

LAKE SURVEY DATAWatershed code #92-02-20
#920-2577-057-000

NAME: SOMENOS LAKE MAP. REF. CODE NO. 92B/13-E
 SURVEYED BY: T. Webber DATE SURVEYED: May 8, 1980
 MANAGEMENT UNIT: 1

DATA ON FILE:

Physical Data	<u>X</u>	Netting Results	<u>X</u>
Contour Map	<u>X</u>	Fish Samples	<u>X</u>
Geography	<u>X</u>	Stomach Analysis	<u>X</u>
Chemical	<u>X</u>	Scale Reading	<u>X</u>
Flora	<u>X</u>	Resort & Campsite	<u>X</u>
Invertebrates	<u>X</u>	Habitation	<u>X</u>
Temperature Series	<u>X</u>	Access	<u>X</u>
Obstructions & Pollutions	<u>X</u>	Oxygen	<u>X</u>
Stocking	<u>-</u>	Photography	<u>X</u>
Miscellaneous	<u>X</u>	Rehabilitation _____ Year	<u>-</u>
		Bench Mark	<u>X</u>

LOCATION: About 3 Air km northeast of Duncan, B.C. (Vancouver Island)
 Latitude, Longitude 48°48': 123°42' U.T.M. N/A
 Drainage, System Somenos Creek → Cowichan River → Straits of Georgia

Elevation About 16 km

PHYSICAL DATA:

Surface Area	<u>1,011,000 sq. m.</u>	Volume	<u>4,290,000 cu. m.</u>
Area, 6 m contour	<u>177,000 sq. m.</u>	Shoreline Perimeter	<u>4800 m.</u>
Maximum Depth	<u>6.5 m.</u>	Mean Depth	<u>4.2 m.</u>
Filterable Residue (T.D.S.)	<u>90 mg/l</u>	Secchi Reading	<u>1.5 m.</u>
		Bench Mark	<u>2 m.</u>

GEOGRAPHY:

Immediate Shoreline: Bordered by a dense growth of swamp willow, reeds and various aquatic macrophytes. Access is generally poor except where open farmland has been cleared to the waters edge. Water drop-off is generally shallow except for localized areas along the south shore. A few small gravel beach areas were noted. Most of the shoreline is muddy with some patches of cobble and boulder.

Surrounding Country: Flat to gently rolling on all sides. Forested in mixed maturing Douglas fir, spruce and red cedar. Some patches of alder and maple with the occasional Gary oak are interspersed over the hillsides. Most of the forest has been cleared around the immediate shoreline.

LAKE SOMENOS

GEOGRAPHY (continued)

Lake Drainage: No information was collected on the outlet or inlets of Somenos Lake during the period of this survey. However, Richards Creek was thoroughly surveyed at the end of August, 1980, by Tom Pendray, a lakes and streams technician of the Aquatic Studies Branch. A copy of the report is available through the Victoria office.

LAKE Somenos

GENERAL INFORMATION

ACCESS:

1. Directions

Turn right off the main highway on the north side of Duncan on to Drinkwater road. Proceed past the Forest museum and continue on a gravel road for about $\frac{1}{2}$ km directly to the boat launch area on the west side of the lake.

2. Road Type & Conditions

Good all weather 2 lane public gravel road that ends at the boat launch ramp at the west end of the lake.

3. Restrictions, Prohibitions

None.

RESORTS AND CAMPSITES

None.

OTHER HABITATION

Numerous houses or cottages and cleared farmland extending away from the shoreline on all sides of the lake.

OBSTRUCTIONS AND POLLUTIONS

None. But cattle and sheep graze to the waters edge.

MISCELLANEOUS COMMENTS

This lake is abundant in water fowl: nesting swans, Canada geese, grebes, Great blue herons, Buffalo heads, osprey, bald eagles, red wing black birds, etc. The flooded marshland near the highway is a bird sanctuary.

- The lake is abundant in aquatic invertebrates and there appears to be both a phytoplankton and zooplankton bloom in the lake at this time. The water is very tannic with a secchi disc of only 1.5 m at the time of this survey.

- The three spine stickleback caught in the minnow traps appear to be near spawning time.

LAKE: SOMENOS

LIGHT PENETRATION: Secchi Disc 1.5 m 9 /10 O.C.

pH: Surface 8 Time 1145 hrs Surface Condition rippled
6 m 6.2
_____ m _____
_____ m _____

Wind Velocity light km/hr Direction variable

H₂S: 6 m nil milligrams/liter
_____ m _____ " "

Method and/or Agency Used <u>Environmental Lab at</u>	
Date <u>May 28, 1980</u>	
U.B.C.	
Residue Filterable (105°) (T.D.S.)	
Surface	<u>90</u> milligrams/liter
<u>6</u> m	<u>88</u> " "
_____ m	_____ " "
Specific Conductance	
Surface	<u>117</u> umhos/cm
<u>6</u> m	<u>118</u> "
_____ m	_____ "

BENCH MARK: Located 2 m above water level in a 40 cm railroad

~~XXXX~~ train trestle piling about 100 m south of the access point.

SOUNDING DEVICE: FURUNO FG 11 Mark 3

MAP OUTLINE FROM: Air Photo

AQUATIC PLANTS: Abundant Nuphar sp along the entire shoreline. There are several areas of dense mats of ceratophyllum.

VERTICAL TEMPERATURE RECORD SHEET FOR LAKES

Lake SOMENOS Station LS 1 of one
 Date May 9, 1980 Time 1200
 Air Temperature °C 11 Instrument Used TELETHERMOMETER
 Remarks _____

Depth in m.	Temperature in °C	Depth in m.	Temperature in °C	Depth in m.	Temperature in °C
Surface	10.2	20.5		41.0	
0.5		21.0		41.5	
1.0	9.8	21.5		42.0	
1.5		22.0		42.5	
2.0	9.8	22.5		43.0	
2.5		23.0		43.5	
3.0	9.2	23.5		44.0	
3.5		24.0		44.5	
4.0	8.8	24.5		45.0	
4.5		25.0		45.5	
5.0	8.2	25.5		46.0	
5.5		26.0		46.5	
6.0	7.8	26.5		47.0	
6.5		27.0		47.5	
7.0	7.2	27.5		48.0	
7.5		28.0		48.5	
8.0		28.5		49.0	
8.5		29.0		49.5	
9.0		29.5		50.0	
9.5		30.0		50.5	
10.0		30.5		60.0	
10.5		31.0		65.0	
11.0		31.5		70.0	
11.5		32.0		75.0	
12.0		32.5		80.0	
12.5		33.0		85.0	
13.0		33.5		90.0	
13.5		34.0		95.0	
14.0		34.5		100.0	
14.5		35.0		105.0	
15.0		35.5		110.0	
15.5		36.0		115.0	
16.0		36.5		120.0	
16.5		37.0		125.0	
17.0		37.5		130.0	
17.5		38.0		135.0	
18.0		38.5		140.0	
18.5		39.0		145.0	
19.0		39.5		150.0	
19.5		40.0			
20.0		40.5			

bottom

OXYGEN RECORD SHEET

Lake SOMENOS Station LS 1 of one

Date May 9, 1980 Time 1200

Instrument Used HACH KIT

Remarks _____

Depth in m.	O ₂ in mg/l	Depth in m.	O ₂ in mg/l	Depth in m.	O ₂ in mg/l
Surface	10	20.5		41.0	
0.5		21.0		41.5	
1.0		21.5		42.0	
1.5		22.0		42.5	
2.0		22.5		43.0	
2.5		23.0		43.5	
3.0		23.5		44.0	
3.5		24.0		44.5	
4.0		24.5		45.0	
4.5		25.0		45.5	
5.0		25.5		46.0	
5.5		26.0		46.5	
6.0	4	26.5		47.0	
6.5		27.0		47.5	
7.0	bottom	27.5		48.0	
7.5		28.0		48.5	
8.0		28.5		49.0	
8.5		29.0		49.5	
9.0		29.5		50.0	
9.5		30.0		50.5	
10.0		30.5		60.0	
10.5		31.0		65.0	
11.0		31.5		70.0	
11.5		32.0		75.0	
12.0		32.5		80.0	
12.5		33.0		85.0	
13.0		33.5		90.0	
13.5		34.0		95.0	
14.0		34.5		100.0	
14.5		35.0		105.0	
15.0		35.5		110.0	
15.5		36.0		115.0	
16.0		36.5		120.0	
16.5		37.0		125.0	
17.0		37.5		130.0	
17.5		38.0		135.0	
18.0		38.5		140.0	
18.5		39.0		145.0	
19.0		39.5		150.0	
19.5		40.0			
20.0		40.5			

FISH SAMPLE RECORD

Net #1. Type* Sinking Date set May 8/80 Time 1700 hours
Monofilament Date lifted May 9/80 Time 0830 hours

Net Dimensions: length 91 m. depth 2.4 m.

Shallow end mesh size 25 mm. and depth 2.5 m. Substrate sand & mud

Deep end mesh size 64 mm. and depth 5 m. Substrate muddy

Net #2. Type* _____ Date set _____ Time _____ hours
 _____ Date lifted _____ Time _____ hours

Net Dimensions: length _____ m. depth _____ m.

Shallow end mesh size _____ mm. and depth _____ m. Substrate _____

Deep end mesh size _____ mm. and depth _____ m. Substrate _____

Net #3. Type* _____ Date set _____ Time _____ hours
 _____ Date lifted _____ Time _____ hours

Net Dimensions: length _____ m. depth _____ m.

Shallow end mesh size _____ mm. and depth _____ m. Substrate _____

Deep end mesh size _____ mm. and depth _____ m. Substrate _____

SPECIES	NET #			ANGLED	TOTAL	SCALE SAMPLES TAKEN	# PRESERVED
	1	2	3				
Rainbow	47			-	47	34	none
Cutthroat	17			-	17	17	none
Brown Bullhead	28			-	28	-	none
* Sculpins	6			-	6	-	none

* The species of sculpin was not identified.

MINNOW TRAPS:

	Hours	Depth	Substrate	Fish Caught
#1	20	$\frac{1}{2}$ m	sands	69 three spine stickleback
#2	20	$\frac{1}{2}$ m	muddy	40 three spine stickleback
#3				

* Sinking or floating, twisted or monofilament, or beach seine

LAKE SURVEYS - FISH DATA SHEET

1. MATURITY:
 IMM - Immature
 MG - Maturing
 MT - Mature
 R - Ripe
 SP - Spent
 ? - Not Known
2. SAMPLE TYPE:
 TG - Fish Tag
 OT - Otolith
 SC - Scale
3. SEX:
 M - Male
 F - Female
 ? - Not Known

LOCALITY Somenos Lake

DATE May 9, 1980

METHOD OF CAPTURE Monofilament Gill Net

SPECIES	FORK LENGTH (cm)	WEIGHT (gm)	SEX	MATURITY	SAMPLE TYPE	AGE	STOMACH CONTENTS				TOTAL VOLUME	COMMENTS
							BOTTOM ORGANISMS	PLANKTON	TERRESTRIAL INSECTS	FISH		
Rainbow Trout	21.8	110	M	IMM	SC							
Rainbow Trout	22.2	125	?	IMM	SC							
Rainbow Trout	23.5	130	?	?	SC							
Rainbow Trout	24.5	140	M	IMM	SC							
Rainbow Trout	24.5	150	M	IMM	SC							
Rainbow Trout	25.5	180	F	IMM	SC							
Rainbow Trout	26.5	180	M	IMM	SC							
Rainbow Trout	26.6	280	F	IMM	SC							
Rainbow Trout	27.6	230	M	IMM	SC							
Rainbow Trout	28.3	250	F	IMM	SC							
Rainbow Trout	28.5	250	M	MG	SC							
Rainbow Trout	28.8	250	M	IMM	SC							
Rainbow Trout	28.8	250	M	IMM	SC							
Rainbow Trout	28.8	275	M	IMM	SC							
Rainbow Trout	29.0	275	M	IMM	SC							
Rainbow Trout	29.2	340	M	IMM	SC							
Rainbow Trout	29.5	340	F	MT	SC							
Rainbow Trout	29.6	320	M	IMM	SC							
Rainbow Trout	29.7	300	M	MT	SC							
Rainbow Trout	29.8	325	M	MG	SC							
Rainbow Trout	29.9	330	F	MG	SC							

LAKE SURVEYS - FISH DATA SHEET

LEGEND:

1. MATURITY:

2. SAMPLE TYPE:

3. SEX:

IMM - Immature
 MG - Maturing
 MT - Mature
 R - Ripe
 SP - Spent
 ? - Not Known

TG - Fish Tag
 OT - Otolith
 SC - Scale

M - Male
 F - Female
 ? - Not Known

LOCALITY Somenos Lake cont'd

DATE May 9, 1980

METHOD OF CAPTURE Monofilament Gill Net

SPECIES	FORK LENGTH (cm)	WEIGHT (gm)	SEX	MATURITY	SAMPLE TYPE	AGE	STOMACH CONTENTS				TOTAL VOLUME	COMMENTS
							BOTTOM ORGANISMS	PLANKTON	TERRESTRIAL INSECTS	FISH		
Rainbow Trout	29.9	330	F	MG	SC							
Rainbow Trout	30	275	M	IMM	SC							
Rainbow Trout	30.8	390	F	IMM	SC							
Rainbow Trout	31	360	F	IMM	SC							
Rainbow Trout	31	390	M	MG	SC							
Rainbow Trout	31	400	F	IMM	SC							
Rainbow Trout	31.5	360	F	IMM	SC							
Rainbow Trout	31.5	390	F	IMM	SC		chironomids					
Rainbow Trout	31.5	400	F	IMM	SC		chironomids					
Rainbow Trout	31.8	390	F	IMM	SC							
Rainbow Trout	32.4	410	M	IMM	SC							
Rainbow Trout	32.7	430	M	IMM	SC							
Rainbow Trout	33	440	F	IMM	SC							
Rainbow Trout	33	575	M	IMM	SC							

MAY 28, 1980

ENVIRONMENTAL LABORATORY
MINISTRY OF THE ENVIRONMENT

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WATER QUALITY REPORT FOR SAMPLE 006920W

TO: J A BALKWILL
765 BROUGHTON ST
VICTORIA BC V8W 1E2
ATTENTION OF: J A BALKWILL

FOR SITE: SOMENOS LAKE

SAMPLING DATE(S): MAY 8/80 1200 HRS TO MAY 8/80 1215 HRS
SAMPLE TYPE: FRESH WATER
SAMPLING DEPTH: 0
SAMPLING LOCATION: SURFACE
SAMPLED BY: E.L.U.C. SECRETARIAT
DATE RECEIVED BY LABORATORY: MAY 22/80

0040101	PH	6.8	0071701	RES:FILT.105C	88.*
		REL UNIT			MG/L
0110101	SPECIFIC CONDUCT	117.			
		UMHO/CM			

THE APPROXIMATE COST OF THE ABOVE TESTS IS \$ 6.80

REMARKS:


FOR ENVIRONMENTAL LABORATORY

MAY 28, 1980

ENVIRONMENTAL LABORATORY
MINISTRY OF THE ENVIRONMENT

PAGE 1

WATER QUALITY REPORT FOR SAMPLE 006921W

TO: J A BALKWILL
765 BROUGHTON ST
VICTORIA BC V8W 1E2
ATTENTION OF: J A BALKWILL

FOR SITE: SOMENOS LAKE

SAMPLING DATE(S): MAY 8/80 1200 HRS TO MAY 8/80 1215 HRS
SAMPLE TYPE: FRESH WATER
SAMPLING DEPTH: 6
SAMPLING LOCATION: BOTTOM
SAMPLED BY: E.L.U.C. SECRETARIAT
DATE RECEIVED BY LABORATORY: MAY 22/80

0040101	PH	6.9	0071701	RES:FILT.105C	90.*
		REL UNIT			MG/L
0110101	SPECIFIC CONDUCT	118.			
		UMHO/CM			

THE APPROXIMATE COST OF THE ABOVE TESTS IS \$ 6.80

REMARKS:



FOR ENVIRONMENTAL LABORATORY

SAMPLERS'S COMMENTS: ATTN: T WEBBER



MAP OR AIR PHOTO IDENTIFICATION

LEGEND:

- LAKE: SOMENOS
DATE SURVEYED: MAY 8, 1980
REFERENCE NO: BC5650 #196 (Nov, 1975)
SCALE: 1:10,200
- ◀ 2 - Figure number, area and direction.
① - Point Sample, number and location.
⊗ - Bench Mark.
LS 1 - Limno Station number.
◌ NS 1 - Net Set and number.
◀ 1 - Stream flow direction and number.

FIGURE NO: 1