FORM 1

LAKE SURVEY

Summary Form

113-91-0

Lake identification (name, ID number, bay or fjord receiving drainage) Elfendahl Lake 113-91-0 Porcupine Bay; Islas Bay; Chichagof I. Lake area & elevation 234 ha; 61-92 m (topo), 87 m (altimeter)

Observers Crone, Holmgren, Parker, Reifenstuhl, Straley

Date Aug 23-24, 1979 Weather & lake conditions Sunny and calm in A.M.; wind came up about 1100h and caused small chop on lake

DEPTH: No. of transects 2 (+ 2 area transects) No. of major basins 1 No. of sampling sites ("X sites") 1

Maximum depth observed in each basin 138 m

WATER QUALITY:

Temperature profile(s): Time of determination 1105 h Air temperature (°C) 19

Depth (m)	Temperature (°C) (at sites $X_1, X_2, \ldots$)	Depth (m)	Temperature (°C) (at sites $X_1, X_2, \ldots$)	Depth (m)	Temperature (°C) (at sites $X_1, X_2, \ldots$)
0	16.5	6.5	15.5	13.0	9-
0.5		7.0	14+	14.0	8
1.0	16	7.5	13+	15.0	7.5
1.5		8.0	12.5	16.0	7
2.0	16	8.5	12	17.0	7-
2.5		9.0	11+	18.0	6.5
3.0	16-	9.5	11+	19.0	6.5
3.5		10.0	11	20.0	
4.0	16-	10.5	11-	21.0	
4.5		11.0	10+	22.0	
5.0	16-	11.5	10-	23.0	
5.5		12.0	9+	24.0	
6.0	15.5	12.5	9+	25.0	

Secchi disc: No. of sites sampled 1 Time(s) 1058 h Surface conditions sunny; calm-light wind but surface still smooth

Depth(s) disc disappeared/reappeared 11.0/10.0 m

Water Chemistry: on-site determination for 3 depths (in order: 1.0 m; below thermocline; and near bottom) at each "X site."

Total hardness (mg/l) 6; 7; 6 Temperature (°C) 16; 10; 9

Alkalinity[1] (mg/l) 5.8; 5.4; 5.4 Conductivity[2] (µmhos/cm) Not determined

pH (wide range) ≈6.7 (6.5-7.0); ≈6.3 (6.0-6.5); 6.5 (narrow range) 6.45[3]; 6.4; 6.23 DO[4] (mg/l) 10; 12; 12

Depth & time of samples: 1.0 m, 0948 h; below thermocline (25.0 m), 1325 h; near bottom (91.0 m), 1315 h (in 93 m-deep water)

PHYTOPLANKTON: No. of samples 1 Depth(s) 1.0 m Time(s) 1230 h

ZOOPLANKTON: No. of samples 2 Time of collections 0920; 0930 h

Tow depths & elapsed times 50 m each @ 58 and 67 secs Tow angle (°) if not vertical

Dominant zooplankters observed Holopedium, Bosmina, cyclopoid copepods

FISH COLLECTION SUMMARY:

Type and amount of gear	Gear location (e.g., surface, littoral; middepth, limnetic; bottom, outlet logjam)	Total elapsed time this gear type fished (trap/net-hrs)	Catch (Number, species, average length)	CPUE* (fish/hr)
GN(F)	near outlet	23.08	1 Dolly Varden, 132mm	0.04
GN(S)	near major inlet	19.08	12 Dolly Varden, 271.4mm	0.63
			3 prickly sculpin, 154.6mm	0.16
MT(14)	bottom, littoral	184.78	32 prickly sculpin, 95.3mm	0.17
MT(1)	surface, littoral	19.30	0 – –	0
MT(2)	bottom, limnetic	21.75	0 – –	0
MT(2)	mid-depth, limnetic	21.75	0 – –	0
MT(2)	surface, limnetic	21.75	0 – –	0
MT(1)	bottom, inlet stream	19.17	1 Dolly Varden, 110 mm	0.05
			4 prickly sculpin, 122.5mm	0.21
ΣGN(2)	–	42.17	13 DV, 260.7mm; 3 sculpin, 154.6mm	0.31; 0.07
ΣMT(21)	(in-lake set traps only)	269.33	32 prickly sculpin, 95.3mm	0.12

COMMENTS: 1/ Alkalinity values given were determined by titration with acid of known normality (0.029N — courtesy of Jeff Koenings, ADF&G, Soldotna Limnology Lab). Alkalinity was also determined for the three depth samples using the acid of unknown normality** (but labeled 0.03N) used on several previous lake surveys. Respectively, 0.41, 0.42, and 0.39 ml of the "old" acid was used to reach the end point of the three depth samples.
2/ Conductivity not determined; instrument in town for calibration.
3/ Red tint in sample makes comparison with color wheel difficult; value selected by color intensity.
4/ Dissolved oxygen values given were determined with PAO of known normality (0.0109N — courtesy of Jeff Koenings, ADF&G, Soldotna Limnology Lab). Dissolved oxygen was also determined using the PAO of unknown normality*** that had been used on the previous lake surveys; results: 12, 15, and 15 mg/l for the three sample depths, respectively.

Observed moderate periphyton growth and numerous small sculpins on rock ledges around base camp.

*Catch per unit effort

**Normality of this acid was subsequently determined to be 0.028N. Multiplying ml of a acid titrated by the appropriate expansion factor (14) yields alkalinity estimates of 5.7, 6.0, and 5.5 mg/l for the three depths, respectively.

***Normality of this PAO was subsequently determined to be 0.0090N. Consequently, dissolved oxygen concentration values based on this PAO are overestimates.