TAHERA
DIAMOND CORPORATION

February 10th, 2006

Derrick Moggy
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RE: Long Lake Fish Salvage Program Report

Mr Moggy,

Attached is Tahera Diamond Corporations submission of Long Lake Fish Salvage Program Report required under section 7.4 of Fisheries Authorization NU-00-0068.

Should you have any additional questions please do not hesitate to contact the undersigned.

Sincerely,

Mike Tanguay
HSE Manager
Tahera Diamond Corporation
Jericho Project

Greg Missal
Vice President and Government Regulatory Affairs
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JERICHO DIAMOND PROJECT
LONG LAKE FISH SALVAGE
-2005-

Prepared for

Tahera Diamond Corporation
Toronto, Ontario

By

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The following Mainstream Aquatics Ltd. personnel participated in this program:

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1.0 INTRODUCTION

1.1 BACKGROUND

The Jericho Diamond Project, subsequently referred to as the Project, is a diamond mine in Nunavut near the northwest corner of Contwoyto Lake that is owned and operated by Tahera Diamond Corporation (Tahera). The Project, which is currently being constructed, is located 420 km northeast of Yellowknife and 170 km north of the Ekati NWT Diamonds Project, NWT (65^{o} 59' 50" Latitude, 111^{o} 8' 30" Longitude). It is a stand-alone operation, which entails mining and processing diamonds from a single kimberlite pipe situated beside a small, unnamed waterbody locally known as Carat Lake.

Under the *Fisheries Act*, Fisheries and Oceans Canada (DFO) has authority for the conservation and protection of fish and fish habitat (DFO 1998). The Project has the potential to affect fish and fish habitat; therefore, DFO is mandated to assess the impacts of the Project and ascertain whether it will result in a habitat harmful alteration, disruption, or destruction (HADD).

The Processed Kimberlite Containment Area, or PKCA, will be used to store the fine fraction generated by the processing operation, discharge from the waste water treatment system, and runoff from the mine site. Construction of the PKCA will inundate three fish-bearing waterbodies collectively termed the 'Long Lake System'. These include Long Lake, the Long Lake Pond immediately west of the main lake, and the North Pond perched above Long Lake along its northern shore.

As a partial condition of DFO Authorization NU-00-068 (see Section 5.6), a fish salvage program is to be implemented during the lowering of water levels in Long Lake, in the manner described in the DFO Fish-Out Protocol (DFO unpublished).

Slimy sculpin and burbot populations occur in Long Lake and Long Lake Pond. A slimy sculpin population exists in the North Pond. A fish salvage program outlined in Mainstream (2004) was implemented in 2005 to mitigate fish mortality.

This document presents the results of the Long Lake Fish Salvage Program.

1.2 PURPOSE AND OBJECTIVES

The purpose of the Long Lake Fish Salvage was to capture and relocate fish from the Long Lake system in a manner that is consistent with DFO Fish-Out Protocol.

The objectives of the program, as specified by the DFO Fish-Out Protocol document, were to:

1. Avoid wasting of fish.
2. Collect data to:
    a. Determine the size, distribution, and density of fish in the lake.
    b. Test lake production models that predict fish population density and production.

The DFO Fish-Out Protocol specifies three components for the fish salvage as follows:

1. Fish Community
2. Aquatic Biology/Physical Limnology
3. Habitat Inventory

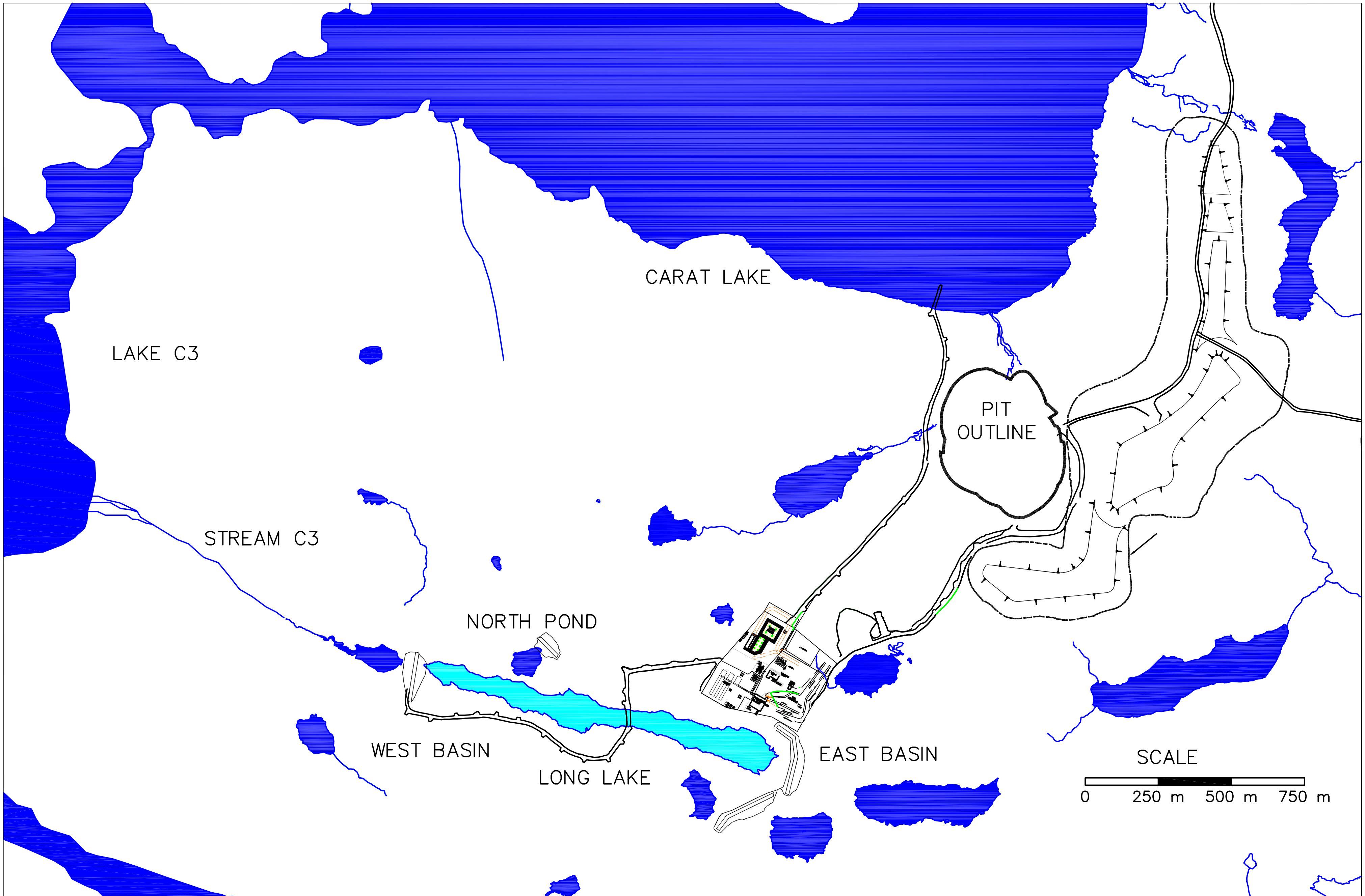
The Long Lake Fish Salvage Program collected data for Point 1. Information collected during previous investigations in the Project area (RL&L 2000a, 2000b) was used to address Points 2 and 3.

1.3 STUDY AREA

The 'Long Lake System' is located directly south of the mine infrastructure and runs along an east west axis (Figure 1.1). It consists of Long Lake, the Long Lake Pond immediately west of the main lake, and the North Pond perched above Long Lake along its northern shore. Sampling in Long Lake occurred in the deep East basin and the shallow West Basin.

1.4 TIMING

Approval was provided by DFO on 15 August 2005 to undertake the fish salvage under Licence SLE-05/06-34. The fish salvage was carried out between 16 and 23 August 2005 and 1 to 5 September 2005. The salvage was terminated on 5 September due to unsafe sampling conditions and the pending freeze-up of study area lakes.



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Jan 30, 2006	SCALE: as shown	Figure 1.1 Long Lake Study Area Long Lake Fish Salvage Program 2005

2.0 METHODS

2.1 FIELD

2.1.1 Fish Capture

The fish salvage program focussed on capturing as many fish as possible with various types of collection methods, while minimizing mortality. The type of method employed was dependent on the habitat sampled and the effectiveness of the sample method.

Gill Net

Gill net sets were used to sample deep-water habitats. Gill nets were comprised of 15.2 × 1.8 m panels of 2.5 cm mesh (stretched measure). Mesh size was chosen to maximize capture efficiency for fish known to reside in Long Lake. Set times were initially kept short (less than 2 h) to minimize capture mortality, but due to very low capture rates gill nets were run continuously day and night in order to maximize the number of fish captured. Data recorded at each site included set/pull time, location/orientation, cloud cover (%), water depth, and substrate type.

Fyke Net

Two fyke nets were set along the shoreline of Long Lake to capture small and large fish. Each fyke net consisted of a single trap net, two 7.6 m wings, and a 7.6 m lead to shore. The trap was 0.9 m long and 0.9 m wide, contained two throats (7.5 cm x 7.5 cm each), and was constructed of 1.0 cm dark grey knotless nylon mesh. Wings and lead were constructed with the same material as the trap and were 0.9 m deep. Stakes were driven into the lake bottom at each corner of the trap to hold it in place. Fyke nets were run continuously and checked daily. The following information was recorded: set duration, the number and species of fish captured.

Backpack Electrofisher

Shallow-water habitats along the lake margins were sampled 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 (grassy areas, boulder cover, etc.). The netter, who was positioned in close proximity to the electrofisher operator, collected the stunned fish and placed them in a holding bucket. Recorded information at each sampled site included date and time of day, sampling effort (s), electrofisher settings, and the number and species of fish captured.

Minnow Trap

Standard minnow traps (gee type) baited with cat food were used to capture fish in shoreline areas. Dimensions of standard gee traps were 0.4 m length x 0.2 m diameter with an aperture of 0.02 m. Glow sticks were added to the traps to attract fish during overnight sampling. Data recorded at each site included set/pull time, location/orientation, water depth, cloud cover (%) and substrate type.

2.1.2 Biological Characteristics

Captured fish were measured for fork length (±1 mm) and weight (±2 g), when appropriate. Ageing structures were not collected from burbot or slimy sculpin because the preferred structure (otolith) is a lethal method of ageing.

2.1.3 Fish Transfer

Captured fish were transferred to release sites within one hour of capture. Small fish size allowed use of 5-gallon buckets to hold and transport fish. Fish were released either into Lake C3 near the outlet of Stream C3 or in Carat Lake. Carat Lake fish were released in two locations: east of the causeway near the outlet of Stream C1 or in the vicinity of the old exploration camp at the eastern end of the lake.

2.1.4 Fish Habitat

The shoreline habitat characteristics of Long Lake were described using a standardized habitat classification system (RL&L 2000a). The classification system categorized shoreline habitat into discrete habitat types based on two variables: slope and substrate type. The assessment was accomplished by circumnavigating the lake by boat. Structured habitat surveys were not completed in the North Pond or the Long Lake Pond; therefore, the assessment was based on general field observations.

2.1.5 Physical Environment

Lake Morphometry

Tahera Corporation completed the field survey of Long Lake in summer 1999 and provided a digital copy of the data for analyses (RL&L 2000a). The resulting depth database was merged with the digital location data generated from transect locations identified on the digitized maps. Lake morphology of the North Pond and the Long Lake Pond were based on synoptic assessments of water depth.

Limnology and Water Quality

The limnology and general water quality characteristics of Long Lake were measured. Oxygen and temperature were measured 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). Conductivity was measured at the water surface using an Oakton TDS Testr meter.

Water samples were collected to document existing water quality characteristics 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 pre-measured 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.

2.1.6 Aquatic Biology

Phytoplankton - Chlorophyll *a*

Phytoplankton was collected to measure chlorophyll *a* (mass of the major photosynthesizing pigment as an estimate of live algae). Samples were collected from the euphotic zone, which is equal to the depth of 1% light penetration (approximately two times the Secchi depth). Long Lake was shallower than two times the secchi depth, therefore the hauls encompassed the entire water column to 1 m above the lake bottom to avoid contamination of the sample with sediment). A 5 mL subsample was withdrawn from the sample for chlorophyll *a* analyses using a syringe. It was then filtered onto Whatman GF/C filter paper, covered with anhydrous $MgCO_3$, and frozen.

Zooplankton

To characterize the zooplankton community samples were collected from Long Lake once during summer. Samples consisted of a composite of five vertical hauls, each taken from a depth 1 m above lake bottom. Normally sample depth would be equal to two times the euphotic zone, but Long Lake was too shallow. 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). Each sample was immediately preserved in 5% formalin and stored in labelled 500 mL polyethylene bottles.

Benthic Macroinvertebrates

Benthic macroinvertebrates were sampled from shallow (< 5.0 m depth) and deep-water (> 5.0 m depth) zones of Long Lake. Samples were collected once in summer. An Ekman grab sampler (aperture area equal to 0.023 m^2) was used to collect five replicate samples at each site. To reduce problems associated with low numbers of benthic invertebrates and within-site variation, each sample consisted of a composite of three grabs (Environment Canada and Department of Fisheries and Oceans, 1993). Each of five replicates were then sieved through a 0.243 mm mesh net to remove excess sediments, placed in labelled polyethylene sample bags, and preserved with 10% formalin.

2.2 OFFICE

2.2.1 Fish Capture

Relative abundance of fish (catch-per-unit-effort or CPUE) was calculated by dividing the number of fish by the amount of effort expended. The unit of effort used to calculate CPUE was dependent on sampling method. The unit of effort was minutes sampled for backpack electrofisher. Catch rates were calculated using hours sampled for gill nets, minnow traps, and fyke nets.

2.2.2 Fish Habitat

Using data collected in the field shorelines of each waterbody were delineated into discrete habitat types based on physical characteristics that included shoreline slope and substrate type.

Slope was defined as the visible portion of the lake bottom adjacent to the shoreline. Visual estimation of slope using three categories was as follows:

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

Substrate was categorized using the visible portion of the lake bottom adjacent to the shoreline. Visual estimation of the percent cover by each substrate size and then grouping into three categories was based on the following criteria:

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

The modified Wentworth scale was used to determine substrate particle size (RL&L 2000a).

2.2.3 Physical Environment

<u>Lake Morphometry</u>

Morphometric characteristics of Long Lake were calculated from digitized maps (generated from 1:50,000 scale N.T.S maps) using the MapInfo™ software. Lake area calculations were also obtained by using MapInfo™ software. Shoreline development indices were calculated using the following formula (from Wetzel 1983):

$$ShorelineDevelopment = \frac{ShorelineLength}{\sqrt[2]{(pi \bullet SurfaceArea}}$$

Lake volumes were calculated using the following formula (Wetzel 1983):

$$Volume = \frac{h}{3}(a_1 + a_2 + \sqrt{a_1 \bullet a_2})$$

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.

<u>Limnology and Water Quality</u>

The water chemistry constituents measured in Long Lake and their detection limits are listed in Table 2.1.

Table 2.1 Water chemistry constituents and their detection limits measured from Long Lake, 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 (CO3)	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			

2.2.4 Aquatic Biology

<u>Phytoplankton - Chlorophyll a</u>

Chlorophyll *a* analysis was conducted using the spectrophotometric-acetone extraction method described by Moss (1967a, 1967b).

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 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 2.1). 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)

Benthic Macroinvertebrates

Samples were first washed to remove the preservative. They were then repeatedly elutriated to remove excess silt, sand, and gravel until nonvertebrates were no longer observed in the elutriated water. The sample was then thoroughly mixed and one third processed using the method and criteria described in Wrona *et al.* 1982.

Using a dissecting microscope (6 to 42× magnification), benthic macroinvertebrates were 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.

Data preparation followed procedures for Environmental Effects Monitoring (EEM) developed by Environment Canada and Department of Fisheries and Oceans (1993, 1995). Unidentified organisms and rare taxa (<5% by density) were removed.

3.0 RESULTS

3.1 FISH CAPTURE

3.1.1 Effort

Sampling effort in Long Lake was split between the east and west basins (Table 3.1). Fyke net effort was similar in each basin (162.50 to 162.92 hours in east and west basin respectively). The number of gill net deployments in the west basin was slightly higher than those in the east basin (5 versus 3) resulting in a higher sampling effort. Gill net sampling effort was higher in the west basin due to greater availability of suitable gill net sites. The same was true for backpack electrofishing effort. Overall, 427.87 versus 208.17 minutes of effort was expended in the west and east basins, respectively. Back electrofishing effort focussed on the west basin because this area had the greatest potential to contain fish (i.e., location of deep water basin). Sampling effort by minnow trap was slightly lower in the west basin.

Sampling effort expended in the North Pond and the Long Lake Pond is presented in Table 3.1 Minnow trap deployment was higher in the North Pond than in the Long Lake Pond (6 versus 4), which resulted in a higher sampling effort (386.22 and 203.68 hours, respectively). The number of deployments for backpack electrofishing was similar for both ponds, but the amount of effort differed. A total of 63.67 hours was expended in the Long Lake Pond compared to 39.95 hours in the North Pond.

Table 3.1 Total effort expended by sample method, Long Lake Fish Salvage Program, 2005.

Waterbody	Method	Number of Deployments[a]	Effort[b]
Long Lake (East Basin)	Fyke Net	1	162.50
	Gill Net	3	258.83
	Minnow Trap	9	187.58
	Backpack Electrofisher	5	208.17
Long Lake (West Basin)	Fyke Net	1	162.92
	Gill Net	5	392.53
	Minnow Trap	6	132.97
	Backpack Electrofisher	10	427.87
North Pond	Minnow Trap	6	386.22
	Backpack Electrofisher	3	39.95
Long Lake Pond	Minnow Trap	4	203.68
	Backpack Electrofisher	2	63.67
Total Effort	Fyke Net	2	325.42
	Gill Net	8	651.37
	Minnow Trap	25	910.45
	Backpack Electrofisher	20	739.65

[a] Deployment units are as follows: fyke net - #sets; gill net - #sets; minnow trap - #sets; backpack electrofishing - #days.

[b] Effort calculated as follows: fyke net - #hours; gill net - #hours; minnow trap - #hours; backpack electrofishing - #minutes.

3.1.2 Abundance

No fish were captured by gill netting (Table 3.2). A single slimy sculpin was captured in the fyke net located in the west basin and three burbot were captured in the east basin. Minnow trap sampling resulted in the capture of one slimy sculpin.

Backpack electrofishing was an effective sampling method (Table 3.2). In total, 299 slimy sculpin and 715 burbot were captured using this method. Catch-per-unit effort values were similar for slimy sculpin in both basins of Long Lake (approximately 0.37 fish/min). Burbot catch rates were higher in the east basin (1.53 fish/min) compared to the west basin (0.83 fish/min).

Table 3.2 Catch-per-unit-effort for each species captured by method, Long Lake Fish Salvage Program, 2005.

Waterbody	Method	Slimy sculpin		Burbot	
		Number	CPUE[a]	Number	CPUE[a]
Long Lake (East Basin)	Fyke Net	0	-	3	0.02
	Gill Net	0	-	0	-
	Minnow Trap	1	0.01	0	-
	Backpack Electrofisher	78	0.37	319	1.53
Long Lake (West Basin)	Fyke Net	1	0.01	0	-
	Gill Net	0	-	0	-
	Minnow Trap	0	-	0	-
	Backpack Electrofisher	172	0.40	356	0.83
North Pond	Minnow Trap	2	0.01	0	-
	Backpack Electrofisher	28	0.70	0	-
Long Lake Pond	Minnow Trap	4	0.02	1	0.01
	Backpack Electrofisher	21	0.33	40	0.63
Total Numbers	Fyke Net	1	0.01	3	0.02
	Gill Net	0	-	0	-
	Minnow Trap	7	0.01	1	>0.01
	Backpack Electrofisher	299	0.40	715	0.97
Overall Total		**307**	**-**	**719**	**-**

[a] CPUE calculated as follows: fyke net #fish/hour; gill net #fish/hour; minnow trap #fish/hour; backpack electrofishing #fish/min.

Burbot were not captured in the North Pond using any method (Table 3.2). Two slimy sculpin were captured using minnow traps, while 28 were captured using backpack electrofisher (0.70 fish/min).

Both species were encountered in the Long Lake Pond. One burbot and four slimy sculpin were recorded in minnow traps (Table 3.2). Burbot and slimy sculpin were effectively captured by backpack electrofisher in the Long Lake Pond. A total of 40 burbot (0.63 fish/min) and 21 slimy sculpin (0.33 fish/min) were recorded.

Sampling effort using backpack electrofisher in Long Lake over several days allowed an assessment of temporal trends in fish abundance (Figure 3.1). Daily slimy sculpin catch rates in Long Lake were highest during day one of the program (2.48 fish/min), but then remained low and stable for the remainder of sampling (<0.65 fish/min). Catch rates were more variable for burbot. The highest catch rate occurred towards the end of the salvage program (4.49 fish/min). During the remainder of the program CPUE values ranged between 1.99 fish/min and 0.00 fish/min.

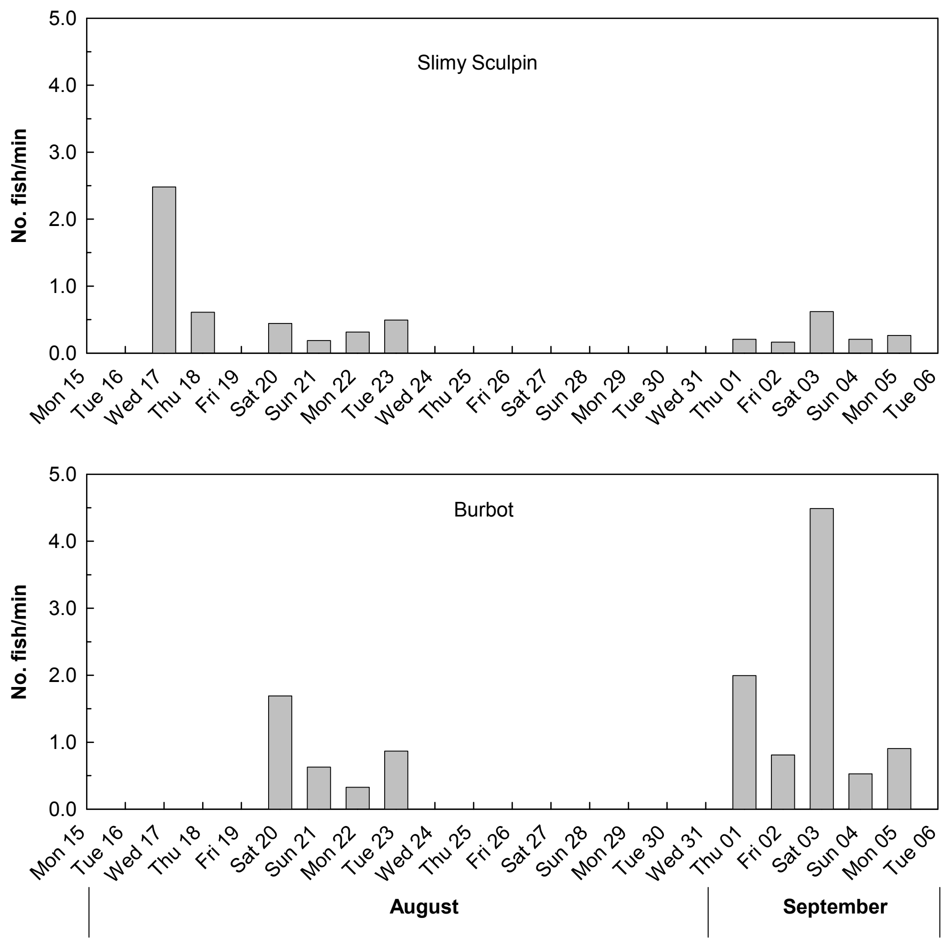

Figure 3.1 Daily catch rates of burbot and slimy sculpin during backpack electrofishing in Long Lake during the Fish Salvage Program, 2005.

3.1.3 Mortality

Fish mortality was very low during the salvage. In total, 37 burbot (5.1% of the sample) and 10 slimy sculpin (3.3% of the sample) died.

3.1.4 Biological Characteristics

Total length was measured from fish captured during the salvage (Table 3.3, Figure 3.2, Appendix A). The burbot data indicated that the sample was dominated by young fish. Mean length was 48.6 mm in Long Lake and 46.8 mm in the Long Lake Pond. The largest burbot captured in each waterbody was 221 mm and 203 mm, respectively.

Table 3.3 Summary of fish lengths recorded during the Long Lake Fish Salvage Program, 2005.

Waterbody	Species	Sample	Mean	Minimum	Maximum
Long Lake	Burbot	678	48.6	11	221
	Slimy sculpin	252	46.0	4	94
North Pond	Slimy sculpin	30	40.8	14	65
Long Lake Pond	Burbot	41	46.8	31	203
	Slimy sculpin	24	56.3	34	85

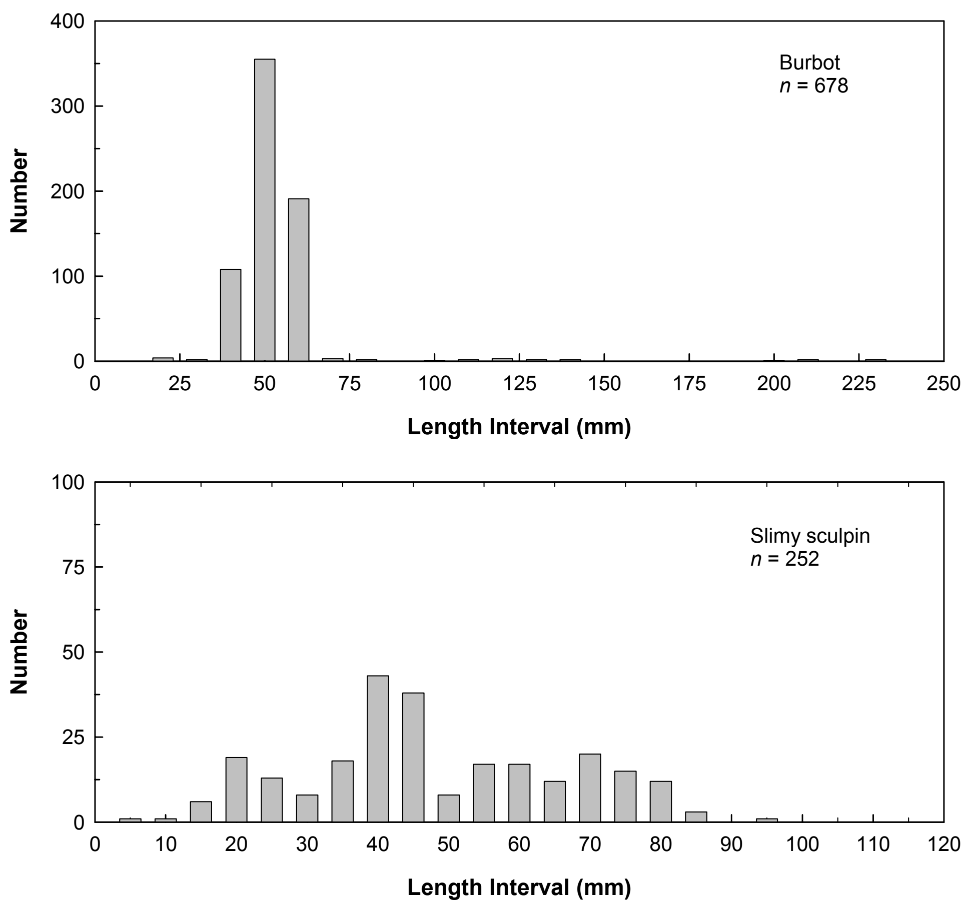

Figure 3.2 Length distribution of burbot and slimy sculpin captured from Long Lake, Long Lake Fish Salvage Program, 2005.

The length distribution of burbot captured from Long Lake confirms that the sample consisted primarily of young fish. Of the 678 fish measured, 13 or 1.9% of the sample were larger than 100 mm. Because multiple sampling techniques were used in a variety of habitats in Long Lake, the sample is deemed representative of the population at the time of the salvage. Captured burbot were not aged, but data from other Arctic burbot populations suggest that the dominant cohort was Age 0 (Roberge *et al.* 2002).

The mean total length of slimy sculpin ranged from 40.8 mm in the North Pond to 56.3 in the Long Lake Pond. The largest slimy sculpin measured was 94 mm from Long Lake. The length distribution of slimy sculpin in Long Lake was multi-modal indicating that a variety of age-classes were present in the population.

3.2 FISH HABITAT

The shoreline of Long Lake was generally steep and dominated by boulder and bedrock (RL&L 2000a, Mainstream 2004, Appendix B). Nineteen distinct shoreline habitat zones were recorded. These were grouped into three habitat types based on physical characteristics related to the amount and type of lake bed material. A fourth habitat type was delineated based on a depth criteria of >3.0 m to reflect the presence of wintering habitat. Ice depths in the study area typically ranged between 2.0 m and 2.5 m. In small Arctic lakes, the absence of deep water may be an important limiting factor for fish populations (Hershey *et al.* 2004).

The habitat types were as follows:

1. Nearshore with interspersed boulders; 0.0 m to 3.0 m depth
2. Nearshore with boulders; 0.0 m to 3.0 m depth
3. Nearshore dominated by bedrock; 0.0 m to 3.0 m depth
4. Farshore; >3.0 m depth

A similar approach was used to segregate habitat types in the North Pond and the Long Lake Pond. Both were situated in steep rock basins; therefore, the entire shoreline of each waterbody consisted of Habitat No. 3. The area (m^2) of each habitat type in each waterbody is presented in Table 3.4.

Table 3.4 Area of habitat types (m^2) in Long Lake, Long Lake Pond, and the North Pond associated with the PKCA.

Habitat Type	Long Lake	Long Lake Pond	North Pond
Nearshore; interspersed boulders; 0.0 m to 3.0 m	4300	0	0
Nearshore; boulders; 0.0 m to 3.0 m	29 700	7625	5600
Nearshore; bedrock; 0.0 m to 3.0 m	42 000	0	0
Farshore; rock and or silt; >3.0 mm	24 300	3400	1500
Total	**100 300**	**11 025**	**7100**

3.3 PHYSICAL CHARACTERISTICS

Lake Morphometry

Lake morphology data collected in 1999 by RL&L (RL&L 2000a) is presented in Table 3.5. Lake bathymetry data collected by Tahera Diamond Corporation is illustrated in Figure 3.3.

Long Lake had no defined inlet stream, but drained to the west into Lake C3 via Stream C3 (Figure 1.1). Long Lake was elongated along an east-west axis and had three basins. It was 1.2 km in length and rarely exceeded 100 m in width. The two eastern basins did not exceed 7 m in depth and were separated by a shallow water area <1.0 m deep (Figure 3.3). The western basin was deeper exhibiting a maximum depth of 8 m. Being relatively shallow (mean depth 1.9 m), only a small percentage of the lake was not subjected to freezing (11% of area and 29% of volume). A summary of morphometric characteristics are presented in Table 3.5.

Table 3.5 Morphometric data collected from Long Lake, July 1999.

Characteristic	Value
Total Volume (m^3)	168 608
Surface Area (ha)	9.0
Shoreline Length (m)	2571
Shoreline Development Ratio	2.4
Mean Depth (m)	1.9
Maximum Depth (m)	8
Percent Surface Area (>2 m)	11.0
Percent Volume (>2 m)	29.3

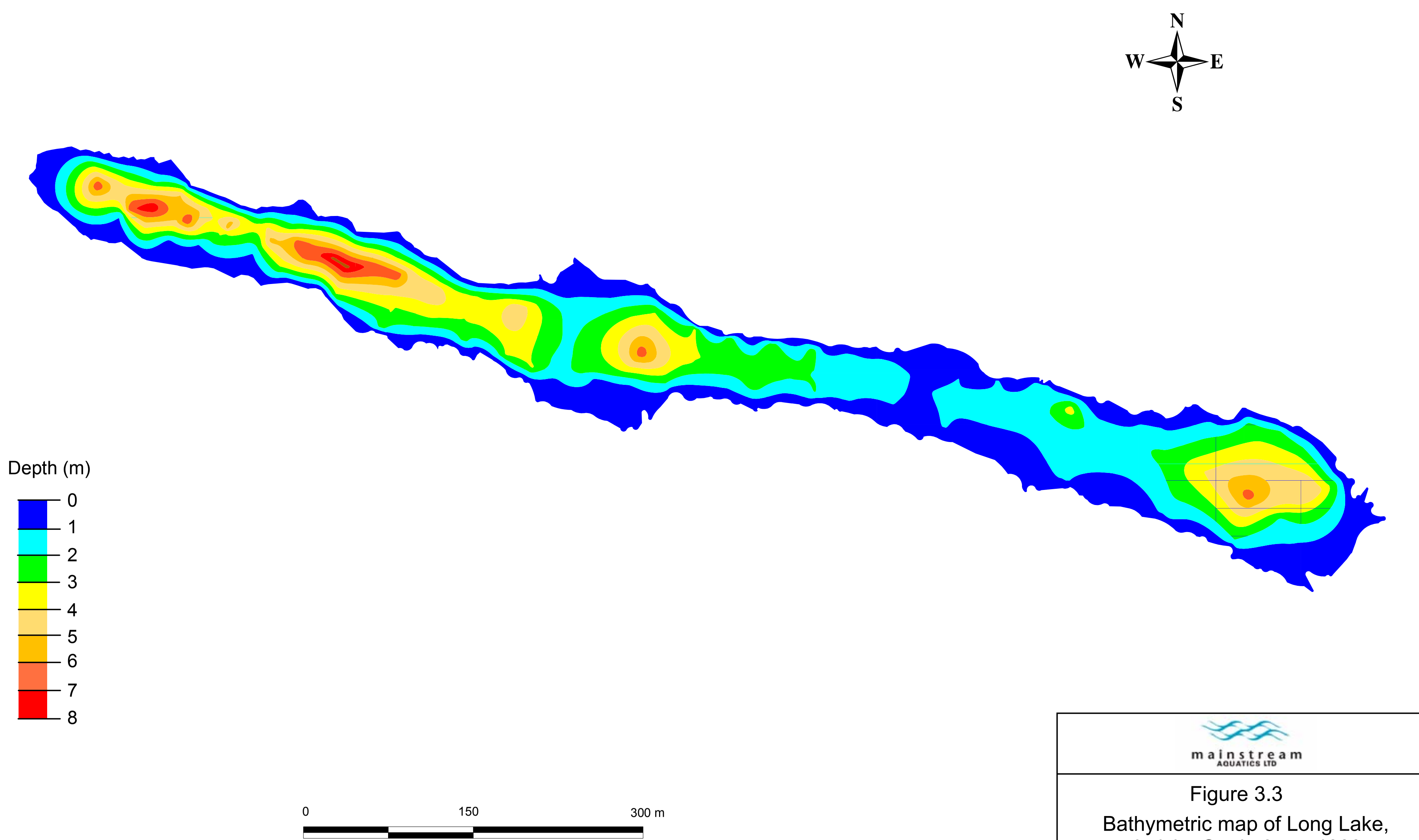

Figure 3.3

Bathymetric map of Long Lake, Jericho Study Area, 1999.

(Data generated by Tahera Diamond Corporation)

The North Pond (0.71 ha) was connected to Long Lake by an ephemeral watercourse that was impassable to fish at all flows. The Long Lake Pond, which was located to the west (1.10 ha) was an extension of Long Lake proper and was connected to the main waterbody by a shallow boulder field that was permanently wetted. Both waterbodies were approximately 7 m deep.

Limnology and Water Quality

Temperature and dissolved oxygen data were collected by RL&L in July 1999 (RL&L 2000a) and July 2000 (RL&L 2000b). Water quality data was collected for Long Lake during July 1999 (RL&L 2000a). Temperature profiles of Long Lake on 19 July 1999 indicated uniform mixing with no thermocline in either the East or West basins (Figure 3.4). Temperatures in the water column ranged between 10 and 11°C. Dissolved oxygen concentrations were near saturation with values between 9 and 10 mg/L throughout the water column. Secchi depth extended to the lake bottom (8.0 m).

A similar pattern was observed in 2000. Dissolved oxygen values were also near saturation ranging between 8 and 9 mg/L throughout the water column. Water temperatures were higher than the previous year ranging from 17 to 20°C (Figure 3.5).

Total phosphorus concentrations in Long Lake were very low (0.007 mg/L) as were nitrite/nitrate - N values (0.003 mg/L) (Table 3.6). Total carbon also was low (2.7 mg/L).

Table 3.6 Water quality data collected for Long Lake, July 1999.

Constituent	Unit	Value
Ammonia – N	mg/L	0.005
Nitrate/Nitrite – N	mg/L	0.003
Nitrate – N	mg/L	0.003
Phosphorus – Total	mg/L	0.007
Silica, Reactive (as Si)	mg/L	0.204
TDS (calculated)	mg/L	7.000
Total Organic Carbon	mg/L	2.700

3.4 AQUATIC BIOLOGY

Phytoplankton - Chlorophyll a

Phytoplankton chlorophyll *a* was collected from Long Lake on 19 July 1999 (RL&L 2000a). The chlorophyll *a* concentration for Long Lake on this date was 1.1 mg/m^{3}.

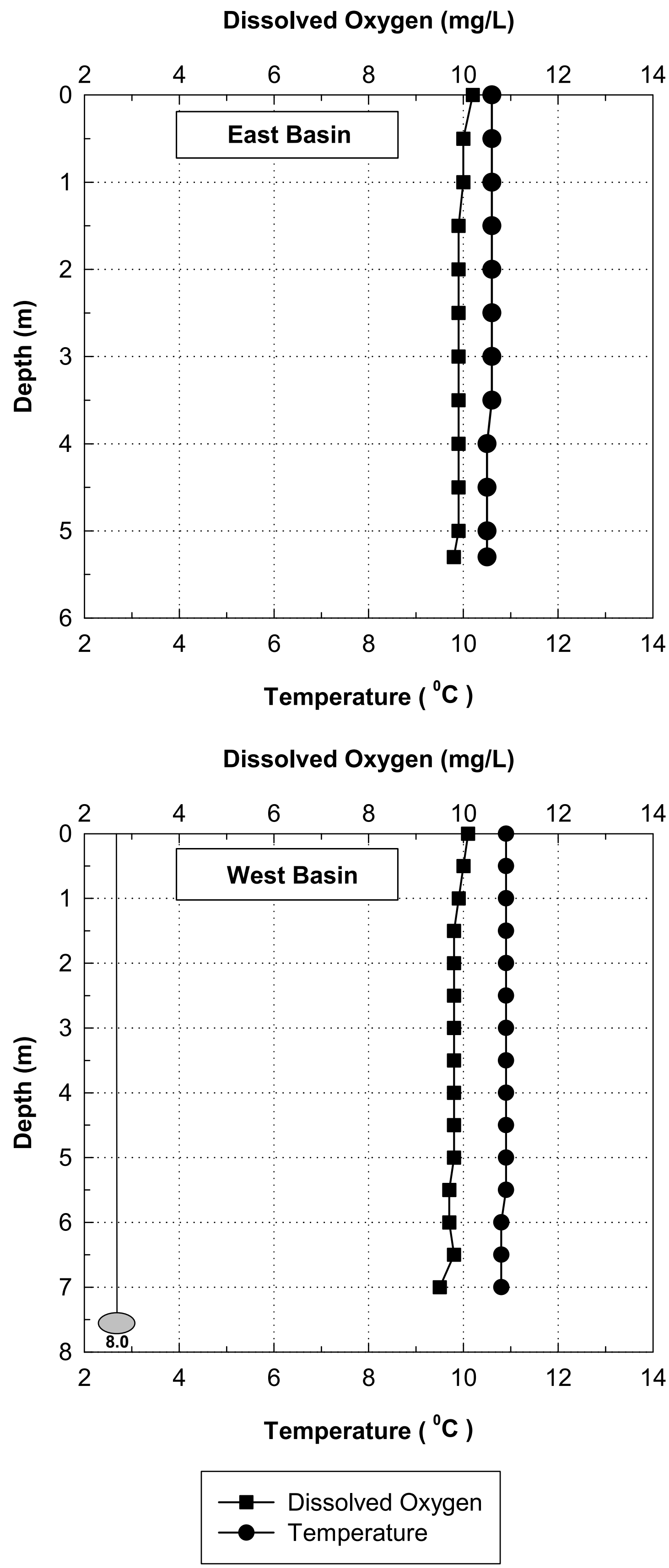

Figure 3.4 Dissolved oxygen and temperature profiles, and transparency of Long Lake, 19 July 1999.

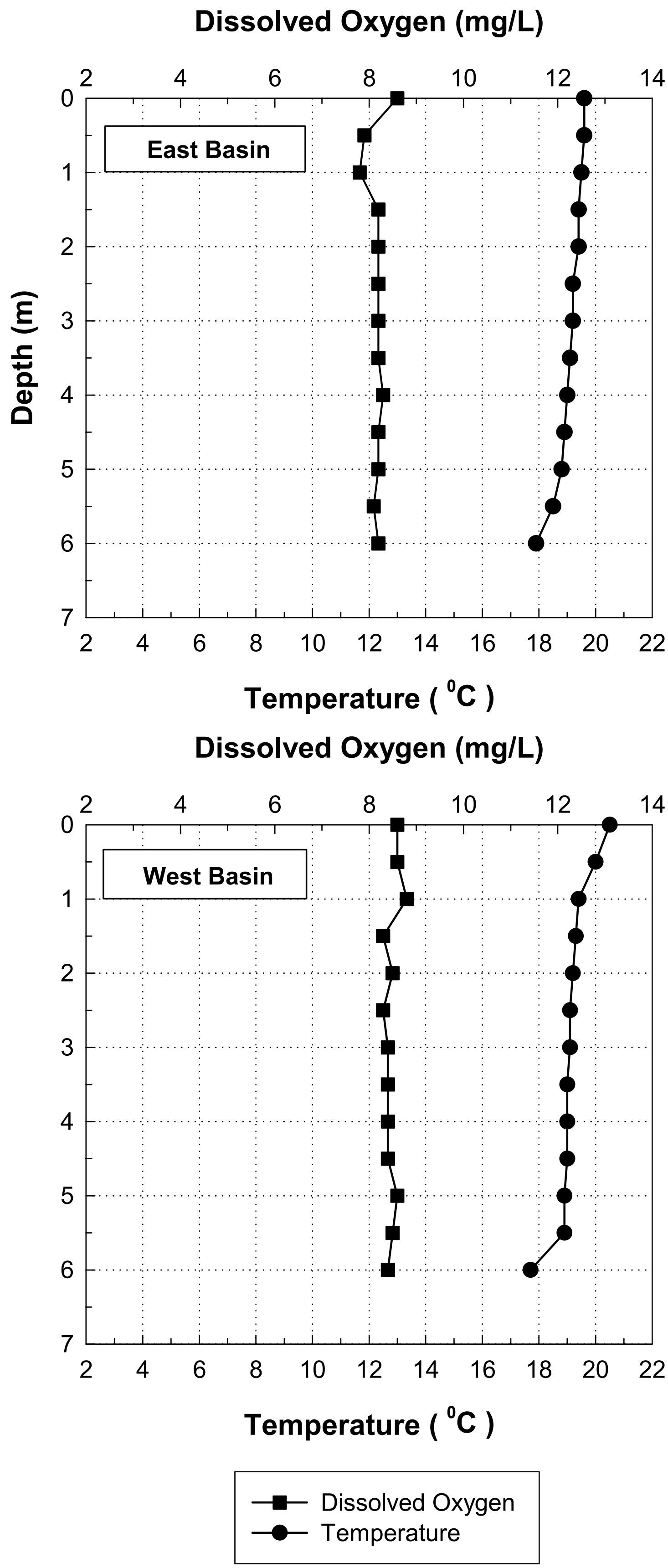

Figure 3.5 Dissolved oxygen and temperature profiles of Long Lake, 29 July 2000.

<u>Zooplankton</u>

Zooplankton samples were collected from Long Lake on 23 July 1999 by RL&L (2000a).

Total zooplankton biomass in Long Lake was 71 253 µg/m^3 (Table 3.7). Cladocera contributed the most to biomass (36 855 µg/m^3). Calanoid copepods were second in importance in terms of biomass followed by cyclopoid copepods. Rotifers and cyclopoid copepods contributed the most toward total zooplankton density; cladocera were least abundant.

Table 3.7 Zooplankton density and biomass data collected from Long Lake, 23 July 1999.

Taxonomic Group	Taxa	Biomass (ug/m^3)	Density (No./m^3)
Calanoida	*Calanoid copepodid*	5206	1812
	Calanoid nauplii	242	2206
	Heterocope sp.	4624	68
	Leptodiaptomus sicilis	12931	1664
	Subtotal	***23003***	***5750***
Cladocera	*Holopedium gibberum*	36 855	34
	Subtotal	***36 855***	***34***
Cyclopoida	*Cyclopoid copepodid*	2135	866
	Cyclopoid nauplii	1893	57226
	Diacyclops bicuspidatus	7197	798
	Subtotal	***11 225***	***58 890***
Rotifers	*Conochillus unicornis*	67	3554
	Kellicotia longispina	60	2206
	Keratella cochlearis	5	245
	Keratella quadrata	11	613
	Polyarthra delichoptera	27	980
	Subtotal	***170***	***7598***
Total		**71 253**	**72 272**

<u>Benthic Macroinvertebrates</u>

Benthic macroinvertebrate samples were collected from Long Lake on 23 July 1999 by RL&L (2000a).

In total, 18 and 14 taxa were collected from each of the littoral and profundal sites of Long Lake respectively (Table 3.8). The total number of benthic macroinvertebrates at the littoral site were slightly higher than those encountered at the profundal site (9606 vs 8389 organisms/m^2). Chironomidae larvae were the dominant taxa numerically at both sites (5174 and 5609 organisms/m^2 at the littoral and profundal sites respectively). Copepods were the second most abundant taxa at the littoral site accounting for 19% of the sample, whereas pelecypods followed behind chironomids at the profundal site accounting for 15% of the sample. Other less numerous taxa at both sites included hydracarina, nematodes, oligochaetes, ostracods, and turbellarians.

Table 3.8 Density of benthic macroinvertebrates in samples collected at the littoral and profundal sites in Long Lake, 23 July 1999.

Taxonomic Group	Littoral	Profundal
Microturbellaria	435	
Mesostoma		217
Nematoda	435	304
Mollusca		
Pelecypoda	651	1217
Annelida		
Oligochaeta		
Naididae	304	
Tubificidae	43	43
Enchytraeidae	130	
Arthropoda		
Arachnida		43
Lebertiidae	130	43
Crustacea		
Copepoda		
Calanoida	1261	261
Cyclopoida	478	435
Harpacticoida	43	
Ostracoda	435	217
Insecta		
Diptera		
Chironomidae	5174	5609
Trichoptera		
Limnephilidae	87	
Total Number Taxa	**18**	**14**
Total Number Organisms/m^2	**9606**	**8389**

4.0 SUMMARY

The Jericho Diamond Project is a diamond mine in Nunavut near the northwest corner of Contwoyto Lake, which is currently being constructed by Tahera Diamond Corporation, which will operate the facility as a stand alone operation. This entails mining and processing diamonds from a kimberlite pipe.

Construction of the Processed Kimberlite Containment Area will inundate three fish-bearing waterbodies collectively termed the 'Long Lake System'. These include Long Lake, the Long Lake Pond immediately west of the main lake, and the North Pond perched above Long Lake along its northern shore. The Long Lake Fish Salvage Program was completed in 2005 during the lowering of water levels in Long Lake, as a partial condition of DFO Authorization NU-00-068. The purpose of the program was to capture and relocate fish in a manner that was consistent with the recommended DFO fish-out protocol.

The fish salvage occurred during thirteen days within the period 16 August to 5 September 2005. Four fish capture methods were used, which included gill nets, fyke nets, minnow traps, and backpack electrofisher. Of these methods backpack electrofisher resulted in the capture of the majority of fish.

Two species were encountered during the salvage: slimy sculpin and burbot. Both species were recorded from Long Lake and the Long Lake Pond, while slimy sculpin was recorded from the North Pond. Approximately one thousand fish were captured and transferred to waterbodies in the immediate vicinity of the Project. The majority of fish originated from Long Lake. Catch rate data for burbot and slimy sculpin collected from Long Lake indicated that the populations likely did not decline during the fish salvage. Fish mortality during the salvage was low.

The sample population of burbot was dominated by small fish, which likely were Age 0. The slimy sculpin sample consisted of a multimodal size distribution, which indicated several age classes.

Data collected in 1999 and 2000 that described the aquatic biology, physical limnology, and fish habitat characteristics were summarized. This information indicated that Long Lake, Long Lake Pond, and the North Pond were small, shallow ultra-oligotrophic waterbodies typical of interior subarctic lakes.

In summary, the goal of the Long Lake Fish Salvage was achieved. Fish in the Long Lake system were captured and relocated during dewatering of Long Lake in a manner that was consistent with DFO fish-out protocol. Fish were not wasted and data were collected that described the fish community, aquatic biology/physical limnology, and fish habitat characteristics.

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APPENDIX A

Appendix A. Biological data collected from fish captured during the Long Lake Fish Salvage Program, 2005.

No.	Date	Location	Species	Length (mm)	Weight (g)
1	8/17/05	West Basin[a]	Slimy sculpin	34	
2	8/17/05	West Basin	Slimy sculpin	35	
3	8/17/05	West Basin	Slimy sculpin	41	
4	8/17/05	West Basin	Slimy sculpin	36	
5	8/17/05	West Basin	Slimy sculpin	40	
6	8/17/05	West Basin	Slimy sculpin	34	
7	8/17/05	West Basin	Slimy sculpin	39	
8	8/17/05	West Basin	Slimy sculpin	40	
9	8/17/05	West Basin	Slimy sculpin	38	
10	8/17/05	West Basin	Slimy sculpin	33	
11	8/17/05	West Basin	Slimy sculpin	39	
12	8/17/05	West Basin	Slimy sculpin	41	
13	8/17/05	West Basin	Slimy sculpin	37	
14	8/17/05	West Basin	Slimy sculpin	40	
15	8/17/05	West Basin	Slimy sculpin	50	
16	8/17/05	West Basin	Slimy sculpin	36	
17	8/17/05	West Basin	Slimy sculpin	34	
18	8/17/05	West Basin	Slimy sculpin	35	
19	8/17/05	West Basin	Slimy sculpin	36	
20	8/17/05	West Basin	Slimy sculpin	30	
21	8/17/05	West Basin	Slimy sculpin	37	
22	8/17/05	West Basin	Slimy sculpin	30	
23	8/17/05	West Basin	Slimy sculpin	29	
24	8/17/05	West Basin	Slimy sculpin	34	
25	8/17/05	West Basin	Slimy sculpin	41	
26	8/17/05	West Basin	Slimy sculpin	37	
27	8/17/05	West Basin	Slimy sculpin	40	
28	8/17/05	West Basin	Slimy sculpin	41	
29	8/17/05	West Basin	Slimy sculpin	36	
30	8/17/05	West Basin	Slimy sculpin	37	
31	8/17/05	West Basin	Slimy sculpin	41	
32	8/17/05	West Basin	Slimy sculpin	32	
33	8/17/05	West Basin	Slimy sculpin	34	
34	8/17/05	West Basin	Slimy sculpin	33	
35	8/17/05	West Basin	Slimy sculpin	39	
36	8/17/05	West Basin	Slimy sculpin	37	
37	8/17/05	West Basin	Slimy sculpin	39	
38	8/17/05	West Basin	Slimy sculpin	40	
39	8/17/05	West Basin	Slimy sculpin	28	
40	8/17/05	West Basin	Slimy sculpin	26	
41	8/17/05	West Basin	Slimy sculpin	37	
42	8/17/05	West Basin	Slimy sculpin	40	
43	8/17/05	West Basin	Slimy sculpin	32	
44	8/17/05	West Basin	Slimy sculpin	42	
45	8/17/05	West Basin	Slimy sculpin	34	
46	8/17/05	West Basin	Slimy sculpin	39	
47	8/17/05	West Basin	Slimy sculpin	36	
48	8/17/05	East Basin	Slimy sculpin	45	
49	8/18/05	East Basin	Slimy sculpin	58	
50	8/18/05	East Basin	Slimy sculpin	40	
51	8/18/05	East Basin	Slimy sculpin	41	
52	8/18/05	West Basin	Slimy sculpin	41	
53	8/18/05	West Basin	Slimy sculpin	39	
54	8/18/05	West Basin	Slimy sculpin	46	
55	8/18/05	West Basin	Slimy sculpin	39	
56	8/18/05	West Basin	Slimy sculpin	36	
57	8/18/05	West Basin	Slimy sculpin	45	
58	8/18/05	West Basin	Slimy sculpin	44	
59	8/18/05	West Basin	Slimy sculpin	40	
60	8/18/05	West Basin	Slimy sculpin	33	
61	8/18/05	West Basin	Slimy sculpin	42	
62	8/18/05	West Basin	Slimy sculpin	34	
63	8/18/05	West Basin	Slimy sculpin	39	
64	8/18/05	West Basin	Slimy sculpin	36	
65	8/18/05	West Basin	Slimy sculpin	40	
66	8/18/05	West Basin	Slimy sculpin	37	
67	8/18/05	West Basin	Slimy sculpin	35	
68	8/18/05	West Basin	Slimy sculpin	39	
69	8/18/05	East Basin	Burbot	134	
70	8/19/05	East Basin	Burbot	210	36
71	8/19/05	West Basin	Slimy Sculpin	78	
72	8/20/05	West Basin	Burbot	34	
73	8/20/05	West Basin	Burbot	38	
74	8/20/05	West Basin	Burbot	38	
75	8/20/05	West Basin	Burbot	44	
76	8/20/05	West Basin	Burbot	39	
77	8/20/05	West Basin	Burbot	40	
78	8/20/05	West Basin	Burbot	43	
79	8/20/05	West Basin	Burbot	47	
80	8/20/05	West Basin	Burbot	48	
81	8/20/05	West Basin	Burbot	37	
82	8/20/05	West Basin	Burbot	43	
83	8/20/05	West Basin	Burbot	42	
84	8/20/05	West Basin	Burbot	46	
85	8/20/05	West Basin	Burbot	38	
86	8/20/05	West Basin	Burbot	30	
87	8/20/05	West Basin	Burbot	41	
88	8/20/05	West Basin	Burbot	47	
89	8/20/05	West Basin	Burbot	39	
90	8/20/05	West Basin	Burbot	41	
91	8/20/05	West Basin	Burbot	43	
92	8/20/05	West Basin	Burbot	43	
93	8/20/05	West Basin	Burbot	41	
94	8/20/05	West Basin	Burbot	46	
95	8/20/05	West Basin	Burbot	33	
96	8/20/05	West Basin	Burbot	40	
97	8/20/05	West Basin	Burbot	42	
98	8/20/05	West Basin	Burbot	41	
99	8/20/05	West Basin	Burbot	37	
100	8/20/05	West Basin	Burbot	42	
101	8/20/05	West Basin	Burbot	44	
102	8/20/05	West Basin	Burbot	39	
103	8/20/05	West Basin	Burbot	42	
104	8/20/05	West Basin	Burbot	42	

Appendix A. Biological data collected from fish captured during the Long Lake Fish Salvage Program, 2005.

No.	Date	Location	Species	Length (mm)	Weight (g)
105	8/20/05	West Basin	Burbot	43	
106	8/20/05	West Basin	Burbot	42	
107	8/20/05	West Basin	Burbot	39	
108	8/20/05	West Basin	Burbot	36	
109	8/20/05	West Basin	Burbot	38	
110	8/20/05	West Basin	Burbot	36	
111	8/20/05	West Basin	Burbot	41	
112	8/20/05	West Basin	Burbot	40	
113	8/20/05	West Basin	Burbot	38	
114	8/20/05	West Basin	Burbot	43	
115	8/20/05	West Basin	Burbot	43	
116	8/20/05	West Basin	Burbot	39	
117	8/20/05	West Basin	Burbot	33	
118	8/20/05	West Basin	Burbot	39	
119	8/20/05	West Basin	Burbot	34	
120	8/20/05	West Basin	Burbot	40	
121	8/20/05	West Basin	Burbot	40	
122	8/20/05	West Basin	Burbot	34	
123	8/20/05	West Basin	Burbot	36	
124	8/20/05	West Basin	Burbot	37	
125	8/20/05	West Basin	Burbot	41	
126	8/20/05	West Basin	Burbot	36	
127	8/20/05	West Basin	Burbot	39	
128	8/20/05	West Basin	Burbot	43	
129	8/20/05	West Basin	Burbot	41	
130	8/20/05	West Basin	Burbot	39	
131	8/20/05	West Basin	Burbot	38	
132	8/20/05	West Basin	Burbot	34	
133	8/20/05	West Basin	Burbot	41	
134	8/20/05	West Basin	Burbot	35	
135	8/20/05	West Basin	Burbot	40	
136	8/20/05	West Basin	Burbot	37	
137	8/20/05	West Basin	Burbot	40	
138	8/20/05	West Basin	Burbot	38	
139	8/20/05	West Basin	Burbot	35	
140	8/20/05	West Basin	Burbot	40	
141	8/20/05	West Basin	Burbot	43	
142	8/20/05	West Basin	Burbot	37	
143	8/20/05	West Basin	Burbot	49	
144	8/20/05	West Basin	Burbot	38	
145	8/20/05	West Basin	Burbot	40	
146	8/20/05	West Basin	Burbot	40	
147	8/20/05	West Basin	Burbot	34	
148	8/20/05	West Basin	Burbot	28	
149	8/20/05	West Basin	Burbot	38	
150	8/20/05	West Basin	Burbot	40	
151	8/20/05	West Basin	Burbot	40	
152	8/20/05	West Basin	Burbot	42	
153	8/20/05	West Basin	Burbot	42	
154	8/20/05	West Basin	Burbot	38	
155	8/20/05	West Basin	Burbot	37	
156	8/20/05	West Basin	Burbot	135	
157	8/20/05	West Basin	Slimy Sculpin	41	
158	8/20/05	West Basin	Slimy Sculpin	37	
159	8/20/05	West Basin	Slimy Sculpin	42	
160	8/20/05	West Basin	Slimy Sculpin	50	
161	8/20/05	West Basin	Slimy Sculpin	17	
162	8/20/05	West Basin	Slimy Sculpin	58	
163	8/20/05	West Basin	Slimy Sculpin	43	
164	8/20/05	West Basin	Slimy Sculpin	35	
165	8/20/05	West Basin	Slimy Sculpin	39	
166	8/20/05	West Basin	Slimy Sculpin	42	
167	8/20/05	West Basin	Slimy Sculpin	38	
168	8/20/05	West Basin	Slimy Sculpin	76	
169	8/20/05	West Basin	Slimy Sculpin	76	
170	8/20/05	West Basin	Slimy Sculpin	18	
171	8/20/05	West Basin	Slimy Sculpin	38	
172	8/20/05	West Basin	Slimy Sculpin	4	
173	8/20/05	West Basin	Slimy Sculpin	78	
174	8/20/05	West Basin	Slimy Sculpin	43	
175	8/20/05	West Basin	Slimy Sculpin	83	
176	8/20/05	West Basin	Slimy Sculpin	41	
177	8/20/05	West Basin	Slimy Sculpin	38	
178	8/20/05	West Basin	Slimy Sculpin	68	
179	8/21/05	East Basin	Burbot	47	
180	8/21/05	West Basin	Burbot	39	
181	8/21/05	West Basin	Burbot	20	
182	8/21/05	West Basin	Burbot	42	
183	8/21/05	West Basin	Burbot	33	
184	8/21/05	West Basin	Burbot	42	
185	8/21/05	West Basin	Burbot	41	
186	8/21/05	West Basin	Burbot	34	
187	8/21/05	West Basin	Burbot	42	
188	8/21/05	West Basin	Burbot	44	
189	8/21/05	West Basin	Burbot	43	
190	8/21/05	West Basin	Burbot	34	
191	8/21/05	West Basin	Burbot	39	
192	8/21/05	West Basin	Burbot	38	
193	8/21/05	West Basin	Burbot	38	
194	8/21/05	West Basin	Burbot	37	
195	8/21/05	West Basin	Burbot	38	
196	8/21/05	West Basin	Burbot	43	
197	8/21/05	West Basin	Burbot	38	
198	8/21/05	West Basin	Burbot	37	
199	8/21/05	West Basin	Burbot	38	
200	8/21/05	West Basin	Burbot	37	
201	8/21/05	West Basin	Burbot	33	
202	8/21/05	West Basin	Burbot	43	
203	8/21/05	West Basin	Burbot	36	
204	8/21/05	West Basin	Burbot	47	
205	8/21/05	West Basin	Burbot	41	
206	8/21/05	West Basin	Burbot	35	
207	8/21/05	West Basin	Burbot	42	
208	8/21/05	West Basin	Burbot	41	

Appendix A. Biological data collected from fish captured during the Long Lake Fish Salvage Program, 2005.

No.	Date	Location	Species	Length (mm)	Weight (g)
209	8/21/05	West Basin	Burbot	40	
210	8/21/05	West Basin	Burbot	42	
211	8/21/05	West Basin	Burbot	39	
212	8/21/05	West Basin	Burbot	40	
213	8/21/05	West Basin	Burbot	41	
214	8/21/05	West Basin	Burbot	38	
215	8/21/05	West Basin	Burbot	44	
216	8/21/05	West Basin	Burbot	40	
217	8/21/05	West Basin	Burbot	37	
218	8/21/05	West Basin	Burbot	38	
219	8/21/05	West Basin	Burbot	41	
220	8/21/05	West Basin	Burbot	44	
221	8/21/05	West Basin	Burbot	41	
222	8/21/05	West Basin	Burbot	43	
223	8/21/05	West Basin	Burbot	41	
224	8/21/05	West Basin	Burbot	35	
225	8/21/05	West Basin	Burbot	39	
226	8/21/05	West Basin	Burbot	37	
227	8/21/05	West Basin	Burbot	49	
228	8/21/05	West Basin	Burbot	38	
229	8/21/05	West Basin	Burbot	41	
230	8/21/05	West Basin	Burbot	45	
231	8/21/05	West Basin	Slimy Sculpin	20	
232	8/21/05	West Basin	Slimy Sculpin	39	
233	8/21/05	West Basin	Slimy Sculpin	63	
234	8/21/05	West Basin	Slimy Sculpin	42	
235	8/21/05	West Basin	Slimy Sculpin	41	
236	8/21/05	West Basin	Slimy Sculpin	17	
237	8/21/05	West Basin	Slimy Sculpin	53	
238	8/21/05	West Basin	Slimy Sculpin	19	
239	8/21/05	West Basin	Slimy Sculpin	58	
240	8/21/05	West Basin	Slimy Sculpin	17	
241	8/21/05	West Basin	Slimy Sculpin	84	6
242	8/21/05	West Basin	Slimy Sculpin	55	
243	8/21/05	West Basin	Slimy Sculpin	52	
244	8/21/05	West Basin	Slimy Sculpin	71	2
245	8/21/05	West Basin	Slimy Sculpin	63	2
246	8/21/05	West Basin	Slimy Sculpin	17	
247	8/21/05	West Basin	Slimy Sculpin	69	4
248	8/21/05	West Basin	Slimy Sculpin	77	6
249	8/22/05	East Basin	Burbot	40	
250	8/22/05	East Basin	Burbot	38	
251	8/22/05	East Basin	Burbot	46	
252	8/22/05	East Basin	Burbot	45	
253	8/22/05	East Basin	Burbot	45	
254	8/22/05	East Basin	Burbot	36	
255	8/22/05	East Basin	Burbot	44	
256	8/22/05	East Basin	Burbot	36	
257	8/22/05	East Basin	Burbot	44	
258	8/22/05	East Basin	Burbot	42	
259	8/22/05	East Basin	Burbot	39	
260	8/22/05	East Basin	Burbot	47	
261	8/22/05	East Basin	Burbot	45	
262	8/22/05	East Basin	Burbot	41	
263	8/22/05	East Basin	Burbot	43	
264	8/22/05	East Basin	Burbot	46	
265	8/22/05	East Basin	Slimy Sculpin	55	2
266	8/22/05	East Basin	Slimy Sculpin	52	
267	8/22/05	East Basin	Slimy Sculpin	66	2
268	8/22/05	East Basin	Slimy Sculpin	57	2
269	8/22/05	East Basin	Slimy Sculpin	40	
270	8/22/05	East Basin	Slimy Sculpin	43	
271	8/22/05	East Basin	Slimy Sculpin	57	
272	8/22/05	East Basin	Slimy Sculpin	43	
273	8/22/05	East Basin	Slimy Sculpin	56	2
274	8/22/05	West Basin	Burbot	96	2
275	8/22/05	West Basin	Burbot	41	
276	8/22/05	West Basin	Burbot	46	
277	8/22/05	West Basin	Burbot	41	
278	8/22/05	West Basin	Burbot	39	
279	8/22/05	West Basin	Burbot	44	
280	8/22/05	West Basin	Burbot	48	
281	8/22/05	West Basin	Burbot	42	
282	8/22/05	West Basin	Burbot	42	
283	8/22/05	West Basin	Burbot	40	
284	8/22/05	West Basin	Burbot	37	
285	8/22/05	West Basin	Burbot	37	
286	8/22/05	West Basin	Burbot	43	
287	8/22/05	West Basin	Slimy Sculpin	58	2
288	8/22/05	West Basin	Slimy Sculpin	57	
289	8/22/05	West Basin	Slimy Sculpin	35	
290	8/22/05	West Basin	Slimy Sculpin	74	4
291	8/22/05	West Basin	Slimy Sculpin	55	
292	8/22/05	West Basin	Slimy Sculpin	38	
293	8/22/05	West Basin	Slimy Sculpin	80	2
294	8/22/05	West Basin	Slimy Sculpin	44	
295	8/22/05	West Basin	Slimy Sculpin	18	
296	8/22/05	West Basin	Slimy Sculpin	15	
297	8/22/05	West Basin	Slimy Sculpin	94	8
298	8/22/05	West Basin	Slimy Sculpin	54	
299	8/22/05	West Basin	Slimy Sculpin	50	
300	8/22/05	West Basin	Slimy Sculpin	40	
301	8/22/05	West Basin	Slimy Sculpin	56	
302	8/22/05	West Basin	Slimy Sculpin	17	
303	8/22/05	West Basin	Slimy Sculpin	20	
304	8/22/05	West Basin	Slimy Sculpin	15	
305	8/22/05	West Basin	Slimy Sculpin	71	2
306	8/23/05	East Basin	Burbot	41	
307	8/23/05	East Basin	Burbot	44	
308	8/23/05	East Basin	Burbot	42	
309	8/23/05	East Basin	Burbot	43	
310	8/23/05	East Basin	Burbot	44	
311	8/23/05	East Basin	Burbot	48	
312	8/23/05	East Basin	Burbot	41	

Appendix A. Biological data collected from fish captured during the Long Lake Fish Salvage Program, 2005.

No.	Date	Location	Species	Length (mm)	Weight (g)
313	8/23/05	East Basin	Burbot	43	
314	8/23/05	East Basin	Burbot	45	
315	8/23/05	East Basin	Burbot	37	
316	8/23/05	East Basin	Burbot	42	
317	8/23/05	East Basin	Burbot	221	64
318	8/23/05	East Basin	Burbot	49	
319	8/23/05	East Basin	Burbot	43	
320	8/23/05	East Basin	Burbot	45	
321	8/23/05	East Basin	Burbot	106	8
322	8/23/05	East Basin	Burbot	47	
323	8/23/05	East Basin	Burbot	41	
324	8/23/05	East Basin	Burbot	43	
325	8/23/05	East Basin	Burbot	49	
326	8/23/05	East Basin	Burbot	110	6
327	8/23/05	East Basin	Burbot	32	
328	8/23/05	East Basin	Burbot	75	4
329	8/23/05	East Basin	Burbot	32	
330	8/23/05	East Basin	Burbot	45	
331	8/23/05	East Basin	Burbot	43	
332	8/23/05	East Basin	Burbot	32	
333	8/23/05	East Basin	Burbot	45	
334	8/23/05	East Basin	Burbot	45	
335	8/23/05	East Basin	Burbot	39	
336	8/23/05	East Basin	Burbot	44	
337	8/23/05	East Basin	Burbot	39	
338	8/23/05	East Basin	Burbot	44	
339	8/23/05	East Basin	Burbot	11	
340	8/23/05	East Basin	Burbot	19	
341	8/23/05	East Basin	Burbot	39	
342	8/23/05	East Basin	Burbot	41	
343	8/23/05	East Basin	Burbot	43	
344	8/23/05	East Basin	Burbot	50	
345	8/23/05	East Basin	Burbot	46	
346	8/23/05	East Basin	Slimy Sculpin	64	
347	8/23/05	East Basin	Slimy Sculpin	70	
348	8/23/05	East Basin	Slimy Sculpin	78	4
349	8/23/05	East Basin	Slimy Sculpin	11	
350	8/23/05	East Basin	Slimy Sculpin	55	
351	8/23/05	East Basin	Slimy Sculpin	57	
352	8/23/05	East Basin	Slimy Sculpin	80	4
353	8/23/05	East Basin	Slimy Sculpin	75	
354	8/23/05	East Basin	Slimy Sculpin	78	
355	8/23/05	East Basin	Slimy Sculpin	69	
356	8/23/05	East Basin	Slimy Sculpin	44	
357	8/23/05	East Basin	Slimy Sculpin	54	
358	8/23/05	East Basin	Slimy Sculpin	56	
359	8/23/05	East Basin	Slimy Sculpin	74	4
360	8/23/05	East Basin	Slimy Sculpin	65	2
361	8/23/05	East Basin	Slimy Sculpin	66	
362	8/23/05	East Basin	Slimy Sculpin	84	6
363	8/23/05	East Basin	Slimy Sculpin	54	
364	8/23/05	East Basin	Slimy Sculpin	44	
365	8/23/05	East Basin	Slimy Sculpin	61	
366	8/23/05	East Basin	Slimy Sculpin	44	
367	8/23/05	East Basin	Slimy Sculpin	70	2
368	8/23/05	East Basin	Slimy Sculpin	56	
369	8/23/05	East Basin	Slimy Sculpin	18	
370	8/23/05	East Basin	Slimy Sculpin	9	
371	8/23/05	East Basin	Slimy Sculpin	67	
372	8/23/05	East Basin	Slimy Sculpin	75	
373	8/23/05	East Basin	Slimy Sculpin	30	
374	8/23/05	East Basin	Slimy Sculpin	15	
375	8/23/05	West Basin	Burbot	42	
376	8/23/05	West Basin	Burbot	34	
377	8/23/05	West Basin	Burbot	42	
378	8/23/05	West Basin	Burbot	44	
379	8/23/05	West Basin	Burbot	40	
380	8/23/05	West Basin	Burbot	42	
381	8/23/05	West Basin	Burbot	45	
382	8/23/05	West Basin	Burbot	48	
383	8/23/05	West Basin	Slimy Sculpin	79	2
384	8/23/05	West Basin	Slimy Sculpin	68	
385	8/23/05	West Basin	Slimy Sculpin	41	
386	8/23/05	West Basin	Slimy Sculpin	67	
387	9/1/05	West Basin	Burbot	49	
388	9/1/05	West Basin	Burbot	45	
389	9/1/05	West Basin	Burbot	45	
390	9/1/05	West Basin	Burbot	52	
391	9/1/05	West Basin	Burbot	46	
392	9/1/05	West Basin	Burbot	45	
393	9/1/05	West Basin	Burbot	48	
394	9/1/05	West Basin	Burbot	48	
395	9/1/05	West Basin	Burbot	48	
396	9/1/05	West Basin	Burbot	49	
397	9/1/05	West Basin	Burbot	40	
398	9/1/05	West Basin	Burbot	44	
399	9/1/05	West Basin	Burbot	52	
400	9/1/05	West Basin	Burbot	42	
401	9/1/05	West Basin	Burbot	49	
402	9/1/05	West Basin	Burbot	50	
403	9/1/05	West Basin	Burbot	40	
404	9/1/05	West Basin	Burbot	46	
405	9/1/05	West Basin	Burbot	39	
406	9/1/05	West Basin	Burbot	43	
407	9/1/05	West Basin	Burbot	51	
408	9/1/05	West Basin	Burbot	46	
409	9/1/05	West Basin	Burbot	47	
410	9/1/05	West Basin	Burbot	44	
411	9/1/05	West Basin	Burbot	47	
412	9/1/05	West Basin	Burbot	45	
413	9/1/05	West Basin	Burbot	45	
414	9/1/05	West Basin	Burbot	47	
415	9/1/05	West Basin	Burbot	111	
416	9/1/05	West Basin	Slimy Sculpin	21	

Appendix A. Biological data collected from fish captured during the Long Lake Fish Salvage Program, 2005.

No.	Date	Location	Species	Length (mm)	Weight (g)	No.	Date	Location	Species	Length (mm)	Weight (g)
417	9/1/05	West Basin	Slimy Sculpin	54		469	9/2/05	West Basin	Burbot	51	
418	9/1/05	West Basin	Slimy Sculpin	68		470	9/2/05	West Basin	Burbot	51	
419	9/2/05	East Basin	Burbot	52		471	9/2/05	West Basin	Burbot	55	
420	9/2/05	East Basin	Burbot	45		472	9/2/05	West Basin	Burbot	46	
421	9/2/05	East Basin	Burbot	52		473	9/2/05	West Basin	Burbot	56	
422	9/2/05	East Basin	Burbot	53		474	9/2/05	West Basin	Burbot	48	
423	9/2/05	East Basin	Burbot	47		475	9/2/05	West Basin	Burbot	45	
424	9/2/05	East Basin	Burbot	51		476	9/2/05	West Basin	Burbot	52	
425	9/2/05	East Basin	Burbot	47		477	9/2/05	West Basin	Burbot	51	
426	9/2/05	East Basin	Burbot	47		478	9/2/05	West Basin	Burbot	47	
427	9/2/05	East Basin	Burbot	50		479	9/2/05	West Basin	Burbot	54	
428	9/2/05	East Basin	Burbot	52		480	9/2/05	West Basin	Burbot	56	
429	9/2/05	East Basin	Burbot	45		481	9/2/05	West Basin	Burbot	200	
430	9/2/05	East Basin	Burbot	49		482	9/2/05	West Basin	Burbot	51	
431	9/2/05	East Basin	Burbot	48		483	9/2/05	West Basin	Burbot	46	
432	9/2/05	East Basin	Burbot	56		484	9/2/05	West Basin	Burbot	46	
433	9/2/05	East Basin	Burbot	50		485	9/2/05	West Basin	Burbot	40	
434	9/2/05	East Basin	Burbot	51		486	9/2/05	West Basin	Burbot	49	
435	9/2/05	East Basin	Burbot	51		487	9/2/05	West Basin	Burbot	50	
436	9/2/05	East Basin	Slimy Sculpin	66		488	9/2/05	West Basin	Burbot	50	
437	9/2/05	West Basin	Burbot	47		489	9/2/05	West Basin	Burbot	52	
438	9/2/05	West Basin	Burbot	50		490	9/2/05	West Basin	Burbot	51	
439	9/2/05	West Basin	Burbot	51		491	9/2/05	West Basin	Burbot	57	
440	9/2/05	West Basin	Burbot	56		492	9/2/05	West Basin	Burbot	53	
441	9/2/05	West Basin	Burbot	47		493	9/2/05	West Basin	Burbot	45	
442	9/2/05	West Basin	Burbot	50		494	9/2/05	West Basin	Burbot	38	
443	9/2/05	West Basin	Burbot	48		495	9/2/05	West Basin	Burbot	37	
444	9/2/05	West Basin	Burbot	46		496	9/2/05	West Basin	Burbot	41	
445	9/2/05	West Basin	Burbot	54		497	9/2/05	West Basin	Burbot	42	
446	9/2/05	West Basin	Burbot	53		498	9/2/05	West Basin	Burbot	36	
447	9/2/05	West Basin	Burbot	44		499	9/2/05	West Basin	Burbot	40	
448	9/2/05	West Basin	Burbot	50		500	9/2/05	West Basin	Burbot	40	
449	9/2/05	West Basin	Burbot	43		501	9/2/05	West Basin	Burbot	41	
450	9/2/05	West Basin	Burbot	49		502	9/2/05	West Basin	Burbot	43	
451	9/2/05	West Basin	Burbot	52		503	9/2/05	West Basin	Burbot	45	
452	9/2/05	West Basin	Burbot	48		504	9/2/05	West Basin	Burbot	39	
453	9/2/05	West Basin	Burbot	45		505	9/2/05	West Basin	Burbot	35	
454	9/2/05	West Basin	Burbot	53		506	9/2/05	West Basin	Burbot	45	
455	9/2/05	West Basin	Burbot	47		507	9/2/05	West Basin	Burbot	49	
456	9/2/05	West Basin	Burbot	41		508	9/2/05	West Basin	Burbot	40	
457	9/2/05	West Basin	Burbot	49		509	9/2/05	West Basin	Burbot	40	
458	9/2/05	West Basin	Burbot	48		510	9/2/05	West Basin	Slimy Sculpin	43	
459	9/2/05	West Basin	Burbot	45		511	9/2/05	West Basin	Slimy Sculpin	21	
460	9/2/05	West Basin	Burbot	45		512	9/2/05	West Basin	Slimy Sculpin	46	
461	9/2/05	West Basin	Burbot	52		513	9/2/05	West Basin	Slimy Sculpin	17	
462	9/2/05	West Basin	Burbot	48		514	9/2/05	West Basin	Slimy Sculpin	59	
463	9/2/05	West Basin	Burbot	46		515	9/2/05	West Basin	Slimy Sculpin	66	
464	9/2/05	West Basin	Burbot	57		516	9/2/05	West Basin	Slimy Sculpin	70	
465	9/2/05	West Basin	Burbot	48		517	9/2/05	West Basin	Slimy Sculpin	67	
466	9/2/05	West Basin	Burbot	50		518	9/2/05	West Basin	Slimy Sculpin	56	
467	9/2/05	West Basin	Burbot	45		519	9/2/05	West Basin	Slimy Sculpin	76	
468	9/2/05	West Basin	Burbot	20		520	9/2/05	West Basin	Slimy Sculpin	55	

Appendix A. Biological data collected from fish captured during the Long Lake Fish Salvage Program, 2005.

No.	Date	Location	Species	Length (mm)	Weight (g)
521	9/2/05	West Basin	Slimy Sculpin	45	
522	9/2/05	West Basin	Slimy Sculpin	41	
523	9/2/05	West Basin	Slimy Sculpin	61	
524	9/2/05	West Basin	Slimy Sculpin	37	
525	9/2/05	West Basin	Slimy Sculpin	36	
526	9/2/05	West Basin	Slimy Sculpin	52	
527	9/3/05	East Basin[b]	Burbot	57	
528	9/3/05	East Basin	Burbot	52	
529	9/3/05	East Basin	Burbot	46	
530	9/3/05	East Basin	Burbot	54	
531	9/3/05	East Basin	Burbot	47	
532	9/3/05	East Basin	Burbot	58	
533	9/3/05	East Basin	Burbot	55	
534	9/3/05	East Basin	Burbot	54	
535	9/3/05	East Basin	Burbot	59	
536	9/3/05	East Basin	Burbot	62	
537	9/3/05	East Basin	Burbot	60	
538	9/3/05	East Basin	Burbot	57	
539	9/3/05	East Basin	Burbot	50	
540	9/3/05	East Basin	Burbot	52	
541	9/3/05	East Basin	Burbot	47	
542	9/3/05	East Basin	Burbot	49	
543	9/3/05	East Basin	Burbot	56	
544	9/3/05	East Basin	Burbot	53	
545	9/3/05	East Basin	Burbot	51	
546	9/3/05	East Basin	Burbot	54	
547	9/3/05	East Basin	Burbot	53	
548	9/3/05	East Basin	Burbot	46	
549	9/3/05	East Basin	Burbot	54	
550	9/3/05	East Basin	Burbot	50	
551	9/3/05	East Basin	Burbot	50	
552	9/3/05	East Basin	Burbot	56	
553	9/3/05	East Basin	Burbot	53	
554	9/3/05	East Basin	Burbot	54	
555	9/3/05	East Basin	Burbot	51	
556	9/3/05	East Basin	Burbot	51	
557	9/3/05	East Basin	Burbot	52	
558	9/3/05	East Basin	Burbot	58	
559	9/3/05	East Basin	Burbot	57	
560	9/3/05	East Basin	Burbot	55	
561	9/3/05	East Basin	Burbot	59	
562	9/3/05	East Basin	Burbot	53	
563	9/3/05	East Basin	Burbot	46	
564	9/3/05	East Basin	Burbot	59	
565	9/3/05	East Basin	Burbot	50	
566	9/3/05	East Basin	Burbot	46	
567	9/3/05	East Basin	Burbot	46	
568	9/3/05	East Basin	Burbot	54	
569	9/3/05	East Basin	Burbot	46	
570	9/3/05	East Basin	Burbot	51	
571	9/3/05	East Basin	Burbot	56	
572	9/3/05	East Basin	Burbot	56	
573	9/3/05	East Basin	Burbot	53	
574	9/3/05	East Basin	Burbot	55	
575	9/3/05	East Basin	Burbot	52	
576	9/3/05	East Basin	Burbot	53	
577	9/3/05	East Basin	Burbot	123	12
578	9/3/05	East Basin	Burbot	52	
579	9/3/05	East Basin	Burbot	47	
580	9/3/05	East Basin	Burbot	56	
581	9/3/05	East Basin	Burbot	60	
582	9/3/05	East Basin	Burbot	53	
583	9/3/05	East Basin	Burbot	56	
584	9/3/05	East Basin	Burbot	54	
585	9/3/05	East Basin	Burbot	50	
586	9/3/05	East Basin	Burbot	55	
587	9/3/05	East Basin	Burbot	47	
588	9/3/05	East Basin	Burbot	51	
589	9/3/05	East Basin	Burbot	53	
590	9/3/05	East Basin	Burbot	56	
591	9/3/05	East Basin	Burbot	55	
592	9/3/05	East Basin	Burbot	52	
593	9/3/05	East Basin	Burbot	47	
594	9/3/05	East Basin	Burbot	50	
595	9/3/05	East Basin	Burbot	55	
596	9/3/05	East Basin	Burbot	49	
597	9/3/05	East Basin	Burbot	57	
598	9/3/05	East Basin	Burbot	51	
599	9/3/05	East Basin	Burbot	49	
600	9/3/05	East Basin	Burbot	56	
601	9/3/05	East Basin	Burbot	46	
602	9/3/05	East Basin	Burbot	52	
603	9/3/05	East Basin	Burbot	52	
604	9/3/05	East Basin	Burbot	52	
605	9/3/05	East Basin	Burbot	55	
606	9/3/05	East Basin	Burbot	34	
607	9/3/05	East Basin	Burbot	60	
608	9/3/05	East Basin	Burbot	51	
609	9/3/05	East Basin	Burbot	52	
610	9/3/05	East Basin	Burbot	54	
611	9/3/05	East Basin	Burbot	41	
612	9/3/05	East Basin	Burbot	56	
613	9/3/05	East Basin	Burbot	54	
614	9/3/05	East Basin	Burbot	60	
615	9/3/05	East Basin	Burbot	51	
616	9/3/05	East Basin	Burbot	45	
617	9/3/05	East Basin	Burbot	52	
618	9/3/05	East Basin	Burbot	54	
619	9/3/05	East Basin	Burbot	55	
620	9/3/05	East Basin	Burbot	56	
621	9/3/05	East Basin	Burbot	44	
622	9/3/05	East Basin	Burbot	29	
623	9/3/05	East Basin	Burbot	50	
624	9/3/05	East Basin	Burbot	51	

Appendix A. Biological data collected from fish captured during the Long Lake Fish Salvage Program, 2005.

No.	Date	Location	Species	Length (mm)	Weight (g)
625	9/3/05	East Basin	Burbot	51	
626	9/3/05	East Basin	Burbot	50	
627	9/3/05	East Basin	Burbot	52	
628	9/3/05	East Basin	Burbot	54	
629	9/3/05	East Basin	Burbot	49	
630	9/3/05	East Basin	Burbot	54	
631	9/3/05	East Basin	Burbot	50	
632	9/3/05	East Basin	Burbot	51	
633	9/3/05	East Basin	Burbot	54	
634	9/3/05	East Basin	Burbot	50	
635	9/3/05	East Basin	Burbot	51	
636	9/3/05	East Basin	Burbot	48	
637	9/3/05	East Basin	Burbot	57	
638	9/3/05	East Basin	Burbot	61	
639	9/3/05	East Basin	Burbot	48	
640	9/3/05	East Basin	Burbot	51	
641	9/3/05	East Basin	Burbot	52	
642	9/3/05	East Basin	Burbot	46	
643	9/3/05	East Basin	Burbot	43	
644	9/3/05	East Basin	Burbot	55	
645	9/3/05	East Basin	Burbot	50	
646	9/3/05	East Basin	Burbot	57	
647	9/3/05	East Basin	Burbot	48	
648	9/3/05	East Basin	Burbot	52	
649	9/3/05	East Basin	Burbot	50	
650	9/3/05	East Basin	Burbot	51	
651	9/3/05	East Basin	Burbot	55	
652	9/3/05	East Basin	Burbot	56	
653	9/3/05	East Basin	Burbot	40	
654	9/3/05	East Basin	Burbot	54	
655	9/3/05	East Basin	Burbot	61	
656	9/3/05	East Basin	Burbot	47	
657	9/3/05	East Basin	Burbot	48	
658	9/3/05	East Basin	Burbot	53	
659	9/3/05	East Basin	Burbot	56	
660	9/3/05	East Basin	Burbot	51	
661	9/3/05	East Basin	Burbot	54	
662	9/3/05	East Basin	Burbot	55	
663	9/3/05	East Basin	Burbot	47	
664	9/3/05	East Basin	Burbot	51	
665	9/3/05	East Basin	Burbot	56	
666	9/3/05	East Basin	Burbot	52	
667	9/3/05	East Basin	Burbot	55	
668	9/3/05	East Basin	Burbot	43	
669	9/3/05	East Basin	Burbot	50	
670	9/3/05	East Basin	Burbot	50	
671	9/3/05	East Basin	Burbot	55	
672	9/3/05	East Basin	Burbot	45	
673	9/3/05	East Basin	Burbot	48	
674	9/3/05	East Basin	Burbot	47	
675	9/3/05	East Basin	Burbot	40	
676	9/3/05	East Basin	Burbot	46	
677	9/3/05	East Basin	Burbot	48	
678	9/3/05	East Basin	Burbot	43	
679	9/3/05	East Basin	Burbot	50	
680	9/3/05	East Basin	Burbot	46	
681	9/3/05	East Basin	Burbot	53	
682	9/3/05	East Basin	Burbot	55	
683	9/3/05	East Basin	Burbot	50	
684	9/3/05	East Basin	Burbot	47	
685	9/3/05	East Basin	Burbot	50	
686	9/3/05	East Basin	Burbot	51	
687	9/3/05	East Basin	Burbot	47	
688	9/3/05	East Basin	Burbot	46	
689	9/3/05	East Basin	Burbot	52	
690	9/3/05	East Basin	Burbot	50	
691	9/3/05	East Basin	Burbot	47	
692	9/3/05	East Basin	Burbot	46	
693	9/3/05	East Basin	Burbot	49	
694	9/3/05	East Basin	Burbot	46	
695	9/3/05	East Basin	Burbot	112	16
696	9/3/05	East Basin	Burbot	50	
697	9/3/05	East Basin	Burbot	50	
698	9/3/05	East Basin	Burbot	47	
699	9/3/05	East Basin	Burbot	51	
700	9/3/05	East Basin	Burbot	50	
701	9/3/05	East Basin	Burbot	54	
702	9/3/05	East Basin	Burbot	51	
703	9/3/05	East Basin	Burbot	50	
704	9/3/05	East Basin	Burbot	60	
705	9/3/05	East Basin	Burbot	59	
706	9/3/05	East Basin	Burbot	44	
707	9/3/05	East Basin	Burbot	49	
708	9/3/05	East Basin	Burbot	54	
709	9/3/05	East Basin	Burbot	60	
710	9/3/05	East Basin	Burbot	59	
711	9/3/05	East Basin	Burbot	58	
712	9/3/05	East Basin	Burbot	48	
713	9/3/05	East Basin	Burbot	47	
714	9/3/05	East Basin	Burbot	46	
715	9/3/05	East Basin	Burbot	40	
716	9/3/05	East Basin	Burbot	52	
717	9/3/05	East Basin	Burbot	54	
718	9/3/05	East Basin	Burbot	53	
719	9/3/05	East Basin	Burbot	49	
720	9/3/05	East Basin	Burbot	50	
721	9/3/05	East Basin	Burbot	44	
722	9/3/05	East Basin	Burbot	51	
723	9/3/05	East Basin	Burbot	48	
724	9/3/05	East Basin	Burbot	56	
725	9/3/05	East Basin	Burbot	51	
726	9/3/05	East Basin	Burbot	49	
727	9/3/05	East Basin	Burbot	46	
728	9/3/05	East Basin	Burbot	48	

Appendix A. Biological data collected from fish captured during the Long Lake Fish Salvage Program, 2005.

No.	Date	Location	Species	Length (mm)	Weight (g)
729	9/3/05	East Basin	Burbot	49	
730	9/3/05	East Basin	Slimy Sculpin	21	
731	9/3/05	East Basin	Slimy Sculpin	26	
732	9/3/05	East Basin	Slimy Sculpin	22	
733	9/3/05	East Basin	Slimy Sculpin	75	4
734	9/3/05	East Basin	Slimy Sculpin	67	2
735	9/3/05	East Basin	Slimy Sculpin	70	2
736	9/3/05	East Basin	Slimy Sculpin	45	
737	9/3/05	East Basin	Slimy Sculpin	74	4
738	9/3/05	East Basin	Slimy Sculpin	60	2
739	9/3/05	East Basin	Slimy Sculpin	26	
740	9/3/05	East Basin	Slimy Sculpin	56	2
741	9/3/05	East Basin	Slimy Sculpin	45	
742	9/3/05	East Basin	Slimy Sculpin	15	
743	9/3/05	East Basin	Slimy Sculpin	21	
744	9/3/05	East Basin	Slimy Sculpin	25	
745	9/3/05	East Basin	Slimy Sculpin	21	
746	9/3/05	East Basin	Slimy Sculpin	44	
747	9/3/05	East Basin	Slimy Sculpin	25	
748	9/3/05	East Basin	Slimy Sculpin	50	
749	9/3/05	East Basin	Slimy Sculpin	65	2
750	9/3/05	East Basin	Slimy Sculpin	65	2
751	9/3/05	East Basin	Slimy Sculpin	70	2
752	9/3/05	East Basin	Slimy Sculpin	73	2
753	9/3/05	East Basin	Slimy Sculpin	55	
754	9/3/05	East Basin	Slimy Sculpin	20	
755	9/3/05	East Basin	Slimy Sculpin	47	
756	9/3/05	East Basin	Slimy Sculpin	55	
757	9/3/05	East Basin	Slimy Sculpin	17	
758	9/4/05	West Basin	Burbot	50	
759	9/4/05	West Basin	Burbot	50	
760	9/4/05	West Basin	Burbot	51	
761	9/4/05	West Basin	Burbot	47	
762	9/4/05	West Basin	Burbot	42	
763	9/4/05	West Basin	Burbot	45	
764	9/4/05	West Basin	Burbot	45	
765	9/4/05	West Basin	Burbot	46	
766	9/4/05	West Basin	Burbot	52	
767	9/4/05	West Basin	Burbot	47	
768	9/4/05	West Basin	Burbot	45	
769	9/4/05	West Basin	Burbot	47	
770	9/4/05	West Basin	Burbot	45	
771	9/4/05	West Basin	Burbot	47	
772	9/4/05	West Basin	Burbot	45	
773	9/4/05	West Basin	Burbot	50	
774	9/4/05	West Basin	Burbot	45	
775	9/4/05	West Basin	Burbot	43	
776	9/4/05	West Basin	Burbot	49	
777	9/4/05	West Basin	Burbot	50	
778	9/4/05	West Basin	Burbot	45	
779	9/4/05	West Basin	Burbot	47	
780	9/4/05	West Basin	Burbot	50	
781	9/4/05	West Basin	Burbot	42	
782	9/4/05	West Basin	Burbot	45	
783	9/4/05	West Basin	Burbot	46	
784	9/4/05	West Basin	Burbot	45	
785	9/4/05	West Basin	Burbot	52	
786	9/4/05	West Basin	Burbot	54	
787	9/4/05	West Basin	Burbot	43	
788	9/4/05	West Basin	Burbot	46	
789	9/4/05	West Basin	Burbot	45	
790	9/4/05	West Basin	Burbot	50	
791	9/4/05	West Basin	Burbot	46	
792	9/4/05	West Basin	Burbot	47	
793	9/4/05	West Basin	Burbot	52	
794	9/4/05	West Basin	Burbot	44	
795	9/4/05	West Basin	Burbot	50	
796	9/4/05	West Basin	Burbot	47	
797	9/4/05	West Basin	Burbot	45	
798	9/4/05	West Basin	Burbot	45	
799	9/4/05	West Basin	Burbot	54	
800	9/4/05	West Basin	Burbot	47	
801	9/4/05	West Basin	Burbot	50	
802	9/4/05	West Basin	Burbot	42	
803	9/4/05	West Basin	Burbot	49	
804	9/4/05	West Basin	Burbot	43	
805	9/4/05	West Basin	Burbot	48	
806	9/4/05	West Basin	Burbot	50	
807	9/4/05	West Basin	Burbot	50	
808	9/4/05	West Basin	Burbot	45	
809	9/4/05	West Basin	Burbot	45	
810	9/4/05	West Basin	Burbot	48	
811	9/4/05	West Basin	Burbot	45	
812	9/4/05	West Basin	Burbot	50	
813	9/4/05	West Basin	Burbot	51	
814	9/4/05	West Basin	Burbot	47	
815	9/4/05	West Basin	Burbot	49	
816	9/4/05	West Basin	Burbot	54	
817	9/4/05	West Basin	Burbot	50	
818	9/4/05	West Basin	Burbot	50	
819	9/4/05	West Basin	Burbot	49	
820	9/4/05	West Basin	Burbot	56	
821	9/4/05	West Basin	Burbot	54	
822	9/4/05	West Basin	Burbot	47	
823	9/4/05	West Basin	Burbot	52	
824	9/4/05	West Basin	Burbot	51	
825	9/4/05	West Basin	Burbot	51	
826	9/4/05	West Basin	Burbot	46	
827	9/4/05	West Basin	Burbot	50	
828	9/4/05	West Basin	Burbot	49	
829	9/4/05	West Basin	Burbot	47	
830	9/4/05	West Basin	Burbot	53	
831	9/4/05	West Basin	Burbot	45	
832	9/4/05	West Basin	Burbot	47	

Appendix A. Biological data collected from fish captured during the Long Lake Fish Salvage Program, 2005.

No.	Date	Location	Species	Length (mm)	Weight (g)
833	9/4/05	West Basin	Burbot	51	
834	9/4/05	West Basin	Burbot	50	
835	9/4/05	West Basin	Burbot	50	
836	9/4/05	West Basin	Burbot	45	
837	9/4/05	West Basin	Burbot	50	
838	9/4/05	West Basin	Burbot	52	
839	9/4/05	West Basin	Burbot	49	
840	9/4/05	West Basin	Burbot	44	
841	9/4/05	West Basin	Burbot	53	
842	9/4/05	West Basin	Burbot	39	
843	9/4/05	West Basin	Burbot	53	
844	9/4/05	West Basin	Burbot	53	
845	9/4/05	West Basin	Burbot	48	
846	9/4/05	West Basin	Burbot	36	
847	9/4/05	West Basin	Burbot	44	
848	9/4/05	West Basin	Burbot	41	
849	9/4/05	West Basin	Burbot	50	
850	9/4/05	West Basin	Burbot	47	
851	9/4/05	West Basin	Burbot	37	
852	9/4/05	West Basin	Burbot	36	
853	9/4/05	West Basin	Burbot	45	
854	9/4/05	West Basin	Burbot	53	
855	9/4/05	West Basin	Burbot	45	
856	9/4/05	West Basin	Burbot	54	
857	9/4/05	West Basin	Burbot	49	
858	9/4/05	West Basin	Burbot	55	
859	9/4/05	West Basin	Burbot	48	
860	9/4/05	West Basin	Burbot	49	
861	9/4/05	West Basin	Burbot	40	
862	9/4/05	West Basin	Burbot	43	
863	9/4/05	West Basin	Burbot	46	
864	9/4/05	West Basin	Burbot	49	
865	9/4/05	West Basin	Burbot	50	
866	9/4/05	West Basin	Burbot	48	
867	9/4/05	West Basin	Burbot	37	
868	9/4/05	West Basin	Burbot	48	
869	9/4/05	West Basin	Burbot	50	
870	9/4/05	West Basin	Burbot	54	
871	9/4/05	West Basin	Burbot	49	
872	9/4/05	West Basin	Slimy Sculpin	76	
873	9/4/05	West Basin	Slimy Sculpin	55	
874	9/4/05	West Basin	Slimy Sculpin	63	
875	9/4/05	West Basin	Slimy Sculpin	72	2
876	9/4/05	West Basin	Slimy Sculpin	71	
877	9/4/05	West Basin	Slimy Sculpin	43	
878	9/4/05	West Basin	Slimy Sculpin	57	
879	9/4/05	West Basin	Slimy Sculpin	22	
880	9/4/05	West Basin	Slimy Sculpin	20	
881	9/4/05	West Basin	Slimy Sculpin	22	
882	9/4/05	West Basin	Slimy Sculpin	44	
883	9/4/05	West Basin	Slimy Sculpin	71	2
884	9/4/05	West Basin	Slimy Sculpin	65	
885	9/4/05	West Basin	Slimy Sculpin	55	
886	9/4/05	West Basin	Slimy Sculpin	38	
887	9/4/05	West Basin	Slimy Sculpin	52	
888	9/4/05	West Basin	Slimy Sculpin	61	
889	9/4/05	West Basin	Slimy Sculpin	21	
890	9/4/05	West Basin	Slimy Sculpin	45	
891	9/4/05	West Basin	Slimy Sculpin	72	
892	9/4/05	West Basin	Slimy Sculpin	64	
893	9/4/05	West Basin	Slimy Sculpin	75	
894	9/4/05	West Basin	Slimy Sculpin	66	
895	9/4/05	West Basin	Slimy Sculpin	43	
896	9/4/05	West Basin	Slimy Sculpin	19	
897	9/5/05	East Basin	Burbot	60	
898	9/5/05	East Basin	Burbot	50	
899	9/5/05	East Basin	Burbot	45	
900	9/5/05	East Basin	Burbot	48	
901	9/5/05	East Basin	Burbot	56	
902	9/5/05	East Basin	Burbot	53	
903	9/5/05	East Basin	Burbot	51	
904	9/5/05	East Basin	Burbot	50	
905	9/5/05	East Basin	Burbot	120	10
906	9/5/05	East Basin	Burbot	52	
907	9/5/05	East Basin	Burbot	57	
908	9/5/05	East Basin	Burbot	47	
909	9/5/05	East Basin	Burbot	48	
910	9/5/05	East Basin	Burbot	49	
911	9/5/05	East Basin	Burbot	51	
912	9/5/05	East Basin	Burbot	53	
913	9/5/05	East Basin	Burbot	50	
914	9/5/05	East Basin	Burbot	51	
915	9/5/05	East Basin	Burbot	52	
916	9/5/05	East Basin	Burbot	126	12
917	9/5/05	East Basin	Burbot	53	
918	9/5/05	East Basin	Burbot	56	
919	9/5/05	East Basin	Burbot	57	
920	9/5/05	East Basin	Burbot	41	
921	9/5/05	East Basin	Burbot	45	
922	9/5/05	East Basin	Burbot	43	
923	9/5/05	East Basin	Burbot	56	
924	9/5/05	East Basin	Burbot	49	
925	9/5/05	East Basin	Burbot	51	
926	9/5/05	East Basin	Burbot	46	
927	9/5/05	East Basin	Burbot	53	
928	9/5/05	East Basin	Burbot	53	
929	9/5/05	East Basin	Burbot	54	
930	9/5/05	East Basin	Burbot	54	
931	9/5/05	East Basin	Burbot	45	
932	9/5/05	East Basin	Burbot	50	
933	9/5/05	East Basin	Burbot	47	
934	9/5/05	East Basin	Burbot	49	
935	9/5/05	East Basin	Burbot	60	
936	9/5/05	East Basin	Burbot	55	

Appendix A. Biological data collected from fish captured during the Long Lake Fish Salvage Program, 2005.

No.	Date	Location	Species	Length (mm)	Weight (g)
937	9/5/05	East Basin	Burbot	50	
938	9/5/05	East Basin	Burbot	44	
939	9/5/05	East Basin	Slimy Sculpin	25	
940	9/5/05	East Basin	Slimy Sculpin	63	
941	9/5/05	East Basin	Slimy Sculpin	76	
942	9/5/05	East Basin	Slimy Sculpin	44	
943	9/5/05	East Basin	Slimy Sculpin	66	
944	9/5/05	East Basin	Slimy Sculpin	20	
945	9/5/05	East Basin	Slimy Sculpin	74	
946	9/5/05	East Basin	Slimy Sculpin	20	
947	9/5/05	East Basin	Slimy Sculpin	17	
948	9/5/05	East Basin	Slimy Sculpin	22	
949	9/5/05	East Basin	Slimy Sculpin	12	
950	9/5/05	East Basin	Slimy Sculpin	41	
951	8/21/05	North Pond	Slimy Sculpin	64	
952	8/21/05	North Pond	Slimy Sculpin	45	
953	8/21/05	North Pond	Slimy Sculpin	51	
954	8/21/05	North Pond	Slimy Sculpin	40	
955	8/21/05	North Pond	Slimy Sculpin	38	
956	8/21/05	North Pond	Slimy Sculpin	52	2
957	8/21/05	North Pond	Slimy Sculpin	50	
958	8/21/05	North Pond	Slimy Sculpin	33	
959	8/21/05	North Pond	Slimy Sculpin	64	2
960	8/21/05	North Pond	Slimy Sculpin	39	
961	8/21/05	North Pond	Slimy Sculpin	57	
962	8/21/05	North Pond	Slimy Sculpin	39	
963	8/21/05	North Pond	Slimy Sculpin	37	
964	8/21/05	North Pond	Slimy Sculpin	40	
965	8/21/05	North Pond	Slimy Sculpin	37	
966	8/21/05	North Pond	Slimy Sculpin	17	
967	8/21/05	North Pond	Slimy Sculpin	61	
968	8/23/05	North Pond	Slimy Sculpin	54	
969	8/23/05	North Pond	Slimy Sculpin	55	
970	8/23/05	North Pond	Slimy Sculpin	15	
971	8/23/05	North Pond	Slimy Sculpin	14	
972	9/2/05	North Pond	Slimy Sculpin	65	
973	9/2/05	North Pond	Slimy Sculpin	46	
974	9/2/05	North Pond	Slimy Sculpin	21	
975	9/2/05	North Pond	Slimy Sculpin	19	
976	9/2/05	North Pond	Slimy Sculpin	39	
977	9/2/05	North Pond	Slimy Sculpin	19	
978	9/2/05	North Pond	Slimy Sculpin	21	
979	9/2/05	North Pond	Slimy Sculpin	52	
980	9/2/05	North Pond	Slimy Sculpin	41	

No.	Date	Location	Species	Length (mm)	Weight (g)
981	8/20/05	Long Lake Pond	Slimy Sculpin	35	
982	8/21/05	Long Lake Pond	Burbot	46	
983	8/21/05	Long Lake Pond	Burbot	115	12
984	8/21/05	Long Lake Pond	Burbot	36	
985	8/21/05	Long Lake Pond	Burbot	32	
986	8/21/05	Long Lake Pond	Burbot	37	
987	8/21/05	Long Lake Pond	Burbot	40	
988	8/21/05	Long Lake Pond	Burbot	35	
989	8/21/05	Long Lake Pond	Burbot	203	64
990	8/21/05	Long Lake Pond	Burbot	45	
991	8/21/05	Long Lake Pond	Burbot	44	
992	8/21/05	Long Lake Pond	Burbot	33	
993	8/21/05	Long Lake Pond	Burbot	34	
994	8/21/05	Long Lake Pond	Burbot	35	
995	8/21/05	Long Lake Pond	Burbot	41	
996	8/21/05	Long Lake Pond	Burbot	40	
997	8/21/05	Long Lake Pond	Burbot	45	
998	8/21/05	Long Lake Pond	Burbot	40	
999	8/21/05	Long Lake Pond	Burbot	94	4
1000	8/21/05	Long Lake Pond	Burbot	39	
1001	8/21/05	Long Lake Pond	Burbot	31	
1002	8/21/05	Long Lake Pond	Burbot	40	
1003	8/21/05	Long Lake Pond	Burbot	43	
1004	8/21/05	Long Lake Pond	Burbot	36	
1005	8/21/05	Long Lake Pond	Slimy Sculpin	71	2
1006	8/21/05	Long Lake Pond	Slimy Sculpin	82	2
1007	8/21/05	Long Lake Pond	Slimy Sculpin	63	2
1008	8/21/05	Long Lake Pond	Slimy Sculpin	50	
1009	8/21/05	Long Lake Pond	Slimy Sculpin	58	2
1010	8/21/05	Long Lake Pond	Slimy Sculpin	85	4
1011	8/21/05	Long Lake Pond	Slimy Sculpin	75	2
1012	8/21/05	Long Lake Pond	Slimy Sculpin	55	
1013	8/21/05	Long Lake Pond	Slimy Sculpin	56	2
1014	8/21/05	Long Lake Pond	Slimy Sculpin	55	6
1015	8/21/05	Long Lake Pond	Slimy Sculpin	69	2
1016	8/21/05	Long Lake Pond	Slimy Sculpin	34	
1017	8/21/05	Long Lake Pond	Slimy Sculpin	57	2
1018	8/21/05	Long Lake Pond	Slimy Sculpin	73	2
1019	8/21/05	Long Lake Pond	Slimy Sculpin	54	2
1020	8/21/05	Long Lake Pond	Slimy Sculpin	39	
1021	8/21/05	Long Lake Pond	Slimy Sculpin	72	4
1022	8/21/05	Long Lake Pond	Burbot	40	
1023	8/21/05	Long Lake Pond	Slimy Sculpin	41	
1024	8/22/05	Long Lake Pond	Burbot	40	

[a] West basin of Long Lake

[b] East basin of Long Lake

APPENDIX B

Appendix B. Shoreline lake habitat characteristics of Long Lake, 1999.

Zone	Shoreline	Subsurface	Substrate Type (%)							Shoreline Habitat Types (%)			Shoreline Vegetation (%)		
	Length (m)	Slope	OM	SI	SA	GR	CO	BO	BE	Grass	Boulder	Bedrock	Grass	Sedge	Macrophyte
1	68.8	Low		20				80		80	20				
2	63.7	Low						100			10	90			
3	237.3	Moderate						100			100				
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				