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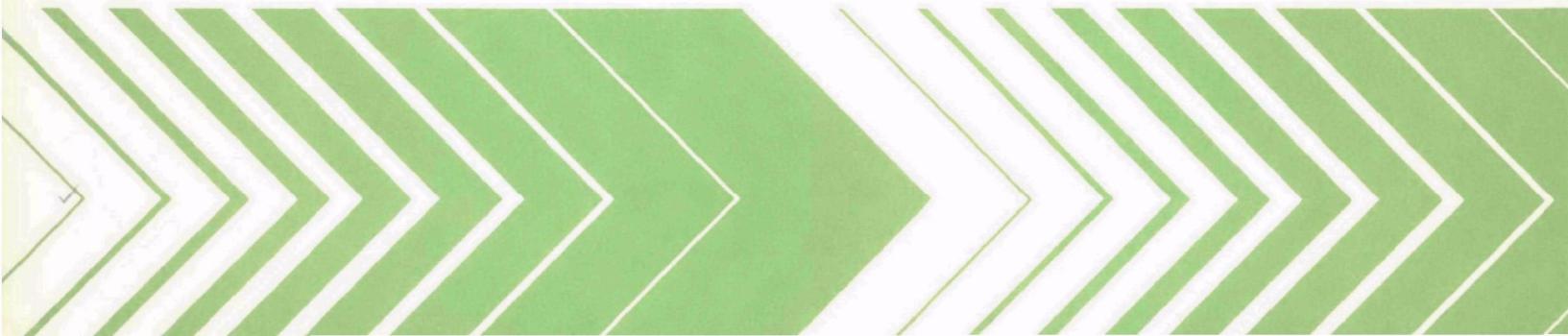
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Research and Development



Distribution of Phytoplankton in Louisiana Lakes



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DISTRIBUTION OF PHYTOPLANKTON IN LOUISIANA 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 19 lakes sampled by the National Eutrophication Survey in the State of Louisiana, 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 19 lakes sampled in the State of Louisiana (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 LOUISIANA

STORET No.	Lake Name	County
2201	Anacoco Lake	Vernon
2202	Bruin Lake	Tensas
2203	Lake Bistineau	Bienville, Webster
2204	Black Bayou	Caddo
2205	Bundicks Lake	Beauregard
2206	Caddo Lake	Marion, Harrison, (Caddo in Texas)
2207	Cocodrie Lake	Concordia
2208	Cotile Lake	Rapides
2209	Concordia Lake	Concordia
2210	Cross Lake	Caddo
2211	D'Arbonne Lake	Union
2212	False River Lake	Pointe Coupee

(Continued)

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

STORET No.	Lake Name	County
2213	Indian Creek	Rapides
2214	Saline Lake	LaSalle
2215	Turkey Creek	Franklin
2216	Lake Verret	Assumption
2217	Lake Vernon	Vernon
2219	Black Lake	
2220	Cocodrie Lake (lower)	Rapides

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 superconcentrate 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 identification 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 forms to 6 for

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

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

TABLE 3. ALGAL GENUS POLLUTION INDEX
(Palmer 1969)

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

TABLE 4. ALGAL SPECIES POLLUTION INDEX (Palmer 1969)

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

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 i th taxon in the sample, which is calculated from n_i/N ; n_i is the number of individuals per milliliter of the i th 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:

$$\text{MinH} = - \frac{S-1}{N} \log_2 \frac{1}{N} - \frac{N - (S-1)}{N} \log_2 \frac{N - (S-1)}{N}$$

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:

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

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 $\log S$, 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 LIST FOR THE STATE OF LOUISIANA

<i>Achnanthes lanceolata</i>	<i>Cosmarium clepsydra</i>
<i>Achnanthes microcephala</i>	<i>v. nanum</i>
<i>Actinastrum hantzschia</i>	<i>Crucigenia apiculata</i>
<i>Amphora</i> sp.	<i>Crucigenia crucifera</i>
<i>Anabaena circinalis</i> ?	<i>Crucigenia fenestrata</i>
<i>Anabaena planctonica</i>	<i>Crucigenia quadrata</i>
<i>Anabaena spiroides</i>	<i>Crucigenia tetrapedia</i>
<i>Anabaenopsis circularis</i>	<i>Crucigenia truncata</i>
<i>Anabaenopsis elenkinii</i>	<i>Cryptomonas erosa</i>
<i>Anabaenopsis philippinensis</i>	<i>Cryptomonas ovata</i>
<i>Anabaenopsis raciborskii</i>	<i>Cryptomonas reflexa</i>
<i>Ankistrodesmus</i> ? <i>braunii</i>	<i>Cyclotella meneghiniana</i>
<i>Ankistrodesmus falcatus</i>	<i>Cyclotella stelligera</i>
<i>Aphanizomenon flos-aquae</i>	<i>Cylindrospermum</i> ? sp.
<i>Aphanocapsa</i> sp.	<i>Cymatopleura elliptica</i>
<i>Aphanothece clathrata</i>	<i>Cymbella affinis</i>
<i>Aphanothece elachista</i>	<i>Cymbella turgida</i>
<i>Aphanothece nidulans</i>	<i>Dactylococcopsis irregularis</i>
<i>Arthrodesmus</i> sp.	<i>Dichotomococcus</i> sp.
<i>Arthrosira</i> sp.	<i>Dictyosphaerium ehrenbergianum</i>
<i>Asterionella formosa</i>	<i>Dictyosphaerium pulchellum</i>
<i>Asterionella formosa</i> v. <i>gracillima</i>	<i>Dimorphococcus</i> sp.
<i>Asterococcus</i> ? sp.	<i>Dinobryon bavaricum</i>
<i>Attheya</i> sp.	<i>Dinobryon cylindricum</i>
<i>Binuclearia</i> ? <i>tarana</i>	<i>Dinobryon divergens</i> ?
<i>Binuclearia eriensis</i>	<i>Dinobryon sertularia</i>
<i>Botryococcus braunii</i>	<i>Dinobryon sociale</i>
<i>Carteria cordiformis</i>	<i>Diploneis elliptica</i>
<i>Centrihydrus</i> sp.	<i>Ducellieria chodatii</i>
<i>Ceratium hirundinella</i>	<i>Echinospaerella limnetica</i>
<i>Ceratium hirundinella</i> f. <i>brachyceras</i>	<i>Elakothrix gelatinosa</i>
<i>Ceratium hirundinella</i> f. <i>furcoides</i>	<i>Epithemia turgida</i>
<i>Chlamydomonas globosa</i>	<i>Euastrum denticulatum</i>
<i>Chlorella</i> sp.	<i>Eudorina elegans</i>
<i>Chlorogonium elongatum</i>	<i>Euglena deses</i> ?
<i>Chlorogonium euchlormum</i>	<i>Euglena elastica</i> ?
<i>Chroococcus dispersus</i>	<i>Euglena gracilis</i>
<i>Chrysococcus rufescens</i>	<i>Euglena klebsii</i>
<i>Closteridium</i> ? sp.	<i>Euglena oxyuris</i>
<i>Closteriopsis</i> sp.	<i>Euglena oxyuris</i> v. <i>minor</i>
<i>Closterium setaceum</i>	<i>Eunotia curvata</i>
<i>Coccocarpis placentula</i>	<i>Eunotia flexuosa</i>
<i>Coelastrum cambricum</i>	v. <i>eurycephala</i>
v. <i>intermedium</i>	<i>Eunotia pectinalis</i>
<i>Coelastrum sphaericum</i>	<i>Eunotia pectinalis</i>
<i>Coelosphaerium naegelianum</i>	v. <i>minor</i> f. <i>impressa</i>
<i>Coelosphaerium pallidum</i>	<i>Eutonia pectinalis</i>
	v. <i>undulata</i>

<i>Eutonia pectinalis</i>	<i>Merismopedia punctata</i>
v. <i>ventricosa</i>	<i>Merismopedia tenuissima</i>
<i>Eunotia valida</i>	<i>Mesostigma viridis</i>
<i>Franceia ovalis</i>	<i>Microctinium pusillum</i>
<i>Frustulia rhomboides</i>	<i>Microcystis aeruginosa</i>
<i>Glenodinium gymmodinium</i>	<i>Microcystis glauca</i>
<i>Glenodinium gymmodinium</i>	<i>Microcystis incerta</i>
v. <i>biscutelliforme</i>	<i>Mougeotia sp.</i>
<i>Glenodinium oculatum</i>	<i>Navicula capitata</i>
<i>Glenodinium penardiforme</i>	<i>Navicula capitata</i>
<i>Gloeoactinium limneticum</i>	v. <i>luneburgensis</i>
<i>Gloeocystis</i> sp.	<i>Navicula cascadiensis</i>
<i>Golenkinia paucispina</i>	<i>Navicula gastrum</i>
<i>Golenkinia radiata</i>	<i>Nephrocytium</i> sp.
<i>Gomphonema acuminatum</i>	<i>Nitzschia actinastroides</i>
<i>Gomphonema augur</i>	<i>Nitzschia capitata</i>
<i>Gomphonema olivaceum</i>	<i>Nitzschia filiformis</i>
<i>Gomphonema sphaerophorum</i>	<i>Nitzschia holsatica</i>
<i>Gomphosphaeria lacustris</i>	<i>Nitzschia palea</i>
v. <i>compacta</i>	<i>Ochromonas</i> ? sp.
<i>Gonium pectorale</i>	<i>Onychonema uncinatum</i>
<i>Gymnodinium albulum</i>	<i>Ophiocytium capitatum</i>
<i>Gymnodinium ordinatum</i>	<i>Ophiocytium captiatum</i>
<i>Gyrosigma</i> sp.	v. <i>longecornutum</i>
<i>Hormidium</i> ? sp.	<i>Oscillatoria geminata</i>
<i>Hyalotheca dissiliens</i>	<i>Oscillatoria limnetica</i>
<i>Kephyrion rubri-claustri</i>	<i>Oscillatoria ornata</i>
v. <i>amphora</i>	<i>Oscillatoria subtilissima</i>
<i>Kirchneriella</i> ? <i>subsolitaria</i>	<i>Oscillatoria tenuis</i>
<i>Kirchneriella contorta</i>	<i>Pandorina morum</i>
<i>Lagerheimia subsalsa</i>	<i>Pandorina protuberans</i>
<i>Lepocinclis acuta</i>	<i>Pediastrum bicaudata</i>
<i>Lepocinclis ovum</i>	<i>Pediastrum bicaudata</i>
<i>Lyngbya circularis</i>	v. <i>longecornutum</i>
<i>Lyngbya circumcreta</i>	<i>Pediastrum duplex</i>
<i>Lyngbya lagerheimii</i>	<i>Pediastrum duplex</i>
<i>Lyngbya limnetica</i>	v. <i>clathratum</i>
<i>Lyngbya subtilissima</i>	<i>Pediastrum duplex</i>
<i>Mallomonas acaroides</i>	v. <i>gracilem</i>
<i>Mallomonas caudata</i> ?	<i>Pediastrum duplex</i>
<i>Melosira distans</i>	v. <i>reticulatum</i>
<i>Melosira granulata</i>	<i>Pediastrum simplex</i>
<i>Melosira granulata</i>	<i>Pediastrum simplex</i>
v. <i>angustissima</i>	v. <i>duodenarium</i>
<i>Melosira granulata</i>	<i>Pediastrum tetras</i>
v. <i>angustissima</i> f. <i>spiralis</i>	<i>Pediastrum tetras</i>
<i>Melosira italica</i>	v. <i>tetraodon</i>
<i>Melosira varians</i>	<i>Peridinium inconspicuum</i>
<i>Meridion</i> ? sp.	<i>Peridinium penardiforme</i>
<i>Merismopedia glauca</i>	<i>Peridinium pusillum</i>
<i>Merismopedia minima</i>	<i>Peridinium quadridens</i>

<i>Peridinium umbonatum</i>	<i>Scenedesmus perforatus</i>
<i>Peridinium wisconsinense</i>	<i>Scenedesmus protuberans</i>
<i>Phacus acuminatus</i>	<i>Scenedesmus quadricauda</i>
<i>Phacus acuminatus</i>	<i>Schizochlamys compacta</i> ?
v. <i>triquetra</i> ?	<i>Schroederia setigera</i>
<i>Phacus anomalus</i>	<i>Selenastrum westii</i>
<i>Phacus caudatus</i>	<i>Spermatozoopsis exultans</i>
<i>Phacus curvicauda</i>	<i>Sphaerocystis schroeteri</i>
<i>Phacus glaber</i>	<i>Spirulina major</i>
<i>Phacus helikoides</i>	<i>Spondylosium planum</i>
<i>Phacus longicauda</i>	<i>Staurastrum arctiscon</i>
<i>Phacus megalopsis</i>	<i>Staurastrum depressiceps</i>
<i>Phacus nordstedtii</i>	v. <i>planiceps</i>
<i>Phacus orbicularis</i> ?	<i>Staurastrum leptocladum</i>
<i>Phacus pleuronectes</i>	v. <i>subinsigne</i>
<i>Phacus pseudonordstedtii</i>	<i>Stephanodiscus astraea</i>
<i>Phacus pyrum</i>	<i>Stephanodiscus niagarae</i>
<i>Phacus suecicus</i>	<i>Surirella angustata</i>
<i>Phacus tortus</i>	<i>Surirella linearis</i>
<i>Phormidium mucicola</i>	<i>Surirella linearis</i>
<i>Pinnularia abaujensis</i>	v. <i>constricta</i>
<i>Pinnularia braunii</i>	<i>Surirella tenera</i> ?
v. <i>amphicephala</i>	<i>Synedra acus</i>
<i>Pithophora oedogonia</i>	<i>Synedra delicatissima</i> ?
<i>Pleodorina</i> sp.	<i>Synedra radians</i> ?
<i>Polyedriopsis spinulosa</i>	<i>Synedra rumpens</i>
<i>Pteromonas angulosa</i>	<i>Synedra ulna</i>
<i>Quadrigula</i> sp.	<i>Synedra ulna</i>
v. <i>platydisca</i>	v. <i>danica</i>
<i>Raphidiopsis curvata</i>	<i>Synura</i> sp.
<i>Rhizosolenia eriensis</i>	<i>Tabellaria fenestrata</i>
<i>Rhodomonas</i> ? sp.	<i>Tetraedron arthrodesmiforme</i>
<i>Scenedesmus abundans</i>	v. <i>contorta</i>
<i>Scenedesmus acuminatus</i>	<i>Tetraedron caudatum</i>
<i>Scenedesmus arcuatus</i>	<i>Tetraedron caudatum</i>
<i>Scenedesmus arcuatus</i>	v. <i>longecornutum</i>
v. <i>platydisca</i>	<i>Tetraedron constrictum</i>
<i>Scenedesmus bicaudatus</i>	<i>Tetraedron cruciatum</i>
<i>Scenedesmus bijuga</i>	<i>Tetraedron gracile</i>
<i>Scenedesmus bijuga</i>	<i>Tetraedron lobulatum</i>
v. <i>alternans</i>	<i>Tetraedron minimum</i>
<i>Scenedesmus brasiliensis</i>	<i>Tetraedron minimum</i>
<i>Scenedesmus denticulatus</i>	v. <i>scrobiculatum</i>
<i>Scenedesmus denticulatus</i>	<i>Tetraedron muticum</i>
v. <i>linearis</i>	<i>Tetraedron pentaedricum</i>
<i>Scenedesmus dimorphus</i>	<i>Tetraedron regulare</i>
<i>Scenedesmus granulatus</i>	<i>Tetraedron regulare</i>
<i>Scenedesmus intermedius</i>	v. <i>incus</i>
<i>Scenedesmus intermedius</i>	<i>Tetraedron regulare</i>
v. <i>bicaudatus</i>	v. <i>torsum</i> ?
<i>Scenedesmus obliquus</i>	<i>Tetraedron trigonum</i>
<i>Scenedesmus opoliensis</i>	

<i>Tetraedron trigonum</i>	<i>Trachelomonas pulchella</i>
v. <i>gracile</i>	
<i>Tetraedron tumidulum</i>	<i>Trachelomonas pulcherrima</i>
<i>Tetrallantos lagerheimii</i>	<i>Trachelomonas rotundata</i>
<i>Tetrastrum heteracanthum</i>	<i>Trachelomonas scabra</i>
<i>Tetrastrum staurogeniaeforme</i>	<i>Trachelomonas schauinslandii</i>
<i>Tolypothrix</i> sp.	<i>Trachelomonas similis</i>
<i>Trachelomonas armata</i>	<i>Trachelomonas stokesii</i>
v. <i>steinii</i>	<i>Trachelomonas urceolata</i>
<i>Trachelomonas bulla</i>	<i>Trachelomonas verrucosa</i>
<i>Trachelomonas dubia</i>	v. <i>zmiewika</i>
<i>Trachelomonas ensifera</i>	<i>Trachelomonas volgensis</i>
<i>Trachelomonas fluviatilis</i>	<i>Trachelomonas volvocina</i>
<i>Trachelomonas girardiana</i> ?	<i>Trachelomonas volvocina</i>
<i>Trachelomonas globularis</i> ?	v. <i>compressa</i> ?
<i>Trachelomonas hispida</i>	<i>Trachelomonas volvocina</i>
<i>Trachelomonas hispida</i>	v. <i>deriphora</i>
v. <i>coronata</i>	<i>Trachelomonas volvocina</i>
<i>Trachelomonas hispida</i>	v. <i>punctata</i> ?
v. <i>punctata</i>	<i>Treubaria setigerum</i>
<i>Trachelomonas intermedia</i>	<i>Treubaria triappendiculata</i>
<i>Trachelomonas lacustris</i>	<i>Trochiscia</i> ? <i>granulata</i>
<i>Trachelomonas longicauda</i>	<i>Ulothrix</i> sp.
<i>Trachelomonas oblonga</i>	<i>Woloszynskia</i> ? <i>reticulata</i>
v. <i>australica</i> ?	

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.

ERRATA

Minimum and evenness are misspelled in the computer printout of the species diversity and abundance indices data.

LAKE NAME: ANACOCO
STREET NUMBER: 2261

NYGAARD TROPHIC STATE INDICES

DATE	03 20 74	05 30 74	11 08 74
MYXOPHYCEAN	0270 E	4.00 E	5.00 E
CHLOROPHYCEAN	1070 E	6.00 E	12.0 E
EUGLENOPHYTE	0.25 E	0.30 E	0.47 E
DIATOM	0.67 E	0.67 E	0.50 E
CUMPOUND	1770 E	17.0 E	29.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 20 74	05 30 74	11 08 74
GENUS	19	13	10
SPECIES	63	63	63

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE	03 20 74	05 30 74	11 08 74
AVERAGE DIVERSITY H	3.17	3.46	3.24
NUMBER OF TAXA S	29.00	33.00	52.00
NUMBER OF SAMPLES COMPOSITED M	2.00	2.00	2.00
MAXIMUM DIVERSITY MAXH	4.66	5.04	5.70
MINIMUM DIVERSITY MINH	0.06	0.09	0.21
TOTAL DIVERSITY D	20725.46	17756.72	19358.28
TOTAL NUMBER OF INDIVIDUALS/ML N	6538.00	5132.00	3197.00
EVENNESS COMPONENT J	0.65	0.69	0.57
RELATIVE EVENNESS RJ	0.65	0.69	0.56
MEAN NUMBER OF INDIVIDUALS/TAXA L	225.45	155.52	61.48
NUMBER/ML OF MOST ABUNDANT TAXON K	2270.00	1954.00	803.00

TAXA	FORM	03 20 74			05 30 74			11 06 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
AMPHIPORA	CEL									X
ANABAENA	FIL									X
ANKISTRODESMUS	CEL									X
ANKISTRODESMUS FALCATUS	CEL	11134.71	2270	5.51	263	151	6.31	203		
APIANTHOCHECA CLATHRATA	COL					X				
ARTHRIDIUMSMUS	CEL									X
ASTERIUNELLA FORMOSA	CEL				30.31	1554				
ASTERIUNELLA FORMOSA V. GRACILLIMA	CEL		1.71	108						
ATTHEYA	FIL									X
EINUCLEARIA ? TATRANA	FIL					1.61	94			
EINUCLEARIA ERIENSIS	FIL									
CENTRIC DIATOM #1	CEL						14	9.51	304	
CHLAMYDOMONAS	COL		3.31	216		6.91	47			51
CHLOROPHYTAN COCCOID CELLED COLONY	COL									
CHLOROPHYTAN FLAGELLATE	CEL			X						
COSMARIUM #1	CEL						X			
CRUCIGENIA QUADRATA	COL			X						
CRUCIGENIA TETRAPEDIA	CCL	151	5.0	324	3.71	168	1.61	51		
CRYPTOMONAS	CEL				151	6.41	333	1111.11	355	
CRYPTOMONAS EROSA	CIL		2.51	162						
CYCLOTELLA STELLIGERA	CEL		2.51	162	131	7.31	377			
CYMBELLA	CEL									X
DACTYLOCUCOPSIS	CEL									X
DICTYOSPHERIUM	COL									X
DINGBYTON	CEL									X
DINGBYTON BAVARIUM	CEL									
DINGBYTON SOCIALE	CEL			X		0.91	47			
DINGFLAGELLATE CYST	CEL		0.81	54						
EUCLENA	CEL									
EUCLENA #1	CEL						X			X
EUCLENA #2	CEL									X
EUCLENA ACUS	CEL									X
EUCLENA GRACILIS	CEL									
EUNOTIA PECTINATIS	CEL									
FLAGELLATE #1	CEL			X						
FLAGELLATE #9	CEL				2.71	141				X
FLAGELLATES	CEL	14115.71	1027							
GLENDODINIUM GYMNODODINIUM	CEL									X
GLENDODINIUM OCULATUM	CEL									51
GLENKINIA PAUCISPINA	CEL						X			
GLENKINIA RADIATA	CEL		0.61	54						
GOMPHONEMA	CEL									
KIRCHNERIELLA	CEL			X						
LAGEGHÉMIA	CEL				1.91	47				
LEPOCINCILIS ACUTA	CEL						X			
LUNATE CELL	CEL		1.71	108						
MALLOMONAS ?	CEL				1.81	94				
MELOSIRA DISTANS	CEL	12113.21	865	2113.81	706					X
MELOSIRA ITALICA	CEL						X			
MERTISHOLDTIA TEHUSSIMA	COL			X	1112.11	518	6.31	203		X
MESOSTIGMA VIRIDIS	CEL									
MICRACTINIUM	COL			X						
MICKLEYSTIS AERUGINOSA	COL	131	8.31	540	5.51	283				X
MICKLEYSTIS INCERTA	COL									X
MOUGLETIA	FIL		1.71	108			X			
NITZSCHEA	CEL		3.31	216	1.61	94				
NITZSCHEA #1	CEL						X			X
NITZSCHEA #2	CEL									
NOCTYSITS	CCL									
OPHIUCTION CAPITATUM	CEL									
V. LONGECORNUTUM										
OSCILLATORIA	FIL				1.61	94				
PALMELLID CELLS	CEL				1.61	94				
PERIDINIUM INCONSPICUUM	CEL		0.61	54						
PERIDINIUM UMBONATUM	CEL						X			
PERIDINIUM WISCONSINENSE	CEL									
PHACUS	CEL									
PHACUS HELIKOIDES	CEL									
PHACUS LONGICAUDA	CEL									
PHIZOSOLENIA	CEL				1.91	47				
SCENEDESMEUS BIJUGA	COL			X						
SCENEDESMEUS DENTICULATUS	COL									
SCENEDESMEUS DENTICULATUS V. LINEARIS	CEL									51
STEPHANODISCUS	CEL		0.81	54	0.91	47				51
SYNEURA	CEL									
SYNEURA #1	CEL									
SYNEURA #2	CEL									

LAKE NAME: ANACOCO
STORET NUMBER: 2201

CONTINUED

TAXA	FORM	03 20 74			05 30 74			11 08 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
SYNEURA ULNA	CEL	1	1		1	1	X	1	1	
TABELLARIA FINESTRATA	CEL	1	1		1	1		12119.01	609	
TETRAEDRON CAUDATUM	CEL		0.81	54				3.21	101	
TETRAEDRON MINIMUM	CEL		1.71	108					x	
TETRAEDRON MITICUM	CEL		2.81	54		0.91	47	1.61	51	
TETRADEKON TRIGONUM	CEL								x	
V. GRACILE	CEL								x	
TETRAEDRON TUMIDULUM	CEL								x	
TRACHELOMONAS	CEL			x						
TRACHELOMONAS #1	CEL								x	
TRACHELOMONAS BULLA	CEL								x	
TRACHELOMONAS UNCEOLATA	CEL			x						
TOTAL				6538			5132		3197	

LAKE NAME: BRUIN
STURET NUMBER: 2202

NYGAARD TROPHIC STATE INDICES

DATE	03	19	74	05	30	74	11	11	74
MYXOPHYCEAN	04/0	E	3.67	E	1.67	E			
CHLOROPHYCEAN	07/0	E	4.67	E	3.67	E			
EUGLENOPHYTE	0.09	?	0.08	?	0.19	?			
DIATOM	0.25	?	1.17	E	0.75	E			
COMPOUND	13/0	E	11.3	E	7.33	E			

PALMER'S ORGANIC POLLUTION INDICES

DATE	03	19	74	05	30	74	11	11	74
GENUS		19			25			24	
SPECIES		04			00			07	

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE	03	19	74	05	30	74	11	11	74
AVERAGE DIVERSITY	H	3.26		2.43		3.40			
NUMBER OF TAXA	S	23.00		52.00		38.00			
NUMBER OF SAMPLES COMPOSITED	M	2.00		2.00		2.00			
MAXIMUM DIVERSITY MAXH		4.52		5.70		5.25			
MINIMUM DIVERSITY MINH		0.07		0.02		0.04			
TOTAL DIVERSITY	D	13802.84		127249.38		46620.80			
TOTAL NUMBER OF INDIVIDUALS/ML	N	4234.00		52366.00		13712.00			
EVENNESS COMPONENT	J	0.72		0.43		0.65			
RELATIVE EVENNESS	RJ	0.72		0.43		0.65			
MEAN NUMBER OF INDIVIDUALS/TAXA	L	184.09		1007.04		360.84			
NUMBER/ML OF MOST ABUNDANT TAXON	K	1189.00		24829.00		4945.00			

TAXA	FORM	03 19 74			05 30 74			11 11 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
ALPHAEHES LANCEOLATA	CEL	1.1		x	1.1					
ANABATOPSIS	FIL	1.1			2.1	7.4	3882		0.71	98
ANABATOPSIS KACIBURSKII	FIL	1.1					x			
ANKISTRUS SNUSS 7	CEL	1.1	7.0	297						
ANKISTRUS SNUSS FALCATUS	CEL					2.9	1245		3.91	539
CENTRIC DIATOMS	CEL									
CEKATIUM HIRUNDINELLA	CEL									
F. RVALVULICERAS	CEL									
CHLAMYDOMONAS	CEL					0.71	366		0.71	98
CHLAMYDOMONAS GLINDSA	CEL						x			
CHLOROCYANUM ELONGATUM	CEL									
CHLOROGONIUM EUCHLORUM	CEL						x		1.1	147
CHROOCOCCUS #1	CEL									
CHROOCOCCUS #2	CEL					0.31	346			
COELASTRUM CANTERICUM	COL					0.11	73			
V. INTERMEDIUM	COL					0.11	73			
COSMARIA	CEL									
COSMARIA #1	CEL								0.41	49
COSMARIA #2	CEL								x	
COSMARIA #3	CEL								0.41	49
CRUCIGENIA APICULATA	CEL						x			
CRUCIGENIA QUADRATA	CEL						x			
CRYPTOMMAS EROSA	CEL	1.1	17.5	743		0.41	220	1.1	5.01	685
CRYPTOMMAS REFLEXA	CEL						x		2.11	294
CYCLOSTELLA STELLIGERA	CEL						x	1.1	4.31	568
DACTYLIOCHODOPSIS	CEL	1.1	12.3	520	1.1	47.4	26829			
DACTYLIOCHODOPSIS IRREGULARIS	CEL							1.1	36.11	4945
DICHTYOSPHEARIUM PULCHELLUM	CEL					0.11	73		x	
EUGLENA	CEL					0.21	73			x
EUGLENA ACUS	CEL						x			
EUDITIA	CEL						x			
FLAGELLATE	CEL									
FLAGELLATE #1	CEL									
GLERDINIUM GYMNOCHIUM	CEL		7.0	297		1.41	952		6.11	632
GLERDINIUM GYMNOCHIUM	CEL						x			
V. RISCUITILLIFORME	CEL								0.41	49
GLERDINIUM OCULAFUM	CEL						x			
GOLENKINTIA RADIANA	CEL						x			
KINCHURTELLA	CEL						x			
LYCIDYA LAGERHEIMII	FIL						x			
LYNGYA SUBTERRASSINA	FIL						x			
MALLOMPHIAS ACAROIDES	CEL					1.11	586			
MELOSIRA DISTANS	CEL					51	3.21	1685	2.11	294
MELOSIRA GRANULATA	CEL						x		0.71	98
V. ANGUSTISSIMA	CEL									
MELOSIRA GRANULATA	CEL					0.31	346			
V. ANGUSTISSIMA F. SPIRALIS	CEL									
MELOSIRA ITALICA	CEL	1.1	28.1	3189		0.31	356			
MERISMOPEDIA GLAUCA	CEL								1.81	245
MERISMOPEDIA MINIMA	CEL						x			
MERISMOPEDIA TENUISSIMA	CEL						x			
MESOSTIGMA VERIDIS	CEL									
MICHAETINUM PUSTULUM	CEL					0.31	346			
MICROCYSTIS INCERTA	CEL	1.1	7.0	297						
NAVICULA	CEL					0.31	346			
NAVICULA GASTROP	CEL						x			
NITZSCHEA	CEL									
NITZSCHEA #1	CEL									
NITZSCHEA #2	CEL								1.41	196
NITZSCHEA ACICULARIS 2	CEL						x		3.91	539
NITZSCHEA ACTINASTROIDES	CEL						x			
NITZSCHEA PALEA	CEL						x			
NITZSCHEA spp.	CEL						x			
OSCILLATORIA	FIL					1.1	26.31		1.1	2448
OSCILLATORIA #1	FIL		1.71	74			x			
OSCILLATORIA SUBTERRASSINA	FIL						x			
PANDUREA	COL					41	4.31	2271		
PEDIASTRUM DUPLEX	COL						x			
V. CLATHRATUM	COL						x			
PEDIASTRUM DUPLEX	COL						x			
V. RETICULATUM	COL						x			
PEDIASTRUM SIMPLEX	COL						x		0.41	49
PERIDINUM UNDULATUM	CEL						x			
PHACUS CAUDATUS	CEL								0.71	98
PHACUS MEGALOPOIS	CEL								0.71	98
RAPHIDIOPSIS	CEL									
SCHEIDESENUS ABUNDANS	FIL					0.61	293			
SCHEIDESENUS BIJUGA	COL		1.71	74						
SCHEIDESENUS BIJUGA V. ALTERNANS	COL									

LAKE NAME: BRUN
STORET NUMBER: 2202

CONTINUED

TAXA	FORM	03 19 74			05 30 74			11 22 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
SCENEDESmus DIMORPHUS	COL	1	1.71	74	1	1	X	1	1	3.33
SCENEDESmus INTERMEDIUS	COL	1					X	1		
V. BICARPOVITUS	COL									
SCENEDESmus QUADRICAUDA	CUL	1	1.7	74				1	1	2.17
SCENEDESmus spp.	COL	1			0.61		293	1		
SCHROEDERIA SETIGERA	CEL				0.41		220		0.71	98
SPONDYLIUM PLANUM	CEL						X			
STAURASTRUM	CEL						X			
STELLATE DIATOM	CEL	1		X	1					
STEPHANODISCUS	CEL	1					X			
SYNEDRA	CEL	1	3.51	149				1	2.91	392
SYNEDRA #1	CEL	1		X						
SYNEDRA RADIANA ?	CEL	1			0.71		366		2.51	343
TETRAEDRUM MINIMUM	CEL	1								
V. SCRUBICULATUM	CEL	1			0.71		366		0.41	49
TETRAEDRUM PENTAEUDRUM	CEL	1								
TETRAEDRUM REGULARE	CEL	1								
V. INCUS	CEL	1	3.51	149			X			
TETRAEDRUM TRIGONUM	CEL	1					X			
TREUBARIA	CEL	1								
TOTAL				4235			52366		13712	

LAKE NAME: BISTENAU
STORE NUMBER: 2203

NYGAARD TROPHIC STATE INDICES

	DATE	03 21 74	05 31 74	11 11 74
MYXOPHYCEAN	03/0 E	7.00 E	1.00 E	
CHLOROPHYCEAN	06/0 E	13.0 E	5.00 E	
EUGLENOPHYTE	0.44 E	0.35 E	0.83 E	
DIATOM	0.60 E	1.50 E	0.57 E	
COMPOUND	16/0 E	33.0 E	15.0 E	

PALMER'S ORGANIC POLLUTION INDICES

	DATE	03 21 74	05 31 74	11 11 74
GENUS		15	22	01
SPECIES		04	03	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

	DATE	03 21 74	05 31 74	11 11 74
AVERAGE DIVERSITY	H	3.28	4.08	2.33
NUMBER OF TAXA	S	32.00	50.00	30.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	4.00	4.00
MAXIMUM DIVERSITY	MAXH	5.00	5.64	4.91
MINIMUM DIVERSITY	MINH	0.12	0.15	0.29
TOTAL DIVERSITY	D	12386.80	17564.40	2740.08
TOTAL NUMBER OF INDIVIDUALS/ML	N	3460.00	4305.00	1176.00
EVENNESS COMPONENT	J	0.72	0.72	0.47
RELATIVE EVENNESS	RJ	0.71	0.72	0.45
MEAN NUMBER OF INDIVIDUALS/TAXA	L	108.13	86.10	39.26
NUMBER/ML OF MOST ABUNDANT TAXON	K	649.00	603.00	560.00

TAXA	FORM	03 21 74		05 31 74		11 22 74				
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
ACHMANTHES	CEL			X						
ACTINASTRUM	CEL									
ACTINASTRUM HANZSCHII	COL				1.01	43				
ANABAENA	FIL			X	1.01	43				
ANABALIA #1	FIL					X				
ANKISTRODESHUS ?	CEL		1.61	54						
ANKISTRODESHUS FALCATUS	CEL				2.01	86				X
ATHEIYA	CEL				2.01	86				X
CENTRIC DIATOM	CEL									
CENTRIC DIATOM #1	CEL		1.61	54	6.01	172		4.01	56	
CENTRIC DIATOM #2	CEL				3.01	129				
CHLAMYDOMONAS	CEL									
CLUSTERJUM ?	CEL						X			X
CUCOIDI CELL	CEL			X						
COCOIDI CELLED COLONY	COL									
CUCUMEIS	CEL									X
CRUCIGENIA TETRAPEDIA	COL		0.21	216						X
CRYPTODONAS	CEL		4.71	162						
CRYPTODONAS EKOZA	CEL				1110.01	433	1121.61		252	
CRYPTODONAS NEFLEXA	CEL	121	5.71	162						
CYMBELLA AFFINIS	CEL			X						
DACTYLOCUCOPSIS IRREGULARIS	CEL	141	12.51	433	5.01	215		2.41	28	
DINUBRYON	CEL			X	2.01	86				
DINUBRYON BAVARIICUM	CEL									
DINUBRYON SIRTULARIA	CEL						X			
DUCELLERIA CHODATII	CEL									
EUDORINA ELEGANS	CEL			X						
EUGLENA	CEL			X						
EUGLENA ACUS	CEL			X	1.01	43				X
EUNOTIA	CEL			X	1.01	43				
FLAGELLATE #1	CEL				13.01	560				
FLAGELLATE #2	CEL	151	17.21	595	13134.01	603				
FLAGELLATES	CEL						12147.61		560	
FRUSTULIA	CEL									
GLEMUDINUM OCULATUM	CEL		3.11	108	51	2.01	86			
GOLENKNIA	CEL						X			
GOMPHONEMA	CEL									
GYRNDINIJUM ? ORDINATUM	CEL									X
GYRNDINIJUM ALBULUM	CEL									
KIRCHNERIELLA ?	CEL									
LEPODICINCLIS	CEL		3.11	108						
LEPODICINCLIS OVUM	CEL			X						
LYNGBYA	FIL					4.01	172			
LYNGBYA LINNETICA ?	FIL									
MALLONDNAS CAUDATA ?	CEL		1.61	54						
MELOSIRA #4	CEL									X
MELOSIRA DISTANS	CEL	11110.01		649						
MELOSIRA GRANULATA	CEL	131	6.21	216	141	8.01	365			
MELOSIRA GRANULATA V. ANGUSTISSIMA	CEL									
MERISMOPEDIA PUNCTATA	COL				2112.01	517	15111.91		140	
NITZSCHIA	CEL						X			
NITZSCHIA #1	CEL									X
NITZSCHIA #2	CEL			X						
DOCYSTIS	CEL					3.01	129			
OPHIOPHYTUM CAPITATUM	CEL			X						
OSCILLATORIA	CEL									
OSCILLATORIA LINNETICA	FIL		1.61	54	2.01	86		141	2.41	28
PANDORINA MORUM	CUL						X			
PEDIASTRUM DUPLEX	CUL									
V. RETICULATUM	COL									
PENNATE DIATOM	CEL						X			
PENNATE DIATOMS	CEL						X			
PERIDIMUM INCONSPICUUM	CEL		1.61	54				2.41	28	
PHACUS	CEL									
PHACUS CURVICANDA ?	CEL									
PHACUS GLABER	CEL									
PHACUS REGALUPSIS	CEL									
PHACUS NORDSTEDTII	CEL									
PINNULARIA	CEL									
PTEROMONAS ANGULUSA	CEL									
SCENEDESmus	COL		4.71	162						
SCENEDESmus VENTICULATUS	COL									
V. LINEARIS	COL									
SCENEDESmus DIMORPHUS	COL			X		1.01	43			
SCENEDESmus INTERMEDIUS	COL			X		1.01	43			
V. BICAUDATUS	COL									
SCENEDESmus OPULENSIS	COL									
SCENEDESmus QUADRICAUDA	COL		1.61	54						
SELENASTRUM VESTII	CEL									
SPERMATOZODOPSIS	CEL									
STAURASTRUM	CEL									

TAXA	FORM	03 21 74			05 31 74			11 11 74		
		IS	%C	ALGAL UNITS PER ML	IS	%C	ALGAL UNITS PER ML	IS	%C	ALGAL UNITS PER ML
SYNEDRA	CEL	1	1							
SYNEDRA #1	CEL	1	1	9.41	325		4.01	172		X
SYNEDRA ULNA	CEL	1	1							
TETRAEDRUM MINIMUM	CEL	1	1							
V. SCRIBICULATUM	CEL	1	1				1.01	43		
TETRAEDRUM REGULARE	CEL	1	1				1.01	43		
TETRASTRUM IN TERACANTHUM	COL	1	1				1.01	43		
TETRASTRUM STAUROGENIAEFORME	COL	1	1							
TRACHELOMONAS	CEL	1	1							
TRACHELOMONAS ENSIFERA	CEL	1	1					X		
TRACHELOMONAS GIRARDIANA T	CEL	1	1							
TRACHELOMONAS HISPIDA	CEL	1	1					X		
TRACHELOMONAS URCEOLATA	CEL	1	1		X					
TOTAL							3460	4305		1176

LAKE NAME: BLACK BAYOU
STORET NUMBER: 2204

NYGAARD TROPHIC STATE INDICES

DATE	03 22 74	06 03 74	08 26 74	11 11 74
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MYXOPHYCEAN	0470 E	1.33 E	1.71 E	1.00 E
CHLOROPHYCEAN	0270 E	4.00 E	3.57 E	1.00 E
EUGLENOPHYTE	0.67 E	0.37 E	0.24 E	1.25 E
DIATOM	0.50 E	0.33 E	0.67 E	0.29 ?
COMPOUND	1170 E	7.67 E	6.86 E	5.50 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 22 74	06 03 74	08 26 74	11 11 74
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GENUS	10	09	19	05
SPECIES	53	06	07	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE	03 22 74	06 03 74	08 26 74	11 11 74
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AVERAGE DIVERSITY	H	2.63	2.80	3.99	2.21
NUMBER OF TAXA	S	16.00	39.00	73.00	22.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	3.00	3.30	3.00
MAXIMUM DIVERSITY MAXH		4.17	5.29	6.19	4.46
MINIMUM DIVERSITY MINH		0.09	0.05	0.14	0.40
TOTAL DIVERSITY	D	6432.98	30979.20	28185.36	1217.71
TOTAL NUMBER OF INDIVIDUALS/ML	N	2446.00	11064.00	7064.00	551.00
EVENNESS COMPONENT	J	0.63	0.53	0.64	0.50
RELATIVE EVENNESS	RJ	0.63	0.53	0.64	0.45
MEAN NUMBER OF INDIVIDUALS/TAXA	L	135.89	283.69	96.77	25.05
NUMBER/ML OF MOST ABUNDANT TAXON	K	611.00	4802.00	2037.00	220.00

TAXA	FORM	03 22 74			06 03 74			08 26 74			11 11 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
ACTINASTRUM	CEL				1	1.91	269	1	0.61	39			
ANABAENA	FIL				1	3.47	157	131	6.61	463			
ANABAENA PLANCTONICA	FIL				1					x			
ANKISTRODESMUS FALCATUS	CEL	2.3	56		1	5.71	626	1	8.71	618			x
APHANOTHECE	COL			12118.41	2036					x			
APHANOTHECE ELACHISTA	COL									x			
ASTERIONELLA FORMOSA													
V. GRACILLIMA	CEL			11143.41	4802			2.21		154			
CENTRIC DIATOM	CEL				1			1120.41	2007				
CENTRITRACTUS	CEL						x	1.11		77			
CERATIUM HIRUNDINELLA	CEL									x			
CLUSTERIUM	CEL				1	1.41	157					x	
CLUSTERIUM #1	CEL						x			x			
CLUSTERIUM #2	CEL							1.21		77			
CLUSTERIUM SPP.	CEL						x						
COCCONEA IS	CEL									x			
COELASTRUM CAMBRICUM	COL									x			
COELASTRUM SPHAERICUM	COL									x			
CRUCIGENIA APICULATA	COL						x			x			
CRUCIGENIA CRUCIFERA	COL									x			
CRUCIGENIA FENESTRATA	COL					0.51	52						
CRUCIGENIA QUADRATA	COL					0.91	104						
CRUCIGENIA TETRAPEDIA	COL									x			
CRYPTOMUNAS	CEL				0.41	104							
CRYPTOMUNAS EROSA	CEL	1120.41	500							1139.91	220		
CRYPTOMUNAS UVATA	CEL									x			
CRYPTOMUNAS SPP.	CEL							15	5.51	386			
CYANGHYTAN FILAMENT	COL									x			
CYCLOTILLA	CEL	2.3	56										
CYMBELLA TURGIDA	CEL												x
DACTYLUCOCCOPSIS IRREGULARIS	FIL	1325.01	611									1226.71	147
DICTYOSPHAERIUM PULCHELLUM	COL			x				1.11		x			
DINORHOCOCCUS	COL												
DINOBRYON BAVARICUM	CEL						x						
DINOBRYON DIVERGENS ?	CEL						x						
DINOBRYON SOCIALE	CEL	12018.21	445										
DIPLOMEIS ELLIPTICA	CEL												x
EUASTRUM	CEL												
EUDORINA	CEL						x			x			
EUGLENA	CEL			x					2.21	154			
EUGLENA #1	CEL									1516.71	37		
EUGLENA ACUS	CEL						x						x
EUGLENA DESES ?	CEL						x						
EUGLENA ELASTICA ?	CEL						x						
EUGLENA KLEBSII	CEL						x						
EUNUTIA PECTINALIS	CEL						x			x			
FLAGELLATE #1	CEL	1418.21	445							x			
FLAGELLATES	CEL				1410.61	1200		4.91		347			
GOMPHOSPHAERIA LACUSTRES													
V. CERPCA	COL						x						
GYNODINIUM	CEL									x			
KIRCHNERIELLA	CEL					3.31	365		2.21	154			
LEPOCINCLIS	CEL			x					1.11	77			
LEPOCINCLIS OVUM ?	CEL												x
LYNGBYA	FIL								41.8.71	618			
MALLOMONAS ACAROIDES	CEL									x			x
MELOSIRA	CEL												
MELOSIRA #1	CEL									14			x
MELOSIRA GRANULATA	CEL				1513.81	418		0.61		39			
MERISMOPEDIA MINIMA	COL						x						
MERISMOPEDIA TEMUSSIMA	COL						x						
MICROCYSTIS AERUGINOSA	COL									x			
MICROCYSTIS INCERTA	COL			x			x		3.31	232			
MOUREOTIA	FIL			x			x						
NAVICULA	CEL									x			
ONYCHONEMA UNCINATUM	CEL									x			
OOCYSTIS	CEL					0.91	104			x			
OPHIODCYTUM	CEL				0.51	52				x			
OSCILLATORIA	FIL	9.11	222						1.61	116			
OSCILLATORIA #1	FIL									x			
OSCILLATORIA #2	FIL									x			
OSCILLATORIA #3	FIL			x							6.71		37
OSCILLATORIA LIMNETICA	FIL						x			x			
PANDORINA MORUM	COL									x			
PEDIASTRUM BICAUDATA	COL									x			
PEDIASTRUM DUPLEX	COL						x			x			
V. RETICULATUM	COL						x			x			
PEDIASTRUM TETRAS	COL								2.21	154			
PENNATE DIATOMS	CEL								1.11	77			
PERIDINUM	CEL				1.41	157							
PERIDINUM INCONSPICUUM	CEL			x						3.31	232		
PERIDINUM UMBONATUM	CEL						x			3.31	232		
PHACUS #1	CEL						x		0.61	39			

LAKE NAME: BLACK BAYOU
STORE NUMBER: 2264

CONTINUED

TAXA	FORM	03 22 74			06 03 74			08 26 74			11 11 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
PHACUS #2	CEL	1	1				0.91	104	1				
PHACUS CURVICAUDA	CEL	1	1								41	6.7	37
PHACUS GLABER	CEL	1	1								X		
PHACUS LONGICAUDA	CEL	1	1								X		
PHACUS MEGALOPSIS	CEL	1	1			X					X		
PHACUS PYRUM	CEL	1	1								X		
PHACUS SUECICUS	CEL	1	1								X		
POLYEDRIOPSIS SPINULOSA	CEL	1	1								X		
SCENEDESmus ACUMINATUS	COL	1	1								X		
SCENEDESmus DENTILULATUS	COL	1	1						1.11	77			
SCENEDESmus DIMORPHUS	COL	1	1								X		
SCENEDESmus INTERMEDIUS	COL	1	1								X		
SCENEDESmus PERFORATUS	COL	1	1								X		
SCENEDESmus PROTUBERANS	COL	1	1				X				X		
SCENEDESmus QUADRICAUDA	COL	1	1					1.11	77				
SELENASTRUM	CEL	1	1								X		
SPERMATOZOOPSIS	CEL	1	1					0.61	39				
STAUROSTRUM	CEL	1	1								X		
STAUROSTRUM #1	CFL	1	1								X		
STAUROSTRUM #2	CEL	1	1				X		1.11	77			
STAUROSTRUM ARCTISCON	CEL	1	1								X		
SYNEDRA	CEL	151	4.51	111									
SYNEDRA ULNA	CEL	1	1		X	3	2.81	313					
TAELLARIA FENESTRATA	CEL	1	1										
TETRAEDRON GRACILE	CEL	1	1				X						
TETRAEDRON MINIMUM	CEL	1	1						0.61	39			
TETRAEDRON REGULARE	CEL	1	1				X		1.11	77			
TETRAEDRON REGULARE V. INCUS	CEL	1	1								0.61	39	
TETRAESTRUM HETEROCANTHUM	CDL	1	1								0.61	39	
TOLYPOTHRIX	CEL	1	1								X		
TRACHELOMONAS ARMATA	CEL	1	1										
V. STEINII	CEL	1	1								X		
TRACHELOMONAS GLOBULARIS ?	CEL	1	1		X								
TRACHELOMONAS SPP.	CEL	1	1										
TRACHELOMONAS VOLVUCINA	CEL	1	1			0.91	104	1	2.71	193			
TREUARIA	CEL	1	1				X						
ULOTHRIX	CEL	1	1								X		
#GLOSZYNSKIA ? RETICULATA	CEL	1	1						(2)	3.81	270	1	1
TOTAL				2446				11064			7064		551

LAKE NAME: BUNDICKS
STURET NUMBER: 2205

NYGAARD TROPHIC STATE INDICES

	DATE	03 20 74	05 30 74	11 12 74
MYXOPHYCEAN		4.00 E	2.67 E	5.00 E
CHLOROPHYCEAN		19.0 E	6.67 E	16.0 E
EUGLENOPHYTE		0.22 E	0.21 E	0/21 ?
DIATOM		1.00 E	0.30 ?	0.43 E
COMPOUND		31.0 E	12.3 E	24.0 E

PALMER'S ORGANIC POLLUTION INDICES

	DATE	03 20 74	05 30 74	11 12 74
GENUS		16	26	16
SPECIES		03	04	02

SPECIES DIVERSITY AND ABUNDANCE INDICES

	DATE	03 20 74	05 30 74	11 12 74
AVERAGE DIVERSITY	H	2.54	4.19	3.80
NUMBER OF TAXA	S	45.00	61.00	43.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY MAXH		5.49	5.93	5.43
MINIMUM DIVERSITY MINH		0.05	0.07	0.19
TOTAL DIVERSITY	D	32763.46	51013.25	11153.00
TOTAL NUMBER OF INDIVIDUALS/ML	N	12899.00	12175.00	2935.00
EVENNESS COMPONENT	J	0.46	0.71	0.70
RELATIVE EVENNESS	RJ	0.46	0.71	0.69
MEAN NUMBER OF INDIVIDUALS/TAXA	L	286.04	199.59	68.26
NUMBER/ML OF MOST ABUNDANT TAXON	K	7275.00	3223.00	533.00

CONTINUED

TAXA	FORM	03 26 74			05 30 74			11 12 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
ACTINASTRUM	CEL									
ANABAENA PLANTONICA	FIL									
ANKISTRIDESMUS	CEL			X			X			
ANKISTRIDESMUS FALLATUS	CEL		1.31	162						
APHANGLAPS A	COL		2.21	283						
APHANGLAPS C	COL					0.61	74			
APHANTHECE CLATHRATA	CEL		0.31	60						
CENTRIC DIATOM	CEL		1.61	202						
CHLAMYDOMONAS	CEL					5.11	620			
CHLAMYDOMONAS #1	CEL					0.61	99			
CHLAMYDOMONAS CIENKOWSKI	CEL					2.01	248			
CHLAMYDOMONAS GLOBOSA	CEL			X			X			
CLOSTERIUM	CEL									
COCCONEIS	CEL									
COELASTRUM SPHAERICUM	COL									
CRUCIGENIA APICULATA	COL		2.21	283						
CRUCIGENIA FINESTRATA	COL			X		0.21	25			
CRUCIGENIA TETRAPEDIA	COL					21.571	694			
CRYPTOMONAS	CEL									
CRYPTOMONAS EROSA	CEL									
CRYPTOMONAS GUATA	CEL		8.11	1051						
CRYPTOMONAS SPP.	CEL					0.61	00099	151.4.51	133	
CYCLOFILLA	CEL									
CYCLOTELLA RENEGHINIANA	CEL									
DACTYLOCYCOPSIS	CEL		1.31	162		2.61	322	13118.21	533	
DICHTYODOCUS	COL		2.21	283						
DICTYOSPHAERIUM EHRENBURGIANUM	COL			X			X			
DICTYOSPHAERIUM PULCHELLUM	COL		0.31	60		0.41	50			
DINGBATUR BAVARIACUM	CEL									
DINGFLAGELLATE	CEL									
EUASTRUM DENTICULATUM	CEL			X		0.61	50			
LUGLENA	CFL									
LUGLENA ACUS	CEL									
MUNDIA	CEL									
FLAGELLATE	CEL									
FLAGELLATE BI	CEL		1.31	162		1.61	198			
GLENDUDINUM OCULATUM	CEL					0.41	50			
GLOEODACTINUM LINNETICUM	CEL						X			
GLENINNIA KAUAI	CEL					1.61	198			
GOMPHONEMA AUGUR	CEL									
GORIUM PECTORALE	COL					0.61	50			
KEPHYRIUM RUBR-CLAUSTRE	CEL			X						
V. AMPHORA	CEL									
KIRCHNERIELLA	CEL		1.61	202	3111.61	1438		15.91	320	
MELOSIRA DISTANS	CEL		0.31	40	11.56.41	7279	1.5.11	496	0.41	187
MELOSIRA GRANULATA	CEL				1126.51	3223	141.6.41	323		
MELUSIRA GRANULATA	CEL									
V. ANGUSTISSIMA	CEL	13411.61	1496					1.8	53	
PERISMOPEDIA	COL	0.31	40							
PERISMOPEDIA MINIMA	CGL			X						
PERISMOPEDIA TENUISSIMA	COL					4.31	523		0.91	27
MESOSTIGMA	CEL									
MICRACIUM PUSILLUM	CEL		0.61	81						
MICROCYSTIS AERUGINOSA	CGL					51.4.51	545			
MICROCYSTIS INCERTA	COL									
NAVICULA #1	CEL									
NAVICULA #2	CEL									
NAVICULA CAPITATA	CEL									
NITZSCHEA	CEL									
NITZSCHEA #2	CEL			X		2.91	347			
NITZSCHEA FILIFORMIS	CEL									
NITZSCHEA MUSATICA	CEL					3.61	179		3.61	107
DOCYSTIS	CEL			X						
OPIHOCAVUM	CEL									
OPIHOCYTION?	CEL									
OSCILLATORIA	FIL					41.3.71	546			
OSCILLATORIA ?	FIL									
PANDOPINA	COL									
PEDIASTRUM BICAUDATA	COL									
PEDIASTRUM DUPLEX	COL									
V. CLATHRATUM	CGL			X						
PEDIASTRUM TETRAS	CGL									
PEDIASTRUM TETRAS	COL			X						
V. TETRAON	COL									
PENNATE DIATOM	CEL		0.61	81						
PENNATE DIATOM #1	CEL									
PERIDIUM INCONSPICUUM	CEL									
PHACUS	CEL									
PHACUS GLABER	CEL					0.21	25			
PINNULARIA	CEL									
PTEROPOMAS	CEL		0.61	81						
PTEROPOMAS ANGULOSA	CEL			X		1.01	124			
RAPHIGIOPSIS CURVATA	FIL					2.01	248			
SCENEDESMUS ARUNDANS	COL			X			X			
SCENEDESMUS BICAUDATUS	COL		0.61	81	1.0.21	25	0.1	6		

TAXA	FORM	13 20 74			05 30 74			11 12 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
SCENEDESMEUS BIJUGA	COL						1.61	198		
SCENEDESMEUS DENTICULATUS	COL		0.61	81			0.21	25		X
SCENEDESMEUS DIMORPHUS	COL			X			0.21	25		X
SCENEDESMEUS QUADRICAUDA	COL			X			1.21	149		X
SCENEDESMEUS SPP.	COL								1112.71	373
SCHREUERIA SETIGERA	CEL						1.21	149		
SPERMATOZOOPSIS	CEL						2.61	322		
SPHAEROCYSTIS SCHREUERI	COL			X						
STAURASTRUM	CEL							X		
SYNEDRA	CEL						2.41	298		
SYNEDRA #2	CEL							X		
SYNEDRA RUMPENS	CEL							X		
TABELLARIA	CEL							X		
TETRAEDRON CAUDATUM	CEL								0.91	27
TETRAEDRON MINIMUM	CEL							X	2.71	80
TETRAEDRON MITICUM	CEL			X			0.21	25		X
TETRASTRUM HETERACANTHUM	COL								0.91	27
TETRASTRUM STAURGENIAEFORME	COL			X						
TRACHELOMONAS	CEL									
TRACHELOMONAS #1	CEL		4.1	526						
TRACHELOMONAS #2	CEL			X						
TRACHELOMONAS HISPIDA	CEL						0.61	74		
TRACHELOMONAS URCEOLATA	CEL							X		
TRACHELOMONAS VOLVOCINA	CEL						1.21	124		
TREUBARIA SETIGERUM	CEL		0.31	40				X		
TREUBARIA TRIAPPENDICULATA	CEL						0.41	50		
TOTAL							12899	12175		2935

LAKE NAME: CADDO
STORET NUMBER: 2206

NYGAARD TROPHIC STATE INDICES

	DATE	03 23 74	05 31 74	06 03 74
MYXOPHYCEAN		0.670 E	10.0 E	3.50 E
CHLOROPHYCEAN		0.710 E	15.0 E	8.00 E
EUGLENOPHYTE		0.08 ?	0.20 ?	0.123 ?
DIATOM		0.29 ?	0.60 E	0.37 E
COMPOUND		16.70 E	33.0 E	13.0 E

PALMER'S ORGANIC POLLUTION INDICES

	DATE	03 23 74	05 31 74	06 03 74
GENUS		22	22	17
SPECIES		16	12	10

SPECIES DIVERSITY AND ABUNDANCE INDICES

	DATE	03 23 74	05 31 74	06 03 74
AVERAGE DIVERSITY	H	3.26	3.02	3.14
NUMBER OF TAXA	S	32.00	49.00	43.00
NUMBER OF SAMPLES COMPOSITED	M	6.00	4.00	4.00
MAXIMUM DIVERSITY	MAXH	5.00	5.61	5.43
MINIMUM DIVERSITY	MINH	0.04	0.03	0.02
TOTAL DIVERSITY	D	38288.70	93251.56	110553.12
TOTAL NUMBER OF INDIVIDUALS/ML	N	11745.00	30878.00	35208.00
EVENNESS COMPONENT	J	0.65	0.54	0.58
RELATIVE EVENNESS	RJ	0.65	0.54	0.58
MEAN NUMBER OF INDIVIDUALS/TAXA	L	367.03	630.16	818.79
NUMBER/ML OF MOST ABUNDANT TAXON	K	4859.00	15979.00	16418.00

TAXA	FORM	03 23 74			05 31 74			06 03 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
ANABAENA	FIL	1.1	1	131 2.41	734	1	1			
ANABAENA PLANCTUNICA	FIL	141	1.31	152	1	1	X	141	2.31	813
ANABAENOPSIS	FIL	1								
ANKISTRODESmus FALCATUS	CEL	1	4.71	557	1	0.81	246	1	1.31	644
APHANIZUMENON FLOS-AQUAE	FIL						X			
APHANOPHECE CLATHRATA ?	COL	1			2.41	734	X			
ASTERIONELLA FORNOSA	CEL	1								
ASTERIONELLA FORNOSA V. GRACILLIMA	CEL	1	0.41	51	1	0.81	246	1	0.21	74
BINUCLEAKIA	FIL	1								
CHLAMYDORNAS	CEL	121	9.51	1114	151	1.81	489	1	0.41	148
CHLAMYDORNAS CIENKOWSKI ?	CEL	1					X	1	0.61	299
CHLORELLA	CEL	1								
CHELGOGONIUM	CEL	1	0.91	101	1	0.51	163	1		X
CLOSTERIUM	CEL	1								
COELASTRUM CAMBRICUM	COL						X			
V. INTERMEDIUM	COL						X			
CRUCIGENIA APICULATA	COL						X			
CRUCIGENIA FEMESHATA	COL						X			
CRUCIGENIA TETRAPEDIA	COL	1	0.41	51	1	1.31	408	1	1.31	444
CRYPTOMONAS	CEL	151	1.71	202	141	1.31	408	1		
CRYPTOMONAS #1	CEL	1		X	1	1				
CRYPTOMONAS #2	CEL	1		X	1	1				X
CYCLOTELLA STELLIGERA	CEL	1								
CYMATOPLEURA	CEL	1		X	1					
DACTYLUCOCAPSIS	CEL	1			1	6.31	1957	1		
DICTYOSPHEARIUM	COL	1			1	0.31	82	1	0.41	146
DICTYOSPHEARIUM PULCHELLUM	COL	1			1	0.31	82	1		X
DINOBRYON BAVARICUM	CEL	1							1.51	518
DINOBRYON SERTULARIA	CEL	1		X	1					
DINOBRYON SOCIALE	CEL	1			1	2.61	815	1		
EUGLENA	CEL	1			1	0.31	82	1		
EUGLENA ACUS	CEL	1			1	0.31	82	1		
EUNOTIA PECTINALIS	CEL	1			1	0.31	82	1		
V. MINOR F. IMPRESSA	CEL	1	7.31	861	1	1.31	408	1	2.21	740
FLAGELLATE #1	CEL	1			1	1				X
FLAGELLATE #3	CEL	1			1	1				
GLOEUCYSTIS	CEL	1	0.91	101	1			1	0.21	74
GOLDFINIA	CEL	1			1		X	1	1.11	370
GYMNODINIUM ORDINATUM	CEL	1			1		X	1	1.91	666
KIRCHNERIELLA	CEL	1	4.71	557	1	2.11	652	1		X
KIRCHNERIELLA CONVICTA	CEL	1			1		X	1	0.21	74
LAGERHEIMIA SUBSALSA	CEL	1			1			1	7.11	2514
LYNGBYA LAGERHEIMII	FIL	1	2.21	253	1151.71	15979	1146.61	116418		
LYNCBYA SUBTILISSIMA	FIL	1			1	2.11	320	1		
MALLOMONAS	CEL	1			1	2.61	815	1	6.31	2219
MELOSIRA DISTANS	CEL	11141.4	4659	121	5.51	1712	121	8.61	2958	
MELOSIRA-GRANULATA	CEL	1	0.91	101	121	5.51	1712	1	2.91	1035
MERISTOPEDIA VENUSSINA	COL	1			1	0.81	246	1		
MICRACTINIUM	COL	1			1		X	1		
MICROCYSTIS INCERTA	COL	1	2.61	304	1	3.71	1342	1	3.81	1331
MOLGElia ?	FIL	1			1			1	1.11	370
NITZSCHIA	CEL	1	5.21	667	1					X
NITZSCHIA ACICULARIS	CEL	1		X	1					X
NITZSCHIA FILIFORMIS	CEL	1			1					X
NITZSCHIA PALEA	CEL	1			1		X	1		
NITZSCHIA PALEA VARS. ?	CEL	1	0.41	51	1	0.31	1557	1		
OPHIOPHYTUM	FIL	1	0.41	51	1		X	1		
OSCILLATORIA	FIL	131	4.31	506	1		X	1		
OSCILLATORIA GEMINATA	FIL	1			1		X	1		
PEDIASTRUM DUPLEX	COL	1			1	0.31	82	1		
PEDIASTRUM DUPLEX V. RETICULATUM	COL	1			1			1	0.21	74
PECIASTRUM TETRAS	COL	1		X	1	0.31	82	1		X
V. TETRAODON	COL	1		X	1	0.31	82	1		
PENNATE DIATOM	CEL	1			1			1	5.51	1923
PENNATE DIATOMS	CEL	1			1		X	1		
PERIDINUM INCONSPICUUM	CEL	1			1		X	1		
PHACUS	CEL	1			1			1		
PHACUS ACUMINATUS	CEL	1			1		X	1		X
V. TRIOQUETRA ?	CEL	1			1			1		
PHURMIODIUM MUCICOLA	FIL	1			1		X	1		
RAPHIDIOPSIS	FIL	1	6.0	709	1		X	1		
RAPHIDIOPSIS CURVATA	FIL	1		X	1			1		X
SCENELESmus ABUNDANS	COL	1			1	3.1	296	1	0.61	222
SCENELESmus BIJUGA	COL	1	1.31	152	1	1.11	326	1	0.61	222
SCENELESmus DENTICULATUS	COL	1			1		X	1		X
SCENELESmus DIMORPHUS	COL	1	1.31	152	1	0.61	246	1	1.71	592
SCENELESmus QUADRICAUDA	COL	1	1.31	152	1	0.61	246	1	1.71	592
STAURASTRUM	CEL	1	1	1	1	1	X	1		

LAKE NAMES CADDO
STOKET NUMBER: 2206

CONTINUED

TAXA	FORM	03 23 74			05 31 74			06 03 74		
		IS	SC	ALGAL UNITS PER ML	IS	SC	ALGAL UNITS PER ML	IS	SC	ALGAL UNITS PER ML
STEPHANOUDISCUS	CEL	1	1	1	1	3.81	246	1	1	1
SURIRELLA LINEARIS	CEL	1	1	1	1	1	0.21	74	1	1
V. CONSTRICTA	CEL	1	1	1	1	1	0.21	74	1	1
SURIRELLA TENERA ?	CEL	1	1	1	1	1	0.21	74	1	1
SYNEDRA ACUS	CEL	1	1	1	1	1	0.61	222	1	1
SYNEDRA ULNA	CEL	1	1	1.3	152	1.1	326	1	1	1
TETRAIDRUM CAUDATUM	CEL	1	1	1	1	1	0.21	74	1	1
V. LONGICORNUTUM	CEL	1	1	0.91	101	1	1	1	1	1
TETRASTRUM STAUROGENIAEFORME	CEL	1	1	0.61	51	1	1	X	1	1
TRACHELUMONAS PULCHELLA	CEL	1	1	0.61	51	1	1	1	1	1
TOTAL				11745			3.678			35208

LAKE NAME: CUCODRIE
STORET NUMBER: 2207

NYGAARD TROPHIC STATE INDICES

DATE	03 19 74	05 29 74
MYXOPHYCEAN	3.00 E	5.00 E
CHLOROPHYCEAN	4.00 E	9.00 E
EUGLENOPHYTE	0.29 E	0.50 E
DIATOM	2.00 E	1.50 E
COMPOUND	11.0 E	27.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 19 74	05 29 74
GENUS	06	05
SPECIES	00	02

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE	03 19 74	05 29 74	
AVERAGE DIVERSITY	H	2.29	3.03
NUMBER OF TAXA	S	18.00	38.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00
MAXIMUM DIVERSITY MAXH	H	4.17	5.25
MINIMUM DIVERSITY MINH	H	0.06	0.03
TOTAL DIVERSITY	D	9288.24	52022.07
TOTAL NUMBER OF INDIVIDUALS/ML	N	4056.00	17169.00
EVENNESS COMPONENT	J	0.55	0.58
RELATIVE EVENNESS	RJ	0.55	0.58
MEAN NUMBER OF INDIVIDUALS/TAXA	L	225.33	451.82
NUMBER/ML OF MOST ABUNDANT TAXON	K	2143.00	6595.00

TAXA	FORM	03 19 74			05 29 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
ACTINASTRUM	CEL					0.21	32
ANABAENA	FIL					X	
ANABAENOPSIS ELENKINI	FIL					X	
ANKISTRIGDDES MUS	CEL	131	6.61	268	131	0.21	32
CERATIUM HIRUNDINELLA	COL						
F. BRACHYCEPAS	CEL			X			
CHLAMYDOMONAS	CEL					X	
CLOSTRIDIUM	COL					X	
COELASTRUM SPAERICUM	COL			X			
CRUCIGENIA TETRAPEDIA	COL			X			
CRYPTOMONAS EROSA	CEL			X		1.51	256
CRYPTOMONAS REFLEXA	CEL			X			
CRYPTOMONAS SPP.	CEL		4.71	191			
CYANOPHYTA FILAMENT	COL					0.71	128
CYCLOTELLA MENEGHINIANA	CEL				136.41	6595	
DACTYLOCUCOCCOPSIS	CEL		1.91	77	131	1.11	392
EUGLENA	CEL					X	
FLAGELLATE #1	CEL	1152.81	2143			10.11	1729
FLAGELLATES	CEL						
KIRCHNERIELLA	CEL		1.91	77			
MELOSIRA #4	CEL					1.51	256
*MELOSIRA DISTANS	CEL			X	131	9.31	1601
MELOSIRA GRANULATA	CEL				131	1.91	320
MELOSIRA GRANULATA	CEL						
V. ANGUSTISSIMA	CEL			X		2.41	416
MERISMOPEDIA	COL	14111.31	459			0.41	64
MESOSTIGMA VIRIDIS	CEL					0.21	32
MICROCYSTIS INCECTA	COL	151	7.51	306			
NITZSCHIA	CEL	21111.31	459			4.11	704
NITZSCHIA HOLSATICA ?	CEL					3.21	554
PEDIASTRUM DUPLEX	COL						
V. RETICULATUM ?	COL					X	
PENNATI DIATOMS	CEL					6.51	1121
PERIDINUM PLEURALIFORME	CEL						
PHACUS LONGICAUDA	CEL					X	
PHACUS PLEURONECTES ?	CEL						
SCENEDES MUS BICAUDATUS	COL			X			
SCENEDES MUS BIJUGA	COL						
V. ALTERNANS	COL					0.21	32
SCHIZOCHELMYS COMPACTA ?	COL						
SCHROEDERIA SETIGERA	CEL					0.71	128
STEPHANODISCUS	CEL				12815.81	2721	
SYNEDRA	CEL					X	
TETRAEDRUM	CEL						
TETRAEDRUM ARTHRODES SKIFORME	CEL					X	
V. CINTURATA	CEL					0.21	32
TETRAEDRUM MUTICUM	CEL						
TRACHELOMONAS	CEL			X			
TRACHELOMONAS #1	CEL		0.91	38		0.21	32
TRACHELOMONAS #2	CEL					0.21	32
TRACHELOMONAS FLUVIATILIS	CEL					0.61	96
TRACHELOMONAS SCABRA ?	CEL					0.41	64
TOTAL					4056		17169

LAKE NAME: CUTILE
STREIT NUMBER: 2208

NYGAARD TROPHIC STATE INDICES

	DATE	03 20 74	05 30 74	11 12 74
MYXOPHYCEAN		5.00 E	05/0 E	09/0 E
CHLOROPHYCEAN		16.0 E	11/0 E	10/0 E
EUCLENOPHYTE		0.19 ?	0.19 ?	0/19 ?
DIATOM		0.33 E	0.67 E	0.50 E
COMPOUND		27.0 E	21/0 E	21/0 E

PALMER'S ORGANIC POLLUTION INDICES

	DATE	03 20 74	05 30 74	11 12 74
GENUS		13	11	06
SPECIES		03	08	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

	DATE	03 20 74	05 30 74	11 12 74
AVERAGE DIVERSITY	H	3.63	3.77	3.91
NUMBER OF TAXA	S	45.00	31.00	33.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY	MAXH	5.49	4.95	5.04
MINIMUM DIVERSITY	MINH	0.07	0.10	0.07
TOTAL DIVERSITY	D	33719.07	15132.78	25098.29
TOTAL NUMBER OF INDIVIDUALS/ML	N	9289.00	4014.00	6419.00
EVENNESS COMPONENT	J	0.66	0.76	0.78
RELATIVE EVENNESS	RJ	0.66	0.76	0.78
MEAN NUMBER OF INDIVIDUALS/TAXA	L	206.42	129.48	194.52
NUMBER/ML OF MOST ABUNDANT TAXON	K	3226.00	634.00	841.00

TAXA	FORM	03 20 74			05 30 74			11 12 74			
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	
ANABAENA	FIL	1	1		1	3.5	141	1	1	2.4	153
ANKISTRODESMUS FALCATUS	CEL	1	1		1	3.5	141	1	1		
ANKISTRODESMUS FALCATUS ?	FIL	1	1	6.5	607			1	1		
APHAENOCAPSIA	COL	1	1	2.0	187			1	1	7.2	459
APHAETHICE NIDULANS	COL	1	1	1.0	93			1	1		x
ASTERIONELLA FORMOSA	COL	1	1	1.0	93			1	1		
BIMUCLEANIA ?	FIL	1	1					1	1	3.6	229
CERATIUM HIRUNDINELLA	CEL	1	1					1	1		x
CHLORELLA	CEL	1	1					1	1		x
CHLOROGONIUM	CEL	1	1					1	1	1.2	76
CHLOROGONIUM ?	CEL	1	1	2.0	187			1	1		
CLOSTERIOPSIS	CEL	1	1					1	1		
CLOSTERIUM	CEL	1	1		x			1	1		
COELASTRUM	COL	1	1		x			1	1		
COELASTRUM CAMBRICUM	COL	1	1					1	1		
CRUCIGENIA APICULATA	COL	1	1					1	1		
CRUCIGENIA FENESTRATA	COL	1	1		x			1	1		
CRUCIGENIA TETRAPEDIA	COL	1	1					1	1	4.8	306
CRYPTOMUNAS	CEL	1	1					1	1	3.6	229
CRYPTOMUNAS ERUSA	CEL	1	1		x			1	1		
CRYPTOMUNAS REFLEXA	CEL	1	1		x			1	1		
CRYPTOMUNAS SPP.	CEL	1	1	9.5	887	2110.5	423	1	1	6.0	382
CYCLOTELLA STELLIGERA	CEL	1	1			1112.3	493	1	1		
CYMBELLA	CEL	1	1	0.5	47			1	1		
DACTYLOCUCOPSIS	CEL	1	1		x	14115.8	634	1	1		x
DICTYOSPHAERIUM	COL	1	1			5.3	211	1	1		
DICTYOSPHAERIUM #2	COL	1	1	0.5	47			1	1		
DICTYOSPHAERIUM PULLELLUM	COL	1	1	3.0	280			1	1		
DINUCYTON	CEL	1	1					1	1		
DINUCYTON BAVARICUM	CEL	1	1	2.5	233			1	1		x
DINOFAGELLATE	CEL	1	1			317.0	282	1	1		
DINOFAGELLATE CYST	CEL	1	1	0.5	47			1	1		
ELAKATUTHRIX	CEL	1	1		x	1.7	70	1	1		
EUGLENA	CEL	1	1					1	1		
EUGLENA ACUS	CEL	1	1		x			1	1		
EUGLENA SPP.	CEL	1	1	1.5	140			1	1		
EUNOTIA PECTINALIS								1	1		
V. UNDULATA	CEL	1	1					1	1		x
EUNOTIA VALIDA	CEL	1	1		x			1	1		
FLAGELLATE	CEL	1	1			7.0	282	1	1		
FLAGELLATE #1	CEL	1	1	6.5	607	3.5	141	1	1	8.3	535
FLAGELLATE #2	CEL	1	1	1.5	140			1	1	6.0	382
FLAGELLATE #9	CEL	1	1	0.5	47			1	1		
FRANCIA OVALIS	CEL	1	1		x			1	1		
GOLENKINIA	CEL	1	1		x			1	1		
GOMPHONEMA	CEL	1	1		x			1	1		
KIRCHNERIELLA	CEL	1	1	3.0	283			1	1	13.1	841
LYNGBYA	FIL	1	1	4.5	420			1	1		x
MALLOMONAS	CEL	1	1	0.5	47			1	1		
MEDOSTIRA DISTANS	CFL	1	1	34.7	3220			1	1		
MERISPOMEDIA	COL	1	1				x	1	1		
MERISPOMEDIA PUNCTATA	COL	1	1	7.5	700			1	1	9.5	612
MERISPOMEDIA TENUISSIMA	COL	1	1					1	1	10.7	688
MICROCYSTIS	COL	1	1			518.8	352	1	1	3.6	229
MICROCYSTIS AERUGINOSA	COL	1	1					1	1		
MICROCYSTIS GLAUCA	COL	1	1	2.5	233			1	1		
MICROCYSTIS INCERTA	COL	1	1				x	1	1		
MOGUEUTIA ?	FIL	1	1			3.5	141	1	1		
NAVICULA	CEL	1	1				x	1	1		x
NITZSCHIA ACICULARIS	CEL	1	1			3.5	141	1	1		x
NITZSCHIA PALEA	CEL	1	1			3.5	141	1	1	3.6	229
ODCYSTIS	COL	1	1	0.5	47		x	1	1		
OPHIDIUM	CEL	1	1			1.7	70	1	1		
OPHIDIUM CAPITATUM								1	1	2.4	153
V. LONGECORNUTUM	CEL	1	1					1	1		
PEDIASTRUM BICAUATA								1	1		x
V. LONGECORNUTUM	COL	1	1					1	1		
PEDIASTRUM DUPLEX	COL	1	1		x			1	1	1.2	76
PERIODINUM INCONSPICUUM	COL	1	1	1.0	93			1	1		
PHACUS	CEL	1	1				x	1	1		
QUADRIGULA	CEL	1	1				x	1	1		x
RHTZOSOLENIA	CEL	1	1		x		x	1	1		
RHIZOSOLENIA ERIENSIS	CEL	1	1		x		x	1	1		x
SCENEDESMUS ARCUATUS							-	1	1		
V. PLATYDISCA	COL	1	1	0.5	47			1	1	1.2	76
SCENEDESMUS BIJUGA	COL	1	1	1.0	93	1	1.7	70	1	1	
SCENEDESMUS DENTICULATUS	COL	1	1	0.5	47			1	1		
SCENEDESMUS PROTUBERANS	COL	1	1				x	1	1		
SCHROEDERIA SETIGERA	CEL	1	1	4.0	373			1	1		
SYNEOPA	CEL	1	1	0.5	47			1	1		

LAKE NAME: COTILE
STOCK NUMBER: 2208

CONTINUED

TAXA	03 20 74						09 30 74						11 12 74					
	FORM	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC
SYNEDRA ULNA	CEL			X														
TABELLARIA FENESTRATA	CEL																	
TETRAEDRON GRACILE	CEL																	
TETRAEDRON MINIMUM	CEL			X						X								
TETRAEDRON REGULARE	CEL																	
V. INCUS	CEL									X								
TRACHELOMONAS	CEL									X								
TRACHELOMONAS PULCHELLA	CEL			X														
TRACHELOMONAS SPP.	CEL		3.01	93														
TOTAL							9289				4014			6419				

LAKE NAME: CONCORDIA
STORET NUMBER: 2209

NYGAARD TROPHIC STATE INDICES

	DATE	03 19 74	05 30 74	11 11 74
MYXOPHYCEAN		1.67 E	1.67 E	6.00 E
CHLOROPHYCEAN		6.00 E	6.00 E	5.00 E
EUGLENOPHYTE		0.35 E	0.48 E	0.45 E
DIATOM		0.83 E	1.14 E	0.71 E
COMPOUND		12.0 E	14.0 E	21.0 E

PALMER'S ORGANIC POLLUTION INDICES

	DATE	03 19 74	05 30 74	11 11 74
GENUS		09	13	11
SPECIES		07	01	02

SPECIES DIVERSITY AND ABUNDANCE INDICES

	DATE	03 19 74	05 30 74	11 11 74
AVERAGE DIVERSITY	H	0.92	3.82	2.42
NUMBER OF TAXA	S	57.00	66.00	35.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY	MAXH	5.83	6.04	5.13
MINIMUM DIVERSITY	MINH	0.02	0.06	0.03
TOTAL DIVERSITY	D	38607.80	64875.06	51386.28
TOTAL NUMBER OF INDIVIDUALS/ML	N	41965.00	16983.00	21234.00
EVENNESS COMPONENT	J	0.16	0.63	0.47
RELATIVE EVENNESS	RJ	0.16	0.63	0.47
MEAN NUMBER OF INDIVIDUALS/TAXA	L	736.23	257.32	606.69
NUMBER/ML OF MOST ABUNDANT TAXON	K	36743.00	3889.00	11286.00

TAXA	FORM	03 19 74			05 30 74			11 11 74		
		IS	XC	ALGAL UNITS PER ML	IS	XC	ALGAL UNITS PER ML	IS	XC	ALGAL UNITS PER ML
ANABATHMA	FIL									
ANABAENOPSIS	FIL									
ANABAENOPSIS CIRCULARIS ?	FIL	0.11	34					0.51	96	
ANABAENOPSIS ELENKHINII	FIL									
ANKISTRUDESMUS ?	CEL	0.41	169					1.1	239	
ANKISTRUDESMUS FALCATUS	CEL									
APHANOCAPS A	COL									
CENTRIC DIATOMS	CEL									
CERATIUM HIPUNDINELLA										
F. BRACHYCLERAS	CEL	0.11	34					X		
CHLOROGONIUM	CEL							0.51	96	
CHLORELLA FLAGELLATE	CEL									
CHRYSOCEGECS RUFERSCENS	CEL									
CUCCOONEIS	CEL									
COELASTRUM ?	COL									
COELASTRUM CAMBRICUM ?	COL									
COELASTRUM CAMBRICUM										
V. INTEKEDIUM	COL									
COSMARIUM #1	CEL									
COSMARIUM #2	CEL									
COSMARIUM #4	CEL									
COSMARIUM CLEPSYDRA										
V. NANUM	CEL									
CRUCIGENIA TETRAPEDIA	COL									
CRYPTOMONAS	CEL	0.91	373					0.51	96	
CRYPTOMONAS EROSA	CFL									
CRYPTOMONAS REFLEXA	CEL									
CYCLOFELLA	CEL	2.01	647							
CYCLOTELLA MINEGHINIANA	CEL									
CYCLOTELLA STELLIGERA	CEL									
CYMATOPLEURA ELLIPTICA	CEL									
SACTYLLOCOPCOPSIS	CEL									
DACTYLOCUCOPSIS IRREGULARIS	CEL	5.41	2271							
DINOBYXON	CEL									
EPITHYMIA TURGIDA	CEL									
EUASTRUM DENTICULATUM ?	CEL									
EUGLENA #1	CEL									
EUGLENA #2	CEL	0.11	34							
EUGLENA #3	CEL									
EUGLENA #4	CEL									
EUGLENA #5	CEL									
EUGLENA ACUS	CEL									
EUGLENA OXYURIS	CEL									
FLAGELLATE #1	CEL	0.91	373							
FLAGELLATE #4	CEL									
FLAGELLATES	CEL									
FRANCIA	CEL									
GLENODINIUM OCULATUM	CEL									
GLENODINIUM OCULATUM ?	CEL									
GOLENKINIA PAUCISPINA	CEL									
GOLENKINIA RADIATA	CEL	0.21	68							
GYCPHENEMA OLIVACUM	CEL									
GYCPHENEMA SPHAEROPHORUM	CEL									
GYNDODINIUM ALBOLUM	CEL	0.34	136							
GYNDODINIUM URDINATUM	CEL									
CYSTIGMA	CEL									
MELOSIRA DISTANS	CEL	1187.61	36743	4.61	778			110.61	2258	
MELOSIRA GRANULATA	CEL	0.21	68	1.11	183			2.01	430	
MELOSIRA GRANULATA										
V. ANGUSTISSIMA F. SPIRALIS	CEL									
MELSIKA VARIANS	CEL									
MERISMOPEDIA TENUISSIMA	COL	0.31	136	112.71	2150			0.51	96	
MICROCYSTIS INCERTA	COL									
NAVICULA	CEL									
MITZSCHIA ACICULARIS	CEL									
MITZSCHIA HOLSATICA ?	CEL									
OPHIOCYTION CAPITATUM	CEL									
V. LIMGEORNUTUM	CEL	0.21	68							
OSCILLATORIA #1	FIL									
OSCILLATORIA LIMNETICA	FIL	0.11	34							
PANDORINA MORUM	COL									
PANDORINA MORUM ?	COL	0.21	68							
PEDIASISTRUM DUPLEX	COL									
PEDIASISTRUM TETRAS										
V. TETRADON	COL	0.11	34							
PENNATE DIATOMS	CEL									
PERIDINIUM INCONSPICUUM	CEL									
PERIDINIUM QUADRIDIENS	CEL									
PERIDINIUM UMBONATUM	CEL									
PHACUS	CEL									
PHACUS AFUMINATUS	CEL									

LAKE NAME: CONCORDIA
STORET NUMBER: 2209

CONTINUED

TAXA	FORM	03 19 74		05 30 74		11 11 74	
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
PHACUS CAUDATUS	CEL	0.10	34				
PHACUS CURVICAUDA	CEL				X		
PHACUS HELICOIDES	CEL				X		
PHACUS ORBICULARIS ?	CEL				X		
PHACUS PLEUROHETES	CEL						
PHACUS PSEUDONODOSTEDDIES	CEL						
PHACUS PYRUM	CEL						
PHACUS TORTUS	CEL						
PTERONOTAS ANGULOSA	COL						
SCENEDESMUS ABUNDANS	COL	0.10	34	0.30	46		
SCENEDESMUS BICAUDATUS	COL			1.1	183		
SCENEDESMUS BIJUGA	COL				X		
SCENEDESMUS DIURPHUS	COL				X		
SCENEDESMUS QUADRICAUDA	COL	0.60	237	1.1	183		
SCENEDESMUS SPP.	COL				X		
SCHROEDERIA SETIGERA	CEL			0.30	46		
SPERMATOCOOPSISIS	CEL						
STAURASTRUM	CEL						
STAURASTRUM LEPTOGLADUM	CEL						
V. SUBINSIGNE	CEL						
STEPHANODISCUS	CEL						
SURIRELLA #1	CEL						
SURIRELLA #2	CEL						
SURIRELLA ANGUSTATA	CEL						
SYNEDRA	CEL						
SYNEDRA ULNA	CEL	0.10	34				
TETRAEDRON ?	CEL						
TETRAEDRON CAUDATUM	CEL						
TETRAEDRON CAUDATUM	CEL						
V. LONGEORNUTUM	CEL						
TETRAEDRON CONSTRICTUM	CEL	0.10	34	0.50	92		
TETRAEDRON GRACILE	CEL				X		
TETRAEDRON LOBULATUM	CEL				X		
TETRAEDRON MINIMUM	CEL					1.1	239
TETRAEDRON MINIMUM	CEL						
V. SCROBICULATUM	CEL	0.20	68	5.70	961		
TETRAEDRON REGULARE	CEL						
V. TORSUM ?	CEL						
TETRAEDRON TRIGONUM	CEL						
TETRAEDRON TRIGONUM	CEL						
V. GRACILE	CEL						
ULTRASTRUM STAURGENIAEFORME	COL	0.10	34				
TRACHELONOTAS HISPIDA	COL						
V. PUNCTATA	CEL					0.70	143
TRACHELONOTAS LACUSTRIS	CEL				X		
TRACHELONOTAS SIMILIS	CEL			0.50	92		
TRACHELONOTAS VOLVUCINA	CEL			0.50	92		
TREUBARIA TRIAPPENDICULATA	CEL			0.50	92		96

TOTAL

41965

16903

21234

LAKE NAME: CROSS
STORET NUMBER: 2210

NYGAARD TROPHIC STATE INDICES

DATE	03 23 74	06 03 74	08 26 74	11 11 74
MYXOPHYCEAN	4.00 E	2.67 E	2.75 E	1.67 E
CHLOROPHYCEAN	8.00 E	4.50 E	6.50 E	5.33 E
EUGLENOPHYTE	0.06 ?	0.16 ?	0.14 ?	0.14 ?
DIATOM	0.40 E	0.60 E	1.00 E	0.50 E
COMPOUND	14.0 E	8.83 E	10.7 E	8.17 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 23 74	06 03 74	08 26 74	11 11 74
GENUS	16	26	19	19
SPECIES	04	07	07	03

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE	03 23 74	06 03 74	08 26 74	11 11 74
AVERAGE DIVERSITY	H	3.50	3.18	1.00
NUMBER OF TAXA	S	44.00	72.00	57.00
NUMBER OF SAMPLES COMPOSITED	M	5.00	5.00	5.00
MAXIMUM DIVERSITY	MAXH	5.46	6.17	5.83
MINIMUM DIVERSITY	MINH	0.03	0.01	0.05
TOTAL DIVERSITY	D	69275.50	138695.70	213419.00
TOTAL NUMBER OF INDIVIDUALS/ML	N	19793.00	43615.00	213419.00
EVENNESS COMPONENT	J	0.64	0.52	0.17
RELATIVE EVENNESS	RJ	0.64	0.52	0.18
MEAN NUMBER OF INDIVIDUALS/TAXA	L	449.64	605.76	3744.19
NUMBER/ML OF MOST ABUNDANT TAXON	K	7626.00	22203.00	180343.00
				4566.00

TAXA	FORM	03 23 74			06 03 74			08 26 74			11 11 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
ANABALHA	FIL			X			X			X			
ANABAENA #1	FIL				161	4.01	1749						
ANABAENOPSIS RACIBURSKII	FIL				1150.91	22203		1184.51	180343		0.71		144
ANKISTRODESMUS 1 FALCATUS	CEL	5.91	1165				0.91	371		0.01	98		120.21
ANKISTRODESMUS FALCATUS	CEL												4206
APHAENIZODON FLUSS-AQUAE	FIL				151	2.61	1113						
APHAENOTILCE	COL												X
APHAENOTILCE NIJOLANS	COL												
CENTRIC DIATOM	CEL	0.31	58				X						
CHLAMYDOPORAS	CEL						X						
CHLAMYDOPORAS #1	CEL												0.5
CHLAMYDOPORAS #2	CEL												108
CHLAMYDOPORAS GLOBOSEA	CEL												
CHLADOGONIUM	CEL												
CHRIOUCOCUS	CEL												
CHRIOUCOCUS DISPERSUS	CEL												
CLOSTERIUM	CEL	0.31	58				0.11	53					1211.71
COCCOID CILIOMY	COL						0.61	265					180
COELASTRUM CAMBRICUM	COL												
COELASTRUM CAMBRICUM V. INTERMEDIUM	COL												X
COELASTRUM SPHAERICUM	COL												
COELOSPHEARIUM HALCELIANUM	COL												
COELOSPHEARIUM PALLIDIUM	COL												
COELOSPHEARIUM PALLIDIUM T	COL												0.21
COSMARIA	CEL	0.31	58										36
COSMARIA #1	CEL												108
COSMARIA #2	CEL												
COSMARIA #3	CEL												
CRUCIGENIA APICULATA	CEL						0.41	359					
CRUCIGENIA CRUCIFERA	CEL												
CRUCIGENIA FILIFORMIS	CEL												
CRUCIGENIA QUADRATA	CEL												
CRUCIGENIA TRAPLOIDA	COL	0.91	174										36
CRUCIGENIA TRUNCATA	COL												252
CRYPTOMMAS	CEL												
CRYPTOMMAS EROSA	CEL												
CRYPTOMMAS REFLEXA	CEL												
CRYPTOMMAS SPP.	CEL												
CYANOPHYTAN FILAMENT	CEL	1.21	233				1.6	689	51	0.41	893		1.71
CYMBELLA	CEL												
DACTYLLOCAPSIS	CEL	4.11	815				0.11	53					
DACTYLLOCAPSIS IRREGULARIS	CEL												3821.91
DICLIYSPHAERIUM PULCHELLUM	CEL	151	2.21	233			X						4560
DICLIYSPHAERIUM PULCHELLUM T	CEL												
DINOBRYON	CEL												
DINOBRYON BAVARICUM	CEL	0.61	116										
ELAKATOTHRIX	CFL												
ELAKATOTHRIX GELATINOSA	CFL												
EUASTRUM	CEL												
EUASTRUM DENTICULATUM	CEL												
EUGLENA	CEL	0.91	174				0.11	53		0.01	101		
EUGLENA #1	CEL						0.11	53					
EUGLENA ACUS	CEL												
FLAGELLATE #1	CEL	2.41	466				2.61	1113		0.51	1095	0.11	863
FLAGELLATE #3	CEL	1.81	349										
GLENODINUM PENARUIFORME	CEL												
GUNNISHISPERIA	CEL												
GYNNOBINUM	CEL	0.91	174				1.81	795					
GYNNOBINUM ALBULUM	CEL												
GYROSIGMA	CEL												
KIRCHNERIELLA	CEL												
KIRCHNERIELLA T	COL						0.21	306					2.11
LAGERHEIMIA T	CEL						0.41	159		0.11	199		431
LAGERHEIMIA SUBSALSA T	CEL												
LUNATT CELL	CEL	7.11	1398										
LYNGBYA CIRCUMCRETA	FIL						1.61	689	51	0.01	102	0.31	72
LYNGBYA LIMNETICA	FIL						3.61	1590		0.01	102		
MALLOMONAS ACAROIDES	CEL												
MELUSINA DISTANS	CEL	11138.51	7628				0.61	265					
MELOSIRA GRANULATA	CEL	131	4.71	932			0.21	106					
MELOSIRA GRANULATA T	CEL												
MERIDIUM T	CEL												
MERISMOPEDIA TENUISSIMA	COL	161	3.21	641			3.41	1484	131	1.41	3042	4.0	1007
MICROCYSTIS	COL												
MICROCYSTIS AERUGINOSA	COL	121	5.61	1106				X	1.01	85		2.0	575
MICROCYSTIS INCERTA	COL	11	2.11	400			2.71	1106		0.31	603	1412.11	2516
NAVICULA	CEL						0.41	159		0.21	399	0.3	72
MITZSCHLA	CEL												
DEHRONOMAS T	CEL												
OOCYSTIS	CEL						0.61	159		0.11	203		
OOCYSTIS PUSILLA	CEL												

CONTINUED

TAXA	FORM	03 23 74			06 03 74			08 26 74			11 11 74		
		IS	ZC	ALGAL UNITS PER ML	IS.	ZC	ALGAL UNITS PER ML	IS.	ZC	ALGAL UNITS PER ML	IS.	ZC	ALGAL UNITS PER ML
OPHIODCYTUM	CEL			X									
OPHIODCYTUM ?	CEL												
OSCILLATORIA	CEL												
PALMELLUID COLONI	COL		0.31	58		0.11	53		0.91	1817			X
PEDIASTRUM BJCAUDATA													
V. LONGICORNUTUM	COL		0.61	116					0.01	49			
PEDIASTRUM DUPLEX	COL		0.61	116									
V. CLATHRATUM	CUL			X									
PEDIASTRUM DUPLEX	CUL												
V. GRACILITRUM	CUL												
PEDIASTRUM DUPLEX	CUL												
V. RETICULATUM	CUL					0.11	53		0.01	17			X
PEDIASTRUM SIMPLEX	CUL												
PEDIASTRUM SIMPLEX	CUL												
V. DUODENARIUM	CUL												
PEDIASTRUM TETRAS	CUL												
V. TETRADODON	CUL			X									
PENNATE DIATOM	CEL		0.41	1863		0.11	53						
PERIDINIUM INCONSPICUUM	CEL												
PERIDINIUM UMBONATUM	CEL												
PHACUS	CEL												
PHACUS # 1	CEL												
PHACUS # 1	CEL												
PHACUS CAUDATUS	CEL					0.11	53						
PHACUS LUNGICAUDA ?	CEL												X
PHACUS NEGLAUPSISS	CEL												
PHORMIDIUM MUCICOLA	CEL												
POLYEDRIOPSIS SPINULOSA	CEL												
RAPHIDIOPSIS CURVATA	FIL			X		31.6.91	3021		21.9.51	20210			
RAPHIDIOPSIS CURVATA ?	FIL												
RHODOPHOMAS ?	CEL												
SCENEDESMEUS ABUNDANS	COL					0.11	53		0.01	51			X
SCENEDESMEUS ARCUATUS	COL												
V. PLATYDISEA	COL					0.11	53		0.01	17			
SCENEDESMEUS BICAUDATUS	COL		0.31	58		0.51	212		0.01	85			X
SCENEDESMEUS BIJUGA	COL		0.31	58									
SCENEDESMEUS BIJUGA	CUL												
V. ALTERNANS	CUL												X
SCENEDESMEUS DENTICULATUS	COL												
SCENEDESMEUS DENTICULATUS	COL												
V. LINEARIS	COL					0.51	159		0.01	51			X
SCENEDESMEUS DIMIRPHUS	COL					0.11	53						
SCENEDESMEUS GRANULATUS	COL												
SCENEDESMEUS INTERMEDIUS	COL												
SCENEDESMEUS INTERMEDIUS	COL												
V. BICAUDATUS	COL								0.01	51			X
SCENEDESMEUS OBLIVIOSUS	COL												
SCENEDESMEUS UPOLIENSIS	COL		0.31	58		0.71	318		0.01	101			X
SCENEDESMEUS OLAURICAUADA	COL		2.41	466									935
SCENEDESMEUS SPP.	COL												
SCHTZUCHLARYS	COL												
SCHROEDERIA SETIGERA	CEL					0.41	159						
SCHROEDERIA SETIGERA ?	CEL												
SELENASTRUM	COL												
SPERMATUZOOPSIS	CEL		1.21	00232		0.11	53						
STAURASTRUM #1	CEL												
STAURASTRUM #2	CEL												
STAURASTRUM #3	CEL												
SURIRELLA	CEL												
SYNEDRA	CEL												
SYNEDRA #1	CEL					2.61	1113						
SYNEDRA #2	CEL					0.21	106						
TETRAEDRUM	CEL					0.71	318						
TETRAEDRUM CAUDATUM	CEL							0.41	159				
V. LONGICORNUTUM	CEL								0.01	100			36
TETRAEDRUM GRACILE	CEL								X				
TETRAEDRUM MINIMUM	CEL												
V. SCROBICULATUM	CEL					0.51	212		0.01	100			503
TETRAEDRUM NUTICUM	CEL		2.61	524		0.11	53		0.01	51			180
TETRAEDRUM REGULARE	CEL												
V. INCUS	CEL												252
TETRALLANTOS LAGERHEIMII	TET												X
TETRASTRUM HETERACANTHUM	COL					0.11	53						108
TETRASTRUM STAURUGENTAEFORME	COL		0.31	58									0.91
TRACHELOMONAS	CEL												36
TRACHELOMONAS HISPIDA ?	CEL								X				
TRACHELOMONAS VOLVOCINA	CEL												
TRACHELOMONAS VOLVOCHINA	CEL												
V. DERIPHORA	CEL					0.61	159		0.01	98			
TREUBARIA TRIAPPENDICULATA	CEL					0.11	53		0.01	34			X

TOTAL

19793

43615

213619

20018

LAKE NAME: GARBUNNE
STORE NUMBER: 2211

NYGAARD TROPHIC STATE INDICES

DATE	03 21 74	05 31 74	11 11 74
MYXOPHYCEAN	03/0 E	5.00 E	2.50 E
CHLOROPHYCEAN	06/0 E	6.00 E	6.00 E
EUGLENOPHYTE	0.33 E	0.73 E	0.59 E
DIATOM	0.67 E	0.75 E	0.29 ?
COMPOUND	16/0 E	25.0 E	15.5 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 21 74	05 31 74	11 11 74
GENUS	01	15	10
SPECIES	00	03	03

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE	03 21 74	05 31 74	11 11 74
AVERAGE DIVERSITY	H	2.91	3.41
NUMBER OF TAXA	S	31.00	46.00
NUMBER OF SAMPLES COMPOSITED	M	4.00	4.00
MAXIMUM DIVERSITY	MAXH	4.95	5.52
MINIMUM DIVERSITY	MINH	0.15	0.28
TOTAL DIVERSITY	D	7219.71	6830.23
TOTAL NUMBER OF INDIVIDUALS/ML	N	2481.00	2003.00
EVENNESS COMPONENT	J	0.59	0.62
RELATIVE EVENNESS	RJ	0.58	0.60
MEAN NUMBER OF INDIVIDUALS/TAXA	L	80.03	43.54
NUMBER/ML OF MOST ABUNDANT TAXON	K	798.00	599.00
			681.00

TAXA	FORM	03 21 74			05 31 74			11 13 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
ANAEALINA	FIL									
ANAEALINOPSIS RACIBURSKII	FIL									
ANASTRODESMUS FALCATUS	CFL				131	6.51	130	151	4.21	97
ASTENIONELLA ?	CFL									x
ASTERIUMILLA FORMOSA	CFL			x	141	7.61	150			x
ASTERICUCCUS ?	CUL									x
ATTHEYTA	CFL									x
CARTERIA	CFL									x
CENTRIC DIATOM	CFL		3.8	44			7.81	156		3.51
CERATIUM HIFUNDINELLA	CFL						1.31	26		61
CLOSTERIUM	CFL							x		
CLOSTERIUM SETACEUM	CFL									x
COELASTIUM CAMBRICUM	CGL									x
CRUCIGENIA APICULATA	COL									x
CRUCIGENIA TETRAPEDIA	COL			x						
CRYPTOMUNAS	CFL	31	7.1	177	121	9.11	182		23.81	551
CRYPTOMUNAS SPP.	CFL									
CYCLUILLELLA STELLIGERA	CFL						2110.41	208		
CYMELLA	CFL			x						x
CACTYLLOCOPYSIS	CFL	151	14.31	355					3.61	63
DICTYOSPHEARIUM PULCHELIUM	CDA									x
DINOBYXON BAVARICUM	CFL		1.6	44				x		x
DINOBYXON SERTULARIA	CFL			x				x		
DINOFAGELLATE	CFL							x		
DUCILLITERIA CHODATII	COL			x				x		
EUDERINA ELEGANS	CFL									
EUGLENA	CFL									
EUGLENA #1	CFL			x				x		
EUGLENA ACUS	CFL									
EUGLENA ACUS ?	CFL									x
EUGLENA OXYURIS										
V. MINOR	CFL							x		
EUCLENA SPP.	CFL								1.31	30
EUNOTIA	CFL			x				x		
EUNOTIA PECTINALIS	CFL							x		
EUNOTIA PECTINALIS										
V. UNDULATA	CFL									x
FLAGELLATE	CFL									
FLAGELLATE #1	CFL	1132.2	798	5129.91	599					x
FLAGELLATE #3	CFL									x
FLAGELLATE #9	CFL		1.6	44					2129.41	681
FLAGELLATES	CFL									x
FRUSTULIA RHOMBIDES	CFL									x
GLENDEINUM OCULATUM	CFL			x						x
GYMNUINTUM	CFL									x
GYROSICHA	CFL							x		
HORNIDIUM ?	FIL							x		x
HYALOTHeca DISSILIENS	FIL									
KIRCHNERIELLA	CFL								1.71	40
LEPODICINCLIS OVUM	CFL									x
LEPODICINCLIS SPP.	CFL							x		
LUNATE CELL	CFL								2.31	54
LYNGBYA	FIL									
MALLOPUNAS	CFL									
MELOSIRKA	CFL									
MELUSIRA #1	CFL	141	8.0	222			3.31	26		
MELUSIRA #2	CFL			x						
MELUSIRA DISTANS	CFL	2114.31	355					x		x
MELUSIRA GRANULATA	CFL									
MELUSIRA GRANULATA										
V. ANGUSTISSIMA	CFL							x		
MICROCYSTIS INCERTA	CFL							x		
MUGILITIA	FIL							x		
NAVICULA	CFL							x		
NAVICULA #2	CFL			x						x
NAVICULA SPP.	CFL									
NITZSCHIA ACICULARIS	CFL									
NITZSCHIA PALEA	CFL									x
NITZSCHIA SPP.	CFL							x		
OPHIOCYTUM CAPITATUM	CFL									
V. LUNGECURNUTUM	CFL			x						x
OSCILLATORIA	FIL									
OSCILLATORIA LINNETICA	FIL		1.6	44			2.61	52		0.61
OSCILLATORIA ORNATA	FIL							x		
PANDORINA MORUM	CFL							x		
PEUASTRUM DUPLEX	CFL							x		
PENNATE	CFL	12.5	310				1.31			
PENNATE DIATOM	CFL						1.31	26		x
PERIDINIUM INCONSPICUUM	CFL		1.6	44						
PERIDINIUM UMBONATUM	CFL							x		
PHACUS	CFL			x					1.71	40
									1.21	27

TAXA	FORM	03 23 74			05 31 74			11 11 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
PHACUS HELIKOIDES	CEL						x			
PHACUS MEGALOUPSIS	CEL									x
PINNULARIA	CEL									x
RAPHICLIPSIS CURVATA	FIL							7.6		175
SCENEDESmus	COL							0.7		16
SCENEDESmus ABUNDANS	COL			x						
SCENEDESmus ARCUATUS	COL			x						x
SCENEDESmus BICAUDATUS	COL	1.6	44							x
SCENEDESmus BIJUGA	COL				1.3	26	x			x
SCENEDESmus BENTICULATUS	COL							0.7		16
SCENEDESmus GENTICULATUS	COL									
V. LINEARIS	COL			x						
SCENEDESmus PROTODERANS	COL					x				
SCENEDESmus QUADRICAUDA	COL							1.2		27
SYNEDRA	CEL			x						
SYNEDRA #1	CEL				7.8	356	x			
SYNEDRA DELICATISSIMA ?	CEL									x
SYNEDRA ULNA	CEL									x
TABELLARIA	CEL									x
TETRAELORON MINIMUM	CEL									x
TETRAELORON REGULARE	CEL									
V. INCUS	CEL					x				
TETRAELORON TRIGONUM	CEL			x						
V. GRACILE	CEL									
TRACHELOMONAS	CEL					x		1.5		34
TRACHELOMONAS HISPIDA	CEL				2.6	52		0.6		14
TRACHELOMONAS INTERMEDIA	CEL			x						
TRACHELOMONAS LACUSTRIS	CEL					x				
TRACHELOMONAS PULCHERRIMA	CEL							0.6		14
TRACHELOMONAS URCEOLATA	CEL				2.6	52				
TRACHELOMONAS VOLVOCINA	CEL						x	1.2		27
TOTAL					2481			2003		2314

LAKE NAME: FALSE RIVER
STORET NUMBER: 2232

NYGAARD TROPHIC STATE INDICES

	DATE	03 21 74	05 29 74	11 12 74
MYXOPHYCEAN		2.00 E	2.40 E	6.00 E
CHLOROPHYCEAN		1.67 E	3.80 E	8.00 E
EUGLENOPHYTE		0.27 E	0.06 ?	0.07 ?
DIATOM		3.00 E	1.00 E	0.80 E
COMPOUND		5.67 E	7.40 E	19.0 E

PALMER'S ORGANIC POLLUTION INDICES

	DATE	03 21 74	05 29 74	11 12 74
GENUS		01	22	14
SPECIES		00	07	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

	DATE	03 21 74	05 29 74	11 12 74
AVERAGE DIVERSITY	H	1.27	2.56	3.13
NUMBER OF TAXA	S	25.00	57.00	32.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY MAXH		4.64	5.63	5.00
MINIMUM DIVERSITY MINH		0.04	0.02	0.04
TOTAL DIVERSITY	D	12706.35	96675.84	32883.78
TOTAL NUMBER OF INDIVIDUALS/ML	N	10005.00	37764.00	10506.00
EVENNESS COMPONENT	J	0.27	0.44	0.63
KELATIVE EVENNESS	RJ	0.27	0.44	0.63
MEAN NUMBER OF INDIVIDUALS/TAXA	L	400.20	662.53	328.31
NUMBER/ML OF MOST ABUNDANT TAXON	K	7918.00	23937.00	3238.00

TAXA	FORM	03 21 74			05 29 74			11 12 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
ANABAEINA	FIL	1	1		1	1		0.41	44	
ANAEAEINA ?	FIL	1	1				X			
ANABAEINA #1	FIL	131	6.31	630	0.61	227				
ANABAEINA #2	FIL	1	0.41	39	0.11	38				
ANABAENA SPIROIDES	FIL	121	5.51	551						
ANABAEINOPSIS ELENKINII	FIL	1	1		1.21	454				
ANABAEINOPSIS RACIBORSKII	FIL	1	1		0.31	114				
ANKISTRIDIUM FALCATUS	CEL	1	1		1.21	417				
APHANTIZOME NODULOS-AQUAE	FIL	1179.11	7918		0.11	38				
CEPHALIUM HIRUNDINELLA	CEL	1	1	X						
CEPHALIUM HIRUNDINELLA F. BRACHYCEPHAS	CEL				0.41	351				
CHLAMYDOMONAS GLUBUSA	CEL	1	1		1.21	454				
CHLOROGONIUM	CEL	1	1		0.71	265				
CHRYSOPHYLIAN CYST	CEL	1	1							
CLOSTERIUM	CEL	1	1	X			X			
COCCOID COLONY	COL	1	1		0.31	114				
COELASTRUM CAMBRICUM	COL	1	1		0.31	114				
COELASTRUM SPHAERICUM	COL	1	1		0.31	114				
COELOSPHERIUM NAICELIANUM	COL	1	0.41	39						
COSMARIAH	CEL	1	1	X						
COSMARIAH #1	CEL	1	1		0.11	38				
COSMARIAH #2	CEL	1	1		0.11	38				
CRUCIGENIA APICULATA	COL	1	1		0.31	114				
CRUCIGENIA TETRAPEDIA	COL	1	1				X			
KRYPTOMENAS	CEL	1	0.81	79				111	9.21	963
KRYPTOMENAS REFLEXA	CEL	1	1					111	0.41	44
KRYPTOMENAS SPP.	CEL	1	1		1.31	492		121	9.21	963
CYCLOTELLA	CEL	1	1							
CYCLOTELLA MENEGHINIANA	CEL	1	1	X						
DACTYLOCOCOPSIS IRREGULARIS	CEL	1	1		3163.41	23937		14	30.81	3238
EICTYCSphaerium EHRENBEGIANUM	COL	1	1	X						
ELAKATCINRIX	CEL	1	1				X			
EPITHEMIA	CEL	1	1				X			
EUASTRUM DENTICULATUM	CEL	1	1				X			
EUGLENA	CEL	1	1				X			
FLAGELLATE #1	CEL	1	1.61	158				3.31	350	
FLAGELLATE #4	CEL	1	1		0.11	38				
FLAGELLATES	CEL	1	1		6.51	2462				
GLENOBINIUM GYMNODINIUM	CEL	1	1	X						
GLENOBINIUM GYMNODINIUM	CEL	1	1							
V. BISCUTELLIFORME	CEL	1	1		51	1.51	568			
GOLIERKINIA	CEL	1	1		0.11	38				
GYMNOCINIUM ALBOLUM	CEL	1	1				X			
GYMNOCINIUM ORDINATUM	CEL	1	1					3.31	350	
LAGERHEIMIA	CEL	1	1		0.11	38				
LEPUCINCLIS	CEL	1	1	X						
LYNGBYA LIMNETICA	FIL	1	1		41	2.51	947			
MELUSIRA	CEL	1	1		0.21	76		0.81	88	
MELUSIRA DISTANS	CEL	1	1		0.71	265		0.81	86	
MELUSIRA GRANULATA	CEL	141	3.91	294						
V. ANGUSTISSIMA F. SPIRALIS	CEL	1	1		0.21	76		2.51	263	
MERISMOPEDIA	COL	1	1		0.21	169				
MERISMOPEDIA GLAUCA	COL	1	1							X
MERISMOPEDIA TENUISSIMA	COL	1	1		1.61	606		0.41	44	
PICRUCYSTIS AERUGINOSA	COL	1	1	X						
PICRUCYSTIS INCERTA	COL	1	1		0.91	341				
NEPHRICYTION ?	CEL	1	1				X			
NITZSCHIA	CEL	1	1				X			
NITZSCHIA #1	CEL	1	1		3.41	1288		131	6.71	700
NITZSCHIA #2	CEL	1	1					4.21	438	
DUCYSTIS	CEL	1	1	X						
OSCILLATORIA	FIL	1	1		21	2.61	985	15	21.71	2275
PEDIASTRUM DUPLEX	COL	1	1		0.11	38				
PEDIASTRUM DUPLEX	COL	1	1							
V. RETICULATUM	COL	1	1	X						
PEDIASTRUM TETRAS	COL	1	1							X
PENNATE DIATOM	CEL	1	0.41	39						
PENNATE DIATOMS	CEL	1	1					2.51	263	
PERIDINIUM QUADRIDENS	CEL	1	1		0.21	76				X
PHACUS	CEL	1	1	X	0.11	38				X
PHACUS CAULATUS	CEL	1	1				X			X
PTEROPHORAS ANGULOSA	CEL	1	1					0.41	44	
SCENEDESMUS ARCUATUS	COL	1	1		0.11	38				
SCENEDESMUS EJCAUGATUS	COL	1	1		0.11	38				
SCENEDESMUS BIJUGA	COL	1	1					0.81	88	
SCENEDESMUS DENTICULATUS	COL	1	1				X			X
SCENEDESMUS GIMMORPHUS	COL	1	1							X
SCENEDESMUS QUADRICAUDA	COL	1	1		0.41	151				X

TAXA	FORM	08 21 74			09 29 74			11 12 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
SCHKOELERIA SETIGERA	CEL			X			0.6	227		
SPHAEROCYSTIS SCHREUTERI	COL			X				X		
STAURASTRUM	CEL			X						
STAUKASTRUM DEPRESSICEPS	CEL									
V. PLANICEPS	CEL						0.1	38		
STEPHANOISCIUS	CEL						4.0	1515		
STEPHANOISCIUS NIAGARAE	CEL	151	1.6	358			0.3	114		
SYNEURA #1	CEL								0.4	44
SYNECKA RUPPENS	CEL									
SYNECKA ULNA	CEL									
V. DANICA	CEL							X		
TETRAEDRUM	CEL						0.3	114		
TETRAEDRUM MINIMUM	CEL								2.1	219
TETRAEDRUM MINIMUM	CEL									
V. SKOBICULATUM	CEL						1.0	379		
TETRAEDRUM MUTICUM	CEL						9.11	38		
TETRAEDRUM TRIGONUM	CEL						0.11	38		
TRACHELUMNAS	CEL			X						
TRICHIALIA TAIJAPPENDICULATA	CEL						0.11	38		
TRICHISCIA ? GRANULATA	CEL								X	
TOTAL				10005			37764		10506	

LAKE NAME: INDIAN
STORET NUMBER: 2213

NYGAARD TRUPHIC STATE INDICES

	DATE	03 22 74	05 30 74	11 12 74
MYXOPHYCEAN		05/0 E	10.0 E	7.00 E
CHLOROPHYCEAN		09/0 E	8.00 E	11.0 E
EUCLENOPHYTE		0.07 ?	0.33 E	0.22 E
DIATOM		1.00 E	0.60 E	0.44 E
COMPOUND		18/0 E	27.0 E	26.0 E

PALMER'S ORGANIC POLLUTION INDICES

	DATE	03 22 74	05 30 74	11 12 74
GENUS		13	24	07
SPECIES		03	04	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

	DATE	03 22 74	05 30 74	11 12 74
AVERAGE DIVERSITY	H	3.32	4.31	3.25
NUMBER OF TAXA	S	26.00	51.00	48.00
NUMBER OF SAMPLES COMPOSITED	M	3.00	3.00	3.00
MAXIMUM DIVERSITY	MAXH	4.81	5.67	5.58
MINIMUM DIVERSITY	MINH	0.04	0.16	0.13
TOTAL DIVERSITY	D	32937.72	18515.76	16753.75
TOTAL NUMBER OF INDIVIDUALS/ML	N	9921.00	4296.00	5155.00
EVENNESS COMPONENT	J	0.69	0.76	0.58
RELATIVE EVENNESS	RJ	0.69	0.76	0.58
MEAN NUMBER OF INDIVIDUALS/TAXA	L	354.32	84.24	157.40
NUMBER/ML OF MOST ABUNDANT TAXON	K	2990.00	979.00	1685.00

TAXA	FCPN	03 22 74			05 30 74			11 12 74		
		IS	EC	ALGAL PER ML	IS	EC	ALGAL PER ML	IS	EC	ALGAL PER ML
ANABAENA #1	FIL				1.51	65				
ANABAENA #2	FIL					X				
ANKistrodesmus ? BRAUNII	CEL	1	1.71	173						
ANKistrodesmus FALCATUS	CEL	1	1.31	130	1.7	73		0.91	44	X
APHAENIZOMENON ?	FIL									
APHAENOTHECE	COL	1	5.21	520						
APHAENOTHECE NIOLANS ?	COL	1		X						
ARTROSPIRA	FIL				0.31	12				
ASTERIONELLA	CEL	1			1.01	42				X
ASTERIONELLA FORMOSA	CFL	1					X			
CENTRIRACTUS ?	CFL	1					X			
CEPATIUM HIKUNDINILLA	CFL	1			0.31	12				
CHLAMYDOMONAS	CFL	1			0.11	260		0.81	42	
CHLOCELLA ?	CFL	1			1.41	60		0.4	21	
CHLOROGUNIUM	CFL	1			1.61	67				
CHLOROGUNIUM ?	CFL	1			0.11	6				
CHROOCOCCUS	COL	1			3.31	141				
CHYTROPHYTAN FLAGELLATE	CEL	1				X				
CLELASTRUM CAMFRICUM	COL	1								
CLELASTRUM CAMERICUM	COL	1								
V. INTERMEDIUM	COL	1		X						X
CUSMAJUM	CFL	1								
CRUCIGENIA	CFL	1			1.21	53				
CRUCIGENIA FINESTRATA	CFL	1	0.91	67						
CRUCIGENIA TETRAPEDIA	CFL	1						2.51	129	
CRYPTOMONAS	CEL	1	1.71	173						
CRYPTOMONAS EROSA	CEL	1		X						X
CRYPTOMONAS REFLEXA	CEL	1			4.31	183	13	9.61	494	
CYTOFLAGMONAS SPP.	CEL	1			1.71	72				X
CYANOPHYTAN FILAMENT	COL	1								
CYCLOCYELLA	CEL	1	7.41	737						
CYCLOCYELLA MENEGHINIANA	CEL	1								
CYCLOCYELLA SPP.	CEL	1						1132.71	1685	
CYCLOCYELLA STELLIGERA	CEL	1			21.21	114				X
DACTYLOCOLCOPSIS	CEL	1		X	2.21	96				X
DICTYOSPHERIUM	CEL	1	2.61	260				0.41	21	
DINOBRYON BAVARICUM	CEL	1	0.41	43	0.31	32				X
DINOBRYON CYLINDRICUM	CEL	1								X
DINOBRYON SERTULARIA	CEL	1						0.81	42	
DINGEYON SPP.	CEL	1					X			
EUSTIKUM DENTICULATUM	CEL	1					X			
FODORINA ELEGANS	COL	1					X			
FUGLENA #1	CEL	1			51	1.71	73			X
FUGLENA ALUS	CEL	1								
FUGLENA OXYURIS	CEL	1					X			
V. MINOR	CEL	1					X			
EUNOTIA	CEL	1					0.41	22		
FLAGELLATE #1	CEL	1	2.61	260	0.71	287		0.91	44	
FLAGELLATE #3	CEL	1	4.41	433						
FLAGELLATE #9	CEL	1				X				X
FRUSTILLIA RHOMBOIDES	CEL	1								
GLENULINUM GYMNODINIUM	CEL	1			130	1.31	54			X
GLENNKINIA	CEL	1								X
COMPHENEMA	CEL	1								
KEPHYLIUM	CEL	1	0.41	43						
KIRCHNERIELLA	CEL	1	5.21	520	0.41	276		7.51	387	
LAGERHEIMIA	CEL	1					X			
LEPIDOCINCLIS ?	COL	1			22.81	979				
LUMAT CELLED COLONY	COL	1			3.41	18				
LYNGBYA	CEL	1			2.11	91				
PALLUMONAS	CEL	1						0.81	42	
MALLUMONAS ACAROIDES	CEL	1						15.61	313	
PELGSIKA DISTANS	CEL	1	20.51	2036	0.41	17	15	6.21	643	
PELGSIKA GRANULATA	CEL	1		X	0.61	24	12	12.51	697	
MERISPOPELIA TEMUSSIMA	COL	1	30.11	2990	0.71	30	14	13.51	697	
MICROCYSTIS AERUGINOSA	COL	1						1.21	63	
MICROCYSTIS INCERTA	COL	1			3.41	133		4.91	254	
MOUGEOETIA	FIL	1						0.41	22	
MOUGEOETIA ?	FIL	1			0.41	6				
NAVICULA	CEL	1			0.71	30		0.81	42	
NAVICULA SPP.	CEL	1								
NITZSCHIA	CEL	1	1.71	173						
NITZSCHIA ACICULARIS	CEL	1			6.31	270		0.81	42	
OCCYSTIS	CEL	1								X
OSCILLATORIA	FIL	1	1.31	130				0.41	21	
OSCILLATORIA LIMNETICA	FIL	1			5.91	209				
PANDORINA MORUM	COL	1			3.51	23				
FENNATE DIATOM	CEL	1	1.71	173						
PEPIDINIUM INCONSPICUUM	CEL	1			11.61	208				
PEPIDINIUM WISCONSINENSE	CEL	1			3.31	12				
PHACUS	CEL	1					X			
SCENEDESmus ARCUATUS	CEL	1								

LAKE NAME: INDIAN
STOKE NUMBER: 2213

CONTINUED

TAXA	03 22 74			05 30 74			11 12 74			
	FORM	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
V. PLATYDISCA	CEL					0.1	6			
SCENEDESmus BIJUGA	CEL		0.4	43			X	0.8	42	
SCENEDESmus DENTICULATUS	CEL							0.4	21	
SCENEDESmus QUADRICALDA	CEL			X						X
SCHIZOCHELMYS ?	CEL	131	8.7	867						
SYNEDRA	CEL									X
SYNEDRA #1	CEL									X
SYNEDRA ULNA	CEL			X						
TABELLARIA FINESTRATA	CEL				5.2	222				
TETRAEDRUM MINIMUM	CEL		0.4	43						
TETRAEDRUM PENTALURKUM	CEL				0.1	6				X
TRACHELLUMNAS HISPIDA	CEL				0.3	12				X
TRACHELLUMNAS HISPIGA	CEL									X
V. CIRRONATA	CEL									
TRACHELLUMNAS PULCHELLA	CEL		0.9	87	1	1.1	42	1	1	X
TRACHELLUMNAS VOLVOCINA	CEL	1	1	1	1	1	1	1	1	1
TOTAL				9921			4296			5155

LAKE NAME: SALINE
STORET NUMBER: 2214

NYGAARD TROPHIC STATE INDICES

	DATE	03 19 74	05 29 74	11 12 74
MYXOPHYCEAN		01/0 E	1.00 E	01/0 E
CHLOROPHYCEAN		03/0 E	6.50 E	0/0 D
EUGLENOPHYTE		0.50 E	0.47 E	3.00 E
DIATOM		0.50 E	2.00 E	1.00 E
COMPOUND		07/0 E	13.0 E	05/0 E

PALMER'S ORGANIC POLLUTION INDICES

	DATE	03 19 74	05 29 74	11 12 74
GENUS		08	21	04
SPECIES		00	05	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

	DATE	03 19 74	05 29 74	11 12 74
AVERAGE DIVERSITY	H	2.70	3.65	2.05
NUMBER OF TAXA	S	13.50	39.00	8.00
NUMBER OF SAMPLES COMPOSITED	M	2.50	2.00	2.00
MAXIMUM DIVERSITY	MAXH	3.72	5.29	3.00
MINIMUM DIVERSITY	MINH	0.05	0.11	0.11
TOTAL DIVERSITY	D	7670.70	17039.00	1410.40
TOTAL NUMBER OF INDIVIDUALS/ML	N	2841.00	4660.00	688.00
EVENNESS COMPONENT	J	0.73	0.60	0.68
RELATIVE EVENNESS	RJ	0.73	0.19	0.68
MEAN NUMBER OF INDIVIDUALS/TAXA	L	218.54	12.49	66.00
NUMBER/ML OF MOST ABUNDANT TAXON	K	1244.00	967.00	287.00

TAXA	FORM	13 19 74			05 29 74			11 12 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
ACTINASTRUM	CEL	1	1		1	1	244	114	1	
ANABAENA	FIL	1	1		1	1	X	1	1	X
ANKISTRODESMUS FALCATUS	CEL	1	1		13	13.44	625	1	1	
CERATIUM HIRUNDINELLA	CEL	1	1		1	1	X	1	1	
F. FUNCOIDES	CEL	1	1		1	1	X	1	1	
CLOSTERIUM #1	CEL	1	1		1	1	X	1	1	
CLOSTERIUM #2	CEL	1	1		1	1	X	1	1	
COELASTRUM CAMBRIUM	COL	1	1		1	1	X	1	1	
V. INTERMEDIUM	COL	1	1		1	1	244	114	1	
CRUCIGENIA TETRAPEDIA	COL	1	1	8.31	237	1	1	X	1	
CRYPTOMONAS	CEL	1	1		1	1	4.91	227	1	
CRYPTOMONAS DIVATA	CEL	1	1		1	1		1216.71	115	
CRYPTOMONAS REFLEXA	CEL	121	2.11	59	1	1		1	1	
CYCLOTILLA MENEGHINIANA	CEL	1	1		1	1	244	114	1	
DACTYLOCUCOPSIS	CEL	131	16.71	474	1	1		1	1	
SICTYOSPHAERIUM PUECHELLUM	COL	1	1		1	1	1.21	57	1	
DINOBYTON	CEL	1	1	4.21	118	1	1		1	
EUGLENA	CEL	1	1		1	1	244	114	1	
FLAGELLATE #1	CEL	131	43.81	1244	1	1	X	151	8.31	57
FLAGELLATES	CEL	1	1		121	19.51	909	1	1	
GLENNIUM OCULATUM	CEL	1	1		1	1	1.61	57	1	
KIRCHNERIELLA	CEL	1	1		151	9.71	454	1	1	
MALLORONAS	CEL	1	1		1	1	X	1	1	
MELISIRA DISTANS	CEL	151	8.31	237	1	1	6.41	284	11141.71	267
MELISIRA GRANULATA	CEL	1	1		11111.01	511		1	1	
MELISIRA GRANULATA	CEL	1	1		1	1		1	1	
V. ANGUSTISSIMA	CEL	1	1		141	9.71	454	13125.01	172	
NITZSCHIA	CEL	1	1		1	1		1	1	
NITZSCHIA #1	CEL	1	1	4.21	118	1	1	X	1	
COLYSTIS	CEL	1	1		1	1	X	1	1	
OSCILLATORIA	FIL	1	1		1	1	244	114	1	
PEDIASTRUM BICAUDATA	COL	1	1		1	1	X	1	1	
PEDIASTRUM TETRAS	COL	1	1		1	1	1.21	57	1	
V. TETHAUDON	COL	1	1		1	1	1.21	57	1	
PENNATE DIATOM	CEL	1	1	2.11	59	1	1		1	
PHACUS	CEL	1	1		1	1	X	1	1	X
PHACUS ACUMINATUS ?	CEL	1	1		1	1		1	1	
PHACUS PYRUS	CEL	1	1		1	1	X	1	1	
PHACUS TORTUS	CEL	1	1		1	1	X	1	1	
PIEROMONAS	CEL	1	1	2.11	59	1	1		1	
PTEROMONAS ANGULOSA	CEL	1	1		1	1	1.21	57	1	
SCENEDESMUS BICAULATUS	COL	1	1		1	1	X	1	1	
SCENEDESMUS DENTICULATUS	COL	1	1		1	1	X	1	1	
SCENEDESMUS INTERMEDUS	COL	1	1	2.11	59	1	1	X	1	
SCENEDESMUS PHOTUBERANS	COL	1	1		1	1	X	1	1	
SCENEDESMUS SPP.	COL	1	1		1	1	2.41	114	1	
TETRAEDRON	COL	1	1	2.11	59	1	1		141	8.31
TRACHELOMONAS	CEL	1	1		1	1		1	1	
TRACHELOMONAS #1	CEL	141	4.21	118	1	1		1	1	
TRACHELOMONAS #2	CEL	1	1		1	1	X	1	1	
TRACHELOMONAS #3	CEL	1	1		1	1	X	1	1	
TRACHELOMONAS #4	CEL	1	1		1	1	X	1	1	
TRACHELOMONAS SPP.	CEL	1	1		1	1	0.11	284	1	
TRACHELOMONAS VOLVOCINA	CEL	1	1		1	1		1	1	X
TOTAL				2641			4660		668	

LAKE NAME: TURKEY
STORED NUMBER: 2215

NYGAARD TROPHIC STATE INDICES

DATE	03 19 74	05 30 74	11 11 74
HYXOPHYCEAN	4.00 E	4.50 E	1.00 E
CHLOROPHYCEAN	5.00 E	13.0 E	7.00 E
EUGLENOPHYTE	0.56 E	0.31 E	0.58 E
DIATOM	2.50 E	0.89 E	0.35 E
COMPOUND	19.0 E	27.0 E	14.6 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	03 19 74	05 30 74	11 11 74
GENUS	08	20	18
SPECIES	03	00	07

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE	03 19 74	05 30 74	11 11 74
AVERAGE DIVERSITY	H	2.69	4.60
NUMBER OF TAXA	S	35.00	82.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00
MAXIMUM DIVERSITY MAXH		5.13	6.36
MINIMUM DIVERSITY MINH		0.14	0.21
TOTAL DIVERSITY	D	8836.65	25129.80
TOTAL NUMBER OF INDIVIDUALS/ML	N	3285.00	5463.00
EVENNESS COMPONENT	J	0.52	0.72
RELATIVE EVENNESS	RJ	0.52	0.72
MEAN NUMBER OF INDIVIDUALS/TAXA	L	93.86	66.62
NUMBER/ML OF MOST ABUNDANT TAXON	K	1694.00	644.00
			738.00

TAXA	FORM	03 19 74			05 30 74			11 11 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
ACHNANTHES MICROCEPHALA	CEL						X			
ANABAENA #1	FIL						X			
ANABAENA #2	FIL					3.41	184			
ANKISTRODESMUS ?	CEL					2.31	123			
ANKISTRODESMUS FALCATUS	CEL		1.81	58			X		5.21	246
APHANOCAPS A	COL			X			.			
APHANOTHECE	COL						X			
ASTERIONELLA FORMOSA	CEL						X			
BOTRYOCOCCUS BRAUNII	COL			X						
CARTERIA	CEL									
CENTRIC DIATOM	CEL			X		10.11	552			
CHLOROPHYTAN FILAMENT #1	FIL						X			
CLUSTERIUM	CEL									X
CLUSTERIUM #1	CEL			X						
COCCONEIS	CEL						X			
COCCONEIS PLACENTULA	CEL									X
COELASTRUM CAMBRICUM	COL			X						
COELASTRUM CAMBRICUM ?	V.	INTERREGNUM								
COELASTRUM CAMBRICUM	COL					0.61	31			
V. INTERMEDIUM	COL					0.61	31			
COSMARIUM	CEL						X		1.21	55
CRUCIGENIA APICULATA	COL			X		2.81	153			X
CRUCIGENIA TETRAPEGIA	COL					1.11	61		5.81	273
CRYPTOMONAS	CEL					3.91	215			
CRYPTOMONAS #1	CEL			X						
CRYPTOMONAS EROSA	CEL			X					9.81	465
CRYPTOMONAS OVATA	CEL			X						
CRYPTOMONAS REFLEXA	CEL					31	3.91	215		
CRYPTOMONAS spp.	CEL		2.61	86						
CYANOPHYTAN FILAMENT	FIL		1.81	58						
CYCLOTELLA	CEL									
CYCLOTELLA MENEGHINIANA	CEL						X		0.61	27
CYCLOTELLA STELLIGERA	CEL						X			
CYMBELLA	CEL						X			
DACTYLOCOCCOPSIS IRREGULARIS	CEL					11.81	644			X
DICHOTOMOCOCCUS	COL					0.61	31			
DICTYOSPHAERIUM PULCHELLUM	COL					1.11	61		0.61	27
DINOKYON	CEL			X		0.61	31		0.61	27
DINOFLAGELLATE	CEL									
ELAKATOTHRIX	COL									
EPITHENIA	CEL									
EPITHENIA TURGIDA	CEL									
EUASTRUM DENTICULATUM	CEL									
EUDORINA ELEGANS	COL		0.91	29						
EUGLENA	CEL					4.61	31			
EUGLENA #1	CEL			X					2.91	137
EUGLENA #2	CEL			X					0.61	27
EUGLENA ACUS	CEL								0.61	27
EUGLENA CYANIRIS	V.	MINOR								
EUGLENOID CELL	CEL									X
EUNOTIA	CEL			X					0.61	27
EUNOTIA PECTINALIS	V.	VENTRICOSA								X
FLAGELLATE #1	CEL		151.71	1699			X			
FLAGELLATE #2	CEL					0.61	31			
FLAGELLATE #4	CEL						X			
FLAGELLATE #9	CEL		4.41	144					15.61	738
FLAGELLATES	CEL									
FRUSTULIA RHOMBOIDES	CEL									X
GLENODINIUM OCULATUM	CEL			X		0.61	31			
GOMPHOMERIA ACUMINATUM	CEL									
GYMODINIUM	CFL									
GYROSIGMA	CEL									
KIACHNERIELLA ? SUBSOLITARIA	COL						X		0.61	27
LEPODICINCLIS	CEL								1.21	55
LUNATE CELL	CEL								1.71	82
LYNGBYA	FIL						X			
MALLOMONAS	CEL			X			X			
MELOSIRA DISTANS	CEL		7.01	230		6.71	368		7.51	355
MELOSIRA GRANULATA	CEL		6.11	202		2.81	153		6.91	328
MELOSIRA GRANULATA	V.	ANGUSTISSIMA								
MELOSIRA ITALICA	CEL					5.11	276			
MELOSIRA VARIANS	CEL			X						
MERISMOPEDIA TENUISSTIMA	COL		0.91	29		1.11	61		0.61	27
MESOSTIGMA VIRIDIS	CEL								0.61	27
MICROCYSTIS INCERTA	COL					1.11	61		0.61	27
NAVICULA	CEL									
NAVICULA CAPITATA	V.	LUMBERGENESIS								
NITZSCIA	CEL								1.71	82

TAXA	FORM	03 19 74		05 30 74		11 11 74				
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
MITZSCHIA #1	CFL				1.11	61				
MITZSCHIA #2	CFL				X					
MITZSCHIA CAPITATA	CFL				X					X
OPHIODIUM CAPITATUM	CFL				X					X
OSCILLATORIA	FIL			11.21	613					
OSCILLATORIA LIMNETICA	FIL	2.6	86					0.61	27	
PANDORINA MURM	COL	0.9	29		X					X
PANDORINA PRUTUBERANS	COL				X					
PEDIASTRUM BICAUDATUM	COL				X					
PEDIASTRUM BICAUDATUM	COL				X					
V. LENGICORNUTUM	COL			1.11	61					X
PELIASTRUM DUPLEX	COL			4.51	245					X
PELIASTRUM DUPLEX	COL									
V. RETICULATUM	COL			0.61	31					
PEDIASTRUM TETRAS	CUL				X					
V. TETRADON	CUL			3.61	115					X
PENNATE DIATOM	CUL			X	2.31	127		0.61	27	
PHACUS	CUL									
PHACUS #1	CUL							1.21	55	
PHACUS ACUMINATUS	CUL							0.61	27	
PHACUS HELIKOIDES	CUL							0.61	27	
PHACUS PYRUM	CUL							0.61	27	
PINNULARIA	CUL									
PINKULAKIA BRAUNII	CUL									X
V. ARPHICEPHALA	CUL									
PTEROMONAS ANGULOSA	CFL	1.6	58	1.11	61					
RAPHIDIOPSIS	FIL				X					
SCENEDESMEUS	COL				X					X
SCENEDESMEUS #1	COL				X					
SCENEDESMEUS ABUNDANS	COL				X					X
SCENEDESMEUS ARCUATUS	COL				X					
V. PLATYPSICA	CUL				X			1.71	82	
SCENEDESMEUS BICAUDATUS	COL				X			3.51	164	
SCENEDESMEUS BIJUGA	COL			2.61	153					
SCENEDESMEUS BRASILIENSIS	CGL				X					
SCENEDESMEUS DENTICULATUS	COL				X					
SCENEDESMEUS DIMORPHUS	COL			0.61	31					
SCENEDESMEUS INTERMEDIUS	COL			0.61	31					
V. BICAUDATUS	COL				X					
SCENEDESMEUS UPOLIENSIS	COL				X			1.71	82	
SCENEDESMEUS QUADRICAUDA	COL			X	X			1.21	55	
SCENEDESMEUS SPP.	COL			2.61	153					
SPERMATOZOOPSIS	CFL				X					
SPERMATOZOOPSIS EXULTANS	CFL				X			0.61	27	
STEPHANODISCUS	CFL				X			13.113.61	547	
STEPHANODISCUS ?	CFL			X						X
SURIRELLA	CFL				X					
SYNEDRA	CFL				X					
SYNURA	CFL				X					
TETRAEDRON CRUCIATUM	CFL				X					
TETRAEDRON GRACILE	CFL				X					
TETRAEDRON MINIMUM	COL				X					
TETRAEDRON MINIMUM	V. SCRUBICULATUM				X					
V. SCRUBICULATUM	CEL				X					
TETRAEDRON TRIGONUM	CEL			0.61	31					
TETRAEDRON TRIGONUM	V. GRACILE				X					
V. GRACILE	CFL				X			0.61	27	
TETRASTROMA STAUROGENIAEFORME	COL				X					
TRACHELUMONAS FLUVIATILIS	CEL				X					
TRACHELUMONAS HISPIDA	CEL				X					
TRACHELUMONAS HISPIDA	V. PUNCTATA				X					
TRACHELUMONAS LACUSTRES	CEL				X					
TRACHELUMONAS LONGICAUDA	CEL				X					
TRACHELUMONAS OBLUNGA	CEL				X					
V. AUSTRALICA ?	CEL				X					
TRACHELUMONAS PULCHELLA	CEL	1.6	58		X					
TRACHELUMONAS ROTUNDATA	CEL				X					
TRACHELUMONAS ROTUNDATA ?	CEL	1.6	58		X					
TRACHELUMONAS SEABRA	CEL			0.61	31					
TRACHELUMONAS STOKESII	CEL			2.61	153					
TRACHELUMONAS VERrucosa	CEL				X					
V. ZMIEVSKA	CEL				X					
TRACHELUMONAS VOLVOLINA	CEL			2.61	153					
TRACHELUMONAS VOLVOCINA	CEL				X					
V. COMPRESSA ?	CEL				X					
TRACHELUMONAS VOLVOCINA	CEL				X					
V. PUNCTATA ?	CEL			1.71	92			5.21	246	
TRICUBARIA TRIAPPENDICULATA	CEL			1.71	92					
TOTAL				3265		5463		4725		

LAKE NAME: VERRET
STORET NUMBER: 2216

NYGAARD TROPHIC STATE INDICES

	DATE	03 20 74	05 29 74	08 21 74
MYXOPHYCEAN		03/0 E	11.0 E	10.0 E
CHLOROPHYCEAN		05/0 E	21.0 E	20.0 E
EUGLENOPHYTE		0.25 E	0.16 ?	0.27 E
DIATOM		1.50 E	0.67 E	1.00 E
COMPOUND		13/0 E	41.0 E	43.0 E

PALMER'S ORGANIC POLLUTION INDICES

	DATE	03 20 74	05 29 74	08 21 74
GENUS		14	24	25
SPECIES		03	08	34

SPECIES DIVERSITY AND ABUNDANCE INDICES

	DATE	03 20 74	05 29 74	08 21 74
AVERAGE DIVERSITY	H	2.77	1.89	2.62
NUMBER OF TAXA	S	16.00	54.00	59.00
NUMBER OF SAMPLES COMPOSITED	M	4.00	3.00	4.00
MAXIMUM DIVERSITY	MAXH	4.17	5.75	5.88
MINIMUM DIVERSITY	MINH	0.03	0.01	0.01
TOTAL DIVERSITY	D	26079.55	253677.69	329098.20
TOTAL NUMBER OF INDIVIDUALS/ML	N	9415.00	134221.00	125610.00
EVENNESS COMPONENT	J	0.66	0.33	0.45
RELATIVE EVENNESS	RJ	0.07	0.33	0.45
MEAN NUMBER OF INDIVIDUALS/TAXA	L	523.06	2485.57	2128.98
NUMBER/ML OF MOST ABUNDANT TAXON	K	3772.00	93324.00	68499.00

TAXA	FORM	13-20-74			15-29-74			08-21-74		
		IS	SC	ALGAL UNITS PER ML	IS	SC	ALGAL UNITS PER ML	IS	SC	ALGAL UNITS PER ML
AMBAEINA	CEL									
AMBAEINA 83	FIL									
AMBAEINOPSIS	FIL									
AMBAEINOPSIS CIRCULARIS	FIL									
AMBAEINOPSIS ELEPHANTIS	FIL									
AMBAEINOPSIS PHILIPPINENSIS	FIL									
AMBAEINOPSIS RADIOLARIA	FIL									
AMMISTIADUS SQUAMIFERUS	CEL	13835.2	1429							
APHAENIZONON FLUSS-AQUAE	FIL									
CAPTEFIA CONDITIFORMIS	CEL									
CENTRIC DIATOM	CEL									
CHLAMYDOMMAS 83	CEL									
CHLAMYDOMMAS CYANOBACTERI	CEL									
CHLORELLINUM	CEL									
CLADISTERIDIUM ?	CEL									
COELASTRUM CAMBREUM	COL									
V. INFLATUM	COL									
COELASTRUM SPHERICUM	COL									
COSMARIA	CEL									
CRUCIGENIA	COL									
CRUCIGENIA ULTRAPEDIA	COL									
CRYPTOMMAS	CEL									
CRYPTOMMAS ERUSA	CEL	1.2	113							
CYCLITELLA	CEL	2.3	220							
CYCLINOPSPERMUM ?	FIL									
DACTYLOCODPSIS IRREGULARIS	CEL									
DUASTROM DENTICULATUM	CEL									
EUGLENIA	FIL									
EUGLENIA ACUS	FIL	0.8	73							
FLAGELLATE 83	CEL									
FLAGELLATE 84	CEL									
FLAGELLATES	CEL	12116.7	3575							
FRANCEIA OVALIS	CEL									
GYMNOCLIDIUM GYMNODINIUM	CEL									
GYMNOCLIDIUM GYMNODINIUM	CEL									
V. DISCUTELLIFORME	CEL									
GOLEMINTIA	CEL									
GYMNOCLIDIUM DRONIUM	CEL									
GYROSTIGMA	CEL									
KIRCHNERIELLA	CEL									
LYNGYA CIRCULARES	FIL									
LYNGYA LINNETICA	FIL	151 3.9	366	141 1.51	464	12136.21	20330			
MELOSIRA 84	CEL									
MELOSTRA DISTANS	CEL	1.0	73							
MELUSINA GRANULATA	CEL									
V. ANGUSTISSIMA F. SPIRALES	CEL									
MERISPUEDIA TENUISSIMA	COL	4.7	460	5.7	976			1.0	2270	
MICRACHTINUM	COL									
PICROCYSTIS	COL									
PICROCYSTIS INCERTA	COL	1.2	110	5.11	177			3.2	1464	
NAVICELLA	CEL									
NAVICELLA CASCADENSIS	CEL									
NIPHYDUCYTUM	CEL									
NITZSCHIA	CEL									
NITZSCHIA ACICULARIS	CEL									
NITZSCHIA HOLSATICA	CEL									
NITZSCHIA PALEA	CEL									
OSCILLATORIA	FIL									
OSCILLATORIA GENINATA ?	FIL									
PANDORINA MECUM	COL									
PELIASSTRUM DUPLEX	COL									
V. RETICULATUM	COL									
PEDIASTRUM SIMPLEX	CEL									
V. DIGULVAKIUM	CEL									
PEDIASTRUM TETRAS	CEL									
V. TETRAODON	CEL	22150.1	3772							
PENNATE DIATOMS	CEL									
PERIDINIUM	CEL									
PERIDINIUM PUSTILLUM	CEL									
PERIDINIUM QUADRIVIDES	CEL									
PHACUS ACUMINATUS ?	CEL									
PHACUS ARIMALUS	CEL									
PHACUS GLABER	CEL									
PHACUS MEGALEPSIS	CEL									
PHACUS PSEUDODORSOSTEDII	CEL									
RAPHIDIOPSIS CURVATA	FIL									
SCENESDESMUS 82	COL									
SCENESDESMUS ABUNDANS	COL									
SCENESDESMUS BICAUDATUS	COL									
SCENESDESMUS OMORPHUS	COL									
SCENESDESMUS OBliquus	COL									
SCENESDESMUS PROTUBERANS	CEL									
SCENESDESMUS QUADRICAUDA	COL									

TAXA	FORM	03 26 74			05 29 74			06 21 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
SCHELESNUS SPP.	COL	141	9.01	643						
SCHREJEDERIA SETIGERA	CEL	1	1		..1	177				
SPERMATOZOOPSIS	CEL	1	1	1.21	110					
STEPHAMODISCUS	CEL	1	1				x			
STEPHAMODISCUS ASTRAEA	CEL	1	1					1.71	2115	
SURIRELLA	CEL	1	1	0.41	37					
SURIRELLA LINEARIS	CEL	1	1				x			
SYNEURA	CEL	1	1					1.61	1952	
TETRAEDRON GRACILE	CEL	1	1				x			
TETRAEDRON MINIMUM	CEL	1	1	0.41	37					
TETRAEDRON MINIMUM	CEL	1	1				x			
V. SCABICULATUM	CEL	1	1			0.01	700	0.51	651	
TETRAEDRON MUNICUM	CEL	1	1			0.01	177	0.31	325	
TETRAEDRON REGULARE	CEL	1	1			0.01	00	0.21	163	
TETRAEDRON REGULARE	CEL	1	1							
V. INCUS	CEL	1	1	0.41	37	0.11	00			
TETRASTRUM HETEROCANTHUM	COL	1	1			0.11	00			
TETRASTRUM STAURGENIAEFORME	COL	1	1					0.31	163	
TRACHELORDONAS	CEL	1	1	0.41	37					
TRACHELUMONAS PI	CEL	1	1							
TRACHELUMONAS VOLGENSIS	CEL	1	1				x			
TRACHELUMONAS VOLVOCINA	CEL	1	1			0.11	177			
TREUBARIA SETIGERA	CEL	1	1							
TREUBARIA TRIAPPENDICULATA	CEL	1	1			0.11	177			
TOTAL					9915			134721		125610

LAKE NAME: VERNON
STUKE NUMBER: 2217

NYGAARD TROPHIC STATE INDICES

	DATE	03 20 74	05 30 74	11 08 74
MYXOPHYCEAN		03/0 E	4.00 E	5.00 E
CHLOROPHYCEAN		05/0 E	7.00 E	7.00 E
EUGLENOPHYTE		0/08 ?	0.18 ?	0/12 ?
DIATOM		1.00 E	02/0 E	1.50 E
COMPOUND		10/0 E	15.0 E	15.0 E

PALMER'S ORGANIC POLLUTION INDICES

	DATE	03 20 74	05 30 74	11 08 74
GENUS		03	11	03
SPECIES		00	00	00

SPECIES DIVERSITY AND ABUNDANCE INDICES

	DATE	03 20 74	05 30 74	11 08 74
AVERAGE DIVERSITY	H	2.50	2.06	3.79
NUMBER OF TAXA	S	21.00	28.00	26.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	2.00	2.00
MAXIMUM DIVERSITY MAXH		4.39	4.81	4.70
MINIMUM DIVERSITY MINH		0.14	0.02	0.07
TOTAL DIVERSITY	D	4212.50	39558.18	18972.74
TOTAL NUMBER OF INDIVIDUALS/ML	N	1685.00	19203.00	9006.00
EVENNESS COMPONENT	J	0.57	0.43	0.81
RELATIVE EVENNESS	RJ	0.56	0.43	0.81
MEAN NUMBER OF INDIVIDUALS/TAXA	L	80.24	685.82	192.54
NUMBER/ML OF MOST ABUNDANT TAXON	K	723.00	10222.00	935.00

TAXA	FORM	03 20 74			05 30 74			11 08 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
ANKISTRODES MUS ?	CEL	1	1	1			X	1	0.91	47
ANKISTRODES MUS FALCATUS	CEL	1	1	2.81	48					
APHANOTHECE CLATHRATA	COL	1	1		2129.61	5660				
ARTHRODES MUS	CEL	1	1		0.21	46				X
ASTERIONELLA FORMOSA	CEL	1	1		X					
ASTERIONELLA FORMOSA V. GRACILLIMA	CEL	1	1					1	0.91	47
BINUCLEARIA	FIL	1	1							
BINUCLEARIA ?	FIL	1	1				0.41	82		
CENTRIC DIATOM	CEL	1	1	14.31	241		0.51	91		
CHLAMYDOMONAS	CEL	1	1				0.71	144		
CHRYSOPHYTAN FLAGELLATE #2	CEL	1	1				0.71	144		
CRUCIGENIA QUADRATA	COL	1	1		X		2.31	462	1	3.71
CRUCIGENIA TETRAPEDIA	COL	1	1				0.41	62	1	1.91
CRYPTOMONAS	CEL	1	1							94
CRYPTOMONAS EROSA	CEL	1	1	20.01	337	4	2.11	399		
CYANOPHYTAN FILAMENT	FIL	1	1	2.81	48	5	0.41	72		
CYCLOTELLA	CEL	1	1						14	10.31
CYCLOTELLA STELLIGERA	CEL	1	1							514
CYST	CEL	1	1		X					
DACTYLOCOCOPSIS	CEL	1	1							
DACTYLOCOCCLPSIS IRREGULARIS	CEL	1	1	2.81	48					140
DICTYOSPHAERIUM	COL	1	1		X		0.6	108	1	5.61
DINOBRYON ?	CEL	1	1							X
DINOBRYON SOCIALE	CEL	1	1		X					
DINIFLAGELLATE	CEL	1	1							
ELAKATOTHRIX	COL	1	1							0.91
EUGLENA	CEL	1	1			5	0.61	108		
FLAGELLATE #1	CEL	1	1				1.51	199	1	4.71
FLAGELLATE #2	CEL	1	1							234
FLAGELLATE #9	CEL	1	1		X					187
GLOEUCYSTIS	COL	1	1							
GYMNODINIUM ?	CEL	1	1				0.41	72		
GYMNODINIUM ALBULUM	CEL	1	1	2.81	48					
KIRCHNERIELLA	CEL	1	1				2.31	462	1	7.51
LUNATE CELL	CEL	1	1				1.01	183		374
LYNCBYA	FIL	1	1							X
MALLOMONAS	CEL	1	1							
MALLOMONAS ACAROIDES	CEL	1	1		X					
MELOSIRA DISTANS	CEL	1	1	42.91	723	1	3.41	651	1	13.11
MERISMOPEDIA TENUISSIMA	COL	1	1		X	1	53.21	10222	12	18.71
MICROCYSTIS	COL	1	1							935
MICROCYSTIS AERUGINOSA	COL	1	1							
MICROCYSTIS INCEPTA	COL	1	1							374
MONOGETIA	FIL	1	1		X					
NUTZSCHIA	CEL	1	1							468
OOCYSTIS	CEL	1	1							
OOCYSTIS PUSILLA	COL	1	1	2.81	48					
OPHIUCYTIUM	CEL	1	1							47
PALMELLOID COLONY	COL	1	1							
PERIDIUMINUM INCUNSPICUUM	CEL	1	1		X					
PLEUORINA	COL	1	1							
QUADRIGULA	COL	1	1							
SCHIZOCHELAHYS COMPACTA ?	COL	1	1		X		0.21	36		
SYNEDRA	CEL	1	1	5.71	96					
TETRAEDRON TRIGONUM	CEL	1	1	2.81	48					
V. GRACILE	CEL	1	1							
TRACHELUMONAS	CEL	1	1							
TOTAL					1685			19203		5006

LAKE NAME: BLACK
STORET NUMBER: 2219

NYGAARD TROPHIC STATE INDICES

	DATE	05 30 74	08 23 74
MYXOPHYCEAN		2.50 E	3.33 E
CHLOROPHYCEAN		4.00 E	5.00 E
EUGLENOPHYTE		0.38 E	0.20 ?
DIATOM		1.00 E	0/05 ?
COMPOUND		10.0 E	10.0 E

PALMER'S ORGANIC POLLUTION INDICES

	DATE	05 30 74	08 23 74
GENUS		24	12
SPECIES		07	01

SPECIES DIVERSITY AND ABUNDANCE INDICES

	DATE	05 30 74	08 23 74
AVERAGE DIVERSITY	H	4.16	2.65
NUMBER OF TAXA	S	32.00	47.00
NUMBER OF SAMPLES COMPOSITED	M	2.00	1.00
MAXIMUM DIVERSITY MAXH		5.00	5.55
MINIMUM DIVERSITY MINH		0.05	0.04
TOTAL DIVERSITY	D	41575.04	50092.95
TOTAL NUMBER OF INDIVIDUALS/ML	N	9994.00	18903.00
EVENNESS COMPONENT	J	0.83	0.48
RELATIVE EVENNESS	RJ	0.84	0.48
MEAN NUMBER OF INDIVIDUALS/TAXA	L	312.31	402.19
NUMBER/ML OF MOST ABUNDANT TAXON	K	1133.00	9900.00

TAXA	FORM	65 30 74			68 23 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
ANABAENA #1	FIL	1	1	1	1	6.41	74
ANABAENA #2	FIL	1	1	1	1	X	
ANABAENA #3	FIL	1	1	1	1	X	
ANABAENOPSIS RACIBORSKII	FIL			21	7.1	1340	
ANKISTRODESMUS	CEL				2.0	372	
ANKISTRODESMUS FALCATUS	CEL	1	2.0	200	1		
APHAENOTHECE MIDULANS	COL	1	1	3.61	670		
ASTERIONELLA FORMOSA							
V. GRACILLIMA	CEL	1	1	1	1	X	
ATTHEYA	CEL	1	10.71	1066	1		
CHLAMYDOPHORAS	CEL	1	2.71	266	1		
CHLOROGONIUM	CEL	1	1	1	1	X	
CLOSTERIUM	CEL	1	1.31	133	1	0.41	74
COCCONICIS	CEL	1	1	1	1	X	
COSMARIUM	CEL	1	1	1	1	X	
CRUCIGENIA APICULATA	COL	1	0.71	67	1	1	X
CRUCIGENIA QUADRATA	COL	1	1	1	1	X	
CRUCIGENIA SPP.	COL	1	1	1	1.61	296	
CRUCIGENIA TETRAPEDIA	COL	1	1	1	1	X	
CRYPTOMUNAS	CEL	1	1	1	1	X	
CRYPTOMUNAS EROSA ?	CEL	1	0.71	666	1		
CYANOPHYTAN FILAMENT	COL	1	8.01	799	1	1.21	223
DACTYLOCOPROSIS	CEL	1	1	1	1	15.41	2903
DICTYOSPHAERIUM	COL	1	0.71	67	1		
DICTYOSPHAERIUM EHRENSBERGIANUM	COL	1	1	1	0.41	74	
DINOBRYON	CEL	1	1	1	0.41	74	
DINOBRYON BAVARICUM	CEL	121	5.31	533	1		
DINOFAGELLATE	CEL	1	1	1	0.41	74	
EUGLENA	CEL	151	2.01	200	1		
EUGLENA #1	CEL	1	1	1	1	X	
EUGLENA #2	CEL	1	1	1	1	X	
EUGLENA SPP.	CEL	1	1	1	1.21	223	
FLAGELLATE #1	CEL	1	1.31	133	1		
FLAGELLATE #3	CEL	1	10.71	1066	1		
GLENODINIUM GYMNODINIUM	CEL	1	1	1	1	X	
KIRCHNERIELLA	CEL	11.31	1133	1	1	X	
LEPODINCLIS ACUTA	CEL	1	1	1	1	X	
LYNGBYA LINNERICA	FIL	1	1	1	1	52.41	9900
MELISPIRA DISTANS	CEL	1	1	1	1	X	
MERISMOPEDIA TENUISSIMA	COL	1	4.71	466	1		
MICROCYSTIS INCERTA	COL	131	5.31	533	1	1	X
MITZSCHIA	CEL	1	6.01	600	1	1	X
MITZSCHIA ACICULARIS	CEL	1	1	1	2.81	521	
OCYCTIS	CEL	1	1	1	1.21	223	
OPHIODCYTUM	CEL	1	1	1	1.61	298	
PERIDINIUM INCONSPICUUM	CEL	141	2.71	266	1		
PHACUS #1	CEL	1	1	1	1	X	
PHACUS #2	CEL	1	1	1	1	X	
PHACUS #3	CEL	1	1	1	1	X	
PHACUS CAUDATUS	CEL	1	0.71	67	1		
PHACUS NEGALOPSIS	CEL	1	1	1	1	X	
PTEROMONAS	CEL	1	1	1	1	X	
PTEROMUNAS ANGULOSA	CEL	1	5.31	533	1		
RAPHIDIOPSIS	FIL	1	5.31	533	1	0.41	74
RAPHIDIOPSIS CURVATA	FIL	1	1	1	1	X	
SCENEDESmus	COL	1	1	1	1	X	
SCENEDESmus BICAUDATUS	COL	1	1	1	1	X	
SCENEDESmus QUADRICAUDA	COL	1	3.71	67	1		
SCHPOEDERIA SETIGERA	CEL	1	2.01	200	1	1	X
SPERMATOZOOPSIS	CEL	1	1	1	1	3.61	670
STAURASTRUM	CEL	1	1	1	1	1.21	223
SYNEURA	CEL	1	2.71	266	1	1	
TABELLARIA FEMESTRATA	CEL	1	1	1	2.01	372	
TETRAEDRON CAUDATUM	CEL	1	1	1	1	X	
TETRAEVRON MINIMUM	CEL	1	0.71	67	1	0.61	149
TETRAEDRON REGULARE	CEL	1	1	1	0.41	74	
V. INCUS	CEL	1	1	1	1	X	
TRACHELOMUNAS URCEULATA ?	CEL	1	0.71	67	1	1	X
TREUBARIA TRIAPPENDICULATA	CEL	1	1	1	1	X	
TOTAL				9994		16903	

LAKE NAME: COCODRIE
STORET NUMBER: 2220

NYGAARD TROPHIC STATE INDICES

DATE	05 29 74	11 12 74
MYXOPHYCEAN	07/0 E	10.0 E
CHLOROPHYCEAN	11/0 E	19.0 E
EUGLENOPHYTE	0.67 E	0.21 E
DIATOM	0.27 ?	1.75 E
COMPOUND	33/0 E	42.0 E

PALMER'S ORGANIC POLLUTION INDICES

DATE	05 29 74	11 12 74
GENUS	18	18
SPECIES	00	03

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE	05 29 74	11 12 74
AVERAGE DIVERSITY	H	3.63
NUMBER OF TAXA	S	52.00
NUMBER OF SAMPLES COMPOSITED	M	1.00
MAXIMUM DIVERSITY MAXH		5.70
MINIMUM DIVERSITY MINH		0.07
TOTAL DIVERSITY	D	36866.28
TOTAL NUMBER OF INDIVIDUALS/ML	N	10156.00
EVENNESS COMPONENT	J	0.64
RELATIVE EVENNESS	RJ	0.64
MEAN NUMBER OF INDIVIDUALS/TAXA	L	195.31
NUMBER/ML OF MOST ABUNDANT TAXON	K	1592.00
		108065.22
		38321.00
		696.75
		17947.00

TAXA	FORM	05 29 74			11 12 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALGAL UNITS PER ML
ACTINASTRUM	CFL	0	0		0	0	x
ANABAENA CIRCINALIS ?	FIL	0	0		131	1.28	470
ANABAENOPSIS	FIL	0	0		41	1.41	549
ANKISTRODESMUS	CEL	0	0				x
ANKISTRODESMUS ?	CEL	341	7.6	796			
ANKISTRODESMUS FALCATUS	CFL	0	0			1.61	705
APHAENIZOMENON FLOWS-AQUAE	FIL	0	0	x			
APHANOCAPSIA	COL	0	0				x
CENTRIC DIATOM	CEL	0	0	8.6	896		
CENTRIC DIATOMS	CEL	0	0			1.41	549
CERATIUM HIRUNDINELLA	CEL	0	0	x			
CERATIUM HIRUNDINELLA F. EFACIICERAS	CEL	0	0				x
CLUSTERIOPSIS	CEL	0	0				x
COCCONELIS	CEL	0	0				x
COELASTRUM CAMBRICUM	COL	0	0				
V. INTERMEDIUM	COL	0	0				x
COSMARIA	CEL	0	0			0.21	78
CRUCIGENIA FENESTRATA	COL	0	0	1.0	100		
CRUCIGENIA TETRAPEDIA	COL	0	0	x			x
CRYPTOMNAS	CEL	0	0				
CRYPTOMNAS ERUSA	CEL	0	0	11.8	1196		
CRYPTOMNAS REFLEXA	CEL	0	0	1.0	100		
CYANOPHYTA FILAMENT	FIL	0	0				x
CYCLOSTILA MENEGHINIANA	CEL	0	0				x
DACTYLUCOCCOPSIS	CEL	0	0			174	6505
DACTYLUCOCCOPSIS IRREGULARIS	CEL	0	0	14.7	1493		
DICHIOSPHEARIUM ENKHENCERIANUM	CEL	0	0	1.0	100		
DINOBRYUM SOCIALE	CEL	0	0	x			
ECHINOSPHEarella LINNEATICA	CEL	0	0	1.0	100		
EUGLENA #1	CEL	0	0	2.0	199		
EUGLENA #2	CEL	0	0	x		0.61	313
EUGLENA ACUS	CEL	0	0	1.0	100		
EUNOTIA CURVATA	CEL	0	0	x		0.21	78
EUNOTIA FLEXUOSA	CEL	0	0				
V. EURYCEPHALA	CEL	0	0	x			
FLAGELLATE #1	CEL	0	0			1.81	705
FLAGELLATES	CEL	0	0	15.7	1592		
FRUSTULIA RHOMBOIDES	CEL	0	0	x			
GOLLENINIA	CEL	0	0	x			
GOMPHONEMA ACUMINATUM	CEL	0	0	x			
GOMPHONEMA CLIVACIUM	CEL	0	0	x			
GYROSIGMA	CEL	0	0				x
KIRCHNERIELLA	CEL	0	0			1.01	392
LEPOCINCLIS CYAN	CEL	0	0	x			
LUNATE CELL	CEL	0	0			0.61	313
LYNGBYA LINNETICA	FIL	0	0			1140.61	17947
MELOSIRA DISTANS	CEL	0	0	x		51.531	2038
MELOSIRA GRANULATA	CEL	0	0	x			x
V. ANGUSTISSIMA	CEL	0	0			1.21	470
MELOSIRA GRANULATA V. ANGUSTISSIMA F. SPIRALIS	CEL	0	0				x
MERISTIPEDIA CLAVCA	COL	0	0	1.0	100		
MERISTIPEDIA TENUISSIMA	COL	0	0	x			x
MESOSTIGMA VIRIDIS	CEL	0	0				x
MICROCYSTIS INCERTA	CEL	0	0			2.51	942
NITZSCHIA #1	CEL	0	0				x
NITZSCHIA ACICULARIS	CEL	0	0				x
NITZSCHIA SPP.	CEL	0	0			2110.6	4075
DOLYSTIS	CEL	0	0				x
OSCILLATORIA #1	FIL	0	0	6.9	697		
OSCILLATORIA TENUIS	FIL	0	0	x			x
PEDIASTRUM BICAUDATA	COL	0	0				
PEDIASTRUM TETRAS	CFL	0	0			0.4	357
V. TETRADON	CFL	0	0				x
PERIDINUM INDOMSPICUM	CFL	0	0	x			
PHACUS	CFL	0	0				x
PHACUS CAUDATUS	CFL	0	0	x			
PHACUS HELICOIDES	CFL	0	0	x			
PHACUS PLEURONECTES	CFL	0	0	x			
PHACUS PYRUM	CFL	0	0	x		0.21	78
PHACUS SUCCUS	CFL	0	0	x			
PINNULARIA	CFL	0	0	x			
PINNULARIA ABAUJENSIS	CFL	0	0	x			
FITTHOPHORA DEDOGONIA	FIL	0	0	x			
PTEROMONAS ANGULOSA	CFL	0	0				x
RAPHIDIOPSIS	FIL	0	0				x
RAPHIDIOPSIS CURVATA	FIL	0	0			0.06	235
RHIZOSOLENIA	CEL	0	0	1.0	100		
SCENEDESmus	COL	0	0			1.61	627

LAKE NAME: CROCDBRÉ
STORET NUMBER: 2220

CONTINUED

TAXA	FORM	05 29 74			11 12 74		
		IS	ZC	ALGAL UNITS PER ML	IS	ZC	ALCAL UNITS PER ML
SCENEDESMUS BICAUDATUS	COL						X
SCENEDESMUS BIJUGA	COL		1.01	100			
SCENEDESMUS DENTICULATUS	COL			X			
SCENEDESMUS GIMMORPHUS	COL						X
SCENEDESMUS QUADRICAUJA	COL						
SCHRLÜDERIA SETIGLFA	CFL					0.61	235
SPERMATOZOOPSIS	CFL					0.61	235
SPHAEROCYSTIS SCHNEIDERI	CDE			X			
SPIRULINA MAJOR	CFL			X			
STEPHANODISCUS	CFL						X
SURIRELLA	CFL			X			
SYNEDRA	CFL	31	13.71	1393			
SYNEDRA ULNA	CFL			X			
TABELLARIA	CFL			X			
TETRAEDRUM GRACILE	CFL			X			X
TETRAEDRUM MINIMUM	CFL					0.41	157
V. SCRBICULATUM	CFL					0.21	78
TETRAEDRUM MUTICUM	CFL						
TETRAEDRUM REGULARE	CFL		1.01	100			
TETRASTRUM HETERACANTHUM	CUL						X
TRACHELOMONAS	CFL					0.61	157
TRACHELOMONAS DUBIA	CFL			X			
TRACHELOMONAS HISPIDA	CFL		2.01	199			
TRACHELOMONAS SCHAUINSLANDII	CFL		1.01	100			
TRACHELOMONAS VOLVOCINA	CFL		5.91	597			
ZYGOTE	CFL		1.01	100			
TOTAL				10156			38323

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

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16. ABSTRACT This is a data report presenting the species and abundance of phytoplankton in the 19 lakes sampled by the National Eutrophication Survey in the State of Louisiana. 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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