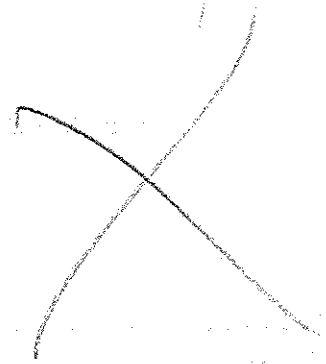


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ASSESSMENT OF COHO SALMON  
RECRUITMENT FROM STREAMS  
TRIBUTARY TO BABINE LAKE

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for

DEPARTMENT OF FISHERIES AND OCEANS  
HABITAT MANAGEMENT SECTION  
PRINCE RUPERT, B.C.

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## TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION.....	1
1.1 Background.....	1
1.2 Babine Lake Fisheries.....	3
2.0 METHODS.....	5
3.0 RESULTS.....	8
3.1 Juvenile Coho Life History Characteristics.....	8
3.2 Overall Tributary Production Estimates.....	13
3.3 Potential Fry Outplanting Sites.....	18
4.0 MANAGEMENT RECOMMENDATIONS.....	23
5.0 LITERATURE CITED.....	24
APPENDICES	

LIST OF TABLES

	<u>Page</u>
Table 1. Coho escapement estimates in the upper Babine River, Fulton River and Pinkut Creek .....	4
Table 2. Summary of total number of fish captured in Babine Lake tributaries.....	9
Table 3. Mean fork length of coho fry in selected Babine Lake tributaries.....	11
Table 4. Summary of coho salmon fry and yearling production in Babine Lake tributaries.....	14

LIST OF FIGURES

	<u>Page</u>
Figure 1. Location of Babine Lake and main tributaries...	2
Figure 2. Babine Lake tributaries used by juvenile coho salmon.....	10
Figure 3. Length frequency distribution of juvenile coho captured in Babine Lake tributaries during August 1988.....	12
Figure 4. North end of Babine Lake coho tributaries.....	19
Figure 5. Tributary 3300 near the north end of Babine Lake.....	20
Figure 6. Coho tributaries in Morrison Arm area of Babine Lake.....	21
Figure 7. Coho tributaries in the vicinity of Topley Landing.....	22

## 1.0 INTRODUCTION

A fisheries survey of tributary streams to Babine Lake was conducted between late July and September 1988. The study was designed to assess recruitment of rainbow trout from Babine tributaries in a program sponsored by the Habitat Conservation Fund, Ministry of Environment. A total of 57 streams were sampled during the course of the study and the results summarizing rainbow recruitment to Babine Lake are presented in Bustard (1989). In addition to collecting information describing juvenile rainbow trout use of these tributaries, juvenile coho were found to be present in the lower reaches of many of the tributaries examined.

This report summarizes the coho salmon results and provides a rough estimate of the production of coho salmon juveniles in streams tributary to Babine Lake. It was prepared at the request of Tom Pendray of the Habitat Management Section of the Department of Fisheries and Oceans, Prince Rupert.

### 1.1 Background

Babine Lake is the largest natural lake entirely within the province of British Columbia. It is a long (150 km) narrow lake located on the Central Interior Plateau and forms one of the major drainage basins in the Skeena River system (Figure 1). The lake lies at 55° N latitude, 123° W longitude and is at an elevation of 708 m. It has an area of 490 km<sup>2</sup>, mean depth of 55 m and a maximum depth of 186 m (Johnson 1965). Information describing the limnology of Babine Lake is reviewed in Levy and Hall (1985).

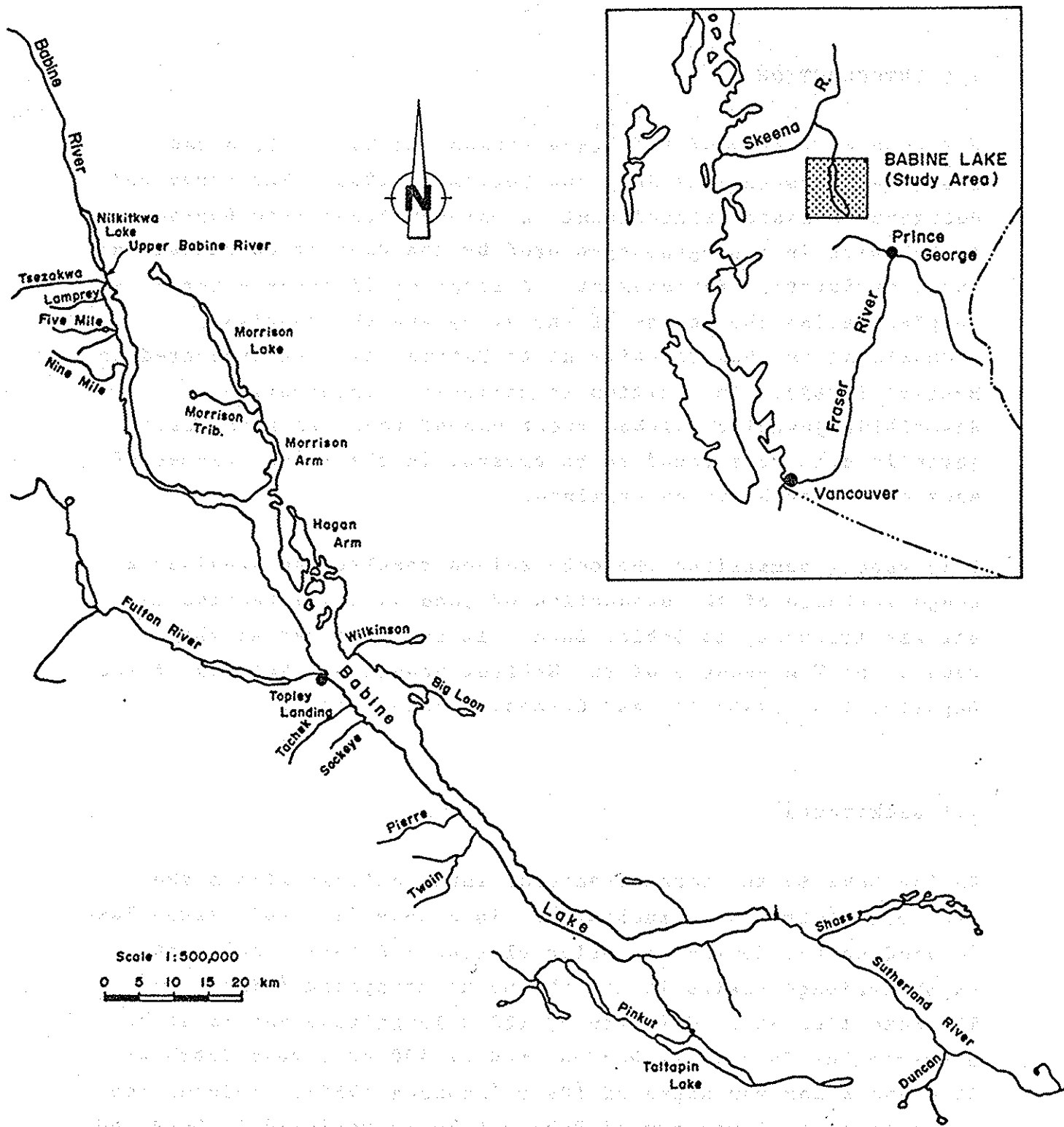


Figure 1. Location of Babine Lake and main tributaries.

The Babine Lake watershed encompasses an area of approximately 10,000 km<sup>2</sup>. The watershed contains four main sub-basins, including the Fulton, Pinkut, Sutherland and Morrison watersheds which drain 21.1, 13.3, 13.1 and 6.8% of the Babine watershed respectively. The rest of the Babine watershed boundary (46.6%) is very close to the lake and numerous small creeks, many with intermittent flow, discharge directly into Babine Lake.

## 1.2 Babine Lake Fisheries

Babine Lake is well known for its large run of sockeye salmon that can exceed 2 million fish in some years and presently accounts for up to 90% of the Skeena River sockeye production (Levy and Hall 1985). At least 16 tributaries to Babine Lake are used by spawning sockeye (Hancock et al. 1983). As well, some shore spawning occurs along the lake. A scattered incidence of pink and chinook salmon spawning has been reported in systems such as the Fulton River (Hancock et al. 1983).

A significant population of coho salmon spawn in the upper Babine River between Babine Lake and Nilkitkwa Lake. Estimates based on the recovery of fish tagged at the fence below Nilkitkwa Lake indicate a mean escapement of just over 4000 fish to this section of the river from 1975 to 1988 (Table 1). A smaller number of coho also spawn in the Babine River downstream of Nilkitkwa Lake in the vicinity of the counting fence.

Coho salmon also spawn in Babine Lake inlet tributaries, although the extent and distribution of coho is poorly documented since they spawn late in the season after the sockeye counts are complete. A review of historical records (Hancock et al. 1983) indicates that coho spawning has been documented in

nine tributary streams to Babine Lake (Figure 2). The two most important tributaries identified are the Fulton River and Pinkut Creek (Table 1), probably reflecting the presence of the counting fences and staff present on these systems during the spawning period. Recent coho escapements in the Fulton River range from 300-500 fish while Pinkut escapements are lower and range from 12-300 fish (Table 1). Escapement estimates for other tributaries indicate small historical populations particularly in Pierre, Morrison and Shass (Sutherland River tributary) creeks. Estimates prior to 1975 suggest that coho escapements were considerably higher than the more recent escapement estimates presented in Table 1. For example, Fulton River coho escapements averaged over 800 fish for the 25 years prior to 1975. Coho counts at the Babine fence have declined from over 10,000 spawners in the mid-sixties to approximately 3000 fish in the 1980's (data on file, DFO, Smithers).

Table 1. Coho escapement estimates in the upper Babine River, Fulton River and Pinkut Creek (from data on file, DFO, Smithers, and Hancock et al. 1983).

YEAR	UPPER BABINE RIVER	FULTON RIVER	PINKUT CREEK
1975	4000	106	NR
1976	4500	300	NR
1977	10500	200	NR
1978	11000	NR	NR
1979	2900	NR	NR
1980	4400	5	NR
1981	2166	200	100
1982	2287	NR	NR
1983	2704	NR	100
1984	2956	NR	NR
1985	2129	NR	NR
1986	2757	300	300
1987	1951	500	12
1988	3027	327	NR
1989		300	150



Limited tributary surveys have been conducted prior to the 1988 study on portions of the Babine watershed. For example, some work had been conducted in the Pinkut Creek watershed, mostly above the barrier at 2.3 km (Carmichael 1977). As well, Graham et al. (1976) provide some aerial habitat descriptions of 14 sockeye spawning streams, and additional information on these main salmon streams is presented in Hancock et al. (1983). Tributary fish sampling was conducted in the Morrison Arm area as part of a program for folio development for logging in this area (Hatlevik 1981). As well, some juvenile trapping data has been collected at the lower end of Morrison Creek (Orr 1984).

The Department of Fisheries and Oceans has been assessing coho use of several inlet tributaries to Babine Lake during the past several years as part of a program to assess the exploitation rate of Babine Lake coho in the commercial fishery. A program initiated in 1988 involving egg-takes at the Fulton and Pinkut fences and releasing fed-fry is underway on the Fulton River and Pinkut Creek and is continuing during 1990. As part of this program, electroshocking has been conducted on the Fulton and lower Sutherland rivers and Morrison Creek (Dr. Mason, DFO, personal communication).

## 2.0 METHODS

Preliminary data compilation and map (1:50,000) and air photo interpretation was undertaken in June and July. All tributary streams were broken into reaches and possible barriers located. The juvenile fish sampling was undertaken by a crew of two during late July, August and September. Sites were mainly located in stream sections accessible to fish from Babine Lake, although

some sites were located upstream of known barriers. Tributaries to Nilkitkwa Lake were not examined.

Access to sites was usually by vehicle where road access existed and by boat to the mouth of the streams that did not have road access. In these situations, sampling was usually restricted to the lower 1 km of the stream. The limited helicopter time available for this study was concentrated on otherwise inaccessible sites in the Sutherland River and several smaller streams at the south end of Babine Lake.

Representative sample sites 10-30 m in length were located in 57 streams. A minimum of one site was established per stream, while up to 11 sites were established in the Sutherland River and its tributaries. Emphasis was placed on the larger systems due to their more extensive and diverse habitat. In all, 87 sample sites were established. Nine additional streams that were visited were considered to have low potential and were not sampled further.

Tributary sites were enclosed with stopnets and electrofished. Population estimates were derived using a two-pass removal technique described by Seber and LeCren (1967). Main channel sites on larger systems such as the Fulton, Pinkut, lower Sutherland and Tsezakwa Creek were enclosed using a 30 m seine around rebar positioned prior to sampling. This technique sampled most of the usable coho habitat. Estimates were doubled on these larger systems to account for the two sides of the stream.

All fish captured were anaesthetized, counted and returned to the stream after sampling. A sample of 30 fish of each species was measured to the nearest millimeter. A representative range of

sizes of each species of fish was weighed and used in calculating biomass estimates. Scales were retained from 9 coho salmon juveniles from Tsezakwa Creek for age determinations. This information, along with length-frequency data was used to separate fry and yearling coho for the systems.

Sample site areas were calculated from a single length and a series of width measurements at each site. As well, water depths, substrate, cover characteristics, pool-riffle ratios, water temperature and estimated flow were recorded at each site.

Reach lengths were calculated from 1:50,000 scale maps and estimates of productivity were made using reach length and the number of fish per meter of stream length. Some judgment was used in applying catch information to stream reaches that apparently contribute to Babine Lake coho recruitment but were not sampled due to access difficulties.

For simplification, streams shown in Figure 2 are numbered from 1 to 36 and their corresponding watershed code and name (if they have one) is given. Some of the names given in this report to previously unnamed tributary streams are not gazetted.

### 3.0 RESULTS

A total of 3073 fish were estimated within the sample sites for all of the Babine Lake tributaries (57 streams) that were electrofished (Table 2). Juvenile coho comprised 18.4% of the total sample. Nearly 60% of the fish captured in the tributary streams were rainbow trout. Other species included prickly sculpins (12.1%), longnose dace (4.6%), and Dolly Varden char (2.8%). The remaining 3% of the catch consisted of squawfish, mountain whitefish, redbreast shiners, longnose suckers, burbot and a single brassy minnow captured in the mid-reaches of the Sutherland River.

Juvenile coho were present in 36 of the 57 streams (Figure 2). Sympatric populations of coho and rainbow occurred in 27 streams. The frequency of occurrence of all species in the sampled streams is shown in Table 2.

#### 3.1 Juvenile Coho Life History Characteristics

Most juvenile coho captured were age 0+ (75%), with age 1+ comprising nearly 25% of the sample. Scale analysis of several larger coho (110-115 mm) captured in July in Tsezakwa Creek indicated that these fish were age 2+.

A summary of the length frequency distribution of 299 juvenile coho from 18 tributaries sampled during August is combined and presented in Figure 3. Fry averaged 62.3 mm fork length (n=192) and yearlings averaged 84.0 mm (n=107). Based on the aging of a small sample of scales and the length frequency information, fish greater than 76 mm were assumed to be yearlings. The actual break-off point between fry and yearling presumably varied for each system. For example, the mean fry sizes from a

Table 2. Summary of total numbers of fish captured in Babine Lake tributaries.

SPECIES	TOTAL NUMBER	PERCENTAGE OF TOTAL	NUMBER OF STREAMS
Coho 0+	424	13.8	25
Coho 1+	142	4.6	27
Total Coho	566	18.4	36
Rbt 0+	1319	42.9	24
Rbt 1+	338	11.0	24
Rbt 2+	173	5.6	23
Total Rbt	1830	59.5	34
Dolly Varden	87	2.8	8
Burbot	3	0.1	3
Mountain whitefish	18	0.6	3
Prickly sculpins	373	12.1	26
Longnose dace	130	4.2	7
Sucker sp.	5	0.2	1
Squawfish	35	1.2	3
Redside shiner	25	0.8	2
Brassy minnow	1	<0.1	1
TOTAL	3374	100	57

KEY TO STREAMS

MAP #	STREAM #	NAME
1	2250	Tsezakwa
2	2300	Lamprey
3	2500	Unnamed
4	2600	Unnamed
5	2700	Five Mile
6	3000	Nine Mile
7	3200	Eleven Mile
8	3300	Unnamed
9	4600	Unnamed
10	4675	Unnamed
11	4730	Unnamed
12	4780	Unnamed
13	4800	Morrison
14	4825	Hazelwood
15	4830	Unnamed
16	6318	Unnamed
17	6320	Unnamed
18	6325	Red Bluff
19	6390	Wilkinson
20	6500	Tachek
21	6600	Unnamed
22	6650	Unnamed
23	6900	Big Loon
24	7200	Sockeye
25	7550	Unnamed
26	7560	Unnamed
27	7570	Unnamed
28	7600	Pierre
29	7700	Twain
30	8000	Unnamed
31	8200	Unnamed
32	8300	Cross
33	8990	Unnamed
34	9000	Pinkut
35	9400	Six Mile
36	9800	Shass

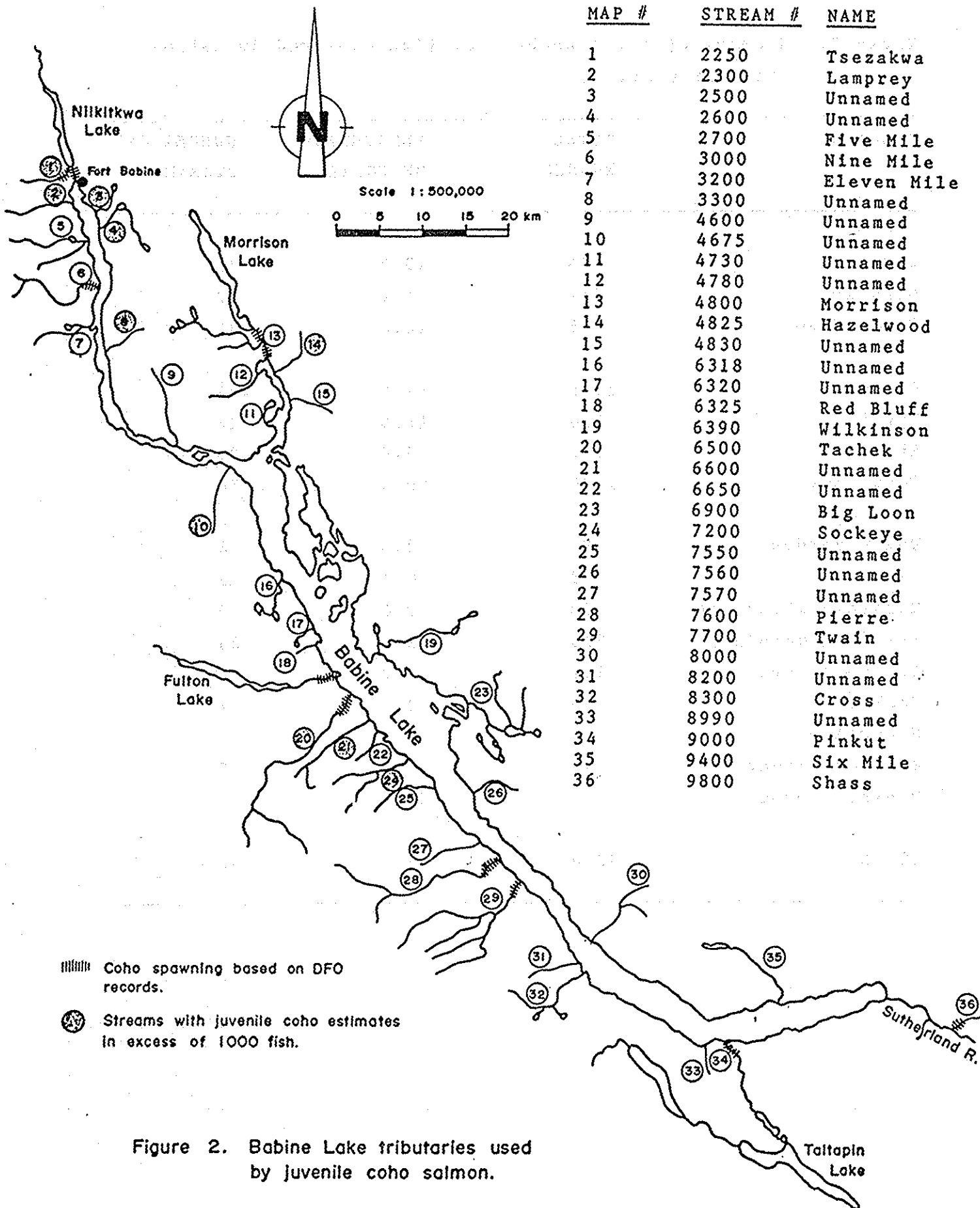


Figure 2. Babine Lake tributaries used by juvenile coho salmon.

sample of tributaries varied from 55-65 mm (Table 3) presumably reflecting differences in emergence timing and growth rates in individual streams.

Shepherd (1978) reports coho fry emergence at the Babine fence begins in late May and continues sporadically into late July.

Table 3. Mean fork length (mm) of coho fry in selected Babine Lake tributary streams.

SYSTEM	MAP NUMBER*	FRY LENGTHS	SAMPLE SIZE	DATE
2300 Lamprey	2	61.8	31	August 10
2500	3	55.3	36	August 9
2600	4	60.8	36	August 9
4825 Hazelwood	14	64.8	30	August 16

\* Refers to stream number on Figure 2.

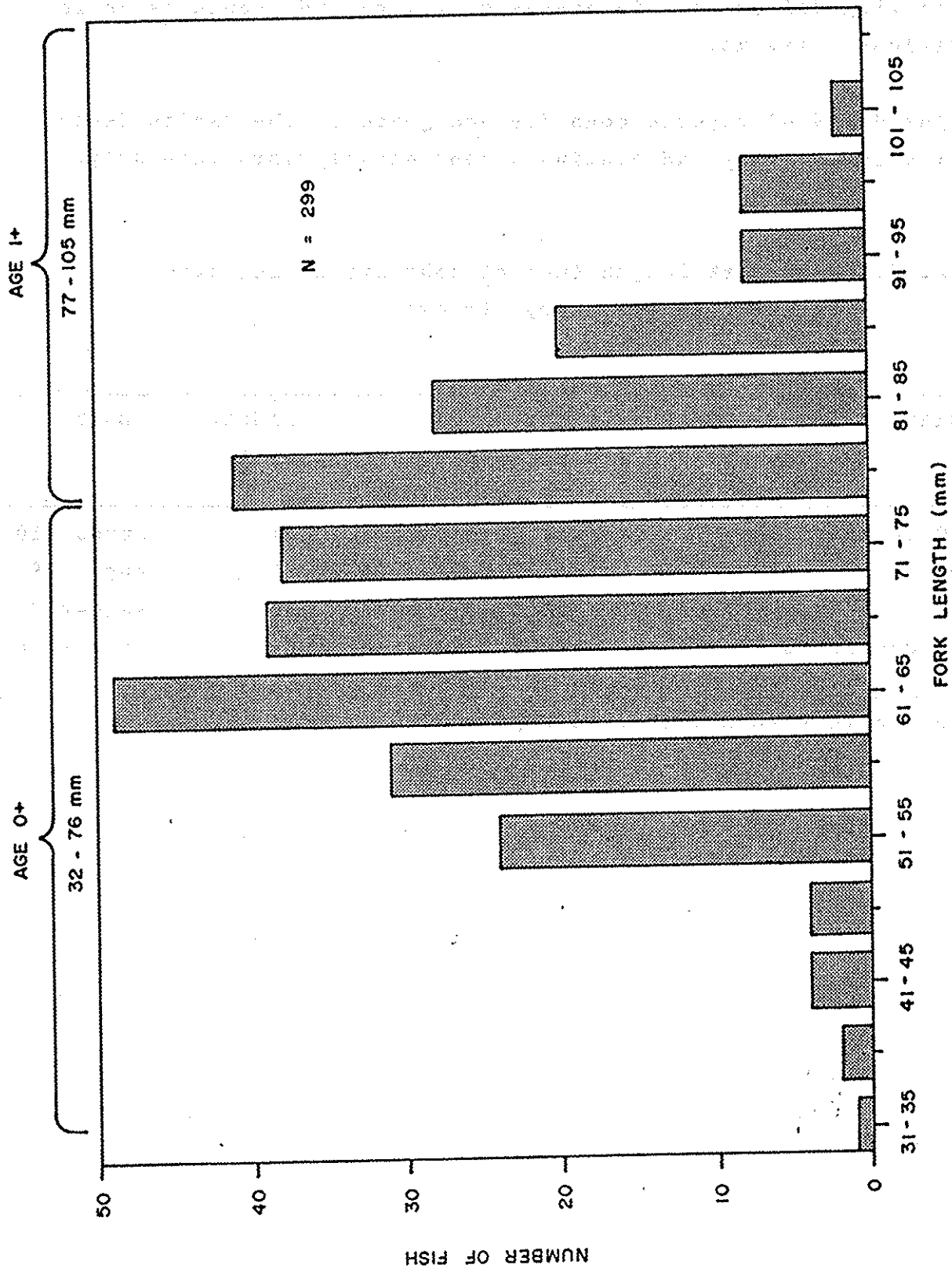


Figure 3. Length frequency distribution of juvenile coho captured in Babine Lake tributaries during August 1988.



### 3.2 Overall Tributary Production Estimates

The 36 streams that possessed coho salmon juveniles comprised approximately 62 km of accessible stream that could produce juvenile coho (Table 4). Most of the coho tributaries of Babine Lake are accessible for less than 5 km, and many for only 1 km or less.

The Sutherland River and tributaries could provide up to an additional 78 km of accessible stream. However, only a single juvenile coho was captured at 8 sample sites in this system. This is surprising since the lower Sutherland is comprised of extensive low velocity sections with abundant debris cover and appears ideal for coho rearing. The Sutherland is accessible during the fall to at least Duncan Creek based on the presence of kokanee this far upstream during some years. Historical records indicate that coho spawn in lower Shass Creek (Hancock et al. 1983), and Bob Lamont (DFO, Pinkut, personal communication) indicates that up to 500 coho spawned in the Sutherland in the Shass Creek area during 1987 indicating that substantial fry recruitment should have been available to the downstream areas. Only a single area was sampled downstream of Shass Creek. However, Dr. Mason (DFO, personal communication) indicates that he also did not find any juvenile coho use of the lower Sutherland when he electroshocked sites downstream of Shass Creek.

It should be noted that the upper point of access on many of the streams is approximate and is based on a combination of air photo and map interpretation, ground observations (often by fishery officers conducting spawner enumeration surveys), and aerial reconnaissance (Graham et al. 1976), and the present study. In some instances, where no known barriers are present,

Table 4. Summary of coho salmon fry and yearling production in Babine Lake tributaries.

SYSTEM(*)	FRY NUMBERS	PERCENT OF TOTAL	YEARLING NUMBERS	PERCENT OF TOTAL	ACCESSIBLE LENGTH (M)
Sockeye (24)	5425	17.5	1200	11.1	2500
2500 (3)	5290	17.0	0	0.0	1000
Hazelwood (14)	4180	13.5	300	2.8	1000
Lamprey (2)	3570	11.5	160	1.5	5000
Tachek (20)	1575	5.1	1313	12.2	5250
3300 (8)	2500	8.0	0	0.0	1000
4675 (10)	310	1.0	1180	10.9	1000
2600 (4)	1390	4.5	75	0.7	500
Tsezakwa (1)	0	0.0	1440	13.3	3800
6600 (21)	1413	4.5	0	0.0	1250
4600 (9)	730	2.3	570	5.3	1000
Five Mile (5)	880	2.8	128	1.2	1600
4730 (11)	550	1.8	375	3.5	1250
Eleven Mile (7)	464	1.5	432	4.0	2800
6650 (22)	0	0.0	830	7.7	500
7560 (26)	0	0.0	800	7.4	1000
6320 (17)	640	2.1	90	0.8	1000
Morrison (13)	650	2.1	65	0.6	3950
Twain (29)	648	2.1	37	0.3	1850
Pinkut (34)	204	0.7	306	2.8	1700
18 other streams	649	2.1	1493	13.8	27950
<b>TOTAL</b>	<b>31068</b>	<b>100</b>	<b>10794</b>	<b>100</b>	<b>66900</b>

\* Refers to stream number on Figure 2.

See Appendix 1 for a summary of all streams.

the upper extent of access has been estimated based on stream gradient and size. As well, tributary streams to Nilkitkwa Lake (Figure 1) may contribute substantially to coho production since they are based downstream from extensive spawning areas in the upper Babine River, but no rearing estimates for this area are available.

Juvenile coho rearing estimates from the tributary streams totalled 31,068 fry and 10,794 yearlings (Table 4). The highest population estimates were in Sockeye, Tributary 2500, Hazelwood, and Lamprey creeks (Table 4 and Figure 2). These four systems together accounted for nearly 60% of the coho fry numbers. Highest yearling numbers were found in Tsezakwa Creek. The absence of coho fry in this system suggests that coho spawners may only use this system during some years.

The methods used in arriving at the estimates in Table 4 are outlined in Appendix 1. A number of qualifying comments are appropriate to outline some of the limitations of these estimates. Firstly, the sample sites are small relative to the overall system lengths, and considerable error can be involved in extrapolating the results of catches from one short stream section to a long distance of unsampled stream. In addition, judgment has been used to estimate the upper extent of fish access in many of the streams. This could lead to considerable error. Many of the streams were accessed by boat and walking up from the mouth of the streams. Sample sites on these systems tended to be located on the lower ends of the streams, and may not truly reflect more typical habitat in the mid-reaches of the streams.

Many of the streams that had coho juveniles present were minor contributors to the production estimate in Table 4. For

example, the estimated combined production from 18 streams where juvenile coho were present represented just over 2% of the total coho fry numbers estimated in the 36 streams.

The results of the sampling suggests that none of the inlet tributaries to Babine Lake provided major rearing habitat to Babine coho populations during the late summer. The combined fry and yearling estimates did not exceed 6700 juveniles in any of these systems. The numbers of juveniles that are present in these tributaries could have been derived from a few pairs of spawners in each creek. The presence of yearlings only in some of these systems (Table 4) suggests that coho use can be sporadic and only occur during some years. Several Morrison Arm streams identified by Hatlevik (1981) as coho rearing streams did not have coho present during these surveys (eg. Tributary 4790 and 4820 in Figure 6).

The presence of coho juveniles in the lower ends of some very small streams such as Tributary 6325 in Red Bluff Park (0.5 m wide) suggests that fry may move up into this creek from the lake. This stream was considered very small for adult coho to use for spawning. Several other creeks possessing juvenile coho were so small that they didn't appear on the 1:50,00 topographic maps. Flows in many of these creeks examined during the late summer were just a trickle.

The most productive coho streams tended to be clustered at the north end of Babine Lake (Figure 4 and 5), Morrison Arm (Figure 6) and south of Topley Landing (Figure 7). It is interesting to note that these areas are close to systems with good coho escapements (Upper Babine River and Fulton River) or historic spawning populations (Morrison Creek).

At the same time, no juvenile coho were captured in the Fulton River, and use of Pinkut Creek was minor relative to the size of the spawning population in this system. Studies by Dr. Mason (DFO, personal communication) indicate that coho fry leave the Fulton River during early July and none are present by late July. This appears to be a response to high water temperatures in this large lake-headed system. Water temperatures taken during sampling in August in Morrison and Pinkut creeks and the Fulton River were in the 15-16 C range and were substantially higher than temperatures in the smaller coho streams identified in Table 4. Temperatures in these smaller streams ranged from 8-12 C during the August sample period (Appendix 2). The lower Sutherland River was 12 C during late August.

The results of the sampling suggest that the bulk of the juvenile coho that are spawned in the inlet tributaries to Babine Lake move into Babine Lake by late summer and rear in the lake until smolt migration the following spring. It is probable that in some instances juvenile coho move up into the lower ends of tributary streams. As well, a small number of coho appear to spawn in the inlet tributaries identified in Table 4. The total numbers of juveniles estimated to rear in these tributaries during the late summer are low relative to the amount of habitat available in these smaller streams.

No estimates of coho smolt numbers leaving Babine Lake are available so the estimated contribution from inlet tributaries compared to lake-rearing juveniles cannot be made. However, the contribution to the overall coho rearing in the Babine system from these smaller tributaries has to be relatively small compared to what must be occurring in Babine Lake itself and in the system downstream of the upper Babine River (Nilkitkwa Lake) based on the numbers of spawners that are reported at the fence (Table 1).

A review of literature describing the catch of juvenile coho in Babine Lake during extensive purse seining studies in the lake (eg. Scarsbrook and McDonald 1970 and 1973), indicate that coho juveniles were rare in these mid-water sample areas. It is assumed that coho juveniles are rearing in the shallow marginal areas along the lake shoreline, particularly in some of the extensive vegetated areas such as in Morrison Arm, the Smithers Landing area, Nilkitkwa Lake, and near the mouth of the Sutherland River.

### 3.3 Potential Fry Outplanting Sites

Three areas that might be suitable for coho fry outplantings were identified during the studies. The sites were barren of fish and the habitat and stream temperature regimes appear to be suitable for supporting populations of rearing coho. The three sites are:

- 1.) Upper Nine Mile Creek (Trib. 3000) in the vicinity of the main road crossing.
- 2.) Upper Tributary 3200 (south fork) in the vicinity of the main road crossing.
- 3.) Upper Twain Creek - this system is barren at the main road crossing, but may be more suited to trout production.

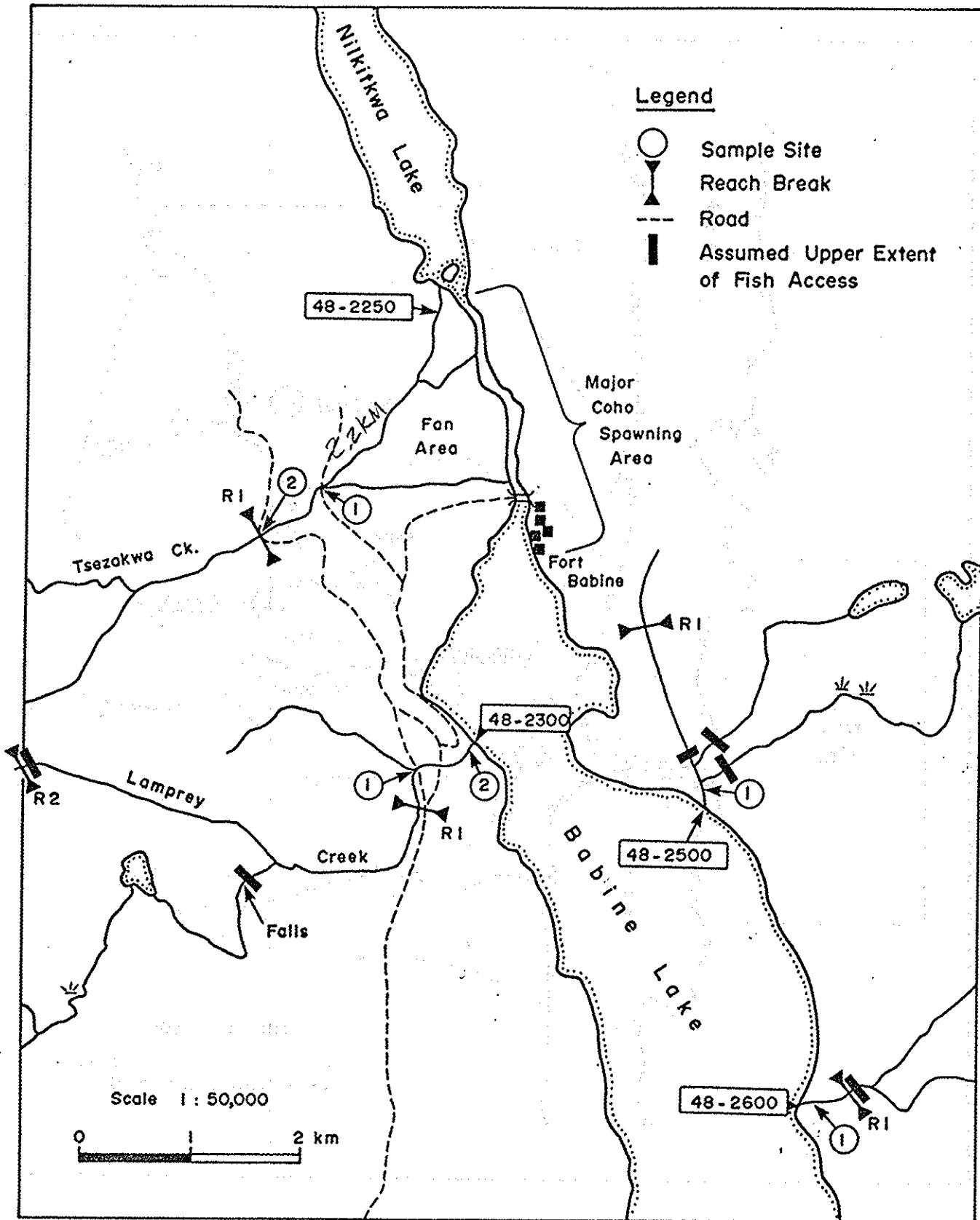


Figure 4. North end Babine Lake coho tributaries.

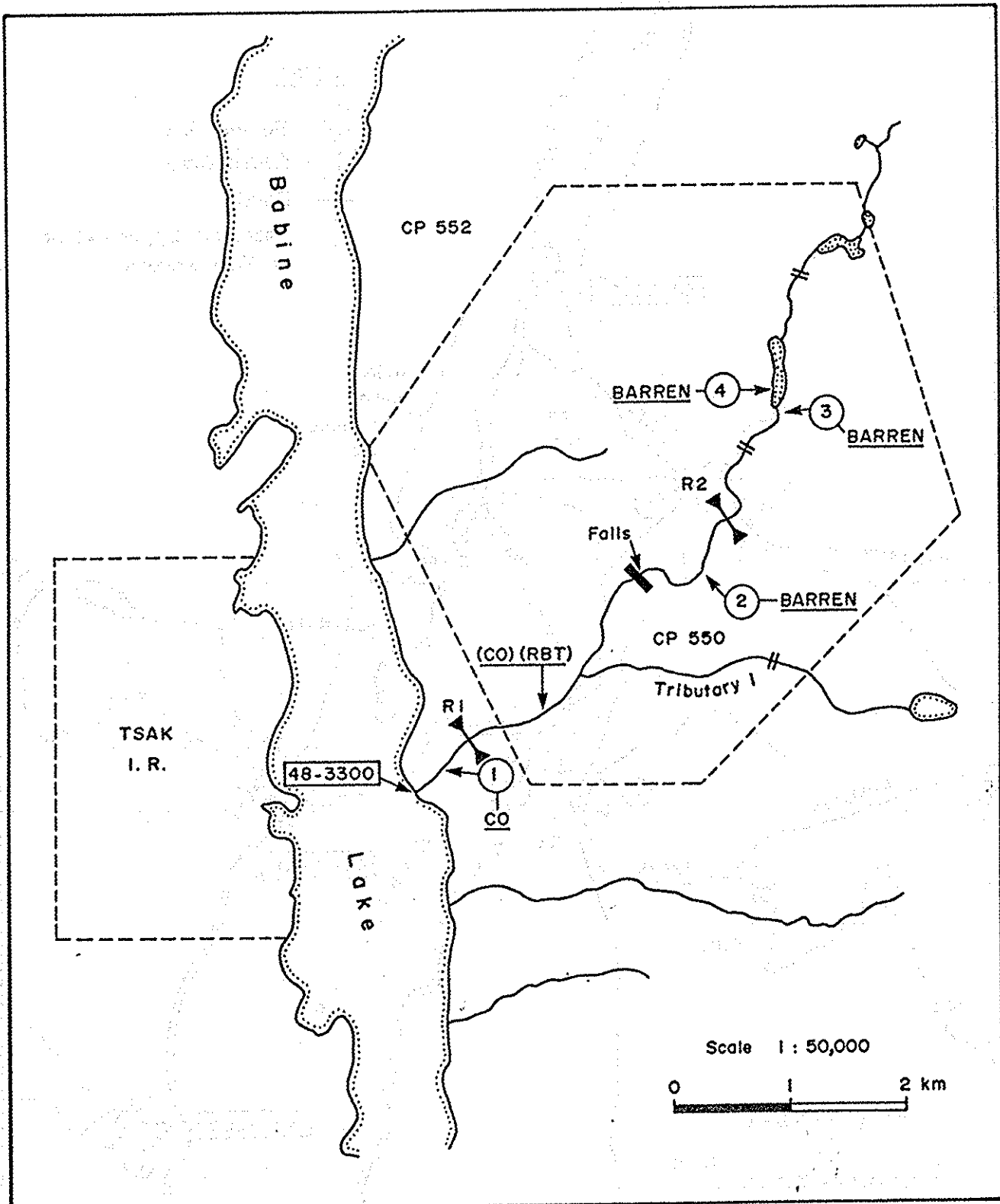


Figure 5. Tributary 3300 near north end of Babine Lake.



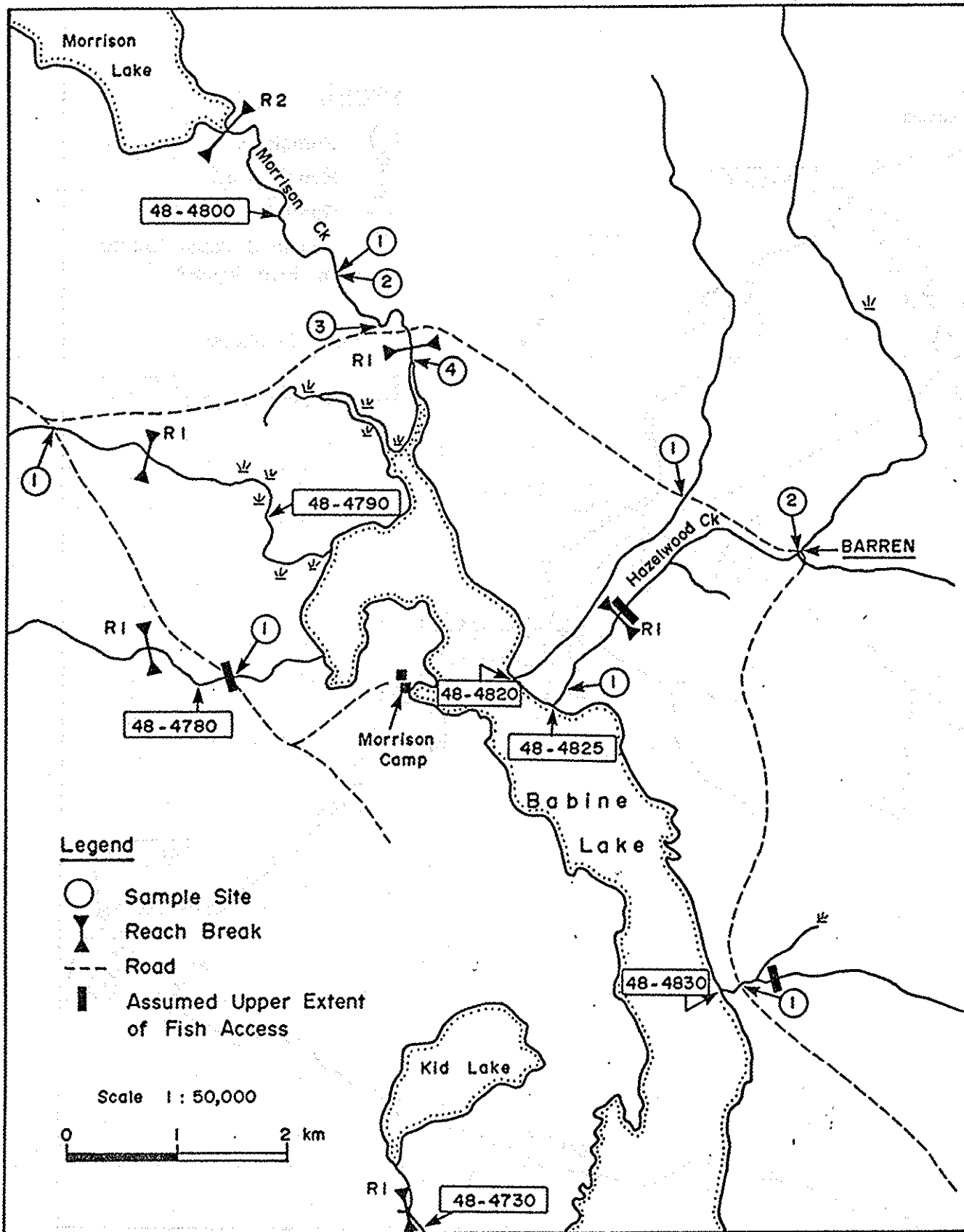


Figure 6. Coho tributaries in Morrison Arm area of Babine Lake.

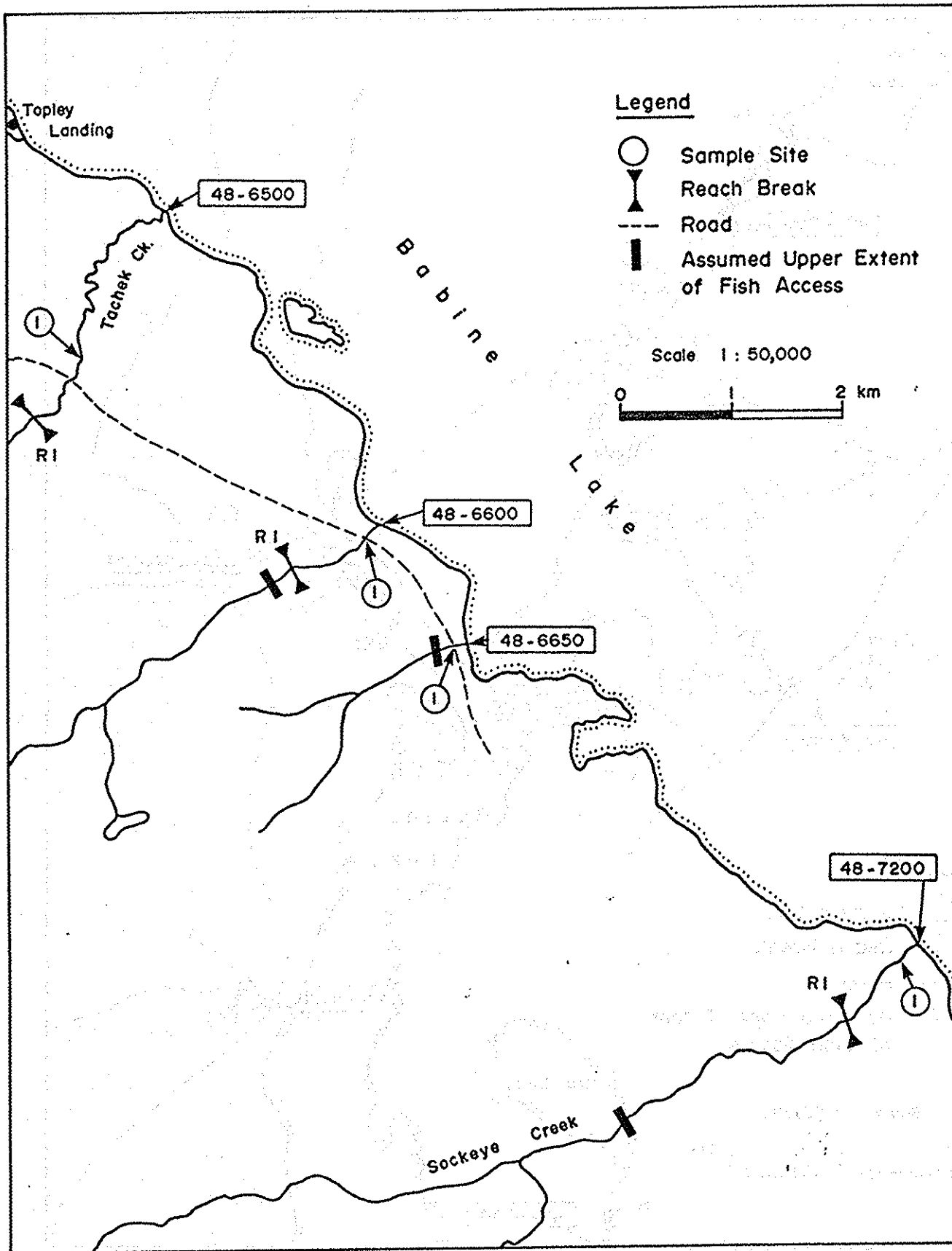


Figure 7. Coho tributaries in vicinity of Topley Landing.

#### 4.0 MANAGEMENT RECOMMENDATIONS

- 1) Coho production in inlet tributaries to Babine Lake is scattered amongst a large number of relatively small tributary streams. Based on the low fry numbers, many of these creeks must rely on a few pair of adults to colonize the streams or upon the movement of fry up into the lower ends of the creeks from the lake. The streams tend to possess abundant habitat relative to the number of juveniles present in the streams. It is important to determine the strategy of juvenile fish in these streams, and whether higher densities are present in the tributaries earlier in the year than when the sampling was conducted. Road development and logging in these small creeks could impact fish using them. Several of the coho streams sampled during this study had been logged across including Tributary 4675, the seventh most important coho rearing stream sampled.
- 2) The key coho rearing areas in the system are probably located downstream of the main spawning area located in the upper Babine River. The role of Nilkitkwa Lake and its inlet tributaries to coho rearing is important to determine.
- 3) Coho smolt movements at the downstream trap should be monitored to estimate the numbers of smolts leaving Babine Lake. The overall role of lake rearing versus inlet tributary rearing could be assessed based on deriving an estimate of smolts leaving the lake outlet.
- 4) Efforts should be made to derive estimates of coho spawning in the Sutherland River and the rearing strategy of juvenile coho using this system. This one system alone possesses more potential coho rearing habitat than most of the other inlet tributaries to Babine Lake combined.

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## Appendix 1. Juvenile Coho Salmon Production Estimates.

#	SYSTEM	REACH	ESTIMATE	FRY/ YEARLINGS/		TOTAL FRY	TOTAL YEARLINGS	SAMPLE SITES USED	COMMENTS
			LENGTH (M)	LINEAL M	LINEAL M				
1	TSEZAKWA 2250	1	3000	0.00	0.48	0	1440	Site 1	4 channels
		2	800	0.00	0.00	0	0	Site 2	2 sides. To lower falls.
2	LAMPREY 2300	1	1000	2.85	0.00	2850	0	Site 2	
		2	4000	0.18	0.04	720	160	Site 1	No barrier - upper extent unknown
3	2500	1	1000	5.29	0.00	5290	0	Site 1	
4	2600	1	500	2.78	0.15	1390	75	Site 1	
5	FIVE MILE 2700	1	100	0.55	0.08	55	8	Site 1	
		2	1500	0.55	0.08	825	120	Site 1	Chute @ 0.8 km - partial barrier.
6	NINE MILE 3000	1	1000	0.00	0.07	0	70	Site 1	
		2	1000	0.00	0.07	0	70	Site 1	
		3	250	0.00	0.07	0	18	Site 1	Falls at this point.
7	ELEVEN MILE 3200	1	800	0.58	0.54	464	432	Site 3	
		2	2000	0.00	0.00	0	0	Site 1	Includes to road and 0.5 km of trib. Site 1 may not be typical - high?
8	3300	1	500	2.50	0.00	1250	0	Site 1	
		2	500	2.50	0.00	1250	0	Site 1	Assumes use for part of Reach 2.
9	4600	1	1000	0.73	0.57	730	570	Site 1	
10	4675	1	1000	0.31	1.18	310	1180	Site 1	
11	4730	1	1250	0.44	0.30	550	375	Site 1	
12	4780	1	500	0.00	0.08	0	40	Site 1	Swampy upstream.
13	MORRISON 4800	1	700	0	0	0	0		
		2	3250	0.20	0.02	650	65	Sites 1-4	Channel of 3.25 km x 2 sides.
14	HAZELWOOD 4825	1	1000	4.18	0.30	4180	300	Site 1	Upper extent of access unknown.
15	4830	1	500	0.29	0.00	145	0	Site 1	Upper extent of access unknown.
16	6318	1	300	0.06	0.00	18	0	Site 1	Falls.
17	6320	1	1000	0.64	0.09	640	90	Site 1	Estimate - 3 km to small lake.
18	RED BLUFF 6325	1	200	0.56	0.00	112	0	Site 1	To culvert at road.
19	WILKINSON 6390	1	1750	0.00	0.07	0	123	Site 2	
		2	7500	0.00	0.00	0	0	Site 1	Assumed impassable at this point.
20	TACHEK 6500	1	2250	0.30	0.25	675	563	Site 1	Used late August sample.
		2	3000	0.30	0.25	900	750	Site 1	Falls at this point.

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1	6600	1	1250	1.13	0.00	1413	0	Site 1	Estimate to falls.
2	6650	1	500	1.66	0.00	830	0	Site 1	
3	BIG LOON 6900	1	3750	0.03	0.00	113	0	Site 1	Pot. hab. in trib. not included.
		2	800	0.03	0.00	24	0	Site 1	
4	SOCKEYE 7200	1	1000	2.17	0.48	2170	480	Site 1	Sample low on creek. To falls.
		2	1500	2.17	0.48	3255	720	Site 1	
5	7550	1	2000	0.06	0.11	120	220	Site 1	
6	7560	1	1000	0.00	0.8	0	800	Site 1	
7	7570	1	1000	0	0.04	0	40		
28	PIERRE 7600	1	1250	0.05	0.16	63	200	Sites 1-2	To falls.
		2	300	0.05	0.16	15	48	"	
29	TWAIN 7700	1	1750	0.00	0.37	0	648	Sites 2-3	To lower falls.
		2	100	0.00	0.37	0	37	Sites 2-3	
30	8000	1	500	0	0.22	0	110	Site 1	
31	8200	1	600	0.05	0.09	30	54	Site 1	
32	CROSS 8300	1	200	0.00	0.03	0	6	Site 1	Falls based on DFO info.
		2	6200	0.00	0.03	0	186	Site 1	
33	8990	1	300	0.08	0.00	24	0	Site 1	
34	PINKIFT 9000	1	200	0.12	0.18	24	36	Sites 1-2	To falls.
		2	1500	0.12	0.18	180	270	Sites 1-2	
35	SIX MILE 9400	1	300	0.00	0.05	0	15	Site 1-2	
		2	4250	0.00	0.05	0	213	Site 1-2	
36	SUTHERLAND 9800	1-6	69000	0	0	0	0	Sites 1-7	
36	SHASS	1	1000	0	0.08	0	80	Site 1	
TOTAL		BABINE TRIBUTARIES				31264	10610		

**Appendix 2. Detailed fish sampling results from electrofishing sites.**

Site	Date	Time	Species	Count	Weight (g)	Length (mm)	Sex	Notes
Site 1	1/15/00	08:00	Bluegill	1	120	50	M	
	1/15/00	08:30	Bluegill	1	110	48	F	
Site 2	1/15/00	09:00	Bluegill	2	150	55	M	
	1/15/00	09:30	Bluegill	1	130	52	F	
Site 3	1/15/00	10:00	Bluegill	3	180	60	M	
	1/15/00	10:30	Bluegill	2	160	58	F	
Site 4	1/15/00	11:00	Bluegill	1	140	55	M	
	1/15/00	11:30	Bluegill	2	170	58	F	
Site 5	1/15/00	12:00	Bluegill	1	130	52	M	
	1/15/00	12:30	Bluegill	2	160	55	F	
Site 6	1/15/00	13:00	Bluegill	1	150	55	M	
	1/15/00	13:30	Bluegill	2	180	60	F	
Site 7	1/15/00	14:00	Bluegill	1	140	55	M	
	1/15/00	14:30	Bluegill	2	170	58	F	
Site 8	1/15/00	15:00	Bluegill	1	130	52	M	
	1/15/00	15:30	Bluegill	2	160	55	F	
Site 9	1/15/00	16:00	Bluegill	1	140	55	M	
	1/15/00	16:30	Bluegill	2	170	58	F	
Site 10	1/15/00	17:00	Bluegill	1	130	52	M	
	1/15/00	17:30	Bluegill	2	160	55	F	



FILE: TSEZ1 MAP#1

STREAM NUMBER: 2250

NAME: TSEZAKWA

SITE: 1 REACH: 1 DATE: AUG 8/88

SITE LOCATION: Just upstream of lower bridge crossing on old logging road. 2.2 KM

One of four channels at this section.

TWO PASS: Y SLOPE (%) 2

TEMP (C) 10

PHOTO: 21 (r1)

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	11	1	12	12.1	0.4	0	12	0.129	0.48
Dolly Varden	all	15	6	21	25.0	5.1	0	25	0.267	1.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.396	1.484

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	71-94	85.1	8.6	1.11
Dolly Varden	all	32-175	83.4	8.8	2.35
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					3.46

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	5.0	30	100		Present	15/30
5	2.5					
10	2.5					
15	3.7					
20	4.2					
25	4.6					
30						

Pool % 30 Riffle % 70  
 COMMENTS: Very unstable braided section.  
 Estimate 100 cfs.

AREA (M<sup>2</sup>M) 3.8  
 93.8 MARGIN (M) 25.0

FILE: TSEZ2 MAP# 1

STREAM NUMBER: 2250

NAME: TSEZAKWA

SITE: 2 REACH: 2 DATE: AUG 8/88

SITE LOCATION: Located on the right side of stream 20 m below logging bridge.

Half of stream enclosed. Located at lowest end of Reach 2

TWO PASS: Y SLOPE (%) 2.5

TEMP (C) 10

PHOTO: 22

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES: Flashy, glacial system with canyon area just upstream.

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	1	1	2	2.0	0.0	0	2	0.021	0.11
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	5	1	6	6.3	0.8	0	6	0.064	0.35
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.085	0.463

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	70-75	72.5	6.1	0.13
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	39-90	67.8	4.0	0.26
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.38

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	4.6	20	30		None	10/40
5	6.0					
10	5.5					
15	5.8					
20	5.5					
25						
30						

Pool % Riffle %  
 COMMENTS: Looks to be excellent Rbt parr habitat.  
 Examined creek 700 m upstream - 100 m deep canyon.  
 HALF OF STREAM ENCLOSED.

5.5  
 AREA (M<sup>2</sup>M) 97.5 MARGIN (M) 17.8

FILE: 2300B MAP# 2

STREAM NUMBER: 2300

NAME: LAMPREY

SITE: 2 REACH: 1 DATE: AUG 10/88

SITE LOCATION: Site located at old bridge crossing just up from the lake.

TWO PASS: Y SLOPE (%) 0.5

TEMP (C) 9

PHOTO:

SPAWNER OBSERVATIONS: 6 kokanee spawners just above site. Also 100+ lamprey redds?

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	1	1	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	6	1	7	7.2	0.6	0	7	0.166	0.58
Rainbow	2+	3	0	3	3.0	0.0	0	3	0.069	0.24
Coho	0+	31	4	35	35.6	1.0	0	36	0.819	2.85
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	2	0	2	2.0	0.0	0	2	0.046	0.16
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	1	0	1	1.0	0.0	0	1	0.023	0.08
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Burbot	all	1	0	1	1.0	0.0	0	1	0.023	0.08
TOTAL									1.146	3.983

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	36	36.0	0.4	0.00
Rainbow	1+	70-92	80.1	8.3	1.38
Rainbow	2+	99-106	102.3	14.9	1.03
Coho	0+	52-71	61.6	3.7	3.03
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	39-42	40.5	1.0	0.05
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	53	53.0	1.8	0.04
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Burbot	all	0	0.0	0.0	0.00
TOTAL					5.52

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DERIS COVER	D50/D90 (cm)
0	2.0	15	50		Present	4/8
5	3.5					
10	5.8					
15	2.6					
20						
25						
30						

Pool % 50 Riffle % 50  
 COMMENTS: Estimate 3-5 cfs.  
 Excellent spawning gravel.  
 Some sidechannels in this fan.

AREA (M<sup>2</sup>M) 3.5  
 43.4 MARGIN (M) 12.5

FILE: 2500 MAP# 3

STREAM NUMBER: 2500

NAME: UNNAMED

SITE: 1 REACH: 1 DATE: AUG 9/88

SITE LOCATION: Creek north of Noralakes Lodge. Site is 350 m above lake.

Dragged boat 200 m up slow flow section.

TWO PASS: Y SLOPE (%) 0.5

TEMP (C) 11

PHOTO:

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	1	0	1	1.0	0.0	0	1	0.044	0.10
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	46	6	52	52.9	1.2	0	53	2.351	5.29
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	1	1	2	2.0	0.0	0	2	0.089	0.20
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Lamprey	ammoc.	present	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									2.484	5.590

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	41	41.0	0.7	0.03
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	38-77	55.3	2.3	5.41
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	44-55	49.5	1.1	0.10
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					5.53

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	1.7	8	15		Present	Silt/4
5	3.0					
10	1.8					
15	2.5					
20						
25						
30						

Pool % 80 Riffle % 20

COMMENTS: Estimate flow is less than 1 cfs.

AREA (M<sup>2</sup>M) 2.3  
22.5 MARGIN (M) 10.0

FILE: 2600 MAP# 4

STREAM NUMBER: 2600

NAME: UNNAMED

SITE: 1 REACH: 1 DATE: AUG 9/88

SITE LOCATION: 300 m upstream of lake.

TWO PASS: Y SLOPE (%) 4

TEMP (C) 11

PHOTO:

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	3	1	4	4.5	1.5	0	5	0.211	0.33
Rainbow	1+	1	0	1	1.0	0.0	0	1	0.047	0.07
Rainbow	2+	2	0	2	2.0	0.0	0	2	0.094	0.15
Coho	0+	30	6	36	37.5	1.9	0	38	1.758	2.78
Coho	1+	2	0	2	2.0	0.0	0	2	0.094	0.15
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	6	3	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									2.203	3.481

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	46-54	50.2	1.3	0.27
Rainbow	1+	90	90.0	11.2	0.53
Rainbow	2+	100-102	101.0	14.5	1.36
Coho	0+	50-73	60.8	3.5	6.15
Coho	1+	76-81	78.5	7.3	0.68
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	43-72	53.1	1.8	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					9.00

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	2.1	8	20		Abundant cobble	5/15
5	0.8					
10	1.5					
15	2.5					
20	1.0					
25						
30						

COMMENTS: Estimate less than 1 cfs  
Channel is bounded but wide channel width (8m)  
is evidence of high flows.

AREA (M<sup>2</sup>M) 1.6  
21.3 MARGIN (M) 13.5

FILE: FIVE1 MAP# 5

STREAM NUMBER: 2700

NAME: FIVE MILE

SITE: 1

DATE: AUG 8/88

SITE LOCATION: Access from lake 300 meters upstream.

Difficult walking.

TWO PASS: Y SLOPE (%) 1.5

TEMP (C)

PHOTO:

SPAWNER OBSERVATIONS: 50 kokanee spawners; no sockeye.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	8	0	8	8.0	0.0	0	8	0.161	0.62
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	6	1	7	7.2	0.6	0	7	0.145	0.55
Coho	1+	1	0	1	1.0	0.0	0	1	0.020	0.08
Dolly Varden	all	1	0	1	1.0	0.0	0	1	0.020	0.08
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	8	3	11	12.8	3.2	0	13	0.257	0.98
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.603	2.308

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	29-54	43.6	0.8	0.13
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	49-57	52.6	1.7	0.25
Coho	1+	84	84.0	8.4	0.17
Dolly Varden	all	45	45.0	1.0	0.02
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	45-115	70.4	4.6	1.18
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					1.75

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	2.8	15	20		Abundant	8/35
5	4.2					
10	3.8					
15	4.5					
20						
25						
30						

Pool % 50 Riffle % 50  
 COMMENTS: Well defined channel with overhanging vegetation.  
 Substrate not very good for spawning.  
 Estimate 5-10 cfs

3.8  
 AREA (M<sup>2</sup>M) 49.7 MARGIN (M) 13.0

FILE: FIVE2 MAP# 5

STREAM NUMBER: 2700

NAME: FIVE MILE

SITE: 2 REACH: 1 DATE: AUG 10/88

SITE LOCATION: Just upstream of road crossing - 4 km upstream.

TWO PASS: Y SLOPE (%) 4

TEMP (C) 8.5

PHOTO:

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	1	0	1	1.0	0.0	0	1	0.020	0.08
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	15	4	19	20.5	2.2	0	20	0.401	1.70
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.421	1.788

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	96	96.0	13.0	0.25
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	34-135	64.9	3.2	1.28
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					1.54

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	2.5	15	25		Cobble	10/40
5	4.0					
10	5.0					
15	5.5					
20						
25						
30						

Pool % Riffle %  
COMMENTS: Estimate 5 cfs flow.

4.3  
AREA (M<sup>2</sup>M) 51.0 MARGIN (M) 12.0

FILE: NINE1 MAP# 6

STREAM NUMBER: 3000

NAME: NINE MILE

SITE: 1

REACH: 1

DATE: AUG 9/88

SITE LOCATION: Site located 350 m upstream from lake. Walked in after access to mouth by boat.

TWO PASS: Y SLOPE (%) 1

TEMP (C) 10

PHOTO:

SPAWNER OBSERVATIONS: Sockeye and Kokanee spawning in creek. 100 of each in lower 300 m.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	Present	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	1	0	1	1.0	0.0	0	1	0.015	0.07
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	2	0	2	2.0	0.0	0	2	0.029	0.14
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.044	0.214

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	70	70.0	5.4	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	46-62	54.0	2.0	0.06
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.06

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	4.5	15	40		good	6/15
5	3.0					
10	5.8					
15	6.2					
20						
25						
30						

Pool % 20 Riffle % 80  
 COMMENTS: Some difficulty sampling due to presence of spawners. 3 Rbt fry caught at lower site before site was moved.

High gravel bars indicate lots of lateral instability.

4.9  
 AREA (M<sup>2</sup>M) 68.3 MARGIN (M) 14.0



FILE: NINE2 MAP# 6

STREAM NUMBER: 3000 NAME: NINE MILE SITE: 2 REACH: 3 DATE: AUG 10/88

SITE LOCATION: Site located 20 m below the main road crossing.

4 Km upstream and above falls.

TWO PASS: N SLOPE (%) 1.5 TEMP (C) 9.5 PHOTO: 1

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES: Outplantings to this excellent habitat.

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/MM	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.000	0.000

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.00

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	4.5	20	30	Cobble	Limited	10/35
5	4.7					
10	5.2					
15	4.2					
20	3.6					
25						
30						

Pool % 5 Riffle % 95  
COMMENTS: Estimate 10 cfs.

Large gravel bars indicating extensive lateral shifting.  
Impassable falls located in canyon below.  
CREEK BARREN IN THIS SECTION.

4.4  
AREA (MM) 84.4 MARGIN (M) 19.0

FILE: 3200A DISK 2 MAP# 7

STREAM NUMBER: 3200

NAME: ELEVEN MILE SITE: 1 REACH: 2 DATE: AUG 10/88

SITE LOCATION: Site located from road culvert downstream. Includes culvert pool.

Site is 2.3 km upstream.

TWO PASS: Y SLOPE (%) 6

TEMP (C) 10

PHOTO:

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/MM	N/LIN-M
Rainbow	0+	21	8	29	33.9	5.4	0	34	1.885	3.77
Rainbow	1+	12	0	12	12.0	0.0	0	12	0.667	1.33
Rainbow	2+	10	1	11	11.1	0.4	0	11	0.617	1.23
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									3.169	6.337

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	32-49	40.4	0.6	1.13
Rainbow	1+	75-91	83.0	9.2	6.13
Rainbow	2+	98-160	115.8	18.9	11.67
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					18.93

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	2.5	10	40		Cobble	10/30
5	2.5				Brush	
10	1.5					
15	1.5					
20						
25						
30						

COMMENTS: Streamflow less than 1 cfs.  
Lots of attached algae. Lake-headed.  
High iron content?

Big pool below culvert makes this site less than typical.

AREA (MM)	2.0	18.0 MARGIN (M)	9.0
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FILE: 3200B DISK: 3 MAP# 7

STREAM NUMBER: 3200B

ELEVEN MILE

SITE: 2 REACH: 2 DATE: AUG 10/88

SITE LOCATION: 30 m upstream of road crossing. 6" wooden culvert.

South tributary above falls.

TWO PASS: Y SLOPE (%) 0.5

TEMP (C) 10

PHOTO:

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.000	0.000

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.00

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	3.0			Aquatic vegetation		2/20
5	2.5			Debris present		
10	2.0					
15	2.5			Pool % 80 Riffle % 20		
20	1.8			COMMENTS: Flow less than 1 cfs.		
25				NO FISH SAMPLED - Good coho outplanting.		
30						

AREA (M<sup>2</sup>M) 2.4  
47.2 MARGIN (M) 20.0

FILE: 3200C DISK: 3 MAP# 7

STREAM NUMBER: 3200

NAME: ELEVEN MILE SITE: 3 REACH: 1 DATE: AUG 11/88

SITE LOCATION: This site is located 200 m upstream from the mouth. Boat taken up through reed channel for 70 m.

TWO PASS: Y SLOPE (%) 0

TEMP (C) 12

PHOTO:

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-OCRR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	1	0	1	1.0	0.0	0	1	0.009	0.06
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	7	2	9	9.8	1.7	0	10	0.092	0.58
Coho	1+	8	1	9	9.1	0.5	0	9	0.085	0.54
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL					0.0	0.0	0	0	0.000	0.00
									0.186	1.173

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	74	74.0	6.5	0.06
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	58-75	69.7	5.4	0.49
Coho	1+	77-97	83.8	8.4	0.72
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					1.27

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	3.0	30	50		Present	Sand/3
5	3.0					
10	5.0					
15	17.5					
20	3.0					
25						
30						

Pool % 100 Riffle %  
 COMMENTS: Flows less than 1 cfs.  
 Sidechannels present  
 Pockets of good spawning gravel in this section.

6.3  
 AREA (M<sup>2</sup>M) 107.1 MARGIN (M) 17.0

FILE: 3300 DISK: 3 MAP# 35

STREAM NUMBER: 3300

NAME: UNNAMED

SITE: 1 REACH: 1 DATE: AUG 11/88

SITE LOCATION: Boat access and walked upstream for 300 m.

TWO PASS: N SLOPE (%) 1.5

TEMP (C)

PHOTO:

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	30	0	30	30.0	0.0	0	30	1.250	2.50
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									1.250	2.500

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	NM	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.00

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
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0

5

10

15

20

25

30

Present

Pool % Riffle %

COMMENTS: Equipment problems at this site.

Only part of first pass completed.

GOOD COHO CREEK

Less than 1 cfs flow.

Excellent spawning gravels.

AREA (M <sup>2</sup> )	2.0	24.0 MARGIN (M)	12.0
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FILE: 4600 MAP# 39

STREAM NUMBER: 4600

NAME: UNNAMED

SITE: 1 REACH: 1 DATE: AUG 12/88

SITE LOCATION: Located 250 m upstream from the lake.

TWO PASS: Y SLOPE (%) 0.5

TEMP (C) 12

PHOTO:

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&UZ	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	8	0	8	8.0	0.0	0	8	0.529	0.73
Coho	1+	5	1	6	6.3	0.8	0	6	0.413	0.57
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	1	0	1	1.0	0.0	0	1	0.066	0.09
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									1.008	1.386

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	64-73	69.0	5.2	2.75
Coho	1+	77-83	80.0	7.6	3.14
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	33	33.0	0.5	0.03
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					5.92

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	1.0	15	30		Abundant	Sand/3
5	1.5					
10	2.0					
15	1.0					
20						
25						
30						

Pool % 80 Riffle % 20  
 COMMENTS: Flow less than 1 cfs  
 Stable channel with well-defined banks.

AREA (M<sup>2</sup>) 1.4  
 15.1 MARGIN (M) 11.0

FILE: 4780 DISK: 4 MAP# 10

STREAM NUMBER: 4780

NAME: UNNAMED

SITE: 1 REACH: 1 DATE: AUG 15/88

SITE LOCATION: Site located 20 m below logging road bridge.

TWO PASS: Y SLOPE (%) 2

TEMP (C) 14

PHOTO:

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	10	1	11	11.1	0.4	0	11	0.494	0.89
Rainbow	1+	2	0	2	2.0	0.0	0	2	0.089	0.16
Rainbow	2+	4	0	4	4.0	0.0	0	4	0.178	0.32
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	1	0	1	1.0	0.0	0	1	0.044	0.08
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
IN Dace	all	1	1	2	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.805	1.449

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	31-59	46.5	1.0	0.49
Rainbow	1+	75-85	80.0	8.3	0.74
Rainbow	2+	98-118	105.8	15.9	2.83
Coho	0+	0	0.0	0.0	0.00
Coho	1+	85	85.0	8.7	0.39
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
IN Dace	all	60-62	61.0	3.2	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					4.44

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	1.3	15	30		Abundant	5/50
5	2.0					
10	1.8					
15	1.9					
20	2.0					
25						
30						

Pool % 50 Riffle % 50  
 COMMENTS: Estimate 2 cfs flow. Rain.  
 Stable channel with no gravel in this section.  
 Very heavy debris.  
 Hatlevik (1981) found no fish in upper swamp area.

AREA (M<sup>2</sup>M) 1.8  
 22.5 MARGIN (M) 12.5

FILE: MORRI DISK: 4 MAP# 11

STREAM NUMBER: 4800

NAME: MORRISON

SITE: 1 REACH: 1 DATE: AUG 16/88

SITE LOCATION: Sidechannel adjacent logged setting 2 km upstream.

Access - pulled boat up from mouth.

TWO PASS: Y SLOPE (%)

TEMP (C) 16

PHOTO:

SPAWNER OBSERVATIONS: Few sockeye present to this date.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	10	1	11	11.1	0.4	0	11	0.370	0.74
Coho	1+	1	0	1	1.0	0.0	0	1	0.033	0.07
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	2	1	3	4.0	3.5	0	4	0.133	0.27
RS Shiner	all	1	0	1	1.0	0.0	0	1	0.033	0.07
LN Dace	all	17	10	27	41.3	18.0	0	41	1.376	2.75
Squawfish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									1.947	3.893

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	58-73	65.6	4.5	1.67
Coho	1+	78	78.0	7.2	0.24
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	55-57	56.0	2.5	0.33
RS Shiner	all	44	44.0	1.0	0.03
LN Dace	all	42-75	47.7	0.9	1.24
Squawfish	all	49	49.0	1.0	0.00
TOTAL					3.52

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0		20	70		Present	5/10
5						
10						
15					Pool % Riffle %	
20					COMMENTS: Estimate flow of 80-100 cfs.	
25					Excellent spawning gravel.	
30					Good potential rearing for Rbt.	
					Logging near edge of creek.	

2.0  
AREA (M<sup>2</sup>M) 30.0 MARGIN (M) 15.0



FILE: MORR2 DISK: 4 MAP# 11

STREAM NUMBER: 4800

NAME: MORRISON

SITE: 2 REACH: 1 DATE: AUG 16/88

SITE LOCATION: Mainstem site located adjacent Site 1.

Located 2 km upstream.

TWO PASS: Y SLOPE (%) 1

TEMP (C) 16

PHOTO:

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/MM	N/LIN-M
Rainbow	0+	1	0	1	1.0	0.0	0	1	0.009	0.05
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	7	6	13	49.0	151.4	0	49	0.440	2.28
LN Dace	all	9	7	16	40.5	63.0	0	41	0.364	1.88
RS Shiner	all	0	7	7	7.0	0.0	0	7	0.063	0.33
Squawfish	all	12	15	27	27.0	NA	0	27	0.242	1.26
TOTAL									1.118	5.791

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	56	56.0	1.6	0.01
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	43-111	70.0	4.5	1.98
LN Dace	all	44-94	55.2	2.2	0.80
RS Shiner	all	41-112	58.1	3.0	0.19
Squawfish	all	41-50	45.9	1.0	0.24
TOTAL					3.23

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	2.8	15	30		Present	15/30
5	5.0					
10	5.8					
15	6.3					
20	6.0					
25						
30						

Pool % Riffle % 100  
 COMMENTS: MAINSTEM Riffle site.  
 Enclosed half of channel.

5.2  
 AREA (M<sup>2</sup>M) 111.4 MARGIN (M) 21.5

FILE: MORR3 DISK: 4 MAP# 11

STREAM NUMBER: 4800

NAME: MORRISON

SITE: 3 REACH: 1 DATE: AUG 16/88

SITE LOCATION: Site located 200 m above bridge on Morrison Creek.

TWO PASS: Y SLOPE (%) >0

TEMP (C) 16

PHOTO: 4(from bridge)

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES: Temperature limitations for Rbt?

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-OCRR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	1	1	1.0	0.0	0	1	0.013	0.05
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	6	0	6	6.0	0.0	0	6	0.080	0.31
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Squawfish	all	2	0	2	2.0	0.0	0	2	0.027	0.10
TOTAL									0.120	0.462

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Squawfish	all	0	0.0	0.0	0.00
TOTAL					0.00

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	4.0	30	60	Present	Present	Sand/5
5	4.4					
10	4.2					
15	4.3					
20	2.4					
25						
30						

Pool % 100 Riffle %  
 COMMENTS: Low velocity site with good cover.  
 Aquatic vegetation and freshwater mussels.  
 Evidence of wolves feeding on mussels.

AREA (M<sup>2</sup>M) 3.9  
 75.3 MARGIN (M) 19.5

FILE: 4730 DISK: 4 MAP# 9

STREAM NUMBER: 4730

NAME: KID LAKE

SITE: 1 REACH: 1 DATE: AUG 16/88

SITE LOCATION: Hiked up 200 m. Boat access.

TWO PASS: Y SLOPE (%) 2

TEMP (C) 10

PHOTO:

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	1	0	1	1.0	0.0	0	1	0.056	0.06
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	8	0	8	8.0	0.0	0	8	0.444	0.44
Coho	1+	4	1	5	5.3	1.0	0	5	0.296	0.30
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	3	2	5	9.0	13.4	0	9	0.500	0.50
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
IN Dace	all	1	0	1	1.0	0.0	0	1	0.056	0.06
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									1.352	1.352

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	57	57.0	1.4	0.08
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	60-75	69.9	54.0	24.00
Coho	1+	76-79	77.8	7.1	2.10
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	51-69	61.2	3.6	1.80
M Whitefish	all	0	0.0	0.0	0.00
IN Dace	all	54	54.0	2.0	0.11
Other	all	0	0.0	0.0	0.00
TOTAL					28.09

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	0.7	5	15	Cobble with debris		7/35
5	1.0					
10	1.2					
15	1.0					
20	1.4					
25	0.7					
30						

Pool % 90 Riffle % 10  
 COMMENTS: Stable creek with lots of moss on rocks.  
 Less than 1 cfs flow.  
 Intermittent at riffle.  
 Lower 100 m marshy with 1 beaver dam.  
 Hatlevik (1981) found coho and rbt present.

AREA (M<sup>2</sup>M) 18.0 MARGIN (M) 18.0

FILE: 4825 DISK: 4 MAP# 45

STREAM NUMBER: 4825

NAME: HAZELWOOD

SITE: 1 REACH: 1 DATE: AUG 16/88

SITE LOCATION: Hiked up 300 m - accessed by boat.

TWO PASS: Y SLOPE (%) 1.5

TEMP (C) 8.5

PHOTO:

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	89	10	99	100.3	1.4	0	100	1.531	4.18
Coho	1+	6	1	7	7.2	0.6	0	7	0.110	0.30
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	4	0	4	4.0	0.0	0	4	0.061	0.17
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
IN Dace	all	0	1	1	1.0	0.0	0	1	0.015	0.04
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									1.717	4.686

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	53-76	64.8	4.3	6.58
Coho	1+	77-88	82.5	8.1	0.89
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	46-58	51.0	1.4	0.09
M Whitefish	all	0	0.0	0.0	0.00
IN Dace	all	54	54.0	2.0	0.03
Other	all	0	0.0	0.0	0.00
TOTAL					7.59

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	1.8	15	60	Present	Present	4/10
5	2.0					
10	2.0					
15	2.6					
20	3.5					
25	3.2					
30	4.0					

Pool % 75 Riffle % 25

COMMENTS: Estimate 3-5 cfs. Rain.

Excellent spawning gravel in this reach.

Hatlevik (1981) found mainly coho and a few rainbow present.

AREA (M<sup>2</sup>M) 2.7  
65.5 MARGIN (M) 24.0

FILE: 4830 DISK: 4 MAP# 46

STREAM NUMBER: 4830

NAME: 4830

SITE: 1 REACH: 1 DATE: AUG 17/88

SITE LOCATION: Site located 30 m below road crossing.

Site just past 32 km sign on logging road.

TWO PASS: Y SLOPE (%) 1

TEMP (C)

PHOTO: 7

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/MM	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	8	0	8	8.0	0.0	0	8	0.126	0.29
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	8	5	13	21.3	16.0	0	21	0.336	0.76
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	1	0	1	1.0	0.0	0	1	0.016	0.04
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.478	1.083

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	32-69	59.5	3.2	0.40
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	44-108	66.7	3.7	1.24
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	65	65.0	9.4	0.15
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL				0.0	1.80

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	0.7	8	40		Present	3/6
5	2.0					
10	3.7					
15	3.2					
20	2.2					
25	1.8					
30						

Pool % 50 Riffle % 50  
 COMMENTS: Estimate 1 cfs.  
 Sediment input from road during rains.  
 Bounded stable stream.  
 Lots of fines in substrate.

AREA (MM) 2.3  
 63.5 MARGIN (M) 28.0

FILE: BEAR1 MAP#17

STREAM NUMBER: 6318

NAME: BEAR ISLAND A SITE: 1 REACH: 1 DATE: JULY 14/88

SITE LOCATION: Just upstream of the Forest Service campsite across from Bear Island.

TWO PASS: Y SLOPE (%) 5

TEMP (C) 10

PHOTO:

SPAWNER OBSERVATIONS: Newly emerged fry just buttoning up - suggest spawning at this location.

ENHANCEMENT OPPORTUNITIES: Nothing obvious

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/MM	N/LIN-M
Rainbow	0+	7	0	7	7.0	0.0	0	7	0.234	0.44
Rainbow	1+	2	0	2	2.0	0.0	0	2	0.067	0.13
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	1	0	1	1.0	0.0	0	1	0.033	0.06
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	8	3	11	12.8	3.2	0	13	0.429	0.80
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.763	1.425

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	28-31	29.9	0.3	0.07
Rainbow	1+	75-94	84.5	9.6	0.64
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	54	54.0	2.0	0.07
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	38-60	54.8	2.2	0.94
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					1.72

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	2.0	15	40		Cobble	7/25
5	1.5					
10	2.0					
15	3.0					
20	1.5					
25	1.2					
30						

Pool % 10 Riffle % 90  
 COMMENTS: Estimate 3 cfs flow.  
 No access above road culvert.  
 Good sidechannels for fry. This is creek fan.  
 Some shocker problems at this site.

AREA (MM)	1.9	MARGIN (M)	29.9	16.0
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FILE: MORR4 DISK: 4 MAP# 11

STREAM NUMBER: 4800

NAME: MORRISON

SITE: 4 REACH: 1 DATE: AUG 16/88

SITE LOCATION: Site located 150 m below logging bridge.

TWO PASS: Y SLOPE (%) <0

TEMP (C) 16

PHOTO: 4

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/MM	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Squawfish	all	0	1	1	0.0	0.0	0	0	0.000	0.00
Sculpins	all	2	1	3	4.0	3.5	0	4	0.048	0.24
LN Dace	all	9	1	10	10.1	0.4	0	10	0.120	0.61
RS Shiner	all	2	1	3	4.0	3.5	0	4	0.048	0.24
Burbot	all	1	0	1	1.0	0.0	0	1	0.012	0.06
TOTAL									0.227	1.159

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>3</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Squawfish	all	0	45.9	5.0	0.00
Sculpins	all	0	70.0	4.5	0.21
LN Dace	all	0	55.2	2.1	0.25
RS Shiner	all	0	58.1	3.0	0.14
Burbot	all	0	150.0	22.0	0.26
TOTAL					0.87

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	5.0	30	50		Cobble	6/100
5	6.0				Boulder	
10	6.0					
15	4.5			Pool %	Riffle % 100	
20	4.0			COMMENTS: Looks to be excellent Rbt habitat.		
25				Rocks slippery with algae.		
30						

5.1  
 AREA (MM) 84.2 MARGIN (M) 16.5

FILE: REDBI MAP# 53 DISK 2

STREAM NUMBER: 6325 NAME: RED BLUFF SITE: 1 REACH: 1 DATE: JULY 14/88

SITE LOCATION: Small creek just 100 m south of Red Bluff campsite turnoff.

Culvert at road is the upper extent of fish access - 4' drop.

TWO PASS: Y SLOPE (%) 4 TEMP (C) 12 PHOTO:

SPAWNER OBSERVATIONS: Suspect fry move into this creek. Very small for spawner access.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	5	2	7	8.3	2.9	0	8	1.111	0.56
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									1.111	0.556

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	46-76	59.6	3.2	3.56
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					3.56

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0		5	10		Present	4/10
5						
10						
15						
20						
25						
30						

Pool % 30 Riffle % 70  
 COMMENTS: Les Cox identified this creek as fish creek.  
 Very little parr habitat in this creek.

0.5  
 AREA (M<sup>2</sup>M) 7.5 MARGIN (M) 15.0



FILE: WILKI DISK: 4 MAP# 19

STREAM NUMBER: 6390

NAME: WILKINSON

SITE: 1 REACH: 2 DATE: AUG 18/88

SITE LOCATION: Site located from upper logging road. Box culvert downstream.

TWO PASS: Y SLOPE (%) 3.5

TEMP (C) 9

PHOTO: 10

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	9	2	11	11.6	1.2	0	12	0.138	0.77
Rainbow	1+	1	0	1	1.0	0.0	0	1	0.012	0.07
Rainbow	2+	1	0	1	1.0	0.0	0	1	0.012	0.07
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.162	0.905

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	35-41	38.0	0.5	0.07
Rainbow	1+	86	86.0	10.1	0.12
Rainbow	2+	110	110.0	17.1	0.20
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.39

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	4.4				Cobble	6/35
5	4.4					
10	8.0					
15	5.5					
20						
25						
30						

Pool % 10 Riffle % 90  
 COMMENTS: High creek flows due to heavy rains.  
 Good fry habitat with lots of shallow riffles.  
 Estimate 40 cfs.

5.6  
 AREA (M<sup>2</sup>M) 83.6 MARGIN (M) 15.0

FILE: WILK2 DISK: 3 MAP# 19

STREAM NUMBER: 6390 NAME: WILKINSON BAY

SITE: 2 REACH: 1 DATE: AUG 31/88

SITE LOCATION: Lower logging road crossing

Site located 30 m below road crossing.

TWO PASS: Y SLOPE (%) 1.8 TEMP (C) 9.5

PHOTO: 7-9 (R2 CFM)

SPAWNER OBSERVATIONS: 1 kokanee carcass observed.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	4	0	4	4.0	0.0	0	4	0.084	0.30
Rainbow	1+	14	1	15	15.1	0.3	0	15	0.316	1.13
Rainbow	2+	7	3	10	12.3	4.2	0	12	0.257	0.91
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	1	0	1	1.0	0.0	0	1	0.021	0.07
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.678	2.412

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	38-51	42.2	0.7	0.06
Rainbow	1+	67-95	81.8	8.8	2.78
Rainbow	2+	97-134	110.4	14.6	3.75
Coho	0+	0	0.0	0.0	0.00
Coho	1+	80	80.0	7.6	0.16
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					6.75

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	2.4	20	70		Abundant	/25
5	4.2					
10	3.6					
15	3.8					
20	3.8					
25						
30						

COMMENTS: Estimate 3-5 cfs.  
Excellent Rbt habitat.  
Extensive cover. slight tannic colour to water.

AREA (M<sup>2</sup>M) 3.6  
47.7 MARGIN (M) 13.4

FILE: TACH1 MAP# 20

STREAM NUMBER: 6500

NAME: TACHEK

SITE: 1 REACH: 1 DATE: JULY 13/88

SITE LOCATION: Located at the old bridge site 100 m below road crossing.

TWO PASS: Y SLOPE (%)

TEMP (C) 10.5

PHOTO: 15

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES: Falls upstream of this site - not examined re potential removal.

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	8	4	12	16.0	6.9	0	16	0.164	1.23
Rainbow	2+	1	0	1	1.0	0.0	0	1	0.010	0.08
Coho	0+	5	1	6	6.3	0.8	0	6	0.064	0.48
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	3	0	3	3.0	0.0	0	3	0.031	0.23
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.269	2.019

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	66-93	79.2	8.0	1.31
Rainbow	2+	108	108.0	16.6	0.17
Coho	0+	58-70	63.0	4.0	0.26
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	142-153	146.0	26.4	0.81
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					2.55

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	6.5	30	60		Rootwad	10/25
5	7.7				Cobble	
10	6.4					
15	5.6					
20						
25						
30						

Pool % 50 Riffle % 50  
 COMMENTS: Estimate 25 cfs flow.  
 No rainbow trout fry captured. Too early.  
 This site was redone in September

7.5  
 AREA (M<sup>2</sup>M) 97.5 MARGIN (M) 13.0

FILE: TACHI DISK: 3 MAP# 20

STREAM NUMBER: 6500

NAME: TACHEK

SITE: 1 REACH: 1 DATE: AUG 31/88

SITE LOCATION: Same site as sampled in July 13.

Located at old bridge site 100 m below road crossing.

TWO PASS: Y SLOPE (%) 1

TEMP (C) 8.5

PHOTO: 11 & 12

SPAWNER OBSERVATIONS: 10-15 kokanee in area. Sockeye finished spawning.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	5	0	5	5.0	0.0	0	5	0.028	0.18
Rainbow	1+	1	1	2	2.0	0.0	0	2	0.011	0.07
Rainbow	2+	5	0	5	5.0	0.0	0	5	0.028	0.18
Coho	0+	5	2	7	8.3	2.9	0	8	0.047	0.30
Coho	1+	7	0	7	7.0	0.0	0	7	0.039	0.25
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	1	0	1	1.0	0.0	0	1	0.006	0.04
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.160	1.012

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	47-54	51.4	1.3	0.04
Rainbow	1+	83-90	86.5	10.2	0.12
Rainbow	2+	96-111	101.4	14.6	0.41
Coho	0+	68-74	72.1	5.9	0.28
Coho	1+	76-79	77.4	7.0	0.28
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	70	70.0	4.5	0.03
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					1.14

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	5.8	15	40	Present	Present	10/35
5	6.0					
10	7.0					
15	5.0					
20	6.2					
25	8.0					
30						

COMMENTS: Pool % Riffle %  
Flows approx 5 cfs.  
Dead fry in algae  
Up to 6000-8000 kokanee in Tachek.

6.3  
AREA (M<sup>2</sup>M) 177.3 MARGIN (M) 28.0

FILE: TACH2 MAP# 20

STREAM NUMBER: 6500

NAME: TACHEK

SITE: 2 REACH: 3 DATE: JULY 13/88

SITE LOCATION: Downstream of main highway crossing.

Good passage at highway culvert.

TWO PASS: Y SLOPE (%) 1.5

TEMP (C) 12

PHOTO: 17

SPAWNER OBSERVATIONS: Falls barrier downstream of this location. Y

ENHANCEMENT OPPORTUNITIES: Falls?

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	7	5	12	24.5	30.3	0	25	0.148	1.07
Rainbow	2+	2	1	3	4.0	3.5	0	4	0.024	0.17
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.173	1.239

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	59-84	75.0	0.0	0.00
Rainbow	2+	101-144	124.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.00

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	7.6	40	80		Boulder &	10/30
5	7.3				cobble cover	
10	7.6					
15	8.2					
20	5.2					
25						
30						

Pool % 70 Riffle % 30  
 COMMENTS: Some question re falls barrier downstream - is it a barrier?  
 Heavy algal mat on substrate.  
 Too early for fry emergence.

7.2  
 AREA (M<sup>2</sup>M) 165.1 MARGIN (M) 23.0

FILE: 6600 MAP# 21

STREAM NUMBER: 6600

NAME: UNNAMED

SITE: 1 REACH: 1 DATE: JULY 13/88

SITE LOCATION: Located near Tachek log sorting site. Small creek.

sampled below road approx 200 m above lake.

TWO PASS: Y SLOPE (%) 2.5

TEMP (C) 8

PHOTO: 16

SPAWNER OBSERVATIONS: Gravel suitable for spawning

ENHANCEMENT OPPORTUNITIES: Very small.

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	2	1	3	4.0	3.5	0	4	0.138	0.32
Coho	0+	13	1	14	14.1	0.3	0	14	0.486	1.13
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	7	1	8	8.2	0.5	0	8	0.282	0.65
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.905	2.100

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	108-115	111.3	17.5	2.41
Coho	0+	54-62	58.1	2.9	1.41
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	39-60	51.8	1.6	0.45
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					4.27

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	1.5		80		Present	2/5
5	2.0					
10	2.5					
15	3.3					
20	2.3					
25						
30						

Pool % 50 Riffle % 50  
 COMMENTS: Suspect creek flows year round.  
 Estimate 2 cfs

2.3  
 AREA (M<sup>2</sup>M) 29.0 MARGIN (M) 12.5

FILE: DEAS1 MAP# 22

STREAM NUMBER: 6650

NAME: DEASY

SITE: 1 REACH: 1 DATE: JULY 13/88

SITE LOCATION: Logging road past Tachek towards Port Arthur (3 km).

Site from road culvert downstream. Not on 1:50,000 mapsheet.

TWO PASS: Y SLOPE (%) 2

TEMP (C) 11.5

PHOTO:

SPAWNER OBSERVATIONS: Newly emerged fry indicates spawning at this location.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	1	1	1.0	0.0	0	1	0.038	0.08
Rainbow	1+	1	0	1	1.0	0.0	0	1	0.038	0.08
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	18	3	21	21.6	1.1	0	22	0.811	1.66
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	4	4	8	8.0	0.0	0	8	0.300	0.62
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									1.186	2.431

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	28	0.3	0.0	0.00
Rainbow	1+	80	80.0	8.3	0.31
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	54-70	59.7	3.2	2.59
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	51-65	58.9	3.1	0.93
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					3.84

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	2.0	15	35		Present	5/35
5	2.0				Cobble	
10	1.6					
15	2.6					
20						
25						
30						

COMMENTS: Estimate 3 cfs.  
 Little pool habitat - subject to dewatering?  
 Rbt fry not buttoned up yet.  
 Site 300 m above lake.

2.1  
 AREA (M<sup>2</sup>M) 26.7 MARGIN (M) 13.0

FILE: 6900 MAP# 23

STREAM NUMBER: 6900

NAME: BIG LOON

SITE: 1 REACH: 1 DATE: AUG 30/88

SITE LOCATION: Walked upstream approx. 700 m. Access by boat.

TWO PASS: Y SLOPE (%) 1.5

13

PHOTO:

SPAWNER OBSERVATIONS: 2 sockeye and 100+ kokanee in lower 700 m of creek.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	8	1	9	9.1	0.5	0	9	0.066	0.29
Rainbow	1+	1	0	1	1.0	0.0	0	1	0.007	0.03
Rainbow	2+	8	0	8	8.0	0.0	0	8	0.058	0.25
Coho	0+	1	0	1	1.0	0.0	0	1	0.007	0.03
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	15	5	20	22.5	3.4	0	23	0.163	0.70
M Whitefish	all	1	0	1	1.0	0.0	0	1	0.007	0.03
LN Dace	all	0	4	4	4.0	0.0	0	4	0.029	0.13
Burbot	all	0	1	1	1.0	0.0	0	1	0.007	0.03
TOTAL									0.344	1.489

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	49-61	54.7	1.5	0.10
Rainbow	1+	66	66.0	4.1	0.03
Rainbow	2+	104-144	124.9	21.6	1.25
Coho	0+	69	69.0	5.2	0.04
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	47-76	56.8	2.6	0.42
M Whitefish	all	78	78.0	5.7	0.04
LN Dace	all	57-68	61.5	3.2	0.09
Burbot	all	75	75.0	5.0	0.04
TOTAL					2.01

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	4.2	10	30		Abundant	2/4
5	3.0					
10	2.0					
15	2.0					
20	5.0					
25	4.4					
30	8.0					
	6.0					
	4.3					
AREA (M <sup>2</sup> M)	138.4	MARGIN (M)	32.0			

COMMENTS: Pool % 50 Riffle % 50  
 Estimate 2 cfs flow.  
 Gravel small but suitable for spawning.  
 Complex channel with lots  
 of small side pools.  
 3-4 old beaver dams in lower 300 m of creek.



FILE: SOCK1 MAP# 24

STREAM NUMBER: 7200

NAME: SOCKEYE

SITE: 1 REACH: 1 DATE: JULY 14/88

SITE LOCATION: Walked upstream 200 m from mouth. Access by boat.

TWO PASS: Y SLOPE (%) 2

TEMP (C)

PHOTO: 19 & 20

SPAWNER OBSERVATIONS: Excellent spawning gravels throughout this reach.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	1	0	1	1.0	0.0	0	1	0.012	0.08
Rainbow	2+	1	1	2	2.0	0.0	0	2	0.024	0.16
Coho	0+	25	2	27	27.2	0.5	0	27	0.324	2.17
Coho	1+	6	0	6	6.0	0.0	0	6	0.072	0.48
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	13	4	17	18.8	2.6	0	19	0.224	1.50
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
LN Dace	all	2	0	2	2.0	0.0	0	2	0.024	0.16
TOTAL									0.680	4.556

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	94	94.0	12.4	0.15
Rainbow	2+	108-109	113.5	18.2	0.43
Coho	0+	58-69	65.5	4.5	1.46
Coho	1+	77-84	80.4	7.7	0.55
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	37-67	49.3	1.5	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
LN Dace	all	73-101	87.0	7.6	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					2.59

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	3.3	35	100	Lots of LOD		6/15
5	4.0					
10	9.0					
15	10.5					
20						
25						
30						

Pool % 80 Riffle % 20

COMMENTS: Estimate 15 cfs.

AREA (M <sup>2</sup> M)	6.7	83.8 MARGIN (M)	12.5
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FILE: 4675 DISK: 3 MAP # 42

STREAM NUMBER: 7500

NAME: UNNAMED

SITE: 1 REACH: 1 DATE: AUG 12/88

SITE LOCATION: This site is located 500 m above lake on Michel Pierre IR # 2

The entire IR has been logged and there is debris all through stream.

TWO PASS: Y SLOPE (%) 2

TEMP (C) 12

PHOTO:

SPAWNER OBSERVATIONS: 6 kokanee spawners observed in lower 200 m. Also 1 adult sockeye at mouth.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M* $\pi$	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	4	1	5	5.3	1.0	0	5	0.131	0.31
Coho	1+	19	1	20	20.1	0.3	0	20	0.492	1.18
Dolly Varden	all	2	0	2	2.0	0.0	0	2	0.049	0.12
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.671	1.611

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	69-75	73.2	6.1	0.80
Coho	1+	76-101	84.8	8.6	4.23
Dolly Varden	all	140-148	144.0	40.1	1.97
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					6.99

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	2.0	15	50		Abundant	1/4
5	3.2					
10	2.2					
15	2.5					
20	2.5					
25	2.0					
30						

COMMENTS: Pool % 80 Riffle % 20  
 Estimate 1 cfs flow.  
 Good gravels throughout this section.  
 Site located at the lowest skid road crossing.

AREA (M\* $\pi$ ) 2.4  
 40.8 MARGIN (M) 17.0

FILE: 7550 DISK: 3 MAP# 25

STREAM NUMBER: 7550

NAME: UNNAMED

SITE: 1 REACH: 1 DATE: AUG 23/88

SITE LOCATION: 300 m upstream from the lake. Access by boat.

TWO PASS: Y SLOPE (%) 2

TEMP (C)

PHOTO:

SPAWNER OBSERVATIONS: 100+ kokanee spawners in lower section.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	1	0	1	1.0	0.0	0	1	0.037	0.06
Coho	0+	1	0	1	1.0	0.0	0	1	0.037	0.06
Coho	1+	2	0	2	2.0	0.0	0	2	0.074	0.11
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	2	1	3	4.0	3.5	0	4	0.148	0.22
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.296	0.444

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	98	98.0	13.6	0.50
Coho	0+	73	73.0	6.1	0.23
Coho	1+	76-82	78.7	7.3	0.54
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	43-68	52.3	1.7	0.25
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					1.52

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	1.0	8	20	Present	Present	3/6
5	1.0					
10	1.5					
15	2.0					
20	1.0					
25	2.4					
30	1.6					

Pool % 70 Riffle % 30  
 COMMENTS: Estimate 1 cfs flow.  
 Creek is intermittent at several locations.  
 Good spawning gravels in lower creek.

1.5  
 AREA (M<sup>2</sup>M) 27.0 MARGIN (M) 18.0

FILE: 7560 DISK: 3 MAP# 26

STREAM NUMBER: 7560B

NAME: UNNAMED

SITE: 1 REACH: 1 DATE: AUG 23/88

SITE LOCATION: 200 m upstream from lake.

TWO PASS: Y SLOPE (%) 2

TEMP (C)

PHOTO: 6 (Low end of creek).

SPAWNER OBSERVATIONS: 1 kokanee carcass near the creek mouth.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	1	1	1.0	0.0	0	1	0.067	0.07
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	12	0	12	12.0	0.0	0	12	0.800	0.80
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	7	3	10	12.3	4.2	0	12	0.817	0.82
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									1.683	1.683

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	112	17.7	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	76-94	84.2	8.5	6.80
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	39-62	48.6	1.0	0.82
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					7.62

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0		6	30	Present	Present	4/25
5						
10						
15						
20						
25						
30						

Pool % 30 Riffle % 70  
 COMMENTS: Less than 1 cfs flow.  
 Subject to high flow fluctuations.  
 Tannic stain to water.  
 Spawning gravel in this creek useable at higher flows.

AREA (M<sup>2</sup>) 1.0  
 15.0 MARGIN (M) 15.0

FILE:7560B DISK: 3 MAP# 26

STREAM NUMBER: 7560

NAME: UNNAMED

SITE: 2 REACH: 2 DATE: AUG 26/88

SITE LOCATION: Approx 4 km upstream. Access by logging road.

TWO PASS: Y SLOPE (%) 1.5

TEMP (C) 12

PHOTO:

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UL&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.000	0.000

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.00

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0		6	15		Cobble	Silt/30
5						
10						
15						
20						
25						
30						

Pool % 60 Riffle: 40  
 COMMENTS: Flow less than 1 cfs.  
 Brackish colour where creek has  
 been diverted along the road.  
 NO FISH  
 Washed out culvert.

AREA (M<sup>2</sup>M)  $\frac{1.0}{27.0}$  MARGIN (M) 27.0

FILE: 7570 DISK: 3 MAP# 59

STREAM NUMBER: 7570

NAME: UNNAMED

SITE: 1 REACH: 1 DATE: AUG 24/88

SITE LOCATION: Located in clearcut 500 m above lake. Access by boat.

Site is located from skid road crossing upstream.

TWO PASS: Y SLOPE (%) 1.5

TEMP (C)

PHOTO: 768

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	1	0	1	1.0	0.0	0	1	0.024	0.04
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.024	0.037

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	85	85.0	8.7	0.21
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.21

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	1.4	8	20		Abundant	2/6
5	1.7					
10	2.0					
15	1.9					
20	0.8					
25	1.3					
30	1.5					
AREA (M <sup>2</sup> M)	1.5					
	40.9 MARGIN (M)					
		27.0				

Pool % 80 Riffle % 20  
 COMMENTS: Flow less than 1 cfs  
 Good spawning gravels at crossing site.  
 Banks caved in at crossing.  
 Lower km of creek is logged both sides  
 during the winter. Brush along  
 creek.

FILE: PIERI DISK: 3 MAP# 27

STREAM NUMBER: 7600

NAME: PIERRE

SITE: 1 REACH: 1 DATE: AUG 22/88

SITE LOCATION: Mainstem 50 m upstream from logging road crossing

Four wheel drive access to this location.

TWO PASS: N SLOPE (%)

TEMP (C)

PHOTO:

SPAWNER OBSERVATIONS: Heavy sockeye and kokanee spawning in this section. Hard to keep fishout of site.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.000	0.000

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.00

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	2.0	30	70		Abundant	3/6
5	4.0					
10	3.2					
15	4.5					
20	4.8					
25						
30						

Pool % 90 Riffle % 10  
 COMMENTS: Estimate 25-30 cfs.  
 Hard to sample due to presence of spawners.  
 Good spawning gravels throughout.  
 Heavy bear sign.

AREA (M <sup>2</sup> M)	3.7	51.8 MARGIN (M)	14.0
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FILE: PIER2 MAP # 27

STREAM NUMBER: 7600

NAME: PIERRE

SITE: 2 REACH: 1 DATE: AUG 22/88

SITE LOCATION: This site is located in a sidechannel near Site 1 just downstream from the old logging road crossing. Bridge washed out at this point.

TWO PASS: Y SLOPE (%) 0.5-1

TEMP (C)

PHOTO:

SPAWNER OBSERVATIONS: Kokanee spawners in sidechannel.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/MM	N/LIN-M
Rainbow	0+	39	21	60	84.5	19.6	0	85	1.557	4.33
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	2	0	2	2.0	0.0	0	2	0.037	0.10
Coho	1+	5	1	6	6.3	0.8	0	6	0.115	0.32
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									1.709	4.756

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	32-38	35.2	0.3	0.47
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	53-65	3.1	0.0	0.00
Coho	1+	79-90	83.4	8.3	0.96
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					1.42

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	2.0					
5	2.2					
10	3.7					
15	3.5					
20	3.5					
25	1.8					
30						

COMMENTS: Pool % 80 Riffle % 20  
 Estimate 1 cfs flow.  
 Good fry habitat but poor for parr.  
 Two sidechannels at this location.

AREA (MM) 2.8  
 54.3 MARGIN (M) 19.5



FILE: TWAIN DISK: 3 MAP3 28

STREAM NUMBER: 7700

NAME: TWAIN

SITE: 1 REACH: 3 DATE: AUG 22/88

SITE LOCATION: This site is located 50 m upstream of main logging road.

This is above the falls in the canyon.

TWO PASS: Y SLOPE (%) 2

TEMP (C)

PHOTO: 2&3 (3 is downstream from bridge)

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES: Creek in this section looks to offer excellent RBT habitat. Outplantings?

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.000
TOTAL										

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.00

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	9.0	25	35	Cobble/boulder		10/35
5	9.0					
10	8.0					
15						
20						
25						
30						

Pool % 10 Riffle % 90  
 COMMENTS: Estimate 25 cfs flow.  
 Heavy algal growth on substrate - stable.

8.7  
 AREA (MM) 112.7 MARGIN (M) 13.0

FILE: TWA12 DISK: 3 MAP# 28

STREAM NUMBER: 7700

NAME: TWA12

SITE: 2 REACH: 1 DATE: AUG 24/88

SITE LOCATION: Site locate 500 m upstream from Lake. Mainstem.

Hard to sample due to presence of sockeye.

TWO PASS: N SLOPE (%) 2

TEMP (C) 10

PHOTO: 12

SPAWNER OBSERVATIONS: Heavy sockeye and kokanee spawning in this section.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M*W	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	4	0	4	4.0	0.0	0	4	0.036	0.27
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.036	0.267

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	43-68	55.0	2.2	0.08
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.08

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	12.0	30	50		Poor	5/12
5	7.5					
10	5.0					
15	5.0					
20						
25						
30						

Pool % 90 Riffle % 10  
 COMMENTS: Good fry habitat at the top of site  
 Poor cover in site.  
 Adult spawners created sampling difficulty.  
 Estimate 20 cfs - lots of subsurface flow.

7.4  
 AREA (M<sup>2</sup>) 110.6 MARGIN (M) 15.0

FILE: TWA13 DISK: 3 MAP# 28

STREAM NUMBER: 7700

NAME: TWA13

SITE: 3 REACH: 1 DATE: AUG 24/88

SITE LOCATION: Located 500 m above the lake. SIDECHANNEL

NO PASS: Y SLOPE (%) 2

TEMP (C) 10

PHOTO: 13

SPAWNER OBSERVATIONS:

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/MM	N/LIN-M
Rainbow	0+	1	0	1	1.0	0.0	0	1	0.019	0.04
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	16	1	17	17.1	0.3	0	17	0.318	0.74
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	2	0	2	2.0	0.0	0	2	0.037	0.09
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.374	0.872

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	40	40.0	0.6	0.01
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	78-91	83.9	8.4	2.67
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	80-96	88.0	8.9	0.33
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					3.01

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	2.5	10	30		Abundant	Sand/4
5	3.0					
10	1.0					
15	3.5					
20	1.0					
25	3.0					
30						

Pool % 90 Riffle % 10  
 COMMENTS: Flow just a trickle along the edge.  
 Dead Rbt fry found in site in heavy algal.  
 Good pot. fry habitat in upper section.

2.3  
 AREA (MM) 53.7 MARGIN (M) 23.0

LE: 8000 DISK: 3 MAP# 62

TEAM NUMBER: 8000

NAME: UNNAMED

SITE: 1 REACH: 1 DATE: AUG 24/88

SITE LOCATION: Site located 250 m upstream from lake - access by boat.

0 PASS: Y SLOPE (%) 0.5

TEMP (C) 9

PHOTO:

AWNER OBSERVATIONS: 2 kokanee spawners in lower 250 m.

MANAGEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	1	0	1	1.0	0.0	0	1	0.018	0.04
Rainbow	1+	5	0	5	5.0	0.0	0	5	0.090	0.21
Rainbow	2+	2	1	3	4.0	3.5	0	4	0.072	0.17
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	4	1	5	5.3	1.0	0	5	0.096	0.22
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	25	0.441	1.02
Culpins	all	14	6	20	24.5	5.9	0	0	0.000	0.00
Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
S Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.716	1.660

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	30	30.0	0.3	0.01
Rainbow	1+	78-94	86.8	10.3	0.93
Rainbow	2+	96-106	99.7	14.1	1.01
Coho	0+	0	0.0	0.0	0.00
Coho	1+	78-93	84.2	8.5	0.82
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	32-75	43.8	1.0	0.44
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					3.20

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	1.4	10	35	Stable	Present	Sand/4
5	2.4					
10	2.6					
15	2.7					
20	1.8					
25	3.0					
30						

COMMENTS: Pool % 70 Riffle % 30  
 Estimate less than 1 cfs flow.  
 Good spawning potential.  
 BFP Foresters indicate fish present at upper logging road crossing  
 Assume Rbt. Couldn't access due to radio problems.

AREA (M<sup>2</sup>M) 2.3  
 55.6 MARGIN (M)

24.0

FILE: 8200 DISK: 3 MAP# 63

TEAM NUMBER: 8200

NAME: UNNAMED

SITE: 1 REACH: 1 DATE: AUG 22/88

FIELD LOCATION: Flows into Johnson Bay. Site located above 2 -3m culverts.

WATER PASS: Y SLOPE (%) 1.5

TEMP (C) 9

PHOTO:

OWNER OBSERVATIONS:

IMPROVEMENT OPPORTUNITIES:

CAPTURE ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	1	0	1	1.0	0.0	0	1	0.021	0.05
Coho	1+	2	0	2	2.0	0.0	0	2	0.043	0.09
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.064	0.136
TOTAL										

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	73	73.0	6.1	0.13
Coho	1+	84-92	88.0	9.3	0.40
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.53

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	2.0	15	40	Debris and cobble		5/30
5	1.7					
10	1.9					
15	2.0					
20	3.0					
25						
30						

Pool % 50 Riffle % 50  
 COMMENTS: Less than 1 cfs flow.

AREA (M<sup>2</sup>M) 2.1  
 46.6 MARGIN (M) 22.0

FILE: CROSS DISK: 3 MAP# 29

STREAM NUMBER: 8300

NAME: CROSS

SITE: 1 REACH: 1 DATE: AUG 22/88

SITE LOCATION: Approximately 30 m above the culvert on the lower road crossing.

TWO PASS: Y SLOPE (%) 1.5

TEMP (C) 11

PHOTO: 1(R3)

SPAWNER OBSERVATIONS: Sockeye and kokanee spawners present. Nearly finished.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	3	0	3	3.0	0.0	0	3	0.033	0.19
Rainbow	2+	2	1	3	4.0	3.5	0	4	0.044	0.25
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	1	0	1	1.0	0.0	0	1	0.011	0.06
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.087	0.500

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	67-92	79.0	8.0	0.26
Rainbow	2+	102-129	111.3	17.5	0.76
Coho	0+	0	0.0	0.0	0.00
Coho	1+	90	90.0	9.7	0.11
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					1.13

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	3.3	15	30		Present	5/
5	3.4					
10	2.7					
15	3.0					
20						
25						
30						

Pool % 80 Riffle % 20

COMMENTS: Estimate 2 cfs flow.

Three dead Rbt parr found in the vicinity of the sample site.

Related to heavy spawning activity?

5.7

AREA (M<sup>2</sup>M) 91.8 MARGIN (M) 16.0

FILE: 8990 DISK: 3 MAP#64

STREAM NUMBER: 8990

NAME: UNNAMED

SITE: 1 REACH: 1 DATE: AUG 25/88

SITE LOCATION: Located 100 m upstream from the lake. Small creek west of Pinkut.

Access by boat. Logging road into upper end of creek.

WO PASS: Y SLOPE (%)

TEMP (C) 8

PHOTO:

PAWNER OBSERVATIONS:

IMPROVEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Brook	0+	1	0	1	1.0	0.0	0	1	0.050	0.08
Brook	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Golden Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	3	0	3	3.0	0.0	0	3	0.151	0.23
Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.202	0.308

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	0	0.0	0.0	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Brook	0+	67	67.0	4.8	0.24
Brook	1+	0	0.0	0.0	0.00
Golden Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	40-68	49.3	1.0	0.15
Whitefish	all	0	0.0	0.0	0.00
Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.39

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	1.2	6	25	Present	Present	6/25
5	1.2					
10	1.7					
15	2.0					
20						
25						
30						

Pool % 80 Riffle % 20

COMMENTS: Flow just a trickle.

Hab. Tech. reported Rbt in vicinity of logging in past years.

1.5

AREA (M<sup>2</sup>M)

19.8 MARGIN (M)

13.0

FILE: PINKI DISK: 3 MAP# 31

STREAM NUMBER: 9000

NAME: PINKUT

SITE: 1 REACH: 1 DATE: AUG 29/88

SITE LOCATION: Site located immediately below canyon on left side.

WO PASS: Y SLOPE (%) &lt;1%

TEMP (C) 15.5

PHOTO: 7(R1 prints)  
Also photos 1-6

OBSERVER OBSERVATIONS: Peak of heavy sockeye spawning.

ENHANCEMENT OPPORTUNITIES:

## POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	U1&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	0	1	1	0.0	0.0	0	0	0.000	0.00
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	2	3	5	5.0	0.0	0	5	0.044	0.17
Coho	1+	8	1	9	9.1	0.5	0	9	0.081	0.30
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	3	1	4	4.5	1.5	0	5	0.040	0.15
Sculpins	all	19	4	23	24.1	1.6	0	24	0.214	0.80
Longnose Dac	all	3	2	5	9.0	13.4	0	9	0.080	0.30
RS Shiner	all	3	9	12	12.0	0.0	0	12	0.107	0.40
Squawfish	all	4	1	5	5.3	1.0	0	5	0.047	0.18
TOTAL									0.614	2.301

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	58	58.0	1.8	0.00
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	70-75	72.3	6.0	0.27
Coho	1+	79-100	90.4	9.8	0.80
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	68-84	77.0	7.0	0.28
Sculpins	all	51-105	77.9	6.4	1.37
Longnose Dac	all	44-68	53.4	1.9	0.15
RS Shiner	all	40-72	57.0	3.0	0.32
Squawfish	all	42-94	63.8	4.0	0.19
TOTAL					3.37

## SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	0.6	20	40		Present	4/15
5	3.4					
10	4.5					
15	5.0					
20	5.0					
25	4.0					
30						

Pool % Riffle %  
 COMMENTS: Sockeye spawning heavy in section.  
 Fry habitat good along edge. But short length of suitable channel.  
 Bob Lamond indicates 200-300 juveniles (yearlings)  
 trapped in channels when they are dewatered in July.  
 Suspects Rbt spawning at mouth.

AREA (M<sup>2</sup>M) 3.8  
 112.5 MARGIN (M) 30.0



FILE: PINK2 DISK: 3 MAP# 31

STREAM NUMBER: 9000

NAME: PINKUT

SITE: 2 REACH: 1 DATE: AUG 29/88

SITE LOCATION: River's right bank just below canyon section.

Rip-rap protecting channels.

TWO PASS: Y SLOPE (%) <1

TEMP (C) 15

PHOTO: 8 (Roll 1 prints)

SPAWNER OBSERVATIONS: Heavy sockeye.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	3	2	5	9.0	13.4	0	9	0.079	0.33
Rainbow	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	2	0	2	2.0	0.0	0	2	0.017	0.07
Coho	1+	2	0	2	2.0	0.0	0	2	0.017	0.07
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	56	6	62	62.7	1.1	0	63	0.547	2.28
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	1	1	1.0	0.0	0	1	0.009	0.04
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.670	2.790

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	56-67	60.4	1.9	0.15
Rainbow	1+	0	0.0	0.0	0.00
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	74-76	75.0	6.5	0.11
Coho	1+	87-100	93.5	10.5	0.18
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	77.9	6.4	3.50
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	59	59.0	1.6	0.01
Other	all	0	0.0	0.0	0.00
TOTAL					3.96

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	5.2	25	40		Rip-rap	10/80
5	5.0					
10	5.5					
15	4.3			Pool %	Riffle %	
20	3.2			COMMENTS: Estimate 100 cfs.		
25	1.8			One side enclosed in nets		
30				Good angular rip-rap cover.		

4.2

AREA (M<sup>2</sup>M) 114.6 MARGIN (M) 27.5

FILE: SIX1 DISK: 3 MAP# 32

STREAM NUMBER: 9400 NAME: SIX MILE SITE: 1 REACH: 2 DATE: AUG 25/88

SITE LOCATION: 400 m upstream of lake. Access by boat.

Cobble SIDECHANNEL

IWO PASS: Y SLOPE (%) 1 TEMP (C) 9 PHOTO:

SPAWNER OBSERVATIONS: Sockeye spawning virtually complete. Kokanee carcasses present.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	21	3	24	24.5	1.0	0	25	0.710	1.63
Rainbow	1+	2	0	2	2.0	0.0	0	2	0.058	0.13
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	0	0	0	0.0	0.0	0	0	0.000	0.00
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	3	2	5	9.0	13.4	0	9	0.261	0.60
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									1.029	2.367

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	33-54	43.0	0.8	0.57
Rainbow	1+	88-89	88.5	10.8	0.63
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	0	0.0	0.0	0.00
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	40-68	49.7	1.1	0.29
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					1.48

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH (cm)	MAXIMUM DEPTH (cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	3.3				Cobble	6/35
5	2.0					
10	2.0					
15	2.2					
20	2.0					
25						
30						

Pool % Riffle %  
 COMMENTS: Good spawning gravel in fan of this reach.  
 Tapeworms in sculpins.

2.3  
 AREA (M<sup>2</sup>M) 34.5 MARGIN (M) 15.0

FILE: SIX2 DISK: 3 MAP# 32

STREAM NUMBER: 9400

NAME: SIX MILE

SITE: 2 REACH: 2 DATE: AUG 25/88

SITE LOCATION: Mainstem site located 400 m above lake.

TWO PASS: Y SLOPE (%)

TEMP (C)

PHOTO:

SPAWNER OBSERVATIONS: Sockeye and kokanee spawning nearly finished.

ENHANCEMENT OPPORTUNITIES:

POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	4	2	6	8.0	4.9	0	8	0.184	0.43
Rainbow	1+	1	0	1	1.0	0.0	0	1	0.023	0.05
Rainbow	2+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	1	1	2	2.0	0.0	0	2	0.046	0.11
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	1	0	1	1.0	0.0	0	1	0.023	0.05
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									0.276	0.649

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	35-47	40.5	0.6	0.11
Rainbow	1+	92	92.0	11.8	0.27
Rainbow	2+	0	0.0	0.0	0.00
Coho	0+	0	0.0	0.0	0.00
Coho	1+	84-91	87.5	9.2	0.42
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	51	51.0	1.4	0.03
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					0.84

SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEBRIS COVER	D50/D90 (cm)
0	2.5	8	40		Present	2/5
5	2.0					
10	2.0					
15	3.2				Pool % 50 Riffle % 50	
20	2.4				COMMENTS: Estimate 3 cfs flow.	
25	2.0				Main flow of creek in this channel.	
30					Spawning gravels in this site.	

AREA (M<sup>2</sup>M) 2.4  
43.5 MARGIN (M) 18.5

FILE: SHAS1 MAP# 34

STREAM NUMBER: 9800-170

NAME: SHASS

SITE: 1 REACH: 1 DATE: SEPT. 15/88

SITE LOCATION: This site is located 100 m upstream of the confluence of Shass and Sutherland r.

Helicopter access - only landing is near mouth.

WO PASS: Y SLOPE (%) 1.5

TEMP (C) 8

PHOTO: #see flight notes

SPAWNER OBSERVATIONS: Large numbers of sockeye in this section. Good spawning gravels.

ENHANCEMENT OPPORTUNITIES: Very low flows present at this point. Sockeye are now restricted to Sutherland.

## POPULATION ESTIMATES:

SPECIES	AGE	PASS 1	PASS 2	UI&U2	NUMBER	S.E.	MORTS	N-CORR	N/M <sup>2</sup> M	N/LIN-M
Rainbow	0+	21	11	32	44.1	13.1	0	44	1.494	3.59
Rainbow	1+	7	0	7	7.0	0.0	0	7	0.237	0.57
Rainbow	2+	2	0	2	2.0	0.0	0	2	0.068	0.16
Coho	0+	0	0	0	0.0	0.0	0	0	0.000	0.00
Coho	1+	1	0	1	1.0	0.0	0	1	0.034	0.08
Dolly Varden	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Suckers	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Sculpins	all	0	0	0	0.0	0.0	0	0	0.000	0.00
M Whitefish	all	0	0	0	0.0	0.0	0	0	0.000	0.00
RS Shiner	all	0	0	0	0.0	0.0	0	0	0.000	0.00
Other	all	0	0	0	0.0	0.0	0	0	0.000	0.00
TOTAL									1.833	4.398

SPECIES	AGE	FL-RANGE (mm)	MEAN FL (mm)	MEAN WEIGHT (g)	BIOMASS (g/m <sup>2</sup> m)
Rainbow	0+	33-59	44.6	0.9	1.34
Rainbow	1+	61-70	64.3	3.6	0.85
Rainbow	2+	103-130	116.5	19.1	1.29
Coho	0+	0	0.0	0.0	0.00
Coho	1+	76	76.0	6.7	0.23
Dolly Varden	all	0	0.0	0.0	0.00
Suckers	all	0	0.0	0.0	0.00
Sculpins	all	0	0.0	0.0	0.00
M Whitefish	all	0	0.0	0.0	0.00
RS Shiner	all	0	0.0	0.0	0.00
Other	all	0	0.0	0.0	0.00
TOTAL					3.72

## SITE MEASUREMENTS:

LOCATION (m)	WIDTH (m)	MEAN DEPTH(cm)	MAXIMUM DEPTH(cm)	BANK COVER	DEERIS COVER	D50/D90 (cm)
0	2.3	8	15	Limited cover at		3/5
5	2.4			these flows.		
10	3.0					
15	1.9			Pool %	Riffle %	
20				COMMENTS: Streamflow quite low 1-2 cfs - lots of subsurface flow in section		
25				Much of the spawning area is high and dry.		
30				Poor parr habitat due to two flows and lack of deep pools.		
				Gravel extends for 0.5 miles downstream of Shass in Suth.		

2.4

AREA (M<sup>2</sup>M) 29.5 MARGIN (M)

12.3