

**Unnamed Lake
(480-697200-25400-62800-01)
01679BABL**

**SECONDARY LAKE INVENTORY
1997 STUDIES**

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

Prepared for:

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COVER PAGE

Lake Name: Unnamed Lake

Alias: -

Watershed Code: 480-697200-25400-62800-01

Waterbody Identifier: 01679BULK

Survey Date: September 28, 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	1
1.5 BATHYMETRY	3
1.6 INLETS/OUTLETS	3
1.7 AQUATIC FLORA	4
1.8 WILDLIFE	4
1.9 LIMNOLOGICAL SAMPLING	4
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	5
1.10.6 Other Concerns/Interest Points	5
2.0 PROJECT-SPECIFIC RESULTS DISCUSSION	6
3.0 REFERENCES	7
 PLATES	
Plate 1 View from south end of lake looking north	2
Plate 2 View from near the limnological station looking northeast	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 INTRODUCTION

1.1 WATERBODY

Type:	Small lake (< 400 ha)
Lake Name:	Unnamed Lake
Watershed Code:	480-697200-25400-62800-01
Waterbody Identifier:	01679BABL
Map Reference:	093L.068 (1993)
Air photo Reference:	30BCC 93057 No.109
Surface Area: 56 ha	Source: MELP
Elevation: 1096 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 helicopter from Houston. Flying time was approximately 20 minutes north of Houston.

1.3 TERRAIN

The lake appears to be a glacial lake (GL) with some formation due to the result of beaver dams (BV) located at the outlet. It is situated with a northwest aspect on a plateau (PN), and exhibits no signs of hillside coupling (DC). Land in the immediate vicinity of the lake is currently in a natural state with no evidence of recent use. Forest Development Plan Maps do not show logging plans within 1000 m of the lake.

1.4 SHORELINE

The shoreline is comprised of 90% rocky substrate and 10% marsh. Potential lake spawning habitat was not observed. Shoreline vegetative cover is sparse and consists primarily of grass and low-lying shrubs. No 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 4.0 m. Based on the E-line survey, the littoral area (% lake < 6 m) was estimated to be 100%. The maximum high water mark was observed at 0.3 m.

1.6 INLETS/OUTLETS

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

Inlet (ephemeral)

W/s code: 480-697200-25400-62800

This is the main inlet for the lake, draining through dense, riparian vegetation. Water was flowing at the time of observation. The channel passes primarily through an open marsh area. The substrate consists of gravel, with riffle/pool stream characteristics and offers good potential spawning habitat.

Inlet (ephemeral)

W/s code: 480-697200-25400-62800-7634

This inlet is approximately 0.3 m wide and drains an upstream marsh. The substrate consists of sand and silt. The lower portion of the inlet is not suitable for spawning, but offers potential seasonal rearing habitat.

Inlet (ephemeral)

W/s Code: 480-697200-25400-62800-7720

This inlet is approximately 0.4 m wide and drains an upstream marsh. The substrate consists of sand and silt. Instream vegetation is present. The lower portion of the inlet is not suitable for spawning but offers seasonal rearing habitat.

Inlet (ephemeral)

ILP # 84

This channel is connected to a marsh/meadow upstream but was dry at the time of the survey. The substrate consists primarily of sand and silt. The channel does not contain suitable spawning habitat but may provide seasonal rearing habitat.

Inlet (ephemeral – new tributary)
ILP # 103

This channel was not previously mapped on the 1:20,000 TRIM map and is mapped as a new tributary. The channel was not well defined and was dry at the time of the survey. The substrate consists primarily of sand and silt. The channel does not contain suitable spawning habitat but may provide seasonal rearing habitat.

Outlet
W/s code: 480-697200-25400-53700

One beaver dam was noted at the outlet. Flow was substantial at the time of the survey. Good potential spawning habitat was present, with abundant riparian vegetation.

1.7 AQUATIC FLORA

Small areas of the lake contained emergent vegetation (<10%) and submergent vegetation (20%). Submergent species included *Hippuris spp.* and *Potamogeton perfoliatus.*, and emergent vegetation included *Nuphar lutea* (yellow pond-lily) and *Caryx spp.* Floating algae were not observed.

1.8 WILDLIFE

During the survey, signs of deer and moose were observed.

1.9 LIMNOLOGICAL SAMPLING

The limnological sampling site was located at the deepest recorded point (4.0 m). Dissolved oxygen (mg/l) and temperature (C) were measured with a YSI meter (model 85). A thermocline was not evident. Oxygen values were low (1-3 mg/l), but likely underestimate actual concentrations due to a malfunction of one of the YSI probes (for profile results, refer to Appendix D). The Secchi depth was 3.7 m; water colour was brown. pH was measured using a hand held Hanna pH meter. Surface and bottom pH values were 8.9 and 8.8, respectively. H₂S was not detected.

1.10 SURVEY COMMENTS

1.10.1 Problems

Subsequent to the survey of this lake, one of the oxygen probes was found to be malfunctioning. Oxygen measurements for this lake likely underestimate actual values.

1.10.2 Fish Comments

One floating gillnet was set perpendicular to the shore for approximately 2.5 hours. Six cutthroat trout (*Oncorhynchus clarki*) were captured. All appeared to be adults and ranged between 24.3 and 30.8 cm in length.

1.10.3 Habitat Comments

Small amounts of rearing habitat were observed in all inlets. This habitat may only be available seasonally. Good spawning habitat and fish cover were observed along the main inlet and outlet channels and is characterized by gravel/cobble substrate and pool/riffle stream sequences. Additional fish cover may be provided by shoreline marsh vegetation.

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. Overall, this lake appears to have small areas of good spawning and potential seasonal rearing habitat within the inlets. No recreational features were observed; nor were there any logging plans identified in close proximity to the lake.

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 south end of lake looking north.



Plate 2 View from near the limnological station looking northeast.



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
M49	480-697200-25400-62800-01	27	37	0830	37	9346	NE	Aerial
M49	480-697200-25400-62800-01	28	1	0832	97	9348	Up	Main inlet
M49	480-697200-25400-62800-01	28	2	0832	98	9348	Dn	Main inlet
M49	480-697200-25400-62800-01	28	3	0832	99	9348	Up	Main inlet
M49	480-697200-25400-62800-01	28	4	0832	100	9348	Up	ILP 103
M49	480-697200-25400-62800-01	28	5	0832	101	9348	Dn	ILP 103
M49	480-697200-25400-62800-01	28	6	0832	102	9348	SD	Shoreline near main inlet
M49	480-697200-25400-62800-01	28	7	0832	103	9348	SD	Shoreline near main inlet
M49	480-697200-25400-62800-01	28	8	0832	104	9348	Up	Marshy area near main inlet
M49	480-697200-25400-62800-01	28	9	0832	105	9348	Up	Marshy area near main inlet
M49	480-697200-25400-62800-01	28	10	0832	106	9348	Up	Inlet ILP 84
M49	480-697200-25400-62800-01	28	11	0832	107	9348	Dn	Inlet ILP 84
M49	480-697200-25400-62800-01	28	12	0832	108	9348	Up	Inlet ILP 84
M49	480-697200-25400-62800-01	28	13	0832	109	9348	Up	Inlet 480-697200-62800-7634
M49	480-697200-25400-62800-01	28	14	0832	110	9348	Dn	Inlet 480-697200-62800-7634
M49	480-697200-25400-62800-01	28	15	0832	111	9348	Up	Inlet 480-697200-62800-7634
M49	480-697200-25400-62800-01	28	16	0832	112	9348	Dn	Inlet 480-697200-62800-7620
M49	480-697200-25400-62800-01	28	17	0832	113	9348	Up	Inlet 480-697200-62800-7620
M49	480-697200-25400-62800-01	28	18	0832	114	9348	Up	Marsh area near inlet 480-697200-62800-7634
M49	480-697200-25400-62800-01	28	19	0832	115	9348	Dn	Marsh area near inlet 480-697200-62800-7634
M49	480-697200-25400-62800-01	28	20	0832	116	9348	Up	Marsh area near inlet 480-697200-62800-7634
M49	480-697200-25400-62800-01	28	21	0832	117	9348	N	Panoramic view of lake
M49	480-697200-25400-62800-01	28	22	0832	118	9348	NW	Panoramic view of lake
M49	480-697200-25400-62800-01	28	23	0832	119	9348	NW	Panoramic view of lake
M49	480-697200-25400-62800-01	28	24	0832	120	9348	W	Panoramic view of lake
M49	480-697200-25400-62800-01	28	25	0832	121	9348	SW	Panoramic view of lake
M49	480-697200-25400-62800-01	28	26	0832	122	9348	S	Panoramic view of lake
M49	480-697200-25400-62800-01	28	27	0832	123	9348	S	Panoramic view of lake
M49	480-697200-25400-62800-01	28	28	0832	124	9348	SE	Panoramic view of lake
M49	480-697200-25400-62800-01	28	29	0832	125	9348	E	Panoramic view of lake
M49	480-697200-25400-62800-01	28	30	0832	126	9348	E	Panoramic view of lake
M49	480-697200-25400-62800-01	28	31	0832	127	9348	NE	Panoramic view of lake
M49	480-697200-25400-62800-01	28	32	0832	128	9348	Up	Outlet
M49	480-697200-25400-62800-01	28	33	0832	129	9348	Up	Outlet



