

**Unnamed Lake
(460-600600-33000-01)
00853MORR**

**SECONDARY LAKE INVENTORY
1997 STUDIES**

**Ministry of Environment, Lands and Parks
Project No. IVBVS622 (FRBC)**

Prepared for:

**MINISTRY OF ENVIRONMENT,
LANDS AND PARKS, SKEENA REGION**
BC Environment
PO Box 5000
Smithers, BC
V0J 2N0

Prepared by:

HATFIELD CONSULTANTS LTD.
Suite 201 - 1571 Bellevue Avenue
West Vancouver, BC
V7V 1A6

Tel: (604) 926.3261 Fax: (604) 926.5389
Email: hcl@hatfieldgroup.com

APRIL 1998

COVER PAGE

Lake Name: Unnamed Lake

Alias: -

Watershed Code: 460-600600-33000-01

Waterbody Identifier: 00853MORR

Survey Date: September 27, 1997

Project Code: IVBVS622

Survey Objectives: to conduct secondary lake inventories in the southern portions of the Morice and Lakes Forest Districts (Prince Rupert Forest Region)

Survey Type: Secondary Lakes Inventory

Survey Agency: CO60

Proponent: MELP

Inventory Program: FRBC

TABLE OF CONTENTS

	PAGE
LIST OF APPENDICES	ii
1.0 LAKE INVENTORY DATA	1
1.1 WATERBODY	1
1.2 ACCESS	1
1.3 TERRAIN	1
1.4 SHORELINE	3
1.5 BATHYMETRY	3
1.6 INLETS/OUTLETS	3
1.7 AQUATIC FLORA	4
1.8 WILDLIFE	5
1.9 LIMNOLOGICAL SAMPLING	5
1.10 SURVEY COMMENTS	5
1.10.1 Problems	5
1.10.2 Fish Comments	5
1.10.3 Habitat Comments	5
1.10.4 Rehabilitation/Enhancement Comments	5
1.10.5 Follow-up Sampling	6
1.10.6 Other Concerns/Interest Points	6
2.0 PROJECT-SPECIFIC RESULTS DISCUSSION	7
3.0 REFERENCES	8
 PLATES	
Plate 1 View from northeast end of lake looking southwest	2
Plate 2 View from limnological station looking south	2

APPENDICES

- Appendix A Bathymetry (E-line Trace)
- Appendix B Lake Outline Map
- Appendix C Air Photo Plate
- Appendix D Lake Survey Form
- Appendix E Fish Collection Form
- Appendix F Photograph Contact Sheets

1.0 LAKE INVENTORY DATA

1.1 WATERBODY

Type:	Small lake (<400 ha)
Lake Name:	Unnamed Lake
Watershed Code:	460-600600-33000-01
Waterbody Identifier:	00853MORR
Map Reference:	093L.025 (1990)
Air photo Reference:	30BCC 94067 No.193
Surface Area: 53 ha	Source: MELP
Elevation: 733 m	Source: TRIM
Biogeoclimatic Zone:	Sub-Boreal Spruce (SBS)

The lake is shown in Plates 1 and 2.

1.2 ACCESS

The lake was accessed by road from Houston.

Directions: from Houston, travel 27 km south on Morice River Forest Service Road (FSR) and turn right; travel 1.9 km and turn right; travel 2.8 km and turn left onto Old Chisolm Road; keep right at 0.9 km; keep right at 7.4 km; at 11.0 km turn left at lake (there is a small trail, which leads to lake, approximately 50 m in length).

1.3 TERRAIN

The lake appears to be a glacial lake (GL), with a southwest aspect. It is situated on the valley floor (VF), and exhibits no signs of hillside coupling (DC). Land in the immediate vicinity of the lake is comprised of natural areas with no evidence of recent use. Forest Development Plan Maps do not show proposed logging within 1000 m of the lake.

1.4 SHORELINE

The shoreline is comprised of 15% marsh and 85% rocky substrate. Large and small cobbles were observed along the shoreline; some gravel was observed along the northeast shore, close to one of the inlets and may provide potential spawning habitat. Shoreline vegetative cover is sparse and consists primarily of low-lying shrubs and grass. One cabin was observed on the north shore, adjacent to the trail leading from the logging road to the landing. No other recreational features (i.e. resorts, campsites, boat launches) were observed.

1.5 BATHYMETRY

An E-line survey was completed along the long axis of the lake using a Lowrance X-16 unit (equipped with continuous paper trace sounder rolls). The maximum recorded depth was 11.0 m. Based on the E-line survey, the estimated littoral area (% lake < 6 m) is 20%. The maximum high water mark was observed at 0.1 m.

1.6 INLETS/OUTLETS

One permanent inlet, three ephemeral inlets and one outlet have been identified for this lake. Three inlet tributaries were previously mapped on the 1:20,000 TRIM map. The fourth inlet was identified during the field survey. Two inlets had existing watershed codes; interim locational points (ILP) were used to identify the remaining two tributaries.

Inlet (permanent)
w/s code: 460-600600-33000

This is the main inlet for the lake. The inlet consisted of 4-5 channels (varying channel widths), which all appear to drain a marsh area. The substrate consists primarily of sand and silt. Potential spawning habitat was not identified. Potential rearing habitat exists within some of the channels. Potential rearing habitat also exists in a pond area located approximately 20 m upstream of the mouth.

Inlet (ephemeral)
w/s code: 460-600600-33000-40500

This channel was identified on the 1:20,000 TRIM map as indefinite. This inlet had a distinct channel with a slight flow, and is approximately 0.6 m in width at the lake. Although the substrate appears to be sand and silt, there is a

substantial amount of gravel underneath the silt. Good stream cover was also provided upstream beneath the forest canopy and may provide rearing habitat.

Inlet (ephemeral)

w/s code: 460-600600-33000-37600

This channel was identified on the 1:20,000 TRIM map as indefinite, however, based on air photo interpretation and the field survey results, it is identified as an ephemeral tributary. This inlet appears to drain a small marsh/shrub area. The channel meanders through the marsh and a distinct channel is evident at the lake. The substrate consists primarily of sand and silt. Some macrophyte growth (*Hippuris spp.*) was observed in the channel. Seasonal rearing habitat may be provided at this inlet.

Inlet (ephemeral – new tributary)

ILP # 115

This channel was not previously mapped on the 1:20,000 TRIM map and was added as a new tributary to the lake outline map. Based on field observations and air photos, this inlet is identified as ephemeral. This inlet appears to drain a small marsh/shrub area. Minimal flow was observed at the lake. The channel was not distinct further upstream. The substrate consists primarily of sand and silt. No fish habitat was identified at this inlet.

Outlet

w/s code: 460-600600-33000

The outlet channel appears to be distinct at the lake with an approximate width of 2.0 m. Minimal flow was observed. The substrate consists primarily of large and small cobbles, with some gravel, though not enough to be considered spawning habitat. Good stream cover exists downstream beneath the forest canopy, and may provide potential rearing habitat.

1.7 AQUATIC FLORA

At the time of the survey, small areas of the lake contained emergent vegetation (<10%) and submergent vegetation (<10%). Submergent species included *Potamogeton perfoliatus* and *Myriophyllum spp.*, while emergent vegetation included *Nuphar lutea* (yellow pond-lily), and *Hippuris spp.* Floating algae were not observed.

1.8 WILDLIFE

During the survey, ducks (5), a loon and beaver activity (i.e. lodge) were observed.

1.9 LIMNOLOGICAL SAMPLING

The limnological sampling site was located at the deepest recorded point (11.0 m). Dissolved oxygen (mg/l) and temperature (C) were measured with a YSI meter (model 85). A thermocline was evident at approximately 4.0 m below the surface. Oxygen levels were 6 to 8 mg/l above the thermocline (for profile results, refer to Appendix D). The Secchi disc was visible at 2.25 m; water colour was brown. pH was measured using a hand held Hanna pH meter. Surface and bottom pH values were 7.7 and 7.2, respectively. No H₂S was detected.

1.10 SURVEY COMMENTS

1.10.1 Problems

No field problems were encountered.

1.10.2 Fish Comments

Three cutthroat trout (*Oncorhynchus clarki*) were captured during gillnetting. One floating gillnet was set parallel to shore for approximately 2.5 hours. Fish were between 11.7 and 26.8 cm in length.

1.10.3 Habitat Comments

Spawning habitat was observed along the north shore of the lake as well as within one of the inlet channels. Rearing habitat is provided in those inlets that primarily drain marsh areas. Rearing habitat was also observed at the outlet and is considered to provide good stream cover. The presence of shoreline grasses may also provide fish cover.

1.10.4 Rehabilitation/Enhancement Comments

No rehabilitation/enhancement efforts are recommended.

1.10.5 Follow-up Sampling

No follow-up sampling is recommended.

1.10.6 Other Concerns/Interest Points

None.

2.0 PROJECT- SPECIFIC RESULTS DISCUSSION

Fish sampling results show that cutthroat trout are present in this lake. Potential spawning habitat exists along the north shore of the lake and within one of the inlet tributaries. Potential rearing habitat was observed at most of the inlets as well as the outlet. There were no signs of visitors to the lake. A small cabin, located on the north shore may be for recreational use.

3.0 REFERENCES

- Anonymous. 1994. Ambient Fresh Water and Effluent Sampling Manual. Resources Inventory Committee Manual, Province of British Columbia. Draft, July 1994.
- Anonymous. 1995. FISS: Data Compilation and Mapping Procedures. Federal/Provincial Fish Habitat Inventory and Information Program. February, 1995.
- Anonymous. 1996. Identification Keys to the Aquatic Plants of British Columbia. Resources Inventory Committee Manual, Province of British Columbia. Draft.
- Anonymous. 1996. A Guide to Photodocumentation. BC Ministry of Environment, Lands and Parks, Fisheries Branch. (Resources Inventory Committee Manual)
- Anonymous. 1997. Bathymetric Standards for Lake Inventories. A: Fish and Fish Habitat. Resources Inventory Committee Manual, Province of British Columbia. Draft, January 1997.
- Anonymous. 1997. Quality Assurance Procedures for Fish Inventory Projects in British Columbia. BC Ministry of Environment, Lands and Parks, Resources Inventory Branch, Fisheries Section. Draft, March 1997.
- Anonymous. 1997. Reconnaissance (1:20,000) Fish and Fish Habitat Inventory: Standards and Procedures. Resources Inventory Committee Manual, Province of British Columbia. Draft, May 1997.
- Anonymous. 1997. Standards for Fish and Fish Habitat Mapping. BC Ministry of Environment, Lands and Parks, Fisheries Section, Resources Inventory Branch. May, 1997. (Resources Inventory Committee Manual)
- Anonymous. 1997. Users Guide to the British Columbia Watershed/Waterbody Identifier System. Resources Inventory Committee Manual, Province of British Columbia. Draft, January 1997.
- BC Ministry of Environment, Lands, and Parks. Fisheries Branch, Inventory Unit. Stream Information Summary System (SISS) and Fisheries Inventory Summary System (FISS) - Data Files and Maps.
- McPhail, J.D., and R. Carveth. 1994. Field Key to the Freshwater Fishes of British Columbia. BC Ministry of Environment, Lands and Parks. Fisheries Branch. (Resources Inventory Committee Manual)

Scott, W.B., and E.J. Crossman. 1973. Freshwater Fishes of Canada.
Fisheries Research Board of Canada, Ottawa. 966 p.

Plates

Plate 1 View from northeast end of lake looking southwest.



Plate 2 View from limnological station looking south.



Appendices

Appendix A

Bathymetry (E-line Trace)

Appendix B

Lake Outline Map

Appendix C

Air Photo Plate

Appendix D

Lake Survey Form

Appendix E

Fish Collection Form

Appendix F

Photograph Contact Sheets

Photographic index for southern lakes secondary lake survey 1997.

Lake	Watershed Code	Roll	Pic#	CD	Image	Neg	Dir.	Comment
M57	460-600600-33000-01	13	17	0822	42	9354	SE	Cabin at landing
M57	460-600600-33000-01	13	18	0822	43	9354	Up	Inlet 460-600600-33000-40500
M57	460-600600-33000-01	13	19	0822	44	9354	Up	Inlet 460-600600-33000-40500
M57	460-600600-33000-01	13	20	0822	45	9354	Dn	Side channel to inlet 460-600600-33000
M57	460-600600-33000-01	13	21	0822	46	9354	Up	Side channel to inlet 460-600600-33000
M57	460-600600-33000-01	13	22	0822	47	9354	Up	Side channel to inlet 460-600600-33000
M57	460-600600-33000-01	13	23	0822	48	9354	Dn	Side channel to inlet 460-600600-33000
M57	460-600600-33000-01	13	24	0822	49	9354	Dn	Side channel to inlet 460-600600-33000
M57	460-600600-33000-01	13	25	0822	50	9354	Dn	Side channel to inlet 460-600600-33000
M57	460-600600-33000-01	14	1	0820	51	9364	Dn	Main inlet
M57	460-600600-33000-01	14	2	0820	52	9364	Up	Main inlet
M57	460-600600-33000-01	14	3	0820	53	9364	E	HWM=12cm
M57	460-600600-33000-01	14	4	0820	54	9364	Up	Inlet ILP 115
M57	460-600600-33000-01	14	5	0820	55	9364	Dn	Inlet ILP 115
M57	460-600600-33000-01	14	6	0820	56	9364	Dn	Outlet
M57	460-600600-33000-01	14	7	0820	57	9364	Up	Outlet
M57	460-600600-33000-01	14	8	0820	58	9364	Up	Inlet 460-600600-33000-37600
M57	460-600600-33000-01	14	9	0820	59	9364	Dn	Inlet 460-600600-33000-37600
M57	460-600600-33000-01	14	10	0820	60	9364	SW	Panoramic view of lake at limnosite
M57	460-600600-33000-01	14	11	0820	61	9364	SE	Panoramic view of lake at limnosite
M57	460-600600-33000-01	14	12	0820	62	9364	NW	Panoramic view of lake at limnosite
M57	460-600600-33000-01	14	13	0820	63	9364	N	Panoramic view of lake at limnosite
M57	460-600600-33000-01	14	14	0820	64	9364	NE	Panoramic view of lake at limnosite
M57	460-600600-33000-01	14	15	0820	65	9364	W	CT 1, 2, 3, caught in gillnet

