

GAHCHO KUÉ PROJECT

2011 Lower Trophic Organisms Supplemental Monitoring Report

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APPENDICES

Appendix I Plankton - Supporting Data, 2011

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1.0 INTRODUCTION

De Beers Canada Inc. (De Beers) is proposing to develop the Gahcho Kué Project (Project), a diamond mine in the Northwest Territories (NWT). The Project is located in the North Slave region of the NWT at Kennedy Lake, approximately 140 kilometres (km) northeast of Łutselk'e and 280 km northeast of Yellowknife.

Baseline studies have been conducted to support the Environmental Impact Assessment (EIS) for the Project and the Environmental Impact Review (EIR) Process. These data were reported in the December 2010 EIS (De Beers 2010a). Baseline data reported in the 2010 EIS are sufficient to support the environmental assessment within the EIS. However, De Beers is committed to ongoing data collection in advance of regulatory approval of and the permitting process for the Project. As such, supplemental baseline data have been collected in 2011, and will continue to be collected and reported annually, until such time that these activities are no longer required prior to Project construction or evolve into future monitoring programs associated with an approved Project.

The purpose of collecting and reporting the supplemental baseline data for the Project is to support a consistent and transparent baseline program. In general, the goals of the supplemental data collection are to:

- reduce uncertainty and increase the level of confidence in impact predictions;
- broaden the baseline areas of investigation; and
- contribute to long-term future monitoring and adaptive management of the Project.

The focus of the 2011 supplemental data collection reported herein is lower trophic communities (e.g., phytoplankton, zooplankton, and benthic invertebrates). The purpose of this report is to provide supplemental baseline information on the lower trophic resources in the area of the Project. This report supplements the data presented in the EIS (De Beers 2010a, Annex J [Fisheries and Aquatic Resources Baseline] and Addendum JJ [Additional Fish and Aquatic Resources Baseline Information]). The supplemental information presented in this report was collected in late summer 2011 to enhance the existing baseline data (e.g., 2004, 2005, 2007, and 2010).

"Plankton" is a general term referring to small, usually microscopic organisms that live suspended in the water. For the purpose of this study, the term "phytoplankton" refers to the algal component of plankton and includes the following seven major taxonomic groups:

- cyanobacteria;
- Chlorophyceae (chlorophytes);
- Chrysophyceae (chrysophytes);
- Cryptophyceae (cryptophytes);
- Bacillariophyceae (diatoms);
- Dinophyceae (dinoflagellates); and
- Euglenophyceae (euglenoids).





The term "zooplankton" refers to microscopic animals and includes Rotifera (rotifers) and crustaceans, specifically Cladocera (cladocerans or water fleas), Cyclopoida (cyclopoid copepods), and Calanoida (calanoid copepods). Cyclopoid and calanoid copepods are considered separately because of taxonomic and ecological differences. Calanoids are typically herbivorous, feeding on phytoplankton; whereas cyclopoids are typically omnivorous, feeding on phytoplankton and small zooplankton (Brönmark and Hansson 1998). Additionally, calanoids are almost exclusively pelagic (i.e., open-water), while cyclopoids are dominated by littoral (i.e., near-shore) species, although a few pelagic species of cyclopoids can account for a major component of the planktonic community.

Benthic invertebrates are small aquatic animals that lack backbones; they live on the bottoms of waterbodies such as lakes and streams. Freshwater benthic invertebrates include mostly insect larvae, crustaceans, worms, leeches, snails, and clams. They form diverse communities often consisting of thousands of individuals per square metre. Benthic invertebrates live on the surface of the sediments or burrow into sediments, although some species are closely associated with aquatic plants. They are frequently sampled to monitor the environmental quality of lakes for the following reasons (Rosenberg and Resh 1993):

- they are present in nearly all waterbodies and are usually abundant;
- they remain in a small area throughout the aquatic phase of their life cycle;
- they obtain food by various means, including the filtering of fine particulates and feeding on algae, decaying organic material, aquatic plants, or other invertebrates;
- they have relatively long life cycles ranging from months to years, thereby integrating the effects of disturbances over a relatively long period;
- they are an important food source for organisms at higher trophic levels such as fish;
- they are sensitive to a large variety of disturbances, including the addition of sediment, toxins, nutrients, and organic material; low dissolved oxygen (DO) levels; and alteration of flow, substratum, and temperature;
- they respond to disturbances in a predictable manner;
- they can be relatively easily collected and identified; and,
- the wide range of species inhabiting any given location assures that animals of varying sensitivity are present.

This report describes results of plankton and benthic invertebrate sampling in August 2011, with a focus on deep open-water stations in East Lake (Reference Lake) and Lake N11, and open water locations in the L and M lakes (Lakes L2, M1, M2, M3, and M4).

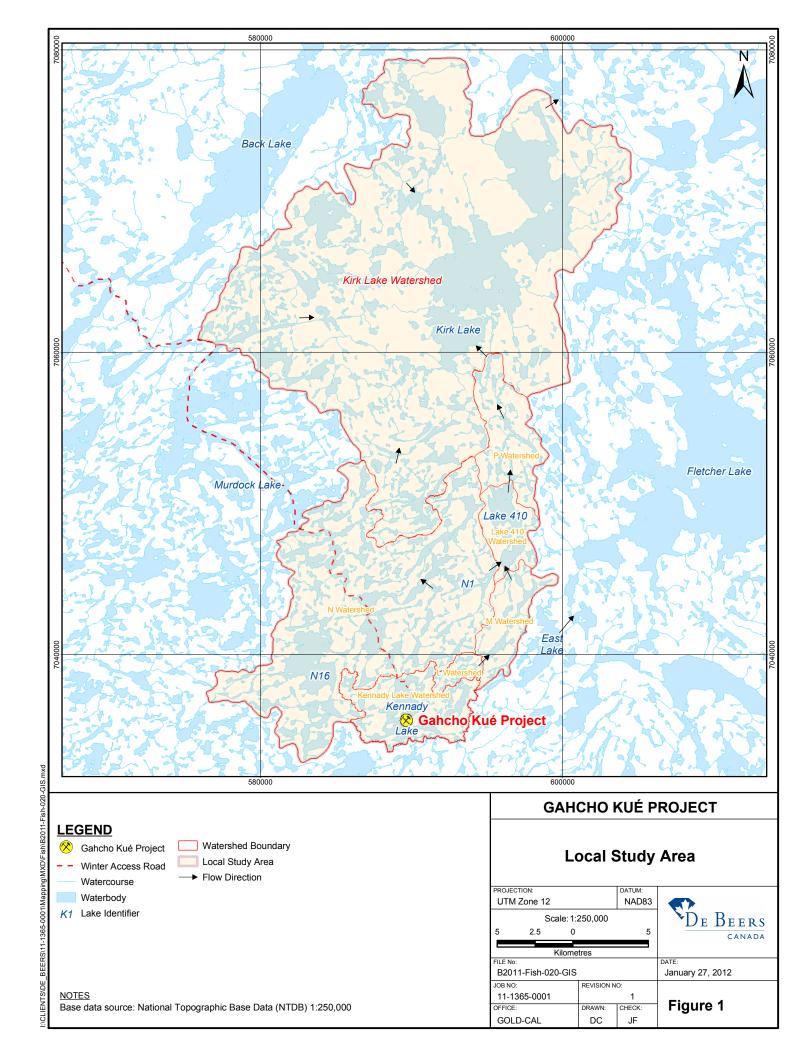




2.0 STUDY AREAS

The LSA is a 739 square kilometres (km²) area that includes the watersheds of the lakes and streams that may be directly affected by the Project (Figure 1). The regional study area (RSA) was defined as the Lockhart River watershed. The 2011 lower trophic field program was conducted within the local study area (LSA), with the exception of East Lake (Reference Lake), which is located outside of the LSA, but within the RSA. The study areas are described in Annex J, Section J2 of the 2010 EIS (De Beers 2010a).







3.0 METHODS

This section summarizes the methods used during the 2011 lower trophic supplemental baseline field programs.

3.1 Lower Trophic Communities

3.1.1 Phytoplankton

Phytoplankton samples were collected in August 2011. A single location was sampled in Lakes M1, M2, M3, M4 and L2. Samples were also collected from five stations in Lake N11 and East Lake (Reference Lake; Table 1 and Figure 2). Discrete water samples were collected at 2 metre (m) intervals within the euphotic zone at each site, using a Kemmerer® water sampler. The water samples were mixed thoroughly and used to fill a 250 millilitre (mL) amber Nalgene® bottle at each site. The samples were preserved with 10 mL formalin acetic acid solution and 5 mL acid Lugol's solution. Samples were stored in the dark and shipped immediately for taxonomic identification and analysis.

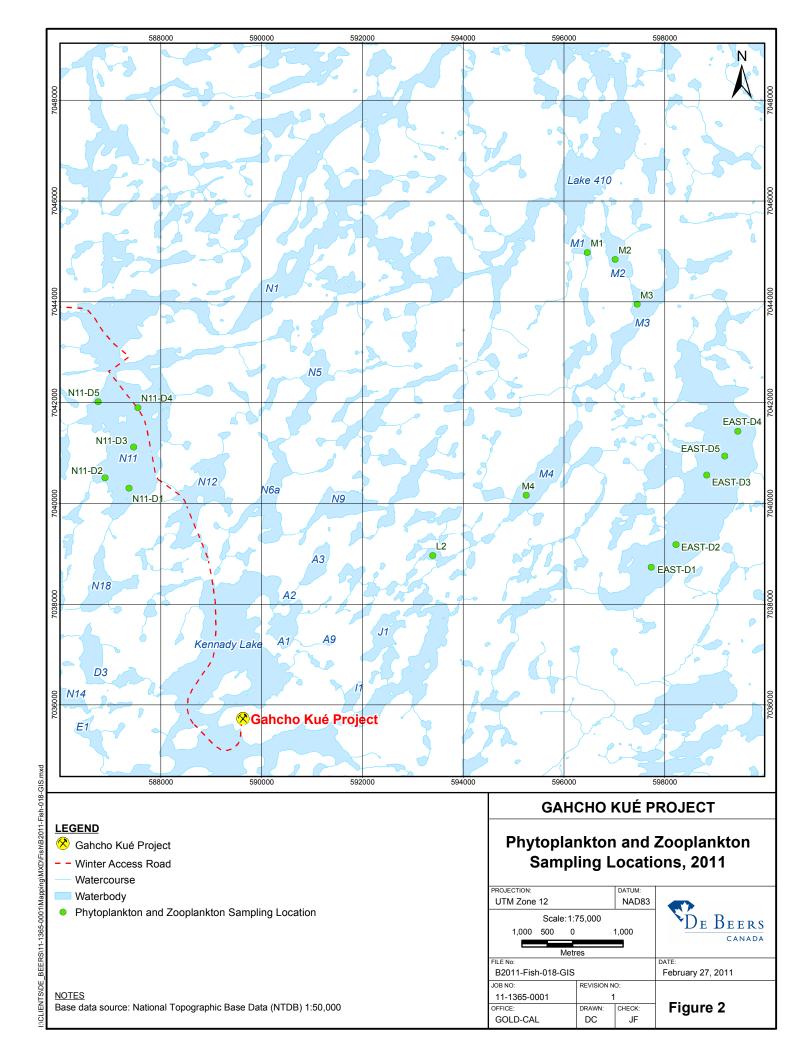
Secchi depths and limnological profiles (i.e., specific conductivity, dissolved oxygen, water temperature and pH) were also measured at each location using a YSI 600QS water meter (Appendix I, Table I-1).

Table 1 Phytoplankton Sampling Locations in Lakes, 2011

Watershed	Lake/Station	UTM Coordinates 12V NAD 83		
Watersheu	Lake/Station	Easting	Northing	
	M1	596466	7045014	
	M2	597001	7044838	
М	M3	597425	7043953	
	M4	595226	7040172	
L	L2	593390	7038966	
	N11-D1	587363	7040300	
	N11-D2	586942	7040514	
١	N11-D3	587460	7041112	
	N11-D4	587546	7041905	
	N11-D5	586853	7041956	
	Ref Lake-D1	597734	7038738	
	Ref Lake-D2	598219	7039180	
East Lake Reference Lake)	Ref Lake-D3	598832	7040567	
resistance Euro)	Ref Lake-D4	599424	7041434	
	Ref Lake-D5	599198	7040935	

UTM = Universal Transverse Mercator; NAD = North American Datum.







Phytoplankton samples were analyzed for taxonomic composition, abundance and biomass by Bio-Limno Research and Consulting Inc. (Bio-Limno), Halifax, Nova Scotia. Aliquots of 7 mL of the preserved phytoplankton samples were allowed to settle overnight in sedimentation chambers following the procedure of Lund et al. (1958). Algal units were counted from randomly selected transects on a Zeiss Axiovert 40 CFL inverted microscope. Counting units were individual cells, filaments, or colonies depending on the organization of the algae. A minimum of 400 units were counted for each sample. The majority of the samples were analyzed at 500 times magnification (500x), with initial scanning for large and rare organisms (e.g., *Ceratium* sp.) completed at 250x. Taxonomic identifications were based primarily on Geitler (1932); Skuja (1949); Findlay and Kling (1976); Anton and Duthie (1981); Huber-Pestalozzi (1961, 1972, 1982, 1983); Tikkanen (1986); Prescott (1982); Whitford and Schumacher (1984); Starmach (1985); Krammer and Lange-Bertalot (1986, 1988, 1991a,b); Komárek and Anagnostidis (1998a,b, 2005); and Wehr and Sheath (2003).

Fresh weight biomass was calculated from recorded abundance and specific biovolume estimates based on geometric solids (Rott 1981), assuming a specific gravity of 1 gram per cubic centimetre (g/cm³). The biovolume (cubic millimetres per cubic metre [mm³/m³] wet weight) of each species was estimated from the average dimensions of 10 to 15 individuals. The biovolumes of colonial taxa were based on the number of individuals within each colony. All calculations for cell concentration and biomass were performed with Hamilton's (1990) computer program.

3.1.1.1 Data Analysis

Phytoplankton data were summarized as total taxonomic richness, abundance and biomass, and taxonomic richness, abundance and biomass of the major taxonomic groups:

- Chlorophyceae;
- Chrysophyceae;
- cyanobacteria;
- Cryptophyceae;
- Bacillariophyceae;
- Euglenophyceae; and
- Dinophyceae.

Community composition was summarized as relative abundance and biomass of each of the major taxonomic groups.

3.1.2 Zooplankton

Zooplankton samples were collected from the same waterbodies and stations as the phytoplankton samples (Table 1 and Figure 2). Five samples were collected at each site using a 25 centimetre (cm) diameter, 73 micron (µm) mesh plankton Wisconsin® net. The net was lowered to 1 m above the lake bottom allowing collection of the full water column. If the sites were too shallow for a full water column vertical haul, horizontal tows were completed. Haul or tow depths and/or lengths were recorded for each sample (Table 2) and were used to calculate the volume of water filtered through the net. Filtering efficiency was assumed to be 100percent





(%), based on the low productivity in the lakes sampled, which was expected to result in low suspended sediment concentrations.

The 250-mL sample bottles were filled with 125 mL of sample and preserved with one half of an Alka-Seltzer tablet to avoid shock or contortion of the zooplankters and then with 125 mL sugar formalin. Samples were stored in the dark and shipped immediately for taxonomic identification.

Table 2 Zooplankton Haul Depths in each Lake, August 2011

Watershed	Lake/Station	Depth/Length of Haul [m]
	M1	3.5
М	M2	4
IVI	M3	6
	M4	7
L	L2	3
	N11-D1	5.5
	N11-D2	5
N	N11-D3	5
	N11-D4	5
	N11-D5	5
	Ref Lake-D1	5.9
	Ref Lake-D2	13
East Lake (Reference Lake)	Ref Lake-D3	14
(INCICIONE LAKE)	Ref Lake-D4	8
	Ref Lake-D5	5

Zooplankton samples were analyzed for abundance and biomass of crustaceans and rotifers by Salki Consultants Inc., Winnipeg, Manitoba. Each sample underwent three levels of analysis, as follows:

- 1/40 or 1/80 of each sample was examined under a compound microscope at 63x to 160x, and all specimens of crustaceans and rotifers were identified to the lowest taxonomic level (typically species) and assigned to size categories;
- a second sub-sample, representing 11 % of the sample volume, was examined under a stereoscope at 12x for the large species (i.e., Heterocope septentrionales, Holopedium gibberum, and Daphnia middendorffiana) and rare species, which were enumerated and assigned to size categories; and
- the entire sample was examined under the stereoscope to improve abundance estimates for the largest species (i.e., adult male and female Heterocope septentrionales, Holopedium gibberum, and Daphnia middendorffiana).

All Cyclopoida and Calanoida specimens (mature and immature) were identified to the species level, with the exception of nauplii, which were classified as either Calanoida or Cyclopoida. All Cladocera were identified to the species level. Rotifers were identified to genus. Zooplankton abundance was reported as individuals per litre (ind./L). Taxonomic identifications were based primarily on Brooks (1957), Wilson (1959), and Yeatman (1959).





Biomass estimates for each taxon were obtained using mean adult sizes determined during the analysis of the zooplankton samples and length-weight regression equations developed by Malley et al. (1989). Additional measurements were made on newly encountered species and to validate consistency of adult sizes. Zooplankton biomass was reported as milligrams (wet weight) per cubic metre (mg/m³). Wet weights were converted to dry weight by assuming that dry weight equals 7% of wet weight, based on the results of Malley et al. (1989) (Appendix I Table I-7).

3.1.2.1 Data Analysis

Zooplankton data were summarized as total taxonomic richness, abundance and biomass, and taxonomic richness, abundance, and biomass of the major taxonomic groups:

- Calanoida
- Cyclopoida
- Cladocera
- Rotifera

Community composition was summarized as relative abundance and biomass of the major taxonomic groups.

3.1.3 Quality Control

Seven samples, accounting for approximately 10% of the total number of zooplankton samples, were re-counted by the same taxonomist to verify counting efficiency (Appendix I Table I-6). The same procedure was not performed for phytoplankton samples collected in 2011, but is planned for 2012. Both the zooplankton and phytoplankton data were entered into electronic format by the taxonomist that did the counts and were double-checked upon entry; errors were corrected as necessary before transferring the electronic files.

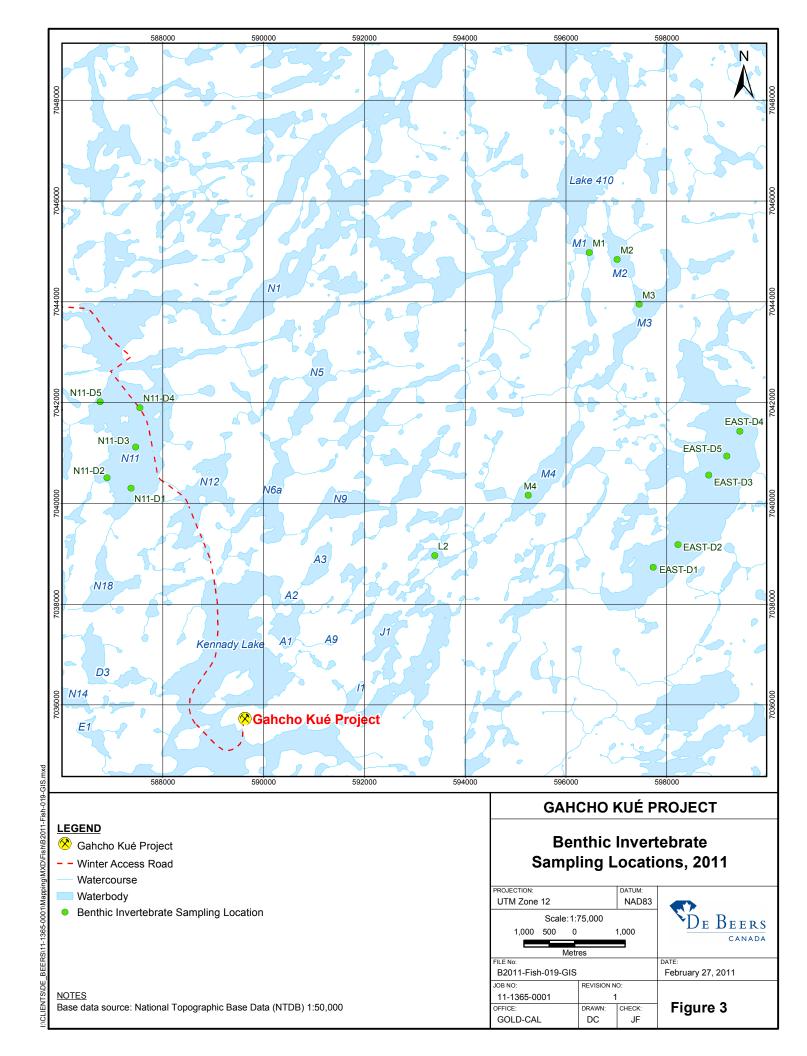
3.1.4 Benthic Invertebrates

3.1.4.1 2011 Supplemental Sampling

In 2011, benthic invertebrate sampling was conducted to enhance available baseline data, including information on among-station variation in lakes within a habitat type, reference lake data, and information for the chain of L and M lakes located downstream of Kennady Lake.

Benthic invertebrate samples were collected in the open water areas of East (Reference) Lake, Lake N11 and the L and M Lakes (Lakes L2, M1, M2, M3, and M4) (Figure 3). In East Lake and Lake N11, five benthic invertebrate stations were sampled in open-water areas (i.e., non-littoral areas). In the L and M Lakes, a single open-water station was sampled for benthic invertebrates. Five replicate samples were collected at each station.







Field Methods

Benthic invertebrate samples were collected using a stainless steel Ekman Grab (15 x 15 x 15 cm) with a bottom sampling area of 0.0232 square metre (m^2), where bottom sediments were suitable (i.e., fine-grained). Each sample was sieved through a sieve bucket with a 250 μ m mesh bottom. The material retained in the bucket was placed into individually labelled 1 litre (L) polyethylene jars and preserved with 10% neutral buffered formalin. Samples were shipped to a qualified taxonomist (J. Zloty, Ph.D., Summerland, British Columbia) for taxonomic identification and enumeration of invertebrates.

At each station, a sediment sample was collected and sent to Maxxam Analytics for determination of sediment particle size, total organic carbon (TOC) and moisture content. However, sediment samples were not collected at M1, M2 and L2 during the August 2011 sampling.

During the benthic invertebrate survey, the following supporting environmental information was recorded at each sampling station:

- Sampling date and time;
- Weather conditions (air temperature, wind velocity and wind direction);
- Global positioning system (GPS) coordinates as universal transverse Mercator (UTM) for each station;
- Water depth (m); and
- Vertical profiles of water temperature (°C), dissolved oxygen (DO; milligrams per litre [mg/L]), pH, and specific conductivity (microSiemens per centimetre [μS/cm]) at 1 m intervals

Station UTM coordinates were recorded using a hand-held Garmin GPS unit. Temperature, dissolved oxygen concentration, and specific conductivity were measured at each benthic invertebrate sampling site with a YSI-556 multi-parameter meter.

Laboratory Methods

Samples were processed according to standard protocols based on recommendations in Environment Canada (2002) and Gibbons et al. (1993). Benthic invertebrate samples were first washed through a sieve with a 250 μ m mesh opening to remove preservative and fine sediments remaining after field sieving. Organic material was separated from inorganic material using elutriation. Inorganic material was checked for any remaining shelled or cased benthic invertebrates, which were removed and added to the organic material. The organic material was split into coarse and fine fractions using a set of nested sieves of 1 millimetre (mm) and 250 μ m mesh size.

Invertebrates were identified to the lowest practical taxonomic level, typically genus, using recognized taxonomic keys (Brinkhurst 1986, Clifford 1991, Coffman and Ferrington Jr. 1996, Epler 2001, Maschwitz and Cook 2000, McAlpine et al. 1981, Merritt et al. 2008, Oliver and Roussel 1983, Pennak 1989, Soponis 1977, Wiederholm 1983). Organisms that could not be identified to the desired level, such as immature or damaged specimens, were reported as a separate category at the lowest taxonomic level possible, typically family. Organisms that required detailed microscopic examination for identification, such as midges (Chironomidae) and aquatic worms (Oligochaeta), were mounted on microscope slides using an appropriate mounting medium. Most common taxa





were distinguishable based on gross morphology and required only a few slide mounts for verification. All rare or less common taxa were slide mounted for identification.

Invertebrates removed from the samples, sorted organic material, and archived samples are being stored for six years to allow possible comparisons, if necessary, with samples collected during subsequent programs.

3.1.4.2 Data Analysis

Data Entry and Screening

Raw benthic invertebrate data were received from the taxonomist in Microsoft Excel[®] spreadsheet format, with data entry already verified. Non-benthic organisms, such as calanoid copepods (Calanoida), cyclopoid copepods (Cyclopoida), water fleas (Cladocera) and terrestrial invertebrates were removed from the data set prior to data analysis. True fly (Diptera) pupae were also removed prior to data analysis. Abundance data received as number of organisms per sample were converted to density data consisting of number of organisms per square meter (organisms/m²). Unusual abundance data were validated before data summary and analysis.

The following benthic invertebrate summary variables were calculated for each station:

- total invertebrate density;
- taxon richness;
- Simpson's index of diversity (diversity);
- evenness;
- densities of dominant taxa; and
- community composition (i.e., relative densities of major invertebrate taxa).

Richness is the total number of taxonomic groups within a station. It provides an indication of the diversity of benthic invertebrates in an area; a higher richness value usually indicates a more healthy and balanced community.

Simpson's index of diversity measures the proportional distribution of organisms in the community, given that not all organisms have the same success in the environment. Certain conditions may favour one organism over another (Simpson 1949). Simpson's index of diversity values range between 0 and 1, where lower values indicate a community dominated by fewer taxonomic groups (less diverse); these are often referred to as stressed communities. Values close to 1 indicate a community consisting of more taxa that are more evenly distributed among the taxonomic groups present. Simpson's index of diversity was calculated using the formula provided by Krebs (1999), as recommended by Environment Canada (2002) for environmental effects monitoring (EEM) programs:

$$D = 1 - \sum_{i=1}^{S} (p_i)^2$$

where:

D = Simpson's index of diversity;





S = the total number of taxa; and

 p_i = the proportion of the ith taxon.

Evenness is an index recommended by Environment Canada (2002) for analyzing EEM data. It is a measure of how evenly the total invertebrate density is distributed among the taxa present at the site. Evenness is also expressed as a value between one and zero, with one representing high evenness and zero representing low evenness. Evenness was calculated using the formula provided by Smith and Wilson(1996):

$$E = 1/\sum_{i=1}^{S} (p_i)^2 / S$$

where:

E = Evenness;

 p_i = the proportion of the ith taxon; and

S = the total number of taxa.

Benthic invertebrate summary variables are presented in tabular and graphical format.

Spearman rank correlations were calculated between total benthic invertebrate density, richness, diversity and evenness, and selected habitat variables (total organic carbon, sediment particle size, and water depth). Statistically significant correlations were examined as scatter-plots to determine whether they represented consistent trends or resulted from one or a few atypical points with high leverage on the value of the correlation coefficient. SYSTAT 13 (SYSTAT 2009) was used to calculate Spearman rank correlations.





4.0 RESULTS

4.1 Lower Trophic Communities

4.1.1 Phytoplankton

4.1.1.1 Taxonomic Richness

Six major taxonomic groups (Chlorophyceae, Chrysophyceae, Cyanobacteria, Cryptophyceae, Bacillariophyceae, and Dinophyceae) were represented in the samples collected from the L, M, and N11 lakes and East Lake (Table 3; Appendix I, Tables I-2 and I-3). In general, phytoplankton taxonomic richness was similar among the lakes, with a range of 31 to 37 taxa. The greatest taxonomic richness was observed in East Lake and Lake M2 (37 taxa). Within these lakes, the greatest taxonomic richness was observed in the Chlorophyceae and Chrysophyceae (Table 3). The lowest taxonomic richness was observed in Lakes M1 and L2. In these lakes, the greatest taxonomic richness was observed in the Chrysophyceae (Table 3). Overall, the Chlorophyceae and Chrysophyceae were the most diverse groups, while the other groups appeared to have low taxonomic richness (Table 3).

Table 3 Total Number of Taxa Identified in Each Major Phytoplankton Group in each Lake, August 2011

Lake	Station	Chlorophyceae	Chrysophyceae	Cyanobacteria	Cryptophyceae	Bacillariophyceae	Euglenophyceae	Dinophyceae	Total Taxa
	D1	13	12	6	2	4	0	1	39
Esset Labor	D2	12	11	6	1	5	0	1	36
East Lake (Reference Lake)	D3	13	12	6	2	5	0	1	39
(Neierende Lake)	D4	11	12	5	2	6	0	1	37
	D5	12	10	5	2	5	0	1	35
East Lake Mean		12	11	6	2	5	0	1	37
Lake L2	-	4	15	3	3	3	0	2	31
Lake M1	-	7	12	4	2	2	1	2	31
Lake M2	-	12	13	5	3	3	0	2	37
Lake M3	-	9	12	5	4	2	0	1	33
Lake M4	-	10	11	7	3	4	0	1	36
	D1	14	9	7	2	2	0	1	34
	D2	13	9	6	2	2	0	1	33
Lake N11	D3	14	9	7	2	2	0	1	36
	D4	14	10	5	1	2	0	0	32
	D5	14	12	6	2	2	0	1	37
Lake N11 Mean		14	10	6	2	2	0	1	34





4.1.1.2 Abundance and Biomass

Mean total phytoplankton abundance, biomass and community composition were similar among lakes (Figure 4; Figure 5; Figures 6 and 7). The highest mean abundance and variation around the mean was measured in Lake M1 (2,144,000 ind./L), while the lowest abundances were measured in East Lake (1,221,000 ind./L; Figure 4). The highest mean biomass and variation around the mean was observed in Lake L2 (782 mg/m³), while the lowest biomass was measured in Lake M2 (332 mg/m³) (Figure 5).

Abundances of the major phytoplankton groups were more variable among lakes than total abundance. Overall, phytoplankton abundance was dominated by Chlorophyceae (26 to 78%), followed closely by Chrysophyceae (4 to 36%) and cyanobacteria (3 to 38%), depending on lake (Figure 6). Chrysophycean abundance was high in Lakes M1, M2, M3, M4, L2 and East Lake, with the greatest abundance observed in Lake M1 (Figure 4). Abundance in Lake N11 was evenly divided amongst the Chrysophyceae, cyanobacteria and Chlorophyceae. Bacillariophyceae, Cryptophyceae, Euglenophyceae and Dinophyceae abundances were relatively low in all of the lakes (Figures 4 and 6).

Similar to abundance, biomass estimates of the major phytoplankton groups were more variable among lakes than total biomass. Overall, phytoplankton biomass was dominated by Chrysophyceae (15 to 57%), followed by Chlorophyceae (12 to 30%) and cyanobacteria (1 to 50%; Figure 7). Lakes L2, M1, M2, M3, and M4 were dominated by Chrysophycean biomass, while biomass in Lake N11 and East Lake were dominated by cyanobacteria and Chlorophyceae. Dinophyceae biomass was high in Lake L2 (304 mg/m³) and at Station D2 in Lake N11 (207 mg/m³) compared to the other lakes and stations (<100 mg/m³). Overall, Bacillariophyceae biomass was low, with the highest bacillariophycean biomass observed in East Lake (150 mg/m³; Figure 5). Euglenophycean and cryptophycean biomass were low in all lakes (Figures 5 and 7).





Figure 4 Total Phytoplankton Abundance (Mean ± Standard Deviation) and Abundances of Major Phytoplankton Groups in each Lake, August 2011

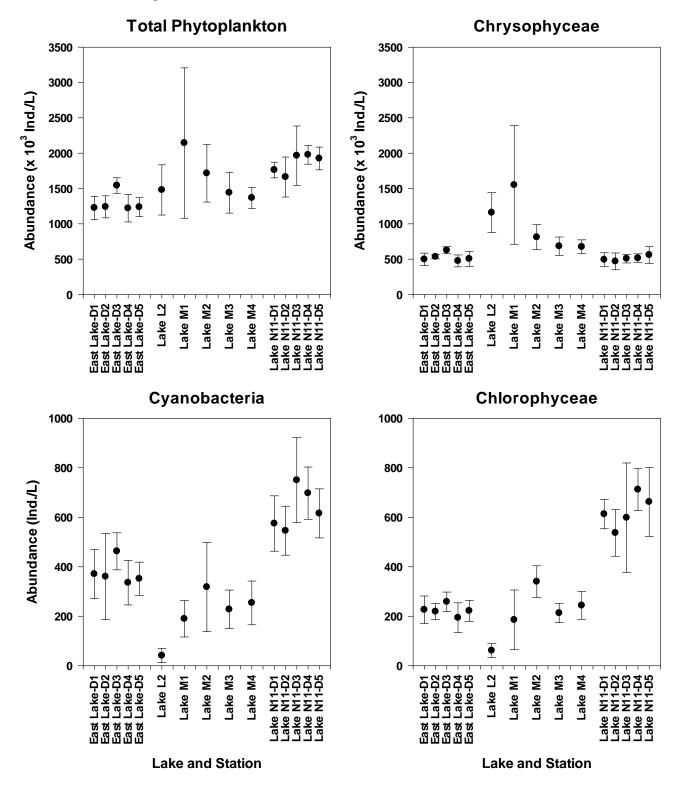






Figure 4 Total Phytoplankton Abundance (Mean ± Standard Deviation) and Abundances of Major Phytoplankton Groups in each Lake, August 2011 (continued)

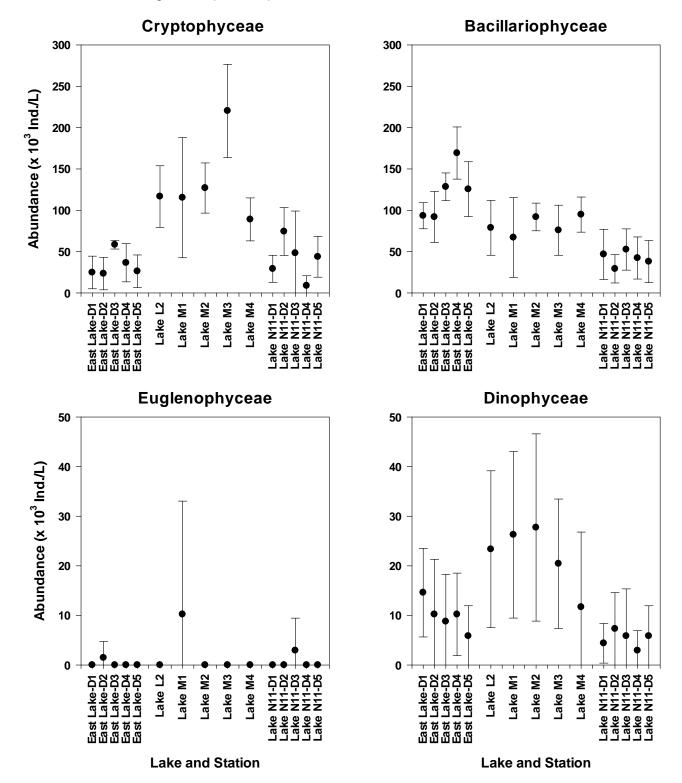






Figure 5 Total Phytoplankton Biomass (Mean ± Standard Deviation) and Biomass of Major Phytoplankton Groups in each Lake, August 2011

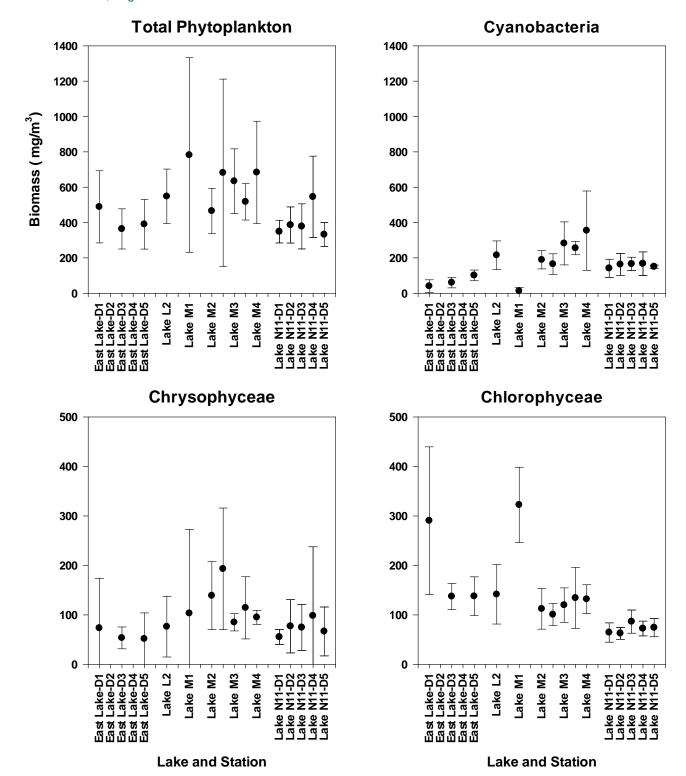






Figure 5 Total Phytoplankton Biomass (Mean ± Standard Deviation) and Biomass of Major Phytoplankton Groups in each Lake, August 2011 (continued)

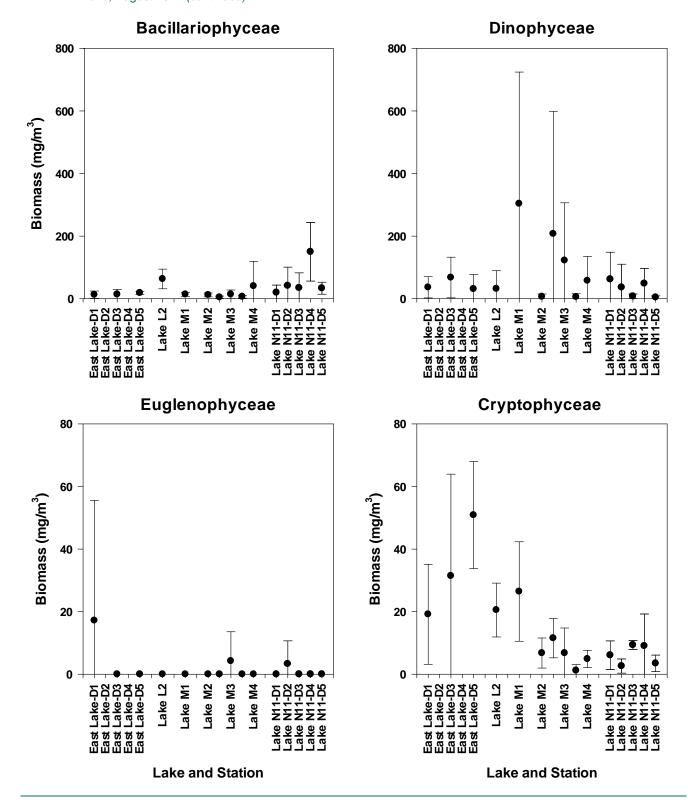






Figure 6 Variation in Relative Abundances of Major Phytoplankton Groups in each Lake, August 2011

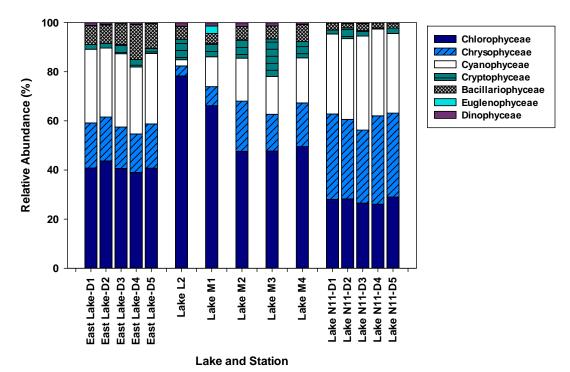
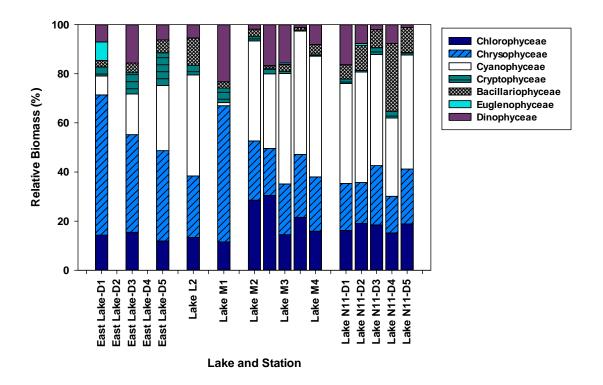


Figure 7 Variation in Relative Biomass of Major Phytoplankton Groups in each Lake, August 2011







4.1.2 Zooplankton

4.1.2.1 Richness

Four major taxonomic groups (Cladocera, Calanoida, Cyclopoida, and Rotifera) were represented in the samples collected from the L, M, and N11 lakes and East Lake in August 2011 (Table 4). Taxonomic richness was similar among the lakes, with a range of 12 to 14. Taxonomic richness was generally evenly distributed among major groups, with Cyclopoida and Cladocera having the lowest diversity (2 to 3 taxa) and Calanoida and Rotifera having the greatest diversity (about 4 taxa) (Table 4).

Table 4 Total Number of Taxa Identified in the Major Zooplankton Groups in each Lake, August 2011

Lakes	Station	Calanoida	Cyclopoida	Cladocera	Rotifera	Total Taxa
East Lake	D1	3	2	3	4	12
East Lake	D2	4	2	3	4	13
East Lake	D3	4	2	3	4	12
East Lake	D4	3	2	2	3	9
East Lake	D5	4	2	3	3	12
East Lake Mear	1	4	2	3	4	12
Lake L2	-	4	3	2	3	13
Lake M1	-	4	2	3	4	13
Lake M2	-	5	2	3	4	14
Lake M3	-	4	2	3	4	14
Lake M4	-	3	2	3	4	12
Lake N11	D1	4	2	2	4	12
Lake N11	D2	3	2	2	4	12
Lake N11	D3	3	3	2	4	12
Lake N11	D4	3	2	2	4	11
Lake N11	D5	3	2	2	4	11
Lake N11 Mean		3	2	2	4	12

Note: Cladocera, Calanoida, and Cyclopoida were identified to species where they could be; Rotifera were identified to genus.

4.1.2.2 Abundance and Biomass

Abundance, biomass and community composition of zooplankton were more variable among the lakes than phytoplankton (Figures 8 to 11; Appendix I, Tables I-4 and I-5). Total zooplankton abundance ranged from 14 ind./L in East Lake Station D3 to 108 ind./L in Lake M2 (Figure JJ4.3-5). Total zooplankton biomass ranged from 80 mg/m³ in East Lake Station D4 to 1,931 mg/m³ in Lake N11 at Station D1 (Figure 8).

Zooplankton abundance was dominated by rotifers and cyclopoid copepods (Figures 8 and 10). Overall, rotifers accounted for 31 to 81% of the total abundance, and cyclopoid copepods accounted for 6 to 51%. Cladocerans and calanoid copepods accounted for a small proportion (<1 to 19% and 4 to 16%, respectively) of the zooplankton community based on abundance.

Relative biomass of major zooplankton groups was highly variable among the lakes (Figures 9 and 11). Cladocera biomass dominated in Lake N11 (80 to 91%), while calanoid copepod biomass dominated in East Lake (45 to 70%) and Lake L2 (78%; Figure 11). Lakes M1 and M2 were co-dominated by calanoid copepods and cladocerans, while Lake M3 and M4 were dominated by cladocerans and sub-dominated by calanoid and cyclopoid copepods (Figure 11).





Despite rotifers being the most abundant group in the lakes, their small body size explains their low relative biomass. In contrast, the large size of calanoid copepods and Cladocera account for their larger contributions to total biomass, despite their low relative abundance.





Figure 8 Total Zooplankton Abundance (Mean ± Standard Deviation) and Abundance of Major Zooplankton Groups in each Lake and Station, August 2011

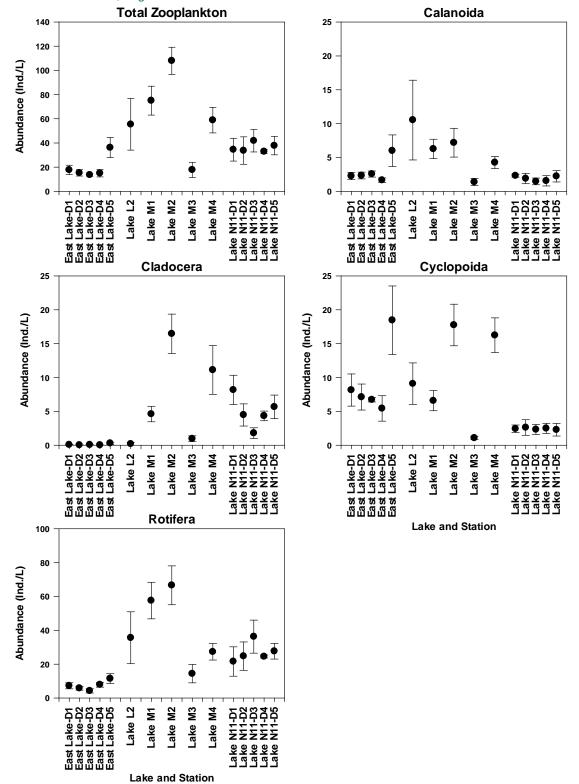






Figure 9 Total Zooplankton Biomass (Mean ± Standard Deviation) and Biomass of Major Zooplankton Groups in each Lake, August 2011

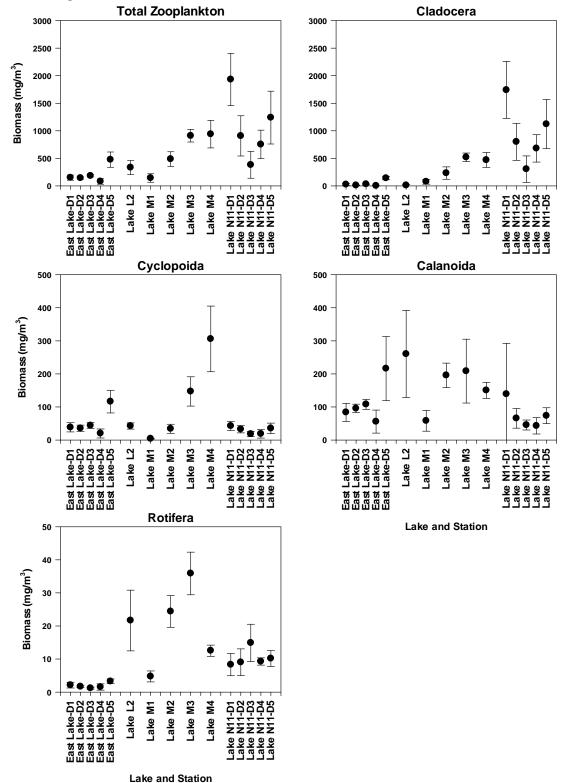




Figure 10 Relative Abundance of Major Zooplankton Groups in each Lake, August 2011

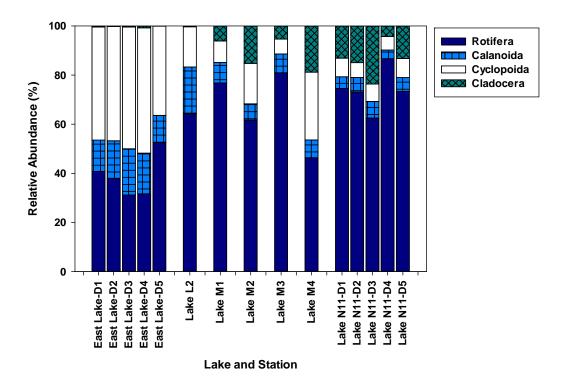
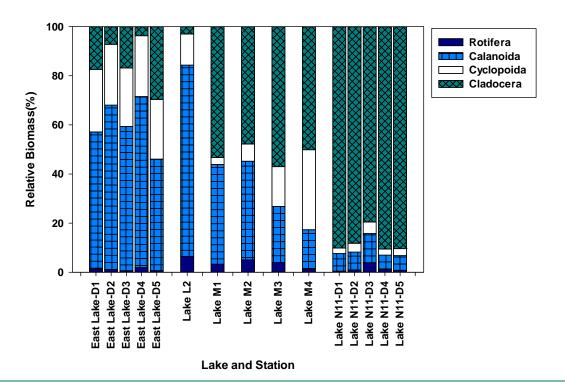


Figure 11 Relative Biomass of Major Zooplankton Groups in each Lake, August 2011







4.1.3 Benthic Invertebrates

4.1.3.1 Habitat Characteristics

Water depth at benthic invertebrate sites sampled in 2011 ranged from 7 to 15 m in East (Reference) Lake, from 2 to 12 m in the L and M Lakes, and from 6 to 7 m in Lake N11 (Appendix II, Table II-1). Water temperature, dissolved oxygen, specific conductivity and pH varied little with depth in the water column, indicating that the water column was well mixed in the lakes sampled. Surface water temperature ranged from 15.1 to 15.2°C in East Lake, from 9.6 to 13.6°C in the L and M lakes, and from 14.2 to 16.3°C in Lake N11. Surface DO ranged from 9.1 to 9.3 mg/L in East Lake, from 9.8 to 10.6 mg/L in the L and M lakes, and from 9.1 to 9.5 mg/L in Lake N11. Specific conductivity at the surface was low in all lakes, as expected in sub-arctic lakes. Specific conductivity was 15 μ S/cm at all stations in East Lake, was 15 μ S/cm in each of the L and M lakes, and ranged from 11 to 12 μ S/cm in Lake N11. Surface pH ranged from 6.7 to 6.9 in East Lake, ranged from 6.6 to 6.9 in the L and M Lakes, and ranged from 6.1 to 6.8 in Lake N11.

Sediment characteristics were variable within and among lakes sampled in 2011 (Appendix II, Table II-1). Sediment data are available for two stations sampled in the L and M lakes (i.e., Lake M3 and Lake M4). Moisture content ranged from 71 to 92% in East Lake, from 87 to 97% in Lake N11, and from 90 to 92% in the L and M Lakes. Total organic carbon was variable in East Lake ranging from 3 to 13%. Total organic carbon was similar among stations in Lake N11, ranging from 9 to 16%, and in the L and M Lakes ranging from 13 to 15%. Bottom sediments in all lakes were dominated by sand, with sand content ranging from 62 to 87% in East Lake, from 63 to 67% in the L and M Lakes, and from 72 to 78% in Lake N11.

Spearman rank correlation analysis detected significant negative correlations between water depth, and total density and total richness (P<0.05, r_s >0.521, n=15) (Table 5). The range in water depths (2 to 15 m) at benthic sampling locations moderately influenced the benthic invertebrate community. In general, both benthic invertebrate density and richness decreased with increasing depth, which is consistent with habitat associations of benthic invertebrates in lakes.

Table 5 Spearman Rank Correlations Between Benthic Invertebrate Variables and Habitat Variables

	Water	Total Organic	Percent Fines
Variable	Depth	Carbon	(silt + clay)
Total density	-0.545	0.086	-0.173
Total richness	-0.567	0.178	-0.074
Mean richness	-0.487	0.136	-0.088
Simpson's diversity index	-0.048	-0.473	-0.201
Evenness	0.195	-0.244	0.180

Note: Significant relationships (P<0.05, r_s >0.521, n=15) are **bolded**.

4.1.3.2 Benthic Invertebrate Community

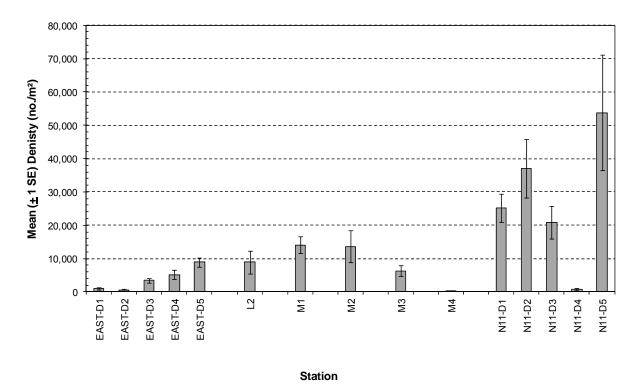
Total benthic invertebrate density was variable within and among lakes (Figure 12; Appendix II, Table II-2). Mean (\pm 1 SE) benthic invertebrate density ranged from 621 \pm 325 to 8,914 \pm 1,418 organisms/m² in East Lake, from 810 \pm 316 to 53,776 \pm 17,303 organisms/m² in Lake N11, and from 241 \pm 84 to 14,095 \pm 2,554 organisms/m² in the L and M lakes. In general, pooled means for stations in each lake were approximately 7 times greater in Lake N11 compared to East Lake, with only one station having a total density below 20,000 organisms/m² (Station N11-D4; 810 \pm 316 organisms/m²). Mean density was approximately 2





times greater in the L and M lakes compared to East Lake, with only one site having a density below $5,000 \text{ organism/m}^2$ (Lake M4; $241 \pm 84 \text{ organisms/m}^2$). Densities in Lake N11 were higher than expected for a sub-Arctic lake, particularly for stations N11-D1, N11-D2, N11-D3 and N11-D5. The lake variation in density was also influenced by the variation in sample depth.

Figure 12 Mean Total Benthic Invertebrate Density at Lake Sampling Locations, Fall 2011

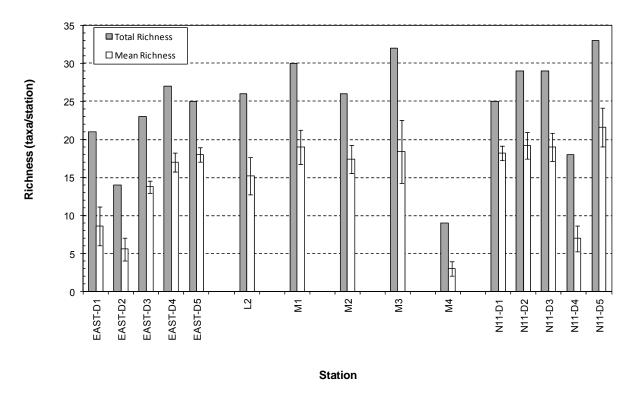


Richness ranged from low to moderate and varied within similar ranges among lakes. Total richness ranged from 14 to 27 taxa/station in East Lake, from 18 to 33 taxa/station in Lake N11, and from 9 to 30 taxa/station in the L and M Lakes (Figure 13; Appendix II, Figure II-2). Mean (\pm 1 SE) richness ranged from 6 \pm 2 to 18 \pm 1 taxa/station in East Lake, from 7 \pm 2 to 22 \pm 3 taxa/station in Lake N11, and from 3 \pm 1 to 19 \pm 2 taxa/station in the L and M Lakes. Overall, taxa richness was in the expected range for sub-Arctic lakes (Beaty et al. 2006).





Figure 13 Benthic Invertebrate Richness at Lake Sampling Locations, Fall 2011



Simpson's index of diversity values were generally high, with the exception of Lake N11, where diversity ranged from moderate to high. Diversity ranged from 0.83 to 0.90 in East Lake, from 0.81 to 0.91 in the L and M Lakes, and from 0.52 to 0.83 in Lake N11 (Figure 14; Appendix II Table II-2). Evenness was generally low to moderate in the lakes sampled, ranging from 0.26 to 0.53 in East Lake, from 0.29 to 0.59 in the L and M Lakes, and 0.06 to 0.33 in Lake N11. This indicated that a few taxa usually accounted for the majority of the total density observed at a station.

The benthic invertebrate community was dominated by the midges at all stations sampled in 2011, with the exception of station EAST-D2 in East Lake where the aquatic worms were dominant, and stations N11-D2 and N11-D3 in Lake N11, where the roundworms were co-dominant with the midges (Figure 15; Appendix II, Table II-3). Other abundant taxa included the roundworms, aquatic worms and clams (Pelecypoda). A combined total of 49 taxa were collected in the lakes sampled in Fall 2011, 30 of which were midges (Table 6). Dominance of the benthic invertebrate community by the midges is as expected for lakes in the sub-arctic region (Beaty et al. 2006, Danks 1981, Danks 2007).

Figure 14 Simpson's Index of Diversity and Evenness at Lake Sampling Locations, Fall 2011

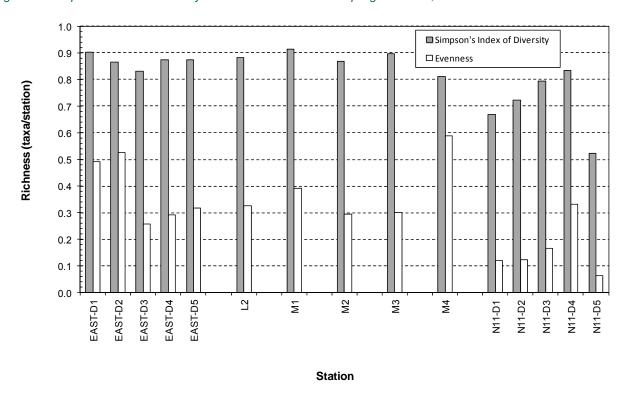


Figure 15 Benthic Invertebrate Community Composition at Lake Sampling Locations, Fall 2011

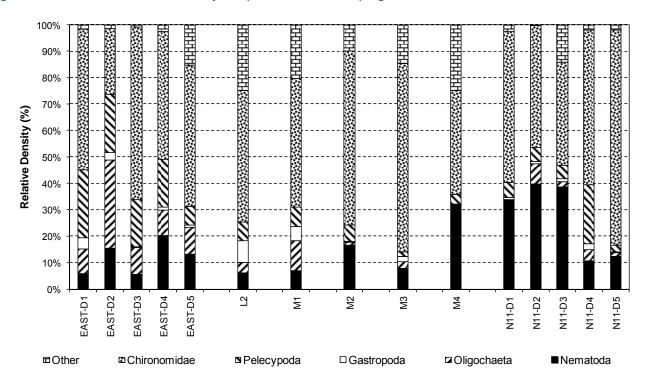






Table 6 List of Benthic Invertebrate Taxa Collected at Lake Sampling Locations, Fall 2011

Major Taxon	Family	Subfamily	Tribe	Genus/Species
Microturbellaria	Typhloplanidae	-	-	Mesostoma
Nematoda	-	-	-	-
	Enchytraeidae	-	-	-
Olimanhanta	Lumbriculidae	-	-	-
Oligochaeta	Naididae	Naidinae	-	-
	Naididae	Tubificinae	-	-
Gastropoda	Valvatidae	-	-	Valvata sincera
	B	-	-	Sphaerium
Bivalvia	Pisidiidae	-	-	Pisidium
Hydracarina	-	-	-	-
Copepoda - Harpacticoida	-	-	-	-
Ostracoda	-	-	-	-
	Hydroptilidae	_	-	Agraylea
	Leptoceridae	_	_	Oecetis
Trichoptera	Limnephilidae	-	_	Grensia praeterica
	Phryganeidae	-	-	Phryganea
	i iliyyancidae	+ -	-	Ablabesmyia
		Tanypodinas	Pentaneurini	
		Tanypodinae	Droolodiini	Thienemannimyia group
		Diamasiasa	Procladiini	Procladius
		Diamesinae	Protanypini	Protanypus
		Prodiamesinae	-	Monodiamesa
				Abyskomyia
			Orthocladiini	Cricotopus / Orthocladius
				Heterotanytarsus
		Orthocladiinae		Heterotrissocladius
				Parakiefferiella
				Psectrocladius
				Zalutschia
				Chironomus
				Cladopelma
				Cryptochironomus
	Chironomidae			Dicrotendipes
Diptera				Microtendipes
•			Chironomini	Pagastiella
				Parachironomus
				Polypedilum
				Sergenta
		Chironominae		Stictochironomus
			Pseudochironomini	Pseudochironomus
			. ocacomonomini	Cladotanytarsus
				Corynocera
				Micropsectra
			Tanytarajaj	
			Tanytarsini	Micropsectra / Tanytarsus
				Paratanytarsus
				Stempellinella
				Tanytarsus
	Ceratopogonidae	Ceratopogoninae	-	Bezzia
		Dasyheleinae		Dasyhelea
	Empididae	-	-	Chelifera / Metachela

^{- =} not identified to this taxonomic level.





5.0 SUMMARY AND CONCLUSIONS

5.1 Lower Trophic Communities

5.1.1 Phytoplankton

In general, phytoplankton taxonomic richness, abundance, biomass and community composition were similar among the sampled lakes. The dominant algal groups by abundance and biomass were Chlorophyceae, Chrysophyceae and cyanobacteria. This is typical of lakes with low to moderate productivity (Wetzel 2001). Similarly, phytoplankton taxonomic richness was diverse in terms of the numbers of taxa present. This is often observed in low productivity lakes, where slower growth rates permit a greater number of species to coexist, compared to more productive waters (Wetzel 2001).

5.1.2 Zooplankton

Abundance, biomass and community composition of zooplankton were more variable among the lakes, compared to phytoplankton. Total zooplankton abundance ranged from 14 to 108 ind./L depending on the lake, and total zooplankton biomass ranged from 80 to 1,931 mg/m³. Zooplankton abundance was dominated by rotifers and cyclopoid copepods, while biomass was dominated by Cladocera and calanoid copepods. Taxonomic richness was similar among lakes (range 12-14). Taxonomic richness was evenly distributed among groups, with Cyclopoida and Cladocera having the lowest taxonomic diversity, and Calanoida and Rotifera having the greatest taxonomic diversity. The zooplankton communities documented in the lakes sampled are similar to those in other sub-Arctic lakes, such as Lac de Gras (Golder 2010) and Snap Lake (De Beers 2010b).

5.1.3 Benthic Invertebrates

The benthic invertebrate communities of lakes were characterized by low to moderate density and richness during the fall 2011 sampling program, consistent with the generally low productivity typical of sub-Arctic lakes on the Canadian Shield. Overall, Simpson's diversity was high and evenness was low to moderate indicating that a few taxa accounted for most of the organisms present in lakes. Midges were the dominant taxa, with the aquatic worms, roundworms and fingernail clams also representing a considerable proportion of the benthic invertebrate community at some stations.

The benthic invertebrate community in the lakes sampled in the Gahcho Kué study area, with the exception of Lake N11, is consistent with that expected in the sub-Arctic region where low productivity is common due to low nutrient levels, low temperatures, and long ice covered periods. Lake N11 is moderately productive compared to other lakes historically sampled in the area (De Beers 2010a, Annex J and Addendum JJ). Also, a moderately strong relationship existed between water depth, and both total density and richness in the lakes sampled in fall 2011.





6.0 CLOSURE

We trust the above meets your present requirements. If you have any questions or require additional details, please contact the undersigned.

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8.0 ABBREVIATIONS

De Beers Canada Inc.
DO dissolved oxygen

EEM environmental effects monitoring
EIR Environmental impact review

EIS Environmental impact assessment

GPS Global positioning system

LSA local study area

n number

NWT Northwest Territories

P probability

Project Gahcho Kué Project

QA/QC quality assurance / quality control

RPD relative percent difference

RSA regional study area
SE standard error

TOC total organic carbon

UTM Universal Transverse Mercator

8.1 Units of Measure

% percent
< less than
> greater than
°C degrees Celsius
μg/L micrograms per litre

μm micrometre

μS/cm microSiemens per centimetre

cm centimetre g gram

g/cm³ grams per cubic centimetre

ind/L individuals per litre

km kilometre

km² square kilometre

L litre m metre

m² square metre m³ cubic metre

mg/L milligrams per litre





% percent

mg/ m³ milligrams per cubic metre

mL millilitre mm millimetre

mm³ cubic millimetres

mm³/ m³ cubic millimetres per cubic metre wet weight org/m² number of organisms per square metre

9.0 GLOSSARY

and these animals are also called zoobenthos.

Calanoida An order of copepods; small planktonic animals that are a component of zooplankton.

Chlorophyta Green algae; a component of phytoplankton.

Chrysophyta Golden-brown algae; a component of phytoplankton.

Cladocera A group of small planktonic animals (crustaceans) also known as water fleas; a component of

zooplankton.

Colonial Individuals of the same species clustered together to form a group.

Conductivity A measure of the resistance of a solution to electrical flow; an indirect measure of the salinity

of the water.

Copepoda An order of planktonic crustacean; a component of zooplankton.

Cryptophyta Flagellated algae also known as cryptomonads; a component of phytoplankton.

Cyanobacteria Blue-green algae; a component of phytoplankton. **Cyclopoida** An order of copepods; small planktonic animals.

Diatom A group of algae that are encased within a frustule made of silica; a component of

phytoplankton.

Dissolved Oxygen Oxygen dissolved within the water column.

Diversity A numerical index that incorporates evenness and richness; the diversity index measures the

proportional distribution of organisms in the community.

Enumeration The act of counting individuals.

Euglenophyta Euglena; a component of phytoplankton.

Evenness A measure of how evenly the total invertebrate abundance is distributed among the different

types of organisms present at the site.

Limnology Profiles Refers to measurements of water temperature, conductivity, pH, and dissolved oxygen in the

water column of a lake.

Littoral The shallow, shoreline area of a lake.

Lower trophic Organisms in an ecosystem that form the bottom of the food chain (benthic invertebrates,

zooplankton, and phytoplankton) upon which fish depend as food.

Pelagic Relating to fish or other aquatic organisms that live offshore in the middle or lower part of the

water column.





Periphyton Algae and small crustaceans that live attached to rocks and other substrates projecting from

the bottom of a stream or lake.

pH A measure of the acidity or alkalinity of water.

Phytoplankton Small, usually microscopic, plants that live in the water column of lakes and make their food

through primary production.

Plankton Small, often microscopic, plants (phytoplankton) and animals (zooplankton) that live in the

open water column of lakes. They are an important food source for many larger animals.

Richness The number of different types of animals present in a sample or at a location.

Rotifera A large class of the pseudocoelomate phylum Aschelminthes; a component of zooplankton.

Secchi Depth A measure of water clarity, measured by lowering a 20 cm diameter disk (Secchi disk) with alternating black and white coloured quadrants. The shallowest depth at which the disk is no

longer visible is the Secchi depth.

Substrate The bottom of a waterbody, usually consisting of sediments of various particle sizes (e.g.,

sand, silt, clay, gravel, cobble, boulder) and organic material (e.g., living or dead plant

material).

Taxon A group of organisms at the same level of the standard biological classification system; the

plural of taxon is taxa.

Terrestrial Living or growing on land.

Total Organic Carbon To

(TOC)

Total organic carbon is composed of both dissolved and particulate forms. Total organic carbon is often calculated as the difference between Total Carbon (TC) and Total Inorganic Carbon (TIC). Total organic carbon has a direct relationship with both biochemical and chemical oxygen demands, and varies with the composition of organic matter present in the water. Organic matter in soils, aquatic vegetation and aquatic organisms are major sources of organic carbon.

Watershed The upstream land area drained by a river network.

Yellow Springs A meter that measures temperature, conductivity and dissolved oxygen in water.

Instrument (YSI)

Zooplankton Small, sometimes microscopic, animals that live in the water column of lakes and mainly eat

primary producers (phytoplankton).





APPENDIX I

Plankton - Supporting Data, 2011





Table I-1: Water Quality Profiles at Plankton Sampling Locations in East Lake, Lake N11 and the L and M Lakes of the Gahcho Kué Project, Fall 2011

Lake	Station	Maximum Depth [m]	Secchi Depth [m]	Depth [m]	Temperature [°C]	Dissolved Oxygen [mg/L]	Specific Conductivity [µS/cm]	рН
				0.3	9.6	10.6	14.0	6.8
Lake M1	-	2.0	2.0	1.0	9.6	10.5	14.0	6.7
				1.5	9.6	10.6	14.0	6.0
				0.3	13.5	9.8	14.0	6.7
				1.0	13.5	9.8	14.0	6.7
				1.5	13.5	9.8	14.0	6.6
				2.0	13.5	9.8	14.0	6.5
Lake M2	-	4.5	3.0	2.5	13.5	9.8	14.0	6.5
				3.0	13.5	9.8	14.0	6.5
				3.8	13.6	9.8	14.0	6.5
				4.0	13.6	9.8	14.0	6.4
				4.5	13.6	9.8	14.0	6.4
				0.3	14.3	9.8	14.0	6.6
				1.0	14.3	9.8	14.0	6.7
				2.0	14.3	9.8	14.0	6.7
Lake M3	-	7.3	3.2	3.0	14.3	9.8	14.0	6.6
				4.0	14.3	9.8	14.0	6.7
				5.0	14.3	9.8	14.0	6.7
				6.0	14.3	9.8	14.0	6.6
				0.5	13.6	9.8	14.0	6.7
				1.0	13.6	9.8	14.0	6.7
				2.0	13.6	9.8	14.0	6.7
				3.0	13.5	9.9	14.0	6.6
				4.0	13.6	9.8	14.0	6.7
Laka M44		40.5	7.0	5.0	13.5	9.8	14.0	6.7
Lake M4	-	12.5	7.0	6.0	13.5	9.8	14.0	6.7
				7.0	13.5	9.8	14.0	6.7
				8.0	13.5	9.8	14.0	6.6
				9.0	13.6	9.5	14.0	6.6
				10.0	13.6	9.5	14.0	6.6
				11.0	14.0	9.5	14.0	6.7





Table I-1: Water Quality Profiles at Plankton Sampling Locations in East Lake, Lake N11 and the L and M Lakes of the Gahcho Kué Project, Fall 2011 (continued)

Lake	Station	Maximum Depth [m]	Secchi Depth [m]	Depth [m]	Temperature [°C]	Dissolved Oxygen [mg/L]	Specific Conductivity [µS/cm]	рН
				0.3	12.2	10.5	14.0	6.9
				1.0	11.7	10.5	14.0	6.8
				1.5	11.6	10.5	14.0	6.7
Lake L2	-	3.8	3.8	2.0	11.5	10.5	14.0	6.7
				2.5	11.4	10.5	14.0	6.7
				3.0	11.3	10.5	14.0	6.7
				3.5	11.4	9.7	15.0	6.4
				0.3	16.1	9.4	11.0	6.5
				1.0	16.1	9.3	11.0	6.6
				2.0	16.1	9.3	11.0	6.6
	D1	6.5	6.0	3.0	16.1	9.3	11.0	6.6
				4.0	16.1	9.3	11.0	6.6
				5.0	16.0	9.3	11.0	6.6
				6.0	15.9	9.3	11.0	6.6
				0.3	14.2	9.5	12.0	6.7
				1.0	14.2	9.5	12.0	6.7
Lake N11	D2	6.2	5.8	2.0	14.2	0.9	12.0	6.7
Lake NTT	D2	0.2	5.6	3.0	14.2	0.9	12.0	6.7
				4.0	14.2	0.9	12.0	6.7
				5.0	14.2	0.9	12.0	6.7
				0.3	16.3	9.1	11.0	6.8
				1.0	16.3	9.1	11.0	6.8
				2.0	16.3	9.1	11.0	6.8
	D3	6.5	Bottom	3.0	16.3	9.1	11.0	6.8
				4.0	16.3	9.1	11.0	6.8
				5.0	16.3	9.1	11.0	6.8
				6.0	16.3	9.0	11.0	6.8





Table I-1: Water Quality Profiles at Plankton Sampling Locations in East Lake, Lake N11 and the L and M Lakes of the Gahcho Kué Project, Fall 2011 (continued)

Lake	Station	Maximum Depth [m]	Secchi Depth [m]	Depth [m]	Temperature [°C]	Dissolved Oxygen [mg/L]	Specific Conductivity [µS/cm]	рН
				0.3	15.9	9.2	12.0	6.1
				1.0	15.9	9.1	12.0	6.2
	D4	6.0	5.8	2.0	15.9	9.1	12.0	6.2
	∪ 4	0.0	5.0	3.0	15.9	9.1	12.0	6.3
				4.0	15.9	9.1	12.0	6.3
Lake N11				5.0	15.9	9.1	12.0	6.3
Lake NTT				0.3	15.3	9.3	12.0	6.3
				1.0	15.3	9.3	12.0	6.3
	D5	5.6	5.0	2.0	15.3	9.3	12.0	6.3
	Do	5.0	5.0	3.0	15.3	9.3	12.0	6.3
				4.0	15.3	9.2	12.0	6.3
				5.0	15.3	9.2	12.0	6.3
				0.3	15.2	9.3	15.0	6.9
				1.0	15.1	9.3	15.0	6.9
				2.0	15.1	9.3	15.0	6.9
	D1	6.9	Bottom	3.0	15.1	9.3	15.0	6.9
				4.0	15.1	9.3	15.0	6.9
				5.0	15.1	9.3	15.0	6.9
				6.0	15.0	9.3	15.0	6.9
				0.3	15.2	9.3	15.0	6.8
East Lake (REF)				1.0	15.2	9.2	15.0	6.8
East Lake (REF)				2.0	15.2	9.2	15.0	6.8
				3.0	15.2	9.2	15.0	6.8
				4.0	15.2	9.2	15.0	6.8
	D2	14.2	7.8	5.0	15.2	9.2	15.0	6.8
				6.0	15.2	9.2	15.0	6.8
				7.0	15.2	9.2	15.0	6.8
				8.0	15.2	9.2	15.0	6.8
				9.0	15.2	9.2	15.0	6.8
				10.0	15.2	9.2	15.0	6.8





Table I-1: Water Quality Profiles at Plankton Sampling Locations in East Lake, Lake N11 and the L and M Lakes of the Gahcho Kué Project, Fall 2011 (continued)

Lake	Station	Maximum Depth [m]	Secchi Depth [m]	Depth [m]	Temperature [°C]	Dissolved Oxygen [mg/L]	Specific Conductivity [µS/cm]	рН
				11.0	15.2	9.2	15.0	6.8
	D2	14.2	7.8	12.0	15.1	9.2	15.0	6.8
	D2	14.2	7.0	13.0	15.1	9.2	15.0	6.8
				14.0	15.1	9.2	15.0	6.8
				0.3	15.1	9.3	15.0	6.8
				1.0	15.1	9.3	15.0	6.8
				2.0	15.1	9.3	15.0	6.8
				3.0	15.1	9.3	15.0	6.8
				4.0	15.1	9.2	15.0	6.8
				5.0	15.1	9.2	15.0	6.8
				6.0	15.1	9.2	15.0	6.8
	D3	15.3	7.4	7.0	15.1	9.2	15.0	6.8
	DS	15.5	7.4	8.0	15.1	9.2	15.0	6.8
				9.0	15.1	9.2	15.0	6.8
East Lake (REF)				10.0	15.1	9.2	15.0	6.8
				11.0	15.1	9.2	15.0	6.8
				12.0	15.1	9.2	15.0	6.8
				13.0	15.0	9.2	15.0	6.8
				14.0	15.0	9.2	15.0	6.8
				15.0	15.0	9.2	15.0	6.8
				0.3	15.1	9.1	15.0	6.8
				1.0	15.1	9.1	15.0	6.8
				2.0	15.1	9.1	15.0	6.8
				3.0	15.1	9.1	15.0	6.8
	D4	9.0	7.5	4.0	15.1	9.1	15.0	6.8
				5.0	15.1	9.1	15.0	6.8
				6.0	15.1	9.1	15.0	6.8
				7.0	15.1	9.1	15.0	6.8
				8.0	15.1	9.1	15.0	6.8





Table I-1: Water Quality Profiles at Plankton Sampling Locations in East Lake, Lake N11 and the L and M Lakes of the Gahcho Kué Project, Fall 2011 (continued)

Lake	Station	Maximum Depth [m]	Secchi Depth [m]	Depth [m]	Temperature [°C]	Dissolved Oxygen [mg/L]	Specific Conductivity [µS/cm]	рН
				0.3	15.1	9.2	15.0	6.7
				1.0	15.1	9.2	15.0	6.7
				3.0	15.1	9.2	15.0	6.7
				5.0	15.1	9.1	15.0	6.8
East Lake (REF)	D5	14.9	7.8	7.0	15.1	9.1	15.0	6.8
				9.0	15.1	9.1	15.0	6.8
				11.0	15.1	9.1	15.0	6.8
				13.0	15.1	9.1	15.0	6.8
				14.0	15.1	9.1	15.0	6.8

Notes: m = metre; °C = degrees Celsius; mg/L = milligrams per litre; µS/cm = microSiemens per centimetre.



Table > 2 Phytoplankton Abundance (ind, /L) in East Lake, Lake Lake Station Date campled	A B 20-Aug-11 1	a Kué Project, Fall 2011 Luke M1 C 20-Aug-11 20-Aug-11	D 20-Aug-11	E #	19-Aug-11 19-A	136eM2 C 6ug-11 18-6ug-11	0 E	A 18-hug-11 18-hug-	8 11 184ug-11	Lake MS C D 18-Aug 11 11	f 8-Aug-11 18-Aug-11	A B 20-64g-11 2	Lake M4 C D-Aug-11 20-Aug-1	D 20-Aug-11	6 20-Aug-11	A B 20-Aug-11 20-	136+12 C Nag-11 20-Aug-11	0 20-Aug-11	E 20-Aug-11	A I	Like N11-0 C 15-dug-11 15-	D mg-11 15-Aug-11	6 A 16-Aug-11 16-Au	Lake N11-02 t B C up:11 16-dup:11 16-dup:11	0 D 6 1 26-Aug-11 16-Aug-11	A B	C D I	i A B	Lake N11-D6 B C D sup-11 10-bup-11 10-bup-11	E A 16-Aug-11 15-Aug-11 1	Lake N11-DS B C D SS-Aug-11 15-Aug-11 15-Aug-	6 / g11 15-kug-11 17-k	East Lake (909) C A B C hug-11 17-dag-11 17-dag-11 :	01 0 i 17-hug-11 17-hug-11 1	East take (i A B C 17-fug-11 17-fug-11 17-fug	169)-02 D 6 -11 17-Aug-11 17-Aug-0	A B	C D 17-fug-11 17-fug-11 17-	E A B	Entlake (MEF) ON C D -11 17-bug-11 17-bug-11	E A	East Lake (REF)-06 B C 17-Aug-11 17-Aug-11 17	D 6 17-bug-11 17-bug-11
CHECROPHYCEAE Antispodernus benandi Konanis Antispodernus bisaria (Corda) Rafis Antispodernus Bisaria (Corda) Rafis	182917 0 0	0 0 0 0	160661 0 0	218798	369831 2 0 0	0 0 0 0	401102 0 0	601302 1881	0 0	218781 0 0	0 0 0 0	235256 0 0	0 0	201725	160628 0 0	0 0	42754 42753 0 0	94804	87515 0 0	0 0	7210 0	0 0	618865 66	0 0 0 0 0 0	2292 0 7292 0 0 0 0	0 0 0	0 7292 0 0 0	7292 0 0 0	0 0 7292 0 0 0	749271 860642 7290 0 0 0	0 14585 0 0	0 7292 0 0 0	7292 0 0 0 0 0	0 0 0 0	263586 182916 240 14585 0 0 0	0 0 0 0	86 260666 291708 0 7292 7292 0 0 0	0 0 0 0	7212 0 0 0	0 7252 0 0 0 0	3 193143 175219 0 0 0 0 0	0 0 0 0	0 7292 0 7292
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Ankistodeomus spiralis (Turner) Lemmennann Ankistodeomus stipitatus (Chod) Antirodeomus convergens Ehrenberg		0 0	0			0 0	0	0	0 0	0 0	0 0			0 0	6	0	0 0		0	7292 0		0 0 0 7292 0 0		0 0 0 0 0 7292	0 14585	0 0	1292 7292 0 0 0 0	7292 7292 0 0 0 0	0 0 0		0 0	0 0	0 7292 0 0 0 0 0 0 7292	0 0 7292 0 0 0	0 0 7292 0 0 0	0 0 721	0 0 0	7292 0 0 0 0 0	0 0 0 7292 0 0	0 0 0	0 7292 0 0 0 0 0 0 0	7292 7292 0 29171 0 0	0 7293 0 0 0 0
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Cosmanum Soculatum Sirebisson Cosmanum margaritasum (Lund.) Roy and Siss Cosmanum phaseous Sirebisson		0 0	0 0	0	7292 0 0	0 0	0	0	0 0	0 0	0 0	0	0 721 0 0	0 0	0 0 7282	0	0 0		0	7292 0 0		0 0	0	0 0 0 0 0 7282 0 0 0	0 0	0 0	7292 0 0 0 0 0	0 0	0 0 0	0 0	0 7292 0 0 0 0	0 0	0 0 0	0 7292 0 0 0 0	0 0	0 0	0 0 0	0 0	0 0	0 0 0	0 0 0	0 0	0 0
Cosmerium suborenatum Hantz. Crucegenia apiculata (Lemmermany) Schmidle		0 0	0 0	0		0 0	0	6	0 0	0 0	0 0			0 0	6 6	0	0 0		0	0		0 0	7292 0	7292 0 0 0 0 0 0 0 0	0 16585 0 0 0 0	0 0	: :	0 0	0 0 0		0 0	0 0 0 0 0 7292	0 0 0	0 0	0 0	0 0	0 0 0	: :	0 0	0 0 0	0 0 0	0 0	0 0
Crucegenia quadrate Morren Crucegenia rectangularis (A. Braut) Gay Crucegenia sp.	7292 0 0	0 0	0 0	0		0 7292 0 0 0 0	7292 0 0	0 165 0 0	585 21879 0 0 0 0	0 0	0 0	0		0 16585 0 0	6 6	7292 0 0	0 0	7292 0 0	0	16965 0 0	14585 0 0	0 0 0 0 7292 0	0	7292 0 0 0 0 0 7292 0 7292	0 0 0 7292 0 2 0 0	7292 0 0 0 0 0 0 0	: :	7292 0 0 0 0 0	0 7292 0 0 0 0 0 0 0	0 0 0 7292 0 0	0 0 0 0 0 0 14	0 0 0 0 4585 0	0 0 0 0 0 0 0 7292 0	0 0 0 0 7292 7292	0 0	0 0 0 0 0 0 sess	0 0 0 0 0 0	0 0 0 0 7292 0	0 0	0 0 7292 0 0 0 0 7292	2 0 0 0 0 0 0 7292 0	0 0	0 0
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Eleksoothis gesevensis (Roverdir) Hindak. Eusstrum ansatum Elmenberg Eusstrum denticulatum (Kinther) Grav	36464	0 29171 0 0 0 0	0	43757	3666 :	36466 102301 0 0 0 0	29171	58363 291 0 0	171 29171 0 0	21878	7292 14585 0 0	43212 0 0	\$1050 \$100 0 0	43757	SRIED O	0	0 0			87525 0 0	65636 7292 0	21878 72929 0 0 0 0	52050 20 0	20204 72929 58343 0 7292 0 0 0 0	5 5050 80222 0 7292 0 0 0	7292 36464 0 0 0	52050 51250 1	96808 96808 13 0 0 0 0	31273 102101 94808 0 0 0 0 0 0	65636 153152 0 0 0 0	36464 72929 656 0 0	5636 36466 0 0	0 36664 0	21878 16985 0 0	14585 14585 14 0 0 0 0	SBS 0 729	92 21879 7292 0 0 0 0 0 0	16585 21879 0 0 7292 0	0 16585 75 0 0 0 0	202 7292 C	0 0 72H2 0 0 0	21878 7282 0 0 0 0	14585 29171 0 0 0 0
Eudorina sp. Franceis Droescheri (Lemm.) G.M. Smith Gloeocystis planctonica (W. and G.S. West) Lemmermann		0 0	0 0	0 0 7292		0 0 0 0 0 1696	0 0 7292	6 6	0 0	7292 0 0	0 0			0 0 0 7292	0 0 7292	0 0	0 0		0	0 0 7292		0 0 0 0 0 29171	0	0 0 0 0 0 0 7292 0 0	0 0	0 0	: :	0 0	0 0 0 0 0 7292 0 7292 0	0 0	0 0	0 0	0 0 0	0 0 0 0 7292 0	0 0	0 0	0 0 0	: :	0 0	0 0 0	0 0 0	0 0	0 0
diteracyanis sp diterative sp. Kinchaedeka caranta (fictimida) fathin		0 29171 0 0 0 0	0	7292 0 0	21879 0 0	16585 0 0 7292 0 0	29171 7292 0	6 72 6	0 0 292 0	21878	16585 23879 0 7292 0 0		0 726 14585 0	7212	0	0	0 7292	3646 0 0	7292 0 0	0	0 0 0	16565 0 0 0 0 0	0 1	0 0 0 16585 0 0 0 0 0	0 0	0 21878 16985 0 7292 0 0 0 0	0 0 23878 0 0 7292	21878 21878 1 0 0 0 0	16585 0 16585 7292 0 0 0 0 0	7290 0 14585 7292 0 0	16585 0 290 0 16585 72 0 0	9575 7292 7292 0 0 0	1695 0 7292 1695 1695 Node 0 0 0	7282 0 14585 21878 0 0	21878 7292 7 21878 16585 0 0	292 7292 729 0 21878 1656 0 0	92 7292 7292 85 16585 29171 0 0 0	14585 7292 0 21879 0 0	0 0 7292 29171 291 0 0	0 0 0 171 0 48791 0 0 0	0 16585 0 7 0 7292 0 0 0	7292 0 65636 16585 0 0	7292 7293 7292 58948 0 0
Kichiadea Liakis (Kichi, Stole. Kishikusela qi. Lagerterina genevensis (Chol.) Chol.	21878	0 0	1695	7292	21878	7292 0	7292	7292	0 14585	7292	1695 1695	21878	16585 2181	21878	7282 0	7292	0 14585	21878	7292 0	7292	7292 7292 0	7292 0	7292 2 0	0 0 0	0 3666	7292 0 0 0	7292 14585	0 7292	0 0 7292	0 7292	0 7292 149	6585 0	0 0 0	0 0 7292 0	0 0	0 0	0 0 0		0 0	0 0	0 0	0 0 7292 0	0 0
Missonghidum corastum (Thuret) Komarkova-Legenerova Missonghidum corastuum (Corda) Missonghidum phissiesi Pilinissi Hindak and Kom-Leon	0 0 21878	0 0 0	0 0	0	0 0 51050	0 0 0 0 5000 3666	0 7292 80222	7292 0 61696 291	0 0 0 0 171 72929	0 0 0 0000	0 0 0 0 21878 80222	0 0 51050	0 0 101101 8021	7292	0 0 21879	0	0 0	0 0 7292	0	0 0 262567	0 0 367961	0 0 0 0 0 0 0 1000	7292 277180 16	0 0 0 0 0 0 67798 182924 226082	0 0 0	0 0 0 0 0 0	7292 0 0 0 255254 306305 2	0 0 0 0 26082 233375 20	0 0 0 0 7292 0 04201 128186 175011	0 0 0 0 255256 175081	0 0 7292 0 72 196900 280668 1790	0 0 7292 7292 5085 175081	0 0 0 0 7292 0 7292 21878	0 0	0 0	0 0 0 0 0 7292 2951	0 0 0 0 0 7292 71 0 29171	0 0 0 0	0 0 7292 0 1696 1696	0 0 0 0 0 0 0 7292 7293	0 0 0 0 0 0 2 16585 16585	0 0 0 0 7292 0	0 0 0 0 7292 0
Misconphidum griffithi (Berkeley) Komarkova-Legenerova Misconphidum inegulare (G.M. Smith) Komarkova-Legenerova Misconphidum misutum (Nag.) Komarkova-Legenerova	0	0 0	0 1695 1695	0		0 0	0 0	16585 7292 0	0 0	0	0 0	0	7292 0 0	0 0	6	0	0 0 0 0 7292 7292		0	0 0	29171 29171 0	65636 36664 16985 21878 0 0	65636 S 21879 21879	18363 65636 16585 7292 63757 16585 0 0 0	5 36664 51050 5 29171 14585 0 0 0	0 21878 21878 5 7292 0 0 0 0	29575 72929 1 43757 36664 1 7292 0	51050 63757 6 16585 36664 6 0 0	43757 72929 43757 43757 14585 7292 0 0 0	65636 116687 43757 14585 0 7292	58969 50050 800 7292 16585 70 0 7292	0222 29171 1 7292 7292 0 0	36666 36664 21879 7292 7292 7292 0 0 0	\$1050 21878 14585 0	72929 21879 58 14585 7292 7 0 0	363 63757 5101 292 16585 721 0 7292	50 \$1050 43757 92 7292 7292 0 0 0	29871 65636 14585 14585 7292 0	36666 72929 656 7292 21878 216 0 0	696 29171 36664 878 7292 0 0 0 0	4 21879 29171 0 7292 14585 0 7292 7292	7292 80222 7292 0 0 0	49797 29171 0 29171 0 0
Minorgethidum up. Minogethi up. Cocyalis parve W. and G.S. West		0 1686 0 0	0 0			0 0	0	0	0 0	0	0 0			7292	0 0 29171	0	0 0			0		0 0 0 7292 0 0	0	0 0 0	0 0	0 0	0 7212	0 0	0 0 0	0 0	0 0	0 0	0 0 0	7282 0 0 0 0 0	0 0	0 0	0 0 0		0 7292 0 0	0 0 0	0 0 0	0 0	0 0
Cocyalis incuents Chodat Cocyalis pavos W. and G.S. West Cocyalis pavids Hangling	0 65636 34585	0 0 0 136687 0 20171	0 72929 43757	0 21878 21878	0 51050 51050	0 7292 65636 96808 65636 21979	0 116697 58363	0 72 138566 497 58363 114	292 0 767 36464 878 42 ⁹⁶⁷	0 80222 16585	0 0 65636 36668 58363 20074	0 51050 36664	0 14585 2181 14585 5190	0 0 8 21878 9 7282	0 0 21978	21978	0 0 16585 7290 0 9969	0 21878 0	58348 6	0 72929 58963	7290 123980 80222	- 7292 0 0 29171 72929 72929 72910	7292 43757 18 87515 7	0 0 0 18566 80222 153152 72929 51050 5+464	0 0 0 2 72929 65636 3 36664 72414	0 0 0 6 80222 21878 8 87525 102****	7292 0 72929 116687 1 80222 87515 1	0 0 75091 159152 12 38566 80222 4	0 0 7292 23980 131273 87515 63757 109384 109384	0 0 191279 167738 87519 167739	0 0 72 80222 145858 656 102101 65636 469	7292 7292 5636 87515 7738 116687	0 0 0 16585 29171 7292 51050 42757 80***	0 0 7292 16985 29171 21874	0 0 14585 21879 14 14585 58343 45	0 0 585 14585 696 5000 ****	0 0 0 0 36664 36664 85 51050 72444	0 0 14585 29171 52050 48757	0 0 7292 7292 231 21879 8666 ***	0 0 0 878 0 16585 878 16585 24174	0 0 0 5 7290 7292 1 8666 8664	0 0 16585 0 43757 4375P	0 0 21878 7292 43757 14585
Docyalis solitaria Wilfmock Pediaszura teras (Ehrenberg) Kalfs Quadriguia tecusnis (Chodal) G.M. Sinim	7292 0 0	0 54585 0 0 0 0	0 0	0	0 7292 0	7292 7292 0 0 0 0	0 0	0	0 7292 0 0 0 0	0 0	7292 0 0 0 0 0		0 2161 0 0	1 16585 0 0	0	0	0 0		7210 0 0	1696 0 0	0	7292 0 0 0 0 0	7292 0 0	0 0 0	0 7292	0 0	0 7212 0 0	7282 0 0 0 0 0	0 0 16585 0 0 0 0 0 0	14585 0 0 0 0 0	0 0 70	7292 0 0 0 7292 0	0 7292 0 0 0 0 0 0 0	0 0	0 0	0 0	0 16585 7292 0 0 0 0 0 0	0 0	0 0	0 0 0	0 0 0	0 0	7292 0 0 0 0 0
Ouadiguis plicari (Schoeder) G. M. Smith Scenedesmus econis var. biceluses (Ehrenberg) Chodus Scenedesmus obliques (Turpin) Kurtzing		0 0 48757 0 0	0	0 7292 1685		21878 0 0 7292 0 0	16585 7292 0	0 0 7292	0 7292 0 7292 0 0	0 0	7292 0 0 0 0 0	14585 0 0	0 0 0 721	7292	0	0	0 0		0	7292 0 0	0	0 0	0	0 0 0	0 16585 0	0 0	0 7292 0 0 0 0	0 0	0 0 16MS 0 0 0 0 0 0	0 0	0 7292 0 0 0 0	0 0	0 0 0	0 0	0 7292 0 0 0 0	0 0 721	0 0 0		0 0		0 0 0	0 0	0 0
Spinerous opposition IF. Notice Spinerous advisers Chodat Spinerous Spinerou		7292 0	0	0 7282		0 0	0	0	0 7292	0	0 0			0	0	0	0 0		0 0	0 0				0 0 0	0 0	0 0		0 0	0 0 0		0 7292 0 0	0 0	0 0 0	0 0 7292 7292	0 0 14585 0 7	0 0	0 0 0 0 7292 0	7292 14585	0 0 71 21878 0	202 0 0	0 0 7212 0 0 7212	0 0 7292 7292	14585 0
Steurostum sp. Temedion minimum (A. Braum) Hanging Temedion mulcum (A. Braum) Hanging		0 0	0			0 0 0 14585	0	0	0 0	0	0 0			0	0	0	0 0		0	0	7292 7292 0	0 0 1695 7292 0 0		0 0 0 7292 7292 7292 0 0 0	0 0 0	0 0 2 16585 16585	21878 29171	0 7292 21878 7292 2	0 0 0 21878 29171 16585 0 0 0	7292 14585 0 0	0 0 16585 7292 364 7292 0	0 0	0 0 0 7292 14585 14585 0 0 0	0 0 16585 7292	14585 14585 7	0 0 292 0 729	0 0 0 92 7292 0	36664 21878	0 0 21878 48797 72	0 0 0 292 7292 1698	0 0 0 5 0 7292 0 0 0	0 0 14585 0	0 0 7292 0
Yessedon ninimun var. Besidubsun Reins CHRYSOPHYCSAS	7212 171884	0 0	1823227	1743009	0 882660 G	0 0 685527	1286629	736583 6813	0 7212	0 751165	0 0 796926 765753	624678	7210 582878 75110	7292 F 679200	790108	1166864 1	14585 0 87470 743871	1279362	1451287	634480	622986	0 0 15692 446963	554259 42	0 0 7292 22986 652356 663650	2 7292 0 2 666744 342762	7292 0 2 415690 510502	7292 0 T 561549 561548 40	0 0 88622 503207 45	0 0 0 0 7292 52155 525087 481325	0 21879 613600 756700	7292 0 0 14585 72 558255 279224 5903	7292 0 : 0720 561551 56	29171 43757 43757 45546 489619 517791	0 16585 850055 SGRREE	7212 7212 16 582878 517792 556	664 0 2187 255 576138 48692	76 7212 36166 E8 601064 876188	7292 29171 SPEER 692828	43757 0 364 641772 510498 6051	064 21879 7292 006 408296 452151	2 0 7292 5 001105 656257	43757 0 561550 487571	7292 29571 688619 286521
Bincha chade (Keeste) Chotal Bincha olde (Ket) Bourely Chysolyko plantonius Mack Chysolyko plantonius Mack	10 12 12 12 12 12 12 12 12 12 12 12 12 12	0 0	29171 0	3656	0 0	21878 16585 0 0 7292 7292	0 0	0 7210	0 0	0 0	7292 7293 0 0 0 7293	7292 0 7292	0 721	0 0	0	0	0 0		0 0	0		0 0 0		0 0 0 0	0 0 0	0 0	0 7212	0 0	0 0 0 0 0 0	0 0 0 7292	0 0	0 0	0 0 0	0 7292 0 7292 0 0	7292 16985 7 0 0 0 0	0 0	0 0 0 0 0 0	0 1000	0 0	0 0 0	0 0 0	0 0	
Otromaina sp. Otromaina sp. 2 Desmando rocalitarriia Kiera	94808 0 24585	43757 136687 0 0 0 0	102101 0 0	87515 0	87515 0 7292	5000 72929 0 0 0 0	3666 0 0	58363 697 61 61	767 72929 0 0	58363 0 0	116687 65636 0 0	51050 0	58343 5100 0 0	7282	61636 0	87505 0 68757	96808 80222 0 0 7282 21879	72929 0 61757	109394 0 7290	SMARS	72929 0 0	36566 36585 0 0 0 0	7292 2 0	29171 0 58343 7292 51050 0 0 0 0	29171 29171 0 0 0	7292 0	21878 16585 1 0 0 14585 0	16585 7292 1 0 0 0 0	14585 0 7292 0 0 0 0 0 0	14585 43757 0 0 0 14585	68757 36664 141 0 0 0 16585	4585 7292 0 0 0 0	7292 7292 7292 0 0 0 0 0	16585 21878 0 0 0 0	29171 14585 7 0 0 0 0	292 7292 729 0 0 0 0	92 14585 7292 0 0 0 0 0 0	29171 14585 0 0 0 0	51050 7292 141 0 0 0 7292	0 0 0 0	2 7292 51250 0 0 0 0 0	21878 16585 0 0 0 0	21878 7292 0 0 0 0
Dictorense cf. uklanum Prauser Dinothyon ecuminatum Ruttner Dinothyon bevericum Imbot	56585 0 56585	0 0 0 0 0 10225	0 0 87515	7282 0 5000	0 0 29071	16585 0 0 0 21878 16585	7292 0 14585	0 72 0 14585 145	292 0 0 0 585 0	7292 0 7292	0 0 0 0 7292 7292	0 0 7292		0 0	0 0 7292	0	7292 7292 0 0 0 0	7292 0 0	0	1696 0 7292	7292 0 7290	0 0 7292 0 0 14585		0 0 0 0 0 0 0 0 7292	0 0	0 0 0 0 0 0	0 0 0 0 14585 7292	7292 0 0 0 7292 16585	0 0 0 0 0 0 7292 7292 16985	0 0 7292 0 0 14585	7292 0 0 0 16585 0 72	0 0 1 0 0 7292 21878 1	21878 0 7292 0 0 0 1685 29171 16585	7292 0 0 0 14585 0	0 7292 0 0 0 14585 21	0 0 0 0 878 16585 1658	0 7282 16585 0 0 0 85 0 16585	14585 0 0 0 21878 14585	0 0 72 0 0 16585 0 72	292 0 0 0 0 0 292 7292 7292	0 14585 51250 0 0 0 2 7290 14585	29171 0 0 0 7292 7292	14595 7292 0 0 0 0
Disablyon darger Lemmentann Disablyon cresulation W. and G.S. West Disablyon disastion Hilland	29171 0 7292	0 14585 0 0 0 14585	0 0 29171	0 0 7292		0 0 0 7292	7292 0 16585	0 72 0 0	292 0 0 0 0 0	7292 0 7292			7292 729 0 0	0 0	0 0 7282	0	0 0		7292 7292 0	0 1695	0 0	0 0	18585	7292 0 29171 0 0 0 0 0 0	0 21878	8 21878 16585 0 0 0 0 0 0	0 7212	0 0	7292 7292 7292 0 0 0 7292 14585 7292	14585 7292 0 0 0 7292	0 16585 141 0 0 0 0	0 0 0 0	1696 0 7292 0 0 0 7292 7292 0	0 7292 0 0 0 0	0 0	0 0 0 0 292 0	0 0 7292 0 0 0 0 7292 0		7292 0 0 0 0 7292	0 7292 1498 0 0 0 0 0 0	s 0 0	0 0	0 0
Dinologion op (socie monad) Dinologion accider var. americana (firundisler) Bachmann Dinologion accider Sirenberg	4257 0 87515	0 0	0 0 1685	29171 0 26566	16585	7292 16585 0 0 0 7292	16585	0 165	585 0 0 0	20878	7292 14585 0 0	7292	7210	0 0	7292 0 0	48757	43757 23878 0 0 0 23878	87515 0 14585	21879 0 36666	0		0 7292 0 0 0 16585	0 7292 23879	0 0 7292 0 0 0 0 0 21978	2 0 0 0 0 0 7292 7292	7282 0 0 0 0	0 0	0 7292 0 0 7292 0 1	0 0 0 0 0 0	7292 0	0 0 0 7292 0 0 72	0 0	7282 0 7292 0 0 0 0 0 0	0 7292 0 0 7292 7292	7292 7292 0 0 0 0	0 16585 729 0 0 0 0	92 16585 7292 0 0 0 0 0 7292	0 21878 0 0 0 0	7282 0 72 0 0 0 7282 161	292 0 7292 0 0 0	2 23879 7292 0 0 0 2 0 0	7292 7292 0 0 7292 0	0 14585
Dinothyon acciate var. aspitatum (Stein) Lemmermann Dinothyon bevericum var. Vanhoffenii (Bachm.) Krieg. Epopyela sp.	0 0 14585	0 0	0 0 29171	0		0 0	0	0 72 0 0	292 0 0 0 0 0	0 0	0 0	0 0	0 0 7290	0 0	0	0	0 0 0 0 7292 7292	0 0 29171	0 0 14586	0		0 0		0 0 0 0 7292 0 7292 0 7292	0 0	0 0	0 0 7292 0 7292 0	0 0 0 7292 0 0	0 0 0 0 7292 0 0 7292		0 0 0 0 216 7282 0	0 0 1879 0 0 0	0 0 0 0 0 0 0 29171 7292	0 0 0 0 0 7292	0 0 0 0 29171 0 21	0 0 0 0 878 7292 1458	0 0 0 0 0 0	0 0 0 0 1292 14685	0 0 0 0 0 21878 291	0 0 0 0 0 0	0 0 0 0 7292 8 1698 1698	0 0 0 0 36668 28171	0 0 0 0 14585 0
Kiphyrion boreate Skupa Kiphyrion boreate Skupa Mallomonas pseudocoronate Prescot	7292	7292 0 0 0	0	0 0		0 0	0	0	0 0	0	0 7292 0 0 14585 0			0 0	0	16585 16585 7292	16585 0 0 0 0 0	7292 0 0	7292 0 0	0		0 0		0 0 0	0 0	0 0	7292 0 0 0 0 0	0 0	0 0 0	0 0	0 0 7292 0	0 0	0 7292 0 0 0 7292 0 0 0	0 0	0 0 7	292 0 0 0 0 0	0 0 0		7292 0 0 0 0 0	0 7292 0	0 0 7292 0 0 0 0 0	0 0	0 0
Minnesige verlans Skuja Ochronovas ap. Predinste so.	72929 102101	7292 43757	160665	90222 51050	21879 3666	36466 7292 21878 29271	21878 50050	6 43757 218	0 \$1050 878 3666	36664 21878	48757 29675 65636 21879	58348 14585	16585 0 2911	7292	29171 36468	21878 102105	14585 7292 90222 21879	87515 160465	16585 182824	7292 0	14585	0 16585 16585 69757	21979 7	0 7292 0 72929 29571 87515	0 16585 5 58363 21878	5 14585 0 6 49756 7292	16565 21878 65636 63757	0 0 16585 7292	0 0 0 7290 21879 7292	0 36464 14585 49757	7292 7292 238 16585 23878 72	1879 0 : 7292 7292	16585 58343 36664 0 7292 14585	58363 102105 16585 7292	29171 65696 43 7292 0 7	757 5090 8021 292 0 1459	22 43757 29171 86 7292 7292	29171 65636 29171 21878	51050 36464 803 14585 7292 73	222 21878 63751 292 16585 16581	7 29175 14585 5 7292 14585	29171 48797 14585 0	7292 \$1050 7292 7293
Pseudiálephysion attenuature Hilland Pseudiálephysion auroreum Nicholls Pseudiálephysion ellipsoideum (Psecher) Schmid		0 0	0 0			0 0	0	6	0 0	0 0	0 0 0 0 0 7292	0 0 7292	7210 721 0	0 0	50585 0	0	0 0		0	0		0 0	0	0 0 0	0 0	0 0		0 0	0 0 0	0 0	0 0 0 16585 0 0	0 0	7282 0 0 0 0 0 0 0 0	0 0	0 7292 0 0 0 0	0 0	0 0 0		0 0	0 0 0		0 0	0 0
Placutokeptyrion minurissimum Contad Spiriteramonae sp. Stichoglose doedenerol (Schmide) Wite	0 0 14585	0 0 0 0 21877 29170	0 0 1685	7292 0 29170	0 0 14584	0 0 0 0 7292 29570	7292 7292 36963	6 6 7292 366	0 0	0 0 21877	0 0 0 0 16585 21879	0 0 7292	0 729 21877 5100	0 0	0 0 1688	0 0 50009	0 0 0 0 7292 14585	29175	7292 0 21879	0 0 43766	0 0 36663	0 0 0 0 1696 3666	0 0 1660	0 0 0 0 0 0 0 29170 29170	0 0 0	0 0 0 0 0 0 5 29170 51089	63756 36653	0 0 0 0 65635 29130 2	0 0 0 0 0 0 29171 SRBQ 87514	0 0 0 0 21879 58342	0 0 0 0 29170 29170 216	0 0 0 0 1877 29171	7292 0 0 0 0 0 7292 7292 0	0 0 0 0 0 21879	0 0 0 0 14584 7292 14	0 0 0 0 585 0 729	0 0 0 0 0 7292 92 7292 7292	0 0 0 0 0 21877	0 0 0 0 16586 7292 72	0 0 0	0 0 0	0 0 0 7292	0 0 0 0 7292 0
Springing grades stamped: Spring up. Ungline up. Ungline up. United total Constitution up. (Coherences Constitution)	72H2	0 0	0			0 0	0	0	0 0	0		0	0 721	0	0 0	0 21877	0 0 36463 43756	29171	0 29171				7292	0 0 0 1292 0 0	0 0		0 7212	0 0	0 0 0	9 79	0 0 0	0 0	0 0 0	0 0		0 0			0 0		0 0 0	0 0	0 0
Unidentified ruleed Chrysophyte sp. (Ochromonas/Chromulina)-a Unidentified Erlenas/Chrysochromulina complex	48629 45436	7292 889763 0 87525	608627 0	568852 145859	286126 17 80222	96910 233275 36666 87515	469871 109394	269840 1531 21878 500	152 233375 050 7292	306305 50050	165859 247961 165859 123980	207961 80222	204203 28442 51250 1459	255256 36464	262567 153152	362770 58363	106105 211096 96808 21878	329196 239396	452164 72929	175001 58040	100294 21878	60665 131273 16985 0	160000 10 0 8	20294 16085 204218 36464 14585 21878	1 160845 116687 8 29171 0	7 131273 72929 0 36464 0	198566 160885 1: 0 21879	65859 116687 7 0 0 1	72929 160865 123980 14585 0 0	233375 175031 23879 43757	165859 87515 2552 51050 0 141	5256 167758 21 6585 7292	98626 175031 291719 7292 29171 36864	94908 175031 43757 43757	182328 226082 226 58363 63757 29	082 277133 2116 171 29171 72	96 255254 269840 92 123980 43757	240668 175091 80222 58348	233375 196930 1896 72929 16585 531	617 138566 123890 050 48757 48751	0 131279 233376 7 36464 43757	267961 145859 14585 29171	175081 165859 51050 29171
CYANDBACTERIA Anabama fluo-aquae Srebisson Anabama inaequalis (Guetzing) Surrest and Fishault	189610 0 7292	94806 291717	218786	1521e0 0 0	481111 2	0 0 0 0	562556 0 0	291716 5000 7292 0	0 0 0 0	306200 0 0	269826 247957 0 0	229274	313591 342N	259925	11668) 0 0	29170 0 0	29170 7292 0 0 0 0	80219	58228 0 0	0 0	599221	25090 692924 0 0 0 0	649069 65	66365 683625 669071 0 0 0	0 0	2 692927 576140 0 0 0	692825 1025599 71	\$1172 707615 71 0 7292 0 0	14707 758466 797638 0 0 0 0 0 0	\$17797 481332 0 0 7292	729294 692827 5681 0 0	0 7292 0 0	0 0 0 0 0 0	0 0 0 0	299005 211092 240 7292 0 0 0	665 608602 64171 0 0	77 430282 279230 0 0 0 0 0 0	561555 517797 0 0	0 0 0 0	675 250060 242761 0 0 0	5 189616 260060 0 0 0 0 0	0 0 0 0	7292 0 0 0
Aphanocapa delicatizates West and West Aphanocapa elachists W. and G.S. West Aphanocapa elachists W. and G.S. West	7292 21878 58348	80222 131278 7292 43757	1686	21878 7282	94808	3666 58343 7292 0	36664 29171	7292 218 7292	878 43757 0 0	42757 7292	29171 29171 21878 16585	41212 29171	87515 10230 16585 5830	102201 21878	21879 7282	1695	7292 7292	29171 14585	7292 0	280668 29171	293821 16585	50062 681236 16585 7292	7292 666750 60 7292 1	38407 206305 293821 14585 14585 26464	262547 291719 29171 16585	9 66750 681336 5 21878 16585	519680 729298 SI 29571 21879	83438 539680 51 7292 29171 3	10508 554266 548024 36464 21878 7292	293821 206305 14585 21878	0 695922 4379 568852 7292 149	7578 510508 2: 4585 0	18799 181273 201710 7292 7292 36664	218789 96808 0 0	102101 123880 87 7292 7292	515 204203 30541 0 14585 1450	77 262547 204203 85 16585 0	320895 291719 7292 16585	262547 87535 1894 18585 18585	617 189617 116681 0 0 16581	7 87515 189617 5 7292 7292	165859 131273 7292 0	116687 277138 21878 14585
Aphanomere clathose: W and G.S. West Aphanomere sp Chroscoccus Sinnesicus var. distans G. M. Smith	0 7292 2696	0 0	29171 0	ě	0 7292 0	0 0 0 0 7292 7292	16585	0 7292 7292 165	0 0 0 14585 585 7292	0 7292 0	0 0 7292 0 7292 7292	14585 14586 0	3686 2387 36585 726 29171 2658	7292 7292 1 1696	7292 0 30585	0	0 0		0	0 1685 1685	21878	0 7292 7292 21879 0 7292	0 0 1 7292	14585 7292 7282 0 0 0	0 0 2 7292 7292	0 0 2 14585 0 1 7292 0	0 0 7292 0 7292 0	0 0 0 0 7292 0	0 0 0 7292 7292 7292 0 0 7292	0 0 0 7292 7290 0	0 0 0 16585 0 0	0 0	0 0 0 7292 7292 7292 0 0 0	0 0 7292 0	0 0 7292 7292	0 0 7292 729	0 0 0 92 0 21878	14585 7292	0 0 7292 0 141	0 0 0 585 14585 0		0 0 7292 21878 0 0	0 0
Cyanodictyon ap (lod) Cyanodictyon ap (spherical) Limosthou sp	0 0 14585	0 0	0 0 29171	0 0 1695		0 0	0 0 7292	6) 6) 6)	0 0	0 0	0 0	0 0 7292	0 0 0 72	0 0	6 6	0 0 1685	0 0 0 0 21878 0	0 0 29171	0 0 21878	0		0 0 0 0 0 7292	0	0 0 0 0 0 0 0 7292 7292	0 0 0	0 0 0 0 0 0 2 0 16585	0 0 0 0 1292 7292	0 0 0 0 7292 0	0 0 0	0 0 0 0 1290 0	0 0 0 0 7292 14585 141	0 0 0 0 4585 7292 1	7292 7292 0 0 0 0 01279 87515 160865	7292 29175 0 0 131273 116687	21878 0 7 0 0 118566 65636 131	292 0 729 0 0 273 145859 26790	92 0 1695 0 0 7292 61 131273 102105	21878 29171 0 0 189617 160865	21878 29171 291 7292 0 72929 189617 1896	171 0 29171 0 0 7291 617 131278 16088	1 0 0 2 0 0 5 72929 145859	7292 0 102301 145858	0 7292 0 0 165858 131279
Ministropeda arcustura Lentinerricani Phomitolyngus limedia Lentinerricani Plantidyngus limedia Lentinerricani Paudistropeda limedia Kinnani	0	0 0	0 0	0 0	281719 Z	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0	0	0 0	7210	0 7290	0 0	0 0	0 0 7292 0	181279 20	0 0 0 0 0 0	0 0 0	0 0 0	0 0	0 0 0	0 0 0 0 0 0	0 0	0 0	0 7292 0 0 :	21878 29171 16585 0 0 0 16585 21878 0	0 0	0 0	0 0 0 0	0 0 0 0 0 0	0 0	0 0 0 0	0 0 0	5 22678 7292 0 0 0 0 0 0	0 0	0 0
Attababahana Sinesee Sidunide and Lauterborn Snowells aractinoides Konseek and Hindak Snowells Sousthis (Chodat) Komanek and Hindak		7292 0	0	ě	0 0 7212	0 7292 0 0	7292	0	0 0 0	7292 0 7292	0 0	14586 0 7292	7212 0 7212 721	0 0	0	0	0 0		0	7292 0 7292	29171 0 0	7292 36664 0 7292 0 7292	7292 1 0 21879	14585 21878 14585 0 0 0	7292 14585 0 0 0	5 16585 21878 0 0 0 7292 21878	16565 36664 1 0 0 36664 0	36466 29171 2 0 0 0 0	29171 7292 0 0 0 0 7292 0 0	0 7292 7292 0	68757 21878 218 0 0 16585 7292	1878 14585 0 0 0 14585	7282 0 0 0 0 0	0 7292 0 0	7292 0 0 0 0 7292	0 0 721	92 7292 0 0 0 0 0 0 0		0 7292 0 0	0 16965 0	0 0 0	0 29171	0 0
Worsichinia compacta (Lemmermann) Kumanek and Hindak CKYPTOPHYCEAE Commonostations (Comby	255694	0 0 54585 87554	116686	145857	0 167797 10	0 0	0 54686	123976 1606	0 0 662 182922	299009	255251 204200	0 87514	116685 8022	51009	109392	167725	0 0	122879	65635	36463	21878	29169 51048	7292 50	0 0 0 2002 72928 58342	94807 36463	4276 0	7292 0 52049 121271 1	50588 0	0 7292 29170	7292 65635	0 0 29170 58842 581	0 0 8842 7292 1	0 0 0 58841 21877 14585	0 0 7292 25877	0 0 52049 24585 7	0 0 292 7292 3660	68 58363 58362	5200E 65625	58342 29139 211	0 0 0 877 72928 16589	a 43755 51049	43756 34588	14585 7292
Ogetonosa etias timetarej Ogetonosa merconi Skuja Ogetonosa merconi Skuja Orgetonosa merca Franter	20171 0	0 0	0	16185 0		7292 0	21878 0	7292 72 0 7292	292 3666 0 0	36664 0 7767	3666 23878 0 0		14585 0	0 0	34585 0	28171 7292	7292 14585 0 7292	7292		7292		0 72H2 0 0		7292 0 0	0 0	0 0	0 7212	0 0	0 0 0	0 0	0 0	0 0	0 0 0	0 0	0 0	0 0	0 7292 0 0 0 0		0 0		0 0 0 0 7290 0	0 0	0 0
Crystenonas ap. (sdourtess) Kasabaphara coals Skap Rtodononas lens Pascher and Ruttrer	0 96808 0 87515	16585 16585	29171 0	102101	123980	0 0 58348 43757 7282 0	41757	0 80222 802 7292	0 0 222 72929	96808	0 0 80222 96808	0 7292 0	65636 4371	21878	SMARK	0 87505 0	0 0 90222 29071 0 0	51050 0	36 and 0	0 29171 0	21878	7292 0 16985 16585 0 0	7292 S	58363 51050 63757 0 0 0	0 0 9 65636 21878	0 0 8 14585 0	29171 80222 0 0	0 0 7292 0	0 0 0 0 7292 7292 0 0 0	0 60757 0 60757	21878 36964 218	1879 0 :	0 0 0 16985 7292 0 7292 0 0	0 0 0 7292	21878 14585 7	0 0 292 0 2921 0 0	0 0 0 71 21878 36464	1665 49757 7292 0	0 0 21878 16565 141	0 0 0 00 36464 7293	0 0 0 2 21879 29171 0 0 0	0 0 21878 7292 0 0	0 0 14585 0
Rhadonara minus Shuja BAGULARGOPHITGEAS	87515 209093	0 72929 29271 58200	87515 1685	29175	43757 1 109092 6	29171 51050 65636 87518	102100	21879 656 94805 487	636 72929 PSS 128976	160045 72928	131273 87515 58361 80220	80229 80229	36464 2911 87513 12130	29171	36464 80259	43757 48754	16464 52562 65625 58240	55636 123977	20171	65634	43756	7292 29171 87924 21878	0 6 1 26585 S	13757 21878 16585 18365 21877 29171	29171 14585 1 14586 21877	29171 0 7 51089 65636	21878 43757 87518 29171 1	7292 0 29169 58342	0 0 21578 0 58342 58342	7292 21879 8665 51867	7292 21878 360 21876 7292 360	6664 72929 11	36464 14585 14585 02097 502097 94804	0 16585 122087 65636	29171 0 58889 188561 102	0 7292 729 085 72926 875 1	92 29171 21878 E1 121269 102089	29171 21878 1 18860 128976	36460 14585 75 146855 189611 1385	202 36464 7292 660 186908 181269	2 16585 21879 8 189618 160440	21878 7282 153167 181369	0 7292 87510 96806
Anomorous vibra (Sirunow) Ross Autocomin opp.		0 0	0	0 0		0 7292	0	0	0 0	0	0 0		72N2 72N 0 0	0	0 7282	0	0 0			0			è	0 0 0	0 0	0 0		0 0	0 0 0		0 0	0 0	0 0 0	0 0	0 0 0	0 0	0 0 0	0 0	0 0 75 0 21878 141	0 7292 0 292 0 0 595 43757 21879	0 0 0 8 21879 0	0 0 0 0	7292 0
Cyclindra Dodanica Grunow Cyrnbella sp. Diatoma Senue C. Aganth Ministra Goodin Kortzina		0 0	0 0			0 0	0	0 0	0 0	0	0 0	1202	7210 1600 0 0	7282	0 0	7292 0 0	0 0			0		0 0		0 0 0	0 0	0 0		0 0	0 0 0	0 0 0 7292	0 0	0 0	0 0 0	0 0	0 0	0 0	0 0 0	0 0	0 0 0 0 0 1695			0 0	0 0
Mavicule sp. Microsthi accularis (Guetzing) W. Smith Microsthi clausi Hartcoch		0 0	0 0 1685	0	7292 0 0	0 0	0	0	0 16984 0 0 0 0	0 0	7292 0 0 0 0 0	0		0 0	0	0	0 7292 0 0 0 0	7292 0 0	0	7292 0 0		0 0	0 1	0 7292 0 0 0 0 0	0 0	0 0		0 0	0 0 0	0 0	0 0	0 0	0 0 0	0 0	0 0	0 0	0 0 0		0 7292 149 0 0 0 0	685 D G	0 0 0	0 0	0 0
Microthia incompicus Grunow Microthia sp. Andropolenia Ionglorea Ehrenberg	0 7292 0	0 0 0 0 0 14585	0			0 0	0 0 7292	0 7292 0	0 0	0	0 0			0 0	0	7292 0 0	0 0		0 7292 0	0				0 0 0	0 0	0 0	: :	0 0 7292 0 0 0	0 0 0		0 0	0 0	0 0 0 7292 0 7292 7292 50050 36664	0 0 0 7292 3666 63757	0 0 14584 14585 7 0 36664 7	0 0 292 0 729 292 29171 1459	0 0 0 92 0 0 85 80222 65696	0 0 7292 0 58363 65636	0 0 7282 0 48757 28171 580	0 7292 0 0 0 14981 348 48757 29171	0 0 0 5 0 14584 1 5200 36464	0 0 7292 0 29171 58363	0 0 14585 0 21878 29171
Synedowine (Nitrach) Elnc. Extentior Science (Roth) Kuetling Ceretic Distant 4 um (Cyclostitution)	7292 0 0 0 51050	0 0 0 0 0 0	0 0	0 0 0 87505	94808	0 0 0 0 0 0	0 0	0 0 0 58869 146	0 0 0 0 0 0	0 0	0 0	0 0 0 49292	0 729 0 1005	7292 0 0 1 0	0 0	0 0 1695	0 0 0 0 58363 Nerty	0 0 7292 80217	0 0 0 0 0	0 0 1695	0 0 0 21878	0 0 0 0 0 0		0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 7292 14596	0 0 0 0 0 7292 0 3666 7997	0 0 1292 0 5200 2927	0 0 0 0 7282 50050	0 0 0 0 0 0 0 0 0	0 0 0 16585 16585 24585	0 0 7292 0 7292 7292 %	0 0	0 0 0 0 0 0 6 0 0	0 0 7292 0 3666 1699	0 21878 7 0 0 0 0 14585 29171 14	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 7292 0 0 0 0 29571 21879	0 0 75 0 0 0 0 0	7292 1698 292 0 0 0 0 0 0 58963 7991	- 16989 7292 0 0 0 0 0 0 0 0	0 0 0 0 0 0 80222 23979	0 0 0 7292 21878 36664
Carolic Disson & 14 um (Cyclowite/Septemodiscus) BUGLENOPHYCEAS	4257	29171 29170 \$1008 0	ě	29171	7212	0 29271	0	21879 291 0	170 \$1669 0 0	No.	21878 8666	29170	36463 4375 0	42756	29171	16185	7292 23877	29171	N-013	43757	21878	36066 23878 0 0	16(8)	2292 0 0	7292 0	14585 51060 0 0 0	26271 0 :	14585 7292 0 0	0 29171 16165 0 0 0 0	23879 56585	7212 0	0 29171	63756 7292 7292 0 0 0	16585 0	14535 21879 36 7292 0	864 29171 6979 8 8	57 14584 7292 4 0 0	16185 21878	\$1050 72929 364 8 8	0 10 1775 063 29170 68751	7 50050 51050 0 0 0	29170 36063	21877 21877
Anisoneria sp. Singlena sp. Anisolanorias sp. Franchismontorias sp.	0	3666 0 7292 0 7292 0	0 0	6	0	0 0	0	6	0 0	0 0		0			0	0	0 0	0	9	0	0	0 0	å	0 0 0 0 0 0 0 0 0	0 0	0 0		0 0	0 0 0	0 0	0 0	0 0	0 0 0	0 0	0 0 7292 0 0 0	0 0	0 0 0	0 0	0 0	0 0 0	0 0 0	0 0	0 0
DROPHYCEAS Anghalaum sp.	51048	7292 29170 0 A	3666	29130	29570	3 0 31877 7292	21877	58361 165	585 24585 0 ^	42757	24184 14185	•	0 5456 0	7292	0 3662	29170	0 0 20160 7202 10105 A	42755	7292	•	7292 0	7292 7292 0 A		2 0 0 14585 7292 34584		218% 0	1685 0 8 7292	0 0	0 0 0 7292 0 0	7292 7292	0 1658 72 0 0	7292 6	0 14584 21877 0 0 ^	16585 21877	0 7292 7	292 29170 721	92 34584 0	7292 0	21877 21876 141	584 7292 G	0 7292 7292	0 7292 0 0	14584 0
dzienodinium sp. Dymnodinium aeroginasum Szein Dymnodinium arakestum Skulp	0 0 16565	0 14585 0 0 0 14585	0 0 1685	0 0 1658	0 0 21879	0 0 0 0 16585 7292	0	0 6 48757 145	0 0 0 0 585 16585	0 0 48797	0 0 0 0 7292 14981		0 721 0 721	0 0	0 7292 56585	0 0 21878	0 0 7292 0 7292 7292	0 7292 14586	0	0	0 0 7292	0 0 0 0 0 7292	0	0 0 0 0 7292 7292 14595 0 0		0 0 0 0 0 0 0 7292 0	0 0 0 1292	0 0	0 0 0 0 0 0 7292 0 0	0 0 0 7292 0 0	0 0 0 7292 0 7292 73	0 0 0 0 7292 0	0 0 7292 0 7292 0 0 7292 16585	0 0 0 0 16585 16585	0 0 0 0 0 7292 7	0 0 0 7292 292 21878 729	0 7292 0 0 0 0 92 7292 0	0 0 1292 0	7292 7292 72 0 0 16585 7292	0 0 0	0 0 0 0 0 0 0 7292 7292	0 0 0 0 0 7292	0 0 0 0 7290 0
Oymnodinian sp. Pestinian circum (C.F. Males) Ehrenberg Pestinian pusition (Perced) Lemmermon.	7292 0 29171	72HZ 0 0 0 0 0 0	0 0	0 0 16985	7212 0 0	0 0 0 0 7292 0	16585 0 7292	5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	0 0	7292 0 0 0 0 0	0		7292	56585 0 0	7292 0 0	0 0	21878 0 0	7210 0 0	0 0	0	0 0 7292 0	8	0 0 0 0 0 0 0 0 7282	0 0	7292 0 7292 0 0 0 0	: :	0 0	0 0 0	7290 0 0 0 0 0	0 0	0 0	0 0 0	0 7282 0 0 0 0	0 0	0 0	0 0		0 7292 72 0 0 0 0	292 7292 0 0 0 0 0 0 0	0 0 0	0 0	7292 0 0 0 0 0
TOTAL ASSESSMENTS																																											

Table - 2 Phytoplankton Biomacc (mg/m²) in East Lake	ike, Lake NSS and the L and M Lai	kes of the Galicho Kué Project, Fall Lake M	2011		ı	u	ake M2	D 1	Α.		Die Mil				Lak	+ MS				LANCO-A			1		Lake N15-01				Lake N15-02		1	Lake NSS-DB		Lake N11-0	04		ake N11-06		East Lake (REF)-00		East Lake	+ (MSF)-02		NX Lake (MEF)-DB		East Lake (MEF)-0	14	fact	ake (REF)-OS
STEDIO DUSE Exempled CHECKOPHYCEAE ANNEXOCIDENTE BETAND KONAME ANNEXOCIDENTE BETAND (COSTE Rafts	20-Aug-11 12-36	20 Aug 11 20 Aug	11 20-hag-11 20-hag-11 0	20-Aug-11 667 41.01	18-dug-11 72.87	18-hug-11 18- 29.03	9-Aug-11 18-7 52-52	Nag-11 18-Aug-11	28-8ug-13	18-Aug-11 8.79 36.81	18-Aug-11 9 142-87 0 0	18-Aug-11 66-40	8 18-Aug-11 26-31 0	20 Aug 11 20 s	Aug 11 20-7	100-11 20-fug	1 20-Aug-11	20-Aug-11	20 Aug 11 179 1.9	20-Aug-11 2 99.0 0	20-Aug-11 9 401.55	20-Aug-11 22-Aug-10	15-Aug-11 71-99	16-Aug-21 216-31 1-65	15-hug-11 60.87	16-84g-11 170.65	25-Aug-11 196.29	16-dag-11 1	16-Aug-11 16-Aug-11 156-20 408-71	26-Aug-11 26-Aug-11 119-03 169-11 0.86 0	15-Aug-11 15-Aug-1 98-80 66.3	1 19-Aug-11 19-Aug-1 14 75-84 821	1 15-Aug-11 16-Aug 06 112-55 21 55 0.57	21 10-hug-21 10-hug-21 138 57-21 77-6	1 10-Aug-11 10-Aug-1 11 109-00 108-1 0 0.50 1.1	25-Aug-21 25-Aug-21 8 110.41 90.91	15-hug-11 15-hug-11 15 79-89 107-81 1-64 0	15-Aug-11 17-Aug-11 90.58 51.78 1.79 2.34	17-Aug-11 17-Aug-11 17 60.07 77.52	7-Aug-11 17-Aug-11 17 62-61 66-81	109 0 0	og 11 17-bug 11 17-bug 142.90 62.58 21	22 27-hag-13 27-hag-1 30 56-26 28 0 076 03	1 17-hug-11 17-hug-11 1 10 154.70 74-45	17-fug-11 17-fug-11 68.73 367.26 0.81 0	27-Aug-11 17-Aug-11 1 28-91 92-90 0 0-82	17-bug-11 17-bug-11 1 47.91 85.12	17-hug-11 17-hug-11 1 158.00 58.40	2841 50.89 26 0 0 6 2-4ag-11 17-4ag-11 17-4ag- 28-41 50.89 26 0 0 1
Ankianodeomus faktatus var. mirahdis titesz Ankianodeomus funliomis Conta Ankianodeomus goalas (feliminat) Kors. Ankyarjudaji (S.M. śmitni) Fost	0 0	0 0	1.51 0 0 0.55		0 0	0 0	0 0	0 0 0	0	0 0	0 0 0	0	0 0	0 0 0	0 0	0 0 0	0 0		0	0	0 0	0		0.60	0	0 0	0.86	0 0	0 0	0 0	0.88	0 0	0 0.79 1 0 0 11 0 0 0	0 0 0	0 0 11 0 0 0 0	0 0.55 0 0 0 0 0 0	0 0	0 0 0	0 0	0 0	0 0	0 0	0 0	0 0 0	0 0	0 0	0 0	0 0	0 0 371 0 020 0
Ankistodeomus spilasis (Turner) Lemmennann Ankistodeomus spilanus (Chod) Antirodeomus consegent Ehrenberg Antirodeomus incus (Sinebisson) Hassatt	0 0 0	0 0	0 0	0 0	0 0	0 0 0	0 0	0 0 0	0	0 0	0 0 0 0 0 0	0 0	6 6 6	0 0 0	0 0	0 0	0 0 0			0 0 0	0 0 0 0 0 0	0	0 0,6	0 0 0	0	0 0.96 0 0	0	0 0	0 0 0 0 0 61.10 0 0	0 481 0 0 0 0	0 0	0 0.68 1/ 0 0 0 0 0 0	55 1.86 : 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0	0 0	0.81 0 0 0 0 28.76 0 0	0 0 0.56 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 7.70	0 0	0 1.86 0 0 0 0 0 0 0 0 0 7.70	0 0 0 120 0 0	0 0 0 0 0 0	0 0.82 0 0 0 0 20.96 15.66	0 192 0 0 0 0 0 0	2.20 0 0 1.96 0 0 0
Arthrodeonus scou var. nitria (W. Shed) Teiling Arthrodeonus sisingulaite. Lagetheim Biospococcus audelous Lammermann Chlamydomonus sagistel Shuja	0 0	0 45.82 0	0 0	0 0 0 0 0 0,17	0 0 0 021	0 0	0	0 0 0	0 7.66 0 0.17	0 0	0 0 0 0 0 0 0 0.17	0	0	0 0	0	42.77 0	0 0			0 0 0	0 0	0		0 0		660 0 0	0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0 0	0 0	0 0	0 10.68 0 0 0 0	0 0	0 0	0 0 61.50 0 0 0	0 0		0 18.0P 0 0 0 0	0 0	0 0	0 0 0 0 109.98 0	0 0
Championnas op Cosnasium agnesi Reinsch Cosnasium blockeum Brebisson Cosnasium eargentasum (Lund) Roy & Bos	0	0			0 730 0	0	0	0	0	0 0	0 0	0	0	0 0	0	10.48 0	0			0	0 0	0		0		0		0	0 0 0 0 0 105.49	0 0	0 0	0 0 0 687 0 0	0 0	0 0	0 0	0 0 0	458 0	0 0	0 0	1.10 0 0 11.60 0 0	0 0	0 0	0 0		0 0	0 0			0 0
Costration op Costration areason Costration subovenature Hantz. Chacegeria policulara (Lemmemany) Schmidle Chacegeria pusabose Morren.	0 0	0	0		0	0 0	0 0	0 0	0	0 0	0 0	0	0	0 0	0	0	0 0			0	0 0	0		0 0		0	140.77 0	11.98 0 0	0 0	59.28	0 0	0 0	0 0	0 0	0 0	0 0 0	0 0	0 0 0 0 22.00 0	0 0	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0
Crucegeria eccangularis (A. Brauri) day Crucegeria se Crucegeria sengedia (Nichner) W. B. G.S. West Dicycoptiaenius pubbellum Skuja	0 0	0 0		0 0	0	0 0 0	0 0	0 0 0	0	0 646	0 0 0 0 0 0	0 0 1830	6 6 6 6	0 0 6.60 0	0 0 1820 0	6.60	0 0 06.18			0	0 0	0	0 0 19.20	0 0	0.55 6.60 0	0 0	0 0 0.98	0.69 6.60	0 0.68 6.60 0	23.46 0 0 0 6.60 0	0 0 0 508 64	0 0 0 0 10 0	0 0 0	0 0 0 0 0 0.48 0 0	0 0 0 0 0 0 64	25.28 0 0 0 0 0 0 0	0 0 0 1-87 0 0	0 0 0 0 6.60 0	0 0 1.87 0 0 0 0.41 0	0 0 0.24 0.69 0 0	0 0	0 0 0	0 0	0 0 0 0 024 0 0 0 0 0 0 0	0 0	0 0 0 024 0 0 0.41 0	0 0 0 0 0 0	0 0	0 0
Dictycophienium aubeolimium Van Goor Elleksochtis peakenosa Wille Elleksochtis peakenosis (Forwede) Hindak Elukotum ansatum Elhenberg	0 0 2:06 0	0 0 0	0 0 134 0	0 0 0 0 0 258	0 0 168	0 0 0.66	0 0 4.09	0 0 1.12 0	0 0 2.29 0	0 0 0 0 0.40 130	0 0 0 0 0 0.80 0 0	0.45	0 0 067 0	0 0 0	0 0 179 0	0 0 2.66 0	0 0 2.28 0	818		0 0 0	0 0 0 0 0 0	0	0 0 1.79	0 1966 9678	0.89	0 0 k1k	0 1.79 0	0 0 4.67	0 0 0 0 139 201 11874 0	0 0 0 0 2.29 3.51 0 118.76	0 0 0 0 0 0.20 1.5	0 0 0 0 6 268 18	0 0 0 0 0 65 2.986 :	0 0 1 120 0 1 152 2.88 1.8	0 0 0 0 H 199 1.i	0 0 0 0 0 0 9 5.81 156 0 0 0	0 0 0 0 3.35 2.66 0 0	0 0 0 0 1.30 0	0 0.31 0 0 1.56 0	0 0 0 0 0.72 0.72 0 0	0 0 0 0 072 0.45 0 0	0 0 0 0 0.65 0 0	0 0 0 0 021 112 02	0 0 0 0 0 0 2 0.68 0.72 0 0 0	0 0 0 0 0 0.77 0 0	0 0 0 0 0.10 0.11 0 0	0 0	0 0 0 0 0.48 0.12 0 0	0 0 0 0 0.24 0.20 :
Sustation democulation (Kitchner) Gay Suddeline sp. Franceis Diceacheri (Lemm.) G.M. Smith Globocyssis plantitorica (W. & G.S. West) Lemment	0 0 0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0	0 0	0 0	0 0 0 7.82	0	0 0	0 0 0 114.96 0 0	0	0	0 0	0	0	0 0 5.34	15.27		0	0 0 0 0 0 0	0	0 0 0 15.27	0	0	0 0 61.10	0	0 0 15.27	0 0	0 0	0 0	0 0	0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 5.85 12 0	0 0 0	0 0	0 0	0 0	0 0 0 0 15.27 0	0 0	0 0	0 0	0 65.99 0 0 0 0 0 0 0	0 0	0 0	0 0	0 0	0 0
diceocyala sp diceocide ap Kincheelete consuta (Schmide) Bothin Kincheelete Juneis (Kinche, Moeb, Kincheelete Juneis (Kinche, Moeb,	0	0	0 0	0 0	0	0 0 0	2.75	2.76 0 0 0 27	0 :	147	0 17a0 0 0 0 0 0 0	0 0	275	0 0	5.87 0 0	0 0	0 0		0	0 %	7 80.18 0 0 0 0 0 0	28.00 0 0 0		0 0 055	0 0	0	0	0 0 0	0 5.50 0 0 0 0	0 0	276 803	0 647 0 0 14 0 0 0	0 0 0 65 0 0 0	0 2.75	0 0 51 0 0 51 0 0	7 0 45.82 0 230 0 0 0 0	5.87 2.75 0 0 0 0	0 550 0 0 0	550 13.75 0 0 0 0	5.50 8.25 0 0 0 0	880 440 0 0 0 0	0 825 5 0 0 0 0	1.50 1.50 81 0 0 0	2 22.81 X.91 0 0 8.25 0 0 0 0 0 0	2.75 11:00 0 0 0 0	11.00 0 0 0 0 0	0 11.79 0 0 0 0	2.75 26.76 0 0 0 0	0 15.27 7 4.60 2.20 17 0 0 0 0
Lagerheinis genevensis (Chod.) Chod. Miscosphidum braunii Naegel Miscosphidum cosonum (Thurel) Komarkuva-Legi Miscosphidum cosonum (Conta)	0 0	0 0			0 0.65	0 0.22 0 0	0 0.41 0	0 0.87 0 0.78	0 0.38 0.86	0 0	0 0 0 0 0 0	0.10	0 0	0 0	0	0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			0	0 0	0		0 0	0	0 0.27 0 0	0 0 0 0.98	0 021 0	0 0 0 0 0 0	0 0	0 0	0 0 0 0.08 02 0 1.65 0 0	0 0 21 0.27 0 0	0 0 0 0 021 00 0 0 11	0 0 08 021 0.1 0 0	0 0 0 8 0 009 0 0 0	0 0 0.18 0 0 0 0 891	0 0 0.10 0.18 0 0 8.95 0	0 0.15 0 0.41 0 0 0 3.91	0.61 0 0.24 0.66 0 0	0 0.15 0.27 0 0 0 0 0	0 0 0.65 0.65 0	0 0 0 0 0 0 1	0 0 0 0 020 020 0 0 0	0 0 0.18 0.10 0 0 1.58 0	0 0 0.22 009 0 0	0 0 0 027 0 0	0 0.38 0 0.87 0 0	0 0 0.15 0.20 6
Minosphidum dybowski (Mokal) Hindak et. Kon. Minosphidum griffithi (Sakeley) Konakova- Minosphidum minutum (Nia) Kimakova- Minosphidum minutum (Nia) Kimakova-Legene	0 0.82 0 0 0 0	0 0	1.65 0 0.4 0 0.6	0 2.47 0 0 3.48 0 3.68 0	182 0 0	1.92 0 0	1.87 0 0	8.02 0 0	2.40 1 0.66 0.82 0	0 0 0 0	5 192 0 0 0 0	0.93	2.40 0 0	2.17 0 0	0.68	3.40 0 0	2.78 0 0	0 0 0	0 0.2	0 0 0 7 0.1	0 0.34 0 0 0 0 7 0	0	9.90 4.12 0 0	9.35 1.71 4.33 0	9.85 4.88 1.87 0	11.14 6.19 1.44 0	11.76 6.60 1.42 0.82	6.32 3.85 0.55 0	687 9.58 3.85 1.92 6.50 2.20 0 0	2.60 550 2.61 2.80 3.71 2.20 0 0	5.22 RS 5.110 2.8 0.96	i7 9.62 12:1 i8 6.60 6:1 0 5:77 6:1 0 0.27	99 852 9 12 8.87 1 19 2.17 1 0 0	1.90 8.66 12.9 1.48 2.98 4.7 1.06 2.47 1.8 0 0	0 8.90 20.9 NE 5.77 9.9 NS 0.61 6.9 0 0	2.57 8.35 0 19.80 3.91 0 2.20 1.24 0 0.81 0	1021 7.42 8.18 12.10 2.47 0.49 0.31 0	7.42 0 2.30 6.39 0.86 0.55 0 0	0.81 0.82 5.50 1.56 0.56 0.82 0 0	0 0 842 852 2.28 0 0 0	0 0 11.17 2.78 2.20 1.10 0 0	0 0.81 1 8.80 7.62 8 1.00 1.86 0 0 0.81	1.36 0 1; 1.42 3.37 6; 0.38 1.26 0; 0 0	8 0 0.62 0 1.65 8.35 6 0.95 2.20 0 0.31 0	0.62 0.27 2.41 5.50 0.41 3.30 0 0	0 0.31 4.95 4.40 3.30 1.25 0 0	0.16 0.62 2.61 1.62 0 1.30 0 0.81	0.62 0.81 1.96 0.55 1.10 1.12 0.81 0	0 0.15 12.10 8.80 1 0 0 :
Missocraphidum sp. Missgestils sp. Chapatis parke W. & G.S. West Chapatis parke W. & G.S. West	0	0	187.68 0 0		0	0	0 0 0 5.36	0	0	0 0	0 0 0 0 0 0	0	0	0	0	11.79	0 82.48 0 5.87	155		0	0 0	0		0		57.74 0 5.87	0	0	0 0	0 0	0 0 0 23.46	0 0 0	27 0 0 0 0 0 0 880	0 0 0	0 0 0 0 0 0 0 0	0 0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0 0	0 293.27 0 0	0 0	0 0	0 0	0 0
Cocyalls pave W. A.G.S. West Cocyalls pusitin Hartigley Cocyalls sollaria Willtock Berlinston some (Deschard Briff)	8.57 0.82 2.25	0	660 23 2.06 16 5.82	130 206 146 0.82	464 182 0	1.71 2.78 2.62	6.62 6.69 0.69 3.42	7.22 2.47 0	9.28 2.47	2.47 6.40 1.24 1.80 0 2.80	0 495 6 093 9 0	4.33 2.47 3.42	155 198 0	3.09 1.55 0	165 062 0	1.72 2.78 8.80	2.17 0.81 5.82	49		0 8 01 0 01	5 2.47 4 0	2.47 0 3.42	4.12 2.20 5.24	880 802 0	2.17 3.09 3.42	6.58 2.09	2.17 2.17 2.92 2.93	10.81 4.02 0	619 928 217 217 0 0	928 691 247 601 0 281	5.05 R3 R1R 4.6	0 2.00 10 2.40 15.1 17 2.30 5.1 0 0 2.1	56 13.92 1: 88 6.50 1: 83 2.98	1.14 #.35 6.8 1.40 1.86 4.9	0 458 10 1206 261 16 650 45 0 587 58	9 10.52 9.79 5 9.90 4.33 7 0 0	897 4.02 3.09 6.32 0 2.93	11.61 137 5.26 2.17 0 0	340 0.62 1.86 6.72 2.93 0	0.62 0.62 3.82 0.98 0 0	069 099 062 247 0 0	0.83 2.06 2.78 2.47 0	0 309 11 062 241 51 0 587 21	5 3.44 2.06 4 2.17 2.17 9 0 0	0.81 0.81 0.90 1.72 0 0	0.99 0 1.24 0.62 0 0	1.55 1.38 1.24 1.32 0 0	034 186 155 186 0 0	0 0.93 0 1.86 2.06 7 0 3.42
Condigue source (Chotal G.M. Smith Condigue pitchel (skroeder) G. M. Smith Scenediscous commissor: bicefallers (Ehrenberg) Scenediscous disputs (Tupp) Konting	0 0 0	0	0 0 1.10	0 0 0 0 0 0.24	0 0	5.84 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2.89 0.55	0 0	0 5.30	0 0 # 0 # 0	5.38 0	0	5.38 0	0 0	0 0	2.69			0	0 0	0	1.52	0	0	0	0	0 0	0 0	6 G	0 0	0 0 0 0 14 0 0	0 0	0 0	0 0 0 247 0 0	0 0 0	0 1.51 1.58 0 0 0	0 0	0 0	0 0	0 0 0 144 0 0	0 0 0	0 0 0.72 0 0 0	0 0 0	0 0	0 0	0 0	0 0	0 0
Scenedensus opolensis P. Richter Spraencypals achraener Chodat Spondylosium planner (Robe) W. & G.S. West Spondylosium pygeeum Rabenhorat	0 0 0	0 0 10.48	0	0 0 0 20.48 0 0	0 0	0 0 0	0 0	0 0 0	0	0 0 0 0 0 0	0 0 2 0 0 0	0	0 0 0	0 0 0	0 0	0 0 0	0 0 0		0	0 0 0	0 0 0 0 0 0	2.41 0 0	0 0	0 0	0	0 0	0	0 29.95 0	0 0	0 0 0 10.69 0 0	0 0	0 0 0 0 0 0 0 0	0 0	0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 1566 0 0 0	0 0 0 0 0 0	0 0 0 0 10.48 0	0 0 0 0 20.48 10.48 0 0	0 0 0 0 20 % 0	0 0 0 0 10.68 20.68	0 0 0 0 0 10.68	0 0 0 0 0 0 0 20% 11.48 0 0 0	0 0 0 0 81.48 0 0 0	0 0 1.15 0 0 0 0 0	0 0	0 0 18.55 0 10.68 9.03 0 0	0 0 0 0 6.60 20.96
Steumerum ap Fermedron environmen (N. Brauer) Hannging Fermedron multium (N. Brauer) Hannging Fermedron minimum var. semiduuteum Renns	0 0 0 0.26	0	0		0	0 0	18:30 0 0	0 0	0	0 03	0 0 0 0 0 0	0	0	0 0	0 0	0	0 0 0		0 0.9	0 0 0 5	0 0 0 0 0 0	0		660 0 0	19.20 0 0	660 0	0	6.60 0	3.82 6.60 0 0 0 0.34	0 660	0 1820 183 0 0 0 0.48	0 0 10 1930 263 0 0 0 024	0 0 10 29 29.80 1 0 0	0 11.66 26.8 0 0 0	0 0 H 1320 64 0 0 0 660	0 0 0 0 20.96 13.20 0 0 0.24 0 0.73 0	0 0 640 32.99 0 0 0.69 0.24	0 0 0 196 0 0 0 098	0 0 391 7.64 0 0 147 147	0 0 18.20 6.60 0 0 0 0.21	0 0 13.20 13.20 0 0 0.24 0.34	0 0 10.68 0 6 0 0 0.52 0 0	0 0 140 640 0 0 0.35 024 03	0 0 0 0 32.99 5.87 0 0 0 2 0.10 0.98	0 0 5.87 11.78 0 0 1.47 0	0 0 882 882 0 0 122 031	0 0 8.91 0 0 0 0.24 0	0 0 3.82 7.64 0 0 0.10 0.62	0 0 0 1.96 0 0 0 0.24
CHOCKSOPHYCELAS Strocks chades (Revesting Chadas Strocks alkes (Fot) Sourcely Chrosistes allessonous Macx	299.03 0.73 0 0.17	52.44 0 0	399.03 422.1 0 0.1 0 0.1	0.11 208.61 0.79 0 0 0 0.81 0.81	134.85 0.21 0	155.57 1.10 0 0.17	92.85 0.79 0 0.17	0.72 0.72 0	152.60 100 2.30 0 0.17	05.00 168.48 0 0	8 125.05 0 0.87 0 0	0.17	228.89 0.37 0 0.00	94.20 0.37 0 0.09	70.65 0 0	220.08 0.17 0 0	0.79 0 0	20.63	LIS 286.3	8 218.5 0 0	0 368.75 0 0 0 0	875.62 0.27 0	106.78	502.75 0 0	67.94 0.78 0	508.70 0 0	190.16 0 0	108.47 0 0	78.56 150.82 0.87 0.79 0 0 0 0	181.89 79.31 0 0.71 0 0	68.35 108.6 0 0	65 564.08 560.0 0 0 0:	00 142.76 B 0 0 17 0 0 0	0 0.87 0.8 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 167.77 91.67 7 0 0.37 0 0 0 0 0.17 0	185.05 116.51 0 0.87 0 0	167.69 89.21 0.67 0 0 0	67.28 42.82 0 0 0 0	0 0.47 0 0.47 0 0.41	70.85 67.06 0.21 0.79 0 0	74.82 67.59 53 0.87 0.87 0 0 0	0.02 0.78 0.0 0 0 0	2 77.86 116.06 7 0 0.78 0 0 0	106.00 SES1 0 0.87 0 0	93.66 61.93 0.37 0.37 0 0	98.16 \$1.57 0 0 0 0	92.92 62.21 0.78 0 0 0	62.62 94.90 56 0 0 0 0
Chrysdylos akujae (Nauencii) Bourselly Chromulina qu. Chromulina qu. 2 Depraeda monitamia Kent	0 24.82 0 0.52	0 12.85 0 0	1980 288	0 0 830 22:65 0 0	0 1650 0 034	0 18.92 0 0	18.75 0 0	0 8.42 0 0	0 14.90 11 0 0	0 0 12.85 26.88 0 0	0 0 8 1647 0 0	0 39.10 0	16.86 0 0	18.82 0 0	14.97 0 0	20.58 0	0 2.06 0	1852 2	0 145 360 0	0 8 18:1 0 9 1:1	0 0 2 18.71 0 0 5 3.85	0 41.99 0 0.69	611 0	20.58 0 0	0 10.29 0	275 0 0	0 2.46 0 0	0 828 880 0	0 0 0 14.97 18.92 0 0 0	8.29 11.79 0 0	2.06	0 0 0 617 41 0 0 0 137	0 0 12 802 : 0 0	0 0 1 187 136 1 0 0	0 0 0 115 54 0 0	0 0 0 7 14.66 11.28 0 0 0 0 130 0	0 0 8.42 2.76 0 0 0.52 0	0 0 2.69 0.95 0 0	0 0 206 2.69 0 0	0 0 274 545 0 0	0 0 823 587 0 0	0 0 2.06 1.87 2 0 0 0 0	0 006 206 374 21 0 0 0 0	0 0 0 6 10.75 8.74 0 0 0 0 0 0	0 0 14.41 3.60 0 0 0 0.84	0 0 4.12 2.06 0 0	0 0 2.06 2.06 0 0	0 0 18.82 6.17 0 0	612 617 1 0 0 0 0
Diconena cf. vidanum Plasser Dicotrjon acuminatum Rutiner Dicotrjon develoum Intol Dicotrjon borgel Lemmemann	0.86 0 5.77 1.00	0	0 0 28.95 0.48	0 0.17 0 0 66 22.34 0 0	0 0 621	0.04 0 4.96	0 0 1.99	0.17 0 6.01 0.81	267	0.06 0 0 0 2.68 0 0.27 0	0 017 0 0 0 124 0 027	0 0 0.92	0 0 0.79 0	0 0 7:86 0	0 0 0 027	0 0 0 0.85	0	7.19	0 0.1	7 61 0 0	7 0.17 0 0 0 0	0.43	0.12	0.06 0 0.86 0.55	0.95	201	0 0 0 2.10	0 0 0 0.36	0 0 0 0 0 5.13 0 0.96	0 0	0 0 0 0 0 0 0.1 0 0.72 0.5	0 0 0 0 H 229 11	0 0.06 0 0 15 1.15 89 0	0 0 0 0 0 128 0.79 1.4 0 0.61 0.2	0 0 0 0 0 0.1 17 248 17 115 0.1	0 0 0.17 7 0 0 0 4.89 3.57 5 0.24 0	0 0 0 0 0 1.15 0.68 0.68	0 0.52 0 0 8.46 8.02 0 1.56	0 0.08 0 0 17.18 8.02 0 0.27	0.08 0 0 0 8.25 0 0 0.38	0 0.17 0 0 0 3.44 0 0	0 0 0 0 1430 7.70 13	0 0.27 0.1 0 0 0 1.69 0 2.4	8 0.34 0 0 0 0 1 1875 16.80 8 0 0	0 0 0 0 5.36 0 0.36 0	0.06 0 0 0 3.85 8.25 0 0.31	0 0.86 0 0 4.58 1.65 0.55 0	120 038 0 0 687 165 0 0	0 0.12 0 0 0 4.58 0 0 8.15
Discopyon celestatum Hittard Discopyon dilangtum Hittard Discopyon dilangese tenhof Discopyon sp (loose monat) Discopyon sociale var. americana (Brunthalen) Bach	0 0.24 0 4.60	0	0.68 0.9	0 0 196 0.31 0 0 0 2.69	0 0 13-37 2-68	0 0 0 1.05	0 0.36 0 1.59	0 0.55 0 1.71	0	0 0	0 0 0 024 0 0 0 220	6.72 1.05	0 0 1.47	0 0 0 0.73	0	0	0	0.27	100 68	0 0 0 7 34	0 0 0 0 0 0	0.61 0 0 3.15	1.10	0		0 0 0 115	0	0	0 0	0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	0 0	0 0.55 0.5 0 0 0	0 0 is 027 0 0 0 0	0 0.85 0	0 0	0 061 0 061 0 061	0.24 0	0 0 0 0 0 105	0 0	0 0 024 0 0 0 0 210 0	0 026 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0.27 0 0 0.76 0	0 0	0 0 0 0 1.15 k.15	0 0 0 0 105 165	0 0 0 0 1.15 0
Chroshyon accase (an embarga parameter) Dinoshyon accase var. aspitetum (doein) Lenneema Dinoshyon bawaicum sar. Vanhalfeni (Bachm.) Kie Sippyes sp.	32.08 0 0 0.08	0	0 241	1.80 11.89 0 0 0 0	0 0	0 0	136 0 0	0 0	0 :	0 105 0 0	0 0	0	0	0 0	078 0 0	0	0		0 02	0 80 0 0	2 14.89 0 0 0 0 7 0.82	11:20 0 0		0		1.47 0 0	8.72 0 0	0 0	0 844 0 0 086 0	135 130	0 0.6	0 11 0 0 0 496 0 034	22 1.15 0 0 0 0	0 1.34 0 0 1.05 0	0 0 0 0 0 283 0 021	0 0 0	0 1.15 0 0 0 18.75 0 0	2.44 0 0 0 0 0	0 0 0 0 0 0	1.47 1.66 0 0 0 0	0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 1	6 0 0 0 0 0 0 0 0	0 0.73 0 0 0 0 0 0.72	147 078 0 0 0 0 0 0	1.15 0 0 0 0 0	0 079 0 0 124 0 048 120	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Hisphysion boreate Skuja Hisphysion boreate Skuja Mallomonas pseudocomista Prescoti Mallomonas sp	0 0.26 0	0 0.26 0 0		0 0.95	0 0	0 0 0 22.48	0 0 0 4.89	0 0 0 4.89	0 0 19.86	0 0 0 0 0 0 0 26.12	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 16.80 18.20	0 82 0 0 7.66	0 0 0 11.00	0 0	0 0	0 0		1.09 0.9 1.09 1.60 6.3	5 0 0 5 113	0 0.48 0 0 0 0 5 7.64	0.68 0 0 7.60		0 0	0	0 0	0	0 0	0 0	0 0	0 0	0 1.81 0 0 0 0	0 0	0 0 0	0 0	0 0 0 0 0 0 0 0 1100 0 0 0	0 0	0 0 0 0 0 0 0 764	0.92 0 0 0.24 0 0	0 0	0 0	0.82 0 0 0 0 0	0 0	0 0 0	0.68 0 0 0 0 0	0 0.82 0 0 0 0	0 0	0.48 0 0 0 0 0	0 0
Missouge vertice Stupe Cohronouse sp Pediates sp Pseudolephysion attenuature Hilland	1.72 28.82 0 0	0 2.06 0 0	0 1347 45.1 0 0	0 1.89 1.28 11.55 0 0 0	0.52 8.42 0 0	0.86 6.17 0 0	0.17 10.75 0	0.52 18.61 0 0	0 18-67 0 0	0 136 617 1846 0 0	0 0.86 4 8.06 0 0 0 0	1.09 16.84 0	2.60 #.80 0	5.87 5.87 0 0	0.34 0 0	10.75 0 0	0.17 4.12 0 0	0.6H 10.2H 2	152 0.3 17 22.6 0	4 03 6 43 0	7 2.06 6 65.28 0 0 0 0	85.06 0 0	0.17 0 3.82 0	0 5.88 0 0	4.12 0 0	0.34 11.28 0 0	6 5.61 0 0	20.58 0 0	0.17 0 7.48 24.70 0 0 0 0	0 030 1647 611 0 0	0.34 13.96 2.3 0 0	0 0.84 01 15 1852 121 0 0 0 0	52 0 85 4.12 : 0 0 0 0	0 0 0 168 2.25 6.1 0 0	0 0 17 288 4.1 0 0 0 0	0 0.86 0.17 2 11.28 8.36 0 0 0 0 0 0	0.17 0.52 7.88 1.87 0 0 0 0	0 036 2.06 0 0 0 0 048	1.37 0.86 2.93 3.74 0 0 0 0	1.97 2.41 9.74 1.97 0 0 0 0	0.69 1.55 2.25 0 0 0 0 0.95	1.08 1.20 2 2.25 0 5 0 0 0 0	1.89 1.03 0.0 1.87 2.06 2: 0 0 0	8 0.69 1.55 5 10.75 6.74 0 0 0 0	1.30 0.86 4.12 2.98 0 0 0 0	1.89 0.52 2.25 5.87 0 0 0 0	1.02 0.69 6.12 2.69 0 0	0.34 0.69 5.38 3.74 0 0 0 0	1.08 0.06 0 0 2.98 1 0 0 0 0
Phenotesphylocaucosum Nociola Phenotesphylocaulphenolesph	0	0			0	0		0 0.82 8.82	0	0 0	0 0	0	0.27 0	0.37	0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0			0	0 0	0.82		0		0	0	0	0 0	0 0	0 0	0 0	0 0	0 0		0 0	0 0	0 0	0 0	0 0	0 0		0 0		0 0	0 0	0 0		
Stichogolae debeleeur (stichinde) Wile Schologiae pichosa Starmach Synora sp Lingkea sp Diidended naked Christophae so I Ochonosas I C	8.25 0 0 4.89	0 0	0 0 19 19	0 0 0 0 0 0	0 0	0 0 0	0 0	16.29 0 0 0	0 0	0 0 0 0 0 0 0 0	0 836 0 0 0 0 0 0	0 0	0 0 0 0	7.48 0 0 0	0 0	20.67 76.67 0 0	0 0 0	61.82 0 0 0 0 0 0 0	0 0 172 193 199	9 03 0 0 7 100.1	0 0 0 0 0 0 0 186	01.50 0 1.96	0 0	0 0 0	0 0	0 0 0	7.66 0 0	15.27 0 9.78	0 0 0 0 0 0	0 0 0 0 0 0	0 0	0 0 0 81 0 0 0 81 0 0 0 81	0 0 1 0 0 1 0 0	0 0 0	0 0 0 0 0 0 0 10668	0 19.09 0 0 0 0 0 0 0	00.65 0 0 0 0 0	15.27 0 0 0 0 0	7.64 0 0 0 0 0	0 0	0 0	0 0	0 0 0	7 0 6.71 0 0 0 0 0 0 0 0 0	0 0	0 0 0 0 0 0 0 0 0 0 0	0 0	0 0	0 7.64 0 0 0 0
Uniderated raised Chrysophyte up (Cohomonas /C Uniderated Erlenas/Chrysophyteurina complex CYANDBACTERIA	11.51 0.55 95.93	0.17 0 16.08	23.56 8.6 0.72 55.72 26.4	142 1140 0 0.92	630 067 11056	6.64 0.11 58.79	5.50 0.79	10.48 0.92 27.66	6.36 0.38 0	8.61 5.50 0.48 0.00 66.01 86.75	0 7.22 6 0.13 7 106.16	244 132	5.86 106 98.71	5.84 0.67 256.82	6.81 0.63 236.73	6.30 0.12 318.35	6.01 0.11 152.74	610 120 1864	187 7.2 149 0.7	2 45 9 61	2 7.78 2 0.92 2 66.54	1046 041	4.12 0.17	258 018 218.66	3.78 0.12 100.14	208.92	3.76 0 282.86	0.92 0.31 249.15	3.78 2.14 0.12 0.18 100.00 196.55	3.76 2.75 0.26 0 150.02 129.41	1.10 0.6 0.81 218.50 189.3	0 0 0 0:	14 1.22 1 18 0 14 238.08 27	0.00 0.61 8.7 0 0.52 0 658 256.72 268.5	18 104 1.5 0 0 0.1	6 4.12 3.46 6 0.37 0.43 6 \$26.87 656.65	2.06 6.01 0 0.12 167.85 168.51	2.56 6.70 0.06 0.06 286.28 282.58	1.47 3.05 0.34 0.31 101.92 201.29	0.99 1.47 0.87 0.87	4.90 1.89 0.49 0.37 176.74 128.67	5.22 6.52 2 0.24 0.24 0 98.08 166.70 255	131 6.01 6. 106 104 0. 138 15036 186	6 5.67 6.12 7 0.67 0.49 18 214.93 197.10	5.50 4.64 0.61 0.12 180.52 218.86	6.47 3.26 0.43 0.37 226.47 548.35	2.92 2.09 0.27 0.31 185.72 62.32	550 586 037 012 167.90 188.48	244 412 k 024 048 6 106.86 161.26 19
Anabanna filo-aquae Shebisson Anabanna inaequalis (Guessing) Somet & Flahaut Anabanna sp. Aphanocapas delicalisasina Yeled & West	9.55 15.72 9.78	0 0 0 11.55	0 0 0 3340 24	0 0 0 0 0 0	0 0 0 37.52	0 0 0 12.88	0 0 0 7.08	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	22.45 0 0 1.22 80	0 0 0 0 0 0 0 12.80	0 0 0 0 0 0 9 2618	0 0 9.78	0 0 0 187	0 0 0 28.96	0 0 0 48.07	0 0 0 87.27	0 0 6.21	550	0 0 0 0 0 0 0	0 0 0 2 11	0 0 0 0 0 0 2 7.84	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 89.20	0 0 0 164,80	0 0 0 48.27	0 0 120.89	0 6.19 125.18	0 0 0 196.41	0 0 0 0 0 0 45.82 155.80	0 0 0 0 0 0 76.87 62.81	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 19 20548 2521	0 0 0 0 0 0 0 84 17418 17	7.48 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 147.1	0 0 0 0 891.02 0 0 0 0 6 105.70 0	0 0 0 0 0 0 11547 12036	11.29 0 0 0 0 0 264.96 45.21	0 0 0 0 0 0	0 0 0 0 42.16 26.88	449 0 0 0 0 0 8055 2055	0 0 0 0 0 0 1650 4277 79	0 0 0 0 0 0 882 8246 26:	0 0 0 0 0 0 0 0 0 7 48.49 64.76	0 0 0 0 0 0 52.54 22.00	0 0 0 0 0 0 0 0 0 0	0 0 0 0 12.22 17.11	66.43 23.83	0 8.74 0 0 0 0 0.55 00.82 5
Aphanospas sp Aphanospas sp Aphanospas sp (5 d.S. West Aphanospas investors usr. distant G. M. Smith Chroscopus investors usr. distant G. M. Smith	0 0 4.12	0 0		0 0	0 0 41.36	0 0	0 0	0 0 6.12	0 0 2.35	0 0 0	0 0 0 0 0 206	0 0 20.62	0 0	0 68.51 6.87	0 96.23 15.12	0 209.88 6.87	0 20.62 6.87	0 61.36 6		0	0 0	0	0 0 0 24.74	0 0 8162	0 0 2.75	0 20.62 5.50	0 0	0 0 15.81	0 0 0 0 275 235	0 0 0 0 13.75 2.71	0 0 0 17.87	0 0 21 0 0 0 0 206	75 0 0 0 0 0	0 0 0 0 0 0 0 13.75 1.8	0 0 0 0 0 275	0 0 0 0 0 0 0 235 0	0 0 0 0 2062 0	0 0 0 0 0 2.75	0 0 0 0 412 687	0 0 0 0 4.12 0	0 0 0 0 412 2062	0 0 0	0 0 0	0 0 0 0 0 0 0 1100 275	0 0 0 0 5.50 0	0 0 0 0 2748 9.62	0 0	0 0 0 0 0 412	0 0 0 0 632 0
Cyanodictyon ap (tod) Cyanodictyon ap (tohencal) Limonitrus p Meristropedia arousissima Lemmermann	0 0 2:06 2:20	0 0	0 0 0 45 5.62 78	0 0 0 0 158 229 782 336	0 0 0 11.12	0 0 0 8.87	0	0 0 1.15 16.99	0 0 0 18.68	0 0 0 0 318 5.8	0 0 0 0 0 0 8 861	0 0 0 8.25	0 0 0 587	0 0 1.15 3.18	0 0 0 488	0 0 1.15 4.40	0 0 0 2.75	0 0 0 230		0 0 6	0 0 0 0 0 6.87 0 0.69	0 1.83 0.69	0 0 0 0 226	0 0 0 408	0 0	0 0 0.57 1.29	0 0 2.60	0 0 0 5.56	0 0 0 0 2.29 2.29 4.22 8.10	0 0 0 0 0 24 495 486	0 0 0 0 0 5.3	0 0 0 0 9 229 21 11 122 81	0 0 0 0 29 8.66 21 8.05	0 0 0 0 0 0 0 105 2 53	0 0 0 0 0 0 0.48 8 452 2.1	0 0 0 0 0 0 9 0 2.29 8 3.42 2.44	0 0 0 0 412 844 387 257	0 2.06 0 0 5.79 92.68 1.28 0.49	6.87 0 0 0 53.86 104.25 1.71 0.37	1.37 6.19 0 0 88.63 49.26 0.12 0.38	97.12 0 0 0 87.64 31.16 0.24 0	13.75 0 6 0 0 62.89 86.77 155 0.24 0.67 0	6.87 0 20.0 0 0 0.0 6.80 70.11 76.1 0.87 0.87 0.7	2 17.87 22.00 0 0 0 5 12601 78.96 8 0.24 0.87	9.62 22.68 1.22 0 37.60 138.56 3.21 0.73	36.63 0 0 0 126.01 85.23 0.68 0	36.48 0 6.11 0 108.88 44.68 0.49 0.49	0 32.99 0 0.61 100.81 56.13 0.24 0.12	0 0 5 0 0 9279 9508 7 0 0.26
Phornidum formouse (filery ex Gamont) Anaghostic Plankolyngya linnetica Lemmermann Pheudiadalenia linnetica Klimanik Bhabdodemia linnetica Klimanik Bhabdodemia linnetica Schmidle & Lauterborn	0 0	0 0 0 4.12	0 0	0 0	0 0	0 0	0 0 1.65	0 0 0 2.27	0	0 0	0 0 0 0 0 1880	0	0	0 0 2.41 18.61	0 0 0 227	0	0 0			0 0 0	0 0	0 1.15 2.29 0	14.85	0 0 2949	0 6.58 0 2.47	0 0 0 15.60	0 0 0 7.42	0 0 0 8.51	0 0 0 0 190 9.90	0 0 0 0 840 143	0 0 0 0 0 0 0 184	0 0 0 0 0 0 0 495 70	0 0 0 0 0 0 6 1116 1	0 0 0 0 0 0 185 1880 24	0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 1.10 41.55	0 0 0 0 0 0 1541 990	09.69 0 0 6.87 0 0 8.66 2.47	0 0 862 0 0 0	0 0 0 0 0 11i	0 0 0 0 227 0	0 0	0 0		0 0 0 0 0 2.66	0 0 0 0 0 247	0 0	0 0	0 0 0 0 0 0 6.29 0
Stocketts and Enthalment Komanik et Hindak Stocketts and sits (Chodat) Komanik et Hindak Wooschinia compacte (Lemmemann) Komanik et PENNYMANNES AL					20.62	0	0 0		0	0 20.80	0 6124 0 0	0	41.24 0	20.62	2062	20.62	0				0 0		20.62	0	:	20.62	35.05 0	0	0 0	0 0	619 30.5	9 70.11 0 97.76	0 0	0 2062		0 0 20.83	6.19 0	14.49 0			0 10.81	0 20.62	0 0					: :	
Organicina eras Sinerberg Organicinas mensios Sisua Organicinas sentesa Sisua Organicinas tensis Pascher	0 24.46 0 0	0 0		6 6 6	0 0	8.91 0 0	0 0	5845 1685 0 0	0 2.60 0 2.42	6.87 0 6.87 36.21 0 0	0 0 8 34.37 0 0 0 2.25	0 29.38 0 2.43	16.70 0 0	0 0 0	11.75 0 0	17.60 0 0	0 0	11.75	0 155 6.1 138 0	0 1 69 0 19.6	6.87 6 0	0	5.88 0	0 0	0	5.88 0 0	0	6.29 0 0	0 0	0 0	0 0	0 0 21	0 0	0 0 0	0 0 0 0 0 0 0	0 0 0	0 0	0 0	0 0	12.10 0 0 0 0 0	0 0	0 0 0 0 0 0 0	0 0 0 5.57 0 0	0 0 0	0 0	0 0	0 0 0 0 0 20.54	0 0	0 0
Cryptonomas sp. (coloudeac) Katalingharis coalis Siuga Attodonomas Inno Paudine & Rutiner Attodonomas minute Siuga	0 7:86 0 12:60	0 2.10 0 0	0 1.84 2.6 0 10.50 18.1	0 0 248 9.41 0 0 175 4.58	0 11.48 0 4.08	0 8.40 8.42 6.58	0 4.08 0 8.02	0 6.90 0 9.45	0 6.72 0 2.62 3.46 1	0 672 673 0 0 0	0 0 2 1365 0 0 6 2310	7.39 0 98.90	0 7.90 0 13.75	6.11 0 11.55	9.45 0 5.78	0 1.67 0 4.30	0 2.02 0 4.58	6 840 0 5.79	0 13 0 10 33	0 2 4.1 0 6 8.0	0 0 0 4.28 0 0 2 9.45	0 5.25 0 4.20	6 420 0 0	0 k15 0 0	8.64 2.10 0 1.05	0 2.10 0 4.20	0.61 0.61 0	0 8.40 0 6.30	0 0 735 630 0 0 315 230	9.45 2.01 0 0 4.20 2.01	0 1.22 0 0 0 6.20	0 0 0 244 11.0 0 0 0 8.15 6.0	0 0 55 1.05 0 0 90 1.15	0 0 06	0 0 i7 105 0 0 0 241 0.4	0 0 0 0 2.67 1.82 0 0 0 7 2.15 1.05	0 0 336 188 0 0 315 526	0 0 0 122 0 342 106 525	0 0 105 0 0 0 210 229	0 0 0 0.67 0 0 0 2.29	0 0 202 122 0 0 420 0	0 0 105 0 2 0 0 0 105 0	0 0 149 183 52 0 0 139 420 83	0 0 0 5 122 630 0 242 0 5 420 844	0 0 8:15 2:10 0 0 5:39 2:29	0 0 1.22 5.25 0 0 1.05 5.25	0 0 1.05 2.15 0 0 0.67 2.10	0 0 420 188 0 0 815 815	0 0 041 210 0 0 115 0
BACISLAROPHICKAS Activaches minutisima Kurtzing Activaches viewa (Sirunow) Ross Autocomis soo.	92.42 0 0	5.87 0 0	SRIM RJ	0 0.20 0 0.20 0 0	11.00 0 0	0 0	0.30	2.47 0 0 0	62.36 21 0 0	12.91 26.31 0 0	9 15.26 0 0 0 0	26.69	21.67 0 0	28.64 0 0	42.42 0.10 0	0.30 0 0	44.74 0 0	75.43 0 0 23.69	.so s.s	2 14.1 0 0	1 20.94 0 0 0 0	20.12	21.05	934 0 0	15.60 0 0	9.59 0 0	5.79 0 0	8.54 0 0	2.47 0.72 0 0 0 0	8.05 8.77 0 0 0 0	6.64 343 0 0	22.07 63 0 0 0 0	72 6.11 6 0 0 0 0	0 0 0 0 0	0 0 0 0 0 0	6 181.36 5.26 0 0 0 0 0 0	018 0.92 0 0 0 0	12.56 22.71 0 0 0 0	7.07 5.84 0.23 0 0 0	59.94 2.07 0 0 0 0	7.85 19.65 1 0.66 0.66 0 0	0 0.22 0 0.22 0 0 20.23	0 0.00 0 0 0	0 119.82 18.07 0 0.26 0.26 0 0 0 0 87.98	26.32 256.59 0 0 0 0	118.05 809.30 0 0.26 1.97 0 53.89 397.00	93.52 79.32 0 0 0 0 71.85 537	25.41 26.54 0 0.21 0 0 0 0	1825 6821 M 0.56 0 0 0 0 1640
Cyclanda bodanice Grunow Cymbella sp Diacona anne C. Agardh Mercula popular Kontrolina	0 0	0 0		0 0	0 0	0 0	0 0	0 0	22.90 0 0	0 0	0 0 0 0 0 0	0	0	22.91 0 0	22.81 0 0	79.38 0 0	22.95 0 0	29.50	0 00	0	0 0 0	0		0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0 0	0 0	0 0 0 0 0 0 0 150 0	0 0	0 0	0 0	39.59	0 0 0	0 0 0 0 0 0	0 0	0 22.81 0 0 0 0 0 0 0	0 0	0 0	0 0	0 0	0 0 0 0 0 0 0 0
Mavicula op Microstia accularis (Kuetzing) W. Smith Microstia clausi Hancach Microstia inconspicua Grunow	0 0	0 0	0 0 0 83	0 0 0 0 127 0	5.82 0 0	0 0 0	0 0	0 0 0	0	0 2.10 0 0 0 0	0 0 0 0 0 0	5.37 0 0	0	0 0 0	0 0	0 0 0	0 0	1	0 0	0 1.0 0 0	1 3.78 0 0 0 0 0 0	0	2.50	0 0	0	0 0	0	7:00 0 0	0 0 210 0 0 0	0 0	0 0	0 0 0 0 0 0	0 0 0 0 0 0	0 0	0 0 0 0 0 0	0 0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0		0 4.20 0 0 0 0 0 0	6.53 0 0 0 0 0 0 0.53	0 0	0 0	0 0
Microthia sp Rhipsoniesia longiuear Ehrenberg Spreede uitse (Microth) Ehr.	0.16 0 1.28 0	0 0	0 0.18 0 0		0 0	0 0	0	0.09	8.17 0 0	0 0	0 0 0 0 0 0	0	0	0 0	0	0	0 0 1.64			0	0 0	0.56 0 0		0	0	0	0	0 0	0 0	0 0	0 0	0 0	0 0.20 0 0 0 0	0 0	0 0	0 0	0 0	0 0.15 0 0.11 0 0	0 0.15 0.80 0.57 2.63 1.35 0 0	0 0.16 0.57 1.56 0 0	0.80 0.29 0 1.29 0 8.05 0 0	0.93 0 0 0.26 0.46 0 1.15 1.15 1	0 126 2. 126 126 2. 131 0	0 0.15 0 2 2.06 2.82 0 0 1.85 0 0 0	0.86 0 1.85 1.08 1.81 2.72 0 0	0 0 0.92 0.55 0 1.85 29.17 0	0.92 0 1.08 0.80 2.95 2.90 0 0	1.32 0.30 1.29 0.46 1.48 0 0 0	0 0.79 0.78 0.27 0 0 0
Centric Distors 4 um (Cyclateda Stephanodiscus) Centric Distors 4 um (Cyclateda Stephanodiscus) Centric Distors 6-14 um (Cyclateda Stephanodiscus)	0 128 29.69	5.87	0.37	0 230 0 587	238 236	1.65	1.38 11.66	2.08	1.0 (8.50 1	0.37 1.41 13.54 22.11	7 092 3 1432	0.72 8.59	110 20.57	15.68 15.68	0 H2 18-09	18.07 1.47 19.27	0 0.92 19.27	0.92 11.46	127 14 139 49	0 7 01 5 121	0 179 3 202 6 11.06	1.47 18.49	0.87 17.18	0 0.55 8.59	0 1.28 14.92	0 8.59	0 5.79	0.92 0.62	0.37 0.73	0 8.60 0.18 0.31 2.86 0	0 14.6 0.92 0.1 5.79 20.6	00 9.84 18 1.28 01 06 11.66	73 0.18 0 5.79	128 0 0.7 186 0 11.6	73 150 0.1 16 573 8.1	0 171.76 2.19 7 0.37 0.38 9 5.73 2.86	0.18 0.92	130 130 1146 2136	0 0 055 082 286 286	0.92 0.87 5.78 0	027 073 573 859	0.55 0 0 14.32 11.66 17	0.27 0.78 0: 7.18 7.81 2.1	0 0 0 1 0.73 0.55 6 5.73 8.59	0.52 0.78 20.05 28.64	0 1.47 23.57 18.15	0.18 1.28 17.18 20.09	128 200 2005 13.54	0 0 47 0.55 0.55 0 16.00 10.68 10
Aniamena op Bioglena op Brasidennosas op Flachenotomas volkocina Enrenberg	0 0	29.33 17.96 0	0 0		0	0 0	0	0 0	0	0 0	0 0 0 0 0 0	0	0	0 0	0	0	0 0		0	0	0 0	0		0 0		0 0	0	0 0	0 0	0 0	0	0 0 0 0 0 0 0 2356	0 0	0 0 0	0 0 0 0 0 0 0	0 0 0	0 0	0 0	0 0	0 0	1650 0 0 0	0 0	0 0	0 0 0	0 0	0 0	0 0	0 0	0 0
DRICFHYCEAS Amphidisum sp dianodinum sp	91.95 0 0	9.50 0 0	99.50 9.5 0 29.54	K16 12.81	354.52 0 0	26.97 0 0	8.85 0 0	36.05 3 0 0	0 0	7.42 7.43 0 0	2 16.18	114.56	9.56 0 0	0.0	0.0	26.56 0 11.08	8.80 :	34.54 5	0 2.7	9 R3	1 577.74 0 0	649	0.0	4.58 0 0	21.51	4.58	0.0	9.36 0 0	125.18 901.88 0 0 0 0 125.18 879.80	0 0	41k94 6	8 88 1977 0 0 0 0	96 0.0 0 0	8.8 H.71 B	8 0.0 38.1 0 0 0 0	6 140.77 0.0 0 0 0	341.96 2.69 0 0 0 0	0 0 0 0 0	250.79 42.77 0 0 0 31.60	5.87 51.88 0 0	0.0 2.99	458 16841 4 0 0 0 0	0 0 0 1198	8 7.30 0.0 0 0 0 0 0 0	14.53 45.27 0 0 5.35 13.47	78.08 118.76 0 0 7.70 0	0.0 4.58 0 0	458 88 0 0 0 0	4.58 12.28 0 0 0 0
dymodisus adoptolas tites dymodisus process (it.p. dymodisus process (C.F. Maley Envelopy Pedinian ancian (C.F. Maley Envelopy Pedinian ancian (G.F. Maley Envelopy	9.56 4.58 0	0 8.80 0	9.16 9.1	0 0 k16 5.87 0 0 0 0	18.75 540.77	7.42 0 0	0 k.ks 0 0	0 0 16:50 0	27.49 1 90.18	7.42 7.41 0 0	0 0 2 16.18 0 0	0 4.58 109.98	0 9.16 0	0 0	0 0	4.58 0 0	0 8.80 0	9.16 15.60	0 907.3 180 2.2 170 0	0 5 3.1 0	0 563.08 1 5.87 0 8.80 0 0	6.87		458 0 0	0	458 0 0	0 0	936 0	125.13 879.80 0 0 0 0 0 0	0 0	0 458 16496 26439	0 0 1971 0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 241	0 140.77 0 0 0 0 4 0 0	14077 0 1.09 2.69 0 0	0 0	20620 0 458 9.56 0 0 0 0	0 0 5.87 9.36 0 62.77 0 0	0 0 0 293 0 0 0 0	0 156.88 4.58 13.75 4 0 0 0 0	0 0 158 371 0 0 0 0	0 0 0 0 7.70 0 0 0 0	9.36 4.58 0 27.22 0 0	0 0 0 0 70.88 118.76	0 0	0 0 458 0 0 0 0 0	0 0 458 458 0 7.70 0 0
FOTAL BIOMASS	10.20			25.91		20.00		****			- 0							_1	-	-	- 0			0	21.91	0	۰		0 2200			- •	- "	- "	- "	1 " "		1 0		- 0			, ,	- 0		529 672			

Table 1-6 Zooplankstn Abundance (Ind./L) is	last take, take NSS and M and L tak	ec, August 2011																																			
itarions itarion Replicates	MIA N	MI MIC	MID	M16 M2A	M28	MIC N	M20 M25	MBA	MIR MIC	MID	MBS MA	A MER	MIC	M4D M6E	LZA	128	iae iao	LIN .	DI NIIDIA	DI DI NISDIE NISDIC	DS NISDSD	DI D2 NISDIS NISDZA	02 N11028 N	02 02 02 N1100C N1100D N1102N	DR DR DR	DB DB D6 N11DBD N11DBS N11D	DE DE DE E	DS DS DS DS	II DE DE DE DE	DI DI DE A REFOSE REFDIC REFOSD	DS D2 D REFOLE REFOZA REF	DZ DZ D DZ DZ DZ D DZ REFOZC REFOZD REF	t DR DR DR DR DR DR	DE D	DE DE DE DE	DE DE DE E	DS DS
COPEPODA Calanoida	20-849-11 20-7	Mag-11 20-Aug-11	20-Aug-11	20-Aug-11 18-Aug-1	1 18-Aug-11	19-842-11 18-9	Aug-11 19-Aug-11	18-Mg-11 1	IRAGII IRAGII	1944911	18-Aug-11 20-Aug	g-11 20-Aug-11	20-Aug-11	20 Aug 11 20 Aug 11	20-Aug-11	20-Aug-11	20-Aug-11 20-Aug	-11 20-Aug-11	10-Aug-11	15-Aug-11 15-Aug-11	15-hag-11	16-Aug-11 16-Aug-11	li-Aug-11 lie	8-Aug-11 [18-Aug-11 [18-Aug-11	1 10-log-11 10-log-11 10-log-11	15-dag-11 15-dag-11 16-dag	-11 10 Aug 11 10 Aug 11 10 Aug 11 10 A	-11 11-Aug-11 11-Aug-11 11-Aug	11 10-Aug-11 10-Aug-11 17-Aug	11 [D-86211 [D-86211 [D-86211]	17-hag-11 17-hag-11 17-h	-min-semin-semin-s	g-11 17-kg-11 [17-kg-11 [17-kg	-11 [17-mg-11 [17-mg-11 17-m	en manen manen man	13 [1746]13 [1746]13 [1746]13 [174	nineenineen
H.s. adult ferrale H.s. adult male	0 0.000	0162 0.0162 0202 0.0081	0.0040	0.0040 0.00is	0.0071 0.0071	0.00H 01	0.0106 0.0106 0.0035 0.0035	0.0024	0 0	0	0 0	0.0000		: :	0.0047	0.0047	0.000 0.000	0.0047	:	0 0	0.0026	0 0	0 0	0.0028 0 0	0 0 0	0 0 0 0	0 0 0	0 0 0	0 0 0.004	6 0.00% 0.0240 0.0048 8 0 0.0120 0.0072	0.0072 0.0054 0.0 0.0072 0.0011 0.0	9 0.0521 0.0022 0.0 5 0.0087 0.0054 0.0	97 0.0001 0.0238 0.02 76 0.0051 0.0101 0.01	78 0.0248 0.0552 0.05 25 0.0075 0.0585 0.05	88 0.0015 0.0177 0.001 42 0 0.0006 0	85 0.0142 0.0255 0.0028 0.0 0.0075 0.0142 0 0.0	.1 0.0968 0.0998 30 0.0226 0.0226
H.C. 2.0 mm H.C. 2.0 mm H.C. 1.0 mm			0 0	0 0		0			0 0	0.1887	0 0	0			0 0	0	0 0	0		0 0	0 0	0 0		0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 00436 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
Fotal H. septembrionales Epitobura facusols: S.A. Fotbes I.I. adult female	0.0000 0.	2064 0.0043 2407 0.2407	0.0040	0.0040 0.0073 0.0085 0.2772	0.0142	0.0005 0.1	0.0142 0.0142	0.0034	0.0410 0.1026	0.1617	0.0616 0.05	28 0.0880	0.0528	02052 0.1056	0.0047	0.0067	0.0410 0.004	0.0017	0.0026	0.8285 0	0.0006	0 0		0 00017 0	0 0 00008	0.0028 0.0057 0		0 0 0	0 0 0.031	2 0.00% 0.00% 0.0120 9 0 0.020% 0	0 0.00% 0.0	N 0.0258 0.0087 0.0	63 0.0552 0.0334 0.031 74 0 0 0.001	94 0.0913 0.0283 0.00 11 0.0404 0 0	0.0035 0.0038 0.008	0.0018 0.009 0 0.1	2 0.0594 0.0825 32 0.0295 0
6.1 adult male 6.1 immature 0.5-1.0 mm Food 8. housets	0 0.0000 0 0.0000 0.0000	0 0 1618 0.3235 3025 0.6643	0.0000 0.0009 0.1294	0.0081 0.2155 0 0 0.0566 0.6926	0.909 0.809 1.109	0.0924 0.2 0 0.2462 0.2	0.2155 0.0108 0 0.2881 0.5236 0.6062	0.0005 0.1897 0.3992	0.0205 0.0021 0 0.1897 60616 0.8786	0.1221 0.1887 0.655	0.0821 0.01 0.1897 0 0.3326 0.27	26 0 0 04 0.000	0.3235 0 0.8768	0.0152 0.0076 0 0 0.0704 0.1235	0 0.1774 0.1774	0.0410 0 0.0410	0 0	0	0 0 0.0036	0 0	0.1029	0 0.0046 0 0 0.0224 0.0266	:	0 0 0 0	0 0 0.0028 0 0 0 0	0 0.0028 0 0 0 0 0 0.0028 0	0 0 0 0 0 0 0.028 0 0	28 0 0 0 0 0 0 28 0 0 0	0 0 0	0 0 0 0	0 0.0021 0 0 0.0022 0 0 0.0020 0.0	0.0095 0.0095 0.0 0.0196 0 0 P9 0.0854 0.0189 0.0	0 0.0404 0.005 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0.0000 0 0 0 0 0 0 0.0000 0.0000 0 0.1	AZ 0.0266 0
b.p. adult female b.p. gravid female	0.0404 0.0000 0	0 0.0008 0091 0.0121	0.0060	0.0202 0.1281 0.0121 0	0.0408 0.0416	0.0008 0.0	0.0225 0.0008 0.0008 0.0071	0.1417	0.1867 0.258 0.0656 0.0821	0.2258 0.0650	0.1642 1.29 0.0616 0.01	61 0.6671 62 0.0880	0.1799 0.0182	0.9706 0.6671 0.0952 0.0076	0.3052	0.0425 0.0542	0 0.129	0 12 0004	0.5029	0.5247 0.2029 0 0	0.000	0 0.2245 0.0226 0.0057	0.0093 0 0.0028 0	0.0985 0.1182 0.2265 0.0028 0.1182 0.0067	0.1281 0.0789 0.1291 0.0067 0 0.0028	0.026 0.026 0.079 0.0028 0.0028 0.002	P9 0.00% 0 0.0769 0.5 R8 0 0.0028 0 0.0	78 0.1970 0.1970 0.172 57 0.0028 0.0028 0.005	4 0.1724 0.1097 0.094 7 0.0095 0.0057 0.062	0 0.2296 0.1918 0.1919 6 0.0120 0.0608 0.0312	0.4798 0.2178 0.5 0.0626 0.0076 0.0	2 0.5226 0.6533 0.6 3 0.0589 0.0095 0.0	97 0.9900 0.6858 0.685 96 0.0952 0.0606 0.095	75 0.6853 0.5662 0.6 52 0.0576 0.0952 0.00	69 0.6266 0.2881 0.070 90 0.0058 0.0058 0	08 0.5569 1.6720 0.0658 1.2 0.0265 0.0698 0 0.0	A 15868 10091 89 0.0266 0.0266
0.p. immature 2.0 mm 0.p. immature 1.0 mm 0.p. immature 0.75 mm	0		0	0 0		0 0	0 0	0	0 0	0 0	0 0	0 03235	0 0.3295	0 0	0 0	0	0 0.188	P 0	0.2059	0 0 0.1029 0.5147 0.1029 0	0.1029	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	0.0028 0.1182 0.0057 0.0098 0.5662 0.5662 0 0 0 0.1182 0.2265 0.1182	0 0 0 0 0 0.1192 0.5662	0 0 0 0 0.1182 0.226	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 32 0,3997 0,3997 0 32 0 0,2265 0	0 0 0 0.3397 0.3397 0 0 0.1192 0	0 0 0	0 0 0	0 0 0 is 0.0816 0 0.0	0 0 0 01 0.1618 0 0.001	0 0 0		0 0 0 0 00708 0 0.1192 0.1 0 0 0 0 0.1	42 0.2365 0.8897
D.p. immature 0.5 mm Total D. pribliowesis Dispannus minutus Littleborg	0.0667 0.	0 0 1488 0.1684	0.0364	0.0085 0.2155	0.1231	0.1231 6.1	0.1867 0.0279	0.3%6	17429 0.6775	0.6157	0.5545 1.62	1.3821	6.9047	1.6528 1.6588	0.7563	0.0902	0.1642 0.695	0.1326	0.6254	1.1323 0.8365	0.6176	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	6,3717 6	0.008 1.0191 0.9115	0,3420 0,2364 0,7434	0 0 0 0.0367 0.8377 0.500	12 0.250 0.028 0.1724 0.4	0 0 0 0.6627 0.8892 0.850	5 0.6930 1.1380 0.486	5 0.6715 1.8842 0.6970	1.2141 0.5102 1.0	0 0 0 10 10642 1.8596 0.8	0 0 0 05 1.4102 0.8897 1.411	0.5404 0 0.0° 02 1.5499 1.0662 0.8°	23 0.7838 0.3894 0.070	0 0 0.0028 0.1 08 1.589 1.6742 0.1825 2.6	H 8.5962 2.5588
b.m. adult female b.m. gravid female b.m. adult male	0.6853 0. 0.0243 0. 0.0809 0.	5618 0.3626 0706 0.2626 5628 0.2808	0.000 0.000 0.000	0 0.869 0.0288 0.1867 0.0809 0.2882	0.2851 0.2155 0.5662	1.1828 0.1 0.1589 0.1 1.1828 1.1	0.5662 0.5662 0.2155 0.0924 1.1123 1.1123	0.8794 0 0.8436	0.1987 0.3774 0.0205 0.3026 0.5662 0.5662	0.1687 0 0.9496	0.0616 0 0.9616 0	0 0.0528 0.6671		0.3235 0 0 0 0 0	1.6872 0.3286 1.5098	0.1774 0.1284 0.1774	0 236 0.000 0.397 0.1887 1.509	17 1.5098 19 0.2973 8 1.8972	0.1968 0.1968 0.6176	0.1009 0.1029 0.1343 0.0448 0.1029 0.5147	0.4118 0.0672 0.5147	0.4118 0.1182 0.1567 0.1870 0.4118 0.4529	0.2265 0.1478 0 0.2265 0	0 0.2265 0.2265 0.0985 0.1291 0.0698 0.1192 0.6794 0.7926	0.1132 0.2365 0.6529 0.0679 0.0985 0.0286 0.3987 0.1132 0.5662	0.0266 0.1192 0.119 0.1678 0.0985 0.079 0.6528 0.8397 1.028	12 0 0 0.1132 0.2 19 0.0698 0.0789 0.0898 0.0 11 0.7926 0.1132 0.8997 0.5	65 0.639 0 0.236 99 0.1678 0.1291 0.098 62 0.6796 0.5662 0.452	5 0.3397 0.1132 0 5 0.0799 0.0893 0.020 9 0.4329 1.0595 0	9 0 0 0	0 0006 0	0.0971 0.0084 0 0 0 0	0 0 0	0 0 0		0.1615 0 0 0.1 0 0.2266 0 0	
b.m. immasure 2.0 mm b.m. immasure 1.0 mm b.m. immasure 0.75 mm	0 0.0009 0. 0.2426 0.	0 0 3235 0.4044 3235 0.3126	0.1618 0.5662	0 0 0.1618 1.9816 0.1618 1.1829	0.5662 0.8699	0 1.4154 1.4 2.5478 0.4	0 0 L4154 0.5662 0.8690 0.2891	0.3774 3.3970	0 0.3774 3.9632 2.3647	0 0.1887 7.5680	0 0 4.7381 3.28	0 0 1626	0 161%	0 0.3235 25892 2.3947	0 1.1323 6.4166	0 23647 23647	0 0.566 3.05% 12.26	0 i2 0 30 52863	0 0 0.5167	0 0 0 0 0.2059 0.4138	0 0 0.4118	0 0 0 0 06176 0.6529	0 0 02265	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.6794 0.6529 0.2397	0 0 0 0 0 0 0.6794 0 0.792	0 0	0 0 0 0 0 0 82 0.1182 0.2265 0.899	0 0 0 0 0.1192 0 7 0.3997 1.0093 1.691	0 0 0 0 0 0 0 0 0 1 0 0 0 1 1 1 1 1 1 1	0 0 0 0.8687 0.8275 1.6	0 0 0 0 0 0 14 1294 13065 13	0 0 0 0 0 0 00 15968 12587 1496	0 0 0 0 0 0 68 18750 08898 07	0 0 0 0 0 0 85 0.8699 0.9200 0	0 0 0 0.1 0.7077 2.6912 2.6912 5.0	65 4.0Ne 3.9692
Fotal D. minutes Catanaid saugitus	0.9140 1. 0 0.	4454 1,0212 1618 0	1.1526 0	0.5126 5.8664 0.0009 0.2982	2.1294 0.8692	7.7972 4J 0.2921 0J	1.7009 2.6894 1.2825 0.8092	5.065 0.7549	5.174 0.187 5.1161 8.8771 0.8774 0.1887	0.275 8.2675 0.1687	6.1007 3.22 0.3774 0	52 2.3175	14176	2,617 2,5882 0 0,1215	12.0218	7.1224 0	8.26M 17.8H 0 0.877	6 9,3651 4 0,3774	1.4726 0.2059	0.7920 1.1771 0 0.1029	1.5083 0	1.5979 1.3294 0.3098 0.3397	0.8272 0 0.1192 0	0.5515 1.6819 1.1816 0.1182 0 0.1182	0 01122 0 0 0.1122	1.3047 0.5515 1.868 0.1192 0 0.119	0 0.11.2 0 0.1 19 14081 0.4136 0.7287 1.0 12 0 0.1132 0.8387 0.1	00 1.3922 0.9258 1.117 02 0.1192 0 0.118	6 12062 2,3139 1,652 2 0 0,3265 0	2 0.8617 1.5154 1.9292	0.9627 0.8720 1.6 0 0.5436	0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0 0 0 0	62 1.2750 0.9092 0.77 0 0.0004 0	WS 0.8692 0.9200 0	0 0 0 0 0	2 4.0764 3.9632
Cyclopoida Cyclopoida Cyclopoida	0	A A		0 0		^	0 0	0 0006	0 0	0 0.005	A A	0	-	A A	0	0	0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0	0	0 0		0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	A 0130
C. c. gravid female C. c. adult male C. c. immature 2.0 mm	0		0 0	0 0 0	0 0 2891	0		0.1887	0 0 0 0 0.1887 0	0 0 0.1887	0.0005 0 0 0 0.1897 0.32	25		0 0	0 0	0	0 0 0 0 0.1887 0	0	0.0051	0.0580 0.0051 0.1029 0 0 0.1029	0.0206	0.0048 0.0266 0 0.1182 0 0	0 0	0.0028 0.0057 0.0057 0.1182 0.1182 0 0 0 0	0 0 0.0028	0.0028 0.0246 0.005 0.1182 0 0 0 0 0	7 00085 0 0 00 0 0 0 0	88 0.0028 0.0028 0.005 0 0.1182 0 0 0 0	7 0 0.0085 0 0.0285 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
C. c. immature 1.0 mm C. c. immature 0.75 mm C. c. immature 0.5 mm	0 0	0 0	0.1618	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 02885 02885	0 02	0.2885 0 0.2885 0.0908 0 0	1,5098 2,3647 0,3774	0.7549 0 2.4534 1.6985 0.8774 0	0.7549 2.0760 0	1.5098 3.88 1.1323 7.11 0.1867 0	23 2,2647 26 4,5294 0,3235	2.2647 1.61% 0	6.8529 3.2553 6.8529 1.6176 0.3235 0	0.8774 0 0	0.3774	0.1887 0 0.1887 0 0.1887 0	0	0.9098 0.8235 0.0029	0.1029 0.6118 0.5047 0.6176 0 0	0.008 0.60% 0	0.2058 0.2265 0.6176 0.1182 0 0	0.1192 0 0.6794 0	0.2265 0.2265 0.1192 0.3997 0.9059 0.6529 0.1192 0.2265 0	0.2265 0 0 0 0.2265 0.3997	0.1182 0 0 0.6529 0.1182 0.118 0 0 0	0 0 0 0 12 1.1323 0.3997 0 0.3 0.1132 0 0	65 0 0.2265 0.226 87 0.9059 0.4529 0.679 0 0 0	5 0 0.4529 0 4 0.6794 1.6720 1.051 0 0 0.009	0 0 0.0960 6 0.6798 1.555 0.0960 0 0 0.8888 0.0960	0.0960 0 0.0 0.1909 0.6791 0.9 0 0.1907 0.3	16 0.0636 0 0 11 0.7604 0.5226 0.9 16 0.2618 0.0871 0.1	0 0 0.325 109 1.0919 0.6875 0.975 07 0.1213 0.325 0.366	25 0 0 0 06 12941 0.9901 0.56 00 0.8235 0.1213 0.15	0 0 0 62 02128 0.3589 0.070 05 0.015 0.0708 0	0 0 0 0. 08 0.699 2.6912 1.6985 41 0.0708 0.5662 0.3997 0.5	2 0.1132 0 17 2.6041 2.7176 62 0.7926 0.5662
Cyclops vernalis Flacter Cx mnature 0.75 mm.	0 0	0 0	0.1618	0.0009 0.5663	0.5193	0.2921 0.7	0.0043	4.3612	0 0	0	0 0	231 23136	0	50.0293 S.4999 · · · ·	0.1776	0.2774	0.7569 0	0	1.4663	0.7296 1.1275	0.9471	0.8682 0.47%	0.9059	0.765 1.4777 0.5718	0 0 0 0	0 0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0.2929 0.6532 1.3	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0
Cyclope capitanus Sars	0		0	0 0	•	0			0 0	0			•		0.0007	0.0094	0.0821 0	00142	•	0 0	0		•		0 0 0	0 0 0	0 0 0	0 0 0		0 0 0	0 0 0	0 0 0	0 0 0	0 0	0 0 0	0 0 0	
Fotal C. capitanus Macracyclops albidus turine institutifust fluid curinoside	0		0	0 0	•	0		•	0 0	0			•		0.0047 0.7549	1.122 1.1418 0.0047	0.8370 1.837 0 0	2 1,500 2 1,5299 0,0047		0 0	0		- :		0 0 0	0 0 0	0 0 0	0 0 0		0 0 0	0 0	0 0	0 0 0	0 0	0 0 0	0 0 0	
Cyclopoid nauplius fetal Cyclopoids (Ind/L) CLEDICIRE	1100 1 1100 1	1323 1.3760 2132 1.3760	0.5662 0.7279	0.7279 7.0772 0.8897 7.6421	2.6805 4.5294	7.8602 7.6 7.6433 7.6	7.0771 5.2786 7.6413 5.4130	16.7964 21.1576	16.9851 12.6558 20.7566 14.1548	13.5991 16.6292	18.0219 7.76 16.0620 19.00	65 7.7665 HS 14.8922	1.8823 18.3666	8.7652 8.7258 18.7665 15.2067	7.9264 9.4656	9.0587 38.5927	2.01% 10.34 4.61% 12.88	60 6.4166 12 7.8652	1.3192 2.7845	0.8285 1.7600 1.6621 2.8875	1.2353 2.1923	1,8529 1,8588 2,7212 1,8364	1.0091 1 1.0090 1	2.0362 2.0573 1.3588 2.8327 4.5350 1.6056	1.5852 1.588 2.8461 1.0896 1.6985 8.5121	1,8117 1,8117 2,604 2,4940 1,9696 2,723	M 21515 2.4912 1.5858 1.2 10 2.4055 2.8009 1.5858 1.8	56 2.3779 1.3588 0.452 50 2.3866 2.3543 1.354	9 0.6794 1.3456 8.630 5 1.4093 8.1795 9.789	5 4.7981 9.5961 7.7729 0 5.8196 11.1815 8.6607	6.1415 2.7454 6.6 6.4294 4.4422 7.7	11 8.6668 6.5127 6.0 12 9.7120 7.5425 6.4	05 5.8215 5.8225 5.2K 92 7.090 6.8165 6.85	77 4.6911 5.8786 6.2 58 6.8088 6.4001 6.90	29 2.5185 4.5294 0 56 2.9724 4.9540 0.030	6.1671 6.9072 12.2293 16.2 08 6.8668 8.9666 34.2675 20.3	65 28.0938 17.8930 67 26.6303 21.2880
Daphnia middenstriffana Fischer 2. m. 10 2. m. 2.5	0		0	0 0		0	0 0		0 0	0	0 0	0	:	: :	0	0	0 0	0	:	0 0	0 0			0 0 0	0 0 0	0 0 0	0 0 0 1	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0 0	0.0010 0 0	0 0 0 0	0 0 0.0028 0 0 0.0255 0.0028 0.0	88 02057 0.0057
0.m.20 0.m.15 0.m.10			0	0 0		0				0	0 0	0			0 0.0047 0	0	0 0 0.0921 0 0 0	0		0 0	0	0 0	0.0028	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0.0028 0.000 0 0 0.000	6 0 0.0096 0 6 0 0.0026 0.0026 6 0 0 0	0 0.0011 0.0 0.0024 0.0044 0.0 0 0.0022 0.0	12 0.0087 0.0085 0.0 12 0.0098 0.0022 0 14 0.0064 0.0033 0.0	0.0091 0.0352 0.00 111 0.0176 0.0352 0.00	88 0.00% 0.00% 0.00 88 0.00% 0.00% 0.00 88 0 0.0088 0.00	0.0018 0.0088 0.0018 08 0.0018 0.0018 0 05 0 0 0	0.0018 0.0042 0.0070 0.0 0.0095 0.0067 0.0042 0.0 0.0008 0.0046 0.0046 0.0	1 0.096 0.096 19 0.0266 0.0255 86 0 0.0098
Total & middendorlanna Mologedism glöberum Zaddach	•		•		•	•		•	• •	•		•	•		0.0047	•	0.0921 0	•	-	• •	•		6.0028	0 4266 0			0.0046 0 0		0 0.023 0.00	2 0 0.0129 0.0024	0.0024 0.0076 0.0	M 0.0340 0.011 0	0.0307 0.0886 0.08	28 0.0217 0.0214 0.02	71 0.0015 0.0006 0.000	18 0.0071 0.0699 0.0614 0.2	2 0.0699 0.3218
H.E. 2.0 H.E. 1.0 H.E. 0.5	0.0964 0: 0.0728 0: 0.3608 0:	0704 0.0704 8044 0.6671 3225 0.0809	0.0085 0.0008 0.1618	0.0824 0.886 0.1618 0.2861 0 1.6965	0.12%1 0.28%1 1.41%4	0.0924 0: 0.2991 1: 0.5662 0:	0.1609 0.1807 0.1629 0.5662 0.5662 0.5662	0 2.6421 2.8609	0 0.0118 2.2647 2.0%0 2.0%0 2.3647	0.0094 1.6985 1.8972	0.0118 0 1.9211 1.61 3.7945 4.52	0 36 1,2941 94 0,896	0.0528 0.9706 0.9706	0.0020 0 0.6471 1.6176 0.6471 1.2941	0.0047	0.0047	0 0 0.1291 0.041 0 0	0 0 0 0 0	6.6266 0.8235 1.5661	2.0588 2.9853 1.0296 0.6136 1.1323 1.0296	2.8823 0.6118 1.2953	2.3676 0.7926 0.5147 0.4529 1.6430 0.6794	12456 0 0.3397 0 0.7926 0	0.9059 2.2647 1.4720 0.2265 0.4529 0 0.4529 0.7926 1.2456	0.7926 0.0921 0.3202 0.3397 0.2265 0.0985 0.4529 0.3397 0.9059	1.0191 0.1724 1.132 0.5662 0.0893 0.905 0.3397 0.5662 0.652	13 0.6794 1.0390 0.6794 1.8 19 0.2265 0.6794 0.6529 0.3 19 0.7836 0.2265 0.1182 0.2	17 13588 0.9059 1925 97 0.7926 0.5662 0.398 65 13588 1.4720 1.245	0 2.082 2.641 0.08 7 0.639 1366 0 6 1366 1817 0	6 0.0617 0.0120 0.0024 0 0 0 0	0.00% 0.00% 0	0.0000 0.0011 0	0.0040 0.0081 0.01 111 0 0 0	0 0 0 0	0 0 0	0 0.053 0.055 01 0 0 0 0	3 0.0653 0.0360 0 0
Total K gibberum Euboomine tingriprine	0 0	7982 0.7983 0 0 0704 0.0552	0.3912	0.1941 2.9223	18217	0.9416 1.0	1.8171 0 0 0 0	5.4720	4.3524	8.5952 0 0.1697	5.3279 6.36 0 0	00 2.2647 0	1,9929	1,2961 2,6117	0.0047	0.0047	0.1281 0.041	0 0.0400	6.7945 0 0.0235	4.2206 4.6223 0 0 0.0026 0	4.5294 0	45294 1.9250 0 0	2,3779 1	1.5852 2.5120 2.7176 0 0 0 0 0	0 0 0 0002 0 0 0 0	0 0 0 0 0 0 0 0	12 1698 1,930 1,266 2,3 0 0 0 0	79 2.5103 2.6441 2.510 0 0 0 67 0 0.0057 0.025	8 27267 6.0014 0.021 0 0 0 6 0.0057 0.0057 0.035	6 0.0528 0.0660 0.0048 0 0 0 0	0.0120 0.0131 0.0	0 0 0 11 0,0011 0 0.0	0 0 0 0 0 0 0 0	0 0 0	0 0,0018 0,000	0.0018 0.3076 0.0962 0.1 0 0 0 0	8 0.0067 0.0679 08 0.0067 0.0266
6.1.0.75 6.1.0.5 6.1.0.25	0.1618 0. 0.009 0. 0.009 0.	2663 0.0652 2426 0.3426 0808 0	0.00 0.000 0.1618	0.0952 0.2801 0.1618 1.6985 0.0809 1.9816	0 0.8698 0.8698	0 01 0.8898 1/ 1.9916 14	0.2881 0.2881 0.4154 1.6985 0.5662	1.8211 4.1519 3.2083	0.1887 0.5662 3.9682 8.1151 2.2667 2.6621	1.1323 5.4790 2.4534	0.9496 0.32 8.8700 4.20 1.6985 0.64	35 0 68 3.5588 71 1.9612	0.3235 0.6471 1.2941	0 0.8706 19412 4.2058 0 0.3235	0 0	0 0 0.3774	0 0 0	0	0.61% 3.8088 0.61%	0.1967 0.1028 1.8959 1.8529 0.1029 0.3088	0.1029 2.1617 0.4118	0.1029 0 3.0892 1.5858 0.5147 0.3997	0 11929 1 02265 0	0 0.3397 0.6529 1.2656 2.8779 0.6794 0.2265 1.0191 0.5662	0 0.1182 0.0698 0.4529 0.4529 0 0.3265 0 0	0.1182 0 0.079 0.8997 0.2265 1.585 0.5662 0.1182 0.679	99 0.1970 0.0985 0.0799 0.1 59 2.6086 1.3656 1.8117 2.2 64 0.1182 0.2265 0.6529 0.2	82 0.2265 0.0898 0.226 87 1.6985 0.7926 1.245 65 0.6529 0.1182 0.226	5 0 0.1192 0.096 6 0.7926 2.0992 0 5 0.2265 0.3997 0	0 0 0 0 0 00209 0.0117 0 0 0	0.0144 0 0.0 0.0072 0 0.0 0 0 0	14 0.0095 0.0095 0 11 0 0 0.00 0 0.0095 0	0 0 0.000 0 0 0.000	0 0 0 0 0	0 0 0 0 0	18 0 0.0042 0.0057 85 0.0025 0.0028 0.0028 0.0	# 0.0035 0.0499 # 0.0028 0
Total E. Iongitpina Dupinia Songitenic Sarc	0.3235 0.	2018 0.8130 0.8130	0.4853	0.8587 2.9633	1,095	2,8309 3.1	2.5478	8.6813	64166 11.3234	8.2075	0 0.12 11.5121 5.00	99 5.4999	22607	2360 5.000		0.2774	0.0410	0	5.0665	2 2381 2 3676	2,6764	1.9250	1.3589 1	14720 27367 16985	0.6794 0.5662 0.2521	1.0095 0.3397 2.363	12 23633 15791 2360 26	00 2.2779 0.9608 1.723	1 18248 24968 0.136	8 0.0209 0.0009 0.0417	0.0216 0.0011 0.0	is 0.0306 0.0189 0.0	17 0 0 0.00	20 0.0018 0.0008 0.00	GR 0.0035 0.0053 0.000	06 0.005 0.0170 0.0118 0.0	2 88170 8.0739
0.1.10 mm 0.1.05 mm 0.1.05 mm	0 0000		0 0.1618 0	0 0	02831	0 01	0 0	1.8211 1.6985	0.8776 1.5098 1.1828 1.8211	0.5662 1.5088	0.7569 3.28 2.0%0 196 0 0	59 12941 12 12941	1.61% 0.8706	22607 1.61% 3250 0.325 0.325 A	0 0	0	0 0	0.0610		0 0	0 0	0 0		0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0	0 0 0	0 0 0	
foral D. longinumic Ophysius procific Sart Eurycercus (ameliatus (O.F. Muller)	0.0040		0.1618	0.0000 0 0 0 0 0.0000	0.3811	0 01	0 0	0 0	1.5098 2.8309 0.0024 0	2.0%0	2.8909 5.21 0 0 0 0	56 2.6762 0	2.6234	7,1176 2,2647	0 0	0	0.1887 0	0.0430		0 0	0		-	0 0 0		0 0 0	0 0 0	0 0 0	0 0 0	0 0 0 0.0040 0 0	0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	
Citydorus sphaericus (O.F. Multer) Total Cladocera (Ind/L) ROTIFERA	0 0.5985 1:	6 6 6002 1,1112	0.9282	0 0 0	1,011	8.7725 S.	0 0 1,3603 3,8643	0 17.1729 0	0 0 122694 18.5067	0 14.9186	0 0 19.6528 16.80	0 10.4000	6,800	10.694 10.694	0 0.0094	0 0.8922 0	0 0 0	0 0.0021	11.8605 0	0 0.5029 6.4387 7.5029 0 0	0 7.2058 0	0 0 8.2952 8.8500	1.7866	0 0 0 2.0572 7.2716 4.4161	23647 12164 12766	0 0 0 2,6665 1.1275 4.856	0 0 0 M 45870 25040 25898 4.9	0 0 0 5.8892 2.9049 5.223	8 0 0 8 42615 8.5013 0.151	6 0.2770 0.0689 0.0489	0.0160 0.0218 0.0	0 0 0 85 0.0432 0.0182 0.0	0 0 0 92 0.0099 0.1027 0.254	0 0 0 60 0.0667 0.0655 0.00	88 0.0088 0.0130 0.0120 0 0 0 0	0 0 0 04 0.2124 0.2145 0.2610 0.5	A 0.5916 0.3616
Keliconia spp. Kenanta spp. Pagartira spp. Conochina spp. Lecane spp.	8.9779 16 0.6851 0: 2.1838 1.	.0796 16.1763 5662 0.4064 5968 2.6009	6.8529 0.8285 1.0515	7.9264 26.892 0.5662 0 2.3656 5.0955	184006 11929 3.9970	12.8379 31. 1.9816 1. 4.5294 3.	1.9887 22.9698 1.4154 1.9826 1.2970 4.2468	0.0024 0.0776 1.0211	9.0587 10.7578 0.8776 0.8776 2.0760 2.6621	11.7009 0.1887 1.5088	13.3994 12.84 0.1897 1.29 1.6985 0.64	111 5.8285 41 0.3285 71 0.6471	8.0882 0 1.2941	92587 11.6470 12941 0.6471 0.6471 0.6471	12.8892 0 29.0635	8.3098 0 16.9951	2.4534 7.549 0 0 9.2475 28.30	0 11,3234 0.7549 86 82,0830	8.7699 3.5000 0.2059	6.206 6.6911 2.3676 8.2941 0 0.1029	6.4852 2.6764 0.1029	13.5881 10.6480 5.8676 4.6426 0 0.8397	7.2470 s 4.1897 d 1.0191 1	8.8026 12.2293 10.3043 6.6026 6.7961 6.0764 1.3588 0.6794 0.2265	18.0219 11.7764 18.0219 7.0205 5.8882 7.0205 1.5858 1.4720 0.6794	8.2661 10.6176 12.22 6.6161 5.7769 6.567 0.1182 0.7926 1.182	98 7.4795 6.7941 10.5108 11.1 NS 2.3779 3.3970 4.1897 3.3 IS 0.2365 0.3997 0.1132	99 9.7381 13.5881 9.738 70 7.5867 5.5685 5.208 0.1132 0.4529 0	1 7.1888 10.6480 5.90 8 4.4161 5.5685 0.181 0.1182 0.1182 0.086	6 5.8596 6.0556 6.1263 9 0.1909 0.0960 0.2879 0 0.0960 0 0.0960	5.3738 4.3552 8.3 0.6717 0.6791 0.3 0 0.1307 0	0 6.2681 6.2150 8.6 13 0.2009 0.3686 0.2 0.0636 0.2178 0	06 2.5588 2.0625 2.02 00 0.5662 0.6688 0.68 0 0 0 0	00 1.9612 4.5294 6.11 58 0.6671 0.8698 0.81 0 0.0004 0.01	71 5.3079 7.5725 1.920 39 0.6954 1.1329 0 08 0 0 0	08 6.5817 3.9632 7.8602 6.6 0.8000 0.8058 1.6885 0.9 0 0 0	4 8.096 12.0028 4 2.0912 1.6985 0 0
Consolitus app. Lecare app. Placama app.	2.4244 1. 0.0009 0	2941 1860 0 0 0 0	0.962	0 0 0 0 0	29.7240 0.5662 0	27.6988 38. 0 01 0	88872 23.6961 12881 0 0 0	0 0 0 0	0 0 0 0 0	0.1887 0.00	0 0 0 0	14.8822 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0.1235 0 0.1235	6.1518 0 0	0 0 0	0 0 0 0	27 75490 0 0	0 0	7.7205 9.8652 0.1029 0.1029 0 0	0.1029 0	0 0 0 0	91720 1 0 0	5.585 198160 4.9823 0 0 0 0 0 0 0	0 0.11k2 0 0 0 0 0	0 0 0 0118 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0.1192 0.119 0 0.0 0.0	9 12.4508 18.1175 8.454 2 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0.7677 0.5226 1.8 0 0 0	0 0 0 0	0.0001 0 0 0.0001 0 0	0 0 0 0	0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0
Total Rockiera (Ind/L)	14.2 1	27.5 27.3	6.8	12.3 45.0	\$13 570	66.3 7	70.8 52.1	\$1.9	56.6 72.3	77.0	25.1 H.	3 33	24.3	25.9 21.4	46.0	29.4	12.6 18.1	\$1.7	18.8	36.4 20.3	12.7	26.6 22.9	21.6	20.0 29.5 19.6	12.8 51.0 16.2	29.1 20.1 25.1	23.3 24.2 25.4 20	7 28.3 28.8 22.5	26.1 26.4 9.7	7.1 7.8 4.7	68 55 S	5.4 7.8 S	1 44 16 16	12 63 8	5 105 156 ***	8.2 8.6 20.2 31	11.9 16.3

Table 1-5 Zooglankton Biomass (mg/m²) in Sast Lake, Lake Nt:	Land M and Lizkes, Au	gust 2011	at .				MP.																			Inte	w++				140	4 N11				Indus N11			Isla NII			Inter NIII			Curt I ske Beferen	cel		Court I vice (Bufarence)		Euriska	Mafarancal		Eur I via litela	wantel		East I ska Nederocce	
Stations Station Replicates Outs COPEPODA	M1A 20-Aug-11	M18 N 20 Aug-11 20 A	nc MID ug-11 20-Aug-11	MSE 20-Aug-11	M2A 18-Aug-11	M28 18 Aug-11 1	M2C 8-Aug-11 18	M20 I Aug-11 18-	M25 Mi Aug-11 18-Au	2A M g-11 18-hs	38 M up11 18-A	GC M3	Ma -11 18-kg	: M4/ -11 20-Aug	M41 11 20-Aug	1 M4 -11 20-Au	: MID	M6E 11 20 Aug-1	12A 11 20-Aug-1	129 11 20-Aug-11	12C 11 20-Aug-11	120 20-Aug-11	126 20 Aug-11	01 N1101A 1 15-Aug-1	N NIIDI II IS-Aug	18 N11 -11 15-As	1 05 06C N110 g-11 15-Au	D1 D N110 11 15-Au	11 016 A ug-11 16	02 I N1102A N1 16-Aug-11 16-8	02 0 1028 N11 lug-11 16-Au	2 D DDC N11 g-11 16-Au	2 0 020 N11 up11 16-Au	1026 No 1026 No 1021 15-	D3 D3 11D3A N11D1 Aug-11 15-Aug	00 00 00 000 000 000 000 000 000 000 0	D3 D3 N11D3D N11D 15-Aug-11 15-Aug	D4 D3E N11D4A P p11 16-Aug-11 1	D6 D6 613D6B N11D4C 1-Aug-11 14-Aug-11	D4 D4 N11D4D N11D 1 16-Aug-11 16-Aug	05 046 N1105A 8 g-11 15-Aug-11 15	DS DS N11DSB N11DSC S-Aug-11 15-Aug-11	DS DS N11DSD N11DSE 15-Aug-11 15-Aug-1	D1 0 REF01A REF 1 17-Aug-11 17-A	DS DS DSB REFDSC sug-11 17-Aug-11	D1 D1 REFD1D REFD1E 17-Aug-11 17-Aug-11	02 02 REF02A REF0 17-Aug-11 17-Aug	02 02 9 86F02C 86F01 11 17-Aug-11 17-Aug	02 0 REF02E R -11 17-Aug-11 17	09 03 KEF03A REF03B R Mag 11 17-Aug 11 17-	DB DB D FORC REFORD REF Aug-11 17-Aug-11 17-A	DS D6 IFDSE REFDAA Aug-11 17-Aug-11	DE DE REFDER REFDEC 17-Aug-11 17-Aug-11	D4 D4 REFD4D ⁽⁴⁾ REFD 1 17-Aug-11 17-Au	4 DS E D4E REFDSA REF up-11 17-Aug-11 17-A	DS DS FOSB REFOSC R tug-11 17-Aug-11 17	6 DS FOSD REFOSE Aug-11 17-Aug-11
Calmonia Memorcope a agreem Variatic Juday and Mutik cweld H. J. adult female H. J. adult female H. J. doll mail H. J. J. d	0 2.62 0 0 0 0 0	7.91 7 12.12 5 0 0 0 0 0	91 1.98 25 0 0 0 0 0 0 0 0 0 0 0 0	1.98 0 0 0 0 0	122 230 0 0 0 0	2.46 4.59 0 0 0 0	1.72 0 0 0 0 0 0	5.19 2.30 0 0 0 0 0 7.49	5.29 1.5 2.30 0 0 0 0 0 0 0 0 0 7.49 1.3	15 C	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 116. 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.96 1.31 0 0 0 0 0	0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0	2.31 0 0 0 0 0 0 2.31	231 0 0 0 0 0	0 2664 0 0 0	0 206 0 0 0	2.3d 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 207.2 0 0 64.60 0 221.9	ot 0	0 12	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 13 0 0 0 0 0 0 0 0 0 0 0 0	38 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 134 3.6 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7.08 4. 2.11 0 0 0 0 0 0 0 10.15 4J	.69 11.72 0 7.78 0 0 0 0 0 0 0 0 0 0 0 0	2.25 2.52 4.67 4.67 0 0 0 0 0 0 0 0 7.02 8.19	2.66 S.20 0.71 6.20 0 0 26.88 0 0 0 0 0 30.25 8.56	6.29 1.66 5.65 2.53 0 0 0 0 0 0 0 0 12.54 5.13	4.26 4.95 0 0 0 0 9.20	4.94 11.37 1 3.28 6.56 0 0 0 0 0 0 0 0 0 8.22 17.98 1	2.24 11.86 7. 7.67 4.59 8. 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0 1	7.41 4.32 8.53 9.19 0 0 0 0 0 0 0 0 0 5.94 12.51	172 8.65 0 6.89 0 0 0 0 0 0 0 0 172 1554	172 69 0 23 0 0 0 0 0 0 0 0 0 172 92	32 12.45 1. 30 9.29 0 0 0 0 0 0 0 0 0 0	38 23.52 : 0 11.02 : 0 0 0 0 0 0 0 0 0 0 0 0	199 29.06 170 14.70 0 0 0 0 0 0 0 0 0 0 12.69 43.76
Epitichura lacureiri S.A. Forbes C.I. adult male E.I. inmature 0.5-1.0 mm Total E. lacureiri	4.95 0.46 0 5.41	13.26 11 0 12.08 2: 25.36 81	1.26 4.19 0 0.46 1.15 6.04 1.42 90.69	4.57 0.92 0 5.49	26.11 26.66 0 50.55	17.41 10.48 63.40 91.29	14.51 10.48 0 24.98	29.01 24.44 0 2	1.70 C 1.69 2.7 1.13 14 1.23 16	2 3.1 23 2.5 09 6	87 9. 22 9. 0 14 20 28	67 12: 31 12: 109 14:	4 5.86 7 9.31 9 14.0 0 29.3	4.97 2.00 0 6.97	8.25 0 0 8.26	4.9 36.6 0 41.4	7 2.32 9 2.99 0 7 7.31	9.95 2.00 0	0 0 28.18 29.18	0 4.66 0	0 0	0 0	0 0	0.24 0 0 0.24		9	9.2	2.1 0 0	11 0	0 2.79 0 2.79	0 0	0 01	ia 6	0 0	0 0	0.27 0.32 0 0.59	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2 0	0 0 0 0 0 021	0 0 0 0.32 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0	0 0 0 0 0 0 0	1.97 0 0 1.97	0 1.97 0 0 0 0 0 1.97	0 0 0 0 0 0 0 0 0	0.72 2.51 0.12 0 0.16 0 1.00 2.51	2.68 0.89 1.07 1.07 3.25 0 7.00 1.97	4.46 1.07 0	0 0 0 0 459 0 0	1.05 3.81 1 0.22 0 1 0 0 1	0 0	0.33 0.17 0.20 0 0 0 0.53 0.17	0 0.1 0 0 0 0	17 4.64 0 5.59 0 0	0 10.67 0 0 0 0 0 10.67	32 0 0 0 0 0 232 0
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H.E. 2.0 H.E. 1.0 H.E. 0.5 Total H. globerum	0 19.54 8.41 2.96 20.90	0 37.77 31 46.70 76 5.92 1 90.39 11	0 0 1.77 26.05 1.72 9.34 48 2.96 1.97 28.25	0 17.37 18.68 0	0 181.77 32.69 31.07 245.53	0 66.10 32.69 25.89 134.68	0 49.57 32.69 10.36 92.62	0 12.62 9 30.76 6 10.36 1 22.76 1	0 0 9.15 0 5.28 305 0.36 51 N4.58 256	0 0 0 0 1.10 261 70 27 389 299	0 6 1.51 22 .98 41	0 0 33 5.0 5.72 296. 43 34.1 7.48 226.	0 6.33 4 252.5 2 69.0 2 227.6	0 5 186.8 5 82.8 8 269.6	0 0 149.4 17.7 5	0 29.3 M 112. 6 17.3 9 158.	0 3 1.09 38 76.72 6 11.84 6 87.64	0 186.80 23.68 210.47	0 0 054 0	0 253 0 0 253	0 0 14.22 0 54.22	0 0 4.74 0 4.76	0 0 474 0 476	0 2375.94 95.30 28.25 2499.29	0 1105.0 118.8 20.72	09 1601 7 71. 2 18.	0 0 2.38 1547. 32 475 83 224 858 1657.	0 12 1270 5 59.1 0 30.1	0.85 -44 -13 0.42	0 425.46 66 52.30 36 12.43 56 490.19 72	0 0 8.58 486 8.23 26 8.50 8.2 2.31 520	0 0 124 1211 15 52 29 14 68 1280	1 0 160 790 30 0 50 22 140 812	0 0.14 45 0 3 1.79 1 2.99 45	0 0 25.46 64.0 19.23 26.11 8.29 6.21 72.97 76.41	0 17 171.86 15 11.38 1 16.57 13 299.80	0 0 547.02 92.5 65.28 5.61 621 10.3 618.61 509.3	0 54 607.80 8 104.61 16 8.29 58 720.69	0 0 364.68 547.02 26.15 78.45 14.50 4.14 405.23 629.62	0 0 364.68 972.4 52.30 39.2 2.07 4.14 419.06 90153	0 48 729.36 22 91.53 34 24.86 385 845.75	0 0 486.24 1033.26 65.38 20.23 26.93 22.70 578.55 1095.27	0 0 1094.04 1580.28 52.30 143.83 22.79 22.15 1169.13 1757.26	0 12 18.03 22 0 1 0 1	148 22.70 141 6.44 0 0 0 0	2.37 2.37 1.29 5.15 0 0 0 0 4.66 8.52	9.18 2.0 3.51 0 0 0 0 0	7,65 3.06 1,75 0.58 0 0 0 0 9,40 2,54	0 0.13 0 2.18	21.30 9.94 1 2.17 4.34 1 0 0 0 0 22.47 54.28 1	420 852 21 5.63 488 4 0 0 0 0 0 9.63 12.41 25	130 0 434 0 0 0 0 0	2.69 0 0 0 0 0 0 0 2.69 0	0 2.6 0 0 0 0 0 0	99 97.48 99 0 24.31 13 0 0 0 0 0 19 111.80 113	2.68 63.82 : 0 0 0 0 0 0 2.69 135.40 1	.51 67.72 131 18.23 0 0 0 0 17.82 65.66
Eubournina diregispina E. L. 1.0 E. L. 0.75 E. L. casia Total E. Rangispina Total E. Rangispina Total E. Rangispina	0 10.44 1.36 0.12 0	11.55 S 15.90 2 4.01 4 0.13 2.67 24.25 11	.77 0 .27 0 .01 5.34 0 0.26 0 0	0 227 267 0.13 1.34 6.41	0 18.27 28.06 3.18 0 49.51	0 0 14.03 1.36 0	0 0 1403 2.18 0	0 1827 1 2128 2 2.72 1 0 6628 4	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 27 12 58 65 26 2.0 0 0	0 118 36 46 13 64 4 0	0 30: .S4 72: 1.04 90: 25 2:8 0 0 1.88 198.	7 0 9 60.9 0 166.1 1 2.77 0	0 20.88 31 69.65 1 1.06 5.36 4 96.39	0 0 58.7 3.11 0	0 20.5 8 50.6 1 2.0 0	0 9 32.05 1 0 5.34 5 27.41	0 62,64 69,47 0,52 0	0 0 0 0 0	0 0 0 061 0	0 2.65 0 0 0 2.65	0 0 0 0	0 0 0 0	2,67 29,86 62,91 0,99 0 107,44	0.42 1012 22.21 0.17 0 42.01	2 64 1 20 0.5 1.7 1.7 1.7	0 0 64 6£ 61 253 60 0£ 70 0 45 43.0	0 6.6 51.0 0.8 0	0 64 01 82 0	0 0 26.18 18 0.55 0 0 26.72 18	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 (0 21. 57 29. 36 1.0 0 (54 62.	92 29. 92 21. 11. 16 0.1 1 0. 86 41.	0 0.23 1.22 1.92 0 1.37	0 0 7.31 7.48 7.48 0.36 0 0 0 7.85	0.46 1 2.18 8 0 0 0	0 0 7.21 0 5.61 2.7 0.91 0.11 0 0 12.82 2.51	4.04 4.77 4 26.18 8 1.09 0 2 36.09	8.08 1.39 12.72 6.36 43.02 20.57 0.18 0.36 0 0 64.00 28.69	0.92 0.93 4.77 7.21 29.93 37.4 0.73 0.36 0 0 36.35 46.0	0 11 14.62 11 28.06 6 0.73 0 0 05 43.40	0.92 4.04 2.18 14.62 13.09 20.57 0.18 0.36 0 0 17.38 29.60	0.93 0.93 0 7.31 1209 21.67 0.36 0.55 0 0 14.29 42.45	2.42 2. 6.19 1 0 1 0 1 0 1 9.62 2.	43 0 0 0 0 034 0 0 0 0 43 034	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.18 0.11 0 0.21 0 0.00 0 0 0 0 0 0	0.18 0 0.61 0.63 0 0 0 0.00 0 0.00	0.36 0 0.16 0 0	0 0 0	0 0.17 1 0.07 0 0 0.03 0.15 0 0 0 1 0 0 0	0 0 0.13 0 0.15 0.03 0 0 0 0.28 0.03	0 0.29 0.11 0 0.03 0.06 0 0 0 0	0.87 0 0.11 0 0.06 0.0 0 0 0 0 1.04 0.0	0 0 0.00 0 0.94 0.00 06 0.05 0.00 0 0 0	0.46 0.46 1.17 0 1.05 1.22 0 0 0 0 0 0	93 4.04 55 3.18 105 0 0 0 0 0 1.52 7.22
Control temperature Dilibras D	0 0.28 0 0 0.22 0 0 41.09	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0.28 0 0 0.38 0 0 0.38	0 0 0 0 0 0 197,07 0	0 19.91 0 0 19.91 0 0 0	0 0 0 0 0 0 0	0 2.16 0 0 2.16 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 92 0 92 0 0 21 0 0 201 0 0 0 0 0 0 12 12 617	90 24 90 5: 60 5: 51 22 6 6 6 8.1 10 6	0 554 20 72 6 0 28 11 0 29 0 1.26 57	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2 S10 10S 0 6 636 0 0 0	6 14 227.5 1 9.83 0 0 242.4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	15.2 91.0 6.51 0 9 112.5 0 0 0	6 6.1 1 112. 4.9 0 11 124. 0 0 0 0	225.86 159.26 1 26.29 41223 2 464.76 0 0	56.66 111.76 1.64 0 171.86 0 0 0 0	0 0 0 0 0	0 0 0 0 0 0 0 0	0 0,96 0 0,96 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 2.89 0 0 2.89 0 0 0	0 0 0 0 0 0 0	0 0 0 0 0 0 0	6 6 6 0.3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	0 0 0 0 0 0 0 0 0 5 5 5	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5 61 134	(A) 854	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 1 0 1 0 1 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
RODEGAN ADDRESSA Maranish app. Maranish app. Polyvertra app. Conochius app. Accorn app. Piecene opp. Piecene opp. Synchanis app. Testa keefva (sA45)	1.92 0.08 1.65 1.65 0.06 0 0	1.02 2 0.09 0 1.16 2 0.78 1 0 0	.47 1.04 .06 0.05 .14 0.80 .12 0.34 .0 0 0 .0 0 .0 0 .0 0	1.70 0.09 1.78 0.97 0 0	5.76 0 2.86 7.81 0 0 0	2.94 0.18 2.57 17.82 0.31 0 0	7.04 0.31 2.42 16.48 0 0 0 27.25	6.85 0.22 2.57 20.01 0.15 0 0	1.79 2.1 1.21 0.4 1.22 1.6 4.90 2.6 0 0 0 0 0 0 2.42 22.	14 13 06 0.5 00 1.1 12 27 0 0 0 0 12 20 22 26	94 2 06 0 57 2 106 25 0 0 0	31 2.5 06 0.0 00 1.3 19 38.1 0 0.3 0 0 0 0	2.81 0.01 1.21 5.35.9 0.0 0.0	2.77 0.20 0.49 0 11.00 0 0	1.25 0.00 0.46 8.86 0 0 0 0	1.7 0 0.9 8.9 0 0 0 0	1.94 0.20 0.69 0.892 0 0 0	2.50 0.10 0.49 20.87 0.18 0 0	2.75 0 22.01 2.49 0 0 0	1.78 0 12.85 2.49 0 0 0	0.52 0 7.00 0.57 0 0 0	1.62 0 21.43 1.36 0 0 0	2.63 0.12 36.29 6.53 0 0	1.87 0.55 0.36 2.82 0 0 0	0.90 0.37 0 4.62 0.06 0	1.4 0.5 0.6 0.6 0.6 0.6 0.6 0.6	12 12 52 0.4 58 0.0 99 5.0 00 0.0 0 0 0	2.9 0.9 20.1 0 0 0	91 92 93 31 31 31 31 31	2.28 1 0.72 0 0.26 0 4.35 5 0 0 0 7.62 8	1.55 1.66 0.77 1.0 1.50 2.2 0 0 0 0 0 0	12 2,0 72 1,1 32 0,3 32 11,0 0 0,0 0 0,0 0 0,0	22 22 27 02 28 22 28 22 20 03 20 03	21 1 64 1 117 99 0 0 0 0 0	2.79 2.52 1.10 0.99 1.20 1.11 6.72 20.21 0 0.06 0 0 0 1.92 24.61	2 2.79 8 1.10 1 0.51 15 9.31 6 0 0	1.77 2.25 0.69 0.90 0.09 0.66 9.78 7.88 0 0 0 0 0 0 12.33 11.6	2 2.62 1 103 0 0.86 8 106 0 0 0 0	160 1.66 0.27 0.52 0.17 0.26 7.88 8.22 0 0 0 0 0 0 0 1003 20.47	226 2.47 0.66 0.57 0.09 0 6.25 5.36 0.06 0 0 0 0 0	7 2.09 2 129 0 029 6 652 0 0	2.91 2.09 0.87 0.82 0.36 0 5.66 4.68 0.06 0.06 0 0 0 0 9.62 2.45	1.52 2.28 0.69 0.87 0.09 0.09 7.47 10.87 0 0 0 0 0 0 9.78 14.11	1.27 1. 0.02 0. 0.07 0. 2.07 0. 0 1 0 1 0 1	25 1.30 09 0.02 07 0 58 0.98 0 0 0 0 0 0	0.88 1.15 0.05 0.11 0.07 0 0.12 0.46 0 0 0 0 0 0	0.99 0.75 0.08 0.0 0.20 0 0.31 0.71 0 0 0 0 0 0	0.91 1.25 0.05 0.05 0.03 0.16 0.47 0.57 0 0 0 0 0 0	0.74 0.06 0 0.39 0 0 0	0.76 0.44 0.09 0.07 0 0 0 0 0.15 0.62 0.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.43 0.42 0: 0.08 0.10 0: 0 0 0 0: 0.66 0.34 0: 0 0 0 0.00 0: 0.00 0:	0.97 1.32 0.13 0.06 0.03 0.05 0.06 0.85 0 0 0 0 0 0 0 0 0	114 1.62 008 0.18 0 0 0004 0.28 0 0 0 0 0 0	0.41 1.4 0 0.1 0 0.4 0 0.4 0 0 0 0 0 0	11 0.85 1. 14 0.14 0. 0 0 0 17 2.34 0. 0	.58 1.42 127 0.34 0 0 0 161 1.56 0 0 0 0 0 0.08 0.08	72 2.57 .39 0.27 0 0 0 182 1.56 0 0 0 0 0 0 2.59 4.49
TOTAL ZOOPLANKTON BIOMASS Note: mg/m² = miligrams per cubic meter; sp. = one species in the	91 genera; spp. = numerous	224 2 species in the genera; mr	30 96 n - millineters,	74	692	406	290	550	296 10	00 76	60 8	S3 100	i 895	1204	727	62	1136	992	429	B1	294	500	298	2745	1726	1 18	62 179	153	24	68 1	121 66	9 15	96 96	165	554 161	1 213	712 177	2 851	565 693	500 1149	1902	699 1224	1282 1992	151 13	27 230	113 131	118 155	166 151	124	188 165	218 184 1	164 111	81 78	10 13	11 422 2	171 611	66 492





Table I-6: Zooplankton Quality Control Samples Base on Abundance (ind./L) in East Lake and Lake N11, Fall 2011

Lake		Lake N1	11		Lake N1	11		Lake N	11	East	t Lake (Re	ference)	East	Lake (Re	ference)	Eas	t Lake (Re	ference)	East	Lake (Re	ference)
Date		15-Aug-	11		15-Aug-	11		15-Aug-	11		17-Aug-	11		17-Aug-	11		17-Aug-	11		17-Aug-	11
Station Replicates		N11D1	A		N11D3	C		N11D3	E		REFD3	С		REFD3	D		REFD4	A		REFD5	4
Stations	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)
COPEPODA																					
Calanoida																					
Heterocope septentrionalis Juday & Muttkowski																					
H.s. adult female	0	0	-	0	0	-	0	0	-	0.03	0.03	0	0.02	0.02	0	0.01	0.01	0	0.03	0.03	0
H.s. adult male	0	0	-	0	0	-	0.01	0.01	0	0.01	0.01	0	0.01	0.01	0	0.01	0.01	0	0.01	0.01	0
H.s. 4.0 mm F & M	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
H.s. 3.0mm	0	0	-	0	0	-	0	0	-	0	0	-	0	0		0	0	-	0	0	-
H.s. 2.0 mm	0	0	-	0	0	-	0	0	-	0	0	-	0	0		0	0	-	0	0	-
H.s. 1.0 mm	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
Total H. septentrionales	0	0	-	0	0	-	0.01	0.01	0	0.04	0.04	0	0.03	0.03	0	0.02	0.02	0	0.04	0.04	0
Epischura lacustris S.A. Forbes																					
E.I. adult female	0.00	0.00	0	0.00	0.00	0	0	0	-	0.01	0.01	0.0	0.04	0.01	38.9	0	0.00	50.0	0.05	0.02	16.7
E.I. adult male	0	0	-	0.00	0.00	0	0.00	0.00	0	0.00	0.00	0.2	0	0.01	50.0	0	0	-	0.05	0.02	16.7
E.I. immature 0.5-1.0 mm	0	0	-	0	0	-	0	0	-	0		-	0	0	-	0	0	-	0	0	-
Total E. lacustris	0.00	0.00	0	0.01	0.01	0	0.00	0.00	0	0.01	0.01	0.1	0.04	0.01	24.5	0	0.00	50.0	0.10	0.05	16.7
Diaptomus pribilofensis Juday & Muttkowski																					
D.p. adult female	0.10	0.10	0	0.12	0.17	8.3	0.02	0.11	32.1	0.69	0.49	8.6	0.49	0.53	2.0	0.64	0.57	2.9	1.47	1.13	6.5
D.p. gravid female	0.01	0.01	0	0.00	0.00	0	0.00	0.00	0	0.04	0.02	16.7	0.02	0.02	0	0.02	0.02	2.0	0.05	0.02	16.7
D.p. adult male	0.31	0.41	7.1	0.05	0.07	10.0	0.20	0.07	22.7	0.65	0.32	16.7	0.61	0.53	3.6	0.14	0.64	31.8	0.45	1.13	21.4
D.p. immature 2.0 mm	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
D.p. immature 1.0 mm	0.21	0	50.0	0.57	0.11	33.3	0.11	0.11	0	0.04	0.04	0	0	0.12	50.0	0	0.07	50.0	0	0.11	50.0
D.p. immature 0.75 mm	0	0	-	0	0	-	0	0	-	0	0.04	50.0	0	0	-	0	0	-	0	0	-
D.p. immature 0.5 mm	0	0	-	0	0	-	0	0	-	0	0	-	0.04	0	50.0	0.07	0	50.0	0	0	-
Total D. pribilofensis	0.63	0.52	4.5	0.74	0.36	17.2	0.34	0.30	2.7	1.41	0.91	10.8	1.15	1.19	0.9	0.87	1.30	9.8	1.97	2.40	4.9
Diaptomus minutus Lilljeborg																					
D.m. adult female	0.10	0.41	30.0	0.45	0	-	0.11	0.11	0	0	0	-	0	0	-	0	0	-	0	0.11	50.0
D.m. gravid female	0.13	0.07	16.7	0.02	0.02	0	0.10	0.22	19.2	0	0	-	0	0	-	0	0	-	0.02	0	50.0
D.m. adult male	0.62	0.93	10.0	0.57	0.57	0	0.34	0.23	10.0	0	0	-	0	0	-	0	0	-	0	0	-
D.m. immature 2.0 mm	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
D.m. immature 1.0 mm	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
D.m. immature 0.75 mm	0.51	0.51	0	0.34	0.79	20.0	0	0.57	50.0	1.50	1.13	6.9	1.37	1.09	5.7	0.78	1.06	7.7	2.49	2.04	5.0







Table I-6: Zooplankton Quality Control Samples Base on Abundance (ind./L) in East Lake and Lake N11, Fall 2011 (continued)

Lake		Lake N	11		Lake N	11		Lake N	11	Eas	t Lake (Re	ference)									
Date		15-Aug-	-11		15-Aug-	11		15-Aug-	11		17-Aug	11		17-Aug-	11		17-Aug-	11		17-Aug-	11
Station Replicates		N11D1	A		N11D3	С		N11D3	E		REFD3	С		REFD3	D		REFD4	A		REFD5	A
Stations	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)
D.m. immature 0.5 mm	0.10	0	50.0	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
Total D. minutus	1.47	1.92	6.6	1.38	1.38	0	0.55	1.13	17.2	1.50	1.13	6.9	1.37	1.09	5.7	0.78	1.06	7.7	2.52	2.15	3.9
Calanoid nauplius	0.21	0.10	16.7	0.11	0.11	0	0	0	-	0	0.04	50.0	0	0	-	0	0	-	0	0.11	50.0
Total Calanoida ind/L	2.31	2.55	2.5	2.24	1.86	4.6	0.90	1.44	11.6	2.96	2.13	8.1	2.60	2.33	2.7	1.67	2.38	8.7	4.63	4.76	0.7
Cyclopoida																					
Cyclops scutifer Sars																					
C. s. adult female	0.21	0.10	16.7	0	0.11	50.0	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
C. s. gravid female	0.01	0.01	0	0.00	0.00	0	0.02	0.02	0	0	0	-	0	0	-	0	0	-	0	0	-
C. s. adult male	0	0	-	0.11	0	50.0	0	0.11	50.0	0	0	-	0	0	-	0	0	-	0	0	-
C. s. immature 2.0 mm	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
C. s. immature 1.0 mm	0.31	0.41	7.1	0	0	-	0	0	-	0.32	0	50.0	0	0	-	0	0	-	0	0.11	50.0
C. s. immatue 0.75 mm	0.82	1.65	16.7	0.34	0.11	25.0	0.11	0.23	16.7	0.97	0.69	8.5	1.29	0.57	19.6	0.57	0.35	11.5	2.49	1.81	7.9
C. s. immature 0.5 mm	0.10	0	50.0	0	0	-	0	0	-	0.36	0.40	2.6	0.32	0.20	11.5	0.14	0.14	0.0	0.57	0.57	0
Total C. scutifer	1.45	2.17	10.0	0.46	0.23	16.5	0.14	0.36	22.5	1.66	1.09	10.3	1.62	0.77	17.8	0.71	0.50	8.8	3.06	2.49	5.1
Small unidentified cyclopoids	1.45	0.21	37.5	0.11	0.11	0			-			-			-			-			-
Cyclopoid nauplius	1.34	2.37	13.9	2.94	2.15	7.8	1.81	1.59	3.3	5.30	3.92	7.5	4.69	4.73	0.2	6.23	6.23	0	6.91	8.27	4.5
Total Cyclopoida ind/L	2.78	4.74	13.0	3.51	2.49	8.5	1.95	1.95	0.0	6.96	5.01	8.1	6.31	5.50	3.4	6.94	6.72	0.8	9.96	10.76	1.9
CLADOCERA																					
Daphnia middendorffiana Fischer																					
D. m. 3.0	0	0	-	0	0	-	0	0	-	0	0	-	0.00	0.00	0	0	0	-	0	0	-
D. m. 2.5	0	0	-	0	0	-	0	0	-	0.00	0.00	0	0.01	0.01	3.3	0.00	0.00	0	0.03	0.02	2.9
D. m. 2.0	0	0	-	0	0	-	0	0	-	0.01	0.01	1.9	0.01	0.01	8.3	0	0	-	0.01	0.01	0
D. m. 1.5	0	0	-	0	0	-	0	0	-	0.01	0.02	16.7	0.02	0.01	16.7	0.00	0.00	0	0.01	0.01	10.0
D. m. 1.0	0	0	-	0	0	-	0	0	-	0.01	0.01	0	0	0	-	0.00	0.00	0	0.02	0	50.0
D. m. 0.5	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
Total D. middendorfianna	0	0	-	0	0	-	0	0	-	0.03	0.04	6.5	0.03	0.02	7.0	0.01	0.01	0	0.07	0.05	10.7
Holopedium gibberum Zaddach																		-			
H. g. 3.0	0	0	-	0	0	-	0	0	-	0.01	0.01	0	0.01	0.01	0	0	0	-	0.06	0.06	2.4
H. g. 2.0	4.43	4.01	2.4	0.32	0.44	8.1	0.17	0.27	11.1	0.01	0.01	0	0.01	0.01	2.9	0	0	-	0.05	0.04	3.3
H. g. 1.0	0.82	1.24	10.0	0.10	0.32	26.5	0.05	0.10	16.7	0	0	-	0	0	-	0	0	-	0	0	-
H. g. 0.5	1.54	1.44	1.7	0.91	1.13	5.6	0.57	1.25	18.8	0	0	-	0	0	-	0	0	-	0	0	-
Total H. gibberum	6.79	6.69	0.4	1.32	1.90	8.9	0.79	1.62	17.2	0.02	0.02	0	0.02	0.01	1.7	0	0	-	0.11	0.10	2.8





Table I-6: Zooplankton Quality Control Samples Base on Abundance (ind./L) in East Lake and Lake N11, Fall 2011 (continued)

Lake		Lake N	11		Lake N1	1		Lake N	11	East	t Lake (Re	ference)	Eas	t Lake (Re	ference)	Eas	t Lake (Re	ference)	East	Lake (Re	ference)
Date		15-Aug-	11		15-Aug-	11		15-Aug-	11		17-Aug-	11		17-Aug-	11		17-Aug-	11		17-Aug-	11
Station Replicates		N11D1	A		N11D3	C		N11D3	E		REFD3	С		REFD3	D		REFD4	A		REFD5	A
Stations	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)	Α	В	RPD (%)
Eubosmina longispina																					
E. I. 1.0	0.02	0	50.0	0.00	0.00	0	0	0	-	0	0	-	0.00	0.00	0	0	0	-	0	0	-
E. I. 0.75	0.62	0.62	0	0.05	0.02	16.7	0	0	-	0.00	0.00	16.7	0	0.01	50.0	0	0	-	0.01	0.02	13.5
E. I. 0.5	3.81	2.16	13.8	0	1.13	50.0	0.23	1.25	34.6	0.00	0.00	0	0.01	0.01	0	0.00	0.00	-	0.00	0	50.0
E. I. 0.25	0.62	1.44	20.0	0	0.45	50.0	0.11	0.23	16.7	0	0	-	0	0	-	0	0	-	0	0	-
E. I. male	0	0.10	50.0	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
Total E. longispina	5.07	4.32	4.0	0.05	1.61	46.9	0.34	1.47	31.3	0.00	0.00	7.1	0.01	0.02	15.5	0.00	0.00	0	0.02	0.02	9.2
Total Cladocera ind/L	11.86	11.01	1.8	1.38	3.51	21.8	1.13	3.09	23.2	0.06	0.07	4.4	0.06	0.06	0.0	0.01	0.01	0	0.19	0.17	3.9
ROTIFERA																					
Kellicottia spp.	8.75	8.24	1.5	13.02	13.81	1.5	10.42	9.85	1.4	2.02	2.67	6.9	1.94	3.11	11.6	6.16	5.02	5.1	3.96	3.85	0.7
Keratella spp.	3.50	3.91	2.8	7.02	8.38	4.4	5.77	5.21	2.6	0.49	0.57	3.8	0.65	0.69	1.5	0.35	0.71	16.7	0.91	1.13	5.6
Polyarthra spp.	0.21	0	50.0	0.68	0.91	7.1	0.79	0.34	20.0	0	0	-	0	0	-	0.07	0.07	0	0	0	-
Conochilus spp.	6.38	6.79	1.6	15.51	18.23	4.0	13.14	15.97	4.9	1.09	0.77	8.7	0.57	0.77	7.6	1.42	0.78	14.5	3.74	4.30	3.5
Lecane spp.	0	0	-	0	0	-	0	0.11	50.0	0	0	-	0	0	-	0	0	-	0	0	-
Pleosoma spp.	0	0.10	50.0		0.11	50.0			-			-			-			-			-
Synchaeta spp.			-			-			-	0.04		50.0	0.04	0.04	0		0.07	50.0			-
Total Rotifera ind/L	18.84	19.04	0.3	36.23	41.44	3.4	30.12	31.48	1.1	3.64	4.00	2.4	3.19	4.61	9.1	8.00	6.65	4.6	8.61	9.29	1.9
TOTAL ZOOPLANKTON	35.79	37.35	1.1	43.37	49.31	3.2	34.10	37.95	2.7	13.61	11.22	4.8	12.16	12.49	0.7	16.62	15.77	1.3	23.39	24.96	1.6

Notes: ind./L = Individuals per litre; sp. = one species in the genera; spp. = numerous species in the genera; mm = millimetres; RPD = Relative Percent Difference





Table I-7: Zooplankton Biomass Length-Weight Regression Information for East Lake, Lake N11 and the L and M Lakes of the Gahcho Kue Project, Fall 2011

Instar Identification and Size Classes	Mean Length [mm]	Ln ^(a) (Length) [mm]	Regression Equation Number ^(b)	Calculated Ln (Weight) [µg]	Calculated Dry Weight [µg]	Calculated Wet Weight [µg]
Heterocope septentrionalis Juday and Muttko	wski					
H.s. adult female	2.7	1.0	R30	3.5	34.2	488.8
H.s. adult male	3.1	1.1	R30	3.8	45.4	649.0
H.s. 4.0 mm (male and female)	3.3	1.2	R30	4.0	52.9	756.2
H.s. 3.0mm	3.0	1.1	R30	3.8	43.2	617.2
H.s. 2.0 mm	1.8	0.6	R30	2.4	11.0	157.1
H.s. 1.0 mm	0.8	-0.3	R30	0.2	1.3	18.3
Epischura lacustris S.A. Forbes			•			
E.l. adult female	1.5	0.4	R32	1.9	6.6	94.2
E.I. adult male	1.4	0.3	R32	2.1	7.9	113.4
E. I. immature	1.0	0.0	R32	1.7	5.2	74.7
Diaptomus pribilofensis Juday and Muttkowsk	ki		•			
D.p. adult female	1.2	0.2	R30	1.4	4.0	57.8
D.p. gravid female	1.2	0.2	R30	1.4	4.0	57.8
D.p. adult male	1.2	0.2	R30	1.4	3.9	55.6
D.p. immature 2.0	1.2	0.1	R30	1.3	3.8	54.7
D.p. immature 1.0	1.0	0.0	R30	1.0	2.6	37.0
D.p. immature 0.75	0.8	-0.3	R30	0.2	1.3	18.3
D.p. immature 0.5	0.5	-0.7	R30	-0.8	0.5	6.5
Diaptomus minutus Lilljeborg			•			
D.m. adult female	0.9	-0.1	R27	0.9	2.5	35.1
D.m. gravid female	0.9	-0.1	R27	0.9	2.4	34.6
D.m. adult male	0.9	-0.1	R27	0.7	2.1	29.9
D.m. immature 2.0	1.1	0.0	R27	1.2	3.3	46.9
D.m. immature 1.0	1.0	0.0	R27	1.0	2.8	39.9
D.m. immature 0.75	0.8	-0.3	R27	0.3	1.3	18.6
D.m. immature 0.5	0.5	-0.7	R27	-0.9	0.4	6.1
Calanoid nauplius	0.3	-1.2	R6	-1.6	0.2	2.9
Cyclops scutifer Sars						
C. s. adult female	1.3	0.2	R94	2.0	7.5	107.0
C. s. gravid female	1.3	0.3	R94	2.1	8.3	118.2
C. s. adult male	1.0	0.0	R94	1.4	3.9	55.6





Table I-7: Zooplankton Biomass Length-Weight Regression Information for East Lake, Lake N11 and the L and M Lakes of the Gahcho Kue Project, Fall 2011 (continued)

Instar Identification and Size Classes	Mean Length [mm]	Ln ^(a) (Length) [mm]	Regression Equation Number ^(b)	Calculated Ln (Weight) [µg]	Calculated Dry Weight [µg]	Calculated Wet Weight [µg]
C. s. immature 2.0	1.2	0.1	R94	1.7	5.6	80.0
C. s. immature 1.0	1.0	0.0	R94	1.3	3.6	51.8
C. s. immatue 0.75	0.8	-0.3	R94	0.5	1.7	23.9
C. s. immature 0.5	0.5	-0.7	R94	-0.6	0.5	7.7
Cyclops vernalis Fischer						
C.v. immature 0.75 mm	0.5	-0.7	R92	-1.0	0.4	5.5
Cyclops capillatus Sars						
C.c. mature	1.6	0.5	R92	2.1	8.2	117.7
C. c. immature	0.5	-0.7	R92	-1.0	0.4	5.5
Macrocyclops albidus Jurine	1.7	0.5	R92	2.1	8.4	119.5
Immature cyclopoid	0.5	-0.7	R92	-1.0	0.4	5.5
Cyclopoid nauplius	0.3	-1.3	R49	-1.6	0.2	2.7
Daphnia middendorffiana Fischer						
D. m. 3.0	3.0	1.1	DsL885	4.7	110.1	1573.3
D. m. 2.5	2.5	0.9	DsL885	4.2	63.6	908.6
D. m. 2.0	2.0	0.7	DsL885	3.5	32.5	464.0
D. m. 1.5	1.5	0.4	DsL885	2.6	13.7	195.1
D. m. 1.0	1.0	0.0	DsL885	1.4	3.9	55.8
D. m. 0.5	0.5	-0.7	DsL885	-0.7	0.5	7.1
Holopedium gibberum Zaddach						
H. g. 3.0	2.5	0.9	L223Hg	4.6	98.3	1404.7
H. g. 2.0	1.8	0.6	L223Hg	3.6	37.6	536.8
H. g. 1.0	1.0	0.0	L223Hg	2.1	8.1	115.5
H. g. 0.5	0.5	-0.7	L223Hg	0.2	1.3	18.3
Eubosmina longispina						
E. I. 1.0	1.0	0.0	L223BI	2.4	11.5	164.1
E. I. 0.75	0.8	-0.3	L223BI	1.5	4.5	64.5
E. I. 0.5	0.5	-0.7	L223BI	0.1	1.2	16.5
E. I. 0.25	0.3	-1.4	L223BI	-2.2	0.1	1.6
E. I. male	0.5	-0.7	L223BI	0.1	1.2	16.5
Daphnia longiremis Sars						
D. I. 1.3mm	1.3	0.3	L302	2.5	12.2	174.5





Table I-7: Zooplankton Biomass Length-Weight Regression Information for East Lake, Lake N11 and the L and M Lakes of the Gahcho Kue Project, Fall 2011 (continued)

Instar Identification and Size Classes	Mean Length [mm]	Ln ^(a) (Length) [mm]	Regression Equation Number ^(b)	Calculated Ln (Weight) [µg]	Calculated Dry Weight [µg]	Calculated Wet Weight [µg]
D.I. 1.0 mm	1.0	0.0	L302	1.6	4.9	70.3
D.I. 0.5 mm	0.5	-0.8	L302	-1.0	0.4	5.1
D.I.male 1.2 mm	1.2	0.2	L302	2.2	9.4	133.6
Ophryoxus gracilis Sars	1.1	0.1	L223BI	2.7	14.9	213.1
Eurycercus lamellatus (O.F. Muller)	2.1	0.7	L223Cs	5.5	243.4	3477.8
Chydorus sphaericus (O.F.Muller)	0.5	-0.8	L223Cs	-0.7	0.5	7.4
Kellicottia spp.	0.1	-2.1	L224	-	0.0	0.2
Keratella spp.	0.1	-2.3	L224	-	0.0	0.2
Polyarthra spp.	0.1	-2.0	L227*	-	0.1	0.8
Conochilus spp.	0.2	-1.7	L223	-	0.0	0.6
Lecane spp.	0.1	-2.3	L227	-	0.0	0.5
Pleosoma spp.	0.2	-1.5	L224*	-	0.1	1.0
Synchaeta spp.	0.1	-2.1	L227*	-	0.0	0.7

Length/DryWeight Regressions in form Lnw = Lna + bLnL from Lawrence et al. 1989.

R6 LnW= 0.9926-2.0997 LnL.

R27 LnW = 1.0542 -2.748 LnL.

R30 LnW = 0.9772-2.5384 LnL.

R32 LnW = 1.1337 + 2.7882 LnL.

R49 LnW= 1.6388 - 2.4474 LnL.

R92 LnW= 0.8344-2.5760 LnL.

R94 LnW = 1.3169 - 2.7197 LnL.

DsL885 LnW = 1.3933 - 3.0114 LnL.

RL302 LnW = 1.6274 - 3.3367 LnL.

RL223Hg LnW = 2.1169 + 2.6972 LnL.

RL223BI LnW = 2.4751 - 3.3614 LnL.

RL223Cs LnW = 3.1270 -3.3678 LnL.

Notes: mm= millimeters; µg/L = micrograms per litre; spp = numerous species in the genera; - = information not available.



⁽b) * = interpolated.



APPENDIX II

Benthic Invertebrates - Supporting Data, 2011





Table II-1: Habitat Data for Benthic Invertebrate Stations Sampled in East Lake, Lake N11, and the L and M Lakes of the Gahcho Kue Project, Fall 2011

			LITMO						Field Water	Quality Data					Sedime	nt Chemist	ry Data		
Lake	Station	Date		ordinates V, NAD83)	Water Depth	Water Ter	nperature	Dissolve	d Oxygen	Specific Co	nductivity	_	ш				Sed	iment Par	ticle Size
					[m]	[°(C]	[mç	g/L]	[µS/	cm]	р	П	Moisture Content [%]	Total Organic Carbon [%]		Silt [%]	Clay [%]	Fines (silt + clay) [%]
			Easting	Northing		Surface	Bottom	Surface	Bottom	Surface	Bottom	Surface	Bottom			Garia [70]	Ont [70]	Oldy [70]	Times (Silt Toldy) [70]
East (Reference) Lake	EAST-D1	17-Aug-2011	597732	7038735	7.4 (reps A & B) 11.3 (reps C, D & E)	15.2	15.0	9.3	9.3	15.0	15.0	6.9	6.9	71	3	86	11	4	15
	EAST-D2	17-Aug-2011	598225	7039182	14.2	15.2	15.1	9.3	9.2	15.0	15.0	6.8	6.8	90	10	62	30	8	38
	EAST-D3	17-Aug-2011	598834	7040563	15.3	15.1	15.0	9.3	9.2	15.0	15.0	6.8	6.8	92	13	77	15	8	23
	EAST-D4	17-Aug-2011	599450	7041433	9.0	15.1	15.1	9.1	9.1	15.0	15.0	6.8	6.8	92	13	87	6	8	14
	EAST-D5	17-Aug-2011	599191	7040941	14.9	15.1	15.1	9.2	9.1	15.0	15.0	6.7	6.8	92	11	77	16	6	22
Lake N11	N11-D1	13-Aug-2011	587367	7040304	6.5	16.1	15.9	9.2	9.2	11.0	11.0	6.5	6.6	92	13	77	16	7	23
	N11-D2	16-Aug-2011	586893	7040510	6.2	14.2	14.2	9.5	9.4	12.0	12.0	6.7	6.7	91	9	74	22	4	26
	N11-D3	15-Aug-2011	587460	7041119	6.1	16.3	16.3	9.1	9.0	11.0	11.0	6.8	6.8	90	16	78	17	5	22
	N11-D4	14-Aug-2011	587543	7041902	6.1	15.9	15.9	9.2	9.1	12.0	12.0	6.1	6.3	87	16	75	18	8	26
	N11-D5	15-Aug-2011	586753	7042017	6.0	15.3	15.3	9.3	9.2	12.0	12.0	6.3	6.3	92	16	72	19	10	29
Lake M1	M1	20-Aug-2011	596462	7044978	2.0	9.6	9.6	10.6	10.6	14.0	14.0	6.8	6.7	-	-	-	-	-	-
Lake M2	M2	18-Aug-2011	597016	7044841	5.0	13.5	13.5	9.8	9.8	14.0	14.0	6.7	6.4	-	-	-	-	-	-
Lake M3	M3	18-Aug-2011	597452	7043954	7.0	13.6	14.3	9.8	9.8	14.0	14.0	6.6	6.7	90	13	63	24	14	38
Lake M4	M4	20-Aug-2011	595252	7040163	12.0	13.6	14.0	9.8	9.8	14.0	14.0	6.7	6.7	92	15	67	28	5	33
Lake L2	L2	20-Aug-2011	593396	7038967	3.8	12.2	11.4	10.5	9.7	14.0	15.0	6.9	6.4	-	-	-	-	-	-

Notes: -=n

- = not available.

Benthic invertebrates were sampled at two locations for station EAST-D1 because the first location did not have sufficient soft bottom substrate to sample more than two replicates.





Table II-2: Benthic Invertebrate Summary Variables for East Lake, Lake N11, and the L and M Lake of the Gahcho Kue Project, Fall 2011

Lake	Habitat Type	Station	(1	al Den: no./m² an ± 1)	Total Richness (taxa/station)		al Richr station) ±1 SE)		Simpson's Diversity Index	Evenness
		EAST-D1	1,034	±	337	21	9	±	3	0.90	0.49
		EAST-D2	621	±	325	14	6	±	2	0.86	0.53
East (Reference) Lake	Deep Open-Water	EAST-D3	3,440	±	749	23	14	±	1	0.83	0.26
		EAST-D4	5,207	±	1,428	27	17	±	1	0.87	0.29
		EAST-D5	8,914	±	1,418	25	18	±	1	0.87	0.32
		N11-D1	25,190	±	4,158	25	18	±	1	0.67	0.12
		N11-D2	37,095	±	8,732	29	19	±	2	0.72	0.12
Lake N11	Deep Open-Water	N11-D3	20,819	±	4,857	29	19	±	2	0.79	0.17
		N11-D4	810	±	316	18	7	±	2	0.83	0.33
		N11-D5	53,776	±	17,303	33	22	±	3	0.52	0.06
Lake M1	Shallow Open-Water	M1	14,095	±	2,554	30	19	±	2	0.91	0.39
Lake M2	Shallow Open-Water	M2	13,595	±	4,769	26	17	±	2	0.87	0.29
Lake M3	Shallow Open-Water	M3	6,345	±	1,583	32	18	±	4	0.90	0.30
Lake M4	Shallow Open-Water	M4	241	±	84	9	3	±	1	0.81	0.59
Lake L2	Shallow Open-Water	L2	8,897	±	3,331	26	15	±	2	0.88	0.33

Notes: SE = standard error of the mean.

Deep Open-Water = open-water areas with water depths ranging from 6 to 10 m. Shallow Open-Water = open-water areas with water depths less than 4 metres.





Table II-3: Percent Mean Relative Density of Major Taxa in East Lake, Lake N11, and the L and M Lakes Sampled for the Gahcho Kue Project, Fall 2011

		Re	eference La	ke				Lake N11			Lake M1	Lake M2	Lake M3	Lake M4	Lake L2
Taxa	East-D1	East-D2	East-D3	East-D4	East-D5	N11-D1	N11-D2	N11-D3	N11-D4	N11-D5	M1	M2	М3	M4	L2
	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
Nematoda	6	15	6	20	13	33	40	38	11	12	7	16	8	32	6
Oligochaeta	9	33	10	10	10	0	8	2	4	1	11	1	2	0	4
Gastropoda	4	3	0	1	1	1	1	1	2	0	6	0	2	0	8
Pelecypoda	26	22	18	18	7	6	6	5	22	3	7	6	2	4	7
Chironomidae	53	25	66	49	53	57	46	39	59	81	49	66	71	39	50
Other	2	1	1	3	15	2	0	14	2	2	20	10	15	25	25
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Note: % = percent.







Table II-4: Raw Benthic Invertebrate Abundance Data (no./sample) Collected Using a Standard Ekman Grab Sampler, Fall 2011

						East (F	Reference) L	_ake D1			East (F	Reference) I	Lake D2			East (I	Reference) L	ake D3			East (Reference) L	ake D4	
Major Taxon	Family	Subfamily	Tribe	Genus/Species	EAST-D1- A	EAST-D1- B	EAST-D1- C	EAST-D1- D	EAST-D1- E	EAST-D2- A	EAST-D2- B	EAST-D2- C	EAST-D2- D	EAST-D2- E	EAST-D3- A	EAST-D3- B	EAST-D3- C	EAST-D3- D	EAST-D3- E	EAST-D4- A	EAST-D4- B	EAST-D4- C	EAST-D4- D	EAST-D4-
Microturbellaria	Typhloplanidae	-	-	Mesostoma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nematoda	-	-	-	-	0	1	0	1	5	0	10	1	0	0	3	5	3	7	4	12	36	47	0	26
	Enchytraeidae	-	-	-	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligochaeta	Lumbriculidae	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Oligocriaeta	Naididae	Naidinae	-	-	2	2	0	0	3	2	12	3	0	1	3	4	8	7	8	4	1	10	2	6
	Naididae	Tubificinae	-	-	2	0	0	0	1	1	0	0	2	1	1	2	1	5	0	4	11	9	7	3
Gastropoda	Valvatidae	-	-	Valvata sincera	4	0	0	0	1	1	0	1	0	0	0	0	0	1	0	2	0	0	3	2
		-	-	(i/d)	5	2	5	0	4	2	5	0	3	0	3	3	4	9	2	3	10	19	12	7
Bivalvia	Pisidiidae	-	-	Sphaerium	1	0	0	0	0	0	1	0	0	0	0	1	0	0	1	1	1	4	0	0
		-	-	Pisidium	2	0	4	1	7	1	4	0	0	0	7	12	6	19	4	4	11	12	11	14
Hydracarina	-	-	-	-	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	3	0	1
Copepoda - Calanoida	-	-	-	-	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Copepoda -	Cyclopidae	Cyclopinae	-	Acanthocyclops	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	10	0	0
Cyclopoida	Ergasilidae	-	-	Ergasilus	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Copepoda - Harpacticoida	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	2	8	0	1
Ostracoda	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Bosminidae	-	-	Bosmina	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Chydoridae	-	-	Eurycercus	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cladagara	Chydoridae	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cladocera	Daphnidae	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Macrothricidae	-	-	-	7	16	0	0	0	1	0	0	1	0	1	0	1	0	1	0	2	11	1	1
	Sididae	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hydroptilidae	-	-	Agraylea	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichantara	Leptoceridae	-	-	Oecetis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichoptera	Limnephilidae	-	-	Grensia praeterica	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Phryganeidae	-	-	Phryganea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	(pupa)	2	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	1	0	0
				(i/d)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Pentaneurini	Ablabesmyia	0	3	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1	0
		Tanypodinae	i entaneum	<i>Thienemannimyia</i> group	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Procladiini	Procladius	0	3	1	0	1	0	0	0	0	0	1	4	2	3	2	1	2	6	3	1
		Diamesinae	Protanypini	Protanypus	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
		Prodiamesinae	-	Monodiamesa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
			-	(i/d)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				Abyskomyia Cricotopus /	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Diptera	Chironomidae			Orthocladius	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
		Orthocladiinae	Orthocladiini	Heterotanytarsus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			0.0.00.00	Heterotrissocladius	2	4	0	0	1	0	4	0	0	0	4	6	14	21	55	2	7	27	1	1
				Parakiefferiella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				Psectrocladius	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0
				Zalutschia	0	0	0	0	0	0	0	0	0	0	1	0	3	1	3	0	1	0	1	0
				(i/d)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				Chironomus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3	0	1
		Chironominae	Chironomini	Cladopelma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1
				Cryptochironomus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
				Dicrotendipes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1





Table II-4: Raw Benthic Invertebrate Abundance Data (no./sample) Collected Using a Standard Ekman Grab Sampler, Fall 2011 (continued)

						East (R	Reference) l	ake D1			East (I	Reference) L	ake D2			East (F	Reference) L	ake D3			East (Reference) l	_ake D4	
Major Taxon	Family	Subfamily	Tribe	Genus/Species	EAST-D1- A	EAST-D1- B	EAST-D1- C	EAST-D1- D	EAST-D1- E	EAST-D2- A	EAST-D2- B	EAST-D2- C	EAST-D2- D	EAST-D2- E	EAST-D3- A	EAST-D3- B	EAST-D3- C	EAST-D3- D	EAST-D3- E	EAST-D4- A	EAST-D4- B	EAST-D4- C	EAST-D4- D	EAST-D4- E
				Microtendipes	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1
				Pagastiella	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	2	2	1	1
			Chironomini (con't)	Parachironomus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Crimonominii (con t)	Polypedilum	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				Sergenta	0	0	0	0	0	0	0	0	0	0	1	1	2	0	2	3	2	2	2	5
				Stictochironomus	4	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Pseudochironomini	Pseudochironomus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Chironomidae	Chironominae		(i/d)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	(con't)	(con't)		Cladotanytarsus	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0
Diptera (con't)				Corynocera	2	1	0	0	0	0	1	0	0	0	1	1	2	3	0	12	10	40	17	27
				Micropsectra	0	2	0	0	1	0	1	1	2	0	8	7	19	32	33	5	3	47	15	8
			Tanytarsini	Micropsectra / Tanytarsus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				Paratanytarsus	17	5	0	0	1	1	2	1	1	0	2	0	0	2	1	3	1	4	1	3
				Stempellinella	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				Tanytarsus	1	0	1	0	4	3	0	0	0	0	0	3	2	4	4	0	0	0	0	0
	Ceratopogonidae	Ceratopogoninae	-	Bezzia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Ceratopogonidae	Dasyheleinae		Dasyhelea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Empididae	-	-	Chelifera / Metachela	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Terrestrial	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total					57	49	12	2	30	12	45	7	9	2	37	55	69	119	126	61	108	270	80	112

						East (Reference) L	ake D5			I	Lake N11-D)1			ı	Lake N11-D	2			L	Lake N11-D	3	
Major Taxon	Family	Subfamily	Tribe	Genus/Species	EAST-D5-A	EAST-D5-B	EAST-D5-C	EAST-D5-D	EAST-D5-E	N11-D1-A	N11-D1-B	N11-D1-C	N11-D1-D	N11-D1-E	N11-D2-A	N11-D2-B	N11-D2-C	N11-D2-D	N11-D2-E	N11-D3-A	N11-D3-B	N11-D3-C	N11-D3-D	N11-D3-E
Microturbellaria	Typhloplanidae	-	-	Mesostoma	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nematoda	-	-	-	-	8	25	41	19	41	108	328	131	221	190	20	379	394	440	472	157	160	109	84	418
	Enchytraeidae	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0
Oligophoeto	Lumbriculidae	-	-	-	0	0	0	0	0	1	1	1	0	0	0	3	4	1	8	0	0	0	0	4
Oligochaeta	Naididae	Naidinae	-	-	19	22	27	8	19	0	0	3	1	0	1	64	65	74	56	4	8	4	4	17
	Naididae	Tubificinae	-	-	2	0	2	4	3	0	0	0	0	0	5	4	9	4	24	9	0	1	0	1
Gastropoda	Valvatidae	-	-	Valvata sincera	1	3	1	3	2	6	8	3	3	5	0	12	4	8	6	3	1	10	0	14
		-	-	(i/d)	6	12	4	2	3	0	29	8	25	18	0	53	27	43	59	12	20	6	7	25
Bivalvia	Pisidiidae	-	-	Sphaerium	0	0	0	0	0	4	1	2	0	4	1	3	1	0	0	0	0	2	0	0
		-	-	Pisidium	10	15	11	6	4	10	18	16	10	16	3	13	17	12	11	9	16	7	3	11
Hydracarina	-	-	-	-	0	2	8	0	10	0	8	0	0	4	0	0	0	0	0	0	0	16	0	0
Copepoda - Calanoida	-	-	-	-	0	1	1	1	1	0	8	0	0	0	1	0	0	8	0	4	4	4	2	8
Ormanada Ovelanaida	Cyclopidae	Cyclopinae	-	Acanthocyclops	2	7	4	1	5	9	0	0	4	0	0	89	32	0	8	16	12	50	4	34
Copepoda - Cyclopoida	Ergasilidae	-	-	Ergasilus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0
Copepoda - Harpacticoida	-	-	-	-	1	44	21	19	52	16	8	11	20	4	4	0	0	0	0	108	48	105	18	48
Ostracoda	-	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0







Table II-4: Raw Benthic Invertebrate Abundance Data (no./sample) Collected Using a Standard Ekman Grab Sampler, Fall 2011 (continued)

						East (Reference) L	ake D5				Lake N11-D	1			L	ake N11-D	2			L	Lake N11-D	3	
Major Taxon	Family	Subfamily	Tribe	Genus/Species	EAST-D5-A	EAST-D5-B			EAST-D5-E	N11-D1-A	N11-D1-B	N11-D1-C	N11-D1-D	N11-D1-E	N11-D2-A	N11-D2-B	N11-D2-C	N11-D2-D	N11-D2-E	N11-D3-A	N11-D3-B	N11-D3-C	N11-D3-D	N11-D3-E
	Bosminidae	-	-	Bosmina	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Chydoridae	-	-	Eurycercus	0	0	0	0	0	7	0	0	1	0	0	3	0	0	0	0	2	12	1	3
Cladocera	Chydoridae	-	-	-	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Oladoccia	Daphnidae	-	-	-	0	0	0	0	0	7	1	2	2	0	0	16	2	3	6	0	7	14	0	2
	Macrothricidae	-	-	-	9	3	5	0	3	0	0	0	0	0	0	16	0	0	0	0	9	23	0	8
	Sididae	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Hydroptilidae	-	-	Agraylea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichoptera	Leptoceridae	-	-	Oecetis	0	0	0	0	0	0	1	0	0	0	0	2	1	0	0	0	0	0	0	0
monoptora	Limnephilidae	-	-	Grensia praeterica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Phryganeidae	-	-	Phryganea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		-	-	(pupa)	0	1	3	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
				(i/d)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
		Tanypodinae	Pentaneurini	Ablabesmyia	0	1	0	0	0	9	3	1	0	1	0	5	18	9	18	5	1	15	0	1
		ranypoundo		Thienemannimyia group	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Procladiini	Procladius	6	1	4	0	2	22	14	4	16	19	6	41	38	33	41	16	32	26	10	39
		Diamesinae	Protanypini	Protanypus	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Prodiamesinae	-	Monodiamesa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			-	(i/d)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0
				Abyskomyia	3	7	3	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				Cricotopus / Orthocladius	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0
		Orthocladiinae		Heterotanytarsus	0	0	0	0	0	4	8	0	0	8	0	16	0	8	0	0	4	0	0	0
		0141100144111140	Orthocladiini	Heterotrissocladius	54	48	63	10	32	9	0	3	0	1	0	0	0	1	9	0	0	4	0	9
				Parakiefferiella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				Psectrocladius	3	2	1	0	1	0	8	3	11	4	1	35	10	9	20	81	21	7	25	119
				Zalutschia	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				(i/d)	0	0	0	0	0	1	2	0	4	1	0	0	0	0	0	0	0	0	0	0
				Chironomus	0	0	0	0	0	0	0	0	0	0	0	0	2	9	0	0	0	0	0	0
	Chironomidae			Cladopelma	0	0	0	0	2	4	17	4	5	2	2	8	0	9	8	14	15	5	3	8
Diptera				Cryptochironomus	0	1	0	0	1	0	6	0	6	6	0	9	2	2	1	0	4	4	1	4
F				Dicrotendipes	0	0	0	0	0	0	0	4	1	0	0	0	0	0	1	0	0	1	0	0
			Chironomin	Microtendipes	2	1	1	1	1	7	5	5	7	19	1	34	3	8	8	3	14	20	2	11
				Pagastiella	0	0	0	1	0	5	0	0	0	1	0	0	0	0	9	4	4	15	1	17
				Parachironomus	0	0	0	0	0	0	0	0	0	0	0	8	0	8	1	0	0	3	0	0
				Polypedilum	0	0	0	0	0	0	16	1	8	2	3	8	2	15	3	2	4	1	5	5
		Chironominae		Sergenta	5	2	4	0	1	0	0	0	0	0	0	0	0	0	0	1	6	0	0	8
				Stictochironomus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Pseudochironomini	Pseudochironomus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
				(i/d)	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	8
				Cladotanytarsus	0	1	0	1	0	0	11	2	11	12	3	16	22	10	13	0	1	0	2	18
				Corynocera	6	22	21	3	15	214	395	139	310	241	13	283	491	228	272	35	68	57	23	69
			Tanytarsini	Micropsectra	41	57	37	9	32	9	8	0	0	5	0	0	16	0	1	0	0	4	0	8
				Micropsectra / Tanytarsus		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	8
				Paratanytarsus	0	8	4	3	6	5	1	0	1	0	0	0	0	0	0	1	0	0	0	1
				Stempellinella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		On make in a second		Tanytarsus	1	1	2	3	0	10	8	0	1	5	0	32	32	16	48	0	8	8	2	16
	Ceratopogonidae	Ceratopogoninae	-	Bezzia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Francisis	Dasyheleinae		Dasyhelea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Torrostrial	Empididae	-	-	Chelifera / Metachela	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Terrestrial	-	-	-	-	0	0	0	0	0	0 475	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total				<u> </u>	182	292	269	99	240	475	914	343	668	568	64	1,152	1,193	958	1,121	488	473	538	197	942





Table II-4: Raw Benthic Invertebrate Abundance Data (no./sample) Collected Using a Standard Ekman Grab Sampler, Fall 2011 (continued)

							Lake N11-D	4				Lake N11-D	5				Lake M1					Lake M2		
Major Taxon	Family	Subfamily	Tribe	Genus/Species	N11-D4-A	N11-D4-B	N11-D4-C	N11-D4-D	N11-D4-E	N11-D5-A	N11-D5-B	N11-D5-C	N11-D5-D	N11-D5-E	M1-A	M1-B	M1-C	M1-D	M1-E	M2-A	M2-B	M2-C	M2-D	M2-E
Microturbellaria	Typhloplanidae	-	-	Mesostoma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nematoda	-	-	-	-	0	6	1	3	0	105	514	25	58	65	8	44	12	34	16	6	54	10	101	88
	Enchytraeidae	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oligachasta	Lumbriculidae	-	-	-	0	0	0	2	0	2	0	2	1	0	5	8	5	2	3	1	0	1	2	1
Oligochaeta	Naididae	Naidinae	-	-	0	0	0	1	0	18	24	0	16	15	16	59	31	8	0	0	0	0	8	0
	Naididae	Tubificinae	-	-	0	0	0	1	0	0	1	0	2	1	0	19	9	0	16	0	0	0	5	0
Gastropoda	Valvatidae	-	-	Valvata sincera	0	1	0	0	1	9	8	1	3	1	14	28	13	21	16	0	1	2	2	1
		-	-	(i/d)	0	1	0	5	0	16	47	5	14	5	21	29	11	10	13	6	10	1	16	18
Bivalvia	Pisidiidae	-	-	Sphaerium	0	0	0	0	0	2	1	2	0	0	0	1	1	4	0	0	0	0	0	0
		-	-	Pisidium	3	4	0	5	3	23	18	4	14	9	15	7	1	2	3	9	7	1	19	12
Hydracarina	-	-	-	-	0	0	0	0	0	12	27	0	2	0	0	18	8	24	8	4	12	0	18	3
Copepoda - Calanoida	-	-	-	-	0	0	0	0	0	16	8	0	0	0	0	0	0	0	0	0	0	0	0	0
Cananada Cyalanaida	Cyclopidae	Cyclopinae	-	Acanthocyclops	0	1	0	0	0	28	34	0	0	0	0	16	4	0	8	2	1	0	20	41
Copepoda - Cyclopoida	Ergasilidae	-	-	Ergasilus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Copepoda - Harpacticoida	a -	-	-	-	0	2	0	0	0	12	48	0	0	20	24	44	20	81	80	17	16	10	72	0
Ostracoda	-	-	-	-	0	0	0	0	0	0	0	0	0	0	8	1	0	8	0	1	0	0	0	1
	Bosminidae	-	-	Bosmina	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	4
	Chydoridae	-	-	Eurycercus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Cladacara	Chydoridae	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0
Cladocera	Daphnidae	-	-	-	0	0	0	0	0	2	0	0	2	4	0	0	0	0	0	0	0	0	0	0
	Macrothricidae	-	-	-	0	0	0	0	0	0	0	0	0	0	8	6	0	0	0	0	2	0	5	19
	Sididae	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
	Hydroptilidae	-	-	Agraylea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichoptera	Leptoceridae	-	-	Oecetis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Піспорієта	Limnephilidae	-	-	Grensia praeterica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Phryganeidae	-	-	Phryganea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
		-	-	(pupa)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				(i/d)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Tanypodinae	Pentaneurini	Ablabesmyia	0	0	0	0	0	5	8	0	2	0	17	16	5	21	1	1	4	0	9	3
		Tarrypourrae		Thienemannimyia group	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
			Procladiini	Procladius	0	3	1	1	3	39	50	10	27	19	26	13	1	9	11	13	21	1	31	39
		Diamesinae	Protanypini	Protanypus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Prodiamesinae	-	Monodiamesa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diptera	Chironomidae		-	(i/d)	0	0	0	0	0	0	8	0	0	0	0	4	4	0	0	0	0	0	8	4
				Abyskomyia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				Cricotopus / Orthocladius	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0
		Orthoolodiinaa		Heterotanytarsus	0	1	0	0	0	1	24	8	0	12	0	0	0	1	0	0	0	0	4	0
		Orthocladiinae	Orthocladiini	Heterotrissocladius	0	0	0	0	0	0	10	0	0	1	0	0	0	0	0	0	2	0	0	0
				Parakiefferiella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				Psectrocladius	0	1	0	0	0	28	27	1	17	1	59	60	4	59	16	0	24	0	45	46
				Zalutschia	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	0	0	0







Table II-4: Raw Benthic Invertebrate Abundance Data (no./sample) Collected Using a Standard Ekman Grab Sampler, Fall 2011 (continued)

Maior Torrer	Familia	Cultanilla	Talle	0/0			Lake N11-D	4			L	Lake N11-D	5				Lake M1				L	ake M2		
Major Taxon	Family	Subfamily	Tribe	Genus/Species	N11-D4-A	N11-D4-B	N11-D4-C	N11-D4-D	N11-D4-E	N11-D5-A	N11-D5-B	N11-D5-C	N11-D5-D	N11-D5-E	M1-A	M1-B	M1-C	M1-D	M1-E	M2-A	M2-B	M2-C	M2-D	M2-E
				(i/d)	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0
				Chironomus	0	0	0	0	1	4	5	0	2	1	1	26	16	2	0	0	0	0	0	0
				Cladopelma	0	0	0	0	0	4	12	0	8	1	3	6	2	19	0	1	8	0	8	3
				Cryptochironomus	1	1	1	1	0	2	6	1	1	1	0	2	0	0	0	0	3	1	4	3
				Dicrotendipes	0	0	0	0	0	5	0	0	0	0	3	1	2	2	0	0	3	1	1	3
			Chironomini	Microtendipes	1	0	0	0	0	9	13	0	3	0	0	4	0	0	8	21	86	8	137	150
				Pagastiella	1	2	0	2	0	7	9	0	13	8	42	28	33	16	0	6	25	1	35	4
				Parachironomus	0	0	0	0	0	2	0	0	1	1	0	0	0	1	0	0	0	0	0	0
				Polypedilum	0	2	0	0	0	52	90	8	31	22	11	24	10	16	0	14	6	2	22	17
				Sergenta	0	0	0	1	0	2	0	1	0	1	1	0	0	1	0	0	0	0	0	3
	Chironomidae (con't)	Chironominae		Stictochironomus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D: (W)			Pseudochironomini	Pseudochironomus	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Diptera (con't)				(i/d)	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	6	0	0	4
				Cladotanytarsus	0	0	0	0	0	19	89	0	26	8	1	0	0	1	0	2	11	0	13	7
				Corynocera	3	11	0	14	1	1,097	1,385	250	1,199	230	0	0	0	0	0	3	13	0	15	25
				Micropsectra	0	0	0	2	0	13	64	0	16	4	0	0	0	0	0	0	0	0	0	0
			Tanytarsini	Micropsectra / Tanytarsus	0	0	0	0	0	0	8	0	16	4	0	0	0	0	0	0	0	0	0	0
				Paratanytarsus	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
				Stempellinella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				Tanytarsus	0	0	0	0	0	9	10	0	0	0	50	73	21	32	0	1	3	0	45	59
	Ceratopogonidae	Ceratopogoninae	-	Bezzia	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	1
	Ceratopogonidae	Dasyheleinae		Dasyhelea	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
	Empididae	-	-	Chelifera / Metachela	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
Terrestrial	-	-	-	-	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Total					9	36	3	38	9	1,545	2,551	318	1,477	443	334	540	221	383	199	109	321	39	655	567

Major Toyon	Family	Subfamily	Tribe	Genus/Species	Lake N11-D4					Lake N11-D5					Lake M1					Lake M2				
Major Taxon					N11-D4-A	N11-D4-B	N11-D4-C	N11-D4-D	N11-D4-E	N11-D5-A	N11-D5-B	N11-D5-C	N11-D5-D	N11-D5-E	M1-A	M1-B	M1-C	M1-D	M1-E	M2-A	M2-B	M2-C	M2-D	M2-E
Microturbellaria	Typhloplanidae	-	-	Mesostoma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nematoda	-	-	-	-	0	6	1	3	0	105	514	25	58	65	8	44	12	34	16	6	54	10	101	88
	Enchytraeidae	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oli control de	Lumbriculidae	-	-	-	0	0	0	2	0	2	0	2	1	0	5	8	5	2	3	1	0	1	2	1
Oligochaeta	Naididae	Naidinae	-	-	0	0	0	1	0	18	24	0	16	15	16	59	31	8	0	0	0	0	8	0
	Naididae	Tubificinae	-	-	0	0	0	1	0	0	1	0	2	1	0	19	9	0	16	0	0	0	5	0
Gastropoda	Valvatidae	-	-	Valvata sincera	0	1	0	0	1	9	8	1	3	1	14	28	13	21	16	0	1	2	2	1
		-	-	(i/d)	0	1	0	5	0	16	47	5	14	5	21	29	11	10	13	6	10	1	16	18
Bivalvia	Pisidiidae	-	-	Sphaerium	0	0	0	0	0	2	1	2	0	0	0	1	1	4	0	0	0	0	0	0
		-	-	Pisidium	3	4	0	5	3	23	18	4	14	9	15	7	1	2	3	9	7	1	19	12
Hydracarina	-	-	-	-	0	0	0	0	0	12	27	0	2	0	0	18	8	24	8	4	12	0	18	3
Copepoda - Calanoida	-	-	-	-	0	0	0	0	0	16	8	0	0	0	0	0	0	0	0	0	0	0	0	0
	Cyclopidae	Cyclopinae	-	Acanthocyclops	0	1	0	0	0	28	34	0	0	0	0	16	4	0	8	2	1	0	20	41
Copepoda - Cyclopoida	Ergasilidae	-	-	Ergasilus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Copepoda - Harpacticoida	-	-	-	-	0	2	0	0	0	12	48	0	0	20	24	44	20	81	80	17	16	10	72	0
Ostracoda	-	-	-	-	0	0	0	0	0	0	0	0	0	0	8	1	0	8	0	1	0	0	0	1





Table II-4: Raw Benthic Invertebrate Abundance Data (no./sample) Collected Using a Standard Ekman Grab Sampler, Fall 2011 (continued)

Major Taxon	Family	Subfamily	Tribe	Genus/Species			Lake N11-D					_ake N11-D					Lake M1			Lake M2				
wajor raxon	ramny	Subtaining	Tribe	Genus/Species	N11-D4-A	N11-D4-B	N11-D4-C	N11-D4-D	N11-D4-E	N11-D5-A	N11-D5-B	N11-D5-C	N11-D5-D	N11-D5-E	M1-A	M1-B	M1-C	M1-D	M1-E	M2-A	M2-B	M2-C	M2-D	M2-E
	Bosminidae	-	-	Bosmina	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	4
Cladocera	Chydoridae	-	-	Eurycercus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
	Chydoridae	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0
Diadocera	Daphnidae	-	-	-	0	0	0	0	0	2	0	0	2	4	0	0	0	0	0	0	0	0	0	0
	Macrothricidae	-	-	-	0	0	0	0	0	0	0	0	0	0	8	6	0	0	0	0	2	0	5	19
	Sididae	-	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
	Hydroptilidae	-	-	Agraylea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Frichantoro	Leptoceridae	-	-	Oecetis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trichoptera	Limnephilidae	-	-	Grensia praeterica	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Phryganeidae	-	-	Phryganea	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
		-	-	(pupa)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				(i/d)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		T	Pentaneurini	Ablabesmyia	0	0	0	0	0	5	8	0	2	0	17	16	5	21	1	1	4	0	9	3
		Tanypodinae		Thienemannimyia group	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
			Procladiini	Procladius	0	3	1	1	3	39	50	10	27	19	26	13	1	9	11	13	21	1	31	39
		Diamesinae	Protanypini	Protanypus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Prodiamesinae	-	Monodiamesa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			-	(i/d)	0	0	0	0	0	0	8	0	0	0	0	4	4	0	0	0	0	0	8	4
			Orthocladiini	Abyskomyia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Orthocladiinae		Cricotopus / Orthocladius	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0
				Heterotanytarsus	0	1	0	0	0	1	24	8	0	12	0	0	0	1	0	0	0	0	4	0
				Heterotrissocladius	0	0	0	0	0	0	10	0	0	1	0	0	0	0	0	0	2	0	0	0
				Parakiefferiella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				Psectrocladius	0	1	0	0	0	28	27	1	17	1	59	60	4	59	16	0	24	0	45	46
				Zalutschia	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	0	0	0
				(i/d)	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0
				Chironomus	0	0	0	0	1	4	5	0	2	1	1	26	16	2	0	0	0	0	0	0
	Chironomidae			Cladopelma	0	0	0	0	0	4	12	0	8	1	3	6	2	19	0	1	8	0	8	3
D				Cryptochironomus	1	1	1	1	0	2	6	1	1	1	0	2	0	0	0	0	3	1	4	3
Diptera				Dicrotendipes	0	0	0	0	0	5	0	0	0	0	3	1	2	2	0	0	3	1	1	3
			Chironomini	Microtendipes	1	0	0	0	0	9	13	0	3	0	0	4	0	0	8	21	86	8	137	150
				Pagastiella	1	2	0	2	0	7	9	0	13	8	42	28	33	16	0	6	25	1	35	4
				Parachironomus	0	0	0	0	0	2	0	0	1	1	0	0	0	1	0	0	0	0	0	0
				Polypedilum	0	2	0	0	0	52	90	8	31	22	11	24	10	16	0	14	6	2	22	17
				Sergenta	0	0	0	1	0	2	0	1	0	1	1	0	0	1	0	0	0	0	0	3
		Chironominae		Stictochironomus	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
			Pseudochironomini	Pseudochironomus	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
				(i/d)	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	6	0	0	4
				Cladotanytarsus	0	0	0	0	0	19	89	0	26	8	1	0	0	1	0	2	11	0	13	7
				Corynocera	3	11	0	14	1	1,097	1,385	250	1,199	230	0	0	0	0	0	3	13	0	15	25
			L	Micropsectra	0	0	0	2	0	13	64	0	16	4	0	0	0	0	0	0	0	0	0	0
			Tanytarsini	Micropsectra / Tanytarsus	0	0	0	0	0	0	8	0	16	4	0	0	0	0	0	0	0	0	0	0
				Paratanytarsus	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
				Stempellinella	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
				Tanytarsus	0	0	0	0	0	9	10	0	0	0	50	73	21	32	0	1	3	0	45	59
	_	Ceratopogoninae	-	Bezzia	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	1
	Ceratopogonidae	Dasyheleinae		Dasyhelea	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
	Empididae	-	-	Chelifera / Metachela	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0
Terrestrial	-	-	-	-	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Total	_		-		9	36	3	38	_ ĭ	1,545	2,551	318	1,477	443	334	540	221	383	199	109	321	39	655	567

Notes: (i/d) = immature or damaged specimens not identified below the taxonomic level indicated; - not identified to this taxonomic level.

Samples were collected using a standard Ekman grab with a bottom sampling area of 0.0232 m².

Samples were sieved through a screen with a 250 μm mesh opening size.





Table II-5: Sorting Efficiency for Benthic Invertebrate Samples for Lakes in the Gahcho Kue Project Area, Fall 2011

Site	Total Organisms in Initial Sort	Total Organisms in QA/QC Re-Sort	Sorting Efficiency [%]
Ref D1-A	57	0	100
Ref D3-C	69	0	100
Ref D5-E	240	4	98
N11-D3-B	473	10	98
N11-D4-D	38	0	100
M1-C	221	5	98
М3-В	226	7	97

Notes: % sorting efficiency = [1-(# in QC re-sort / (# sorted originally + # QC resort))]* 100.



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