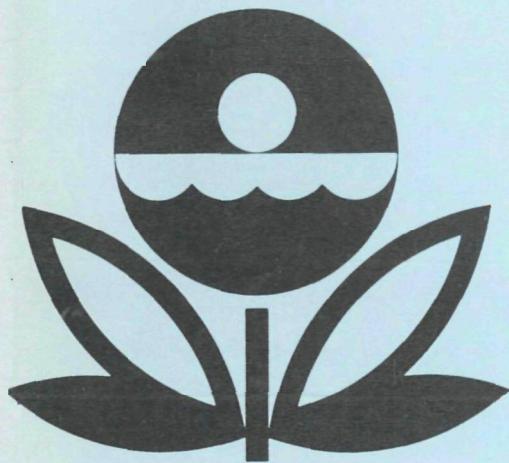


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DISTRIBUTION OF PHYTOPLANKTON
IN SOUTH CAROLINA LAKES

WORKING PAPER NO. 690

CORVALLIS ENVIRONMENTAL RESEARCH LABORATORY - CORVALLIS, OREGON
and
ENVIRONMENTAL MONITORING & SUPPORT LABORATORY - LAS VEGAS, NEVADA

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by

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FOREWORD

The National Eutrophication Survey was initiated in 1972 in response to an Administration commitment to investigate the nationwide threat of accelerated eutrophication to freshwater lakes and reservoirs. The Survey was designed to develop, in conjunction with State environmental agencies, information on nutrient sources, concentrations, and impact on selected freshwater lakes as a basis for formulating comprehensive and coordinated national, regional, and State management practices relating to point source discharge reduction and nonpoint source pollution abatement in lake watersheds.

The Survey collected physical, chemical, and biological data from 815 lakes and reservoirs throughout the contiguous United States. To date, the Survey has yielded more than two million data points. In-depth analyses are being made to advance the rationale and data base for refinement of nutrient water quality criteria for the Nation's freshwater lakes.

INTRODUCTION

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

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

This report presents the species and abundance of phytoplankton in the 13 lakes sampled in the State of South Carolina (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 South Carolina

| <u>STORET #</u> | <u>LAKE NAME</u> | <u>COUNTY</u> |
|-----------------|---------------------------|---|
| 4503 | Fishing Creek Reservoir | Lancaster, Chester |
| 4504 | Lake Greenwood | Laurens, Greewood, Newberry |
| 4505 | Lake Hartwell | Anderson, Oconee, Pickens (Franklin, Hart in GA) |
| 4506 | Lake Marion | Berkeley, Clarendon, Sumter, Calhoun, Orangeburg |
| 4507 | Lake Murray | Lexington, Saluda, Richland, Newberry |
| 4508 | Lake Robinson | Darlington, Chesterfield |
| 4510 | Lake Wateree | Kershaw, Fairfield, Lancaster |
| 4511 | Lake Wylie (Lake Catawba) | York (Gaston, Mecklenburg in NC) |
| 4512 | Lake Moultrie | Berkeley |
| 4513 | Lake Keowee | Oconee, Pickens |
| 4514 | Lake Secession | Abbeville, Anderson |
| 4515 | Saluda Lake | Greenville, Pickens |
| 4516 | Lake William C. Bowen | Spartanburg |

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. EPA 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. EPA 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 a uniform mixture 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

Four milliliters (ml) of Acid-Lugol's solution (Prescott 1970) were added to each 130-ml sample from each site at the time of collection for preservation. 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 supernatant. The volume of the removed supernatant and the volume of the remaining concentrate were measured and concentrations determined. A small (8 ml) library subsample of the concentrate was then taken. The remaining concentrate was gently agitated to resuspend the plankton and poured into a capped, graduated test tube. If a preliminary examination of a sample indicated the need for a more concentrated sample, the contents of the test tube were further concentrated by repeating the settling method. Final concentrations varied from 15 to 40 times the original.

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

Backup samples, library samples, permanent sample slides, and Hyrax-mounted diatom slides are being stored and maintained at the U.S. EPA's 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.

QUALITY CONTROL

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

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

RESULTS

The Appendix summarizes all of the phytoplankton data collected from the State by the Survey. It is organized by lake, including 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. EPA's computer system which processes and maintains water quality data.] The first two digits of the STORET number identify the State; the last two digits identify the lake.

NYGAARD'S TROPHIC STATE INDICES

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

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

Table 2. Nygaard's Trophic State Indices
adapted from Hutchinson (1967)

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

PALMER'S ORGANIC POLLUTION INDICES

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

Table 3. Algal Genus Pollution Index (Palmer 1969)

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

Table 4. Algal Species Pollution Index (Palmer 1969)

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

In analyzing a water sample, any of the 20 genera or species of algae present in concentrations of 50 per ml 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 (1962). 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 (1966), the average diversity per individual for these types of samples can be estimated from the Shannon-Wiener formula (Shannon and Weaver 1962):

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

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 ml 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 , which was verified by our own calculations. Our counts are in number per ml 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 ml or 0.008 per ml was used in the calculations since at least one individual of the taxon must have been present in the collection.

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

Zand (1976) suggests that diversity indices be expressed in units of "sits", i.e., in logarithms to base S (where S is the total number of taxa in the sample) instead of in "bits", i.e., in logarithms to base 2. Zand points out that the diversity index in sits per individual is a normalized number ranging from 1 for the most evenly distributed samples to 0 for the least evenly distributed samples. Also, it can be used to compare different samples, independent of the number of

taxa in each. The diversity in bits per individual should not be used in direct comparisons involving various samples which have different numbers of species. Since MaxH equals $\log S$, the expression in bits is equal to $\log S$ or 1. Therefore diversity in bits per individual is numerically equivalent to J, the evenness component for the Shannon-Wiener formula.

SPECIES OCCURRENCE AND ABUNDANCE

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

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APPENDIX

SUMMARY OF PHYTOPLANKTON DATA

The Appendix format was computer generated. 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, EUNOTIA ?, FLAGELLATE, FLAGELLATES, MICROSYSTIS INCERTA ?, CHLOROPHYTAN COCCOID CELLED COLONY). When species determinations were not possible, symbols or descriptive phrases were used to separate taxa for enumeration purposes. Each name on a list, however, represents a unique species different from any other name on the same list, unless otherwise noted, for counting purposes.

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

LAKE NAME: FISHING CREEK RES.
STORET NUMBER: 4503

NYGAARD TROPHIC STATE INDICES

| DATE | 04 02 73 | 07 07 73 | 09 22 73 |
|---------------|----------|----------|----------|
| MYXOPHYCEAN | 03/0 E | 03/0 E | 0.75 E |
| CHLOROPHYCEAN | 0/0 O | 06/0 E | 2.75 E |
| EUGLENOPHYTE | 0.33 E | 0.22 E | 0.14 ? |
| DIATOM | 0.37 E | 0.67 E | 0.50 E |
| COMPOUND | 10/0 E | 19/0 E | 5.50 E |

PALMER'S ORGANIC POLLUTION INDICES

| DATE | 04 02 73 | 07 07 73 | 09 22 73 |
|---------|----------|----------|----------|
| GENUS | 01 | 09 | 06 |
| SPECIES | 00 | 00 | 04 |

SPECIES DIVERSITY AND ABUNDANCE INDICES

| DATE | 04 02 73 | 07 07 73 | 09 22 73 |
|------------------------------------|----------|----------|----------|
| AVERAGE DIVERSITY H | 2.13 | 3.82 | 3.87 |
| NUMBER OF TAXA S | 29.00 | 35.00 | 43.00 |
| NUMBER OF SAMPLES COMPOSITED M | 3.00 | 3.00 | 3.00 |
| MAXIMUM DIVERSITY MAXH | 4.86 | 5.13 | 5.43 |
| TOTAL DIVERSITY D | 611.31 | 2405.60 | 2325.87 |
| TOTAL NUMBER OF INDIVIDUALS/ML N | 287.00 | 630.00 | 601.00 |
| EVENNESS COMPONENT J | 0.44 | 0.74 | 0.71 |
| MEAN NUMBER OF INDIVIDUALS/TAXA L | 9.90 | 18.00 | 13.98 |
| NUMBER/ML OF MOST ABUNDANT TAXON K | 115.00 | 92.00 | 105.00 |

LAKE NAME: FISHING CREEK RES.
STORET NUMBER: 4503

CONTINUED

| TAXA | | 04 02 73 | | 07 07 73 | | 09 22 73 |
|----------------------------|------|----------|--------------------------|----------|--------------------------|----------|
| | FORM | IS % | ALGAL UNITS PER ML | IS % | ALGAL UNITS PER ML | IS % |
| ACHNANTHES LANCEOLATA | CEL | | | | X | |
| ACHNANTHES LANCEOLATA | | | | | | X |
| V. DUBIA | CEL | | | X | | |
| ACTINASTRUM HANTZSCHII | CCL | | | | | |
| ANABAENA | FIL | | | 2.1 | | |
| ANKISTRODESmus FALCATUS | CEL | | | | | |
| APHANIZCMENON ? FLOS-AQUAE | FIL | 3 19.9 | 57 | | | |
| ASTERIONELLA FORMOSA | CEL | | | | | |
| CENTRIC DIATOM | CEL | | | X | | |
| CLOSTERIUM | CEL | | | | | |
| CLOSTERIUM ACICULARE | CEL | | | | | X |
| COCCINEIS FLUVIATILIS | CEL | | | | | X |
| COSMARIUM | CEL | | | | | |
| CRYPTOMONAS | CEL | 1 40.1 | 115 | | | |
| CRYPTOMONAS #1 | CEL | | | | | |
| CRYPTOMONAS #2 | CEL | | | 6.2 | | |
| CYANOPHYTAN FILAMENT | FIL | | | X | | |
| CYCLOTELLA | CEL | | | | | |
| CYCLOTELLA ATOMUS | CEL | | | | | |
| CYCLOTELLA STELLIGERA | CEL | | | 6.2 | | |
| CYMBELLA | CEL | | | | | |
| CYMBELLA TUMIDA | CEL | | | X | | |
| CYMBELLA VENTRICOSA | CEL | | | X | | |
| DINOBRYON BAVARICUM | CEL | | | | | |
| DINOFLAGELLATE | CEL | | | | | |
| DINOFLAGELLATES | CEL | | | | | |
| EUGLENA | CEL | | | | | |
| EUGLENA #1 | CEL | | | | | |
| EUGLENA #2 | CEL | | | | | |
| FLAGELLATE | CEL | | | 2.1 | | |
| FRUSTULIA | CEL | | | | | |
| GOLENKINIA RADIATA | CEL | | | 14.6 | | |
| | | | X | 92 | | |
| | | | | | 4.3 | |
| | | | | | 27 | |
| | | | | | | 15 |

LAKE NAME: FISHING CREEK RES.
STCRET NUMBER: 4503

CONTINUED

| TAXA | FORM | 04 02 73 | | | 07 07 73 | | | 09 22 73 | | |
|-------------------------|------|----------|------|--------------------|----------|----|--------------------|----------|----|--------------------|
| | | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML |
| GOMPHONEMA ANGUSTATUM | CEL | | | X | | | | | | |
| V. PRODUCTA | CEL | | | | | | | | | X |
| GYRCSIGMA | CEL | | | | | | | | | X |
| HANTZSCHIA | CEL | | | | | | | | | X |
| HANTZSCHIA #2 | CEL | | | | | | X | | | |
| HYDROSERA | CEL | | | X | | | | | | |
| LEFOCINCLIS | CEL | | | | | | X | | | |
| LYNGBYA LIMNETICA | FIL | | | | | | | | | X |
| MELOSIRA | CEL | | | X | | | | | | X |
| MELOSIRA #2 | CEL | | | | 14.6 | | 92 | | | |
| MELOSIRA DISTANS | CEL | 2 | 19.9 | 57 | | | X | | | |
| MELOSIRA ITALICA | CEL | | | X | | | | | | |
| MELOSIRA VARIANS | CEL | 4 | 10.1 | 29 | 4.3 | | 27 | | | |
| MERISMOPEDIA TENUISSIMA | COL | | | | 6.2 | | 39 | | | |
| MICROSPORA ? | FIL | | | X | | | | | | |
| NAVICULA | CEL | | | X | | | | | | X |
| NAVICULA #1 | CEL | | | | | | X | | | |
| NAVICULA #2 | CEL | | | | | | | | | X |
| NAVICULA #3 | CEL | | | | | | X | | | |
| NAVICULA GOTTLANDICA | CEL | | | | 2.1 | | 13 | | | |
| NAVICULA HEUFLERI | CEL | | | | | | | | | |
| V. LEPTOCEPHALA | CEL | | | | | | | 2.7 | | 16 |
| NAVICULA MUTICA | CEL | | | X | 4.3 | | 27 | | | X |
| NITZSCHIA | CEL | 5 | 10.1 | 29 | 12.5 | | 79 | | | |
| NITZSCHIA #1 | CEL | | | | | | | 6.7 | | 40 |
| NITZSCHIA FILIFORMIS ? | CEL | | | X | | | | | | |
| NITZSCHIA HUNGARICA ? | CEL | | | X | | | | | | |
| NITZSCHIA SINUATA | CEL | | | X | | | | | | |
| CSCILLATORIA | FIL | | | X | | | X | | | X |
| PANDORINA MORUM | COL | | | | | | X | | | X |
| PEDIASTRUM BIRADIASTUM | | | | | | | | | | |
| V. LONGECORNUTUM | COL | | | | | | X | 1.3 | | 8 |

LAKE NAME: FISHING CREEK RES.
STCRET NUMBER: 4503

CONTINUED

04 02 73

07 07 73

09 22 73

| TAXA | FORM | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML |
|--|------|---|----|--------------------|-----|----|--------------------|---|------|--------------------|
| PEDIASTRUM DUPLEX | COL | | | | | | X | | | |
| V. CLATHRATUM | | | | | | | | | | |
| PEDIASTRUM DUPLEX | COL | | | | | | | | | |
| V. RETICULATUM | CEL | | | X | 6.2 | | 39 | | 2.7 | |
| PENNATE DIATOM | CEL | | | | | | X | | | |
| PINNULARIA | CEL | | | | | | X | | | |
| RHIZOSCLENIA ERIENSIS | CEL | | | | | | | | | |
| SCENEDESMUS | COL | | | | 2.1 | | 13 | | | |
| SCENEDESMUS #2 | CCL | | | | | | | | 2.7 | |
| SCENEDESMUS ABUNDANS | COL | | | | | | | | | X |
| SCENEDESMUS BIJUGA | COL | | | | | | | | 2.7 | |
| SCENEDESMUS DENTICULATUS | COL | | | | | | | | | X |
| SCENEDESMUS QUADRICAUDA | COL | | | | | | | | 10.6 | |
| SCENEDESMUS QUADRICAUDA V. LONGISPINA | COL | | | | | | | | | 64 |
| STAURASTRUM | CEL | | | | | | | | | |
| STEPHANODISCUS | CEL | | | | | | X | | | |
| SURIRELLA ANGUSTATA | CEL | | | | | | X | | | |
| SURIRELLA OVATA | CEL | | | X | | | | | | |
| SYNEDRA | CEL | | | X | | | | | | |
| SYNEDRA #1 | CEL | | | | 2.1 | | 13 | | | |
| SYNEDRA ULNA | CEL | | | X | | | | | | X |
| TETRAECRON | CEL | | | X | | | | | | |
| TETRASTRUM HETERACANTHUM | COL | | | | | | X | | | |
| TRACHELOMONAS HISPIDA | CEL | | | X | | | | | | X |
| TOTAL | | | | | 287 | | 630 | | 501 | |

LAKE NAME: LAKE GREENWOOD
STORET NUMBER: 4504

NYGAARD TROPHIC STATE INDICES

| DATE | 03 28 73 | 07 09 73 | 09 19 73 |
|---------------|----------|----------|----------|
| MYXOPHYCEAN | 2.00 E | 5.50 E | 2.67 E |
| CHLOROPHYCEAN | 5.00 E | 6.50 E | 1.67 E |
| EUGLENOPHYTE | 0.71 E | 0.08 ? | 0.15 ? |
| DIATOM | 1.25 E | 0.83 E | 0.75 E |
| COMPCUND | 17.0 E | 15.5 E | 7.00 E |

PALMER'S ORGANIC POLLUTION INDICES

| DATE | 03 28 73 | 07 09 73 | 09 19 73 |
|---------|----------|----------|----------|
| GENUS | 05 | 15 | 11 |
| SPECIES | 00 | 00 | 05 |

18

SPECIES DIVERSITY AND ABUNDANCE INDICES

| DATE | 03 28 73 | 07 09 73 | 09 19 73 |
|------------------------------------|----------|----------|----------|
| AVERAGE DIVERSITY H | 3.05 | 3.58 | 2.15 |
| NUMBER OF TAXA S | 27.00 | 45.00 | 34.00 |
| NUMBER OF SAMPLES COMPOSITED M | 4.00 | 4.00 | 4.00 |
| MAXIMUM DIVERSITY MAXH | 4.75 | 5.49 | 5.09 |
| TOTAL DIVERSITY D | 2784.65 | 24623.24 | 33356.88 |
| TOTAL NUMBER OF INDIVIDUALS/ML N | 913.00 | 6878.00 | 15443.00 |
| EVENNESS COMPONENT J | 0.64 | 0.65 | 0.42 |
| MEAN NUMBER OF INDIVIDUALS/TAXA L | 33.81 | 152.84 | 454.21 |
| NUMBER/ML OF MOST ABUNDANT TAXON K | 273.00 | 2456.00 | 9263.00 |

LAKE NAME: LAKE GREENWOOD
STORET NUMBER: 4504

CONTINUED

| TAXA | | | | 03 28 73 | | | 07 09 73 | | | 09 19 73 |
|-----------------------------|------|---|------|--------------------|-----|----|--------------------|------|------|--------------------|
| | FORM | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML |
| ACTINASTRUM HANTZSCHII | COL | | | | | | X | | | |
| ANABAENA #1 | FIL | | | | 1.3 | | 87 | | | |
| ANABAENA #2 | FIL | | | | | | X | | | |
| ANABAENA #3 | FIL | | | | | | X | | | |
| ANABAENOPSIS | FIL | | | | | | | | 4.5 | 697 |
| ANKISTRODESmus ? | CEL | 5 | 5.0 | 46 | | | | | | |
| ANKISTRODESmus FALCATUS | CEL | | | | | | X | 1.3 | 199 | |
| ASTERIONELLA | CEL | | | | | | X | | | |
| ASTERICNELLA FORMOSA | CEL | | 2.5 | 23 | | | | | | |
| CENTRIC DIATOM | CEL | 2 | 19.9 | 182 | | | | | 1.9 | 299 |
| CERATIUM | CEL | | | | 0.4 | | 29 | | | |
| COELASTRUM CAMBRICUM | COL | | | | | | X | | | |
| V. INTERMEDIUM | COL | | | | | | | | | X |
| COELASTRUM MICROPORUM | COL | | | | 0.4 | | 29 | | | |
| COELASTRUM MICROPORUM ? | COL | | 2.5 | 23 | | | | | | |
| COELASTRUM PROBOSCIDEUM | COL | | | | 0.8 | | 58 | | | |
| COSMARIA | CEL | | 2.5 | 23 | | | | | | X |
| COSMARIA #1 | CEL | | | | 0.8 | | 58 | | | |
| COSMARIA #2 | CEL | | | | 0.8 | | 58 | | | |
| CRUCIGENIA TETRAPEDIA | COL | | | X | | | | | | |
| CRYPTOMCNAS #1 | CEL | | | | 4.6 | | 318 | | | |
| CRYPTOMCNAS #2 | CEL | | | | | | X | | | |
| CRYPTOMCNAS EROSA | CEL | 1 | 29.9 | 273 | | | | | | |
| CYANOPHYTAN FILAMENT | FIL | | | | | | | 0.6 | 100 | |
| CYCLOTELLA #2 | CEL | | | | 2.1 | | 144 | | | X |
| CYCLOTELLA MENEGHINIANA | CEL | | | | | | | 0.5 | 100 | |
| CYCLOTELLA STELLIGERA | CEL | | | | 9.7 | | 665 | | | |
| DACTYLOCOCOPSIS | CEL | | | | 1.3 | | 87 | 11.0 | 1693 | |
| DACTYLCCCCCPsis IRREGULARIS | CEL | | 2.5 | 23 | | | | | | |
| DINOFLAGELLATE | CEL | | | | 1.3 | | 87 | | | |
| EUGLENA | CEL | | | X | | | | | | X |
| EUGLENA #1 | CEL | | | | | | X | | | |

LAKE NAME: LAKE GREENWOOD
STORET NUMBER: 4504

CONTINUED

| TAXA | | FORM | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML |
|-------------------------|--|------|---|------|--------------------|------|-----|--------------------|------|------|--------------------|
| EUGLENA #2 | | CEL | | | | | | X | | | |
| EUGLENA #3 | | CEL | | | | | | | | | X |
| FLAGELLATE | | CEL | | | 6.3 | 433 | | 0.5 | 100 | | |
| FRAGILARIA | | CEL | | | 1.7 | 116 | | | | | |
| LYNGBYA LIMNETICA | | FIL | | | 35.7 | 2456 | | 2.6 | 399 | | |
| MALLOMENAS ACAROIDES | | CEL | 4 | 5.0 | 45 | | | | | | |
| MELOSIRA #2 | | CEL | | | | 2.5 | 173 | | | | X |
| MELOSIRA #4 | | CEL | | | | 1.3 | 87 | | | | |
| MELOSIRA DISTANS | | CEL | 3 | 15.0 | 137 | | 2.1 | 144 | | | |
| MELOSIRA GRANULATA | | CEL | | | X | | | | | | |
| MELOSIRA ITALICA | | CEL | | | X | | | | | | |
| MERISMOPEDIA MINIMA | | COL | | | | 0.4 | 29 | | | | |
| MERISMOPEDIA TENUISSIMA | | COL | | | | 0.8 | 58 | | 0.6 | 100 | |
| MICROCYSTIS INCERTA | | COL | | | | 0.4 | 29 | | | | |
| NAVICULA #1 | | CEL | | | | 0.4 | 29 | | | | |
| NAVICULA #2 | | CEL | | | | | | | | | X |
| NAVICULA ATOMUS | | CEL | | | | | | | | | X |
| NITZSCHIA #1 | | CEL | | | X | 6.7 | 462 | | 1.3 | 199 | |
| NITZSCHIA #2 | | CEL | | | | | | | | | X |
| OSCILLATORIA | | FIL | | | | 6.3 | 433 | | | | |
| OSCILLATORIA #1 | | FIL | | | | | | | 11.6 | 1796 | |
| OSCILLATORIA #2 | | FIL | | | | | | X | | | X |
| OSCILLATORIA LIMNETICA | | FIL | | 7.4 | 68 | | | | | | |
| PANDORINA MORUM | | COL | | | | | | X | | | |
| PEDIASTRUM DUPLEX | | COL | | | | | | | | | |
| V. CLATHRATUM | | COL | | | | 0.4 | 29 | | | | |
| PEDIASTRUM DUPLEX | | COL | | | | | | X | | | |
| V. GRACILIMUM | | COL | | | | | | | | | X |
| PENNATE DIATOM #1 | | CEL | | | | | | | 1.3 | 199 | |
| PENNATE DIATOM #4 | | CEL | | | | | | | 1.3 | 199 | |
| PENNATE DIATOMS | | CEL | | 2.5 | 23 | | | | | | |
| PERIDINIUM INCONSPICUUM | | CEL | | | X | | | | | | |

20

LAKE NAME: LAKE GREENWOOD
STORET NUMBER: 4504

CONTINUED

03 28 73

07 09 73

09 19 73

| TAXA | FORM | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML |
|--------------------------|------|---|-----|--------------------|-----|-----|--------------------|-----|------|--------------------|
| PERIDINIUM VOLZII | CEL | | | X | | | | | | |
| PHACUS PYRUM ? | CEL | | | X | | | | | | |
| PTEROMONAS ANGULCSA | CEL | | 2.5 | 23 | | | | | | |
| RAPHIDIOPSIS | FIL | | | | 6.3 | | 433 | | 60.0 | 9263 |
| RHIZOSOLENIA ERIENSIS | CEL | | | | | 0.4 | | 29 | | X |
| SCENEDESMUS ABUNDANS | COL | | | | | | | | | |
| SCENEDESMUS ACUMINATUS | COL | | 2.5 | 23 | | | | | | X |
| SCENEDESMUS BIJUGA | COL | | | | | | | X | | |
| SCENEDESMUS DENTICULATUS | COL | | | | | | | X | | |
| SCENEDESMUS QUADRICAUDA | COL | | | X | | | | | | |
| SCENEDESMUS QUADRICAUDA | COL | | | | | 0.4 | | 29 | | X |
| V. LONGISPINA | COL | | | | | | | | | |
| SCHROEDERIA SETIGERA | CEL | | | | | | | X | | X |
| STAURASTRUM #2 | CEL | | | | | | | | | X |
| STAURASTRUM TETRACERUM | CEL | | | | | | | | 0.6 | 100 |
| STEPHANODISCUS | CEL | | | | | | | | | X |
| SYNEDRA #1 | CEL | | | | | 3.4 | | 231 | | X |
| SYNEDRA #2 | CEL | | | | | | | X | | |
| SYNEDRA ULNA | CEL | | | X | | | | | | |
| TRACHELomonas | CEL | | | X | | | | | | |
| TRACHELomonas CAUDATA | CEL | | | X | | | | | | |
| TRACHELomonas HISPICA | CEL | | | X | | | | | | |
| TREUBARIA | CEL | | | | 0.8 | | 58 | | | |
| TOTAL | | | | 913 | | | 6878 | | | 15443 |

21

LAKE NAME: LAKE HARTWELL
STORET NUMBER: 4505

NYGAARD TROPHIC STATE INDICES

| DATE | 06 | 26 | 73 | 09 | 15 | 73 | 11 | 13 | 73 |
|---------------|------|----|----|------|----|----|------|----|----|
| MYXOPHYCEAN | 05/0 | E | | 0.62 | E | | 4.00 | E | |
| CHLOROPHYCEAN | 04/0 | E | | 1.00 | E | | 12.0 | E | |
| EUGLENOPHYTE | 0/09 | ? | | 0/13 | ? | | 0.12 | ? | |
| DIATOM | 0.62 | E | | 0.40 | E | | 0.60 | E | |
| COMPOUND | 14/0 | E | | 2.12 | E | | 21.0 | E | |

PALMER'S ORGANIC POLLUTION INDICES

| DATE | 06 | 26 | 73 | 09 | 15 | 73 | 11 | 13 | 73 |
|---------|----|----|----|----|----|----|----|----|----|
| GENUS | 02 | | | 02 | | | 02 | | |
| SPECIES | 00 | | | 00 | | | 00 | | |

22

SPECIES DIVERSITY AND ABUNDANCE INDICES

| DATE | 06 | 26 | 73 | 09 | 15 | 73 | 11 | 13 | 73 |
|----------------------------------|----|---------|----|---------|----|---------|----|----|----|
| AVERAGE DIVERSITY | H | 3.02 | | 2.54 | | 3.23 | | | |
| NUMBER OF TAXA | S | 28.00 | | 41.00 | | 34.00 | | | |
| NUMBER OF SAMPLES COMPOSITED | M | 12.00 | | 12.00 | | 12.00 | | | |
| MAXIMUM DIVERSITY MAXH | | 4.81 | | 5.36 | | 5.09 | | | |
| TOTAL DIVERSITY | D | 3832.38 | | 4457.70 | | 2593.69 | | | |
| TOTAL NUMBER OF INDIVIDUALS/ML | N | 1269.00 | | 1755.00 | | 803.00 | | | |
| EVENNESS COMPONENT | J | 0.63 | | 0.47 | | 0.63 | | | |
| MEAN NUMBER OF INDIVIDUALS/TAXA | L | 45.32 | | 42.80 | | 23.62 | | | |
| NUMBER/ML OF MOST ABUNDANT TAXON | K | 507.00 | | 1045.00 | | 181.00 | | | |

LAKE NAME: LAKE HARTWELL
STORET NUMBER: 4505

CONTINUED

| TAXA | FORM | IS | %C | ALGAL UNITS PER ML | IS | %C | ALGAL UNITS PER ML | IS | %C | ALGAL UNITS PER ML |
|---------------------------|------|----|------|--------------------|----|------|--------------------|----|------|--------------------|
| ANABAENA #1 | FIL | | 1.5 | 19 | | | | | | X |
| ANABAENA #2 | FIL | | 1.5 | 19 | | | | | | |
| ANABAENOPSIS | FIL | | | | | 5.1 | 90 | | | |
| ANKISTRODESMUS | CEL | | 0.7 | 9 | | | | | | |
| ANKISTRODESMUS FALCATUS | CEL | | | X | | | | | | |
| ASTERICNELLA | CEL | | | | | | | | | |
| ASTERIONELLA FORMOSA | CEL | | | X | | 3.2 | 56 | | | |
| ATTHEYA | CEL | | | | | | X | | | |
| CERATIUM HIRUNDINELLA | CEL | | | X | | | | | | |
| CHROCCOCCUS | COL | | | | | 1.3 | 23 | | | |
| COSMARIUM #1 | CEL | | | | | 0.6 | 11 | | | |
| COSMARIUM #2 | CEL | | | | | 0.6 | 11 | | | |
| COSMARIUM #3 | CEL | | | | | | X | | | |
| COSMARIUM #4 | CEL | | | | | | X | | | |
| CRUCIGENIA TETRAPEDIA | COL | | | | | | | | 3.2 | 26 |
| CRYPTOMONAS #1 | CEL | | | | | | | | 1.6 | 13 |
| CRYPTOMONAS #2 | CEL | | | X | | | | | | |
| CYCLOTELLA STELLIGERA | CEL | | 7.4 | 94 | | | | | 11.3 | 91 |
| DACTYLOCOCCOPSIS | CEL | | | | | 0.6 | 11 | | 3.2 | 26 |
| DINOBRYON | CEL | | | X | | | | | | X |
| CINCDBRYON BAVARICUM | CEL | | | | | 1.3 | 23 | | | |
| DINOFLAGELLATE #1 | CEL | | 360 | 38 | | 1.3 | 23 | | | |
| DINOFLAGELLATE #2 | CEL | | | | | | | | | X |
| DINOFLAGELLATE #3 | CEL | | | | | | | | 3.2 | 26 |
| EUGLENA | CEL | | | | | | | | | X |
| EUNOTIA FLEXUOSA | CEL | | | | | | X | | | |
| FLAGELLATES | CEL | | 11.8 | 150 | | 5.8 | 101 | | 3.2 | 26 |
| FRANCEIA | CEL | | | | | | | | | X |
| GLENKINIA RADIATA | CEL | | | | | 2.6 | 45 | | | |
| LYNGBYA LIMNETICA | FIL | | 3.0 | 38 | | 59.5 | 1045 | | | X |
| MALLOMONAS | CEL | | | | | 1.9 | 34 | | | |
| MALLOMONAS PSEUDOCORONATA | CEL | | | | | | | | 1.6 | 13 |

LAKE NAME: LAKE HARTWELL
STORET NUMBER: 4505

CONTINUED

| TAXA | FORM | IS | %C | ALGAL UNITS PER ML | IS | %C | ALGAL UNITS PER ML | IS | %C | ALGAL UNITS PER ML |
|--------------------------|------|----|-----|--------------------|----|-----|--------------------|----|------|--------------------|
| MELOSIRA #2 | CEL | | 9.6 | 122 | | | X | | 22.5 | 181 |
| MELOSIRA DISTANS | CEL | | 8.9 | 113 | | | | | 20.9 | 168 |
| MELOSIRA VARIANS | CEL | | 0.7 | 9 | | | X | | | |
| MERISMOPEDIA MINIMA | COL | | | | | | | | | |
| MERISMOPEDIA TENUISSIMA | COL | | | | | | | | | X |
| NAVICULA | CEL | | 0.7 | 9 | | | | | | X |
| NAVICULA #1 | CEL | | | X | | | X | | | X |
| NAVICULA #3 | CEL | | | X | | | X | | | |
| NAVICULA NOTHA ? | CEL | | | X | | | | | | |
| NITZSCHIA | CEL | | | X | | 1.9 | | 34 | | |
| OOCYSTIS | CEL | | | | | | | | | X |
| OSCILLATORIA | FIL | | | X | | | | | | |
| OSCILLATORIA #1 | FIL | | 3.0 | 38 | | | | | | |
| PEDIASTRUM CUPLEX | COL | | | | | | | | | |
| V. CLATHRATUM | COL | | | | | | | | 1.6 | 13 |
| PEDIASTRUM TETRAS | COL | | | | | | | | 1.6 | 13 |
| V. TETRAODON | COL | | | | | | X | | | |
| PENNATE DIATOM #4 | CEL | | | | | | X | | | |
| PERIDINIUM #2 | CEL | | | | | | X | | | |
| PERIDINIUM WISCONSINENSE | CEL | | 3.0 | 38 | | 1.9 | | 34 | | |
| PHACUS PYRUM | CEL | | | | | | | | | X |
| PINNULARIA | CEL | | | | | | X | | | |
| RHIZOSCLENIA ERIENSIS | CEL | | | X | | | X | | | |
| SCENEDESMUS | COL | | | | | | X | | | |
| SCENEDESMUS ABUNDANS | COL | | | | | | X | | 4.9 | 39 |
| SCENEDESMUS ACUMINATUS | COL | | | | | | X | | | |
| SCENEDESMUS ACUMINATUS | COL | | | | | | X | | | |
| V. BERNARDII | COL | | | X | | | | | | |
| SCENEDESMUS BIJUGA | COL | | | | | | | | | X |
| SCENEDESMUS DISPAR | COL | | | | | | | X | | X |
| SCENEDESMUS QUADRICauda | COL | | | | | | | | | X |
| SELENASTRUM ? | COL | | | | | | | | | X |

LAKE NAME: LAKE HARTWELL
STORET NUMBER: 4505

CONTINUED

| TAXA | FORM | 06 26 73 | | | 09 15 73 | | | 11 13 73 | | |
|-------------------------|------|----------|-----|--------------------|----------|-----|--------------------|----------|-----|--------------------|
| | | IS | %C | ALGAL UNITS PER ML | IS | %C | ALGAL UNITS PER ML | IS | %C | ALGAL UNITS PER ML |
| STAURASTRUM #1 | CEL | | | | | 1.3 | 23 | | | |
| STAURASTRUM CUSPIDATUM | CEL | | | | | | X | | | X |
| V. DIVERGENS | CEL | | | | | | | | | |
| STAURASTRUM PARADOXUM | CEL | | | | | 4.5 | 79 | | | |
| V. PARVUM | CEL | | | | | | X | | | |
| STAURASTRUM TETRACERUM | CEL | | | | | | | | | |
| SYNEDRA #1 | CEL | 3.0 | 38 | | 3.2 | 56 | | 3.2 | 26 | |
| SYNEDRA #2 | CEL | | X | | 0.6 | 11 | | | X | |
| TABELLARIA FENESTRATA | CEL | 40.0 | 507 | | 2.6 | 45 | | 16.1 | 129 | |
| TETRAEDRON MINIMUM | CEL | 2.2 | 28 | | | | X | | | |
| TETRAEDRON PLANCTONICUM | CEL | | | | | | | | | X |
| TETRAEDRON TRIGONUM | CEL | | | | | | X | | | |
| TREUBARIA | CEL | | | | | | | | | |
| TOTAL | | | | 1269 | | | 1755 | | | 803 |

LAKE NAME: LAKE MARION
STCET NUMBER: 4506

NYGAARD TROPHIC STATE INDICES

| DATE | 03 27 73 | 07 10 73 | 09 22 73 |
|---------------|----------|----------|----------|
| MYXOPHYCEAN | 4.00 E | 3.00 E | 2.25 E |
| CHLOROPHYCEAN | 15.0 E | 8.50 E | 4.00 E |
| EUGLENOPHYTE | 0.11 ? | 0.17 ? | 0.12 ? |
| DIATOM | 0.47 E | 0.90 E | 0.62 E |
| COMPOUND | 30.0 E | 18.0 E | 9.25 E |

PALMER'S ORGANIC POLLUTION INDICES

| DATE | 03 27 73 | 07 10 73 | 09 22 73 |
|---------|----------|----------|----------|
| GENUS | 07 | 25 | 22 |
| SPECIES | 02 | 07 | 07 |

26

SPECIES DIVERSITY AND ABUNDANCE INDICES

| DATE | 03 27 73 | 07 10 73 | 09 22 73 |
|------------------------------------|----------|----------|----------|
| AVERAGE DIVERSITY H | 3.72 | 4.12 | 3.84 |
| NUMBER OF TAXA S | 57.00 | 54.00 | 51.00 |
| NUMBER OF SAMPLES COMPOSITED M | 6.00 | 6.00 | 6.00 |
| MAXIMUM DIVERSITY MAXH | 5.83 | 5.75 | 5.67 |
| TOTAL DIVERSITY D | 12863.76 | 23754.16 | 22475.52 |
| TOTAL NUMBER OF INDIVIDUALS/ML N | 3458.00 | 5768.00 | 5853.00 |
| EVENNESS COMPONENT J | 0.64 | 0.72 | 0.68 |
| MEAN NUMBER OF INDIVIDUALS/TAXA L | 50.57 | 106.81 | 114.76 |
| NUMBER/ML OF MOST ABUNDANT TAXON K | 789.00 | 1154.00 | 1485.00 |

LAKE NAME: LAKE MARION
STORET NUMBER: 4506

CONTINUED

| TAXA | | | 03 27 73 | | 07 10 73 | | 09 22 73 |
|---------------------------------------|------|-----|--------------------------|-----|--------------------------|-----|--------------------------|
| | FORM | | IS %C ALGAL UNITS PER ML | | IS %C ALGAL UNITS PER ML | | IS %C ALGAL UNITS PER ML |
| ACHNANTHES LANCEOLATA | CEL | 1 | | | X | | |
| ACHNANTHES MICROCEPHALA | CEL | 1 | | X | | X | |
| AMPHIPRORA | CEL | 1 | | X | | | |
| ANABAENA #1 | FIL | 1 | | | 0.6 | 36 | |
| ANABAENA #2 | FIL | 1 | | | 1.9 | 108 | |
| ANABAENOPSIS | FIL | 1 | | | | | |
| ANKISTRODESmus ? | CEL | 5.5 | 189 | | | | |
| ANKISTRODESmus FALCATUS | CEL | 1 | | X | | | |
| ASTERIONELLA | CEL | 1 | | | 1.2 | 72 | |
| ASTERIONELLA FORMOSA | CEL | 1 | | | | | |
| ASTERIONELLA FORMOSA V. GRACILLIMA | CEL | 3.6 | 126 | | | | |
| ATTHEYA | CEL | 1 | | | | X | |
| BOTRYOCOCCUS BRAUNII | COL | 1 | | | | | |
| CHLAMYDOMONAS | CEL | 1 | | X | | | |
| CHLAMYDOMONAS #1 | CEL | 1 | | | 1.9 | 108 | |
| CHLAMYDOMONAS #2 | CEL | 1 | | | | | |
| CHROOCOCCUS | COL | 1 | 0.5 | 16 | | | |
| CLUSTERIUM | CEL | 1 | | | | X | |
| COCCINEIS | CEL | 1 | | X | | | |
| COELASTRUM | COL | 1 | | | 0.6 | 36 | |
| COSMARIUM | CEL | 1 | | | 1.2 | 72 | |
| CRUCIGENIA TETRAPEDIA | COL | 1 | | X | | | |
| CRYPTOMONAS #1 | CEL | 1 | | | 3.1 | 180 | |
| CRYPTOMONAS EROSA | CEL | 3 | 5.0 | 173 | | | |
| CRYPTOMONAS REFLEXA | CEL | 5 | 0.5 | 16 | | | |
| CYANOPHYTAN FILAMENT | FIL | 1 | | | | | |
| CYCLCTELLA #1 | CEL | 1 | | | 3.7 | 216 | |
| CYCLOTELLA MENEGHINIANA | CEL | 1 | | | 0.6 | 36 | |
| CYCLOTELLA STELLIGERA | CEL | 1 | 0.9 | 31 | 1.9 | 108 | |
| CYMATOPLEURA ? | CEL | 1 | | X | | | |
| CYMBELLA | CEL | 1 | | X | | | |

LAKE NAME: LAKE MARION
STORET NUMBER: 4506

CONTINUED

| TAXA | FORM | 03 27 73 | | | 07 10 73 | | | 09 22 73 | | |
|----------------------------|------|----------|------|--------------------|----------|------|--------------------|----------|------|--------------------|
| | | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML |
| DACTYLOCCOPSIS | CEL | 1 | 5.1 | 178 | 4 | 14.4 | 830 | 1 | 25.4 | 1485 |
| DICTYOSPHAERIUM PULCHELLUM | COL | 1 | | X | 1 | 0.5 | 36 | | | X |
| DINOBRYCN | CEL | 1 | | | 1 | 0.6 | 36 | | | |
| DINOFLAGELLATE | CEL | 1 | | | 1 | 0.6 | 36 | | | |
| DINOFLAGELLATE #1 | CEL | 1 | | | 1 | | | 1 | 1.5 | 85 |
| DINOFLAGELLATE #2 | CEL | 1 | | | 1 | | | | | X |
| EUASTRUM | CEL | | | | 1 | | | 1 | 0.7 | 42 |
| EUGLENA | CEL | | | X | | | | | | |
| EUGLENA #1 | CEL | | | | 1 | 0.6 | 36 | 1 | 2.9 | 170 |
| EUGLENA #2 | CEL | | | | 1 | 0.5 | 36 | | | X |
| FLAGELLATE #1 | CEL | | 14.6 | 505 | 5 | 6.9 | 397 | 12 | 13.1 | 764 |
| FLAGELLATES | CEL | | | | 1 | | | | | |
| FRAGILARIA | CEL | | | X | | | | | | |
| FRAGILARIA CROTONENSIS | CEL | | | | 1 | | X | | | |
| FRANCEIA | CEL | | | | | | | | | |
| FRUSTULIA | CEL | | | X | | | | | | |
| GLENODINIUM ? | CEL | | | X | | | | | | |
| GLENODINIUM OCULATUM ? | CEL | | 0.5 | 16 | | | | | | |
| GOLENKINIA | CEL | | | | 1 | 1.2 | 72 | | | |
| GOMPHONEMA | CEL | | | X | | | | | | |
| GOMPHONEMA #2 | CEL | | | X | | | | | | |
| GYMNCDINIUM | CEL | | 0.5 | 16 | 1 | 1.2 | 72 | | | |
| KIRCHNERIELLA | CEL | | | X | | | | | | |
| LYNGBYA LIMNETICA | FIL | | | | 1 | 20.0 | 1154 | 3 | 11.6 | 679 |
| MELOSIRA #2 | CEL | | | | 2 | 11.3 | 649 | | 1.5 | 85 |
| MELOSIRA #3 | CEL | | | | 1 | 1.2 | 72 | | 5.1 | 297 |
| MELOSIRA #4 | CEL | | 0.5 | 16 | | | | | | |
| MELOSIRA DISTANS | CEL | 4 | 22.8 | 788 | 5 | 5.0 | 289 | 0 | 0.7 | 42 |
| MELOSIRA GRANULATA | CEL | | | X | | | | | | |
| MELOSIRA GRANULATA | CEL | | | | 1 | | | | | |
| V. ANGSTISSIMA | CEL | 1 | 2.7 | 95 | | | | | | |
| MELOSIRA ITALICA | CEL | 2 | 7.8 | 268 | | | | | | |

LAKE NAME: LAKE MARION
STORET NUMBER: 4506

CONTINUED

| TAXA | | FORM | IS | %C | ALGAL UNITS PER ML | IS | %C | ALGAL UNITS PER ML | IS | %C | ALGAL UNITS PER ML |
|-------------------------|--|------|----|-----|--------------------|----|-----|--------------------|-----|-----|--------------------|
| MELOSIRA VARIANS | | CEL | 1 | 6.4 | 221 | | | X | | | |
| MERISMOPEDIA TENUISSIMA | | COL | 1 | | | | | | 0.7 | 42 | |
| MESOSTIGMA | | CEL | 1 | | | | 1.9 | 108 | | | |
| NAVICULA | | CEL | 1 | | | | | | | | X |
| NAVICULA ? | | CEL | 1 | | | X | | | | | |
| NAVICULA #1 | | CEL | 1 | | | X | 0.6 | 36 | | | |
| NAVICULA #2 | | CEL | 1 | | | X | | | | | |
| NAVICULA RHYNCHOCEPHALA | | CEL | 1 | | | | | | | | |
| V. GERMAINII | | CEL | 1 | | | | | X | | | |
| NITZSCHIA | | CEL | 1 | | | X | | | | | |
| NITZSCHIA #1 | | CEL | 1 | | | | | | | | X |
| NITZSCHIA #2 | | CEL | 1 | | | | 3 | 6.9 | 397 | 2.9 | 170 |
| NITZSCHIA ACICULARIS | | CEL | 1 | | | X | | | | | |
| OPHIOCYTIUM ? | | CEL | 1 | | | | | | | 0.7 | 42 |
| OSCILLATORIA | | FIL | 1 | | | X | 1.2 | 72 | | 1.5 | 85 |
| OSCILLATORIA LIMNETICA | | FIL | 1 | 0.9 | 31 | | | | | | |
| PEDIASTRUM DUPLEX | | COL | 1 | | | | | X | | | |
| V. CLATHRATUM | | CCL | 1 | | | | | X | | | |
| PEDIASTRUM DUPLEX | | COL | 1 | | | | | | | | |
| V. GRACILIMUM | | CEL | 1 | | | X | | | | | |
| PEDIASTRUM TETRAS | | CEL | 1 | | | | | | | | X |
| V. TETRAODON | | CEL | 1 | | | | | | | | |
| PENNATE DIATOM #2 | | CEL | 1 | 8.2 | 284 | | 3.1 | 180 | | | |
| PENNATE DIATOMS | | CEL | 1 | 5.5 | 189 | | | | | | |
| PHACUS | | CEL | 1 | 0.5 | 16 | | | | | | |
| PHACUS #1 | | CEL | 1 | | | | 0.5 | 36 | | 0.7 | 42 |
| PHACUS PYRUM | | CEL | 1 | | | | | X | | | |
| RAPHIDIOPSIS | | FIL | 1 | | | | | X | | | |
| RAPHIDIOPSIS ? | | FIL | 1 | | | | | | 4 | 8.0 | 467 |
| RHIZOSCLENIA ERIENSIS | | CEL | 1 | | | | | X | | | |
| SCENEDESMUS | | COL | 1 | 1.4 | 47 | | 1.2 | 72 | | 0.7 | 42 |
| SCENEDESMUS ABUNDANS | | COL | 1 | 1.4 | 47 | | | | | | |

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LAKE NAME: LAKE MARION
STORET NUMBER: 4506

CONTINUED

| TAXA | FORM | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML |
|---------------------------|------|-----|----|--------------------|-----|-----|--------------------|----|-----|--------------------|
| SCENEDESMUS ARMATUS | COL | | | X | | | | | | |
| V. BICAUDATUS | | | | | | | | | | |
| SCENEDESMUS ARMATUS | COL | | | | 0.6 | | 36 | | | X |
| V. BOGLARIENSIS | | | | | | | X | | | |
| SCENEDESMUS BICAUDATUS | COL | | | | | | | | | X |
| SCENEDESMUS BIJUGA ? | COL | | | | | | | | | X |
| SCENEDESMUS DENTICULATUS | COL | | | | | | | | | X |
| SCENEDESMUS DIMORPHUS | COL | | | X | | | | | | |
| SCENEDESMUS INTERMEDIUS | COL | | | X | | | | | | |
| SCENEDESMUS PROTUBERANS | COL | 0.5 | | 16 | | | | | | |
| SCENEDESMUS PROTUBERANS ? | COL | | | | | | X | | | X |
| SCENEDESMUS QUADRICAUDA | COL | | | X | | 1.2 | 72 | | 1.5 | 85 |
| SCHROEDERIA | CEL | | | | | | | | | X |
| SCHROEDERIA SETIGERA | CEL | | | | | | | X | 0.7 | 42 |
| STAURASTRUM #1 | CEL | | | | | | | | | X |
| STAURASTRUM #2 | CEL | | | | | | | | | X |
| STAURASTRUM PARADOXUM | CEL | | | | | | | | | |
| V. PARVUM | CEL | | | | | | | X | | |
| STAURASTRUM TETRACERUM | CEL | | | X | | | | | | |
| STEPHANOISCUS | CEL | 4.6 | | 158 | | | | | | |
| STEPHANOISCUS ASTRAEA | CEL | 0.5 | | 16 | | | | | | |
| SYNEDRA #1 | CEL | | | | | | | | 1.5 | 85 |
| SYNECRA #2 | CEL | | | | | | | | 2.9 | 170 |
| SYNEDRA DELICATISSIMA | CEL | | | | | 0.6 | 36 | | | |
| SYNEDRA ULNA | CEL | | | X | | | | | | |
| TABELLARIA | CEL | | | X | | | | X | | |
| TABELLARIA FLOCCULOSA | CEL | | | X | | | | | | |
| TETRAEDRON MINIMUM | CEL | | | X | | | | | | |
| TETRAEDRON MINIMUM | CEL | | | X | | | 0.6 | 36 | | |
| V. SCROBICULATUM | CEL | | | X | | | | | | |
| TETRAEDRON TRIGONUM | CEL | | | X | | | | | | |
| V. GRACILE | CEL | | | X | | | | | | |

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LAKE NAME: LAKE MARION
STORET NUMBER: 4506

CONTINUED

| | 03 27 73 | | | 07 10 73 | | | 09 22 73 | | |
|--------------------------|----------|----|-----------------------|----------|-----------------------|------|-----------------------|----|--|
| TAXA | FORM | IS | ALGAL UNITS %C PER ML | IS | ALGAL UNITS %C PER ML | IS | ALGAL UNITS %C PER ML | | |
| TETRASTRUM HETERACANTHUM | COL | | | | | X | | | |
| TREUBARIA | CEL | | | | | 0.71 | X | 42 | |
| TOTAL | | | 3458 | | 5768 | | 5853 | | |

LAKE NAME: LAKE MURRAY
STORET NUMBER: 4507

NYGAARD TROPHIC STATE INDICES

| | DATE | 03 27 73 | 07 07 73 | 09 22 73 |
|---------------|------|----------|----------|----------|
| MYXOPHYCEAN | | 01/0 E | 2.20 E | 1.00 E |
| CHLOROPHYCEAN | | 08/0 E | 1.80 E | 1.83 E |
| EUGLENOPHYTE | | 0/09 ? | 0.15 ? | 0.06 ? |
| DIATOM | | 1.00 E | 0.37 E | 0.67 E |
| COMPOUND | | 15/0 E | 5.20 E | 3.67 E |

PALMER'S ORGANIC POLLUTION INDICES

| | DATE | 03 27 73 | 07 07 73 | 09 22 73 |
|---------|------|----------|----------|----------|
| GENUS | | 06 | 14 | 08 |
| SPECIES | | 00 | 00 | 03 |

SPECIES DIVERSITY AND ABUNDANCE INDICES

| | DATE | 03 27 73 | 07 07 73 | 09 22 73 |
|----------------------------------|------|----------|----------|----------|
| AVERAGE DIVERSITY | H | 3.10 | 3.65 | 3.15 |
| NUMBER OF TAXA | S | 28.00 | 47.00 | 38.00 |
| NUMBER OF SAMPLES COMPOSITED | M | 7.00 | 7.00 | 7.00 |
| MAXIMUM DIVERSITY MAXH | | 4.81 | 5.55 | 5.25 |
| TOTAL DIVERSITY | D | 5854.10 | 40993.15 | 16420.95 |
| TOTAL NUMBER OF INDIVIDUALS/ML | N | 2211.00 | 11231.00 | 5213.00 |
| EVENNESS COMPONENT | J | 0.64 | 0.66 | 0.60 |
| MEAN NUMBER OF INDIVIDUALS/TAXA | L | 78.96 | 238.95 | 137.18 |
| NUMBER/ML OF MOST ABUNDANT TAXON | K | 659.00 | 2429.00 | 1321.00 |

LAKE NAME: LAKE MURRAY
STORET NUMBER: 4507

CONTINUED

| TAXA | | 03 27 73 | | | 07 07 73 | | | 09 22 73 | | | | | |
|--------------------------------|------|----------|------|----|--------------------|------|------|----------|--------------------|---|------|----|--------------------|
| | FORM | I | S | %C | ALGAL UNITS PER ML | I | S | %C | ALGAL UNITS PER ML | I | S | %C | ALGAL UNITS PER ML |
| ANABAENA | FIL | | | | | | | | X | 1 | 6.6 | | 345 |
| ANABAENA #1 | FIL | | | | 2 | 12.0 | | | 1350 | | | | |
| ANABAENA #2 | FIL | | | | | | | 0.5 | 54 | | | | |
| ANKISTRODESMUS FALCATUS | CEL | | | | X | | | | | | | | |
| ASTERICNELLA FORMOSA | CEL | | 1.6 | | 35 | | | | | | | | |
| CERATIUM HIRUNDINELLA | CEL | | | | | | | | X | | | | |
| CHLAMYDOMONAS | CEL | | 3.0 | | 66 | | | | | | | | |
| CHLAMYDOMONAS ? | CEL | | 0.4 | | 9 | | | | | | | | |
| CHROOCOCCUS | COL | | | | | | | 0.5 | 54 | 5 | 5.5 | | 287 |
| CLADSTERIUM | CEL | | | | | | | | X | | | | |
| COELASTRUM | COL | | | | | | | | X | | | | |
| COELASTRUM PROBOSCIDEUM | COL | | | | | | | | | | | | X |
| COELOSPHAERIUM NAEGELIANUM | COL | | | | | | | | X | | | | 33 |
| COSMARIUM | CEL | | | | | | | | | | | | |
| COSMARIUM #1 | CEL | | | | | | | 0.5 | 54 | | 1.6 | | 86 |
| COSMARIUM #2 | CEL | | | | | | | | | | 0.6 | | 29 |
| CRUCIGENIA | COL | | | | | | | | | | | | X |
| CRYPTOMONAS EROSA | CEL | 1 | 12.6 | | 278 | | | | | | | | |
| CRYPTOMONAS REFLEXA | CEL | | | | X | | | | | | | | |
| CYCLOTELLA | CEL | | | | | 3 | 12.0 | | 1350 | | 0.6 | | 29 |
| CYCLOTELLA STELLIGERA | CEL | | 2.8 | | 62 | | 0.5 | | 54 | | | | |
| DACTYLOCYCOPSIS | CEL | | 1.6 | | 35 | | 5.8 | | 648 | 4 | 25.3 | | 1321 |
| DACTYLOCYCOPSIS FASCICULARIS ? | CEL | | | | | | | | X | | | | |
| DICTYOSPHAERIUM PULCHELLUM | COL | | 0.4 | | 9 | | | | | | | | |
| DINOBRYON ? | CEL | | | | X | | | | | | | | |
| DINOFLAGELLATE | CEL | | | | | | | | | | 3.6 | | 186 |
| DINOFLAGELLATE #1 | CEL | | | | | | | | X | | | | |
| DINOFLAGELLATE #2 | CEL | | | | | | 0.5 | | 54 | | | | |
| DINOFLAGELLATE #3 | CEL | | | | | | 2.4 | | 270 | | | | |
| EUDORINA | COL | | | | | | | | X | | | | |
| EUGLENA #1 | CEL | | | | | | | | X | | | | |
| EUGLENA #2 | CEL | | | | | | | | X | | | | |

LAKE NAME: LAKE MURRAY
STC RET NUMBER: 4507

CONTINUED

03 27 73

07 07 73

09 22 73

TAXA

FLAGELLATE
FLAGELLATE #1
FLAGELLATE #2
FRAGILARIA
FRAGILARIA CROTCHNENSIS
FRANCEIA OVALIS
GLENODINIUM
KIRCHNERIELLA
LYNGBYA
LYNGBYA LIMNETICA
MELOSIPA
MELOSIRA #4
MELOSIRA DISTANS
MELOSIRA ITALICA
MERISMOPEDIA
MERISMOPEDIA TENUISSIMA
MICRACHTINUM PUSILLUM
NAVICULA
NAVICULA ?
NITZSCHIA
NITZSCHIA #1
NITZSCHIA #2
OOCYSTIS
OSCILLATORIA LIMNETICA
PANDORINA MORUM
PEDIASTRUM BIACIATUM
V. ?
PEDIASTRUM DUPLEX
V. GRACILIMUM
PEDIASTRUM TETRAS
V. TETRAODON
PENNATE DIATOM #1

| FORM | ALGAL UNITS PER ML | | ALGAL UNITS PER ML | | ALGAL UNITS PER ML | |
|------|--------------------|------|--------------------|------|--------------------|-----|
| | S | %C | S | %C | S | %C |
| CEL | | | 6.3 | | 702 | |
| CEL | 5 | 30.3 | 569 | | 5.8 | 648 |
| CEL | | | | | | |
| CEL | | | 5.8 | | 648 | |
| CEL | | | | | X | |
| CEL | 6.2 | | 138 | | 0.5 | 54 |
| CEL | | | | | | |
| CEL | 0.4 | | 9 | | | |
| CEL | 1.2 | | 27 | | | |
| FIL | | | | 9.1 | 1026 | |
| FIL | | | | | | |
| CEL | | | X | | X | |
| CEL | | | | | | |
| CEL | 0.6 | | 13 | | | |
| CEL | 4 | 19.1 | 423 | | | |
| CEL | 3 | 10.6 | 234 | | | |
| COL | | | | 0.5 | 54 | |
| COL | | | | | X | |
| COL | | | | | X | |
| CEL | | | | | | |
| CEL | | | X | | | |
| CEL | | | | | | |
| CEL | | | | | | |
| CEL | | | | | | |
| CEL | | | | | | |
| CEL | | | | | | |
| FIL | | | | 21.6 | 2429 | |
| COL | | | | | | |
| COL | | | | | | |
| COL | | | | | | |
| COL | | | | | | |
| COL | | | | | | |
| COL | | | | | | |
| COL | | | | | | |
| COL | | | | | | |
| COL | | | | | | |
| COL | | | | | | |
| COL | | | | | | |
| COL | | | | | | |
| CEL | | | | | | |

LAKE NAME: LAKE MURRAY
STORET NUMBER: 4507

CONTINUED

03 27 73

07 07 73

09 22 73

| TAXA | FORM | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML |
|----------------------------|------|----|------|--------------------|------|-----|--------------------|---|------|--------------------|
| PENNATE DIATOM #4 | CEL | | | | | 3.8 | 432 | | | |
| PENNATE DIATOMS | CEL | | 3.6 | 80 | | | | | | X |
| PERIDINIUM | CEL | | | | | | | | | X |
| PHACUS PYRUM | CEL | | | | | 0.5 | 54 | | | |
| PINNULARIA | CEL | | | X | | | | | | |
| RAPHIDIOPSIS | FIL | | | | | | | | | |
| RHIZOSCLENIA ERIENSIS | CEL | | | | | | | | | |
| SCENEDESMUS | COL | | | | | | | | | |
| SCENEDESMUS #1 | COL | | | | | | | X | | |
| SCENEDESMUS #2 | COL | | | | | | | X | | |
| SCENEDESMUS #7 | COL | | | | | | | | | X |
| SCENEDESMUS ARCUATUS | COL | | 0.4 | 9 | | | | | | |
| SCENEDESMUS DENTICULATUS | COL | | | | | | | | | X |
| SCENEDESMUS DISPAR | COL | | | | | | | X | | |
| SCENEDESMUS PROTUBERANS | COL | | | X | | | | | | |
| SCENEDESMUS QUADRICAUDA | COL | | 0.4 | 9 | | | | | | |
| STAURASTRUM | CEL | | | | | | | | | X |
| STAURASTRUM #1 | CEL | | | | | 0.5 | 54 | | | X |
| STAURASTRUM #2 | CEL | | | | | 0.5 | 54 | | | |
| STAURASTRUM TETRACERUM | CEL | | | | | | | | | X |
| STEPHANODISCUS ASTREA | CEL | 21 | 4.81 | 106 | | | | | | |
| SYNEDRA | CEL | | | | 5 | 6.7 | 756 | | 0.6 | 29 |
| SYNEDRA DELICATISSIMA | CEL | | | X | | | | | | |
| V. ANGUSTISSIMA | CEL | | | | | | | | | |
| TABELLARIA | CEL | | | | | | | X | | |
| TABELLARIA FENESTRATA ? | CEL | | | | | | | | 1.1 | 58 |
| TETRAEDRON | CEL | | | | | | | | | X |
| TETRAEDRON MINIMUM | CEL | | | | | | | | 0.6 | 29 |
| TETRAEDRON MINIMUM | CEL | | | | | | | | | |
| V. SCORBICULATUM | CEL | | | X | | | | | | |
| TETRASTRUM HETERACANTHUM | COL | | | | | 1.9 | 216 | | | |
| TREUBARIA TRIAPPENDICULATA | CEL | | | X | | | | | | |
| TOTAL | | | | | 2211 | | 11231 | | 5213 | |

LAKE NAME: LAKE ROBINSON
STCRET NUMBER: 4508

NYGAARD TROPHIC STATE INDICES

| DATE | 03 22 73 | 07 05 73 | 09 21 73 |
|---------------|----------|----------|----------|
| MYXOPHYCEAN | 0/04 0 | 0.06 C | 0/14 0 |
| CHLOROPHYCEAN | 0.75 E | 0.37 ? | 0.35 ? |
| EUGLENOPHYTE | 0/03 ? | 0.29 E | 0.40 E |
| DIATOM | 0/09 ? | 0/07 ? | 0/04 ? |
| COMPOUND | 0.75 0 | 0.56 0 | 0.50 0 |

PALMER'S ORGANIC POLLUTION INDICES

| DATE | 03 22 73 | 07 06 73 | 09 21 73 |
|---------|----------|----------|----------|
| GENUS | 00 | 02 | 05 |
| SPECIES | 00 | 00 | 00 |

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SPECIES DIVERSITY AND ABUNDANCE INDICES

| DATE | 03 22 73 | 07 06 73 | 09 21 73 |
|----------------------------------|----------|----------|----------|
| AVERAGE DIVERSITY | H | 0.47 | 0.95 |
| NUMBER OF TAXA | S | 20.00 | 39.00 |
| NUMBER OF SAMPLES COMPOSITED | M | 3.00 | 3.00 |
| MAXIMUM DIVERSITY | MAXH | 4.32 | 5.29 |
| TOTAL DIVERSITY | D | 2509.33 | 6005.90 |
| TOTAL NUMBER OF INDIVIDUALS/ML | N | 5339.00 | 6322.00 |
| EVENNESS COMPONENT | J | 0.11 | 0.18 |
| MEAN NUMBER OF INDIVIDUALS/TAXA | L | 266.95 | 162.10 |
| NUMBER/ML OF MOST ABUNDANT TAXON | K | 5023.00 | 5572.00 |
| | | | 881.28 |
| | | | 9506.00 |

LAKE NAME: LAKE ROBINSON
STCRET NUMBER: 4508

CONTINUED

| TAXA | FORM | 03 22 73 | | | 07 06 73 | | | 09 21 73 | | |
|-----------------------------|------|----------|------|--------------------|----------|------|--------------------|----------|------|--------------------|
| | | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML |
| ANKISTRODESMUS ? | CEL | | 0.9 | 47 | | | | | | |
| ARTHRODESMUS | CEL | | | | | | X | | | X |
| ARTHRODESMUS INCUS | CEL | | | X | | | | | | |
| ASTERICNELLA | CEL | | | | | | | | 0.1 | 32 |
| ASTERICNELLA FORMOSA | CEL | | | X | | | | | | |
| ASTERICNELLA RALFSII | CEL | | | | 88.1 | 5572 | | | | |
| CLOSTERIUM #1 | CEL | | | | | | | | 8.9 | 1971 |
| CLOSTERIUM #2 | CEL | | | | 0.4 | 23 | | | 3.2 | 700 |
| CLOSTERIUM #3 | CEL | | | | | | X | | | |
| COELASTRUM CAMBRICUM | COL | | | | | | | | | X |
| CCSMARIUM | CEL | 1 | 94.1 | 5023 | | | | | | |
| COSMARIUM #1 | CEL | | | | | | | | 43.1 | 9506 |
| CCSMARIUM #2 | CEL | 5 | 1.7 | 93 | | | | | | |
| COSMARIUM TENUE | CEL | | | | 0.4 | 23 | | | 2.0 | 445 |
| CRUCIGENIA TETRAPEDIA | COL | | 0.2 | 12 | 0.4 | 23 | | | | |
| CRYPTOMONAS #1 | CEL | | | | | | X | | | |
| CRYPTOMONAS EROSA | CEL | 3 | 1.1 | 58 | | | | | | |
| CYMBELLA ? | CEL | | | X | | | | | | |
| DESMID | CEL | | | | | | | 2.2 | | 477 |
| DICTYOSPHAERIUM PULCHELLUM | COL | | | | 0.4 | 23 | | | | |
| DINOBYRON CAMPANULOSTIPITUM | CEL | | | X | | | | | | |
| DINOBRYCN SERTULARIA | CEL | | | | | | | | | |
| DINOFLAGELLATE | CEL | | | | 0.4 | 23 | | | | |
| EUDORINA | COL | | | | | | X | | | |
| EUGLENA | CEL | | | | | | X | | | X |
| EUNOTIA FLEXUOSA | CEL | | | X | | | | | | |
| EUNOTIA PECTINALIS | CEL | | | X | | | | | | |
| EUNOTIA PECTINALIS | CEL | | | | | | | | | |
| V. ? | CEL | | | | | | | | | |
| FLAGELLATES | CEL | | | | 1.1 | 68 | | | | |
| FRUSTULIA | CEL | | | X | | | | | | |
| GLENODINIUM OCULATUM ? | CEL | | | X | | | | | | |

LAKE NAME: LAKE ROBINSON
STCRET NUMBER: 4508

CONTINUED

TAXA

COLENKINIA PAUCISPINA
GYMNODINIUM AERUGINOSUM
GYROSIGMA
MALLCMENAS
MICROCYSTIS INCERTA
NAVICULA CUSPIDATA
COCYSTIS PARVA
PEDIASTRUM DUPLEX
V. RETICULATUM
PENIUM ?
PINNULARIA MESOLEPTA
SCENEDESMUS ACUMINATUS
SCENEDESMUS BIJUGA
SCENEDESMUS DENTICULATUS
V. LINEARIS
SPHAERCHOSMA GRANULATUM
STAURASTRUM
STAURASTRUM #1
STAURASTRUM #2
STAURASTRUM #3
STAURASTRUM #4
STAURASTRUM #5
STAURASTRUM #6
STAURASTRUM APICULATUM
STAURASTRUM BRACHIATUM
STAURASTRUM DEJECTUM
STAURASTRUM GRANULATUS
STAURASTRUM MARGARITACEUM
STAURASTRUM MARGARITAC EUM
STAURASTRUM TETRACERUM
STAURONEIS ANCEPS
V. GRACILIS

03 22 73

07 06 73

09 21 73

| FORM | ALGAL UNITS PER ML | | | ALGAL UNITS PER ML | | | ALGAL UNITS PER ML | | |
|------|--------------------|-----|-----|--------------------|----|-----|--------------------|-----|------|
| | S | %C | | S | %C | | S | %C | |
| CEL | | | | | | X | | | X |
| CEL | 12 | 1.5 | 82 | | | | | | |
| CEL | | | | | | X | | | |
| CEL | | | | 1.1 | | 68 | | | |
| COL | | | | | | X | | | |
| CEL | 1 | | | | | X | | | X |
| CEL | | | | 1.8 | | 113 | | | |
| COL | | | | | | X | | | X |
| CEL | | | X | | | | | | |
| CEL | | | | | | | | | X |
| COL | | | | | | | | | |
| COL | 0.2 | 12 | 0.4 | | | 23 | | 0.3 | 63 |
| COL | | | | | | X | | | |
| CEL | | | | | | X | | | 5850 |
| CEL | | | | | | X | | | |
| CEL | | | | | | X | | | |
| CEL | | | | | | X | | | X |
| CEL | | | | | | | | | |
| CEL | | | | 1.4 | | 91 | | | |
| CEL | | | | 0.4 | | 23 | | | |
| CEL | | | | | | X | | | |
| CEL | | | | | | | | | X |
| CEL | | | X | | | | | | |
| CEL | | | | 0.4 | | 23 | | 3.0 | 568 |
| CEL | | | | | | X | | | |
| CEL | | | | 0.7 | | 45 | | | |
| CEL | | | | | | X | | | X |
| CEL | | | X | | | | | | |
| CEL | | | | | | | | 5.6 | 1239 |
| CEL | | | | | | X | | | |

LAKE NAME: LAKE ROBINSON
STORE NUMBER: 4508

CONTINUED

TAXA

SYNEDRA
TABELLARIA
TABELLARIA FENESTRATA
TABELLARIA FENESTRATA ?
TABELLARIA FLOCCULOSA
TRACHELMONAS SUPEREA
ULCTHRIX SUBTILLISSIMA
XANTHIDIUM ANTILCPAEUM
V. ?

TOTAL

LAKE NAME: LAKE WATERREE
STORET NUMBER: 4510

NYGAARD TROPHIC STATE INDICES

| DATE | 03 30 73 | 07 06 73 | 09 21 73 |
|---------------|----------|----------|----------|
| MYXOPHYCEAN | 02/0 E | 5.50 E | 3.00 E |
| CHLOROPHYCEAN | 04/0 E | 2.00 E | 4.25 E |
| EUGLENOPHYTE | 0.33 E | 0.06 ? | 0.07 ? |
| DIATOM | 0.40 E | 0.87 E | 1.00 E |
| COMPCUND | 12/0 E | 20.0 E | 9.25 E |

PALMER'S ORGANIC POLLUTION INDICES

| DATE | 03 30 73 | 07 06 73 | 09 21 73 |
|---------|----------|----------|----------|
| GENUS | 14 | 28 | 09 |
| SPECIES | 00 | 06 | 04 |

40

SPECIES DIVERSITY AND ABUNDANCE INDICES

| DATE | 03 30 73 | 07 06 73 | 09 21 73 |
|----------------------------------|----------|----------|----------|
| AVERAGE DIVERSITY | H | 3.81 | 4.48 |
| NUMBER OF TAXA | S | 34.00 | 57.00 |
| NUMBER OF SAMPLES COMPOSITED | M | 4.00 | 4.00 |
| MAXIMUM DIVERSITY | MAXH | 5.09 | 5.83 |
| TOTAL DIVERSITY | D | 9765.03 | 32206.72 |
| TOTAL NUMBER OF INDIVIDUALS/ML | N | 2563.00 | 7189.00 |
| EVENNESS COMPONENT | J | 0.75 | 0.77 |
| MEAN NUMBER OF INDIVIDUALS/TAXA | L | 75.38 | 126.12 |
| NUMBER/ML OF MOST ABUNDANT TAXON | K | 407.00 | 860.00 |
| | | | 16999.53 |
| | | | 4899.00 |
| | | | 90.72 |
| | | | 1493.00 |

LAKE NAME: LAKE WATeree
STORET NUMBER: 4510

CONTINUED

| TAXA | | | | 03 30 73 | | | 07 06 73 | | 09 21 73 |
|---------------------------|------|----|------|--------------------|-----|--|--------------------|-------|--------------------|
| | FCRM | IS | %C | ALGAL UNITS PER ML | | | ALGAL UNITS PER ML | | ALGAL UNITS PER ML |
| ACHNANTHES LANCEOLATA | | | | | | | | | |
| V. DUBIA | CEL | | | | | | X | | |
| ACHNANTHES LANCEOLATA | CEL | | | | | | | | |
| V. LANCEOLATOIDES | CEL | | | | | | | | X |
| ANABAENA ? #1 | FIL | | | | | | | 214.6 | 717 |
| ANABAENA #1 | FIL | | | | | | 304 | | |
| ANABAENA #2 | FIL | | | | | | X | | |
| ANABAENA #3 | FIL | | | | | | X | | |
| ANABAENA #4 | FIL | | | | | | X | | |
| ANABAENOPSIS #1 | FIL | | | | | | | 4.3 | 209 |
| ANABAENOPSIS #2 | FIL | | | | | | | | X |
| ANKISTRODESmus ? FALCATUS | CEL | | | | | | | | X |
| ASTERIONELLA FORMOSA | CEL | | 0.4 | | | | | | |
| CARTERIA KLEBSII | CEL | | | | 11 | | | | |
| CENTRIC DIATOM | CEL | | | | X | | | | |
| CERATIUM | CEL | | | | | | X | | |
| CHLAMYDOMONAS | CEL | 3 | 5.6 | | | | | | |
| CHLOROGNIUM | CEL | | | | 143 | | | | |
| CHROOCOCCUS | CEL | | 1.7 | | 44 | | | | |
| CLUSTERIUM ? | CCL | | | | | | | | |
| CLUSTERIUM #1 | CEL | | | | | | X | | |
| CLOSTERIUM #2 | CEL | | | | | | | | |
| COCCOID COLONY | COL | | 0.9 | | | | | | |
| COELASTRUM | COL | | | | 22 | | | | |
| COSMARIUM | CEL | | | | | | | | |
| CRUCIGENIA APICULATA | COL | | | | | | | | |
| CRUCIGENIA TETRAPEDIA | COL | | | | | | | | |
| CRYPTOMONAS #1 | COL | | | | | | | | |
| CRYPTOMONAS #2 | CEL | | | | | | | | |
| CRYPTOMONAS EROSA | CEL | | | | | | | | |
| CRYPTOMONAS SPP. | CEL | 4 | 13.3 | | | | | | |
| CYANOPHYTAN FILAMENT | FIL | | 3.9 | | | | | | |

LAKE NAME: LAKE WATREE
STCRET NUMBER: 4510

CONTINUED

03 30 73 07 06 73 09 21 73

TAXA

CYCLOTELLA #1
CYCLOTELLA STELLIGERA
EACTYLCCCCOPYSIS
DINOFLAGELLATE
EUASTRUM
EUGLENA
EUGLENA #1
FLAGELLATE #1
FLAGELLATE #2
FLAGELLATE #3
FLAGELLATES
GOMPHONEMA ACUMINATUM
 V. PRODUCTA
GOMPHONEMA CLIVACEUM
GONIUM PECTORALE
GYROSIGMA
HANTZSCHIA VIRGATA
KIRCHNERIELLA
LAGERHEIMIA
LYNGBYA LIMNETICA
MALLOMONAS
MELOSIRA #2
MELOSIRA #3
MELOSIRA #4
MELOSIRA DISTANS
MELOSIRA GRANULATA
MELOSIRA ITALICA
MELOSIRA VARIANS
MERISMOPEDIA MINIMA
MERISMOPEDIA PUNCTATA
MERISMOPEDIA TENUISSIMA
MICROCYSTIS INCERTA

| FORM | ALGAL UNITS PER ML | | | ALGAL UNITS PER ML | | | ALGAL UNITS PER ML | | |
|------|--------------------|------|-----|--------------------|-----|----|--------------------|------|------|
| | I | S | %C | I | S | %C | I | S | %C |
| CEL | | | | 5.6 | 405 | | 14 | 7.9 | 388 |
| CEL | 15 | 6.9 | 176 | 4.2 | 304 | | | | |
| CEL | | 5.0 | 231 | 3.5 | 253 | | 11 | 30.5 | 1493 |
| CEL | | | | 1.4 | 101 | | | 3.6 | 30 |
| CEL | | | | | | | | 0.6 | 30 |
| CEL | | | | | | | | | X |
| CEL | | 4.3 | 110 | | | | | | |
| CEL | | | | 0.7 | 51 | | | | |
| CEL | | | | | | X | | | |
| CEL | | 2.6 | 66 | | | | | | |
| CEL | | 11.2 | 286 | | | | | | |
| CEL | | | | 5.3 | 455 | | 5 | 7.3 | 358 |
| CEL | | | | | | | | | |
| CEL | | | | | | | | | |
| CEL | | | | | | | | | |
| COL | | | | | | | | | |
| CEL | | | | | | | | | |
| CEL | | 0.4 | 11 | | | | | | |
| CEL | | 0.4 | 11 | 0.7 | 51 | | 1.2 | | 60 |
| CEL | | | | | | | | | X |
| CEL | | | | | | | | | |
| CEL | | | | | | | | | |
| FIL | | | | | | | | | |
| CEL | | 4.3 | 110 | | | | | | |
| CEL | | | | | | | | | |
| CEL | | | | 12.0 | 860 | | | | |
| CEL | | | | 1.4 | 101 | | 4.3 | | 209 |
| CEL | | | | 1.4 | 101 | | | | X |
| CEL | | | | 1.4 | 101 | | | | X |
| CEL | 12 | 15.9 | 407 | 1.4 | 101 | | | | |
| CEL | 11 | 3.6 | 220 | | | | | | |
| CEL | | | | | | | | | |
| CEL | | | | | | | | | |
| COL | | | | | | | | | |
| CEL | | | | | | | | | |
| COL | | | | 0.7 | 51 | | 1.2 | | 60 |
| COL | | | | | | | | | X |
| COL | | | | | | | | | |
| COL | | | | | | | | | |
| COL | | | | 9.2 | 658 | | 2.4 | | 119 |
| COL | | | | 2.8 | 202 | | | | X |
| COL | | | | | | | | | |

LAKE NAME: LAKE WATREE
STCRET NUMBER: 4510

CONTINUED

| TAXA | FORM | 03 30 73 | | | 07 06 73 | | | 09 21 73 | | | | |
|------------------------|------|----------|---|-----|--------------------|-----|-----|----------|--------------------|-----|-----|----|
| | | I | S | %C | ALGAL UNITS PER ML | I | S | %C | ALGAL UNITS PER ML | I | S | %C |
| NAVICULA | CEL | | | | | | | | X | | | |
| NAVICULA #1 | CEL | | | | X | | | | | | | X |
| NAVICULA #2 | CEL | | | | X | | | | | | | X |
| NAVICULA #3 | CEL | | | | X | | | | | | | |
| NAVICULA MUTICA | CEL | | | | | | | | X | | | X |
| NAVICULA SPP. | CEL | | | 4.7 | 121 | | | | | | | |
| NITZSCHIA | CEL | | | | X | | | | | | | |
| NITZSCHIA #1 | CEL | | | | | 2 | 8.4 | 607 | | 6.1 | 299 | |
| OSCILLATORIA #1 | FIL | | | | | 3 | 8.4 | 607 | | 0.6 | 30 | |
| CSCILLATORIA LIMNETICA | FIL | | | | | | 0.7 | 51 | | | | |
| PANDORINA MCRUM | COL | | | | | | | | | | | X |
| PEDIASTRUM BIRACIATUM | COL | | | | | | | | | | | |
| V. LONGECORNUTUM | COL | | | | | | | | | 0.6 | 30 | |
| PEDIASTRUM BORYANUM | COL | | | | | | | | X | | | |
| PECIASTRUM DUPLEX | COL | | | | | | | | | | | |
| V. CLATHRATUM | COL | | | | | | | | X | | | |
| PEDIASTRUM DUPLEX | COL | | | | | | | | | | | |
| V. RETICULATUM | COL | | | | | | | | X | | | |
| PEDIASTRUM TETRAS | COL | | | | | | | | | | | |
| V. TETRAODON | COL | | | | | 0.7 | | 51 | | | | X |
| PENNATE DIATOM | CEL | | | | | | | | X | | | |
| PHACUS | CEL | | | | | | | | | 0.6 | 30 | |
| PINNULARIA | CEL | | | | | | | | X | | | |
| PTERCMCNAS | CEL | | | | | | | | | | | |
| PTERCMONAS KLEBSII | CEL | | | 1.3 | 33 | | | | | | | |
| RAPHIDIOPSIS | FIL | | | | | | | | | | | |
| SCENEDESMUS | COL | | | | | | | | X | | | |
| SCENEDESMUS #1 | COL | | | | | 1.4 | | 101 | | 0.6 | 30 | |
| SCENEDESMUS ACUMINATUS | COL | | | | | 0.7 | | 51 | | | | X |
| SCENEDESMUS ARMATUS | COL | | | | | | | | | | | |
| V. BOGLARIENSIS | COL | | | | | | | | X | | | |
| SCENEDESMUS BICAUDATUS | COL | | | | | 4.2 | | 304 | | 0.5 | 30 | |

LAKE NAME: LAKE WATREE
STORET NUMBER: 4510

CONTINUED

| TAXA | FORM | 03 30 73 | | | 07 06 73 | | | 09 21 73 | | |
|--------------------------|------|----------|----|--------------------|----------|-----|--------------------|----------|-----|--------------------|
| | | IS | %C | ALGAL UNITS PER ML | IS | %C | ALGAL UNITS PER ML | IS | %C | ALGAL UNITS PER ML |
| SCENEDESMUS BIJUGA | COL | | | | | | | | | X |
| SCENEDESMUS DENTICULATUS | COL | | | | | 0.7 | 51 | | | X |
| SCENEDESMUS DISPAR ? | CCL | | | | | | X | | 1.2 | 60 |
| SCENEDESMUS QUADRICAUDA | COL | 1.3 | | 33 | | | | | 2.4 | 119 |
| SCHROEDERIA ? | CEL | | | | | | | | | X |
| SCHROEDERIA SETIGERA | CEL | 0.9 | | 22 | | | | | | |
| SYNEDRA | CEL | | | | | | X | | | X |
| SYNEDRA ULNA | CEL | | | X | | 2.1 | 152 | | | |
| TETRAEDRON | CEL | | | | | | X | | | |
| TETRAEDRON #1 | CEL | | | | | 1.4 | 101 | | | |
| TETRAEDRON MINIMUM | CEL | | | | | | | | | X |
| TETRAEDRON TRIGONUM | CEL | | | | | | X | | | X |
| TETRASTRUM HETERACANTHUM | COL | | | | | | | | | X |
| TRACHELMONAS VOLVCCINA | CEL | 2.6 | | 66 | | 0.7 | 51 | | | |
| TREUBARIA | CEL | | | | | | | | | X |
| TOTAL | | | | 2563 | | | 7189 | | | 4899 |

LAKE NAME: LAKE WYLIE
STCRET NUMBER: 4511

NYGAARD TROPHIC STATE INDICES

| DATE | 03 28 73 | 07 12 73 | 09 20 73 |
|---------------|----------|----------|----------|
| MYXOPHYCEAN | 3.00 E | 1.50 E | 3.00 E |
| CHLOROPHYCEAN | 3.00 E | 2.50 E | 7.00 E |
| EUGLENOPHYTE | 0.17 ? | 0.12 ? | 0/20 ? |
| DIATOM | 0.44 E | 0.56 E | 1.00 E |
| COMPCUND | 11.0 E | 5.75 E | 12.0 E |

PALMER'S ORGANIC POLLUTION INDICES

| DATE | 03 28 73 | 07 12 73 | 09 20 73 |
|---------|----------|----------|----------|
| GENUS | 11 | 09 | 12 |
| SPECIES | 00 | 00 | 00 |

54

SPECIES DIVERSITY AND ABUNDANCE INDICES

| DATE | 03 28 73 | 07 12 73 | 09 20 73 |
|----------------------------------|----------|----------|----------|
| AVERAGE DIVERSITY | H | 3.36 | 3.62 |
| NUMBER OF TAXA | S | 27.00 | 42.00 |
| NUMBER OF SAMPLES COMPOSITED | M | 4.00 | 4.00 |
| MAXIMUM DIVERSITY | MAXH | 4.75 | 5.39 |
| TOTAL DIVERSITY | D | 10617.50 | 16782.32 |
| TOTAL NUMBER OF INDIVIDUALS/ML | N | 3160.00 | 4636.00 |
| EVENNESS COMPONENT | J | 0.71 | 0.67 |
| MEAN NUMBER OF INDIVIDUALS/TAXA | L | 117.04 | 110.38 |
| NUMBER/ML OF MOST ABUNDANT TAXON | K | 627.00 | 874.00 |
| | | | 134.00 |

LAKE NAME: LAKE WYLIE
STORET NUMBER: 4511

CONTINUED

| TAXA | | 03 28 73 | | 07 12 73 | | 09 20 73 | | | | |
|--------------------------|------|----------|-----|--------------------|-----|----------|--------------------|------|------|--------------------|
| | FORM | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML |
| ANABAENA | FIL | | | | | | | 13.2 | | 132 |
| ANABAENA #1 | FIL | 1 | | | 1.6 | | 76 | | | |
| ANABAENA #2 | FIL | | | | | | X | | | |
| ANKISTRODES MUS | CEL | | 1.6 | 52 | | | X | | 1.3 | 13 |
| ANKISTRODES MUS FALCATUS | CEL | | | | | | | | | X |
| ASTERIONELLA | CEL | | | X | | 0.8 | | 38 | | |
| CENTRIC DIATOM | CEL | | | | | | | | 11.9 | 119 |
| CENTRIC DIATOM #1 | CEL | | 2.5 | 78 | | 3.3 | | 152 | | |
| CHLAMYDOMONAS | CEL | | | | | 3.3 | | 152 | | |
| CHLORELLA | CEL | | | | | | | | 5.2 | 52 |
| CHLORELLA VULGARIS | CEL | | | | | | | | 7.9 | 79 |
| CHROOCOCCUS ? | COL | | | | | | | | 2.7 | 27 |
| CLCSTERIUM | CEL | | | X | | | | | | |
| CLCSTERIUM #2 | CEL | | | | | | | X | | |
| COCCONEIS | CEL | | | | | | | X | | |
| COELASTRUM | COL | | | | | | | X | | |
| COSMARIUM #1 | CEL | | | | | 0.8 | | 38 | | |
| COSMARIUM #2 | CEL | | | | | | | X | | |
| CRUCIGENIA | COL | | | | | | | | | X |
| CRUCIGENIA CRUCIFERA | COL | | | | | | | X | | |
| CRUCIGENIA TETRAPEDIA | COL | | | | | 0.8 | | 38 | | |
| CRYPTOMCNAS | CEL | | | | | 13.1 | | 508 | | |
| CRYPTOMCNAS #2 | CEL | | | | | | | | 10.5 | 105 |
| CYCLOTELLA | CEL | 9.9 | | 314 | | 18.9 | | 874 | | |
| CYCLOTELLA STELLIGERA ? | CEL | | | | | | | X | | |
| CYMBELLA | CEL | | | | | | | | | |
| CACTYLLOCOCOPSIS | CEL | 4.1 | | 131 | | 1.6 | | 76 | | |
| DINCBRYCN BAVARICUM | CEL | 0.8 | | 26 | | | | | | |
| DINOFLAGELLATE #1 | CEL | | | X | | 1.6 | | 76 | | |
| DINOFLAGELLATE #2 | CEL | 0.8 | | 26 | | 3.3 | | 152 | | |
| DINOFLAGELLATE #3 | CEL | | | | | 0.8 | | 38 | | |
| DINOFLAGELLATE spp. | CFL | | | | | | | | 5.21 | 52 |

LAKE NAME: LAKE WYLIE
STCRET NUMBER: 4511

CONTINUED

03 28 73

07 12 73

09 20 73

TAXA

EPITHEMIA
EUGLENA
EUGLENA #1
EUNOTIA
FLAGELLATE #1
FLAGELLATE #2
FLAGELLATE #3
FLAGELLATES
FRANCEIA DROESCHERI
KIRCHNERIELLA CONVICTA
LYNGBYA LIMNETICA
MELOSIRA
MELOSIRA #2
MELOSIRA DISTANS
MERISMOPEDIA
MERISMOPEDIA MARSSONII
MICROCYSTIS
MICROCYSTIS INCERTA
NAVICULA #1
NAVICULA #2
NAVICULA #3
NITZSCHIA
NITZSCHIA #1
NITZSCHIA #2
OSCILLATORIA
OSCILLATORIA LIMNETICA
PEDIASTRUM BIIRRADIATUM
V. LONGECRNUUM
PEDIASTRUM TETRAS
V. TETRAODON
PENNATE DIATOM #1
PENNATE DIATOM #4

| FORM | ALGAL UNITS PER ML | | | ALGAL UNITS PER ML | | | ALGAL UNITS PER ML | | |
|------|--------------------|-----|------|--------------------|----|--|--------------------|----|--|
| | IS | %C | | IS | %C | | IS | %C | |
| CEL | | | X | | | | | | |
| CEL | 0.8 | 26 | | | | | | | |
| CEL | | | X | | | | X | | |
| CEL | 19.8 | 627 | | | | | | | |
| CEL | 15.7 | 496 | | | | | | | |
| CEL | 6.6 | 209 | | | | | | | |
| CEL | | | 13.1 | | | | 608 | | |
| CEL | | | | | | | X | | |
| CEL | | | 0.8 | | | | 38 | | |
| FIL | | | X | | | | | | |
| FIL | | | 0.8 | | | | 38 | | |
| CEL | | | | | | | | | |
| CEL | 6.6 | 209 | | | | | 508 | | |
| CEL | 14.9 | 470 | | | | | 646 | | |
| COL | | | | | | | | | |
| COL | | | | | | | | | |
| COL | | | | | | | | | |
| CCL | | | 0.8 | | | | 38 | | |
| CEL | | | | | | | | | |
| CEL | 0.8 | 26 | | | | | 38 | | |
| CEL | | | X | | | | | | |
| CEL | | | 0.8 | | | | 38 | | |
| FIL | 1.6 | 52 | | | | | | | |
| FIL | | | 0.8 | | | | 38 | | |
| COL | | | | | | | | | |
| COL | | | | | | | | | |
| CEL | | | 0.8 | | | | 38 | | |
| CEL | 0.8 | 26 | | | | | | | |

47

X

LAKE NAME: LAKE WYLIE
STORET NUMBER: 4511

CONTINUED

| TAXA | FORM | 03 28 73 | | | 07 12 73 | | | 09 20 73 | | | | | |
|-------------------------|------|----------|------|----|--------------------|---|---|----------|--------------------|----|---|------|--------------------|
| | | I | S | %C | ALGAL UNITS PER ML | I | S | %C | ALGAL UNITS PER ML | I | S | %C | ALGAL UNITS PER ML |
| PHACUS FELIKOIDES | CEL | | | | | | | | X | | | | |
| PINNULARIA | CEL | | | | X | | | | | | | | |
| RHIZOSCLENIA | CEL | | | | | | | | X | | | | |
| SCENEDESMUS | COL | | | | | | | | | | | | |
| SCENEDESMUS #1 | COL | | 0.8 | | 26 | | | 0.8 | | 38 | | 9.2 | 92 |
| SCENEDESMUS ABUNDANS | COL | | | | | | | | | | | X | |
| SCENEDESMUS ACUMINATUS | COL | | | | | | | | | | | X | |
| SCENEDESMUS GUTWINSKII | COL | | | | | | | | | | | X | |
| V. ? | COL | | | | | | | | | | | | |
| SCENEDESMUS QUADRICAUDA | COL | | | | | | | | X | | | | |
| SCENEDESMUS QUADRICAUDA | COL | | | | | | | | | | | X | |
| V. LONGISPINA | COL | | | | | | | | | | | | |
| SCENEDESMUS SOLI | COL | | | | X | | | | | | | X | |
| SCHROEDERIA SETIGERA | CEL | | | | | | | | | | | | |
| STAURASTRUM | CEL | | | | | | | | | X | | | |
| STAURASTRUM #1 | CEL | | | | | | | | | | | 1.3 | 13 |
| STAURASTRUM #2 | CEL | | | | | | | | | | | 1.3 | 13 |
| SYNEDRA | CEL | | 11.6 | | 356 | | | | | | | | |
| SYNEDRA ? | CEL | | | | X | | | | | | | | |
| SYNEDRA #1 | CEL | | | | | | | | | X | | | |
| SYNEDRA #2 | CEL | | | | | | | | | X | | | |
| TABELLARIA | CEL | | | | | | | | | | | | |
| TETRAECRON | CEL | | | | | | | | | X | | | |
| TETRAECRON REGULARE | CEL | | | | | | | | | | | | |
| V. INCLS ? | CEL | | | | | | | | | | | 1.3 | 13 |
| TREUBARIA | CEL | | | | | | | | | | | X | |
| TOTAL | | | | | 3160 | | | | 4636 | | | 1001 | |

LAKE NAME: LAKE MOLLTRIE
STCRET NUMBER: 4512

NYGAARD TROPHIC STATE INDICES

DATE 07 09 73 09 21 73

| | | | | |
|---------------|------|---|------|---|
| MYXOPHYCEAN | 3.00 | E | 1.50 | E |
| CHLOROPHYCEAN | 4.67 | E | 3.50 | E |
| EUGLENOPHYTE | 0/23 | ? | 0/10 | ? |
| DIATOM | 0.67 | E | 1.00 | E |
| CCMPUND | 9.00 | E | 6.00 | E |

PALMER'S ORGANIC POLLUTION INDICES

DATE 07 09 73 09 21 73

| | | | |
|---------|----|--|----|
| GENUS | 22 | | 06 |
| SPECIES | 07 | | 04 |

69

SPECIES DIVERSITY AND ABUNDANCE INDICES

DATE 07 09 73 09 21 73

| | | | |
|----------------------------------|------|----------|----------|
| AVERAGE DIVERSITY | H | 3.56 | 2.05 |
| NUMBER OF TAXA | S | 39.00 | 17.00 |
| NUMBER OF SAMPLES COMPOSITED | M | 6.00 | 6.00 |
| MAXIMUM DIVERSITY | MAXH | 5.29 | 4.09 |
| TOTAL DIVERSITY | D | 48448.04 | 36428.50 |
| TOTAL NUMBER OF INDIVIDUALS/ML | N | 13609.00 | 17770.00 |
| EVENNESS CCMPONENT | J | 0.67 | 0.50 |
| MEAN NUMBER OF INDIVIDUALS/TAXA | L | 348.95 | 1045.29 |
| NUMBER/ML OF MOST ABUNDANT TAXON | K | 3609.00 | 7280.00 |

LAKE NAME: LAKE MOULTRIE
STORET NUMBER: 4512

CONTINUED

07 09 73

09 21 73

| TAXA | FORM | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML |
|-------------------------------|------|---|------|--------------------|------|-----|--------------------|
| ACHNANTHES LANCEOLATA | CEL | | | X | | | |
| V. DUBIA | FIL | | | | 0.4 | | 70 |
| ANABAENA | FIL | | 0.7 | 93 | | | |
| ANABAENA #1 | FIL | | 2.0 | 278 | | | |
| ANABAENA #2 | CEL | | 0.7 | 93 | | | |
| ANKISTRODESmus | COL | | | | 38.5 | | 6850 |
| CHROOCOCCUS | CEL | | | X | | | |
| CLOSTERIUM | COL | | | X | | | |
| COELASTRUM | COL | | | | 0.8 | | 140 |
| COELASTRUM PRINTSII ? | COL | | 0.7 | 93 | | | |
| COELASTRUM SPHAERICUM | CEL | | | | | | X |
| CCSCINODISCUS | CEL | | | | 0.4 | | 70 |
| COSMARIUM | CEL | | | | | | |
| CRYPTOMONAS #1 | CEL | | 2.0 | 278 | | | |
| CYCLOTELLA STELLIGERA | CEL | | 2.0 | 278 | | | |
| DACTYLOCOCCOPSIS | CEL | | 4.1 | 555 | | | |
| DACTYLOCOCCOPSIS FASCICULARIS | CEL | | | | 41.0 | | 7280 |
| DINOFLAGELLATE | CEL | | 0.7 | 93 | | 0.4 | 70 |
| EUASTRUM | CEL | | 0.7 | 93 | | | |
| FLAGELLATES | CEL | | 4.1 | 555 | | | |
| FRAGILARIA CROTONEENSIS | CEL | | | X | | | |
| FRANCEIA | CEL | | 0.7 | 93 | | | |
| GOLENKINIA | CEL | | | X | | 0.4 | 70 |
| KIRCHNERIELLA | CEL | | | X | | | |
| LYNGBYA LIMNETICA | FIL | | 26.5 | 3609 | | | |
| MELOSIRA | CEL | | | | 8.7 | | 1540 |
| MELOSIRA #2 | CEL | | 22.4 | 3054 | | | |
| MELOSIRA #3 | CEL | | 1.4 | 185 | | | |
| MELOSIRA DISTANS | CEL | | 11.6 | 1573 | | | |
| MERISMOPEDIA PUNCTATA | COL | | | X | | | |
| MERISMOPEDIA TENUISSIMA | COL | | 2.0 | 278 | | | |
| MICROCYSTIS INCERTA | COL | | 1.4 | 185 | | | |

LAKE NAME: LAKE MULTRIE
STORET NUMBER: 4512

CONTINUED

07 09 73

09 21 73

TAXA

NAVICULA
NITZSCHIA #1
OSCILLATORIA LIMNETICA
PEDIASTRUM CUPLEX
V. RETICULATUM
PEDIASTRUM TETRAS
V. TETRAODON
PENNATE DIATOM #1
PENNATE DIATOM #2
RAPHIDICPSIS
SCENEDESMUS ABUNDANS
SCENEDESMUS ACUMINATUS
SCENEDESMUS BICALDATUS
SCENEDESMUS BIJUGA
SCENEDESMUS DENTICULATUS
SCENEDESMUS DISPAR
SCENEDESMUS QUADRICAUDA
V. LONGISPINA
STAURA STRUM
SYNEDRA
SYNEDRA ULNA
TETRAEDRON MINIMUM

| FORM | ALGAL UNITS PER ML | | | ALGAL UNITS PER ML | | |
|------|--------------------|-----|--|--------------------|-----|---|
| | IS | %C | | IS | %C | |
| CEL | 0.7 | 93 | | | | |
| CEL | 2.0 | 278 | | | | |
| FIL | 2.0 | 278 | | | | |
| COL | | X | | 0.4 | 70 | |
| COL | 0.7 | 93 | | 0.4 | 70 | |
| CEL | | | | 4.3 | 770 | |
| CEL | | | | | | X |
| FIL | 0.7 | 93 | | | | |
| COL | 1.4 | 185 | | | | |
| COL | | X | | 0.4 | 70 | |
| CCL | | X | | | | |
| COL | | X | | | | X |
| COL | | X | | | | |
| COL | 1.4 | 185 | | | | |
| COL | | X | | | | |
| COL | 5.4 | 740 | | 3.2 | 550 | |
| CEL | | X | | 0.8 | 140 | |
| CEL | 0.7 | 93 | | | | |
| CEL | 1.4 | 185 | | | | |
| CEL | | X | | | | |

TOTAL

13609

17770

LAKE NAME: LAKE KECWEE
STORET NUMBER: 4513

NYGAARD TROPHIC STATE INDICES

| DATE | 06 25 73 | 09 17 73 | 11 13 73 |
|---------------|----------|----------|----------|
| MYXOPHYCEAN | 04/0 E | 8.00 E | 1.00 E |
| CHLOROPHYCEAN | 01/0 E | 3.00 E | 4.00 E |
| EUGLENOPHYTE | 0/05 ? | 0/11 ? | 0.20 ? |
| DIATOM | 0.67 E | 1.33 E | 1.00 E |
| COMPCUND | 09/0 E | 15.0 E | 9.00 E |

PALMER'S ORGANIC POLLUTION INDICES

| DATE | 06 25 73 | 09 17 73 | 11 13 73 |
|---------|----------|----------|----------|
| GENUS | 02 | 02 | 00 |
| SPECIES | 00 | 00 | 00 |

52

SPECIES DIVERSITY AND ABUNDANCE INDICES

| DATE | 06 25 73 | 09 17 73 | 11 13 73 |
|----------------------------------|-----------|----------|----------|
| AVERAGE DIVERSITY | H 2.23 | 3.15 | 2.60 |
| NUMBER OF TAXA | S 21.00 | 28.00 | 12.00 |
| NUMBER OF SAMPLES COMPOSITED | M 4.00 | 4.00 | 4.00 |
| MAXIMUM DIVERSITY | MAXH 4.39 | 4.81 | 3.58 |
| TOTAL DIVERSITY | D 4326.20 | 2101.05 | 156.00 |
| TOTAL NUMBER OF INDIVIDUALS/ML | N 1940.00 | 657.00 | 50.00 |
| EVENNESS COMPONENT | J 0.51 | 0.65 | 0.73 |
| MEAN NUMBER OF INDIVIDUALS/TAXA | L 92.38 | 23.82 | 5.00 |
| NUMBER/ML OF MOST ABUNDANT TAXON | K 915.00 | 231.00 | 17.00 |

LAKE NAME: LAKE KECWEE
STORET NUMBER: 4513

CONTINUED

06 25 73

09 17 73

11 13 73

TAXA

ANABAENA #1
ASTERICNELLA
ASTERICNELLA FORMOSA
CERATIUM HIRUNDINELLA
COELASTRUM #1
CCSMARIUM
CRUCIGENIA TETRAPEDIA
CYANOPHYTAN FILAMENT
CYCLOTELLA
CYCLOTELLA STELLIGERA
CACTYLOCOCOPSIS #1
DACTYLCCCCPSIS SMITHII
DINCBRYCN
DINOBRYON SERTULARIA
DINOBRYCN SERTULARIA ?
DINOFLAGELLATE
EUGLENA
FLAGELLATE
FLAGELLATE #1
GLOEOTHECE
LYNGBYA LIMNETICA
MALLOMONAS
MELOSIRA #4
MELOSIRA DISTANS
MELOSIRA ITALICA
V. TENUISSIMA
MERISMOPEDIA TENUISSIMA
MICROCYSTIS INCERTA
MICROTHAMNIUM STRICTISSIMUM
NAVICULA #1
NAVICULA #2
NAVICULA ELGINENSIS

| FORM | ALGAL UNITS PER ML | | | ALGAL UNITS PER ML | | | ALGAL UNITS PER ML | | |
|------|--------------------|------|-----|--------------------|------|----|--------------------|------|----|
| | S | %C | | S | %C | | S | %C | |
| FIL | | 1.3 | 25 | | | | X | | |
| CEL | | 0.6 | 12 | | | | | | |
| CEL | | | X | | | | | | |
| CEL | | | X | | | | | | |
| COL | | | | 1.5 | | 10 | | 6.7 | 4 |
| CEL | | | | | | | | | X |
| COL | | 0.6 | 12 | | | | | 28.3 | 17 |
| FIL | | 1.3 | 25 | | | | | | |
| CEL | | 10.2 | 198 | | | | | | |
| CEL | | 27.4 | 532 | | 6.3 | 42 | | 15.0 | 9 |
| CEL | | | X | | 1.5 | 10 | | 6.7 | 4 |
| CEL | | | | | | | X | | X |
| CEL | | | | | | | X | | |
| CEL | | | | | | | X | | |
| CEL | | 3.8 | 74 | | 1.5 | 10 | | | X |
| CEL | | | | | | | | | |
| CEL | | | | | | | | | |
| CEL | | 2.5 | 49 | | 4.6 | 31 | | | |
| COL | | | | | 10.9 | 73 | | | |
| FIL | | | | | 6.3 | 42 | | | |
| CEL | | 0.6 | 12 | | 1.5 | 10 | | | |
| CEL | | | | | | | X | | |
| CEL | | 47.2 | 915 | | 14.1 | 94 | | 21.7 | 13 |
| CEL | | | | | | | X | | |
| COL | | 2.5 | 49 | | 6.3 | 42 | | | |
| COL | | | | | | | X | | |
| FIL | | | | | 1.5 | 10 | | | |
| CEL | | | X | | 1.5 | 10 | | | X |
| CEL | | | X | | | | | | |
| CEL | | | | | | | | | |

53

LAKE NAME: LAKE KECWEE
STORET NUMBER: 4513

CONTINUED

06 25 73

09 17 73

11 13 73

TAXA

COCYSTIS
CSCILLATORIA
PENNATE DIATOM #1
PERIDINIUM WISCONSINENSE
QUADRIGULA CLOSTERIOIDES
RHIZOSCLENIA ERIENSIS
ROYA ?
SCENEDESMUS BIJUGA
STAURASTRUM
SYNEDRA
TABELLARIA FENESTRATA

| FORM | ALGAL UNITS | | | ALGAL UNITS | | | ALGAL UNITS | | |
|-------|-------------|------|----|-------------|------|-----|-------------|------|----|
| | I | S | %C | I | S | %C | I | S | %C |
| CEL | | | | | | | X | | |
| FIL | | | | | 4.6 | | 31 | | |
| CEL | | | | | | | | | |
| CEL | | 0.6 | | 12 | | | X | | |
| CEL | | | | | | | X | | |
| CEL | | | | | | | | | |
| CEL | | | | X | | | | | |
| CEL | | | | | 34.6 | | 231 | | |
| COL | | | | | | | | 15.0 | |
| CEL | | | | | | | X | | |
| CEL | | | | X | | 3.1 | 21 | | |
| CEL | | 1.31 | | 25 | | | | | |
| TOTAL | | | | 1940 | | | 667 | | 60 |

LAKE NAME: LAKE SECESSION
STORET NUMBER: 4514

NYGAARD TROPHIC STATE INDICES

| DATE | 06 | 26 | 73 | 09 | 18 | 73 | 11 | 14 | 73 |
|---------------|------|----|----|------|----|----|------|----|----|
| MYXOPHYCEAN | 2.40 | E | | 06/0 | E | | 1.25 | E | |
| CHLOROPHYCEAN | 4.20 | E | | 02/0 | E | | 5.00 | E | |
| EUGLENOPHYTE | 0.18 | ? | | 0.25 | E | | 0.16 | ? | |
| DIATOM | 0.50 | E | | 0.80 | E | | 0.50 | E | |
| COMPOUND | 8.80 | E | | 14/0 | E | | 8.25 | E | |

PALMER'S ORGANIC POLLUTION INDICES

| DATE | 06 | 26 | 73 | 09 | 18 | 73 | 11 | 14 | 73 |
|---------|----|----|----|----|----|----|----|----|----|
| GENUS | | | 10 | | | 00 | | | 15 |
| SPECIES | | | 00 | | | 00 | | | 07 |

55

SPECIES DIVERSITY AND ABUNDANCE INDICES

| DATE | 06 | 26 | 73 | 09 | 18 | 73 | 11 | 14 | 73 |
|----------------------------------|----|---------|----|--------|----|----------|----|----|----|
| AVERAGE DIVERSITY | H | 3.92 | | 2.62 | | 4.03 | | | |
| NUMBER OF TAXA | S | 70.00 | | 23.00 | | 55.00 | | | |
| NUMBER OF SAMPLES COMPOSED | M | 3.00 | | 3.00 | | 3.00 | | | |
| MAXIMUM DIVERSITY MAXH | | 6.13 | | 4.52 | | 5.78 | | | |
| TOTAL DIVERSITY | D | 9325.68 | | 969.40 | | 21101.08 | | | |
| TOTAL NUMBER OF INDIVIDUALS/ML | N | 2379.00 | | 370.00 | | 5236.00 | | | |
| EVENNESS COMPONENT | J | 0.64 | | 0.58 | | 0.70 | | | |
| MEAN NUMBER OF INDIVIDUALS/TAXA | L | 33.99 | | 16.09 | | 95.20 | | | |
| NUMBER/ML OF MOST ABUNDANT TAXON | K | 567.00 | | 147.00 | | 1145.00 | | | |

LAKE NAME: LAKE SECESSION
STCRET NUMBER: 4514

CONTINUED

| TAXA | | 06 26 73 | | | 09 18 73 | | | 11 14 73 | | | | | |
|-------------------------|------|----------|------|----|--------------------|---|------|----------|--------------------|---|------|----|--------------------|
| | FORM | I | S | %C | ALGAL UNITS PER ML | I | S | %C | ALGAL UNITS PER ML | I | S | %C | ALGAL UNITS PER ML |
| ACHNANTHES LANCEOLATA | CEL | | | | X | | | | | | | | |
| ACHNANTHES LANCEOLATA | FIL | | 0.9 | | 21 | | 39.7 | | 147 | | | | |
| V. DUBIA | FIL | | | | X | | | | X | | | | X |
| ANABAENA #1 | FIL | | | | X | | 13.2 | | X | | 0.5 | | 27 |
| ANABAENA #2 | FIL | | | | X | | | | 49 | | | | |
| ANABAENA #3 | CEL | | 0.5 | | 11 | | | | | | | | |
| ANABAENOPSIS | CEL | | 0.5 | | 11 | | 6.8 | | 25 | | 21.9 | | 1145 |
| ANKISTRODESMUS | COL | | 0.5 | | 11 | | | | X | | | | X |
| ANKISTRODESMUS FALCATUS | CEL | | 0.5 | | 11 | | | | | | | | |
| APHANOTHECE | CEL | | 0.3 | | 6 | | | | | | 0.5 | | 27 |
| ASTERICNELLA FORMOSA | COL | | 0.5 | | 13 | | | | | | 0.5 | | 27 |
| CENTRIC DIATOM | CEL | | | | X | | | | | | | | |
| CERATIUM HIRUNDINELLA | CEL | | | | X | | | | | | | | |
| CHROOCOCCUS DISPERSUS | CEL | | | | X | | | | | | | | |
| CHRYSOCOCCUS | CEL | | | | X | | | | | | | | |
| CLISTERIUM | CEL | | | | X | | | | | | | | X |
| COELASTRUM CAMBRICUM | COL | | | | X | | | | | | | | |
| COELASTRUM SPAERICUM ? | COL | | | | X | | | | | | | | |
| CCSMARIUM | CEL | | | | X | | | | | | 0.5 | | 27 |
| CRUCIGENIA APICULATA | COL | | | | X | | | | | | 0.5 | | 27 |
| CRUCIGENIA CRUCIFERA | COL | | | | X | | | | | | | | X |
| CRUCIGENIA TETRAPEDIA | COL | | | | X | | | | | | 3.6 | | 191 |
| CRYPTOMONAS ? #2 | CEL | 1 | 14.2 | | 337 | | | | | | | | |
| CRYPTOMONAS #1 | CEL | | 1.6 | | 38 | | | | | | 1.5 | | 82 |
| CRYPTOMONAS #2 | CEL | | | | X | | | | X | | 2.6 | | 136 |
| CYANOPHYTAN FILAMENT | FIL | | 2.7 | | 64 | | | | | | | | |
| CYCLOTELLA STELLIGERA | CEL | | 2.7 | | 64 | | 6.8 | | 25 | | 4.2 | | 218 |
| DACTYLOCOCOPSIS | CEL | | 3.0 | | 71 | | | | | | | | |
| DINOBYRON BAVARICUM | CEL | | | | X | | | | | | 1.1 | | 55 |
| DINCBYON SERTULARIA | CEL | | | | X | | | | | | | | X |
| DINOFLAGELLATE #1 | CEL | | 1.9 | | 46 | | | | | | | | X |
| DINOFLAGELLATE #2 | CEL | | 0.3 | | 7 | | | | X | | 1.1 | | 55 |

LAKE NAME: LAKE SECESSION
STCRET NUMBER: 4514

CONTINUED

06 26 73

09 18 73

11 14 73

TAXA

DINOFLAGELLATE #3
DINCFLAGELLATE #4
EUASTRUM
EUDORINA ?
EUGLENA
EUGLENA #1
EUGLENA #2
EUGLENA ACUS
EUGLENA ACUS
V. RIGIDA
FLAGELLATES
FRUSTULIA RHOMBIDES
V. CAPITATA
GOLENKINIA
GYMNOODINUM ?
KIRCHNERIELLA
LAGERHEIMIA
LAGERHEIMIA CILIATA
V. MINOR
LYNGBYA LAGERHEIMII
LYNGBYA LIMNETICA
MELOSIRA #2
MELOSIRA DISTANS
MERISMOPEDIA MARSSONII
MICRACTINIUM PUSILLUM
MICROCYSTIS INCERTA
NAVICULA #1
NAVICULA #2
NAVICULA #3
NAVICULA #4
NAVICULA SUBTILISSIMA ?
NAVICULA VIRIDULA
V. LINEARIS

| FORM | ALGAL UNITS | | | ALGAL UNITS | | | ALGAL UNITS | | |
|------|-------------|------|--------|-------------|-----|--------|-------------|------|--------|
| | IS | %C | PER ML | IS | %C | PER ML | IS | %C | PER ML |
| CEL | 1 | 0.5 | 11 | | | | | | |
| CEL | 1 | 0.3 | 6 | | | | | | |
| CEL | 1 | 0.3 | 7 | | | | | 0.5 | 27 |
| COL | 1 | | X | | | | | | |
| CEL | 1 | | | | | | | X | |
| CEL | 1 | 0.5 | 13 | | | | | 1.1 | 55 |
| CEL | 1 | | X | | | | | | |
| CEL | 1 | | | | | | | X | |
| CEL | 1 | | | | | | | | |
| CEL | 14 | 9.6 | 228 | | 6.8 | 25 | 19.3 | 1009 | |
| CEL | 1 | | X | | | | | | |
| CEL | 1 | 0.3 | 7 | | | | | | |
| CEL | 1 | | X | | | | | | |
| CEL | 1 | 0.7 | 17 | | | | | | |
| CEL | 1 | 0.3 | 6 | | | | | | |
| CEL | 1 | | | | | | | | |
| FIL | 1 | | X | | | | | | |
| FIL | 1 | 1.0 | 23 | | | | | | |
| CEL | 1 | 2.3 | 54 | | | | | | |
| CEL | 12 | 23.8 | 567 | | | | | | |
| COL | 1 | 1.1 | 27 | | | | | | |
| COL | 15 | 8.6 | 205 | | | | | | |
| COL | 1 | | | | | | | | |
| CEL | 1 | | X | | | | | | |
| CEL | 1 | | X | | | | | | |
| CEL | 1 | | X | | | | | | |
| CEL | 1 | | | | | | | X | |
| CEL | 1 | | | | | | | X | |
| CEL | 1 | | | | | | | X | |
| CEL | 1 | | | | | | | | |

57

LAKE NAME: LAKE SECESSION
STCRET NUMBER: 4514

CONTINUED

| TAXA | FORM | 06 26 73 | | | 09 18 73 | | | 11 14 73 | | |
|--------------------------|------|----------|------|--------------------|----------|----|--------------------|----------|----|--------------------|
| | | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML |
| NEPHROCYTIUM AGARDHIANUM | COL | | | | | | | 5.7 | | 300 |
| NITZSCHIA | CEL | 0.5 | | 13 | | | | | | X |
| COCYSTIS | CEL | | | X | | | | | | |
| OSCILLATORIA | FIL | 2.7 | | 64 | | | X | | | X |
| PANDCRINA MCRUM | COL | 0.5 | | 13 | | | X | | | X |
| PEDIASTRUM BIRADIATUM | COL | | | | | | | 1.1 | | 55 |
| V. LONGECORNUTUM | COL | | | | | | | | | X |
| PEDIASTRUM DUPLEX | COL | | | | | | | | | |
| PEDIASTRUM DUPLEX | COL | | | | | | | | | |
| V. RETICULATUM | COL | | | X | | | | | | |
| PECIASTRUM TETRAS | COL | | | | | | | | | X |
| V. TETRAODON | COL | | | | | | | | | X |
| PENNATE DIATOM #1 | CEL | | | | | | | | | X |
| PHACUS #1 | CEL | | | X | | | | | | X |
| PHACUS LONGICAUDA | CEL | 0.3 | | 7 | | | | | | |
| PINNULARIA | CEL | | | | | | | | | |
| RAPHIDICPSIS | FIL | 1.0 | | 23 | | | X | | | 27 |
| RHIZOSOLENIA ERIENSIS | CEL | 2.4 | | 58 | | | 6.8 | | | 55 |
| SCENEDESMUS | COL | | | | | | | | | X |
| SCENEDESMUS #1 | COL | | | | | | | | | 55 |
| SCENEDESMUS ABUNDANS | COL | | | X | | | | | | X |
| SCENEDESMUS ACUMINATUS | COL | | | X | | | | | | |
| SCENEDESMUS BICAUDATUS | COL | | | X | | | | | | |
| SCENEDESMUS BIJUGA | COL | | | X | | | | | | |
| SCENEDESMUS DISPAR | COL | 0.6 | | 15 | | | | | | 300 |
| SCENEDESMUS QUADRICAUDA | COL | | | X | | | | | | 218 |
| SCHRCEDERIA SETIGERA | CEL | 0.5 | | 13 | | | | | | 55 |
| STAURASTRUM #1 | CEL | | | X | | | | | | |
| STAURASTRUM #2 | CEL | | | X | | | | | | |
| STAURASTRUM #3 | CEL | 0.3 | | 6 | | | | | | X |
| SYNEDRA #1 | CEL | | | X | | | 13.2 | | | 245 |
| SYNEDRA #2 | CEL | 13 | 10.6 | 252 | | | | 4.7 | | 55 |

LAKE NAME: LAKE SECESSION
STCRET NUMBER: 4514

CONTINUED

06 26 73

09 18 73

11 14 73

TAXA

SYNEDRA DELICATISSIMA
SYNEDRA ULNA
TABELLARIA
TETRAEDRON #1
TETRAEDRON GRACILE
TETRAEDRON MINIMUM
TETRAECRON REGULARE
V. INCUS
TETRAECRON TRIGONUM
V. GRACILE
TETRASTRUM HETERACANTHUM
TRACHELOMONAS
TREUBARIA

| FORM | ALGAL UNITS | | | ALGAL UNITS | | | ALGAL UNITS | | |
|------|-------------|-----|--------|-------------|----|--------|-------------|-----|--------|
| | IS | %C | PER ML | IS | %C | PER ML | IS | %C | PER ML |
| CEL | | | | | | | | | X |
| CEL | | 0.9 | 21 | | | | | | |
| CEL | | | | | | | | 1.1 | 55 |
| CEL | | | X | | | | | | |
| CEL | | | X | | | | | | |
| CEL | | | X | | | | | 3.6 | 191 |
| CEL | | | X | | | | | | |
| CEL | | | X | | | | | | |
| CEL | | | X | | | | | | |
| COL | | | X | | | | | | |
| CEL | | 1.0 | 23 | | | | | | |
| CEL | | | | | | | | 0.5 | 27 |
| | | | | | | | | 0.5 | 27 |
| | | | | | | | | 1.6 | 82 |
| | | | | | | | | 0.5 | 27 |

TOTAL

2379

370

5236

LAKE NAME: SALUDA LAKE
STORE NUMBER: 4515

NYGAARD TROPHIC STATE INDICES

| DATE | 06 22 73 | 09 18 73 | 11 14 73 |
|---------------|----------|----------|----------|
| MYXOPHYCEAN | 2.00 E | 0.67 E | 4.00 E |
| CHLOROPHYCEAN | 2.00 E | 0.33 ? | 4.00 E |
| EUGLENOPHYTE | 1.25 E | 0.33 E | 0.12 ? |
| DIATOM | 0.22 ? | 0.75 E | 0.38 E |
| COMPOUND | 7.00 E | 3.33 E | 14.0 E |

PALMER'S ORGANIC POLLUTION INDICES

| DATE | 06 22 73 | 09 18 73 | 11 14 73 |
|---------|----------|----------|----------|
| GENUS | 00 | 00 | 00 |
| SPECIES | 00 | 00 | 00 |

60

SPECIES DIVERSITY AND ABUNDANCE INDICES

| DATE | 06 22 73 | 09 18 73 | 11 14 73 |
|------------------------------------|----------|----------|----------|
| AVERAGE DIVERSITY H | 1.99 | 2.93 | 3.65 |
| NUMBER OF TAXA S | 20.00 | 23.00 | 33.00 |
| NUMBER OF SAMPLES COMPOSITED M | 2.00 | 2.00 | 2.00 |
| MAXIMUM DIVERSITY MAXH | 4.32 | 4.52 | 5.04 |
| TOTAL DIVERSITY D | 845.75 | 668.04 | 613.20 |
| TOTAL NUMBER OF INDIVIDUALS/ML N | 425.00 | 228.00 | 168.00 |
| EVENNESS COMPONENT J | 0.45 | 0.65 | 0.72 |
| MEAN NUMBER OF INDIVIDUALS/TAXA L | 21.25 | 9.91 | 5.09 |
| NUMBER/ML OF MOST ABUNDANT TAXON K | 265.00 | 62.00 | 28.00 |

LAKE NAME: SALUDA LAKE
STCRET NUMBER: 4515

CONTINUED

| TAXA | | 06 22 73 | | | 09 18 73 | | | 11 14 73 | | |
|-------------------------|------|----------|------|--------------------|----------|------|--------------------|----------|------|--------------------|
| | FORM | IS | %C | ALGAL UNITS PER ML | IS | %C | ALGAL UNITS PER ML | IS | %C | ALGAL UNITS PER ML |
| ACHNANTHES | CEL | | 4.2 | 18 | | | | | | |
| ANABAENA | FIL | | | 5.3 | | | 12 | | 9.5 | 15 |
| ANKISTRODESMUS | CEL | 5 | 4.2 | 18 | | | | | | |
| ANKISTRODESMUS FALCATUS | CEL | | | X | | 5.3 | 12 | | 2.4 | 4 |
| ASTERIONELLA #1 | CEL | | | | 1 | 21.5 | 49 | | | |
| ASTERIONELLA #2 | CEL | | | | | | | | | X |
| ATTHEYA | CEL | | | | 3 | 16.2 | 37 | | | |
| CLCSTERIUM | CEL | | | | | | X | | | |
| COCCONEIS | CEL | | | | | | | | | X |
| COSMARIUM | CEL | 4 | 4.2 | 18 | | | | | | |
| CRUCIGENIA TETRAPEDIA | COL | | | | | | | | | |
| CRYPTOMONAS #1 | CEL | | | X | | | | | 4.8 | 8 |
| CYCLOTELLA | CEL | | | | | | | | | X |
| CYCLOTELLA STELLIGERA | CEL | | | | 4 | 5.3 | 12 | | | X |
| DINOBRYON #1 | CEL | | | | | | X | | | X |
| CINCBBRYCN #2 | CEL | | | | | | | | | X |
| CINOFLAGELLATE | CEL | | | | | | | | 2.4 | 4 |
| EUGLENA #1 | CEL | | | X | | | | | | |
| EUGLENA #2 | CEL | | | | | | | | | X |
| EUNOTIA #1 | CEL | | | | | | X | | | |
| EUNOTIA #2 | CEL | | | | | | X | | | X |
| EUNOTIA ARCUS | CEL | | | | | | | | | |
| FLAGELLATES | CEL | 1 | 62.4 | 265 | 2 | 27.2 | 62 | 4 | 14.3 | 24 |
| FRAGILARIA | CEL | | | X | | | | | | |
| FRUSTULIA RHOMBIDES | CEL | | | | | | | | | |
| V. SAXONICA | CEL | | | X | | | | | | |
| GOMPHONEMA | CEL | | | X | | | | | | |
| LYNGBYA CONTORTA | FIL | | | | | | | | 4.8 | 8 |
| MELOSIRA #2 | CEL | | | X | | | | 1 | 16.7 | 28 |
| MELOSIRA #5 | CEL | | | | | | X | | | |
| MELOSIRA DISTANS | CEL | | | | | | | | | X |
| MERISMOPEDIA TENUISSIMA | COL | | | | 5.3 | | 12 | | | |

LAKE NAME: SALUDA LAKE
STREET NUMBER: 4515

CONTINUED

06 22 73

09 18 73

11 14 73

| TAXA | FORM | ALGAL UNITS PER ML | | | ALGAL UNITS PER ML | | | ALGAL UNITS PER ML | | |
|---------------------------|------|--------------------|-----|----|--------------------|----|-----|--------------------|------|-----|
| | | I | S | %C | I | S | %C | I | S | %C |
| NAVICULA #1 | CEL | 12 | 8.2 | | 35 | 15 | 3.3 | 12 | | X |
| NAVICULA #2 | CEL | 1 | 1 | | X | 1 | 1 | X | | X |
| NAVICULA #3 | CEL | 1 | 1 | | | | | X | | X |
| NAVICULA BICONICA | CEL | 1 | 1 | | | | | | 4.8 | 8 |
| NITZSCHIA #1 | CEL | 1 | 1 | | | | 5.3 | 12 | 2.4 | 4 |
| NITZSCHIA ACICULARIS | CEL | 1 | 1 | | | | | 3 | 14.3 | 24 |
| OSCILLATORIA #1 | FIL | 1 | | | X | 1 | | | | |
| OSCILLATORIA LIMNETICA | FIL | 1 | 4.2 | | 18 | 1 | | | 4.8 | 8 |
| PENNATE DIATOM #1 | CEL | 1 | 8.2 | | 35 | 1 | | | | |
| PERIDINIUM WISCCNS INENSE | CEL | 3 | 4.2 | | 18 | 1 | | | | |
| PINNULARIA #1 | CEL | 1 | | | X | 1 | | | 2.4 | 4 |
| PINNULARIA OBSCURA | CEL | 1 | | | | 1 | | | | X |
| RAPHIDIOPSIS | FIL | 1 | | | | | | | 4.8 | 8 |
| RHIZOSOLENIA | CEL | 1 | | | | | | X | | |
| RHIZOSCLENIA ERIENSIS | CEL | 1 | | | X | 1 | | | | X |
| SCENEDESMUS | COL | 1 | | | | | | | 2.4 | 4 |
| SCENEDESMUS QUADRICAUDA | COL | 1 | | | | | | | 2.4 | 4 |
| STAURASTRUM | CEL | 1 | | | | | 3.5 | 8 | | X |
| SURIRELLA ANGUSTATA | CEL | 1 | | | | | | | | X |
| SYNEDRA | CEL | 1 | | | X | 1 | | | | |
| SYNEDRA SOCIA | CEL | 1 | | | | | | 15 | 7.1 | 12 |
| TOTAL | | | | | 425 | | | 228 | | 168 |

LAKE NAME: LAKE WILLIAM C. BOWEN
STORET NUMBER: 4516

NYGAARD TROPHIC STATE INDICES

| DATE | 03 29 73 | 07 11 73 | 09 20 73 |
|---------------|----------|----------|----------|
| MYXOPHYCEAN | 02/0 E | 3.50 E | 2.33 E |
| CHLOROPHYCEAN | 0/0 O | 2.50 E | 1.33 E |
| EUGLENOPHYTE | 0/02 ? | 0.25 E | 0.18 ? |
| DIATOM | 0.67 E | 1.33 E | 1.50 E |
| COMPOUND | 04/0 E | 9.50 E | 5.33 E |

PALMER'S ORGANIC POLLUTION INDICES

| DATE | 03 29 73 | 07 11 73 | 09 20 73 |
|---------|----------|----------|----------|
| GENUS | 01 | 03 | 03 |
| SPECIES | 00 | 00 | 00 |

63

SPECIES DIVERSITY AND ABUNDANCE INDICES

| DATE | 03 29 73 | 07 11 73 | 09 20 73 |
|----------------------------------|----------|----------|----------|
| AVERAGE DIVERSITY | H | 1.62 | 2.33 |
| NUMBER OF TAXA | S | 11.00 | 29.00 |
| NUMBER OF SAMPLES COMPOSITED | M | 3.00 | 3.00 |
| MAXIMUM DIVERSITY | MAXH | 3.46 | 4.86 |
| TOTAL DIVERSITY | D | 656.10 | 7031.94 |
| TOTAL NUMBER OF INDIVIDUALS/ML | N | 405.00 | 3018.00 |
| EVENNESS COMPONENT | J | 0.47 | 0.48 |
| MEAN NUMBER OF INDIVIDUALS/TAXA | L | 36.82 | 104.07 |
| NUMBER/ML OF MOST ABUNDANT TAXON | K | 223.00 | 1383.00 |
| | | | 54.03 |
| | | | 592.00 |

LAKE NAME: LAKE WILLIAM C. BOWEN CONTINUED
 STORET NUMBER: 4515

03 29 73

07 11 73

09 20 73

| TAXA | FORM | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML |
|-----------------------------|------|---|------|--------------------|------|------|--------------------|------|------|--------------------|
| ANABAENA #1 | FIL | | | | | | X | | 2.2 | 35 |
| ANABAENA #2 | FIL | | | X | | | X | | | X |
| ANABAENA #3 | FIL | | | | | | | | | X |
| ANKISTRODES MUS | CEL | | | | | | X | | | |
| ARTHRODES MUS | CEL | | | | | | X | | | |
| ASTERICNELLA FORMOSA | CEL | 2 | 4.9 | 20 | | | | | | |
| CHRYSOCCCUS | CEL | | | | | | | | 1.5 | 23 |
| COELASTRUM MICROPORUM | COL | | | | 0.8 | 23 | | | | |
| COSMARIUM | CEL | | | | | | X | | | X |
| CCSMARIUM #1 | CEL | | | | | | | 0.8 | 12 | |
| CRUCIGENIA TETRAPEDIA | COL | | | | 1 | | | | | X |
| CRYPTOMONAS #1 | CEL | | | | | 0.8 | 23 | | 1.5 | 23 |
| CRYPTOMONAS #2 | CEL | | | | | | | | | X |
| CRYPTOMONAS EROSA | CEL | 1 | 55.1 | 223 | | | | | | |
| CYCLOTELLA STELLIGERA | CEL | | | | 45.8 | 1383 | | 29.6 | 464 | |
| DACTYLCCCCOPSIS IRREGULARIS | CEL | | | X | | | | | | |
| DICTYOSPHAERIUM PULCHELLUM | COL | | | | | | X | | | |
| DINOBYCN | CEL | | | | | 3.0 | 92 | | | |
| DINCBYCN DIVERGENS | CEL | | | | | | | | | X |
| DINOFLAGELLATES | CEL | | | | | 1.5 | 46 | | | |
| EUGLENA | CEL | | | | | | | | | X |
| EUGLENA #1 | CEL | | | | | | X | | | |
| EUGLENA #2 | CEL | | | | 0.8 | 23 | | | | |
| FLAGELLATES | CEL | | | | | 4.6 | 138 | | 1.5 | 23 |
| GLOEOTHECE | COL | | | | | 3.8 | 115 | | 11.9 | 186 |
| GCMPHOSPHAERIA LACUSTRIS | COL | | | | | | | | 3.7 | 59 |
| KIRCHNERIELLA | CEL | | | | | | | | 0.8 | 12 |
| LUNATE CELLED COLONY | COL | | | | | | X | | | |
| LYNGBYA LAGERHEIMII | FIL | | | | | | X | | | |
| LYNGBYA LIMNETICA | FIL | | | | 0.8 | 23 | | | | |
| MALLOMONAS | CEL | | | | | | | 1.5 | 23 | |
| MALLCMNAS ALPINA | CEL | | | X | | | | | | |

LAKE NAME: LAKE WILLIAM C. BOWEN CONTINUED
STORET NUMBER: 4516

03 29 73

07 11 73

09 20 73

| TAXA | FORM | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML | S | %C | ALGAL UNITS PER ML |
|--------------------------|------|---|------|--------------------|---|------|--------------------|---|------|--------------------|
| MALLOMCNAS PSEUDOCRCNATA | CEL | | | | | | | | | X |
| MELOSIRA | CEL | | | | | | X | | | |
| MELOSIRA #2 | CEL | | | | | | X | | | X |
| MELOSIRA DISTANS | CEL | 4 | 20.0 | 81 | | 27.5 | 830 | | 37.8 | 592 |
| MELOSIRA ITALICA | CEL | | | X | | | | | | |
| MERISMOPEDIA MINIMA | COL | | | | | 0.8 | 23 | | | |
| MERISMOPEDIA TENUISSIMA | COL | | | | | 8.4 | 253 | | 5.9 | 93 |
| MICROCYSTIS INCERTA | CCL | | | | | | | | | X |
| MOUGEOTIA | CEL | 3 | 20.0 | 81 | | | | | | |
| NAVICULA | CEL | | | X | | | | | | |
| NAVICULA RHYNCHOCEPHALA | CEL | | | | | | X | | | |
| NITZSCHIA | CEL | | | | | 0.8 | 23 | | | |
| CCCYSTIS | CEL | | | | | | | | 1.5 | 23 |
| OOCYSTIS SUBMARINA | CEL | | | | | | | | | X |
| PENNATE DIATCM #1 | CEL | | | | | | | | | X |
| PERIDINIUM INCONSPICUUM | CEL | | | X | | | | | | |
| PERIDINIUM WISCONSINENSE | CEL | | | | | | | | | X |
| PHACUS | CEL | | | | | | X | | | X |
| SCENEDESMUS ABUNDANS | COL | | | | | 0.9 | 23 | | | |
| SCENEDESMUS BIJUGA | COL | | | | | | X | | | X |
| STAURASTRUM | CEL | | | | | | | | | X |
| SYNEDRA | CEL | | | | | | X | | | X |
| SYNEDRA ULNA | CEL | | | X | | | | | | |
| TOTAL | | | | 405 | | | 3018 | | | 1567 |

6