52
MINUMUM DIVERSITY	MINH	0.05	0.09	0.22
TOTAL DIVERSITY	D	19131.56	8745.75	9121.35
TOTAL NUMBER OF INDIVIDUALS/ML	N	6356.00	5175.00	2555.00
EVENESS COMPONENT	J	0.65	0.34	0.65
RELATIVE EVENESS	RJ	0.65	0.33	0.64
MEAN NUMBER OF INDIVIDUALS/TAXA	L	254.24	156.82	55.54
NUMBER/ML OF MOST ABUNDANT TAXON	K	2118.00	3885.00	487.00

LAKE NAME: LAKE CATHERINE
STORET NUMBER: 0505

CONTINUED

TAXA	FORM	23 26 74 S	23 26 74 %C	23 26 74 ALGAL UNITS PER ML	26 25 74 S	26 25 74 %C	26 25 74 ALGAL UNITS PER ML	12 15 74 S	12 15 74 %C	12 15 74 ALGAL UNITS PER ML
ANKISTRODESMUS	CEL					2.2	113			
ANKISTRODESMUS FALCATUS	CEL		1.2	77						X
ANKISTRODESMUS FALCATUS V. MIRABILIS	CEL		1.2	77						
ASTERIONELLA FORMOSA	CEL						X			X
CENTRIC DIATOM	CEL					3.5	191			
CENTRITRACTUS	CEL						X			
CHLAMYDOMONAS	CEL	3	6.1	385						
CHLOROPHYTAN FILAMENT	FIL						X			
CHROOMONAS ACUTA	CEL	4	6.7	424	5	4.4	226			X
COELASTRUM RETICULATUM	COL						X			
CRUCIGENIA	COL								2.4	61
CRUCIGENIA TETRAPEDIA	COL			X			X			
CRYPTOMONAS	CEL		1.2	77	2	2.6	136			
CRYPTOMONAS EROSA	CEL			X				4	5.9	152
CRYPTOMONAS REFLEXA	CEL									X
CYCLOTELLA	CEL		7.9	501						
DACTYLOCOCCOPSIS	CEL			X					8.3	213
DICTYOSPHAERIUM PULCHELLUM	COL					0.4	23		1.2	31
DINOBRYON SOCIALE	CEL						X			X
EUASTRUM	CEL									X
EUGLENA	CEL						X			X
EUGLENA #1	CEL									X
FLAGELLATE	CEL					1.7	90			
FLAGELLATE #2	CEL		7.3	462						
FLAGELLATES	CEL								2.4	61
FRAGILARIA CROTONENSIS	CEL			X						X
GOLENKINIA	CEL									X
GOMPHONEMA	CEL						X			
GONIUM PECTORALE	COL						X			
KIRCHNERIELLA	CEL								2.4	61
MALLOMONAS	CEL		0.6	39						
MELOSIRA DISTANS	CEL	1	33.3	2118	4	2.2	113		4.9	122
MELOSIRA GRANULATA	CEL		2.4	154						
MELOSIRA GRANULATA V. ANGUSTISSIMA	CEL			X		1.3	68		4.9	122
MERISMOPEDIA TENUISSIMA	COL					0.9	45		2.4	61
MESOSTIGMA VIRIDIS	CEL		2.4	154		0.4	23			X
NAVICULA	CEL			X		0.4	23		1.2	30
NITZSCHIA #1	CEL									X
NITZSCHIA #2	CEL		5.5	347			X	3	17.9	457
OOCYSTIS	CEL									X
OSCILLATORIA	FIL					0.4	23			X
OSCILLATORIA #1	FIL									X
OSCILLATORIA #2	FIL						X			
PANDORINA MORUM	COL						X			
PEDIASTRUM BIRADIATUM	COL						X		3.6	91
PEDIASTRUM TETRAS V. TETRAODON	COL									X
PENNATE DIATOM #1	CEL							1	19.1	487
PENNATE DIATOMS	CEL				3	3.1	158			
PERIDINIUM INCONSPICUUM	CEL								1.2	30
PHACUS	CEL								1.2	30
RHOICOSPHENIA CURVATA	CEL									X
SCENEDESMUS	COL			X						
SCENEDESMUS ABUNDANS	COL					0.9	45	5	5.9	152
SCENEDESMUS BICAUDATUS	COL									X
SCENEDESMUS DENTICULATUS	COL									X
SCENEDESMUS DIMORPHUS	COL									X
SCENEDESMUS QUADRICAUDA	CEL		0.6	39			X	2	14.3	365
SKELETONEMA POTAMOS	CEL	2	21.8	1386	1	75.1	3885			X
SPERMATOZOOPSIS	CEL									X
STAURASTRUM	CEL									X
SURIRELLA	CEL			X						
SYNEDRA ACUS	CEL						X			X
SYNEDRA RUMPENS	CEL			X						
TABELLARIA FENESTRATA	CEL	5	1.2	77			X			X
TETRAEDRON CAUDATUM V. LONGISPINUM	CEL									X
TETRAEDRON MINIMUM	CEL		0.6	39						
TETRAEDRON MINIMUM V. SCROBICULATUM	CEL								1.2	30
TETRASTRUM HETERACANTHUM	COL									X
TETRASTRUM STAUROGENIAEFORME	COL						X			
TRACHELOMONAS	CEL					0.4	23			
TREUBARIA SETIGERUM	CEL									X
TOTAL				6356			5175			2555

LAKE NAME: LAKE CHICOT
STORET NUMBER: 0506

NYGAARD TROPHIC STATE INDICES

DATE	03 26 74	06 05 74	10 16 74
MYXOPHYCEAN	04/0 E	5.00 E	05/0 E
CHLOROPHYCEAN	09/0 E	3.00 E	08/0 E
EUGLENOPHYTE	0.46 E	1.00 E	0.46 E
DIATOM	1.00 E	1.50 E	1.40 E
COMPOUND	23/0 E	19.0 E	26/0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 26 74	06 05 74	10 16 74
GENUS	01	18	06
SPECIES	00	03	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		03 26 74	06 05 74	10 16 74
AVERAGE DIVERSITY	H	1.68	3.56	3.08
NUMBER OF TAXA	S	29.00	30.00	39.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	3.00	3.00
MAXIMUM DIVERSITY	MAXH	4.86	4.91	5.25
MINUMUM DIVERSITY	MINH	0.13	0.13	0.08
TOTAL DIVERSITY	D	4799.76	10502.00	20768.44
TOTAL NUMBER OF INDIVIDUALS/ML	N	2857.00	2950.00	6743.00
EVENESS COMPONENT	J	0.35	0.73	0.59
RELATIVE EVENESS	RJ	0.33	0.72	0.59
MEAN NUMBER OF INDIVIDUALS/TAXA	L	98.52	98.33	177.45
NUMBER/ML OF MOST ABUNDANT TAXON	K	1904.00	566.00	2281.00

LAKE NAME: LAKE CHICOT
STORET NUMBER: 0506

CONTINUED

TAXA	FORM	23 26 74 S	23 26 74 %C	23 26 74 ALGAL UNITS PER ML	26 05 74 S	26 05 74 %C	26 05 74 ALGAL UNITS PER ML	10 16 74 S	10 16 74 %C	10 16 74 ALGAL UNITS PER ML
ACHNANTHES MICROCEPHALA	CEL									X
ACTINASTRUM GRACILIMUM	CEL	4	5.4	154						
ANABAENA	FIL			X						
ANABAENOPSIS CIRCULARIS	FIL									X
ANABAENOPSIS ELENKINII	FIL				3	4.0	119			
ANKISTRODESMUS FALCATUS	CEL					2.0	60			
ANKISTRODESMUS FALCATUS V. ACICULARIS	CEL			X					1.5	35
BINUCLEARIA	FIL		1.1	31						
CHROOCOCCUS	COL									X
CHROOMONAS	CEL						X			
CHROOMONAS ACUTA	CEL					3.0	89			
CLOSTERIUM	CEL						X			
COELASTRUM MICROPORUM	COL			X						
CRUCIGENIA APICULATA	COL			X		1.0	30			
CRUCIGENIA TETRAPEDIA	COL			X						
CRYPTOMONAS EROSA	CEL	3	8.6	246	1	14.1	417			
CRYPTOMONAS MARSSONII	CEL					1.0	30	3	1.5	104
CYANOPHYTAN FILAMENT	FIL							1	33.8	2281
CYCLOTELLA	CEL					6.1	179			
CYCLOTELLA MENEGHINIANA	CEL								0.5	35
DACTYLOCOCCOPSIS	CEL		3.2	92		3.0	89			
EUGLENA #1	CEL			X						X
EUGLENA #2	CEL			X						
EUGLENA #3	CEL						X			
EUGLENA #4	CEL						X			
EUGLENA #5	CEL								0.5	35
EUGLENA ACUS	CEL									X
EUGLENA LEMNOPHILA V. LEMMERMANNII ?	CEL						X			
EUGLENA OXYURIS V. MINOR	CEL	5	1.1	31						
EUGLENA SPP.	CEL				4	4.0	119			
FLAGELLATE #2	CEL					4.0	119			
FLAGELLATES	CEL								10.8	724
GLENODINIUM OCULATUM	CEL					2.0	60			
GYMNODINIUM	CEL									X
LEPOCINCLIS	CEL						X			
LUNATE CELL	CEL								2.0	138
MELOSIRA DISTANS	CEL	2	12.9	368		18.2	536	2	18.4	1244
MELOSIRA GRANULATA	CEL						X			X
MELOSIRA GRANULATA V. ANGUSTISSIMA F. SPIRALIS	CEL			X				4	1.0	69
MELOSIRA VARIANS	CEL			X						X
MERISMOPEDIA TENUISSIMA	COL				2	19.2	566		3.6	242
MESOSTIGMA VIRIDIS	CEL								0.5	35
MICROCYSTIS INCERTA	COL					2.0	60			
NITZSCHIA #1	CEL		1.1	31		6.1	179		3.1	207
NITZSCHIA #2	CEL									X
NITZSCHIA ACICULARIS	CEL						X			
OSCILLATORIA	FIL				5	7.1	239			
OSCILLATORIA #1	FIL			X						
PEDIASTRUM DUPLEX V. RETICULATUM	COL									X
PENNATE DIATOM	CEL			X						
PERIDINIUM	CEL								0.5	35
PERIDINIUM UMBONATUM	CEL						X			
PHACUS	CEL			X						X
PHACUS ACUMINATUS	CEL						X			
PHACUS MEGALOPSIS	CEL			X						
PTEROMONAS ACULEATA	CEL									X
RAPHIDIOPSIS ?	FIL			X						
RAPHIDIOPSIS CURVATA	FIL								4.1	277
SCENEDESMUS	COL								0.5	35
SCENEDESMUS DIMORPHUS	COL									X
SCENEDESMUS PROTUBERANS	COL			X						
SCHROEDERIA SETIGERA	CEL						X			X
SKELETONEMA POTAMOS	CEL								2.6	173
STEPHANODISCUS	CEL							5	10.8	724
STEPHANODISCUS ASTRAEA V. MINUTULA	CEL	1	66.6	1934						
SURIRELLA	CEL			X						
SYNEDRA	CEL									X
SYNEDRA #1	CEL								4.6	311
SYNEDRA #2	CEL			X						
TETRAEDRON CAUDATUM V. LONGISPINUM	CEL									X
TETRAEDRON MINIMUM	CEL								0.5	35
TETRAEDRON MUTICUM	CEL			X						

LAKE NAME: LAKE CHICOT
STORET NUMBER: 0506

CONTINUED

TAXA	FORM	03 26 74 S	03 26 74 %C	03 26 74 ALGAL UNITS PER ML	06 05 74 S	06 05 74 %C	06 05 74 ALGAL UNITS PER ML	10 16 74 S	10 16 74 %C	10 16 74 ALGAL UNITS PER ML
TETRAEDRON TRIGONUM	CEL			X						
TETRASTRUM STAUROGENIAEFORME	COL			X						X
TRACHELOMONAS	CEL					3.0	89			X
TRACHELOMONAS SCABRA	CEL			X			X			X
TRACHELOMONAS SCABRA V. CORDATA	CEL						X			
TOTAL				2857			2950			6743

LAKE NAME: DE GRAY LAKE
STORET NUMBER: 0507

NYGAARD TROPHIC STATE INDICES

DATE	03 25 74	06 05 74	10 16 74
MYXOPHYCEAN	03/0 E	0.75 E	2.50 E
CHLOROPHYCEAN	05/0 E	1.00 E	4.50 E
EUGLENOPHYTE	0.12 ?	0.14 ?	0.07 ?
DIATOM	0.30 ?	0.80 E	0.40 E
COMPOUND	12/0 E	3.00 E	8.50 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 25 74	06 05 74	10 16 74
GENUS	06	06	11
SPECIES	03	00	04

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		03 25 74	06 05 74	10 16 74
AVERAGE DIVERSITY	H	3.57	1.87	4.14
NUMBER OF TAXA	S	26.00	28.00	33.00
NUMBER OF SAMPLES COMPOSITED	M	6.00	5.00	6.00
MAXIMUM DIVERSITY	MAXH	4.70	4.81	5.04
MINUMUM DIVERSITY	MINH	0.19	0.04	0.20
TOTAL DIVERSITY	D	5808.39	17196.52	8176.50
TOTAL NUMBER OF INDIVIDUALS/ML	N	1627.00	9196.00	1975.00
EVENESS COMPONENT	J	0.76	0.39	0.82
RELATIVE EVENESS	RJ	0.75	0.39	0.82
MEAN NUMBER OF INDIVIDUALS/TAXA	L	62.58	328.43	59.85
NUMBER/ML OF MOST ABUNDANT TAXON	K	287.00	6083.00	214.00

LAKE NAME: DE GRAY LAKE
STORET NUMBER: 0507

CONTINUED

TAXA	FORM	03 25 74 S	03 25 74 %C	03 25 74 ALGAL UNITS PER ML	06 05 74 S	06 05 74 %C	06 05 74 ALGAL UNITS PER ML	10 16 74 S	10 16 74 %C	10 16 74 ALGAL UNITS PER ML
ACHNANTHES LANCEOLATA	CEL			X						
ANKISTRODESMUS FALCATUS	CEL	2	17.6	287				3	13.8	214
ANKISTRODESMUS FALCATUS V. MIRABILIS	CEL						X			
APHANIZOMENON FLOS-AQUAE	FIL	5	2.0	32	3	3.4	317			
ASTERIONELLA FORMOSA	CEL		9.8	159		0.6	58			
CENTRITRACTUS	CEL									X
CERATIUM HIRUNDINELLA	CEL						X			
CERATIUM HIRUNDINELLA F. FURCOIDES	CEL						X			
CHLAMYDOMONAS	CEL							5	6.0	119
CHROOMONAS ACUTA	CEL				5	6.9	634	11	10.8	214
CLOSTERIUM #1	CEL						X			
CLOSTERIUM #2	CEL						X			
COCCONEIS	CEL			X						
COELASTRUM MICROPORUM	COL						X			
CRUCIGENIA TETRAPEDIA	COL			X						
CRYPTOMONAS	CEL							4	6.0	119
CRYPTOMONAS EROSA	CEL	4	5.9	96	4	3.1	288			
CRYPTOMONAS REFLEXA	CEL						X			
DINOBRYON BAVARICUM	CEL	13	13.7	223						X
ELAKATOTHRIX GELATINOSA	CEL					0.9	86			
EUGLENA GRACILIS	CEL						X			
FLAGELLATE #2	CEL		3.9	64					3.6	71
FRAGILARIA CROTONENSIS	CEL			X			X			
FRANCEIA	CEL		2.0	32						
GOLENKINIA	CEL		3.9	64						
GOLENKINIA RADIATA V. BREVISPINA	CEL									X
GOMPHONEMA TRUNCATUM V. CAPITATUM	CEL			X						
GYMNODINIUM ALBULUM	CEL					0.6	58			
GYMNODINIUM ORDINATUM	CEL		5.9	96						
KIRCHNERIELLA CONTORTA	CEL									X
LAGERHEIMIA QUADRISETA	CEL								1.2	24
LYNGBYA	FIL								4.8	95
MALLOMONAS	CEL									X
MELOSIRA	CEL						X			
MELOSIRA DISTANS	CEL		11.7	191	2	12.2	1124		3.6	71
MELOSIRA GRANULATA	CEL			X		0.9	86			
MELOSIRA GRANULATA V. ANGUSTISSIMA	CEL					0.6	58		3.6	71
MERISMOPEDIA MINIMA	COL								2.4	48
MICRACTINIUM	COL			X						
MICROCYSTIS INCERTA	COL		2.0	32		0.3	29		4.8	95
MOUGEOTIA	CEL						X	2	8.5	167
NAVICULA #1	CEL		3.9	64						
NAVICULA #2	CEL						X			
NITZSCHIA	CEL		2.0	32						
NITZSCHIA #1	CEL								7.2	143
NITZSCHIA #2	CEL									X
NITZSCHIA ACICULARIS	CEL								4.8	95
OSCILLATORIA	FIL			X		3.4	317			X
PERIDINIUM INCONSPICUUM	CEL								2.4	48
RAPHIDIOPSIS CURVATA	FIL								7.2	143
SCENEDESMUS BIJUGA	COL					0.3	29			
SCENEDESMUS QUADRICAUDA	COL								1.2	24
SCHROEDERIA SETIGERA	CEL								3.6	71
SELENASTRUM MINUTUM	CEL									X
SKELETONEMA POTAMOS	CEL		5.9	96						
STAURASTRUM	CEL						X			
STAURASTRUM #1	CEL									X
STAURASTRUM CUSPIDATUM	CEL						X			
STAURASTRUM TETRACERUM	CEL									X
SYNEDRA ACUS	CEL			X						X
SYNEDRA ULNA	CEL			X		0.3	29			
TABELLARIA FENESTRATA	CEL	11	9.8	159	11	66.1	6083		4.8	95
TETRAEDRON MUTICUM	CEL								1.2	24
TRACHELOMONAS HISPIDA	CEL								1.2	24
TRACHELOMONAS LACUSTRIS	CEL			X						
TREUBARIA SETIGERUM	CEL									X
TOTAL				1627			9196			1975

LAKE NAME: LAKE ERLING
STORET NUMBER: 0508

NYGAARD TROPHIC STATE INDICES

DATE	03 25 74	06 03 74	10 17 74
MYXOPHYCEAN	2.00 E	2.50 E	1.00 E
CHLOROPHYCEAN	5.00 E	1.50 E	4.50 E
EUGLENOPHYTE	0.43 E	0.37 E	0.36 E
DIATOM	0.67 E	1.50 E	0.83 E
COMPOUND	12.0 E	7.00 E	10.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 25 74	06 03 74	10 17 74
GENUS	07	01	01
SPECIES	03	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		03 25 74	06 03 74	10 17 74
AVERAGE DIVERSITY	H	2.10	2.05	2.20
NUMBER OF TAXA	S	23.00	24.00	34.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	3.00	3.00
MAXIMUM DIVERSITY	MAXH	4.52	4.58	5.09
MINUMUM DIVERSITY	MINH	0.10	0.23	0.21
TOTAL DIVERSITY	D	6079.50	2394.40	4353.80
TOTAL NUMBER OF INDIVIDUALS/ML	N	2895.00	1168.00	1979.00
EVENESS COMPONENT	J	0.46	0.45	0.43
RELATIVE EVENESS	RJ	0.46	0.42	0.41
MEAN NUMBER OF INDIVIDUALS/TAXA	L	125.87	48.67	58.21
NUMBER/ML OF MOST ABUNDANT TAXON	K	1715.00	491.00	1104.00

LAKE NAME: LAKE ERLING
STORET NUMBER: 1508

CONTINUED

TAXA	FORM	03 25 74 S	03 25 74 %	03 25 74 ALGAL UNITS PER ML	06 03 74 S	06 03 74 %	06 03 74 ALGAL UNITS PER ML	10 17 74 S	10 17 74 %	10 17 74 ALGAL UNITS PER ML
ACTINASTRUM HANTZSCHII										
V. FLUVIATILE	CEL									X
ANABAENA	FIL						X			
ANKISTRODESMUS FALCATUS										
V. ACICULARIS	CEL		1.8	51						
APHANIZOMENON FLOS-AQUAE	FIL						X			
CERATIUM HIRUNDINELLA	CEL						X			
CHLOROPHYTAN COCCOID CELLED COLONY	COL						X			
CHROOMONAS ACUTA	CEL	4	4.4	128	2	18.4	215			
CHRYSOPHYTAN CELL	CEL		0.9	26						
CLOSTERIUM #1	CEL									X
CLOSTERIUM #2	CEL			X						
CLOSTERIUM #3	CEL						X			
CLOSTERIUM #4	CEL						X			
CRUCIGENIA FENESTRATA	COL		0.9	26						
CRUCIGENIA QUADRATA	COL									X
CRYPTOMONAS #1	CEL									X
CRYPTOMONAS EROSA	CEL	3	9.7	282	5	2.7	31	3	9.6	190
CRYPTOMONAS MARSSONII	CEL			X						
CYANOPHYTAN FILAMENT	FIL		0.9	26						
CYCLOTELLA MENEGHINIANA	CEL									X
CYMBELLA	CEL						X			X
DACTYLOCOCCOPSIS	CEL	5	5.3	154	3	28.9	339	1	3.8	76
DICTYOSPHAERIUM PULCHELLUM	COL								1.9	38
DINOBRYON BAVARICUM	CEL									X
DINOBRYON DIVERGENS	CEL			X			X			
DINOBRYON SOCIALE	CEL								1.9	38
EUDORINA ELEGANS	COL			X						
EUGLENA	CEL									X
EUGLENA ACUS	CEL						X			
FUNOTIA	CEL			X			X			
FUNOTIA PECTINALIS										
V. VENTRICOSA	CEL							2	1.9	38
GLENODINIUM OCULATUM	CEL						X			
KIRCHNERIELLA	CEL									X
LEPOCINCLIS	CEL						X			
MELOSIRA DISTANS	CEL	11	59.2	1715			X	6	13.9	269
MELOSIRA GRANULATA	CEL	2	13.3	384	1	42.0	491	1	55.8	1104
MELOSIRA GRANULATA										
V. ANGUSTISSIMA	CEL						X			X
MELOSIRA GRANULATA										
V. ANGUSTISSIMA F. SPIRALIS	CEL									X
MICROCYSTIS AERUGINOSA	COL						X			
MICROCYSTIS INCERTA	COL					2.7	31			
NOSTOCOTIA	FIL									X
NAVICULA	CEL									X
OOCYSTIS	CEL							5	9.7	192
OSCILLATORIA	FIL									X
PEDIASTRUM DUPLEX										
V. ?	COL						X			
PEDIASTRUM TETRAS										
V. TETRAODON	COL									X
PENNATE DIATOM	CEL								1.9	38
PHACUS	CEL									X
PHACUS CHLOROPLASTES	CEL						X			
PHACUS MEGALOPSIS	CEL									X
PHACUS PLEURONECTES ?	CEL			X						
PINNULARIA	CEL									X
SCENEDESMUS BIJUGA	COL			X		2.7	31			
SCENEDESMUS DENTICULATUS	COL									X
SCENEDESMUS INTERMEDIUS	COL		1.8	51						
SPERMATOZOOPSIS	CEL									X
STAURASTRUM	CEL									X
SYNEDRA #1	CEL									X
SYNEDRA #2	CEL		0.9	26						
SYNEDRA ULNA	CEL			X						
SYNURA UVELLA	CEL			X						
TETRAEDRON MINIMUM										
V. SCROBICULATUM	CEL									X
TETRAEDRON TRIGONUM										
V. GRACILE	CEL				4	2.7	31			X
TETRASTRUM STAUROGENIAEFORME	COL		0.9	26						
TRACHELOMONAS	CEL			X						
TRACHELOMONAS INTERMEDIA	CEL			X						
TRACHELOMONAS VOLVOCINA	CEL								1.9	38
TOTAL				2895			1168			1979

LAKE NAME: GRAND LAKE
STORET NUMBER: 0509

NYGAARD TROPHIC STATE INDICES

DATE	03 26 74	06 04 74	10 16 74
MYXOPHYCEAN	2.67 E	3.33 E	3.00 E
CHLOROPHYCEAN	7.67 E	5.33 E	7.67 E
EUGLENOPHYTE	0.16 ?	0.23 E	0.06 ?
DIATOM	0.67 E	1.00 E	1.50 E
COMPOUND	13.3 E	13.0 E	13.3 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 26 74	06 04 74	10 16 74
GENUS	24	18	13
SPECIES	07	07	04

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		03 26 74	06 04 74	10 16 74
AVERAGE DIVERSITY	H	4.18	3.28	3.15
NUMBER OF TAXA	S	59.00	57.00	50.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY	MAXH	5.88	5.83	5.64
MINUMUM DIVERSITY	MINH	0.04	0.01	0.04
TOTAL DIVERSITY	D	96570.54	501157.76	54148.50
TOTAL NUMBER OF INDIVIDUALS/ML	N	23103.00	152792.00	17190.00
EVENESS COMPONENT	J	0.71	0.56	0.56
RELATIVE EVENESS	RJ	0.71	0.57	0.56
MEAN NUMBER OF INDIVIDUALS/TAXA	L	391.58	2680.56	343.80
NUMBER/ML OF MOST ABUNDANT TAXON	K	3813.00	52408.00	3523.00

LAKE NAME: GRAND LAKE
STORET NUMBER: 0509

CONTINUED

TAXA	FORM	03 26 74 S	03 26 74 %C	03 26 74 ALGAL UNITS PER ML	06 04 74 S	06 04 74 %C	06 04 74 ALGAL UNITS PER ML	10 15 74 S	10 15 74 %C	10 15 74 ALGAL UNITS PER ML
ACTINASTRUM GRACILINUM	CEL			X						
ANABAENA	FIL	1	3.6	822						
ANABAENA PLANCTONICA	FIL				1	0.9	1304			
ANABAENOPSIS CIRCULARIS	FIL				1	2.9	4433	1	3.0	353
ANKISTRODESMUS FALCATUS	CEL			X	1	0.2	261			X
ANKISTRODESMUS FALCATUS V. ACICULARIS	CEL	1	7.4	1719	1		X	1		
ANKISTRODESMUS FALCATUS V. MIRABILIS	CEL				1		X	1		X
CENTRIC DIATOM	CEL				1		X	4	17.0	2024
CHLAMYDOMONAS	CEL	4	9.1	2093	1			1		
CHLOROCOCCALEAN COLONY #9	COL				1		X	1		
CHLOROGONIUM	CEL	1	1.0	224	1			1		
CHROOCOCCUS	COL	1			1			1		X
CHROOCOCCUS DISPERSUS	COL	1			5	4.9	7561	1		
CHRODMONAS ACUTA	CEL	1		X	1		X	1		
CLOSTERIUM	CEL	1			1		X	1		X
COELASTRUM CAMBRICUM V. INTERMEDIUM	COL	1			1		X	1	0.2	35
COSMARIUM #1	CEL	1		X	1		X	1		X
COSMARIUM #2	CEL	1			1			1		X
COSMARIUM #3	CEL	1		X	1			1		
CRUCIGENIA TETRAPEDIA	COL	1		X	1			1		
CRUCIGENIA TRUNCATA	COL	1			1		X	1	0.2	35
CRYPTOMONAS EROSA	CEL	1	4.5	1047	1	1.5	2347	1	0.4	70
CYANOPHYTAN COLONY	COL	1	1.6	374	1			1		
CYMATOPLEURA ELLIPTICA	CEL	1			1		X	1		
CYMATOPLEURA SOLEA	CEL	1		X	1		X	1		
CYMBELLA MINUTA	CEL	1		X	1			1		
DACTYLOCOCCOPSIS	CEL	1	7.1	1645	13	34.3	52408	2	20.5	3523
DACTYLOCOCCOPSIS IRREGULARIS	CEL	1			1		X	1		
DICTYOSPHAERIUM PULCHELLUM	COL	1	0.6	150	1		X	1		
ELAKATOTHRIX GELATINOSA	CEL	1			1	0.5	782	1		
EUGLENA	CEL	1	0.3	75	1			1		
EUGLENA #1	CEL	1		X	1			1		
EUGLENA #2	CEL	1			1			1		X
EUGLENA GRACILIS	CEL	1			1		X	1		
EUGLENA TRIPTERIS	CEL	1			1		X	1		
FLAGELLATE #4	CEL	1			1	0.2	261	1		
FLAGELLATES	CEL	5	10.7	2467	1			1		
FRANCEIA	CEL	1		X	1			1		
GLENODINIUM GYMNODINIUM V. BISCUTELLIFORME	CEL	1			1		X	1		
GLENODINIUM OCULATUM	CEL	1			1		X	1		
GLENODINIUM PENARDIFORME	CEL	1		X	1			1		
GOLENKINIA RADIATA ? V. BREVISPINA	CEL	1			1			1		X
GYMNODINIUM	CEL	1		X	1			1		
GYMNODINIUM ALBULUM	CEL	1			1	0.2	261	1		
GYROSIGMA	CEL	1			1		X	1		
KIRCHNERIELLA CONTORTA	CEL	1			1			1		X
LAGERHEIMIA	CEL	1	0.3	75	1			1		
LUNATE CELL	CEL	1	1.0	224	1		X	1		
LYNGBYA	FIL	1	0.3	75	1			1		
LYNGBYA CONFORTA	FIL	1			13	6.8	10429	1	1.7	211
MELOSIRA DISTANS	CEL	1			1	2.0	3129	1	0.4	70
MELOSIRA GRANULATA	CEL	12	3.2	748	1	3.3	521	1	3.4	141
MELOSIRA GRANULATA V. ANGUSTISSIMA	CEL	1	1.0	224	1	0.2	261	1		X
MELOSIRA GRANULATA V. ANGUSTISSIMA F. SPIRALIS	CEL	1	3.6	822	1	0.3	521	1	2.0	353
MELOSIRA VARIANS	CEL	1			1		X	1		
MERISMOPEDIA GLAUCA	COL	1			1	2.4	3650	1	1.4	176
MERISMOPEDIA TENUISSIMA	COL	1	1.3	299	1	8.2	12515	1	11.7	2008

LAKE NAME: GRAND LAKE
STOREY NUMBER: 0509

CONTINUED

TAXA	FORM	03 26 74 %S	03 26 74 %C	03 26 74 ALGAL UNITS PER ML	06 04 74 %S	06 04 74 %C	06 04 74 ALGAL UNITS PER ML	10 16 74 %S	10 16 74 %C	10 16 74 ALGAL UNITS PER ML
MESOSTIGMA VIRIDIS	CEL								0.2	35
MICROCYSTIS INCERTA	COL			X		7.5	11472	3	14.8	2537
NITZSCHIA	CEL					1.0	1566			
NITZSCHIA #1	CEL		7.4	1719						X
NITZSCHIA #2	CEL		3.6	822						
NITZSCHIA #3	CEL		0.3	75						
NITZSCHIA HOLSATICA	CEL		4.5	1047						
OOCYSTIS	CEL			X						X
OSCILLATORIA	FIL							1	17.6	3030
OSCILLATORIA ?	FIL		2.9	673						
OSCILLATORIA LIMNETICA	FIL		0.3	75		3.4	5215			
PEDIASTRUM BORYANUM	COL			X			X			X
PEDIASTRUM DUPLEX										
V. ?	COL			X						
PEDIASTRUM SIMPLEX	COL			X			X			X
PEDIASTRUM TETRAS										
V. TETRADON	COL		0.6	150					0.2	35
PENNATE DIATOM	CEL									X
PERIDINIUM	CEL									X
PERIDINIUM INCONSPICUUM	CEL					0.2	241			
PERIDINIUM UMBONATUM	CEL			X						
PHACUS CAUDATUS	CEL			X						X
PHACUS MEGALOPSIS	CEL			X			X			
PHACUS PSEUDONORDSTEDTII	CEL						X			
PHACUS TORTUS	CEL						X			
RAPHIDIOPSIS CURVATA	FIL								0.6	106
SCENEDESMUS ABUNDANS	COL		0.3	75			X			X
SCENEDESMUS ACUMINATUS	COL		0.6	150						
SCENEDESMUS ARMATUS										
V. ?	COL									X
SCENEDESMUS BICAUDATUS	COL									X
SCENEDESMUS BIJUGA	COL						X		1.4	176
SCENEDESMUS BREVISPINA	COL									X
SCENEDESMUS DIMORPHUS	COL					0.2	261		0.2	35
SCENEDESMUS QUADRICAUDA	COL		1.3	299		0.7	1043		0.8	141
SCHROEDERIA SETIGERA	CEL			X						X
STAURASTRUM	CEL			X						
STAURASTRUM #1	CEL						X			
STEPHANODISCUS ASTRAEA										
V. MINUTULA	CEL	3	16.5	3813	2	15.2	23206			X
SURIRELLA	CEL									X
SURIRELLA TENERA	CEL						X			
SYNEDRA	CEL							5	7.0	1198
SYNEDRA ACUS	CEL				14	5.6	8634			
TABELLARIA FENESTRATA	CEL						X			
TETRAEDRON CAUDATUM										
V. LONGISPINUM	CEL		1.3	224						X
TETRAEDRON GRACILE	CEL					0.2	261			X
TETRAEDRON GRACILE ?	CEL			X						
TETRAEDRON MINIMUM	CEL		0.3	75		0.2	261		0.2	35
TETRAEDRON MUTICUM	CEL		0.3	75						
TETRASTRUM ELEGANS	COL			X						
TETRASTRUM HETERACANTHUM	COL			X					0.2	35
TETRASTRUM SPP.	COL		3.2	748						X
TETRASTRUM STAUROGENIAEFORME	COL			X						
TRACHELOMONAS	CEL			X						
TRACHELOMONAS SCABRA										
V. LONGICOLLIS	CEL						X			
TOTAL				23103			152792			17190

LAKE NAME: LAKE HAMILTON
STORET NUMBER: 0510

NYGAARD TROPHIC STATE INDICES

DATE	03 27 74	06 05 74	10 15 74
MYXOPHYCEAN	010 E	9.00 E	2.00 E
CHLOROPHYCEAN	030 E	10.0 E	6.75 E
EUGLENOPHYTE	0/04 ?	0.05 ?	0.09 ?
DIATOM	0.67 E	0.50 E	1.25 E
COMPOUND	100 E	23.0 E	10.7 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 27 74	06 05 74	10 15 74
GENUS	06	08	12
SPECIES	03	00	03

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		03 27 74	06 05 74	10 15 74
AVERAGE DIVERSITY	H	2.41	3.58	3.59
NUMBER OF TAXA	S	24.00	37.00	62.00
NUMBER OF SAMPLES COMPOSITED	M	6.00	6.00	6.00
MAXIMUM DIVERSITY	MAXH	4.58	5.21	5.95
MINUMUM DIVERSITY	MINH	0.07	0.22	0.15
TOTAL DIVERSITY	D	11199.27	7296.04	20168.62
TOTAL NUMBER OF INDIVIDUALS/ML	N	4647.00	2038.00	5618.00
EVENESS COMPONENT	J	0.53	0.69	0.60
RELATIVE EVENESS	RJ	0.52	0.68	0.60
MEAN NUMBER OF INDIVIDUALS/TAXA	L	193.63	55.08	90.61
NUMBER/ML OF MOST ABUNDANT TAXON	K	2543.00	528.00	1976.00

LAKE NAME: LAKE HAMILTON
STORET NUMBER: 0510

CONTINUED

TAXA	FORM	03 27 74 S	03 27 74 %C	03 27 74 ALGAL UNITS PER ML	06 05 74 S	06 05 74 %C	06 05 74 ALGAL UNITS PER ML	10 15 74 S	10 15 74 %C	10 15 74 ALGAL UNITS PER ML
ANABAENA	FIL					5.5	113			X
ANABAENA #1	FIL								1.4	79
ANABAENA #2	FIL		1.1	49	3	3.7	75			X
ANKISTRODESMUS FALCATUS	CEL			X					3.5	198
ANKISTRODESMUS FALCATUS V. MIRABILIS	CEL		6.3	293			X			
APHANIZOMENON FLOS-AQUAE	FIL						X			
APHANOTHECE	COL						X			
ASTERIONELLA FORMOSA	CEL		1.1	49						
ATTHEYA	CEL									X
CENTRIC DIATOMS	CEL	1	54.7	2543						
CERATIUM HIRUNDINELLA F. BRACHYCERAS	CEL						X			X
CHLOROGONIUM	CEL									X
CHROOMONAS ACUTA	CEL		1.1	49		3.7	75			X
CLOSTERIUM	CEL									X
COELASTRUM PROBOSCIDEUM	COL									X
COELASTRUM RETICULATUM V. POLYCHORDON	COL									X
COELASTRUM SPHAERICUM	COL					1.9	38			
COSMARIUM	CEL									X
CRUCIGENIA APICULATA	COL								0.7	40
CRUCIGENIA CRUCIFERA	COL						X			
CRUCIGENIA FENESTRATA	COL									X
CRUCIGENIA TETRAPEDIA	COL		1.1	49						X
CRUCIGENIA TRUNCATA	COL									X
CRYPTOMONAS EROSA	CEL	4	5.3	245	5	3.7	75	2	7.7	435
CRYPTOMONAS MARSSONII	CEL			X						
CRYPTOMONAS REFLEXA	CEL						X			
CYCLOTELLA STELLIGERA	CEL			X		1.9	38			
CYMBELLA	CEL			X						
DACTYLOCOCCOPSIS	CEL					9.3	189			
DACTYLOCOCCOPSIS IRREGULARIS	CEL							3	35.2	1976
DICTYOSPHAERIUM PULCHELLUM	COL						X			X
DINOBRYON	CEL								0.7	40
DINOBRYON CYLINDRICUM	CEL			X						
EUASTRUM DENTICULATUM	CEL									X
EUGLENA	CEL									X
EUGLENA ACUS	CEL									X
FRAGILARIA CROTONENSIS	CEL		2.1	98						X
FRANCEIA	CEL									X
GOLENKINIA	CEL									X
GOMPHONEMA	CEL			X						
GONATOZYGON MONTAENIUM	CEL									X
GYMNODINIUM ORDINATUM	CEL						X			X
KIRCHNERIELLA	CEL								2.9	158
LAGERHEIMIA SUBSALSA	CEL									X
LYNGBYA	FIL				2	25.9	528		4.2	237
MALLOMONAS	CEL						X			X
MELOSIRA DISTANS	CEL	3	11.6	538		3.7	75			X
MELOSIRA GRANULATA	CEL	2	6.3	293	1	7.4	151	4	3.5	198
MELOSIRA GRANULATA V. ANGUSTISSIMA	CEL			X						
MERISMOPEDIA MINIMA	COL				4	14.8	302		3.5	198
MESOSTIGMA VIRIDIS	CEL					1.9	38			X
MICROCYSTIS AERUGINOSA	COL						X			
NOUGEOTIA	FIL									X
NAVICULA	CEL			X						
NITZSCHIA	CEL					7.4	151			
NITZSCHIA #1	CEL		5.3	245					3.5	198
NITZSCHIA #2	CEL		1.1	49			X			
NITZSCHIA #3	CEL						X			
OSCILLATORIA	FIL									X
PEDIASTRUM BIRADIATUM	COL						X			

LAKE NAME: LAKE HAMILTON
STORET NUMBER: 0510

CONTINUED

TAXA	FORM	03 27 74 S	03 27 74 %C	03 27 74 ALGAL UNITS PER ML	06 05 74 S	06 05 74 %C	06 05 74 ALGAL UNITS PER ML	10 15 74 S	10 15 74 %C	10 15 74 ALGAL UNITS PER ML
PEDIASTRUM BIRADIATUM V. LONGECORNUTUM	COL									X
PEDIASTRUM TETRAS V. TETRAODON	COL									X
PERIDINIUM	CEL			X						
PERIDINIUM INCONSPICUUM	CEL									X
PHACUS	CEL									X
RAPHIDIOPSIS ?	FIL					1.9	38			
RAPHIDIOPSIS CURVATA ?	FIL								4.9	277
RHIZOSOLENIA	CEL	5	3.2	147					0.7	40
SCENEDESMUS ABUNDANS	COL						X		0.7	40
SCENEDESMUS DENTICULATUS	COL					1.9	38		2.1	119
SCENEDESMUS DIMORPHUS	COL					1.9	38			X
SCENEDESMUS INTERMEDIUS	COL									X
SCENEDESMUS INTERMEDIUS V. BICAUDATUS	COL								2.1	119
SCENEDESMUS QUADRICAUDA	COL								0.7	40
STAURASTRUM #1	CEL						X			
STAURASTRUM TETRACERUM	CEL									X
STEPHANODISCUS	CEL							1	9.8	553
SYNEDRA #1	CEL								4.2	237
SYNEDRA ACUS	CEL						X			
SYNEDRA CAPITATA	CEL			X						
SYNEDRA DELICATISSIMA	CEL							5	1.4	79
SYNEDRA ULNA	CEL						X			
TABELLARIA FENESTRATA	CEL			X		1.9	38			
TETRAEDRON CAUDATUM V. LONGISPINUM	CEL								0.7	40
TETRAEDRON CONSTRICTUM	CEL						X			
TETRAEDRON LIMNETICUM	CEL									X
TETRAEDRON MINIMUM	CEL								1.5	198
TETRAEDRON MINIMUM V. SCROBICULATUM	CEL									X
TETRAEDRON TRIGONUM	CEL									X
TETRAEDRON TRIGONUM V. GRACILE	CEL					1.9	38			
TETRASTRUM HETERACANTHUM	COL								0.7	40
TRACHELOMONAS	CEL						X			
TREUBARIA SETIGERUM	CEL								1.4	79
TOTAL				4647			2338			5618

LAKE NAME: MILLWOOD LAKE
STORET NUMBER: 0511

NYGAARD TROPHIC STATE INDICES

DATE	03 25 74	06 03 74	10 17 74
MYXOPHYCEAN	03/0 E	06/0 E	2.00 E
CHLOROPHYCEAN	06/0 E	11/0 E	8.00 E
EUGLENOPHYTE	0/09 ?	0.06 ?	0.30 E
DIATOM	0.27 ?	0.44 E	0.67 E
COMPOUND	12/0 E	22/0 E	17.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 25 74	06 03 74	10 17 74
GENUS	11	08	01
SPECIES	03	03	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		03 25 74	06 03 74	10 17 74
AVERAGE DIVERSITY	H	3.33	3.84	2.73
NUMBER OF TAXA	S	29.00	40.00	31.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	3.00	3.00
MAXIMUM DIVERSITY	MAXH	4.86	5.32	4.95
MINUMUM DIVERSITY	MINH	0.12	0.08	0.28
TOTAL DIVERSITY	D	9780.21	27605.76	3458.91
TOTAL NUMBER OF INDIVIDUALS/ML	N	2937.00	7189.00	1267.00
EVENESS COMPONENT	J	0.69	0.72	0.55
RELATIVE EVENESS	RJ	0.68	0.72	0.53
MEAN NUMBER OF INDIVIDUALS/TAXA	L	101.28	179.73	40.87
NUMBER/ML OF MOST ABUNDANT TAXON	K	698.00	2010.00	438.00

LAKE NAME: MILLWOOD LAKE
STORET NUMBER: 0511

CONTINUED

TAXA	FORM	03 25 74 S	03 25 74 %C	03 25 74 ALGAL UNITS PER ML	06 03 74 S	06 03 74 %C	06 03 74 ALGAL UNITS PER ML	10 17 74 S	10 17 74 %C	10 17 74 ALGAL UNITS PER ML
ACHNANTHES MICROCEPHALA	CEL						X			
ANABAENA	FIL		1.3	37	1	7.5	541			
ANKISTRODESMUS	CEL			X						
ANKISTRODESMUS FALCATUS	CEL		2.5	73		1.6	116			X
ANKISTRODESMUS FALCATUS V. ACICULARIS	CEL									X
APHANIZOMENON FLOS-AQUAE	FIL					1.1	77			
ASTERIONELLA FORMOSA	CEL		2.5	73			X			
ATTHEYA ?	CEL					0.5	39			
CARTERIA KLEBSII	CEL	4	7.5	220						
CENTRIC DIATOMS	CEL							1	34.6	438
CHROOMONAS ACUTA	CEL	2	23.8	698				5	15.4	195
COCCONEIS	CEL			X						
COELASTRUM SPHAERICUM	COL					0.5	39			
CRUCIGENIA TETRAPEDIA	COL									X
CRYPTOMONAS	CEL							4	3.9	49
CRYPTOMONAS EROSA	CEL	3	7.5	220		1.6	116			
CRYPTOMONAS MARSSONII	COL			X			X			
CYCLOTELLA	CEL			X						
CYCLOTELLA MENEGHINIANA	CEL									X
CYMBELLA	CEL			X						X
CYMBELLA VENTRICOSA	CEL						X			
DACTYLOCOCCOPSIS	CEL		2.5	73		5.9	425		7.7	97
DINOBRYON BAVARICUM	CEL				3	7.0	502			
DINOBRYON SOCIALE	CEL									X
EUASTRUM	CEL									X
EUDORINA ELEGANS	COL						X			
EUGLENA TRIPTERIS	CEL									X
EUNOTIA	CEL									X
EUNOTIA PECTINALIS V. MINOR F. IMPRESSA	CEL			X						
FLAGELLATE #2	CEL	5	7.5	220		5.9	425			
FLAGELLATE #4	CEL					0.5	39			
FRAGILARIA CROTONENSIS	CEL					2.7	193			
GOLENKINIA	CEL									X
GYMNODINIUM	CEL								3.9	49
KIRCHNERIELLA	CEL					1.6	116			
KIRCHNERIELLA CONTORTA	CEL						X			
LEPOCINCLIS	CEL					1.1	77			
LYNGBYA	FIL					3.2	232			X
MALLOMONAS	CEL									X
MELOSIRA DISTANS	CEL	11	23.8	698	2	28.0	2010	3	15.4	195
MELOSIRA GRANULATA	CEL				4	5.9	425	2	11.5	146
MELOSIRA GRANULATA V. ANGUSTISSIMA	CEL			X		5.4	387			
MERISMOPEDIA MINIMA	COL					2.2	155			
MESOSTIGMA VIRIDIS	CEL				5	4.3	309			X
MICRACTINIUM	COL						X			
MICROCYSTIS INCERTA	COL					5.9	425			
MOUGEOTIA	FIL						X			
NAVICULA	CEL						X			
NAVICULA #1	CEL			X						
NAVICULA #2	CEL			X						X
NAVICULA VIRIDULA V. LINEARIS	CEL						X			
NEPHROCYTIUM	CEL		5.0	147						
NITZSCHIA	CEL					2.7	193			
NITZSCHIA #1	CEL		1.3	37						
NITZSCHIA #2	CEL			X						
NITZSCHIA #3	CEL			X						
NITZSCHIA #4	CEL		5.0	147						
NITZSCHIA ACICULARIS	CEL								3.9	49
OSCILLATORIA	FIL		3.7	110						
PEDIASTRUM DUPLEX	COL						X			
PEDIASTRUM DUPLEX V. ?	COL									X
PEDIASTRUM TETRAS V. TETRAODON	COL									X
PERIDINIUM	CEL					1.6	116			
PERIDINIUM UMBONATUM	CEL									X
PHACUS LONGICAUDA	CEL									X
PTEROMONAS ANGULOSA	CEL		3.7	110						
SCENEDESMUS ARCUATUS V. PLATYDISCA	COL								3.9	49
SCENEDESMUS BICAUDATUS	COL					0.5	39			
SCENEDESMUS DENTICULATUS	COL						X			
SCENEDESMUS DIMORPHUS	COL									X
SCENEDESMUS OVALTERNUS V. GRAEVENITZII	COL		1.3	37						

LAKE NAME: MILLWOOD LAKE
STORET NUMBER: 0511

CONTINUED

TAXA	FORM	03 25 74 IS	03 25 74 %C	03 25 74 ALGAL UNITS PER ML	06 03 74 IS	06 03 74 %C	06 03 74 ALGAL UNITS PER ML	10 17 74 IS	10 17 74 %C	10 17 74 ALGAL UNITS PER ML
SCHROEDERIA SETIGERA	CEL		1.3	37		2.7	193			
SURIRELLA	CEL			X						
SYNEDRA	CEL									X
SYNEDRA ULNA	CEL						X			
TABELLARIA FENESTRATA	CEL						X			X
TETRAEDRON MINIMUM V. SCROBICULATUM	CEL			X			X			
TETRAEDRON REGULARE	CEL						X			
TRACHELOMONAS	CEL									X
TOTAL				2937			7199			1267

LAKE NAME: NIMROD LAKE
STORET NUMBER: 0512

NYGAARD TROPHIC STATE INDICES

DATE	03 27 74	06 07 74	10 18 74
MYXOPHYCEAN	02/0 E	04/0 E	04/0 E
CHLOROPHYCEAN	05/0 E	01/0 E	06/0 E
EUGLENOPHYTE	0.57 E	0.80 E	0/10 ?
DIATOM	1.00 E	0.80 E	0.57 E
COMPOUND	14/0 E	13/0 E	14/0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 27 74	06 07 74	10 18 74
GENUS	09	01	10
SPECIES	03	00	04

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		03 27 74	06 07 74	10 18 74
AVERAGE DIVERSITY	H	1.93	3.04	3.12
NUMBER OF TAXA	S	26.00	22.00	27.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY	MAXH	4.70	4.46	4.75
MINUMUM DIVERSITY	MINH	0.10	0.25	0.10
TOTAL DIVERSITY	D	6183.72	2927.52	11232.00
TOTAL NUMBER OF INDIVIDUALS/ML	N	3204.00	963.00	3600.00
EVENESS COMPONENT	J	0.41	0.68	0.66
RELATIVE EVENESS	RJ	0.40	0.67	0.65
MEAN NUMBER OF INDIVIDUALS/TAXA	L	123.23	43.77	133.33
NUMBER/ML OF MOST ABUNDANT TAXON	K	1933.00	394.00	1296.00

LAKE NAME: NIMROD LAKE
STORET NUMBER: 0517

CONTINUED

TAXA	FORM	03 27 74 S	03 27 74 %C	03 27 74 ALGAL UNITS PER ML	06 07 74 S	06 07 74 %C	06 07 74 ALGAL UNITS PER ML	10 19 74 S	10 19 74 %C	10 19 74 ALGAL UNITS PER ML
ACHNANTHES MICROCEPHALA	CEL									X
ACTINASTRUM	CEL			X						
ANABAENA	FIL			X			X			
ANKISTRODESMUS FALCATUS	CEL	3	13.2	424						
ASTERIONELLA FORMOSA	CEL					2.6	25			
CARTERIA	CEL			X						
CENTRIC DIATOMS	CEL		2.9	94						
CERATIUM HIRUNDINELLA F. FURCOIDES	CEL			X	3	2.6	25			
CHROMONAS ACUTA	CEL			X	5	10.3	99		3.4	121
COELASTRUM SPHAERICUM	COL								1.1	40
CRYPTOMONAS	CEL			X						
CRYPTOMONAS EROSA	CEL	2	13.2	424	4	5.1	49	3	6.7	242
CYCLOTELLA	CEL					5.1	49		4.5	162
DACTYLOCOCCOPSIS	FIL					5.1	49	5	12.4	445
DICTYOSPHAERIUM PULCHELLUM	COL			X						
EUGLENA	CEL					2.6	25			
EUGLENA #1	CEL			X						
EUGLENA OXYURIS V. MINOR	CEL						X			
FLAGELLATES	CEL	1	60.3	1933						
FRAGILARIA CROTONENSIS	CEL									X
GLENODINIUM OCULATUM	CEL	5	1.5	47						
HANTZSCHIA	CEL									X
KIRCHNERIELLA	CEL								2.2	81
LEPOCINCLIS	CEL		1.5	47			X			
MALLOMONAS	CEL									X
MALLOMONAS PSEUDOCORONATA	CEL									X
MELOSIRA DISTANS	CEL			X	2	10.3	99	1	36.0	1298
MELOSIRA GRANULATA	CEL			X	11	40.9	394		3.4	121
MELOSIRA GRANULATA V. ANGUSTISSIMA	CEL						X			
MERISMOPEDIA GLAUCA	COL									X
MERISMOPEDIA TENUISSIMA	COL						X			
MESOSTIGMA VIRIDIS	CEL								3.4	121
MICRACTINIUM PUSILLUM	COL					2.6	25			
MICROCYSTIS INCERTA	COL							2	13.5	486
MOUGEOTIA	FIL			X						
NAVICULA	CEL								3.4	121
NITZSCHIA	CEL								1.1	40
NITZSCHIA #2	CEL									X
OSCILLATORIA	FIL	4	2.9	94		2.6	25			
PEDIASTRUM TETRAS V. TETRAODON	COL			X						
PENNATE DIATOM	CEL					2.6	25			
PERIDINIUM	CEL							4	4.5	162
PHACUS	CEL			X						
PHORMIDIUM MUCICOLA	FIL									X
PTEROMONAS	CEL			X						
RHIZOSOLENIA	CEL									X
SCENEDESMUS BICAUDATUS	COL									X
SCENEDESMUS DENTICULATUS	COL									X
SCENEDESMUS PROTUBERANS	COL								1.1	40
SCENEDESMUS QUADRICAUDA	COL			X					3.4	121
SURIRELLA ANGUSTA	CEL									X
SYNEDRA ?	CEL		2.9	94			X			
SYNEDRA DELICATISSIMA	CEL						X			
SYNEDRA DELICATISSIMA V. ANGUSTISSIMA	CEL			X						
SYNURA ?	CEL					5.1	49			
TABELLARIA FENESTRATA	CEL			X			X			
TRACHELOMONAS INTERMEDIA	CEL		1.5	47		2.6	25			
TOTAL				3204			963			3400

LAKE NAME: NORFORK LAKE
STORET NUMBER: 0513

NYGAARD TROPHIC STATE INDICES

DATE	04 04 74	06 19 74	09 03 74	10 10 74
MYXOPHYCEAN	02/0 E	0/01 O	5.00 E	06/0 E
CHLOROPHYCEAN	02/0 E	1.00 E	2.00 E	05/0 E
EUGLENOPHYTE	0/04 ?	0/01 ?	0.14 ?	0.09 ?
DIATOM	1.40 E	1.00 E	0.17 ?	0.75 E
COMPOUND	11/0 E	4.00 E	9.00 E	15/0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	04 04 74	06 19 74	09 03 74	10 10 74
GENUS	01	01	10	07
SPECIES	00	00	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		04 04 74	06 19 74	09 03 74	10 10 74
AVERAGE DIVERSITY	H	2.28	2.45	3.24	3.55
NUMBER OF TAXA	S	20.00	17.00	19.00	28.00
NUMBER OF SAMPLES COMPOSITED	M	7.00	7.00	7.00	7.00
MAXIMUM DIVERSITY	MAXH	4.32	4.09	4.25	4.81
MINUMUM DIVERSITY	MINH	0.16	0.11	0.06	0.12
TOTAL DIVERSITY	D	3210.24	4304.65	13588.56	10277.25
TOTAL NUMBER OF INDIVIDUALS/ML	N	1408.00	1757.00	4194.00	2895.00
EVENESS COMPONENT	J	0.53	0.60	0.76	0.74
RELATIVE EVENESS	RJ	0.51	0.59	0.76	0.74
MEAN NUMBER OF INDIVIDUALS/TAXA	L	70.40	103.35	220.74	103.39
NUMBER/ML OF MOST ABUNDANT TAXON	K	556.00	645.00	805.00	603.00

LAKE NAME: NORFORK LAKE
STORET NUMBER: 0513

CONTINUED

TAXA	FORM	04 04 74 S	04 04 74 %C	04 04 74 ALGAL UNITS PER ML	06 19 74 S	06 19 74 %C	06 19 74 ALGAL UNITS PER ML	09 23 74 S	09 23 74 %C	09 23 74 ALGAL UNITS PER ML	12 11 74 S	12 11 74 %C	12 11 74 ALGAL UNITS PER ML
ACHNANTHES MICROCEPHALA	CEL							5	9.6	402			X
ANABAENA	FIL			X									
ANKISTRODESMUS FALCATUS	CEL											1.4	43
APHANIZOMENON FLOS-AQUAE	FIL												X
ASTERIONELLA FORMOSA	CEL			X	2	2.0	36						
CENTRIC DIATOM	CEL	1	5.3	74									
CERATIUM HIRUNDINELLA F. FURCOIDES	CEL						X						
CERATIUM HIRUNDINELLA F. ROBUSTUM	CEL				2	4.1	72						
CHROOMONAS ACUTA	CEL	2	39.5	556			X						
CHROOMONAS ACUTA ?	CEL											4.2	121
CLOSTERIUM	CEL						X						
COSMARIUM	CEL									X			
CRUCIGENIA TETRAPEDIA	COL											1.4	40
CRYPTOMONAS	CEL								6.8	287			
CRYPTOMONAS EROSA	CEL	4	5.3	74	3	6.1	137			X	1	11.1	322
CRYPTOMONAS MARSSONII	CEL					4.1	72						
CYCLOTELLA	CEL					4.1	72					1.4	40
CYCLOTELLA COMTA	CEL			X									
CYCLOTELLA MICHIGANIANA	CEL			X									
CYCLOTELLA STELLIGERA	CEL			X									
CYMBELLA TUMIDULA	CEL			X									
DACTYLOCOCCOPSIS	CEL											8.3	241
DIATOMA VULGARE V. BREVE	CEL					2.0	36						
DINOBRYON SOCIALE	CEL				4	34.7	609						X
ENTOMONEIS ORNATA	CEL			X									
EUGLENA	CEL												X
FLAGELLATE #2	CEL						X				1	2.5	362
FRAGILARIA CROTONENSIS	CEL	5	5.3	74	1	36.7	645	1	19.2	805	1	5.6	161
FRANCEIA OVALIS ?	CEL												
LYNGBYA BIRGEI	FIL									X			
MALLOMONAS	CEL												X
MALLOMONAS PSEUDOCORONATA	CEL						X						
MELOSIRA DISTANS	CEL												X
MELOSIRA GRANULATA	CEL	1	29.0	408			X	4	8.2	345	1	4.2	121
MELOSIRA VARIANS	CEL			X									
MERISMOPEDIA MINIMA	COL												X
MERISMOPEDIA TENUISSIMA	COL									X			
MICROCYSTIS INCERTA	COL							3	15.1	632	5	20.8	604
MOUGEOTIA	CEL										4	6.9	201
NAVICULA	CEL			X									
NEPHROCYTIUM	CEL								1.4	57			
NITZSCHIA	CEL								15.1	632			X
NITZSCHIA #1	CEL									X			
NITZSCHIA #2	CEL								1.4	57			
NITZSCHIA VERMICULARIS	CEL			X									
OSCILLATORIA	FIL			X					8.2	345	1	5.6	161
PEDIASTRUM SIMPLEX	COL												X
PEDIASTRUM SIMPLEX V. DUODENARIUM	COL			X									
PERIDINIUM	CEL								1.4	57			
PERIDINIUM #2	CEL												X
PERIDINIUM MINUSCULUM	CEL												X
PERIDINIUM QUADRIDENS	CEL					2.0	36						
PERIDINIUM SPP.	CEL											2.8	80
PHACUS MEGALOPSIS	CEL									X			
RAPHIDIOPSIS CURVATA	FIL							2	8.2	345	1	6.9	201
SCENEDESMUS QUADRICAUDA	COL			X									
SCHROEDERIA SETIGERA	CEL					2.0	36						
STEPHANODISCUS NIAGARAE	CEL	1	5.3	74	5	2.0	36						
STIPITOCOCCUS	CEL		19.5	148									
SYNEDRA ACUS	CEL									X			
TABELLARIA FENESTRATA	CEL												X
TETRAEDRON MINIMUM V. SCROBICULATUM	CEL								5.5	230		6.9	201
TOTAL				1408			1757			4194			2895

LAKE NAME: LAKE OUACHITA
STORET NUMBER: 0514

NYGAARD TROPHIC STATE INDICES

DATE	03 25 74	06 06 74	10 17 74
MYXOPHYCEAN	0/0 D	1.00 E	7.00 E
CHLOROPHYCEAN	03/0 E	0.67 ?	2.00 E
EUGLENOPHYTE	0/03 ?	0.40 E	0/09 ?
DIATOM	2.00 E	0.50 E	0/03 ?
COMPOUND	07/0 E	3.00 E	9.00 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 25 74	06 06 74	10 17 74
GENUS	00	01	01
SPECIES	00	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		03 25 74	06 06 74	10 17 74
AVERAGE DIVERSITY	H	1.47	2.71	3.44
NUMBER OF TAXA	S	12.00	20.00	21.00
NUMBER OF SAMPLES COMPOSITED	M	6.00	6.00	6.00
MAXIMUM DIVERSITY	MAXH	3.58	4.32	4.39
MINIMUM DIVERSITY	MINH	0.46	0.08	0.14
TOTAL DIVERSITY	D	323.40	8176.07	5841.12
TOTAL NUMBER OF INDIVIDUALS/ML	N	220.00	3017.00	1698.00
EVENESS COMPONENT	J	0.41	0.63	0.78
RELATIVE EVENESS	RJ	0.33	0.63	0.78
MEAN NUMBER OF INDIVIDUALS/TAXA	L	18.33	150.85	80.86
NUMBER/ML OF MOST ABUNDANT TAXON	K	110.00	797.00	266.00

LAKE NAME: LAKE OUACHITA
STORET NUMBER: 1514

CONTINUED

TAXA	FORM	01 25 74 S	01 25 74 %C	01 25 74 ALGAL UNITS PER ML	04 06 74 S	04 06 74 %C	04 06 74 ALGAL UNITS PER ML	10 17 74 S	10 17 74 %C	10 17 74 ALGAL UNITS PER ML
ANABAENA PLANCTONICA	FIL						X	1	5.9	133
ANKISTRODESMUS FALCATUS	CEL			X						
ANKISTRODESMUS FALCATUS V. MIRABILIS	CEL			X						
APHANIZOMENON FLOS-AQUAE	FIL						X	2	11.8	200
ARTHRODESMUS MINOR ?	CEL				1	1.2	35			
ASTERIONELLA FORMOSA	CEL				1	3.4	134			X
CENTRIC DIATOM	CEL	3	16.8	37						
CERATIUM HIRUNDINELLA F. FURCOIDES	CEL				1	1.2	35			
CHROOMONAS ACUTA	CEL	2	33.2	73	4	23.0	699	1	13.7	233
CLOSTERIOPSIS	CEL			X						
CLOSTERIUM	CEL									X
CRYPTOMONAS EROSA	CEL	1	50.0	110	1	1.2	35	1	7.8	133
CRYPTOMONAS MARSSONII	CEL									X
DACTYLOCOCCOPSIS	CEL							1	11.8	200
DINOBRYON	CEL								3.9	67
EUASTRUM DENTICULATUM	CEL						X			
FLAGELLATE #2	CEL								5.9	100
FRAGILARIA CROTONENSIS	CEL			X	2	26.4	797			X
GYMNODINIUM ALBULUM	CEL			X						
LYNGBYA	FIL							1	15.7	266
MALLOMONAS	CEL									X
MALLOMONAS PSEUDOCORONATA	CEL									X
MELOSIRA DISTANS	CEL			X	5	13.8	416			
MELOSIRA GRANULATA	CEL			X	3	10.3	312			
MERISMOPEDIA TENUISSIMA	COL								1.9	33
MICROCYSTIS INCERTA	COL								9.8	167
NOUGEOTIA	FIL						X			
OSCILLATORIA	FIL						X			
OSCILLATORIA #1	FIL									X
PEDIASTRUM BIRADIATUM V. LONGECORNUTUM	COL				1	1.2	35			
PERIDINIUM QUADRIDENS	CEL							1	7.8	133
SCENEDESMUS QUADRICAUDA	COL				1	1.2	35			
SKELETONEMA POTAMOS	CEL			X						
STAURASTRUM CUSPIDATUM ?	CEL						X			
SURIRELLA	CEL									X
SYNEDRA	CEL						X			
TABELLARIA FENESTRATA	CEL			X	1	17.2	520			
TETRAEDRON CAUDATUM	CEL								1.9	33
TETRAEDRON MINIMUM V. SCROBICULATUM	CEL								1.9	33
TRACHELOMONAS	CEL						X			
TRACHELOMONAS INTERMEDIA	CEL						X			
TOTAL				220			3317			1498

LAKE NAME: TABLE ROCK LAKE
STORET NUMBER: 0515

NYGAARD TROPHIC STATE INDICES

DATE	04 05 74	06 18 74	09 04 74	10 10 74
MYXOPHYCEAN	03/0 E	05/0 E	1.00 E	1.50 E
CHLOROPHYCEAN	01/0 E	06/0 E	2.67 E	1.00 E
EUGLENOPHYTE	0/04 ?	0/11 ?	0.09 ?	0.60 E
DIATOM	1.20 E	1.33 E	1.50 E	0.40 E
COMPOUND	10/0 E	15/0 E	5.00 E	5.00 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	04 05 74	06 18 74	09 04 74	10 10 74
GENUS	06	03	05	09
SPECIES	00	00	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		04 05 74	06 18 74	09 04 74	10 10 74
AVERAGE DIVERSITY	H	2.89	3.49	1.29	1.01
NUMBER OF TAXA	S	19.00	29.00	26.00	24.00
NUMBER OF SAMPLES COMPOSITED	M	9.00	9.00	9.00	9.00
MAXIMUM DIVERSITY	MAXH	4.25	4.86	4.70	4.58
MINUMUM DIVERSITY	MINH	0.07	0.21	0.02	0.02
TOTAL DIVERSITY	D	9554.34	5528.16	28796.67	16806.40
TOTAL NUMBER OF INDIVIDUALS/ML	N	3306.00	1584.00	22323.00	16640.00
EVENESS COMPONENT	J	0.68	0.72	0.27	0.22
RELATIVE EVENESS	RJ	0.68	0.71	0.28	0.22
MEAN NUMBER OF INDIVIDUALS/TAXA	L	174.00	54.62	858.58	693.33
NUMBER/ML OF MOST ABUNDANT TAXON	K	882.00	264.00	17906.00	13893.00

LAKE NAME: TABLE ROCK LAKE
STORET NUMBER: 0515

CONTINUED

TAXA	FORM	06 05 74 S	06 05 74 %C	06 05 74 ALGAL UNITS PER ML	06 18 74 S	06 18 74 %C	06 18 74 ALGAL UNITS PER ML	09 04 74 S	09 04 74 %C	09 04 74 ALGAL UNITS PER ML	10 10 74 S	10 10 74 %C	10 10 74 ALGAL UNITS PER ML
ACHNANTHES MICROCEPHALA	CEL				2	2.1	33	1	0.2	1790	1	3.5	13893
ANABAENA	FIL			X									
ANKISTRODESMUS	CEL				5	8.3	132						
APHANIZOMENON	FIL				5	8.3	132						
ASTERIONELLA FORMOSA	CEL			X									
CENTRIC DIATOM	CEL		7.8	257				5	3.0	479			
CERATIUM HIRUNDINELLA	CEL						X						
CERATIUM HIRUNDINELLA F. BRACHYCERAS	CEL						X			X			X
CERATIUM HIRUNDINELLA F. FURCOIDES	CEL						X						
CHROOMONAS ACUTA	CEL	5	6.7	220	10	16.7	264	1	1.7	388	1	1.2	193
COELASTRUM SPHAERICUM	COL						X	1	0.2	49			
COSMARIUM #1	CEL							1	0.4	97			
COSMARIUM #2	CEL									X			X
CRUCIGENIA QUADRATA	COL									X			
CRYPTOMONAS	CEL				11	12.5	198	1	0.7	146	2	1.4	232
CRYPTOMONAS EROSA	CEL	4	2.2	73									
CYCLOTELLA STELLIGERA	CEL						X						X
DACTYLOCOCCOPSIS	CEL										5	8.4	1393
DINOBRYON SOCIALE	CEL				1	2.1	33			X			
FRAGILARIA	CEL												X
FRAGILARIA CROTONENSIS	CEL	3	23.3	771	2	4.2	66						X
GLENODINIUM	CEL									X			
GLENODINIUM GYMNODINIUM	CEL						X						
GLENODINIUM QUADRIDEN	CEL				2	4.2	66			X			X
GYMNODINIUM	CEL		1.1	37									
KIRCHNERIELLA	CEL									X			
MALLOMONAS	CEL				1	2.1	33						
MELOSIRA	CEL			X									
MELOSIRA DISTANS	CEL		3.3	110	2	4.2	66			X			X
MELOSIRA GRANULATA	CEL	11	26.7	882									
MELOSIRA ITALICA	CEL				1	2.1	33						
MELOSIRA VARIANS	CEL			X									
MERISMOPEDIA MINIMA	COL				1	2.1	33						
MERISMOPEDIA TENUISSIMA	COL							1	0.4	97			
MESOSTIGMA VIRIDIS	CEL												X
MOUGEOTIA	FIL				14	14.6	231						X
NITZSCHIA	CEL		1.1	37									
OSCILLATORIA LACUSTRIS	FIL			X								0.2	39
OSCILLATORIA LIMNETICA	FIL		3.3	110			X	4	1.1	243	4	0.9	155
PEDIASTRUM SIMPLEX	COL							1	0.2	49			
PEDIASTRUM SIMPLEX V. DUODENARIUM	COL						X						
PENNATE DIATOM	CEL		1.1	37									
PENNATE DIATOM #1	CEL							3	2.6	582			
PERIDINIUM #1	CEL						X						
PERIDINIUM #2	CEL		1.1	37									
PERIDINIUM INCONSPICUUM	CEL												X
PHACUS	CE									X			X
RAPHIDIOPSIS CURVATA	FIL						X	2	7.2	1601	1	0.9	155
SCENENESMUS	COL						X						
SCENEDESMUS ABUNDANS	COL										1	0.5	77
SCENEDESMUS BICAUDATUS	COL							1	0.2	49			
SCENEDESMUS QUADRICAUDA V. QUADRISPINA F. SPINOSUS	COL		1.1	37									
SCHROEDERIA SETIGERA	CEL						X	1	0.2	49			
SCYTONEMA	FIL						X						
STAURASTRUM	CEL												
STAURASTRUM TETRACERUM	CEL									X			X
STEPHANODISCUS	CEL				1	2.1	33			X			
STEPHANODISCUS NIAGARAE	CEL	2	20.0	661									
SYNEDRA	CEL												X
SYNEDRA DELICATISSIMA V. ANGUSTISSIMA	CEL		1.1	37			X						
TETRAEDRON MINIMUM V. SCROBICULATUM	CEL				5	14.6	231	1	1.7	388	3	3.0	503
TRACHELOMONAS #1	CEL												X
TRACHELOMONAS #2	CEL												X
TREUBARIA SETIGERUM	CEL									X			
TOTAL				3306			1584			22323			16640

LAKE NAME: GREER'S FERRY LAKE
STORET NUMBER: 0516

NYGAARD TROPHIC STATE INDICES

DATE	03 27 74	06 06 74	09 03 74	10 16 74
MYXOPHYCEAN	2.50 E	3.00 E	1.33 E	1.33 E
CHLOROPHYCEAN	2.50 E	3.00 E	1.00 E	1.33 E
EUGLENOPHYTE	0.20 ?	0/06 ?	0/07 ?	0.25 E
DIATOM	0.43 E	0.75 E	0/02 ?	1.00 E
COMPOUND	7.50 E	9.00 E	2.33 E	4.33 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 27 74	06 06 74	09 03 74	10 16 74
GENUS	04	04	01	01
SPECIES	00	00	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE		03 27 74	06 06 74	09 03 74	10 16 74
AVERAGE DIVERSITY	H	3.35	2.29	1.80	2.37
NUMBER OF TAXA	S	29.00	19.00	17.00	23.00
NUMBER OF SAMPLES COMPOSITED	M	4.00	4.00	4.00	4.00
MAXIMUM DIVERSITY	MAXH	4.86	4.25	4.09	4.52
MINIMUM DIVERSITY	MINH	0.14	0.08	0.05	0.15
TOTAL DIVERSITY	D	8291.25	6666.19	7941.60	4268.37
TOTAL NUMBER OF INDIVIDUALS/ML	N	2475.00	2911.00	4412.00	1801.00
EVENESS COMPONENT	J	0.69	0.54	0.44	0.52
RELATIVE EVENESS	RJ	0.69	0.53	0.44	0.51
MEAN NUMBER OF INDIVIDUALS/TAXA	L	85.34	153.21	259.53	78.30
NUMBER/ML OF MOST ABUNDANT TAXON	K	500.00	1579.00	3098.00	678.00

LAKE NAME: GREER'S FERRY LAKE CONTINUED
STORET NUMBER: 0516

TAXA	FORM	03 27 74			06 06 74			09 03 74			10 16 74		
		S	%C	ALGAL UNITS PER ML	S	%C	ALGAL UNITS PER ML	S	%C	ALGAL UNITS PER ML	S	%C	ALGAL UNITS PER ML
ANABAENA PLANCTONICA	FIL			X									
ANABAENOPSIS	FIL												X
APHANIZOMENON	FIL			X									
APHANIZOMENON FLOS-AQUAE	FIL								1.4	62			X
ASTERIONELLA FORMOSA	CEL	1	3.0	75							5	2.2	39
CENTRIC DIATOM	CEL												
CERATIUM HIRUNDINELLA	CEL						X						
CERATIUM HIRUNDINELLA F. FURCOIDES	CEL				2	1.4	40						X
CHROOMONAS ACUTA	CEL	1	20.2	500	1	6.9	202	2	7.1	313			
COELASTRUM MICROPORUM	COL				1	1.4	40						
COSMARIUM	CEL										1	2.2	39
CRUCIGENIA TETRAPEDIA	COL			X			X						
CRYPTOMONAS	CEL												X
CRYPTOMONAS EROSA	CEL	2	14.1	350	5	6.9	202	4	4.3	188			
CYMBELLA	CEL			X									
DACTYLOCOCCOPSIS	CEL	1	2.0	50							1	3.2	58
DESMID	CEL			X									
EUGLENA	CEL			X									X
FLAGELLATE	CEL								2.9	125			
FLAGELLATE 02	CEL	1	9.1	225									
FRAGILARIA CROTONENSIS	CEL	1	2.0	50	3	4.2	121						X
FRANCEIA	CEL									X			
GLOEOCYSTIS	COL						X						
GOMPHONEMA GRACILE	CEL			X									
GYMNODINIUM ALBULUM	CEL	1	1.0	25									
LEPOCINCLIS	CEL												X
LYNGBYA	FIL							1	70.2	3099	4	37.6	678
LYNGBYA 01	FIL				1	1.4	40						
LYNGBYA 02	FIL				1	1.4	40						
MALLOMONAS	CEL								0.7	31			
MALLOMONAS ACAROIDES	CEL												X
MELOSIRA DISTANS	CEL	3	18.2	450	4	16.7	486				1	6.4	116
MELOSIRA GRANULATA	CEL	1	2.0	50							2	9.7	174
MELOSIRA GRANULATA V. ANGUSTISSIMA	CEL						X						
MERISMOPEDIA GLAUCA	COL	1	2.0	50									
MERISMOPEDIA PUNCTATA	COL			X									
MERISMOPEDIA TENUISSIMA	COL				1	1.4	40						
MICROCYSTIS INCERTA	COL							3	5.0	219			
NEPHROCYTIUM	CEL	1	4.0	100					1.4	62			
NITZSCHIA	CEL				1	2.8	81			X			
NITZSCHIA 01	CEL	1	4.0	100									
NITZSCHIA 02	CEL			X									
OOCYSTIS	COL				1	1.4	40						
OSCILLATORIA	FIL								0.7	31			
PEDIASTRUM BIRADIATUM V. LONGECORNUTUM	COL												X
PERIDINIUM ?	CEL												X
PERIDINIUM MINUSCULUM ?	CEL								2.9	125			
PERIDINIUM UMBONATUM	CEL			X									
SCENEDESMUS DENTICULATUS	COL	1	1.0	25									
SCENEDESMUS DIMORPHUS	COL												X
SKELETONEMA POTAMOS	CEL	5	13.1	325			X						
STAURASTRUM	CEL								0.7	31			
STAURASTRUM 01	CEL									X	1	1.1	19
STAURASTRUM 02	CEL			X									
STAURASTRUM 03	CEL						X						
STAURASTRUM TETRACERUM	CEL									X	1	2.2	39
SURIRELLA	CEL						X						
SYNEDRA DELICATISSIMA V. ANGUSTISSIMA	CEL												X
TABELLARIA FENESTRATA	CEL	4	3.0	75	1	54.2	1579	5	2.9	125	1	33.4	601
TETRAEDRON	CEL	1	1.0	25									
TETRAEDRON CAUDATUM	CEL									X	1	1.1	19
TETRAEDRON MINIMUM	CEL										1	1.1	19
TETRAEDRON MINIMUM V. SCROBICULATUM	CEL			X									
TRACHELOMONAS HISPIDA	CEL			X									
TOTAL				2475			2911			4412			1801

TECHNICAL REPORT DATA
(Please read Instructions on the reverse before completing)

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EPA-600/3-78-101		

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15. SUPPLEMENTARY NOTES

16. ABSTRACT

This is a data report representing the species and abundance of phytoplankton in the 16 lakes sampled by the National Eutrophication Survey in the State of Arkansas. 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
*aquatic microbiology lakes *phytoplankton water quality	Arkansas lake eutrophication Nygaard's trophic indices Palmer's organic pollution indices Species diversity and abundance indices	06 C, M 08 H 13 B

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