# JERICHO DIAMOND PROJECT
# AQUATIC STUDIES PROGRAM (1999)

Prepared for


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The following R.L. & L. Environmental Services Ltd. personnel participated in this program:

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# EXECUTIVE SUMMARY

The Jericho Diamond Project was initiated by Tahera Corporation in 1995 based on the discovery of a kimberlite pipe situated 420 km northeast of Yellowknife in the Northwest Territories (Nunavut Territory as of April 1, 1999). In anticipation of possible development of this deposit, Tahera has completed several years of baseline environmental inventories in the area. R.L. & L. Environmental Services Ltd. was contracted to complete the aquatic biota component of these baseline inventories.

The 1999 aquatic studies program had four major objectives. The first was to undertake synoptic surveys to characterize waterbodies not previously sampled. The second was to complete detailed surveys of waterbodies that may be removed from production by the proposed development. The third objective was to initiate an environmental effects monitoring program to collect predevelopment baseline data. The fourth and final objective of the 1999 program was to collect data to assist in the development of compensation strategies for potential residual effects caused by the project. This document is a comprehensive data report that summarizes the information collected in 1999 for Objectives 1 and 2.

<u>Synoptic Surveys</u>

Synoptic surveys were completed on five lakes (Carat Lake, Lakes C1, C2, C3, and D10) and five streams (Streams C1, C2, C2A, C3, and C19) in the Jericho Study Area.

Carat Lake is the largest waterbody (271 ha) in the Jericho Study Area. It consists of three basins and exhibits an irregular shoreline. There is one major inlet tributary that enters Carat Lake at its extreme western end (from Lake C3) and one outlet stream (to Jericho Lake) at its northeast end. There are several small ephemeral tributaries, including Stream C1, which enter Carat Lake at the southeast corner. Carat Lake is deep; the mean depth of this waterbody is 10.1 m and the maximum recorded depth is 32 m.

Lake C3 (103 ha), which was the second largest waterbody surveyed, has a central basin associated with an elongated bay that extends to the west. This waterbody receives major inputs from streams that enter at its southern and the northwestern corners. Several intermittent streams flow into Lake C3, including Stream C3, which drains Lake D10. A preliminary bathymetric survey indicated that the main basin consists of two smaller sub-basins; the southern area exhibits a maximum depth of 14 m, while the northern area is 15 m deep.

Lakes C2 (1 ha) and C1 (3.5 ha) are small waterbodies situated in the headwater area of Stream C1 immediately west of the Jericho Diamond Project. There are no well-defined inlet or outlet streams to either lake, however, the outlet to Lake C1 appears to be the primary water source for Stream C1. Bathymetric assessments indicate that each lake

consists of a single basin; Lake C2 is very shallow (maximum depth of 2 m), while Lake C1 is much deeper (maximum depth of 12 m). Given these characteristics, it is likely that Lake C2 freezes to the bottom during winter.

Lake D10 is located to the south of Carat Lake and to the east of Lake C3. This waterbody has no defined inlet stream, but drains to the west, via Stream C3. This small waterbody (9 ha) is elongated along an east-west axis and has three basins. Because Lake D10 is relatively shallow (maximum depth of 8.0 m and mean depth of 1.9 m), only a small percentage of the lake is not subjected to freezing.

During early summer (19 to 27 July), temperature profiles of Lakes C2, C3 and D10 indicated uniform mixing (i.e., isothermal conditions). However, Lake C1 likely stratifies during the open water period.

All surveyed streams were small and it is suspected that they freeze to the bottom during winter. The average channel width was <1.7 m, the average maximum depth was <0.29 m, and water flows were 0.007 $m^3$/s or less at all sampled sites. Barriers to fish passage were present in all systems. Stream C1 contains the most distinct barrier; a 5.3 m high rock wall located 815 m upstream from Carat Lake. A variety of channel types were documented including single and multiple braids, as well as dispersed flow (i.e., lack of well-defined stream banks). Substrates consist primarily of two types: very fine and coarse materials (i.e., silt/sands and cobble/boulders).

Stream water temperatures closely tracked air temperatures. Continuous monitoring in Stream C1 indicated that water temperatures warmed rapidly in spring and by late June reached a maximum of 12.3˚C. Water temperatures then fluctuated between 5 and 10°C during the rest of the open-water period.

In general, concentrations of water quality constituents were low in sampled lakes and streams. This was true for turbidity(≤1.10 NTU), total alkalinity (≤13 mg/L), and total dissolved solids (≤20 mg/L). Stream and lake pH values were between 6.5 and 7.5. Total phosphorus concentrations ranged from 0.002 to 0.007 mg/L and showed no spatial pattern. The TKN concentrations in lakes tended to have slightly higher values (range of 0.17 to 0.48 mg/L) compared to streams (range of <0.05 to 0.29 mg/L). Nitrite/nitrate-N concentrations were generally low at most sites; they ranged from <0.006 to 0.072 mg/L. The only exception occurred at Stream C1, where nitrite/nitrate-N concentrations were 1.200 and 0.350 mg/L. Total carbon concentrations ranged from 4.0 to 8.7 mg/L.

Components of the nonvertebrate community that were sampled during the synoptic survey included periphyton, phytoplankton, zooplankton, and benthic macroinvertebrates. The periphyton and phytoplankton assemblages in surveyed waterbodies were simple and indicative of oligotrophic systems. Periphyton chlorophyll *a* concentrations were ≤5.5 μg/$cm^2$ at all sites and AFDM values, although more variable, were also low (≤63.9 mg/$cm^2$). Similarly, phytoplankton chlorophyll *a*, biovolume, and density values were all low.

Zooplankton exhibited some variation between lakes in terms of community biomass and density, but values were low. In general, cladocera (water fleas) was the dominant taxonomic group in terms of biomass. Within this group, *Holopedium gibberum* was the most important species. Rotifers, particularly *Conochilus unicornis*, *Kellicottia longispina*, and *Keratella cochlearis*, were the most abundant zooplankton species. Due to their small size, rotifers did not contribute a large amount to zooplankton biomass.

Benthic macroinvertebrate groups encountered in surveyed lakes included copepods, chironomids, hydracarinas, nematodes, oligochaetes, ostracods, pelecypods, and turbellarians. This taxonomic composition was indicative of a homogenous substrate dominated by fine sediments in lake environments. Both the profundal and littoral benthic macroinvertebrate communities were dominated by a few taxa; copepods and chironomids were numerically abundant. In general, densities and numbers of taxonomic groups were greater in the littoral zones than in the profundal zones.

Most sampled lakes in the Jericho Study Area supported populations of lake trout, round whitefish, and Arctic char. Lake trout was the predominant species with Arctic char and round whitefish being less numerous. Notable exceptions were Lake C2, which contained no fish, and Lake D10 which supported only one fish species: slimy sculpin. Lake C1 also supported a simple fish community consisting of lake trout and slimy sculpin. Several fish species were encountered in sampled streams (Arctic char, lake trout, slimy sculpin, and burbot), but fish numbers were very low.

The biological characteristics of fish populations in the study area indicated that they were slow growing, late maturing, and dominated by older age-classes. Lake trout, Arctic char, and round whitefish tended to exhibit bimodal length-frequency distributions. Their feeding habits were related to species-specific feeding habits and the most abundant food item available. Zooplankton was the dominant food group identified in fish stomachs, although trichopterans and fish were also consumed. Although round whitefish consumed a variety of food items, zooplankton was also the dominant food group. Other food items consumed by this species included oligochaetes, trichopterans, gastropods, and pelecypods.

Limited recapture data for tagged fish made it difficult to assess movement patterns of fish. However, characteristics of the watercourses connecting the major waterbodies in the study area suggested that large numbers of fish do not undertake extensive movements within the drainage.

Lake trout and Arctic char in prespawning and spawning condition were recorded in both Carat Lake and Lake C3 during fall. Because few of these fish were spawning females, it is difficult confirm whether sampled sites were in fact used as spawning areas.

The amount and quality of fish habitat available to fish differed between inventoried waterbodies. The shoreline areas of lakes were dominated by low slope areas and by cobble-boulder substrates, which are characteristics that provide an abundance of potential spawning areas for lake trout, Arctic char, and round whitefish. The same shoreline characteristics that provided an abundance of spawning habitat also contained rearing habitat for fish. But, there was a paucity of aquatic macrophytes, a feature that enhances the quality of rearing habitat along shoreline areas.

Surveyed streams provided limited habitat for fish populations originating from study area lakes. The primary reasons were their small size, ephemeral water flow, and poorly defined channels.

Detailed Surveys

The detailed surveys completed in the Jericho Study Area were designed to collect scientifically defensible data from waterbodies that may be removed from production by the proposed development. The specific tasks to be completed for each waterbody included estimates of fish density, quantification of fish habitat, and assessment of the trophic status.

Fish catch rates in most waterbodies targeted for detailed assessment were too low to warrant an estimate of fish density. These included Lakes C1, C2 and D10 and Streams C3 and C19. Stream C1 did support a sufficient number of fish to allow an estimate of fish abundance.

Inventories conducted in 1995, 1996, spring 1998, and 1999 all documented the occurrence of fish in Stream C1. Species recorded included Arctic char, Arctic grayling, burbot, lake trout, round whitefish, and slimy sculpin. Young-of-the-year and smaller juvenile fish consistently dominated the fish community in Stream C1; no adults were ever recorded. Although a large portion of Stream C1 was inventoried each year, fish were recorded only in the lowermost 100 m section of the stream.

A density estimate was generated for fish residing in the lowermost section of Stream C1. Densities ranged from 5 ± 2 fish/100 m for burbot to 54 fish/100 m for slimy sculpin. Arctic char was the dominant char species (30 ± 4 fish/100 m), followed by a lower number of lake trout (15 ± 12 fish/100 m). These data suggest that several fish species use Stream C1 during the open water period. The numbers of fish recorded varied between years, but the estimates of abundance generated in 1999 suggested that densities could exceed 15 fish/100 m.

Several waterbodies targeted for detailed habitat assessments had limited or no value as fish habitat (Lakes C2 and D10, and Streams C3 and C19). The remaining waterbodies (Lake C1 and Stream C1) contained habitat that was sufficient to support fish. Due to the small size of Lake C1 and its simple physical characteristics detailed habitat surveys were not undertaken in this waterbody.

Stream C1 is a complex system that has been modified by exploration activity in the Jericho Diamond Project Area. It contains 10 reaches, which exhibit variable physical characteristics. High gradient reaches contained narrow channels and flowing water; the low gradient reaches exhibited dispersed areas of ponded water with trace flows. Reach 9 is a barrier to fish passage; it consists of a 5.3 m rock wall. Substrate types in most reaches were dominated by cobble and boulder substrates, with gravel substrates being widely distributed but much less abundant. High gradient reaches were dominated by RIFFLE and/or RUN type habitats, while low gradient reaches were primarily FLAT and DISPERSED type habitats. Although there was a larger area of potential fish habitat upstream of the impoundment, the downstream sections had a higher habitat complexity.

Oligotrophic waterbodies are characterized by low nutrient levels, which hampers primary production. These characteristics in turn, limit the productive potential of fish communities that reside in these waterbodies. The trophic status of selected waterbodies was characterized by examining nutrient levels, biomass indices of primary producers (chlorophyll *a*), and an assessment of the potential for fish production.

Nutrient concentrations were very low in all surveyed waterbodies and these values were consistent with results of previous work in the Jericho Study Area. Variation in chlorophyll *a* concentrations and the absence of a clear temporal pattern, made it difficult to identify a single value as being representative of peak production for either phytoplankton or periphyton. However, the data did indicate that primary productivity was very low. Chlorophyll *a* concentrations documented during this study were at the lower spectrum of primary production in freshwater systems.

The potential fish production was found to be severely limited in the waterbodies examined. Fish yield ranged from 0.24 kg/ha in Lake C2 to 0.86 kg/ha in Lake C1. Due to the extreme environmental conditions experienced by fish residing in these lakes (i.e., colder water temperature regimes and short open water periods), the potential yield in these waterbodies is likely much lower. Based on this information, one can conclude that the surveyed waterbodies exhibit a very low trophic status and can be considered oligotrophic.

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# 1.0 INTRODUCTION

## 1.1 BACKGROUND

The Jericho Diamond Project was initiated by Tahera Corporation (formerly Lytton Minerals Ltd.) in 1995 based on the discovery of a kimberlite pipe adjacent to the southern shore of an unnamed lake (locally known as Carat Lake).

In anticipation of the possible development of this deposit, Tahera Corporation completed baseline inventory programs in 1995 and 1996. This involved collection of data on meteorological conditions, water quality, hydrology, wildlife, and aquatic biota. R.L. & L. Environmental Services Ltd. was contracted to complete the aquatic biota component of the baseline inventory programs, which focused on the aquatic community within the Carat Lake drainage in the immediate vicinity of the deposit. The information from the aquatic inventories were presented in two reports entitled "Jericho Diamond Project Aquatic Studies, 1995 and 1996" (RL&L 1995, 1997).

As part of the ongoing baseline inventory program for the Jericho Diamond Project, R.L. & L. Environmental Services Ltd. initiated field investigations in spring 1998 to address data gaps associated with existing baseline information. However, after the initial spring inventory, the 1998 program was terminated. In 1999, the aquatic studies program was reinitiated and R.L. & L. Environmental Services Ltd. was contracted to undertake additional field investigations.

## 1.2 STUDY PURPOSE AND OBJECTIVES

The purpose of the aquatic studies program was to collect information in preparation of an environmental impact assessment. There were four major study objectives, each of which had its own specific objectives as follows:

1) Complete synoptic surveys to collect descriptive data from waterbodies not previously sampled:

   - to describe the physical characteristics (morphology and water quality) of waterbodies;
   - to describe the abundance, distribution and biological characteristics of nonvertebrate communities (benthic macroinvertebrates, zooplankton, phytoplankton, and periphyton);
   - to describe the seasonal abundance, distribution, and biological characteristics of fish species in the study area, as well as the habitat used by these fish; and,
   - to assess the importance of waterbodies that may be impacted by development to fish populations residing within, immediately downstream or upstream of the development.

2) Complete detailed surveys to collect scientifically defensible data from waterbodies (lakes and streams) that may be removed from production by the proposed development:

   - to develop density estimates for fish;
   - to quantify the amount of fish habitat; and,
   - to quantify the trophic status of these waterbodies.

3) Initiate an environmental effects monitoring program designed to collect scientifically defensible predevelopment baseline data for selected components of the aquatic biota (and abiota) from waterbodies immediately downstream of potential contaminant sources and from control sites not impacted by development as follows:

   - background levels of sedimentation;
   - species composition, density, and productivity of periphyton;
   - species composition and density of benthic macroinvertebrates; and,
   - background concentrations of metals in tissues of fish.

4) Collect scientifically defensible data that can be used as a basis for compensation as follows:

   - physical characteristics of high quality fish habitat to be used as a template for habitat enhancement; and,
   - nutrient status of selected waterbodies to ascertain the potential for nutrient enrichment.

This document is a comprehensive data report that summarizes the baseline information collected in 1999 (Objectives 1 and 2) with selected comparisons to previous work (e.g., 1998 investigations). Information pertaining to the monitoring and compensation programs (Objectives 3 and 4) will be submitted as a separate addendum to this report.

## 1.3 STUDY AREA

The study area is located approximately 420 km northeast of Yellowknife in the general vicinity of Echo Bay Mines Ltd. Lupin production facility. The Jericho study site is situated 50 km north of Lupin (66° 00' N, 111° 29' ) (Figure 1.1).

The study area (referred to as Jericho Study Area) encompasses lakes and streams in the immediate vicinity of the Jericho Diamond Project Site (Figure 1.2 and Table 1.1). Waterbodies selected for investigation in 1999 and the study tasks in each waterbody, were based on three criteria:

- the potential for adverse effects from the development;
- the relative importance of the waterbody to the aquatic biological system, and:
- work not previously undertaken on a particular waterbody.

Table 1.1 Waterbodies investigated and tasks completed during the aquatic studies program in the Jericho Study Area, 1999.

| Category | Task | Waterbody[a] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Carat Lake | Lake C1 | Lake C2 | Lake C3 | Lake D10 | Stream C1 | Stream C3 | Stream C19 |
| **Synoptic Survey** | **Lake Characteristics** | | | | | | | | |
| | Morphology | ps[b] | ✓ | ✓ | ✓ | ✓ | | | |
| | Limnology | ps | ✓ | ✓ | ✓ | ✓ | | | |
| | Stream Characteristics | | | | | | | | |
| | Structure and Discharge | | | | | | ✓ | ✓ | ✓ |
| | Temperature | | | | | | ✓ | ✓ | ✓ |
| | Water Quality | ps | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | **Nonvertebrates** | | | | | | | | |
| | Zooplankton | ps | ✓ | ✓ | ps | ✓ | | | |
| | Phytoplankton | ps | ✓ | ✓ | ps | ✓ | | | |
| | Periphyton | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Benthic Macroinvertebrates | ps | ✓ | ✓ | ✓ | ✓ | | | |
| | **Fish** | | | | | | | | |
| | Species Composition and Abundance | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Biological Characteristics/Feeding Habits | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Movements | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Habitat Characteristics | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Detailed Survey** | Fish Abundance | | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| | Fish Habitat Characteristics | | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| | Trophic Status | | | | | | | | |
| | Nutrient Level | | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| | Phytoplankton Standing Crop | | ✓ | ✓ | | ✓ | | | |
| | Periphyton Standing Crop | | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |

[a] Unless otherwise specified, the survey included tributaries associated with the waterbody.
[b] Previously sampled.


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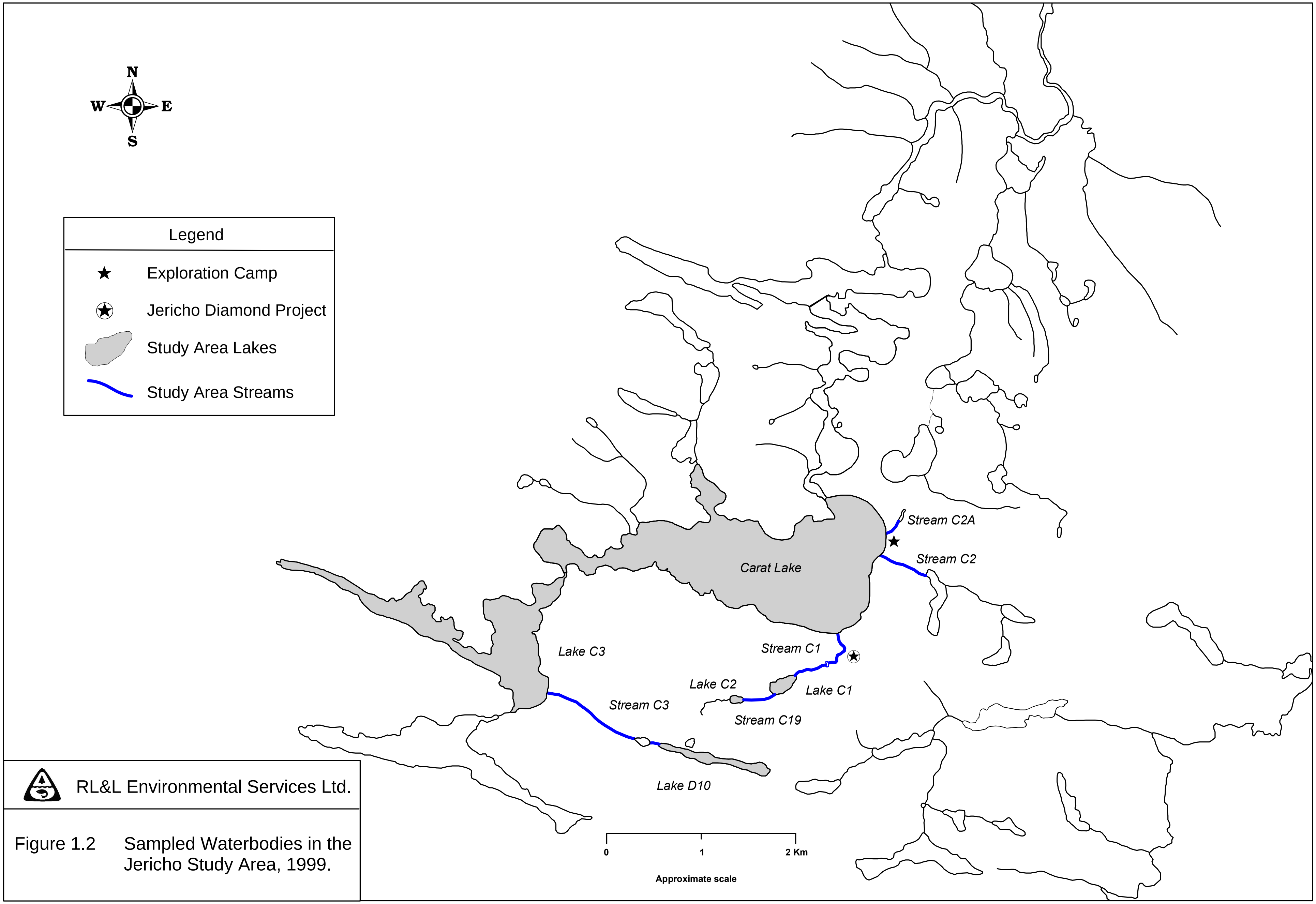
Figure 1.1

Jericho Study Area, 1999.




RL&L Environmental Services Ltd.

Figure 1.2 Sampled Waterbodies in the Jericho Study Area, 1999.

## 1.4 TIMING AND LOGISTICS OF SAMPLING

The 1999 field program was conducted on a seasonal basis (spring, summer, and fall). The spring session, which was conducted between 8 and 15 June, was designed to determine fish use of streams for spawning and rearing, and to establish sampling sites for the summer and fall sessions.

The summer field period commenced on 13 July and was completed on 3 August, and involved several sampling components. Tributary investigations included collection of fish and habitat data from streams and lakes, as well as collection of periphyton and water quality samples from selected locations. Lake work involved collection of limnological data, and samples of phytoplankton, zooplankton, periphyton, and benthic macroinvertebrates. Fish species distribution and abundance were investigated and a tagging program was undertaken in an attempt to assess fish movements between waterbodies and to develop density estimates for selected species in some waterbodies.

The fall session (31 August-7 September) involved documentation of fish distribution and abundance in lakes, as well as identification of potential spawning areas.

Access to the site was by fixed-wing aircraft from Yellowknife. Accommodations were at the Tahera Corporation exploration camp located on the east shore of Carat Lake or at the Lupin Mine owned by Echo Bay Mines Ltd. Transportation of personnel and equipment to sampling sites was provided by helicopter.

# 2.0 METHODOLOGY

## 2.1 FIELD SAMPLING

### 2.1.1 Physical Environment

#### 2.1.1.1 Lake Morphometry

Bathymetric surveys of selected lakes were conducted in summer 1999. The surveys were carried out using a Lowrance (Model X16) echo sounder, which provided a graphic output of depth measurements. The resulting depth database was merged with the digital location data generated from transect locations identified on the digitized maps.

#### 2.1.1.2 Limnology and Water Quality

To document the limnology and general water quality characteristics of waterbodies in the study area, water chemistry, water temperature ($^{o}$C) and dissolved oxygen concentrations (mg/L) were measured at selected locations. At lake sites, a H20 Hydrolab with a Surveyor3 Data Logger was used to record vertical profiles of water temperature, oxygen, pH, conductivity, and turbidity. Oxygen and temperature were also measured in selected waterbodies using an Oxyguard Handy Beta dissolved oxygen-temperature meter. Water transparency was measured to the nearest 0.1 m using a standard Secchi disk (20 cm diameter). Additional parameters measured at the water surface included conductivity (Oakton TDS Testr meter) and pH (Oakton pHTestr 2 meter). Due to cold water temperatures the pH meter malfunctioned, therefore, the pH data collected for that period were discarded.

Water temperature was continuously monitored from one stream (Stream C1) during the open water period (mid-June to mid-September). This provided a database of seasonal changes and daily temperature fluctuations. An Onset Optic StowAway Temp™ thermograph was deployed to electronically record water temperatures at 30 minute intervals.

Water samples were collected during summer at selected waterbodies to document existing water quality characteristics. Stream water samples were collected from approximately 0.1 m below the water surface (surface grab). Lake water samples were collected at established sites using a prewashed 4 L Van Dorn bottle submerged to a depth of 1 m. Polyethylene gloves were worn during water collection to prevent contamination of the samples. Appropriate premeasured preservatives were added to the samples (if needed) and the samples were placed on ice and shipped to Enviro-Test Laboratories in Edmonton for analyses within 48 hrs of collection.

As part of the quality assurance / quality control (QA/QC) program, a water sample was split (i.e., collected from the same site but labelled as different sites) and submitted to the lab as a blind control. In addition, a sample consisting of distilled water was submitted for analyses. These QA/QC procedures were designed to document possible contamination of the samples from the bottles or the laboratory process.

#### 2.1.1.3 Stream Discharge

Stream discharge was measured at selected stream locations to characterize the seasonal variation in the availability and quality of fish habitat. Velocity was recorded with a direct-readout meter (Swoffer Model 2100); readings were taken along a tag line positioned perpendicular to the flow. Water depth and mean column velocities (at 0.6 depth) were measured at vertical stations located along the cross-section, each of which encompassed no more than 10% of the water flow (Buchanan and Somers 1969).

In addition to the measurements of discharge conducted by the study team, continuous monitoring of discharge and water levels at key sites in the Jericho Study Area were carried out by Tahera Corporation, and M. Miles and Associates Ltd.

### 2.1.2 Nonvertebrates

#### 2.1.2.1 Periphyton

The periphyton communities in lakes and streams were sampled during summer to assess the algal community composition, and to measure chlorophyll *a* and ash-free dry mass (AFDM). To ascertain productivity levels of selected waterbodies, additional chlorophyll *a* and ash-free dry mass (AFDM) samples were collected from selected locations (total of three at each site) throughout the open water period.

Each sample consisted of a composite of five scrapings following the methods described in Charlton et al. (1981) and Hickman et al. (1982). Each scraping (4 $cm^2$) was collected from a stone, selected at random, from the lake or stream bottom. Samples used for algal identification and enumeration were placed in individually labelled 20 mL dark containers and preserved with 5% acid-Lugol's solution. Shortly after collection, two drops of 100% formalin were added to each of these samples to prevent growth of bacteria and fungi. Samples destined for chlorophyll *a* analysis were filtered (5 mL) onto Whatman GF/C filter paper, covered with anhydrous $MgCO_3$, and frozen. Samples for AFDM were subsampled in the laboratory, from the acid-Lugol's preserved samples.

#### 2.1.2.2 Phytoplankton

Phytoplankton were collected from lakes once during summer to characterize the community (species composition and chlorophyll *a*). Samples were collected from the euphotic zone, which is equal to the depth of 1% light penetration (approximately two times the Secchi depth). A sample consisted of a composite of five discrete vertical collections within this zone, which were made using a weighted plastic tube. In lakes that were shallower than two times the Secchi depth, phytoplankton hauls encompassed the entire water column to 1 m above the lake bottom (to avoid contamination of the sample with sediment). Samples were placed in labelled 500 mL containers, preserved with 5% acid-Lugol's solution, and stored in the dark. Three drops of 100% formalin were added to each sample to prevent growth of bacteria and fungi during storage. Prior to preservation, samples destined for chlorophyll *a* analysis were filtered (5 mL) onto Whatman GF/C filter paper, covered with anhydrous $MgCO_3$, and frozen. Samples for AFDM were subsampled in the laboratory, from the acid-Lugol's preserved samples. Equipment was thoroughly rinsed before and after sampling at each site to prevent contamination. To ascertain productivity levels of selected lakes, additional chlorophyll *a* samples were collected from selected locations (total of three at each site) throughout the open water period.

#### 2.1.2.3 Zooplankton

To characterize the zooplankton community in study area lakes, zooplankton samples also were collected from lakes once during summer. Each sample consisted of a composite of five vertical hauls, each of which were taken from a depth that was equal to the euphotic zone (approximately two times the Secchi depth). In lakes that were shallower than three times the Secchi depth, zooplankton hauls encompassed the entire water column to 1 m above the lake bottom (to avoid contamination of the sample with sediment). Zooplankton collections were made with a Wisconsin plankton net constructed with Nitex® mesh (net mouth diameter 130 mm; 0.064 x 0.064 mm mesh). To prevent predation by cyclopoid copepods, each sample was immediately preserved in 5% formalin and stored in labelled 500 mL polyethylene bottles. Equipment was thoroughly rinsed before and after sampling at each site to prevent contamination.

#### 2.1.2.4 Benthic Macroinvertebrates

Benthic macroinvertebrates were sampled once from sites located in littoral (< 5.0 m depth) and profundal (> 5.0 m depth) zones of selected lakes during summer. The samples were used to characterize the nonvertebrate community in each of these zones. An Ekman grab sampler (aperture area equal to 0.023 $m^2$) was used to collect a composite of three grabs for each sample. Samples were then sieved through a 0.243 mm mesh net to remove excess sediments, placed in labelled polyethylene sample bags, and preserved in 10% formalin.

### 2.1.3 Fish

Fish sampling focussed on determining species composition, relative abundance, and seasonal use of lakes and streams. In addition, captured fish of selected species not required for other aspects of the program (fish tissues) were tagged using individually numbered Floy anchor tags in an attempt to ascertain movement patterns and to develop density estimates. The type of sampling technique employed was dependent on the habitats sampled and size-classes of fish targeted.

#### 2.1.3.1 Backpack Electrofishing

Shallow-water habitats in streams and lake margins were sampled during spring and summer using a Smith-Root Type XII high output backpack electrofisher. The electrofisher operator waded along the banks and sampled in the vicinity of suspected fish holding areas (undercut banks, boulder cover, etc.). The netter, who was positioned immediately downstream, collected the stunned fish and placed them in a holding bucket. Recorded information at each sampled site included UTM coordinates, date and time of day, water temperature and conductivity, distance sampled (m), sampling effort (s), electrofisher settings, and the number and species of fish captured or observed.

#### 2.1.3.2 Gill Netting

Variable-mesh standard gill net sets were employed to sample deep-water habitats in lakes during the summer and fall field sessions. Each standard gill net set was comprised of 15.2 × 1.8 m panels of 2.5, 3.8, 6.4, 8.9, 11.4, and 14.0 cm mesh sizes (stretched measure). These sets were used to sample a wide range of fish size-classes and to allow comparison of catch rates. Set times were kept short (less than 2 h) to minimize capture mortality; occasionally overnight sets were employed to collect fish for tissue samples (see Section 3.3.1).

During summer, a variety of habitats were sampled. During fall, sampling sites were chosen based on their potential as spawning habitat for lake trout, Arctic char, and round whitefish. Pertinent data recorded at each gill net site included set/pull time, set location/orientation, water depth, and substrate type.

#### 2.1.3.3 Fyke Net

A modified Arctic fyke net was utilized to sample near-shore areas of Carat Lake near the outlet of Stream C1. The fyke net consisted of two trap nets (to determine direction of movements), two 15 m wings, and a 30 m lead to shore. The traps were 3.7 m long and 0.9 m wide, contained two throats (15 × 25 cm each), and were constructed of 1.27 cm dark grey knotless nylon mesh. Wings and lead were constructed of 2.54 cm dark grey knotless nylon and were 1.7 m deep. The fyke net was held in place by metal stakes driven into the lake bottom. The fyke net was checked daily and the following information was recorded: water temperature, set duration, the number and species of fish captured in the eastbound and westbound trap compartments.

#### 2.1.3.4 Minnow Traps

To capture smaller size-classes of fish in habitats not effectively sampled by gillnetting, standard minnow traps (gee type) baited with cat food were used in rocky shoreline areas. Dimensions of standard gee traps were 0.4 m length x 0.2 m diameter with an aperture of 0.02 m. Data recorded at each site included set/pull time, location/orientation, water depth, and substrate type.

#### 2.1.3.5 Density Estimates

An estimate of population size was generated for fish using the lowermost reach of Stream C1. A multi-pass removal-depletion method described by Zippin (1958) was utilized to develop the estimate. Sampling methodology involved placement of block nets (0.5 cm mesh; stretched measure) across the channel at upstream and downstream ends of the site to prevent fish movement into or out of the area. A backpack electrofisher was then used to thoroughly sample the enclosed area. The multi-pass removal-depletion method requires a minimum of three removal runs to generate an accurate density estimate. Each removal run consisted of an upstream pass through the enclosed area. Captured fish were placed in a holding tank located at the downstream end of the enclosed section. All fish were identified, enumerated and measured prior to their release downstream of the lower block net.

#### 2.1.3.6 Biological Characteristics

All captured fish were identified to species. Data recorded for each fish included fork length (to the nearest 1 mm), weight (to the nearest 5 g), sex, and maturity. An appropriate ageing structure was also collected (Mackay et al. 1990) from a representative sample of captured fish. Data were recorded on standardized record sheets to facilitate data analyses in the laboratory.

To determine feeding habits, stomach contents of fish that succumbed during sampling were analysed in the field using the method described by Thompson (1959), which is a modification of the numerical method used by Hynes (1950). Each stomach was examined and evaluated for fullness, and allotted a designated number of fullness points (i.e., 20 points for a full stomach and 0 points for an empty stomach). After points were allocated for the degree of fullness, the stomach was opened and the points allotted to individual food categories based on their volume. To account for the presence of empty stomachs, values of zero were incorporated into the analysis.

### 2.1.4 Fish Habitat

#### 2.1.4.1 Lakes

The shoreline habitat characteristics of major lakes in the study area were described using a standardized habitat classification system developed by R.L. & L. Environmental Services Ltd. (Appendix A1). The classification system categorized shoreline habitat into discrete habitat types based on two variables: slope and substrate type. Lake habitat assessments were accomplished by circumnavigating each lake by boat. In addition to categorizing lake shoreline into habitat types, important features such as high quality rearing and spawning areas were identified based on visual assessments by qualified field personnel.

#### 2.1.4.2 Streams

The physical habitat available to fish in study area streams was examined during spring and summer to ascertain their importance to fish (habitat quality). Surveys were undertaken using a variety of methods. The physical habitat provided by streams was described using a classification system specifically developed for this purpose by R.L. & L. Environmental Services Ltd. (Appendix A2). The classification system categorizes stream habitat into discrete habitat types (e.g., Run, Pool, Riffle). Once the stream was described using this system, several parameters were quantified. Cross-sectional transects within the stream channel were used to measure water depth, water velocity, substrate type, instream cover and stream width. Velocity was measured using a Swoffer Model 2100 digital flow meter and water depths were measured using a calibrated wading rod. Substrate characteristics were recorded according to the modified Wentworth Classification System (Appendix A3).

A detailed habitat survey was conducted on Stream C1 to quantify habitat characteristics, including its longitudinal profile, unique features, physical characteristics, and the area ($m^2$) of habitat types. The stream was surveyed using a Nikon DTM 5 total station in conjunction with a DR2 datalogger (± 30 mm). A survey grid was based on three benchmarks and two control points. One person operated the survey instrument, while a second person traversed the stream with a survey rod and prism. The banks of the channel were surveyed at approximately 2 m intervals, while the channel thalweg was surveyed at 2 to 3 m intervals. Unique features such as stream reaches, the berm, fish barriers etc. were identified.

## 2.2 OFFICE ANALYSES

### 2.2.1 Physical Environment

#### 2.2.1.1 Lake Morphometry

Morphometric characteristics of the study area lakes (surface area, shoreline length, island area, and perimeter) were calculated from digitized maps (generated from 1:50,000 scale N.T.S maps) using the MapInfo™ software package. Lake area calculations were obtained by using the MapInfo™ software package. Shoreline development indices were calculated using the following formula (from Wetzel 1983):

$$\textit{Shoreline Development} = \frac{\text{Shoreline Length}}{2\sqrt{(\text{pi} \cdot \text{Surface Area})}}$$

To generate bathymetric maps, the depth database generated during the field survey was merged with the digital location data generated from transect locations identified on digitized maps. These x, y, z data were then analysed by Vertical Mapper™ software, which generated isobaths at 0.5 m contour intervals. The only exception to this procedure was for Lake D10. Tahera Corporation completed the field survey and provided a digital copy of the data for analyses. The computer-generated isobaths were then visually assessed and corrected in cases where the shallow water contours did not closely agree with the conditions identified in the field. Lake area calculations were obtained by using the MapInfo™ software package. Lake volumes were calculated using the following formula (Wetzel 1983):

$$\textit{Volume} = \frac{h}{3}\left(a_1 + a_2 + \sqrt{a_1 \cdot a_2}\right)$$

where $h$ is the vertical depth of each stratum, $a_1$ is the area of the upper surface, and $a_2$ is the area of the lower surface of the stratum whose volume is to be determined.

### 2.2.1.2 Water Quality

The water chemistry constituents measured in the Jericho Study Area and their detection limits are listed in Table 2.1.

Table 2.1 Water chemistry constituents and their detection limits, Jericho Study Area, 1999.

| Constituent | Unit | Detection Limit | Constituent | Unit | Detection Limit |
|---|---|---|---|---|---|
| Conductivity | µS/cm | 0.2 | Total Dissolved Solids | mg/L | 1 |
| Total Alkalinity | mg/L | 1 | Total Hardness | mg/L | 1 |
| Carbonate ($CO_3$) | mg/L | 1 | Hydroxide | mg/L | 1 |
| Calcium | mg/L | 0.05 | Total Kjeldahl-N | mg/L | 0.05 |
| Bicarbonate | mg/L | 1 | Ammonia-N | mg/L | 0.005 |
| Magnesium | mg/L | 0.01 | Total Phosphorus | mg/L | 0.001 |
| Potassium | mg/L | 0.01 | Dissolved Phosphorus | mg/L | 0.001 |
| Sodium | mg/L | 0.1 | Ortho-Phosphorus | mg/L | 0.001 |
| Chloride | mg/L | 0.05 | Total Carbon | mg/L | 0.5 |
| Sulphate | mg/L | 0.05 | Total Organic Carbon | mg/L | 0.5 |
| Reactive Silica | mg/L | 0.003 | Total Inorganic Carbon | mg/L | 0.5 |
| Turbidity | NTU | 0.1 | Cation/Anion Balance | % | 1 |
| Total Suspended Solids | mg/L | 3 | | | |

### 2.2.1.3 Stream Discharge

Stream discharge ($m^3/s$) was determined using the mid-section method utilized by the United States Geological Survey at gauging stations to calibrate the stage-discharge relationship. This method is described in detail in Buchanan and Somers (1969).

## 2.2.2 Nonvertebrates

### 2.2.2.1 Periphyton

In the laboratory, the periphytic algal samples were processed as outlined in Lund et al. (1958). Samples were first mixed and then subjected to serial dilutions (generally 0 to 1000 fold dilutions depending on algal and organic debris in the original sample). Subsequently, 1 to 10 mL subsamples were dispensed into sedimentation chambers. After a 12 h settling period, the basal area of each chamber was scanned qualitatively with an inverted Lietz™ microscope to identify the best dilution factor for subsequent quantitative analyses and to obtain a comprehensive species list. Once the appropriate dilution factor was established, taxonomic groups within the sample were identified and enumerated.

Taxonomic keys of Smith (1950), Prescott (1970), and Webber (1971) were used for species identification. Counts were made at a magnification of approximately 450× along horizontal transects across the diameter of the chamber; a minimum of 200 algal units were examined. Species that were encountered, but not enumerated during routine transect counts, were recorded as present.

To identify and enumerate diatoms, subsamples were treated with a mixture of concentrated sulphuric acid, potassium dichromate, and hydrogen peroxide followed by repeated washes in distilled water. The cleaned frustules were then dried on cover glasses and mounted in Storax™.

Chlorophyll *a* analysis was conducted on all five replicates using the spectrophotometric-acetone extraction method described by Moss (1967a, 1967b). The AFDM subsamples were removed from the five replicate acid-Lugol's preserved samples and filtered onto pre-washed and pre-weighed Whatman™ GF/C filters. They were subsequently dried (at 105˚C for 24 h) and weighed. The dried samples were then ashed in a muffle furnace (at 550˚C for 1 h) and cooled in a desiccator. The difference between dry mass and ash mass is ash-free dry mass (APHA 1992).

### 2.2.2.2 Phytoplankton

Prior to analyses, the phytoplankton samples were gently inverted, and 10 to 100 mL subsamples were dispensed into sedimentation chambers (Lund et al. 1958). After a 24 h sedimentation period, samples were processed. To obtain a comprehensive species list, the entire basal area of the chamber was scanned qualitatively with an inverted microscope (Wild™ M-40). Taxonomic keys used for identification included Prescott (1970), Taft and Taft (1971), and Webber (1971).

Once a comprehensive species list was established, cell density was assessed. To calculate cell density (cells/mL), individual cells were enumerated within a specified area of the sedimentation chamber. This was accomplished by counting the number of cells along horizontal transects placed across the specified area. To calculate the cell density of each species in the sample, the number of cells within the specified area was extrapolated to the subsample, and then to the entire sample.

Cell biovolume ($\mu m^3/m^3$) was calculated by first measuring the physical dimensions (length, width, and depth) of 10 to 30 cells of each species in the sample. Estimates of cell biovolume were then generated by multiplying the mean dimension of cells of a particular species by the number of cells enumerated for that species. The mean cell biovolume estimate for the subsample was then extrapolated to the entire sample. Species that were encountered during the qualitative assessment, but not enumerated (i.e., very low numbers or located outside the enumeration transects) were recorded as present.

For diatom identification and enumeration, a separate subsample was concentrated, dried onto a coverslip, ashed in a muffle furnace to remove organic matter, and mounted in Storax™.

### 2.2.2.3 Zooplankton

Zooplankton counts were conducted using a dissecting stereo-microscope (Wild™-5); identifications were made using a compound microscope equipped with a phase-contrast condenser (Wild™-20). Taxonomic keys used for crustacean plankton were Brooks, Wilson, and Yeatman (in Edmondson 1959), supplemented by the keys of Brooks (1957), Smirnov (1971), Brandlova et al. (1972), Flössner (1972), and Kiefer (1978). The taxonomic key used for identification of rotifers was the Voigt revision by Koste (1978), supplemented by keys of Ahlstrom (1943) and Ruttner-Kolisko (1974). Chaoboridae were identified using the keys of Cook (1956) and Saether (1970). Specimens were identified to the lowest taxonomic level possible.

Enumeration of zooplankton involved different techniques that were dependent on taxonomic group. Cladocerans and copepods (all stages) were enumerated either from three 15 mL subsamples or from the entire sample using a dissecting microscope at 12× to 50× magnification. For cladocerans and copepods, subsampling was performed (using an automatic pipette) on samples that contained large numbers of specimens. All samples were subsampled (using an automatic pipette) for rotifer enumeration; however, each subsample was allowed to settle for 24 h before processing. An inverted microscope (100× or 200× magnification) was used to enumerate rotifers by counting either six fields (one field = 0.02625 $cm^2$) or the entire counting chamber (4.907 $cm^2$). Subsamples were continually removed from the original sample until approximately 200 mature or identifiable rotifer organisms were processed. Once numbers of organisms within each sample were established, these values were converted to densities per cubic metre. This was accomplished by dividing the number of organisms encountered in a sample by the total volume filtered (i.e., net mouth area × depth of haul × number of hauls).

The biomass of major taxonomic groups within each sample was also determined. To calculate biomass, lengths were measured from the first 30 individuals observed in a sample. Lengths of larger zooplankton were measured directly with a microscope connected to a calibrated Sigma Scan™ digitizing tablet. Smaller zooplankton, such as rotifers, were measured using an eyepiece graticule and corrected for magnification. Using length measurements from individual organisms, weights were calculated from published length-weight regression equations (Table 2.2). For each sample, a mean individual weight was calculated by averaging the estimated weights generated from the length-weight regression equation (it is important to average weights and not lengths; Bird and Prairie 1985). Biomass for each taxonomic group was calculated by multiplying the number enumerated for that sample by the mean individual weight.

Table 2.2 Length-weight regression equations used to calculate zooplankton weights.

| Organism | Equation | Reference |
|---|---|---|
| Copepods (N1-Adult) | $\ln W(\mu g) = 1.9526 + 2.399 \cdot \ln L(mm)$ | Bottrell et al. (1976) |
| *Daphnia* spp. | $\ln W(\mu g) = 1.6 + 2.84 \cdot \ln L(mm)$ | Bottrell et al. (1976) |
| *Bosmina* and *Eubosmina* spp. | $\ln W(\mu g) = 3.0896 + 3.0395 \cdot \ln L(mm)$ | Bottrell et al. (1976) |
| *Chydorus sphaericus* | $\ln W(\mu g) = 4.543 + 3.636 \cdot \ln L(mm)$ | Downing and Rigler (1984) |
| *Holopedium* spp. | $\ln W(\mu g) = 6.4957 + 3.190 \cdot \ln L(mm)$ | Downing and Rigler (1984) |
| Rotifers | $\ln W(\mu g) = -10.3815 + 1.574 \cdot \ln L(\mu m)$ | Stemberger and Gilbert (1987) |

#### 2.2.2.4 Benthic Macroinvertebrates

In the laboratory, samples were first processed to remove all extraneous substrate and organic matter. Individual samples were washed to remove the preservative and repeatedly elutriated to remove excess silt, sand, and gravel (i.e., inorganic materials). This procedure was continued until nonvertebrates were no longer observed in the elutriated water. The sample was then subsampled using the method described in Wrona et al. 1982; only one third of the sample was used to enumerate the macroinvertebrates.

Using a dissecting microscope (6 to 42× magnification), nonvertebrates were then sorted by major taxonomic group and identified to the lowest practical taxonomic level (genus or species where possible). More difficult groups, such as nematodes, were identified to a higher taxonomic level. Keys used for identification included Wiggins (1977), Merritt and Cummins (1984), and Clifford (1991). As part of the quality assurance / quality control (QA/QC) program, discarded sample material (material thrown out after being examined and sorted for macroinvertebrates) was thoroughly checked by an independent individual.

### 2.2.3 Fish

#### 2.2.3.1 Ageing

Fish ageing followed the protocol outlined in Mackay et al. (1990). Otoliths were used to age lake trout, Arctic char, and round whitefish. Otoliths, which had been stored dry in labelled envelopes, were first lightly ground and polished with emery cloth (400 grit) to allow sufficient light transmission. Then a binocular dissecting microscope, equipped with a transmitted light source, was used to obtain an age from each structure. Each structure was aged by two independent readers. When discrepancies in the assigned age occurred, the two readers conferred to arrive at a consensus. A third independent reader conducted a random check of selected structures to ensure quality control.

#### 2.2.3.2 Calculations

Relative abundance of fish was calculated in terms of catch-per-unit-effort (CPUE) based on the number of captured fish per unit of effort that was dependent on the sampling method. For backpack electrofishing, the units of effort included minutes of sampling time. For gill nets, catch rates were assessed by using a net-unit approach (i.e., 100 $m^2$

surface area of net fished for the equivalent of a 12-hour period constitutes one net-unit of effort). Catch-per-unit-effort (CPUE) was expressed as the number of fish (by species) per net-unit.

Length-weight relationships were characterized based on the least squares regression formula using SPSS for Windows (Version 7.0). Condition factors were calculated using Fulton's Condition Factor, K according to Cone (1989) as follows:

$$\textit{Fulton's Condition Factor} = W/L^3 \cdot 10^n$$

where W = weight,
L = fork length, and
n = 4

To facilitate data recording and presentation of the results, all captured fish species were assigned a four-letter code in accordance with Mackay et al. (1990). The common and scientific names of all fish species mentioned in this report, as well as their corresponding coded abbreviations, are presented in Table 2.3.

Table 2.3 Common and scientific names of fish species (and coded abbreviations) recorded in the Jericho Study Area, 1999.

| Common Name | Scientific Name | Code[a] |
|---|---|---|
| Arctic char | *Salvelinus alpinus* (Linnaeus) | ARCH |
| Lake trout | *Salvelinus namaycush* (Walbaum) | LKTR |
| Arctic grayling | *Thymallus arcticus* (Pallas) | ARGR |
| Round whitefish | *Prosopium cylindraceum* (Pallas) | RNWH |
| Burbot | *Lota lota* (Linnaeus) | BURB |
| Slimy sculpin | *Cottus cognatus* Richardson | SLSC |
| Ninespine stickleback | *Pungitius pungitius* (Linnaeus) | NNST |

[a] According to Mackay et al. (1990).

## 2.2.4 Fish Habitat

Data collected during the detailed survey of Stream C1 were downloaded into the software program TraversePC. This program was used to reduce raw data and prepare site plans and profiles. The site plans were then imported into CorelDraw and overlain onto scanned images of airphotos. This detailed map was then used to record stream habitat types in the field, which were then imported into the MapInfo™ software package to calculate the area ($m^2$) of habitat types identified.

# 3.0 SYNOPTIC SURVEYS

The primary waterbodies sampled during the 1999 synoptic survey program included five lakes (Carat Lake, Lakes C1, C2, C3, and D10) and three streams (Streams C1, C3, and C19) (Table 1.1 and Figure 1.2). These waterbodies were chosen based on the potential for adverse effects from the development, their relative importance to the aquatic biological community, and work previously undertaken on the waterbody. In addition to these primary systems, synoptic level fisheries and habitat investigations were carried out on two ephemeral streams draining into Carat Lake (Streams C2 and C2A) (Figure 3.1). This work was completed to provide a more complete assessment of the fish community in the vicinity of the development.

To be consistent with previous studies, site designations and labelling correspond to those established in 1995, 1996, and 1998. Appendix B, Table B1 provides geodetic data for all sampled sites referenced in this report.

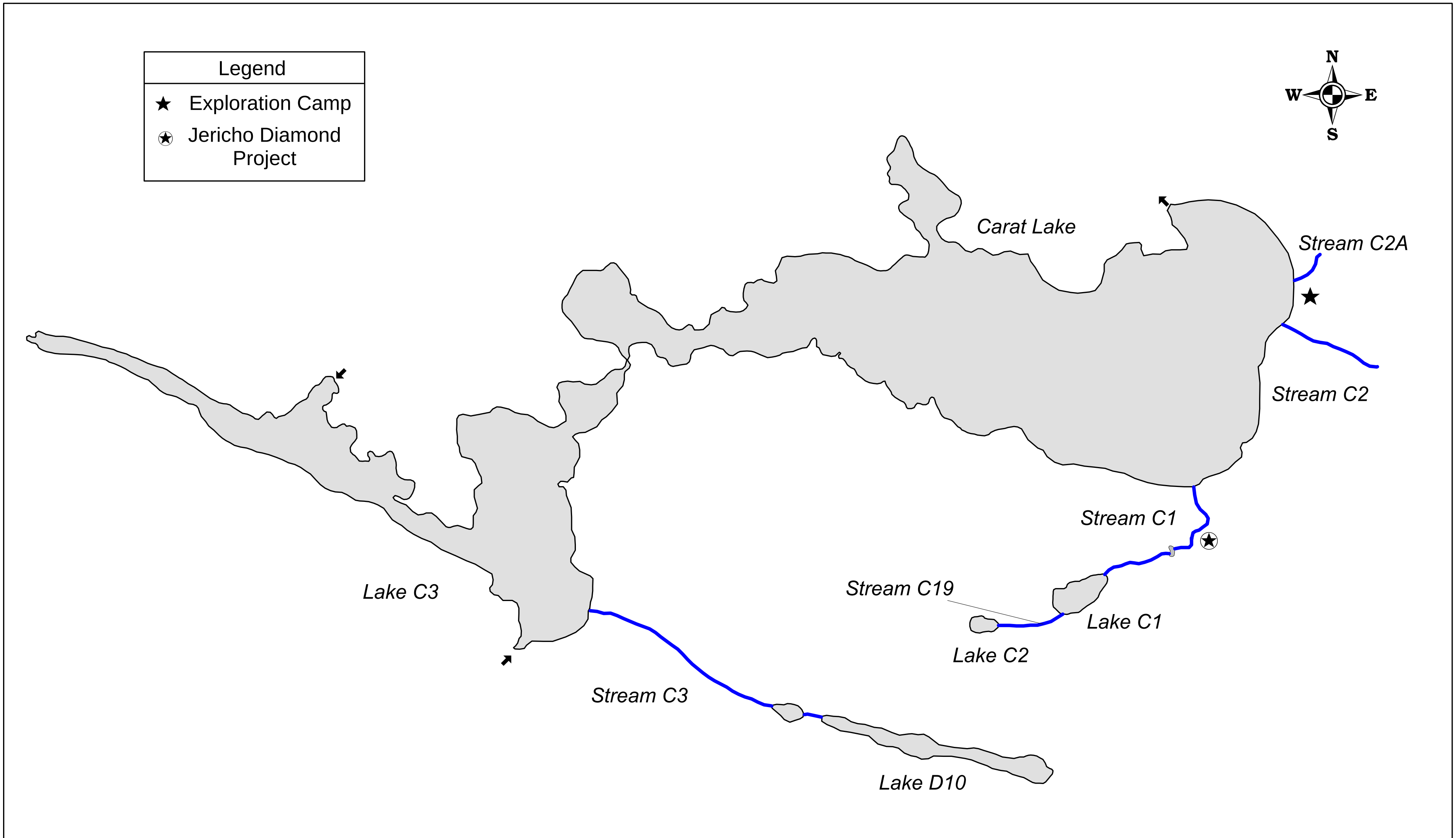
Although this document summarizes data for the 1999 program, pertinent information collected during previous investigations have also been presented. Summary information for waterbodies that are not included in this document can be accessed in the aquatic studies reports from 1995 (RL&L 1995) and 1996 (RL&L 1997).

The results of the 1999 program have been presented in the following sections based on the component investigated. All raw data used to generate these summaries are presented in appendices and have been referenced when appropriate.

## 3.1 PHYSICAL CHARACTERISTICS

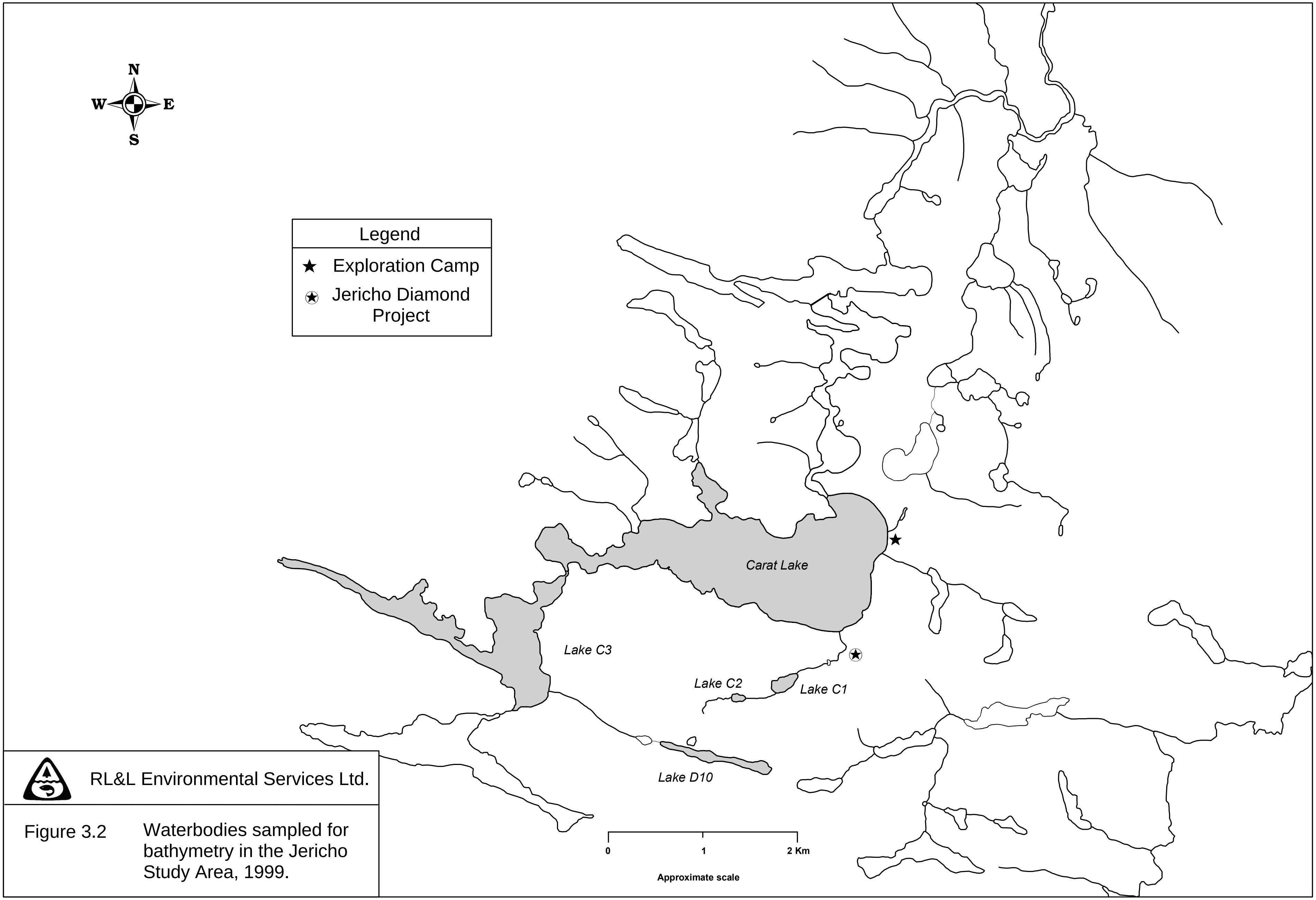
### 3.1.1 Lake Morphology

Morphological characteristics of four lakes were determined during the 1999 program (Figure 3.2). Survey information for Lakes C1, C2 and C3 were collected by R.L. & L. Environmental Services Ltd. staff, while data for Lake D10 were obtained and a map developed by Tahera Corporation personnel. Data for Lake C3 should be viewed as preliminary because the elongated basin situated to the west and the shallow basin to the north were not included in the present survey. For comparative purposes, morphological data were also generated for Carat Lake based on a bathymetric map developed in 1996 by Canamera Geological Ltd (unpublished data). Bathymetric survey data collected by R. L. & L. Environmental Services Ltd. are presented in Appendix B, Table B2.




RL&L Environmental Services Ltd.

Figure 3.1 Sampled Waterbodies in the Jericho Study Area, 1999.




RL&L Environmental Services Ltd.

Figure 3.2 Waterbodies sampled for bathymetry in the Jericho Study Area, 1999.

Lakes in the Jericho Study Area exhibited variable characteristics (Table 3.1). Carat Lake, which is the largest waterbody in the Jericho Study Area (271 ha), consists of three basins. The largest basin comprises the central portion of the lake, while two smaller basins are situated to the west (Figure 3.3). Carat Lake exhibits an irregular shoreline, which results in a relatively high shoreline development ratio (2.1). There is one major inlet tributary that enters at the extreme western end (from Lake C3), while one outlet stream (to Jericho Lake) exits to the northeast. Several small ephemeral streams enter Carat Lake along its eastern, northern, and southern shores; Stream C1 is situated at the southeast corner (Figure 3.2).

Table 3.1 Morphometric characteristics of surveyed lakes in the Jericho Study Area, 1999.

| Lake | Total Volume ($m^3$) | Surface Area (ha) | Shoreline Length (m) | Shoreline Development Ratio |
|---|---|---|---|---|
| Carat Lake[a] | 27 203 110 | 270.5 | 12 270 | 2.1 |
| Lake C1 | 126 980 | 3.5 | 779 | 1.2 |
| Lake C2 | 6807 | 1.0 | 386 | 1.1 |
| Lake C3 | 2 584 978[c] | 102.5[c] | 10 830[c] | 3.0[c] |
| Lake D10[d] | 168 608 | 9.0 | 2571 | 2.4 |

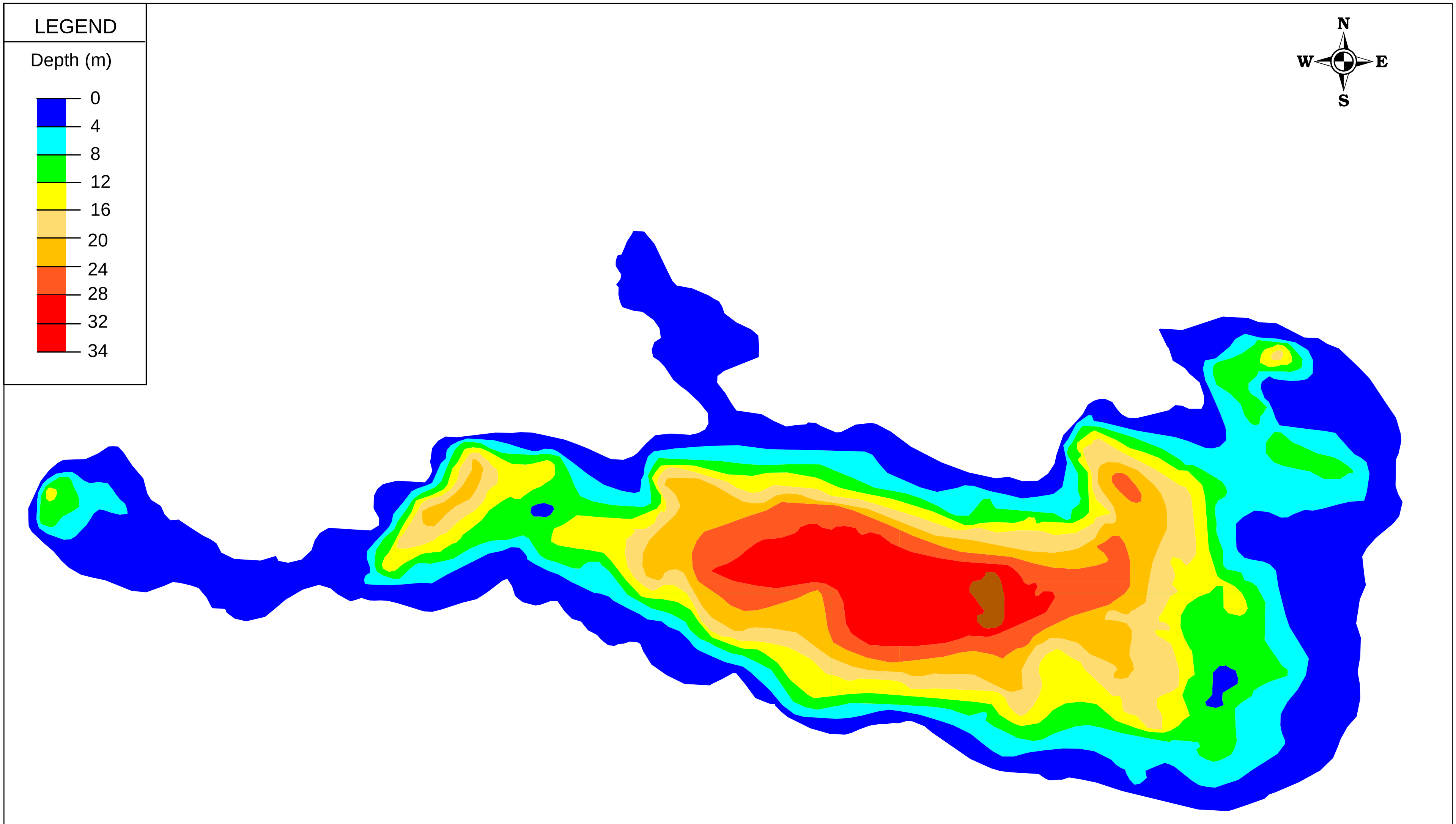
[a] Information calculated from bathymetric map generated by Canamera Geological Ltd. (unpublished data).
[b] Applies only to the sampled portion of the lake; see Figure 3.6.
[c] Applies to entire lake; see Figure 3.2.
[d] Bathymetric survey and map developed by Tahera Corporation.

Carat Lake is deep with a mean depth of 10.1 m and a maximum recorded depth of 32 m (Table 3.2). As such, a large percentage of this waterbody, in terms of area and volume, is > 2.0 m deep (95% and 98%, respectively) and is not subjected to freezing.

Table 3.2 Depth characteristics of surveyed lakes in the Jericho Study Area, 1999.

| Lake | Mean Depth (m) | Maximum Depth (m) | Percent Surface Area >2 m Depth | Percent Volume >2 m Depth |
|---|---|---|---|---|
| Carat Lake[a] | 10.1 | 32 | 95.0 | 98.4 |
| Lake C1 | 3.6 | 12 | 48.7 | 62.1 |
| Lake C2 | 0.7 | 2 | 0.0 | 0.0 |
| Lake C3[b] | 4.8 | 15 | 62.8 | 67.0 |
| Lake D10[c] | 1.9 | 8 | 11.0 | 29.3 |

[a] Information calculated from bathymetric map generated by Canamera Geological Ltd. (unpublished data).
[b] Applies only to the sampled portion of the lake; see Figure 3.6.
[c] Bathymetric survey and map developed by Tahera Corporation.




RL&L Environmental Services Ltd.

Figure 3.3 Bathymetric map of Carat Lake, Jericho Study Area, 1999.

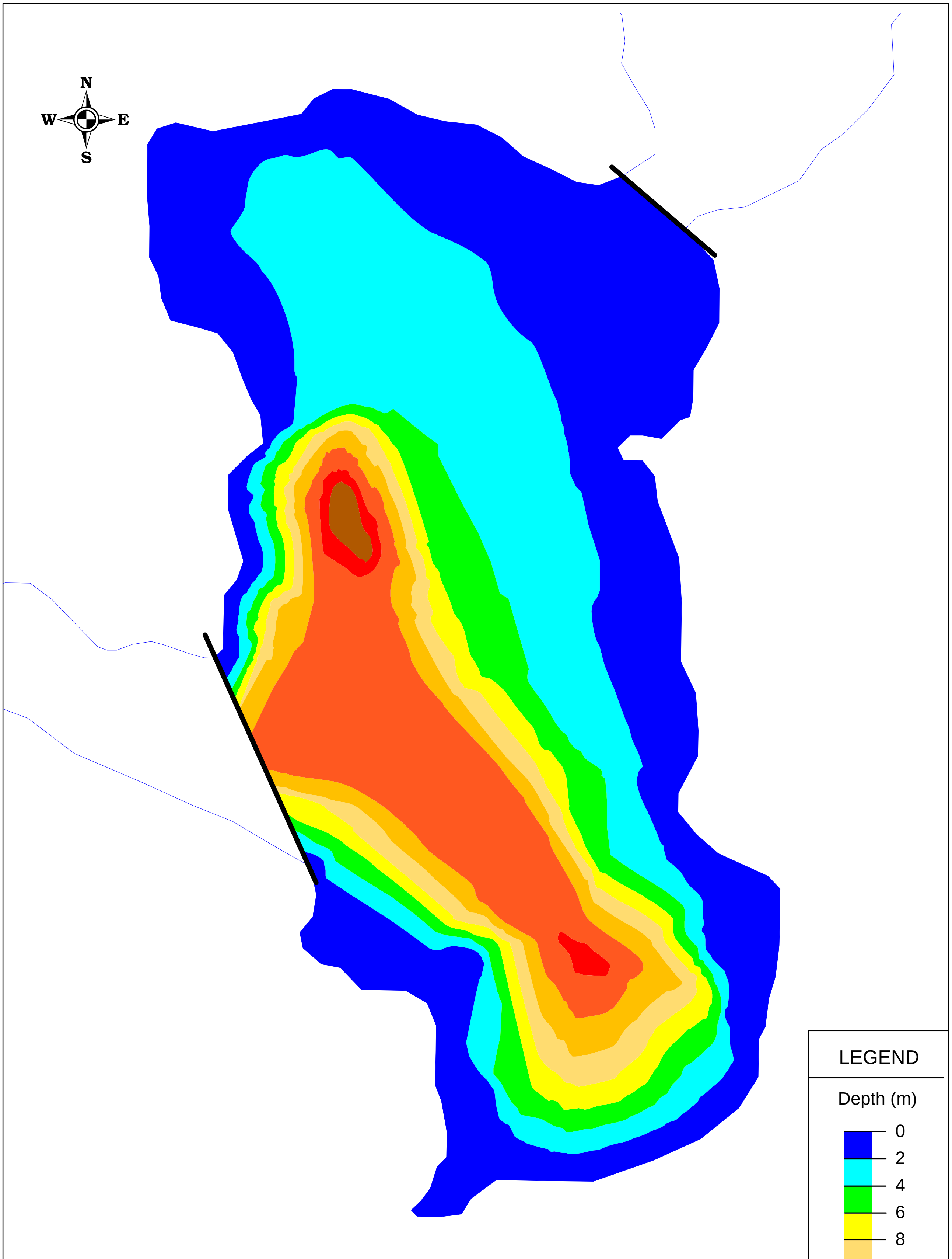
Lake C3, with a surface area of 103 ha, is the second largest waterbody surveyed in the Jericho Study Area. This lake is situated immediately upstream and to the southwest of Carat Lake and is connected to this waterbody by a narrow, shallow, channel. It has a central basin associated with an elongated bay that extends to the west. Lake C3 receives the majority of its inflow from inlet streams that enter at the southern and northwestern corners of the lake. Several intermittent streams also flow into Lake C3; the largest of these is Stream C3, which drains Lake D10.

A preliminary bathymetric survey that included only the main basin of Lake C3, was conducted in 1999 (Figure 3.4). The main basin is comprised of two smaller sub-basins; the southern area exhibits a maximum depth of 14 m, while the northern area is 15 m deep. The irregular shoreline of Lake C3 results in a high shoreline development ratio (3.0).

The smallest surveyed waterbodies in the Jericho Study Area are Lakes C2 (1 ha) and C1 (3.5 ha). These lakes differ dramatically in their physical characteristics from Carat Lake and Lake C3. Both exhibit simple basin morphologies consisting of a single basin (Figures 3.5 and 3.6). Lake C2 is very shallow (maximum depth of 2 m), while Lake C1 is much deeper (maximum depth of 12 m). Lake C2 likely freezes to the bottom in its entirety, whereas most of Lake C1 does not freeze to the bottom (49% by area and 62% by volume).

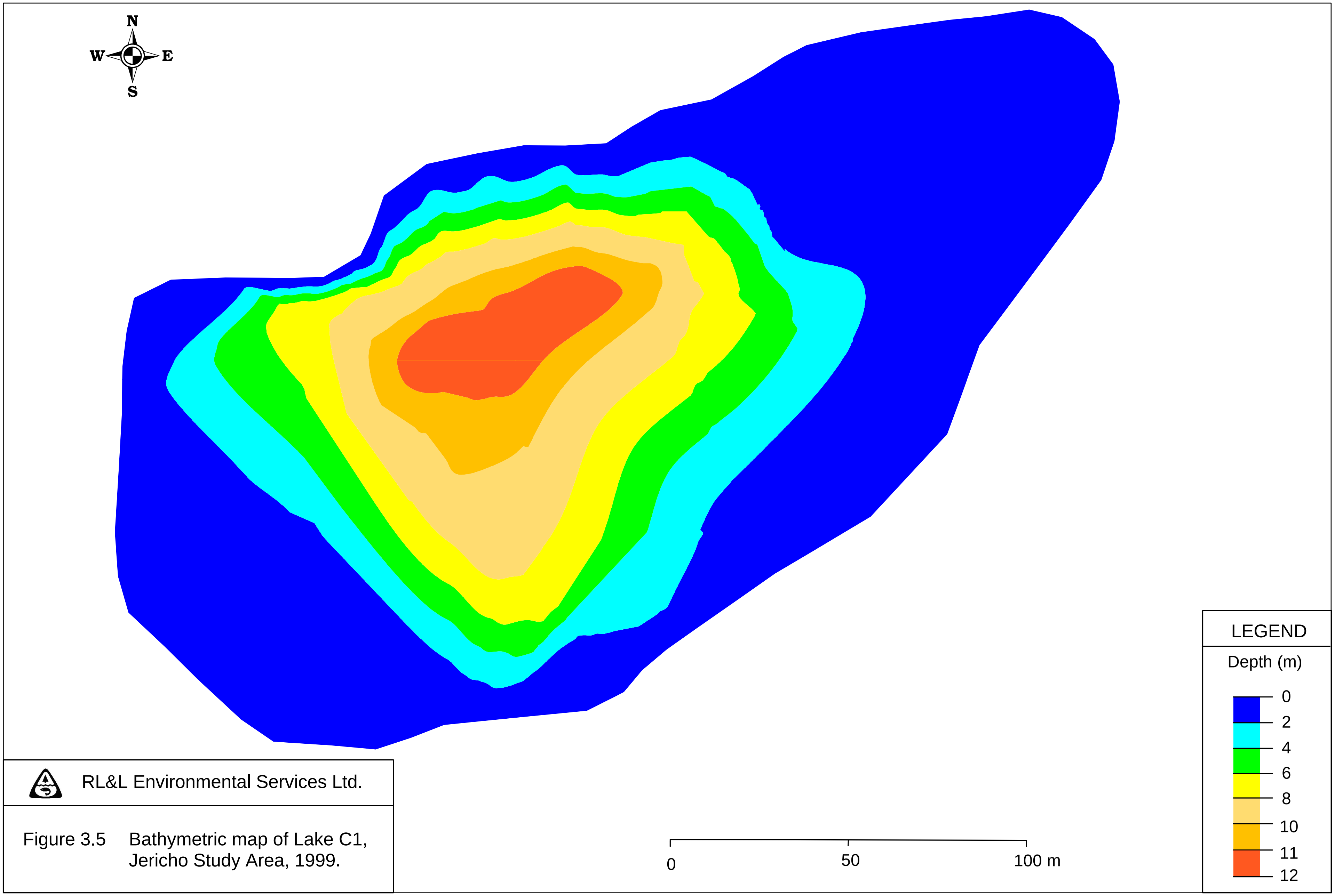
These two waterbodies are situated in the headwater area of Stream C1 immediately west of the Jericho Diamond Project. There are no well-defined inlet or outlet streams to either lake. In general, the inlet areas are situated at the western end of each lake, while the outlets are situated to the east. The outlet to Lake C1, appears to be the primary water source for Stream C1.

Lake D10 is located to the south of Carat Lake and to the east of Lake C3. This waterbody has no defined inlet stream, but drains to the west, via Stream C3, into Lake C3. This small waterbody (9 ha) is elongated along an east-west axis and has three basins (Figure 3.7). The two eastern basins do not exceed 6 m in depth and are separated by a shallow-water area <1.0 m deep. The western basin is slightly deeper exhibiting a maximum depth of 8 m. Lake D10 is relatively shallow (mean depth of 1.9 m). As such, only a small percentage of the lake is not subjected to freezing (11% of area and 29% of volume).



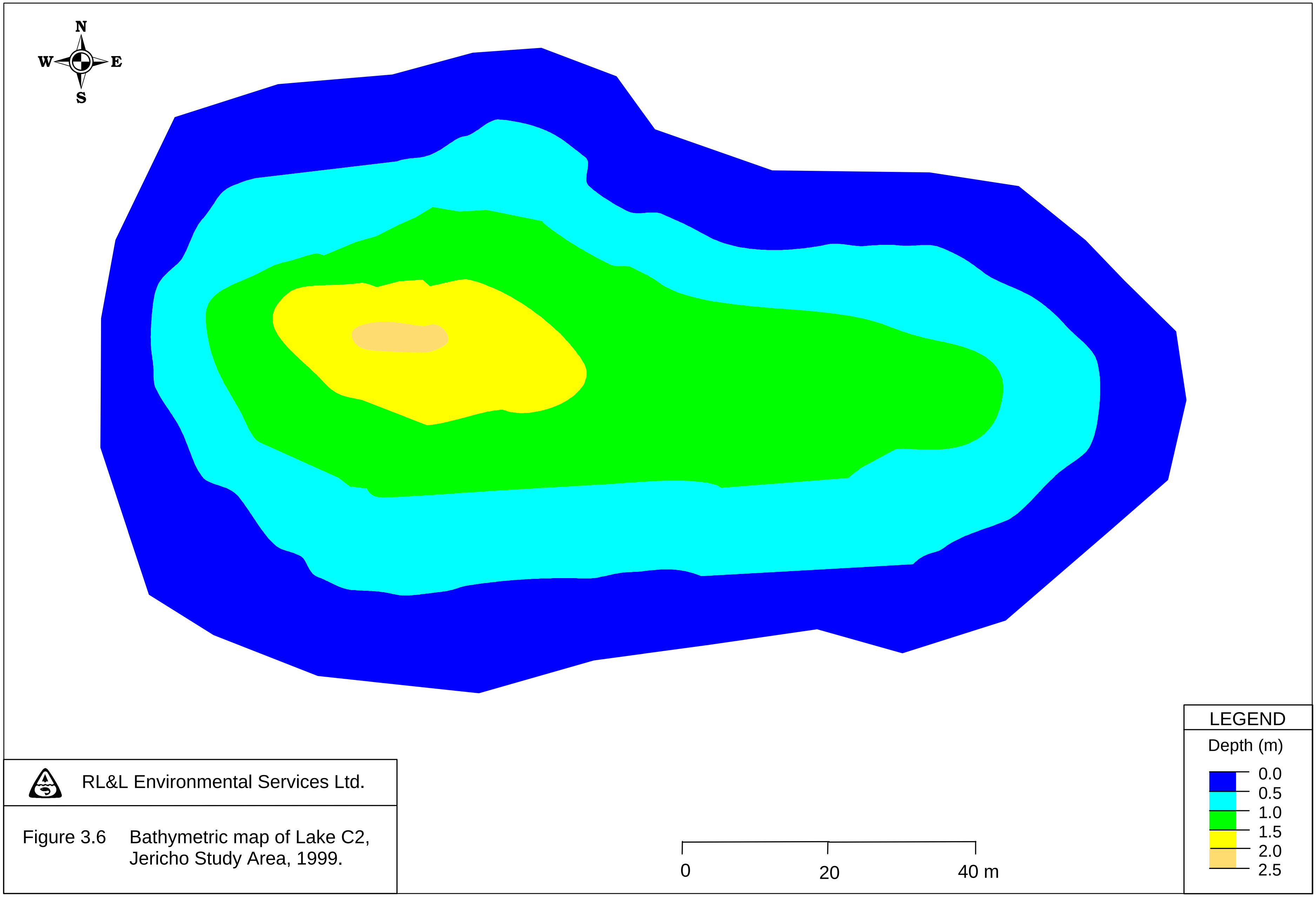

RL&L Environmental Services Ltd.

Figure 3.4 Preliminary bathymetric map of Lake C3, Jericho Study Area, 1999.



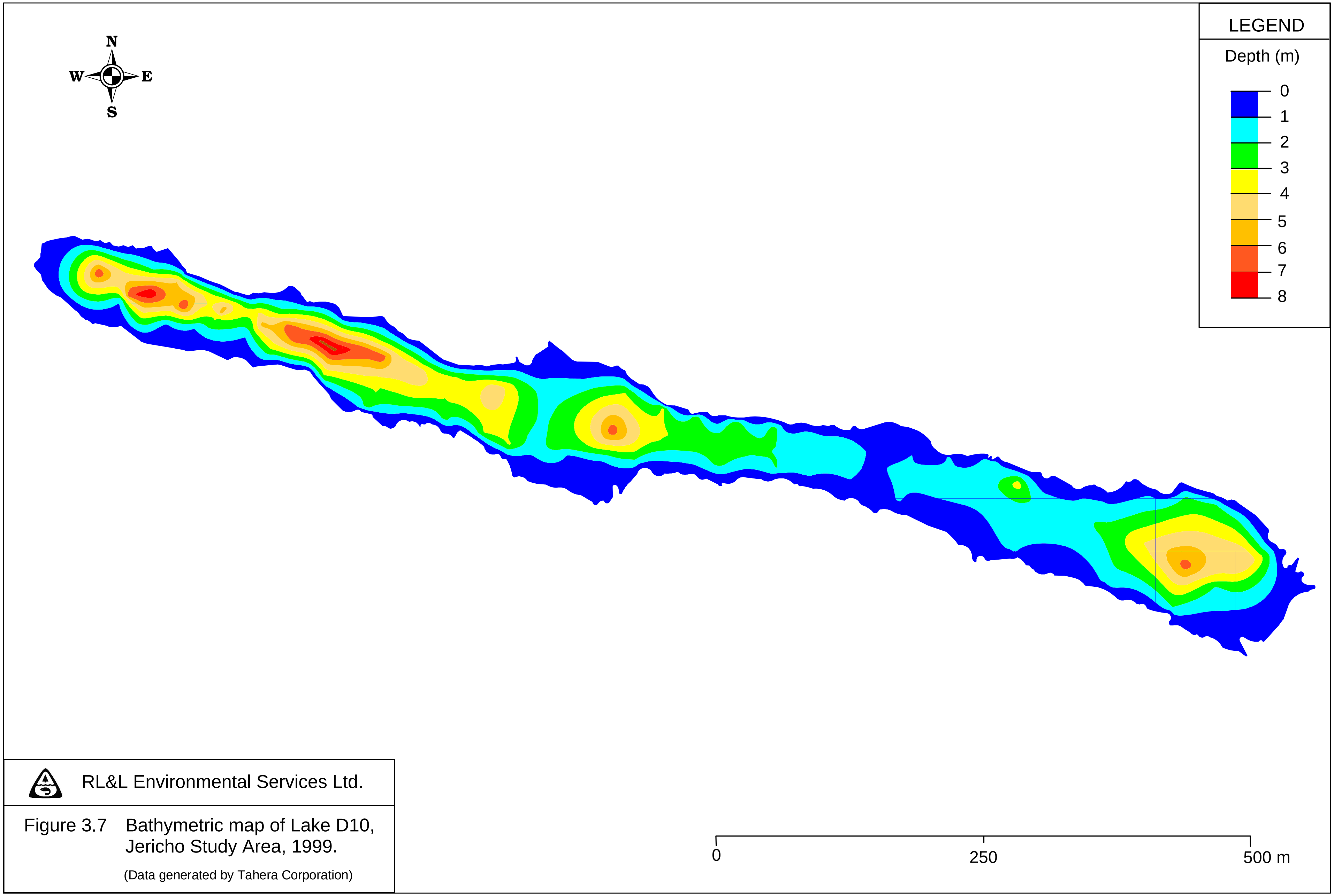

RL&L Environmental Services Ltd.

Figure 3.5 Bathymetric map of Lake C1, Jericho Study Area, 1999.




RL&L Environmental Services Ltd.

Figure 3.6 Bathymetric map of Lake C2, Jericho Study Area, 1999.




RL&L Environmental Services Ltd.

Figure 3.7 Bathymetric map of Lake D10, Jericho Study Area, 1999.

(Data generated by Tahera Corporation)

### 3.1.2 Lake Limnology

Temperature and dissolved oxygen sites were located on four lakes in the Jericho Study Area in July 1999 (Figure 3.8). Dissolved oxygen-temperature profiles and water transparency readings were determined at each of these sites (Figure 3.9; Appendix B, Table B3).

During early summer (19 to 27 July), the temperature profiles of some waterbodies (Lakes C2, C3 and D10) indicated uniform mixing (i.e., isothermal). In contrast, water temperatures in Lake C1 exhibited a gradual and consistent decrease from surface to bottom (13 to 5$^{o}$C). This indicates that this waterbody will stratify during the open water period. These results are consistent with findings made by RL&L in 1996. Stratification of Lake C1 is possible because it is deep relative to its size (maximum depth of 12 m and surface area of 3.5 ha) and it is partially sheltered from wind action by a high shoreline at its western end.

The results for Lake C3 indicated that it was isothermal at the time of sampling, but these data should be viewed as preliminary for two reasons. The 1999 limnology site may have been in water that was too shallow to identify stratification (8 m) and the survey may have been undertaken too early in the year. Studies in 1995 and 1996 indicated that deeper waterbodies such as Carat Lake stratify and a thermocline develops between 10 and 14 m by late summer. The maximum depth of Lake C3 is 15 m (Section 3.1.1). It should be noted that work completed in 1995 on Lake C3 did not identify a thermocline at a site that was 13 m in depth; therefore, additional surveys are required to establish whether Lake C3 remains isothermal during the entire open water period.

Dissolved oxygen concentrations were near saturation at all sites; values were approximately 10.0 mg/L at the lake surface and did not decrease significantly lower down in the water column. As such, anoxic conditions did not occur at the time of sampling in any of the study area lakes.

Water transparencies did not vary greatly between sites. Secchi depths ranged between 4.8 and 5.9 m. In Lakes C2 and D10 secchi depths extended to the bottom (1.8 and 8.0 m, respectively). Based on Secchi depth readings, the euphotic zones (depth to 1% light penetration where algae can exist = 2 × Secchi depth) were approximately 10 m at most sites.

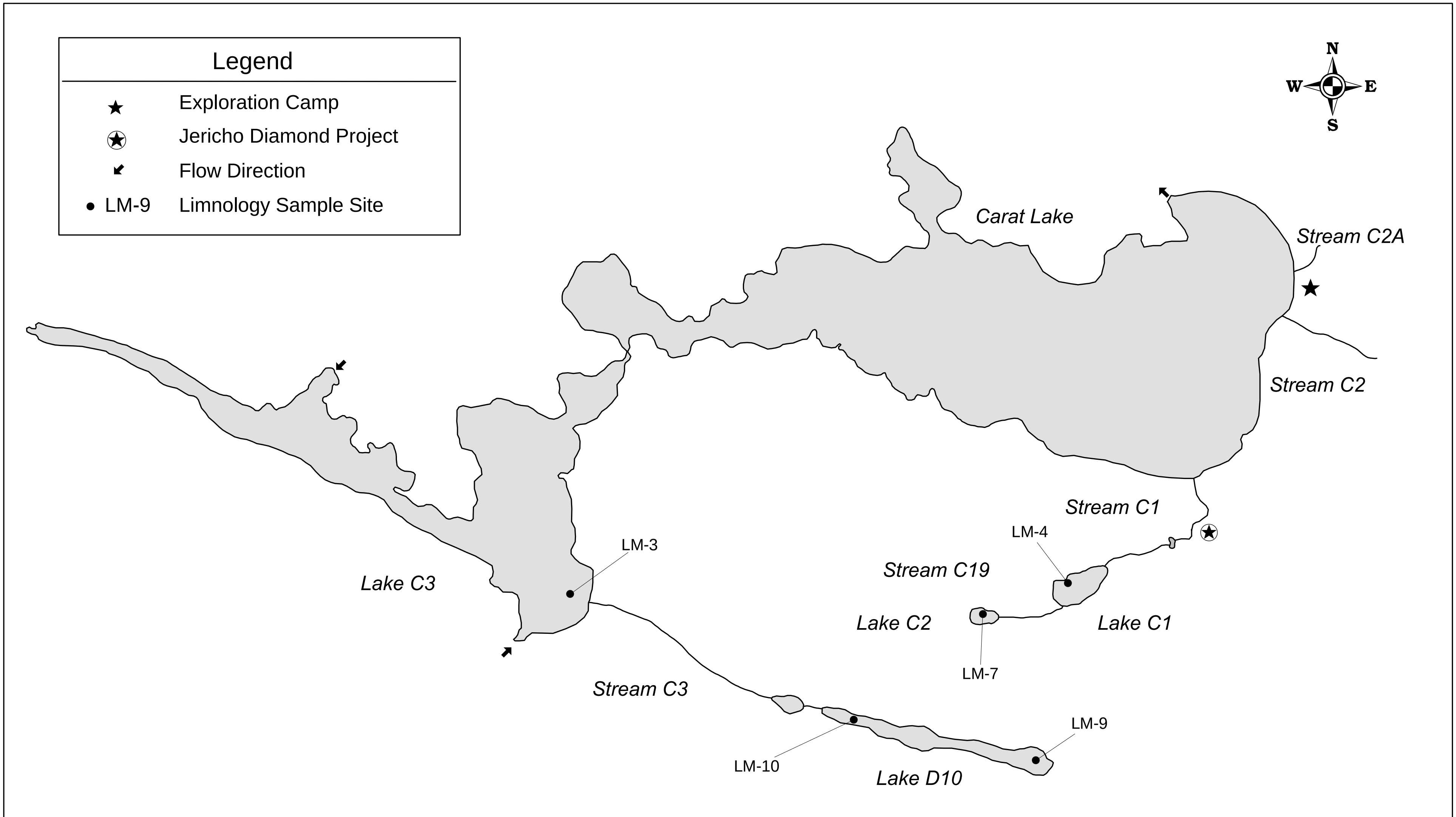



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Figure 3.8 Limnology Sample Sites, Jericho Study Area, 1999.

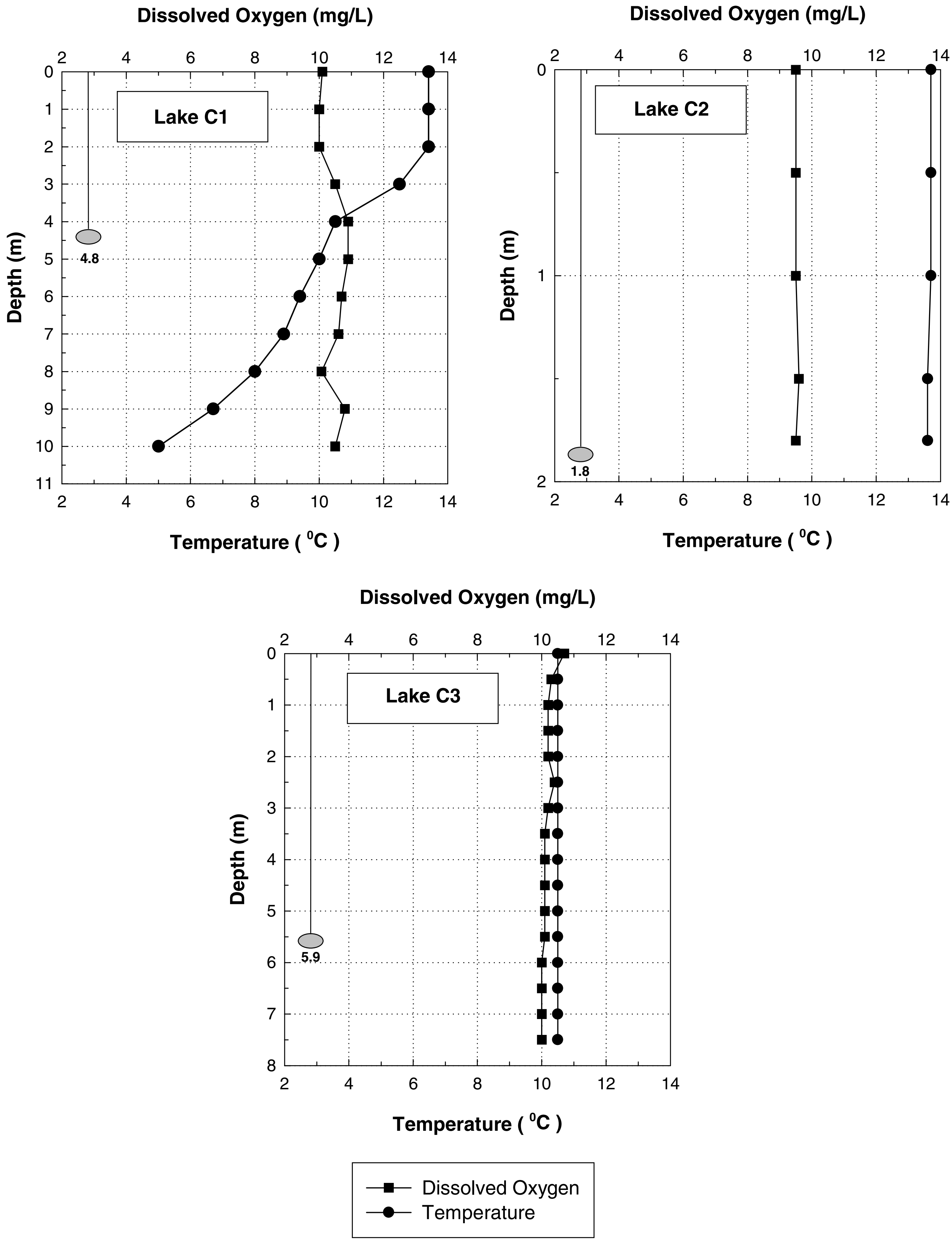


Figure 3.9 Dissolved oxygen and temperature profiles, and transparency of lakes in the Jericho Study Area, 19 to 27 July 1999.

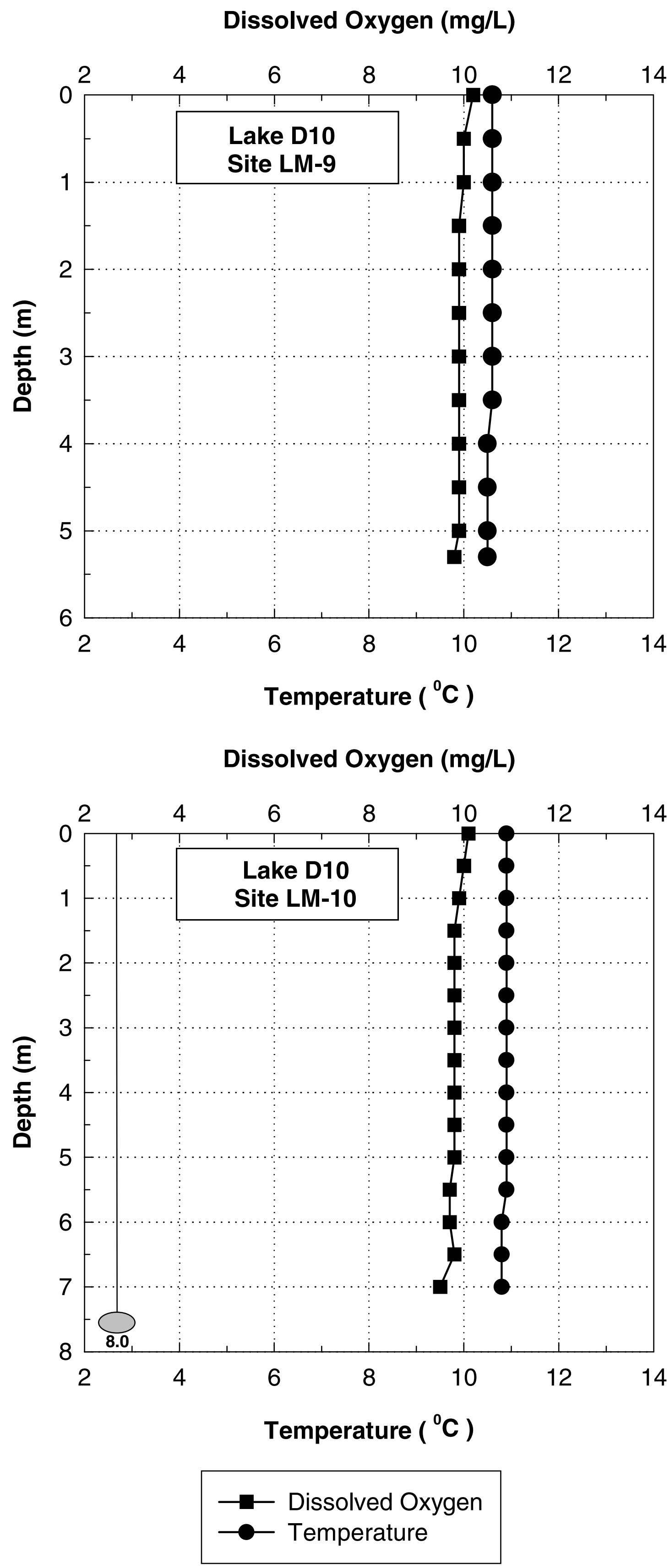


Figure 3.9 concluded.

### 3.1.3 Stream Characteristics

Physical characteristics of streams (length, gradient, discharge, and temperature) were assessed during the spring and summer field program. This section provides summary information; all raw data are provided in Appendix B, Table B4.

Stream C3 is a small system that drains Lake D10 into Lake C3, while Stream C1 drains Lake C1 into Carat Lake. Stream C19 is also small; it connects Lake C2 to Lake C1. Streams C2 and C2A drain into Carat Lake in the vicinity of the exploration camp. Streams C2, C2A, C3 and C19 exhibited ephemeral flow during the 1999 open water period. These streams freeze to the bottom during winter.

The length of streams surveyed ranged between 100 and 912 m (Table 3.3). All were small, having average channel widths of 0.5 to 1.6 m and average maximum depths of less than 0.29 m and low discharge (0.007 $m^3$/s or less at all sampled sites). The gradients of these streams ranged between 20 and 60 m/km. Stream C19 has the highest overall gradient (60 m/km), which traverses a steep slope immediately upstream of its entry point with Lake C1. Due to their small size, all surveyed streams contained barriers to fish passage. The largest obstructions were the steep slope on Stream C19, and a 5.3 m high rock wall on Stream C1 located 815 m upstream of Carat Lake.

Table 3.3 Summary of physical characteristics of inventoried streams during summer in the Jericho Study Area, 1999.

| Stream | Surveyed Length (m) | Average Width (m) | Average Depth (m) | Discharge ($m^3$/s) | Gradient (m/km) | Channel Type (%) | | Bank Type (%) | | Substrate Type (%) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Single | Multiple | Distinct | Indistinct | Si/Sa | Gr | Co | Bo | Be |
| C1[a] | 454 | 1.6 | 0.28 | 0.004 | 20 | 22 | 78 | 22 | 78 | 7 | 17 | 50 | 27 | |
| C2[a] | 300 | 0.5 | 0.18 | 0.001 | 50 | | 100 | | 100 | | 40 | 50 | 10 | |
| C2A[a] | 100 | 0.5 | 0.17 | 0.001 | 25 | 80 | 20 | 60 | 40 | 69 | 10 | 14 | 7 | |
| C3[b] | 912 | 0.6 | 0.18 | 0.007 | 30 | 42 | 58 | 50 | 50 | 41 | 20 | 20 | 19 | |
| C19[b] | 345 | 0.4 | 0.28 | 0.003 | 60 | 50 | 50 | 10 | 90 | 85 | | | 15 | |

[a] Characteristics measured during previous inventories (RL&L 1995, 1997).
[b] Characteristics measured during summer 1999.

The surveyed streams contain a variety of channel types including single and multiple braids, as well as dispersed flow (i.e., lack of well-defined stream banks). They generally exhibit more than one channel type and often two or three types are present in the same system. Substrates in most of the surveyed streams consist primarily (>50%) of two types: very fine and coarse materials (i.e., silt/sands and cobble/boulders). In contrast, gravels contribute a much smaller percentage (between 10 and 40%).

Stream water temperatures closely tracked air temperatures during the 1999 open-water period. This relationship was illustrated at Stream C1, where water temperature was continuously monitored from June 10 to 4 September (Figure 3.10). The daily water temperature in Stream C1 warmed rapidly in spring and by late June reached its maximum daily temperature (12.3˚C) on 20 June. Water temperatures fluctuated between 5 and 10°C during the remainder of the open-water period corresponding very closely with fluctuations in air temperature. The close relationship between air and water temperature likely reflected the low discharge of Stream C1 and is considered to be representative of other small streams in the study area.

### 3.1.4 Water Quality

The water quality assessment of most waterbodies in the Jericho Study Area is based on data collected in July 1999; however, sampling of Stream C1 was also completed in September 1999. Sites were established on four lakes and three streams (Figure 3.11). Two sample sites were established, on Stream C1 to ascertain whether water chemistry differed between areas on this system. The first (WC-1A) was located downstream of the Jericho Diamond Project, while the second (WC-1B) was situated upstream of the project area.

This section provides a description of water quality in the study area based on selected physical and chemical constituents. Where applicable, the water quality constituents were assessed according to their compliance to the guidelines for the protection of aquatic life (Canadian Water Quality Guidelines or CWQG; CCME 1999) and drinking water (Guidelines for Canadian Drinking Water Quality or GCDWQ; Health and Welfare Canada 1993). The water quality raw data (field splits and field blanks for QA/QC) are provided in Appendix B, Table B5; the QA/QC results indicated that the precision and accuracy of water quality determinations were within acceptable levels (Shaw et al. 1994; Noton and Saffran 1995).

*Turbidity and Suspended Solids*

In July, turbidity was extremely low at both lake and stream sites (Figure 3.12). Values ranged from 0.28 to 1.10 NTU, which is within the GCDWQ of 2 NTU for clear water. This constituent showed no spatial pattern with respect to the area sampled. Total suspended solids (TSS) were below detection limits at all sites.

*Alkalinity, pH*, and *Total Dissolved Solids*

Total alkalinity values were low at all sites. Streams tended to have slightly higher values (range of 6 to 13 mg/L) compared to lakes (range of 4 to 11 mg/L). Although there are no formal water quality guidelines for total alkalinity, levels ranging from 30 to 500 mg/L are generally acceptable for drinking water (McNeely et al. 1979). Alkalinity refers to the neutralizing capacity of water; therefore, the low total alkalinity levels suggest that waterbodies in the Jericho Study Area have a poor buffering capacity against acids.

Stream and lake pH ranged from 6.5 to 7.5. These values were within the CWQG and the GCDWQ of 6.5-9.5 and 6.5-8.5, respectively.

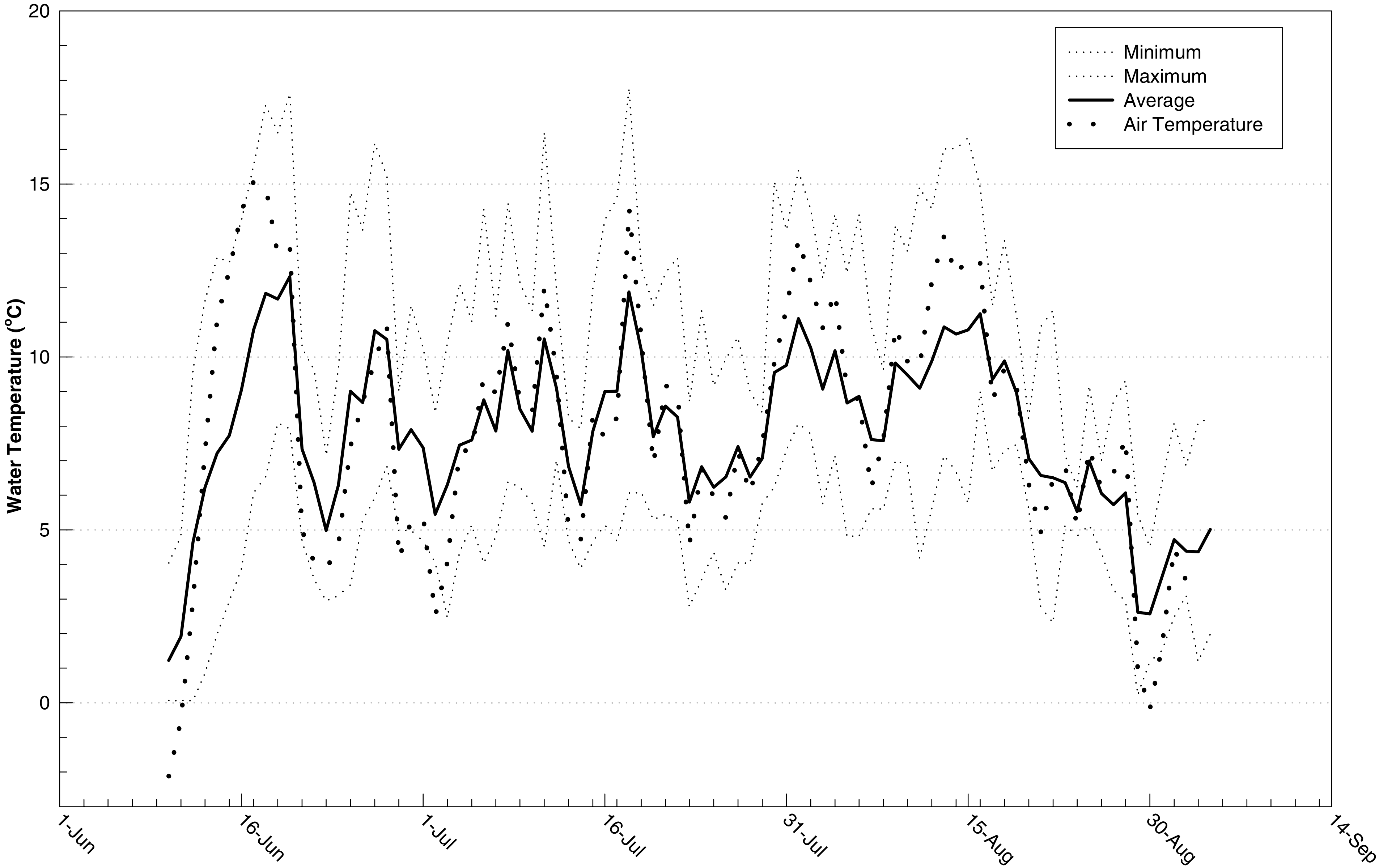


Figure 3.10 Daily water temperatures in Stream C1 from June to September 1999 (average daily air temperature provided for comparison).

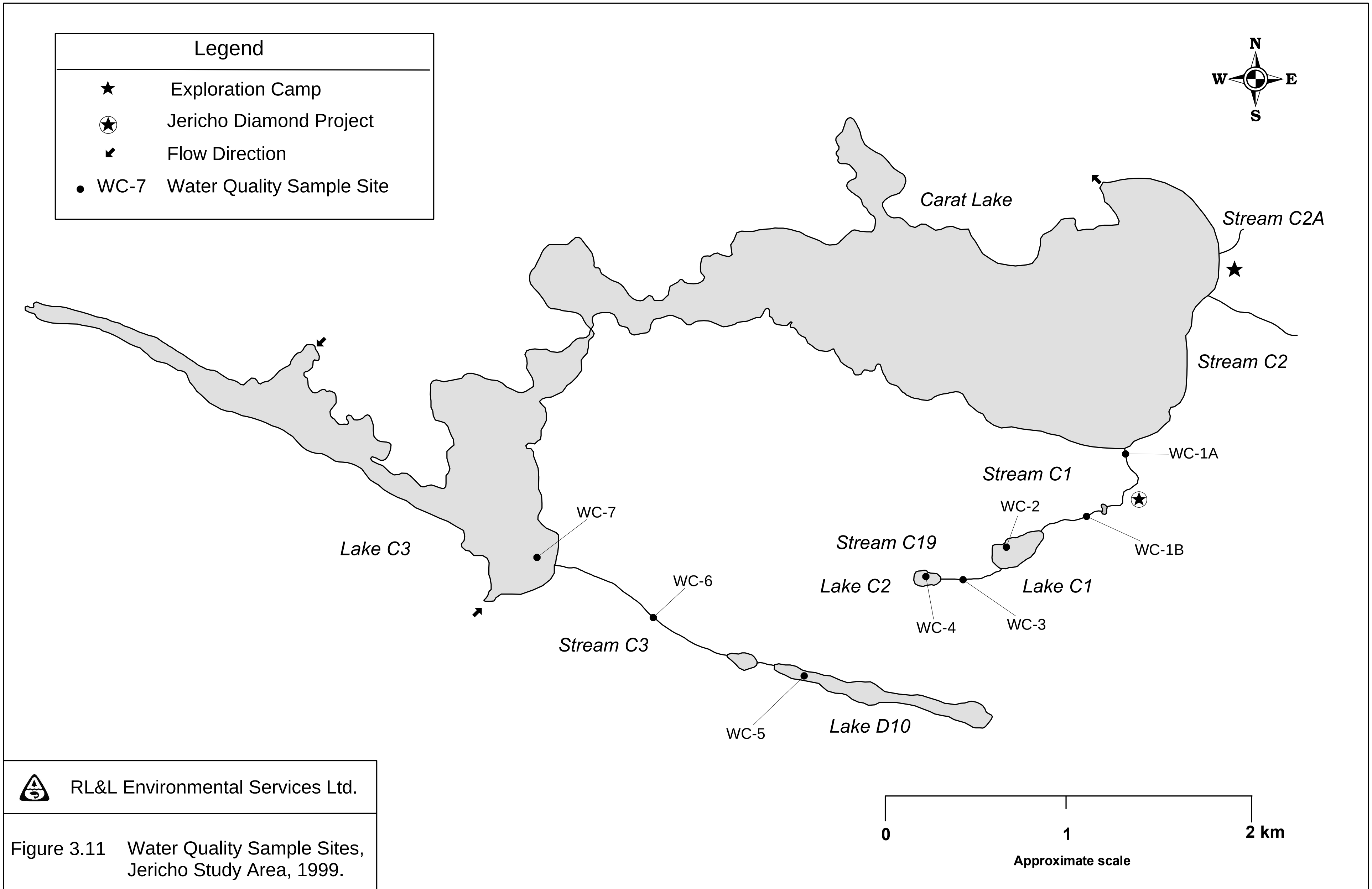


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Figure 3.11 Water Quality Sample Sites, Jericho Study Area, 1999.

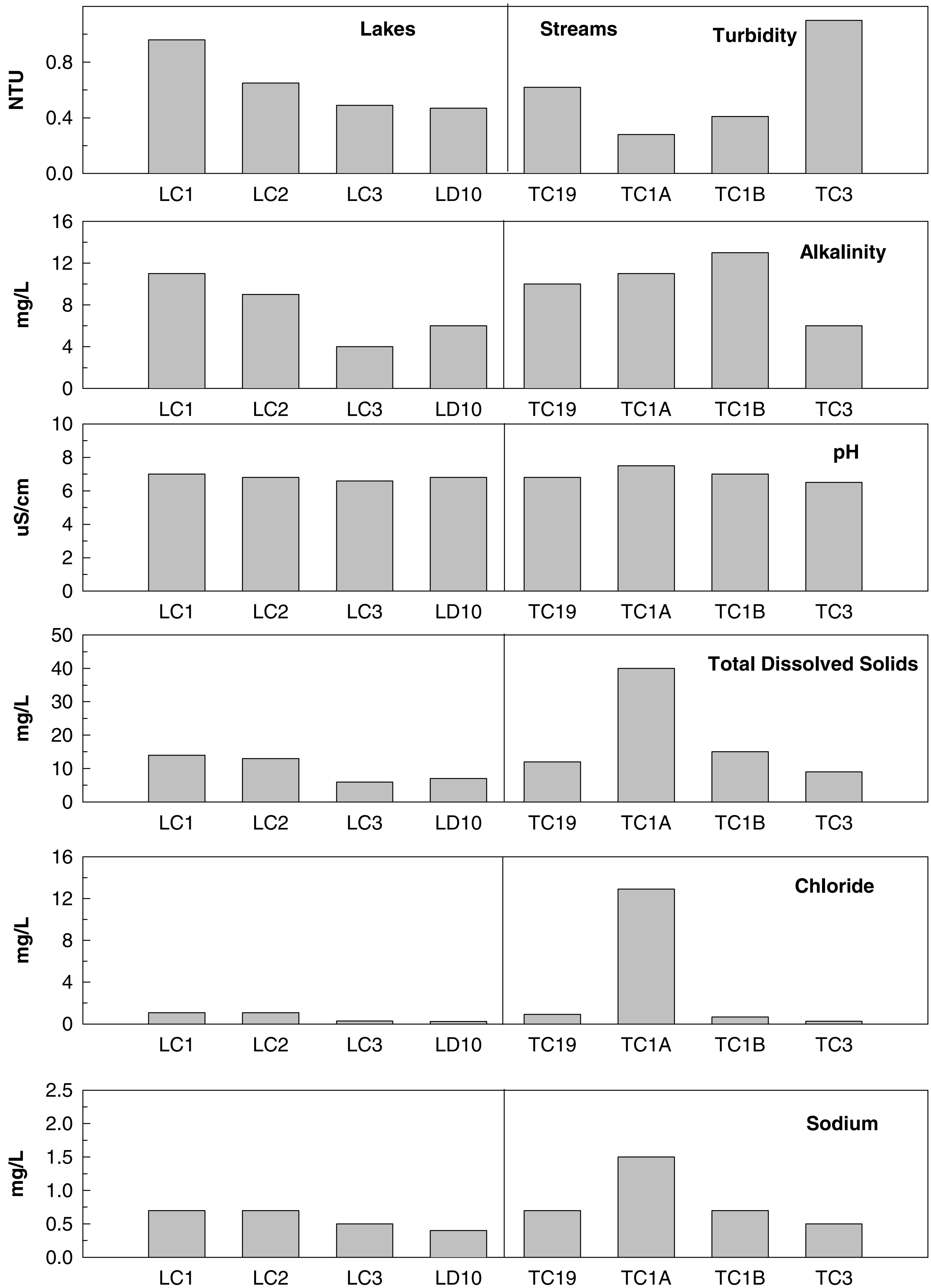


Figure 3.12 Concentrations of selected water quality constituents in samples collected from lakes and streams in the Jericho Study Area, 1999.

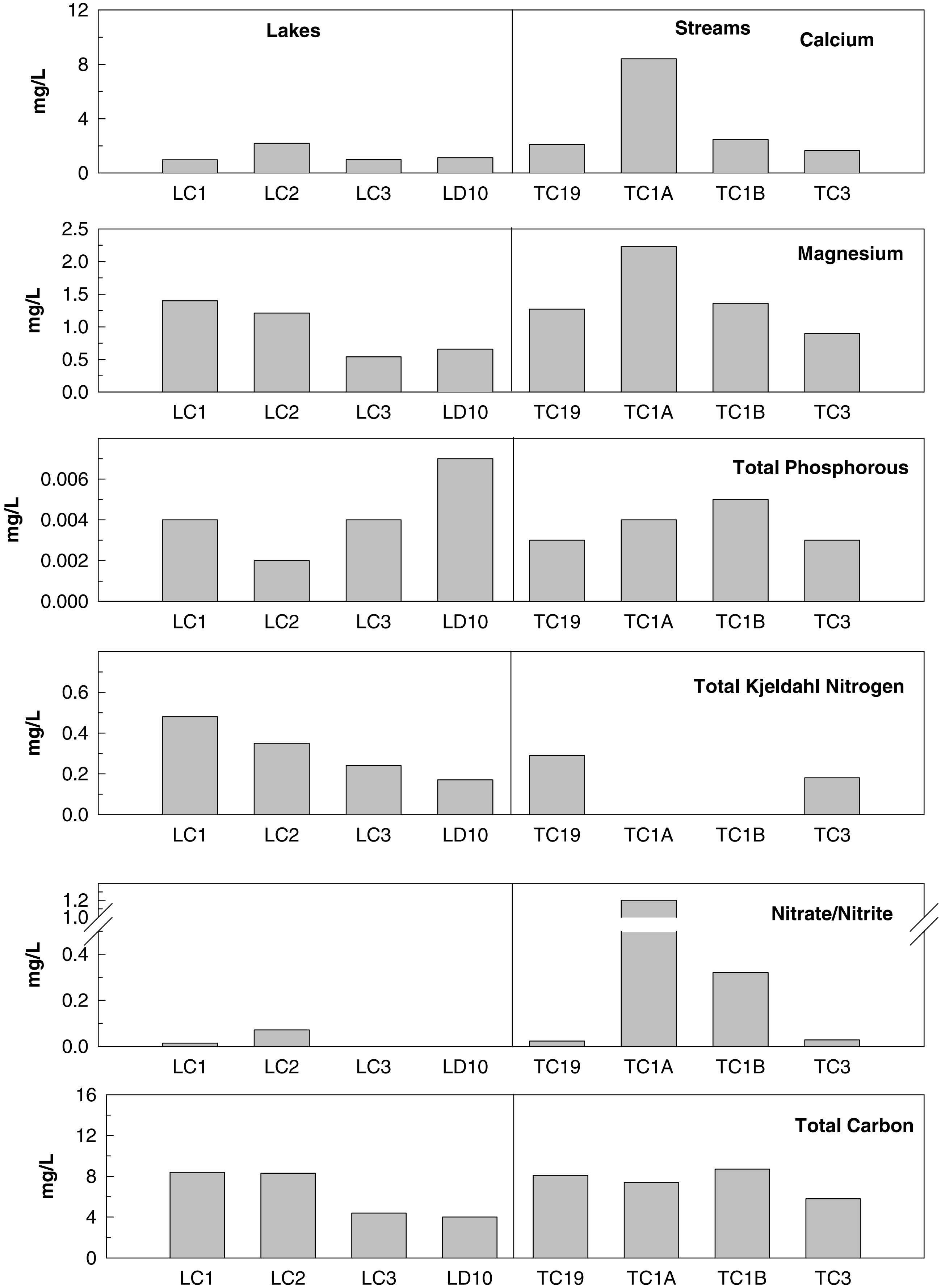


Figure 3.12 concluded.

Concentrations of total dissolved solids (TDS) were generally low at most sites (<20 mg/L). TDS was highest at Site WC-1A of Stream C1 (40 mg/L); this contrasts with 15 mg/L at Site WC-1B of the same system. There are no TDS guidelines for the protection of aquatic life; however, the GCDWQ is 500 mg/L for drinking water. Concentrations of TDS in water generally depend on geochemical weathering of rocks and soil, and the influence of anthropogenic sources (McNeely et al. 1979; Shaw et al. 1994). It is possible that prior exploration activity immediately upstream of Site WC-1A may have influenced the water chemistry of the sample collected from Stream C1.

*Major Ions and Total Hardness*

The major ions consist of $Cl^-$, $Na^+$, $Ca^{++}$, $Mg^{++}$, $K^+$, $HCO_3^-$, and $SO_4^=$. As a group, the major ions were generally low at all lake sites and most stream sites. The concentrations of major ions at all sites were in compliance with the GCDWQ. They state that concentrations of sodium, chloride, and sulphate should not exceed 200, 250, and 500 mg/L, respectively.

As indicated by the elevated TDS value at Site WC-1A of Stream C1, concentrations of some ions (chloride, sodium, calcium and magnesium) were higher than at other sites, including WC-1B of Stream C1. Although elevated, these concentrations should be viewed as low.

*Phosphorus*

Total phosphorus concentrations in lakes and streams in the Jericho Study Area were very low. They ranged from 0.002 to 0.007 mg/L and showed no spatial pattern. Total dissolved phosphorus concentrations (the phosphorus form available for primary production) constituted the dominant portion of all forms of phosphorus analysed. Because phosphorus is a nutrient that limits primary productivity in freshwater ecosystems, these results indicate that waterbodies in the Jericho Study Area are extremely nutrient poor. No CWQG or GCDWQ exist for phosphorus, although 0.10 mg/L is considered a maximum desirable concentration for streams (McNeely et al. 1979).

*Nitrogen*

In aquatic systems, nitrogen occurs as organic and inorganic (dissolved, nitrite, nitrate, ammonium, and ammonia compounds). Total Kjeldahl nitrogen (TKN) is the sum of organic and ammonia nitrogen fractions, while total nitrogen is the sum of TKN and nitrite/nitrate-nitrogen.

The TKN concentrations in lakes and streams of the Jericho Study Area were low. Lakes tended to have slightly higher values (range of 0.17 to 0.48 mg/L) compared to streams (range of <0.05 to 0.29 mg/L). The highest TKN concentration was recorded from the water sample collected in Lake C1 (0.48 mg/L). Concentrations of TKN in waterbodies that are not influenced by excessive organic inputs, typically range from 0.1 to 0.5 mg/L (McNeely et al. 1979).

Nitrite/nitrate-N concentrations were generally low at most sites; they ranged from <0.006 to 0.072 mg/L. Such low values indicated that total nitrogen concentrations consisted mainly of organic forms. The only exceptions occurred at Stream C1, where nitrite/nitrate-N concentrations were higher (1.200 and 0.350 mg/L in WC-1A and WC-1B, respectively). It is possible that prior exploration activity immediately upstream of Site WC-1A may have influenced the water chemistry of the sample collected from Stream C1. There are no CWQG or GCDWQ for TKN. Ammonia and nitrate concentrations at all sites were within the CWQG of 1.37 and 10 mg/L, respectively.

*Carbon*

In aquatic systems, total organic carbon content can vary from 1 to 30 mg/L with higher levels generally being the result of anthropogenic inputs (McNeely et al. 1979). Total carbon concentrations were low at all sites; they ranged from 4.0 to 8.7 mg/L and showed no spatial pattern. There are no CWQG or GCDWQ available for carbon.

## 3.2 NONVERTEBRATES

This section provides summary results for periphyton, phytoplankton, zooplankton, and benthic macroinvertebrate communities in selected streams and lakes of the Jericho Study Area. Specific sampling locations are depicted in Figure 3.13; georeferenced site locations are listed in Appendix C, Table C1.

### 3.2.1 Periphyton

Periphyton refers to the community of algae, bacteria, fungi, and their secretions that grow on substrates in freshwater systems (Lock et al. 1984). Periphyton provides food and habitat resources for benthic invertebrates and herbivorous fish, especially in flowing waters (Warren et al. 1964; Hynes 1970; Horner and Welch 1981; Lock et al. 1984; Merritt and Cummins 1984). Although periphyton in temperate zone lakes generally account for a small amount of the systems primary productivity (i.e., phytoplankton is the major source), it has been documented that Arctic lakes can derive a large proportion (15 to 80%) of their energy inputs from benthic sources (Welch and Kalff 1974; Welch et al. 1988; Welch et al.1989). For these reasons, periphyton communities were sampled in both streams and lakes of the Jericho Study Area.

The periphyton sampling program was conducted in July 1999. Composite samples were collected from five lake and four stream sites. Summary results of chlorophyll *a* concentration (a measure of the amount of live algae), ash-free-dry-mass (AFDM) concentration (an estimate of the total organic content of periphyton), and the periphyton algal community are presented. Detailed data are provided in Appendix C, Tables C2 and C3.

#### 3.2.1.1 Biomass and Density

Chlorophyll *a* is an important photosynthesizing pigment of plants and its concentration is a measure of the amount of living tissue. Chlorophyll *a* concentrations ranged from 0.0 $\mu g/cm^2$ in Lake C3 to 5.3 $\mu g/cm^2$ in Stream C3 (Figure 3.14). The absence of chlorophyll *a* production in Lake C3 was an artifact of sampling (inappropriate

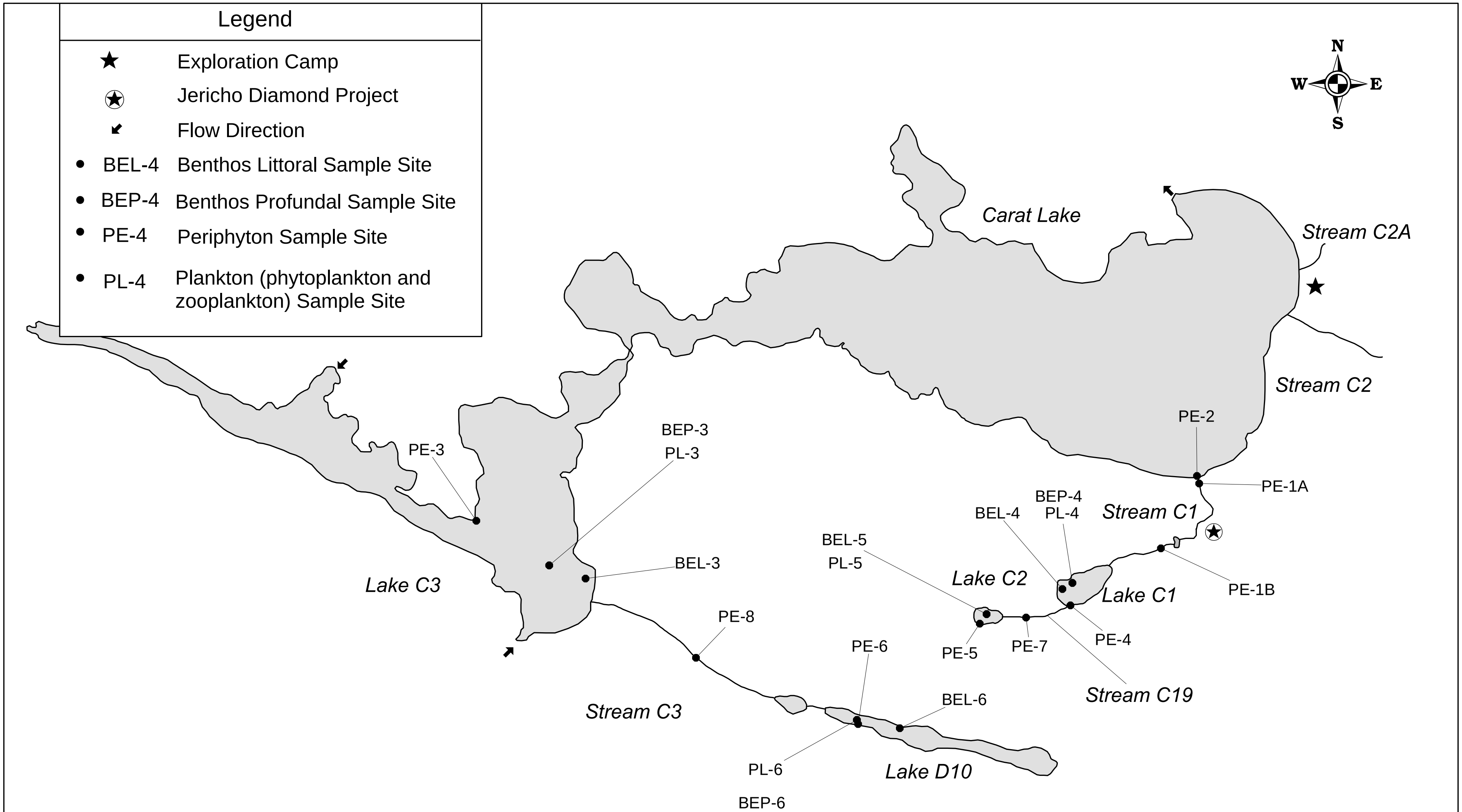


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Figure 3.13 Nonvertebrate Sample Sites, Jericho Study Area, 1999.

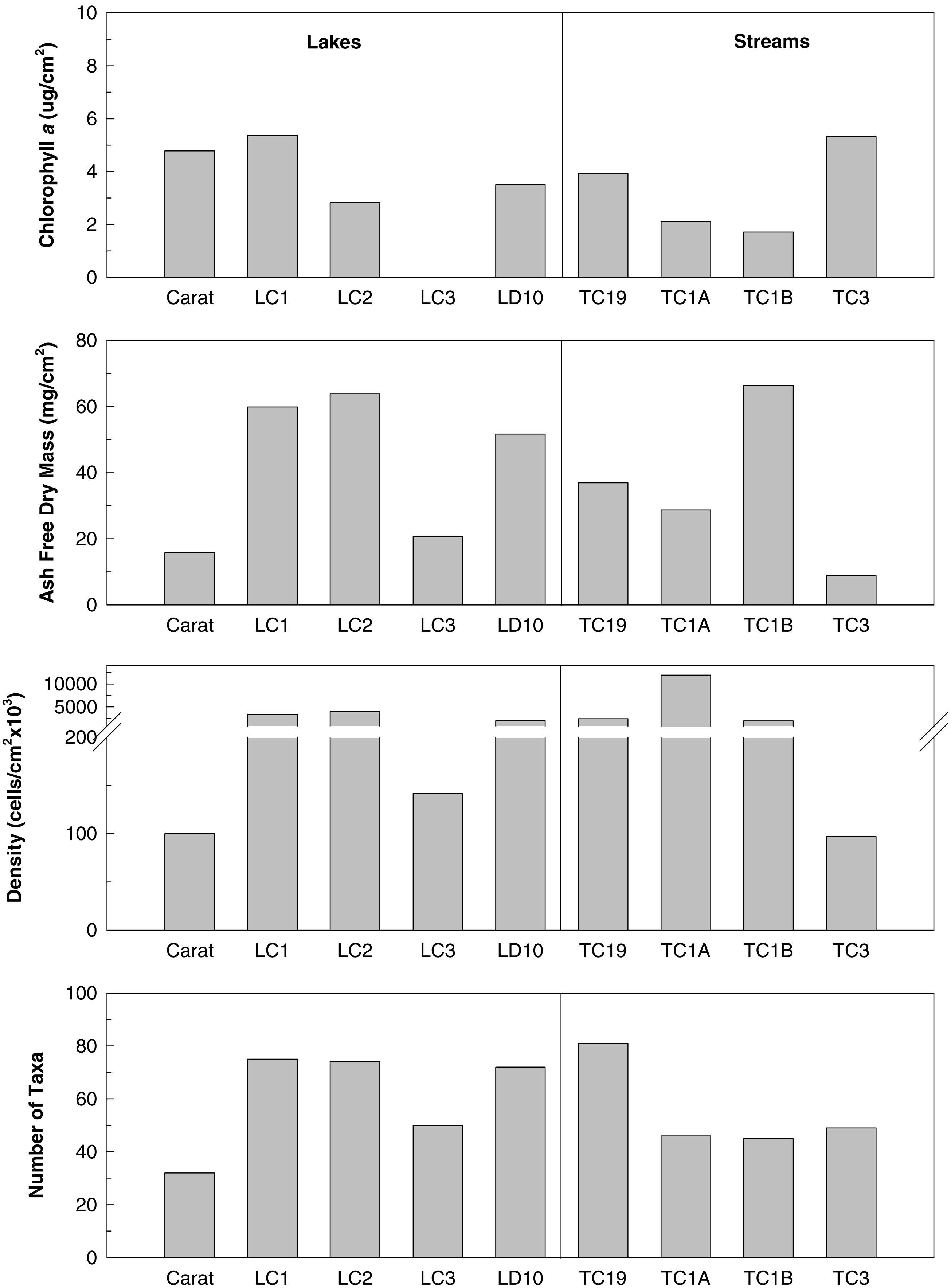


Figure 3.14 Density, number of taxa, chlorophyll *a* and AFDM values for periphyton samples in lakes and streams of the Jericho Study Area, 1999.

substrate chosen) and was not indicative of conditions in this waterbody. In general, concentrations tended to be higher in lakes than streams, but no clear pattern was evident. AFDM values were variable and ranged from 8.9 (Stream C3) to 63.9 mg/cm$^2$ (Lake C2). Lake sites tended to have higher values than stream sites. Despite differences in water quality at Sites PE-1A and PE-1B of Stream C1 relative to other sites, no dramatic differences in biomass of periphyton were recorded.

Periphyton density was extremely variable at both lake and stream sites. Values ranged from 9.7 x 10$^4$ cells/cm$^2$ at Stream C3 to 1192.8 x 10$^4$ cells/cm$^2$ at Site PE-1A of Stream C1.

#### 3.2.1.2 Community Structure

In total, 162 periphytic algal species were identified (Appendix C, Table C3); the number of species at sampled sites ranged from 32 (Carat Lake) to 81 (Stream C19). Taxonomic counts tended to be higher and more variable at lake sites compared to stream sites.

The periphytic algal community was dominated by four taxonomic divisions: Bacillariophyta (diatoms), Chlorophyta (green algae), Chrysophyta (golden-brown algae), and Cyanophyta (cyanobacteria). These four divisions accounted for more than 99% of the total number of algal cells counted in each of the periphyton samples (Appendix C, Table C2). Of these four groups, cyanobacteria and diatoms predominated (Figure 3.15). The overall numerical dominance of these two groups reflected their colonial nature and small cell size exhibited by most species. The relative importance of these four groups was consistent between individual sites, although cyanobacteria tended to account for a higher percentage of the sample in streams compared to lakes.

In terms of frequency of occurrence, diatoms were well represented in both lake and stream sites by *Achnanthes minutissima* and *Tabellaria flocculosa*. The most frequently encountered green algae species included *Oocystis lacustris* and *Oocystis elliptica*. *Dinobryon sertularia* (lakes) and *Stichogloea doederleinii* (streams) were the dominant golden-brown algae, while *Schizothrix calcicola* was the most widely distributed cyanobacteria species.

#### 3.2.1.3 Summary

Chlorophyll *a* values were low at all sites as were AFDM concentrations. In streams, the amount of chlorophyll *a* and AFDM found in periphytic communities is controlled primarily by light quality and quantity, water velocity, and nutrient concentrations (Horner and Welch 1981). Moderate current velocities (20 to 100 cm/s) and increasing phosphorus concentrations (to 50 µg/L total phosphorus) promote periphytic growth. The locations sampled in the present study were not shaded by riparian vegetation, exhibited current velocities within the range reported by Horner and Welch (1981), and were not exposed to a known toxic substance. Therefore, the low chlorophyll *a* and AFDM concentrations were likely due to low nutrient levels. Total phosphorus concentrations, the nutrient that most often limits algal growth (Wetzel 1983) were very low at all sites (see Section 3.1.4). Phosphorus limitation in Arctic streams has been reported to have dramatic effects on overall productivity (Peterson et al. 1983, 1985, and 1986).

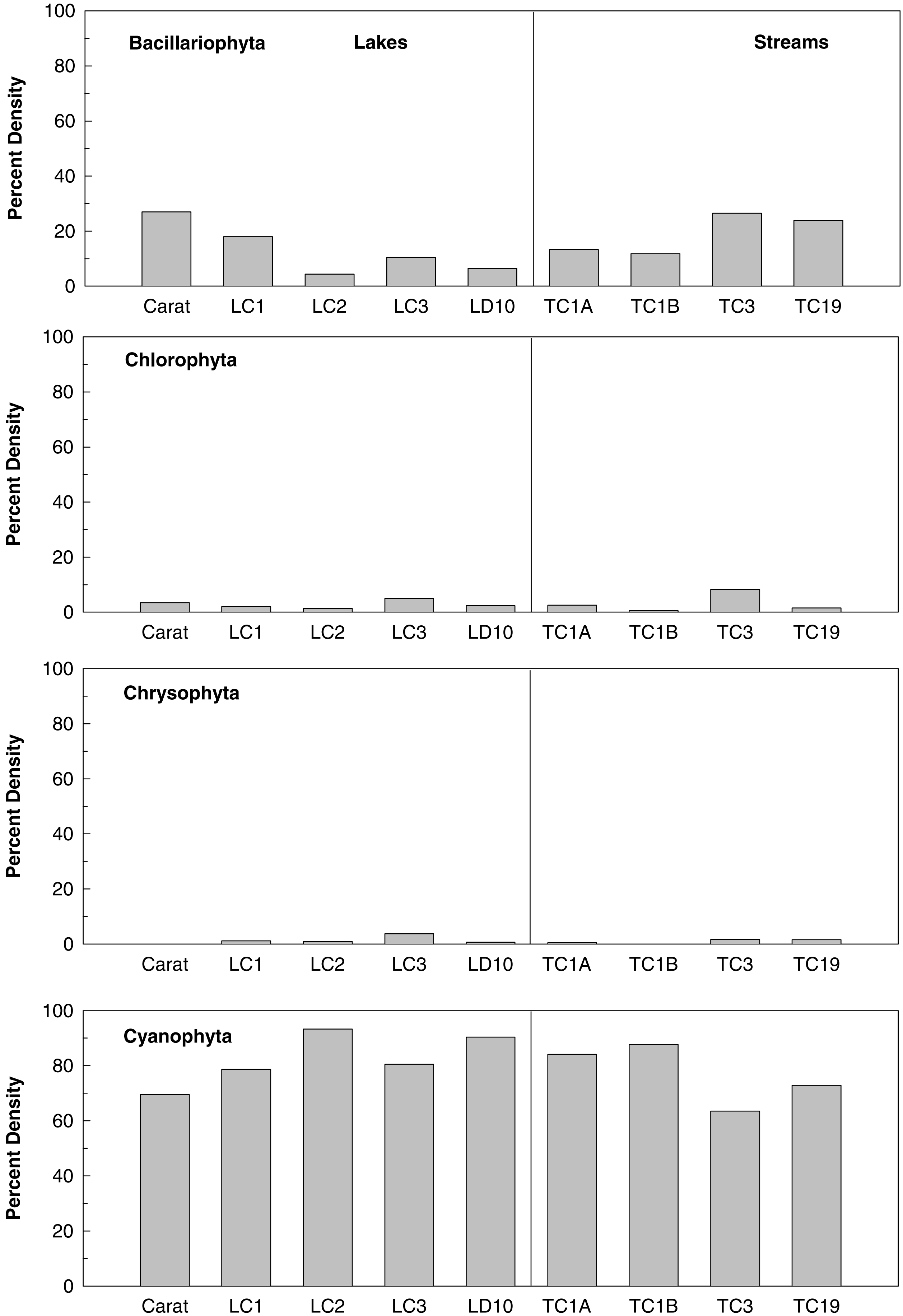


Figure 3.15 Percent density for major taxonomic periphyton groups in lakes and streams of the Jericho Study Area, 1999.

Lake periphyton biomass is also adversely affected by nutrient deficiencies (Kalff and Welch 1974; Welch and Kalff 1974; Bergmann and Welch 1990). In general, the periphytic biomass indices documented in the lakes of the Jericho Study Area were low, which is characteristic of oligotrophic conditions.

## 3.2.2 Phytoplankton

To provide baseline information on the phytoplankton community, samples were collected from lakes in the Jericho Study Area during July 1999. Sites were established on Lakes C1, C2, C3, and D10 (Figure 3.13). Relevant data are summarized in the following sections; all data are presented in Appendix C, Tables C3 and C4.

Phytoplankton are microscopic free-floating algae (Smith 1950). Summary results of phytoplankton biovolume ($\mu m^3$/mL) and density (No. cells/mL) are both presented in this section because density alone does not provide an accurate assessment of a taxon's importance. For example, taxa that are extremely numerous may have a low biovolume due to the small size of individual organisms. Conversely, taxa that have large biovolumes (due to the large size of individual organisms) may not be numerically abundant. These large bodied groups can contribute significantly to lake productivity. As such, they can influence the abundance of herbivores that feed on them (generally zooplankton) and can modify nutrient availability for competing plants or algae.

### 3.2.2.1 Biomass and Density

Chlorophyll *a* concentrations ranged from less than 0.4 mg/$m^3$ to 2.3 mg/$m^3$ (Table 3.4). The biovolumes of all algae varied between sites as did the density of cells. Biovolume was greatest in Lake C1 (2064 $\mu m^3 x10^3$/mL) and lowest in Lake D10 (245 $\mu m^3 x10^3$/mL). Similar results were recorded for density: Lake C1 had the highest (9120 cells/mL), where as Lake D10 had the lowest (932 cells/mL).

Table 3.4 Biovolume, density, number of taxa, and chlorophyll *a* values for phytoplankton samples in lakes of the Jericho Study Area, 1999.

| Category | Site | | | |
|---|---|---|---|---|
| | Lake C1 | Lake C2 | Lake C3 | Lake D10 |
| Biovolume ($\mu m^3 x10^3$/mL) | 2064.4 | 394.9 | 1409.3 | 245.8 |
| Chlorophyll *a* (mg/$m^3$) | 2.3 | 0.4 | 0.9 | 1.1 |
| Density (cells/mL) | 9120 | 1007 | 3318 | 932 |
| Taxa | 51 | 51 | 62 | 57 |

### 3.2.2.2 Community Structure

In total, 124 species of algae were identified in the samples collected in the Jericho Study Area (Appendix C, Table C4). The number of species identified at each site was consistent (range from 51 to 62). In terms of community structure, the majority (99% of biovolume) belonged to five taxonomic groups.

The importance of each major taxonomic group varied between lakes and no spatial pattern was apparent (Figure 3.16). Chrysophyta (golden-brown algae) exhibited the greatest importance in terms of percent biovolume in Lakes C1 and C3, while Chlorophyta (green algae) was most important in Lake D10, and Bacillariophyta (diatoms) dominated in Lake C2. In terms of percent density, Cyanophyta (cyanobacteria) were most important in Lakes C1 and C2. Percent density results for Lakes D10 and C3 were similar to that for biovolume.

In terms of frequency of occurrence, diatoms were well represented at sites by the species *Cyclotella glomerata*. The most frequently encountered green algae species were *Oocystis lacustris*, while cryptomonads were represented by *Cryptomonas reflexa* and *Rhodomonas minuta*. *Chrysophyta rodhei* was the dominant golden-brown algae and *Aphanocapsa elachista* was the most widely distributed cyanobacteria species.

#### 3.2.2.3 Summary

The phytoplankton assemblages in the lakes of the Jericho Study Area were indicative of oligotrophic waterbodies (using criteria presented in Wetzel 1983). Chlorophyll *a*, biovolume and density values were all low. In general, golden-brown algae (Chrysophyta) had the greatest biovolumes and cyanobacteria (Cyanophyta) had the greatest densities. It should be noted that samples were collected in early summer (July). Because phytoplankton communities exhibit seasonal variation, in terms of biomass and community composition, it is likely that the results would vary between seasons.

### 3.2.3 Zooplankton

Zooplankton samples were collected at the four lake sites used to collect phytoplankton (Figure 3.13). Summary information is presented in this section; detailed data are presented in Appendix C, Table C5.

Zooplankton communities are composed of microscopic animals that live in the water column (Pennak 1978; Wetzel 1983). Summary results of zooplankton biomass (μg/m$^3$; dry weight) and density (No./m$^3$) are both presented in this section because density alone does not provide an accurate assessment of a taxon's importance. Taxa that are extremely numerous may have a low biomass because of the small size of individual organisms. Conversely, taxa that have large biomass (due to large size of individual organisms) may not be numerically abundant. Zooplankton groups can contribute to lake productivity by influencing the abundance of predators that feed on them (generally other zooplankton and fish) and modifying phytoplankton communities through grazing.

#### 3.2.3.1 Biomass

The estimates of total zooplankton biomass in lakes of the Jericho Study Area were low (Table 3.5). Overall, Lake C1 exhibited the highest biomass (217 554 μg/m$^3$), while the biomass of zooplankton was lowest at Lake D10 (71 254 μg/m$^3$).

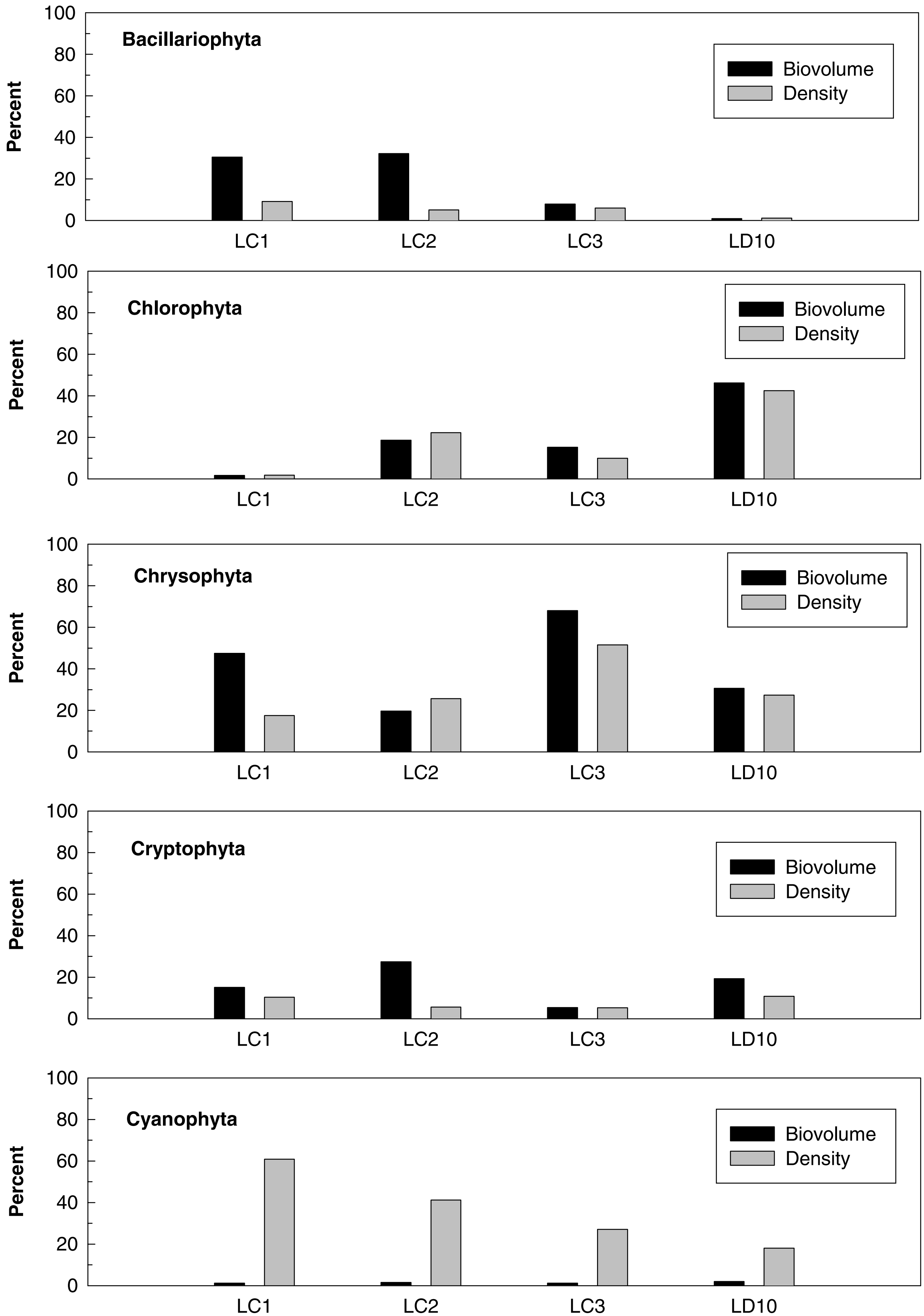


Figure 3.16 Percent biovolume and density of major taxonomic phytoplankton groups in lakes of the Jericho Study Area, 1999.

Cladocera contributed the most (range 52 to 86%) to zooplankton biomass (Figure 3.17). In general, calanoid copepods were second in importance in terms of biomass (range from 6 to 32%), followed by cyclopoid copepods (range from 1 to 16%). *Holopedium gibberum* was the most important cladoceran species, while *Leptodiaptomus sicilis*, was the dominant calanoid copepod species (Appendix C, Table C6). The dominant species in the cyclopoid copepod group was *Diacyclops bicuspidatus*.

Table 3.5 Biomass, density, and number of taxa values for zooplankton samples in lakes of the Jericho Study Area, 1999.

| **Category** | **Site** | | | |
|---|---|---|---|---|
| | **Lake C1** | **Lake C2** | **Lake C3** | **Lake D10** |
| Density (number/$m^3$) | 66 340.3 | 7175.6 | 33 461.7 | 72 271.7 |
| Biomass (µg/$m^3$) | 217 554.5 | 170 896.4 | 141 877.1 | 71 254.0 |
| Taxa | 13 | 11 | 15 | 13 |

### 3.2.3.2 Density

Zooplankton densities ranged from 7176 to 72 272 organisms/$m^3$ (Lake C2 and Lake D10, respectively). Overall, rotifers and cyclopoid copepods contributed the most toward total zooplankton density; water fleas were not abundant. As a group, the rotifers *Conochilus unicornis*, *Kellicottia longispina*, and *Keratella cochlearis* accounted for the largest portion (81%) of the total zooplankton abundance in sampled lakes in the Jericho Study Area. The presence of large numbers of copepod nauplii explains the high densities recorded in some lakes (C1 and D10).

### 3.2.3.3 Summary

Zooplankton in the Jericho Study Area exhibited some variation in community biomass and density. Cladocera (water fleas) was the dominant taxonomic group in terms of biomass. Within this group, *Holopedium gibberum* was the most important species. Other taxonomic groups accounted for limited amounts of zooplankton biomass at some sites. Rotifers, particularly *Conochilus unicornis*, *Kellicottia longispina*, and *Keratella cochlearis*, were the most abundant zooplankton species at most sites. Due to their small size, rotifers did not have a large contribution to the community biomass.

## 3.2.4 Benthic Macroinvertebrates

Benthic (bottom-dwelling) macroinvertebrates are an important link in aquatic food webs. Most are herbivorous, detrivorous, or filter feeders and derive much of their energy from aquatic plants and algae or organic materials. Some species are predacious, generally feeding upon other nonvertebrates. Many fish species, including early life history stages of piscivorus species, feed on benthic macroinvertebrates.

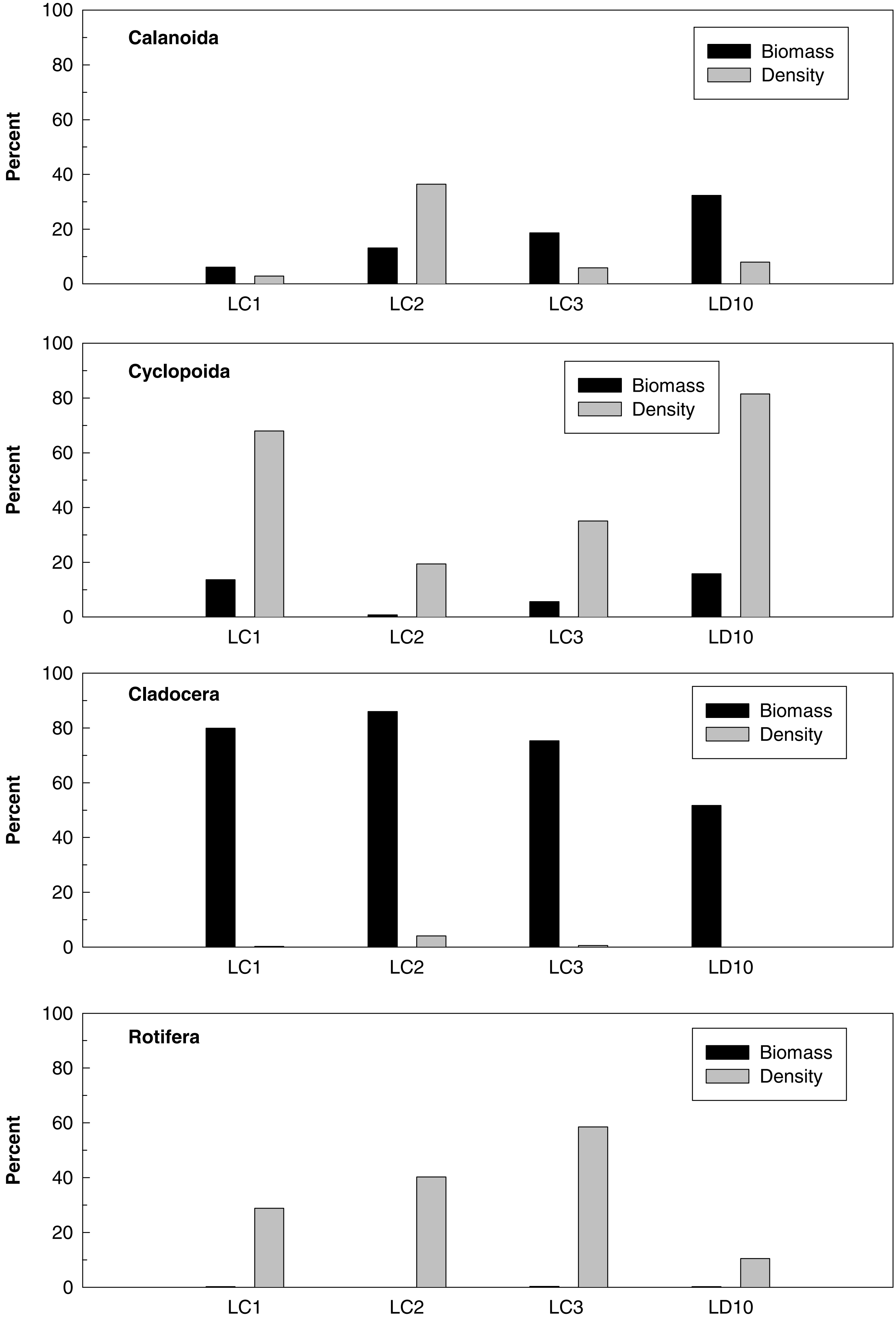


Figure 3.17 Percent biomass and density for major taxonomic zooplankton groups in lakes of the Jericho Study Area, 1999.

The 1999 program was designed to collect baseline information for benthic macroinvertebrate communities in selected waterbodies of the Jericho Study Area. Previous experience in the area indicated that most streams were ephemeral (intermittent flow during open water period) and logistically difficult to sample (large substrates), which limited their potential as sample areas. Therefore, benthic macroinvertebrate sampling was restricted to lakes. Collections were stratified into littoral and profundal zones to account for variation in community structure. The littoral zone (<5.0 m depth) receives larger amounts of light relative to the profundal zone (>5.0 m depth), and therefore, is potentially more productive. Sites were established on each of Lakes C1, C3 and D10. Because of its shallow depth, a profundal samplewas not collected in Lake C2. Due to faulty preservation procedures, the littoral sample for Lake C2 could not be analysed, therefore, results are not available for this waterbody. Summary information are presented in Table 3.6 and Figure 3.18; all raw data are summarized in Appendix C, Table C6.

#### 3.2.4.1 Community Structure

The number of taxa at littoral sites ranged from 8 to 18, with higher values occurring in Lakes C3 and D10 (Table 3.6). The total number of benthic macroinvertebrates at littoral sites ranged from 8129 organisms/m$^2$ in Lake C1 to 13 259 organism/m$^2$ in Lake C3. Benthic copepods were the dominant taxa numerically at all littoral sites. Calanoid, cyclopoid and harpacticoid copepods as a group accounted for between 21 and 83% of the sample. Chironomidae larvae were the second most abundant taxa in the littoral benthic community. Lake D10 had the highest chironomid density, (5174 organisms/m$^2$), while Lakes C3 and C1 densities were lower (3826 and 1044 organisms/m$^2$ respectively). Other less numerous taxa in the littoral zone included hydracarina, nematodes, oligochaetes, ostracods, pelecypods, and turbellarians.

At profundal sites, the number of taxa ranged from 9 to 14, with the highest number occurring in Lake D10. The total number of benthic macroinvertebrates at profundal sites was more variable. Densities ranged from 1868 organisms/m$^2$ in Lake C3 to 22 433 organisms/m$^2$ in Lake C1. As for littoral sites, benthic copepods were the dominant taxa numerically. This was particularly true in Lake C1. Calanoid, cyclopoid and harpacticoid copepods as a group accounted for between 8 and 95% of the sample. Chironomidae larvae were the second most abundant taxa in the profundal benthic community. Lake D10 had the highest chironomid density (5609 organisms/m$^2$), while Lakes C3 and C1 densities were lower (739 and 869 organisms/m$^2$ respectively).

With the exception of the high number of copepods at the profundal site in Lake C1, total densities of benthic macroinvertebrates were generally higher in the littoral zone than in the profundal zone. This was also true for the number of taxonomic groups. If the copepod fraction of the sample is excluded from the analyses, the relative importance of each of the major taxonomic groups within each lake was relatively constant (Figure 3.18). In all three waterbodies, chironomid larvae accounted for the largest percentage of the sample in both the littoral and profundal zones. Pelecypods tended to be second in importance in terms of density. In Lake C1, this was true only in the littoral zone; this group was absent from the profundal sample. In Lake C3, oligochaetes were an important taxanomic group in both littoral and profundal sites. In Lake D10, other taxonomic groups were also well represented including hydracarina, nematodes and turbellarians.

Table 3.6 Density of benthic macroinvertebrates groups in samples collected at littoral and profundal zones[a] of selected lakes in the Jericho Study Area, 1999.

| Taxonomic Group | Lake C1 | | Lake C3 | | Lake D10 | |
|---|---|---|---|---|---|---|
| | Littoral | Profundal | Littoral | Profundal | Littoral | Profundal |
| PLATYHELMINTHES | | | | | | |
| **TURBELLARIA** | | | | | | |
| **MICROTURBELLARIA** | | | | | 435 | |
| Mesostoma | | | | 43 | | 217 |
| NEMATODA | | | 43 | 87 | 435 | 304 |
| MOLLUSCA | | | | | | |
| **PELECYPODA** | 260 | | 2043 | 522 | 651 | 1217 |
| ANNELIDA | | | | | | |
| **OLIGOCHAETA** | | | | | | |
| Naididae | | | 87 | 43 | 304 | |
| Tubificidae | | | 1652 | 87 | 43 | 43 |
| Lumbriculidae | | | 43 | | | |
| Enchytraeidae | | | | | 130 | |
| ARTHROPODA | | | | | | |
| **ARACHNIDA** | | | | | | |
| **Hydracarina** | | 43 | 87 | | | 43 |
| Lebertiidae | | | | | 130 | 43 |
| **CRUSTACEA** | | | | | | |
| **COPEPODA** | | | | | | |
| CALANOIDA | 3739 | 17 522 | 3348 | 304 | 1261 | 261 |
| CYCLOPOIDA | 3043 | 3696 | 2130 | | 478 | 435 |
| HARPATICOIDA | | | | | 43 | |
| **OSTRACODA** | 43 | 217 | | 43 | 435 | 217 |
| **MALACOSTRACA** | | | | | | |
| AMPHIPODA | | | | | | |
| Gammaridae | | 43 | | | | |
| **INSECTA** | | | | | | |
| COLLEMBOLA | | 43 | | | | |
| DIPTERA | | | | | | |
| Chironomidae | 1044 | 869 | 3826 | 739 | 5174 | 5609 |
| TRICHOPTERA | | | | | | |
| Limnephilidae | | | | | 87 | |
| **Total No. Taxa/m$^2$ [b]** | **8** | **9** | **15** | **9** | **18** | **14** |
| **Total No. Organisms/m$^2$** | **8129** | **22 433** | **13 259** | **1868** | **9606** | **8389** |
| **No. Organisms/m$^2$ (Copepoda excluded)** | **1347** | **1215** | **7781** | **1564** | **7824** | **7693** |

[a] For definition of littoral and profundal zones, see Section 2.1.2.4.
[b] Based on number of taxa identified; see Appendix C, Table C6.

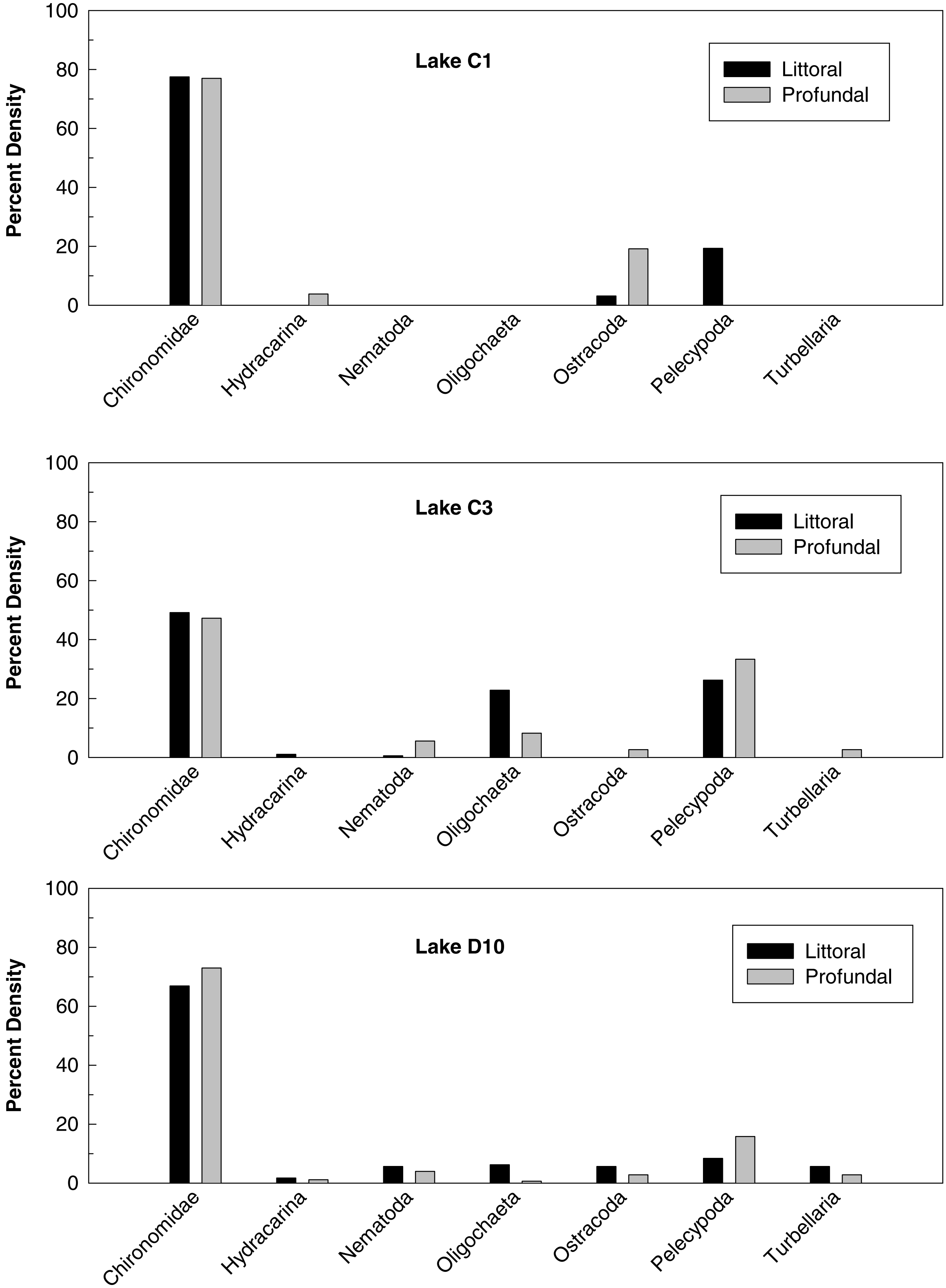


Figure 3.18 Percent density of major benthic macroinvertebrate taxonomic groups at littoral and profundal sites in selected lakes of the Jericho Study Area, 1999 (Copepods excluded from summary).

#### 3.2.4.2 Summary

In general, densities and number of taxonomic groups of benthic macroinvertebrates were greater in the littoral zones than in the profundal zones of sampled lakes in the Jericho Study Area. This likely reflects the higher productivity of shallow-water habitats because of higher water temperatures and greater light penetration. Taxonomic groups encountered included copepods, chironomids, hydracarinas, nematodes, oligochaetes, ostracods, pelecypods, and turbellarians. This taxonomic composition was indicative of a homogenous substrate dominated by fine sediments in lake environments. In terms of taxonomic composition, the benthic macroinvertebrate communities were dominated by a few taxa: copepods and chironomids were numerically abundant.

## 3.3 FISH

The 1999 fish sampling program was designed to provide information on fish communities in selected waterbodies of the Jericho Study Area. Sampling was conducted during spring, summer, and fall in a variety of habitats using several inventory techniques. In lakes, these techniques included gillnetting, backpack electrofishing, minnow traps, and use of an Arctic fyke net. In streams, fish were inventoried using backpack electrofishing. The following section provides summary information for fish communities in selected lakes and streams. All raw data are presented in Appendix D, Tables D1 to D8.

### 3.3.1 Species Composition and Abundance

#### 3.3.1.1 Lakes

During the 1999 fisheries program, five lakes were sampled in the Jericho Study Area (Carat Lake, Lakes C1, C2, C3, and D10). Fish were not recorded in Lake C2. This is a small (1.0 ha), shallow (maximum depth of 2.0 m) waterbody situated in the headwaters of Stream C1. As such, Lake C2 provides little potential as habitat for fish residing in the Jericho Study Area. Incidental observations during the field program documented high densities of the Branchiopoda, Anostraca (fairy shrimp). The presence of fairy shrimp in a waterbody is usually a good indication that predatory fish are absent from the system (Clifford 1991).

In total, 328 fish representing five species were recorded in the remaining four lakes (Table 3.7). Lake trout (147) was the numerically dominant species, followed by round whitefish (93), slimy sculpin (48), Arctic char (39), and burbot (1). The relative importance of a particular species within each lake was not constant. In Lake C1, lake trout and slimy sculpin were the only species encountered. In Carat Lake, lake trout dominated the sample (49%), but species such as round whitefish (31%) and Arctic char (15%) were also present. The species composition and relative importance of fish sampled in Lake C3 was similar to that of Carat Lake. Lake trout dominated the sample (53%), followed by lower numbers of round whitefish (36%) and Arctic char (10%). Despite a significant amount of sampling effort (62.1 h gillnetting; 541 sec backpack electrofishing; 101 h gee trapping) in Lake D10, only 23 slimy sculpins were recorded. Fairy shrimp were also observed in this waterbody.

To assess the relative abundance of fish in each of the sampled lakes, gill net catch data were summarized. These data were used for comparative purposes because they were based on a standardized sampling effort in all study area lakes and the majority of fish were captured using this technique (176 of 328 fish).

In summer, a variety of habitats and locations were sampled to assess fish distribution patterns. During summer, the relative abundance (catch-per-unit-effort or CPUE) of fish captured in each lake varied (Figure 3.19). In Carat Lake, lake trout were most abundant (2.5 fish/100 $m^2 \cdot$ 12 h), followed by Arctic char and round whitefish (1.3 and 1.4 fish/100 $m^2 \cdot$ 12 h, respectively). Catch rates for lake trout and round whitefish were higher in Lake C3 than in Carat Lake (2.8 and 1.7 fish/100 $m^2 \cdot$ 12 h, respectively), but the catch rate for Arctic char was much lower (0.1 fish/100 $m^2 \cdot$ 12 h). The higher catch rates for lake trout and round whitefish recorded in Lake C3 were likely a reflection of differences in sampling techniques rather than differences in fish abundance between lakes. In Lake C3, gill nets were set overnight, whereas in Carat Lake they were set and run only during the day. Gillnetting efficiency is generally higher during darkness, therefore, CPUE values for fish in Lake C3 are biassed upward. Despite this difference in sampling, the results for Lake C3 suggest that Arctic char are not abundant in this waterbody (high sampling efficiency resulted in low numbers of captured fish).

Table 3.7 Species composition of fish sampled from lakes in the Jericho Study Area, 1999 (all sampling methods and periods combined).

| Species | Carat Lake | | Lake C1 | | Lake C3 | | Lake D10 | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Arctic char | 30 | 15.4 | | | 9 | 9.7 | | | 39 | 11.9 |
| Burbot | 1 | 0.5 | | | | | | | 1 | 0.3 |
| Lake trout | 95 | 48.7 | 3 | 17.6 | 49 | 52.7 | | | 147 | 44.8 |
| Round whitefish | 60 | 30.8 | | | 33 | 35.5 | | | 93 | 28.4 |
| Slimy sculpin | 9 | 4.6 | 14 | 82.4 | 2 | 2.2 | 23 | 100.0 | 48 | 14.6 |
| **Total** | **195** | **100.0** | **17** | **100.0** | **93** | **100.0** | **23** | **100.0** | **328** | **100.0** |

Results for Lake C1 indicated that fish are not abundant in this waterbody; the average catch rate for lake trout was only 0.4 fish/100 $m^2 \cdot$ 12 h. The CPUE value for captured fish in Lake D10 was even lower. The only species encountered was slimy sculpin and the catch rate was 0.2 fish/100 $m^2 \cdot$ 12 h. Because the gill nets used during the field program were not designed to capture fish the size of slimy sculpin (<150 mm length), the low CPUE value was not indicative of the abundance of slimy sculpin in Lake D10. A limited amount of sampling for this species using backpack electrofishing resulted in catch rates of 2.4 fish/min.

In fall, sampling was restricted to Carat Lake and Lake C3 in an attempt to identify concentrations of spawning fish. Gill net catch rates were variable, with CPUE values tending to be lower in Carat Lake and higher in Lake C3. Lake trout was the dominant species present in both lakes (Figure 3.19).

### 3.3.1.2 Streams

During the 1999 fisheries program, five streams were sampled in the Jericho Study Area (Streams C1, C2, C2A, C3, and C19). Fish were not recorded in Stream C19. This system is small (length of 350 m), exhibits ephemeral flow (no discharge during summer), and contains a barrier to fish passage, therefore, this waterbody provides little potential as habitat for fish residing in the Jericho Study Area.

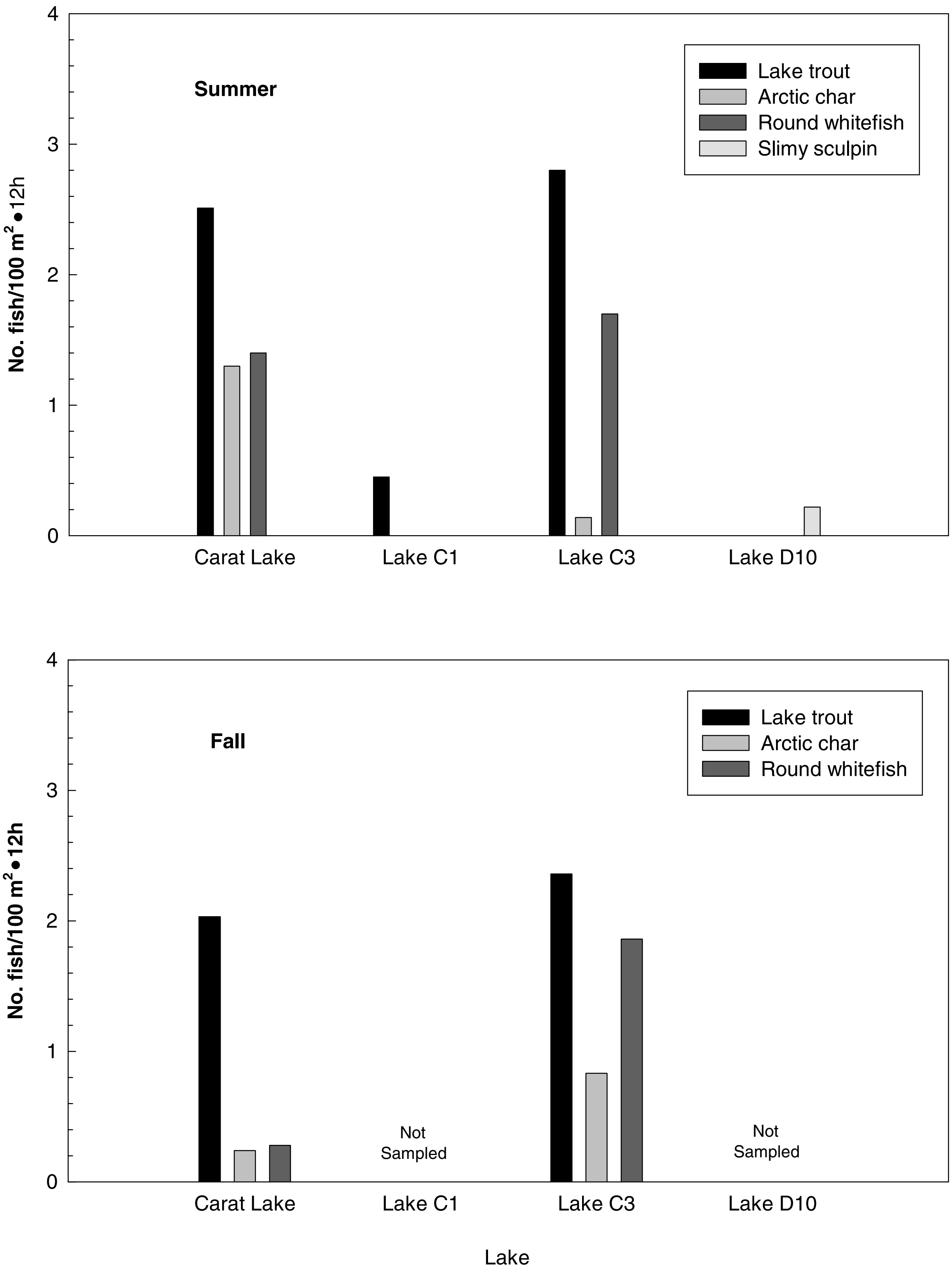


Figure 3.19 Average catch-per-unit-effort values (fish/100 $m^2$•12h) for fish captured during gill net sampling in lakes during summer and fall within the Jericho Study Area, 1999.

In total, 138 fish representing four species were enumerated during the synoptic and detailed surveys (Table 3.8). Slimy sculpin dominated the sample (62), followed by Arctic char (42), lake trout (28), and burbot (6). The number of species encountered varied depending on sample area. Four species and the highest number of fish (96) were recorded in Stream C1. Four species of fish were encountered in Stream C2A, but fish numbers were much lower (12). Three species of fish were recorded in Stream C2, while only one species (Arctic char) was recorded in Stream C3.

Table 3.8 Species composition of fish sampled from streams in the Jericho Study Area, 1999 (all sampling methods and periods combined).

| Species | Stream C1 | | Stream C2 | | Stream C2A | | Stream C3 | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Percent | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Arctic char | 31 | 32.3 | 7 | 25.9 | 1 | 8.3 | 3 | 100.0 | 42 | 30.4 |
| Burbot | 5 | 5.2 | | | 1 | 8.3 | | | 6 | 4.3 |
| Lake trout | 25 | 26.0 | 2 | 7.4 | 1 | 8.3 | | | 28 | 20.3 |
| Slimy sculpin | 35 | 36.5 | 18 | 66.7 | 9 | 75.0 | | | 62 | 44.9 |
| **Total** | **96** | **100.0** | **27** | **100.0** | **12** | **100.0** | **3** | **100.0** | **138** | **100** |

On a percentage basis, the relative contribution of each species differed among streams. In Stream C1, Arctic char (32%), lake trout (26%), and slimy sculpin (37%) were similarly represented. Burbot were also present, but represented only a small percentage of the sample (5%). In Streams C2 and C2A, slimy sculpin dominated (>66%). In Stream C3, only three individuals of one species, Arctic char, were recorded.

Based on backpack electrofishing data during the synoptic survey only, the relative abundance of fish were low in all sampled streams (Figure 3.20). Rates did not exceed 2 fish/min of sampling for most species. Exceptions were CPUE values for slimy sculpin of 2.6 and 5.0 fish/min in Streams C2 and C2A, respectively. These results were not unexpected. All sampled streams were small systems that were used on an opportunistic basis by lake resident populations.

### 3.3.2 Biological Characteristics

An objective of the 1999 fisheries program was to describe the biological characteristics of fish species encountered in the Jericho Study Area. Characteristics described in this section include the following: length-frequency distributions, length-weight relationships, condition factors, age-at-maturity, length-at-age, and weight-at-age. Because much of this information was collected from fish that succumbed during sampling, and mortality rates were low, sample sizes available for analyses were small. Unless otherwise stated, data from all sampling sessions and sampling methods have been combined to maximize sample sizes. Raw data are presented in Appendix D, Table D7.

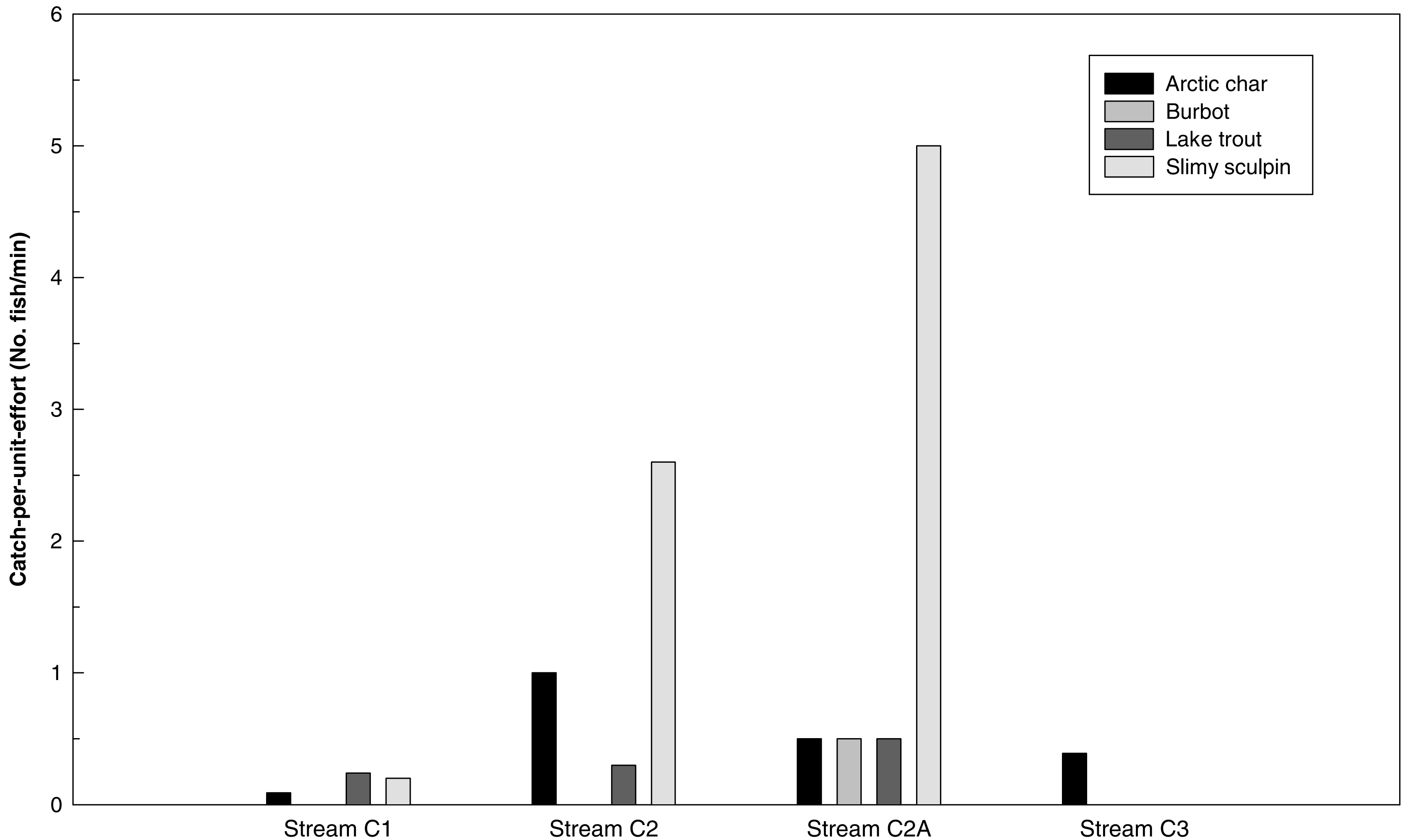


Figure 3.20 Relative abundance (no. fish/min) of fish encountered in streams during synoptic surveys using backpack electrofishing, Jericho Study Area, 1999 (all seasons combined).

### 3.3.2.1 Lake trout

In Carat Lake, captured lake trout ranged in fork length from 35 to 989 mm; however, few individuals were encountered that were greater than 500 mm in length (Appendix D, Table D7). Based on combined data for all fish sampling techniques (gill net and fyke net were the primary methods), the length-frequency distribution of lake trout in Carat Lake exhibited a bimodal distribution with smaller fish predominating (Figure 3.21). The bimodal grouping occurred between 20 and 200 mm and between 400 and 500 mm.

In Lake C3, lake trout generally exhibited the same length characteristics as in Carat Lake, but smaller-sized individuals (i.e., <150 mm) were absent from the sample (Figure 3.22). This was due to the primary method used, gill netting, which selectively captured larger individuals than the fyke net used in Carat Lake. Fish ranged in length from 176 to 835 mm. Similar to results for Carat Lake, lake trout in Lake C3 also exhibited a bimodal distribution.

Length data were also collected from lake trout captured in Lake C1; however, the sample (*n*=2) was too small to establish an accurate assessment of the length-frequency distribution. Lengths of lake trout in this small waterbody ranged between 210 and 305 mm (Appendix D7).

Length-weight regression equations and mean condition factors for lake trout sampled from lakes in the Jericho Study Area are presented in Table 3.9.

Table 3.9 Length-weight regression equations and mean condition factors for lake trout sampled during summer and fall from lakes in the Jericho Study Area, 1999.

| Lake | Length-weight Relationship | | Condition Factor | Sample Size |
|---|---|---|---|---|
| | Regression Equation[a] | $r^2$ Value | | |
| Carat Lake | $Weight = 4.5 \cdot 10^{-6} \cdot Fork\ Length^{3.143}$ | 0.994 | 1.04 | 52 |
| Lake C3 | $Weight = 2.8 \cdot 10^{-5} \cdot Fork\ Length^{2.826}$ | 0.938 | 1.02 | 48 |

[a] Weight in grams; fork length in millimetres.

Age-at-length and age-at-weight information for lake trout captured in the Jericho Study Area (all samples combined) are provided in Table 3.10. Fish ranged in age from 1 to 35 years; however, caution should be used when interpreting this information. The sample used for ageing was small (*n*=26) and there was variation inherent to this type of data. Subarctic fish populations typically exhibit a great range in age for fish of a given length (Johnson 1972). This information provides only a representative cross-section of the population and should not be interpreted as an accurate description of growth rate, nor should it be used for comparison of growth curves among different fish populations.

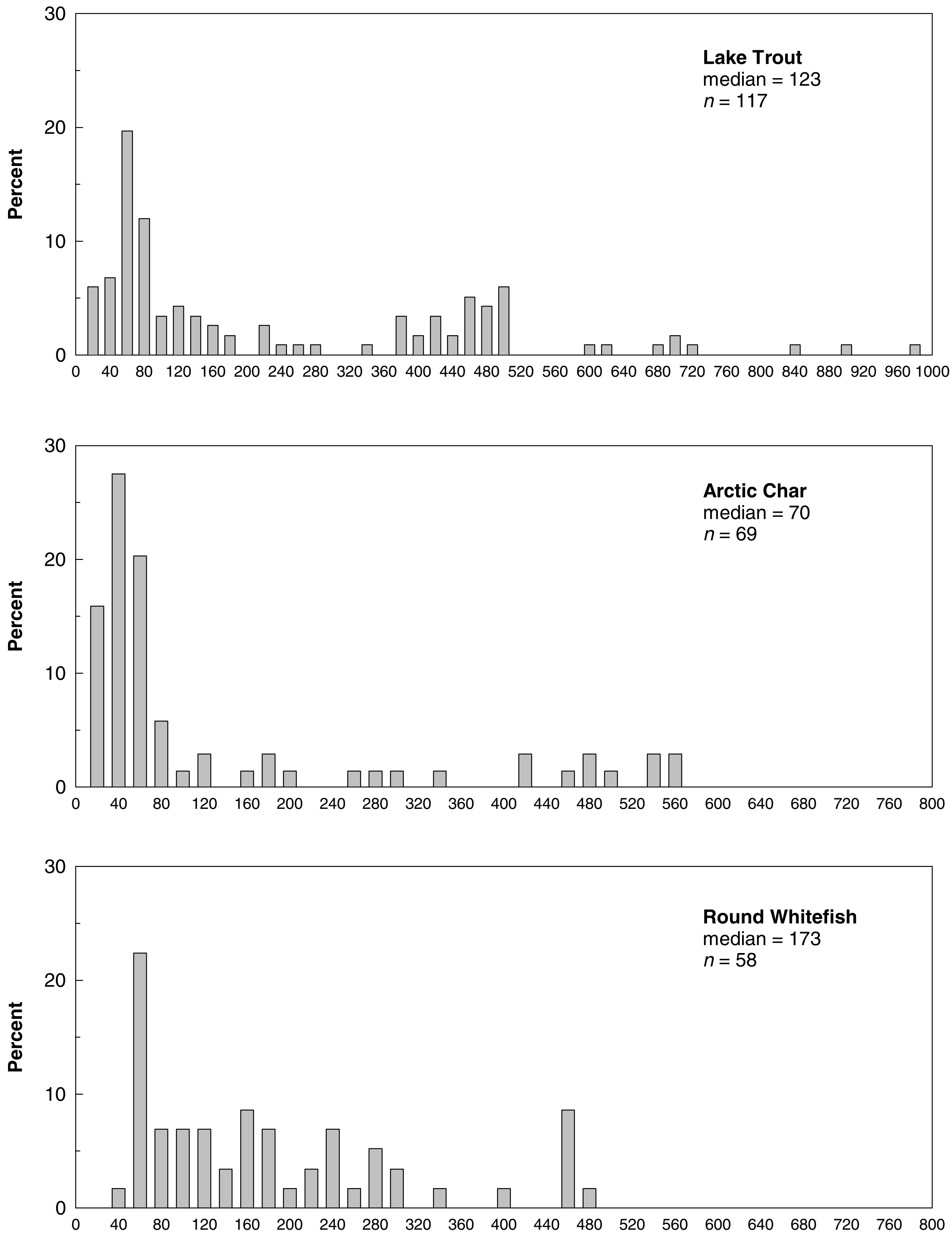


Figure 3.21 Length-frequency distribution of lake trout, Arctic char, and round whitefish in Carat Lake, Jericho Study Area, 1999 (all seasons and methods combined).

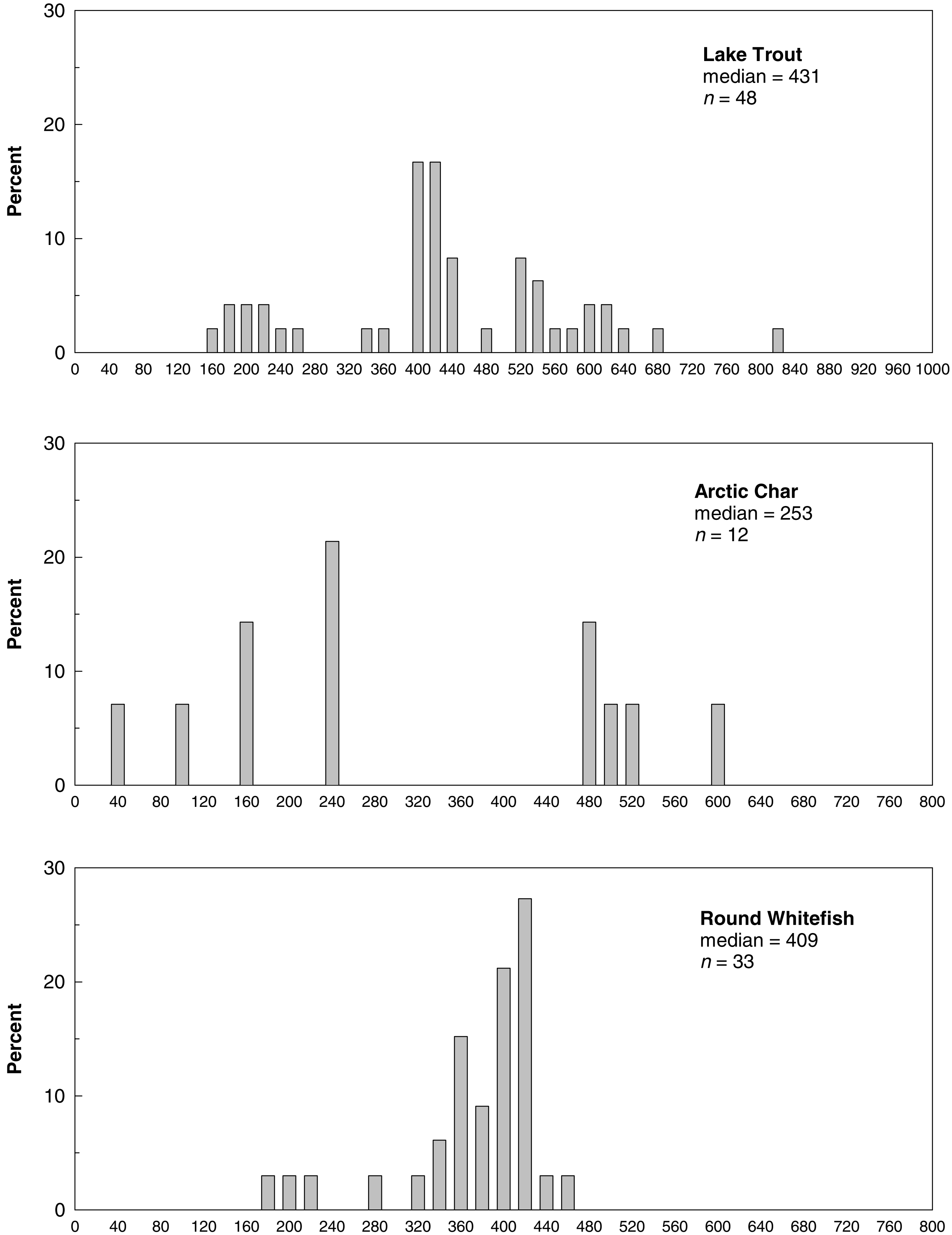


Figure 3.22 Length-frequency distribution of lake trout, Arctic char, and round whitefish in Lake C3, Jericho Study Area, 1999 (all seasons and methods combined).

Limited data were available to assess age-at-maturity for lake trout in the Jericho Study Area. Lake trout appear to become sexually mature at approximately 11 years of age. The smallest sexually mature individual encountered had a fork length of 401 mm. This fish was a gravid female captured from Lake C3. Nonfecund lake trout were identified during the present study (i.e., mature fish that did not spawn that year). The percentage of nonfecund individuals in the sample was 34% (*n*=35).

Table 3.10 Age-length relationships[a] for lake trout, Arctic char, and round whitefish sampled from selected waterbodies within the Jericho Study Area, 1999.

| Age | Lake trout | | | | | Arctic char | | | | | Round whitefish | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Fork Length (mm) | | Weight (g) | | *n* | Fork Length (mm) | | Weight (g) | | *n* | Fork Length (mm) | | Weight (g) | | *n* |
| | Mean | Range | Mean | Range | | Mean | Range | Mean | Range | | Mean | Range | Mean | Range | |
| 1 | 89 | 68-137 | 20 | | 4 | 72 | | | | 1 | 80 | 78-82 | | | 3 |
| 2 | | | | | | | | | | | 112 | 106-118 | 5 | | 2 |
| 3 | | | | | | 258 | 250-265 | 185 | 175-195 | 2 | 214 | | 70 | | 1 |
| 4 | 188 | 176-203 | 68 | 60-85 | 3 | 271 | 242-299 | 188 | 110-265 | 2 | 262 | 239-285 | 193 | 145-240 | 2 |
| 5 | 224 | | 100 | | 1 | 283 | 256-310 | 313 | 140-485 | 2 | | | | | |
| 6 | 239 | 236-241 | 140 | 130-150 | 2 | | | | | | 354 | | 550 | | 1 |
| 7 | 275 | | 225 | | 1 | | | | | | 362 | | 515 | | 1 |
| 8 | | | | | | | | | | | 400 | | 760 | | 1 |
| 9 | | | | | | | | | | | 401 | 385-424 | 775 | 655-885 | 3 |
| 11 | 403 | 401-405 | 589 | 565-612 | 2 | | | | | | 389 | | 725 | | 1 |
| 12 | 404 | | 798 | | 1 | | | | | | | | | | |
| 13 | | | | | | | | | | | 416 | | 855 | | 1 |
| 14 | 459 | 431-486 | 1419 | 892-1945 | 2 | | | | | | 418 | | 800 | | 1 |
| 15 | 532 | | 1345 | | 1 | | | | | | | | | | |
| 17 | 446 | | 860 | | 1 | | | | | | | | | | |
| 18 | 491 | 456-525 | 1180 | 1000-1360 | 2 | | | | | | 432 | | 1075 | | 1 |
| 19 | | | | | | | | | | | 445 | | 1010 | | 1 |
| 22 | 589 | 540-637 | 1985 | 1345-2625 | 2 | | | | | | | | | | |
| 23 | 538 | | 1605 | | 1 | | | | | | | | | | |
| 24 | | | | | | | | | | | 429 | | 850 | | 1 |
| 27 | 738 | | 4500 | | 1 | | | | | | | | | | |
| 29 | 692 | | | | 1 | | | | | | | | | | |
| 35 | 835 | | 3000 | | 1 | | | | | | | | | | |

[a] Ages generated using fish sampled during all seasons and waterbodies.

### 3.3.2.2 Arctic char

In Carat Lake, captured Arctic char ranged in fork length from 36 to 578 mm (Figure 3.21; Appendix D, Table D7). Based on combined data for all fish sampling techniques (gill net and fyke net were the primary methods), the length-frequency distribution of Arctic char in Carat Lake exhibited a bimodal distribution with smaller fish predominating. The bimodal grouping occurred between 20 and 200 mm and between 400 and 560 mm. In Lake C3, only a small number of Arctic char were captured (*n*=12); thus, patterns in size distribution were not evident (Figure 3.22). Fish in the sample from Lake C3 ranged in length from 41 to 604 mm.

Length-weight regression equations and mean condition factors for Arctic char sampled from lakes within the Jericho Study Area are presented in Table 3.11. The results are typical of unexploited subarctic lake populations.

Table 3.11 Length-weight regression equations and mean condition factors for Arctic char sampled during summer and fall from lakes within the Jericho Study Area, 1999.

| Lake | Length-weight Relationship | | Condition Factor | Sample Size |
|---|---|---|---|---|
| | Regression Equation[a] | $r^2$ Value | | |
| Carat Lake | Weight = 2.1 · $10^{-5}$ · Fork Length$^{2.887}$ | 0.98 | 1.09 | 18 |
| Lake C3 | Weight = 3.1 · $10^{-6}$ · Fork Length$^{3.191}$ | 0.989 | 0.99 | 8 |

[a] Weight in grams; fork length in millimetres.

Age-at-length and age-at-weight information for Arctic char are presented in Table 3.10. Fish in this small sample (*n*=7) ranged in age from 1 to 5 years. No age-at-maturity data for Arctic char were available from the 1999 sample. Data previously collected in the Jericho Study Area suggested that fish became sexually mature at 10 years of age, and alternate year spawners were present (RL&L 1997).

### 3.3.2.3 Round whitefish

In Carat Lake, sampled round whitefish ranged in fork length from 59 to 491 mm; however, few individuals were greater than 300 mm in length (Figure 3.21; Appendix D, Table D7). In Lake C3, larger fish dominated the sample (Figure 3.22). This was due to the primary sampling technique used (gill nets). Fork lengths ranged from 194 to 464 mm.

Length-weight regression equations and mean condition factors for round whitefish sampled from lakes in the Jericho Study Area are presented in Table 3.12.

Table 3.12 Length-weight regression equations and mean condition factors for round whitefish sampled during summer and fall from lakes within the Jericho Study Area, 1999.

| Lake | Length-weight Relationship | | Condition Factor | Sample Size |
|---|---|---|---|---|
| | Regression Equation[a] | $r^2$ Value | | |
| Carat Lake | Weight = $3.0 \cdot 10^{-6} \cdot$ Fork Length$^{3.218}$ | 0.944 | 1.02 | 41 |
| Lake C3 | Weight = $6.5 \cdot 10^{-7} \cdot$ Fork Length$^{3.479}$ | 0.975 | 1.1 | 32 |

[a] Weight in grams; fork length in millimetres.

Round whitefish ranged in age from 1 to 24 years (Table 3.10). Past investigations (e.g., Kennedy 1949; Mackay 1989) of subarctic round whitefish populations have not documented the existence of fish 15 years of age and older. However, several individuals in the Jericho Study Area sample did exceed this age. This discrepancy can be explained by the use of different ageing structures; these studies employed scales, whereas the present study utilized otoliths. It is now commonly accepted that otoliths allow a more accurate assessment of fish age than scales, particularly for older fish (Jessop 1972; Mackay et al. 1990).

Limited data were available to assess the age-at-maturity for round whitefish captured in the Jericho Study Area during 1999. These data suggest that fish became sexually mature at eight years of age. The smallest sexually mature round whitefish encountered during the study was 365 mm in fork length. This fish was a gravid female captured from Lake C3. Nonfecund round whitefish were not recorded during the 1999 study.

### 3.3.3 Feeding Habits

Stomach contents of three species (lake trout, Arctic char, and round whitefish) were analysed to assess feeding habits (all seasons combined). Data were collected from fish that succumbed during capture or that were sacrificed for collection of tissue samples. The information is presented as frequency of occurrence and percent composition of food items by volume. The raw data used for these analyses can be found in Appendix D, Table D8.

The diet of lake trout consisted principally of zooplankton (50% occurrence) (Figure 3.23). Other food items consumed were fish (25%), trichopterans (16%), pelecypods (7%), and dipterans (1%). The diet of Arctic char was dominated by zooplankton (91% occurrence). Other food items consumed included ephemeropterans and trichopterans. Round whitefish consumed a variety of food items, which included oligochaetes, gastropods, pelecypods, zooplankton, and trichopterans. The dominant food consumed was zooplankton (64% occurrence). Other food items did not exceed 18% occurrence.

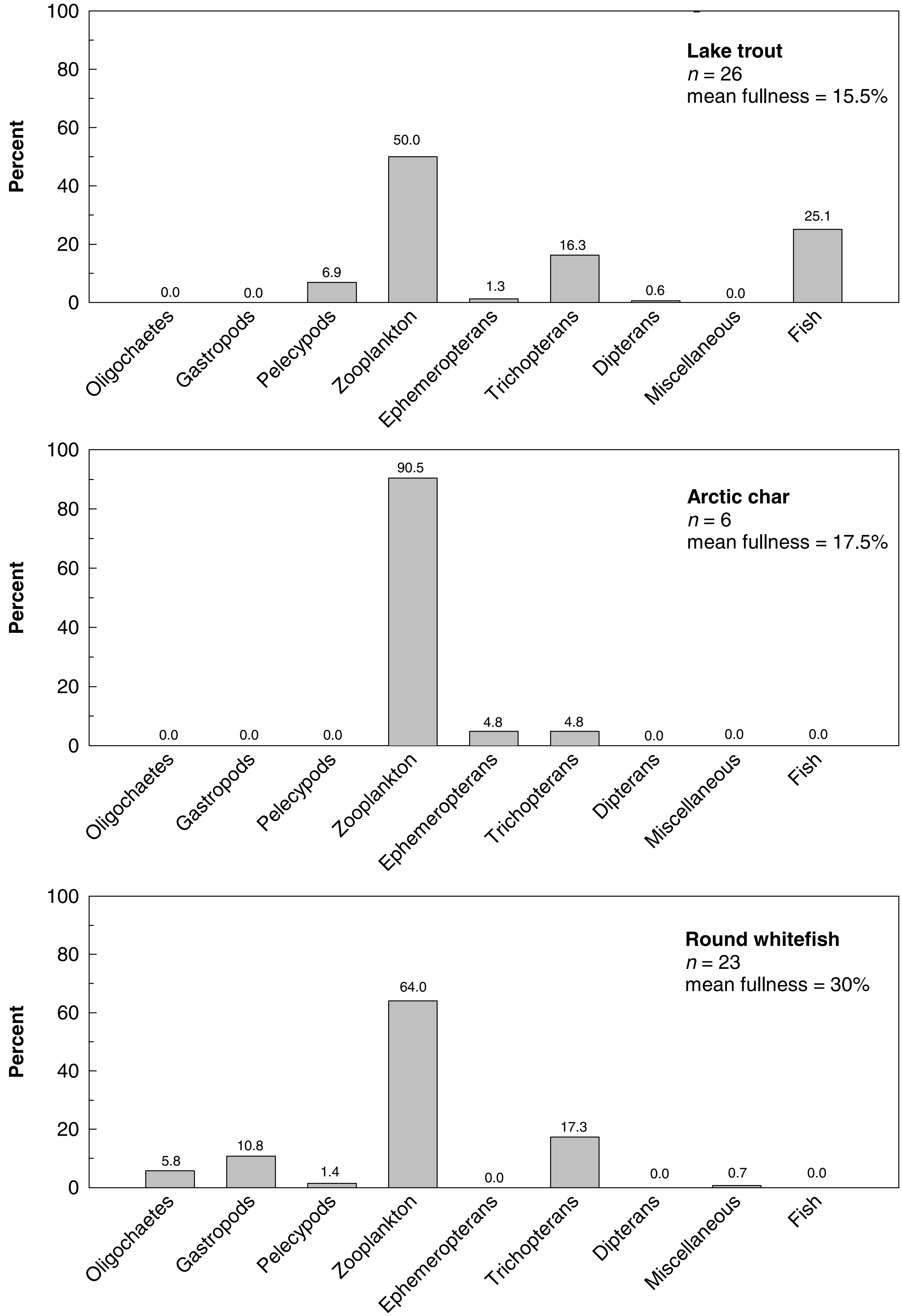


Figure 3.23 Percent frequency of occurrence of food items encountered in stomachs of lake trout, Arctic char and round whitefish captured from lakes in the Jericho Study Area, 1999.

### 3.3.4 Fish Movements

The Jericho Study Area contains several lakes that are interconnected by larger streams with discharges >0.5 $m^3/s$ during the open water period (Tahera Corporation, unpubl. data). As such, the potential exists for fish to undertake movements between waterbodies. To assess fish movement patterns, a tagging program was initiated in 1995 and continued during the present study. Lake trout and Arctic char in good physical condition were tagged and released. Round whitefish were not included in this study component because captured individuals of this species generally were in poor physical condition. The 1999 program sampled two waterbodies that had the potential to contain tagged fish: Carat Lake and Lake C3.

During the present study, 43 lake trout and 12 Arctic char were tagged and released in Carat Lake. Only one marked fish was recaptured in Carat Lake. This lake trout, which was marked in summer 1999, was subsequently recaptured near the original release site. In Lake C3, 21 lake trout and 5 Arctic char were tagged and released during the present study; none of these fish were recaptured. Two lake trout originally marked in Lake C3 in 1995 were recaptured in Lake C3 in 1999.

These limited results make it difficult to assess movement patterns of fish in the Jericho Study Area; however, characteristics of the watercourse connecting Carat Lake to Lake C3 suggest that there is limited potential for movement between waterbodies. The connection is shallow and is dominated by large boulder substrates. These characteristics would hamper, but not prevent, movement of large adult fish between these two lakes during all but high flow periods.

### 3.3.5 Fall Spawning

Gill net sampling was undertaken during fall in an attempt to identify sites used for spawning by lake trout and Arctic char. Sampling was conducted in Carat Lake and Lake C3. On Carat Lake, sampling was concentrated near the mouth of Stream C1. On Lake C3, sampling was widely distributed within the southern basin where Stream C3 enters the lake (Figure 3.24).

In total, 19 fish were captured in Carat Lake during the fall (Table 3.13; Appendix D, Table D9); these included lake trout (15), Arctic char (3), and round whitefish (1). Most fish were captured in the net set directly in front of the mouth of Stream C1 (14 of 19 fish). One gravid male Arctic char in prespawning condition and five ripe male lake trout in spawning condition were among the captured fish. An additional two ripe male lake trout were captured at a rocky shoal immediately east of the mouth of Stream C1. No gravid or ripe females were captured in Carat Lake. Overall, the catch-per-unit-effort was 3.91 fish/100 $m^2 \cdot 12$ h.

In Lake C3, 30 fish were captured during the fall spawning survey (Table 3.13; Appendix D, Table D9); these included lake trout, round whitefish, and Arctic char. Of the 16 captured lake trout, 3 were in prespawning condition and 8 were in spawning condition. Of the five Arctic char recorded, 1 was a prespawner, while 4 were ripe fish.

Gravid females of lake trout and Arctic char were also present (2 and 1, respectively). Only one of the nine round whitefish captured was gravid. Overall, the catch-per-unit-effort was 6.21 fish/100 $m^2 \cdot 12$ h.

### 3.3.6 Summary

Most sampled lakes in the Jericho Study Area supported populations of lake trout, round whitefish, and Arctic char. Lake trout was the predominant species with Arctic char and round whitefish being less numerous. Notable exceptions were Lake C2, which contained no fish, and Lake D10 which supported only one fish species (slimy sculpin). Lake C1 also contained a very simple fish community consisting of lake trout and slimy sculpin.

Several fish species were encountered in sampled streams. Arctic char, lake trout, and slimy sculpin were the most numerous, followed by much lower numbers of burbot at some sites. Overall, fish abundance was very low.

The biological characteristics of fish populations in the Jericho Study Area indicated that the individuals were slow growing, late maturing, and the population was dominated by older age-classes. Lake trout, Arctic char, and round whitefish tended to exhibit bimodal length-frequency distributions.

The feeding habits of fish in the Jericho Study Area were related to species-specific feeding habits and the most abundant food item available. Zooplankton was the dominant food group identified in fish stomachs, although other items were consumed. Although round whitefish consumed a variety of food items, zooplankton was also the dominant food group. Other food items consumed by this species included oligochaetes, trichopterans, gastropods, and pelecypods.

Limited recapture data for tagged fish made it difficult to assess movement patterns of fish; however, characteristics of the watercourse between Carat Lake and Lake C3 indicated that large numbers of fish likely do not undertake movements between these two waterbodies.

Lake trout and Arctic char in prespawning and spawning condition were present in both Carat Lake and Lake C3, with most of the captured fish being males. No spawning females were captured in Carat Lake; however, gravid female lake trout and Arctic char were encountered in Lake C3. The presence of fish in spawning condition suggests that spawning sites were present in the vicinity of the sampling locations. The low numbers of females in spawning condition, however, suggests that sampling was undertaken prior to the peak spawning period.

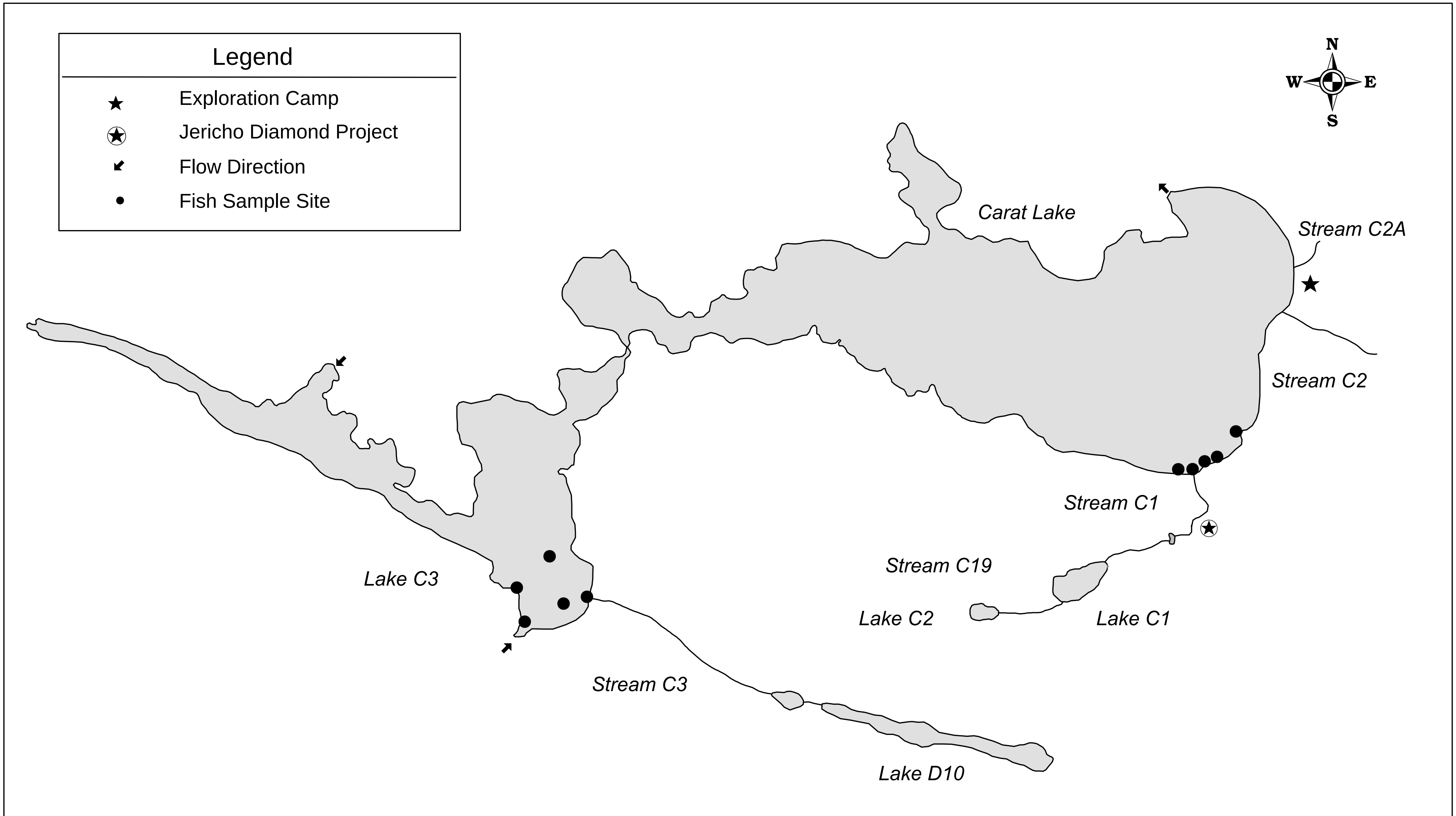


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Figure 3.24 Fall Fish Spawning Sample Sites, Jericho Study Area, 1999.

Table 3.13 Number of fish encountered and catch-per-unit-effort values during fall spawning surveys in the Jericho Study Area, 1999.

| Waterbody | Sample Time (h) | Species | Sexual Maturity | Count | CPUE (fish/100 $m^2 \cdot 12$ h) |
|---|---|---|---|---|---|
| Carat Lake | 26.2 | Lake trout | Ripe | 7 | 1.44 |
| | | | Nonspawner | 8 | 1.64 |
| | | Arctic char | Gravid | 1 | 0.21 |
| | | | Nonspawner | 2 | 0.41 |
| | | Round whitefish | Nonspawner | 1 | 0.21 |
| | | **Total** | | **19** | **3.91** |
| Lake C3 | 26 | Arctic char | Gravid | 1 | 0.21 |
| | | | Ripe | 4 | 0.83 |
| | | Lake trout | Gravid | 3 | 0.62 |
| | | | Ripe | 8 | 1.66 |
| | | | Nonspawner | 5 | 1.04 |
| | | Round whitefish | Gravid | 1 | 0.21 |
| | | | Nonspawner | 8 | 1.66 |
| | | **Total** | | **30** | **6.21** |

## 3.4 HABITAT AND HABITAT USE

This study component was designed to describe aquatic habitat in lakes and streams in the Jericho Study Area and to assess its value to fish. The 1999 program was a continuation of work undertaken in 1995 and 1996 (RL&L 1995, 1997). This section provides information for waterbodies not previously investigated. Raw data collected during the present study are provided in Appendix E, Tables E3 and E4.

### 3.4.1 Lakes

The shoreline habitat characteristics of Lakes C1, C2, C3, and D10 were inventoried. Surveys were designed to provide a general assessment of the shoreline characteristics of each lake and to identify critical habitats that were potentially important to fish (high quality spawning and rearing sites).

Surveys indicated that the shorelines of all lakes were dominated by zones exhibiting low slopes (Table 3.14). The percent length of lake shorelines with low slopes ranged from 63% (Lake D10) to 94% (Lake C2). Moderate sloped areas were less prominent; percentages ranged from 7% (Lake C2) to 28% (Lake C1). High shoreline slope areas were present in two of the surveyed lakes. In Lake D10, this zone accounted for 21% of the shoreline. In Lake C3, it was much less evident (6%). The high percentage of low slope zones in these lakes suggests that the availability of shallow-water areas that can be used by small fish for rearing and feeding are not limited.

Much of the shoreline habitat in all surveyed lakes consisted of rock substrates. Cobble-boulder substrates were the predominant type in most zones (>74%). Only in the moderate slope zones of Lakes C1 and C2 did bedrock exceed cobble-boulder substrate (70% versus 15% by length). Shoreline areas dominated by fine substrates (silts and sands) were not abundant. This substrate group did not exceed 15% in any lake zone and it was restricted to the low slope areas. These data also suggest that the availability of cobble-boulder substrates that can be used by smaller fish for rearing are not limited.

Spawning habitats required by lake dwelling species, such as lake trout, Arctic char, and round whitefish, are characterized by the presence of clean gravel to boulder-sized substrate in areas sufficiently deep to avoid freezing (Scott and Crossman 1973). Areas with these characteristics were widely distributed in all surveyed waterbodies, which suggests that high quality spawning habitat was not limited in any of the surveyed lakes.

In contrast, shoreline surveys documented a paucity of high quality rearing habitat in all lakes. High quality rearing habitat suitable for lake dwelling fish species is characterized by shallow-water zones exhibiting low slopes and fine substrates that support growth of aquatic macrophytes (Randall et al. 1996). Although areas supporting dense growths of aquatic macrophytes are not a common feature in subarctic lakes, when they occur, they provide important shelter (i.e., protection from predators and source of food) for younger age-classes of fish. In addition, they provide habitat for forage fish species. Shallow water areas with fine substrates were present, but, submergent aquatic macrophytes were not identified in any lake. Emergent species including sedges (*Carex* spp.) and aquatic grasses (*Glyceria* spp.) were present only in one waterbody (Lake D10), but these were restricted to the lake margins. As such, areas exhibiting high quality rearing habitat were severely limited in all surveyed lakes.

### 3.4.2 Streams

Investigations of streams were undertaken during spring and summer. During spring, a reconnaissance level survey was conducted to identify streams that provided some habitat for fish communities and to assess their potential as spawning habitat (i.e., use by spring spawning Arctic grayling). Surveys during summer were used to provide a more detailed description of stream characteristics and to assess their overall potential as fish habitat. Streams chosen for investigation included Streams C2, C2A, C3, and C19. All these streams are very small, ephemeral watercourses that have limited value to fish; however, because there is the potential to be affected by the Jericho Diamond Project, surveys were undertaken on each system. Stream C1 was also investigated in 1999, but this waterbody received a more intensive assessment and the results are presented elsewhere (Section 4.2).

#### 3.4.2.1 Streams C2 and C2A

Streams C2 and C2A are located on the east shore of Carat Lake in the immediate vicinity of the exploration camp (Figure 3.2) and both drain shallow ponds. These streams exhibit minimal flow during dry periods and freeze to the bottom during winter. Due to their small size, barriers to fish passage exist on both streams within 100 m of their confluence with Carat Lake. Fish habitat in Stream C2 was dominated by RIFFLE habitat (Table 3.15). In Stream C2A, POOL and RUN habitats were prevalent.

Table 3.14 Summary of lakeshore habitat characteristics recorded for sampled waterbodies within the Jericho Study Area, 1999.

| Habitat Zone[a] | | Lake C1 | | Lake C2 | | Lake C3 | | Lake D10 | |
|---|---|---|---|---|---|---|---|---|---|
| **Slope** | **Substrate** | **Length (m)** | **Percent** | **Length (m)** | **Percent** | **Length (m)** | **Percent** | **Length (m)** | **Percent** |
| Low | Fines | 80 | 14.3 | 54 | 15 | 209 | 2.6 | 107 | 6.6 |
| | Cobble-Boulder | 423 | 75.7 | 268 | 74.3 | 7598 | 94.5 | 1450 | 89.2 |
| | Bedrock | 56 | 10 | 39 | 10.7 | 233 | 2.9 | 68 | 4.2 |
| | **Overall Total** | **559** | **71.8** | **361** | **93.5** | **8040** | **74.2** | **1625** | **63.2** |
| Moderate | Fines | 11 | 5 | 4 | 16 | | | | |
| | Cobble-Boulder | 55 | 25 | 4 | 16 | 1992 | 93.3 | 345 | 83.3 |
| | Bedrock | 154 | 70 | 17 | 68 | 143 | 6.7 | 69 | 16.7 |
| | **Overall Total** | **220** | **28.2** | **25** | **6.5** | **2135** | **19.7** | **414** | **16.1** |
| High | Fines | | | | | | | | |
| | Cobble-Boulder | | | | | 491 | 75 | 531 | 100 |
| | Bedrock | | | | | 164 | 25 | | |
| | **Overall Total** | **0** | **0** | **0** | **0** | **655** | **6.1** | **531** | **20.7** |

[a] For definition of habitat zones see Appendix A.

Table 3.15 Summary of habitat types identified during summer in inventoried streams in the Jericho Study Area, 1999.

| Stream | Reach | Surveyed Length (m) | Habitat Type (%)[c] | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | **Pool** | **Run** | **Riffle** | **Flat** | **Dispersed** | **Boulder Garden** |
| C2[a] | 1 | 100 | | | 100 | | | |
| C2A[a] | 1 | 100 | 30 | 70 | | | | |
| C3[b] | 1 | 110 | | | 90 | | 10 | |
| | 2 | 215 | 10 | 10 | 80 | | | |
| | 3 | 113 | | | | | 100 | |
| | 4 | 198 | | | | | 50 | 50 |
| | 5 | 276 | | | | | | 100 |
| | 6 | 200 | | | | 50 | 50 | |
| C19[b] | 1 | 35 | | 10 | | | | 90 |
| | 2 | 146 | | | | | 75 | 25 |

[a] Characteristics measured during previous inventories (RL&L 1995, 1997).
[b] Characteristics measured during summer 1999.
[c] For definitions of habitat types see Appendix A

Fish were present in both streams during the 1999 sampling program, but were restricted to the lowermost 50 m section. In Stream C2, young-of-the year and juvenile Arctic char (7) were recorded, as well as juvenile lake trout (2) and slimy sculpin (35). Lower numbers of fish were captured in Stream C2A (one each of juvenile Arctic char, burbot, and lake trout, and nine slimy sculpin). Although fish were present, the small size of the streams severely limited their value as fish habitat (Table 3.16).

Table 3.16 Fish habitat quality ratings for sampled streams within the Jericho Study Area, 1999.

| Stream | Species | Rating of Habitat Quality | | |
|---|---|---|---|---|
| | | Spawning | Rearing | Adult Feeding |
| Stream C2 | Arctic char | Nil | Low | Nil |
| | Lake trout | Nil | Low | Nil |
| Stream C2A | Arctic char | Nil | Low | Nil |
| | Lake trout | Nil | Low | Nil |
| Stream C3 | Arctic char | Nil | Low | Nil |
| | Lake trout | Nil | Low | Nil |
| Stream C19 | Arctic char | Nil | Nil | Nil |
| | Lake trout | Nil | Nil | Nil |

### 3.4.2.2 Stream C3

Stream C3 is located at the west end of Lake D10 and flows in a westerly direction; it connects Lake D10 to Lake C3. The stream exhibits subsurface flow in several locations and it freezes to the bottom during winter. Due its small size, a barrier to fish passage (dispersed flow) exists within 300 m of its confluence with Lake C3. Stream C3 can be divided into six distinct reaches based on habitat type; however, useable fish habitat is restricted to Reaches 1 and 2. Reach 1 is dominated by RIFFLE habitat, while Reach 2 contains POOL, RUN, and RIFFLE habitats.

Fish were present in Stream C3, but were restricted to the two lowermost reaches. Recorded fish included three juvenile Arctic char. Although fish were present, its small size severely limited its value as fish habitat.

### 3.4.2.3 Stream C19

Stream C19 connects Lake C1 to Lake C2. This system has no potential as fish habitat. This is due to its small size, and the presence of an impassible fish barrier at its lower end (i.e., within 30 m of lake). As a consequence, Stream C19 received a habitat quality rating of nil for all categories (Table 3.16).

## 3.4.3 Summary

The shoreline areas of surveyed lakes were dominated by low slope areas and by cobble-boulder substrates. These shoreline characteristics provided an abundance of potential spawning areas for species such as lake trout, Arctic char, and round whitefish. Therefore, spawning areas were not limited in any of the surveyed lakes. The same shoreline characteristics that provided an abundance of spawning habitat also provided some rearing habitat for fish. Although rearing habitat was available, no high quality areas were identified.

Surveyed streams provided limited habitat for fish populations originating from study area lakes. The primary reasons for low quality fish habitat were small size and poorly defined channels that contained barriers to fish passage.

# 4.0 DETAILED SURVEYS

The detailed surveys completed in the Jericho Study Area were designed to collect scientifically defensible data from waterbodies that may be removed from production by the proposed development (including those waterbodies proposed for the stand-alone project option, which is not the preferred option; Tahera 1999). The specific tasks to be completed for each waterbody included estimates of fish density, quantification of fish habitat, and assessment of the trophic status (Table 4.1). The aquatic biological components chosen as a basis for detailed surveys were deemed to be important to the aquatic community and provided the best opportunity to meet the study objectives.

Table 4.1 Waterbodies investigated and tasks completed during detailed surveys in the Jericho Study Area, 1999.

| Task | Waterbody | | | | | |
|---|---|---|---|---|---|---|
| | Lake C1 | Lake C2 | Lake D10 | Stream C1 | Stream C3 | Stream C19 |
| Fish Density | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Habitat Characteristics | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Trophic Status | | | | | | |
| Nutrient Level | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Standing Crop | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Lakes potentially impacted under the present development plans include Lakes C1 and C2 (proximity to project zone) and Lake D10 (proposed tailings storage site). Streams that may be impacted include Stream C1 (diversion around the project) and Streams C19 and C3 (proximity to the project) (Figure 4.1). This section provides summary results for the detailed surveys; all raw data are presented in Appendix E, Tables E1 to E5.

## 4.1 FISH DENSITY

Fish densities in selected lakes and streams were to be quantified using two methods. These included the Petersen mark-recapture technique in lakes (Ricker 1975) and the depletion-removal technique in streams (VanDeventer and Platts 1983). Both techniques require that a sufficient number of fish are captured so that an accurate estimate of fish density can be generated.

During the present study, low numbers of fish were captured in most waterbodies targeted for detailed assessment, which precluded development of accurate estimates. Lakes where insufficient fish were captured included Lakes C1, C2 and D10. Based on the results of the 1999 program, it is appropriate to conclude that there are too few or no fish in these lakes to warrant an estimate of abundance. Lake C2 supports no fish, while Lake D10 contains only slimy sculpin. Data from this study and from previous work in 1996 (RL&L 1997) documented resident lake trout and slimy sculpin populations in Lake C1. In total, 12 lake trout were recorded in 1996, while 2 were captured in 1999. Catch rates, however, were too low to warrant an attempt to generate an estimate of fish density in this lake.

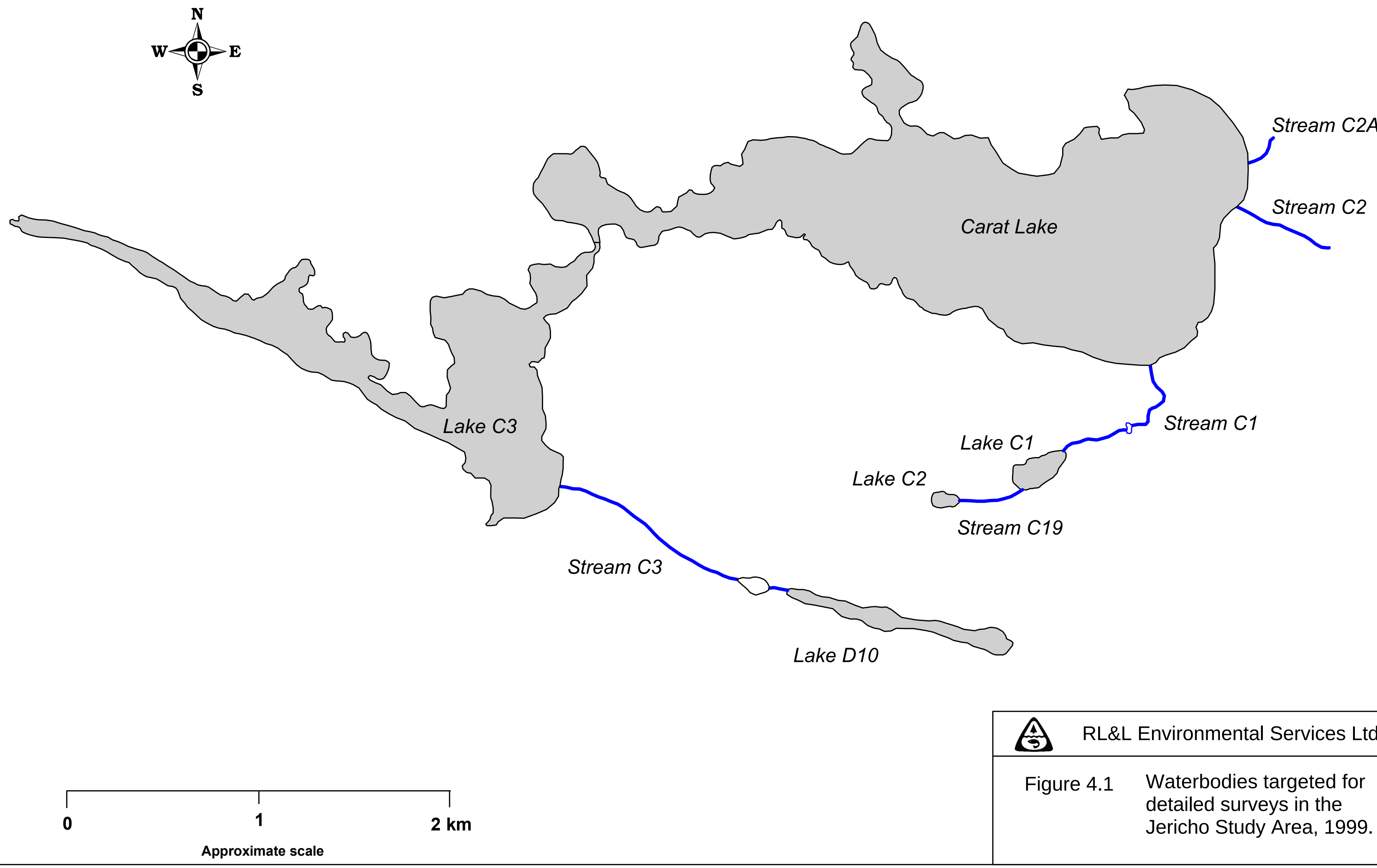


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Figure 4.1 Waterbodies targeted for detailed surveys in the Jericho Study Area, 1999.

Similar results were recorded for two of the streams identified for detailed survey. Only three Arctic char were recorded in Stream C3 and no fish were present in Stream C19. Due to their small size and the presence of numerous barriers to fish passage (see Section 3.4.2), both streams are severely limited in their potential to support fish. As such, estimates of fish density in these systems were not generated.

Stream C1 did support fish (Table 4.2). Inventories completed in 1995, 1996, spring 1998, and 1999 all documented the occurrence of fish in this stream. Species recorded included Arctic char, Arctic grayling, burbot, lake trout, round whitefish, and slimy sculpin. Although six species of fish were recorded in Stream C1 during these surveys, the highest number during any one year was four (1995 and 1999). Some species were infrequently encountered. Arctic grayling were recorded in this system only in 1995 and round whitefish were observed in 1996. Other species, which included Arctic char, lake trout, burbot, and slimy sculpin, were recorded during most years. The fish that used Stream C1 were consistently dominated by young-of-the-year and small juvenile fish; no adults were ever recorded in Stream C1.

The numbers of fish recorded in Stream C1 in a given year ranged from 10 to 24, but it should be noted that these values are closely related to the amount of sampling effort expended (e.g., sampling effort in 1999 was greater than previous years); therefore, it is difficult to ascertain the absolute numbers of fish in the stream. To provide an accurate estimate of fish density in Stream C1, the depletion-removal technique was employed to calculate the number of fish per 100 m of stream (Figure 4.2). The estimate was generated for fish residing in the lowermost 93 m of Stream C1 because this was the only section of stream where fish were recorded during the 1999 sampling program.

Four species of fish were present in the lower section of Stream C1 during the detailed survey with densities ranging from 5 ± 2 fish/100 m for burbot to 54 fish/100 m for slimy sculpin. Arctic char was the dominant char species (30 ± 4 fish/100 m) followed by a lower number of lake trout 15 ± 12 fish/100 m.

These data suggest that several fish species use Stream C1 during the open water period. The numbers of fish recorded varied between years, but estimates of abundance generated in 1999 suggested that densities could exceed 15 fish/100 m.

During each survey year, a large portion of Stream C1 was sampled for fish. These inventories extended from the confluence with Carat Lake to the headwater area near Lake C1. During every survey, fish were recorded only in the lowermost 100 m of the stream. The reason for this restricted distribution is unclear, but it may be related to the habitat characteristics of Stream C1.

## 4.2 FISH HABITAT

Quantification of fish habitat during the 1999 aquatic studies program first required synoptic surveys of waterbodies to establish their potential value as fish habitat. This involved fish sampling and inventory level assessment of physical characteristics and habitat types. Results of the synoptic surveys indicated that several waterbodies had limited or no potential as fish habitat (see Section 3.4), which was substantiated by the absence or low numbers of fish (see Section 3.3). Waterbodies with limited or no potential as fish habitat included Lakes C2 and D10, and Streams C3 and C19. The remaining waterbodies (Lake C1 and Stream C1) contained habitat that was sufficient to support fish populations. Lake C1 contains only small resident populations of lake trout and of slimy sculpin. These populations are isolated from others in the Carat Lake watershed, due to a barrier on Stream C1 (see following section). As such, these fish populations are self-sustaining and do not rely on stock replenishment from Carat Lake. Due to its small size, simple physical characteristics, and isolation from the remainder of the Carat Lake watershed, detailed habitat surveys of Lake C1 were not undertaken. General characteristics of the lake are summarized in Section 3.1.

Based on these findings, detailed surveys of fish habitat were restricted to Stream C1. The following section provides summary data that describes the characteristics of the stream, including its longitudinal profile, unique features, physical characteristics, and quantification of habitat types.

### 4.2.1 Physical Characteristics of Stream C1

Stream C1 originates as the outlet to Lake C1 and flows a distance of 1031 m before draining into Carat Lake (Figure 4.3; Plate 4.1). Stream C1 is a complex system that has been modified by exploration activity in the Jericho Diamond Project Area. Its major features include a natural barrier to fish passage (5.3 m in height) that is located 815 m upstream from Carat Lake (Plate 4.2) and a large impounded area (351 m from confluence) that was formed by a berm constructed during the winter of 1995-96 (Plate 4.3). This berm was built to contain drilling fluids that were produced during exploration activity (Canamera Geological Ltd., unpublished data). The impoundment inundated a portion of the existing channel and diverted part of the stream discharge to the west (Plate 4.4). This diverted water flows over the tundra and rejoins Stream C1 near its confluence with Carat Lake.

Stream C1 can be differentiated into 10 reaches based on changes in gradient and physical characteristics (Figures 4.3 and 4.4, and Table 4.3). Reach 10 (closest to Lake C1) is the longest reach (200 m), whereas Reach 9 is the shortest (16 m). Reaches 1, 2, 7, and part of 5 exhibit relatively high gradients (2.7 to 7.1 m/100 m). Reach 9 exhibits the highest gradient, with an elevation gain of 5.3 m over a distance of 16 m (33.1 m/100 m). This section is impassible to fish. Reaches 3, 4, 6, 8, and 10 have very low gradients ($\leq$5 m/100 m) and are generally dominated by areas of ponded water. The physical characteristics of each reach are influenced by these major features.

Table 4.2 Number of fish recorded in Stream C1 according to age-class, Jericho Study Area, 1995, 1996, spring 1998, and 1999.

| Year | Species | Age-Class | | | |
|---|---|---|---|---|---|
| | | Young-of-the-year | Juvenile | Adult | Combined |
| 1995 | Arctic char | | | | |
| | Arctic grayling | | 39 | | 39 |
| | Burbot | | 1 | | 1 |
| | Lake trout | | 2 | | 2 |
| | Round whitefish | | | | |
| | Slimy sculpin | | | | 23 |
| | **Total** | | **42** | | **65** |
| 1996 | Arctic char | 41 | 7 | | 48 |
| | Arctic grayling | | | | |
| | Burbot | | | | |
| | Lake trout | | 9 | | 9 |
| | Round whitefish | | 8 | | 8 |
| | Slimy sculpin | | | | 9 |
| | **Total** | **41** | **24** | | **74** |
| 1998 | Arctic char | 11 | 2 | | 13 |
| | Arctic grayling | | | | |
| | Burbot | | 1 | | 1 |
| | Lake trout | | | | |
| | Round whitefish | | | | |
| | Slimy sculpin | | | | 10 |
| | **Total** | **11** | **3** | | **24** |
| 1999[a] | Arctic char | 27 | 4 | | 31 |
| | Arctic grayling | | | | |
| | Burbot | | 5 | | 5 |
| | Lake trout | 15 | 10 | | 25 |
| | Round whitefish | | | | |
| | Slimy sculpin | | | | 39 |
| | **Total** | **42** | **19** | | **100** |

[a] Fish numbers generally high due to more intensive sampling effort.

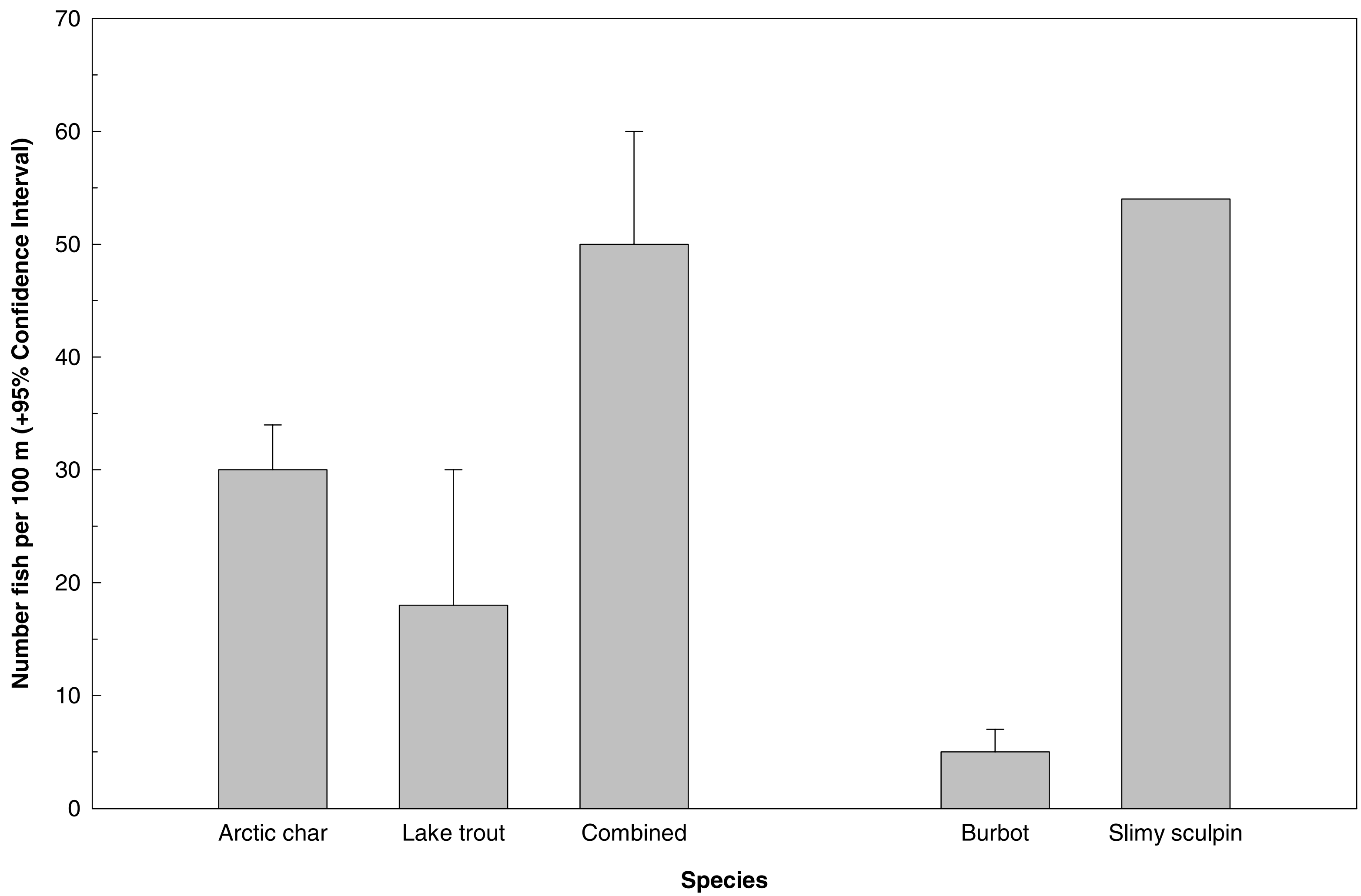


Figure 4.2 Estimates of fish density in Stream C1 in August 1999, Jericho Study Area.

Reaches with higher gradients exhibited narrower widths and had flowing water; the low gradient reaches exhibited dispersed areas of ponded water with trace flow. The majority of the reaches had well-defined channel embankments; the only exception was the impoundment (Reach 4). Substrate types in most reaches were dominated by cobble and boulder substrates. Exceptions were Reaches 4 and 6, which contained a preponderance of organic substrates. Gravel substrates were not abundant in Stream C1, but were widely distributed. Silt and sand substrates were rarely encountered; however, they were most evident in Reaches 5 and 8. Anecdotal information during field surveys indicated that the sand recorded in Reach 5 originated from sand bags that had been placed in this stream section (Figure 4.3).

### 4.2.2 Habitat Types in Stream C1

Habitat types present in Reaches 1 to 8 were quantified to assess their importance to fish. The work was restricted to these reaches because they represented the section of Stream C1 that was accessible to fish populations originating from Carat Lake.

The habitat types present were dictated by the physical features of each reach (Table 4.4). In general, RIFFLE and/or RUN type habitats dominated. In high gradient sections, their combined values exceeded 75% in terms of surface area and frequency of occurrence. In lower gradient reaches, FLAT and DISPERSED habitat types were more prevalent. This was particularly evident in Reach 8.

In terms of the area of habitat that was potentially available to fish, the impounded area (Reach 4) contained the greatest amount (5842 $m^2$). All other reaches contained less than 1000 $m^2$. The combined area of habitat available to fish below the impounded section in July 1999 was 1117 $m^2$ (Reaches 1 to 3), compared to 2126 $m^2$ upstream of the impoundment (Reaches 5 to 8). Habitat complexity (frequency of occurrence) was highest in Reach 1 (31 habitat units). Overall, habitat complexity was higher downstream compared to upstream of the impounded area (62 versus 17 habitat units, respectively).

These data indicated that potential fish habitat was available to fish in Reaches 1 to 8. The area of habitat above the impoundment was twice that of the downstream section, although, Reaches 1 to 3 were more complex than sections farther upstream.

Construction of a berm across the drainage path of Stream C1 resulted in the formation of an impounded area upstream of the berm and diversion of part of the stream flow to the west. The impoundment inundated an unknown amount of existing fish habitat, but the inundated area was still suitable for fish use. In contrast, the diversion of stream flow may have reduced the amount of fish habitat in the original stream channel downstream from the point of diversion.

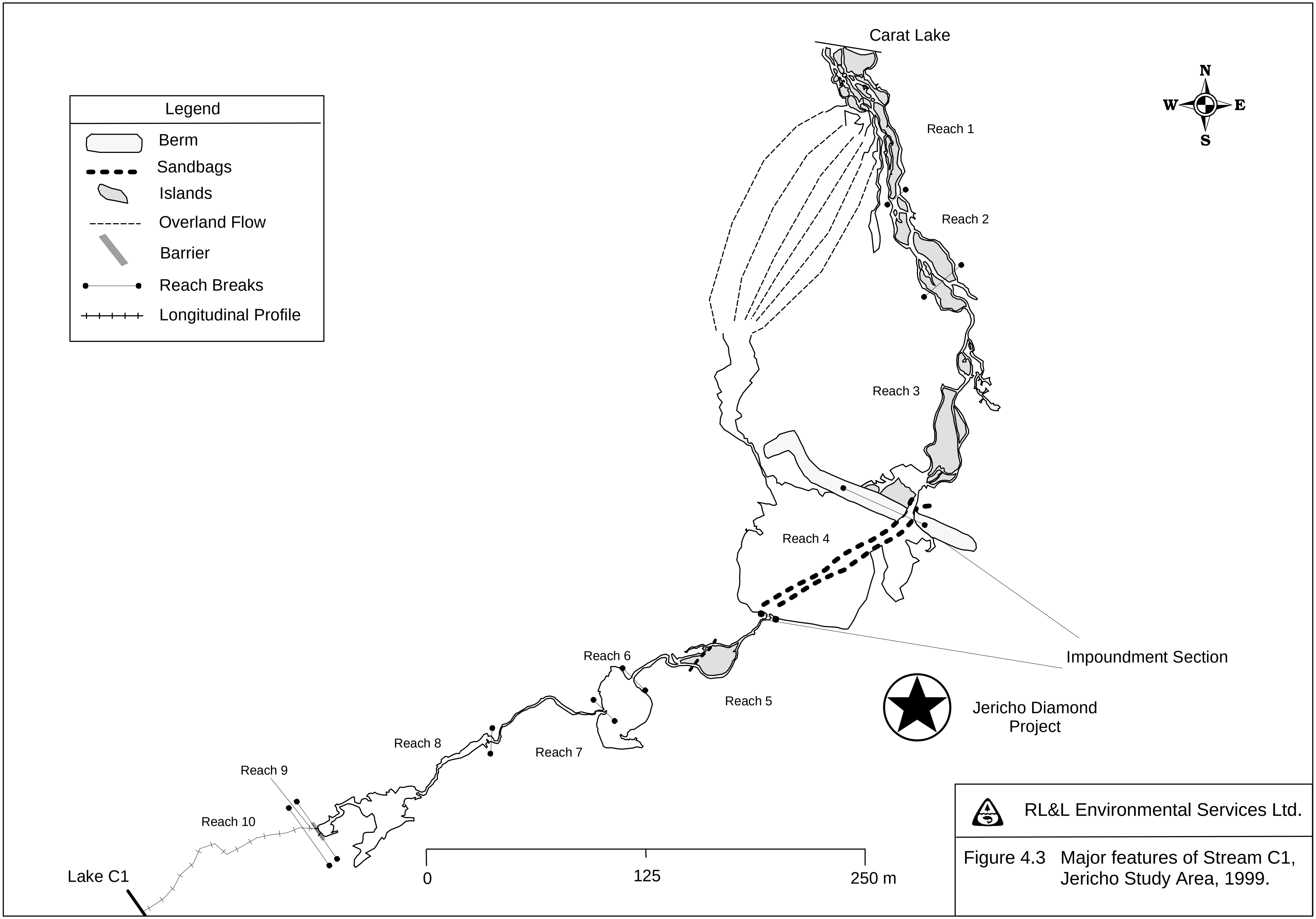


Figure 4.3 Major features of Stream C1, Jericho Study Area, 1999.

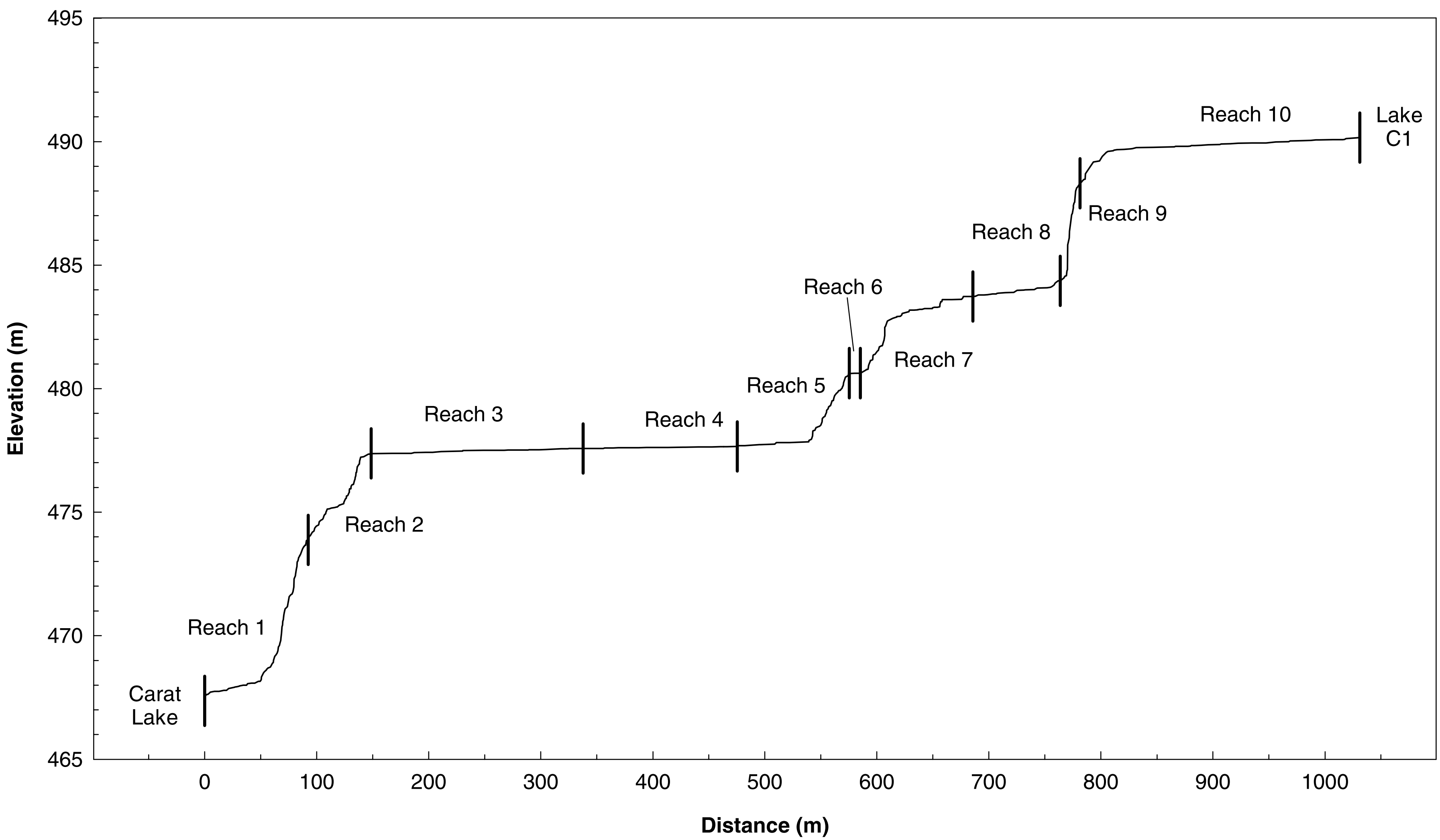


Figure 4.4 Gradient profile for Stream C1, Jericho Study Area, 1999.

Table 4.3 Summary of stream characteristics in reaches of Stream C1 in the Jericho Study Area, 1999.

| Reach | Gradient (m/km) | Length (m) | Sample Size | Mean Wetted Width (m) | Mean Depth (m) | | Mean Velocity ($m^3/s$) | Mean Percent Channel Type | | | Mean Percent Bank Type | | Substrate Type[a] (%) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Average | Max | | Single | Multiple | Dispersed | Defined | Ill-Defined | Om | Si/Sa | Gr/Pe | Co | Bo | Be |
| 1 | 7.1 | 92 | 9 | 1.25 | 0.08 | 0.15 | 0.1 | | 89 | 11 | 100 | | 2 | 1 | 5 | 66 | 27 | |
| 2 | 5.0 | 70 | 5 | 2.03 | 0.08 | 0.11 | 0.13 | | 100 | | 100 | | | | 5 | 42 | 53 | |
| 3 | 0.1 | 177 | 9 | 1.15 | 0.08 | 0.12 | 0.09 | | 100 | | 89 | 11 | 9 | | 9 | 71 | 11 | |
| 4 | 0.2 | 134 | 6 | | 0.28 | | | | | | | | | | | | | |
| 5 | 2.7 | 102 | 9 | 0.84 | 0.08 | 0.11 | 0.16 | 100 | | | 100 | | | 8 | 10 | 47 | 36 | |
| 6 | 0.1 | 24 | 1 | | | 0.67 | | | | | | | 100 | | | | | |
| 7 | 3.8 | 82 | 5 | 1.04 | 0.13 | 0.16 | 0.28 | 100 | | | 100 | | 16 | 2 | 12 | 36 | 34 | |
| 8 | 0.5 | 134 | 6 | 4.57 | 0.18 | 0.24 | 0.09 | | 67 | 33 | 67 | 33 | 2 | 27 | 12 | 5 | 48 | 3 |
| 9 | 33.1 | 16 | ns[b] | | | | | | | | | | | | | | | |
| 10 | 0.2 | 200 | ns | | | | | | | | | | | | | | | |

[a] See Appendix A3 for definitions.
[b] Not sampled.

Table 4.4 Summary of habitat types (area and occurrence) in reaches of Stream C1 in the Jericho Study Area,1999.

| Reach | Group | Coverage ($m^2$) | | Frequency | |
|---|---|---|---|---|---|
| | | Area | Percent | Number | Percent |
| 1 | Flat | 43 | 12.1 | 4 | 12.9 |
| | Pool | 2 | 0.6 | 1 | 3.2 |
| | Riffle | 173 | 48.9 | 14 | 45.2 |
| | Run | 136 | 38.4 | 12 | 38.7 |
| | **Subtotal** | **354** | **100** | **31** | **100** |
| 2 | Flat | 4 | 2 | 1 | 11.1 |
| | Pool | | | | |
| | Riffle | 154 | 76.2 | 6 | 66.7 |
| | Run | 44 | 21.8 | 2 | 22.2 |
| | **Subtotal** | **202** | **100** | **9** | **100** |
| 3 | Dispersed | 305 | 54.4 | 1 | 4.5 |
| | Flat | | | | |
| | Pool | | | | |
| | Riffle | 169 | 30.1 | 11 | 50 |
| | Run | 87 | 15.5 | 10 | 45.5 |
| | **Subtotal** | **561** | **100** | **22** | **100** |
| 4 | Impounded | **5842** | **100** | **1** | **100** |
| 5 | Flat | | | | |
| | Pool | 17 | 12 | 1 | 20 |
| | Riffle | 107 | 75.4 | 3 | 60 |
| | Run | 18 | 12.7 | 1 | 20 |
| | **Subtotal** | **142** | **100** | **5** | **100** |
| 6 | Pond | **971** | **100** | **1** | **100** |
| 7 | Flat | | | | |
| | Pool | 4 | 4.5 | 1 | 20 |
| | Riffle | 76 | 85.4 | 3 | 60 |
| | Run | 9 | 10.1 | 1 | 20 |
| | **Subtotal** | **89** | **100** | **5** | **100** |
| 8 | Boulder Garden | 113 | 12.2 | 1 | 16.7 |
| | Dispersed | 676 | 73.2 | 1 | 16.7 |
| | Flat | 93 | 10.1 | 2 | 33.3 |
| | Pool | 0 | 0 | 0 | 0 |
| | Riffle | 42 | 4.5 | 2 | 33.3 |
| | Run | 0 | 0 | 0 | 0 |
| | **Subtotal** | **924** | **100** | **6** | **100** |

To ascertain whether this diversion affected fish habitat availability, discharge in the original stream channel was compared to that in the diverted channel (Table 4.5). During June 1999, the proportion of water diverted away from the original channel was substantial. Based on five measurements, the average discharge in the original channel was 0.012 $m^3/s$ compared to 0.062 $m^3/s$ in the diversion. This represented a difference of 0.050 $m^3/s$ or a reduction in flow of 67%. It should be noted that these values are not precise estimates of stream discharge in each channel, but instead, should be used to ascertain the relative differences in discharge.

Table 4.5 Comparison of discharge in two channels of Stream C1 during spring in the Jericho Study Area, 1999.

| Date | Discharge ($m^3/s$) | | Difference | |
|---|---|---|---|---|
| | Original Channel | Diversion | Discharge ($m^3/s$) | Percent |
| June 4 | 0.007 | 0.037 | -0.030 | -68.2 |
| June 5 | 0.01 | 0.056 | -0.046 | -69.7 |
| June 7 | 0.011 | 0.059 | -0.048 | -68.6 |
| June 9 | 0.018 | 0.085 | -0.067 | -65.0 |
| June 14 | 0.015 | 0.073 | -0.058 | -65.9 |
| **Average** | **0.012** | **0.062** | **-0.050** | **-67.1** |

Based on these findings, it can be assumed that the amount of fish habitat provided by Stream C1 has been reduced by the diversion of water away from the original channel. Due to the lack of data collected prior to construction of the berm, it is not possible to quantify the magnitude of this reduction.

### 4.2.3 Summary

Stream C1 is a complex system that has been modified by exploration activity in the Jericho Diamond Project Area. It contains 10 reaches, which exhibit variable physical characteristics. Reaches with high gradients (2.7 to 7.1 m/100 m) exhibited narrower widths with flowing water; the low gradient reaches exhibited dispersed areas of ponded water with trace flows. Reach 9 is a barrier to fish passage; it exhibits an elevation gain of 5.3 m over a distance of 16 m (33.1 m/100 m). Substrate types in most reaches were dominated by cobble and boulder substrates, except in the ponded areas; gravel substrate was widely distributed, but were not abundant. High gradient sections were typically RIFFLE and/or RUN type habitats, whereas low gradient sections were primarily FLAT and DISPERSED type habitats. Although there was a larger area of potential fish habitat upstream of the impoundment, the downstream sections had a higher habitat complexity. The presence of the berm across Stream C1 has reduced stream flows in the original channel by approximately 67%.

## 4.3 TROPHIC STATUS

In general, waterbodies in the subarctic are considered to be oligotrophic. Oligotrophic waterbodies are characterized by a low rate of primary production due to low nutrient levels. These characteristics in turn, limit the productive potential of fish communities that reside in these waterbodies. The following section summarizes information that categorizes the trophic status of selected waterbodies in the Jericho Study Area. Parameters investigated included nutrient levels, biomass indices of primary producers, and an assessment of the potential for fish production.

### 4.3.1 Nutrient Concentrations

At most sites, water samples for nutrient analyses were collected on 26 July 1999. The only exception occurred at the two sites on Stream C1, which were collected on 6 September 1999. Nutrient concentrations were low in all surveyed waterbodies (Figure 4.5). Values for inorganic carbon did not exceed 2.3 mg/L and total carbon ranged between 4.0 and 8.7 mg/L. There was no substantial difference in carbon concentrations among lakes and streams, nor between Sites A and B on Stream C1. Similarly, water samples contained low concentrations of nitrogen constituents; ammonia values ranged from <0.005 to 0.025 mg/L, while total Kjeldahl nitrogen did not exceed 0.48 mg/L.

Phosphorous concentrations were close to analytical detection limits. Total phosphorous concentrations at most sites was ≤0.005 mg/L. Only Lake D10 exhibited a higher concentration (0.007 mg/L). Dissolved phosphorous concentrations ranged between 0.002 and 0.004 mg/L.

Nutrient concentrations in surveyed waterbodies during the present study were consistent with results of previous work in the Jericho Study Area (RL&L 1995); concentrations of all nutrients were very low. Studies that have investigated the relationship between nutrient levels (mainly phosphorous) and primary production in subarctic waterbodies, indicate that concentrations documented during this study are limiting (Ostrofsky and Rigler 1987; Shortreed and Stockner 1986; Welch et al.1989) and are indicative of a low trophic status.

### 4.3.2 Primary Production

Biomass (chlorophyll *a)* of phytoplankton and periphyton can be used as an indicator of primary production. Samples of phytoplankton and periphyton were collected three times during the open water period in an attempt to measure the full range of algal biomass during the open water period.

Chlorophyll *a* concentrations from samples collected from each waterbody varied between sampling periods (Table 4.6). For phytoplankton, the greatest difference between samples occurred in Lake C1 (1.47 mg/m$^3$); however, a much wider range of values was apparent for periphyton. In lakes, the greatest range was 8.41 µg/cm$^2$ (Lake C2) and at stream sites it was 7.99 µg/cm$^2$ (Stream C1B). This variation and the absence of a clear temporal pattern in chlorophyll *a* concentrations makes it difficult to identify a single value as being representative of peak biomass production for either phytoplankton or periphyton communities.

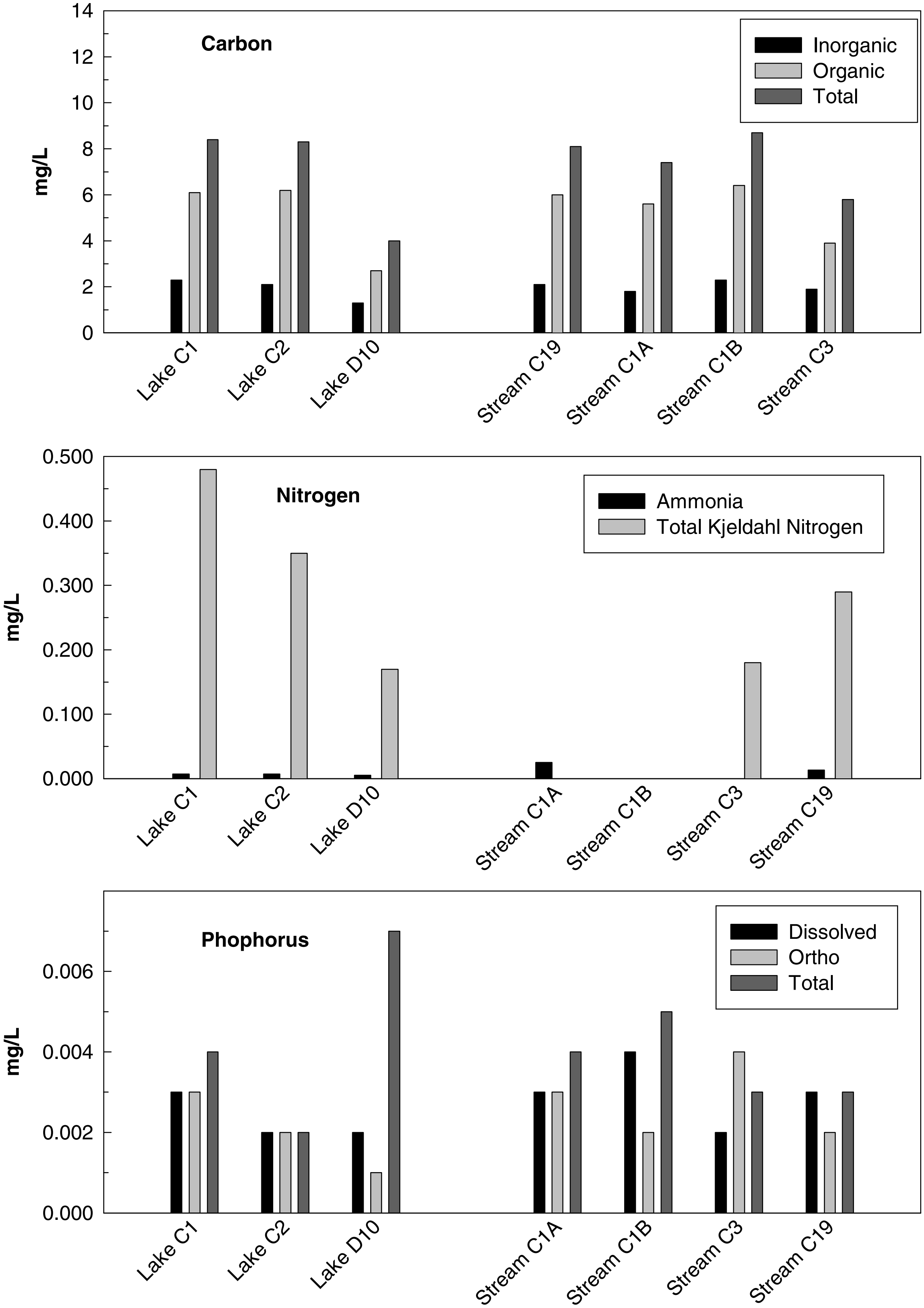


Figure 4.5 Nutrient concentrations in selected waterbodies in the Jericho Study Area, 1999.

Table 4.6 Summary of chlorophyll *a* concentrations of phytoplankton (mg/m$^3$) and periphyton (µg/cm$^2$) samples collected three times[a] from selected waterbodies in the Jericho Study Area, 1999.

| Group | Waterbody | Phytoplankton | | | | Periphyton | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Early | Mid | Late | Range | Early | Mid | Late | Range |
| Lakes | Lake C1 | 2.30 | 1.22 | 0.83 | 1.47 | 2.49 | 5.37 | 5.14 | 2.88 |
| | Lake C2 | 0.35 | 0.50 | 0.11 | 0.39 | 7.64 | 2.82 | 11.23 | 8.41 |
| | Lake D10 | 1.09 | 0.27 | 0.00 | 1.09 | 1.64 | 3.50 | 1.50 | 2.00 |
| Streams | Stream C1A | ns[b] | ns | ns | | ns | 2.11 | 6.10 | 3.99 |
| | Stream C1B | ns | ns | ns | | 9.70 | 1.71 | 2.47 | 7.99 |
| | Stream C3 | ns | ns | ns | | 6.48 | 5.33 | 2.04 | 4.44 |
| | Stream C19 | ns | ns | ns | | 3.47 | 3.93 | 5.15 | 1.22 |

[a] Early (19 July); mid (30 to 31 July); late (25 to 26 August).
[b] Not sampled.

The data provide an indication of the potential production that can be achieved by each community. A comparison of chlorophyll *a* concentrations recorded during the present study to other investigations suggested that primary productivity was very low in these lakes. Ostrofsky and Rigler (1987) documented that mean chlorophyll *a* concentrations for phytoplankton in 49 subarctic lakes varied between 1.5 and 26.8 mg/m$^3$. In four oligotrophic lakes in the high Arctic, Welch et al. (1989) recorded values of 1.0 to 2.9 mg/m$^3$.

Chlorophyll *a* concentrations recorded for the periphyton community during this study also reflected oligotrophic conditions. Values of 1.2 to 21.9 mg/m$^3$ in the Kuparuk River, Alaska were deemed to be indications of limited primary production (Peterson et al.1986). In a nutrient poor coastal stream in British Columbia, chlorophyll *a* concentrations averaged 4.7 mg/m$^3$ and never exceeded 10.0 mg/m$^3$ (Perrin et al. 1987).

Recent work completed by Morin et al. (1999), which investigated periphyton production in streams and phytoplankton production in lakes, suggests that the chlorophyll *a* concentrations documented during this study were at the lower spectrum of primary production in freshwater systems.

### 4.3.3 Fish Production

The results presented for nutrient concentrations and primary production clearly documented the low trophic status of surveyed waterbodies. As such, the potential for fish production in these waterbodies would also be low and given their small size, annual biomass production would be minimal. Although the present study documented no or low numbers of fish in Lakes C1, C2, and D10, it would be useful to provide an estimate of their potential productive capacity. A biomass estimate was derived using a formula developed for north temperate climatic regions by Hanson and Leggett (1982), which is based on a relationship between total phosphorous and mean lake depth.

$$\textit{Annual Fish Yield (kg / ha)} = 0.071\,\mathrm{TP} + 0.165\,\mathrm{Z} - 1.164$$

Where TP = total phosphorous (mg/L)
Z = mean water depth (m)

Using this formula, the potential annual fish yield (kg/ha) would range from a low of 0.24 kg/ha in Lake C2 to 0.86 kg/ha in Lake C1; in Lake D10 the value would be 0.79 kg/ha. This information indicates that potential fish production was severely limited in these waterbodies. It should also be noted that these values may be biassed upward due to a number of environmental differences between subarctic lakes and north temperate waterbodies. Lower nutrient levels, a colder water temperature regime, and a shorter open water period would significantly lower the potential yield in these lakes compared to those in north temperate areas.

### 4.3.4 Summary

Nutrient concentrations were low in all surveyed waterbodies and these values were consistent with results of previous work in the Jericho Study Area (RL&L 1995). Chlorophyll *a* results from phytoplankton and periphyton indicated that primary production was also low. Based on these results, the lakes in the Jericho Study Area exhibit an oligotrophic status.

Variation in chlorophyll *a* concentrations and the absence of a clear temporal pattern made it difficult to identify a single value as being representative of peak production for either phytoplankton or periphyton. However, the data indicate that primary productivity was very low. Chlorophyll *a* concentrations documented during this study were at the lower spectrum of primary production in freshwater systems, which is indicative of oligotrophic conditions.

The potential fish production was found to be severely limited in the waterbodies surveyed. Potential annual fish yield (biomass) ranged from 0.24 kg/ha in Lake C2 to 0.86 kg/ha in Lake C1. Due to the extreme environmental conditions experienced by fish residing in subarctic lakes (i.e., colder water temperature regimes and short open water periods), the potential yield in these waterbodies is likely much lower.

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# PLATES

**Plate 1** Stream C1 as it enters Carat Lake in the Jericho Study Area, August 1999.

**Plate 2** Barrier to fish passage on Stream C1 in the Jericho Study Area, August 1999.

**Plate 3** Man-made berm and impounded area on Stream C1 in the Jericho Study Area, August 1999.

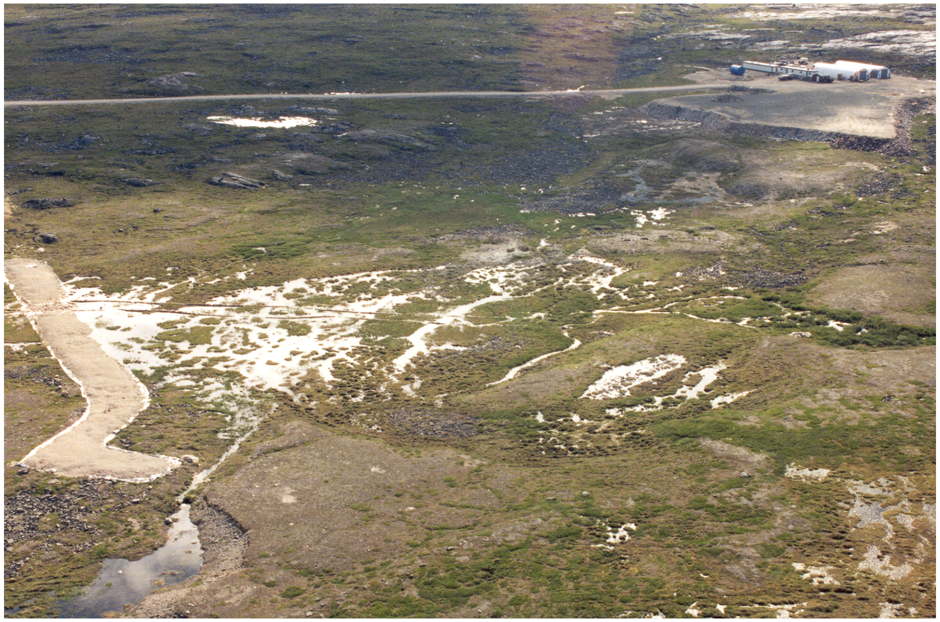

**Plate 4** New channel formed by berm on Stream C1 in the Jericho Study Area, August 1999 (lower left-hand corner).

# APPENDIX A
## METHODOLOGY

# APPENDIX A

**STREAM HABITAT CLASSIFICATION SYSTEM**

Provides a qualitative assessment of the physical characteristics of a stream and its potential as fish habitat.

Riffle - Portion of channel with increased velocity relative to Run and Pool habitat types; broken water surface due to effects of submerged or exposed bed materials; shallow (less than 25 cm). Limited value as habitat for larger juveniles and adults (i.e., feeding), but may be used extensively by young-of-the-year and small juveniles.

RF - Typical riffle habitat type; provides limited cover for all life stages.

RF/BG - Riffle habitat type with abundance of large cobble and boulder substrates. Limited cover for juveniles and adults; but, may be used extensively by young-of-the-year fish.

Rapids (RA) - Portion of channel with highest velocity relative to other habitat types. Deep (>25 cm); often formed by channel constriction. Substrate extremely coarse; dominated by large cobble and boulder substrates. Habitat provided for juveniles and adults in pocket eddies associated with substrate.

Run - Portion of channel characterized by moderate to high current velocity relative to Pool and Flat habitats; water surface largely unbroken. Potentially high habitat value for all life stages. Can be differentiated into five types based on depth and cover.

R1 - Maximum depth exceeding 1.5 m; average depth 1.0 m. High cover at all flow conditions. Highest quality habitat for larger juveniles and adults; limited value for young-of-the-year-fish.

R2/BG - Maximum depth reaching 1.0 m and generally exceeding 0.75 m; presence of large cobble or boulder substrates in channel. High cover at all flows. Moderate to high quality habitat for larger juveniles and adults.

R2 - Maximum depth reaching 1.0 m and generally exceeding 0.75 m. High cover during most flows, but not during base flows. Moderate quality habitat for juveniles and adults; limited value for young-of-the-year-fish.

R3/BG - Maximum depth of 0.75 m, but averaging <0.50 m; presence of large cobble or boulder substrates in channel. Moderate cover at all flows. Moderate quality habitat for juveniles and adults; but, the value to young-of-the-year-fish is potentially high.

R3 - Maximum depth of 0.75 m, but averaging <0.50 m. Low cover at all flows. Lowest quality habitat for juveniles and adults; but, the value to young-of-the-year-fish is potentially high.

Flat - Area of channel characterized by low current velocities (relative to RF and Run cover types); near-laminar (i.e., non-turbulent) flow. Depositional area dominated sand/silt substrates. Differentiated from Pool habitat type by high channel uniformity and lack of direct association with riffle/run complex. Potential habitat value for all life stages is moderate to high. Can be differentiated into five types based on depth and cover.

F1 - Maximum depth exceeding 1.5 m; average depth 1.0 m or greater. High cover at all flows. Highest quality habitat for larger juveniles and adults; limited value for young-of-the-year-fish.

F2/BG - Maximum depth reaching 1.0 m and generally exceeding 0.75 m; presence of large cobble or boulder substrates in channel. High cover at all flows. Moderate to high quality habitat for larger juveniles and adults.

F2 - Maximum depth exceeding 1.0 m; generally exceeding 0.75 m. High cover during most flows, but not during base flows. Moderate quality habitat for juveniles and adults; limited value for young-of-the-year-fish.

F3/BG - Maximum depth of 0.75 m, but averaging $<0.50$ m; presence of large cobble or boulder substrates in channel. Moderate cover at all flows. Moderate quality habitat for juveniles and adults; but, the value to young-of-the-year-fish is potentially high.

F3 - Maximum depth of 0.75 m, averaging less than 0.50 m. Low cover at all flows. Lowest quality habitat for juveniles and adults; but, the value to young-of-the-year-fish is potentially high.

Pool - Discrete portion of channel featuring increased depth and reduced velocity (downstream oriented) relative to Riffle and Run habitat types. Normally featuring Riffle/Run associations. Principal habitat value for all life stages is cover. When in close association with Riffle/Run habitats, value can be very high. Can be differentiated into three types based on depth.

P1 - Maximum depth exceeding 1.5 m; average depth 1.0 m or greater; high cover at all flow conditions. Often intergrades with deep-slow type of R1. Highest quality habitat for larger juveniles and adults; limited value for young-of-the-year-fish.

P2 - Maximum depth reaching or exceeding 1.0 m, generally exceeding 0.75 m. High cover at all but base flows. Moderate quality habitat for juveniles and adults; limited value for young-of-the-year-fish.

P3 - Maximum depth of 0.75 m, averaging $<0.50$ m. Low instream cover; includes small pocket eddies. Lowest quality habitat for all life stages.

Dispersed (DIS) - Portion of stream exhibiting no defined channel. Water depth rarely exceeding 0.25 m and often dispersed over boulder fields. Very limited value as fish habitat.

Habitat Features - Includes the following instream features:

Chutes (CH) - Area of channel constriction; generally resulting in channel deepening and increased velocity. Associated habitat types are Pool, Run, and Rapid.

Ledges (LG) - Areas of bedrock intrusion into the channel; often creates Chutes and Pool habitat.

Falls (FAL) - Area of channel exhibiting rapid vertical decent over boulder and bedrock. Often a barrier to fish passage.

Cascade (CAS) - Area of channel exhibiting rapid decent over boulder and bedrock, but, with no well defined vertical decent (i.e., falls). Often a barrier to fish passage.

Outlet/Inlet (Out) - Confluence of stream and lake; can be the outlet or inlet.

Channel Type - Includes the following categories:

Single (C1) - Entire water flow of stream through one active channel.
Multiple (C2) - Water flow of stream through more than one active channel.
Dispersed (C3) - No defined channel.

Bank Type - Includes the following categories:

Well-defined (D1) - Well-defined boundary at water-bank interface of active stream channel.
Ill-defined (D2) - Poorly defined boundary at water-bank interface of active stream channel.

## LAKE SHORELINE HABITAT CLASSIFICATION SYSTEM

Provides a qualitative assessment of the physical characteristics of the littoral zone (zone of visible light penetration to bottom) and its potential as critical fish habitat (spawning and rearing).

Slope - The slope of the visible portion of the lake bottom adjacent to the shoreline. The lower the slope, the greater the amount of shallow water (littoral zone) available for use by smaller juveniles and young-of-the-year fish. Visual estimation of slope using three categories.

Low - 0 to 10%
Moderate - 11 to 30%
High - >30%

Substrate - The dominant substrate in the visible portion of the lake bottom adjacent to the shoreline. The presence of rock (cobbles, boulders) indicates potential as a spawning habitat; presence of fines (organics, clay, silt, sand, gravel) indicates the potential as rearing habitat (enhances growth of macrophytes); presence of bedrock indicates limited value as fish habitat. Visual estimation of the percent cover by each substrate size and then grouping into three categories based on the following criteria:

Fines - >40% of bottom consists of organics, clays, silts, or gravel substrates.
Rock - >60% of bottom consists of cobbles or boulders.
Bedrock - > 40% of bottom consists of bedrock.

## SUBSTRATE CLASSIFICATION SYSTEM

Modified Wentworth classification for substrate particle sizes

| CLASSIFICATION | PARTICLE SIZE RANGE (mm) |
|---|---|
| Bedrock | - |
| Boulder | >256 |
| Cobble | 32 - 256 |
| Gravel | 1 - 32 |
| Sand | 0.0625 - 0.2-1 |
| Silt | 0.0039-0.0625 |
| Clay | <0.0039 |
| Organics | - |

# APPENDIX B
## PHYSICAL CHARACTERISTICS

## Appendix B Table B1. Information for sites sampled in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Site Type | Zone | Easting | Northing |
|---|---|---|---|---|---|---|
| Carat Lake | | | | | | |
| | ANLCA01 | | Angling | 12W | 477810 | 7320100 |
| | ANLCA02 | | Angling | 12W | 478180 | 7320540 |
| | EFLCA01 | | Backpack electrofishing | 12W | 478640 | 7320800 |
| | EFLCA02 | | Backpack electrofishing | 12W | 478200 | 7319970 |
| | FNLCA01 | | Fyke Net | 12W | 478301 | 7320040 |
| | GNLCA01 | | Gill Net | 12W | 478403 | 7320174 |
| | GNLCA02 | | Gill Net | 12W | 477283 | 7320299 |
| | GNLCA03 | | Gill Net | 12W | 478182 | 7319981 |
| | GNLCA04 | | Gill Net | 12W | 478307 | 7320044 |
| | GNLCA05 | | Gill Net | 12W | 478242 | 7320020 |
| | GNLCA06 | | Gill Net | 12W | 478109 | 7319979 |
| | LMLCA01 | | Limnology | 12W | 476573 | 7320848 |
| | LMLCA02 | | Limnology | 12W | 478165 | 7320941 |
| | PELCA01 | | Periphyton | 12W | 478180 | 7319964 |
| Control Lake | | | | | | |
| | HYLCN01 | | Hydrolab | 12W | 474012 | 7318792 |
| Lake C1 | | | | | | |
| | ANLC0101 | | Angling | 12W | 477510 | 7319430 |
| | BELLC0101 | BEL-4 | Benthos | 12W | 477495 | 7319389 |
| | BEPLC0101 | BEP-4 | Benthos | 12W | 477545 | 7319421 |
| | EFLC0101 | | Backpack electrofishing | 12W | 477730 | 7319500 |
| | EFLC0102 | | Backpack electrofishing | 12W | 477590 | 7319320 |
| | GNLC0101 | | Gill Net | 12W | 477676 | 7319490 |
| | GNLC0102 | | Gill Net | 12W | 477678 | 7319475 |
| | GTLC0101 | | Gee Trap | 12W | 477547 | 7319316 |
| | GTLC0102 | | Gee Trap | 12W | 477480 | 7319415 |
| | GTLC0103 | | Gee Trap | 12W | 477693 | 7319500 |
| | GTLC0104 | | Gee Trap | 12W | 477701 | 7319443 |
| | LMLC0101 | LM-4 | Limnology | 12W | 477545 | 7319421 |
| | PELC0101 | PE-4 | Periphyton | 12W | 477536 | 7319307 |
| | PHLC0101 | PL-4 | Phytoplankton | 12W | 477545 | 7319421 |
| | WCLC0101 | WC-2 | Water Chemistry | 12W | 477545 | 7319421 |
| | ZOLC0101 | PL-4 | Zooplankton | 12W | 477545 | 7319421 |
| Lake C2 | | | | | | |
| | BELLC0201 | BEL-5 | Benthos | 12W | 477110 | 7319262 |
| | EFLC0201 | | Backpack electrofishing | 12W | 477180 | 7319230 |
| | GNLC0201 | | Gill Net | 12W | 477172 | 7319267 |
| | GNLC0202 | | Gill Net | 12W | 477171 | 7319233 |
| | GTLC0201 | | Gee Trap | 12W | 477084 | 7319216 |
| | GTLC0202 | | Gee Trap | 12W | 477052 | 7319266 |
| | GTLC0203 | | Gee Trap | 12W | 477107 | 7319291 |

## Appendix B Table B1. Information for sites sampled in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Site Type | Zone | Easting | Northing |
|---|---|---|---|---|---|---|
| Lake C2 | | | | | | |
| | GTLC0204 | | Gee Trap | 12W | 477181 | 7319261 |
| | LMLC0201 | LM-7 | Limnology | 12W | 477110 | 7319262 |
| | PELC0201 | PE-5 | Periphyton | 12W | 477074 | 7319213 |
| | PHLC0201 | PL-5 | Phytoplankton | 12W | 477110 | 7319262 |
| | WCLC0201 | WC-4 | Water Chemistry | 12W | 477110 | 7319262 |
| | ZOLC0201 | PL-5 | Zooplankton | 12W | 477110 | 7319262 |
| Lake C3 | | | | | | |
| | ANLC0301 | | Angling | 12W | 473710 | 7320050 |
| | ANLC0302 | | Angling | 12W | 474560 | 7319820 |
| | ANLC0303 | | Angling | 12W | 474520 | 7319640 |
| | ANLC0304 | | Angling | 12W | 474540 | 7319750 |
| | ANLC0305 | | Angling | 12W | 474790 | 7319320 |
| | ANLC0306 | | Angling | 12W | 474520 | 7319640 |
| | ANLC0307 | | Angling | 12W | 474520 | 7319640 |
| | ANLC0308 | | Angling | 12W | 474520 | 7319640 |
| | BELLC0301 | BEL-3 | Benthos | 12W | 475070 | 7319443 |
| | BEPLC0301 | BEP-3 | Benthos | 12W | 474885 | 7319510 |
| | EFLC0301 | | Backpack electrofishing | 12W | 475100 | 7319330 |
| | GNLC0301 | | Gill Net | 12W | 474571 | 7319971 |
| | GNLC0302 | | Gill Net | 12W | 474623 | 7319505 |
| | GNLC0303 | | Gill Net | 12W | 474870 | 7319933 |
| | GNLC0304 | | Gill Net | 12W | 474872 | 7319760 |
| | GNLC0305 | | Gill Net | 12W | 474887 | 7319542 |
| | GNLC0306 | | Gill Net | 12W | 474899 | 7319546 |
| | GNLC0307 | | Gill Net | 12W | 474969 | 7319294 |
| | GNLC0308 | | Gill Net | 12W | 474772 | 7319203 |
| | GNLC0309 | | Gill Net | 12W | 475088 | 7319330 |
| | GNLC0310 | | Gill Net | 12W | 474729 | 7319375 |
| | GTLC0301 | | Gee Trap | 12W | 474607 | 7319423 |
| | GTLC0302 | | Gee Trap | 12W | 474753 | 7319168 |
| | GTLC0303 | | Gee Trap | 12W | 474438 | 7320277 |
| | GTLC0304 | | Gee Trap | 12W | 474459 | 7320112 |
| | HYLC0301 | LM-3 | Hydrolab | 12W | 475002 | 7319365 |
| | HYLC0302 | | Hydrolab | 12W | 474677 | 7320182 |
| | PELC0301 | PE-3 | Periphyton | 12W | 474514 | 7319737 |
| | PHLC0301 | PL-3 | Phytoplankton | 12W | 474885 | 7319510 |
| | WCLC0301 | WC-7 | Water Chemistry | 12W | 475002 | 7319365 |
| | ZOLC0301 | PL-3 | Zooplankton | 12W | 474885 | 7319510 |
| Lake D10 | | | | | | |
| | BELLD1001 | BEL-6 | Benthos | 12W | 476667 | 7318681 |
| | BEPLD1001 | BEP-6 | Benthos | 12W | 476450 | 7318723 |

## Appendix B Table B1. Information for sites sampled in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Site Type | Zone | Easting | Northing |
|---|---|---|---|---|---|---|
| Lake D10 | | | | | | |
| | EFLD1001 | | Backpack electrofishing | 12W | 476310 | 7318750 |
| | GNLD1001 | | Gill Net | 12W | 477350 | 7318465 |
| | GNLD1002 | | Gill Net | 12W | 476698 | 7318616 |
| | GNLD1003 | | Gill Net | 12W | 476406 | 7318714 |
| | GNLD1004 | | Gill Net | 12W | 476674 | 7318678 |
| | GNLD1005 | | Gill Net | 12W | 476713 | 7318681 |
| | GTLD1001 | | Gee Trap | 12W | 476307 | 7318781 |
| | GTLD1002 | | Gee Trap | 12W | 476386 | 7318717 |
| | GTLD1003 | | Gee Trap | 12W | 476719 | 7318602 |
| | GTLD1004 | | Gee Trap | 12W | 477439 | 7318517 |
| | HYLD1001 | LM-9 | Hydrolab | 12W | 477379 | 7318517 |
| | HYLD1002 | LM-10 | Hydrolab | 12W | 476450 | 7318723 |
| | LMLD1001 | | Limnology | 12W | 476450 | 7318723 |
| | PELD1001 | PE-6 | Periphyton | 12W | 476456 | 7318702 |
| | PHLD1001 | PL-6 | Phytoplankton | 12W | 476450 | 7318723 |
| | WCLD1001 | WC-5 | Water Chemistry | 12W | 476450 | 7318723 |
| | ZOLD1001 | PL-6 | Zooplankton | 12W | 476450 | 7318723 |
| Lake O1 | | | | | | |
| | BELLO0101 | | Benthos | 12W | 479118 | 7321708 |
| | BEPLO0101 | | Benthos | 12W | 479054 | 7321802 |
| | LMLO0101 | | Limnology | 12W | 479054 | 7321802 |
| | LMLO0102 | | Limnology | 12W | 478774 | 7321721 |
| | PELO0101 | | Periphyton | 12W | 479181 | 7321769 |
| | PHLO0101 | | Phytoplankton | 12W | 479054 | 7321802 |
| | ZOLO0101 | | Zooplankton | 12W | 479054 | 7321802 |
| Stream C1 | | | | | | |
| | EFTC0101 | | Backpack electrofishing | 12W | 478187 | 7319976 |
| | EFTC0102 | | Backpack electrofishing | 12W | 478215 | 7319891 |
| | EFTC0103 | | Backpack electrofishing | 12W | 478243 | 7319852 |
| | EFTC0105 | | Backpack electrofishing | 12W | 478143 | 7319669 |
| | EFTC0106 | | Backpack electrofishing | 12W | 478083 | 7319626 |
| | EFTC0107 | | Backpack electrofishing | 12W | 478067 | 7319607 |
| | PETC01A01 | PE-1A | Periphyton | 12W | 478191 | 7319927 |
| | PETC01B01 | PE-1B | Periphyton | 12W | 477995 | 7319597 |
| | POPTC0101 | | Population Estimate | 12W | 478187 | 7319976 |
| | SHTC0101 | | Stream Habitat | 12W | 478187 | 7319976 |
| | SHTC0102 | | Stream Habitat | 12W | 478215 | 7319891 |
| | SHTC0103 | | Stream Habitat | 12W | 478243 | 7319852 |
| | SHTC0103A | | Stream Habitat | 12W | 478136 | 7319752 |
| | SHTC0104 | | Stream Habitat | 12W | 478222 | 7319726 |
| | SHTC0105 | | Stream Habitat | 12W | 478143 | 7319669 |

## Appendix B Table B1. Information for sites sampled in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Site Type | Zone | Easting | Northing |
|---|---|---|---|---|---|---|
| Stream C1 | | | | | | |
| | SHTC0106 | | Stream Habitat | 12W | 478083 | 7319626 |
| | SHTC0107 | | Stream Habitat | 12W | 478067 | 7319607 |
| | SHTC0108 | | Stream Habitat | 12W | 478002 | 7319591 |
| | SHTC0109 | | Stream Habitat | 12W | 477885 | 7319540 |
| | SHTC0110 | | Stream Habitat | 12W | 477879 | 7319540 |
| | Tahera 0301 | | Discharge (Monitoring) | 12W | 477970 | 7319580 |
| | WCTC01A01 | WC-1A | Water Chemistry | 12W | 478191 | 7319927 |
| | WCTC01B01 | WC-1B | Water Chemistry | 12W | 478190 | 7319930 |
| | WCTC01B02 | | Water Chemistry | 12W | 478190 | 7319930 |
| | WTTC0101 | | Water Temperature | 12W | 478194 | 7319910 |
| Stream C19 | | | | | | |
| | EFTC1901 | | Backpack electrofishing | 12W | 477519 | 7319307 |
| | PETC1901 | PE-7 | Periphyton | 12W | 477310 | 7319244 |
| | SHTC1901 | | Stream Habitat | 12W | 477519 | 7319307 |
| | SHTC1901A | | Stream Habitat | 12W | 477519 | 7319307 |
| | SHTC1902 | | Stream Habitat | 12W | 477418 | 7319254 |
| | WCTC1901 | WC-3 | Water Chemistry | 12W | 477310 | 7319244 |
| Stream C2 | | | | | | |
| | EFTC0201 | | Backpack electrofishing | 12W | 478637 | 7320785 |
| | SHTC0201 | | Stream Habitat | 12W | 478637 | 7320785 |
| | WCTC0201 | | Water chemistry | 12W | 478637 | 7320785 |
| Stream C20 | | | | | | |
| | SHTC2001 | | Stream Habitat | 12W | 477040 | 7319260 |
| | SHTC2002 | | Stream Habitat | 12W | 477020 | 7319250 |
| | SHTC2003 | | Stream Habitat | 12W | 476980 | 7319250 |
| Stream C2A | | | | | | |
| | EFTC02A01 | | Backpack electrofishing | 12W | 478701 | 7321014 |
| | SHTC02A01 | | Stream Habitat | 12W | 478701 | 7321014 |
| Stream C3 | | | | | | |
| | EFTC0301 | | Backpack electrofishing | 12W | 475101 | 7319323 |
| | EFTC0302 | | Backpack electrofishing | 12W | 475214 | 7319307 |
| | EFTC0303 | | Backpack electrofishing | 12W | 475414 | 7319225 |
| | EFTC0304 | | Backpack electrofishing | 12W | 475507 | 7319154 |
| | PETC0301 | PE-8 | Periphyton | 12W | 475631 | 7319040 |
| | SHTC0301 | | Stream Habitat | 12W | 475101 | 7319323 |
| | SHTC0302 | | Stream Habitat | 12W | 475214 | 7319307 |
| | SHTC0303 | | Stream Habitat | 12W | 475414 | 7319225 |
| | SHTC0304 | | Stream Habitat | 12W | 475507 | 7319154 |
| | SHTC0305 | | Stream Habitat | 12W | 475650 | 7319020 |
| | SHTC0306 | | Stream Habitat | 12W | 475896 | 7318878 |
| | WCTC0301 | WC-6 | Water Chemistry | 12W | 475631 | 7319040 |

**Appendix B Table B1. Information for sites sampled in the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Site Type | Zone | Easting | Northing |
|---|---|---|---|---|---|---|
| Stream D2 | | | | | | |
| | EFTD0201 | | Backpack electrofishing | 12W | 479517 | 7319015 |
| | SHTD0201 | | Stream Habitat | 12W | 479517 | 7319015 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C1 | | | | | |
| | 1 | 0.0 | 12W | 477472 | 7319342 |
| | 1 | 1.0 | 12W | 477511 | 7319365 |
| | 1 | 1.5 | 12W | 477519 | 7319370 |
| | 1 | 2.0 | 12W | 477520 | 7319370 |
| | 1 | 2.5 | 12W | 477521 | 7319371 |
| | 1 | 3.0 | 12W | 477522 | 7319371 |
| | 1 | 3.5 | 12W | 477522 | 7319371 |
| | 1 | 4.5 | 12W | 477523 | 7319372 |
| | 1 | 5.0 | 12W | 477524 | 7319372 |
| | 1 | 5.5 | 12W | 477524 | 7319373 |
| | 1 | 6.0 | 12W | 477525 | 7319373 |
| | 1 | 6.5 | 12W | 477527 | 7319374 |
| | 1 | 7.0 | 12W | 477527 | 7319374 |
| | 1 | 7.5 | 12W | 477531 | 7319377 |
| | 1 | 8.0 | 12W | 477544 | 7319384 |
| | 1 | 8.5 | 12W | 477547 | 7319386 |
| | 1 | 9.0 | 12W | 477551 | 7319388 |
| | 1 | 9.5 | 12W | 477555 | 7319391 |
| | 1 | 10.0 | 12W | 477558 | 7319392 |
| | 1 | 10.5 | 12W | 477562 | 7319395 |
| | 1 | 10.5 | 12W | 477599 | 7319416 |
| | 1 | 10.0 | 12W | 477616 | 7319427 |
| | 1 | 9.5 | 12W | 477620 | 7319429 |
| | 1 | 9.0 | 12W | 477624 | 7319431 |
| | 1 | 8.5 | 12W | 477626 | 7319433 |
| | 1 | 8.0 | 12W | 477629 | 7319434 |
| | 1 | 7.5 | 12W | 477631 | 7319435 |
| | 1 | 7.0 | 12W | 477633 | 7319437 |
| | 1 | 6.5 | 12W | 477636 | 7319438 |
| | 1 | 6.0 | 12W | 477638 | 7319440 |
| | 1 | 5.5 | 12W | 477642 | 7319442 |
| | 1 | 5.0 | 12W | 477644 | 7319443 |
| | 1 | 4.5 | 12W | 477645 | 7319444 |
| | 1 | 4.0 | 12W | 477647 | 7319445 |
| | 1 | 3.5 | 12W | 477648 | 7319445 |
| | 1 | 3.0 | 12W | 477649 | 7319446 |
| | 1 | 2.5 | 12W | 477649 | 7319446 |
| | 1 | 2.0 | 12W | 477651 | 7319447 |
| | 1 | 1.5 | 12W | 477654 | 7319449 |
| | 1 | 1.0 | 12W | 477664 | 7319455 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C1 | | | | | |
| | 1 | 0.0 | 12W | 477742 | 7319501 |
| | 2 | 0.0 | 12W | 477634 | 7319486 |
| | 2 | 1.0 | 12W | 477642 | 7319472 |
| | 2 | 1.0 | 12W | 477646 | 7319465 |
| | 2 | 1.5 | 12W | 477647 | 7319463 |
| | 2 | 1.5 | 12W | 477651 | 7319456 |
| | 2 | 1.0 | 12W | 477662 | 7319438 |
| | 2 | 1.0 | 12W | 477663 | 7319437 |
| | 2 | 1.5 | 12W | 477677 | 7319413 |
| | 2 | 1.5 | 12W | 477680 | 7319409 |
| | 2 | 1.0 | 12W | 477683 | 7319403 |
| | 2 | 0.0 | 12W | 477694 | 7319386 |
| | 3 | 0.0 | 12W | 477530 | 7319439 |
| | 3 | 1.0 | 12W | 477533 | 7319432 |
| | 3 | 1.5 | 12W | 477539 | 7319424 |
| | 3 | 2.0 | 12W | 477540 | 7319422 |
| | 3 | 2.5 | 12W | 477541 | 7319421 |
| | 3 | 3.0 | 12W | 477541 | 7319421 |
| | 3 | 3.5 | 12W | 477541 | 7319420 |
| | 3 | 4.0 | 12W | 477542 | 7319419 |
| | 3 | 4.5 | 12W | 477543 | 7319418 |
| | 3 | 6.0 | 12W | 477544 | 7319416 |
| | 3 | 6.5 | 12W | 477545 | 7319414 |
| | 3 | 7.0 | 12W | 477546 | 7319413 |
| | 3 | 7.5 | 12W | 477547 | 7319412 |
| | 3 | 8.0 | 12W | 477548 | 7319410 |
| | 3 | 8.5 | 12W | 477549 | 7319407 |
| | 3 | 9.0 | 12W | 477550 | 7319406 |
| | 3 | 9.5 | 12W | 477552 | 7319403 |
| | 3 | 10.0 | 12W | 477553 | 7319402 |
| | 3 | 10.5 | 12W | 477555 | 7319399 |
| | 3 | 11.0 | 12W | 477557 | 7319396 |
| | 3 | 11.5 | 12W | 477561 | 7319389 |
| | 3 | 11.0 | 12W | 477565 | 7319383 |
| | 3 | 10.5 | 12W | 477567 | 7319380 |
| | 3 | 10.0 | 12W | 477581 | 7319358 |
| | 3 | 9.5 | 12W | 477583 | 7319355 |
| | 3 | 9.0 | 12W | 477584 | 7319353 |
| | 3 | 8.5 | 12W | 477586 | 7319351 |
| | 3 | 8.0 | 12W | 477587 | 7319349 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C1 | | | | | |
| | 3 | 7.5 | 12W | 477588 | 7319347 |
| | 3 | 7.0 | 12W | 477589 | 7319346 |
| | 3 | 6.5 | 12W | 477590 | 7319344 |
| | 3 | 6.0 | 12W | 477591 | 7319343 |
| | 3 | 5.5 | 12W | 477591 | 7319342 |
| | 3 | 4.5 | 12W | 477592 | 7319341 |
| | 3 | 4.0 | 12W | 477593 | 7319340 |
| | 3 | 3.5 | 12W | 477593 | 7319339 |
| | 3 | 3.0 | 12W | 477594 | 7319338 |
| | 3 | 2.5 | 12W | 477595 | 7319337 |
| | 3 | 2.0 | 12W | 477596 | 7319335 |
| | 3 | 1.5 | 12W | 477597 | 7319333 |
| | 3 | 1.0 | 12W | 477598 | 7319331 |
| | 3 | 0.0 | 12W | 477607 | 7319319 |
| | 4 | 0.0 | 12W | 477571 | 7319471 |
| | 4 | 2.0 | 12W | 477577 | 7319461 |
| | 4 | 3.0 | 12W | 477578 | 7319459 |
| | 4 | 3.5 | 12W | 477580 | 7319457 |
| | 4 | 4.0 | 12W | 477582 | 7319454 |
| | 4 | 4.5 | 12W | 477587 | 7319447 |
| | 4 | 4.5 | 12W | 477601 | 7319427 |
| | 4 | 4.0 | 12W | 477608 | 7319417 |
| | 4 | 3.5 | 12W | 477609 | 7319416 |
| | 4 | 3.0 | 12W | 477610 | 7319415 |
| | 4 | 2.5 | 12W | 477611 | 7319412 |
| | 4 | 2.0 | 12W | 477612 | 7319411 |
| | 4 | 1.5 | 12W | 477614 | 7319408 |
| | 4 | 1.0 | 12W | 477644 | 7319366 |
| | 4 | 0.0 | 12W | 477653 | 7319354 |
| | 5 | 0.0 | 12W | 477470 | 7319421 |
| | 5 | 1.0 | 12W | 477515 | 7319427 |
| | 5 | 7.0 | 12W | 477527 | 7319428 |
| | 5 | 7.5 | 12W | 477531 | 7319429 |
| | 5 | 8.0 | 12W | 477535 | 7319429 |
| | 5 | 8.5 | 12W | 477548 | 7319431 |
| | 5 | 9.0 | 12W | 477559 | 7319433 |
| | 5 | 9.5 | 12W | 477562 | 7319433 |
| | 5 | 10.0 | 12W | 477568 | 7319434 |
| | 5 | 10.5 | 12W | 477573 | 7319435 |
| | 5 | 11.0 | 12W | 477581 | 7319436 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C1 | | | | | |
| | 5 | 11.0 | 12W | 477619 | 7319441 |
| | 5 | 10.5 | 12W | 477626 | 7319442 |
| | 5 | 10.0 | 12W | 477637 | 7319444 |
| | 5 | 9.5 | 12W | 477645 | 7319445 |
| | 5 | 9.0 | 12W | 477648 | 7319445 |
| | 5 | 8.5 | 12W | 477652 | 7319446 |
| | 5 | 8.0 | 12W | 477656 | 7319446 |
| | 5 | 7.5 | 12W | 477659 | 7319447 |
| | 5 | 7.0 | 12W | 477663 | 7319447 |
| | 5 | 6.5 | 12W | 477667 | 7319448 |
| | 5 | 6.0 | 12W | 477670 | 7319448 |
| | 5 | 5.5 | 12W | 477674 | 7319449 |
| | 5 | 5.0 | 12W | 477676 | 7319449 |
| | 5 | 1.5 | 12W | 477687 | 7319450 |
| | 5 | 1.0 | 12W | 477709 | 7319453 |
| | 5 | 0.0 | 12W | 477739 | 7319458 |
| Lake C2 | | | | | |
| | 1 | 0.0 | 12W | 477045 | 7319262 |
| | 1 | 1.0 | 12W | 477081 | 7319258 |
| | 1 | 1.5 | 12W | 477093 | 7319256 |
| | 1 | 1.5 | 12W | 477109 | 7319255 |
| | 1 | 1.5 | 12W | 477116 | 7319254 |
| | 1 | 1.5 | 12W | 477123 | 7319253 |
| | 1 | 1.0 | 12W | 477165 | 7319249 |
| | 1 | 0.0 | 12W | 477190 | 7319247 |
| | 2 | 0.0 | 12W | 477153 | 7319280 |
| | 2 | 1.0 | 12W | 477149 | 7319259 |
| | 2 | 1.0 | 12W | 477146 | 7319240 |
| | 2 | 1.0 | 12W | 477144 | 7319225 |
| | 2 | 0.0 | 12W | 477143 | 7319218 |
| | 3 | 0.0 | 12W | 477109 | 7319295 |
| | 3 | 1.0 | 12W | 477092 | 7319264 |
| | 3 | 1.5 | 12W | 477091 | 7319262 |
| | 3 | 1.5 | 12W | 477090 | 7319261 |
| | 3 | 1.0 | 12W | 477087 | 7319256 |
| | 3 | 0.0 | 12W | 477065 | 7319215 |
| | 4 | 0.0 | 12W | 477073 | 7319212 |
| | 4 | 1.0 | 12W | 477115 | 7319237 |
| | 4 | 1.0 | 12W | 477118 | 7319239 |
| | 4 | 1.0 | 12W | 477125 | 7319243 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C2 | | | | | |
| | 4 | 1.0 | 12W | 477127 | 7319244 |
| | 4 | 1.0 | 12W | 477142 | 7319253 |
| | 4 | 1.0 | 12W | 477146 | 7319256 |
| | 4 | 1.0 | 12W | 477151 | 7319259 |
| | 4 | 0.0 | 12W | 477174 | 7319273 |
| | 5 | 0.0 | 12W | 477055 | 7319288 |
| | 5 | 0.5 | 12W | 477078 | 7319273 |
| | 5 | 1.0 | 12W | 477096 | 7319263 |
| | 5 | 2.0 | 12W | 477106 | 7319256 |
| | 5 | 1.5 | 12W | 477119 | 7319248 |
| | 5 | 1.0 | 12W | 477133 | 7319240 |
| | 5 | 0.0 | 12W | 477167 | 7319220 |
| | 6 | 0.0 | 12W | 477097 | 7319210 |
| | 6 | 1.0 | 12W | 477083 | 7319236 |
| | 6 | 1.0 | 12W | 477081 | 7319240 |
| | 6 | 1.0 | 12W | 477078 | 7319246 |
| | 6 | 1.5 | 12W | 477075 | 7319251 |
| | 6 | 2.0 | 12W | 477071 | 7319259 |
| | 6 | 1.5 | 12W | 477069 | 7319263 |
| | 6 | 1.0 | 12W | 477068 | 7319265 |
| | 6 | 1.0 | 12W | 477067 | 7319267 |
| | 6 | 0.0 | 12W | 477056 | 7319288 |
| Lake C3 | | | | | |
| | 1 | 0.0 | 12W | 474733 | 7319347 |
| | 1 | 2.0 | 12W | 474759 | 7319426 |
| | 1 | 2.5 | 12W | 474759 | 7319428 |
| | 1 | 3.0 | 12W | 474759 | 7319428 |
| | 1 | 3.5 | 12W | 474760 | 7319430 |
| | 1 | 4.0 | 12W | 474761 | 7319434 |
| | 1 | 4.5 | 12W | 474762 | 7319436 |
| | 1 | 5.0 | 12W | 474764 | 7319440 |
| | 1 | 5.5 | 12W | 474765 | 7319444 |
| | 1 | 6.0 | 12W | 474766 | 7319446 |
| | 1 | 6.5 | 12W | 474766 | 7319449 |
| | 1 | 7.0 | 12W | 474768 | 7319453 |
| | 1 | 7.5 | 12W | 474768 | 7319455 |
| | 1 | 8.0 | 12W | 474770 | 7319459 |
| | 1 | 8.5 | 12W | 474771 | 7319463 |
| | 1 | 9.0 | 12W | 474772 | 7319465 |
| | 1 | 9.5 | 12W | 474773 | 7319469 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 1 | 10.0 | 12W | 474774 | 7319473 |
| | 1 | 10.5 | 12W | 474776 | 7319477 |
| | 1 | 11.0 | 12W | 474778 | 7319483 |
| | 1 | 11.0 | 12W | 474783 | 7319500 |
| | 1 | 10.5 | 12W | 474786 | 7319508 |
| | 1 | 10.0 | 12W | 474793 | 7319528 |
| | 1 | 9.5 | 12W | 474797 | 7319541 |
| | 1 | 9.0 | 12W | 474798 | 7319545 |
| | 1 | 8.5 | 12W | 474799 | 7319549 |
| | 1 | 8.0 | 12W | 474801 | 7319553 |
| | 1 | 7.5 | 12W | 474801 | 7319555 |
| | 1 | 7.0 | 12W | 474803 | 7319559 |
| | 1 | 6.0 | 12W | 474804 | 7319563 |
| | 1 | 6.5 | 12W | 474805 | 7319565 |
| | 1 | 5.5 | 12W | 474806 | 7319567 |
| | 1 | 5.0 | 12W | 474808 | 7319574 |
| | 1 | 4.5 | 12W | 474808 | 7319576 |
| | 1 | 4.0 | 12W | 474810 | 7319582 |
| | 1 | 3.5 | 12W | 474812 | 7319588 |
| | 1 | 3.0 | 12W | 474816 | 7319598 |
| | 1 | 2.5 | 12W | 474817 | 7319602 |
| | 1 | 2.0 | 12W | 474820 | 7319611 |
| | 1 | 1.5 | 12W | 474826 | 7319629 |
| | 1 | 1.5 | 12W | 474851 | 7319705 |
| | 1 | 2.0 | 12W | 474873 | 7319770 |
| | 1 | 2.5 | 12W | 474873 | 7319773 |
| | 1 | 3.0 | 12W | 474877 | 7319785 |
| | 1 | 3.5 | 12W | 474886 | 7319811 |
| | 1 | 3.0 | 12W | 474903 | 7319863 |
| | 1 | 3.0 | 12W | 474936 | 7319961 |
| | 1 | 2.5 | 12W | 474942 | 7319982 |
| | 1 | 2.0 | 12W | 474943 | 7319984 |
| | 1 | 1.5 | 12W | 474981 | 7320099 |
| | 1 | 0.0 | 12W | 475016 | 7320203 |
| | 2 | 0.0 | 12W | 474780 | 7320317 |
| | 2 | 1.5 | 12W | 474815 | 7320195 |
| | 2 | 1.5 | 12W | 474820 | 2515170 |
| | 2 | 1.5 | 12W | 474824 | 7320164 |
| | 2 | 2.0 | 12W | 474888 | 7319945 |
| | 2 | 2.5 | 12W | 474891 | 7319935 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 2 | 2.5 | 12W | 474893 | 7319927 |
| | 2 | 2.5 | 12W | 474894 | 7319924 |
| | 2 | 2.0 | 12W | 474896 | 7319918 |
| | 2 | 1.5 | 12W | 474939 | 7319771 |
| | 2 | 1.5 | 12W | 474987 | 7319605 |
| | 2 | 1.5 | 12W | 474999 | 7319562 |
| | 2 | 1.5 | 12W | 475003 | 7319549 |
| | 2 | 1.5 | 12W | 475005 | 7319543 |
| | 2 | 1.5 | 12W | 475011 | 7319524 |
| | 2 | 1.5 | 12W | 475017 | 7319501 |
| | 2 | 1.5 | 12W | 475023 | 7319482 |
| | 2 | 2.0 | 12W | 475025 | 7319475 |
| | 2 | 2.0 | 12W | 475036 | 7319438 |
| | 2 | 1.5 | 12W | 475037 | 7319433 |
| | 2 | 1.5 | 12W | 475043 | 7319413 |
| | 2 | 0.0 | 12W | 475088 | 7319261 |
| | 3 | 0.0 | 12W | 475101 | 7319323 |
| | 3 | 1.5 | 12W | 475074 | 7319338 |
| | 3 | 1.5 | 12W | 475070 | 7319340 |
| | 3 | 1.5 | 12W | 475060 | 7319346 |
| | 3 | 2.0 | 12W | 475059 | 7319347 |
| | 3 | 3.0 | 12W | 475057 | 7319348 |
| | 3 | 3.5 | 12W | 475057 | 7319348 |
| | 3 | 4.0 | 12W | 475057 | 7319348 |
| | 3 | 4.5 | 12W | 475056 | 7319349 |
| | 3 | 5.0 | 12W | 475051 | 7319351 |
| | 3 | 5.5 | 12W | 475048 | 7319353 |
| | 3 | 6.0 | 12W | 475043 | 7319356 |
| | 3 | 6.5 | 12W | 475042 | 7319357 |
| | 3 | 7.0 | 12W | 475035 | 7319361 |
| | 3 | 7.5 | 12W | 475031 | 7319363 |
| | 3 | 8.0 | 12W | 475028 | 7319365 |
| | 3 | 8.5 | 12W | 475024 | 7319367 |
| | 3 | 9.0 | 12W | 475020 | 7319370 |
| | 3 | 9.5 | 12W | 475015 | 7319372 |
| | 3 | 10.0 | 12W | 475010 | 7319375 |
| | 3 | 10.5 | 12W | 475007 | 7319377 |
| | 3 | 11.0 | 12W | 474981 | 7319392 |
| | 3 | 11.5 | 12W | 474971 | 7319398 |
| | 3 | 12.0 | 12W | 474960 | 7319404 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 3 | 12.5 | 12W | 474910 | 7319433 |
| | 3 | 12.0 | 12W | 474882 | 7319450 |
| | 3 | 11.5 | 12W | 474873 | 7319455 |
| | 3 | 11.0 | 12W | 474868 | 7319458 |
| | 3 | 10.5 | 12W | 474863 | 7319461 |
| | 3 | 10.0 | 12W | 474859 | 7319464 |
| | 3 | 9.5 | 12W | 474854 | 7319466 |
| | 3 | 9.0 | 12W | 474851 | 7319468 |
| | 3 | 8.5 | 12W | 474848 | 7319470 |
| | 3 | 8.0 | 12W | 474846 | 7319471 |
| | 3 | 7.5 | 12W | 474842 | 7319474 |
| | 3 | 7.0 | 12W | 474840 | 7319475 |
| | 3 | 6.5 | 12W | 474837 | 7319476 |
| | 3 | 6.0 | 12W | 474835 | 7319477 |
| | 3 | 5.0 | 12W | 474832 | 7319479 |
| | 3 | 5.5 | 12W | 474832 | 7319479 |
| | 3 | 4.5 | 12W | 474826 | 7319483 |
| | 3 | 4.0 | 12W | 474824 | 7319484 |
| | 3 | 3.5 | 12W | 474820 | 7319486 |
| | 3 | 3.0 | 12W | 474817 | 7319488 |
| | 3 | 2.0 | 12W | 474815 | 7319489 |
| | 3 | 2.0 | 12W | 474773 | 7319514 |
| | 3 | 2.0 | 12W | 474756 | 7319524 |
| | 3 | 2.0 | 12W | 474749 | 7319527 |
| | 3 | 2.5 | 12W | 474746 | 7319529 |
| | 3 | 3.0 | 12W | 474732 | 7319537 |
| | 3 | 3.5 | 12W | 474706 | 7319553 |
| | 3 | 3.5 | 12W | 474682 | 7319567 |
| | 3 | 3.5 | 12W | 474618 | 7319604 |
| | 3 | 4.0 | 12W | 474604 | 7319612 |
| | 3 | 4.5 | 12W | 474587 | 7319622 |
| | 3 | 5.0 | 12W | 474584 | 7319624 |
| | 3 | 5.5 | 12W | 474576 | 7319629 |
| | 3 | 6.0 | 12W | 474568 | 7319633 |
| | 3 | 6.5 | 12W | 474560 | 7319638 |
| | 3 | 7.0 | 12W | 474554 | 7319641 |
| | 3 | 7.5 | 12W | 474543 | 7319648 |
| | 3 | 7.0 | 12W | 474535 | 7319652 |
| | 3 | 6.5 | 12W | 474529 | 7319656 |
| | 3 | 6.0 | 12W | 474524 | 7319659 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 3 | 5.5 | 12W | 474520 | 7319661 |
| | 3 | 5.0 | 12W | 474513 | 7319665 |
| | 3 | 4.5 | 12W | 474509 | 7319668 |
| | 3 | 4.0 | 12W | 474504 | 7319671 |
| | 3 | 3.5 | 12W | 474499 | 7319673 |
| | 3 | 3.5 | 12W | 474491 | 7319678 |
| | 3 | 3.0 | 12W | 474454 | 7319700 |
| | 3 | 2.5 | 12W | 474451 | 7319702 |
| | 3 | 2.5 | 12W | 474443 | 7319706 |
| | 3 | 0.0 | 12W | 474323 | 7319776 |
| | 4 | 0.0 | 12W | 474330 | 7319637 |
| | 4 | 1.5 | 12W | 474379 | 7319663 |
| | 4 | 2.0 | 12W | 474403 | 7319676 |
| | 4 | 2.5 | 12W | 474405 | 7319677 |
| | 4 | 3.0 | 12W | 474407 | 7319678 |
| | 4 | 4.0 | 12W | 474410 | 7319679 |
| | 4 | 5.0 | 12W | 474412 | 7319680 |
| | 4 | 5.5 | 12W | 474414 | 7319681 |
| | 4 | 6.0 | 12W | 474416 | 7319683 |
| | 4 | 6.5 | 12W | 474419 | 7319684 |
| | 4 | 7.5 | 12W | 474421 | 7319685 |
| | 4 | 8.0 | 12W | 474423 | 7319686 |
| | 4 | 8.5 | 12W | 474425 | 7319687 |
| | 4 | 9.0 | 12W | 474430 | 7319690 |
| | 4 | 9.5 | 12W | 474432 | 7319691 |
| | 4 | 10.0 | 12W | 474434 | 7319692 |
| | 4 | 10.5 | 12W | 474439 | 7319694 |
| | 4 | 11.0 | 12W | 474441 | 7319696 |
| | 4 | 11.5 | 12W | 474447 | 7319699 |
| | 4 | 12.0 | 12W | 474456 | 7319704 |
| | 4 | 12.5 | 12W | 474483 | 7319718 |
| | 4 | 13.0 | 12W | 474494 | 7319724 |
| | 4 | 13.5 | 12W | 474505 | 7319730 |
| | 4 | 13.5 | 12W | 474559 | 7319758 |
| | 4 | 13.0 | 12W | 474567 | 7319763 |
| | 4 | 12.5 | 12W | 474576 | 7319768 |
| | 4 | 12.0 | 12W | 474583 | 7319771 |
| | 4 | 11.5 | 12W | 474587 | 7319773 |
| | 4 | 11.0 | 12W | 474594 | 7319777 |
| | 4 | 10.5 | 12W | 474598 | 7319779 |

## Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 4 | 10.0 | 12W | 474603 | 7319782 |
| | 4 | 9.5 | 12W | 474607 | 7319784 |
| | 4 | 9.0 | 12W | 474610 | 7319785 |
| | 4 | 8.5 | 12W | 474616 | 7319789 |
| | 4 | 8.0 | 12W | 474621 | 7319791 |
| | 4 | 7.5 | 12W | 474627 | 7319795 |
| | 4 | 7.0 | 12W | 474634 | 7319798 |
| | 4 | 6.5 | 12W | 474638 | 7319801 |
| | 4 | 6.0 | 12W | 474647 | 7319805 |
| | 4 | 5.5 | 12W | 474654 | 7319809 |
| | 4 | 5.0 | 12W | 474663 | 7319814 |
| | 4 | 4.5 | 12W | 474676 | 7319821 |
| | 4 | 4.5 | 12W | 474701 | 7319834 |
| | 4 | 4.5 | 12W | 474730 | 7319849 |
| | 4 | 4.0 | 12W | 474743 | 7319856 |
| | 4 | 3.5 | 12W | 474752 | 7319861 |
| | 4 | 3.0 | 12W | 474836 | 7319906 |
| | 4 | 3.0 | 12W | 474854 | 7319915 |
| | 4 | 2.0 | 12W | 474856 | 7319916 |
| | 4 | 1.5 | 12W | 474870 | 7319923 |
| | 4 | 1.5 | 12W | 474876 | 7319927 |
| | 4 | 1.0 | 12W | 474898 | 7319939 |
| | 4 | 0.0 | 12W | 474998 | 7319992 |
| | 5 | 0.0 | 12W | 474497 | 7320309 |
| | 5 | 1.5 | 12W | 474532 | 7320281 |
| | 5 | 1.5 | 12W | 474535 | 7320278 |
| | 5 | 1.5 | 12W | 474540 | 7320274 |
| | 5 | 2.0 | 12W | 474545 | 7320270 |
| | 5 | 2.5 | 12W | 474564 | 7320256 |
| | 5 | 3.0 | 12W | 474584 | 7320240 |
| | 5 | 3.5 | 12W | 474603 | 7320225 |
| | 5 | 3.5 | 12W | 474629 | 7320205 |
| | 5 | 3.0 | 12W | 474665 | 7320177 |
| | 5 | 3.0 | 12W | 474750 | 7320110 |
| | 5 | 3.0 | 12W | 474784 | 7320084 |
| | 5 | 2.0 | 12W | 474873 | 7320015 |
| | 5 | 1.5 | 12W | 474888 | 7320003 |
| | 5 | 1.5 | 12W | 474903 | 7319991 |
| | 5 | 1.0 | 12W | 474919 | 7319979 |
| | 5 | 0.0 | 12W | 474940 | 7319962 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 6 | 0.0 | 12W | 474551 | 7319975 |
| | 6 | 2.0 | 12W | 474566 | 7319974 |
| | 6 | 2.5 | 12W | 474568 | 7319974 |
| | 6 | 3.0 | 12W | 474571 | 7319974 |
| | 6 | 3.5 | 12W | 474574 | 7319974 |
| | 6 | 4.0 | 12W | 474582 | 7319973 |
| | 6 | 4.5 | 12W | 474584 | 7319973 |
| | 6 | 5.0 | 12W | 474587 | 7319973 |
| | 6 | 5.5 | 12W | 474590 | 7319973 |
| | 6 | 6.0 | 12W | 474595 | 7319973 |
| | 6 | 6.5 | 12W | 474597 | 7319973 |
| | 6 | 7.0 | 12W | 474600 | 7319973 |
| | 6 | 7.5 | 12W | 474603 | 7319973 |
| | 6 | 8.0 | 12W | 474605 | 7319973 |
| | 6 | 8.5 | 12W | 474608 | 7319972 |
| | 6 | 9.0 | 12W | 474613 | 7319972 |
| | 6 | 9.5 | 12W | 474616 | 7319972 |
| | 6 | 10.0 | 12W | 474621 | 7319972 |
| | 6 | 10.5 | 12W | 474627 | 7319972 |
| | 6 | 11.0 | 12W | 474629 | 7319972 |
| | 6 | 11.0 | 12W | 474645 | 7319971 |
| | 6 | 10.5 | 12W | 474650 | 7319971 |
| | 6 | 10.0 | 12W | 474656 | 7319971 |
| | 6 | 9.5 | 12W | 474661 | 7319971 |
| | 6 | 9.0 | 12W | 474669 | 7319970 |
| | 6 | 8.5 | 12W | 474674 | 7319970 |
| | 6 | 8.0 | 12W | 474677 | 7319970 |
| | 6 | 7.5 | 12W | 474679 | 7319970 |
| | 6 | 7.0 | 12W | 474682 | 7319970 |
| | 6 | 6.5 | 12W | 474687 | 7319970 |
| | 6 | 6.0 | 12W | 474690 | 7319969 |
| | 6 | 5.5 | 12W | 474695 | 7319969 |
| | 6 | 5.0 | 12W | 474706 | 7319969 |
| | 6 | 4.5 | 12W | 474732 | 7319968 |
| | 6 | 4.0 | 12W | 474743 | 7319968 |
| | 6 | 3.5 | 12W | 474767 | 7319967 |
| | 6 | 3.0 | 12W | 474856 | 7319963 |
| | 6 | 2.0 | 12W | 474885 | 7319962 |
| | 6 | 0.0 | 12W | 474940 | 7319961 |
| | 7 | 0.0 | 12W | 474551 | 7319971 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 7 | 1.0 | 12W | 474557 | 7319974 |
| | 7 | 1.5 | 12W | 474563 | 7319977 |
| | 7 | 2.0 | 12W | 474581 | 7319986 |
| | 7 | 2.5 | 12W | 474593 | 7319992 |
| | 7 | 3.0 | 12W | 474596 | 7319993 |
| | 7 | 3.5 | 12W | 474613 | 7320002 |
| | 7 | 3.5 | 12W | 474651 | 7320021 |
| | 7 | 3.0 | 12W | 474657 | 7320024 |
| | 7 | 3.0 | 12W | 474661 | 7320025 |
| | 7 | 3.0 | 12W | 474743 | 7320067 |
| | 7 | 2.5 | 12W | 474779 | 7320085 |
| | 7 | 2.0 | 12W | 474781 | 7320086 |
| | 7 | 1.5 | 12W | 474817 | 7320103 |
| | 7 | 0.0 | 12W | 475016 | 7320203 |
| | 8 | 0.0 | 12W | 474551 | 7319974 |
| | 8 | 2.0 | 12W | 474559 | 7319966 |
| | 8 | 2.5 | 12W | 474561 | 7319964 |
| | 8 | 3.0 | 12W | 474563 | 7319962 |
| | 8 | 3.5 | 12W | 474565 | 7319960 |
| | 8 | 4.0 | 12W | 474567 | 7319958 |
| | 8 | 4.5 | 12W | 474569 | 7319956 |
| | 8 | 5.0 | 12W | 474571 | 7319954 |
| | 8 | 5.5 | 12W | 474575 | 7319951 |
| | 8 | 6.0 | 12W | 474577 | 7319949 |
| | 8 | 6.5 | 12W | 474579 | 7319947 |
| | 8 | 7.0 | 12W | 474581 | 7319945 |
| | 8 | 7.5 | 12W | 474583 | 7319943 |
| | 8 | 8.0 | 12W | 474585 | 7319941 |
| | 8 | 8.5 | 12W | 474589 | 7319938 |
| | 8 | 9.0 | 12W | 474591 | 7319936 |
| | 8 | 10.0 | 12W | 474593 | 7319934 |
| | 8 | 10.5 | 12W | 474595 | 7319932 |
| | 8 | 11.0 | 12W | 474597 | 7319930 |
| | 8 | 11.5 | 12W | 474601 | 7319927 |
| | 8 | 12.0 | 12W | 474605 | 7319923 |
| | 8 | 12.5 | 12W | 474607 | 7319921 |
| | 8 | 13.0 | 12W | 474609 | 7319919 |
| | 8 | 13.5 | 12W | 474611 | 7319917 |
| | 8 | 14.0 | 12W | 474617 | 7319912 |
| | 8 | 14.5 | 12W | 474619 | 7319910 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 8 | 15.0 | 12W | 474625 | 7319904 |
| | 8 | 15.0 | 12W | 474669 | 7319864 |
| | 8 | 14.5 | 12W | 474675 | 7319858 |
| | 8 | 14.0 | 12W | 474681 | 7319853 |
| | 8 | 13.5 | 12W | 474687 | 7319847 |
| | 8 | 13.0 | 12W | 474691 | 7319843 |
| | 8 | 12.5 | 12W | 474697 | 7319838 |
| | 8 | 12.0 | 12W | 474701 | 7319834 |
| | 8 | 11.5 | 12W | 474705 | 7319830 |
| | 8 | 11.0 | 12W | 474711 | 7319825 |
| | 8 | 10.5 | 12W | 474715 | 7319821 |
| | 8 | 10.0 | 12W | 474719 | 7319817 |
| | 8 | 9.5 | 12W | 474723 | 7319814 |
| | 8 | 9.0 | 12W | 474727 | 7319810 |
| | 8 | 8.5 | 12W | 474731 | 7319806 |
| | 8 | 8.0 | 12W | 474733 | 7319804 |
| | 8 | 7.5 | 12W | 474737 | 7319801 |
| | 8 | 7.0 | 12W | 474745 | 7319793 |
| | 8 | 6.5 | 12W | 474752 | 7319786 |
| | 8 | 6.0 | 12W | 474762 | 7319777 |
| | 8 | 5.5 | 12W | 474784 | 7319756 |
| | 8 | 5.0 | 12W | 474804 | 7319738 |
| | 8 | 4.5 | 12W | 474830 | 7319714 |
| | 8 | 4.0 | 12W | 474844 | 7319701 |
| | 8 | 3.5 | 12W | 474882 | 7319665 |
| | 8 | 3.0 | 12W | 474922 | 7319628 |
| | 8 | 2.5 | 12W | 474952 | 7319601 |
| | 8 | 2.5 | 12W | 474956 | 7319597 |
| | 8 | 2.0 | 12W | 474962 | 7319591 |
| | 8 | 1.5 | 12W | 475054 | 7319506 |
| | 8 | 0.0 | 12W | 475117 | 7319448 |
| | 9 | 0.0 | 12W | 475101 | 7319323 |
| | 9 | 2.0 | 12W | 475063 | 7319314 |
| | 9 | 2.5 | 12W | 475060 | 7319313 |
| | 9 | 3.0 | 12W | 475056 | 7319312 |
| | 9 | 3.5 | 12W | 475054 | 7319312 |
| | 9 | 4.0 | 12W | 475046 | 7319310 |
| | 9 | 4.5 | 12W | 475032 | 7319307 |
| | 9 | 5.0 | 12W | 475017 | 7319303 |
| | 9 | 5.5 | 12W | 475004 | 7319300 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 9 | 6.0 | 12W | 474992 | 7319298 |
| | 9 | 6.5 | 12W | 474985 | 7319296 |
| | 9 | 7.0 | 12W | 474977 | 7319294 |
| | 9 | 7.5 | 12W | 474972 | 7319293 |
| | 9 | 8.0 | 12W | 474961 | 7319290 |
| | 9 | 8.5 | 12W | 474944 | 7319287 |
| | 9 | 9.0 | 12W | 474933 | 7319284 |
| | 9 | 9.5 | 12W | 474897 | 7319276 |
| | 9 | 9.0 | 12W | 474893 | 7319275 |
| | 9 | 8.5 | 12W | 474884 | 7319273 |
| | 9 | 8.0 | 12W | 474877 | 7319271 |
| | 9 | 7.5 | 12W | 474867 | 7319269 |
| | 9 | 7.0 | 12W | 474854 | 7319266 |
| | 9 | 6.5 | 12W | 474850 | 7319265 |
| | 9 | 6.0 | 12W | 474845 | 7319264 |
| | 9 | 5.5 | 12W | 474832 | 7319261 |
| | 9 | 5.0 | 12W | 474824 | 7319259 |
| | 9 | 4.0 | 12W | 474815 | 7319257 |
| | 9 | 3.0 | 12W | 474809 | 7319256 |
| | 9 | 2.5 | 12W | 474808 | 7319255 |
| | 9 | 2.0 | 12W | 474806 | 7319255 |
| | 9 | 1.5 | 12W | 474802 | 7319254 |
| | 9 | 0.0 | 12W | 474747 | 7319242 |
| | 10 | 0.0 | 12W | 474603 | 7319502 |
| | 10 | 2.0 | 12W | 474584 | 7319541 |
| | 10 | 2.0 | 12W | 474582 | 7319545 |
| | 10 | 2.0 | 12W | 474579 | 7319553 |
| | 10 | 2.5 | 12W | 474578 | 7319555 |
| | 10 | 3.0 | 12W | 474577 | 7319557 |
| | 10 | 4.0 | 12W | 474576 | 7319559 |
| | 10 | 4.5 | 12W | 474574 | 7319563 |
| | 10 | 5.0 | 12W | 474573 | 7319566 |
| | 10 | 5.5 | 12W | 474571 | 7319569 |
| | 10 | 6.0 | 12W | 474570 | 7319572 |
| | 10 | 6.5 | 12W | 474568 | 7319576 |
| | 10 | 7.0 | 12W | 474567 | 7319578 |
| | 10 | 7.5 | 12W | 474566 | 7319580 |
| | 10 | 8.0 | 12W | 474565 | 7319582 |
| | 10 | 8.5 | 12W | 474564 | 7319584 |
| | 10 | 9.0 | 12W | 474563 | 7319586 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 10 | 9.5 | 12W | 474562 | 7319588 |
| | 10 | 10.0 | 12W | 474561 | 7319590 |
| | 10 | 10.5 | 12W | 474560 | 7319593 |
| | 10 | 11.0 | 12W | 474558 | 7319597 |
| | 10 | 11.5 | 12W | 474557 | 7319599 |
| | 10 | 12.0 | 12W | 474552 | 7319610 |
| | 10 | 11.5 | 12W | 474552 | 7319612 |
| | 10 | 11.0 | 12W | 474548 | 7319620 |
| | 10 | 10.5 | 12W | 474547 | 7319622 |
| | 10 | 10.0 | 12W | 474546 | 7319624 |
| | 10 | 9.5 | 12W | 474544 | 7319629 |
| | 10 | 9.0 | 12W | 474543 | 7319631 |
| | 10 | 8.5 | 12W | 474542 | 7319633 |
| | 10 | 8.0 | 12W | 474541 | 7319635 |
| | 10 | 7.5 | 12W | 474539 | 7319639 |
| | 10 | 7.5 | 12W | 474529 | 7319660 |
| | 10 | 8.0 | 12W | 474528 | 7319663 |
| | 10 | 8.5 | 12W | 474525 | 7319668 |
| | 10 | 8.0 | 12W | 474522 | 7319676 |
| | 10 | 7.5 | 12W | 474521 | 7319677 |
| | 10 | 7.0 | 12W | 474520 | 7319679 |
| | 10 | 6.5 | 12W | 474519 | 7319681 |
| | 10 | 6.0 | 12W | 474518 | 7319683 |
| | 10 | 5.5 | 12W | 474517 | 7319685 |
| | 10 | 5.0 | 12W | 474516 | 7319687 |
| | 10 | 4.5 | 12W | 474516 | 7319689 |
| | 10 | 4.0 | 12W | 474514 | 7319692 |
| | 10 | 3.5 | 12W | 474513 | 7319695 |
| | 10 | 2.5 | 12W | 474512 | 7319696 |
| | 10 | 2.0 | 12W | 474511 | 7319698 |
| | 10 | 2.0 | 12W | 474508 | 7319705 |
| | 10 | 0.0 | 12W | 474497 | 7319731 |
| | 11 | 11.0 | 12W | 475094 | 7319289 |
| | 11 | 11.0 | 12W | 474967 | 7319359 |
| | 11 | 11.5 | 12W | 474956 | 7319365 |
| | 11 | 12.0 | 12W | 474949 | 7319369 |
| | 11 | 12.5 | 12W | 474947 | 7319370 |
| | 11 | 13.0 | 12W | 474940 | 7319374 |
| | 11 | 13.5 | 12W | 474934 | 7319378 |
| | 11 | 14.0 | 12W | 474927 | 7319382 |

## Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 11 | 14.5 | 12W | 474922 | 7319384 |
| | 11 | 14.5 | 12W | 474898 | 7319398 |
| | 11 | 14.0 | 12W | 474889 | 7319403 |
| | 11 | 13.5 | 12W | 474877 | 7319409 |
| | 11 | 13.0 | 12W | 474862 | 7319418 |
| | 11 | 12.5 | 12W | 474819 | 7319442 |
| | 11 | 12.0 | 12W | 474808 | 7319448 |
| | 11 | 11.5 | 12W | 474790 | 7319458 |
| | 11 | 11.0 | 12W | 474761 | 7319474 |
| | 11 | 10.5 | 12W | 474759 | 7319476 |
| | 11 | 10.0 | 12W | 474754 | 7319478 |
| | 11 | 9.5 | 12W | 474725 | 7319494 |
| | 11 | 9.5 | 12W | 474721 | 7319497 |
| | 11 | 9.0 | 12W | 474705 | 7319506 |
| | 11 | 8.5 | 12W | 474691 | 7319513 |
| | 11 | 8.0 | 12W | 474678 | 7319521 |
| | 11 | 7.5 | 12W | 474658 | 7319532 |
| | 11 | 7.0 | 12W | 474649 | 7319537 |
| | 11 | 6.5 | 12W | 474644 | 7319539 |
| | 11 | 6.0 | 12W | 474640 | 7319542 |
| | 11 | 5.5 | 12W | 474635 | 7319544 |
| | 11 | 5.0 | 12W | 474633 | 7319546 |
| | 11 | 4.0 | 12W | 474631 | 7319547 |
| | 11 | 3.5 | 12W | 474629 | 7319548 |
| | 11 | 3.0 | 12W | 474626 | 7319549 |
| | 11 | 2.0 | 12W | 474624 | 7319551 |
| | 11 | 1.5 | 12W | 474613 | 7319557 |
| | 11 | 1.5 | 12W | 474568 | 7319582 |
| | 11 | 2.0 | 12W | 474564 | 7319585 |
| | 11 | 2.0 | 12W | 474541 | 7319597 |
| | 11 | 1.5 | 12W | 474537 | 7319600 |
| | 11 | 1.0 | 12W | 474521 | 7319608 |
| | 11 | 1.0 | 12W | 474458 | 7319643 |
| | 11 | 1.5 | 12W | 474407 | 7319672 |
| | 11 | 1.5 | 12W | 474400 | 7319676 |
| | 11 | 1.5 | 12W | 474393 | 7319680 |
| | 11 | 1.5 | 12W | 474375 | 7319690 |
| | 11 | 1.5 | 12W | 474362 | 7319697 |
| | 11 | 2.0 | 12W | 474355 | 7319701 |
| | 11 | 2.5 | 12W | 474353 | 7319702 |

## Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 11 | 3.0 | 12W | 474351 | 7319703 |
| | 11 | 3.5 | 12W | 474346 | 7319706 |
| | 11 | 4.0 | 12W | 474342 | 7319709 |
| | 11 | 4.5 | 12W | 474333 | 7319714 |
| | 11 | 5.0 | 12W | 474319 | 7319721 |
| | 11 | 5.0 | 12W | 474294 | 7319735 |
| | 11 | 4.5 | 12W | 474265 | 7319751 |
| | 11 | 4.0 | 12W | 474263 | 7319752 |
| | 11 | 3.5 | 12W | 474261 | 7319754 |
| | 11 | 3.0 | 12W | 474256 | 7319756 |
| | 11 | 2.5 | 12W | 474247 | 7319761 |
| | 11 | 2.0 | 12W | 474236 | 7319767 |
| | 11 | 2.0 | 12W | 474158 | 7319811 |
| | 11 | 2.5 | 12W | 474155 | 7319812 |
| | 11 | 3.0 | 12W | 474153 | 7319814 |
| | 11 | 3.5 | 12W | 474146 | 7319817 |
| | 11 | 4.0 | 12W | 474140 | 7319821 |
| | 11 | 4.5 | 12W | 474138 | 7319822 |
| | 11 | 5.0 | 12W | 474135 | 7319824 |
| | 11 | 5.5 | 12W | 474131 | 7319826 |
| | 11 | 6.0 | 12W | 474129 | 7319827 |
| | 11 | 6.5 | 12W | 474126 | 7319829 |
| | 11 | 7.0 | 12W | 474099 | 7319844 |
| | 11 | 7.5 | 12W | 474090 | 7319849 |
| | 11 | 8.0 | 12W | 474081 | 7319854 |
| | 11 | 8.0 | 12W | 474070 | 7319860 |
| | 11 | 7.5 | 12W | 474025 | 7319885 |
| | 11 | 7.5 | 12W | 474003 | 7319898 |
| | 11 | 8.0 | 12W | 473998 | 7319900 |
| | 11 | 8.0 | 12W | 473996 | 7319901 |
| | 11 | 8.5 | 12W | 473983 | 7319909 |
| | 11 | 9.0 | 12W | 473956 | 7319924 |
| | 11 | 8.5 | 12W | 473942 | 7319931 |
| | 11 | 8.0 | 12W | 473940 | 7319933 |
| | 11 | 7.5 | 12W | 473933 | 7319936 |
| | 11 | 7.0 | 12W | 473931 | 7319938 |
| | 11 | 6.5 | 12W | 473927 | 7319940 |
| | 11 | 6.0 | 12W | 473918 | 7319945 |
| | 11 | 5.0 | 12W | 473909 | 7319950 |
| | 11 | 4.5 | 12W | 473871 | 7319972 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 11 | 4.0 | 12W | 473889 | 7319961 |
| | 11 | 3.5 | 12W | 473884 | 7319964 |
| | 11 | 3.0 | 12W | 473877 | 7319968 |
| | 11 | 3.0 | 12W | 473857 | 7319979 |
| | 11 | 3.5 | 12W | 473853 | 7319982 |
| | 11 | 4.0 | 12W | 473848 | 7319984 |
| | 11 | 4.5 | 12W | 473844 | 7319987 |
| | 11 | 5.0 | 12W | 473839 | 7319989 |
| | 11 | 5.0 | 12W | 473821 | 7319999 |
| | 11 | 4.0 | 12W | 473817 | 7320002 |
| | 11 | 3.5 | 12W | 473815 | 7320003 |
| | 11 | 3.0 | 12W | 473810 | 7320005 |
| | 11 | 2.5 | 12W | 473808 | 7320007 |
| | 11 | 2.0 | 12W | 473801 | 7320010 |
| | 11 | 2.0 | 12W | 473772 | 7320027 |
| | 11 | 2.5 | 12W | 473770 | 7320028 |
| | 11 | 3.0 | 12W | 473768 | 7320029 |
| | 11 | 3.5 | 12W | 473765 | 7320030 |
| | 11 | 4.0 | 12W | 473763 | 7320032 |
| | 11 | 5.0 | 12W | 473761 | 7320033 |
| | 11 | 5.0 | 12W | 473756 | 7320035 |
| | 11 | 4.5 | 12W | 473752 | 7320038 |
| | 11 | 4.0 | 12W | 473747 | 7320040 |
| | 11 | 4.0 | 12W | 473727 | 7320052 |
| | 11 | 4.5 | 12W | 473725 | 7320053 |
| | 11 | 5.0 | 12W | 473709 | 7320062 |
| | 11 | 4.5 | 12W | 473678 | 7320079 |
| | 11 | 4.5 | 12W | 473644 | 7320098 |
| | 11 | 5.0 | 12W | 473631 | 7320106 |
| | 11 | 5.5 | 12W | 473617 | 7320113 |
| | 11 | 6.0 | 12W | 473597 | 7320124 |
| | 11 | 6.5 | 12W | 473586 | 7320131 |
| | 11 | 7.0 | 12W | 473579 | 7320134 |
| | 11 | 7.5 | 12W | 473570 | 7320139 |
| | 11 | 8.0 | 12W | 473561 | 7320144 |
| | 11 | 8.5 | 12W | 473557 | 7320147 |
| | 11 | 9.0 | 12W | 473550 | 7320151 |
| | 11 | 9.5 | 12W | 473537 | 7320158 |
| | 11 | 10.0 | 12W | 473523 | 7320166 |
| | 11 | 10.5 | 12W | 473503 | 7320177 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 11 | 11.0 | 12W | 473478 | 7320191 |
| | 11 | 11.5 | 12W | 473429 | 7320218 |
| | 11 | 11.5 | 12W | 473404 | 7320232 |
| | 11 | 11.5 | 12W | 473380 | 7320246 |
| | 11 | 11.5 | 12W | 473317 | 7320281 |
| | 11 | 11.0 | 12W | 473303 | 7320288 |
| | 11 | 10.5 | 12W | 473265 | 7320310 |
| | 11 | 10.0 | 12W | 473250 | 7320318 |
| | 11 | 9.5 | 12W | 473238 | 7320325 |
| | 11 | 9.0 | 12W | 473227 | 7320331 |
| | 11 | 8.5 | 12W | 473214 | 7320338 |
| | 11 | 8.0 | 12W | 473202 | 7320345 |
| | 11 | 8.0 | 12W | 473196 | 7320348 |
| | 11 | 8.5 | 12W | 473169 | 7320364 |
| | 11 | 8.5 | 12W | 473131 | 7320385 |
| | 11 | 8.0 | 12W | 473113 | 7320395 |
| | 11 | 7.5 | 12W | 473084 | 7320411 |
| | 11 | 7.0 | 12W | 473072 | 7320417 |
| | 11 | 6.5 | 12W | 473068 | 7320420 |
| | 11 | 6.0 | 12W | 473066 | 7320421 |
| | 11 | 5.5 | 12W | 473046 | 7320432 |
| | 11 | 5.5 | 12W | 473037 | 7320437 |
| | 11 | 5.5 | 12W | 473023 | 7320445 |
| | 11 | 5.0 | 12W | 473019 | 7320447 |
| | 11 | 4.5 | 12W | 473016 | 7320449 |
| | 11 | 3.5 | 12W | 473014 | 7320450 |
| | 11 | 3.0 | 12W | 473012 | 7320451 |
| | 11 | 2.0 | 12W | 473007 | 7320454 |
| | 11 | 1.5 | 12W | 473003 | 7320456 |
| | 11 | 1.5 | 12W | 472864 | 7320534 |
| | 11 | 2.0 | 12W | 472862 | 7320535 |
| | 11 | 3.0 | 12W | 472859 | 7320536 |
| | 11 | 3.5 | 12W | 472857 | 7320538 |
| | 11 | 4.0 | 12W | 472855 | 7320539 |
| | 11 | 4.5 | 12W | 472848 | 7320543 |
| | 11 | 5.0 | 12W | 472837 | 7320549 |
| | 11 | 5.5 | 12W | 472828 | 7320554 |
| | 11 | 6.0 | 12W | 472819 | 7320559 |
| | 11 | 6.5 | 12W | 472810 | 7320564 |
| | 11 | 6.0 | 12W | 472761 | 7320591 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 11 | 5.5 | 12W | 472759 | 7320593 |
| | 11 | 5.0 | 12W | 472756 | 7320594 |
| | 11 | 4.5 | 12W | 472754 | 7320595 |
| | 11 | 3.5 | 12W | 472752 | 7320596 |
| | 11 | 3.0 | 12W | 472747 | 7320599 |
| | 11 | 2.0 | 12W | 472743 | 7320601 |
| | 11 | 1.5 | 12W | 472725 | 7320612 |
| | 11 | 0.0 | 12W | 472652 | 7320653 |
| | 12 | 0.0 | 12W | 472721 | 7320631 |
| | 12 | 1.0 | 12W | 472547 | 7320650 |
| | 12 | 1.5 | 12W | 472503 | 7320655 |
| | 12 | 2.0 | 12W | 472469 | 7320658 |
| | 12 | 2.0 | 12W | 472460 | 7320659 |
| | 12 | 1.5 | 12W | 472445 | 7320661 |
| | 12 | 2.0 | 12W | 472421 | 7320664 |
| | 12 | 2.5 | 12W | 472417 | 7320664 |
| | 12 | 2.5 | 12W | 472399 | 7320666 |
| | 12 | 2.0 | 12W | 472382 | 7320668 |
| | 13 | 0.0 | 12W | 472382 | 7320716 |
| | 13 | 1.5 | 12W | 472443 | 7320670 |
| | 13 | 2.0 | 12W | 472446 | 7320668 |
| | 13 | 2.5 | 12W | 472447 | 7320667 |
| | 13 | 3.0 | 12W | 472449 | 7320666 |
| | 13 | 3.5 | 12W | 472452 | 7320664 |
| | 13 | 4.0 | 12W | 472457 | 7320660 |
| | 13 | 4.0 | 12W | 472461 | 7320657 |
| | 13 | 3.5 | 12W | 472463 | 7320656 |
| | 13 | 3.0 | 12W | 472464 | 7320655 |
| | 13 | 2.5 | 12W | 472466 | 7320654 |
| | 13 | 2.0 | 12W | 472467 | 7320652 |
| | 13 | 1.5 | 12W | 472474 | 7320647 |
| | 13 | 0.0 | 12W | 472511 | 7320621 |
| | 14 | 0.0 | 12W | 472500 | 7320622 |
| | 14 | 1.5 | 12W | 472563 | 7320626 |
| | 14 | 2.0 | 12W | 472564 | 7320626 |
| | 14 | 2.5 | 12W | 472565 | 7320626 |
| | 14 | 3.0 | 12W | 472567 | 7320627 |
| | 14 | 3.5 | 12W | 472568 | 7320627 |
| | 14 | 3.0 | 12W | 472575 | 7320627 |
| | 14 | 2.5 | 12W | 472579 | 7320627 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 14 | 2.0 | 12W | 472583 | 7320628 |
| | 14 | 1.5 | 12W | 472587 | 7320628 |
| | 14 | 1.5 | 12W | 472588 | 7320628 |
| | 14 | 1.5 | 12W | 472593 | 7320628 |
| | 14 | 0.0 | 12W | 472700 | 7320637 |
| | 15 | 0.0 | 12W | 472684 | 7320643 |
| | 15 | 1.5 | 12W | 472694 | 7320631 |
| | 15 | 2.0 | 12W | 472699 | 7320625 |
| | 15 | 2.5 | 12W | 472699 | 7320624 |
| | 15 | 3.0 | 12W | 472700 | 7320624 |
| | 15 | 3.5 | 12W | 472700 | 7320623 |
| | 15 | 4.0 | 12W | 472701 | 7320623 |
| | 15 | 4.5 | 12W | 472701 | 7320622 |
| | 15 | 5.0 | 12W | 472702 | 7320622 |
| | 15 | 5.5 | 12W | 472702 | 7320621 |
| | 15 | 6.0 | 12W | 472703 | 7320621 |
| | 15 | 6.5 | 12W | 472705 | 7320618 |
| | 15 | 3.5 | 12W | 472708 | 7320615 |
| | 15 | 6.5 | 12W | 472710 | 7320612 |
| | 15 | 6.0 | 12W | 472713 | 7320609 |
| | 15 | 5.5 | 12W | 472715 | 7320606 |
| | 15 | 5.0 | 12W | 472719 | 7320602 |
| | 15 | 4.5 | 12W | 472722 | 7320598 |
| | 15 | 4.0 | 12W | 472727 | 7320593 |
| | 15 | 3.5 | 12W | 472732 | 7320587 |
| | 15 | 3.0 | 12W | 472738 | 7320580 |
| | 15 | 2.5 | 12W | 472739 | 7320579 |
| | 15 | 2.0 | 12W | 472740 | 7320578 |
| | 15 | 1.5 | 12W | 472741 | 7320576 |
| | 15 | 0.0 | 12W | 472797 | 7320513 |
| | 16 | 0.0 | 12W | 472738 | 7320547 |
| | 16 | 1.5 | 12W | 472796 | 7320527 |
| | 16 | 1.5 | 12W | 472809 | 7320522 |
| | 16 | 2.0 | 12W | 472850 | 7320508 |
| | 16 | 2.5 | 12W | 472853 | 7320507 |
| | 16 | 3.0 | 12W | 472860 | 7320504 |
| | 16 | 3.5 | 12W | 472863 | 7320503 |
| | 16 | 4.0 | 12W | 472870 | 7320501 |
| | 16 | 4.5 | 12W | 472880 | 7320497 |
| | 16 | 5.0 | 12W | 472887 | 7320495 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 16 | 6.0 | 12W | 472894 | 7320493 |
| | 16 | 6.5 | 12W | 472904 | 7320489 |
| | 16 | 7.0 | 12W | 472917 | 7320485 |
| | 16 | 7.5 | 12W | 472931 | 7320480 |
| | 16 | 8.0 | 12W | 472945 | 7320475 |
| | 16 | 8.5 | 12W | 472955 | 7320472 |
| | 16 | 9.0 | 12W | 472962 | 7320469 |
| | 16 | 9.5 | 12W | 472972 | 7320466 |
| | 16 | 10.0 | 12W | 472978 | 7320464 |
| | 16 | 10.5 | 12W | 472999 | 7320457 |
| | 16 | 10.5 | 12W | 473036 | 7320444 |
| | 16 | 10.0 | 12W | 473050 | 7320439 |
| | 16 | 9.5 | 12W | 473063 | 7320434 |
| | 16 | 9.0 | 12W | 473073 | 7320431 |
| | 16 | 8.5 | 12W | 473084 | 7320427 |
| | 16 | 8.0 | 12W | 473087 | 7320426 |
| | 16 | 7.5 | 12W | 473090 | 7320425 |
| | 16 | 6.5 | 12W | 473097 | 7320423 |
| | 16 | 5.5 | 12W | 473100 | 7320422 |
| | 16 | 4.5 | 12W | 473104 | 7320420 |
| | 16 | 3.5 | 12W | 473107 | 7320419 |
| | 16 | 2.5 | 12W | 473111 | 7320418 |
| | 16 | 1.5 | 12W | 473114 | 7320417 |
| | 16 | 1.0 | 12W | 473117 | 7320416 |
| | 16 | 0.0 | 12W | 473162 | 7320401 |
| | 17 | 0.0 | 12W | 473081 | 7320457 |
| | 17 | 1.5 | 12W | 473150 | 7320396 |
| | 17 | 2.0 | 12W | 473153 | 7320393 |
| | 17 | 2.5 | 12W | 473154 | 7320391 |
| | 17 | 3.5 | 12W | 473156 | 7320390 |
| | 17 | 4.0 | 12W | 473158 | 7320389 |
| | 17 | 4.5 | 12W | 473159 | 7320387 |
| | 17 | 5.5 | 12W | 473161 | 7320386 |
| | 17 | 6.5 | 12W | 473162 | 7320384 |
| | 17 | 7.5 | 12W | 473164 | 7320383 |
| | 17 | 8.0 | 12W | 473166 | 7320381 |
| | 17 | 9.0 | 12W | 473167 | 7320380 |
| | 17 | 10.0 | 12W | 473172 | 7320376 |
| | 17 | 10.5 | 12W | 473174 | 7320374 |
| | 17 | 11.0 | 12W | 473199 | 7320352 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 17 | 11.0 | 12W | 473279 | 7320282 |
| | 17 | 10.5 | 12W | 473288 | 7320273 |
| | 17 | 10.0 | 12W | 473293 | 7320269 |
| | 17 | 9.5 | 12W | 473296 | 7320266 |
| | 17 | 9.0 | 12W | 473299 | 7320263 |
| | 17 | 8.5 | 12W | 473303 | 7320261 |
| | 17 | 8.0 | 12W | 473304 | 7320259 |
| | 17 | 7.5 | 12W | 473307 | 7320256 |
| | 17 | 6.5 | 12W | 473309 | 7320255 |
| | 17 | 6.0 | 12W | 473311 | 7320254 |
| | 17 | 5.5 | 12W | 473314 | 7320251 |
| | 17 | 4.5 | 12W | 473317 | 7320248 |
| | 17 | 3.5 | 12W | 473319 | 7320247 |
| | 17 | 3.0 | 12W | 473320 | 7320245 |
| | 17 | 2.5 | 12W | 473322 | 7320244 |
| | 17 | 2.0 | 12W | 473323 | 7320242 |
| | 17 | 1.5 | 12W | 473326 | 7320240 |
| | 17 | 0.0 | 12W | 473479 | 7320106 |
| | 18 | 0.0 | 12W | 473265 | 7320173 |
| | 18 | 1.0 | 12W | 473359 | 7320149 |
| | 18 | 1.5 | 12W | 473462 | 7320124 |
| | 18 | 2.0 | 12W | 473573 | 7320096 |
| | 18 | 2.5 | 12W | 473585 | 7320093 |
| | 18 | 3.0 | 12W | 473589 | 7320092 |
| | 18 | 4.0 | 12W | 473597 | 7320090 |
| | 18 | 4.5 | 12W | 473610 | 7320087 |
| | 18 | 5.0 | 12W | 473618 | 7320085 |
| | 18 | 5.5 | 12W | 473634 | 7320081 |
| | 18 | 6.0 | 12W | 473651 | 7320077 |
| | 18 | 6.5 | 12W | 473667 | 7320073 |
| | 18 | 7.0 | 12W | 473684 | 7320069 |
| | 18 | 7.5 | 12W | 473708 | 7320063 |
| | 18 | 8.0 | 12W | 473733 | 7320056 |
| | 18 | 8.5 | 12W | 473746 | 7320053 |
| | 18 | 9.0 | 12W | 473770 | 7320047 |
| | 18 | 9.5 | 12W | 473799 | 7320040 |
| | 18 | 9.5 | 12W | 473836 | 7320031 |
| | 18 | 9.0 | 12W | 473853 | 7320027 |
| | 18 | 8.5 | 12W | 473865 | 7320024 |
| | 18 | 8.0 | 12W | 473873 | 7320022 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 18 | 7.5 | 12W | 473881 | 7320020 |
| | 18 | 7.0 | 12W | 473898 | 7320016 |
| | 18 | 6.5 | 12W | 473902 | 7320015 |
| | 18 | 6.0 | 12W | 473914 | 7320012 |
| | 18 | 5.5 | 12W | 473918 | 7320011 |
| | 18 | 5.0 | 12W | 473923 | 7320010 |
| | 18 | 4.5 | 12W | 473927 | 7320009 |
| | 18 | 3.5 | 12W | 473931 | 7320008 |
| | 18 | 3.0 | 12W | 473935 | 7320007 |
| | 18 | 2.5 | 12W | 473943 | 7320004 |
| | 18 | 2.0 | 12W | 473947 | 7320003 |
| | 18 | 1.5 | 12W | 473968 | 7319998 |
| | 18 | 0.0 | 12W | 474206 | 7319940 |
| | 19 | 0.0 | 12W | 473176 | 7320395 |
| | 19 | 1.5 | 12W | 473340 | 7320294 |
| | 19 | 1.5 | 12W | 473367 | 7320278 |
| | 19 | 1.5 | 12W | 473393 | 7320262 |
| | 19 | 2.0 | 12W | 473516 | 7320187 |
| | 19 | 2.5 | 12W | 473525 | 7320182 |
| | 19 | 3.0 | 12W | 473529 | 7320179 |
| | 19 | 4.0 | 12W | 473534 | 7320176 |
| | 19 | 5.0 | 12W | 473569 | 7320155 |
| | 19 | 5.5 | 12W | 473600 | 7320136 |
| | 19 | 5.0 | 12W | 473643 | 7320109 |
| | 19 | 4.5 | 12W | 473657 | 7320101 |
| | 19 | 4.0 | 12W | 473665 | 7320096 |
| | 19 | 3.5 | 12W | 473674 | 7320090 |
| | 19 | 3.0 | 12W | 473687 | 7320082 |
| | 19 | 2.5 | 12W | 473709 | 7320069 |
| | 19 | 2.0 | 12W | 473723 | 7320061 |
| | 19 | 1.5 | 12W | 473749 | 7320045 |
| | 19 | 1.5 | 12W | 473788 | 7320021 |
| | 19 | 1.5 | 12W | 473810 | 7320007 |
| | 19 | 1.5 | 12W | 474417 | 7319638 |
| | 19 | 2.5 | 12W | 474421 | 7319635 |
| | 19 | 3.5 | 12W | 474426 | 7319632 |
| | 19 | 4.5 | 12W | 474430 | 7319630 |
| | 19 | 5.5 | 12W | 474434 | 7319627 |
| | 19 | 6.0 | 12W | 474439 | 7319624 |
| | 19 | 6.0 | 12W | 474456 | 7319614 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 19 | 5.5 | 12W | 474461 | 7319611 |
| | 19 | 5.0 | 12W | 474469 | 7319606 |
| | 19 | 5.0 | 12W | 474505 | 7319584 |
| | 19 | 5.5 | 12W | 474513 | 7319579 |
| | 19 | 6.0 | 12W | 474500 | 7319587 |
| | 19 | 6.5 | 12W | 474531 | 7319568 |
| | 19 | 7.0 | 12W | 474562 | 7319549 |
| | 19 | 6.0 | 12W | 474575 | 7319541 |
| | 19 | 5.5 | 12W | 474584 | 7319536 |
| | 19 | 4.5 | 12W | 474593 | 7319531 |
| | 19 | 4.0 | 12W | 474601 | 7319525 |
| | 19 | 3.0 | 12W | 474623 | 7319512 |
| | 19 | 2.5 | 12W | 474636 | 7319504 |
| | 19 | 2.0 | 12W | 474645 | 7319499 |
| | 19 | 1.5 | 12W | 474672 | 7319482 |
| | 19 | 1.5 | 12W | 474751 | 7319434 |
| | 19 | 2.0 | 12W | 474777 | 7319418 |
| | 19 | 3.0 | 12W | 474790 | 7319410 |
| | 19 | 3.5 | 12W | 474795 | 7319408 |
| | 19 | 4.0 | 12W | 474803 | 7319402 |
| | 19 | 5.0 | 12W | 474821 | 7319391 |
| | 19 | 5.5 | 12W | 474825 | 7319389 |
| | 19 | 6.0 | 12W | 474852 | 7319373 |
| | 19 | 5.5 | 12W | 474856 | 7319370 |
| | 19 | 4.5 | 12W | 474861 | 7319367 |
| | 19 | 4.0 | 12W | 474865 | 7319365 |
| | 19 | 3.5 | 12W | 474869 | 7319362 |
| | 19 | 3.0 | 12W | 474878 | 7319357 |
| | 19 | 0.0 | 12W | 475074 | 7319238 |
| | 20 | 0.0 | 12W | 474721 | 7319358 |
| | 20 | 1.5 | 12W | 474779 | 7319401 |
| | 20 | 2.0 | 12W | 474781 | 7319403 |
| | 20 | 1.5 | 12W | 474787 | 7319407 |
| | 20 | 2.0 | 12W | 474789 | 7319409 |
| | 20 | 3.0 | 12W | 474791 | 7319410 |
| | 20 | 3.5 | 12W | 474793 | 7319411 |
| | 20 | 4.0 | 12W | 474795 | 7319413 |
| | 20 | 4.5 | 12W | 474797 | 7319414 |
| | 20 | 5.5 | 12W | 474801 | 7319417 |
| | 20 | 5.5 | 12W | 474803 | 7319419 |

**Appendix B Table B2. Data used to generate bathymetric isobaths in lakes of the Jericho Study Area, 1999.**

| Waterbody | Transect | Depth (m) | Zone | Easting | Northing |
|---|---|---|---|---|---|
| Lake C3 | | | | | |
| | 20 | 6.0 | 12W | 474805 | 7319420 |
| | 20 | 6.5 | 12W | 474806 | 7319422 |
| | 20 | 7.5 | 12W | 474808 | 7319423 |
| | 20 | 8.5 | 12W | 474812 | 7319426 |
| | 20 | 9.0 | 12W | 474814 | 7319427 |
| | 20 | 10.0 | 12W | 474816 | 7319429 |
| | 20 | 10.5 | 12W | 474818 | 7319430 |
| | 20 | 11.0 | 12W | 474822 | 7319433 |
| | 20 | 12.0 | 12W | 474826 | 7319436 |
| | 20 | 12.5 | 12W | 474830 | 7319439 |
| | 20 | 13.0 | 12W | 474834 | 7319442 |
| | 20 | 13.6 | 12W | 474841 | 7319447 |
| | 20 | 14.0 | 12W | 474849 | 7319453 |
| | 20 | 14.0 | 12W | 474865 | 7319465 |
| | 20 | 13.5 | 12W | 474872 | 7319471 |
| | 20 | 13.0 | 12W | 474880 | 7319476 |
| | 20 | 12.0 | 12W | 474890 | 7319484 |
| | 20 | 10.5 | 12W | 474896 | 7319488 |
| | 20 | 10.0 | 12W | 474901 | 7319492 |
| | 20 | 9.0 | 12W | 474907 | 7319497 |
| | 20 | 8.0 | 12W | 474911 | 7319499 |
| | 20 | 7.5 | 12W | 474913 | 7319501 |
| | 20 | 6.5 | 12W | 474915 | 7319502 |
| | 20 | 6.0 | 12W | 474917 | 7319504 |
| | 20 | 5.0 | 12W | 474921 | 7319507 |
| | 20 | 4.5 | 12W | 474923 | 7319508 |
| | 20 | 4.0 | 12W | 474925 | 7319509 |
| | 20 | 3.0 | 12W | 474926 | 7319511 |
| | 20 | 2.5 | 12W | 474973 | 7319546 |
| | 20 | 2.0 | 12W | 474979 | 7319550 |
| | 20 | 0.0 | 12W | 475007 | 7319571 |
| | 19 | 2.5 | 12W | 474818 | 7319394 |
| | 19 | 2.0 | 12W | 474843 | 7319378 |
| | 12 | 1.5 | 12W | 472375 | 7320669 |
| | 12 | 1.0 | 12W | 472365 | 7320670 |
| | 12 | 0.0 | 12W | 472271 | 7320681 |

## Appendix B Table B3. Temperature and dissolved oxygen profile data from sampled lakes of the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Date | Method | Secchi (m) | Depth Sampled (m) | DO (mg/L) | Temp (C) |
|---|---|---|---|---|---|---|---|---|
| Lake C1 | LMLC0101 | LM-4 | | | | | | |
| | | | 7/19/1999 | OxyGuard | 4.18 | | | |
| | | | | | | 0.0 | 10.10 | 13.40 |
| | | | | | | 1.0 | 10.00 | 13.40 |
| | | | | | | 2.0 | 10.00 | 13.40 |
| | | | | | | 3.0 | 10.50 | 12.50 |
| | | | | | | 4.0 | 10.90 | 10.50 |
| | | | | | | 5.0 | 10.90 | 10.00 |
| | | | | | | 6.0 | 10.70 | 9.40 |
| | | | | | | 7.0 | 10.60 | 8.90 |
| | | | | | | 8.0 | 10.70 | 8.00 |
| | | | | | | 9.0 | 10.80 | 6.70 |
| | | | | | | 10.0 | 9.60 | 5.00 |
| Lake C2 | LMLC0201 | LM-7 | | | | | | |
| | | | 7/19/1999 | OxyGuard | 1.80 | | | |
| | | | | | | 0.0 | 10.00 | 13.70 |
| | | | | | | 0.5 | 10.00 | 13.70 |
| | | | | | | 1.0 | 10.00 | 13.70 |
| | | | | | | 1.5 | 10.00 | 13.60 |
| | | | | | | 1.8 | 10.00 | 13.60 |
| Lake C3 | HYLC0302 | | | | | | | |
| | | | 7/21/1999 | H20 Hydrolab | | | | |
| | | | | | | 1.2 | 10.75 | 10.69 |
| | | | | | | 1.5 | 10.42 | 10.54 |
| | | | | | | 1.6 | 10.34 | 10.69 |
| | | | | | | 2.1 | 10.31 | 10.54 |
| | | | | | | 2.1 | 10.28 | 10.69 |
| | | | | | | 2.6 | 10.20 | 10.69 |
| | | | | | | 2.6 | 10.24 | 10.54 |
| | | | | | | 2.8 | 10.16 | 10.69 |
| | | | | | | 3.1 | 10.21 | 10.53 |
| | | | | | | 3.6 | 10.71 | 10.54 |
| | | | | | | 4.1 | 10.25 | 10.54 |
| | | | | | | 4.6 | 10.19 | 10.54 |
| | | | | | | 4.9 | 10.17 | 10.53 |
| | | | | | | 5.6 | 10.14 | 10.53 |
| | | | | | | 6.1 | 10.12 | 10.54 |
| | | | | | | 6.6 | 10.11 | 10.54 |
| | | | | | | 7.2 | 10.10 | 10.54 |
| | | | | | | 7.6 | 10.10 | 10.54 |
| | | | | | | 8.2 | 10.09 | 10.54 |
| | | | | | | 8.6 | 10.08 | 10.54 |

**Appendix B Table B3. Temperature and dissolved oxygen profile data from sampled lakes of the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Date | Method | Secchi (m) | Depth Sampled (m) | DO (mg/L) | Temp (C) |
|---|---|---|---|---|---|---|---|---|
| Lake D10 | LMLD1001 | | | | | | | |
| | | | 7/19/1999 | OxyGuard | 8.00 | | | |
| | | | | | | 0.0 | 10.00 | 12.80 |
| | | | | | | 0.5 | 9.90 | 12.90 |
| | | | | | | 1.0 | 10.00 | 12.60 |
| | | | | | | 1.5 | 9.90 | 12.70 |
| | | | | | | 2.0 | 10.00 | 12.70 |
| | | | | | | 2.5 | 10.00 | 12.80 |
| | | | | | | 3.0 | 10.00 | 12.80 |
| | | | | | | 3.5 | 9.90 | 12.80 |
| | | | | | | 4.0 | 10.00 | 12.80 |
| | | | | | | 4.5 | 10.00 | 12.80 |
| | | | | | | 5.0 | 10.00 | 12.80 |
| | | | | | | 5.5 | 10.00 | 12.80 |
| | | | | | | 6.0 | 10.00 | 12.80 |
| | | | | | | 6.5 | 10.00 | 12.40 |
| | | | | | | 7.0 | 10.20 | 12.20 |
| | | | | | | 7.5 | 10.10 | 12.00 |
| | | | 7/21/1999 | H20 Hydrolab | | | | |
| | | | | | | 1.1 | 10.36 | 10.62 |
| | | | | | | 1.1 | 10.45 | 10.98 |
| | | | | | | 1.6 | 10.10 | 10.96 |
| | | | | | | 1.6 | 10.13 | 10.62 |
| | | | | | | 2.1 | 10.04 | 10.62 |
| | | | | | | 2.1 | 9.94 | 10.96 |
| | | | | | | 2.6 | 10.00 | 10.62 |
| | | | | | | 2.6 | 9.89 | 10.95 |
| | | | | | | 3.1 | 9.85 | 10.95 |
| | | | | | | 3.1 | 9.97 | 10.62 |
| | | | | | | 3.6 | 9.81 | 10.94 |
| | | | | | | 3.6 | 9.96 | 10.62 |
| | | | | | | 4.1 | 9.94 | 10.57 |
| | | | | | | 4.1 | 9.82 | 10.92 |
| | | | | | | 4.6 | 9.92 | 10.61 |
| | | | | | | 5.1 | 9.92 | 10.56 |
| | | | | | | 5.1 | 9.80 | 10.93 |
| | | | | | | 5.6 | 9.92 | 10.55 |
| | | | | | | 5.7 | 9.82 | 10.92 |
| | | | | | | 6.1 | 9.91 | 10.54 |
| | | | | | | 6.1 | 9.77 | 10.92 |
| | | | | | | 6.4 | 9.92 | 10.54 |
| | | | | | | 6.6 | 9.78 | 10.90 |
| | | | | | | 7.1 | 9.80 | 10.87 |
| | | | | | | 7.6 | 9.76 | 10.87 |
| | | | | | | 8.1 | 9.58 | 10.83 |

## Appendix B Table B4. Channel characteristics measured during stream surveys in the Jericho Study Area, 1999.

| Waterbody | Reach | Date | Slope (°) | Length (m) | Wetted Width (m) | Max. Depth (m) | Channel Type | Bank Type | Substrate Type[1] (%) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | OM | SI | SA | GR | CO | BO | BE |
| Stream C19 | | | | | | | | | | | | | | | |
| | 1 | 7/31/1999 | | 119.6 | | | | | | | | | | | |
| | 1A | 6/10/1999 | 12 | 198.7 | | | | | | | | | | | |
| | 2 | 6/10/1999 | 1 | 26.4 | | | | | | | | | | | |
| | | | | | 6.5 | 0.23 | Dispersed | Ill-defined | 85 | | | | | 15 | |
| | | | | | 11.4 | 0.14 | Dispersed | Ill-defined | 95 | | | | | 5 | |
| | | | | | 12.9 | 0.18 | Dispersed | Ill-defined | 75 | | | | 5 | 20 | |
| | | | | | 17.3 | 0.24 | Dispersed | Ill-defined | 80 | | | | 5 | 15 | |
| Stream C3 | | | | | | | | | | | | | | | |
| | 1 | 7/29/1999 | 2 | 110 | | | | | | | | | | | |
| | | | | | 0.45 | 0.11 | Multiple | Defined | 50 | | | | 50 | | |
| | | | | | 0.7 | 0.15 | Multiple | Ill-defined | 20 | | | 80 | | | |
| | | | | | 0.8 | 0.04 | Multiple | Ill-defined | | | | 25 | 25 | 50 | |
| | | | | | 0.9 | 0.06 | Multiple | Ill-defined | | | 20 | 20 | 60 | | |
| | | | | | 1 | 0.06 | Multiple | Defined | 80 | | 10 | 10 | | | |
| | | | | | 1 | 0.1 | Multiple | Ill-defined | 20 | | | | | 80 | |
| | | | | | 1 | 0.07 | Multiple | Ill-defined | 60 | | 30 | 10 | | | |
| | 2 | 7/29/1999 | 4 | 215 | | | | | | | | | | | |
| | | | | | 0.25 | 0.18 | Single | Defined | | | | | 50 | 50 | |
| | | | | | 0.3 | 0.05 | Single | Defined | 100 | | | | | | |
| | | | | | 0.55 | 0.17 | Single | Defined | | | | 10 | 20 | 70 | |
| | | | | | 0.6 | | Single | Defined | | | | 90 | | 10 | |

## Appendix B Table B4. Channel characteristics measured during stream surveys in the Jericho Study Area, 1999.

| Waterbody | Reach | Date | Slope (°) | Length (m) | Wetted Width (m) | Max. Depth (m) | Channel Type | Bank Type | Substrate Type[1] (%) OM | SI | SA | GR | CO | BO | BE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stream C3 | | | | | | | | | | | | | | | |
| | 2 | 7/29/1999 | 4 | 215 | | | | | | | | | | | |
| | | | | | 0.6 | 0.13 | Single | Defined | | | | 80 | 10 | 10 | |
| | | | | | 0.65 | 0.09 | Double | Defined | | | | 50 | | 50 | |
| | | | | | 0.65 | 0.07 | Single | Ill-defined | 80 | | | 20 | | | |
| | | | | | 0.8 | 0.07 | Single | Defined | | | | 60 | 40 | | |
| | 3 | 7/28/1999 | 2 | 113 | | | | | | | | | | | |
| | | | | | 0.32 | 0.22 | Double | Defined | | | | 100 | | | |
| | | | | | 3.5 | 0.09 | Dispersed | Ill-defined | 100 | | | | | | |
| | | | | | 4 | 0.19 | Dispersed | Ill-defined | 100 | | | | | | |
| | | | | | 6 | 0.21 | Dispersed | Ill-defined | 100 | | | | | | |
| | | | | | 7.5 | 0.09 | Dispersed | Ill-defined | 100 | | | | | | |
| | 4 | 7/31/1999 | 3 | 198 | | | | | | | | | | | |
| | | | | | 0.4 | 0.22 | Single | Ill-defined | 50 | | | 50 | | | |
| | | | | | 0.5 | 0.11 | Single | Defined | | | 10 | | 30 | 60 | |
| | | | | | 0.5 | 0 | Double | Defined | 100 | | | | | | |
| | | | | | 0.75 | | Single | Defined | | | | | | 100 | |
| | | | | | 0.8 | 0.21 | Multiple | Ill-defined | 90 | | | | | 10 | |
| | | | | | 1.5 | 0.22 | Single | Ill-defined | 50 | | | | 50 | | |
| | 5 | 7/31/1999 | 3 | 276 | | | | | | | | | | | |
| | 6 | 7/31/1999 | 1 | 139 | | | | | | | | | | | |
| | | | | | 6 | 0.24 | Dispersed | Defined | 60 | | | | | 40 | |
| | | | | | 11 | 0.17 | Dispersed | Ill-defined | 40 | | | | | 60 | |

**Appendix B Table B4. Channel characteristics measured during stream surveys in the Jericho Study Area, 1999.**

| Waterbody | Reach | Date | Slope (°) | Length (m) | Wetted Width (m) | Max. Depth (m) | Channel Type | Bank Type | Substrate Type[1] (%) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | OM | SI | SA | GR | CO | BO | BE |
| Stream C3 | | | | | | | | | | | | | | | |
| | 6 | 7/31/1999 | 1 | 139 | | | | | | | | | | | |
| | | | | | 12 | 0.14 | Dispersed | Ill-defined | 90 | | | | | 10 | |
| | | | | | 13 | 0.2 | Dispersed | Ill-defined | 100 | | | | | | |
| | | | | | 15 | 0.26 | Dispersed | Ill-defined | 80 | | | | | 20 | |

[1] See Appendix A for definitions

## Appendix B Table B5. Results for constituents analyzed in water samples collected from waterbodies in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Date | Analytical Test | Value | |
|---|---|---|---|---|---|---|
| Lake C1 | WCLC0101 | WC-2 | | | | |
| | | | 7/26/1999 | | | |
| | | | | Alkalinity, Total (T Alk) | 11.000 | mg/L |
| | | | | Ammonia-N | 0.007 | mg/L |
| | | | | Balance | 102.000 | % |
| | | | | Bicarbonate (HCO3) | 13.000 | mg/L |
| | | | | Calcium (Ca) | 2.600 | mg/L |
| | | | | Carbonate (CO3) | 0.500 | mg/L |
| | | | | Chloride (Cl) | 1.090 | mg/L |
| | | | | Conductance (EC) | 32.300 | uS/cm |
| | | | | Hardness | 12.000 | mg/L |
| | | | | Hydroxide in Water | 0.500 | mg/L |
| | | | | Magnesium (Mg) | 1.400 | mg/L |
| | | | | Nitrate/Nitrite-N | 0.015 | mg/L |
| | | | | Nitrate-N | 0.013 | mg/L |
| | | | | Orthophosphate | 0.003 | mg/L |
| | | | | pH in Water | 7.000 | pH |
| | | | | Phosphorus, Dissolved | 0.003 | mg/L |
| | | | | Phosphorus, Total | 0.004 | mg/L |
| | | | | Potassium (K) | 0.310 | mg/L |
| | | | | Silica, Reactive (as Si) | 0.689 | mg/L |
| | | | | Sodium (Na) | 0.700 | mg/L |
| | | | | Sulfate (SO4) | 1.610 | mg/L |
| | | | | TDS (Calculated) | 14.000 | mg/L |
| | | | | Total Carbon | 8.400 | mg/L |
| | | | | Total Inorganic Carbon | 2.300 | mg/L |
| | | | | Total Kjeldahl Nitrogen | 0.480 | mg/L |
| | | | | Total Organic Carbon | 6.100 | mg/L |
| | | | | Total Suspended Solids | 1.500 | mg/L |
| | | | | Turbidity | 0.960 | NTU |
| Lake C2 | WCLC0201 | WC-4 | | | | |
| | | | 7/26/1999 | | | |
| | | | | Alkalinity, Total (T Alk) | 9.000 | mg/L |
| | | | | Ammonia-N | 0.007 | mg/L |
| | | | | Balance | 101.000 | % |
| | | | | Bicarbonate (HCO3) | 11.000 | mg/L |
| | | | | Calcium (Ca) | 2.190 | mg/L |
| | | | | Carbonate (CO3) | 0.500 | mg/L |
| | | | | Chloride (Cl) | 1.080 | mg/L |

**Appendix B Table B5. Results for constituents analyzed in water samples collected from waterbodies in the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Date | Analytical Test | Value | |
|---|---|---|---|---|---|---|
| Lake C2 | WCLC0201 | WC-4 | | | | |
| | | | 7/26/1999 | | | |
| | | | | Conductance (EC) | 27.600 | uS/cm |
| | | | | Hardness | 10.000 | mg/L |
| | | | | Hydroxide in Water | 0.500 | mg/L |
| | | | | Magnesium (Mg) | 1.210 | mg/L |
| | | | | Nitrate/Nitrite-N | 0.072 | mg/L |
| | | | | Nitrate-N | 0.071 | mg/L |
| | | | | Orthophosphate | 0.002 | mg/L |
| | | | | pH in Water | 6.800 | pH |
| | | | | Phosphorus, Dissolved | 0.002 | mg/L |
| | | | | Phosphorus, Total | 0.002 | mg/L |
| | | | | Potassium (K) | 0.240 | mg/L |
| | | | | Silica, Reactive (as Si) | 1.210 | mg/L |
| | | | | Sodium (Na) | 0.700 | mg/L |
| | | | | Sulfate (SO4) | 1.370 | mg/L |
| | | | | TDS (Calculated) | 13.000 | mg/L |
| | | | | Total Carbon | 8.300 | mg/L |
| | | | | Total Inorganic Carbon | 2.100 | mg/L |
| | | | | Total Kjeldahl Nitrogen | 0.350 | mg/L |
| | | | | Total Organic Carbon | 6.200 | mg/L |
| | | | | Total Suspended Solids | 1.500 | mg/L |
| | | | | Turbidity | 0.650 | NTU |
| Lake C3 | WCLC0301 | WC-7 | | | | |
| | | | 7/26/1999 | | | |
| | | | | Alkalinity, Total (T Alk) | 4.000 | mg/L |
| | | | | Ammonia-N | 0.004 | mg/L |
| | | | | Balance | 105.000 | % |
| | | | | Bicarbonate (HCO3) | 5.000 | mg/L |
| | | | | Calcium (Ca) | 1.000 | mg/L |
| | | | | Carbonate (CO3) | 0.500 | mg/L |
| | | | | Chloride (Cl) | 0.280 | mg/L |
| | | | | Conductance (EC) | 15.500 | uS/cm |
| | | | | Hardness | 5.000 | mg/L |
| | | | | Hydroxide in Water | 0.500 | mg/L |
| | | | | Magnesium (Mg) | 0.540 | mg/L |
| | | | | Nitrate/Nitrite-N | 0.003 | mg/L |
| | | | | Nitrate-N | 0.003 | mg/L |
| | | | | Orthophosphate | 0.001 | mg/L |

## Appendix B Table B5. Results for constituents analyzed in water samples collected from waterbodies in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Date | Analytical Test | Value | |
|---|---|---|---|---|---|---|
| Lake C3 | WCLC0301 | WC-7 | | | | |
| | | | 7/26/1999 | | | |
| | | | | pH in Water | 6.600 | pH |
| | | | | Phosphorus, Dissolved | 0.003 | mg/L |
| | | | | Phosphorus, Total | 0.004 | mg/L |
| | | | | Potassium (K) | 0.340 | mg/L |
| | | | | Silica, Reactive (as Si) | 0.261 | mg/L |
| | | | | Sodium (Na) | 0.500 | mg/L |
| | | | | Sulfate (SO4) | 1.390 | mg/L |
| | | | | TDS (Calculated) | 6.000 | mg/L |
| | | | | Total Carbon | 4.400 | mg/L |
| | | | | Total Inorganic Carbon | 1.100 | mg/L |
| | | | | Total Kjeldahl Nitrogen | 0.240 | mg/L |
| | | | | Total Organic Carbon | 3.300 | mg/L |
| | | | | Total Suspended Solids | 1.500 | mg/L |
| | | | | Turbidity | 0.490 | NTU |
| Lake D10 | WCLD1001 | WC-5 | | | | |
| | | | 7/26/1999 | | | |
| | | | | Alkalinity, Total (T Alk) | 6.000 | mg/L |
| | | | | Ammonia-N | 0.005 | mg/L |
| | | | | Balance | 95.000 | % |
| | | | | Bicarbonate (HCO3) | 7.000 | mg/L |
| | | | | Calcium (Ca) | 1.140 | mg/L |
| | | | | Carbonate (CO3) | 0.500 | mg/L |
| | | | | Chloride (Cl) | 0.240 | mg/L |
| | | | | Conductance (EC) | 16.800 | uS/cm |
| | | | | Hardness | 6.000 | mg/L |
| | | | | Hydroxide in Water | 0.500 | mg/L |
| | | | | Magnesium (Mg) | 0.660 | mg/L |
| | | | | Nitrate/Nitrite-N | 0.003 | mg/L |
| | | | | Nitrate-N | 0.003 | mg/L |
| | | | | Orthophosphate | 0.001 | mg/L |
| | | | | pH in Water | 6.800 | pH |
| | | | | Phosphorus, Dissolved | 0.002 | mg/L |
| | | | | Phosphorus, Total | 0.007 | mg/L |
| | | | | Potassium (K) | 0.250 | mg/L |
| | | | | Silica, Reactive (as Si) | 0.204 | mg/L |
| | | | | Sodium (Na) | 0.400 | mg/L |
| | | | | Sulfate (SO4) | 0.990 | mg/L |

**Appendix B Table B5. Results for constituents analyzed in water samples collected from waterbodies in the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Date | Analytical Test | Value | |
|---|---|---|---|---|---|---|
| Lake D10 | WCLD1001 | WC-5 | | | | |
| | | | 7/26/1999 | | | |
| | | | | TDS (Calculated) | 7.000 | mg/L |
| | | | | Total Carbon | 4.000 | mg/L |
| | | | | Total Inorganic Carbon | 1.300 | mg/L |
| | | | | Total Kjeldahl Nitrogen | 0.170 | mg/L |
| | | | | Total Organic Carbon | 2.700 | mg/L |
| | | | | Total Suspended Solids | 1.500 | mg/L |
| | | | | Turbidity | 0.470 | NTU |
| Stream C1 | WCTC01A01 | WC-1A | | | | |
| | | | 7/26/1999 | | | |
| | | | | Alkalinity, Total (T Alk) | 8.000 | mg/L |
| | | | | Ammonia-N | 0.006 | mg/L |
| | | | | Balance | 104.000 | % |
| | | | | Bicarbonate (HCO3) | 9.000 | mg/L |
| | | | | Calcium (Ca) | 7.930 | mg/L |
| | | | | Carbonate (CO3) | 0.500 | mg/L |
| | | | | Chloride (Cl) | 12.600 | mg/L |
| | | | | Conductance (EC) | 82.300 | uS/cm |
| | | | | Hardness | 28.000 | mg/L |
| | | | | Hydroxide in Water | 0.500 | mg/L |
| | | | | Magnesium (Mg) | 2.030 | mg/L |
| | | | | Nitrate/Nitrite-N | 0.925 | mg/L |
| | | | | Nitrate-N | 0.921 | mg/L |
| | | | | Orthophosphate | 0.003 | mg/L |
| | | | | pH in Water | 6.700 | pH |
| | | | | Phosphorus, Dissolved | 0.003 | mg/L |
| | | | | Phosphorus, Total | 0.003 | mg/L |
| | | | | Potassium (K) | 0.530 | mg/L |
| | | | | Silica, Reactive (as Si) | 1.880 | mg/L |
| | | | | Sodium (Na) | 1.300 | mg/L |
| | | | | Sulfate (SO4) | 1.990 | mg/L |
| | | | | TDS (Calculated) | 35.000 | mg/L |
| | | | | Total Carbon | 7.300 | mg/L |
| | | | | Total Inorganic Carbon | 2.000 | mg/L |
| | | | | Total Kjeldahl Nitrogen | 0.350 | mg/L |
| | | | | Total Organic Carbon | 5.300 | mg/L |
| | | | | Total Suspended Solids | 1.500 | mg/L |
| | | | | Turbidity | 0.730 | NTU |

**Appendix B Table B5. Results for constituents analyzed in water samples collected from waterbodies in the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Date | Analytical Test | Value | |
|---|---|---|---|---|---|---|
| Stream C1 | WCTC01A01 | WC-1A | | | | |
| | | | 7/26/1999 | | | |
| | | | | Alkalinity, Total (T Alk) | 11.000 | mg/L |
| | | | | Ammonia-N | 0.025 | mg/L |
| | | | | Balance | 97.000 | % |
| | | | | Bicarbonate (HCO3) | 13.000 | mg/L |
| | | | | Calcium (Ca) | 8.410 | mg/L |
| | | | | Carbonate (CO3) | 0.500 | mg/L |
| | | | | Chloride (Cl) | 12.900 | mg/L |
| | | | | Conductance (EC) | 87.100 | uS/cm |
| | | | | Hardness | 30.000 | mg/L |
| | | | | Hydroxide in Water | 0.500 | mg/L |
| | | | | Magnesium (Mg) | 2.230 | mg/L |
| | | | | Nitrate/Nitrite-N | 1.200 | mg/L |
| | | | | Nitrate-N | 1.200 | mg/L |
| | | | | Orthophosphate | 0.003 | mg/L |
| | | | | pH in Water | 7.500 | pH |
| | | | | Phosphorus, Dissolved | 0.003 | mg/L |
| | | | | Phosphorus, Total | 0.004 | mg/L |
| | | | | Potassium (K) | 0.570 | mg/L |
| | | | | Silica, Reactive (as Si) | 4.700 | mg/L |
| | | | | Sodium (Na) | 1.500 | mg/L |
| | | | | Sulfate (SO4) | 2.040 | mg/L |
| | | | | TDS (Calculated) | 40.000 | mg/L |
| | | | | Total Carbon | 7.400 | mg/L |
| | | | | Total Inorganic Carbon | 1.800 | mg/L |
| | | | | Total Kjeldahl Nitrogen | 0.025 | mg/L |
| | | | | Total Organic Carbon | 5.600 | mg/L |
| | | | | Total Suspended Solids | 1.500 | mg/L |
| | | | | Turbidity | 0.280 | NTU |
| | | | 9/6/1999 | | | |
| | | | | Alkalinity, Total (T Alk) | 13.000 | mg/L |
| | | | | Ammonia-N | 0.003 | mg/L |
| | | | | Balance | 88.000 | % |
| | | | | Bicarbonate (HCO3) | 16.000 | mg/L |
| | | | | Calcium (Ca) | 2.480 | mg/L |
| | | | | Carbonate (CO3) | 0.500 | mg/L |
| | | | | Chloride (Cl) | 0.670 | mg/L |
| | | | | Conductance (EC) | 31.400 | uS/cm |

**Appendix B Table B5. Results for constituents analyzed in water samples collected from waterbodies in the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Date | Analytical Test | Value | |
|---|---|---|---|---|---|---|
| Stream C1 | WCTC01A01 | WC-1A | | | | |
| | | | 9/6/1999 | | | |
| | | | | Hardness | 12.000 | mg/L |
| | | | | Hydroxide in Water | 0.500 | mg/L |
| | | | | Magnesium (Mg) | 1.360 | mg/L |
| | | | | Nitrate/Nitrite-N | 0.320 | mg/L |
| | | | | Nitrate-N | 0.030 | mg/L |
| | | | | Orthophosphate | 0.002 | mg/L |
| | | | | pH in Water | 7.000 | pH |
| | | | | Phosphorus, Dissolved | 0.004 | mg/L |
| | | | | Phosphorus, Total | 0.005 | mg/L |
| | | | | Potassium (K) | 0.240 | mg/L |
| | | | | Silica, Reactive (as Si) | 2.300 | mg/L |
| | | | | Sodium (Na) | 0.700 | mg/L |
| | | | | Sulfate (SO4) | 1.280 | mg/L |
| | | | | TDS (Calculated) | 15.000 | mg/L |
| | | | | Total Carbon | 8.700 | mg/L |
| | | | | Total Inorganic Carbon | 2.300 | mg/L |
| | | | | Total Kjeldahl Nitrogen | 0.025 | mg/L |
| | | | | Total Organic Carbon | 6.400 | mg/L |
| | | | | Total Suspended Solids | 1.500 | mg/L |
| | | | | Turbidity | 0.410 | NTU |
| Stream C19 | WCTC1901 | WC-3 | | | | |
| | | | 7/26/1999 | | | |
| | | | | Alkalinity, Total (T Alk) | 10.000 | mg/L |
| | | | | Ammonia-N | 0.013 | mg/L |
| | | | | Balance | 100.000 | % |
| | | | | Bicarbonate (HCO3) | 12.000 | mg/L |
| | | | | Calcium (Ca) | 2.100 | mg/L |
| | | | | Carbonate (CO3) | 0.500 | mg/L |
| | | | | Chloride (Cl) | 0.920 | mg/L |
| | | | | Conductance (EC) | 27.800 | uS/cm |
| | | | | Hardness | 10.000 | mg/L |
| | | | | Hydroxide in Water | 0.500 | mg/L |
| | | | | Magnesium (Mg) | 1.270 | mg/L |
| | | | | Nitrate/Nitrite-N | 0.023 | mg/L |
| | | | | Nitrate-N | 0.021 | mg/L |
| | | | | Orthophosphate | 0.002 | mg/L |
| | | | | pH in Water | 6.800 | pH |

**Appendix B Table B5. Results for constituents analyzed in water samples collected from waterbodies in the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Date | Analytical Test | Value | |
|---|---|---|---|---|---|---|
| Stream C19 | WCTC1901 | WC-3 | | | | |
| | | | 7/26/1999 | | | |
| | | | | Phosphorus, Dissolved | 0.003 | mg/L |
| | | | | Phosphorus, Total | 0.003 | mg/L |
| | | | | Potassium (K) | 0.250 | mg/L |
| | | | | Silica, Reactive (as Si) | 1.210 | mg/L |
| | | | | Sodium (Na) | 0.700 | mg/L |
| | | | | Sulfate (SO4) | 1.040 | mg/L |
| | | | | TDS (Calculated) | 12.000 | mg/L |
| | | | | Total Carbon | 8.100 | mg/L |
| | | | | Total Inorganic Carbon | 2.100 | mg/L |
| | | | | Total Kjeldahl Nitrogen | 0.290 | mg/L |
| | | | | Total Organic Carbon | 6.000 | mg/L |
| | | | | Total Suspended Solids | 1.500 | mg/L |
| | | | | Turbidity | 0.620 | NTU |
| Stream C3 | WCTC0301 | WC-6 | | | | |
| | | | 7/26/1999 | | | |
| | | | | Alkalinity, Total (T Alk) | 6.000 | mg/L |
| | | | | Ammonia-N | 0.003 | mg/L |
| | | | | Balance | 105.000 | % |
| | | | | Bicarbonate (HCO3) | 8.000 | mg/L |
| | | | | Calcium (Ca) | 1.660 | mg/L |
| | | | | Carbonate (CO3) | 0.500 | mg/L |
| | | | | Chloride (Cl) | 0.250 | mg/L |
| | | | | Conductance (EC) | 22.400 | uS/cm |
| | | | | Hardness | 8.000 | mg/L |
| | | | | Hydroxide in Water | 0.500 | mg/L |
| | | | | Magnesium (Mg) | 0.900 | mg/L |
| | | | | Nitrate/Nitrite-N | 0.028 | mg/L |
| | | | | Nitrate-N | 0.026 | mg/L |
| | | | | Orthophosphate | 0.004 | mg/L |
| | | | | pH in Water | 6.500 | pH |
| | | | | Phosphorus, Dissolved | 0.002 | mg/L |
| | | | | Phosphorus, Total | 0.003 | mg/L |
| | | | | Potassium (K) | 0.270 | mg/L |
| | | | | Silica, Reactive (as Si) | 0.851 | mg/L |
| | | | | Sodium (Na) | 0.500 | mg/L |
| | | | | Sulfate (SO4) | 1.810 | mg/L |
| | | | | TDS (Calculated) | 9.000 | mg/L |

## Appendix B Table B5. Results for constituents analyzed in water samples collected from waterbodies in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Date | Analytical Test | Value | |
|---|---|---|---|---|---|---|
| Stream C3 | WCTC0301 | WC-6 | | | | |
| | | | 7/26/1999 | | | |
| | | | | Total Carbon | 5.800 | mg/L |
| | | | | Total Inorganic Carbon | 1.900 | mg/L |
| | | | | Total Kjeldahl Nitrogen | 0.180 | mg/L |
| | | | | Total Organic Carbon | 3.900 | mg/L |
| | | | | Total Suspended Solids | 1.500 | mg/L |
| | | | | Turbidity | 1.100 | NTU |

# APPENDIX C
## NONVERTEBRATES

## Appendix C Table C1. Periphyton sample parameters, chlorophyll *a* and ash free dry mass (AFDM) data collected from waterbodies in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Date | Area | Composite | Volume Filtered (mL) | Chlorophyll *a* ($mg/m^2$) | AFDM ($mg/m^2$) |
|---|---|---|---|---|---|---|---|---|
| Lake C1 | | | | | | | | |
| | PELC0101 | PE-4 | 19-Jul-99 | 20.0 | 5 | 5 | 2.49 | 27.33 |
| | PELC0101 | PE-4 | 30-Jul-99 | 20.0 | 5 | 5 | 5.37 | 59.84 |
| | PELC0101 | PE-4 | 26-Aug-99 | 20.0 | 5 | 5 | 5.14 | 25.66 |
| Lake C2 | | | | | | | | |
| | PELC0201 | PE-5 | 19-Jul-99 | 20.0 | 5 | 5 | 7.64 | 72.83 |
| | PELC0201 | PE-5 | 30-Jul-99 | 20.0 | 5 | 5 | 2.82 | 63.91 |
| | PELC0201 | PE-5 | 26-Aug-99 | 20.0 | 5 | 5 | 11.23 | 34.19 |
| Lake C3 | | | | | | | | |
| | PELC0301 | PE-3 | 24-Jul-99 | 20.0 | 5 | 5 | 0.00 | 20.68 |
| Lake D10 | | | | | | | | |
| | PELD1001 | PE-6 | 19-Jul-99 | 20.0 | 5 | 5 | 1.64 | 15.30 |
| | PELD1001 | PE-6 | 30-Jul-99 | 20.0 | 5 | 5 | 3.50 | 51.66 |
| | PELD1001 | PE-6 | 26-Aug-99 | 20.0 | 5 | 5 | 1.50 | 21.78 |
| Stream C1 | | | | | | | | |
| | PETC01A01 | PE-1A | 27-Jul-99 | 20.0 | 5 | 5 | 3.94 | 152.68 |
| | PETC01A01 | PE-1A | 30-Jul-99 | 20.0 | 5 | 5 | 2.11 | 28.68 |
| | PETC01A01 | PE-1A | 26-Aug-99 | 20.0 | 5 | 5 | 6.10 | 21.89 |
| | PETC01B01 | PE-1B | 19-Jul-99 | 20.0 | 5 | 5 | 9.70 | 22.28 |
| | PETC01B01 | PE-1B | 30-Jul-99 | 20.0 | 5 | 5 | 1.71 | 66.33 |
| | PETC01B01 | PE-1B | 26-Aug-99 | 20.0 | 5 | 5 | 2.47 | 79.50 |
| Stream C19 | | | | | | | | |
| | PETC1901 | PE-7 | 19-Jul-99 | 20.0 | 5 | 5 | 3.47 | 37.00 |
| | PETC1901 | PE-7 | 30-Jul-99 | 20.0 | 5 | 5 | 3.93 | 36.90 |
| | PETC1901 | PE-7 | 26-Aug-99 | 20.0 | 5 | 5 | 5.15 | 33.27 |
| Stream C3 | | | | | | | | |
| | PETC0301 | PE-8 | 19-Jul-99 | 20.0 | 5 | 5 | 6.48 | 20.12 |
| | PETC0301 | PE-8 | 30-Jul-99 | 20.0 | 5 | 5 | 5.33 | 8.93 |
| | PETC0301 | PE-8 | 26-Aug-99 | 20.0 | 5 | 5 | 2.04 | 16.10 |

## Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Carat Lake | PELCA01 | | | | | |
| | | | BACILLARIOPHYTA | | | |
| | | | | *Achnanthes flexella* | 14 | |
| | | | | *Achnanthes minutissima* | 2092 | |
| | | | | *Cymbella minuta* | 138 | |
| | | | | *Cymbella sp.* | 0 | P |
| | | | | *Diatoma elongatum* | 0 | P |
| | | | | *Eunotia glacialis* | 14 | |
| | | | | *Eunotia praerupta* | 171 | |
| | | | | *Frustulia vulgaris* | 28 | |
| | | | | *Gomphonema gracile* | 194 | |
| | | | | *Nitzschia filiformis* | 14 | |
| | | | | *Synedra sp. b* | 277 | |
| | | | | *Synedra ulna* | 0 | P |
| | | | | *Tabellaria fenestrata* | 0 | P |
| | | | | *Tabellaria flocculosa* | 526 | |
| | | | CHLOROPHYTA | | | |
| | | | | *Closterium sp.* | 0 | P |
| | | | | *Cosmarium biculatum* | 41 | |
| | | | | *Cosmarium laeve* | 14 | |
| | | | | *Cosmarium sp. a* | 0 | P |
| | | | | *Cylindrocystis brebissonii* | 14 | |
| | | | | *Elakatothrix sp.* | 0 | P |
| | | | | *Gloeocystis schroeteri* | 124 | |
| | | | | *Hyalotheca sp.* | 0 | P |
| | | | | *Mougeotia sp. a* | 0 | P |
| | | | | *Oocystis lacustris* | 222 | |
| | | | | *Sphaerozosma granulatum.* | 28 | |
| | | | CHRYSOPHYTA | | | |
| | | | | *Chrysosphaerella rodhei* | 0 | P |
| | | | | *Pseudokephyrion angulosum* | 0 | P |
| | | | CRYPTOPHYTA | | | |
| | | | | *Cryptomonas ovata* | 0 | P |
| | | | CYANOPHYTA | | | |
| | | | | *Anabaena sp.* | 0 | P |
| | | | | *Aphanocapsa elachista v. planctonica* | 0 | P |

## Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Carat Lake | PELCA01 | | | | | |
| | | | CYANOPHYTA | | | |
| | | | | *Desmonema wrangelii* | 968 | |
| | | | | *Schizothrix calcicola* | 7952 | |
| Lake C1 | PELC0101 | PE-4 | | | | |
| | | | BACILLARIOPHYTA | | | |
| | | | | *Achnanthes flexella* | 3303 | |
| | | | | *Achnanthes minutissima* | 136661 | |
| | | | | *Achnanthes minutissima v.cryptocephala* | 1859 | |
| | | | | *Caloneis ventricosa* | 9297 | |
| | | | | *Cyclotella ocellata* | 0 | P |
| | | | | *Cymbella cuspidata* | 0 | P |
| | | | | *Cymbella gracilis* | 4332 | |
| | | | | *Eunotia maior* | 0 | P |
| | | | | *Eunotia praerupta* | 20453 | |
| | | | | *Eunotia praerupta v. bidens* | 0 | P |
| | | | | *Eunotia triodon* | 1101 | |
| | | | | *Frustulia vulgaris* | 16585 | |
| | | | | *Gomphonema gracile* | 31609 | |
| | | | | *Hantzschia amphioxys* | 0 | P |
| | | | | *Navicula sp.* | 0 | P |
| | | | | *Nedium sp.* | 0 | P |
| | | | | *Nitzschia angustata* | 0 | P |
| | | | | *Nitzschia sp. a* | 1859 | |
| | | | | *Pinnularia sp. a* | 0 | P |
| | | | | *Stephanodiscus astraea* | 0 | P |
| | | | | *Synedra sp. b* | 60744 | |
| | | | | *Tabellaria fenestrata* | 0 | P |
| | | | | *Tabellaria flocculosa* | 320103 | |
| | | | CHLOROPHYTA | | | |
| | | | | *Actinotaenium sp.* | 1101 | P |
| | | | | *Ankistrodesmus falcatus* | 0 | P |
| | | | | *Botryococcus sp.* | 0 | P |
| | | | | *Bulbochaete sp.* | 1859 | |
| | | | | *Chlamydomonas sp.* | 0 | P |
| | | | | *Coeloastrum printzii* | 0 | P |

## Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Lake C1 | PELC0101 | PE-4 | | | | |
| | | | CHLOROPHYTA | | | |
| | | | | *Cosmarium capitulum v. groenlandicum* | 0 | P |
| | | | | *Cosmarium granulatum* | 0 | P |
| | | | | *Cosmarium holmiense v. intermedium* | 0 | P |
| | | | | *Cosmarium impressulum v.suborthogonum* | 0 | P |
| | | | | *Cosmarium phaseolus v. phaseolus* | 0 | P |
| | | | | *Cosmarium rectangulum* | 0 | P |
| | | | | *Cosmarium speciosum* | 0 | P |
| | | | | *Cylindrocystis brebissonii* | 7894 | |
| | | | | *Euastrum ansatum* | 0 | P |
| | | | | *Euastrum denticulatum* | 0 | P |
| | | | | *Euastrum dubium v. maius* | 0 | P |
| | | | | *Euastrum elegans* | 0 | P |
| | | | | *Euastrum pectinatum* | 0 | P |
| | | | | *Geminella interrupta* | 0 | P |
| | | | | *Gloeocystis schroeteri* | 3719 | |
| | | | | *Hyalotheca sp.* | 8807 | |
| | | | | *Mougeotia sp. a* | 11621 | |
| | | | | *Mougeotia sp. b* | 0 | P |
| | | | | *Netrium sp.* | 0 | P |
| | | | | *Oocystis lacustris* | 33468 | |
| | | | | *Pediastrum boryanum v. ellesmerense* | 0 | P |
| | | | | *Scenedesmus acuminatus* | 3719 | |
| | | | | *Sphaerozosma granulatum.* | 0 | P |
| | | | | *Staurastrum paradoxum* | 0 | P |
| | | | | *Staurastrum punctulatum* | 0 | P |
| | | | | *Staurastrum sp. a* | 0 | P |
| | | | | *Staurastrum sp. b* | 0 | P |
| | | | | *Zygnema sp.* | 0 | P |
| | | | CHRYSOPHYTA | | | |
| | | | | *Dinobryon sertularia v.protuberans* | 39046 | |
| | | | | *Kephyrion boreale* | 0 | P |
| | | | | *Pseudokephyrion angulosum* | 1859 | |
| | | | CYANOPHYTA | | | |
| | | | | *Anabaena planctonica* | 61358 | |

**Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Lake C1 | PELC0101 | PE-4 | | | | |
| | | | CYANOPHYTA | | | |
| | | | | *Anacystis cyanea* | 0 | P |
| | | | | *Anacystis dimidiata* | 3719 | |
| | | | | *Anacystis montana* | 92967 | |
| | | | | *Aphanocapsa elachista v. planctonica* | 184074 | |
| | | | | *Dactylococcopsis linearis* | 3719 | |
| | | | | *Desmonema wrangelii* | 59499 | |
| | | | | *Gomphosphaeria naegelianum* | 145321 | |
| | | | | *Nostoc commune* | 16514 | |
| | | | | *Oscillatoria sp.* | 0 | P |
| | | | | *Oscillatoria tenuis* | 0 | P |
| | | | | *Schizothrix calcicola* | 1922549 | |
| | | | | *Scopulonema minus* | 172918 | |
| Lake C2 | PELC0201 | PE-5 | | | | |
| | | | BACILLARIOPHYTA | | | |
| | | | | *Achnanthes flexella* | 2559 | |
| | | | | *Achnanthes minutissima* | 92697 | |
| | | | | *Caloneis ventricosa* | 3719 | |
| | | | | *Cymbella cuspidata* | 0 | P |
| | | | | *Cymbella gracilis* | 0 | P |
| | | | | *Cymbella minuta* | 0 | P |
| | | | | *Cymbella sp.* | 0 | P |
| | | | | *Eunotia glacialis* | 0 | P |
| | | | | *Eunotia praerupta* | 0 | P |
| | | | | *Eunotia praerupta v. bidens* | 0 | P |
| | | | | *Eunotia triodon* | 0 | P |
| | | | | *Frustulia vulgaris* | 0 | P |
| | | | | *Gomphonema gracile* | 40292 | |
| | | | | *Nedium incurvum* | 0 | P |
| | | | | *Nedium sp.* | 0 | P |
| | | | | *Nitzschia sp. a* | 16734 | |
| | | | | *Opephora martyi* | 0 | P |
| | | | | *Stauroneis anceps* | 0 | P |
| | | | | *Synedra sp. b* | 12086 | |
| | | | | *Tabellaria fenestrata* | 0 | P |

## Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Lake C2 | PELC0201 | PE-5 | | | | |
| | | | BACILLARIOPHYTA | | | |
| | | | | *Tabellaria flocculosa* | 7817 | |
| | | | CHLOROPHYTA | | | |
| | | | | *Actinotaenium sp.* | 9297 | |
| | | | | *Ankistrodesmus falcatus* | 0 | P |
| | | | | *Ankistrodesmus falcatus v. spiralis* | 0 | P |
| | | | | *Arthrodesmus triangularis* | 0 | P |
| | | | | *Botryococcus sp.* | 0 | P |
| | | | | *Bulbochaete sp.* | 0 | P |
| | | | | *Closterium sp.* | 0 | P |
| | | | | *Coeloastrum printzii* | 0 | P |
| | | | | *Cosmarium capitulum v. groenlandicum* | 0 | P |
| | | | | *Cosmarium granulatum* | 0 | P |
| | | | | *Cosmarium humile v. lacustre* | 350 | |
| | | | | *Cosmarium norimbergense* | 1859 | |
| | | | | *Cosmarium phaseolus v. phaseolus* | 0 | P |
| | | | | *Cosmarium subgranatum* | 350 | |
| | | | | *Cylindrocystis brebissonii* | 1750 | |
| | | | | *Elakatothrix sp.* | 0 | P |
| | | | | *Euastrum denticulatum* | 350 | |
| | | | | *Euastrum dubium v. maius* | 0 | P |
| | | | | *Euastrum elegans* | 0 | P |
| | | | | *Gloeocystis schroeteri* | 7437 | |
| | | | | *Gonatozygon brebissonii* | 0 | P |
| | | | | *Hyalotheca sp.* | 0 | P |
| | | | | *Mougeotia sp. a* | 0 | P |
| | | | | *Mougeotia sp. b* | 930 | |
| | | | | *Oocystis elliptica* | 9297 | |
| | | | | *Oocystis lacustris* | 11156 | |
| | | | | *Oocystis pusilla* | 8367 | |
| | | | | *Scenedesmus incrassatulus* | 700 | |
| | | | | *Sphaerozosma granulatum.* | 1400 | |
| | | | | *Staurastrum sp. a* | 350 | |
| | | | | *Staurastrum sp. b* | 0 | P |
| | | | | *Staurastrum sp. c* | 0 | P |

**Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm²) | Presence |
|---|---|---|---|---|---|---|
| Lake C2 | PELC0201 | PE-5 | | | | |
| | | | CHLOROPHYTA | | | |
| | | | | *Staurastrum tetracerum* | 1859 | |
| | | | | *Teilingia granulata* | 700 | |
| | | | CHRYSOPHYTA | | | |
| | | | | *Dinobryon sertularia v.protuberans* | 20655 | |
| | | | | *Kephyrion boreale* | 1859 | |
| | | | | *Stichogloea doederleinii* | 13945 | |
| | | | CYANOPHYTA | | | |
| | | | | *Agmenellum quadruplicatum* | 9297 | |
| | | | | *Anabaena sp.* | 24856 | |
| | | | | *Anacystis cyanea* | 0 | P |
| | | | | *Anacystis montana* | 123646 | |
| | | | | *Aphanocapsa elachista v. planctonica* | 840418 | |
| | | | | *Dactylococcopsis linearis* | 0 | P |
| | | | | *Dichothrix gypsophila* | 20655 | |
| | | | | *Gomphosphaeria naegelianum* | 59499 | |
| | | | | *Lyngbya contorta* | 0 | P |
| | | | | *Microcoleus vaginatus* | 15754 | |
| | | | | *Nostoc commune* | 184074 | |
| | | | | *Oscillatoria tenuis* | 2101 | |
| | | | | *Schizothrix calcicola* | 2413413 | |
| | | | | *Scopulonema minus* | 26031 | |
| | | | PYRROPHYTA | | | |
| | | | | *Gymnodinium sp.* | 0 | P |
| | | | | *Peridinium sp.* | 350 | |
| Lake C3 | PELC0301 | PE-3 | | | | |
| | | | BACILLARIOPHYTA | | | |
| | | | | *Achnanthes minutissima* | 978 | |
| | | | | *Cymbella sp.* | 217 | |
| | | | | *Eunotia glacialis* | 219 | |
| | | | | *Eunotia praerupta* | 0 | P |
| | | | | *Eunotia praerupta v. bidens* | 0 | P |
| | | | | *Frustulia vulgaris* | 0 | P |
| | | | | *Gomphonema gracile* | 380 | |
| | | | | *Melosira sp.* | 0 | P |

**Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Lake C3 | PELC0301 | PE-3 | | | | |
| | | | BACILLARIOPHYTA | | | |
| | | | | *Nitzschia sigmoidea* | 109 | |
| | | | | *Nitzschia sp. a* | 217 | |
| | | | | *Pinnularia sp. a* | 0 | P |
| | | | | *Stephanodiscus astraea* | 0 | P |
| | | | | *Synedra sp. b* | 887 | |
| | | | | *Tabellaria fenestrata* | 0 | P |
| | | | | *Tabellaria flocculosa* | 11817 | |
| | | | CHLOROPHYTA | | | |
| | | | | *Bulbochaete sp.* | 652 | |
| | | | | *Characium sp.* | 0 | P |
| | | | | *Closterium sp.* | 0 | P |
| | | | | *Coeloastrum printzii* | 109 | |
| | | | | *Cosmarium holmiense v. intermedium* | 0 | P |
| | | | | *Cosmarium sp. a* | 0 | P |
| | | | | *Cosmarium speciosum* | 0 | P |
| | | | | *Cosmarium subcrenulatum* | 0 | P |
| | | | | *Desmidium sp.* | 0 | P |
| | | | | *Euastrum elegans* | 0 | P |
| | | | | *Gloeocystis schroeteri* | 325 | |
| | | | | *Gonatozygon brebissonii* | 0 | P |
| | | | | *Mougeotia sp. a* | 109 | |
| | | | | *Oocystis lacustris* | 6085 | |
| | | | | *Oocystis solitaria* | 0 | P |
| | | | | *Sphaerozosma granulatum.* | 0 | P |
| | | | | *Staurastrum punctulatum* | 0 | P |
| | | | | *Staurastrum sp. a* | 0 | P |
| | | | | *Staurastrum varians* | 0 | P |
| | | | CHRYSOPHYTA | | | |
| | | | | *Dinobryon sertularia v.protuberans* | 4944 | |
| | | | | *Ishtmochloron trispinatum* | 217 | |
| | | | | *Pseudokephyrion angulosum* | 217 | |
| | | | CRYPTOPHYTA | | | |
| | | | | *Cryptomonas ovata* | 0 | P |

## Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Lake C3 | PELC0301 | PE-3 | | | | |
| | | | CYANOPHYTA | | | |
| | | | | *Anabaena planctonica* | 0 | P |
| | | | | *Anabaena sp.* | 3912 | |
| | | | | *Anacystis cyanea* | 0 | P |
| | | | | *Anacystis dimidiata* | 217 | |
| | | | | *Anacystis montana* | 2934 | |
| | | | | *Aphanocapsa elachista v. planctonica* | 2199 | |
| | | | | *Desmonema wrangelii* | 49115 | |
| | | | | *Nostoc commune* | 652 | |
| | | | | *Schizothrix calcicola* | 19559 | |
| | | | | *Scopulonema minus* | 34120 | |
| | | | | *Stigonema mamillosum* | 1304 | |
| | | | PYRROPHYTA | | | |
| | | | | *Peridinium sp.* | 217 | |
| Lake D10 | PELD1001 | PE-6 | | | | |
| | | | BACILLARIOPHYTA | | | |
| | | | | *Achnanthes flexella* | 0 | P |
| | | | | *Achnanthes minutissima* | 39421 | |
| | | | | *Amphora ovalis* | 0 | P |
| | | | | *Caloneis ventricosa* | 2145 | |
| | | | | *Cymbella cuspidata* | 0 | P |
| | | | | *Cymbella gracilis* | 1073 | |
| | | | | *Cymbella minuta* | 0 | P |
| | | | | *Cymbella naviculiformis* | 0 | P |
| | | | | *Cymbella sp.* | 0 | P |
| | | | | *Eunotia maior* | 0 | P |
| | | | | *Eunotia praerupta* | 540 | |
| | | | | *Eunotia praerupta v. bidens* | 0 | P |
| | | | | *Fragilaria sp.* | 0 | P |
| | | | | *Frustulia vulgaris* | 1073 | |
| | | | | *Gomphonema angustatum* | 0 | P |
| | | | | *Gomphonema gracile* | 19308 | |
| | | | | *Gomphonema sp.* | 0 | P |
| | | | | *Nitzschia amphibia* | 0 | P |
| | | | | *Nitzschia filiformis* | 1877 | |

**Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Lake D10 | PELD1001 | PE-6 | | | | |
| | | | BACILLARIOPHYTA | | | |
| | | | | *Nitzschia sp. a* | 18236 | |
| | | | | *Nitzschia sp. b* | 6436 | |
| | | | | *Stauroneis phoenicenteron* | 0 | P |
| | | | | *Tabellaria fenestrata* | 540 | |
| | | | | *Tabellaria flocculosa* | 38215 | |
| | | | CHLOROPHYTA | | | |
| | | | | *Actinotaenium sp.* | 0 | P |
| | | | | *Ankistrodesmus falcatus* | 0 | P |
| | | | | *Arthrodesmus triangularis* | 0 | P |
| | | | | *Botryococcus sp.* | 0 | P |
| | | | | *Bulbochaete sp.* | 0 | P |
| | | | | *Coeloastrum printzii* | 0 | P |
| | | | | *Cosmarium biculatum* | 0 | P |
| | | | | *Cosmarium granulatum* | 0 | P |
| | | | | *Cosmarium humile v. lacustre* | 0 | P |
| | | | | *Cosmarium norimbergense* | 1073 | |
| | | | | *Cosmarium phaseolus v. phaseolus* | 0 | P |
| | | | | *Cosmarium rectangulare* | 0 | P |
| | | | | *Cosmarium rectangulum* | 0 | P |
| | | | | *Cosmarium subcrenulatum* | 0 | P |
| | | | | *Crucigenia rectangularis* | 0 | P |
| | | | | *Cylindrocystis brebissonii* | 2145 | |
| | | | | *Euastrum dubium v. maius* | 0 | P |
| | | | | *Euastrum elegans* | 0 | P |
| | | | | *Gloeocystis schroeteri* | 270 | |
| | | | | *Hyalotheca sp.* | 0 | P |
| | | | | *Mougeotia sp. a* | 1080 | |
| | | | | *Mougeotia sp. b* | 1619 | |
| | | | | *Oocystis elliptica* | 1080 | |
| | | | | *Oocystis lacustris* | 27890 | |
| | | | | *Pandorina morum* | 0 | P |
| | | | | *Sphaerozosma granulatum.* | 12872 | |
| | | | | *Staurastrum borgeanum* | 0 | P |
| | | | | *Staurastrum pachyrhynchum* | 0 | P |

**Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Lake D10 | PELD1001 | PE-6 | | | | |
| | | | CHLOROPHYTA | | | |
| | | | | *Staurastrum punctulatum* | 0 | P |
| | | | | *Staurastrum sp. a* | 0 | P |
| | | | | *Staurastrum sp. b* | 0 | P |
| | | | | *Staurastrum sp. c* | 0 | P |
| | | | | *Trochiscia granulata* | 0 | P |
| | | | CHRYSOPHYTA | | | |
| | | | | *Dinobryon sertularia v.protuberans* | 13409 | |
| | | | | *Ishtmochloron trispinatum* | 0 | P |
| | | | | *Ophiocytium sp.* | 0 | P |
| | | | CYANOPHYTA | | | |
| | | | | *Anabaena lapponica* | 66936 | |
| | | | | *Anacystis cyanea* | 48583 | |
| | | | | *Anacystis montana* | 19433 | |
| | | | | *Aphanocapsa elachista v. planctonica* | 231701 | |
| | | | | *Dichothrix gypsophila* | 22672 | |
| | | | | *Gomphosphaeria naegelianum* | 0 | P |
| | | | | *Nostoc commune* | 15654 | |
| | | | | *Schizothrix calcicola* | 1387062 | |
| | | | | *Scopulonema minus* | 2145 | |
| | | | | *Stigonema mamillosum* | 8637 | |
| | | | PYRROPHYTA | | | |
| | | | | *Gymnodinium uberrimum* | 540 | |
| | | | | *Peridinium sp.* | 0 | P |
| Stream C1 | PETC01A01 | PE-1A | | | | |
| | | | BACILLARIOPHYTA | | | |
| | | | | *Achnanthes flexella* | 5697 | |
| | | | | *Achnanthes minutissima* | 1249131 | |
| | | | | *Caloneis ventricosa* | 0 | P |
| | | | | *Cyclotella ocellata* | 0 | P |
| | | | | *Eunotia maior* | 540 | |
| | | | | *Eunotia praerupta* | 6511 | |
| | | | | *Frustulia vulgaris* | 0 | P |
| | | | | *Gomphonema gracile* | 8139 | |
| | | | | *Melosira sp.* | 19534 | |

## Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm²) | Presence |
|---|---|---|---|---|---|---|
| Stream C1 | PETC01A01 | PE-1A | | | | |
| | | | BACILLARIOPHYTA | | | |
| | | | | *Navicula pupula* | 0 | P |
| | | | | *Navicula radiosa* | 0 | P |
| | | | | *Nitzschia sp. a* | 71426 | |
| | | | | *Pinnularia sp. a* | 0 | P |
| | | | | *Synedra sp. b* | 71426 | |
| | | | | *Synedra ulna* | 0 | P |
| | | | | *Tabellaria fenestrata* | 0 | P |
| | | | | *Tabellaria flocculosa* | 149228 | |
| | | | CHLOROPHYTA | | | |
| | | | | *Actinotaenium sp.* | 0 | P |
| | | | | *Characium sp.* | 0 | P |
| | | | | *Closterium sp.* | 0 | P |
| | | | | *Cosmarium granulatum* | 0 | P |
| | | | | *Cosmarium holmiense v. intermedium* | 0 | P |
| | | | | *Cosmarium phaseolus v. phaseolus* | 0 | P |
| | | | | *Cosmarium rectangulare* | 0 | P |
| | | | | *Cosmarium rectangulum* | 0 | P |
| | | | | *Cosmarium subcrenulatum* | 540 | |
| | | | | *Cylindrocystis brebissonii* | 3061 | |
| | | | | *Euastrum ansatum* | 0 | P |
| | | | | *Gloeocystis schroeteri* | 0 | P |
| | | | | *Hyalotheca sp.* | 22789 | |
| | | | | *Mougeotia sp. a* | 14370 | |
| | | | | *Oocystis elliptica* | 10204 | |
| | | | | *Oocystis lacustris* | 255091 | |
| | | | | *Scenedesmus incrassatulus* | 0 | P |
| | | | | *Sphaerozosma granulatum.* | 0 | P |
| | | | | *Staurastrum borgeanum* | 0 | P |
| | | | | *Staurastrum sp. a* | 0 | P |
| | | | CHRYSOPHYTA | | | |
| | | | | *Stichogloea doederleinii* | 10204 | |
| | | | CYANOPHYTA | | | |
| | | | | *Anacystis cyanea* | 159526 | |
| | | | | *Anacystis dimidiata* | 29419 | |

**Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Stream C1 | PETC01A01 | PE-1A | | | | |
| | | | CYANOPHYTA | | | |
| | | | | *Aphanocapsa elachista v. planctonica* | 744867 | |
| | | | | *Desmonema wrangelii* | 91227 | |
| | | | | *Pseudanabaena sp.* | 112240 | |
| | | | | *Schizothrix calcicola* | 8719021 | |
| | | | | *Scopulonema minus* | 173462 | |
| | | | | *Stigonema mamillosum* | 540 | |
| | | | BACILLARIOPHYTA | | | |
| | | | | *Achnanthes flexella* | 0 | P |
| | | | | *Achnanthes minutissima* | 134698 | |
| | | | | *Caloneis ventricosa* | 0 | P |
| | | | | *Cyclotella ocellata* | 0 | P |
| | | | | *Cymbella cuspidata* | 0 | P |
| | | | | *Cymbella gracilis* | 0 | P |
| | | | | *Cymbella minuta* | 2041 | |
| | | | | *Eunotia arcus* | 0 | P |
| | | | | *Eunotia maior* | 0 | P |
| | | | | *Eunotia praerupta* | 4416 | |
| | | | | *Eunotia praerupta v. bidens* | 0 | P |
| | | | | *Frustulia vulgaris* | 3826 | |
| | | | | *Melosira sp.* | 48978 | |
| | | | | *Navicula sp.* | 3061 | |
| | | | | *Nitzschia sp. a* | 6122 | |
| | | | | *Nitzschia sp. b* | 7143 | |
| | | | | *Pinnularia borealis* | 0 | P |
| | | | | *Pinnularia sp. a* | 0 | P |
| | | | | *Stauroneis phoenicenteron* | 0 | P |
| | | | | *Stephanodiscus astraea* | 0 | P |
| | | | | *Synedra sp a* | 3061 | |
| | | | | *Synedra sp. b* | 8673 | |
| | | | | *Tabellaria fenestrata* | 0 | P |
| | | | | *Tabellaria flocculosa* | 10540 | |
| | | | CHLOROPHYTA | | | |
| | | | | *Actinotaenium sp.* | 339 | |
| | | | | *Cosmarium sp. a* | 0 | P |

## Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Stream C1 | PETC01A01 | PE-1A | | | | |
| | | | CHLOROPHYTA | | | |
| | | | | *Euastrum dubium v. maius* | 0 | P |
| | | | | *Gloeocystis schroeteri* | 4081 | |
| | | | | *Mougeotia sp. a* | 255 | |
| | | | | *Oocystis elliptica* | 5612 | |
| | | | | *Oocystis lacustris* | 0 | P |
| | | | | *Scenedesmus incrassatulus* | 0 | P |
| | | | | *Staurastrum gladiosum* | 0 | P |
| | | | | *Staurastrum sp. a* | 678 | |
| | | | CYANOPHYTA | | | |
| | | | | *Anabaena sp.* | 0 | P |
| | | | | *Anacystis cyanea* | 0 | P |
| | | | | *Anacystis dimidiata* | 10714 | |
| | | | | *Anacystis montana* | 440798 | |
| | | | | *Aphanocapsa elachista* | 129586 | |
| | | | | *Coelosphaerium kuetzingianum* | 249989 | |
| | | | | *Dichothrix gypsophila* | 272438 | |
| | | | | *Gomphosphaeria naegelianum* | 16326 | |
| | | | | *Microcoleus vaginatus* | 152034 | |
| | | | | *Schizothrix calcicola* | 434676 | |
| | | | | *Scopulonema minus* | 24489 | |
| Stream C19 | PETC1901 | PE-7 | | | | |
| | | | BACILLARIOPHYTA | | | |
| | | | | *Achnanthes flexella* | 501 | |
| | | | | *Achnanthes minutissima* | 240784 | |
| | | | | *Cymbella gracilis* | 4648 | |
| | | | | *Cymbella sp.* | 501 | |
| | | | | *Eunotia glacialis* | 10226 | |
| | | | | *Eunotia maior* | 501 | |
| | | | | *Eunotia peruviana* | 0 | P |
| | | | | *Eunotia praerupta* | 6192 | |
| | | | | *Eunotia praerupta v. bidens* | 1859 | |
| | | | | *Eunotia triodon* | 0 | P |
| | | | | *Fragilaria sp.* | 0 | P |
| | | | | *Frustulia vulgaris* | 22777 | |

## Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Stream C19 | PETC1901 | PE-7 | | | | |
| | | | BACILLARIOPHYTA | | | |
| | | | | *Melosira sp.* | 11022 | |
| | | | | *Meridion circulare* | 501 | |
| | | | | *Nedium incurvum* | 0 | P |
| | | | | *Nedium sp.* | 0 | P |
| | | | | *Nitzschia sp. a* | 52061 | |
| | | | | *Nitzschia sp. b* | 15023 | |
| | | | | *Pinnularia sp. a* | 0 | P |
| | | | | *Pinnularia sp. b* | 0 | P |
| | | | | *Stauroneis phoenicenteron* | 0 | P |
| | | | | *Surirella sp.* | 0 | P |
| | | | | *Synedra sp a* | 0 | P |
| | | | | *Synedra sp. b* | 78092 | |
| | | | | *Tabellaria fenestrata* | 837 | |
| | | | | *Tabellaria flocculosa* | 132794 | |
| | | | CHLOROPHYTA | | | |
| | | | | *Actinotaenium sp.* | 0 | P |
| | | | | *Bulbochaete sp.* | 1503 | |
| | | | | *Closterium sp.* | 0 | P |
| | | | | *Coeloastrum printzii* | 0 | P |
| | | | | *Cosmarium capitulum v. groenlandicum* | 1859 | |
| | | | | *Cosmarium granulatum* | 0 | P |
| | | | | *Cosmarium holmiense v. intermedium* | 0 | P |
| | | | | *Cosmarium norimbergense* | 0 | P |
| | | | | *Cosmarium phaseolus v. phaseolus* | 0 | P |
| | | | | *Cosmarium speciosum* | 0 | P |
| | | | | *Cosmarium subcrenulatum* | 501 | |
| | | | | *Crucigenia rectangularis* | 0 | P |
| | | | | *Cylindrocystis brebissonii* | 1754 | |
| | | | | *Desmidium sp.* | 0 | P |
| | | | | *Euastrum ansatum* | 0 | P |
| | | | | *Euastrum bidentatum* | 0 | P |
| | | | | *Euastrum denticulatum* | 0 | P |
| | | | | *Euastrum dubium v. maius* | 0 | P |
| | | | | *Euastrum elegans* | 0 | P |

## Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Stream C19 | PETC1901 | PE-7 | | | | |
| | | | CHLOROPHYTA | | | |
| | | | | *Geminella interrupta* | 0 | P |
| | | | | *Gloeocystis schroeteri* | 1859 | |
| | | | | *Hyalotheca sp.* | 0 | P |
| | | | | *Mougeotia sp. a* | 0 | P |
| | | | | *Mougeotia sp. b* | 1859 | |
| | | | | *Oocystis elliptica* | 501 | |
| | | | | *Oocystis lacustris* | 19523 | |
| | | | | *Oonephris obesa* | 0 | P |
| | | | | *Pediastrum boryanum v. ellesmerense* | 0 | P |
| | | | | *Penium sp.* | 0 | P |
| | | | | *Scenedesmus incrassatulus* | 3507 | |
| | | | | *Sphaerozosma granulatum.* | 3507 | |
| | | | | *Staurastrum borgeanum* | 0 | P |
| | | | | *Staurastrum gladiosum* | 0 | P |
| | | | | *Staurastrum pachyrhynchum* | 0 | P |
| | | | | *Staurastrum punctulatum* | 0 | P |
| | | | | *Staurastrum sp. a* | 501 | |
| | | | | *Staurastrum sp. b* | 0 | P |
| | | | | *Xanthicium armatum* | 0 | P |
| | | | | *Zygnema sp.* | 2004 | |
| | | | CHRYSOPHYTA | | | |
| | | | | *Dinobryon sertularia v.protuberans* | 0 | P |
| | | | | *Pseudokephyrion angulosum* | 501 | |
| | | | | *Stichogloea doederleinii* | 38432 | |
| | | | CYANOPHYTA | | | |
| | | | | *Anabaena sp.* | 0 | P |
| | | | | *Anacystis cyanea* | 55112 | |
| | | | | *Anacystis montana* | 74373 | |
| | | | | *Aphanocapsa elachista v. planctonica* | 217542 | |
| | | | | *Aphanothece clathrata* | 89248 | |
| | | | | *Dactylococcopsis linearis* | 2004 | |
| | | | | *Desmonema wrangelii* | 0 | P |
| | | | | *Dichothrix gypsophila* | 61124 | |
| | | | | *Gomphosphaeria naegelianum* | 635892 | |

**Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Stream C19 | PETC1901 | PE-7 | | | | |
| | | | CYANOPHYTA | | | |
| | | | | *Nostoc commune* | 0 | P |
| | | | | *Oscillatoria tenuis* | 0 | P |
| | | | | *Schizothrix calcicola* | 585690 | |
| | | | | *Scopulonema minus* | 42765 | |
| Stream C3 | PETC0301 | PE-8 | | | | |
| | | | BACILLARIOPHYTA | | | |
| | | | | *Achnanthes minutissima* | 11825 | |
| | | | | *Caloneis ventricosa* | 0 | P |
| | | | | *Cymbella gracilis* | 409 | |
| | | | | *Cymbella sp.* | 0 | P |
| | | | | *Eunotia glacialis* | 446 | |
| | | | | *Eunotia maior* | 0 | P |
| | | | | *Eunotia praerupta* | 1032 | |
| | | | | *Eunotia praerupta v. bidens* | 0 | P |
| | | | | *Eunotia triodon* | 112 | |
| | | | | *Fragilaria sp.* | 0 | P |
| | | | | *Frustulia vulgaris* | 298 | |
| | | | | *Gomphonema sp.* | 112 | |
| | | | | *Melosira sp.* | 0 | P |
| | | | | *Navicula sp.* | 0 | P |
| | | | | *Nitzschia sp. a* | 0 | P |
| | | | | *Pinnularia sp. a* | 0 | P |
| | | | | *Synedra sp a* | 3559 | |
| | | | | *Tabellaria fenestrata* | 0 | P |
| | | | | *Tabellaria flocculosa* | 7865 | |
| | | | CHLOROPHYTA | | | |
| | | | | *Actinotaenium sp.* | 0 | P |
| | | | | *Ankistrodesmus falcatus* | 0 | P |
| | | | | *Characium sp.* | 0 | P |
| | | | | *Cosmarium humile v. lacustre* | 0 | P |
| | | | | *Cosmarium phaseolus v. phaseolus* | 112 | |
| | | | | *Cosmarium reniforme* | 0 | P |
| | | | | *Cosmarium septentrionale* | 0 | P |
| | | | | *Cosmarium speciosum* | 56 | |

## Appendix C Table C2. Periphyton species and density data collected from waterbodies in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/cm$^2$) | Presence |
|---|---|---|---|---|---|---|
| Stream C3 | PETC0301 | PE-8 | | | | |
| | | | CHLOROPHYTA | | | |
| | | | | *Cosmarium subcrenulatum* | 0 | P |
| | | | | *Cylindrocystis brebissonii* | 0 | P |
| | | | | *Geminella interrupta* | 0 | P |
| | | | | *Gloeocystis schroeteri* | 1116 | |
| | | | | *Oocystis elliptica* | 6749 | |
| | | | | *Oocystis solitaria* | 0 | P |
| | | | | *Sphaerozosma granulatum.* | 0 | P |
| | | | | *Staurastrum pachyrhynchum* | 0 | P |
| | | | | *Staurastrum sp. a* | 0 | P |
| | | | | *Trochiscia granulata* | 0 | P |
| | | | | *Xanthidium antilopaeum* | 0 | P |
| | | | CHRYSOPHYTA | | | |
| | | | | *Dinobryon sertularia v.protuberans* | 0 | P |
| | | | | *Kephyrion sp.* | 0 | P |
| | | | | *Stichogloea doederleinii* | 1673 | |
| | | | CYANOPHYTA | | | |
| | | | | *Anacystis dimidiata* | 0 | P |
| | | | | *Anacystis montana* | 669 | |
| | | | | *Aphanocapsa elachista v. planctonica* | 669 | |
| | | | | *Desmonema wrangelii* | 36257 | |
| | | | | *Oscillatoria tenuis* | 2120 | |
| | | | | *Schizothrix calcicola* | 20415 | |
| | | | | *Scopulonema minus* | 1450 | |

## Appendix C Table C3. Phytoplankton sample parameters and chlorophyll *a* data collected from lakes in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Date | Secchi Depth (m) | Depth Sampled (m) | Composite | Volume Filtered for Chlorophyll a Analysis (mL) | Chlorophyll a ($mg/m^2$) |
|---|---|---|---|---|---|---|---|---|
| Lake C1 | | | | | | | | |
| | PHLC0101 | | | | | | | |
| | | PL-4 | 19-Jul-99 | 4.20 | 8.40 | 5 | 300 | 2.30 |
| | | PL-4 | 30-Jul-99 | 4.20 | 11.00 | 5 | 300 | 1.22 |
| | | PL-4 | 25-Aug-99 | 4.35 | 10.00 | 5 | 300 | 0.83 |
| Lake C2 | | | | | | | | |
| | PHLC0201 | | | | | | | |
| | | PL-5 | 19-Jul-99 | 1.80 | 1.50 | 50 | 300 | 0.35 |
| | | PL-5 | 30-Jul-99 | 2.00 | 1.50 | 20 | 300 | 0.50 |
| | | PL-5 | 25-Aug-99 | 2.20 | 1.50 | 20 | 300 | 0.11 |
| Lake C3 | | | | | | | | |
| | PHLC0301 | | | | | | | |
| | | PL-3 | 24-Jul-99 | 5.90 | 12.00 | 5 | 300 | 0.89 |
| Lake D10 | | | | | | | | |
| | PHLD1001 | | | | | | | |
| | | PL-6 | 19-Jul-99 | 8.00 | 7.50 | 5 | 300 | 1.09 |
| | | PL-6 | 31-Jul-99 | 8.60 | 5.90 | 5 | 300 | 0.27 |
| | | PL-6 | 26-Aug-99 | 6.50 | 5.50 | 5 | 300 | 0.00 |

## Appendix C Table C4. Phytoplankton species, density, and biovolume data collected from lakes in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/mL) | Biovolume ($um^3 x10^3$/mL) | Presence |
|---|---|---|---|---|---|---|---|
| Lake C1 | PHLC0101 | PL-4 | | | | | |
| | | | BACILLARIOPHYTA | | | | |
| | | | | *Achnanthes minutissima* | 10 | 2.751 | |
| | | | | *Cyclotella glomerata* | 494 | 23.458 | |
| | | | | *Cyclotella ocellata* | 224 | 190.010 | |
| | | | | *Cymbella sp.* | 0 | 0.000 | P |
| | | | | *Eunotia praerupta* | 0 | 0.000 | P |
| | | | | *Eunotia sp.* | 0 | 0.000 | P |
| | | | | *Frustulia vulgaris* | 0 | 0.000 | P |
| | | | | *Melosira sp.* | 0 | 0.000 | P |
| | | | | *Meridion circulare* | 0 | 0.000 | P |
| | | | | *Nitzschia angustata* | 0 | 0.000 | P |
| | | | | *Nitzschia sp. b* | 13 | 0.240 | |
| | | | | *Stephanodiscus astraea* | 79 | 407.475 | |
| | | | | *Synedra sp.* | 15 | 6.826 | |
| | | | | *Tabellaria floculosa* | 0 | 0.000 | P |
| | | | CHLOROPHYTA | | | | |
| | | | | *Ankistrodesmus falcatus* | 10 | 0.603 | |
| | | | | *Closterium sp. a* | 0 | 0.000 | P |
| | | | | *Crucigenia quadrata* | 0 | 0.000 | P |
| | | | | *Elakatothrix gelatinosa* | 52 | 2.884 | |
| | | | | *Euastrum elegans* | 0 | 0.000 | P |
| | | | | *Gloeocystis schroeteri* | 0 | 0.000 | P |
| | | | | *Kirchneriella sp.* | 7 | 0.096 | |
| | | | | *Oocystis lacustris* | 81 | 25.351 | |
| | | | | *Sphaerozosma granulatum* | 10 | 5.414 | |
| | | | CHRYSOPHYTA | | | | |
| | | | | *Bitrichia longispina* | 0 | 0.000 | P |
| | | | | *Chrysochromulina parva* | 494 | 17.054 | |
| | | | | *Chrysosphaerella rodhei* | 354 | 296.415 | |
| | | | | *Chrysostephanosphaera globulifera* | 7 | 3.153 | |
| | | | | *Dinobryon sertularia* | 47 | 55.111 | |
| | | | | *Dinobryon sertularia v.protuberans* | 57 | 117.996 | |
| | | | | *Dinobryon sociale* | 90 | 112.699 | |
| | | | | *Dinobryon tabellariae* | 0 | 0.000 | P |
| | | | | *Ishtmochloron trispinatum* | 0 | 0.000 | P |
| | | | | *Kephyrion boreale* | 403 | 282.822 | |
| | | | | *Mallomonas sp.* | 23 | 38.615 | |
| | | | | *Ochromonas sp. a* | 34 | 8.866 | |
| | | | | *Ochromonas stellaris* | 10 | 23.537 | |
| | | | | *Stichogloea doederleinii* | 74 | 23.958 | |
| | | | CRYPTOPHYTA | | | | |
| | | | | *Cryptomonas ovata* | 3 | 12.126 | |
| | | | | *Cryptomonas reflexa* | 66 | 96.181 | |

## Appendix C Table C4. Phytoplankton species, density, and biovolume data collected from lakes in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/mL) | Biovolume ($um^3$ x$10^3$/mL) | Presence |
|---|---|---|---|---|---|---|---|
| Lake C1 | PHLC0101 | PL-4 | | | | | |
| | | | CRYPTOPHYTA | | | | |
| | | | | *Rhodomonas minuta* | 874 | 203.952 | |
| | | | CYANOPHYTA | | | | |
| | | | | *Anabaena sp.* | 0 | 0.000 | P |
| | | | | *Anacystis montana* | 0 | 0.000 | P |
| | | | | *Aphanocapsa elachista* | 5249 | 20.276 | |
| | | | | *Aphanocapsa elachista v. planctoni* | 296 | 5.462 | |
| | | | | *Lyngbya limnetica* | 0 | 0.000 | P |
| | | | EUGLENOPHYTA | | | | |
| | | | | *Trachelomonas sp.* | 4 | 3.937 | |
| | | | PYRROPHYTA | | | | |
| | | | | *Glenodinium sp.* | 40 | 77.111 | |
| | | | | *Gymnodinium sp.* | 0 | 0.000 | P |
| | | | | *Gymnodinium uberrimum* | 0 | 0.000 | P |
| | | | | *Peridinium aciculiferum* | 0 | 0.000 | P |
| | | | | *Peridinium cinctum* | 0 | 0.000 | P |
| Lake C2 | PHLC0201 | PL-5 | | | | | |
| | | | BACILLARIOPHYTA | | | | |
| | | | | *Achnanthes flexella* | 0 | 0.000 | P |
| | | | | *Achnanthes minutissima* | 30 | 8.892 | |
| | | | | *Caloneis ventricosa* | 0 | 0.000 | P |
| | | | | *Cyclotella glomerata* | 5 | 0.349 | |
| | | | | *Cymbella minuta* | 0 | 0.000 | P |
| | | | | *Eunotia bidentula* | 0 | 0.000 | P |
| | | | | *Eunotia exigua* | 0 | 0.000 | P |
| | | | | *Eunotia praerupta* | 5 | 76.607 | |
| | | | | *Melosira sp.* | 0 | 0.000 | P |
| | | | | *Meridion circulare* | 1 | 0.676 | |
| | | | | *Nitzschia sp. a* | 0 | 0.000 | P |
| | | | | *Stephanodiscus astraea* | 4 | 18.362 | |
| | | | | *Synedra sp.* | 2 | 16.834 | |
| | | | | *Tabellaria fenestrata* | 0 | 0.000 | P |
| | | | | *Tabellaria floculosa* | 5 | 5.934 | |
| | | | CHLOROPHYTA | | | | |
| | | | | *Ankistrodesmus falcatus v. spiralis* | 14 | 1.204 | |
| | | | | *Chlamydomonas sp. a* | 0 | 0.000 | P |
| | | | | *Closterium sp. a* | 0 | 0.000 | P |
| | | | | *Cosmarium phaseolus v. phaseolus* | 0 | 0.000 | P |
| | | | | *Crucigenia quadrata* | 37 | 1.012 | |
| | | | | *Crucigenia rectangularis* | 0 | 0.000 | P |
| | | | | *Cylindrocystis sp.* | 0 | 0.000 | P |
| | | | | *Euastrum elegans* | 0 | 0.000 | P |
| | | | | *Oocystis elliptica* | 113 | 25.126 | |

## Appendix C Table C4. Phytoplankton species, density, and biovolume data collected from lakes in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/mL) | Biovolume ($um^3$x$10^3$/mL) | Presence |
|---|---|---|---|---|---|---|---|
| Lake C2 | PHLC0201 | PL-5 | | | | | |
| | | | CHLOROPHYTA | | | | |
| | | | | *Oocystis lacustris* | 11 | 30.039 | |
| | | | | *Scenedesmus incrassatulus* | 7 | 0.805 | |
| | | | | *Sphaerocystis schroeteri* | 41 | 14.122 | |
| | | | | *Sphaerozosma granulatum* | 2 | 0.960 | |
| | | | | *Staurastrum sp. a* | 0 | 0.000 | P |
| | | | | *Staurastrum sp. b* | 0 | 0.000 | P |
| | | | CHRYSOPHYTA | | | | |
| | | | | *Bitrichia longispina* | 7 | 7.000 | |
| | | | | *Chrysococcus sp.* | 30 | 2.669 | |
| | | | | *Chrysosphaerella rodhei* | 205 | 50.209 | |
| | | | | *Dinobryon sertularia v.protuberans* | 10 | 14.344 | |
| | | | | *Kephyrion sp.* | 2 | 0.660 | |
| | | | | *Mallomonas sp.* | 0 | 0.000 | P |
| | | | | *Ochromonas sp. a* | 4 | 3.038 | |
| | | | CRYPTOPHYTA | | | | |
| | | | | *Cryptomonas ovata* | 2 | 35.282 | |
| | | | | *Cryptomonas reflexa* | 51 | 72.582 | |
| | | | | *Katablepharis ovalis* | 0 | 0.000 | P |
| | | | | *Rhodomonas minuta* | 2 | 0.505 | |
| | | | CYANOPHYTA | | | | |
| | | | | *Agmenellum quadriplicatum* | 32 | 0.147 | |
| | | | | *Aphanocapsa elachista v. planctoni* | 46 | 0.321 | |
| | | | | *Aphanothece clathrata* | 0 | 0.000 | P |
| | | | | *Dactylococcopsis linearis* | 0 | 0.000 | P |
| | | | | *Dichotrix gypsophila* | 21 | 2.828 | |
| | | | | *Gomphosphaeria naegelianum* | 120 | 1.049 | |
| | | | | *Lyngbya limnetica* | 44 | 0.218 | |
| | | | | *Oscillatoria limnetica* | 152 | 1.282 | |
| | | | EUGLENOPHYTA | | | | |
| | | | | *Trachelomonas sp.* | 2 | 1.848 | |
| | | | PYRROPHYTA | | | | |
| | | | | *Glenodinium sp.* | 0 | 0.000 | P |
| Lake C3 | PHLC0301 | PL-3 | | | | | |
| | | | BACILLARIOPHYTA | | | | |
| | | | | *Achnanthes minutissima* | 21 | 5.552 | |
| | | | | *Cyclotella glomerata* | 60 | 7.643 | |
| | | | | *Cyclotella ocellata* | 7 | 5.414 | |
| | | | | *Eunotia praerupta* | 0 | 0.000 | P |
| | | | | *Frustulia vulgaris* | 0 | 0.000 | P |
| | | | | *Gomphonema sp.* | 0 | 0.000 | P |
| | | | | *Melosira sp.* | 7 | 1.551 | |

**Appendix C Table C4. Phytoplankton species, density, and biovolume data collected from lakes in the Jericho Study Area, 1999.**

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/mL) | Biovolume ($um^3 x10^3$/mL) | Presence |
|---|---|---|---|---|---|---|---|
| Lake C3 | PHLC0301 | PL-3 | | | | | |
| | | | BACILLARIOPHYTA | | | | |
| | | | | *Nitzschia sp. a* | 0 | 0.000 | P |
| | | | | *Rhizosolenia longiseta* | 43 | 41.304 | |
| | | | | *Stephanodiscus astraea* | 0 | 0.000 | P |
| | | | | *Synedra sp.* | 29 | 11.497 | |
| | | | | *Tabellaria fenestrata* | 0 | 0.000 | P |
| | | | | *Tabellaria floculosa* | 36 | 40.039 | |
| | | | CHLOROPHYTA | | | | |
| | | | | *Ankistrodesmus falcatus v. spiralis* | 0 | 0.000 | P |
| | | | | *Arthrodesmus triangularis* | 4 | 6.000 | |
| | | | | *Chlamydomonas sp. a* | 8 | 8.000 | |
| | | | | *Chlamydomonas sp. b* | 0 | 0.000 | P |
| | | | | *Coeloastrum microporum* | 142 | 25.000 | |
| | | | | *Cosmarium phaseolus v. phaseolus* | 4 | 9.000 | |
| | | | | *Cosmarium subcrenatum* | 38 | 98.000 | |
| | | | | *Crucigenia quadrata* | 0 | 0.000 | P |
| | | | | *Elakatothrix gelatinosa* | 12 | 1.000 | |
| | | | | *Gloeocystis schroeteri* | 75 | 58.000 | |
| | | | | *Oocystis lacustris* | 25 | 8.000 | |
| | | | | *Sphaerozosma granulatum* | 4 | 2.000 | |
| | | | | *Staurastrum sp. a* | 0 | 0.000 | P |
| | | | | *Staurastrum sp. b* | 0 | 0.000 | P |
| | | | | *Tetraedron arthrodesmiforme* | 18 | 0.036 | |
| | | | CHRYSOPHYTA | | | | |
| | | | | *Bitrichia longispina* | 4 | 0.490 | |
| | | | | *Chromulina sp.* | 4 | 1.361 | |
| | | | | *Chrysochromulina parva* | 28 | 0.981 | |
| | | | | *Chrysoikos skujai* | 7 | 2.128 | |
| | | | | *Chrysosphaerella rodhei* | 1061 | 327.939 | |
| | | | | *Chrysostephanosphaera globulifera* | 4 | 2.755 | |
| | | | | *Dinobryon sertularia* | 71 | 74.610 | |
| | | | | *Dinobryon sertularia v.protuberans* | 57 | 104.455 | |
| | | | | *Dinobryon sociale* | 74 | 95.852 | |
| | | | | *Dinobryon tabellariae* | 0 | 0.000 | P |
| | | | | *Kephyrion boreale* | 323 | 271.565 | |
| | | | | *Kephyrion sp.* | 11 | 3.646 | |
| | | | | *Mallomonas sp.* | 7 | 9.313 | |
| | | | | *Ochromonas sp. a* | 4 | 0.938 | |
| | | | | *Ochromonas sp. b* | 4 | 0.916 | |
| | | | | *Ochromonas stellaris* | 14 | 50.989 | |
| | | | | *Stichogloea doederleinii* | 39 | 10.045 | |
| | | | CRYPTOPHYTA | | | | |
| | | | | *Cryptomonas curvata* | 7 | 32.653 | |

## Appendix C Table C4. Phytoplankton species, density, and biovolume data collected from lakes in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/mL) | Biovolume ($um^3 x10^3$/mL) | Presence |
|---|---|---|---|---|---|---|---|
| Lake C3 | PHLC0301 | PL-3 | | | | | |
| | | | CRYPTOPHYTA | | | | |
| | | | | *Cryptomonas ovata* | 0 | 0.000 | P |
| | | | | *Cryptomonas reflexa* | 17 | 18.872 | |
| | | | | *Katablepharis ovalis* | 96 | 12.793 | |
| | | | | *Rhodomonas minuta* | 53 | 11.270 | |
| | | | CYANOPHYTA | | | | |
| | | | | *Anabaena sp.* | 64 | 1.285 | |
| | | | | *Anacystis montana* | 0 | 0.000 | P |
| | | | | *Aphanocapsa elachista* | 348 | 2.153 | |
| | | | | *Aphanothece clathrata* | 231 | 0.249 | |
| | | | | *Dactylococcopsis linearis* | 0 | 0.000 | P |
| | | | | *Dichotrix gypsophila* | 25 | 9.295 | |
| | | | | *Gomphosphaeria naegelianum* | 0 | 0.000 | P |
| | | | | *Lyngbya limnetica* | 228 | 2.328 | |
| | | | | *Pseudanabaena sp.* | 0 | 0.000 | P |
| | | | PYRROPHYTA | | | | |
| | | | | *Glenodinium sp.* | 0 | 0.000 | P |
| | | | | *Gymnodinium uberrimum* | 4 | 32.427 | |
| | | | | *Peridinium aciculiferum* | 0 | 0.000 | P |
| Lake D10 | PHLD1001 | PL-6 | | | | | |
| | | | BACILLARIOPHYTA | | | | |
| | | | | *Achnanthes minutissima* | 5 | 1.270 | |
| | | | | *Cyclotella glomerata* | 4 | 0.234 | |
| | | | | *Cymbella minuta* | 0 | 0.000 | P |
| | | | | *Cymbella sp.* | 0 | 0.000 | P |
| | | | | *Diatoma elongatum* | 0 | 0.000 | P |
| | | | | *Eunotia arcus* | 2 | 0.988 | |
| | | | | *Eunotia praerupta* | 0 | 0.000 | P |
| | | | | *Melosira sp.* | 0 | 0.000 | P |
| | | | | *Meridion circulare* | 0 | 0.000 | P |
| | | | | *Navicula pupula* | 0 | 0.000 | P |
| | | | | *Navicula sp.* | 0 | 0.000 | P |
| | | | | *Nitzschia sp. a* | 0 | 0.000 | P |
| | | | | *Pinnularia sp.* | 0 | 0.000 | P |
| | | | | *Stauroneis phoenicenteron* | 0 | 0.000 | P |
| | | | | *Synedra sp.* | 0 | 0.000 | P |
| | | | | *Synedra ulna* | 0 | 0.000 | P |
| | | | | *Tabellaria fenestrata* | 0 | 0.000 | P |
| | | | | *Tabellaria floculosa* | 0 | 0.000 | P |
| | | | CHLOROPHYTA | | | | |
| | | | | *Ankistrodesmus convolutus* | 4 | 0.074 | |
| | | | | *Arthrodesmus triangularis* | 0 | 0.000 | P |
| | | | | *Botryococcus sp.* | 0 | 0.000 | P |

## Appendix C Table C4. Phytoplankton species, density, and biovolume data collected from lakes in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Taxonomic Group | Taxa | Density (cells/mL) | Biovolume ($um^3$x$10^3$/mL) | Presence |
|---|---|---|---|---|---|---|---|
| Lake D10 | PHLD1001 | PL-6 | | | | | |
| | | | CHLOROPHYTA | | | | |
| | | | | *Bulbochaete sp.* | 0 | 0.000 | P |
| | | | | *Characium sp.* | 46 | 20.073 | |
| | | | | *Chlamydomonas sp. a* | 13 | 0.908 | |
| | | | | *Chlamydomonas sp. b* | 2 | 0.115 | |
| | | | | *Cosmarium subcrenatum* | 2 | 4.000 | |
| | | | | *Crucigenia quadrata* | 68 | 2.070 | |
| | | | | *Crucigenia rectangularis* | 71 | 28.485 | |
| | | | | *Cylindrocystis sp.* | 0 | 0.000 | P |
| | | | | *Elakatothrix gelatinosa* | 0 | 0.000 | P |
| | | | | *Euastrum elegans* | 0 | 0.000 | P |
| | | | | *Gloeocystis schroeteri* | 0 | 0.000 | P |
| | | | | *Kirchneriella sp.* | 18 | 0.253 | |
| | | | | *Oocystis elliptica* | 25 | 5.129 | |
| | | | | *Oocystis lacustris* | 2 | 3.902 | |
| | | | | *Scenedesmus incrassatulus* | 0 | 0.000 | P |
| | | | | *Schroederia setigera* | 10 | 4.260 | |
| | | | | *Sphaerocystis schroeteri* | 133 | 44.530 | |
| | | | | *Tetraedron arthrodesmiforme* | 2 | 0.036 | |
| | | | CHRYSOPHYTA | | | | |
| | | | | *Bitrichia longispina* | 0 | 0.000 | P |
| | | | | *Chrysococcus sp.* | 37 | 3.041 | |
| | | | | *Chrysosphaerella rodhei* | 208 | 59.205 | |
| | | | | *Dinobryon sertularia v.protuberans* | 4 | 6.273 | |
| | | | | *Dinobryon sociale* | 0 | 0.000 | P |
| | | | | *Mallomonas sp.* | 5 | 7.034 | |
| | | | CRYPTOPHYTA | | | | |
| | | | | *Cryptomonas reflexa* | 16 | 28.711 | |
| | | | | *Katablepharis ovalis* | 18 | 2.764 | |
| | | | | *Rhodomonas minuta* | 67 | 16.057 | |
| | | | CYANOPHYTA | | | | |
| | | | | *Anacystis dimidiata* | 0 | 0.000 | P |
| | | | | *Aphanocapsa elachista v. planctoni* | 125 | 1.932 | |
| | | | | *Aphanothece clathrata* | 25 | 0.087 | |
| | | | | *Dichotrix gypsophila* | 11 | 1.421 | |
| | | | | *Lyngbya limnetica* | 0 | 0.000 | P |
| | | | | *Pseudanabaena sp.* | 0 | 0.000 | P |
| | | | | *Scopulina minus* | 7 | 1.325 | |
| | | | EUGLENOPHYTA | | | | |
| | | | | *Trachelomonas sp.* | 0 | 0.000 | P |
| | | | PYRROPHYTA | | | | |
| | | | | *Glenodinium sp.* | 2 | 1.641 | |

## Appendix C Table C5. Zooplankton sample parameters, density, and biomass data collected from lakes in summer in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Sampling Date | Composite | Depth (m) | Secchi Depth (m) | Taxonomic Group | Taxa | Density (No./m$^3$) | Biomass (ug/m$^3$) |
|---|---|---|---|---|---|---|---|---|---|---|
| Lake C1 | ZOLC0101 | PL-4 | | | | | | | | |
| | | | 22-Jul-99 | 5 | 10.50 | 4.70 | | | | |
| | | | | | | | Calanoida | | | |
| | | | | | | | | *Calanoid copepodid* | 269 | 772 |
| | | | | | | | | *Leptodiaptomus sicilis* | 1639 | 12735 |
| | | | | | | | Cladocera | | | |
| | | | | | | | | *Bosmina longirostris* | 9 | 53 |
| | | | | | | | | *Holopedium gibberum* | 161 | 173747 |
| | | | | | | | Cyclopoida | | | |
| | | | | | | | | *Cyclopoid copepodid* | 27 | 66 |
| | | | | | | | | *Cyclopoid nauplii* | 41966 | 1388 |
| | | | | | | | | *Diacyclops bicuspidatus* | 3134 | 28275 |
| | | | | | | | Rotifera | | | |
| | | | | | | | | *Conochillus unicornis* | 1947 | 37 |
| | | | | | | | | *Kellicotia longispina* | 5842 | 158 |
| | | | | | | | | *Keratella cochlearis* | 3559 | 70 |
| | | | | | | | | *Keratella quadrata* | 3156 | 58 |
| | | | | | | | | *Polyarthra delichoptera* | 2216 | 61 |
| | | | | | | | | *Syncheata pectinata* | 2417 | 135 |
| Lake C2 | ZOLC0201 | PL-5 | | | | | | | | |
| | | | 21-Jul-99 | 5 | 1.30 | 1.80 | | | | |
| | | | | | | | Calanoida | | | |
| | | | | | | | | *Calanoid copepodid* | 63 | 181 |
| | | | | | | | | *Heterocope sp.* | 42 | 2845 |

## Appendix C Table C5. Zooplankton sample parameters, density, and biomass data collected from lakes in summer in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Sampling Date | Composite | Depth (m) | Secchi Depth (m) | Taxonomic Group | Taxa | Density (No./$m^3$) | Biomass (ug/$m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|
| Lake C2 | ZOLC0201 | PL-5 | | | | | | | | |
| | | | | | | | Calanoida | | | |
| | | | | | | | | *Leptodiaptomus sicilis* | 2504 | 19458 |
| | | | | | | | Cladocera | | | |
| | | | | | | | | *Daphnia middendorfiana* | 168 | 10933 |
| | | | | | | | | *Holopedium gibberum* | 126 | 136081 |
| | | | | | | | Cyclopoida | | | |
| | | | | | | | | *Cyclopoid copepodid* | 63 | 156 |
| | | | | | | | | *Cyclopoid nauplii* | 1201 | 40 |
| | | | | | | | | *Diacyclops bicuspidatus* | 126 | 1139 |
| | | | | | | | Rotifera | | | |
| | | | | | | | | *Keratella cochlearis* | 2162 | 43 |
| | | | | | | | | *Monostyla lunaris* | 240 | 7 |
| | | | | | | | | *Polyarthra delichoptera* | 480 | 13 |
| Lake C3 | ZOLC0301 | PL-3 | | | | | | | | |
| | | | 24-Jul-99 | 5 | 12.00 | 5.90 | | | | |
| | | | | | | | Calanoida | | | |
| | | | | | | | | *Calanoid copepodid* | 589 | 1692 |
| | | | | | | | | *Calanoid nauplii* | 101 | 11 |
| | | | | | | | | *Heterocope sp.* | 249 | 16847 |
| | | | | | | | | *Leptodiaptomus sicilis* | 1019 | 7922 |
| | | | | | | | Cladocera | | | |
| | | | | | | | | *Bosmina longirostris* | 30 | 179 |
| | | | | | | | | *Daphnia longiremis* | 53 | 343 |

## Appendix C Table C5. Zooplankton sample parameters, density, and biomass data collected from lakes in summer in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Sampling Date | Composite | Depth (m) | Secchi Depth (m) | Taxonomic Group | Taxa | Density ($No./m^3$) | Biomass ($ug/m^3$) |
|---|---|---|---|---|---|---|---|---|---|---|
| Lake C3 | ZOLC0301 | PL-3 | | | | | | | | |
| | | | | | | | Cladocera | | | |
| | | | | | | | | *Daphnia middendorfiana* | 8 | 490 |
| | | | | | | | | *Holopedium gibberum* | 98 | 105806 |
| | | | | | | | Cyclopoida | | | |
| | | | | | | | | *Cyclopoid copepodid* | 151 | 372 |
| | | | | | | | | *Cyclopoid nauplii* | 10777 | 356 |
| | | | | | | | | *Diacyclops bicuspidatus* | 823 | 7425 |
| | | | | | | | Rotifera | | | |
| | | | | | | | | *Conochillus unicornis* | 10626 | 201 |
| | | | | | | | | *Kellicotia longispina* | 7504 | 203 |
| | | | | | | | | *Keratella cochlearis* | 1259 | 25 |
| | | | | | | | | *Polyarthra delichoptera* | 176 | 5 |
| Lake D10 | ZOLD1001 | PL-6 | | | | | | | | |
| | | | 23-Jul-99 | 5 | 7.50 | 8.00 | | | | |
| | | | | | | | Calanoida | | | |
| | | | | | | | | *Calanoid copepodid* | 1812 | 5206 |
| | | | | | | | | *Calanoid nauplii* | 2206 | 242 |
| | | | | | | | | *Heterocope sp.* | 68 | 4624 |
| | | | | | | | | *Leptodiaptomus sicilis* | 1664 | 12931 |
| | | | | | | | Cladocera | | | |
| | | | | | | | | *Holopedium gibberum* | 34 | 36855 |
| | | | | | | | Cyclopoida | | | |
| | | | | | | | | *Cyclopoid copepodid* | 866 | 2135 |

## Appendix C Table C5. Zooplankton sample parameters, density, and biomass data collected from lakes in summer in the Jericho Study Area, 1999.

| Waterbody | Site Label | Map Label | Sampling Date | Composite | Depth (m) | Secchi Depth (m) | Taxonomic Group | Taxa | Density (No./m$^3$) | Biomass (ug/m$^3$) |
|---|---|---|---|---|---|---|---|---|---|---|
| Lake D10 | ZOLD1001 | PL-6 | | | | | | | | |
| | | | | | | | Cyclopoida | | | |
| | | | | | | | | *Cyclopoid nauplii* | 57226 | 1893 |
| | | | | | | | | *Diacyclops bicuspidatus* | 798 | 7197 |
| | | | | | | | Rotifera | | | |
| | | | | | | | | *Conochillus unicornis* | 3554 | 67 |
| | | | | | | | | *Kellicotia longispina* | 2206 | 60 |
| | | | | | | | | *Keratella cochlearis* | 245 | 5 |
| | | | | | | | | *Keratella quadrata* | 613 | 11 |
| | | | | | | | | *Polyarthra delichoptera* | 980 | 27 |

## Appendix C Table C6. Benthic macroinvertebrate sample parameters, species, and density data collected from littoral and profundal zones of lakes in the Jericho Study Area, 1999.

| Waterbody | Site | Map Label | Date | Taxonomic Group | | | | Depth (m) | Area ($m^2$) | Total Number | Density ($No/m^2$) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lake C1 | BELLC0101 | BEL-4 | 22-Jul-99 | | | | | | | | |
| | | | | Copepoda | | | | | | | |
| | | | | | Calanoida | | | | | | |
| | | | | | | | | 5.00 | | 86 | 3739 |
| | | | | | Cyclopida | | | | | | |
| | | | | | | | | 5.00 | | 70 | 3043 |
| | | | | Diptera | | | | | | | |
| | | | | | Chironomidae | | | | | | |
| | | | | | | Tanypodinae | | 5.00 | | 18 | 783 |
| | | | | | | Orthocladiinae/Diamesinae | | 5.00 | | 6 | 261 |
| | | | | Mollusca | | | | | | | |
| | | | | | Pelecypoda | | | | | | |
| | | | | | | Sphaeriidae | | 5.00 | | 1 | 43 |
| | | | | | | Sphaeriidae | *Sphaerium* | 5.00 | | 3 | 130 |
| | | | | | | Sphaeriidae | *Pisidium* | 5.00 | | 2 | 87 |
| | | | | Ostracoda | | | | | | | |
| | | | | | | | | 5.00 | | 1 | 43 |
| | | | | Amphipoda | | | | | | | |
| | | | | | Gammaridae | | | | | | |
| | | | | | | | *Gammarus* | 11.00 | | 1 | 43 |
| | | | | Collembola | | | | | | | |
| | | | | | | | | 11.00 | | 1 | 43 |
| | | | | Copepoda | | | | | | | |
| | | | | | Calanoida | | | | | | |
| | | | | | | | | 11.00 | | 403 | 17522 |
| | | | | | Cyclopida | | | | | | |

## Appendix C Table C6. Benthic macroinvertebrate sample parameters, species, and density data collected from littoral and profundal zones of lakes in the Jericho Study Area, 1999.

| Waterbody | Site | Map Label | Date | Taxonomic Group | Depth (m) | Area ($m^2$) | Total Number | Density ($No/m^2$) |
|---|---|---|---|---|---|---|---|---|
| Lake C1 | BELLC0101 | BEL-4 | 22-Jul-99 | | | | | |
| | | | | Copepoda | | | | |
| | | | | Cyclopida | | | | |
| | | | | | 11.00 | | 85 | 3696 |
| | | | | Diptera | | | | |
| | | | | Chironomidae | | | | |
| | | | | Orthocladiinae/Diamesinae | 11.00 | | 3 | 130 |
| | | | | Tanypodinae | 11.00 | | 6 | 261 |
| | | | | Tanytarsini | 11.00 | | 11 | 478 |
| | | | | Hydracarina | | | | |
| | | | | | 11.00 | | 1 | 43 |
| | | | | Ostracoda | | | | |
| | | | | | 11.00 | | 5 | 217 |
| Lake C3 | BELLC0301 | BEL-3 | 24-Jul-99 | | | | | |
| | | | | Copepoda | | | | |
| | | | | Calanoida | | | | |
| | | | | | 4.50 | | 77 | 3348 |
| | | | | Cyclopida | | | | |
| | | | | | 4.50 | | 49 | 2130 |
| | | | | Diptera | | | | |
| | | | | Chironomidae | | | | |
| | | | | Orthocladiinae/Diamesinae | 4.50 | | 18 | 783 |
| | | | | Chironomini | 4.50 | | 13 | 565 |
| | | | | Tanytarsini | 4.50 | | 23 | 1000 |
| | | | | Tanypodinae | 4.50 | | 28 | 1217 |
| | | | | Chironomidae pupae | | | | |

## Appendix C Table C6. Benthic macroinvertebrate sample parameters, species, and density data collected from littoral and profundal zones of lakes in the Jericho Study Area, 1999.

| Waterbody | Site | Map Label | Date | Taxonomic Group | | | | Depth (m) | Area ($m^2$) | Total Number | Density ($No/m^2$) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lake C3 | BELLC0301 | BEL-3 | 24-Jul-99 | | | | | | | | |
| | | | | Diptera | | | | | | | |
| | | | | | Chironomidae pupae | | | | | | |
| | | | | | | | | 4.50 | | 6 | 261 |
| | | | | Hydracarina | | | | | | | |
| | | | | | | | | 4.50 | | 2 | 87 |
| | | | | Mollusca | | | | | | | |
| | | | | | Pelecypoda | | | | | | |
| | | | | | | Sphaeriidae | *Sphaerium* | 4.50 | | 1 | 43 |
| | | | | | | Sphaeriidae | *Pisidium* | 4.50 | | 3 | 130 |
| | | | | | | Sphaeriidae | | 4.50 | | 43 | 1870 |
| | | | | Nematoda | | | | | | | |
| | | | | | | | | 4.50 | | 1 | 43 |
| | | | | Oligochaeta | | | | | | | |
| | | | | | Lumbriculidae | | | | | | |
| | | | | | | | | 4.50 | | 1 | 43 |
| | | | | | Naididae | | | | | | |
| | | | | | | | | 4.50 | | 2 | 87 |
| | | | | | Tubificidae | | | | | | |
| | | | | | | | | 4.50 | | 38 | 1652 |
| | | | | Copepoda | | | | | | | |
| | | | | | Calanoida | | | | | | |
| | | | | | | | | 13.60 | | 7 | 304 |
| | | | | Diptera | | | | | | | |
| | | | | | Chironomidae | | | | | | |
| | | | | | | Tanytarsini | | 13.60 | | 6 | 261 |

## Appendix C Table C6. Benthic macroinvertebrate sample parameters, species, and density data collected from littoral and profundal zones of lakes in the Jericho Study Area, 1999.

| Waterbody | Site | Map Label | Date | Taxonomic Group | Depth (m) | Area ($m^2$) | Total Number | Density ($No/m^2$) |
|---|---|---|---|---|---|---|---|---|
| Lake C3 | BELLC0301 | BEL-3 | 24-Jul-99 | | | | | |
| | | | | Diptera | | | | |
| | | | | Chironomidae | | | | |
| | | | | Orthocladiinae/Diamesinae | 13.60 | | 11 | 478 |
| | | | | Microturbellaria | | | | |
| | | | | Mesostoma | | | | |
| | | | | | 13.60 | | 1 | 43 |
| | | | | Mollusca | | | | |
| | | | | Pelecypoda | | | | |
| | | | | Sphaeriidae | 13.60 | | 12 | 522 |
| | | | | Nematoda | | | | |
| | | | | | 13.60 | | 2 | 87 |
| | | | | Oligochaeta | | | | |
| | | | | Naididae | | | | |
| | | | | | 13.60 | | 1 | 43 |
| | | | | Tubificidae | | | | |
| | | | | | 13.60 | | 2 | 87 |
| | | | | Ostracoda | | | | |
| | | | | | 13.60 | | 1 | 43 |
| Lake D10 | BELLD1001 | BEL-6 | 23-Jul-99 | | | | | |
| | | | | Copepoda | | | | |
| | | | | Calanoida | | | | |
| | | | | | 2.00 | | 29 | 1261 |
| | | | | Cyclopida | | | | |
| | | | | | 2.00 | | 11 | 478 |
| | | | | Harpacticoida | | | | |
| | | | | | 2.00 | | 1 | 43 |

## Appendix C Table C6. Benthic macroinvertebrate sample parameters, species, and density data collected from littoral and profundal zones of lakes in the Jericho Study Area, 1999.

| Waterbody | Site | Map Label | Date | Taxonomic Group | | | | Depth (m) | Area ($m^2$) | Total Number | Density ($No/m^2$) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lake D10 | BELLD1001 | BEL-6 | 23-Jul-99 | | | | | | | | |
| | | | | Diptera | | | | | | | |
| | | | | | Chironomidae | | | | | | |
| | | | | | | Orthocladiinae/Diamesinae | | 2.00 | | 70 | 3043 |
| | | | | | | Tanypodinae | | 2.00 | | 14 | 609 |
| | | | | | | Tanytarsini | | 2.00 | | 25 | 1087 |
| | | | | | Chironomidae pupae | | | | | | |
| | | | | | | | | 2.00 | | 10 | 435 |
| | | | | Hydracarina | | | | | | | |
| | | | | | Lebertiidae | | | | | | |
| | | | | | | | *Lebertia* | 2.00 | | 3 | 130 |
| | | | | Microturbellaria | | | | | | | |
| | | | | | | | | 2.00 | | 10 | 435 |
| | | | | Mollusca | | | | | | | |
| | | | | | Pelecypoda | | | | | | |
| | | | | | | Sphaeriidae | | 2.00 | | 9 | 391 |
| | | | | | | Sphaeriidae | *Sphaerium* | 2.00 | | 1 | 43 |
| | | | | | | Sphaeriidae | *Pisidium* | 2.00 | | 5 | 217 |
| | | | | Nematoda | | | | | | | |
| | | | | | | | | 2.00 | | 10 | 435 |
| | | | | Oligochaeta | | | | | | | |
| | | | | | Enchytraeidae | | | | | | |
| | | | | | | | | 2.00 | | 3 | 130 |
| | | | | | Naididae | | | | | | |
| | | | | | | | | 2.00 | | 7 | 304 |
| | | | | | Tubificidae | | | | | | |

## Appendix C Table C6. Benthic macroinvertebrate sample parameters, species, and density data collected from littoral and profundal zones of lakes in the Jericho Study Area, 1999.

| Waterbody | Site | Map Label | Date | Taxonomic Group | | | | Depth (m) | Area ($m^2$) | Total Number | Density ($No/m^2$) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lake D10 | BELLD1001 | BEL-6 | 23-Jul-99 | | | | | | | | |
| | | | | Oligochaeta | | | | | | | |
| | | | | | Tubificidae | | | | | | |
| | | | | | | | | 2.00 | | 1 | 43 |
| | | | | Ostracoda | | | | | | | |
| | | | | | | | | 2.00 | | 10 | 435 |
| | | | | Trichoptera | | | | | | | |
| | | | | | Limnephilidae | | | | | | |
| | | | | | | | *Grensia* | 2.00 | | 2 | 87 |
| | | | | Copepoda | | | | | | | |
| | | | | | Calanoida | | | | | | |
| | | | | | | | | 8.00 | | 6 | 261 |
| | | | | | Cyclopida | | | | | | |
| | | | | | | | | 8.00 | | 10 | 435 |
| | | | | Diptera | | | | | | | |
| | | | | | Chironomidae | | | | | | |
| | | | | | | Chironomini | | 8.00 | | 35 | 1522 |
| | | | | | | Orthocladiinae/Diamesinae | | 8.00 | | 46 | 2000 |
| | | | | | | Tanypodinae | | 8.00 | | 25 | 1087 |
| | | | | | | Tanytarsini | | 8.00 | | 22 | 957 |
| | | | | | Chironomidae pupae | | | | | | |
| | | | | | | | | 8.00 | | 1 | 43 |
| | | | | Hydracarina | | | | | | | |
| | | | | | | | | 8.00 | | 1 | 43 |
| | | | | | Lebertiidae | | | | | | |
| | | | | | | | *Lebertia* | 8.00 | | 1 | 43 |

## Appendix C Table C6. Benthic macroinvertebrate sample parameters, species, and density data collected from littoral and profundal zones of lakes in the Jericho Study Area, 1999.

| Waterbody | Site | Map Label | Date | Taxonomic Group | Depth (m) | Area ($m^2$) | Total Number | Density ($No/m^2$) |
|---|---|---|---|---|---|---|---|---|
| Lake D10 | BELLD1001 | BEL-6 | 23-Jul-99 | | | | | |
| | | | | Microturbellaria | | | | |
| | | | | Mesostoma | | | | |
| | | | | | 8.00 | | 5 | 217 |
| | | | | Mollusca | | | | |
| | | | | Pelecypoda | | | | |
| | | | | Sphaeriidae | 8.00 | | 28 | 1217 |
| | | | | Nematoda | | | | |
| | | | | | 8.00 | | 7 | 304 |
| | | | | Oligochaeta | | | | |
| | | | | Tubificidae | | | | |
| | | | | | 8.00 | | 1 | 43 |
| | | | | Ostracoda | | | | |
| | | | | | 8.00 | | 5 | 217 |

# APPENDIX D
## FISH

**Appendix D Table D1. Fish species encountered in sampled waterbodies in the Jericho Study Area, 1999.**

| Family | Common Name | Scientific Name | Code |
|---|---|---|---|
| Cottidae | | | |
| | Slimy sculpin | *Cottus cognatus* | SLSC |
| Gadidae | | | |
| | Burbot | *Lota lota* | BURB |
| Gasterosteidae | | | |
| | Ninespine stickleback | *Pungitius pungitius* | NNST |
| Salmonidae | | | |
| | Arctic char | *Salvelinus alpinus* | ARCH |
| | Arctic grayling | *Thymallus arcticus* | ARGR |
| | Lake trout | *Salvelinus namaycush* | LKTR |
| | Round whitefish | *Prosopium cylindraceum* | RNWH |

## Appendix D Table D2. Gill net sampling effort in lakes in the Jericho Study Area, 1999.

| Waterbody | Site Label | Set Date | Set Time | Pull Date | Pull Time | Set Orientation | Minimum Depth (m) | Maximum Depth (m) | Dominant Substrate | Depth Position | Water Temperature (C) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carat Lake | | | | | | | | | | | |
| | GNLCA01 | | | | | | | | | | |
| | | 27-Jul-99 | 10:55 | 27-Jul-99 | 12:05 | Perpendicular | 2 | 3 | Boulder | Bottom | 10 |
| | | 27-Jul-99 | 12:05 | 27-Jul-99 | 14:10 | Perpendicular | 2 | 3 | Boulder | Bottom | 10 |
| | | 27-Jul-99 | 14:10 | 27-Jul-99 | 15:45 | Perpendicular | 2 | 3 | Boulder | Bottom | 10 |
| | | 27-Jul-99 | 15:45 | 27-Jul-99 | 17:32 | Perpendicular | 2 | 3 | Boulder | Bottom | 10 |
| | | 01-Sep-99 | 11:36 | 01-Sep-9 | 13:12 | Perpendicular | 1.5 | 4 | Boulder | Bottom | 8 |
| | | 01-Sep-99 | 13:12 | 01-Sep-9 | 14:09 | Perpendicular | 1.5 | 4 | Boulder | Bottom | 8 |
| | | 01-Sep-99 | 14:09 | 01-Sep-9 | 14:42 | Perpendicular | 1.5 | 4 | Boulder | Bottom | 8 |
| | | 01-Sep-99 | 14:42 | 01-Sep-9 | 15:35 | Perpendicular | 1.5 | 4 | Boulder | Bottom | 8 |
| | GNLCA02 | | | | | | | | | | |
| | | 27-Jul-99 | 11:15 | 27-Jul-99 | 12:20 | Perpendicular | 2 | 4 | Boulder | Bottom | 10 |
| | | 27-Jul-99 | 12:20 | 27-Jul-99 | 14:35 | Perpendicular | 2 | 4 | Boulder | Bottom | 10 |
| | | 27-Jul-99 | 14:35 | 27-Jul-99 | 16:10 | Perpendicular | 2 | 4 | Boulder | Bottom | 10 |
| | | 27-Jul-99 | 16:10 | 27-Jul-99 | 17:55 | Perpendicular | 2 | 4 | Boulder | Bottom | 10 |
| | GNLCA03 | | | | | | | | | | |
| | | 01-Sep-99 | 9:02 | 01-Sep-9 | 9:53 | Perpendicular | 1.5 | 7 | Cobble | Bottom | 8.5 |
| | | 01-Sep-99 | 9:53 | 01-Sep-9 | 10:57 | Perpendicular | 1.5 | 7 | Cobble | Bottom | 8.5 |
| | | 01-Sep-99 | 10:57 | 01-Sep-9 | 11:48 | Perpendicular | 1.5 | 7 | Cobble | Bottom | 8.5 |
| | | 01-Sep-99 | 11:48 | 01-Sep-9 | 13:57 | Perpendicular | 1.5 | 7 | Cobble | Bottom | 8.5 |
| | | 01-Sep-99 | 13:57 | 01-Sep-9 | 14:54 | Perpendicular | 1.5 | 7 | Cobble | Bottom | 8.5 |
| | | 01-Sep-99 | 14:54 | 01-Sep-9 | 16:00 | Perpendicular | 1.5 | 7 | Cobble | Bottom | 8.5 |
| | | 04-Sep-99 | 9:14 | 04-Sep-9 | 10:24 | Perpendicular | 1.5 | 7 | Cobble | Bottom | 9 |

## Appendix D Table D2. Gill net sampling effort in lakes in the Jericho Study Area, 1999.

| Waterbody | Site Label | Set Date | Set Time | Pull Date | Pull Time | Set Orientation | Minimum Depth (m) | Maximum Depth (m) | Dominant Substrate | Depth Position | Water Temperature (C) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carat Lake | | | | | | | | | | | |
| | GNLCA03 | | | | | | | | | | |
| | | 04-Sep-99 | 10:24 | 04-Sep-9 | 12:00 | Perpendicular | 1.5 | 7 | Cobble | Bottom | 9 |
| | | 04-Sep-99 | 12:00 | 04-Sep-9 | 13:48 | Perpendicular | 1.5 | 7 | Cobble | Bottom | 9 |
| | | 04-Sep-99 | 13:48 | 04-Sep-9 | 15:05 | Perpendicular | 1.5 | 7 | Cobble | Bottom | 9 |
| | | 04-Sep-99 | 15:05 | 04-Sep-9 | 15:56 | Perpendicular | 1.5 | 7 | Cobble | Bottom | 9 |
| | GNLCA04 | | | | | | | | | | |
| | | 01-Sep-99 | 9:18 | 01-Sep-9 | 10:18 | Perpendicular | 2 | 7 | Sand | Bottom | 8.5 |
| | | 01-Sep-99 | 10:18 | 01-Sep-9 | 11:14 | Perpendicular | 2 | 7 | Sand | Bottom | 8.5 |
| | GNLCA05 | | | | | | | | | | |
| | | 04-Sep-99 | 9:27 | 04-Sep-9 | 10:43 | Perpendicular | 1.5 | 7 | Sand | Bottom | 9 |
| | | 04-Sep-99 | 10:43 | 04-Sep-9 | 12:15 | Perpendicular | 1.5 | 7 | Sand | Bottom | 9 |
| | GNLCA06 | | | | | | | | | | |
| | | 04-Sep-99 | 12:28 | 04-Sep-9 | 14:06 | Perpendicular | 1.5 | 8 | Sand | Bottom | 9 |
| | | 04-Sep-99 | 14:06 | 04-Sep-9 | 15:18 | Perpendicular | 1.5 | 8 | Sand | Bottom | 9 |
| | | 04-Sep-99 | 15:18 | 04-Sep-9 | 16:19 | Perpendicular | 1.5 | 8 | Sand | Bottom | 9 |
| Lake C1 | | | | | | | | | | | |
| | GNLC0101 | | | | | | | | | | |
| | | 22-Jul-99 | 10:56 | 22-Jul-99 | 12:25 | Perpendicular | 1.5 | 5 | Boulder | Bottom | 10 |
| | | 22-Jul-99 | 12:25 | 22-Jul-99 | 14:45 | Perpendicular | 1.5 | 5 | Boulder | Bottom | 10 |
| | | 22-Jul-99 | 14:45 | 22-Jul-99 | 16:30 | Perpendicular | 1.5 | 5 | Boulder | Bottom | 10 |
| | | 02-Aug-9 | 8:41 | 02-Aug-9 | 9:55 | Perpendicular | 2 | 6 | Boulder | Bottom | 13 |

## Appendix D Table D2. Gill net sampling effort in lakes in the Jericho Study Area, 1999.

| Waterbody | Site Label | Set Date | Set Time | Pull Date | Pull Time | Set Orientation | Minimum Depth (m) | Maximum Depth (m) | Dominant Substrate | Depth Position | Water Temperature (C) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lake C1 | | | | | | | | | | | |
| | GNLC0101 | | | | | | | | | | |
| | | 02-Aug-9 | 9:55 | 02-Aug-9 | 11:02 | Perpendicular | 2 | 6 | Boulder | Bottom | 13 |
| | | 02-Aug-9 | 11:02 | 02-Aug-9 | 12:32 | Perpendicular | 2 | 6 | Boulder | Bottom | 13 |
| | | 02-Aug-9 | 12:32 | 02-Aug-9 | 13:39 | Perpendicular | 2 | 6 | Boulder | Bottom | 13 |
| | | 02-Aug-9 | 13:39 | 02-Aug-9 | 15:03 | Perpendicular | 2 | 6 | Boulder | Bottom | 13 |
| | | 02-Aug-9 | 15:03 | 02-Aug-9 | 15:45 | Perpendicular | 2 | 6 | Boulder | Bottom | 13 |
| | GNLC0102 | | | | | | | | | | |
| | | 22-Jul-99 | 11:15 | 22-Jul-99 | 12:45 | Perpendicular | 1.5 | 5.5 | Boulder | Bottom | 10 |
| | | 22-Jul-99 | 12:45 | 22-Jul-99 | 14:35 | Perpendicular | 1.5 | 5.5 | Boulder | Bottom | 10 |
| | | 22-Jul-99 | 14:35 | 22-Jul-99 | 16:15 | Perpendicular | 1.5 | 5.5 | Boulder | Bottom | 10 |
| | | 02-Aug-9 | 8:59 | 02-Aug-9 | 10:06 | Perpendicular | 2 | 8 | Boulder | Bottom | 13 |
| | | 02-Aug-9 | 10:06 | 02-Aug-9 | 11:09 | Perpendicular | 2 | 8 | Boulder | Bottom | 13 |
| | | 02-Aug-9 | 11:09 | 02-Aug-9 | 12:40 | Perpendicular | 2 | 8 | Boulder | Bottom | 13 |
| | | 02-Aug-9 | 12:40 | 02-Aug-9 | 13:49 | Perpendicular | 2 | 8 | Boulder | Bottom | 13 |
| | | 02-Aug-9 | 13:49 | 02-Aug-9 | 15:09 | Perpendicular | 2 | 8 | Boulder | Bottom | 13 |
| | | 02-Aug-9 | 15:09 | 02-Aug-9 | 16:00 | Perpendicular | 2 | 8 | Boulder | Bottom | 13 |
| Lake C2 | | | | | | | | | | | |
| | GNLC0201 | | | | | | | | | | |
| | | 21-Jul-99 | 15:45 | 22-Jul-99 | 9:45 | Perpendicular | 0.4 | 1.8 | Cobble/Boulder | Bottom | 10 |
| | GNLC0202 | | | | | | | | | | |
| | | 21-Jul-99 | 16:10 | 22-Jul-99 | 9:30 | Perpendicular | 0.3 | 1.8 | Cobble/Boulder | Bottom | 10 |

## Appendix D Table D2. Gill net sampling effort in lakes in the Jericho Study Area, 1999.

| Waterbody | Site Label | Set Date | Set Time | Pull Date | Pull Time | Set Orientation | Minimum Depth (m) | Maximum Depth (m) | Dominant Substrate | Depth Position | Water Temperature (C) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lake C3 | | | | | | | | | | | |
| | GNLC0301 | | | | | | | | | | |
| | | 24-Jul-99 | 11:30 | 24-Jul-99 | 15:45 | Perpendicular | 2 | 6 | Boulder | Bottom | 10 |
| | | 24-Jul-99 | 15:45 | 24-Jul-99 | 16:30 | Perpendicular | 2 | 6 | Boulder | Bottom | 10 |
| | | 24-Jul-99 | 16:30 | 25-Jul-99 | 9:10 | Perpendicular | 2 | 6 | Boulder | Bottom | 10 |
| | | 25-Jul-99 | 9:10 | 25-Jul-99 | 11:40 | Perpendicular | 2 | 6 | Boulder | Bottom | 10 |
| | GNLC0302 | | | | | | | | | | |
| | | 24-Jul-99 | 11:45 | 24-Jul-99 | 15:30 | Perpendicular | 2 | 6 | Boulder | Bottom | 10 |
| | | 24-Jul-99 | 15:30 | 24-Jul-99 | 16:15 | Perpendicular | 2 | 6 | Boulder | Bottom | 10 |
| | | 24-Jul-99 | 16:15 | 25-Jul-99 | 11:27 | Perpendicular | 2 | 6 | Boulder | Bottom | 10 |
| | GNLC0303 | | | | | | | | | | |
| | | 28-Jul-99 | 9:26 | 28-Jul-99 | 11:15 | Parrallel | 3 | 5 | Silt | Bottom | 10 |
| | | 28-Jul-99 | 11:15 | 28-Jul-99 | 13:10 | Parrallel | 3 | 5 | Silt | Bottom | 10 |
| | | 28-Jul-99 | 13:10 | 28-Jul-99 | 14:50 | Parrallel | 3 | 5 | Silt | Bottom | 10 |
| | | 28-Jul-99 | 14:50 | 28-Jul-99 | 16:20 | Parrallel | 3 | 5 | Silt | Bottom | 10 |
| | GNLC0304 | | | | | | | | | | |
| | | 28-Jul-99 | 9:40 | 28-Jul-99 | 11:30 | Parrallel | 2.5 | 5 | Boulder | Bottom | 10 |
| | | 28-Jul-99 | 11:30 | 28-Jul-99 | 12:05 | Parrallel | 2.5 | 5 | Boulder | Bottom | 10 |
| | GNLC0305 | | | | | | | | | | |
| | | 28-Jul-99 | 12:15 | 28-Jul-99 | 13:31 | Parrallel | 3 | 9 | Boulder | Bottom | 10 |
| | | 28-Jul-99 | 13:31 | 28-Jul-99 | 15:27 | Parrallel | 3 | 9 | Boulder | Bottom | 10 |
| | | 28-Jul-99 | 15:27 | 28-Jul-99 | 16:37 | Parrallel | 3 | 9 | Boulder | Bottom | 10 |

## Appendix D Table D2. Gill net sampling effort in lakes in the Jericho Study Area, 1999.

| Waterbody | Site Label | Set Date | Set Time | Pull Date | Pull Time | Set Orientation | Minimum Depth (m) | Maximum Depth (m) | Dominant Substrate | Depth Position | Water Temperature (C) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lake C3 | | | | | | | | | | | |
| | GNLC0306 | | | | | | | | | | |
| | | 03-Sep-99 | 8:32 | 03-Sep-9 | 9:30 | Parrallel | 2 | 12 | Boulder | Bottom | 6 |
| | | 03-Sep-99 | 9:30 | 03-Sep-9 | 10:40 | Parrallel | 2 | 12 | Boulder | Bottom | 6 |
| | | 03-Sep-99 | 10:40 | 03-Sep-9 | 12:05 | Parrallel | 2 | 12 | Boulder | Bottom | 6 |
| | | 03-Sep-99 | 12:05 | 03-Sep-9 | 13:15 | Parrallel | 2 | 12 | Boulder | Bottom | 6 |
| | | 03-Sep-99 | 13:15 | 03-Sep-9 | 14:42 | Parrallel | 2 | 12 | Boulder | Bottom | 6 |
| | | 03-Sep-99 | 14:42 | 03-Sep-9 | 15:39 | Parrallel | 2 | 12 | Boulder | Bottom | 6 |
| | | 03-Sep-99 | 15:39 | 03-Sep-9 | 16:05 | Parrallel | 2 | 12 | Boulder | Bottom | 6 |
| | GNLC0307 | | | | | | | | | | |
| | | 03-Sep-99 | 9:00 | 03-Sep-9 | 9:45 | Parrallel | 7 | 7 | Cobble/Boulder | Bottom | 6 |
| | | 03-Sep-99 | 9:45 | 03-Sep-9 | 10:52 | Parrallel | 7 | 7 | Cobble/Boulder | Bottom | 6 |
| | GNLC0308 | | | | | | | | | | |
| | | 03-Sep-99 | 11:30 | 03-Sep-9 | 11:42 | Diagonal | 2 | 2.5 | Cobble/Boulder | Bottom | 6 |
| | | 03-Sep-99 | 11:42 | 03-Sep-9 | 13:00 | Diagonal | 2 | 2.5 | Cobble/Boulder | Bottom | 6 |
| | | 03-Sep-99 | 13:00 | 03-Sep-9 | 14:30 | Diagonal | 2 | 2.5 | Cobble/Boulder | Bottom | 6 |
| | | 03-Sep-99 | 14:30 | 03-Sep-9 | 15:30 | Diagonal | 2 | 2.5 | Cobble/Boulder | Bottom | 6 |
| | GNLC0309 | | | | | | | | | | |
| | | 04-Sep-99 | 8:45 | 04-Sep-9 | 10:10 | Perpendicular | 1.5 | 6 | Silt/Sand | Bottom | 7 |
| | | 04-Sep-99 | 10:10 | 04-Sep-9 | 11:45 | Perpendicular | 1.5 | 6 | Silt/Sand | Bottom | 7 |
| | | 04-Sep-99 | 11:45 | 04-Sep-9 | 13:35 | Perpendicular | 1.5 | 6 | Silt/Sand | Bottom | 7 |
| | | 04-Sep-99 | 13:35 | 04-Sep-9 | 15:00 | Perpendicular | 1.5 | 6 | Silt/Sand | Bottom | 7 |

## Appendix D Table D2. Gill net sampling effort in lakes in the Jericho Study Area, 1999.

| Waterbody | Site Label | Set Date | Set Time | Pull Date | Pull Time | Set Orientation | Minimum Depth (m) | Maximum Depth (m) | Dominant Substrate | Depth Position | Water Temperature (C) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lake C3 | | | | | | | | | | | |
| | GNLC0310 | | | | | | | | | | |
| | | 04-Sep-99 | 9:10 | 04-Sep-9 | 10:30 | Parrallel | 1.5 | 6 | Boulder | Bottom | 7 |
| | | 04-Sep-99 | 10:30 | 04-Sep-9 | 12:00 | Parrallel | 1.5 | 6 | Boulder | Bottom | 7 |
| | | 04-Sep-99 | 12:00 | 04-Sep-9 | 13:50 | Parrallel | 1.5 | 6 | Boulder | Bottom | 7 |
| | | 04-Sep-99 | 13:50 | 04-Sep-9 | 15:30 | Parrallel | 1.5 | 6 | Boulder | Bottom | 7 |
| Lake D10 | | | | | | | | | | | |
| | GNLD1001 | | | | | | | | | | |
| | | 22-Jul-99 | 13:45 | 22-Jul-99 | 15:50 | Perpendicular | 2 | 4 | Boulder | Bottom | 13 |
| | | 22-Jul-99 | 15:50 | 22-Jul-99 | 16:30 | Perpendicular | 2 | 4 | Boulder | Bottom | 13 |
| | | 22-Jul-99 | 16:30 | 23-Jul-99 | 11:55 | Perpendicular | 2 | 4 | Boulder | Bottom | 13 |
| | | 23-Jul-99 | 11:55 | 23-Jul-99 | 16:45 | Perpendicular | 2 | 4 | Boulder | Bottom | 13 |
| | GNLD1002 | | | | | | | | | | |
| | | 22-Jul-99 | 14:15 | 22-Jul-99 | 15:45 | Diagonal | 2 | 7 | Boulder | Bottom | 13 |
| | | 22-Jul-99 | 15:45 | 22-Jul-99 | 16:45 | Diagonal | 2 | 7 | Boulder | Bottom | 13 |
| | | 22-Jul-99 | 16:45 | 23-Jul-99 | 11:15 | Diagonal | 2 | 7 | Boulder | Bottom | 13 |
| | GNLD1003 | | | | | | | | | | |
| | | 23-Jul-99 | 11:30 | 23-Jul-99 | 16:00 | Diagonal | 2 | 5 | Boulder | Bottom | 11 |
| | GNLD1004 | | | | | | | | | | |
| | | 31-Jul-99 | 11:53 | 31-Jul-99 | 15:00 | Parrallel | 1.5 | 9 | Silt/Sand/Boulder | Bottom | 12 |
| | | 31-Jul-99 | 15:00 | 31-Jul-99 | 16:40 | Parrallel | 1.5 | 9 | Silt/Sand/Boulder | Bottom | 12 |

## Appendix D Table D2. Gill net sampling effort in lakes in the Jericho Study Area, 1999.

| Waterbody | Site Label | Set Date | Set Time | Pull Date | Pull Time | Set Orientation | Minimum Depth (m) | Maximum Depth (m) | Dominant Substrate | Depth Position | Water Temperature (C) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lake D10 | | | | | | | | | | | |
| | GNLD1005 | | | | | | | | | | |
| | | 31-Jul-99 | 12:05 | 31-Jul-99 | 15:20 | Parrallel | 3.5 | 6.2 | Silt/Sand | Bottom | 12 |
| | | 31-Jul-99 | 15:20 | 31-Jul-99 | 16:55 | Parrallel | 3.5 | 6.2 | Silt/Sand | Bottom | 12 |

## Appendix D Table D3. Numbers recorded and catch-per-unit-effort values (CPUE) for fish captured at gill net sites in lakes in the Jericho Study Area, 1999.

| Season | Waterbody | Site Label | FishSampling ID | Time (h) | Effort ($100m^2$ •12h) | Arctic Char No. | Arctic Char CPUE | Lake Trout No. | Lake Trout CPUE | Round Whitefish No. | Round Whitefish CPUE | Sculpin No. | Sculpin CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Summer | | | | | | | | | | | | | |
| | Carat Lake | | | | | | | | | | | | |
| | | GNLCA01 | 40 | 1.17 | 0.22 | 1 | 4.61 | | | | | | |
| | | GNLCA01 | 41 | 2.08 | 0.39 | | | | | 1 | 2.58 | | |
| | | GNLCA01 | 42 | 1.58 | 0.29 | | | 1 | 3.40 | | | | |
| | | GNLCA01 | 43 | 1.78 | 0.33 | | | | | 1 | 3.02 | | |
| | | GNLCA02 | 44 | 1.08 | 0.20 | | | | | 1 | 4.97 | | |
| | | GNLCA02 | 45 | 2.25 | 0.42 | 3 | 7.18 | 1 | 2.39 | | | | |
| | | GNLCA02 | 46 | 1.58 | 0.29 | | | 2 | 6.80 | 1 | 3.40 | | |
| | | GNLCA02 | 47 | 1.75 | 0.33 | | | 3 | 9.23 | 1 | 3.08 | | |
| | Lake C1 | | | | | | | | | | | | |
| | | GNLC0101 | 2 | 1.48 | 0.28 | | | | | | | | |
| | | GNLC0101 | 3 | 2.33 | 0.43 | | | | | | | | |
| | | GNLC0101 | 4 | 1.75 | 0.33 | | | | | | | | |
| | | GNLC0101 | 8 | 1.23 | 0.23 | | | | | | | | |
| | | GNLC0101 | 9 | 1.12 | 0.21 | | | | | | | | |
| | | GNLC0101 | 10 | 1.50 | 0.28 | | | | | | | | |
| | | GNLC0101 | 11 | 1.12 | 0.21 | | | | | | | | |
| | | GNLC0101 | 12 | 1.40 | 0.26 | | | | | | | | |
| | | GNLC0101 | 13 | 0.70 | 0.13 | | | | | | | | |
| | | GNLC0102 | 5 | 1.50 | 0.28 | | | | | | | | |
| | | GNLC0102 | 6 | 1.83 | 0.34 | | | | | | | | |
| | | GNLC0102 | 7 | 1.67 | 0.31 | | | | | | | | |
| | | GNLC0102 | 14 | 1.12 | 0.21 | | | | | | | | |
| | | GNLC0102 | 15 | 1.05 | 0.20 | | | | | | | | |
| | | GNLC0102 | 16 | 1.52 | 0.28 | | | 2 | 7.10 | | | | |
| | | GNLC0102 | 17 | 1.15 | 0.21 | | | | | | | | |
| | | GNLC0102 | 18 | 1.33 | 0.25 | | | | | | | | |
| | | GNLC0102 | 19 | 0.85 | 0.16 | | | | | | | | |

## Appendix D Table D3. Numbers recorded and catch-per-unit-effort values (CPUE) for fish captured at gill net sites in lakes in the Jericho Study Area, 1999.

| Season | Waterbody | Site | FishSampling | Time | Effort | Arctic Char | | Lake Trout | | Round Whitefish | | Sculpin | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Label | ID | (h) | ($100m^2$ •12h) | No. | CPUE | No. | CPUE | No. | CPUE | No. | CPUE |
| Summer | | | | | | | | | | | | | |
| | Lake C2 | | | | | | | | | | | | |
| | | GNLC0201 | 20 | 18.00 | 3.34 | | | | | | | | |
| | | GNLC0202 | 21 | 17.33 | 3.22 | | | | | | | | |
| | Lake C3 | | | | | | | | | | | | |
| | | GNLC0301 | 22 | 4.25 | 0.79 | | | 2 | 2.53 | 1 | 1.27 | | |
| | | GNLC0301 | 23 | 0.75 | 0.14 | | | | | 1 | 7.18 | | |
| | | GNLC0301 | 24 | 16.67 | 3.10 | | | 10 | 3.23 | 10 | 3.23 | | |
| | | GNLC0301 | 25 | 2.50 | 0.46 | | | | | 1 | 2.15 | | |
| | | GNLC0302 | 26 | 3.75 | 0.70 | | | 1 | 1.44 | | | | |
| | | GNLC0302 | 27 | 0.75 | 0.14 | | | | | | | | |
| | | GNLC0302 | 28 | 19.20 | 3.57 | 3 | 0.84 | 11 | 3.08 | 7 | 1.96 | | |
| | | GNLC0303 | 29 | 1.82 | 0.34 | | | 1 | 2.96 | | | | |
| | | GNLC0303 | 30 | 1.92 | 0.36 | | | 1 | 2.81 | 1 | 2.81 | | |
| | | GNLC0303 | 31 | 1.67 | 0.31 | | | 3 | 9.69 | 1 | 3.23 | | |
| | | GNLC0303 | 32 | 1.50 | 0.28 | | | | | | | | |
| | | GNLC0304 | 35 | 1.83 | 0.34 | | | 1 | 2.94 | | | | |
| | | GNLC0304 | 36 | 0.58 | 0.11 | | | | | | | | |
| | | GNLC0305 | 37 | 1.27 | 0.24 | | | 1 | 4.25 | | | | |
| | | GNLC0305 | 38 | 1.93 | 0.36 | | | 1 | 2.78 | 2 | 5.57 | | |
| | | GNLC0305 | 39 | 1.17 | 0.22 | | | | | | | | |
| | Lake D10 | | | | | | | | | | | | |
| | | GNLD1001 | 48 | 2.08 | 0.39 | | | | | | | | |
| | | GNLD1001 | 49 | 0.67 | 0.12 | | | | | | | | |
| | | GNLD1001 | 50 | 19.42 | 3.61 | | | | | | | | |
| | | GNLD1001 | 51 | 4.83 | 0.90 | | | | | | | | |

**Appendix D Table D3. Numbers recorded and catch-per-unit-effort values (CPUE) for fish captured at gill net sites in lakes in the Jericho Study Area, 1999.**

| Season | Waterbody | Site Label | FishSampling ID | Time (h) | Effort ($100m^2 \bullet 12h$) | Arctic Char No. | Arctic Char CPUE | Lake Trout No. | Lake Trout CPUE | Round Whitefish No. | Round Whitefish CPUE | Sculpin No. | Sculpin CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Summer | | | | | | | | | | | | | |
| | Lake D10 | | | | | | | | | | | | |
| | | GNLD1002 | 52 | 1.50 | 0.28 | | | | | | | | |
| | | GNLD1002 | 53 | 1.00 | 0.19 | | | | | | | | |
| | | GNLD1002 | 54 | 18.50 | 3.44 | | | | | | | | |
| | | GNLD1003 | 55 | 4.50 | 0.84 | | | | | | | | |
| | | GNLD1004 | 56 | 3.12 | 0.58 | | | | | | | | |
| | | GNLD1004 | 57 | 1.67 | 0.31 | | | | | | | | |
| | | GNLD1005 | 58 | 3.25 | 0.60 | | | | | | | 1 | 1.66 |
| | | GNLD1005 | 59 | 1.58 | 0.29 | | | | | | | | |
| Fall | | | | | | | | | | | | | |
| | Carat Lake | | | | | | | | | | | | |
| | | GNLCA01 | 142 | 1.60 | 0.30 | | | 3 | 10.09 | | | | |
| | | GNLCA01 | 143 | 0.95 | 0.18 | | | 1 | 5.67 | | | | |
| | | GNLCA01 | 219 | 0.55 | 0.10 | | | | | | | | |
| | | GNLCA01 | 221 | 0.88 | 0.16 | | | | | | | | |
| | | GNLCA03 | 144 | 0.85 | 0.16 | 1 | 6.33 | 2 | 12.66 | | | | |
| | | GNLCA03 | 145 | 1.07 | 0.20 | | | 2 | 10.09 | | | | |
| | | GNLCA03 | 146 | 0.85 | 0.16 | | | | | | | | |
| | | GNLCA03 | 147 | 2.15 | 0.40 | | | 2 | 5.01 | | | | |
| | | GNLCA03 | 148 | 0.95 | 0.18 | | | | | | | | |
| | | GNLCA03 | 149 | 1.10 | 0.20 | | | 1 | 4.89 | | | | |
| | | GNLCA03 | 150 | 1.17 | 0.22 | | | 1 | 4.61 | | | | |
| | | GNLCA03 | 151 | 1.60 | 0.30 | 1 | 3.36 | 1 | 3.36 | | | | |
| | | GNLCA03 | 152 | 1.80 | 0.33 | | | 1 | 2.99 | | | | |
| | | GNLCA03 | 153 | 1.28 | 0.24 | 1 | 4.19 | 1 | 4.19 | | | | |
| | | GNLCA03 | 154 | 0.85 | 0.16 | | | 1 | 6.33 | | | | |

## Appendix D Table D3. Numbers recorded and catch-per-unit-effort values (CPUE) for fish captured at gill net sites in lakes in the Jericho Study Area, 1999.

| Season | Waterbody | Site | FishSampling | Time | Effort | Arctic Char | | Lake Trout | | Round Whitefish | | Sculpin | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Label | ID | (h) | ($100m^2$ •12h) | No. | CPUE | No. | CPUE | No. | CPUE | No. | CPUE |
| Fall | | | | | | | | | | | | | |
| | Carat Lake | | | | | | | | | | | | |
| | | GNLCA04 | 155 | 1.00 | 0.19 | | | | | | | | |
| | | GNLCA04 | 156 | 0.93 | 0.17 | | | | | | | | |
| | | GNLCA05 | 157 | 1.27 | 0.24 | | | | | | | | |
| | | GNLCA05 | 159 | 1.53 | 0.28 | | | | | | | | |
| | | GNLCA06 | 161 | 1.63 | 0.30 | | | | | 1 | 3.30 | | |
| | | GNLCA06 | 164 | 1.20 | 0.22 | | | | | | | | |
| | | GNLCA06 | 166 | 1.02 | 0.19 | | | | | | | | |
| | Lake C3 | | | | | | | | | | | | |
| | | GNLC0306 | 167 | 0.97 | 0.18 | | | 1 | 5.57 | | | | |
| | | GNLC0306 | 168 | 1.17 | 0.22 | | | | | | | | |
| | | GNLC0306 | 169 | 1.42 | 0.26 | | | 1 | 3.80 | 1 | 3.80 | | |
| | | GNLC0306 | 171 | 1.17 | 0.22 | | | 2 | 9.23 | 1 | 4.61 | | |
| | | GNLC0306 | 177 | 1.45 | 0.27 | | | 1 | 3.71 | | | | |
| | | GNLC0306 | 179 | 0.95 | 0.18 | 1 | 5.67 | 2 | 11.33 | | | | |
| | | GNLC0306 | 180 | 0.43 | 0.08 | | | | | 1 | 12.42 | | |
| | | GNLC0307 | 181 | 0.75 | 0.14 | | | | | | | | |
| | | GNLC0307 | 182 | 1.12 | 0.21 | | | | | 1 | 4.82 | | |
| | | GNLC0308 | 183 | 0.20 | 0.04 | | | 1 | 26.91 | | | | |
| | | GNLC0308 | 184 | 1.30 | 0.24 | | | | | | | | |
| | | GNLC0308 | 185 | 1.50 | 0.28 | | | | | | | | |
| | | GNLC0308 | 186 | 1.00 | 0.19 | | | | | | | | |
| | | GNLC0309 | 187 | 1.42 | 0.26 | 1 | 3.80 | | | | | | |
| | | GNLC0309 | 188 | 1.58 | 0.29 | 1 | 3.40 | 1 | 3.40 | 1 | 3.40 | | |
| | | GNLC0309 | 189 | 1.83 | 0.34 | | | 1 | 2.94 | 1 | 2.94 | | |
| | | GNLC0309 | 190 | 1.42 | 0.26 | 2 | 7.60 | | | | | | |

**Appendix D Table D3. Numbers recorded and catch-per-unit-effort values (CPUE) for fish captured at gill net sites in lakes in the Jericho Study Area, 1999.**

| Season | Waterbody | Site Label | FishSampling ID | Time (h) | Effort ($100m^2 \bullet 12h$) | Arctic Char No. | Arctic Char CPUE | Lake Trout No. | Lake Trout CPUE | Round Whitefish No. | Round Whitefish CPUE | Sculpin No. | Sculpin CPUE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fall | | | | | | | | | | | | | |
| | Lake C3 | | | | | | | | | | | | |
| | | GNLC0310 | 191 | 1.33 | 0.25 | | | 4 | 16.15 | | | | |
| | | GNLC0310 | 192 | 1.50 | 0.28 | | | 1 | 3.59 | 2 | 7.18 | | |
| | | GNLC0310 | 193 | 1.83 | 0.34 | | | | | | | | |
| | | GNLC0310 | 194 | 1.67 | 0.31 | | | 1 | 3.23 | 1 | 3.23 | | |

## Appendix D Table D4. Minnow trap[a] sampling effort in lakes in the Jericho Study Area, 1999.

| Waterbody | Site Label | Set | | Pull | | Depth (m) | Water Temperature (C) |
|---|---|---|---|---|---|---|---|
| | | Date | Time | Date | Time | | |
| Lake C1 | | | | | | | |
| | GTLC0101 | 22-Jul-99 | 11:23 | 22-Jul-99 | 15:52 | 0.50 | 10.0 |
| | GTLC0102 | 22-Jul-99 | 11:26 | 22-Jul-99 | 15:54 | 0.50 | 10.0 |
| | GTLC0103 | 22-Jul-99 | 11:29 | 22-Jul-99 | 15:56 | 0.50 | 10.0 |
| | GTLC0104 | 22-Jul-99 | 11:30 | 22-Jul-99 | 15:58 | 0.50 | 10.0 |
| Lake C2 | | | | | | | |
| | GTLC0201 | 21-Jul-99 | 15:59 | 22-Jul-99 | 8:47 | 0.40 | 10.0 |
| | GTLC0202 | 21-Jul-99 | 16:01 | 22-Jul-99 | 8:50 | 0.40 | 10.0 |
| | GTLC0203 | 21-Jul-99 | 16:03 | 22-Jul-99 | 9:10 | 0.40 | 10.0 |
| | GTLC0204 | 21-Jul-99 | 16:05 | 22-Jul-99 | 9:20 | 0.40 | 10.0 |
| Lake C3 | | | | | | | |
| | GTLC0301 | 24-Jul-99 | 11:45 | 25-Jul-99 | 11:50 | 0.35 | 10.0 |
| | GTLC0302 | 24-Jul-99 | 11:55 | 25-Jul-99 | 11:57 | 0.35 | 10.0 |
| | GTLC0303 | 24-Jul-99 | 12:02 | 25-Jul-99 | 12:03 | 0.35 | 10.0 |
| | GTLC0304 | 24-Jul-99 | 12:05 | 25-Jul-99 | 12:08 | 0.35 | 10.0 |
| Lake D10 | | | | | | | |
| | GTLD1001 | 22-Jul-99 | 15:00 | 23-Jul-99 | 16:02 | 1.00 | 13.0 |
| | GTLD1002 | 22-Jul-99 | 15:00 | 23-Jul-99 | 16:04 | 1.00 | 13.0 |
| | GTLD1003 | 22-Jul-99 | 15:00 | 23-Jul-99 | 16:07 | 1.00 | 13.0 |
| | GTLD1004 | 22-Jul-99 | 15:00 | 23-Jul-99 | 16:50 | 1.00 | 13.0 |

[a] *No fish captured using this method .*

## Appendix D Table D5. Fyke net sampling effort in Carat Lake during summer, Jericho Study Area, 1999.

| Waterbody | Site Label | Sample Direction | Set Date | Set Time | Pull Date | Pull Time | Soak Time (h) | Species | No. Caught |
|---|---|---|---|---|---|---|---|---|---|
| Carat Lake | FNLCA01 | | | | | | | | |
| | | East | 21-Jul-99 | 12:00 | 22-Jul-99 | 9:10 | 21.17 | | |
| | | | | | | | | Lake trout | 1 |
| | | West | 21-Jul-99 | 12:00 | 22-Jul-99 | 9:22 | 21.37 | | |
| | | | | | | | | Arctic char | 1 |
| | | | | | | | | Lake trout | 12 |
| | | | | | | | | Round whitefish | 2 |
| | | East | 22-Jul-99 | 9:10 | 24-Jul-99 | 15:00 | 53.83 | | |
| | | | | | | | | Arctic char | 1 |
| | | | | | | | | Lake trout | 2 |
| | | East | 24-Jul-99 | 15:00 | 25-Jul-99 | 14:53 | 23.88 | | |
| | | | | | | | | Lake trout | 1 |
| | | West | 24-Jul-99 | 15:00 | 25-Jul-99 | 14:53 | 23.88 | | |
| | | | | | | | | Arctic char | 5 |
| | | | | | | | | Lake trout | 8 |
| | | East | 25-Jul-99 | 14:53 | 26-Jul-99 | 15:40 | 24.78 | | |
| | | | | | | | | Lake trout | 9 |
| | | | | | | | | Round whitefish | 1 |
| | | | | | | | | Arctic char | 1 |
| | | West | 25-Jul-99 | 14:53 | 26-Jul-99 | 15:10 | 24.28 | | |
| | | | | | | | | Lake trout | 7 |
| | | | | | | | | Round whitefish | 3 |
| | | | | | | | | Arctic char | 1 |
| | | East | 26-Jul-99 | 15:40 | 27-Jul-99 | 12:00 | 20.33 | | |
| | | | | | | | | Arctic char | 2 |
| | | | | | | | | Lake trout | 1 |
| | | | | | | | | Round whitefish | 1 |
| | | East | 27-Jul-99 | 12:00 | 28-Jul-99 | 17:35 | 29.58 | | |
| | | | | | | | | Lake trout | 5 |
| | | | | | | | | Round whitefish | 1 |
| | | West | 27-Jul-99 | 12:00 | 28-Jul-99 | 17:35 | 29.58 | | |
| | | | | | | | | Round whitefish | 6 |
| | | | | | | | | Arctic char | 1 |
| | | | | | | | | Lake trout | 1 |
| | | East | 28-Jul-99 | 17:35 | 29-Jul-99 | 11:50 | 18.25 | | |
| | | | | | | | | Arctic char | 2 |

## Appendix D Table D5. Fyke net sampling effort in Carat Lake during summer, Jericho Study Area, 1999.

| Waterbody | Site Label | Sample Direction | Set Date | Set Time | Pull Date | Pull Time | Soak Time (h) | Species | No. Caught |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Round whitefish | 2 |
| | | | | | | | | Lake trout | 2 |
| | | West | 28-Jul-99 | 17:35 | 29-Jul-99 | 11:40 | 18.08 | | |
| | | | | | | | | Lake trout | 2 |
| | | | | | | | | Round whitefish | 1 |
| | | West | 29-Jul-99 | 11:40 | 30-Jul-99 | 9:20 | 21.67 | | |
| | | | | | | | | Arctic char | 1 |
| | | | | | | | | Lake trout | 3 |
| | | | | | | | | Round whitefish | 3 |
| | | East | 29-Jul-99 | 11:50 | 30-Jul-99 | 8:55 | 21.08 | | |
| | | | | | | | | Lake trout | 3 |
| | | | | | | | | Round whitefish | 1 |
| | | East | 30-Jul-99 | 8:55 | 31-Jul-99 | 8:30 | 23.58 | | |
| | | | | | | | | Lake trout | 3 |
| | | | | | | | | Round whitefish | 6 |
| | | | | | | | | Arctic char | 1 |
| | | West | 30-Jul-99 | 9:20 | 31-Jul-99 | 9:01 | 23.68 | | |
| | | | | | | | | Lake trout | 1 |
| | | | | | | | | Round whitefish | 7 |
| | | | | | | | | Arctic char | 1 |
| | | East | 31-Jul-99 | 8:30 | 01-Aug-99 | 17:40 | 33.17 | | |
| | | | | | | | | Lake trout | 1 |
| | | | | | | | | Round whitefish | 9 |
| | | West | 31-Jul-99 | 9:01 | 01-Aug-99 | 17:55 | 32.90 | | |
| | | | | | | | | Arctic char | 3 |
| | | | | | | | | Lake trout | 2 |
| | | | | | | | | Round whitefish | 1 |
| | | East | 01-Aug-99 | 17:40 | 02-Aug-99 | 8:15 | 14.58 | | |
| | | | | | | | | Round whitefish | 5 |
| | | West | 01-Aug-99 | 17:55 | 02-Aug-99 | 8:15 | 14.33 | | |
| | | | | | | | | Round whitefish | 2 |
| | | | | | | | | Lake trout | 1 |

## Appendix D Table D6. Number of fish recorded and catch-per-unit-effort (CPUE) values during backpack electrofishing in waterbodies in the Jericho Study Area, 1999.

| Waterbody | Reach | Date | Effort (min) | Species | Captured | Observed | CPUE (No. fish/min) |
|---|---|---|---|---|---|---|---|
| Carat Lake | | | | | | | |
| | | 6/14/1999 | 9.15 | | | | |
| | | | | Arctic char | 1 | | 0.11 |
| | | | | Burbot | 1 | | 0.11 |
| | | | | Lake trout | 2 | | 0.22 |
| | | | | Round whitefish | 1 | | 0.11 |
| | | | | Slimy sculpin | 1 | | 0.11 |
| | | 7/27/1999 | 6.82 | | | | |
| | | | | Arctic char | 2 | | 0.29 |
| | | | | Lake trout | 1 | | 0.15 |
| | | | | Slimy sculpin | 5 | 1 | 0.88 |
| Lake C1 | | | | | | | |
| | | 7/31/1999 | 5.52 | | | | |
| | | | | Lake trout | | 1 | 0.18 |
| | | | | Slimy sculpin | 7 | 1 | 1.45 |
| Lake C2 | | | | | | | |
| | | 7/31/1999 | 7.52 | | | | |
| | | | | No Fish | | | |
| Lake C3 | | | | | | | |
| | | 7/29/1999 | 2.50 | | | | |
| | | | | Arctic char | 1 | 2 | 0.78 |
| | | | | Slimy sculpin | 2 | | 0.52 |
| Lake D10 | | | | | | | |
| | | 6/14/1999 | 3.87 | | | | |
| | | | | Slimy sculpin | 3 | | 0.78 |
| | | 7/31/1999 | 5.15 | | | | |
| | | | | Slimy sculpin | 13 | 1 | 2.72 |
| Stream C1 | | | | | | | |
| | 1 | 6/9/1999 | 9.97 | | | | |
| | | | | No Fish | | | |
| | 1 | 6/14/1999 | 7.78 | | | | |
| | | | | Arctic char | 1 | | 0.13 |
| | | | | Slimy sculpin | 5 | | 0.64 |

**Appendix D Table D6. Number of fish recorded and catch-per-unit-effort (CPUE) values during backpack electrofishing in waterbodies in the Jericho Study Area, 1999.**

| Waterbody | Reach | Date | Effort (min) | Species | Captured | Observed | CPUE (No. fish/min) |
|---|---|---|---|---|---|---|---|
| Stream C1 | | | | | | | |
| | 1 | 7/23/1999 | 4.12 | | | | |
| | | | | Arctic char | 3 | | 0.73 |
| | | | | Lake trout | 11 | | 2.67 |
| | | | | Slimy sculpin | 3 | 1 | 0.97 |
| | 2 | 6/9/1999 | 3.08 | | | | |
| | | | | No Fish | | | |
| | 2 | 7/23/1999 | 2.78 | | | | |
| | | | | No Fish | | | |
| | 2 | 8/2/1999 | 2.28 | | | | |
| | | | | No Fish | | | |
| | 3 | 6/10/1999 | 3.08 | | | | |
| | | | | No Fish | | | |
| | 3 | 7/23/1999 | 5.80 | | | | |
| | | | | No Fish | | | |
| | 5 | 7/23/1999 | 2.47 | | | | |
| | | | | No Fish | | | |
| | 6 | 7/23/1999 | 1.82 | | | | |
| | | | | No Fish | | | |
| | 7 | 7/28/1999 | 2.52 | | | | |
| | | | | No Fish | | | |
| Stream C19 | | | | | | | |
| | 1 | 7/31/1999 | 2.08 | | | | |
| | | | | No Fish | | | |
| Stream C2 | | | | | | | |
| | 1 | 7/27/1999 | 6.82 | | | | |
| | | | | Arctic char | 7 | | 1.03 |
| | | | | Lake trout | 2 | | 0.29 |
| | | | | Slimy sculpin | 18 | | 2.64 |
| Stream C2A | | | | | | | |
| | 1 | 7/27/1999 | 2.00 | | | | |
| | | | | Arctic char | 1 | | 0.50 |
| | | | | Burbot | 1 | | 0.50 |
| | | | | Lake trout | 1 | | 0.50 |

**Appendix D Table D6. Number of fish recorded and catch-per-unit-effort (CPUE) values during backpack electrofishing in waterbodies in the Jericho Study Area, 1999.**

| Waterbody | Reach | Date | Effort (min) | Species | Captured | Observed | CPUE (No. fish/min) |
|---|---|---|---|---|---|---|---|
| Stream C2A | | | | | | | |
| | 1 | 7/27/1999 | 2.00 | | | | |
| | | | | Slimy sculpin | 9 | 1 | 5.00 |
| Stream C3 | | | | | | | |
| | 1 | 7/29/1999 | 2.50 | | | | |
| | | | | No Fish | | | |
| | 2 | 7/29/1999 | 4.90 | | | | |
| | | | | Arctic char | 2 | | 0.41 |
| | 3 | 7/29/1999 | 1.45 | | | | |
| | | | | Arctic char | 1 | | 0.69 |
| | 4 | 7/29/1999 | 4.03 | | | | |
| | | | | No Fish | | | |
| Stream D2 | | | | | | | |
| | 1 | 7/23/1999 | 6.45 | | | | |
| | | | | Arctic char | 1 | 1 | 0.31 |
| | | | | Slimy sculpin | | 1 | 0.16 |

## Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Carat Lake | | | | | | | | | | |
| | EFLCA01 | | | | | | | | | |
| | | 14-Jun-99 | | | | | | | | |
| | | | Arctic char | 67 | | | | | 0 | |
| | | | Burbot | 85 | | | | | 0 | |
| | | | Lake trout | 62 | | | | | 0 | |
| | | | Lake trout | 64 | | | | | 0 | |
| | | | Round whitefish | 59 | | | | | 0 | |
| | | | Slimy sculpin | 57 | | | | | 0 | |
| | | 27-Jul-99 | | | | | | | | |
| | | | Arctic char | 131 | | | | | 0 | |
| | | | Arctic char | 63 | | | | | 0 | |
| | | | Lake trout | 71 | | | | | 0 | |
| | | | Slimy sculpin | 65 | | | | | 0 | |
| | | | Slimy sculpin | 39 | | | | | 0 | |
| | | | Slimy sculpin | 57 | | | | | 0 | |
| | | | Slimy sculpin | 36 | | | | | 0 | |
| | | | Slimy sculpin | 48 | | | | | 0 | |
| | FNLCA01 | | | | | | | | | |
| | | 21-Jul-99 | | | | | | | | |
| | | | Arctic char | 122 | | | | | 0 | |
| | | | Lake trout | 75 | | | | | 0 | |
| | | | Lake trout | 468 | 1140 | | | | 0 | 3601 |
| | | | Lake trout | 74 | | | | | 0 | |
| | | | Lake trout | 85 | | | | | 0 | |
| | | | Lake trout | 118 | 15 | | | | 0 | |
| | | | Lake trout | 137 | | | | | 0 | |
| | | | Lake trout | 74 | | | | | 0 | |
| | | | Lake trout | 74 | | | | | 0 | |
| | | | Lake trout | 75 | | | | | 0 | |
| | | | Lake trout | 117 | | | | | 0 | |
| | | | Lake trout | 155 | | | | | 0 | |
| | | | Lake trout | 80 | | | | | 0 | |
| | | | Lake trout | 123 | 10 | | | | 0 | |
| | | | Round whitefish | 74 | | | | | 0 | |
| | | | Round whitefish | 118 | 5 | | | Scale | 0 | |
| | | 22-Jul-99 | | | | | | | | |
| | | | Arctic char | 75 | | | | | 0 | |
| | | | Lake trout | 148 | | | | | 0 | |
| | | | Lake trout | 233 | | | | | 0 | 3305 |
| | | 24-Jul-99 | | | | | | | | |
| | | | Arctic char | 74 | | | | | 1 | |

## Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Carat Lake | | | | | | | | | | |
| | FNLCA01 | | | | | | | | | |
| | | 24-Jul-99 | | | | | | | | |
| | | | Arctic char | 421 | 815 | | | | 0 | 3312 |
| | | | Arctic char | 106 | 20 | | | | 0 | |
| | | | Arctic char | 78 | | | | | 1 | |
| | | | Arctic char | 70 | | | | | 1 | |
| | | | Lake trout | 510 | 1455 | | | | 0 | 3310 |
| | | | Lake trout | 255 | 190 | | | | 0 | 3313 |
| | | | Lake trout | 438 | 925 | | | | 0 | 3311 |
| | | | Lake trout | 96 | 10 | | | | 0 | |
| | | | Lake trout | 738 | 4500 | | 27 | Otolith | 1 | |
| | | | Lake trout | 842 | | | | | 0 | 3308 |
| | | | Lake trout | 232 | 125 | | | | 0 | 3317 |
| | | | Lake trout | 175 | 70 | | | | 0 | |
| | | | Lake trout | 69 | | | | | 1 | |
| | | 25-Jul-99 | | | | | | | | |
| | | | Arctic char | 179 | | | | | 0 | |
| | | | Arctic char | 555 | 1260 | | | | 0 | 3328 |
| | | | Lake trout | 108 | 10 | | | | 0 | |
| | | | Lake trout | 137 | 20 | | 1 | Otolith | 1 | |
| | | | Lake trout | 81 | | | 1 | Otolith | 1 | |
| | | | Lake trout | 68 | | | 1 | Otolith | 1 | |
| | | | Lake trout | 490 | 1480 | | | | 0 | 3329 |
| | | | Lake trout | 140 | 25 | | | | 0 | |
| | | | Lake trout | 81 | | | | | 1 | |
| | | | Lake trout | 503 | 1740 | | | | 0 | 3330 |
| | | | Lake trout | | | | | | 1 | |
| | | | Lake trout | 434 | | | | | 0 | 3319 |
| | | | Lake trout | 444 | | | | | 0 | 3327 |
| | | | Lake trout | 425 | | | | | 0 | 3325 |
| | | | Lake trout | 382 | | | | | 0 | 3324 |
| | | | Lake trout | 419 | | | | | 0 | 3320 |
| | | | Lake trout | 142 | | | | | 0 | |
| | | | Lake trout | 121 | | | | | 0 | |
| | | | Round whitefish | 79 | | | | | 0 | |
| | | | Round whitefish | 204 | 55 | | | Scale | 0 | |
| | | | Round whitefish | 82 | | | | | 1 | |
| | | | Round whitefish | 178 | 25 | | | Scale | 0 | |
| | | 26-Jul-99 | | | | | | | | |
| | | | Arctic char | 578 | 1730 | | | | 0 | 3334 |
| | | | Arctic char | 188 | 65 | | | | 0 | |

## Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Carat Lake | | | | | | | | | | |
| | FNLCA01 | | | | | | | | | |
| | | 26-Jul-99 | | | | | | | | |
| | | | Lake trout | 716 | | | | | 0 | 3333 |
| | | | Round whitefish | 113 | 15 | | | Scale | 0 | |
| | | 27-Jul-99 | | | | | | | | |
| | | | Arctic char | 496 | 1105 | | | | 0 | 3504 |
| | | | Lake trout | 81 | | | | | 0 | |
| | | | Lake trout | 80 | 5 | | | | 0 | |
| | | | Lake trout | 83 | 5 | | | | 0 | |
| | | | Lake trout | 84 | 5 | | | | 0 | |
| | | | Lake trout | 482 | 1260 | | | | 0 | 3503 |
| | | | Lake trout | 84 | | | | | 0 | |
| | | | Round whitefish | 464 | 1260 | | | | 0 | 3549 |
| | | | Round whitefish | 78 | | | | | 0 | |
| | | | Round whitefish | 118 | 5 | | 2 | Scale | 0 | |
| | | | Round whitefish | 81 | | | 1 | Scale | 0 | |
| | | | Round whitefish | 223 | 105 | | | | 0 | 3501 |
| | | | Round whitefish | 253 | 155 | | | | 0 | 3502 |
| | | | Round whitefish | 82 | | | 1 | Scale | 0 | |
| | | 28-Jul-99 | | | | | | | | |
| | | | Arctic char | 72 | | 99 | 1 | Otolith | 1 | |
| | | | Arctic char | 435 | 960 | | | | 0 | 3604 |
| | | | Lake trout | 220 | 110 | | | | 0 | 3605 |
| | | | Lake trout | 419 | 770 | | | | 0 | 3348 |
| | | | Lake trout | 421 | 800 | | | | 0 | 3349 |
| | | | Lake trout | 387 | 565 | | | | 0 | 3603 |
| | | | Round whitefish | 243 | 130 | | | Scale | 0 | |
| | | | Round whitefish | 301 | 250 | | | Scale | 0 | |
| | | | Round whitefish | 106 | 5 | | 2 | Scale | 0 | |
| | | 29-Jul-99 | | | | | | | | |
| | | | Arctic char | 500 | 1395 | | | | 0 | 3352 |
| | | | Lake trout | 293 | 200 | | | | 0 | 3353 |
| | | | Lake trout | 182 | 40 | | | | 0 | |
| | | | Lake trout | 118 | 20 | | | | 0 | |
| | | | Round whitefish | 130 | 50 | | | Scale | 0 | |
| | | | Round whitefish | 300 | 200 | | | | 0 | 3354 |
| | | | Round whitefish | 125 | 25 | | | | 0 | |
| | | 29-Jul-99 | | | | | | | | |
| | | | Lake trout | 355 | 490 | | | | 0 | 3551 |
| | | | Lake trout | 92 | | | | | 0 | |
| | | | Lake trout | 69 | | 99 | 1 | Otolith | 1 | |

**Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.**

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Carat Lake | | | | | | | | | | |
| | FNLCA01 | | | | | | | | | |
| | | 29-Jul-99 | | | | | | | | |
| | | | Round whitefish | 190 | 95 | | | Scale | 0 | |
| | | 30-Jul-99 | | | | | | | | |
| | | | Arctic char | 65 | | | | | 0 | |
| | | | Lake trout | 485 | 1350 | | | | 0 | 3606 |
| | | | Lake trout | 165 | 50 | | | | 0 | |
| | | | Lake trout | 77 | | | | | 0 | |
| | | | Round whitefish | 190 | 60 | | | | 0 | |
| | | | Round whitefish | 175 | 45 | | | Scale | 0 | |
| | | | Round whitefish | 263 | 160 | | | Scale | 0 | |
| | | | Round whitefish | 175 | 50 | | | Scale | 0 | |
| | | | Round whitefish | 173 | 55 | | | Scale | 0 | |
| | | | Round whitefish | 74 | | | | | 0 | |
| | | 30-Jul-99 | | | | | | | | |
| | | | Arctic char | 554 | 1750 | | | | 0 | 3607 |
| | | | Lake trout | 384 | 715 | | | | 0 | 3608 |
| | | | Round whitefish | 294 | 240 | | | Scale | 0 | |
| | | | Round whitefish | 346 | 505 | | | Scale | 0 | |
| | | | Round whitefish | 120 | | | | Scale | 0 | |
| | | | Round whitefish | 250 | 150 | | | Scale | 0 | |
| | | | Round whitefish | 81 | | | | Otolith | 1 | |
| | | | Round whitefish | 78 | | | 1 | Otolith | 1 | |
| | | | Round whitefish | 251 | 110 | | | Scale | 0 | |
| | | 31-Jul-99 | | | | | | | | |
| | | | Lake trout | 265 | 205 | | | | 0 | 3570 |
| | | | Round whitefish | 190 | 80 | | | | 0 | |
| | | | Round whitefish | 290 | 230 | | | | 0 | 3568 |
| | | | Round whitefish | 230 | 140 | | | | 0 | 3569 |
| | | | Round whitefish | 140 | 45 | | | | 0 | |
| | | | Round whitefish | 76 | | | | | 0 | |
| | | | Round whitefish | 74 | | | | | 0 | |
| | | | Round whitefish | 74 | | | | | 0 | |
| | | | Round whitefish | 78 | | | | | 0 | |
| | | | Round whitefish | 172 | 80 | | | | 0 | |
| | | 31-Jul-99 | | | | | | | | |
| | | | Arctic char | 180 | 45 | | | | 0 | |
| | | | Arctic char | 90 | | | | Scale | 0 | |
| | | | Arctic char | 205 | 85 | | | | 0 | 3571 |
| | | | Lake trout | 162 | 30 | | | | 0 | |
| | | | Lake trout | 85 | | | | Scale | 0 | |

## Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Carat Lake | | | | | | | | | | |
| | FNLCA01 | | | | | | | | | |
| | | 31-Jul-99 | | | | | | | | |
| | | | Round whitefish | 146 | 20 | | | | 0 | |
| | | 01-Aug-99 | | | | | | | | |
| | | | Round whitefish | 77 | 5 | | | | 0 | |
| | | | Round whitefish | 73 | 5 | | | | 0 | |
| | | | Round whitefish | 136 | 20 | | | | 0 | |
| | | | Round whitefish | 191 | 65 | | | | 0 | |
| | | | Round whitefish | 283 | 240 | | | | 0 | 3572 |
| | | 01-Aug-99 | | | | | | | | |
| | | | Lake trout | 138 | 20 | | | | 0 | |
| | | | Round whitefish | 79 | | | | | 0 | |
| | | | Round whitefish | 68 | | | | | 0 | |
| | GNLCA01 | | | | | | | | | |
| | | 27-Jul-99 | | | | | | | | |
| | | | Arctic char | 351 | 475 | | | | 0 | 3331 |
| | | 27-Jul-99 | | | | | | | | |
| | | | Round whitefish | 491 | 1320 | | | Scale | 0 | |
| | | 27-Jul-99 | | | | | | | | |
| | | | Lake trout | 510 | 1130 | | | | 0 | 3336 |
| | | 27-Jul-99 | | | | | | | | |
| | | | Round whitefish | 410 | 905 | | | Scale | 0 | 3339 |
| | | 01-Sep-99 | | | | | | | | |
| | | | Lake trout | 463 | 1205 | | | | 0 | 3578 |
| | | | Lake trout | 451 | 1085 | 8 | | | 0 | 3579 |
| | | | Lake trout | 470 | 1250 | 8 | | | 0 | 3580 |
| | | 01-Sep-99 | | | | | | | | |
| | | | Lake trout | 608 | 2185 | | | | 0 | 3583 |
| | GNLCA02 | | | | | | | | | |
| | | 27-Jul-99 | | | | | | | | |
| | | | Round whitefish | 460 | 1295 | | | Scale | 0 | 3332 |
| | | 27-Jul-99 | | | | | | | | |
| | | | Arctic char | 265 | 195 | 1 | 3 | Otolith | 1 | |
| | | | Arctic char | 299 | 265 | 11 | 4 | Otolith | 1 | |
| | | | Arctic char | 310 | 485 | 1 | 5 | Otolith | 1 | |
| | | | Lake trout | 694 | | | | | 0 | 3335 |
| | | 27-Jul-99 | | | | | | | | |
| | | | Lake trout | 500 | 1415 | | | | 0 | 3338 |
| | | | Lake trout | 716 | | | | | 2 | 3333 |
| | | | Round whitefish | 470 | 1200 | | | Scale | 0 | 3337 |
| | | 27-Jul-99 | | | | | | | | |

## Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Carat Lake | | | | | | | | | | |
| | GNLCA02 | | | | | | | | | |
| | | 27-Jul-99 | | | | | | | | |
| | | | Lake trout | 197 | 70 | | | | 0 | |
| | | | Lake trout | 485 | 1275 | | | | 0 | 3340 |
| | | | Round whitefish | 460 | 1205 | | | Scale | 0 | 3341 |
| | GNLCA03 | | | | | | | | | |
| | | 01-Sep-99 | | | | | | | | |
| | | | Arctic char | 573 | 2160 | 7 | | | 0 | 3576 |
| | | | Lake trout | 519 | 1405 | | | | 0 | 3574 |
| | | | Lake trout | 505 | 1350 | | | | 0 | 3575 |
| | | 01-Sep-99 | | | | | | | | |
| | | | Lake trout | 630 | 2370 | | | | 0 | 3577 |
| | | 01-Sep-99 | | | | | | | | |
| | | | Lake trout | 989 | 1E+04 | | | | 0 | 3581 |
| | | | Lake trout | 910 | 9250 | 8 | | | 0 | 3582 |
| | | 01-Sep-99 | | | | | | | | |
| | | | Lake trout | 391 | 730 | | | | 0 | 3584 |
| | | 04-Sep-99 | | | | | | | | |
| | | | Lake trout | 510 | 1305 | | | | 0 | |
| | | 04-Sep-99 | | | | | | | | |
| | | | Arctic char | 496 | 1400 | | | | 0 | 3700 |
| | | | Lake trout | 477 | 1200 | 8 | | | 0 | 3699 |
| | | 04-Sep-99 | | | | | | | | |
| | | | Lake trout | 489 | 1350 | 8 | | | 0 | 3698 |
| | | 04-Sep-99 | | | | | | | | |
| | | | Arctic char | 465 | 1200 | | | | 0 | 3695 |
| | | | Lake trout | 478 | 1300 | 8 | | | 0 | 3696 |
| | | 04-Sep-99 | | | | | | | | |
| | | | Lake trout | 471 | 1160 | 8 | | | 0 | 3694 |
| | GNLCA06 | | | | | | | | | |
| | | 04-Sep-99 | | | | | | | | |
| | | | Round whitefish | 474 | 1375 | | | | 0 | 3697 |
| Lake C1 | | | | | | | | | | |
| | EFLC0101 | | | | | | | | | |
| | | 31-Jul-99 | | | | | | | | |
| | | | Slimy sculpin | 34 | | | | | 0 | |
| | | | Slimy sculpin | 32 | | | | | 0 | |
| | | | Slimy sculpin | 46 | | | | | 0 | |
| | | | Slimy sculpin | 36 | | | | | 0 | |
| | | | Slimy sculpin | 57 | | | | | 0 | |
| | | | Slimy sculpin | 42 | | | | | 0 | |

## Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Lake C1 | | | | | | | | | | |
| | EFLC0101 | | | | | | | | | |
| | | 31-Jul-99 | | | | | | | | |
| | | | Slimy sculpin | 63 | | | | | 0 | |
| | GNLC0102 | | | | | | | | | |
| | | 02-Aug-99 | | | | | | | | |
| | | | Lake trout | 210 | 205 | | | Scale | 0 | 3610 |
| | | | Lake trout | 305 | 325 | | | Scale | 0 | 3609 |
| Lake C3 | | | | | | | | | | |
| | ANLC0303 | | | | | | | | | |
| | | 03-Sep-99 | | | | | | | | |
| | | | Lake trout | 601 | 2155 | 97 | | | 0 | 3592 |
| | EFLC0301 | | | | | | | | | |
| | | 29-Jul-99 | | | | | | | | |
| | | | Arctic char | 41 | | | | | 1 | |
| | | | Slimy sculpin | 77 | | | | | 0 | |
| | | | Slimy sculpin | 41 | | | | | 0 | |
| | GNLC0301 | | | | | | | | | |
| | | 24-Jul-99 | | | | | | | | |
| | | | Lake trout | 446 | 860 | 1 | 17 | Otolith | 1 | |
| | | | Lake trout | 532 | 1345 | 11 | 15 | Otolith | 1 | |
| | | | Round whitefish | 433 | 1030 | 7 | | Otolith | 1 | |
| | | 24-Jul-99 | | | | | | | | |
| | | | Round whitefish | 385 | 655 | 17 | 9 | Otolith | 1 | |
| | | 24-Jul-99 | | | | | | | | |
| | | | Lake trout | 456 | 1000 | 17 | 18 | Otolith | 1 | |
| | | | Lake trout | 203 | 85 | 99 | 4 | Otolith | 1 | |
| | | | Lake trout | 204 | 105 | 99 | | Otolith | 1 | |
| | | | Lake trout | 637 | 2625 | 16 | 22 | Otolith | 3 | 474 |
| | | | Lake trout | 176 | 60 | 99 | 4 | Otolith | 1 | |
| | | | Lake trout | 241 | 150 | 1 | 6 | Otolith | 1 | |
| | | | Lake trout | 540 | 1345 | 16 | 22 | Otolith | 1 | |
| | | | Lake trout | 236 | 130 | 99 | 6 | Otolith | 1 | |
| | | | Lake trout | 224 | 100 | 99 | 5 | Otolith | 1 | |
| | | | Lake trout | 525 | 1360 | 1 | 18 | Otolith | 1 | |
| | | | Round whitefish | 409 | 710 | 17 | | Otolith | 1 | |
| | | | Round whitefish | 354 | 550 | 16 | 6 | Otolith | 1 | |
| | | | Round whitefish | 285 | 240 | 11 | 4 | Otolith | 1 | |
| | | | Round whitefish | 400 | 760 | 17 | 8 | Otolith | 1 | |
| | | | Round whitefish | 393 | 785 | 17 | 9 | Otolith | 1 | |
| | | | Round whitefish | 416 | 855 | 7 | 13 | Otolith | 1 | |
| | | | Round whitefish | 430 | 835 | 17 | | Otolith | 1 | |

## Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Lake C3 | | | | | | | | | | |
| | GNLC0301 | | | | | | | | | |
| | | 24-Jul-99 | | | | | | | | |
| | | | Round whitefish | 426 | 895 | 7 | | Otolith | 1 | |
| | | | Round whitefish | 416 | 810 | 7 | | Otolith | 1 | |
| | | | Round whitefish | 432 | 1075 | 7 | 18 | Otolith | 1 | |
| | | 25-Jul-99 | | | | | | | | |
| | | | Round whitefish | 365 | 585 | | | | 0 | 3306 |
| | GNLC0302 | | | | | | | | | |
| | | 24-Jul-99 | | | | | | | | |
| | | | Lake trout | 486 | 1945 | 11 | 14 | Otolith | 1 | |
| | | 24-Jul-99 | | | | | | | | |
| | | | Arctic char | 256 | 140 | 99 | 5 | Otolith | 1 | |
| | | | Arctic char | 250 | 175 | 99 | 3 | Otolith | 1 | |
| | | | Arctic char | 242 | 110 | 99 | 4 | Otolith | 1 | |
| | | | Lake trout | 538 | 1605 | 6 | 23 | Otolith | 1 | |
| | | | Lake trout | 405 | 612 | 16 | 11 | Otolith | 1 | |
| | | | Lake trout | 431 | 892 | 16 | 14 | Otolith | 1 | |
| | | | Lake trout | 835 | 3000 | 6 | 35 | Otolith | 3 | 236 |
| | | | Lake trout | 692 | 750 | 7 | 29 | Otolith | 1 | |
| | | | Lake trout | 645 | 2900 | 6 | | | 1 | |
| | | | Lake trout | 275 | 225 | 99 | 7 | Otolith | 1 | |
| | | | Lake trout | 185 | 60 | 99 | 4 | Otolith | 1 | |
| | | | Lake trout | 527 | 1186 | 1 | | Otolith | 1 | |
| | | | Lake trout | 186 | 45 | 99 | | Otolith | 1 | |
| | | | Lake trout | 404 | 798 | 17 | 12 | Otolith | 1 | |
| | | | Round whitefish | 389 | 725 | 7 | 11 | Otolith | 1 | |
| | | | Round whitefish | 424 | 985 | 17 | | Otolith | 1 | |
| | | | Round whitefish | 365 | 625 | 17 | | | 1 | |
| | | | Round whitefish | 423 | 910 | 7 | | | 1 | |
| | | | Round whitefish | 424 | 885 | 17 | 9 | Otolith | 1 | |
| | | | Round whitefish | 239 | 145 | 1 | 4 | Otolith | 1 | |
| | | | Round whitefish | 362 | 515 | 6 | 7 | Otolith | 1 | |
| | GNLC0303 | | | | | | | | | |
| | | 28-Jul-99 | | | | | | | | |
| | | | Lake trout | 401 | 565 | 17 | 11 | Otolith | 1 | |
| | | 28-Jul-99 | | | | | | | | |
| | | | Lake trout | 430 | 825 | | | Scale | 0 | 3343 |
| | | | Round whitefish | 464 | 860 | | | Scale | 0 | |
| | | 28-Jul-99 | | | | | | | | |
| | | | Lake trout | 597 | 2085 | | | | 0 | 3346 |
| | | | Lake trout | 355 | 405 | | | | 0 | 3344 |

## Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Lake C3 | | | | | | | | | | |
| | GNLC0303 | | | | | | | | | |
| | | 28-Jul-99 | | | | | | | | |
| | | | Lake trout | 566 | 1960 | | | | 0 | 3345 |
| | | | Round whitefish | 445 | 1010 | 7 | 19 | Otolith | 1 | |
| | GNLC0304 | | | | | | | | | |
| | | 28-Jul-99 | | | | | | | | |
| | | | Lake trout | 545 | 1605 | | | | 0 | 3342 |
| | GNLC0305 | | | | | | | | | |
| | | 28-Jul-99 | | | | | | | | |
| | | | Lake trout | 400 | 715 | | | | 0 | 3347 |
| | | | Round whitefish | 214 | 70 | 99 | 3 | Otolith | 1 | |
| | | | Round whitefish | 418 | 800 | 17 | 14 | Otolith | 1 | |
| | GNLC0306 | | | | | | | | | |
| | | 03-Sep-99 | | | | | | | | |
| | | | Lake trout | 443 | 870 | 8 | | | 0 | 3591 |
| | | 03-Sep-99 | | | | | | | | |
| | | | Lake trout | 376 | 550 | | | | 0 | |
| | | | Round whitefish | 335 | 435 | | | Scale | 0 | |
| | | 03-Sep-99 | | | | | | | | |
| | | | Lake trout | 439 | 940 | 17 | | | 0 | 3595 |
| | | | Lake trout | 424 | 885 | 7 | | Scale | 0 | 3594 |
| | | | Round whitefish | 378 | 620 | | | Scale | 0 | |
| | | 03-Sep-99 | | | | | | | | |
| | | | Lake trout | 403 | 820 | | | | 0 | 3596 |
| | | 03-Sep-99 | | | | | | | | |
| | | | Arctic char | 506 | 1510 | 8 | | | 0 | 3599 |
| | | | Lake trout | 410 | 835 | 8 | | | 0 | 3598 |
| | | | Lake trout | 423 | 715 | | | | 0 | 3597 |
| | | 03-Sep-99 | | | | | | | | |
| | | | Round whitefish | 360 | | | | | 0 | |
| | GNLC0307 | | | | | | | | | |
| | | 03-Sep-99 | | | | | | | | |
| | | | Round whitefish | 410 | 920 | | | Scale | 0 | |
| | GNLC0308 | | | | | | | | | |
| | | 03-Sep-99 | | | | | | | | |
| | | | Lake trout | 608 | 2140 | 8 | | | 0 | 3593 |
| | GNLC0309 | | | | | | | | | |
| | | 04-Sep-99 | | | | | | | | |
| | | | Arctic char | 489 | 1100 | 8 | | | 0 | 3600 |
| | | 04-Sep-99 | | | | | | | | |
| | | | Arctic char | 487 | 1125 | 8 | | | 0 | 3616 |

## Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Lake C3 | | | | | | | | | | |
| | GNLC0309 | | | | | | | | | |
| | | 04-Sep-99 | | | | | | | | |
| | | | Lake trout | 402 | 715 | 8 | | | 0 | 3615 |
| | | | Round whitefish | 436 | 880 | | | Scale | 0 | |
| | | 04-Sep-99 | | | | | | | | |
| | | | Lake trout | 635 | 2795 | 6 | | Otolith | 1 | |
| | | | Round whitefish | 429 | 850 | 7 | 24 | Otolith | 1 | |
| | | 04-Sep-99 | | | | | | | | |
| | | | Arctic char | 530 | 1730 | 17 | | | 0 | 3618 |
| | | | Arctic char | 607 | 2175 | 8 | | | 0 | 3619 |
| | GNLC0310 | | | | | | | | | |
| | | 04-Sep-99 | | | | | | | | |
| | | | Lake trout | 405 | 840 | 8 | | | 0 | 3613 |
| | | | Lake trout | 424 | 980 | 8 | | | 0 | 3614 |
| | | | Lake trout | 433 | 955 | 8 | | | 0 | 3612 |
| | | | Lake trout | 430 | 945 | 8 | | | 0 | 3611 |
| | | 04-Sep-99 | | | | | | | | |
| | | | Lake trout | 540 | 1230 | | | | 0 | 3617 |
| | | | Round whitefish | 419 | 915 | | | | 0 | |
| | | | Round whitefish | 194 | 50 | | | Scale | 0 | |
| | | 04-Sep-99 | | | | | | | | |
| | | | Lake trout | 440 | 900 | 17 | | | 0 | 3620 |
| | | | Round whitefish | 356 | 520 | | | Scale | 0 | |
| Lake D10 | | | | | | | | | | |
| | EFLD1001 | | | | | | | | | |
| | | 14-Jun-99 | | | | | | | | |
| | | | Slimy sculpin | 84 | | | | | 0 | |
| | | | Slimy sculpin | 102 | | | | | 0 | |
| | | | Slimy sculpin | 60 | | | | | 0 | |
| | | 31-Jul-99 | | | | | | | | |
| | | | Slimy sculpin | 27 | | | | | 0 | |
| | | | Slimy sculpin | | | | | | 1 | |
| | | | Slimy sculpin | | | | | | 1 | |
| | | | Slimy sculpin | 41 | | | | | 0 | |
| | | | Slimy sculpin | 38 | | | | | 0 | |
| | | | Slimy sculpin | 51 | | | | | 0 | |
| | | | Slimy sculpin | 52 | | | | | 0 | |
| | | | Slimy sculpin | 38 | | | | | 0 | |
| | | | Slimy sculpin | 47 | | | | | 0 | |
| | | | Slimy sculpin | 41 | | | | | 0 | |
| | | | Slimy sculpin | 56 | | | | | 0 | |

**Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.**

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Lake D10 | | | | | | | | | | |
| | EFLD1001 | | | | | | | | | |
| | | 31-Jul-99 | | | | | | | | |
| | | | Slimy sculpin | 69 | | | | | 0 | |
| | | | Slimy sculpin | 46 | | | | | 0 | |
| | GNLD1005 | | | | | | | | | |
| | | 31-Jul-99 | | | | | | | | |
| | | | Slimy sculpin | 78 | | | | | 0 | |
| Stream C1 | | | | | | | | | | |
| | EFTC0101 | | | | | | | | | |
| | | 14-Jun-99 | | | | | | | | |
| | | | Arctic char | 66 | | | | | 0 | |
| | | | Slimy sculpin | 74 | | | | | 0 | |
| | | | Slimy sculpin | 73 | | | | | 0 | |
| | | | Slimy sculpin | 54 | | | | | 0 | |
| | | | Slimy sculpin | 63 | | | | | 0 | |
| | | | Slimy sculpin | 71 | | | | | 0 | |
| | | 23-Jul-99 | | | | | | | | |
| | | | Arctic char | 38 | | | | | 0 | |
| | | | Arctic char | 41 | | | | | 0 | |
| | | | Arctic char | 41 | | | | | 0 | |
| | | | Lake trout | 39 | | | | | 0 | |
| | | | Lake trout | 41 | | | | | 0 | |
| | | | Lake trout | 42 | | | | | 0 | |
| | | | Lake trout | 38 | | | | | 0 | |
| | | | Lake trout | 41 | | | | | 0 | |
| | | | Lake trout | 37 | | | | | 0 | |
| | | | Lake trout | 35 | | | | | 0 | |
| | | | Lake trout | 39 | | | | | 0 | |
| | | | Lake trout | 38 | | | | | 0 | |
| | | | Lake trout | 40 | | | | | 0 | |
| | | | Lake trout | 43 | | | | | 0 | |
| | | | Slimy sculpin | 58 | | | | | 0 | |
| | | | Slimy sculpin | 58 | | | | | 0 | |
| | | | Slimy sculpin | 52 | | | | | 0 | |
| | POPTC0101 | | | | | | | | | |
| | | 02-Aug-99 | | | | | | | | |
| | | | Arctic char | 42 | | | | | 0 | |
| | | | Arctic char | 46 | | | | | 0 | |
| | | | Arctic char | 44 | | | | | 0 | |
| | | | Arctic char | 38 | | | | | 0 | |
| | | | Arctic char | 43 | | | | | 0 | |

## Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Stream C1 | | | | | | | | | | |
| | POPTC0101 | | | | | | | | | |
| | | 02-Aug-99 | | | | | | | | |
| | | | Arctic char | 43 | | | | | 0 | |
| | | | Arctic char | 47 | | | | | 0 | |
| | | | Arctic char | 52 | | | | | 0 | |
| | | | Arctic char | 37 | | | | | 0 | |
| | | | Arctic char | 47 | | | | | 0 | |
| | | | Arctic char | 55 | | | | | 0 | |
| | | | Arctic char | 45 | | | | | 0 | |
| | | | Arctic char | 41 | | | | | 0 | |
| | | | Arctic char | 48 | | | | | 0 | |
| | | | Arctic char | 38 | | | | | 0 | |
| | | | Arctic char | 39 | | | | | 0 | |
| | | | Arctic char | 78 | | | | | 0 | |
| | | | Arctic char | 49 | | | | | 0 | |
| | | | Arctic char | 38 | | | | | 0 | |
| | | | Arctic char | 37 | | | | | 0 | |
| | | | Arctic char | 45 | | | | | 0 | |
| | | | Arctic char | 37 | | | | | 0 | |
| | | | Arctic char | 39 | | | | | 0 | |
| | | | Arctic char | 44 | | | | | 0 | |
| | | | Arctic char | 81 | | | | | 0 | |
| | | | Arctic char | 42 | | | | | 0 | |
| | | | Arctic char | 90 | | | | | 0 | |
| | | | Burbot | 98 | | | | | 0 | |
| | | | Burbot | 132 | | | | | 0 | |
| | | | Burbot | 105 | | | | | 0 | |
| | | | Burbot | 86 | | | | | 0 | |
| | | | Burbot | 95 | | | | | 0 | |
| | | | Lake trout | 75 | | | | | 0 | |
| | | | Lake trout | 67 | | | | | 0 | |
| | | | Lake trout | 68 | | | | | 0 | |
| | | | Lake trout | 63 | | | | | 0 | |
| | | | Lake trout | 67 | | | | | 0 | |
| | | | Lake trout | 64 | | | | | 0 | |
| | | | Lake trout | 36 | | | | | 0 | |
| | | | Lake trout | 95 | | | | | 0 | |
| | | | Lake trout | 40 | | | | | 0 | |
| | | | Lake trout | 47 | | | | | 0 | |
| | | | Lake trout | 72 | | | | | 0 | |
| | | | Lake trout | 66 | | | | | 0 | |

## Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Stream C1 | | | | | | | | | | |
| | POPTC0101 | | | | | | | | | |
| | | 02-Aug-99 | | | | | | | | |
| | | | Lake trout | 58 | | | | | 0 | |
| | | | Lake trout | 68 | | | | | 0 | |
| | | | Slimy sculpin | 47 | | | | | 0 | |
| | | | Slimy sculpin | 49 | | | | | 0 | |
| | | | Slimy sculpin | 52 | | | | | 0 | |
| | | | Slimy sculpin | 66 | | | | | 0 | |
| | | | Slimy sculpin | 39 | | | | | 0 | |
| | | | Slimy sculpin | 73 | | | | | 0 | |
| | | | Slimy sculpin | 48 | | | | | 0 | |
| | | | Slimy sculpin | 70 | | | | | 0 | |
| | | | Slimy sculpin | 70 | | | | | 0 | |
| | | | Slimy sculpin | 67 | | | | | 0 | |
| | | | Slimy sculpin | 57 | | | | | 0 | |
| | | | Slimy sculpin | 39 | | | | | 0 | |
| | | | Slimy sculpin | 48 | | | | | 0 | |
| | | | Slimy sculpin | 50 | | | | | 0 | |
| | | | Slimy sculpin | 63 | | | | | 0 | |
| | | | Slimy sculpin | 55 | | | | | 0 | |
| | | | Slimy sculpin | 68 | | | | | 0 | |
| | | | Slimy sculpin | 53 | | | | | 0 | |
| | | | Slimy sculpin | 52 | | | | | 0 | |
| | | | Slimy sculpin | 37 | | | | | 0 | |
| | | | Slimy sculpin | 38 | | | | | 0 | |
| | | | Slimy sculpin | 56 | | | | | 0 | |
| | | | Slimy sculpin | 54 | | | | | 0 | |
| | | | Slimy sculpin | 52 | | | | | 0 | |
| | | | Slimy sculpin | 52 | | | | | 0 | |
| | | | Slimy sculpin | 72 | | | | | 0 | |
| | | | Slimy sculpin | 60 | | | | | 0 | |
| Stream C2 | | | | | | | | | | |
| | EFTC0201 | | | | | | | | | |
| | | 27-Jul-99 | | | | | | | | |
| | | | Arctic char | 36 | | | | | 0 | |
| | | | Arctic char | 83 | | | | | 0 | |
| | | | Arctic char | 77 | | | | | 0 | |
| | | | Arctic char | 78 | | | | | 0 | |
| | | | Arctic char | 79 | | | | | 0 | |
| | | | Arctic char | 37 | | | | | 0 | |
| | | | Arctic char | 42 | | | | | 0 | |

## Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Stream C2 | | | | | | | | | | |
| | EFTC0201 | | | | | | | | | |
| | | 27-Jul-99 | | | | | | | | |
| | | | Lake trout | 72 | | | | | 0 | |
| | | | Lake trout | 96 | | | | | 0 | |
| | | | Slimy sculpin | 37 | | | | | 0 | |
| | | | Slimy sculpin | 57 | | | | | 0 | |
| | | | Slimy sculpin | 56 | | | | | 0 | |
| | | | Slimy sculpin | 63 | | | | | 0 | |
| | | | Slimy sculpin | 51 | | | | | 0 | |
| | | | Slimy sculpin | 47 | | | | | 0 | |
| | | | Slimy sculpin | 63 | | | | | 0 | |
| | | | Slimy sculpin | 56 | | | | | 0 | |
| | | | Slimy sculpin | 52 | | | | | 0 | |
| | | | Slimy sculpin | 64 | | | | | 0 | |
| | | | Slimy sculpin | 58 | | | | | 0 | |
| | | | Slimy sculpin | 47 | | | | | 0 | |
| | | | Slimy sculpin | 58 | | | | | 0 | |
| | | | Slimy sculpin | 73 | | | | | 0 | |
| | | | Slimy sculpin | 62 | | | | | 0 | |
| | | | Slimy sculpin | 81 | | | | | 0 | |
| | | | Slimy sculpin | 67 | | | | | 0 | |
| | | | Slimy sculpin | 67 | | | | | 0 | |
| Stream C2A | | | | | | | | | | |
| | EFTC02A01 | | | | | | | | | |
| | | 27-Jul-99 | | | | | | | | |
| | | | Arctic char | 78 | | | | | 0 | |
| | | | Burbot | 107 | | | | | 0 | |
| | | | Lake trout | 71 | | | | | 0 | |
| | | | Slimy sculpin | 54 | | | | | 0 | |
| | | | Slimy sculpin | 68 | | | | | 0 | |
| | | | Slimy sculpin | 61 | | | | | 0 | |
| | | | Slimy sculpin | 53 | | | | | 0 | |
| | | | Slimy sculpin | 55 | | | | | 0 | |
| | | | Slimy sculpin | 48 | | | | | 0 | |
| | | | Slimy sculpin | 47 | | | | | 0 | |
| | | | Slimy sculpin | 51 | | | | | 0 | |
| | | | Slimy sculpin | 54 | | | | | 0 | |
| Stream C3 | | | | | | | | | | |

## Appendix D Table D7. Life history data for fish recorded in waterbodies of the Jericho Study Area, 1999.

| Waterbody | Site Label | Date | Species | Fork Length (mm) | Weight (g) | Sexual Maturity Code | Age | Age Structure | Capture Code | Tag No. |
|---|---|---|---|---|---|---|---|---|---|---|
| Stream C3 | | | | | | | | | | |
| | EFTC0302 | | | | | | | | | |
| | | 29-Jul-99 | | | | | | | | |
| | | | Arctic char | 104 | 10 | | | | 0 | |
| | | | Arctic char | 178 | 65 | | | | 0 | |
| | EFTC0303 | | | | | | | | | |
| | | 29-Jul-99 | | | | | | | | |
| | | | Arctic char | 167 | 55 | | | | 0 | |
| Stream D2 | | | | | | | | | | |
| | EFTD0201 | | | | | | | | | |
| | | 23-Jul-99 | | | | | | | | |
| | | | Arctic char | 88 | | | | | 0 | |
| | | | Lake trout | 85 | | | | | 0 | |
| | | | Slimy sculpin | 47 | | | | | 0 | |
| | | | Slimy sculpin | 65 | | | | | 0 | |
| | | | Slimy sculpin | 62 | | | | | 0 | |
| | | | Slimy sculpin | 74 | | | | | 0 | |
| | | | Slimy sculpin | 59 | | | | | 0 | |

## Appendix D Table D8. Stomach contents for fish collected from lakes in the Jericho Study Area, 1999.

| Waterbody | Date | Sampling Method | Species | Fork Length (mm) | Weight (g) | Stomach Fullness | Food Item | Food Item Value |
|---|---|---|---|---|---|---|---|---|
| Carat Lake | | | | | | | | |
| | 27-Jul-99 | Gill Net | | | | | | |
| | | | Arctic char | 265 | 195 | 10 | | |
| | | | | | | | Zooplankton | 10 |
| | | | Arctic char | 299 | 265 | 5 | | |
| | | | | | | | Zooplankton | 5 |
| | | | Arctic char | 310 | 485 | 5 | | |
| | | | | | | | Ephemeroptera | 1 |
| | | | | | | | Trichoptera larvae | 1 |
| | | | | | | | Zooplankton | 3 |
| Lake C3 | | | | | | | | |
| | 24-Jul-99 | Gill Net | | | | | | |
| | | | Arctic char | 242 | 110 | 0 | | |
| | | | | | | | Empty | 0 |
| | | | Arctic char | 250 | 175 | 1 | | |
| | | | | | | | Zooplankton | 1 |
| | | | Arctic char | 256 | 140 | 0 | | |
| | | | | | | | Empty | 0 |
| | | | Lake trout | 176 | 60 | 5 | | |
| | | | | | | | Zooplankton | 5 |
| | | | Lake trout | 185 | 60 | 0 | | |
| | | | | | | | Empty | 0 |
| | | | Lake trout | 186 | 45 | 0 | | |
| | | | | | | | Empty | 0 |
| | | | Lake trout | 203 | 85 | 5 | | |
| | | | | | | | Zooplankton | 5 |
| | | | Lake trout | 204 | 105 | 0 | | |
| | | | | | | | Empty | 0 |
| | | | Lake trout | 224 | 100 | 1 | | |
| | | | | | | | Zooplankton | 1 |
| | | | Lake trout | 236 | 130 | 1 | | |
| | | | | | | | Zooplankton | 1 |
| | | | Lake trout | 241 | 150 | 1 | | |
| | | | | | | | Zooplankton | 1 |
| | | | Lake trout | 275 | 225 | 5 | | |
| | | | | | | | Zooplankton | 5 |
| | | | Lake trout | 404 | 798 | 15 | | |
| | | | | | | | Zooplankton | 10 |
| | | | | | | | Trichoptera larvae | 5 |
| | | | Lake trout | 405 | 612 | 5 | | |

## Appendix D Table D8. Stomach contents for fish collected from lakes in the Jericho Study Area, 1999.

| Waterbody | Date | Sampling Method | Species | Fork Length (mm) | Weight (g) | Stomach Fullness | Food Item | Food Item Value |
|---|---|---|---|---|---|---|---|---|
| Lake C3 | | | | | | | | |
| | 24-Jul-99 | Gill Net | | | | | | |
| | | | Lake trout | 405 | 612 | 5 | | |
| | | | | | | | Mollusc | 1 |
| | | | | | | | Sculpin spp. | 4 |
| | | | Lake trout | 431 | 892 | 10 | | |
| | | | | | | | Zooplankton | 10 |
| | | | Lake trout | 446 | 860 | 0 | | |
| | | | | | | | Empty | 0 |
| | | | Lake trout | 456 | 1000 | 5 | | |
| | | | | | | | Sculpin spp. | 5 |
| | | | Lake trout | 486 | 1945 | 0 | | |
| | | | | | | | Empty | 0 |
| | | | Lake trout | 525 | 1360 | 1 | | |
| | | | | | | | Mollusc | 0 |
| | | | | | | | Diptera larvae (general) | 0 |
| | | | Lake trout | 527 | 1186 | 10 | | |
| | | | | | | | Mollusc | 4 |
| | | | | | | | Fish (general) | 6 |
| | | | Lake trout | 532 | 1345 | 5 | | |
| | | | | | | | Trichoptera larvae | 3 |
| | | | | | | | Zooplankton | 2 |
| | | | Lake trout | 538 | 1605 | 5 | | |
| | | | | | | | Char | 5 |
| | | | Lake trout | 540 | 1345 | 5 | | |
| | | | | | | | Trichoptera larvae | 5 |
| | | | Lake trout | 637 | 2625 | 0 | | |
| | | | | | | | Empty | 0 |
| | | | Lake trout | 645 | 2900 | 0 | | |
| | | | | | | | Empty | 0 |
| | | | Lake trout | 692 | 750 | 0 | | |
| | | | | | | | Empty | 0 |
| | | | Lake trout | 835 | 3000 | 0 | | |
| | | | | | | | Empty | 0 |
| | | | Round whitefish | 239 | 145 | 5 | | |
| | | | | | | | Trichoptera larvae | 5 |
| | | | Round whitefish | 285 | 240 | 10 | | |
| | | | | | | | Zooplankton | 10 |
| | | | Round whitefish | 354 | 550 | 1 | | |
| | | | | | | | Unidentified Remains | 1 |

## Appendix D Table D8. Stomach contents for fish collected from lakes in the Jericho Study Area, 1999.

| Waterbody | Date | Sampling Method | Species | Fork Length (mm) | Weight (g) | Stomach Fullness | Food Item | Food Item Value |
|---|---|---|---|---|---|---|---|---|
| Lake C3 | | | | | | | | |
| | 24-Jul-99 | Gill Net | | | | | | |
| | | | Round whitefish | 362 | 515 | 5 | | |
| | | | | | | | Zooplankton | 5 |
| | | | Round whitefish | 365 | 625 | 10 | | |
| | | | | | | | Oligochaetes | 3 |
| | | | | | | | Gastropods | 3 |
| | | | | | | | Zooplankton | 4 |
| | | | Round whitefish | 385 | 655 | 5 | | |
| | | | | | | | Zooplankton | 5 |
| | | | Round whitefish | 389 | 725 | 0 | | |
| | | | | | | | Empty | 0 |
| | | | Round whitefish | 393 | 785 | 5 | | |
| | | | | | | | Trichoptera larvae | 2 |
| | | | | | | | Zooplankton | 3 |
| | | | Round whitefish | 400 | 760 | 1 | | |
| | | | | | | | Trichoptera larvae | 1 |
| | | | Round whitefish | 409 | 710 | 1 | | |
| | | | | | | | Trichoptera larvae | 1 |
| | | | Round whitefish | 416 | 810 | 5 | | |
| | | | | | | | Oligochaetes | 5 |
| | | | | | | | Gastropods | 2 |
| | | | | | | | Zooplankton | 8 |
| | | | Round whitefish | 423 | 910 | 10 | | |
| | | | | | | | Zooplankton | 10 |
| | | | Round whitefish | 424 | 885 | 5 | | |
| | | | | | | | Zooplankton | 5 |
| | | | | | | | Empty | 0 |
| | | | Round whitefish | 426 | 895 | 15 | | |
| | | | | | | | Zooplankton | 5 |
| | | | | | | | Trichoptera larvae | 10 |
| | | | Round whitefish | 430 | 835 | 10 | | |
| | | | | | | | Gastropods | 1 |
| | | | | | | | Zooplankton | 9 |
| | | | Round whitefish | 432 | 1075 | 5 | | |
| | | | | | | | Zooplankton | 5 |
| | | | Round whitefish | 433 | 1030 | 10 | | |
| | | | | | | | Zooplankton | 9 |
| | | | | | | | Gastropods | 1 |
| | 28-Jul-99 | Gill Net | | | | | | |
| | | | Lake trout | 401 | 565 | 1 | | |
| | | | | | | | Ephemeroptera | 1 |

## Appendix D Table D8. Stomach contents for fish collected from lakes in the Jericho Study Area, 1999.

| Waterbody | Date | Sampling Method | Species | Fork Length (mm) | Weight (g) | Stomach Fullness | Food Item | Food Item Value |
|---|---|---|---|---|---|---|---|---|
| Lake C3 | | | | | | | | |
| | 28-Jul-99 | Gill Net | | | | | | |
| | | | Round whitefish | 214 | 70 | 1 | | |
| | | | | | | | Zooplankton | 1 |
| | | | Round whitefish | 418 | 800 | 5 | | |
| | | | | | | | Zooplankton | 3 |
| | | | | | | | Mollusc | 2 |
| | | | Round whitefish | 445 | 1010 | 10 | | |
| | | | | | | | Zooplankton | 5 |
| | | | | | | | Trichoptera larvae | 5 |
| | 04-Sep-99 | Gill Net | | | | | | |
| | | | Lake trout | 635 | 2795 | 0 | | |
| | | | | | | | Empty | 0 |
| | | | Round whitefish | 429 | 850 | 10 | | |
| | | | | | | | Gastropods | 8 |
| | | | | | | | Zooplankton | 2 |

**Appendix D Table D9. Numbers recorded and catch-per-unit-effort values (CPUE) for fish captured during spawning surveys in waterbodies of the Jericho Study Area, 1999.**

| Waterbody | Site Label | Site Soak Time (h) | Effort | Species | Sexual Maturity | Count | CPUE |
|---|---|---|---|---|---|---|---|
| Carat Lake | | | | | | | |
| | GNLCA01 | 3.98 | 0.74 | | | | |
| | | | | Lake trout | Unknown | 2 | 2.70 |
| | | | | Lake trout | Ripe | 2 | 2.70 |
| | GNLCA03 | 13.67 | 2.54 | | | | |
| | | | | Arctic char | Gravid | 1 | 0.39 |
| | | | | Arctic char | Unknown | 2 | 0.79 |
| | | | | Lake trout | Ripe | 5 | 1.97 |
| | | | | Lake trout | Unknown | 6 | 2.36 |
| | GNLCA04 | 1.93 | | | | | |
| | | | | No Fish | | | |
| | GNLCA05 | 2.80 | | | | | |
| | | | | No Fish | | | |
| | GNLCA06 | 3.85 | 0.72 | | | | |
| | | | | Round whitefish | Unknown | 1 | 1.40 |
| Lake C3 | | | | | | | |
| | GNLC0306 | 7.55 | 1.40 | | | | |
| | | | | Arctic char | Ripe | 1 | 0.71 |
| | | | | Lake trout | Unknown | 3 | 2.14 |
| | | | | Lake trout | Gravid | 1 | 0.71 |
| | | | | Lake trout | Ripe | 2 | 1.43 |
| | | | | Lake trout | Gravid | 1 | 0.71 |
| | | | | Round whitefish | Unknown | 3 | 2.14 |
| | GNLC0307 | 1.87 | 0.35 | | | | |
| | | | | Round whitefish | Unknown | 1 | 2.88 |
| | GNLC0308 | 4.00 | 0.74 | | | | |
| | | | | Lake trout | Ripe | 1 | 1.35 |
| | GNLC0309 | 6.25 | 1.16 | | | | |
| | | | | Arctic char | Ripe | 3 | 2.58 |
| | | | | Arctic char | Gravid | 1 | 0.86 |
| | | | | Lake trout | Mature | 1 | 0.86 |
| | | | | Lake trout | Ripe | 1 | 0.86 |
| | | | | Round whitefish | Gravid | 1 | 0.86 |
| | | | | Round whitefish | Unknown | 1 | 0.86 |
| | GNLC0310 | 6.33 | 1.18 | | | | |
| | | | | Lake trout | Ripe | 4 | 3.40 |
| | | | | Lake trout | Gravid | 1 | 0.85 |
| | | | | Lake trout | Unknown | 1 | 0.85 |
| | | | | Round whitefish | Unknown | 3 | 2.55 |

# APPENDIX E
## DETAILED SURVEY DATA

**Appendix E Table E1. Number of fish recorded during backpack electrofishing using the removal-depletion method in Reach 1 of Stream C1, Jericho Study Area, 1999.**

| Waterbody | Reach | Date | Pass No. | Effort (min) | Species | Captured | Observed |
|---|---|---|---|---|---|---|---|
| Stream C1 | | | | | | | |
| | 1 | 8/2/1999 | | | | | |
| | | | 1 | 7.45 | | | |
| | | | | | Arctic char | 16 | |
| | | | | | Burbot | 3 | |
| | | | | | Lake trout | 7 | |
| | | | | | Slimy sculpin | 10 | 1 |
| | | | 2 | 5.97 | | | |
| | | | | | Arctic char | 9 | |
| | | | | | Burbot | 1 | |
| | | | | | Lake trout | 3 | |
| | | | | | Slimy sculpin | 10 | 1 |
| | | | 3 | 7.18 | | | |
| | | | | | Arctic char | 2 | |
| | | | | | Burbot | 1 | |
| | | | | | Lake trout | 4 | |
| | | | | | Slimy sculpin | 7 | |

**Appendix E Table E2. Population estimate results for fish recorded in Stream C1, Jericho Study Area, 1999.**

| Species | Number Captured | Non-standardized Estimate | SE | 95% CI Lower | 95% CI Upper | Distance Sampled (m) | Adjusted Estimate (no. fish/100 m) | 95% CI Lower | 95% CI Upper |
|---|---|---|---|---|---|---|---|---|---|
| Arctic Char | 27 | 28 | 2 | 27 | 32 | 92 | 30 | 29 | 4 |
| Burbot | 5 | 5 | 1 | 5 | 7 | 92 | 5 | 5 | 2 |
| Lake Trout | 14 | 17 | 5 | 14 | 28 | 92 | 18 | 15 | 12 |
| Slimy Sculpin | 27 | 50 | 32 | 27 | 115 | 92 | 54 | 54 | 54 |

## Appendix E Table E3. Shoreline lake habitat characteristics of waterbodies in the Jericho Study Area, 1999.

| Waterbody | Date | Zone | Shoreline Length (m) | Subsurface Slope | Substrate Type (%) | | | | | | | Shoreline Habitat Types (%) | | | Shoreline Vegetation (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | OM | SI | SA | GR | CO | BO | BE | Grass | Boulder | Bedrock | Grass | Sedge | Macrophyte |
| Carat Lake | | | | | | | | | | | | | | | | | |
| | 7/31/1999 | | | | | | | | | | | | | | | | |
| | | 1 | 188.6 | Low | | | | 25 | 25 | 50 | | | | | 100 | | |
| | | 2 | 139.7 | Low | | | | 25 | 25 | 50 | | | 10 | | 90 | | |
| | | 3 | 147.5 | High | | | | | 100 | | | | 80 | | | | |
| | | 4 | 162.8 | Moderate | | | | | 50 | 50 | | | 70 | | | | |
| | | 5 | 114.6 | Low | | | | | | 100 | | | 10 | | | 90 | |
| | | 6 | 142.4 | Low | | | | | 50 | 50 | | | 5 | | 95 | | |
| | | 7 | 124.0 | Low | | | | 30 | 30 | 40 | | | 5 | | 95 | | |
| | | 8 | 98.7 | Low | | | | | 50 | 50 | | | 5 | | 95 | | |
| | | 9 | 98.6 | Low | | | | 35 | 35 | 30 | | | | | 100 | | |
| | | 10 | 83.9 | Low | | 10 | 10 | 35 | 35 | 10 | | | 5 | | 95 | | |
| | | 11 | 107.3 | Low | | 10 | 10 | 35 | 35 | 10 | | | 100 | | 5 | | |
| | | 12 | 101.6 | Low | | | | 35 | 35 | 30 | | | 100 | | | | |
| | | 13 | 76.1 | Low | | 10 | 10 | 20 | 20 | 40 | | | 80 | | | 20 | |
| | | 14 | 50.7 | Low | | | | | | | 100 | | | 100 | | | |
| | | 15 | 261.5 | Low | | | | | | 100 | | | 100 | | | | |
| | | 16 | 94.8 | Low | | | | 30 | 30 | 40 | | | 80 | | | 20 | |
| | | 17 | 64.1 | High | | | | | | | 100 | | | 100 | | | |
| | | 18 | 184.5 | Low | | 15 | 15 | 15 | 50 | 5 | | | 100 | | 5 | | |

## Appendix E Table E3. Shoreline lake habitat characteristics of waterbodies in the Jericho Study Area, 1999.

| Waterbody | Date | Zone | Shoreline Length (m) | Subsurface Slope | Substrate Type (%) | | | | | | | Shoreline Habitat Types (%) | | | Shoreline Vegetation (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | OM | SI | SA | GR | CO | BO | BE | Grass | Boulder | Bedrock | Grass | Sedge | Macrophyte |
| Lake C1 | | | | | | | | | | | | | | | | | |
| | 7/23/1999 | | | | | | | | | | | | | | | | |
| | | 1 | 220.2 | Moderate | | 5 | | | 5 | 20 | 70 | | 40 | 60 | | | |
| | | 2 | 36.2 | Low | | 10 | | | 40 | 50 | | | 100 | | | | |
| | | 3 | 16.7 | Low | 5 | 15 | | | 5 | 75 | | 100 | | | | 15 | |
| | | 4 | 237.5 | Low | | | | | | 100 | | 5 | 95 | | | | |
| | | 5 | 116.2 | Low | | 60 | | | | 40 | | 95 | 5 | | | 60 | |
| | | 6 | 33.2 | Low | | 5 | | | | 85 | 10 | 5 | 85 | 10 | | 5 | |
| | | 7 | 74.9 | Low | | | | | | 40 | 60 | | | 100 | | | |
| | | 8 | 43.6 | Low | | 5 | | | 5 | 90 | | 10 | 90 | | | 10 | |
| Lake C2 | | | | | | | | | | | | | | | | | |
| | 7/23/1999 | | | | | | | | | | | | | | | | |
| | | 1 | 50.4 | Low | | 5 | | | | 95 | | 50 | 50 | | | | |
| | | 2 | 39.7 | Low | | 70 | | | | 30 | | 95 | 5 | | 65 | | |
| | | 3 | 58.2 | Low | | 10 | | | | 90 | | 20 | 80 | | | 5 | |
| | | 4 | 28.7 | Low | | | | | | 100 | | 10 | 90 | | | | |
| | | 5 | 30.8 | Low | | 10 | | | | 90 | | 100 | | | | 10 | |
| | | 6 | 24.9 | Moderate | | 10 | | 5 | 15 | | 70 | | | 100 | | | |
| | | 7 | 32.8 | Low | | | | | | 100 | | | 100 | | | | |
| | | 8 | 120.3 | Low | | 10 | | | | 15 | 75 | 5 | 15 | 80 | | | |
| Lake C3 | | | | | | | | | | | | | | | | | |
| | 7/24/1999 | | | | | | | | | | | | | | | | |
| | | 1 | 171.9 | Moderate | | | | | | 100 | | | 100 | | | | |

## Appendix E Table E3. Shoreline lake habitat characteristics of waterbodies in the Jericho Study Area, 1999.

| Waterbody | Date | Zone | Shoreline Length (m) | Subsurface Slope | Substrate Type (%) | | | | | | | Shoreline Habitat Types (%) | | | Shoreline Vegetation (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | OM | SI | SA | GR | CO | BO | BE | Grass | Boulder | Bedrock | Grass | Sedge | Macrophyte |
| Lake C3 | | | | | | | | | | | | | | | | | |
| | 7/24/1999 | | | | | | | | | | | | | | | | |
| | | 2 | 261.0 | Low | | | | | | 100 | | | 100 | | | | |
| | | 3 | 48.8 | Low | | 50 | | | | 50 | | 100 | | | | | |
| | | 4 | 164.2 | Low | | | | | | 100 | | | 100 | | | | |
| | | 5 | 28.1 | Low | | | | | | 100 | | 50 | 50 | | | | |
| | | 6 | 59.9 | Low | | | | | | 100 | | | 100 | | | | |
| | | 7 | 119.3 | Low | | | | | | 100 | | | 100 | | | | |
| | | 8 | 183.5 | Low | | | | | | 100 | | | | 100 | | | |
| | | 9 | 31.6 | Low | | | | | | 100 | | 50 | 50 | | | | |
| | | 10 | 98.4 | Low | | | | | | 100 | | | 100 | | | | |
| | | 11 | 25.7 | Low | | | | | | 100 | | | | 100 | | | |
| | | 12 | 411.8 | Low | | | | | | 100 | | | 100 | | | | |
| | | 13 | 57.1 | Low | | | | | | 100 | | | | 100 | | | |
| | | 14 | 41.6 | Low | | | | | | 100 | | 100 | | | | | |
| | | 15 | 396.3 | Low | | | | | | 100 | | | 100 | | | | |
| | | 16 | 55.9 | Low | | | | | | 100 | | 100 | | | | | |
| | | 17 | 412.5 | Low | | | | | | 100 | | | 100 | | | | |
| | | 18 | 35.0 | Low | | | | | | 100 | | 100 | | | | | |
| | | 19 | 75.7 | Low | | | | | | 100 | | | 100 | | | | |
| | | 20 | 39.2 | Low | | | | | | 100 | | 100 | | | | | |
| | | 21 | 112.1 | Low | | | | | | 100 | | | 100 | | | | |

## Appendix E Table E3. Shoreline lake habitat characteristics of waterbodies in the Jericho Study Area, 1999.

| Waterbody | Date | Zone | Shoreline Length (m) | Subsurface Slope | Substrate Type (%) | | | | | | | Shoreline Habitat Types (%) | | | Shoreline Vegetation (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | OM | SI | SA | GR | CO | BO | BE | Grass | Boulder | Bedrock | Grass | Sedge | Macrophyte |
| Lake C3 | | | | | | | | | | | | | | | | | |
| | 7/24/1999 | | | | | | | | | | | | | | | | |
| | | 22 | 355.0 | Low | | | | | | 100 | | 50 | 50 | | | | |
| | 7/28/1999 | | | | | | | | | | | | | | | | |
| | | 23 | 188.4 | Moderate | | | | | 50 | 50 | | | 100 | | | 100 | |
| | | 24 | 256.9 | Low | | | | | | 100 | | 100 | | | | 100 | |
| | | 25 | 132.6 | Moderate | | | | | 50 | 50 | | 100 | | | | 100 | |
| | | 26 | 150.8 | Low | | | | | 50 | 50 | | 100 | | | | 100 | |
| | | 27 | 145.8 | Low | | | | | | 100 | | | 100 | | | | |
| | | 28 | 199.1 | Moderate | | | | | 50 | 50 | | | 75 | 25 | | | |
| | | 29 | 255.8 | Low | | | | | | 100 | | | 100 | | | 100 | |
| | 9/4/1999 1 | | | | | | | | | | | | | | | | |
| | | 30 | 538.8 | High | | | | | 50 | 50 | | | 100 | | | | |
| | | 31 | 406.9 | Low | | | | | 40 | 60 | | 100 | | | | 100 | |
| | | 32 | 106.9 | Low | | | 20 | | 40 | 40 | | | 100 | | | | |
| | | 33 | 385.6 | Moderate | | | | | 40 | 60 | | 80 | 20 | | | | |
| | | 34 | 113.8 | High | | | | | | 50 | 50 | | 100 | | | | |
| | | 35 | 86.1 | Low | | | | | 40 | 60 | | 50 | 50 | | | | |
| | | 36 | 93.1 | Low | | | 20 | | 30 | 50 | | 100 | | | | | |
| | | 37 | 290.3 | Moderate | | | | | 20 | 50 | 30 | | | 100 | | | |
| | | 38 | 531.6 | Low | | | | | 50 | 30 | 20 | | | 100 | | | |
| | | 39 | 344.0 | Low | | | | | 50 | 50 | | 100 | | | | 100 | |

## Appendix E Table E3. Shoreline lake habitat characteristics of waterbodies in the Jericho Study Area, 1999.

| Waterbody | Date | Zone | Shoreline Length (m) | Subsurface Slope | Substrate Type (%) | | | | | | | Shoreline Habitat Types (%) | | | Shoreline Vegetation (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | OM | SI | SA | GR | CO | BO | BE | Grass | Boulder | Bedrock | Grass | Sedge | Macrophyte |
| Lake C3 | | | | | | | | | | | | | | | | | |
| | 9/4/1999 1 | | | | | | | | | | | | | | | | |
| | | 40 | 407.3 | Low | | | | | 50 | 50 | | 90 | 10 | | | | |
| | | 41 | 145.7 | Low | | | | | 40 | 60 | | | 20 | 80 | | | |
| | | 42 | 146.9 | Low | | | | | 60 | 40 | | 100 | | | | | |
| | | 43 | 132.5 | Moderate | | | | | 20 | 50 | 30 | | | 100 | | | |
| | | 44 | 84.9 | Low | | | | | 60 | 40 | | 70 | 30 | | | | |
| | | 45 | 106.6 | Low | | | | | 50 | 50 | | 100 | | | | | |
| | | 46 | 102.4 | Low | | | | | 50 | 30 | 20 | | | 100 | | | |
| | | 47 | 285.9 | Moderate | | | | | 50 | 50 | | | 10 | 90 | | | |
| | | 48 | 341.9 | Moderate | | | | | 50 | 50 | | 50 | 50 | | | | |
| | | 49 | 238.7 | Low | | | | | 50 | 30 | 20 | 30 | 70 | | | | |
| | | 50 | 311.4 | Low | | | 10 | 10 | 40 | 40 | | | 100 | | | | |
| | | 51 | 232.6 | Low | | | | | 30 | 40 | 30 | | | 100 | | | |
| | | 52 | 271.8 | Low | | | | | 50 | 50 | | 50 | 50 | | | | |
| | | 53 | 358.5 | Low | | | | | 50 | 50 | | | | 100 | | | |
| | | 54 | 233.1 | Low | | | | | 30 | 35 | 35 | | | 100 | | | |
| Lake D10 | | | | | | | | | | | | | | | | | |
| | 7/23/1999 | | | | | | | | | | | | | | | | |
| | | 1 | 68.8 | Low | | 20 | | | | 80 | | 80 | 20 | | | | |
| | | 2 | 63.7 | Low | | | | | | 100 | | | 10 | 90 | | | |
| | | 3 | 237.3 | Moderate | | | | | | 100 | | | 100 | | | | |

## Appendix E Table E3. Shoreline lake habitat characteristics of waterbodies in the Jericho Study Area, 1999.

| Waterbody | Date | Zone | Shoreline Length (m) | Subsurface Slope | Substrate Type (%) | | | | | | | Shoreline Habitat Types (%) | | | Shoreline Vegetation (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | OM | SI | SA | GR | CO | BO | BE | Grass | Boulder | Bedrock | Grass | Sedge | Macrophyte |
| Lake D10 | | | | | | | | | | | | | | | | | |
| | 7/23/1999 | | | | | | | | | | | | | | | | |
| | | 4 | 315.9 | Low | | | | | | 100 | | | | 100 | | | |
| | | 5 | 25.1 | High | | | | | | 100 | | | | 100 | | | |
| | | 6 | 220.2 | Low | | | | | | 100 | | | 100 | | | | |
| | | 7 | 254.6 | High | | | | | | 100 | | | | 100 | | | |
| | | 8 | 38.6 | Moderate | | | | | | 100 | | | 100 | | | | |
| | | 9 | 76.0 | High | | | | | | 100 | | | | 100 | | | |
| | | 10 | 49.6 | Low | | | | | | 100 | | | 100 | | | | |
| | | 11 | 20.0 | Low | | 30 | | | | 70 | | 70 | 30 | | | 10 | |
| | | 12 | 186.0 | Low | | | | | | 100 | | | 100 | | | | |
| | | 13 | 32.0 | Low | | 30 | | | | 70 | | 100 | | | | 10 | |
| | | 14 | 175.0 | High | | | | | | 100 | | | | 100 | | | |
| | | 15 | 77.6 | Low | | | | | | 100 | | | 100 | | | | |
| | | 16 | 147.5 | Low | | | | | | 100 | | 50 | 50 | | | | |
| | | 17 | 381.1 | Low | | | | | | 50 | 50 | | | 100 | | | |
| | | 18 | 138.3 | Moderate | | | | | | 50 | 50 | | 100 | | | | |
| | | 19 | 63.4 | Low | | | | | | 100 | | | 100 | | | | |

## Appendix E Table E4. Stream habitat types recorded during stream surveys in the Jericho Study Area, 1999.

| Waterbody | Reach | Surveyed Length (m) | Habitat Types (%) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Pool | Run | Riffle | Flat | Dispersed | Boulder |
| Stream C19 | | | | | | | | |
| | 1 | 35 | | | | | | |
| | 2 | 146 | | | | | 75 | 25 |
| Stream C3 | | | | | | | | |
| | 1 | 110 | | | 90 | | 10 | |
| | 2 | 215 | 10 | 10 | 80 | | | |
| | 3 | 113 | | | | | 100 | |
| | 4 | 198 | | | | | | |
| | 5 | 276 | | | | | | |
| | 6 | 139 | | | | 50 | 50 | |

## Appendix E Table E5. Habitat characteristics Stream C1 in the Jericho Study Area, 1999.

| Waterbody | Reach | Sampling Date | Habitat UnitID | Habitat Type | Wetted Width | Water Depth | | | Max. Depth | Water Velocity | | | Channel Type | Bank Type | Substrate Type (%) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | .25 | .50 | .75 | | .25 | .50 | .75 | | | OM | SI | SA | GR | CO | BO | BE |
| Stream C1 | | | | | | | | | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | | | | | | | | | | |
| | | 7/23/1999 | 1 | Run | | | | | | | | | | | | | | | | | |
| | | | | | 1.61 | 0.07 | 0.08 | 0.08 | 0.1 | 0.01 | 0.05 | 0.01 | Multiple | Defined | 10 | 5 | | 5 | 70 | 10 | |
| | | 7/23/1999 | 3 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 1.03 | 0.05 | 0.11 | 0.06 | 0.28 | 0.18 | 0.01 | 0.12 | Multiple | Defined | | | | | 80 | 20 | |
| | | 7/23/1999 | 4 | Flat | | | | | | | | | | | | | | | | | |
| | | | | | 1.86 | 0.11 | 0.15 | 0.11 | 0.16 | 0.005 | 0.03 | 0.03 | Multiple | Defined | 5 | | | 5 | 65 | 25 | |
| | | 7/23/1999 | 5 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 1.09 | 0.04 | 0.11 | 0.07 | 0.2 | 0.005 | 0.1 | 0.14 | Multiple | Defined | | | | | 40 | 60 | |
| | | 7/23/1999 | 6 | Pool | | | | | | | | | | | | | | | | | |
| | | | | | 0.88 | 0.24 | 0.17 | 0.13 | 0.26 | 0.01 | 0.08 | 0.01 | Multiple | Defined | | | | 5 | 75 | 20 | |
| | | 7/23/1999 | 7 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 1.5 | 0.05 | 0.08 | 0.09 | 0.1 | 0.08 | 0.21 | 0 | Dispersed | Defined | | | | 10 | 70 | 20 | |
| | | 7/23/1999 | 9 | RF | | | | | | | | | | | | | | | | | |
| | | | | | 0.84 | 0.06 | 0.03 | 0.05 | 0.1 | 0.16 | 0.12 | 0.4 | Multiple | Defined | | | | 10 | 80 | 10 | |
| | | 7/23/1999 | 10 | RFBG | | | | | | | | | | | | | | | | | |
| | | | | | 0.96 | 0.02 | 0.05 | 0.05 | 0.07 | 0.14 | 0.35 | 0.22 | Multiple | Defined | | | | | 40 | 60 | |
| | | | | | 1.5 | 0.05 | 0.08 | 0.09 | 0.1 | 0.08 | 0.21 | 0 | Multiple | Defined | | | | 10 | 70 | 20 | |
| | 2 | | | | | | | | | | | | | | | | | | | | |
| | | 7/23/1999 | 12 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 1.94 | 0.04 | 0.09 | 0.09 | 0.1 | 0.29 | 0.02 | 0.22 | Multiple | Defined | | | | 10 | 50 | 40 | |
| | | | | | 1.98 | 0.08 | 0.07 | 0.04 | 0.1 | 0.13 | 0.26 | 0.09 | Multiple | Defined | | | | 5 | 25 | 70 | |
| | | | | | 1.36 | 0.09 | 0.07 | 0.07 | 0.09 | 0.2 | 0.19 | 0.06 | Multiple | Defined | | | | | 40 | 60 | |

## Appendix E Table E5. Habitat characteristics Stream C1 in the Jericho Study Area, 1999.

| Waterbody | Reach | Sampling Date | Habitat UnitID | Habitat Type | Wetted Width | Water Depth | | | Max. Depth | Water Velocity | | | Channel Type | Bank Type | Substrate Type (%) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | .25 | .50 | .75 | | .25 | .50 | .75 | | | OM | SI | SA | GR | CO | BO | BE |
| Stream C1 | | | | | | | | | | | | | | | | | | | | | |
| | 2 | | | | | | | | | | | | | | | | | | | | |
| | | 7/23/1999 | 12 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 1.34 | 0.11 | 0.11 | 0.13 | 0.13 | 0.08 | 0 | 0.03 | Multiple | Defined | | | | 5 | 40 | 55 | |
| | | | | | 3.53 | 0.03 | 0.1 | 0.12 | 0.12 | 0.27 | 0.03 | 0.08 | Multiple | Defined | | | | 5 | 55 | 40 | |
| | 3 | | | | | | | | | | | | | | | | | | | | |
| | | 7/23/1999 | 13 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 2.25 | 0.08 | 0.08 | 0.05 | 0.08 | 0.02 | 0.13 | 0.005 | Multiple | Defined | | | | 15 | 70 | 15 | |
| | | 7/23/1999 | 14 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 1.54 | 0.01 | 0.05 | 0.06 | 0.09 | 0.26 | 0.05 | 0.08 | Multiple | Defined | | | | 20 | 75 | 5 | |
| | | 7/23/1999 | 16 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 1.07 | 0.1 | 0.2 | 0.12 | 0.22 | 0 | 0.005 | 0.27 | Multiple | Defined | | | | 5 | 55 | 40 | |
| | | 7/23/1999 | 18 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 0.71 | 0.05 | 0.08 | 0.02 | 0.08 | 0.005 | 0.05 | 0.03 | Double | Defined | | | | 15 | 75 | 10 | |
| | | | | | 0.94 | 0.08 | 0.1 | 0.06 | 0.11 | 0.21 | 0.05 | 0.08 | Multiple | Defined | | | | | 95 | 5 | |
| | | | | | 0.97 | 0.06 | 0.05 | 0.06 | 0.11 | 0.06 | 0.27 | 0.005 | Double | Defined | | | | 5 | 90 | 5 | |
| | | | | | 1 | 0.04 | 0.09 | 0.11 | 0.11 | 0.005 | 0.03 | 0.05 | Double | Defined | | | | 10 | 85 | 5 | |
| | | | | | 1.04 | 0.02 | 0.09 | 0.04 | 0.12 | 0.18 | 0.19 | 0.28 | Multiple | Defined | | | | 15 | 80 | 5 | |
| | | 7/23/1999 | 19 | Flat | | | | | | | | | | | | | | | | | |
| | | | | | 0.84 | 0.11 | 0.18 | 0.2 | 0.2 | 0.005 | 0.03 | 0.03 | Multiple | Ill-defined | 85 | | | | 10 | 5 | |
| | 4 | | | | | | | | | | | | | | | | | | | | |
| | | 6/6/1999 | 137 | Pond | | | | | | | | | | | | | | | | | |
| | | | | | | | | | 0.27 | | | | | | | | | | | | |
| | | | | | | | | | 0.25 | | | | | | | | | | | | |

## Appendix E Table E5. Habitat characteristics Stream C1 in the Jericho Study Area, 1999.

| Waterbody | Reach | Sampling Date | Habitat UnitID | Habitat Type | Wetted Width | Water Depth | | | Max. Depth | Water Velocity | | | Channel Type | Bank Type | Substrate Type (%) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | .25 | .50 | .75 | | .25 | .50 | .75 | | | OM | SI | SA | GR | CO | BO | BE |
| Stream C1 | | | | | | | | | | | | | | | | | | | | | |
| | 4 | | | | | | | | | | | | | | | | | | | | |
| | | 6/6/1999 | 137 | Pond | | | | | | | | | | | | | | | | | |
| | | | | | | | | | 0.31 | | | | | | | | | | | | |
| | | | | | | | | | 0.34 | | | | | | | | | | | | |
| | | | | | | | | | 0.35 | | | | | | | | | | | | |
| | | | | | | | | | 0.18 | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | | | | | | | | |
| | | 7/23/1999 | 20 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 0.5 | 0.04 | 0.06 | 0.09 | 0.1 | 0.4 | 0.47 | 0.2 | Single | Defined | | | | | 30 | 70 | |
| | | | | | 1.05 | 0.06 | 0.09 | 0.1 | 0.1 | 0.12 | 0.04 | 0.17 | Single | Defined | | | 10 | 10 | 50 | 30 | |
| | | 7/23/1999 | 21 | Run | | | | | | | | | | | | | | | | | |
| | | | | | 0.75 | 0.01 | 0.08 | 0.09 | 0.11 | 0.22 | 0.18 | 0.1 | Single | Defined | | | 20 | 25 | 45 | 10 | |
| | | | | | 0.8 | 0.08 | 0.07 | 0.05 | 0.08 | 0.24 | 0.005 | 0.11 | Single | Defined | | | 20 | 20 | 50 | 10 | |
| | | 7/23/1999 | 22 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 0.95 | 0.15 | 0.17 | 0.03 | 0.21 | 0.005 | 0.23 | 0.04 | Single | Defined | | | 10 | 10 | 40 | 40 | |
| | | | | | 0.8 | 0.13 | 0.17 | 0.03 | 0.08 | 0.08 | 0.15 | 0.29 | Single | Defined | | | 10 | | 40 | 50 | |
| | | | | | 0.45 | 0.05 | 0.1 | 0.08 | 0.11 | 0.08 | 0.19 | 0.06 | Single | Defined | | | | | 20 | 80 | |
| | | | | | 0.9 | 0.05 | 0.03 | 0.04 | 0.07 | 0.09 | 0.25 | 0.23 | Single | Defined | | | | 10 | 70 | 20 | |
| | | 7/23/1999 | 26 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 1.35 | 0.1 | 0.1 | 0.14 | 0.16 | 0.15 | 0.13 | 0.15 | Single | Defined | | | | 15 | 75 | 10 | |
| | 6 | | | | | | | | | | | | | | | | | | | | |
| | | 6/10/1999 | 106 | Pond | | | | | | | | | | | | | | | | | |
| | | | | | 40.8 | | | | 0.67 | | | | | | 100 | | | | | | |

## Appendix E Table E5. Habitat characteristics Stream C1 in the Jericho Study Area, 1999.

| Waterbody | Reach | Sampling Date | Habitat UnitID | Habitat Type | Wetted Width | Water Depth | | | Max. Depth | Water Velocity | | | Channel Type | Bank Type | Substrate Type (%) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | .25 | .50 | .75 | | .25 | .50 | .75 | | | OM | SI | SA | GR | CO | BO | BE |
| Stream C1 | | | | | | | | | | | | | | | | | | | | | |
| | 7 | | | | | | | | | | | | | | | | | | | | |
| | | 7/28/1999 | 54 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 1.82 | 0.05 | 0.06 | 0.06 | 0.07 | 0.18 | 0.45 | 0.2 | Single | Defined | | | 10 | 25 | 55 | 10 | |
| | | | | | 0.67 | 0.08 | 0.17 | 0.14 | 0.17 | 0.15 | 0.54 | 0.22 | Single | Defined | 10 | | | 10 | 70 | 10 | |
| | | 7/28/1999 | 55 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 0.91 | 0.14 | 0.16 | 0.16 | 0.18 | 0.28 | 0.32 | 0.29 | Single | Defined | | | | 10 | 20 | 70 | |
| | | | | | 1.06 | 0.1 | 0.11 | 0.07 | 0.13 | 0.36 | 0.18 | 0.16 | Single | Defined | 5 | | | 10 | 20 | 65 | |
| | | 7/28/1999 | 57 | Run | | | | | | | | | | | | | | | | | |
| | | | | | 0.73 | 0.23 | 0.22 | 0.13 | 0.23 | 0.3 | 0.33 | 0.27 | Single | Defined | 65 | | | 5 | 15 | 15 | |
| | 8 | | | | | | | | | | | | | | | | | | | | |
| | | 8/2/1999 | 58 | Flat | | | | | | | | | | | | | | | | | |
| | | | | | 2.3 | 0.4 | 0.45 | 0.36 | 0.45 | 0 | 0.005 | 0 | Single | Defined | | 70 | | | | 30 | |
| | | 8/2/1999 | 59 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 1.7 | 0.03 | 0.04 | 0.12 | 0.12 | 0.23 | 0.16 | 0.05 | Single | Defined | | | | | | 100 | |
| | | 8/2/1999 | 60 | Flat | | | | | | | | | | | | | | | | | |
| | | | | | 1.25 | 0.18 | 0.27 | 0.21 | 0.31 | 0.005 | 0.03 | 0.03 | Single | Defined | | 90 | | | | 10 | |
| | | 8/2/1999 | 61 | Riffle | | | | | | | | | | | | | | | | | |
| | | | | | 1.15 | 0.04 | 0.06 | 0.05 | 0.1 | 0.26 | 0.33 | 0.34 | Single | Defined | | | 10 | 70 | 10 | | |
| | | 8/2/1999 | 62 | Disperse | | | | | | | | | | | | | | | | | |
| | | | | | 12.6 | 0.36 | 0.42 | 0.16 | 0.42 | 0 | 0 | 0 | Dispersed | Ill-defined | 10 | | | | | 90 | |
| | | 8/2/1999 | 63 | Garden | | | | | | | | | | | | | | | | | |
| | | | | | 8.4 | 0.02 | 0.04 | 0.02 | 0.06 | 0.12 | 0.1 | 0 | Subsurface | Ill-defined | | | | | 20 | 60 | 20 |