Bill Nye Lake
(460-600600-36400-64100-2380-01)
01494MORR

SECONDARY LAKE INVENTORY
1997 STUDIES

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

Prepared for:

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APRIL 1998

COVER PAGE

Lake Name:	**Bill Nye Lake**
Alias:	**-**
Watershed Code:	**460-600600-36400-64100-2380-01**
Waterbody Identifier:	**01494MORR**
Survey Date:	**October 01, 1997**
Project Code:	**lVBVS622**
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**

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APPENDICES

1.0 LAKE INVENTORY DATA

1.1 WATERBODY

Type:	Small lake (<400 ha)
Lake Name:	Bill Nye Lake
Watershed Code:	460-600600-36400-64100-2380
Waterbody Identifier:	01494MORR
Map Reference:	093L.005 (1993)
Air photo Reference:	30BCC95058 No.24
Surface Area: 96 ha	Source: MELP
Elevation: 857 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, British Columbia. Flying time from Houston was approximately 20-25 minutes southwest. Access by road may be possible using an existing logging road. However, at the time of the survey brush and debris between a clearcut site and the lake made land access difficult. Considerable time would have been required to transport sampling equipment through debris to the lake.

1.3 TERRAIN

The lake appears to be a glacial lake (GL), with a west 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 (80%) and logging (20%).

1.4 SHORELINE

The shoreline is comprised primarily of rocky shoreline (75%) and marshy areas (25%) located mainly at the north end of the lake. Some gravel was noted intermittently amongst the rocky substrate, particularly along the east shore and may be potential spawning habitat. 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 12.5 m. Based on the E-line survey, the estimated littoral area (% lake <6 m) is 40%. The maximum high water mark was observed at 0.10 m.

1.6 INLETS/OUTLETS

One permanent inlet, two ephemeral inlets and one outlet have been identified for this lake. All three inlet tributaries were previously mapped on the 1:20,000 TRIM map. One inlet had an existing watershed code; interim locational points (ILP) were used to identify the remaining two tributaries. Channels were not discenible in the field for two of the previously mapped inlets and these have been recorded as nvc on the lake outline map.

Inlet (permanent)
w/s code: 460-6006-003-640-064-100-238

This is the main inlet to the lake. The stream meanders through a marsh area with the channel becoming distinct and wider (approximately 2-3 m) close to the lake. The substrate is comprised primarily of sand and silt. This inlet may provide seasonal rearing habitat.

Inlet (ephemeral - nvc)
ILP # 104

This channel is identified as permanent on the 1:20,000 TRIM map. The channel was not discernible during a foot survey of the area. Further investigations may be required to confirm channel presence.

Inlet (ephemeral - nvc)
ILP # 105

Again, although previously mapped on the 1:20,000 TRIM map, the channel was not discernible during a foot survey of the area. Further investigations may be required to confirm channel presence.

Outlet
w/s code: 460-600600-36400-64100-2380

The outlet is a distinct channel. Discharge was low at the time of the survey. The channel is approximately 0.6 m wide at the lake and passes through a marsh/shrub area. The outlet area appears to have been dammed as a result of beaver activity. This has created rearing habitat near the oulet. The substrate is comprised of some gravel and small cobbles, but is mostly sand/silt further downstream. Suitable spawning areas were not observed.

1.7 AQUATIC FLORA

Small areas of the lake contained emergent vegetation (10%) and submergent vegetation (<10%). Submerged species included *Myriophyllum spp*. and emergent vegetation included *Nuphar lutea* (yellow pond-lily) and *Potamogeton natans* (floating-leaved pondweed). Floating algae were not observed.

1.8 WILDLIFE

Beaver activity (i.e. 2 lodges) and ducks (3) were observed during the survey.

1.9 LIMNOLOGICAL SAMPLING

The limnological sampling site was located at the deepest recorded point (12.5 m). Dissolved oxygen (mg/l) and temperature (C) were measured with a YSI meter (model 85). A thermocline was evident at approximately 5.0 m. Oxygen levels were 6-8 mg/l above the thermocline (for profile results, refer to Appendix D). The Secchi depth was 2.25 m; water colour was brown. pH was measured using a hand held Hanna pH meter. Surface and bottom pH values were 7.3 and 6.7, respectively. H_2S was not detected.

1.10 SURVEY COMMENTS

1.10.1 Problems

No field problems were encountered.

1.10.2 Fish Comments

Four cutthroat trout (*Oncorhynchus clarki*) were captured during gillnetting. One floating gillnet was set parallel to shore for approximately 2.2 hours. These fish were 16.2 - 23.0cm in length.

1.10.3 Habitat Comments

Potential spawning habitat was not observed in inlets but may exist in a few shoreline areas consisting of gravel/cobble substrate along the eastern section of the lake. Potential seasonal rearing habitat was noted at the outlet as well as one of the inlets. In addition, there was a significant amount of large woody debris, particularly towards the outlet, that would provide good habitat cover.

1.10.4 Rehabilitation/Enhancement Comments

No rehabilitation/enhancement efforts recommended.

1.10.5 Follow-up Sampling

No follow-up sampling is recommended.

1.10.6 Other Concerns/Interest Points

According to FISS data, cutthroat trout, Dolly Varden, rainbow trout and mountain whitefish are present approximately 2 km downstream of Bill Nye Lake.

2.0 PROJECT- SPECIFIC RESULTS DISCUSSION

Fish sampling results show that cutthroat trout are present in this lake. Although no inlet spawning habitat was observed, potential spawning areas were identified along the eastern shoreline. A thermocline was present at approximately 5-6 m below the surface. Dissolved oxygen levels were 6-8 mg/l above the thermocline. Signs of angler/recreational use were not observed. No trails were observed leading to the lake.

3.0 REFERENCES

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Plates

Plate 1 Aerial view of lake looking east.

Plate 2 View from near lake outlet looking east.

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
M53	460-600600-36400-64100-2380-01	18	1	0830	124	9352	W	Overview of lake
M53	460-600600-36400-64100-2380-01	18	2	0830	125	9352	N	Inlet ILP 105
M53	460-600600-36400-64100-2380-01	18	3	0830	126	9352	SE	Outlet
M53	460-600600-36400-64100-2380-01	18	4	0830	127	9352	SE	Area near outflow
M53	460-600600-36400-64100-2380-01	18	5	0830	128	9352	N	Main inlet
M53	460-600600-36400-64100-2380-01	18	6	0830	129	9352	E	Area at NE end of lake
M53	460-600600-36400-64100-2380-01	18	7	0830	130	9352	SW	Inlet ILP 104
M53	460-600600-36400-64100-2380-01	18	8	0830	131	9352	NW	Area near gillnet site
M53	460-600600-36400-64100-2380-01	18	9	0830	132	9352	E	Area at NE end of lake
M53	460-600600-36400-64100-2380-01	18	10	0830	133	9352	Dn	Inlet ILP 105
M53	460-600600-36400-64100-2380-01	18	11	0830	134	9352	SW	HWM=8cm
M53	460-600600-36400-64100-2380-01	18	12	0830	135	9352	Up	Outlet
M53	460-600600-36400-64100-2380-01	18	13	0830	136	9352	Dn	Outlet
M53	460-600600-36400-64100-2380-01	18	14	0830	137	9352	NW	Beaver lodge at outlet
M53	460-600600-36400-64100-2380-01	18	15	0830	138	9352	Dn	Main inlet
M53	460-600600-36400-64100-2380-01	18	16	0830	139	9352	Up	Main inlet
M53	460-600600-36400-64100-2380-01	18	17	0831	1	9352	N/A	Fish 1 and 2, CT


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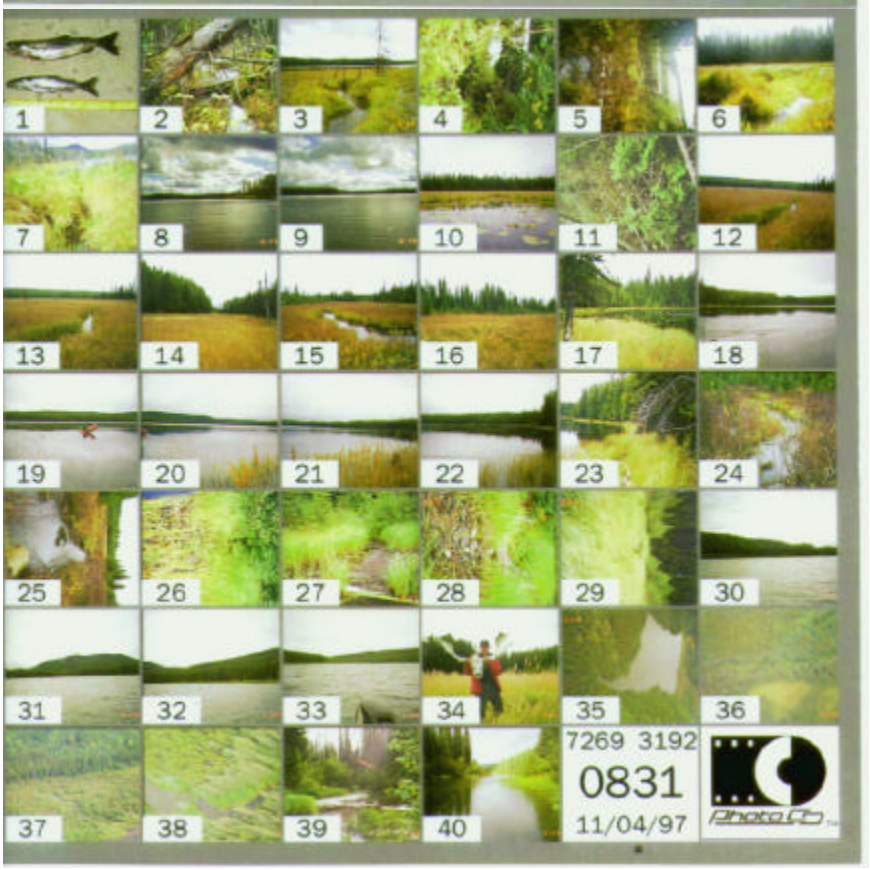
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