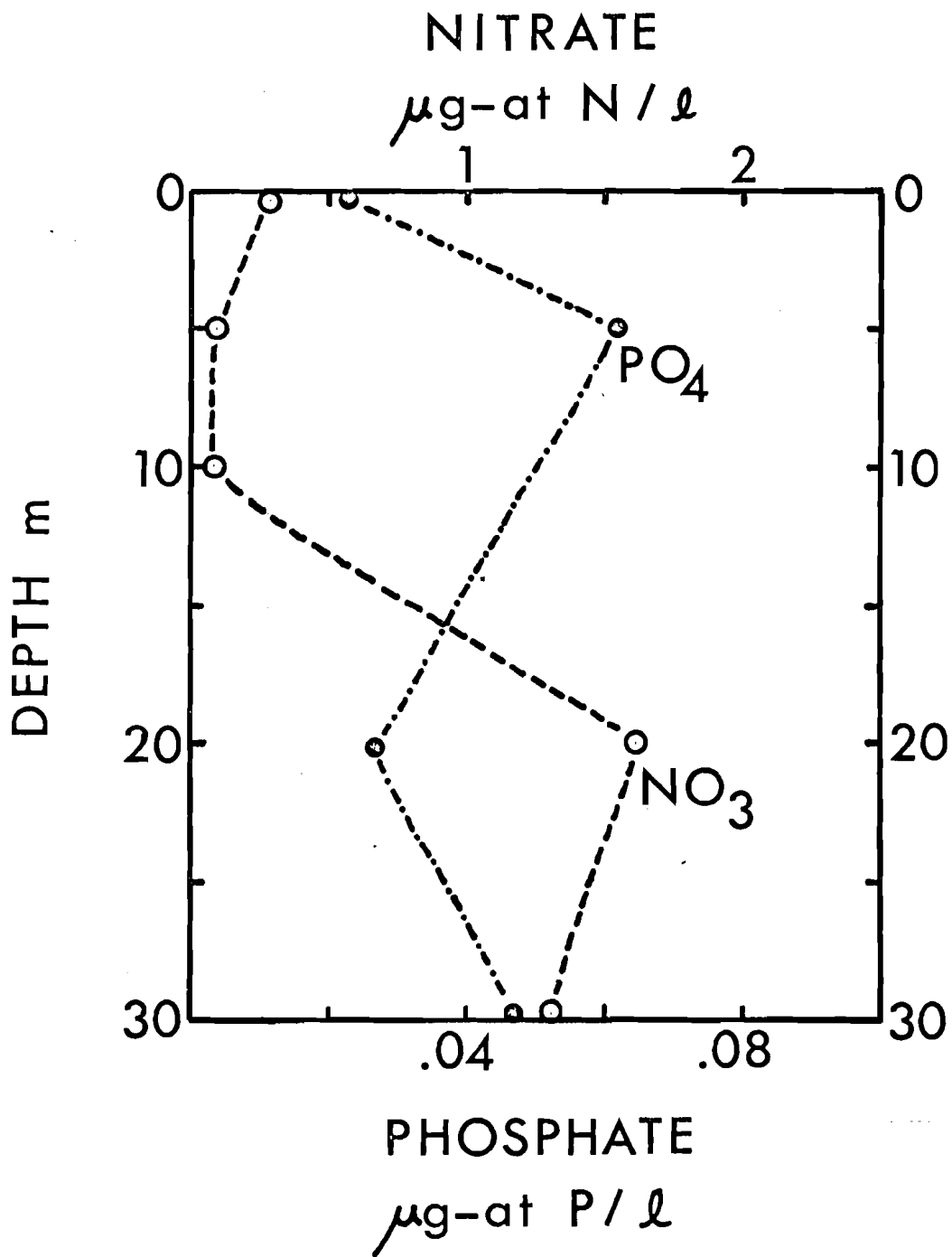


SWAN LAKE

Club  
Lake

1 km



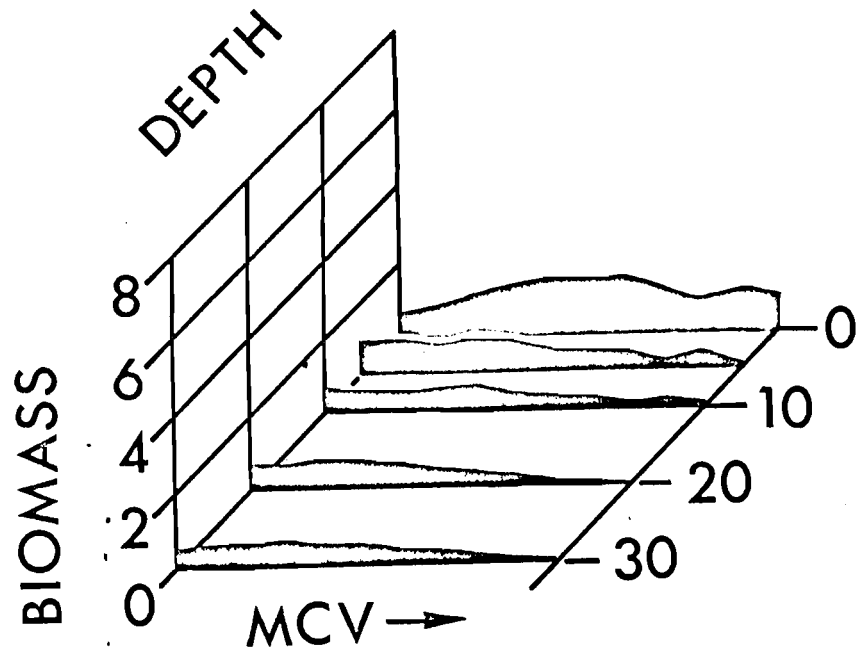


TABLE 24-1

SWAN LAKE: Phytoplankton Species Composition and Standing Crop at 5 m (15/10/75).		
Genus	Cells / ml	Cells / m <sup>3</sup>
CHLOROPHYTA Ankistrodesmus	9.1	9.1 x 10 <sup>6</sup>
CYANOPHYTA Chroococcus	3.0	3.0 x 10 <sup>6</sup>
PYRROPHYTA nil		
CHRYSOPHYTA nil		
BACILLARIOPHYCEAE Melosira Synedra	6.1 3.0	6.1 x 10 <sup>6</sup> 3.0 x 10 <sup>6</sup>
FLAGELLATES / CILIATES nil		
UNKNOWNNS U 16 U 18	6.1 3.0	6.1 x 10 <sup>6</sup> 3.0 x 10 <sup>6</sup>
TOTAL STANDING CROP	33.3	3.3 x 10 <sup>7</sup>

TABLE 24-2

SWAN LAKE: Zooplankton Species Composition and Standing Crop from a depth of 50 m (15/10/75)								
Species	Number / m <sup>2</sup> for Size Group							TOTAL
	1	2	3	4	5	6	7	
CLADOCERA								
Bosmina coregoni	20		20	30	40			110
Daphnia ambigua				6				6
Holopedium gibberum				1				1
CALANOID COPEPODA								
Diaptomus tyrelli	910	50				360		1320
CYCLOPOID COPEPODA								
Cyclops bicuspidatus	240	810	80	320	170	210	180	2010
ROTIFERA								
Conchilius unicornis		130						130
Kellicottia spp.	20	120						140
Naked Rotifers		10						10
CHIRONOMIDS / MITES								
Chironomids								1

TOTAL STANDING CROP	3727
% CLADOCERA	3.1
% CALANOID COPEPODA	35.4
% CYCLOPOID COPEPODA	53.9
% ROTIFERA	7.5

## SWAN LAKE

Depth m	pH	Conductivity $\mu\text{mhos}/\text{cm}^2$	TDS ppm
0	7.81	39	23
5	8.76	38	23
10	8.57	37	22
20	7.49	37	22
30	7.49	37	22

TABLE 24-4

SWAN LAKE: Total Particle Number, Particle Biomass and Chlorophyll <u>a</u>						
Depth (m)	Number / ml	Biomass / ml ( $\mu^3 \times 10^5$ )	MPV ( $\mu^3$ )	Chlor <u>a</u> (mg/l)		
0	21,928	11.76	53.6			
5	23,602	6.69	28.3			
10	18,140	5.10	28.1			
20	20,961	5.51	26.2			
30	16,056	5.25	32.7			
Mean	20,137	6.86	34.1			

TABLE 24-5

SWAN LAKE: Anadromous salmonid escapement history to Upper Club Creek, Swan L. and tributaries (1960-1974)						
YEAR	SOCKEYE	SPRING	COHO	CHUM	PINK	STLHEAD
1974	600		150			
1973	600		150			
1972	1,520		350			
1971	1,500		400			
1970	400		400			
1969	1,800		400			
1968						
1967	2,500	100	800			
1966	1,520		350			
1965	1,050	20	650			
1964	2,000	.20	2,000			
1963	420		"good"			
1962						
1961	900					
1960	1,100					
MEAN	1,229	47	565			

SOURCE: Fisheries Operations Spawning Files



TABLE 24-6

SWAN LAKE: Non-anadromous fishes		
FAMILY	COMMON NAME	SCIENTIFIC NAME
Salmonidae	Dolly Varden	Salvelinus malma
	Lake Trout	Salvelinus namaycush
	Kokanee	Oncorhynchus nerka kennerlyi
Coregonidae	Mountain Whitefish	Prosopium williamsoni
Catastomidae	Longnose Sucker	Catastomus catastomus

SOURCE: Fish and Wildlife, B.C. Provincial Museum Handbook No. 5.

TABLE 24-7

SWAN LAKE: Upland and Shoreline Vegetation	
Common Name	Scientific Name
<b>A. Upland Vegetation</b>	
Lodgepole Pine	<i>Pinus contorta latifolia</i>
Western Red Cedar	<i>Thuja plicata</i>
Yellow Cedar	<i>Chamaecyparis nootkatensis</i>
Black Spruce	<i>Picea mariana</i>
White Spruce	<i>Picea glauca ssp. glauca</i>
Alaska Birch	<i>Betula papyrifera humilis</i>
<b>B. Shoreline Vegetation</b>	
Salal	<i>Gaultheria shallon</i>
Hardhack	<i>Spiraea douglasii</i>
Labrador Tea	<i>Ledum groenlandicum</i>
Copper Bush	<i>Cladothamnus pyrolaeiflorus</i>
Devil's Club	<i>Oplopanax horridus</i>
Black Twinberry	<i>Lonicera involucrata</i>



	CLASS VOL (CU.MIC)	DIAMETER (MIC)	BIO MASS (CU.MIC)	CELL NO.
1	7.1	3.8	60057.0	8474.
2	14.2	4.8	76073.3	5367.
3	28.3	6.1	102008.7	2601.
4	56.7	7.7	122117.6	2154.
5	113.4	9.7	136131.1	1200.
6	226.8	12.2	136631.5	692.
7	453.6	15.4	142136.9	313.
8	907.2	19.4	114139.9	126.
9	1814.4	24.4	86032.0	47.
10	3628.8	30.7	110106.0	30.
11	7257.6	38.7	90086.8	12.

0 m

	CLASS VOL (CU.MIC)	DIAMETER (MIC)	BIO MASS (CU.MIC)	CELL NO.
1	7.1	3.8	81640.2	11561.
2	14.2	4.8	92122.7	6503.
3	28.3	6.1	77843.2	2746.
4	56.7	7.7	90134.2	1590.
5	113.4	9.7	81940.2	723.
6	226.8	12.2	61455.2	271.
7	453.6	15.4	57358.1	126.
8	907.2	19.4	49164.1	54.
9	1814.4	24.4	28679.1	16.
10	3628.8	30.7	40070.1	11.
11	7257.6	38.7	6145.5	1.

5

	CLASS VOL (CU.MIC)	DIAMETER (MIC)	BIO MASS (CU.MIC)	CELL NO.
1	7.1	3.8	68852.8	9715.
2	14.2	4.8	60083.0	4302.
3	28.3	6.1	59016.7	2082.
4	56.7	7.7	62951.1	1110.
5	113.4	9.7	64918.3	572.
6	226.8	12.2	45737.9	202.
7	453.6	15.4	43279.9	65.
8	907.2	19.4	35410.0	39.
9	1814.4	24.4	21639.4	12.
10	3628.8	30.7	20528.3	8.
11	7257.6	38.7	17305.0	2.

10

	CLASS VOL (CU.MIC)	DIAMETER (MIC)	BIO MASS (CU.MIC)	CELL NO.
1	7.1	3.8	75200.3	10610.
2	14.2	4.8	72603.6	5128.
3	28.3	6.1	80213.6	2829.
4	56.7	7.7	77706.9	1370.
5	113.4	9.7	72603.6	641.
6	226.8	12.2	50040.2	232.
7	453.6	15.4	42617.5	94.
8	907.2	19.4	35003.5	39.
9	1814.4	24.4	22560.1	12.
10	3628.8	30.7	12537.4	3.
11	7257.6	38.7	7520.0	1.

20

	CLASS VOL (CU.MIC)	DIAMETER (MIC)	BIO MASS (CU.MIC)	CELL NO.
1	7.1	3.8	52400.2	7305.
2	14.2	4.8	60472.1	4266.
3	28.3	6.1	64507.6	2275.
4	56.7	7.7	66510.3	1173.
5	113.4	9.7	58456.4	515.
6	226.8	12.2	58060.7	260.
7	453.6	15.4	44346.2	98.
8	907.2	19.4	42330.5	47.
9	1814.4	24.4	30236.1	17.
10	3628.8	30.7	28220.3	9.
11	7257.6	38.7	18141.5	6.

30

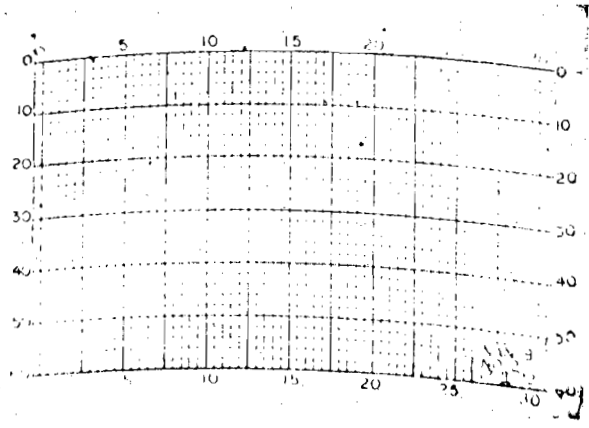


PLATE 24-1: SWAN LAKE - Temperature Profile

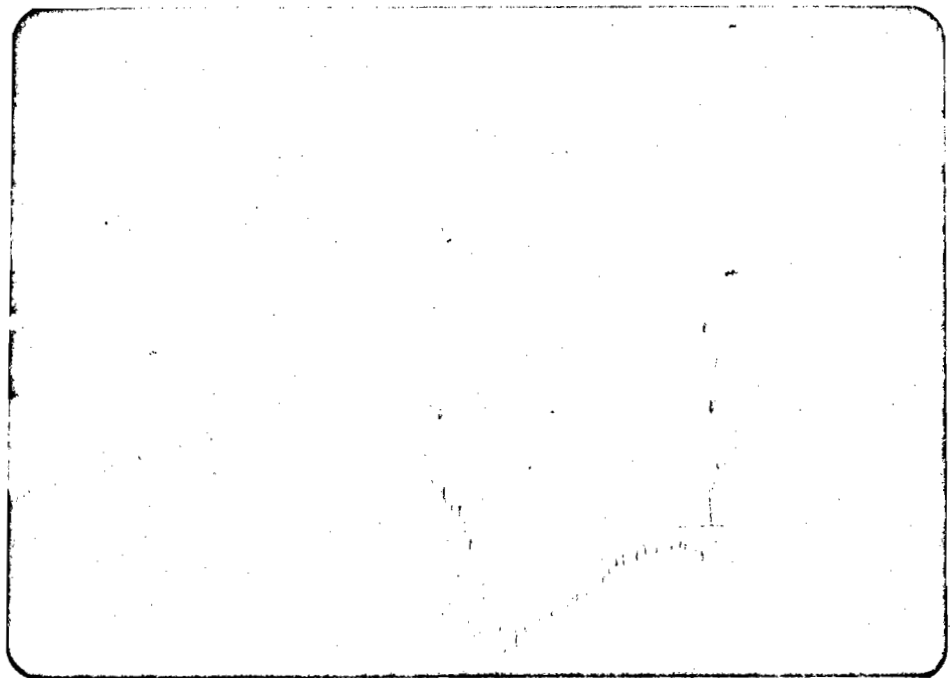


PLATE 24-2: SWAN LAKE - Aerial View to North,  
Club Creek on right

LAKE INVENTORY DATA SHEET NO. 1

SWAN LAKE MU 6-17 B		Latitude: 56° 47'
Hazelton and Stewart approx. 70 km		Longitude: 128° 40'
		1980. Map Name: Brown Bear Lake
		1980. Map Number(s): 103 p/15 East

Date: Oct. 15/75		Time: 1430
See Hydrographic Map		Bench mark Location and Height NA
Area: 5.8	Elevation: 1525 m	Cloud Cover (tenths): 10/10
Weather Conditions		Precipitation: a. nil X
		Photographs: b. light
		c. moderate
		d. heavy
Wind Speed: 15 Mph		Wind Direction: E
Yes		

Lake Elevation: 525 m		Surrounding Elev. 549 m
Slope Characteristics:		Several peaks ranging in elev. from 1750 m to 1860 m N-NE of lake : Distance 15-25 km
Flat	25%	
Rolling		
Hilly	55%	
Mountainous	20%	
Distance to nearest high elevation (km):		Unnamed peak (1273 m) ~ 8.25 km
Slope Length (km):		1.4

Frost-free days: 170		Day-degree units: 411.1
Atmos. Env. Services		New Hazelton
Rainfall: 49.0 cm		Hours Sunlight/Year: 1583
Mean Winter Temp: -5.13		Mean Summer Temp: 13.33
Additional information:		Mean daily Temp: 4.33
		Greatest 24 hr. ppt: 5.559
		Mean annual snow: 120.1 cm

Swan L./Club L./ Club Cr./ Stephens L./ Stephens R./ Kisiox R./	
Topo. Maps	
Skeena R.	
Total Dist.=270 km	
Drainage Area=145 km	

LAKE INVENTORY DATA SHEET 2

PART F: DEPTH INFORMATION	
Hydrographic Map Available: Yes	Source of Map: WSD 6 3
Surface Area: 27.97	Total Lake Volume: 636.1x10 m
Mean Depth (m): 22.9 m 6 3	Maximum Depth (m): 64 m 6 3
Epilimnion Volume: 266x10 m	Hypolimnion Volume: 370x10 m
Comments and Additional Information	
Epilimnion is 42% of total lake volume.	

PART G: SHORELINE INFORMATION	
Shoreline Perimeter: 36.2 km	Island Perimeter: 49 islands 18.6 km
Total Perimeter: 55.0 km	Beach (% Perimeter): 5.0
Beach Access from water: Poor	Beach Access from land: V. Poor
Industrial Use: None	Public Use: Ltd. inaccessibility by road-trail within 2.5km of
Launching Facilities: None	Resorts/Lottages/Campsites lake: None
No. of Embayments: Exceedingly high- See Hydro. Map	Extent of Embayments:
Shoreline Development Factor: 3.5 (Godrey, 1958)	Obstructions and Pollutions: None
Photographs: Yes	Additional Information: Peripheral area very swampy. Lake accessible by float plane only.

PART H: DISCHARGE INFORMATION				
Literature or Estimation:		Information Sources:		
Stream or River	Width (ft)	Depth (ft)	Straight L	Time / l
Water Residence time:				39.3 years
% Epilimnion Flushed during Growing Season:				2.93
Max. 24 hr. % Epilimnion Flushed during G.S.				0.48
Stream Velocity Correction Factor (a)				
$cfs = (W) \times (D) \times (a) \times (L)$			rock bottom	0.8
			gravel bottom	0.8
			mud bottom	0.9
			sand bottom	0.9
			bedrock	0.9
Flow Rates of Streams and Rivers:		A		
Minimum Flow (cfs):		B		
Maximum Flow (cfs):		C		
Minimum Outflow (cfs):		D		
Maximum Outflow (cfs):		E		
		F		

LAKE INVENTORY DATA SHEET NO. 3

PART 1: TEMPERATURE PROFILE					
INSTRUMENT: Bathythermograph			TIME: 1450		
DEPTH (m)	TEMP	DEPTH (m)	TEMP	DEPTH (m)	TEMP
0	9.4	9	9.4	20	5.0
	9.4	10	9.4	25	4.8
	9.4	11	9.0	30	4.7
	9.4	12	6.5	35	4.6
	9.4	13	5.8	40	4.4
	9.4	14	5.6	45	4.2
	9.4	15	5.4	50	4.1
	9.4	16	5.2	4	4.1
	9.4	18	5.1	50	-
EPI-thermocline depth:			Depth of Thermocline:		
DEPTHS FOR SAMPLING PROGRAM: 0   5   10   20   30					

Epi. T. 9.40      Hyp. T. 5.23

PART 2: pH, CONDUCTIVITY, TOTAL DISSOLVED SOLIDS						
INSTRUMENT: Radiometer-22			Conductivity Instrument: Fluke 710B			
			pH Buffer Solution: 6.00			
DEPTH (m)	pH	Temp. (C)	Res.	Sp. Cond.	Temp.	TDS (ppm)
0	7.81	8.068	E3	39		23
5	8.76	8.014		38		23
10	8.57	8.339		37		22
20	7.49	8.355		37		22
30	7.49	8.118		37		22
Mean Epilimnion pH: 8.38		Mean Epilimnion TDS (ppm): 22.7				
Mean Hypolimnion pH: 7.49		Mean Hypolimnion TDS (ppm): 22.0				
Additional Information and Comments:						

PART 3: NUTRIENT LEVELS			
How samples taken:		Time samples frozen:	
Method of Determination:		Phosphate Determination:	
Autoanalyzer		Strickland and Parsons	
How Air Analyzed: K. Stephens		Phosphate Analyzed: K. Stephens	
DEPTH (m)	Date & Time Anal.	NO <sub>3</sub> -N P/II	Date & Time Anal. ug-atN/l
0		.023	0.29
5		.061	< 0.10
10		-	< 0.10
20		.027	1.62
30		.047	1.36
Mean Epilimnion P: 0.042		Mean Epilimnion N: 0.163	
Mean Hypolimnion P: 0.037		Mean Hypolimnion N: 1.490	
Additional Information and Comments:			



LAKE INVENTORY DATA SHEET NO. 4

PART I: TEMPERATURE			
Date	1445 hrs.	Location	
Water Temp - down	9.5	Secchi Value - up	19.0
Water Color	colourless	Water Color	green X
Additional Information and Comments			

PART II: PARTICLE ANALYSIS						
Date		Electrolyte				
Dilution Factor		Calibration Factor				
Depth (m)		Type of Analysis				
Depth (m)	total no/m <sup>3</sup>	coll no/m <sup>3</sup>	Stomach/m <sup>3</sup>	per	Remarks	
0	21,928		11.76 E5 u <sup>3</sup>	53.6 E5 u <sup>3</sup>		
5	23,602		6.69	28.3		
10	18,140		5.10	28.1		
20	20,961		5.51	26.2		
30	16,056		5.25	32.7		
Additional Comments and Information						

PART III: VEGETATION - UPLAND SPECIES				
Scientific Name	Common Name	Collected	Photo	Extent
<i>Pinus contorta latifolia</i>	Lodgepole Pine			
<i>Thuja plicata</i>	Western Red Cedar			
<i>Chamaecyparis nootkatensis</i>	Yellow Cedar			
<i>Picea mairana</i>	Black Spruce			
<i>Picea glauca ssp. glauca</i>	White Spruce			
Additional Comments and Information				
<i>Betula papyrifera humilis</i>	-Alaska Birch			

PART IV: VEGETATION - SHORELINE SPECIES				
Scientific Name	Common Name	Collected	Photo	Extent
<i>Gaultheria shallon</i>	Salal			
<i>Spiraea douglasii</i>	Hardhack			
<i>Ledum groenlandicum</i>	Labrador Tea			
<i>Cladothamnus pyrolaeiflorus</i>	Copper Bush			
<i>Oplopanax horridus</i>	Devil's Club			
Additional Comments and Information				
<i>Lonicera involucrata</i>	Black Twinberry			

TYPE OF VEGETATION - LITTORAL/EMERGENT

Species	Location Name	Collected	Photo	Extent
Additional comments and information				
None observed.				

TYPE OF VEGETATION - LITTORAL/EMERGENT

Species	Location Name	Collected	Photo	Extent
Additional comments and information				
None observed.				

TYPE OF PHYTOPLANKTON Listed in order of abundance.

Species	Cell Number/ml
Ankistrodesmus	9.1
Melosira	6.1
Chroococcus	3.0
Synedra	3.0
Total Number/ml	33.3
Total Number/m <sup>3</sup>	3.3 x 10 <sup>7</sup>
Ident. by: R.M.C.	
Additional comments and information	

TYPE OF ZOOPLANKTON Listed in order of abundance.

Species	Number/m <sup>3</sup>
Cyclops bicuspidatus	2010
Diaptomus tyrelli	1320
Kellicottia spp.	140
Bosmina coregoni	110

See Table 24-2 for complete species list.

LAKE KISPIOX FISH SPECIES

FISH SPECIES

Scientific Name	Common Name	Comm.	Anglo	Russian	Pop'n
Onocorhynchus nerka	Sockeye				
" tshawytscha	Spring				
" kisutch	Coho				
Salvelinus malma	Dolly Varden				
Salvelinus namaycush	Lake Trout				
Onocorhynchus nerka kennerlyi	Kokanee				
Prosopium williamsoni	Mountain Whitefish				
Catostomus catostomus	Longnose Sucker				

see topographic map

Additional Information and Comments:

ADDITIONAL INFORMATION, APPROXIMATE AND COMMENTS

- Not accessible by road - trail along Kispiox River within 2.5 km of lake: hunters
- Hwy 37 north to Meziadin passes within 7 km of west side of lake
- Very rough water (stormy) during sampling program