ADF&G TECHNICAL DATA REPORT NO. 150
(Limited Distribution)

STATE OF ALASKA
Bill Sheffield, Governor

REVISED ANADROMOUS STREAM CATALOG OF SOUTHEASTERN ALASKA

District 106

Northeast Coast of Prince of Wales Island

Subdistrict 106-30 and 106-10

Volume II

By:
John R. Edgington
James P. Cariello
and
Craig A. Burns

July 1985

ALASKA DEPARTMENT OF FISH AND GAME
P.O. Box 3-2000, Juneau, Alaska 99802

Don W. Collinsworth
Commissioner

ADF&G TECHNICAL DATA REPORTS

This series of reports is designed to facilitate prompt reporting of data from studies conducted by the Alaska Department of Fish and Game, especially studies which may be of direct and immediate interest to scientists of other agencies.

The primary purpose of these reports is presentation of data. Description of programs and data collection methods is included only to the extent required for interpretation of the data. Analysis is generally limited to that necessary for clarification of data collection methods and interpretation of the basic data. No attempt is made in these reports to present analysis of the data relative to its ultimate or intended use.

Data presented in these reports is intended to be final, however, some revisions may occasionally be necessary. Minor revision will be made via errata sheets. Major revisions will be made in the form of revised reports.

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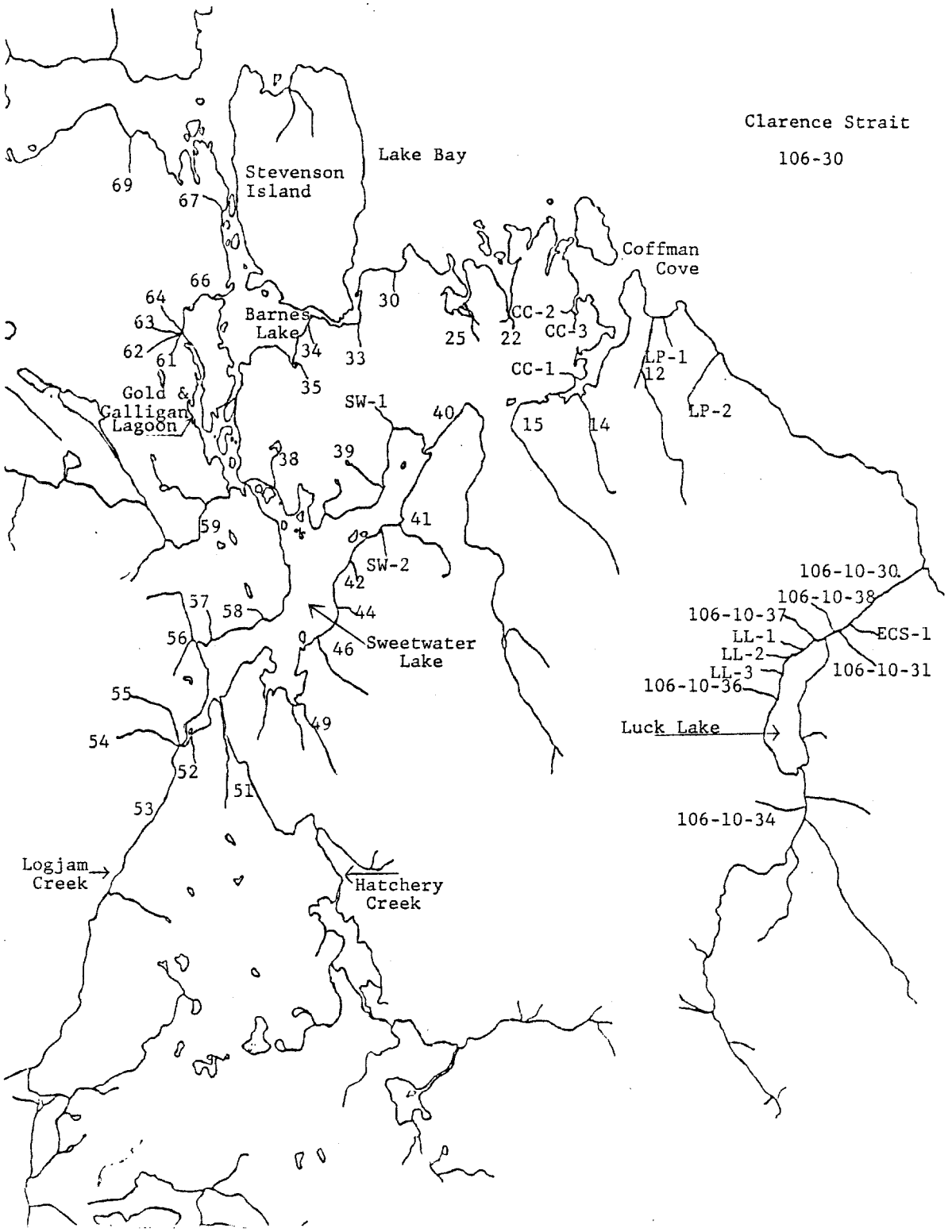
Clarence Strait
106-30
Lake Bay
Stevenson Island
Coffman Cove
Barnes Lake
Gold & Calligan Lagoon
Sweetwater Lake
Luck Lake
Logjam Creek
Hatchery Creek
106-10-30
106-10-38
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ECS-1
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CC-1
CC-2
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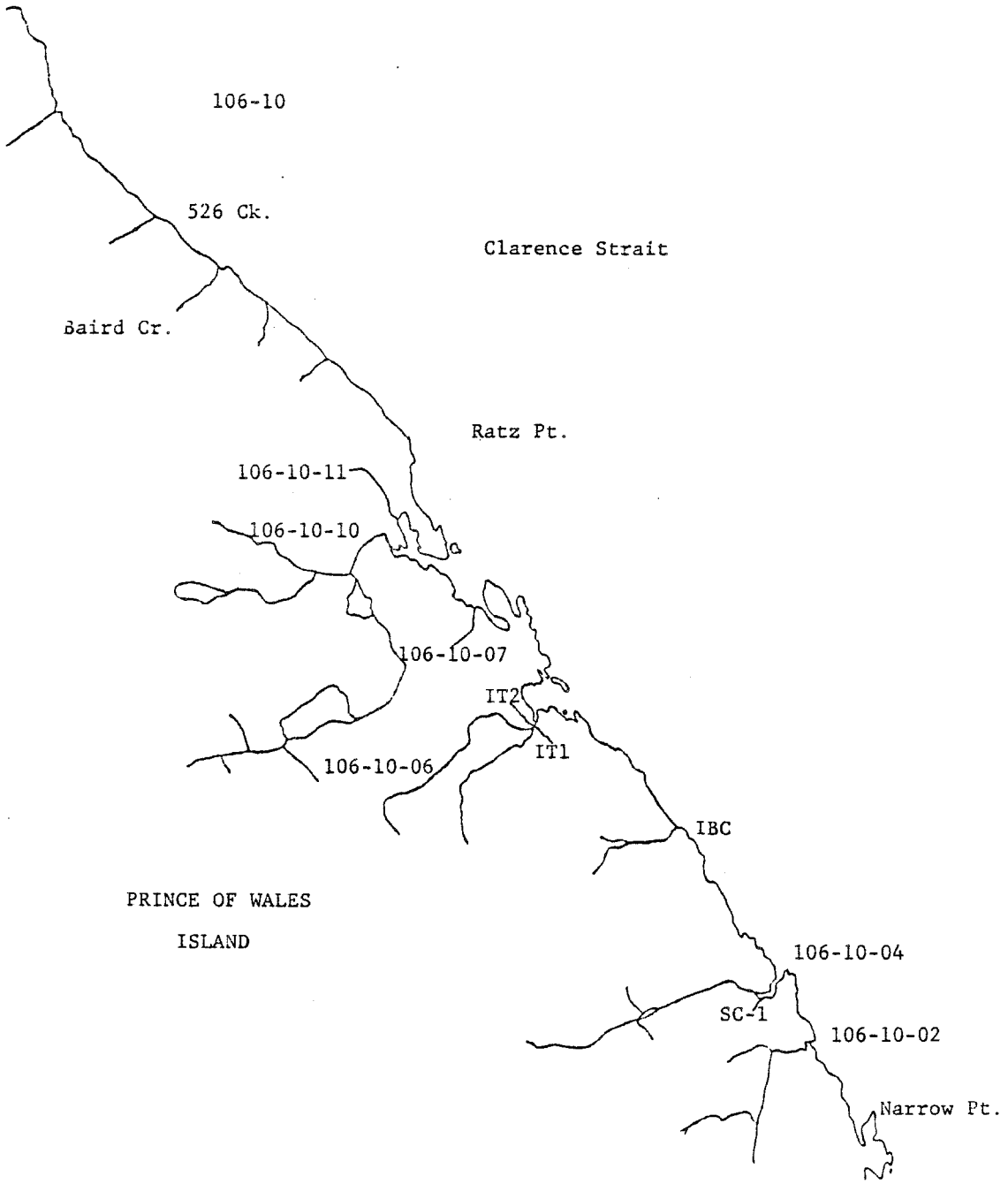

106-10
526 Ck.
Clarence Strait
Baird Cr.
Ratz Pt.
106-10-11
106-10-10
106-10-07
IT2
IT1
106-10-06
IBC
PRINCE OF WALES
ISLAND
106-10-04
SC-1
106-10-02
Narrow Pt.

Explanation

This report contains no Table of Contents, Abstract, or any other means of determining what the content is. So I went through the report, and determined that it consists of a catalog of various streams. With this in mind, I set my bookmarks for the PDF file to the individual streams categorized in the report. I then grouped the stream listings by bay/drainage.

Mae Tanner
July, 2006

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas none 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name n/a 2. ADF&G Catalog No. 106-30-67

3. Latitude 56°02'05" Longitude 132°58'25"

4. Agency Unit 05 5. Mgmt. Area 552 K 6. USGS Map No. Petersburg A-3

7. Aerial Photo No. 8-26-79 12 28 610050 479-197

8. Bay/Drainage Indian Creek 9. Access 2

10. Present Land Use none

11. Historical Land Use none

12. Stream Origin 4, 5 13. Estimated Flow .5 cfs 14. Flow Stage 2

15. Stream Temperature 12°C 16. pH 6.0 17. Beaver none

18. Temperature Sensitivity yes

19. Barrier none surveyed 20. Weather 1

Part III.

21. Intertidal

A. Substrate: Fines 98 % Gravel/S. Cob. 2%
L. Cob/Boulder/Bedrock 0 %
B. Gradient 1.0 %
C. ASA % 0
D. Schooling no
E. Shellfish no
F. Anchorage Whale Passage

22. Comments Stream Evaluation

This small, dark stream contained no significant fish habitat. The ITZ totalled 70 m in length, flowing through a grassy area. The intertidal substrate was composed almost exclusively of sand and muck providing no ASA. The non-tidal portion of the stream was a muskeg seep, cutting a deep sinuous channel through a grassy meadow. Here again substrate was largely sand and muck, providing no ASA. The only fish sighted were cottids.

23. Investigators Randy Ericksen 24. Date 8/14/83

1. The ITZ looking up toward the creek mouth. Intertidal substrate is composed almost entirely of sand and muck. No ASA.

2. The non-tidal portion of the stream is a muskeg seep cutting a deep, sinuous channel through a grassy meadow. No significant fish habitat.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100-160 m

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name "Slough Creek" 2. ADF&G Catalog No. 106-30-66

3. Latitude 56°01'05" Longitude 132°58'42"

4. Agency Unit 05 5. Mgmt. Area 552 K 6. USGS Map No. Petersburg A-3

7. Aerial Photo No. 79-28-479-195/194

8. Bay/Drainage Barnes Lake 9. Access 2

10. Present Land Use none

11. Historical Land Use none

12. Stream Origin 3, 4, 5, 6 13. Estimated Flow 4 cfs 14. Flow Stage 2

15. Stream Temperature 14.0°C 16. pH 5.0 17. Beaver yes

18. Temperature Sensitivity yes

19. Barrier no 20. Weather 1

Part III.

21. Intertidal

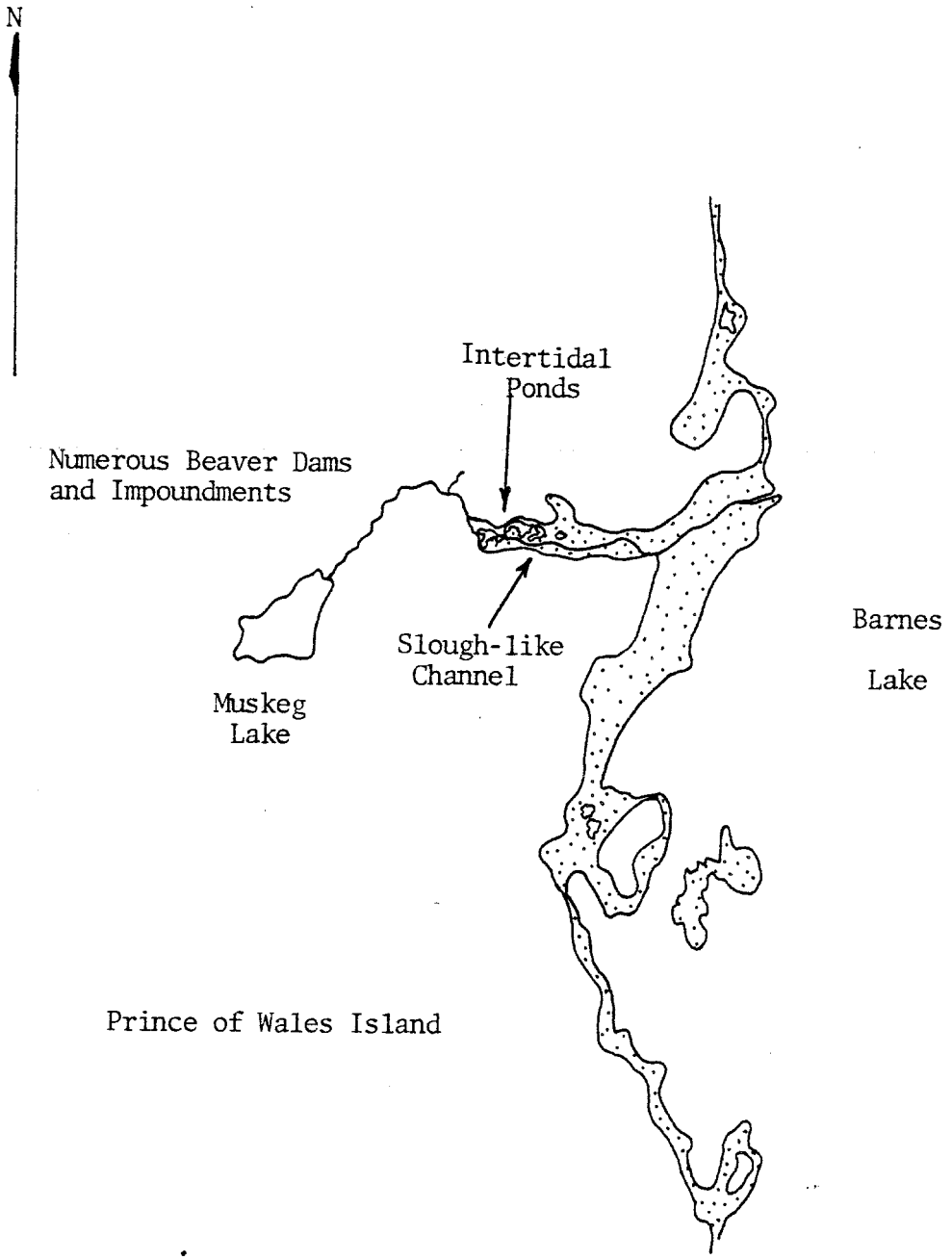
A. Substrate: Fines 20 % Gravel/S. Cob. 70 %
L. Cob/Boulder/Bedrock 10 %
B. Gradient 2 %
C. ASA % 15 (abundant interstitial fines)
D. Schooling Barnes Lake
E. Shellfish none observed
F. Anchorage vessel anchorage in Lake Bay; skiff to stream mouth

22. Comments Stream Evaluation

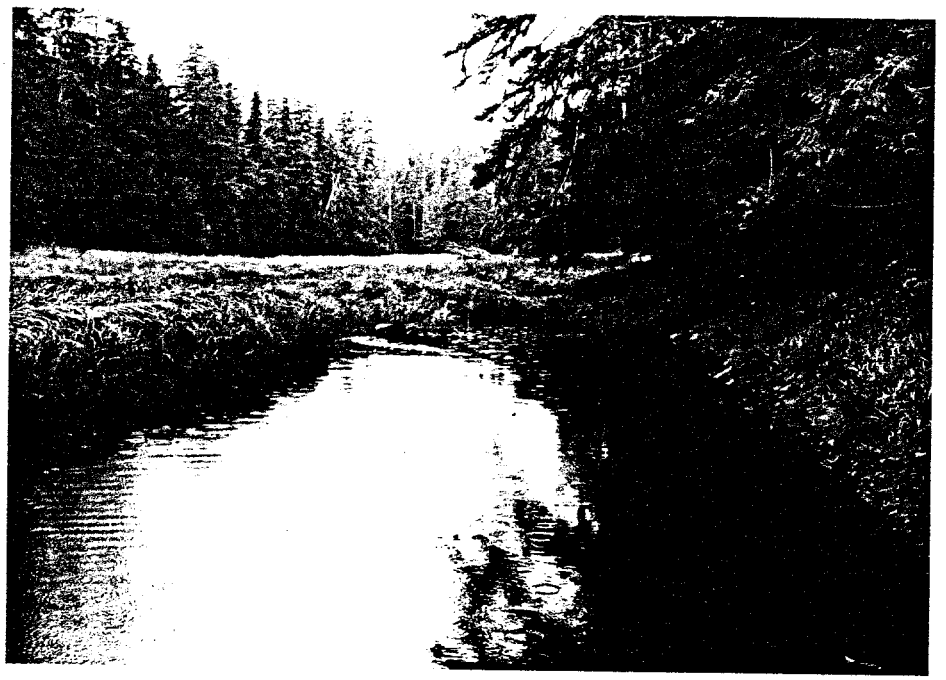
Beaver impounded "headwaters" and a dark, sinuous, tidally influenced channel provide extensive rearing habitat. Several Section 1 riffles provide limited ASA, however, the bulk of available spawning habitat is location below Section 1 in the ITZ. One injured, unspawned, female pink salmon was observed milling in Section 2 . No other fish were observed and no rehabilitation or enforcement recommended.

23. Investigators Ted Mickowski 24. Date 8/14/83

Slough Creek
106-30-66



1. Stream interface with tidal Barnes Lake. Channel meanders left center before entering an extensive marsh.



2. Section 2: Dark, slough-like channel meanders through marsh. Instream grass common.

3. Section 4: Sinuous channel drains dark ponds, demarcating the extent of the ITZ.

4. Section 5: Numerous beaver dams create an extensive multi-level impoundment. No fish or ASA observed. Survey negated.

5. Reconnaissance and air photos reveal an extensive series of beaver dams culminating in a muskeg lake. No fish or ASA observed.

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1I	100	6.3	3.0	$18.9m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name n/a 2. ADF&G Catalog No. 106-30-66

Reach Number	1	1	1	1	1		
1. Section Number	1I	2I	3I	4I	5		
2. Section Length	100	100	100	100	100		
3. Compass Bearing	256	253	259	227	282		
4. Gradient	1.5	.5	.5	.5	.5		
5. Water Quality	3	3	3	3	3		
6. Bank Type	A/B	A/B	A	A/B	A/B		
7. Bank Stability	1/1	1/1	1/1	1/1	1/1		
8. Bank Vegetation	1,3-5	1,3-5	5	1,3-5	1,3-5		
9. Debris Loading	1	1	5	8	4		
10. Undercut Bank Length	--	--	--	--	--		
11. Stream Width:							
Channel	10.5	6.6	6.0	7.2	24.0		
Water	6.3	5.7	6.0	6.3	24.0		
12. Water Type %: SS	60	45	75	60	65		
DS	--	45	20	35	30		
SF	40	10	5	5	5		
DF	--	--	--	--	--		
13. Substrate %:							
Bedrock	--	--	--	--	--		
Boulder	5	5	--	15	5		
Large Cobble	20	15	10	15	5		
Small Cobble	30	20	25	20	5		
Gravel	30	40	45	30	30		
Sand	15	20	20	20	30		
Muck	--	--	--	--	25		
Other	--	---	--	--	--		
14. ASA %/Quality	3/3	--	--	--	--		
15. Rearing Area %	20	70	70	70	90		
16. Pool Cover %	15	20	20	30	20		
17. Riffle Cover %	15	15	15	15	15		
18. Fish Observed (adult)PS	--	1	--	--	--		
19. Sampling	N	N	N	Y	N		
20. Potential Barriers	N	N	N	N	N		
21. Enhancement/Rehab	N	N	N	N	N		

Section 1I: Survey began at treeline along steep left bank. Left bank slope moderates and channel sinuosity increases as stream meanders through a grassy marsh.

Section 2I: An injured, unspawned, female pink salmon was observed milling in a dark, grass-lined pool.

Section 2I&3I: Sinuosity increases and velocity decreases as this slough-like channel meanders through a grassy marsh. Abundant instream grass provides excellent rearing cover.

22. Investigators Ted Mickowski Date 8/14/83

LEVEL TWO HABITAT SURVEY

Section 4I: Sinuous channel drains dark ponds, demarcating the extent of the ITZ (photo 4).

Section 5: Channel meanders from the ponds through a grassy slough to a 1.0 m high beaver dam in poor repair.

Survey was terminated at the aforementioned beaver dam due to lack of suitable habitat and fish sightings. A reconnaissance, however, was performed beyond Section 5 revealing an extensive marsh/beaver complex which culminates in a muskeg lake (photo 5). No fish or ASA were observed.

FISH SAMPLING FORM

Stream Name Slough Creek ADF&G Catalog No. 106-30-66 Date 8/14/83

Identify Survey Area A Water Temp. 14.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1435	1525	--	--	Section 2: Trap set in deep, dark pool amidst debris.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100 meters

3. Historical Fish Species No escapement data available.

Part II.

1. Stream Name G&G#4 2. ADF&G Catalog No. 106-30-064

3. Latitude 55°59'30: Longitude 132°59'10"

4. Agency Unit 05 5. Mgmt. Area 573&552K 6. USGS Map No. Craig D-3

7. Aerial Photo No. 1979 Photos Fl. Ln. 28 Photo 194

8. Bay/Drainage Gold & Galligan Lagoon 9. Access 2

10. Present Land Use None

11. Historical Land Use None

12. Stream Origin 3, 4, 5, 6 13. Estimated Flow about 3.5 cfs 14. Flow Stage 3

15. Stream Temperature 13°C 16. pH 6.2 17. Beaver yes

18. Temperature Sensitivity No

19. Barrier No 20. Weather 1

Part III.

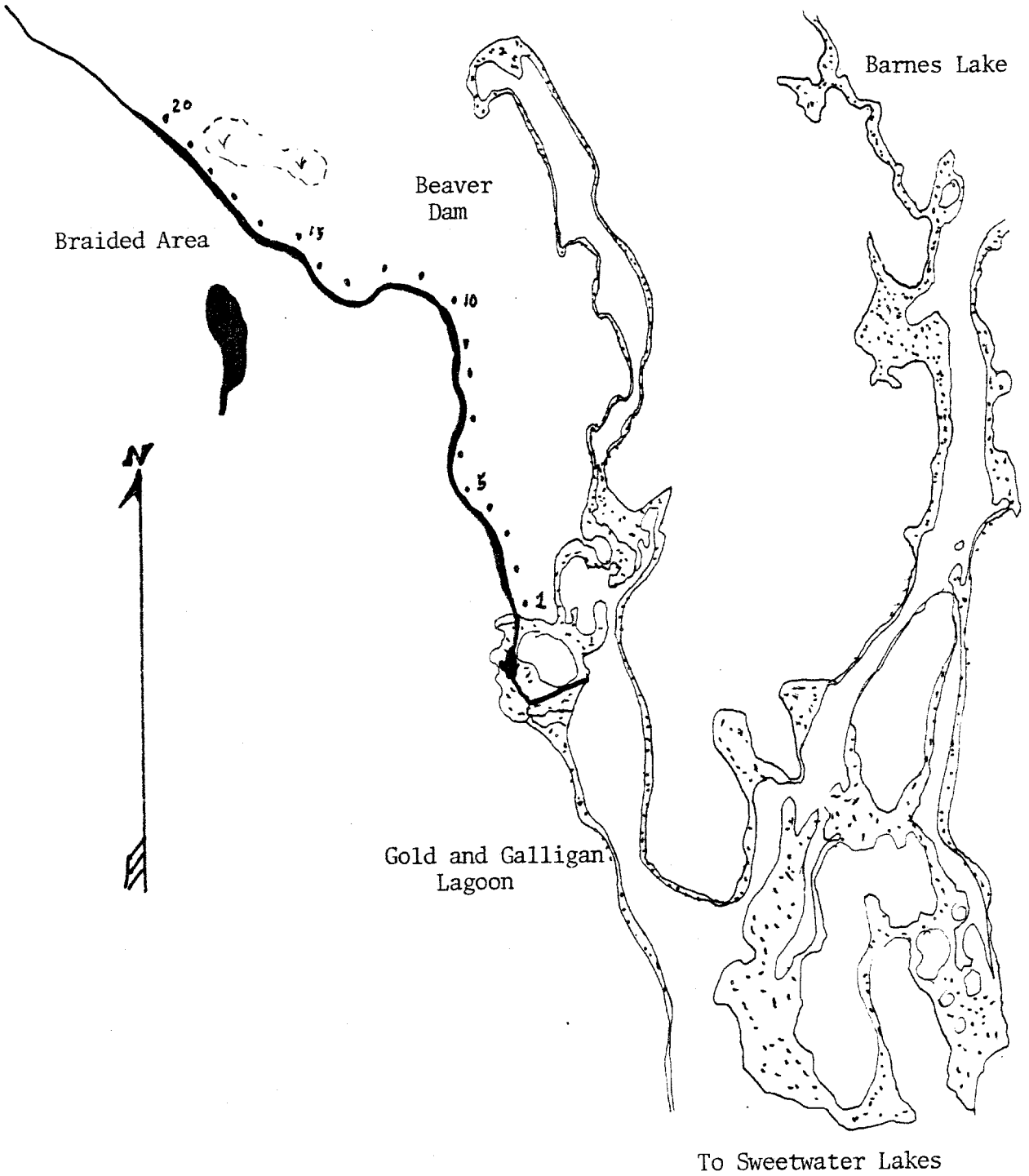
21. Intertidal - shared with G&G#3; 106-30-063

A. Substrate: Fines 10 % Gravel/S. Cob. 70 %
L. Cob/Boulder/Bedrock 20 %
B. Gradient 1 %
C. ASA % Moderate
D. Schooling 10x20m holding area in middle ITZ.
E. Shellfish Very sparse
F. Anchorage High tide; skiff access only.

22. Comments Stream Evalution

This is a small stream flowing into Gold and Galligan Lagoon between Barnes and Sweetwater Lakes. The low lying watershed gives rise to a sinuous meandering stream that flows through a variety of habitats: V-notch, spruce flat, beaver pond, and so on. Coho fry are present throughout, but in sparse concentrations.

23. Investigators Gerry Merrigan 24. Date 8/14/83



G&G #4
106-30-064

Prince of Wales Island

1. ITZ with highly compacted gravel substrate.

2. Mouth of stream with low velocity gradient through old forest cover. Dark tan water with forbs at edge of bank.

3. Reach I: Section 2; Moss covered boulder substrate with brush cover and blowdown along stream.

G&G#4
106-30-064

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	4.8	10	48					
2	100	2.0	12	24					
3	100	3.0	11	33					
4	100	4.0	8	32					
5	100	3.2	4	12.8					
6	100	0.3	--	--					
7	100	3.0	--	--					
8	100	2.8	--	--					
9	100	2.0	5	10					
10	100	8.0	--	--					
11	100	3.2	5	16					
12	100	5.0	4	20					
13	100	4.9	10	49					
14	100	4.0	5	20					
15	100	3.1	7	21.7					
16	100	5.2	8	41.6					
17	100	1.0	6	6					
18	100	2.0	5	10					
19	100	5.8	4	23.2					
20	100	3.0	--	--					
Total				$367.3m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name G&G#4 2. ADF&G Catalog No. 106-30-064

Reach Number	1	1	1	1	1	2	2
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	333	325	337	18	353	358	324
4. Gradient	1.5	1.5	1.5	1.5	2	2.5	2.5
5. Water Quality	4	4	4	4	4	4	4
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	2(2)	1(1,2)	1(1,2)	1(1,2)	1(1,2)	1(2)	1(2)
8. Bank Vegetation	1,3-5	1,3-5	1,3-5	1,3-5	1,3-5	1,3-5	1,3-5
9. Debris Loading	12	4	6	6	7	4	6
10. Undercut Bank Length	45	30	90	75	35	30	--
11. Stream Width:							
Channel	8.4	5.0	6.2	4.0	3.2	6.0	4.8
Water	4.8	2.0	3.0	4.0	3.2	0.3	3.0
12. Water Type %: SS	30	30	35	30	35	20	20
DS	25	15	20	25	35	25	20
SF	45	55	45	45	30	55	60
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	--	--	5	10	15
Boulder	10	10	5	5	15	20	25
Large Cobble	25	20	15	20	25	25	30
Small Cobble	30	20	30	35	25	25	20
Gravel	30	50	50	35	25	15	15
Sand	5	--	--	5	5	5	5
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	10/2	12/3	11/3	8/3	4/3	--	---
15. Rearing Area %	40	35	35	30	35	25	20
16. Pool Cover %	20	15	10	10	5	5	2
17. Riffle Cover %	10	15	20	10	5	2	5
18. Fish Observed	SS	SS	SS	SS	SS	SS	SS
19. Sampling	Y	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: 0m; Gravel intermixed with moss covered boulder. Heavy incidence of windthrow. Moderate amount of coho fry were observed.

Section 2: Overhanging salmonberry bushes on bank. Isolated riffle. Moderate amount of coho fry observed. Decreasing amount of windthrow.

Section 3: Good rearing habitat with coho fry abundant.

Section 5: 60m; Begin cobble substrate. Few fish observed.

Section 6: Begin moss covered boulder with isolated patches of fish habitat. Few fish observed.

22. Investigators Gerry Merrigan Date 8/14/83

Section 7: 100m; Enter V-notch.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name G&G#4 2. ADF&G Catalog No. 106-30-064

Reach Number	2	2	3	4	4	4	4
1. Section Number	8	9	10	11	12	13	14
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	313	253	242	340	314	338	296
4. Gradient	2.5	2.5	0.5	1.5	1.5	1.5	1.5
5. Water Quality	4	4	4	4	4	4	4
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1(3,2)	1(3,2)	1(1)	1(1)	1(2,1)	1(1)	1(1)
8. Bank Vegetation	1,3-5	1,3-5	1,3-5	1,3-5	1,3-5	1,3-5	1,3-5
9. Debris Loading	6	3	3	3	6	10	3
10. Undercut Bank Length	--	20	--	65	75	80	70
11. Stream Width:							
Channel	4.9	5.1	8.0	5.4	5.0	6.2	4.0
Water	2.8	2.0	8.0	3.2	5.0	4.9	4.0
12. Water Type %: SS	20	20	20	25	25	20	20
DS	20	30	80	25	30	55	50
SF	60	50	--	50	45	25	30
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	20	20	--	5	--	--	--
Boulder	10	10	10	15	15	15	5
Large Cobble	20	20	25	20	20	10	10
Small Cobble	25	25	20	35	30	25	30
Gravel	20	20	35	25	25	30	45
Sand	5	5	10	--	5	15	10
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	Clay5	Clay5	--
14. ASA %/Quality	--	5/2	--	5/2	4/3	10/3	5/3
15. Rearing Area %	20	35	100	25	30	60	45
16. Pool Cover %	2	--	10	5	10	15	5
17. Riffle Cover %	2	2	--	2	10	20	10
18. Fish Observed	--	SS	SS	SS	SS	SS	SS
					CT		
					DV		
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 8: 25m; Begin flow over bedrock.
Section 10: 0m; Beaver dam (1x8m); recent beaver activity.
Section 11: 0m; Resume flow over cobble/gravel in well channelized stream. Moderate amounts of coho fry observed.
Section 12: 80m; Clay patch left side in blowdown area. Isolated ASA.
Section 13: 20m; Blown out beaver dam.
30m; Blue clay deposit, left side.
55m; Alternate channel left side for 35 meters. Mainly deep, slow habitat.

22. Investigators Gerry Merrigan Date 8/14/83

Section 14: Few SS observed.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name G&G#4 2. ADF&G Catalog No. 106-30-064

Reach Number	4	4	4	4	4	5	
1. Section Number	15	16	17	18	19	20	
2. Section Length	100	100	100	100	100	100	
3. Compass Bearing	27	317	240	302	225	292	
4. Gradient	1.5	2	2	2	2	2.5	
5. Water Quality	4	4	4	4	4	4	
6. Bank Type	B	B	B	B	B	B	
7. Bank Stability	1(1)	1(1)	1(3,1)	1(3,1)	1(1,2)	1(1)	
8. Bank Vegetation	1,3-5	1,3-5	1,3-5	1,3-5	1,3-5	1,3-5	
9. Debris Loading	4	7	6	6	8	6	
10. Undercut Bank Length	110	100	35	25	50	40	
11. Stream Width:							
Channel	7.8	5.2	6.0	3.8	7.6	3.8	
Water	3.1	5.2	1.0	2.0	5.8	3.0	
12. Water Type %: SS	20	30	20	20	25	20	
DS	50	40	25	20	20	15	
SF	30	30	55	60	55	65	
DF	--	--	--	--	--	--	
13. Substrate %:							
Bedrock	--	--	5	10	--	--	
Boulder	5	5	15	15	15	25	
Large Cobble	10	25	20	25	30	35	
Small Cobble	30	45	40	25	35	20	
Gravel	45	20	20	25	20	20	
Sand	10	5	--	--	--	--	
Muck	--	--	--	--	--	--	
Other	--	--	--	--	--	--	
14. ASA %/Quality	7/3	8/3	6/3	5/3	4/3	--	
15. Rearing Area %	50	35	30	30	30	20	
16. Pool Cover %	2	5	2	2	10	2	
17. Riffle Cover %	2	8	5	2	2	5	
18. Fish Observed	SS	SS	SS	SS	--	--	
19. Sampling	N	N	N	N	N	N	
20. Potential Barriers	N	N	N	N	N	N	
21. Enhancement/Rehab	N	N	N	N	N	N	

Section 15: Predominantly pool with few fish observed. Muskeg 30 meters distant from right bank.
Section 17: 0m; Braided area for 50 meters.
Section 19: 25m; Braiding for 75 meters.
100m; Tributary left side. No fish habitat.
Section 20: Trout habitat only. No fish observed.
100m; Approaching V-notch. End of survey.

22. Investigators Gerry Merrigan Date 8/14/82

FISH SAMPLING FORM

Stream Name G&G#4 ADF&G Catalog No. 106-30-064 Date 8/14/83

Identify Survey Area A Water Temp. 13°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1220	1455	SS - 4		Section 1: 10m; right side.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100 meters

3. Historical Fish Species No escapement data available.

Part II.

1. Stream Name G&G#3 2. ADF&G Catalog No. 106-30-063
3. Latitude 55°59'30" Longitude 132°59'10"
4. Agency Unit 05 5. Mgmt. Area 552K 6. USGS Map No. Craig D-3
7. Aerial Photo No. 1979 Photos Fl. Ln. 28 Photo 193
8. Bay/Drainage Gold & Galligan Lagoon 9. Access 2
10. Present Land Use None
11. Historical Land Use None
12. Stream Origin 3, 4, 5, 6 13. Estimated Flow about 2.5 cfs 14. Flow Stage 3
15. Stream Temperature 13°C 16. pH 6.1 17. Beaver No
18. Temperature Sensitivity No
19. Barrier No 20. Weather 3

Part III.

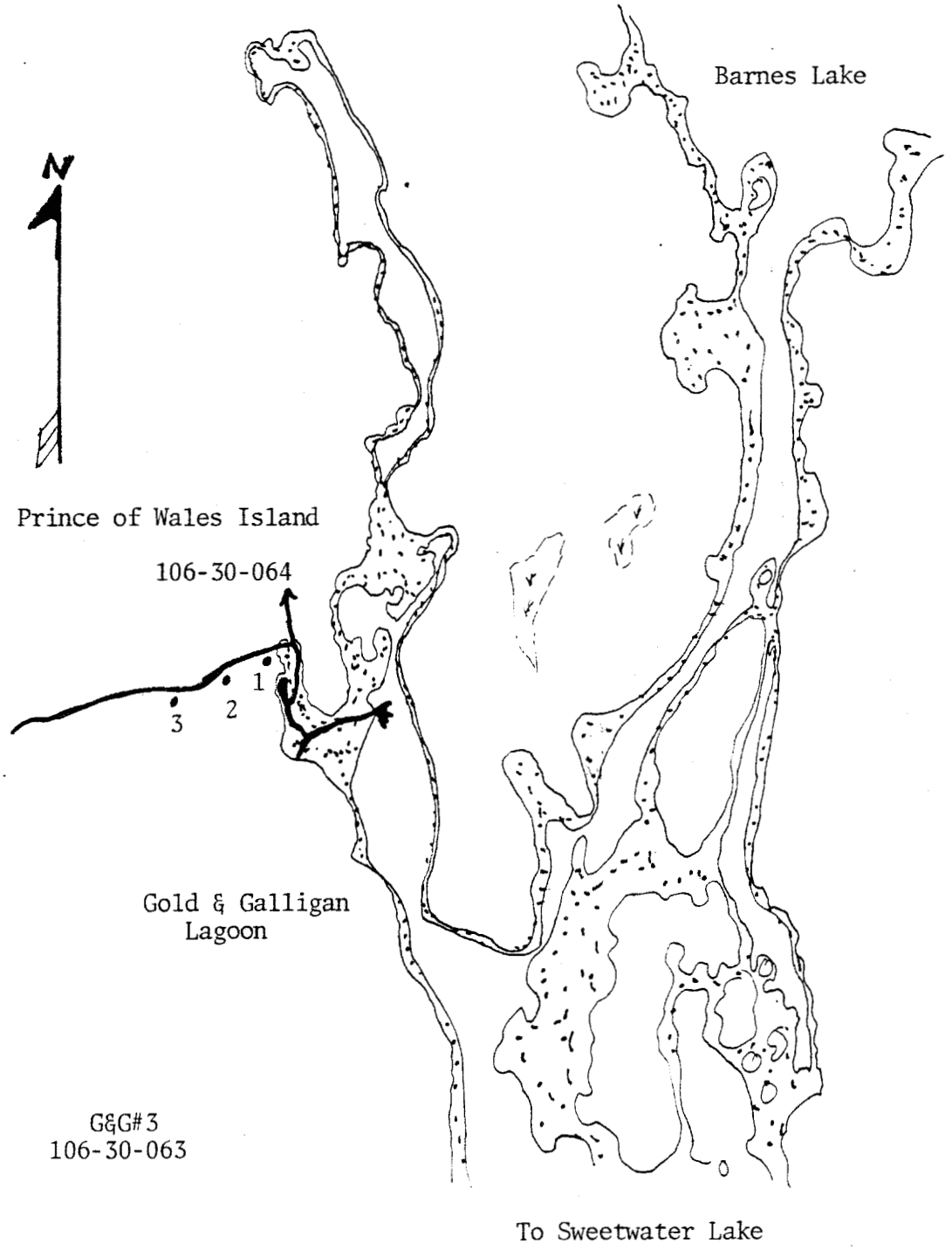
21. Intertidal - Shares ITZ with 106-30-064: G&G#4

A. Substrate: Fines 20 % Gravel/S. Cob. 50 %
L. Cob/Boulder/Bedrock 30 %
B. Gradient 1 %
C. ASA % Moderate in mid-ITZ.
D. Schooling In lower ITZ.
E. Shellfish Very little observed.
F. Anchorage High tide; skiff access only.

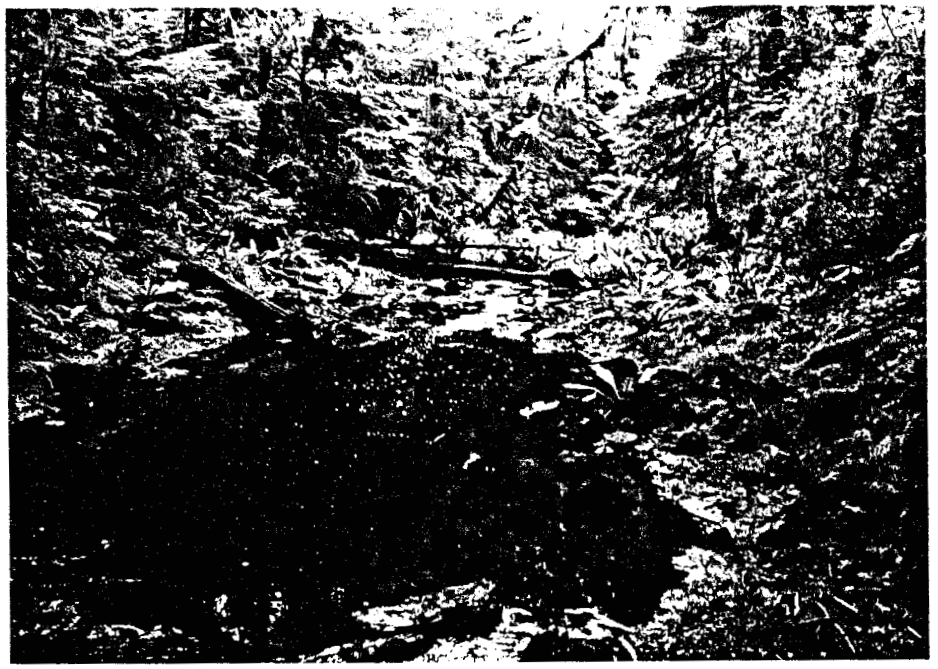
22. Comments Stream Evaluation

This stream consists of primarily rearing habitat for coho fry with little isolated, low quality spawning area. Located in Gold and Galligan Lagoon between Barnes and Sweetwater Lake. This stream is basically a low velocity, low gradient muskeg drainage.

23. Investigators Gerry Merrigan 24. Date 8/14/83


Barnes Lake
N
Prince of Wales Island
106-30-064
1
2
3
Gold & Galligan
Lagoon
G&G#3
106-30-063
To Sweetwater Lake

1. Upper ITZ above confluence with ITZ of 106-30-064. Flow is over gravel with moderate ASA through grass meadow.



2. Mouth of stream with boulder substrate and instream forbs (swamp cabbage).

G&G#3
106-30-063

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	4.0	--	--					
2	100	4.0	5	20					
3	100	2.8	5	14					
Total				$34.0m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name G&G#3 2. ADF&G Catalog No. 106-30-063

Reach Number	1	1	1				
1. Section Number	1	2	3				
2. Section Length	100	100	100				
3. Compass Bearing	208	320	187				
4. Gradient	1	1	2				
5. Water Quality	4	4	4				
6. Bank Type	B	A	B				
7. Bank Stability	1(1)	1(1)	1(1,2)				
8. Bank Vegetation	1,3-5	1,3-5	1,3-5				
9. Debris Loading	8	9	5				
10. Undercut Bank Length	30	60	25				
11. Stream Width:							
Channel	9.0	4.8	5.1				
Water	4.0	4.0	2.8				
12. Water Type %: SS	50	35	30				
DS	25	30	30				
SF	25	35	40				
DF	--	--	--				
13. Substrate %:							
Bedrock	--	--	--				
Boulder	10	--	10				
Large Cobble	15	25	25				
Small Cobble	15	20	30				
Gravel	35	30	30				
Sand	15	15	5				
Muck	--	--	--				
Other	10B	10B	--				
14. ASA %/Quality	--	5/2	5/2				
15. Rearing Area %	30	40	30				
16. Pool Cover %	15	20	15				
17. Riffle Cover %	10	15	5				
18. Fish Observed	SS	SS	SS				
19. Sampling	Y	N	N				
20. Potential Barriers	N	N	N				
21. Enhancement/Rehab	N	N	N				

Section 1: 0m; Primarily boulder with forbs in streambed. Isolated patches of gravel with insufficient flow for ASA. Coho fry in moderate concentrations. Good brush cover overhanging stream.

Section 2: Assuming characteristics of a muskeg drainage. A few coho fry were observed. Low gradient with forbs in stream.

Section 3: Increase in substrate size to large cobble; moderate amount of coho fry. 100m; Moss covered boulder/bedrock substrate at 9% gradient. No fish habitat. Forbs in stream.

22. Investigators Gerry Merrigan Date 8/14/83

FISH SAMPLING FORM

Stream Name G&G#3 ADF&G Catalog No. 106-30-063 Date 8/14/83

Identify Survey Area A Water Temp. 13°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1130	1204	--		Section 1: 0m; right side.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length --

3. Historical Fish Species No escapement data available.

Part II.

1. Stream Name G&G#2 2. ADF&G Catalog No. 106-30-062
3. Latitude 55°59'25" Longitude 132°59'10"
4. Agency Unit 05 5. Mgmt. Area 552K 6. USGS Map No. Craig D-3
7. Aerial Photo No. 1979 Photos Fl. Ln. 28 Photo 193
8. Bay/Drainage Gold&Galligan Lagoon 9. Access 2
10. Present Land Use None
11. Historical Land Use None
12. Stream Origin 3, 4, 5, 6 13. Estimated Flow about 1 cfs 14. Flow Stage 3
15. Stream Temperature 12°C 16. pH 6.3 17. Beaver No
18. Temperature Sensitivity No
19. Barrier No 20. Weather 3

Part III.

21. Intertidal

A. Substrate: Fines 60 % Gravel/S. Cob. 40 %
L. Cob/Boulder/Bedrock -- %
B. Gradient 1 %
C. ASA % No
D. Schooling No
E. Shellfish None observed
F. Anchorage High tide; skiff access only.

22. Comments Stream Evaluation

This muskeg drainage is located in Gold & Galligan Lagoon between Barnes and Sweetwater Lake. The ITZ is a grass meadow with compacted substrate throughout as well as heavy deer sign. The stream consists of two small tributaries over gravel with many instream forbs. The stream is light tan in color with a heading of 231°. At 40m, the stream flow is over moss covered boulder at 7% gradient.

23. Investigators Gerry Merrigan 24. Date 8/14/83

1. Upper ITZ and mouth of stream.

2. Downstream view of ITZ and rearing pool looking toward Gold & Galligan Lagoon.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length --

3. Historical Fish Species No escapement data available.

Part II.

1. Stream Name G&G#1 2. ADF&G Catalog No. 106-30-061
3. Latitude 55°59'15" Longitude 132°59'00"
4. Agency Unit 05 5. Mgmt. Area 552K 6. USGS Map No. Craig D-3
7. Aerial Photo No. 1979 Photo Fl. Ln. 28 Photo 193
8. Bay/Drainage Golg & Galligan Lagoon 9. Access 2
10. Present Land Use None
11. Historical Land Use None
12. Stream Origin 3, 4, 5, 6 13. Estimated Flow less than 0.5 cfs 14. Flow Stage 1
15. Stream Temperature 12°C 16. pH 6.2 17. Beaver No
18. Temperature Sensitivity No
19. Barrier No 20. Weather 3

Part III.

21. Intertidal

A. Substrate: Fines 90 % Gravel/S. Cob. ____ %
L. Cob/Boulder/Bedrock -- % Grass/Debris 10%
B. Gradient 1 %
C. ASA % None
D. Schooling No
E. Shellfish None observed.
F. Anchorage High tide; skiff access only.

22. Comments Stream Evaluation

This is a small muskeg drainage located in Gold and Galligan Lagoon between Barnes and Sweetwater Lake. The ITZ is a grass meadow with slow velocity flow over mud and grass with a small intertidal rearing pond. The stream itself has no rearing or spawning habitat, and bears 152°. No fry were observed in the ITZ or stream.

23. Investigators Gerry Merrigan 24. Date 8/14/83

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100 m

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name n/a 2. ADF&G Catalog No. 106-30-59
3. Latitude 55°58'44" Longitude 132°58'07"
4. Agency Unit 05 5. Mgmt. Area 573K 6. USGS Map No. Craig D-3
7. Aerial Photo No. 79-28-479-191 -192
8. Bay/Drainage Gold & Galligan Lagoon 9. Access 1
10. Present Land Use Logging road access to future clearcut units.
11. Historical Land Use none
12. Stream Origin 3, 5, 6 13. Estimated Flow 1.5 cfs 14. Flow Stage 2
15. Stream Temperature 15°C 16. pH 6.5 17. Beaver Y
18. Temperature Sensitivity yes; low flow and beaver impounded headwaters
19. Barrier no 20. Weather 2

Part III.

21. Intertidal - n/a

A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%
B. Gradient ____%
C. ASA % ____
D. Schooling ____
E. Shellfish ____
F. Anchorage ____

22. Comments

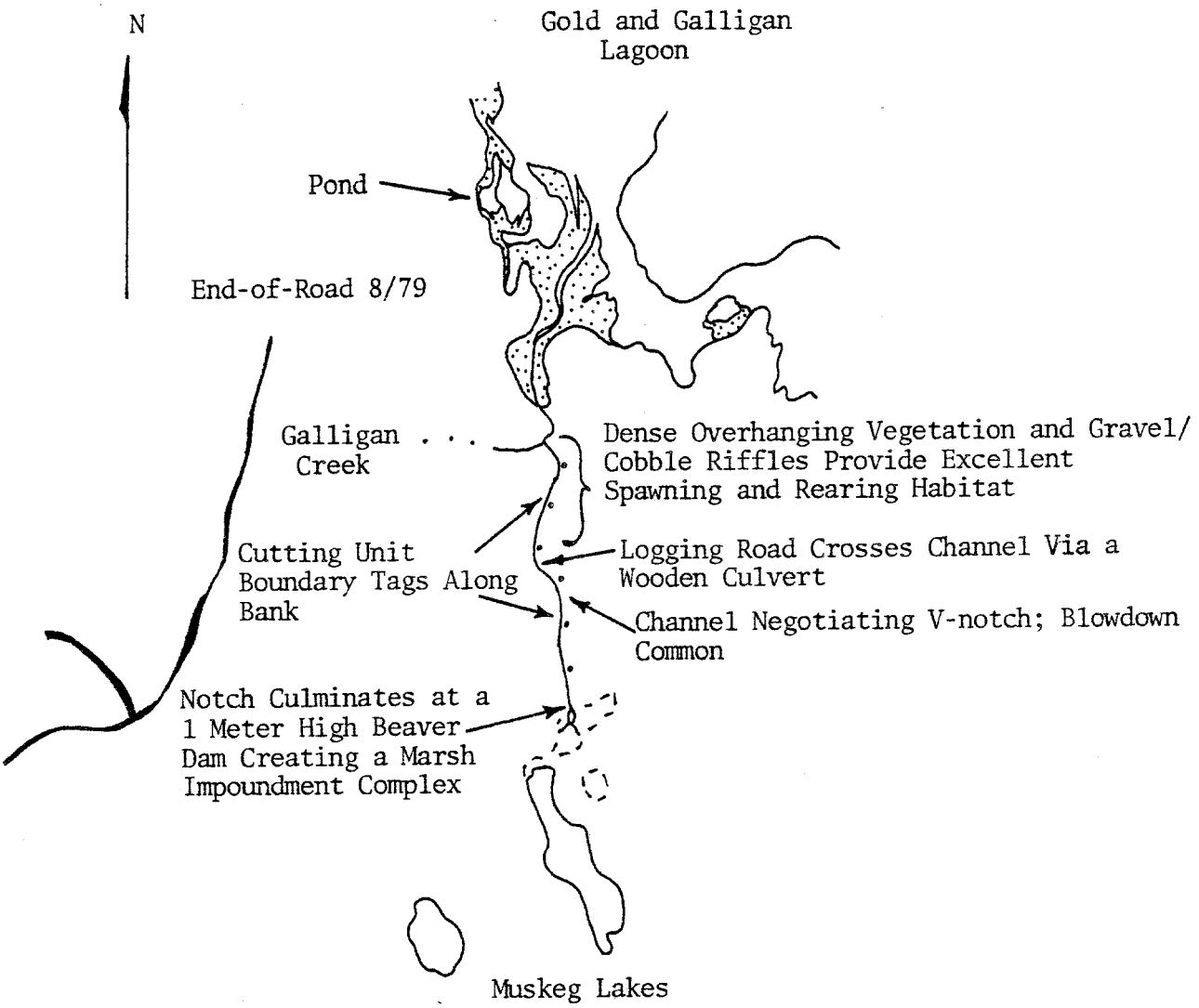
Proposed clearcutting of streamside timber could detrimentally elevate temperatures in this "temperature sensitive" anadromous producer.

Stream Evaluation

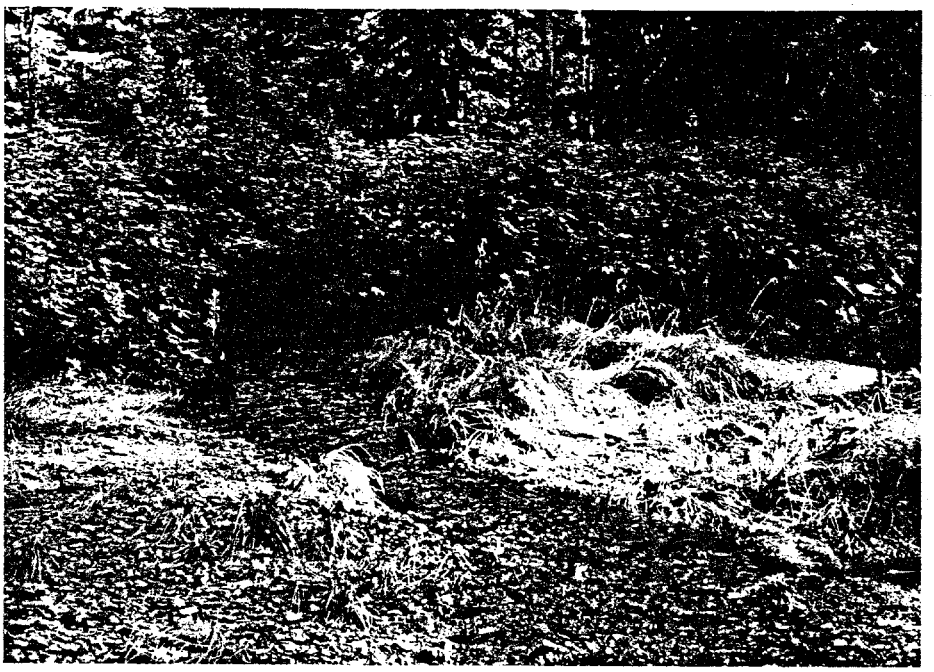
This small, productive stream enters Gold and Galligan Lagoon via the Galligan Creek ITZ. Excellent rearing and spawning habitat, dense overhanging vegetation and nearly continuous undercut banks characterize Reach 1. A logging road crosses the channel 334 m above the ITZ, accessing proposed streamside clearcut units. Reach 2 is typified by increasing gradients, coarse substrate, copious blowdown, and extremely steep unstable side slopes. Survey terminated at beaver impounded headwater, 700m above the ITZ. No rehabilitation or enhancement recommended.

23. Investigators Ted Mickowski 24. Date 8/13/83

106-30-59



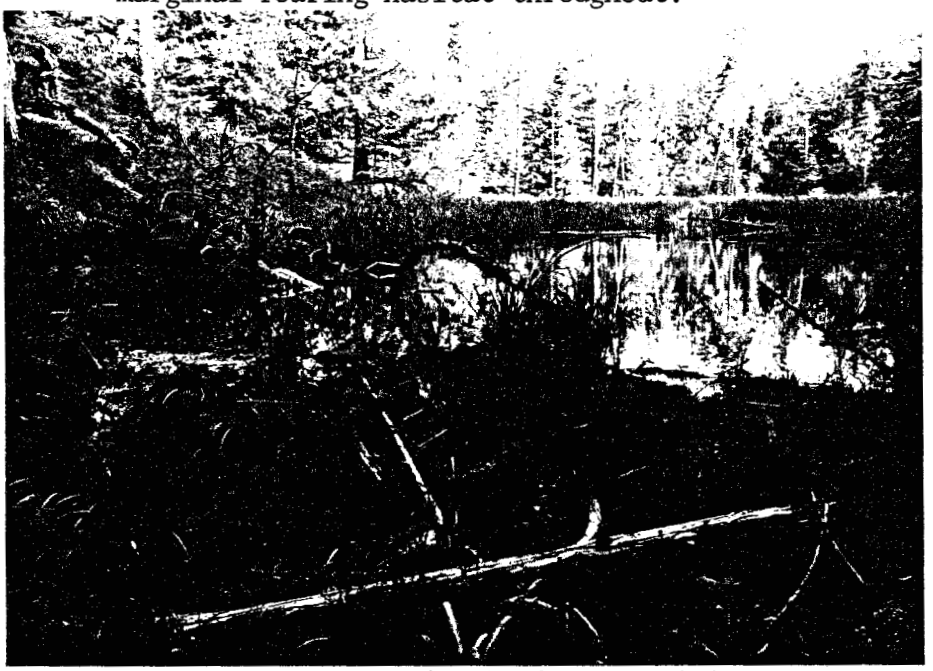
Prince of Wales Island



1. Confluence with Galligan Creek ITZ. Above the IT ecotone, canopy coverage is 90%.

2. Section 3: Looking up section to wooden culvert and logging road crossing. Proposed cutting unit boundary tags were observed along the right bank. Spawning and rearing habitat remains good-excellent throughout.

3. Section 6: Notch continues along with copious blowdown. Substrate unsuitable for spawning, marginal rearing habitat throughout.



4. Section 9: Beaver dam in foreground demarcates survey end. No fish were observed within the extensive wet land fringed impoundment.

106-30-59

Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	2.1	20	42
2	100	2.4	20	48
3	100	3.9	20	78
4	100	2.7	10	27
6	100	3.6	2	7.2
Total				$202.2m^2$

Section	Length (m)	Width (m)	ASA %	ASA Total

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name n/a 2. ADF&G Catalog No. 106-30-59

Reach Number	1	1	1	2	2	2	2
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	110
3. Compass Bearing	175	206	192	179	166	183	175
4. Gradient	0.5	0.5	1.0	4.0	3.0	2.5	4.0
5. Water Quality	3	3	3	3	3	3	3
6. Bank Type	A	A	A	D	D	D	D
7. Bank Stability	1/1	1/1	1/1	3/2	3/2	2/2	2/2
8. Bank Vegetation	1,3-5	1,3-5	1,3-5	1,3-5	1,3-5	1,3-5	1,3-5
9. Debris Loading	8	15	5	20	20	15	10
10. Undercut Bank Length	120	75	60	40	--	--	--
11. Stream Width:							
Channel	3.0	2.4	4.5	5.7	2.7	3.9	3.9
Water	2.1	2.4	3.9	2.7	2.7	3.6	3.9
12. Water Type %: SS	40	55	45	30	30	40	25
DS	--	--	--	--	--	--	--
SF	60	45	55	70	70	60	75
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	--	--	5	10	30
Boulder	--	--	5	15	25	25	35
Large Cobble	10	10	20	30	35	35	20
Small Cobble	30	45	35	25	15	15	10
Gravel	45	30	30	20	15	15	5
Sand	15	15	10	10	5	5	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	20/3	20/3	20/3	10/3	--	2/3	--
15. Rearing Area %	40	60	55	25	15	35	10
16. Pool Cover %	90	65	40	60	20	20	15
17. Riffle Cover %	90	65	40	60	25	15	15
18. Fish Observed (fry) SS	> 6	>25	>12	>12	< 6	> 6	--
CT/RB		>12					
19. Sampling	Y	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: 90% brush coverage impedes the survey process but provides excellent cover and a source of insects for rearing fry. Gravel/cobble riffles provide excellent ASA throughout.

Section 2: Canopy opens somewhat, however, instream debris and overhanging vegetation provides excellent rearing cover. Cobble/gravel riffles provide excellent ASA throughout. Blue and white USFS ribbon indicating salmon habitat was observed along banks.

22. Investigators Ted Mickowski Date 8/13/83

LEVEL TWO HABITAT SURVEY

106-30-59

Section 2: 60m; Extreme blowdown across channel results in extensive braiding. Proposed cutting unit boundary tags were observed along the right bank.

Section 3: Spawning and rearing habitat remains good-excellent throughout. Proposed cutting unit boundary tags were observed along the right bank.
34m; Logging road crosses survey area via an unobstructed log culvert.
68m; 100% brush coverage commences.

Section 4: Increasing gradient and substrate size demarcate reach transition and V-notch boundary. Blowdown induced channel migration has exposed soil along right bank. Dense overhanging vegetation provides excellent cover, however, channel character results in reduced spawning and rearing habitat throughout. Proposed cutting unit boundary tags were observed along the right bank.

Section 5: Proposed cutting unit boundary tags were observed along notch's steep left bank. Dense overhanging vegetation gives way to copious blowdown. Increasing gradient and substrate size provides no ASA and marginal rearing.

Section 6: Notch and copious blowdown continue although gradient moderates, providing good rearing and isolated spawning habitat, throughout the second half of the section.

Section 7: Notch culminates at the base of a 1.0 m high beaver dam in good repair, delineating survey end. No fish were observed in the impoundment or extensive "wetland". Substrate unsuitable for spawning habitat. However, marginal rearing cover is primarily boulder induced. Localized slope failures common.

FISH SAMPLING FORM

Stream Name n/a ADF&G Catalog No. 106-30-59 Date 8/13/83

Identify Survey Area A Water Temp. 15°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1700	1900	SS - 1 CO - 3	--	Section 1: Canopy coverage, 95%.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas none 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name none 2. ADF&G Catalog No. 106-30-58
3. Latitude 55°52'35" Longitude 132°56'55"
4. Agency Unit 05 5. Mgmt. Area 573 K 6. USGS Map No. Craig D-3
7. Aerial Photo No. 8-26-79 12 29 610050 479-119
8. Bay/Drainage Sweetwater Lake 9. Access 02
10. Present Land Use none
11. Historical Land Use none
12. Stream Origin 1, 4, 5 13. Estimated Flow 3 cfs 14. Flow Stage 2
15. Stream Temperature 13.0°C 16. pH 6.0 17. Beaver no
18. Temperature Sensitivity no
19. Barrier none surveyed 20. Weather 6

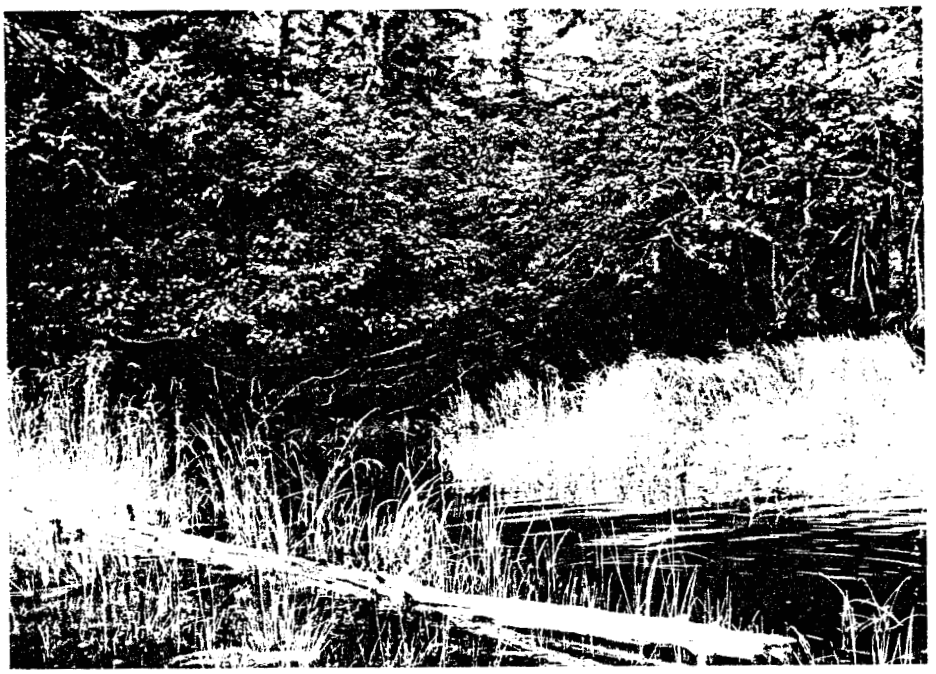
Part III.

21. Intertidal - ITZ is negligible. Sweetwater Lake fluctuates only slightly with the tide.
   A. Substrate: Fines ____ % Gravel/S. Cob. ____ %
      L. Cob/Boulder/Bedrock ____ %
   B. Gradient ____ %
   C. ASA % ____
   D. Schooling ____
   E. Shellfish ____
   F. Anchorage ____

22. Comments Stream Evaluation

This small dark stream has low but stable flow. A small (more than 1 cfs) tributary enters the left bank 14 m up from the creek mouth. This tributary is cascaded containing no fish or fish habitat. The initial 45 m of the main stem provides excellent rearing habitat, low gradient, undercut banks, good pool/riffle ratio, and good cover. Substrate composition includes 50% gravel providing 5% good ASA. At 45 m an abrupt gradient increase alters the fish habitat significantly. Large, moss covered cobble dominate the substrate, cover and pool area decrease, and debris loading decreases. A reconnaissance upstream showed similar habitat for 100 m. Coho fry were found 60 m up from the creek mouth.

23. Investigators Randy Ericksen 24. Date 8/11/83



1. The creek mouth looking from Sweetwater Lake.

2. At 45 m the gradient increases. Large moss covered cobble dominates the substrate composition.

FISH SAMPLING FORM

Stream Name n/a ADF&G Catalog No. 106-30-58 Date 8/11/83

Identify Survey Area n/a Water Temp. 13.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1225	1320	SS - 1		Set just above tributary.
2	1235	1315	SS - 1		Set at the beginning of the steep area.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100 meters

3. Historical Fish Species No escapement data available.

Part II.

1. Stream Name n/a 2. ADF&G Catalog No. 106-30-057

3. Latitude 55°56'50" Longitude 132°58'35"

4. Agency Unit 05 5. Mgmt. Area 573K 6. USGS Map No. Craig D-3

7. Aerial Photo No. 1979 Photos Fl. Ln. 28 Photo 189

8. Bay/Drainage Sweetwater Lake 9. Access 1

10. Present Land Use New roading; proposed cutting unit.

11. Historical Land Use None

12. Stream Origin 3, 4, 5, 6 13. Estimated Flow about 3 cfs 14. Flow Stage 3

15. Stream Temperature 15°C 16. pH 6.1 17. Beaver Yes

18. Temperature Sensitivity Yes, south facing beaver system.

19. Barrier No 20. Weather 6

Part III.

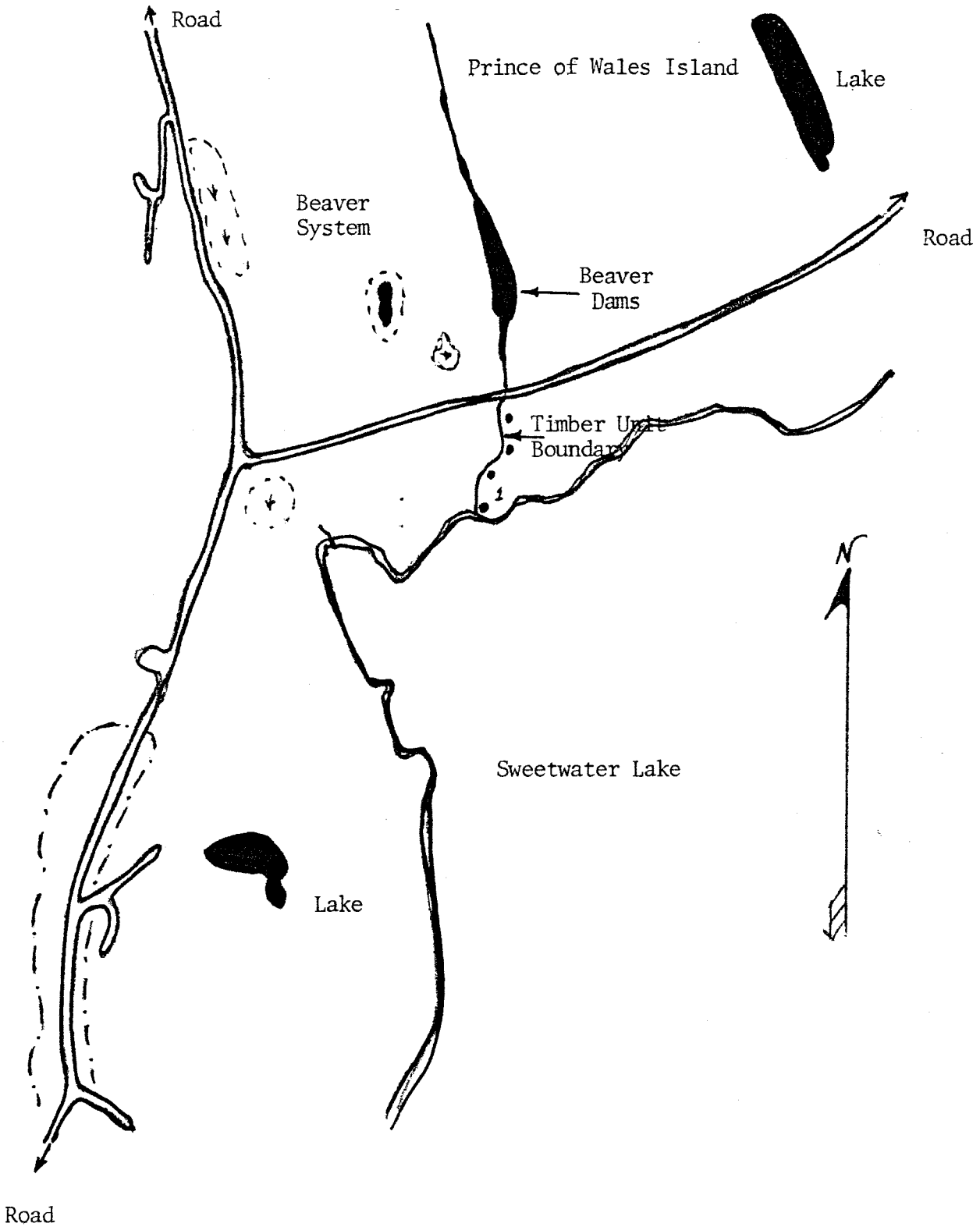
21. Intertidal n/a

A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%
B. Gradient ____%
C. ASA %
D. Schooling
E. Shellfish
F. Anchorage

22. Comments Stream Evaluation

Predominantly a beaver system, this stream is significant as rearing habitat for coho and trout with only a few patches of isolated marginal ASA. Heavy blowdown occurs in the initial sections of the stream as it is southerly exposed on the SW shore of Sweetwater Lake. A proposed timber unit boundary is adjacent to the stream at Section 3: 40m. New road construction crosses the stream at Section 4: 100m. A lengthy beaver dam complex begins 50 meters upstream of the road.

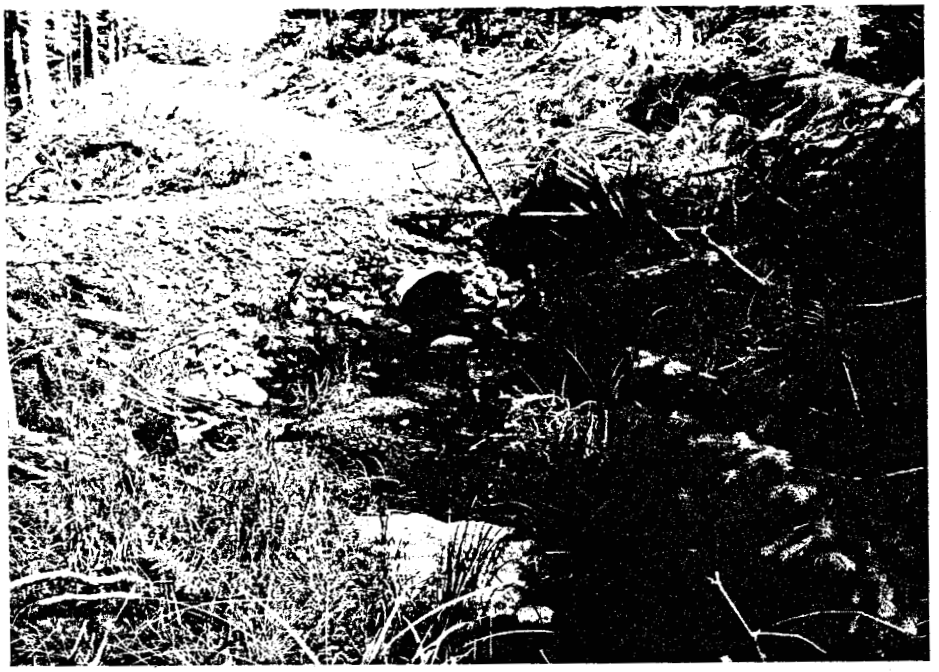
23. Investigators Gerry Merrigan 24. Date 8/11/83


Road
Prince of Wales Island
Lake
Beaver
System
Road
Beaver
Dams
Timber Unit
Boundary
1
N
Sweetwater Lake
Lake
Road

106-30-057

1. Mouth of stream with backwater influence of lake.

2. Section 1: Low velocity stream with poor ASA flowing through a heavy patch of windthrow.



3. Section 4: 100m; New road crossing via 5' culvert. Rearing for coho fry.

4. Beaver dam 1m x 35m, located 100 meters above road crossing.

5. Beaver pond marsh system 300 meters upstream of road.

106-30-057

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	2.5	7	17.5					
2	100	2.0	3	6.0					
3	100	2.2	8	17.6					
4	100	2.0	--	--					
Total				$41.1m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name n/a 2. ADF&G Catalog No. 106-30-057

Reach Number	1	1	1	1			
1. Section Number	1	2	3	4			
2. Section Length	100	100	100	100			
3. Compass Bearing	350	39	22	12			
4. Gradient	1.5	1.5	1.5	1			
5. Water Quality	4	4	4	4			
6. Bank Type	B	B	B	B			
7. Bank Stability	2(1)	1(1)	1(1)	1(1)			
8. Bank Vegetation	1,3-5	1,3-5	1,3-5	1,3-5			
9. Debris Loading	8	8	5	6			
10. Undercut Bank Length	--	--	--	--			
11. Stream Width:							
Channel	2.5	2.8	3.4	3.0			
Water	2.5	2.0	2.2	2.0			
12. Water Type %: SS	30	30	30	30			
DS	25	20	25	25			
SF	45	50	45	45			
DF	--	--	--	--			
13. Substrate %:							
Bedrock	--	--	--	--			
Boulder	5	15	5	--			
Large Cobble	20	25	25	10			
Small Cobble	25	25	25	20			
Gravel	40	25					
Sand	10	10	10	20			
Muck	--	--	--	10			
Other	--	--	--	--			
14. ASA %/Quality	7/2	3/2	8/2	--			
15. Rearing Area %	35	25	30	25			
16. Pool Cover %	10	5	10	5			
17. Riffle Cover %	10	10	5	5			
18. Fish Observed (fry)	DV	--	DV	--			
	CT		CT				
	SS						
19. Sampling							
20. Potential Barriers							
21. Enhancement/Rehab							

Section 1: 0m; Backwater from lake for 12 meters. Water very dark. Considerable blowdown (southerly exposed stream) in this section.

Section 2: Low velocity flow. Forbs midstream. Substrate is moss covered boulder and cobble. Moderate blowdown throughout.

Section 3: 40m; Cutting unit boundary line.
100m; New road cut 50 meters from left bank. Diminishing amount of windthrow.

22. Investigators Gerry Merrigan Date 8/11/83

LEVEL TWO HABITAT SURVEY

106-30-057

Section 4: Low gradient flow through grass. Light amount of windthrow. 100m; Road crossing via 5' culvert. End survey.

Raconnaissance

25m; Road fill causing channel migration.
50m; Old beaver dam, .5m x 15m. Coho fry in pond.
100m; 1m x 35m beaver dam with recent activity. Large pond/marsh complex.
300m; Additional beaver dam and large pond/marsh system.

FISH SAMPLING FORM

Stream Name n/a ADF&G Catalog No. 106-30-057 Date 8/11/83

Identify Survey Area A Water Temp. 15°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1315	1427	--		Section 1: 12m
2	1355	1415	SS - 4		Section 4: 100m; Coho especially dark.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 1-51: B 1-4: C1-17 2. Section Length 50 m

3. Historical Fish Species _____

Part II.

1. Stream Name Log Jam Creek 2. ADF&G Catalog No. 106-30-53 ?

3. Latitude _____ Longitude _____

4. Agency Unit 05 5. Mgmt. Area K08 6. USGS Map No. _____

7. Aerial Photo No. _____

8. Bay/Drainage Sweetwater Lake 9. Access _____

10. Present Land Use _____

11. Historical Land Use _____

12. Stream Origin _____ 13. Estimated Flow .2-.7 m^3 14. Flow Stage 1

15. Stream Temperature 16.5°C 16. pH 6.7 17. Beaver 5

18. Temperature Sensitivity _____

19. Barrier _____ 20. Weather 2

Part III.

21. Intertidal

A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%

B. Gradient ____%

C. ASA _____

D. Schooling _____

E. Shellfish _____

F. Anchorage _____

---

22. Comments: SS, DV, SB, CT, Sculpins trapped

23. Investigators U.S.F.S. 24. Date 6/10/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Area B Log Jam Creek 2. ADF&G Catalog No. 106-30-53

Reach Number							
1. Section Number	1	2	3	4			
2. Section Length	150	150	150	150			
3. Compass Bearing	37	4	93	111			
4. Gradient	0	0	0	0			
5. Water Quality							
6. Bank Type	u/u	u/u	u/u	u/u			
7. Bank Stability	3/3	3/3	3/3	3/3			
8. Bank Vegetation							
9. Debris Loading	15	15	5	5			
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	18	19	22				
12. Water Type %: SS							
DS							
SF							
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	5	5	0	0			
15. Rearing Area %	99	99	99	99			
16. Pool Cover %							
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers							
21. Enhancement/Rehab							

Comments: Section 4 becomes a swamp-poorly drained. Area B runs parallel to Logjam Creek-right side channel

22. Investigators U.S.F.S. Date 6/10/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Log Jam Creek 2. ADF&G Catalog No. 106-30-53

Reach Number			1				2
1. Section Number	1	2	3	4	5	6	7
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	324	24	2/3	2	355	2	350
4. Gradient	1	1	0	2	2	2	0
5. Water Quality							
6. Bank Type L/R	u/u	u/u	u/u	u/u	u/u	u/u	u,g/g
7. Bank Stability L/R	2/2	2/2	2/2	2/2	2/2	2/2	2/2
8. Bank Vegetation							
9. Debris Loading	5	5		5	30	50	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	21	20	23	18	17	15	
12. Water Type %: SS			38				97
DS			62				3
SF							
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	1	1	0	1	1	1	0
15. Rearing Area %	99	99		99	99	99	
16. Pool Cover %	3	3		5	5	5	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-		-	3	3	
21. Enhancement/Rehab							

Comments: Section 1.-Very slow moving water.
Section 3.-No spawning area-silty bottom. This is a tidally influenced area.
Section 7.-Bottom very silty. No potential spawning gravel.

22. Investigators U.S.F.S. Date 6/10/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Log Jam Creek 2. ADF&G Catalog No. 106-30-53

Reach Number				3			
1. Section Number	8	9	10	11	12	13	14
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	358	26	41	18	12	23	8
4. Gradient	1	1	1	0	0	0	0
5. Water Quality							
6. Bank Type L/R	u/u	-/s	g/g	g/g	g/g	g/g	g/g
7. Bank Stability L/R	2/2	-/2	1/1	1/1	1/1	1/1	1/2
8. Bank Vegetation							
9. Debris Loading	50	80	60		70	60	60
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	5	3	8	16	17	26	29
12. Water Type %: SS							
DS				100			
SF							
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	5	5	5	0	5	5	5
15. Rearing Area %	50	60	90		99	99	99
16. Pool Cover %	5	20	20		2	2	2
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	3	3	-	-	-	-	-
21. Enhancement/Rehab							

Comments: Section 8-Potential debris barrier at low water
Section 9-log jam barrier
Section 11-whole area with wood debris on bottom. Sand and gravel mixed with chips.

22. Investigators U.S.F.S. Date 6/10/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Log Jam Creek 2. ADF&G Catalog No. 106-30-53

Reach Number		4				5		
1. Section Number		15	16	17	18	19	20	21
2. Section Length		50	50	50	50	50	50	50
3. Compass Bearing		40	26	26	25	29	42	42
4. Gradient		0	0	0	0	0	0	0
5. Water Quality								
6. Bank Type	L/R	g/g	g/g	g/g	g/g	g/s	g/g	g/g
7. Bank Stability	L/R	1/1	1/1	1/2	1/1	1/2	1/1	1/1
8. Bank Vegetation								
9. Debris Loading			40	35	35		5	5
10. Undercut Bank %								
11. Stream Width:								
Channel								
Water		30	45	40	32	29	29	17
12. Water Type %: SS						60		
DS		35				40		
SF		65						
DF								
13. Substrate %:								
Bedrock								
Boulder								
Large Cobble								
Small Cobble								
Gravel								
Sand								
Muck								
Other								
14. ASA % Quality			5	5	5	0	5	5
15. Rearing Area %			99	99	99		99	99
16. Pool Cover %			1	1	1		1	1
17. Riffle Cover %								
18. Fish Observed								
19. Sampling								
20. Potential Barriers		-	-	-	-	-	-	-
21. Enhancement/Rehab								

22. Investigators U.S.F.S. Date 6/10/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Log Jam Creek 2. ADF&G Catalog No. 106-30-53

Reach Number			6				7	
1. Section Number		22	23	24	25	26	27	28
2. Section Length		50	50	50	50	50	50	50
3. Compass Bearing		33	29	47	37	27	12	19
4. Gradient		0	0	0	0	0	0	0
5. Water Quality								
6. Bank Type	L/R	g/g	g/g	u/g	u/g	u/g	g/g	g/g
7. Bank Stability	L/R	1/1	1/1	2/1	2/1	2/1	3/1	2/1
8. Bank Vegetation								
9. Debris Loading		5		5	5	5		4
10. Undercut Bank %								
11. Stream Width:								
Channel								
Water		18	16.7	16	18	20	30	31
12. Water Type %:	SS		17				80	
	DS		83				15	
	SF						5	
	DF							
13. Substrate %:								
Bedrock								
Boulder								
Large Cobble								
Small Cobble								
Gravel								
Sand								
Muck								
Other								
14. ASA % Quality		5		10	10	90	80	80
15. Rearing Area %		99		99	10	1		95
16. Pool Cover %		1		1	5	50		2
17. Riffle Cover %								
18. Fish Observed								
19. Sampling								
20. Potential Barriers		-	-	-	-	-	-	-
21. Enhancement/Rehab								

Comments: Section 23-Bedrock close to surface, very little spawning ground-bottom predominately silt.
Section 27-area contains excellent potential spawning ground.

22. Investigators U.S.F.S. Date 6/10/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Log Jam Creek 2. ADF&G Catalog No. 106-30-53

Reach Number			8				9
1. Section Number	29	30	31	32	33	34	35
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	24	21	26	30	26	27	32
4. Gradient	0	0	0	0	0	0	0
5. Water Quality							
6. Bank Type							
7. Bank Stability L/R	u/g	g/g	g/g	g/g	g/s	g/s	g/g,s
8. Bank Vegetation L/R	2/1	2/2	2/2	3/3	3/3	2/-	2/-
9. Debris Loading	4	2		10	20	40	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	35	26	26	26	25	20	27
12. Water Type %: SS			80				16
DS			8				84
SF			8				
DF			4				
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	80	75	45	80	80	80	
15. Rearing Area %	90	90		85	90	95	
16. Pool Cover %	0	0		2	1	10	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	-
21. Enhancement/Rehab							

Comments: Sections 32 & 33 are bounded by clear cut area on right and have fallen trees in the water near the right bank.

22. Investigators U.S.F.S. Date 6/11/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Log Jam Creek 2. ADF&G Catalog No. 106-30-53

Reach Number				10			
1. Section Number	36	37	38	39	40	41	42
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	54	85		29	34	354	27
4. Gradient	0	0	0	0	0	0	0
5. Water Quality							
6. Bank Type L/R	u/g	u/g	u/g	g/g	g/g	g/g	s/u
7. Bank Stability L/R	2/1	2/1	2/1	1/1	1/1	1/1	2/3
8. Bank Vegetation							
9. Debris Loading	5	5	5		2	2	2
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	22	14	11	12.4	10	13	26
12. Water Type %: SS				80			
DS							
SF				20			
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	90	90	90	100	90	70	80
15. Rearing Area %	5	5	5		90	60	95
16. Pool Cover %	3	3	10		2	2	5
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	-
21. Enhancement/Rehab							

22. Investigators U.S.F.S. Date 6/11/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Log Jam Creek 2. ADF&G Catalog No. 106-30-53

Reach Number		11				12		
1. Section Number		43	44	45	46	47	48	49
2. Section Length		50	50	50	50	50	50	50
3. Compass Bearing		26	24	33	43	43	43	50
4. Gradient			0	0	0	0.5		
5. Water Quality								
6. Bank Type	L/R	u/q	q/q	q/q	q/q	q/q	q/q	q/q
7. Bank Stability	L/R	2/1	1/1	1/1	1/1	1/1	1/2	1/1
8. Bank Vegetation								
9. Debris Loading			3	3	3		3	3
10. Undercut Bank %								
11. Stream Width:								
Channel								
Water		18	17	18	17	15.5	18	16
12. Water Type %:	SS	100				55		
	DS					6		
	SF					39		
	DF							
13. Substrate %:								
Bedrock								
Boulder								
Large Cobble								
Small Cobble								
Gravel								
Sand								
Muck								
Other								
14. ASA % Quality		95	90	80	75		85	60
15. Rearing Area %			85	80	75		85	60
16. Pool Cover %			2	2	2		2	3
17. Riffle Cover %								
18. Fish Observed								
19. Sampling								
20. Potential Barriers			-	-	-		-	-
21. Enhancement/Rehab								

22. Investigators U.S.F.S. Date

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Log Jam Creek 2. ADF&G Catalog No. 106-30-53

Reach Number			13					
1. Section Number		50	51					
2. Section Length		50	50					
3. Compass Bearing		74	44					
4. Gradient		1	1					
5. Water Quality								
6. Bank Type	L/R	u.g/g	s/g					
7. Bank Stability	L/R	2/1	2/1					
8. Bank Vegetation								
9. Debris Loading		3						
10. Undercut Bank %								
11. Stream Width:								
Channel								
Water		17	21					
12. Water Type %: SS			15					
DS								
SF			85					
DF								
13. Substrate %:								
Bedrock								
Boulder								
Large Cobble								
Small Cobble								
Gravel								
Sand								
Muck								
Other								
14. ASA % Quality		75	97					
15. Rearing Area %		50						
16. Pool Cover %		10						
17. Riffle Cover %								
18. Fish Observed								
19. Sampling								
20. Potential Barriers		-	-					
21. Enhancement/Rehab								

22. Investigators U.S.F.S. Date

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas _____ 2. Section Length 50m. (.28 miles surveyed)
3. Historical Fish Species _____

Part II.

1. Stream Name Little Last Straw 2. ADF&G Catalog No. 106-30-56
3. Latitude _____ Longitude _____
4. Agency Unit _____ 5. Mgmt. Area _____ 6. USGS Map No. _____
7. Aerial Photo No. _____
8. Bay/Drainage Sweetwater Lake 9. Access _____
10. Present Land Use _____
11. Historical Land Use _____
12. Stream Origin _____ 13. Estimated Flow _____ 14. Flow Stage 3
15. Stream Temperature 58°C. 16. pH 6.2 17. Beaver _____
18. Temperature Sensitivity _____
19. Barrier no 20. Weather 2

Part III.

21. Intertidal

A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%
B. Gradient ____%
C. ASA _____
D. Schooling _____
E. Shellfish _____
F. Anchorage _____

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22. Comments: D.O. - 9 ppm
pH 6.2
Alkalinity 34 mg/l
Turbidity - 1
Dolly Varden and cutthroat trout were caught in traps

23. Investigators USFS V-Crew 24. Date 8/2/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Little Last Straw 2. ADF&G Catalog No. 106-30-56

Reach Number		I				I	
1. Section Number	1	2	3	4	5	6	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	87		42	10	67		
4. Gradient	1.5	2.0	1.7	1.0	1.3	5.0	
5. Water Quality							
6. Bank Type L/R	s/g		g/g	g/g	g/g	g,s/g,s	
7. Bank Stability L/R	1/1		1/1	1/1	1/1	1/1	
8. Bank Vegetation							
9. Debris Loading	5		20	18	30		
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	2.1	2.3	2.2	1.7	1.7	3.2	
12. Water Type %: SS							
DS							
SF							
DF							
13. Substrate %:							
Bedrock						23	
Boulder		6				15	
Large Cobble		77				43	
Small Cobble							
Gravel							
Sand-silt						5	
Muck							
Other		16				15	
14. ASA % Quality	5	2	5	10	20		
15. Rearing Area %							
16. Pool Cover %	5		25	25	40		
17. Riffle Cover %							
18. Fish Observed							
19. Sampling	y	n	n	n	n	y	
20. Potential Barriers	n	n	n	n	n	n	
21. Enhancement/Rehab							

22. Investigators USFS/V-Crew Date 8/2/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Little Last Straw 2. ADF&G Catalog No. 106-30-56

Reach Number							
1. Section Number	7	8	9	10	11	12	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	128	170	115	145			
4. Gradient	1.0	2.0	1.5	1.0	1.3	1.8	
5. Water Quality							
6. Bank Type L/R	g/g	g/g	g/g	g/g	g/g	s/g	
7. Bank Stability L/R	1/1	1/1	1/1	1/1	1/1	1/1	
8. Bank Vegetation							
9. Debris Loading	10	2	10	10	25	60	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	1.4	2.0	1.5	2.0	1.4	1.2	
12. Water Type %: SS							
DS							
SF							
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	20	15	20	10	10	5	
15. Rearing Area %							
16. Pool Cover %	35	30	10	20	20	50	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling	n	n	n	n	n	n	
20. Potential Barriers	n	n	n	n	n	n	
21. Enhancement/Rehab							

22. Investigators USFS V-Crew Date 8/2/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Little Last Straw 2. ADF&G Catalog No. 106-30-56

Reach Number							
1. Section Number	13	14	15				
2. Section Length	50	50	50				
3. Compass Bearing							
4. Gradient	3.0	1.0	1.2				
5. Water Quality							
6. Bank Type L/R	s/s	g/g	g/g				
7. Bank Stability L/R	1/1	1/1	1/1				
8. Bank Vegetation							
9. Debris Loading	70	80	80				
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	0.8	0.7	0.8				
12. Water Type %: SS							
DS							
SF							
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	3	2	2				
15. Rearing Area %							
16. Pool Cover %	95	85	85				
17. Riffle Cover %							
18. Fish Observed							
19. Sampling	n	n	n				
20. Potential Barriers							
21. Enhancement/Rehab							

Comments: Sections 13-15 In clearcut area

22. Investigators USFS/V-Crew Date 8/2/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas C 1-17 2. Section Length 50 m

3. Historical Fish Species _____

Part II.

1. Stream Name Tributary to Log Jam Creek ~~No See Um Creek (?)~~ 2. ADF&G Catalog No. ~~106-30-53~~

3. Latitude _____ Longitude _____

4. Agency Unit 05 5. Mgmt. Area _____ 6. USGS Map No. _____

7. Aerial Photo No. _____

8. Bay/Drainage _____ 9. Access 2

10. Present Land Use _____

11. Historical Land Use _____

12. Stream Origin 6,3 13. Estimated Flow _____ 14. Flow Stage 2

15. Stream Temperature 11°C 16. pH 6.5 17. Beaver 5

18. Temperature Sensitivity _____

19. Barrier Falls barrier in section 14 20. Weather _____

Part III.

21. Intertidal

A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%

B. Gradient ____%

C. ASA _____

D. Schooling _____

E. Shellfish _____

F. Anchorage _____

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22. Comments: ss, dv, ct and cottids observed and trapped. This is a tributary to Log Jam Creek. The best description places it intersecting Area B of Log Jam Creek, but its exact location cannot be determined.

23. Investigators U.S.F.S. 24. Date 6/20-6/21/80

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and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Tributary to Log Jam Creek No See Um Creek 2. ADF&G Catalog No. 106-30-53

Reach Number					1			
1. Section Number		1	2	3	4	5	6	7
2. Section Length		50	50	50	50	50	50	50
3. Compass Bearing		90	120	150	120	118	146	154'
4. Gradient		1	2	1	3.5	2	4	2
5. Water Quality								
6. Bank Type	L/R	g/u	u/u	g/u	u/g	g/u	g/u	g/u
7. Bank Stability	L/R	1/1	1/1	1/1	1/1	2/2	2/2	2/2
8. Bank Vegetation								
9. Debris Loading		30	20	20	16	50	20	50
10. Undercut Bank %					3			
11. Stream Width:								
Channel					8			
Water		4	6	3	2.5	2.4	1.8	2.4
12. Water Type %:	SS				32			
	DS							
	SF				68			
	DF							
13. Substrate %:								
Bedrock								
Boulder					4			
Large Cobble					7			
Small Cobble					56			
Gravel								
Sand					5			
Muck								
Other decaying matter					28			
14. ASA % Quality		20	13	8	7	18	8	8
15. Rearing Area %		70	80	70	32	80	10	40
16. Pool Cover %		80	60	70	44	90	80	60
17. Riffle Cover %								
18. Fish Observed								
19. Sampling								
20. Potential Barriers		-	-	-	-	-	-	-
21. Enhancement/Rehab								

Comments: Section 6 is under the edge of the road. Large dried up streambed just below Section 6 probably indicates a recent diversion of the stream source (caused by road building?)

22. Investigators U.S.F.S. Date 6/20/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Tributary to Log Jam Creek No See Um Creek 2. ADF&G Catalog No. 106-30-53

Reach Number		2					3	
1. Section Number		8	9	10	11	12	13	14
2. Section Length		50	50	50	50	50	50	50
3. Compass Bearing		338	132	120	100	156	328	150
4. Gradient		3.5	3	8	7	11	13.5	18
5. Water Quality								
6. Bank Type	L/R	g/g	g/g	s/s	s/s	s/s	s/s	s/s
7. Bank Stability	L/R	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation								
9. Debris Loading		10	5	5	5	5	6	10
10. Undercut Bank %		0						
11. Stream Width:								
Channel		6.3					6.8	
Water		4.2	2	2.2	2.4	2	3.4	2
12. Water Type %: SS		42					30	
DS		2					11	
SF		55					58	
DF		1					1	
13. Substrate %:								
Bedrock							7	
Boulder		22					48	
Large Cobble		22					20	
Small Cobble		54					23	
Gravel								
Sand								
Muck								
Other decaying veg. matter		2					2	
14. ASA % Quality		14	8	8	6	5	1	5
15. Rearing Area %		44	15	50	60	50	41	40
16. Pool Cover %		12	5	10	10	15	9	10
17. Riffle Cover %								
18. Fish Observed								
19. Sampling								
20. Potential Barriers		-	-	-	-	-	-	2
21. Enhancement/Rehab								

Comments: Section 14-steep falls (5-7 m high)

22. Investigators U.S.F.S. Date 6/20/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Tributary to Log Jam Creek No See Um Creek 2. ADF&G Catalog No. 106-30-53

Reach Number							
1. Section Number	15	16	17				
2. Section Length	50	50	30				
3. Compass Bearing	136	142	136				
4. Gradient	8	6	6				
5. Water Quality							
6. Bank Type L/R	s/s	s/s	s/s				
7. Bank Stability L/R	1/1	1/1	1/1				
8. Bank Vegetation							
9. Debris Loading	10	10	10				
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	1.2	1.4	1.2				
12. Water Type %: SS							
DS							
SF							
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	3	5	5				
15. Rearing Area %	50	50	40				
16. Pool Cover %	10	10	10				
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-				
21. Enhancement/Rehab							

22. Investigators U.S.F.S. Date 6/21/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas _____ 2. Section Length 50 m.

3. Historical Fish Species _____

Part II.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

3. Latitude _____ Longitude _____

4. Agency Unit 05 5. Mgmt. Area _____ 6. USGS Map No. _____

7. Aerial Photo No. _____

8. Bay/Drainage Sweetwater Lake 9. Access _____

10. Present Land Use _____

11. Historical Land Use _____

12. Stream Origin _____ 13. Estimated Flow _____ 14. Flow Stage 1

15. Stream Temperature 16° C. 16. pH 6.8 17. Beaver _____

18. Temperature Sensitivity _____

19. Barrier None 20. Weather 2

Part III.

21. Intertidal

A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%

B. Gradient ____%

C. ASA _____

D. Schooling _____

E. Shellfish _____

F. Anchorage _____

22. Comments: Adult RS observed. A fishway was proposed for this stream. Juvenile SS, CT & DV were caught throughout the survey area.
Turbidity - 1
Alkalinity - 1.0
D. O. - 9

23. Investigators USFS 24. Date 6/8,25/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number			I				I
1. Section Number	1	2	3	4	5	6	7
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	310	305		350	360	360	
4. Gradient	1	1	.5	1	.5	1	1
5. Water Quality							
6. Bank Type L/R	s/g	g/g	g/u	g/u	u/g	u/g	g/g
7. Bank Stability L/R	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation							
9. Debris Loading	5	1		15	5	4	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	22	17		14	16	25	
12. Water Type %: SS			70				59
DS			30				
SF							41
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble			71				93
Gravel							
Sand			10				4
Muck							
Other			19				3
14. ASA % Quality	10	80		2	30	5	
15. Rearing Area %							
16. Pool Cover %	10	5		40	5	3	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	-
21. Enhancement/Rehab							

22. Investigators USFS Date 6/8/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number					I		
1. Section Number	8	9	10	11	12	13	14
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	340	350	350	360		20	20
4. Gradient	.5	.5	1	1	1.5	1	1
5. Water Quality							
6. Bank Type L/R	g/u	g/s	g/u	g/g	g/g	u/u	u/u
7. Bank Stability L/R	1/1	1/2	1/1	1/1	2/1	2/1	1/1
8. Bank Vegetation							
9. Debris Loading				10		3	2
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	17	17	18	2		12	12
12. Water Type %: SS					14		
DS					18		
SF					68		
DF							
13. Substrate %:							
Bedrock							
Boulder					1		
Large Cobble					3		
Small Cobble					74		
Gravel							
Sand					12		
Muck							
Other					10 (3)		
14. ASA % Quality	10	5	60	20		15	5
15. Rearing Area %							
16. Pool Cover %	5	40		40		30	5
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	-
21. Enhancement/Rehab							

Comments: This is a side channel 125 m. long running along the right bank between A010 and A014

22. Investigators USFS Date 6/8/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number			I				I	
1. Section Number		15	16	17	18	19	20	21
2. Section Length		50	50	50	50	50	50	50
3. Compass Bearing		30		10	360	10		186
4. Gradient		2	2	.5	.5	.5	1	2
5. Water Quality								
6. Bank Type	L/R	u/u	u/g	g/u	g/u	s/u	g/s,u	g/s,u
7. Bank Stability	L/R	1/1	2/2	1/2	1/2	1/1	2/2	2/3
8. Bank Vegetation								
9. Debris Loading		5		35	50	20		2
10. Undercut Bank %								
11. Stream Width:								
Channel								
Water		10		20	20	20		18.3
12. Water Type %:	SS		11				70	
	DS		23				30	
	SF		35					
	DF		31					
13. Substrate %:								
Bedrock								
Boulder							1	
Large Cobble			6				4	
Small Cobble			77				60	
Gravel								
Sand			1				22	
Muck								
Other			16				14	
14. ASA % Quality		5		2.0	10	20		50
15. Rearing Area %								
16. Pool Cover %		10		40	20	2		1
17. Riffle Cover %								
18. Fish Observed								
19. Sampling								
20. Potential Barriers		-	-	-	-	-	-	-
21. Enhancement/Rehab								

22. Investigators USFS Date 6/8/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number			I				I
1. Section Number	22	23	24	25	26	27	28
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	172	115		314	14	343	
4. Gradient	2	2		4	2	2	
5. Water Quality							
6. Bank Type L/R	g/u	u/g	u/g	g/u	g/u,g	g,u/u	g/g
7. Bank Stability L/R	2/3	3/2	2/2	2/3	2/3	2/3	2/2
8. Bank Vegetation							
9. Debris Loading	8	5		2	5	2	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	23	18.5		9.7	16	28	
12. Water Type %: SS			4				48
DS			5				38
SF			89				14
DF			2				
13. Substrate %:							
Bedrock							
Boulder							4
Large Cobble							2
Small Cobble			77				86
Gravel							
Sand			2				4
Muck							
Other			21				5
14. ASA % Quality	20	45		95	95	95	
15. Rearing Area %							
16. Pool Cover %	5	5		3	3	2	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	-
21. Enhancement/Rehab							

22. Investigators USFS Date 6/8/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number				I			
1. Section Number	29	30	31	32	33	34	35
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	338	327	344		336	352	328
4. Gradient	2	2	2	1	2	2	2
5. Water Quality							
6. Bank Type L/R	g/u	u/u	s/g	g/g	s/g	u/u	g/g.u
7. Bank Stability L/R	2/2	2/2	2/2	2/2	2/2	2/2	2/2
8. Bank Vegetation							
9. Debris Loading	5	15	15		3	8	5
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	28	32	30		18	28	20
12. Water Type %: SS				25			
DS							
SF				75			
DF							
13. Substrate %:							
Bedrock							
Boulder				2			
Large Cobble				5			
Small Cobble				89			
Gravel							
Sand				2			
Muck							
Other				1			
14. ASA % Quality	95	90	95		75	85	70
15. Rearing Area %							
16. Pool Cover %	3	3	8		5	10	5
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	-
21. Enhancement/Rehab							

22. Investigators USFS Date 6/8/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number		I				I		
1. Section Number		36	37	38	39	40	41	42
2. Section Length		50	50	50	50	50	50	50
3. Compass Bearing			336	258	227		273	340
4. Gradient		2	3	2	2	2	2	2
5. Water Quality								
6. Bank Type	L/R	g/g	s/g	s/g	g/g	g/g	g/s	g/g
7. Bank Stability	L/R	2/2	2/1	2/2	2/2	2/2	1/2	2/2
8. Bank Vegetation								
9. Debris Loading			3	5	50		2	2
10. Undercut Bank %								
11. Stream Width:								
Channel								
Water			17	14	19		11	20
12. Water Type %:	SS	26				5		
	DS	2						
	SF	39				82		
	DF	33				13		
13. Substrate %:								
Bedrock								
Boulder		27				19		
Large Cobble		44				33		
Small Cobble		18				20		
Gravel								
Sand		2				2		
Muck								
Other	(4)	9				26		
14. ASA % Quality			85	70	10		10	80
15. Rearing Area %								
16. Pool Cover %			2	4	40		2	2
17. Riffle Cover %								
18. Fish Observed								
19. Sampling								
20. Potential Barriers		-	-	-	-	-	-	-
21. Enhancement/Rehab								

22. Investigators USFS Date 6/8/80

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and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number		I				I	
1. Section Number	42	44	45	46	47	48	49
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	326		356	352	360		351
4. Gradient	3	3	1	2	1	1	2
5. Water Quality							
6. Bank Type L/R	g/g	g/g	s,g/g	g/g	g/g	s/s	s/u
7. Bank Stability L/R	2/2	2/2	2/2	1/1	1/1	1/1	1/2
8. Bank Vegetation							
9. Debris Loading	2		2	2	2		2
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	29		20	24	26		32
12. Water Type %: SS						14	
DS						2	
SF						81	
DF						3	
13. Substrate %:							
Bedrock							
Boulder						11	
Large Cobble						35	
Small Cobble						51	
Gravel							
Sand						3	
Muck							
Other							
14. ASA % Quality	80		35	60	40		60
15. Rearing Area %							
16. Pool Cover %	2		5	2	5		2
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	-
21. Enhancement/Rehab							

22. Investigators USFS Date 6/8/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number			I				I
1. Section Number	50	51	52	53	54	55	56
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	316	312		332	332	332	
4. Gradient	1	2	1	1	1	2	1
5. Water Quality							
6. Bank Type L/R	g,s/s	s/u		s/s	s/s	s/s	s/s
7. Bank Stability L/R	1/1	2/2		1/1	1/1	1/1	2/1
8. Bank Vegetation							
9. Debris Loading	1	4		1	5	1	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	28	28		24	24	27	
12. Water Type %: SS			40				
DS							
SF			60				100
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	47	30	/3	7	5	5	/3
15. Rearing Area %							
16. Pool Cover %	2	1		1	1	1	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	-
21. Enhancement/Rehab							

22. Investigators USFS Date 6/25/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number					I			
1. Section Number		57	58	59	60	61	62	
2. Section Length		50	50	50	50	50	50	
3. Compass Bearing		344	329	352		333	348	
4. Gradient		1	1	1	1	2	2	
5. Water Quality								
6. Bank Type	L/R	s/g	s/g	s/g	g/g	g/g,u	g,u/g	
7. Bank Stability	L/R	2/1	2/1	2/2	2/2	2/2	2/1	
8. Bank Vegetation								
9. Debris Loading		1	4	1		1	1	
10. Undercut Bank %								
11. Stream Width:								
Channel								
Water		30	30	30		23	24	
12. Water Type %:	SS				34			
	DS							
	SF				66			
	DF							
13. Substrate %:								
Bedrock								
Boulder								
Large Cobble								
Small Cobble								
Gravel								
Sand								
Muck								
Other								
14. ASA % Quality		45	37	7	/4	2	5	
15. Rearing Area %								
16. Pool Cover %		1	1	1		2	0	
17. Riffle Cover %								
18. Fish Observed								
19. Sampling								
20. Potential Barriers		-	-	-	-	-	-	-
21. Enhancement/Rehab								

22. Investigators USFS Date 6/25/80

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and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number		I				I	
1. Section Number	63	64	65	66	67	68	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	325		332	336	344	326	
4. Gradient	2	4	1	2	1	2	
5. Water Quality							
6. Bank Type L/R	s/s	g/g	s/s	s/s	s/g	s/g	
7. Bank Stability L/R	2/1	2/1	2/2	2/2	2/2	1/2	
8. Bank Vegetation							
9. Debris Loading	8		5	2	4		
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	25		24	25	23		
12. Water Type %: SS						5	
DS						10	
SF		80				85	
DF		20					
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	3	/4	2	1	5	/4	
15. Rearing Area %							
16. Pool Cover %	5		10	3	2		
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	
21. Enhancement/Rehab							

Comments: Sections 61-63: Right bank is about 35% exposed bedrock

22. Investigators USFS Date 6/25/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number				I			
1. Section Number	69	70	71	72	73	74	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	332	325	312		333	334	
4. Gradient	3	2	3	2	1	1	
5. Water Quality							
6. Bank Type L/R	g/g	g/g	g/g	g/g	s/s	s/s	
7. Bank Stability L/R	1/1	1/1	1/1	1/1	2/2	2/2	
8. Bank Vegetation							
9. Debris Loading	5	1	0		8	4	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	13	13.5	15		22	25	
12. Water Type %: SS				18			
DS							
SF				82			
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	15	15	0	/4	0	5	
15. Rearing Area %							
16. Pool Cover %	20	0	0		8	5	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	
21. Enhancement/Rehab							

Comments: Section 73-Stream bottom is exposed bedrock

22. Investigators USFS Date 6/25/80

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LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number		I				I	
1. Section Number	75	76	77	78	79	80	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	005		326	272	245		
4. Gradient	2		5	5	5		
5. Water Quality							
6. Bank Type L/R	s/g	s/g,s	g/g	g/g	g/g	g/g	
7. Bank Stability L/R	1/2	2/2	1/1	1/1	1/1	1/1	
8. Bank Vegetation							
9. Debris Loading	1		5	5	5		
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	13		12	9	14		
12. Water Type %: SS						28	
DS							
SF		52				67	
DF		48				5	
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	0	/4				/4	
15. Rearing Area %							
16. Pool Cover %	2		0	30	0		
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	
21. Enhancement/Rehab							

Comments: Section 77-Fast water with 2' falls
Section 78-Fast water with braided falls 2' high
Section 79-Fast water with lots of jutting rocks and steep gradient

22. Investigators USFS Date 6/25/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number							
1. Section Number	81	82	83	84	85	86	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	320	278	104	105	122	125	
4. Gradient	3	4	4	4	4	6	
5. Water Quality							
6. Bank Type L/R	s/g	s/s	g/s	g/s	g/s	s/s	
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	
8. Bank Vegetation							
9. Debris Loading	1	3	10	2	2	1	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	11	13	11	11	10	10	
12. Water Type %: SS							
DS							
SF							
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	5	3	0	0	0	3	
15. Rearing Area %							
16. Pool Cover %	5	10	10	3	1	1	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	
21. Enhancement/Rehab							

Comments: Section 83-Beginning of waterfall area
Section 84-This section was originally intensive but due to the waterfall/high velocity area it was recorded as observational.
Section 85-Area of boulders and waterfall. Banks are boulders

22. Investigators USFS Date 6/25/80

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LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number							
1. Section Number	87	88	89	90	91	92	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	34	15	12	7	355	005	
4. Gradient	4	8	3	3	3	6	
5. Water Quality							
6. Bank Type L/R	s/s	s/s	s/s	g/s	s/s	s/s	
7. Bank Stability L/R	1/1	1/1	1/1	1/1	1/1	1/1	
8. Bank Vegetation							
9. Debris Loading	1	1	1	1	1	2	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	9	8	10	10	8	7	
12. Water Type %: SS							
DS							
SF							
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	2	0	1	1	0	0	
15. Rearing Area %							
16. Pool Cover %	5	3	2	1	2	5	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	-
21. Enhancement/Rehab							

Comments: Section 88-6' waterfall (sockeye and Dolly Varden jumping falls here)
Section 93-potential barrier , large falls

22. Investigators USFS Date 6/25/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number			I				
1. Section Number	93	94	95	96	97	98	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	54	56	242	222	238	255	
4. Gradient	17	1	1	1	1	1	
5. Water Quality							
6. Bank Type L/R	s/g	u/u	g/u	g/u	g/u	g/u	
7. Bank Stability L/R	1/2	3/3	2/3	2/2	2/2	2/2	
8. Bank Vegetation							
9. Debris Loading	2	8		10	1	1	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	34	30		17	22	23	
12. Water Type %: SS			63				
DS			37				
SF							
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	25	75	/1	95	95	95	
15. Rearing Area %							
16. Pool Cover %	5	10		5	25	5	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	2	-	-	-	-	-	
21. Enhancement/Rehab							

Comments: Section 93-Large falls

22. Investigators USFS Date 6/25/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number	I				I		
1. Section Number	99	100	101	102	103	104	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	250	240	228	234	328	333	
4. Gradient	1	1	2	1	1	1	
5. Water Quality							
6. Bank Type L/R	u/s	g/g	g/s	s/s	u/u	g/g	
7. Bank Stability L/R	2/2	1/1	1/1	1/1	3/3	1/1	
8. Bank Vegetation							
9. Debris Loading		8	10	10		1	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water		30	15	20		26	
12. Water Type %: SS	78				43		
DS	22						
SF					32		
DF					25		
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	/1	50	30	75	/2	90	
15. Rearing Area %							
16. Pool Cover %		10	5	10		1	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	
21. Enhancement/Rehab							

Comments: Section 102-Stream takes a 90° turn before the Intensive site

22. Investigators USFS Date 6/25/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number			I				
1. Section Number	105	106	107	108	109	110	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	341	344		02	318	334	
4. Gradient	1	1	1	1	1	1	
5. Water Quality							
6. Bank Type L/R	g/g,s	g/g	g/g	g/g	u/g	g/g	
7. Bank Stability L/R	1/1	1/1	1/1	2/2	3/2	2/2	
8. Bank Vegetation							
9. Debris Loading	1	1		3	8	5	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	23	22		11	15	27	
12. Water Type %: SS			24				
DS							
SF			76				
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	95	95	/2	40	85	80	
15. Rearing Area %							
16. Pool Cover %				25	7	2	
17. Riffle Cover %	1	10					
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	
21. Enhancement/Rehab							

22. Investigators USFS Date 6/25/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number	I				I		
1. Section Number	111	112	113	114	115	116	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	335	355	23	5		336	
4. Gradient	1	1	1	1		1	
5. Water Quality							
6. Bank Type L/R	g/s	g/g,s	g,s/g	g/g	g/g	s/s	
7. Bank Stability L/R	2/3	1/1	1/1	1/1	1/1	2/2	
8. Bank Vegetation							
9. Debris Loading		2	5	2		3	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water		17	20	18		25	
12. Water Type %: SS	40				36		
DS							
SF	55				64		
DF	5						
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	/3	20	30	30	/2	60	
15. Rearing Area %							
16. Pool Cover %		2	10	1		15	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-		-	
21. Enhancement/Rehab							

Comments: Section 114-Stream makes a 90° bend at the beginning of the section

22. Investigators USFS Date 6/25/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number			I				
1. Section Number	117	118	119	120	121	122	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	332	326	334	324	326	338	
4. Gradient	2	1	1	1	1	1	
5. Water Quality							
6. Bank Type L/R	s/s	s/s	g/s	g/g	g/g	g/g	
7. Bank Stability L/R	2/2	2/2	2/2	1/1	1/1	1/1	
8. Bank Vegetation							
9. Debris Loading	1	1		1	5	1	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	27	28		26	25	19	
12. Water Type %: SS			19				
DS							
SF			81				
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	40	50	/3	70	15	5	
15. Rearing Area %							
16. Pool Cover %	10	5		2	2	2	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	
21. Enhancement/Rehab							

22. Investigators USFS Date 6/25/80

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LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number	I				I		
1. Section Number	123	124	125	126	127	128	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing		334	334	324	327	302	
4. Gradient	1	1	1	1	1	1	
5. Water Quality							
6. Bank Type L/R	g/g	s/g	g/g	s/g	s/g	g/g	
7. Bank Stability L/R	1/1	1/2	2/2	2/2	2/2	1/1	
8. Bank Vegetation							
9. Debris Loading		5	5	10		2	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water		26	27	27		15.5	
12. Water Type %: SS	29				17		
DS							
SF	71				83		
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	/4	20	15	10	/4	5	
15. Rearing Area %							
16. Pool Cover %		10	7	15		40	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	
21. Enhancement/Rehab							

Comments: Section 127-Slide on left bank. Thin soil

22. Investigators USFS Date 6/25/80

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LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number			I				
1. Section Number	129	130	131	132	133	134	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	303	306		350	306	298	
4. Gradient	1	1		2	2	2	
5. Water Quality							
6. Bank Type L/R	g/g	g.u/g.s	g/g	s/g	u/g	g/s	
7. Bank Stability L/R	1/1	1/1	1/1	2/2	2/2	2/2	
8. Bank Vegetation							
9. Debris Loading	5	12		15	20	15	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	21	24		22	25	-	
12. Water Type %: SS			53				
DS							
SF			47				
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	15	10	/4	42	78	24	
15. Rearing Area %							
16. Pool Cover %	10	20		20	20	40	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	
21. Enhancement/Rehab							

22. Investigators USFS Date 6/25/80

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LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number	I				I		
1. Section Number	135	136	137	138	139	140	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	318	332	332	332	328	322	
4. Gradient	2	1	0	0	0	.5	
5. Water Quality							
6. Bank Type L/R	s/g	g/s	s/s	s/s	s/s	s/s	
7. Bank Stability L/R	2/2	2/2	2/2	2/2	2/2	2/2	
8. Bank Vegetation							
9. Debris Loading		15	20	15		1	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water		31	29	29		31	
12. Water Type %: SS	39				6		
DS					94		
SF	61						
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	/4	10	3	1	/4	0	
15. Rearing Area %							
16. Pool Cover %		25	5	5		10	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	
21. Enhancement/Rehab							

Comments: Section 139-Water is too deep to wade across -silt bottom with no ASA

22. Investigators USFS Date 6/25/80

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and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number			I				
1. Section Number	141	142	143	144	145	146	
2. Section Length	50	50	50	50	50	50	
3. Compass Bearing	41	30		348	015	017	
4. Gradient	2	1		2	2	2	
5. Water Quality							
6. Bank Type l/R	g,s/g,s	g/g,u	s/s	g/g	s/g	s/s	
7. Bank Stability l/R	2/2	1/2	2/2	2/2	2/2	2/2	
8. Bank Vegetation							
9. Debris Loading	1	5		20	10	22	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	40	20		24	25	27	
12. Water Type %: SS			41				
DS			59				
SF							
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	5	0	poor	65	45	20	
15. Rearing Area %							
16. Pool Cover %	2	5		15	25	20	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	
21. Enhancement/Rehab							

Comments: Section 142-Mostly bedrock substrate
Sections 144-146-Water too deep to wade.

22. Investigators USFS Date 6/25/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Hatchery Creek 2. ADF&G Catalog No. 106-30-51

Reach Number	I						
1. Section Number	147	148	149				
2. Section Length	50	50	50				
3. Compass Bearing	10	17	18				
4. Gradient	2						
5. Water Quality							
6. Bank Type L/R	g/g	s/s	s/s				
7. Bank Stability L/R	2/2	2/2	2/2				
8. Bank Vegetation							
9. Debris Loading		20	20				
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water		30	33				
12. Water Type %: SS							
DS	100						
SF							
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	0/4	0	0				
15. Rearing Area %							
16. Pool Cover %		5	5				
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers		-	-				
21. Enhancement/Rehab							

Comments: Section 149-Hatchery Lake begins here. End of Survey

22. Investigators USFS Date 6/25/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 1-37, B 1-16 2. Section Length 50 m.
3. Historical Fish Species _____

Part II.

1. Stream Name Sweetwater-Cabin Stream 2. ADF&G Catalog No. 106-30-46
3. Latitude _____ Longitude _____
4. Agency Unit 05 5. Mgmt. Area _____ 6. USGS Map No. _____
7. Aerial Photo No. _____
8. Bay/Drainage _____ 9. Access _____
10. Present Land Use _____
11. Historical Land Use _____
12. Stream Origin _____ 13. Estimated Flow _____ 14. Flow Stage 1
15. Stream Temperature 10° C 16. pH 6.4 17. Beaver 5
18. Temperature Sensitivity _____
19. Barrier many potential log barriers 20. Weather 2

Part III.

21. Intertidal

A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%
B. Gradient ____%
C. ASA _____
D. Schooling _____
E. Shellfish _____
F. Anchorage _____

---

22. Comments: SS, CT, DV observed

23. Investigators USFS 24. Date 5/30-6/10/80

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LEVEL TWO HABITAT SURVEY

Part IV.

Area A

1. Stream Name Sweetwater Cabin Stream 2. ADF&G Catalog No. 106-30-46

Reach Number			I				2
1. Section Number	1	2	3	4	5	6	7
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	348	3	2	300	310	315	314
4. Gradient	2	3	6	10	9	7	3
5. Water Quality							
6. Bank Type L/R	g/u	g/g	u/g	g/g	g/g	g/g	
7. Bank Stability L/R	1/1	1/1	1/1	1/1	2/2	2/2	
8. Bank Vegetation							
9. Debris Loading	2	35		30	15	30	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	2	2		2.7	1.5	2.3	
12. Water Type %: SS			6				45
DS							17
SF			94				38
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	40	20	100	45	80	50	
15. Rearing Area %	60	75		70	80	75	
16. Pool Cover %	40	30		20	40	55	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	3		3	3	3	
21. Enhancement/Rehab							

Comments: Section 1-Stream braided. A large amount of gravel is built up at the stream mouth. Spawning gravel present but not under moving water so assigned a low ASA%.
Sections 4-6-Debris in stream forms many very low falls, potential log barriers.

22. Investigators USFS Date 5/30-6/10/80

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LEVEL TWO HABITAT SURVEY

Part IV.

Area A

1. Stream Name Sweetwater Cabin Stream 2. ADF&G Catalog No. 106-30-46

Reach Number				3			
1. Section Number	8	9	10	11	12	13	14
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	320	300	295		336	336	25
4. Gradient	5	3	3	1	6	5	5
5. Water Quality							
6. Bank Type L/R	g/s	u/g	g/g		g/g	g/s	g/g
7. Bank Stability L/R	1/1	1/1	1/1		1/1	2/1	1/1
8. Bank Vegetation							
9. Debris Loading	15	1	2		25	30	15
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	2.2	2.5			2	1.5	1.5
12. Water Type %: SS				23			
DS							
SF				77			
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	20	10	5		70	60	40
15. Rearing Area %	30	50	15		30	15	30
16. Pool Cover %	20	10	10		50	50	10
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-		3	3	3
21. Enhancement/Rehab							

Comments: Section 13- intersects road
Section 14- clear cut on right side.
Section 12- log may be barrier in low water, possible log barrier in sections 13, 14

22. Investigators USFS Date 5/30-6/10/80

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LEVEL TWO HABITAT SURVEY

Part IV. Area A

1. Stream Name Sweetwater Cabin Stream 2. ADF&G Catalog No. 106-30-46

Reach Number		4				5		
1. Section Number		15	16	17	18	19	20	21
2. Section Length		50	50	50	50	50	50	50
3. Compass Bearing		20	9	321	302	292	264	308
4. Gradient		7	3	2	7	6	6	4
5. Water Quality								
6. Bank Type	L/R	g/g	u,g/g	g/g	g/g		g/g	u,g/g
7. Bank Stability	L/R	1/1	2/1	2/1	2/2		1/1	2/1
8. Bank Vegetation								
9. Debris Loading			5	10	25		15	10
10. Undercut Bank %								
11. Stream Width:								
Channel								
Water			1.3	1.2	1.7		1.1	0.9
12. Water Type %:	SS	39				37		
	DS							
	SF	61				63		
	DF							
13. Substrate %:								
Bedrock								
Boulder								
Large Cobble								
Small Cobble								
Gravel								
Sand								
Muck								
Other								
14. ASA % Quality			20	35	50			
15. Rearing Area %			25	15	15		25	10
16. Pool Cover %			20	30	50		30	15
17. Riffle Cover %								
18. Fish Observed								
19. Sampling								
20. Potential Barriers		3,6	-	-	3	-	-	-
21. Enhancement/Rehab								

Comments: Section 17- Entering V-notch
Section 18- Fry and adult log barrier

22. Investigators USFS Date 5/30-6/10/80

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LEVEL TWO HABITAT SURVEY

Part IV.

Area A

1. Stream Name Sweetwater Cabin Stream 2. ADF&G Catalog No. 106-30-46

Reach Number		6				7	
1. Section Number	22	23	24	25	26	27	28
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	326	326	346	308	322	334	330
4. Gradient	4	6	4	7	6	6	3
5. Water Quality							
6. Bank Type L/R	g/g	g/g	u,g/g	g/g	g/g		g/g
7. Bank Stability L/R	1/1	1/1	1/1	1/1	1/1		1/1
8. Bank Vegetation							
9. Debris Loading	5		5	10	5		25
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	1.1		1.1	0.8			0.4
12. Water Type %: SS		14				71	
DS							
SF		86				29	
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	20		15	5	5		5
15. Rearing Area %	10		20	35	60		50
16. Pool Cover %	5		13	10	10		50
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	2	-	-	3	3	6	3
21. Enhancement/Rehab							

Comments: Section 25- Stream disappears completely into rock and trees. Potential barrier of wood slash and rocks to adults and fry.
Section 28- Stream disappears for 30 m.

22. Investigators USFS Date 5/30-6/10/80

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LEVEL TWO HABITAT SURVEY

Part IV. Area A

1. Stream Name Sweetwater Cabin Stream 2. ADF&G Catalog No. 106-30-46

Reach Number			8				9
1. Section Number	29	30	31	32	33	34	35
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	314	298	32	278	336	302	340
4. Gradient	4	8	19	14	11	12	12
5. Water Quality							
6. Bank Type L/R	g/g	g/g		g/g	u/g	g/g	
7. Bank Stability L/R	1/1	1/1		1/1	2/1	1/1	
8. Bank Vegetation							
9. Debris Loading	5	5		10	5	15	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	0.8	1.2		1	0.8	1.2	
12. Water Type %: SS			31				39
DS							
SF			69				61
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	15	10		5	5	5	0
15. Rearing Area %	20	10		35	5	30	
16. Pool Cover %	25	5		10	5	5	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	6	3	3	3	6
21. Enhancement/Rehab							

Comments: Sections 32-34- Log barriers.

22. Investigators USFS Date 5/30-6/10/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

Area A

1. Stream Name Sweetwater Cabin Stream 2. ADF&G Catalog No. 106-30-46

Reach Number								
1. Section Number		36	37					
2. Section Length		50	50					
3. Compass Bearing		274	288					
4. Gradient		23	25					
5. Water Quality								
6. Bank Type	L/R	g/u	u/u					
7. Bank Stability	L/R	1/2	2/2					
8. Bank Vegetation								
9. Debris Loading		5	10					
10. Undercut Bank %								
11. Stream Width:								
Channel								
Water		1.2	1.5					
12. Water Type %:	SS							
	DS							
	SF							
	DF							
13. Substrate %:								
Bedrock								
Boulder								
Large Cobble								
Small Cobble								
Gravel								
Sand								
Muck								
Other								
14. ASA % Quality		5	5					
15. Rearing Area %		25	15					
16. Pool Cover %		5	15					
17. Riffle Cover %								
18. Fish Observed								
19. Sampling								
20. Potential Barriers		3	3					
21. Enhancement/Rehab								

Comments: Sections 36 and 37- Debris and log barriers present

22. Investigators USFS Date 5/30-6/10/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

Area B

1. Stream Name Sweetwater Cabin Stream 2. ADF&G Catalog No. 106-30-46

Reach Number			1				2
1. Section Number	1	2	3	4	5	6	7
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	355	316		310	336	336	356
4. Gradient	3	3	5	4	5	6	7
5. Water Quality							
6. Bank Type L/R	g/g	g/u,g	g/g	g/g	u,g/u,g	u,g/u,g	
7. Bank Stability	1/1	1/1	1/1	1/1	2/2	2/2	
8. Bank Vegetation							
9. Debris Loading	5	10		10	30	10	
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	1.2	0.8		1.2	0.5	0.5	
12. Water Type %: SS							
DS							
SF							
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	25	25		30	20	20	
15. Rearing Area %	10	10		15	40	40	
16. Pool Cover %							
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-		3	3	3	
21. Enhancement/Rehab							

Comments: H_2O-10°C. pH-6.3

22. Investigators USFS Date 6/8/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV. Area B

1. Stream Name Sweetwater Cabin Stream 2. ADF&G Catalog No. 106-30-46

Reach Number					3			
1. Section Number		8	9	10	11	12	13	14
2. Section Length		50	50	50	50	50	50	50
3. Compass Bearing		336	316	22	18	356	342	340
4. Gradient		8	6	12	12	17	16	14
5. Water Quality								
6. Bank Type	L/R	g/g	u/g	u,g/u		g/g	u,s/u,s	u/u
7. Bank Stability	L/R	1/1	2/1	2/2		3/3	1/1	2/2
8. Bank Vegetation								
9. Debris Loading		40	30	25		30	10	5
10. Undercut Bank %								
11. Stream Width:								
Channel								
Water		0.7	1	0.5		0.5	.8	.8
12. Water Type %: SS								
DS								
SF								
DF								
13. Substrate %:								
Bedrock								
Boulder								
Large Cobble								
Small Cobble								
Gravel								
Sand								
Muck								
Other								
14. ASA % Quality		25	20	5	0	5	5	5
15. Rearing Area %		50	35	30		25	40	40
16. Pool Cover %		30	30	25		20	20	15
17. Riffle Cover %								
18. Fish Observed								
19. Sampling								
20. Potential Barriers		3	-	3		3	-	-
21. Enhancement/Rehab								

22. Investigators USFS Date 6/8/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Sweetwater Cabin Stream Area B 2. ADF&G Catalog No. 106-30-46

Reach Number	4						
1. Section Number	15	16					
2. Section Length	50	50					
3. Compass Bearing		340					
4. Gradient	8	10					
5. Water Quality							
6. Bank Type L/R		u/u					
7. Bank Stability L/R		2/2					
8. Bank Vegetation							
9. Debris Loading		10					
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water		1.4					
12. Water Type %: SS							
DS							
SF							
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality		5					
15. Rearing Area %		40					
16. Pool Cover %		15					
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-					
21. Enhancement/Rehab							

22. Investigators USFS Date 6/8/80

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100 m

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name none 2. ADF&G Catalog No. 106-30-44

3. Latitude 55°55'40" Longitude 132°57'25"

4. Agency Unit 05 5. Mgmt. Area 573 K 6. USGS Map No. Craig D-3

7. Aerial Photo No. 8-26-79 12 30 610050 479-96

8. Bay/Drainage Sweetwater Lake 9. Access 2

10. Present Land Use road crossing

11. Historical Land Use logged 5-10 years ago

12. Stream Origin 5 13. Estimated Flow 3 cfs 14. Flow Stage 2

15. Stream Temperature 15°C 16. pH 7.0 17. Beaver none

18. Temperature Sensitivity yes; small stream, western exposure

19. Barrier none surveyed 20. Weather 6

Part III.

21. Intertidal

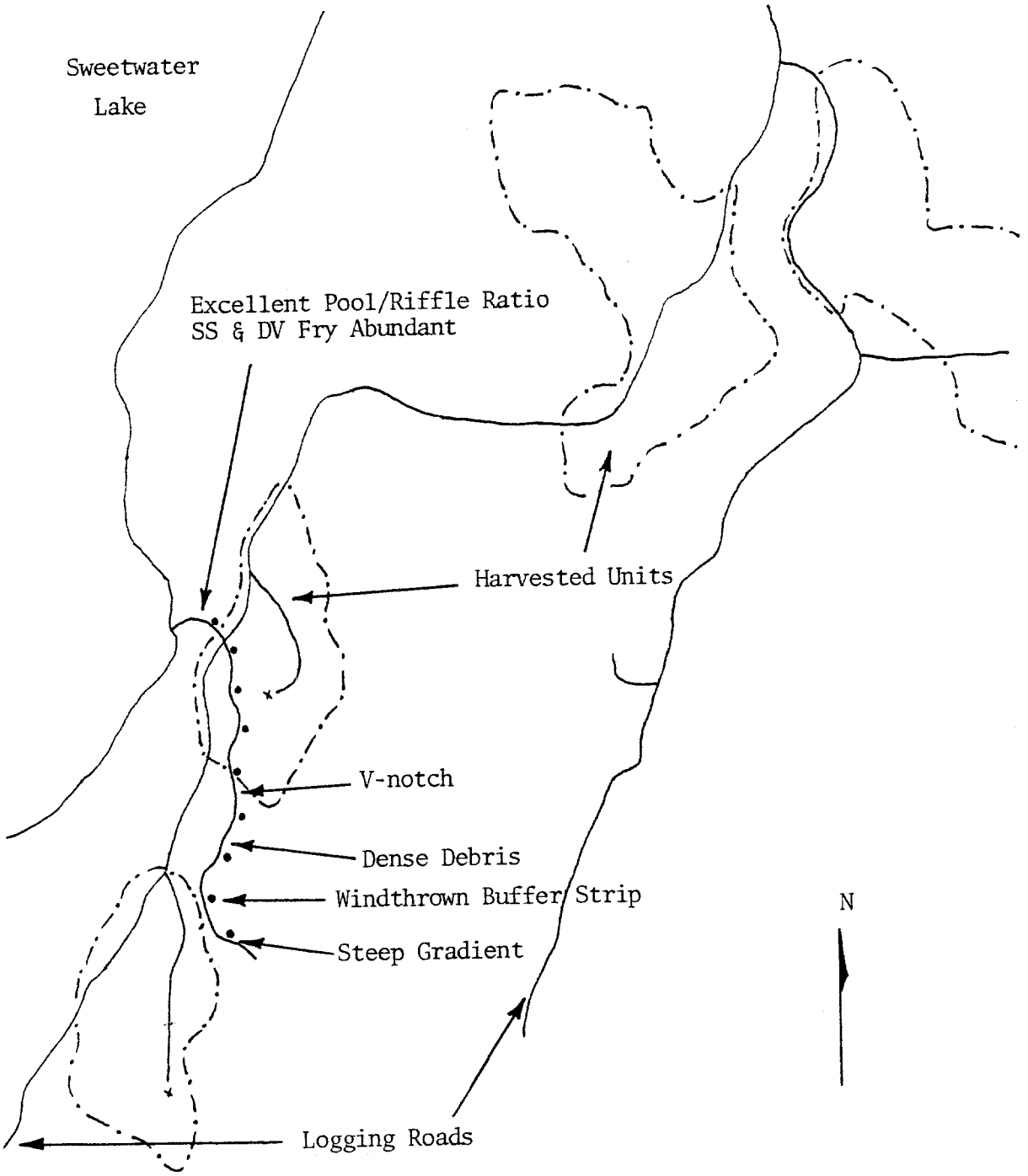
A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%
B. Gradient ____%
C. ASA % ____
D. Schooling ____
E. Shellfish ____
F. Anchorage ____

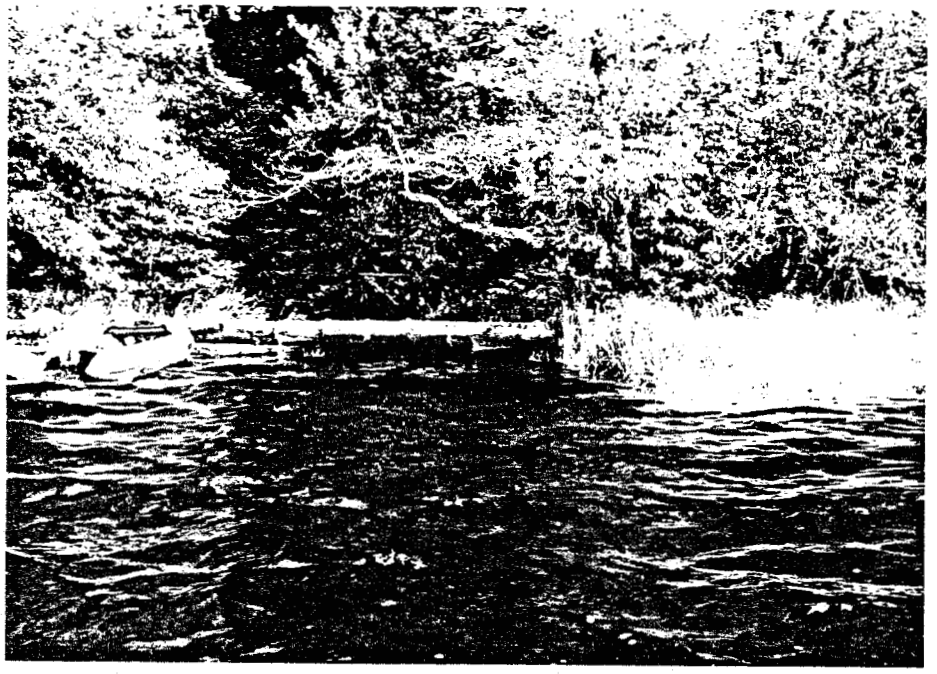
22. Comments Stream Evaluation

This stream enters a cutting unit 75 meters upstream from the lake. The following 400 meters of stream was logged along both banks. The stream flows through an old growth fringe beginning in Section 6. Gradient soon becomes steeper as the stream enters a V-notch. Windthrow causes channel diversion and instability in the latter sections. Overall the stream provides good to excellent spawning and rearing habitat.

23. Investigators Randy Ericksen 24. Date 8/11/83

106-30-44


Sweetwater
Lake
Excellent Pool/Riffle Ratio
SS & DV Fry Abundant
Harvested Units
V-notch
Dense Debris
Windthrown Buffer Strip
Steep Gradient
N
Logging Roads



1. The creek mouth taken from Sweetwater Lake.

2. Section 1: Flows through a fringe of old growth timber. Excellent ASA and rearing habitat.

3. The stream flows through a cutting unit beginning in Section 2. ASA is excellent but rearing habitat is poor.

4. Rearing habitat improves in Section 5 with an increase in debris loading.

5. The stream enters the old growth forest in Section 6. Good ASA and rearing habitat.

6. Section 9: A narrow buffer strip has allowed windthrow to enter the stream channel.

106-30-44

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	74	2.7	20	40					
2	100	2.8	70	196					
3	100	1.5	45	67.5					
4	100	1.2	15	18					
5	100	2.1	5	10.5					
6	100	2.1	10	21					
7	100	2.1	5	10.5					
8	100	2.3	--	--					
9	70	2.2	--	--					
Total				$363.5m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name n/a 2. ADF&G Catalog No. 106-30-44

Reach Number	1	2	2	2	2	3	3
1. Section Number	1	2	3	4	5	6	7
2. Section Length	74	100	100	100	100	100	100
3. Compass Bearing	120	165	200	200	170	200	260
4. Gradient	1.0	3.0	2.5	2.5	2.5	3.0	3.5
5. Water Quality	3	3	3	3	3	3	3
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1/1	2/3	1/1	1/1	2/3	1/1	1/1
8. Bank Vegetation	1-5	3-5	2-5	2-5	2-5	1,3-5	1,3-5
9. Debris Loading	10	2	5	7	7	10	40
10. Undercut Bank Length	100	--	20	20	20	40	50
11. Stream Width:							
Channel	4.1	3.3	1.8	1.2	2.4	3.2	2.1
Water	2.7	2.8	1.5	1.2	2.1	2.1	2.1
12. Water Type %: SS	40	10	30	40	50	40	40
DS	10	--	--	5	5	5	5
SF	45	90	70	55	45	55	55
DF	5	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	2	--	--	--	--
Boulder	--	--	2	--	--	2	--
Large Cobble	2	5	4	5	5	3	5
Small Cobble	8	15	17	15	15	20	20
Gravel	50	70	60	65	60	60	65
Sand	15	10	15	15	20	15	10
Muck	5	--	--	--	--	--	--
Other	20/c	--	--	--	--	--	--
14. ASA %/Quality	20/2	70/2	45/3	15/3	5/3	10/3	5/3
15. Rearing Area %	40	3	10	15	15	15	20
16. Pool Cover %	30	--	3	4	4	10	50
17. Riffle Cover %	10	2	10	10	10	10	30
18. Fish Observed	CT	CT	CT	CT	CT	CT	CT
	SS	SS	SS	SS	SS	SS	SS
	DV						
19. Sampling	Y	N	Y	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: Flows through old growth fringe of timber. Excellent pool/riffle ratio. DV & SS fry are abundant.

Section 2: Enters cutting unit logged along both banks and flows through a road culvert at 78 m. Predominantly riffle.

Section 3: Riparian vegetation is dense. Increase in substrate fines.

Section 4: Increase in pool formation. Several root wads slid into the streambed causing moderate erosion of banks.

22. Investigators Randy Ericksen Date 8/11/83

LEVEL TWO HABITAT SURVEY

Section 5: Runs parallel to road at 70 meters. End section at the cutting unit edge.

Section 6: Enter old growth forest. Water temperature, 13.0°C. Stream flows through a V-notch.

Section 7: Dense debris sometimes providing total channel cover.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name n/a 2. ADF&G Catalog No. 106-30-44

Reach Number	3	3					
1. Section Number	8	9					
2. Section Length	100	70					
3. Compass Bearing	130	140					
4. Gradient	4.5	5.5					
5. Water Quality	3	3					
6. Bank Type	B	B					
7. Bank Stability	2/1	1/1					
8. Bank Vegetation	1-5	1-5					
9. Debris Loading	30	60					
10. Undercut Bank Length	--	--					
11. Stream Width:							
Channel	2.3	2.4					
Water	2.3	2.2					
12. Water Type %: SS	40	40					
DS	--	10					
SF	60	50					
DF	--	--					
13. Substrate %:							
Bedrock	--	--					
Boulder	--	5					
Large Cobble	5	15					
Small Cobble	25	25					
Gravel	55	30					
Sand	15	25					
Muck	--	--					
Other	--	--					
14. ASA %/Quality	--	--					
15. Rearing Area %	10	3					
16. Pool Cover %	30	20					
17. Riffle Cover %	30	20					
18. Fish Observed	SS						
19. Sampling	N	N					
20. Potential Barriers	Y	N					
21. Enhancement/Rehab	N	N					

Section 8: Continue dense debris. Enters cascade area. Runs parallel to cutting unit at 60 m. Blowdown diverts stream channel at 68 m.

Section 9: Increased gradient; bad blowdown. Survey terminated due to lack of fish habitat.

22. Investigators Randy Ericksen Date 8/11/83

FISH SAMPLING FORM

Stream Name n/a ADF&G Catalog No. 106-30-44 Date 8/11/83

Identify Survey Area A Water Temp. 15.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1410	1605	CT - 2 SS - 2		Section 1
2	1440	1600	--		Section 3

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100 m

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name n/a 2. ADF&G Catalog No. 106-30-42
3. Latitude 55°57'57" Longitude 132°55'33"
4. Agency Unit 05 5. Mgmt. Area 573 K 6. USGS Map No. Craig D-3
7. Aerial Photo No. 79-39-479-96/97
8. Bay/Drainage Sweetwater Lake 9. Access 1
10. Present Land Use Logging road crosses upper watershed, 900 m above lake.
11. Historical Land Use none
12. Stream Origin 3, 4, 5, 6 13. Estimated Flow 2 cfs 14. Flow Stage 2
15. Stream Temperature 13.5C 16. pH 6.3 17. Beaver
18. Temperature Sensitivity yes; low flow and beaver impounded headwaters
19. Barrier no 20. Weather 2

Part III.

21. Intertidal n/a

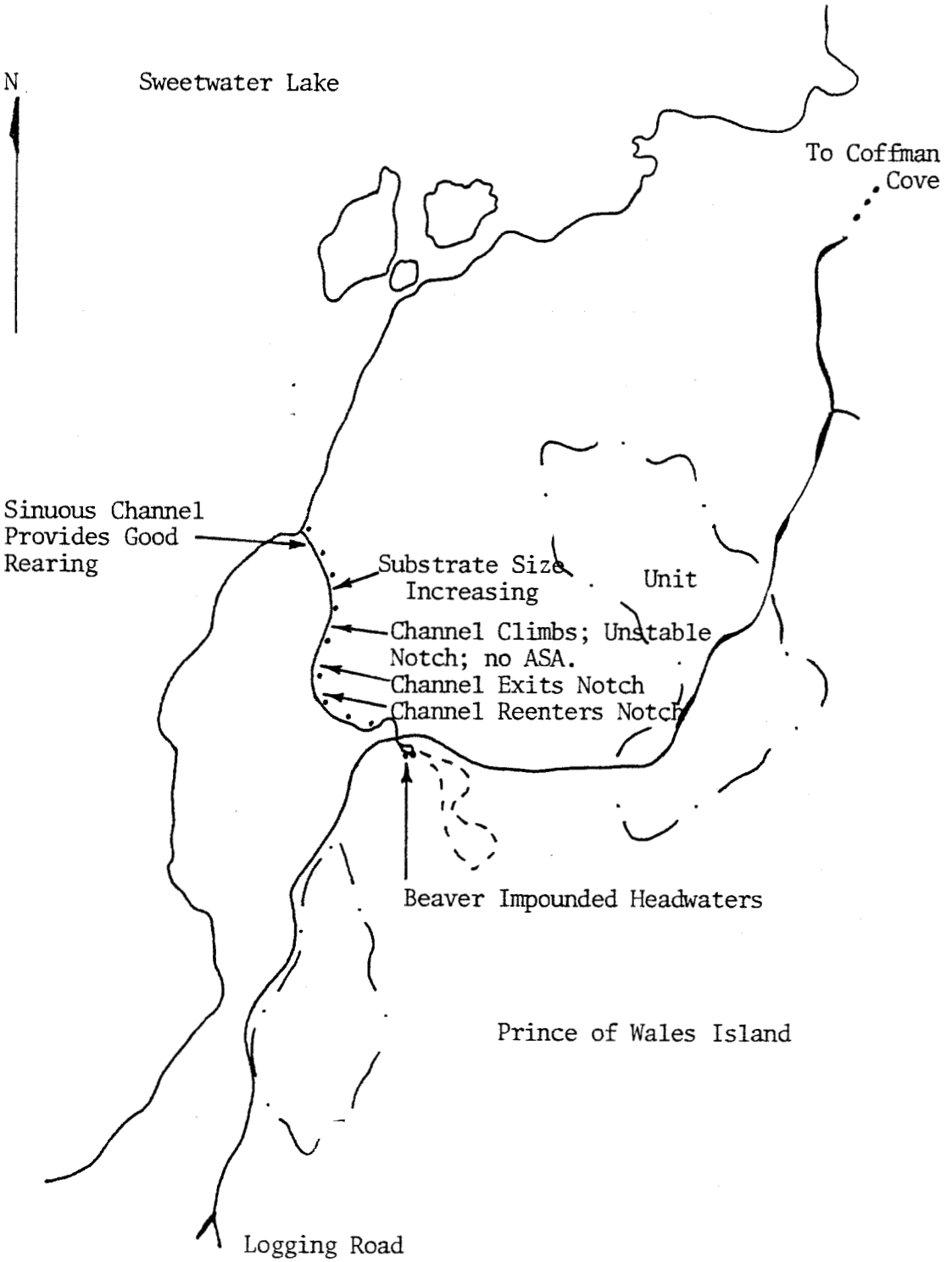
A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%
B. Gradient ____%
C. ASA %
D. Schooling
E. Shellfish
F. Anchorage

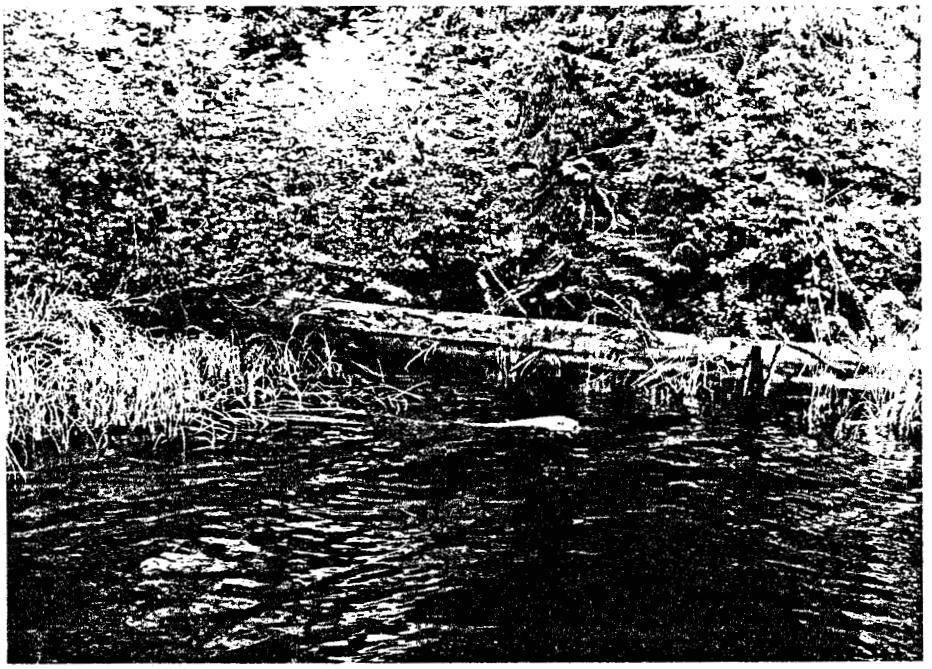
22. Comments Stream Evaluation

This small, dark, sinuous stream provides limited spawning but good rearing habitat through Reach 1. The channel negotiates a series of V-notches in Reach 2, providing no ASA and marginal rearing limited to debris/boulder pools. Moderate-dense debris loading was noted throughout the survey while localized side slope failures were common in the steeper portions of Reach 2. Mainline logging road crosses stream via a metal culvert, approximately 900 m above the ITZ. No fish were observed and no rehabilitation or enhancement recommended.

23. Investigators Ted Mickowski 24. Date 8/11/83

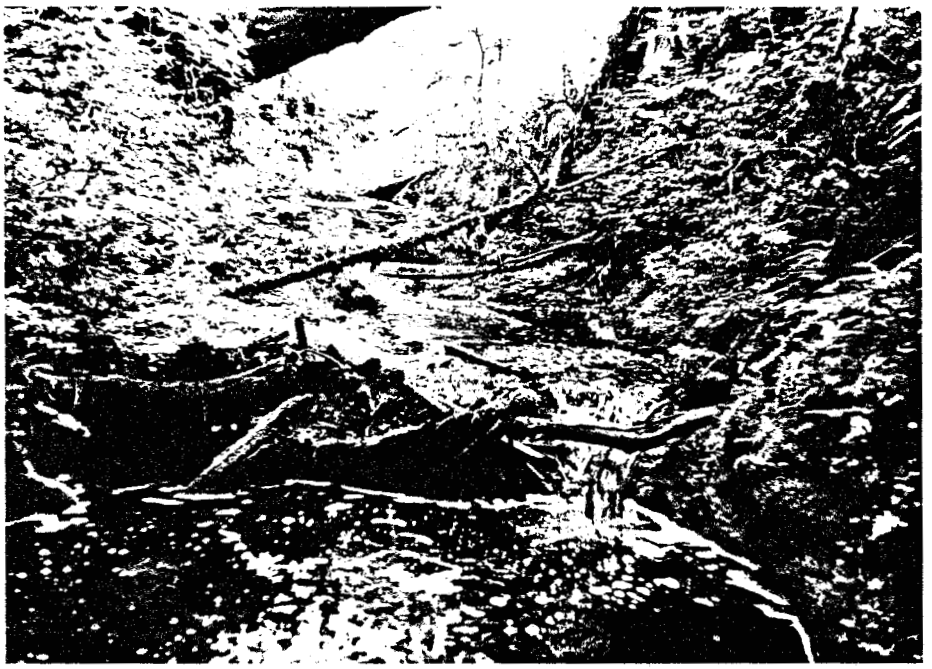
106-30-42


N
Sweetwater Lake
To Coffman Cove
Sinuous Channel Provides Good Rearing
Substrate Size Increasing
Unit
Channel Climbs; Unstable Notch; no ASA.
Channel Exits Notch
Channel Reenters Notch
Beaver Impounded Headwaters
Prince of Wales Island
Logging Road



1. Confluence with Sweetwater Lake obscured by brush. Flow is backed up, forming a deep pool just inside canopy.

2. Section 1: Copious debris and overhanging vegetation provide good rearing throughout this sinuous section, however ASA is reduced due to compacted riffles.



3. Section 4: Substrate size and gradient increases as channel cuts through an unstable notch. No ASA observed and rearing limited to debris/boulder pools.

4. Section 8: Bedrock cascades, no ASA, and marginal, sporadic rearing characterize section. Above stream log, upper center, demarcates point where logging road parallels stream.

5. Beaver impounded headwaters as viewed from mainline logging road, approximately 100 m beyond survey end.

106-30-42

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	6.6	10	66					
2	100	3.6	7	25.2					
3	100	2.7	5	13.5					
Total				$104.7m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name A 2. ADF&G Catalog No. 1 -30-42

Reach Number	1	1	1	2	2	2	2
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	112	205	250	146	150	159	119
4. Gradient	3	3	3	4	5	5	6
5. Water Quality	4	4	4	4	4	3	3
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	2/1	2/1	2/1	2/3	2/3	2/3	2/3
8. Bank Vegetation	1-5	1-5	1-5	1,3-5	1-5	1,3-5	1,3-5
9. Debris Loading	35	25	15	10	10	10	15
10. Undercut Bank Length	75	15	--	15	--	10	--
11. Stream Width:							
Channel	6.6	3.6	2.7	4.5	3.6	2.7	3.9
Water	6.6	3.6	2.7	2.7	3.6	2.7	2.1
12. Water Type %: SS	25	35	35	25	25	20	20
DS	--	--	--	--	5	--	5
SF	75	65	65	75	70	80	75
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	--	5	20	40	25
Boulder	--	2	5	15	20	15	15
Large Cobble	20	25	30	40	25	20	30
Small Cobble	35	30	40	25	20	15	15
Gravel	30	30	20	15	15	10	10
Sand	15	10	5	--	--	--	--
Muck	--	3	--	--	--	--	5
Other	--	--	--	--	--	--	--
14. ASA %/Quality	10/1	7/1	5/1	--	--	--	--
15. Rearing Area %	20	30	30	20	15	15	15
16. Pool Cover %	75	60	40	30	20	35	35
17. Riffle Cover %	--	--	--	--	--	--	--
18. Fish Observed	N	N	N	N	N	N	N
19. Sampling	Y	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: Copious debris and overhanging vegetation provide good rearing throughout this sinuous section, however, ASA is reduced due to compacted riffles.

Section 2: Channel braids through copious debris and overhanging vegetation. Instream log "cascades", common. ASA reduced due to compacted riffles.

Section 3: This section demarcates the transition between Reach 1 and Reach 2. Substrate size increases as channel meanders through broad V-notch.

22. Investigators Ted Mickowski Date 8/11/83

LEVEL TWO HABITAT SURVEY

Section 4: Reach 2 begins. Substrate size and gradient increases as channel cuts through an unstable notch. No ASA observed and rearing limited to debris/boulder pools.

Section 5: Channel climbs out of notch, however, bedrock outcrops and gradient increasing. No ASA observed and rearing limited to debris/boulder pools.

Section 6: Muskeg seep enters main stem via the left bank. Channel reenters notch and continues to climb via a primarily bedrock bed.

Section 7: Muskeg seep enters main stem via the right bank. Localized side slope failure with exposed soil along right bank. No ASA observed and rearing limited to debris/boulder pools.

Section 8: Bedrock cascades, no ASA, and marginal sporadic rearing characterize section.
75m; Logging road borders right bank and is marked by streamside blowdown and cut logs. Root wads and shot rock from road bed construction have been side cast into channel. Streamside (i.e., right-of-way) timber has been removed along right bank from survey end to road crossing, approximately 100 m. Dense alder regeneration forms nearly impenetrable coverage to the unobstructed 60" culvert.

Reconnaissance beyond survey revealed beaver impounded headwaters. No fish were observed in the reservoir, however, no migration barrier was observed over the length of the survey. No rehabilitation or enhancement recommended.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name A 2. ADF&G Catalog No. 106-30-42

Reach Number	2						
1. Section Number	8						
2. Section Length	100						
3. Compass Bearing	122						
4. Gradient	3						
5. Water Quality	3						
6. Bank Type	4						
7. Bank Stability	B						
8. Bank Vegetation	1,3-5						
9. Debris Loading	25						
10. Undercut Bank Length	--						
11. Stream Width:							
Channel	4.2						
Water	2.4						
12. Water Type %: SS	15						
DS	--						
SF	85						
DF	--						
13. Substrate %:							
Bedrock	55						
Boulder	15						
Large Cobble	15						
Small Cobble	10						
Gravel	5						
Sand	--						
Muck	--						
Other	--						
14. ASA %/Quality	--						
15. Rearing Area %	5						
16. Pool Cover %	25						
17. Riffle Cover %	--						
18. Fish Observed	N						
19. Sampling	N						
20. Potential Barriers	N						
21. Enhancement/Rehab	N						

For comments see previous page.

22. Investigators Ted Mickowski Date 8/11/83

FISH SAMPLING FORM

Stream Name n/a ADF&G Catalog No. 106-30-42 Date 8/11/83

Identify Survey Area A Water Temp. 13.5°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1430	1440	SS - 1 CO - 1	--	Section 1: Trap set 8/11 and pulled 8/13.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length variable

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name Sweetwater Lake #2 2. ADF&G Catalog No. none
3. Latitude 55°53'30" Longitude 132°54'50"
4. Agency Unit 05 5. Mgmt. Area 573 K 6. USGS Map No. Craig D-3
7. Aerial Photo No. 8-26-79 12 30 610050 479-97
8. Bay/Drainage Sweetwater Lake 9. Access 1
10. Present Land Use active road crossing
11. Historical Land Use logged 5-10 years ago
12. Stream Origin 5 13. Estimated Flow 3.5 cfs 14. Flow Stage 2
15. Stream Temperature 13°C 16. pH 7.0 17. Beaver none
18. Temperature Sensitivity no
19. Barrier none surveyed 20. Weather 1

Part III.

21. Intertidal no significant ITZ

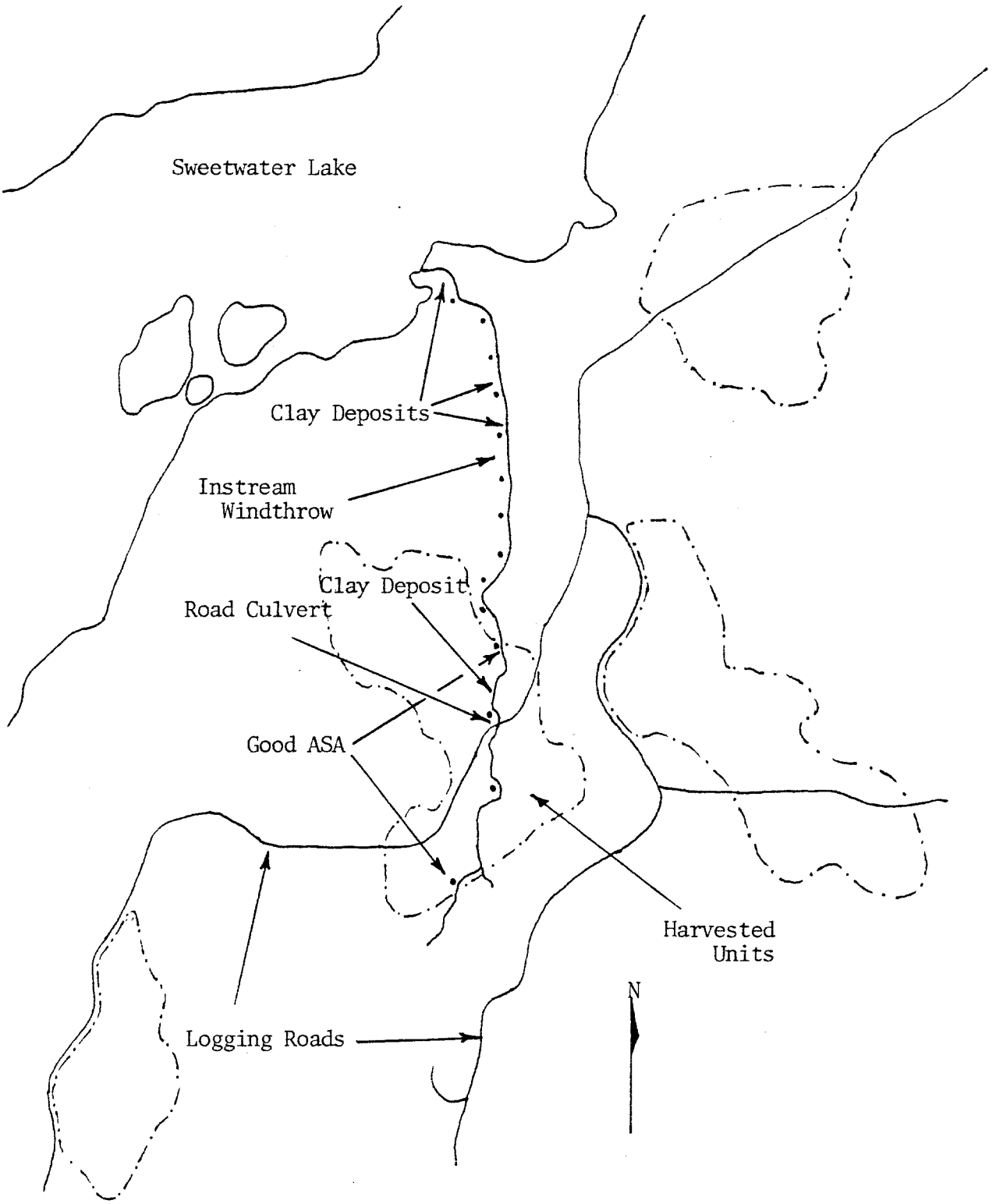
A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%
B. Gradient ____%
C. ASA % ____
D. Schooling ____
E. Shellfish ____
F. Anchorage ____

22. Comments Stream Evaluation

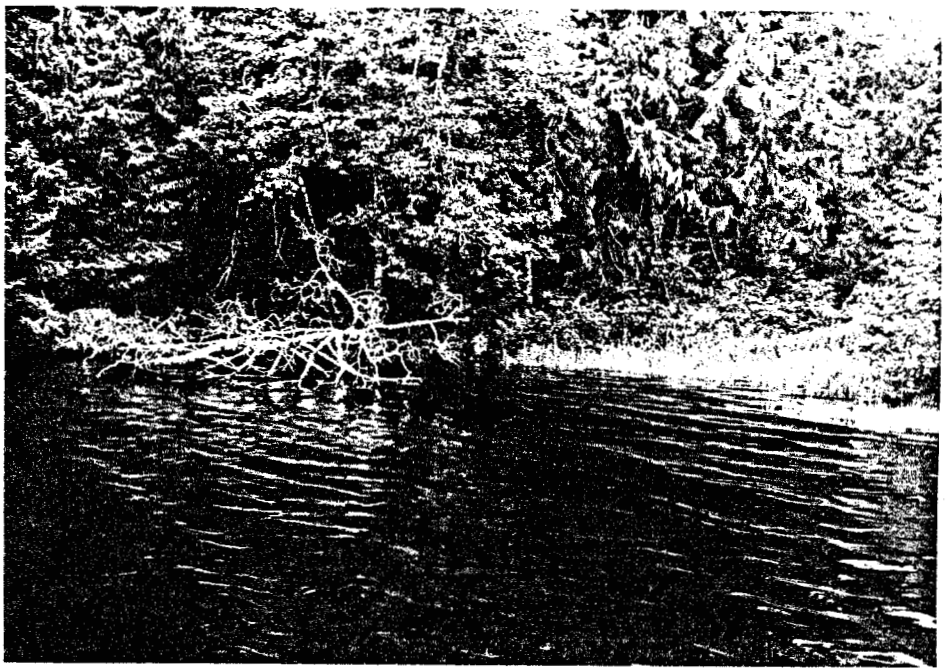
This small stream is characterized by low gradient with substantial bank and substrate deposits of blue clay. Coho were present along the length of stream surveyed but in notably smaller numbers than expected considering the habitat. The stream is broken into two reaches. The first begins at the creek mouth and extends to the cutting unit boundary. Substrate in this reach is generally fine and debris loading is moderate creating pools and bank cutting. Blue clay deposits are more substantial in this reach, adding to erosion/instability problems. The second reach is wholly contained within the clearcut. Logging debris had evidently been removed allowing large areas of riffle to flow without deflection. This combined with a larger percentage of small cobble and gravel substrate has created fair to good ASA but poor to fair rearing habitat.

23. Investigators Randy Ericksen 24. Date 8/12/83

Sweetwater Lake #2



Sweetwater Lake #2



1. The creek mouth looking from Sweetwater Lake.

2. Section 10: A large percentage of sand substrate reduces ASA quality. The cutting unit is visible along the right bank.

Sweetwater Lake #2

3. Large clay deposits along the banks have caused instability and mass erosion problems.

4. Section 12: The stream enters a cutting unit. The percentage of gravel and small cobble increases creating good ASA.

Sweetwater Lake #2

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	3.4	2	6.8					
2	100	3.6	5	18.0					
3	100	3.2	2	6.4					
4	100	3.6	5	18.0					
5	100	4.0	2	8.0					
6	100	3.3	4	13.2					
7	100	2.5	1	2.5					
8	100	5.4	2	10.8					
9	100	4.6	3	13.8					
10	100	4.5	2	9.0					
11	118	5.1	2	12.0					
12	200	2.9	5	29.0					
13	200	5.1	5	51.0					
14	250	3.1	5	38.8					
Total				$237.3m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Sweetwater Lake #2 2. ADF&G Catalog No. n/a

Reach Number	1	1	1	1	1	1	1
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	130	170	190	180	180	170	210
4. Gradient	1.0	1.0	1.0	1.0	1.0	1.0	1.0
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	3/3	2/1	3/3	3/3	3/3	2/1	3/3
8. Bank Vegetation	1-4	1-5	1,3-5	1-5	1-4	1-5	1,3-5
9. Debris Loading	10	15	10	10	10	30	15
10. Undercut Bank Length	40	50	50	20	25	30	60
11. Stream Width:							
Channel	5.0	5.6	5.3	6.5	5.4	4.3	5.2
Water	3.4	3.6	3.2	3.6	4.0	3.3	2.5
12. Water Type %: SS	20	30	50	40	35	35	55
DS	30	15	5	10	15	5	5
SF	45	45	35	40	35	55	40
DF	5	10	10	10	15	5	--
13. Substrate %:							
Bedrock	--	5	--	--	--	5	--
Boulder	--	5	--	--	--	5	--
Large Cobble	--	10	5	5	5	10	5
Small Cobble	10	15	10	20	15	15	15
Gravel	40	35	40	60	60	35	20
Sand	35	20	35	10	10	20	55
Muck	5	5	5	5	10	5	5
Other	10/d	5/c	5/d	--	--	5/d	--
14. ASA %/Quality	2/1	5/1	2/1	5/2	2/2	4/2	1/2
15. Rearing Area %	10	30	30	40	40	20	30
16. Pool Cover %	10	15	10	10	10	30	10
17. Riffle Cover %	20	10	10	10	10	30	30
18. Fish Observed	SS	SS	SS	SS	SS	SS	SS
19. Sampling	Y	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: First 32 m backed up by the lake; deep, slow water; wide channel. Some clay deposits along bank and interspersed about the substrate.
Section 2: Occasional bedrock and boulder patches along the streambed.
Section 3: High percentage of sand substrate.
Section 4: Large clay deposit along the left bank at 39 m.
Section 5: Massive clay deposit along the right bank at 55 m. This bank has begun to slide into the stream channel.

22. Investigators Randy Ericksen Date 8/12/83

Section 6: A large blowdown area (from a northeast wind) has created several moderate debris jams. No barriers.

Section 7: Increase in fine substrate.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Sweetwater Lake #2 2. ADF&G Catalog No. n/a

Reach Number	1	1	1	1	2	2	2
1. Section Number	8	9	10	11	12	13	14
2. Section Length	100	100	100	118	200	200	250
3. Compass Bearing	190	210	180	160	160	200	240
4. Gradient	1.0	1.0	1.0	1.0	1.0	1.0	1.5
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	3/3	2/1	2/1	2/2	2/3	1/1	1/1
8. Bank Vegetation	1,3-5	1,3-4	1-5	1-5	2-5	2-5	2-5
9. Debris Loading	20	20	15	10	10	5	10
10. Undercut Bank Length	50	20	40	70	50	20	--
11. Stream Width:							
Channel	6.5	4.6	6.1	5.3	2.9	6.0	6.0
Water	5.4	4.6	4.5	5.1	2.9	5.1	3.1
12. Water Type %: SS	50	40	25	20	35	35	30
DS	--	25	15	20	20	5	5
SF	50	30	55	50	40	60	65
DF	--	5	5	10	5	--	--
13. Substrate %:							
Bedrock	--	--	--	--	--	5	--
Boulder	5	--	--	5	--	5	--
Large Cobble	10	5	5	10	5	5	10
Small Cobble	10	10	10	10	20	25	30
Gravel	25	30	30	30	40	40	50
Sand	45	50	50	45	30	20	10
Muck	5	5	5	--	--	--	--
Other	--	--	--	--	5/d	--	--
14. ASA %/Quality	2/2	3/2	2/1	2/1	5/2	5/2	5/2
15. Rearing Area %	10	30	10	10	10	10	10
16. Pool Cover %	5	5	5	5	2	2	2
17. Riffle Cover %	5	5	2	2	2	2	2
18. Fish Observed	SS	SS	SS	SS	SS	SS	
19. Sampling	N	Y	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 10: Cutting unit visible up right bank. Shallow water.
Section 11: Ends at cutting unit. End Reach 1.
Section 12: Logged along both banks. Good ASA. Blue clay deposit along the right bank at 170 m.
Section 13: Continues through cutting unit, good ASA. Flows through a road culvert at 22 m.

22. Investigators Randy Ericksen Date 8/12/83

LEVEL TWO HABITAT SURVEY

Section 14: Continue through cutting unit; good ASA. A small tributary enters the left bank at 220 meters. This tributary contains no significant fish habitat. The stream travels along the unit boundary after the tributary. The survey was terminated when the stream left the cutting unit. Gradient was increasing but fish habitat was still present. The survey was terminated due to lack of time.

FISH SAMPLING FORM

Stream Name Sweetwater Lake #2 ADF&G Catalog No. n/a Date 8/12/83

Identify Survey Area A Water Temp. 13.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1605	1930	SS - 3		Section 1
2	1745	1915	SS - 1		Section 9

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A, B, C 2. Section Length 100 meters

3. Historical Fish Species No escapement data available.

Part II.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040
3. Latitude 55°59'15" Longitude 132°54'00"
4. Agency Unit 05 5. Mgmt. Area 573K 6. USGS Map No. Craig D-3
7. Aerial Photo No. 1979 Photos Fl. Ln. 31 Photos 22-26; Fl. Ln. 32 Photos 219-223
8. Bay/Drainage Sweetwater Lake 9. Access 1
10. Present Land Use Active logging in upper watershed; active road use throughout.
11. Historical Land Use Extensive logging and roading throughout watershed.
12. Stream Origin 1, 3, 4, 5, 6 13. Estimated Flow 20 cfs 14. Flow Stage 2
15. Stream Temperature 12.5 16. pH 7.5 17. Beaver Yes
18. Temperature Sensitivity No
19. Barrier Yes; Section 90: 100m 20. Weather 3

Part III.

21. Intertidal n/a

A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%
B. Gradient ____%
C. ASA %
D. Schooling
E. Shellfish
F. Anchorage

22. Comments Stream Evaluation

The major watershed draining into N.E. Sweetwater Lake, this moderately sized stream is characterized by deeply incised headwaters, an intermediate segment of good-excellent spawning habitat, and a braided lower portion that meanders through lowlands, providing excellent rearing habitat. Clearcut units extend to the banks in several places throughout the watershed, and roads provide limited access. Logging debris locally reduces channel stability by altering hydraulics; however, in some cases large instream organic debris enhanced rearing. Resident and anadromous fish were observed through Section 90. However, the bulk of spawning/rearing habitat is located within 2900 meters of the mouth. The stream habitat is suitable to support pinks and chums in the lower reaches, and coho and steelhead in the upper reaches with resident cutthroat and Dolly Varden throughout. Fish observations (coho & trout fry) were sparse in general.

23. Investigators Merrigan, Mickowski, Ericksen Date 8/12&13/83

LEVEL TWO HABITAT SURVEY
Trumpeter Creek
106-30-040

Stream Evaluation Cont.

Above the barrier falls (Section 90: 100m), the substrate is boulder/cobble within a clearcut with little ASA. Another barrier falls occurs as the stream leaves this clearcut. The prevailing V-notch habitat (capable of generating high velocity flows) throughout the stream, along with the lack of habitat above the falls, removes the stream for consideration for enhancement and rehabilitation.

Reach Analysis

Survey Area "A": Main Stem

Reach I: 300 m

This portion of the stream is flatwater; a backwater influence from Sweetwater Lake. Basically a deep slough with heavy undercut banks, the Reach possesses good holding and rearing habitat. There are also two additional mouths of this stream entering Sweetwater Lake (see Map 1.) Coho and trout fry observed in moderate amounts.

Reach II: 800 m

Beginning and ending with the departure and confluence of Survey Area "B" (left side), this Reach is highly braided, sinuous and meandering. Occasional dry channels and debris jams cause channel instability which often reduces ASA. The substrate is predominantly gravel with isolated clay deposits. Coho and trout fry observed throughout the Reach in moderate concentrations.

Reach III: 1800 m

This Reach is primarily cobble substrate with low quality ASA interspersed lightly throughout. A clearcut borders the left bank (Section 15: 22m) for 700 meters. Good potential rearing habitat was observed but fish observations were scarce. This Reach along with Reach II comprises the best fish habitat for the stream system.

Reach IV: 600 m

This is a V-notch area with minimal fish habitat. Bedrock, boulder and large cobble substrate predominate. Few coho fry were observed.

Reach V: 560 m

The stream returns to a moderate gradient over a cobble/gravel substrate. A large clearcut borders the left bank with associated blowdown, debris jams, channel migration and newly formed gravel bars. Fish observations were less than would be expected in this habitat. A log stringer bridge occurs at Section 37: 60m.

LEVEL TWO HABITAT SURVEY
Trumpeter Creek
106-30-040

Reach VI: 600 m

After a short stretch through mature forest, the stream is adjacent to a clearcut on the right bank with predominantly large cobble substrate with the exception of 200 meters of bedrock. Few fish were observed in this Reach which has several bank failures, slumps and blowdown areas that are normally associated with streamside clearcuts. Few fish were observed.

Reach VII: 900 m

Here the stream has a moderate gradient flowing between gentle banks over cobble substrate with isolated ASA. Major bends in this stream are characterized by extensive blowdown, debris jams and braiding. This and large sand deposits indicate occasional upstream high velocity discharges. Moderate amounts of coho fry were observed.

Reach VIII: 1600 m

A well-channelized stretch of stream with an area of V-notch, this Reach is capable of generating high velocity flows. Fish habitat is minimal with the exception of resident trout in the predominant riffle over bedrock, boulder and large cobble that is present. A few coho fry were observed.

Reach IX: 700 m

A clearcut is adjacent to the right bank for the duration of the Reach which is characterized by bank failures, blowdown, debris jams and channel migration. ASA is moderate but of low quality due to the relative stream instability. Survey Area "C" enters the left bank at Section 73: 50m.

Reach X: 615 m

The stream reenters old forest growth with multiple channels and braiding throughout. Overhanging bank vegetation and numerous windthrown trees afford good rearing habitat which is not utilized as heavily as would be expected. Fish observations were moderate in this Reach of cobble substrate with isolated ASA.

Reach XI: 1200 m

The stream enters a clearcut with this unit extending down to streamside with no buffer strip. Numerous debris jams were observed including a potential barrier at Section 87: 10m. Banks become increasingly steeper with a bedrock canyon forming at Section 89 until culminating at an 8 meter barrier falls above which a log stringer bridge crossing occurs. Above the falls, the stream has a boulder/cobble substrate within another clearcut above which an additional barrier falls is located, so enhancement is not recommended.

LEVEL TWO HABITAT SURVEY
Trumpeter Creek
106-30-040

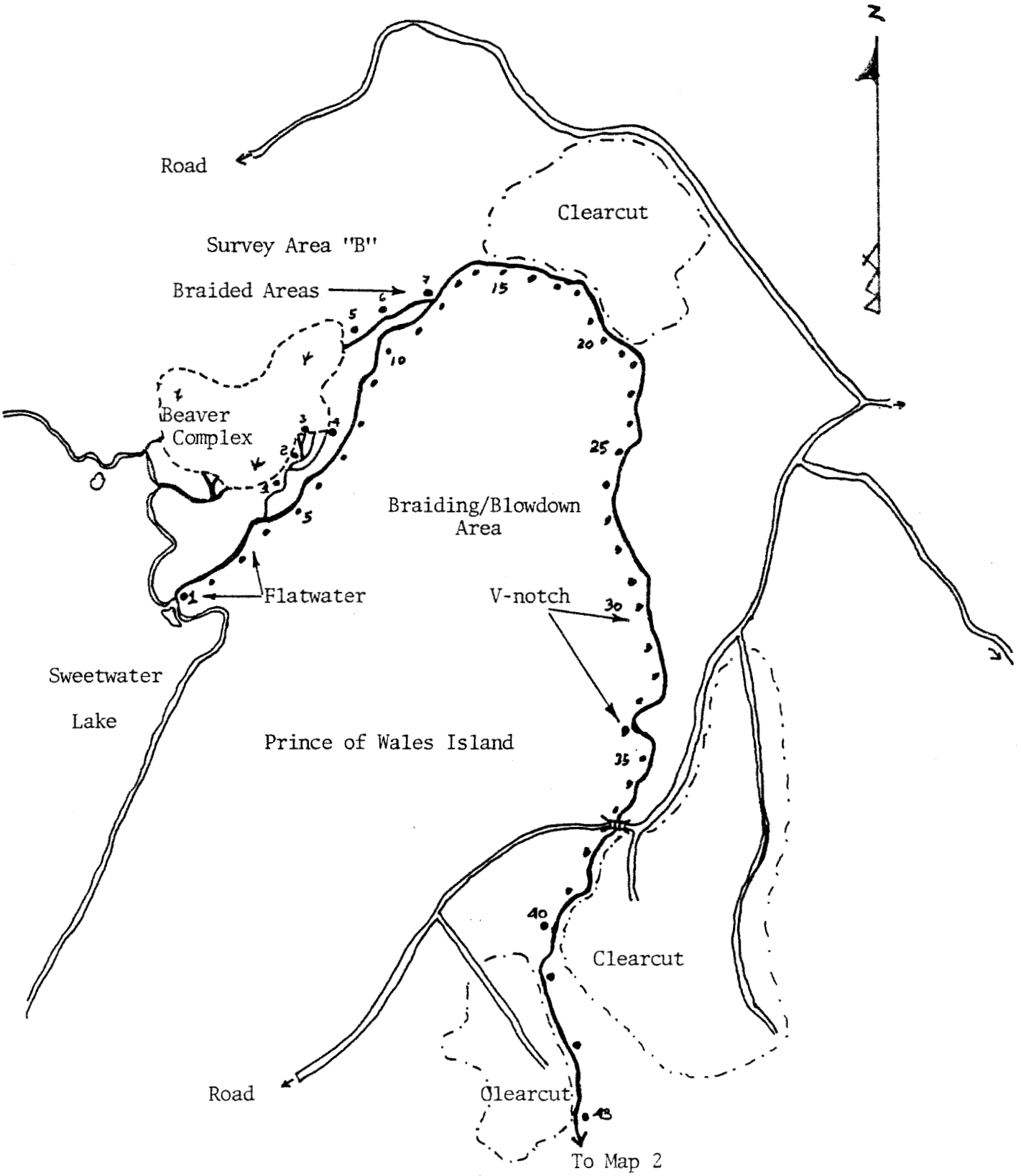
Survey Area "B"
Beaver System and 700 Meters of Survey

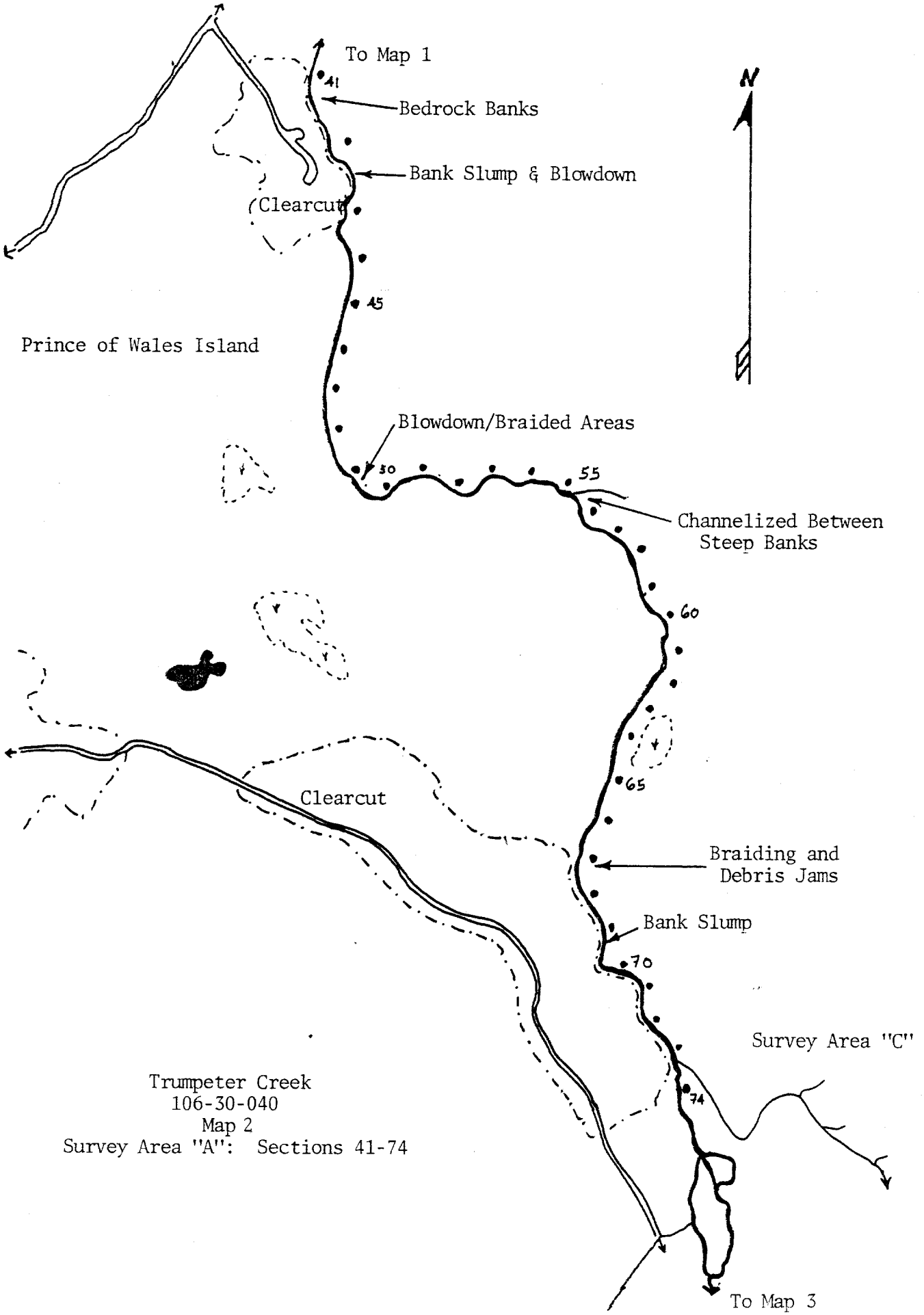
This is a beaver influenced additional channel paralleling Survey Area "A", main stem departing at Section 4: 0m and resuming at Section 12: 0m. Braided sloughs are upstream and downstream of a large beaver pond/marsh complex which also causes multiple mouths draining to Sweetwater Lake. Coho and trout fry were present throughout.

Survey Area "C"
Tributary Joining Main Stem at Section 73: 50m, Left Side

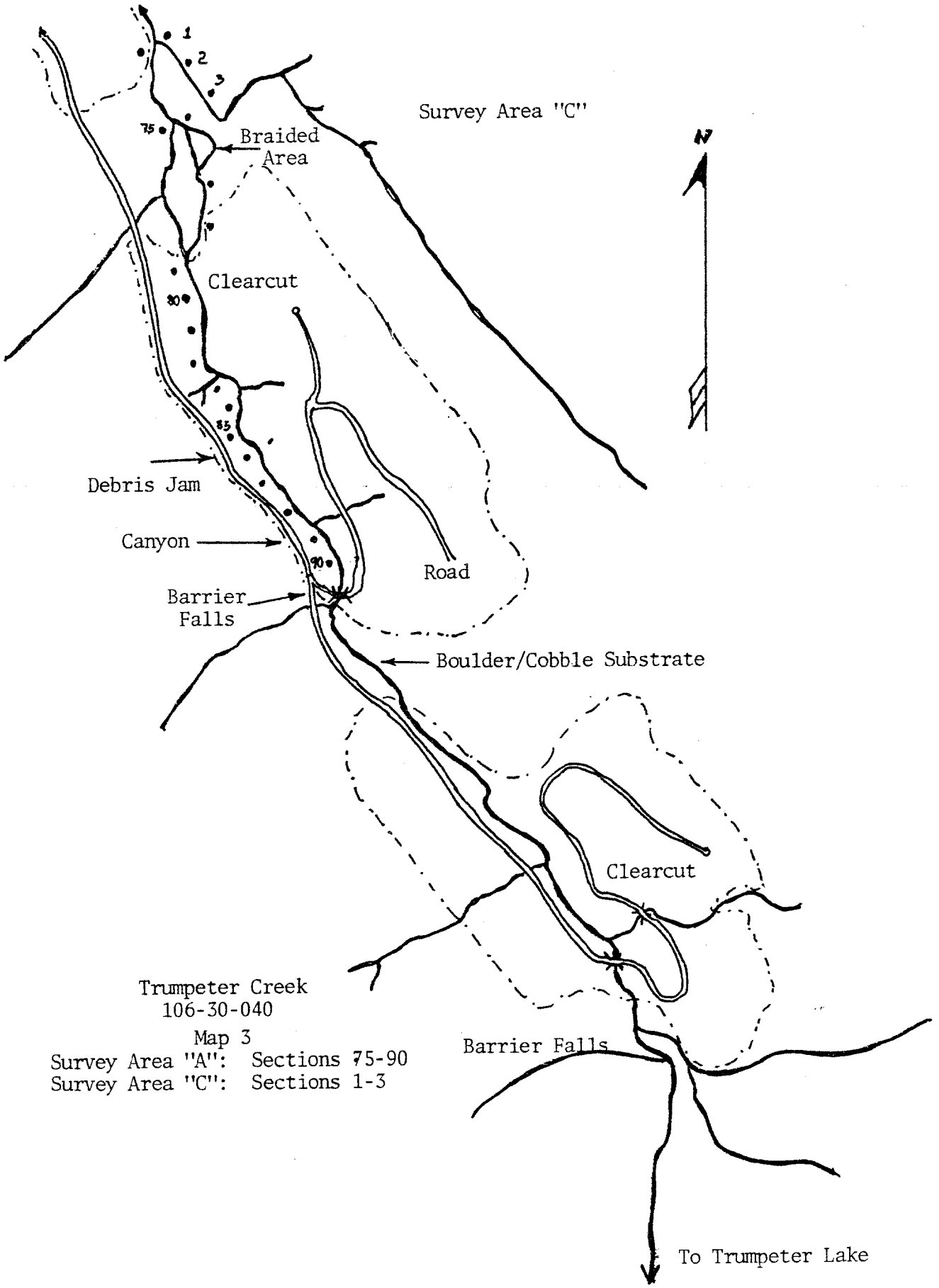
This is a small spawning and rearing tributary flowing through mature forest. Largely cobble/gravel substrate, the stream has good fish habitat for 200 meters whereupon gradient increases and substrate becomes boulder and large cobble. Moderate amounts of coho fry were observed in the first 200 meters.

Trumpeter Creek
106-30-040
Map 1
Survey Area "A": Sections 1-43
Survey Area "B": Sections 1-7





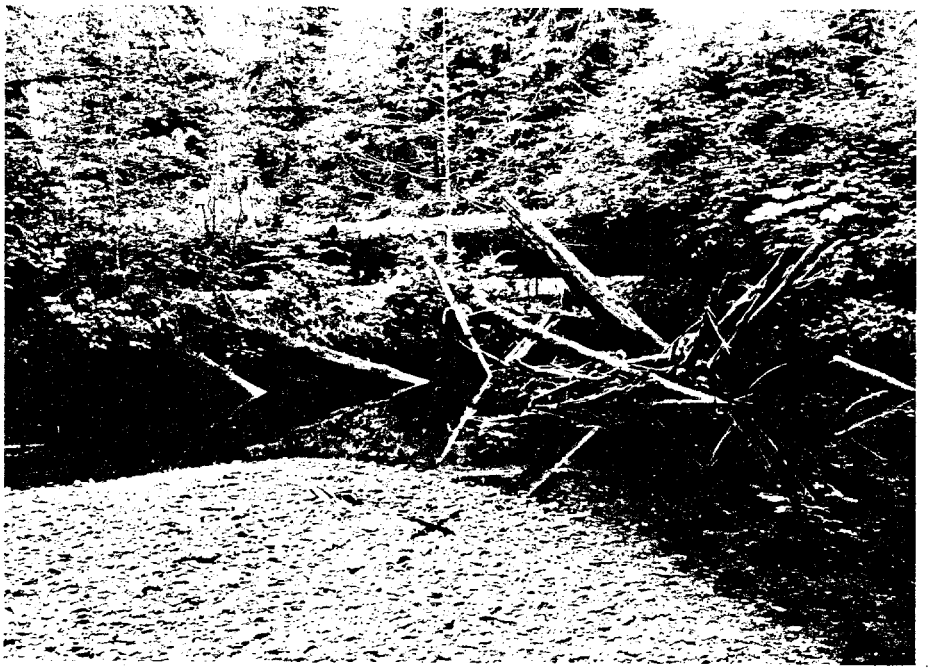
Trumpeter Creek
106-30-040
Map 2
Survey Area "A": Sections 41-74



Trumpeter Creek
106-30-040
Map 3
Survey Area "A": Sections 75-90
Survey Area "C": Sections 1-3

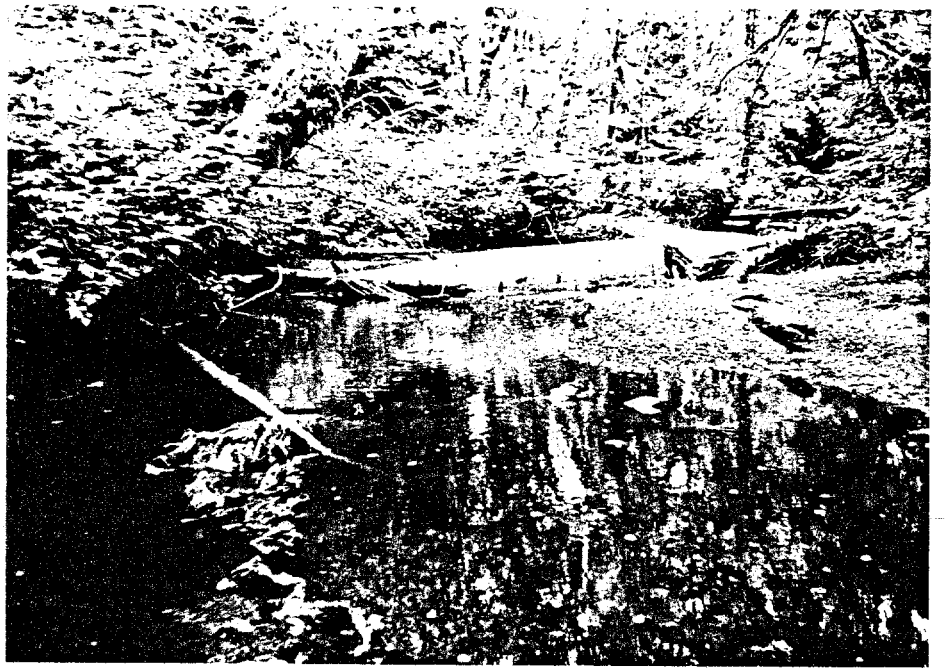
Trumpeter Creek
106-30-040

1. Confluence with Sweetwater Lake results in backed up flow, creating extensive rearing/holding habitat.

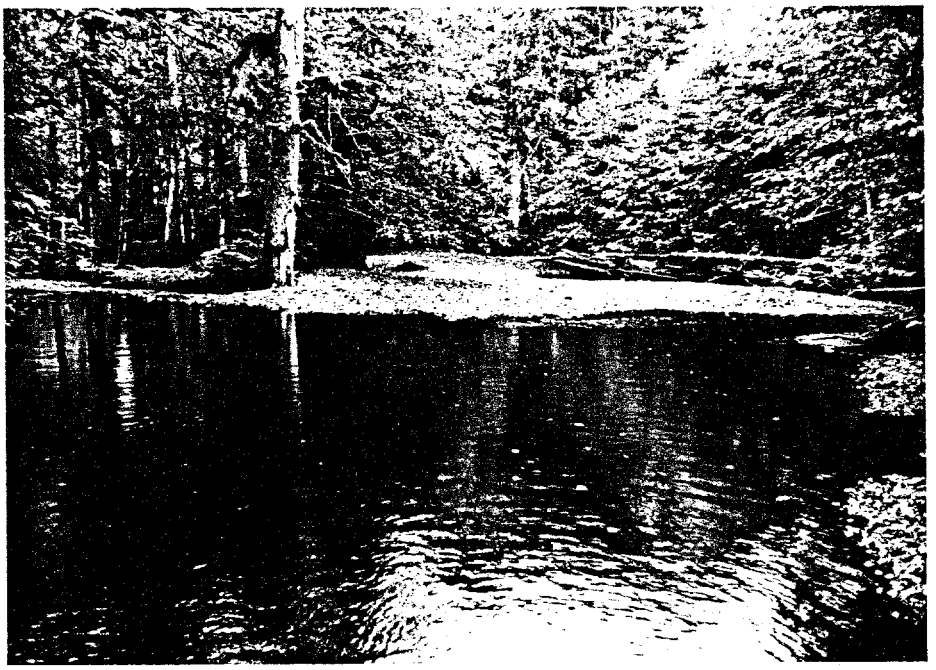


2. Right fork confluence main stem diverges at 300 meters creating two highly sinuous and braided channels characterized by current beaver activity and copious debris/overhanging banks.

Trumpeter Creek
106-30-040



3. Section 5: Sinuous channel provides extensive pooling and undercut banks creating excellent rearing habitat. Gravel riffles contain extensive interstitial fines effectively reducing ASA.



4. Section 12: Main stem diverges into two highly sinuous channels characterized by extensive braiding, copious debris, undercut banks and overhanging vegetation before converging at Section 4: 0m.

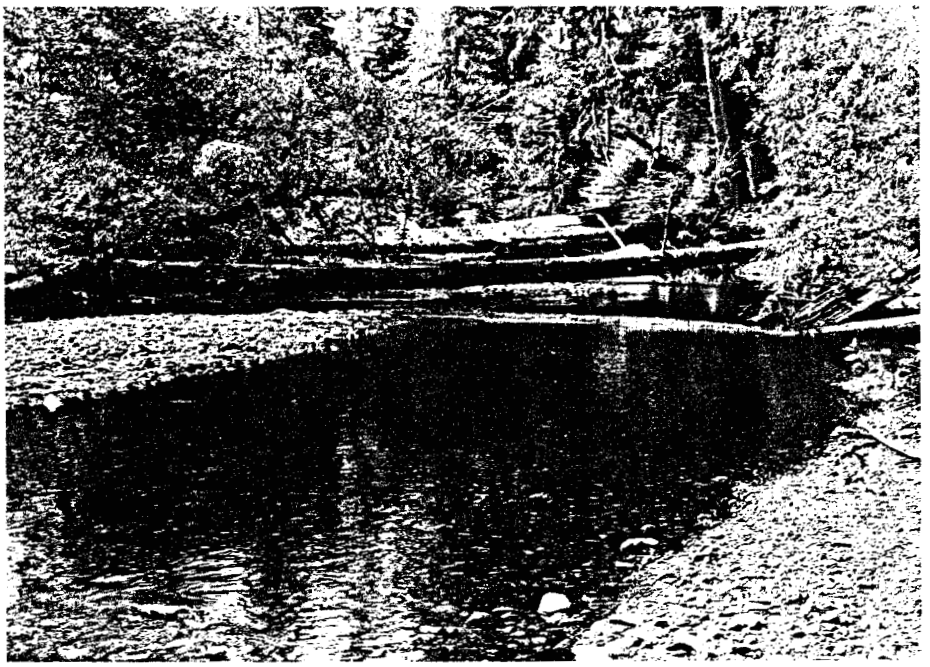
Trumpeter Creek
106-30-040

5. Section 12: Channel and water widths have greatly increased above the point of divergence. Spawning and rearing habitat is common throughout the cobble/gravel bed.

6. Section 30: Channel negotiates a V-notch marking the advent of Reach IV. No ASA was observed and rearing habitat is limited to peripheral boulder induced pools.

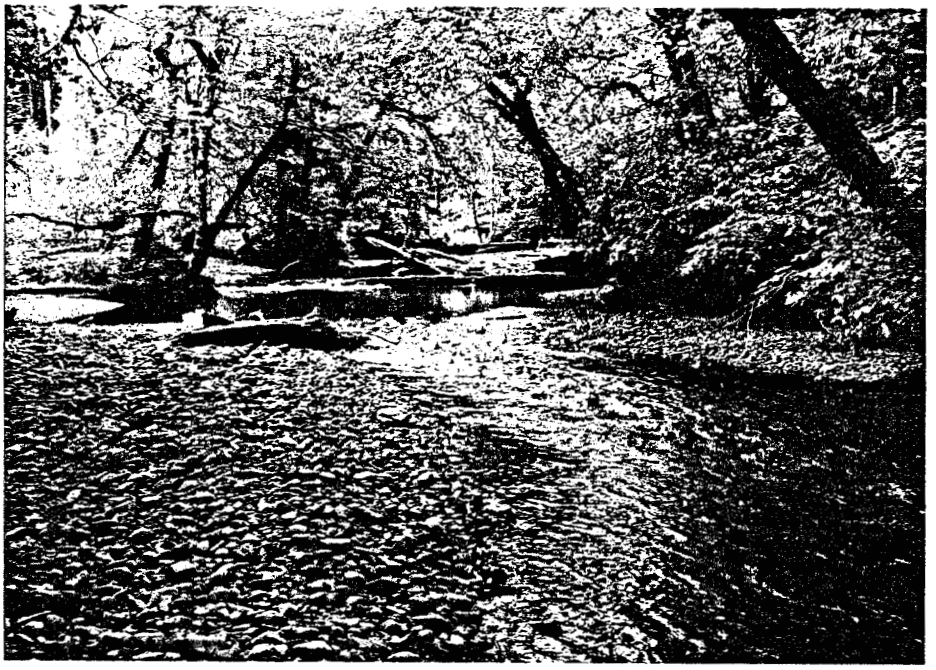
Trumpeter Creek
106-30-040

7. Section 37: Reach V is characterized by a return to moderate gradients and a cobble/gravel substrate. Mainline logging road crosses the stream via a log stringer bridge accessing an extensive clearcut unit bordering the left bank.

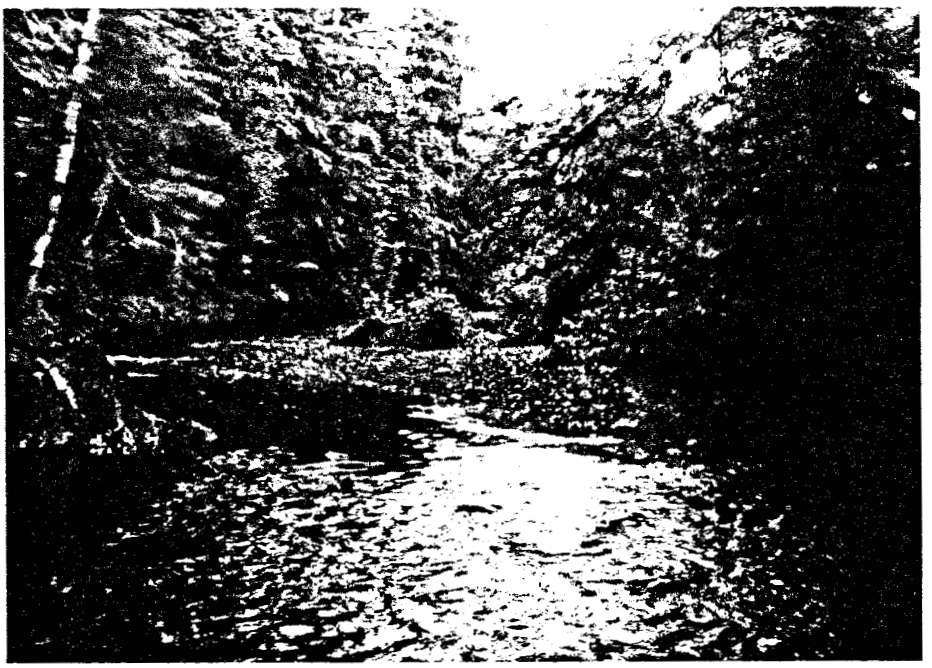


8. Section 38: An extensive clearcut unit borders the left bank. Copious blowdown and logging debris has accelerated braiding and bar formation, however, debris pools are utilized by rearing salmon and trout.

Trumpeter Creek
106-30-040



9. Section 40: 40m; Leaving unit to left and entering alder cover over cobble substrate.



10. Reach VI: Section 42: Begin unit right side with cobble substrate. Few fish observed here.

Trumpeter Creek
106-30-040

11. Reach 7: Section 46: Leave clearcut and enter old growth forest with predominantly cobble riffles.

12. Mouth of tributary entering Section 55: 80m; Survey Area "A". Predominantly rearing habitat with ASA at mouth only.

13. Reach VIII: Section 61: 0m; Stream well channelized between steep banks with riffle over boulder/cobble. Trout habitat.

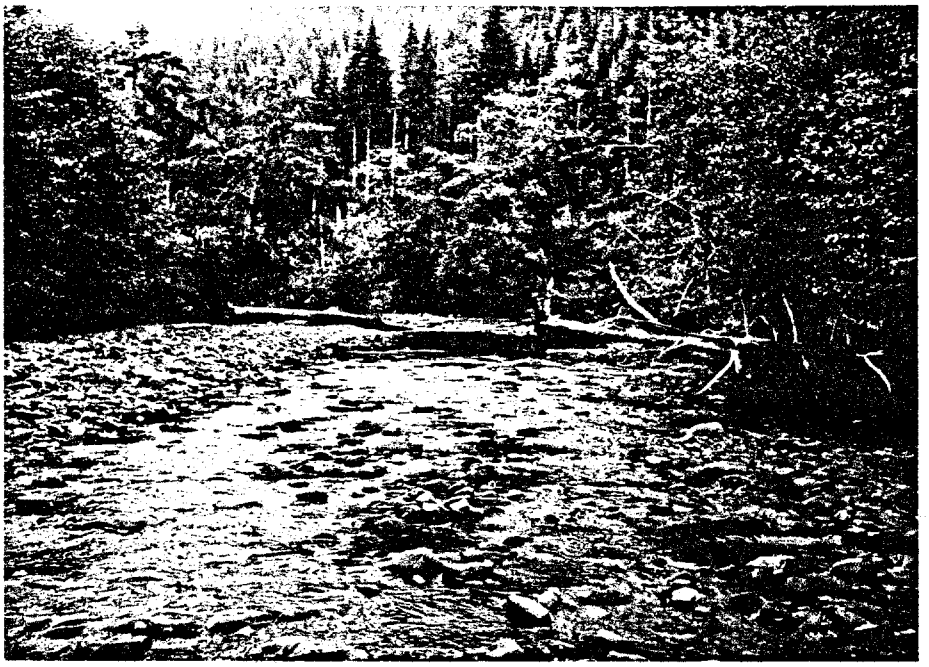
14. Reach IX: Section 69: Downstream of right bank slump in reach within clearcut.

Trumpeter Creek
106-30-040

15. Reach IX: Section 71: Heavy debris and blowdown within old clearcut. Good rearing cover over cobble substrate.

16. Reach X: Section 75: 0m; Dense vegetative cover over braided stream channels with cobble substrate.

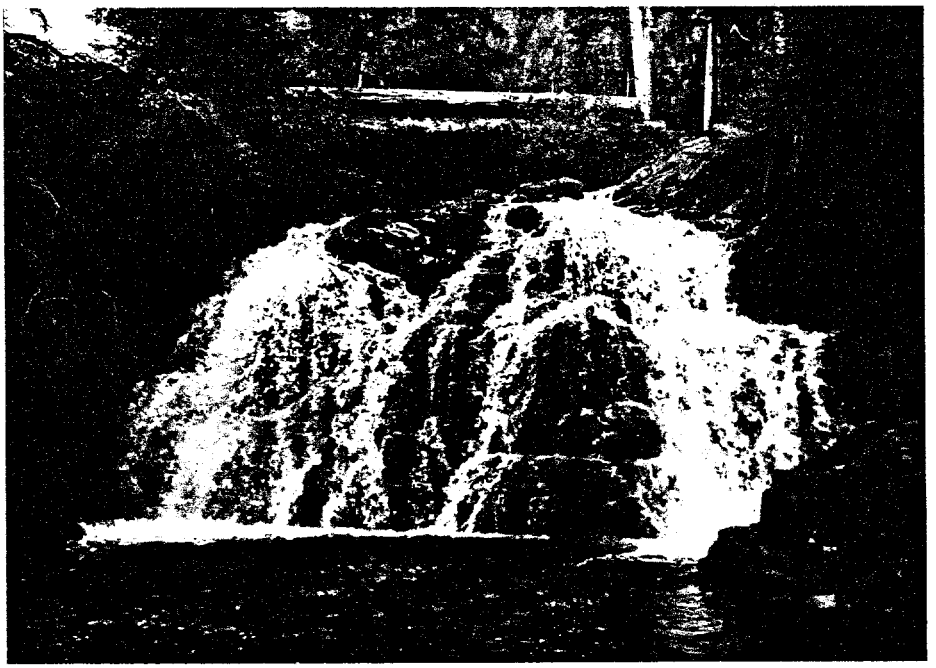
Trumpeter Creek
106-30-040



17. Reach XI: Section 79: Leaver forest cover and enter unit with boulder/cobble substrate.

18. Reach XI: Section 87: 10m; A 3 meter falls within a debris jam is a potential barrier.

19. Reach XI: Section 89: Steep sided canyon within unit with bedrock/boulder substrate.



20. Reach XI: Section 7: 100m; 8 meter barrier falls with log stringer bridge crossing.

Trumpeter Creek
106-30-040

21. Habitat above falls. Unit both sides behind buffer strip with boulder/large cobble substrate.

22. The mouth of Survey Area "B" taken from Survey Area "A".

23. Survey Area "B", Section 3: Clay substrate and bank composition create instability and extensive channel braiding.

24. A massive beaver complex creates excellent rearing habitat at the end of Sections 3 & 4.

Trumpeter Creek
106-30-040

25. The second mouth on Sweetwater Lake. The creek originates from a large beaver complex off Survey Area "B".

26. The third mouth on Sweetwater Lake. The creek drains a large beaver complex originating from Survey Area "B".

Trumpeter Creek
106-30-040

27. Survey Area "B"; Section 5: Begins just upstream of the beaver complex. Channel braiding is common. Substrate is mostly sand.

28. Mouth of Survey Area "C"; tributary entering main stem at Section 73: 50m; left side.

Trumpeter Creek
106-30-040

29. Survey Area "C": Section 1: 50m; Riffle over small cobble/gravel substrate with overhanging bank vegetation.

Trumpeter Creek
106-30-040

Section	Length (m)	Width (m)	ASA %	ASA Total
	Survey Area "A"			
4	100	6.3	10	63
5	100	5.1	10	51
6	100	4.8	15	72
7	100	3.0	15	45
9	100	4.2	15	63
10	100	3.9	25	97.5
11	100	3.3	15	49.5
12	100	10.5	35	367.5
13	100	11.7	20	234
14	100	10.5	10	105
15	100	5.7	15	85.5
16	100	11.4	15	171
18	100	4.8	10	48
19	100	9.6	35	336
20	100	6.9	20	138
21	100	19.2	15	288
22	100	8.7	10	87
23	100	12	2	24
25	100	6.3	10	63
26	100	6	5	30
27	100	7.8	10	78
28	100	12	15	180
29	100	7.2	10	72
35	100	12.6	7	88.2
36	100	8.4	10	84
37	100	5.7	5	28.5
38	100	9	5	45
39	100	11.4	5	57
40	160	12	15	288
41	300	8	8	192
42	300	10	3	90
43	200	8	--	--
44	100	9.5	--	--
45	100	7.0	--	--
46	100	18	8	144
47	100	4	5	20
48	100	18	5	90
49	100	3	--	--
50	100	8	--	--
51	100	9	--	--
52	100	12	--	--
53	100	5	--	--
54	100	8	15	120
55	100	6	--	--
56	100	11	5	55
57	100	3.5	--	--
58	100	6	--	--
59	100	4	7	28
60	100	9	--	--
61	100	9	--	--
62	100	9.1	15	136.5
63	100	8	--	--
64	100	12.0	--	--
65	100	9	10	90
66	100	5.2	8	41.6
67	100	3.6	11	39.6
68	100	4.7	10	47
69	100	10	15	150
70	100	21	11	231
71	100	4.2	10	42
72	100	14	15	210
73	100	7	13	91
74	100	8.8	12	105.6
75	100	3.2	16	51.2
76	215	3	10	64.5
77	100	6	12	72
78	100	11.8	10	118
79	100	4.8	--	--
80	100	3.0	--	--
81	100	7.8	3	23.4
82	100	12	--	--
83	100	5.8	--	--
84	100	4.7	--	--
85	100	3.8	--	--
86	100	5.0	--	--
87	100	4.0	--	--
88	100	6.8	---	--
89	100	4.5	--	--
90	100	3.0	--	--
Total Survey Area "A"				5,591.1m^2
	Survey Area "B"			
1	100	4.6	1	4.6
2	100	3.8	2	7.6
5	100	5.6	3	16.8
6	100	4.1	5	20.5
7	153	5.4	7	57.8
Total Survey Area "B"				107.3m^2
	Survey Area "C"			
1	100	7.0	22	154
2	100	2.0	18	36
3	100	2.8	--	--
Total Survey Area "B"				190.0m^2
Total "A", "B", "C":				5,888.4m^2

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Reach Number	1	1	1	2	2	2	2
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	386	59	50	121	74	357	53
4. Gradient	.5	.5	.5	1.0	1.0	1.0	1.0
5. Water Quality	4	4	4	4	3	3	3
6. Bank Type	A	A	A	D	D	D	D
7. Bank Stability	1/1	1/1	1/1	2/1	2/1	2/1	2/1
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	4	3	5	15	15	15	15
10. Undercut Bank Length	120	150	130	100	110	120	90
11. Stream Width:							
Channel	15	19.5	18	15.6	11.7	7.8	6.9
Water	15	18	18	6.3	5.1	4.8	3
12. Water Type %: SS	10	10	15	10	25	30	30
DS	90	90	85	55	30	25	30
SF	--	--	--	35	45	45	40
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	--	--	--	--	--	--	--
Large Cobble	--	--	--	--	--	--	--
Small Cobble	15	10	15	15	15	15	20
Gravel	75	80	70	70	65	60	60
Sand	10	10	10	15	20	20	15
Muck	--	--	5	--	--	5	--
Other	--	--	--	--	--	--	b)2c)3
14. ASA %/Quality	--	--	--	10/3	10/3	15/3	15/3
15. Rearing Area %	90	90	80	50	45	40	45
16. Pool Cover %	15	10	15	45	40	40	40
17. Riffle Cover %	--	--	--	--	--	--	--
18. Fish Observed (fry)SS	--	>6	>6	>6	>6	>6	>6
(juv)CT							2
(juv)DV							
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Sections 1-3: Stream flow is backed up from lake confluence to junction of forks, creating extensive rearing ahd holding areas (Reach I). Several unidentified fish rolls were observed.

Section 2: 30m; 4 meter wide slough meanders 75 meters from the right bank before entering the lake amidst grass and sedges.

Section 4: 0m; Main stem diverges at 300 meters creating two highly sinuous and braided channels characterized by past and present beaver activity, numerous side channels and copious debris/overhanging banks (Reach 2).

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LEVEL TWO HABITAT SURVEY
Trumpeter Creek
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Section 4: 0m Cont.: For survey purposes, the right fork was considered Area "A" and the left fork, Area "B". Rearing area is excellent throughout, however, ASA is greatly reduced by interstitial fines.

Section 5: 27m; A 1 cfs side channel meanders through the sumpy lowland, separating the left and right forks before entering the right fork via the left bank. No ASA observed, however, rearing habitat was common. Flow appeared limiting.
56m; A 1 cfs side channel meanders through a sumpy lowland amidst muskeg seeps providing marginal ASA but moderate rearing before entering the right fork via the right bank.

Section 7: 0m; A 1 cfs side channel diverges from the right bank, reentering at Section 5: 56m.
43-73m; Channel braids around forested isle. Numerous dry "gravel channels" were observed along both banks. Heavily undercut banks exposed instream clay deposits.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Reach Number	2	2	2	2	2	2	2
1. Section Number	8	9	10	11	12	13	14
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	49	49	36	61	56	42	45
4. Gradient	1.5	1.5	1.0	2	1	1	1.5
5. Water Quality	3	3	3	3	3	3	3
6. Bank Type	4	4	1	1	2	2	4
7. Bank Stability	2/1	2/1	1/1	2/1	1/1	1/1	2/1
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	20	20	1	30	2	2	20
10. Undercut Bank Length	130	45	35	20	20	25	45
11. Stream Width:							
Channel	11.4	*	7.8	20.4	15.9	15.6	10.5
Water	4.2	**	3.9	3.3	10.5	***	10.5
12. Water Type %: SS	30	25	40	25	20	25	5
DS	30	35	20	30	25	25	30
SF	40	40	40	45	45	45	15
DF	--	--	--	--	10	5	50
13. Substrate %:							
Bedrock	5	--	--	--	--	--	--
Boulder	--	--	--	--	--	--	--
Large Cobble	--	--	--	--	--	15	25
Small Cobble	15	20	30	40	50	40	35
Gravel	50	65	65	55	45	35	30
Sand	20	15	5	5	5	10	10
Muck	--	--	--	--	--	--	--
Other	b) 5c) 5	--	--	--	--	--	--
14. ASA %/Quality	--	15/3	25/3	15/3	35/3	20/3	10/3
15. Rearing Area %	40	40	30	30	35	35	35
16. Pool Cover %	40	35	20	60	15	15	35
17. Riffle Cover %	--	--	--	--	--	--	--
18. Fish Observed (fry) SS	>6	>6	>12	>12	>12	>12	>12
(juv) CT	1		1				
(juv) DV		1					
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 8: Entire section composed of a multitude of sinuous, braided channels. Debris, overhanging vegetation, and undercut banks common throughout. Channel instability effectively reduces ASA to zero.

Section 9: Channel braiding continues along with copious debris loading and bank undercutting.
29m; Beaver pond "slough" enters channel via the right bank.

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*R7.5/L6.6
**R2.7/L4.2
***R5.7/L6.0

LEVEL TWO HABITAT SURVEY
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Section 10: "Converged braids" and minimal debris loading results in a "stabilized" gravel/cobble channel which provides excellent rearing and spawning habitat.

Section 11: 00-34m; Extensive right bank blowdown culminates in a "passable" debris jam. Extensive bars/floodplains and transported root wads indicate flows are extremely variable.

Section 12: 0m; Main stem junction demarcates Reach III. Channel and water widths have substantially increased above the point of divergence. Spawning and rearing habitat is common throughout the cobble/gravel bed.

Section 13: 56m; A near stagnant muskeg seep enters the main stem via the right bank. SS fry were observed at the mouth, however, habitat appeared marginal. Left bank side slope gradient increasing.

Section 14: 45m; Channel converges around a forested bar and blowdown. The left channel carries the bulk of the flow and borders an extensive beaver impoundment.
73m; A bank water slough provides access to the reservoir, however, no rearing fish were observed.
99m; Channel diverges around forested bar, debris, and blowdown. Braiding and active bank cutting was observed. Large cobble is becoming evermore common and cutover stumps were noted under the dense left bank alder canopy.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Reach Number	3	3	3	3	3	3	3
1. Section Number	15	16	17	18	19	20	21
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	89	119	89	73	144	166	113
4. Gradient	1.5	1.5	2	2	1.5	1.5	
5. Water Quality	3	3	3	3	3	3	3
6. Bank Type	B	B	D	B	B	B	B
7. Bank Stability	1/1	1/1	2/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	7	4	7	8	--	2	2
10. Undercut Bank Length	--	--	40	--	--	--	--
11. Stream Width:							
Channel	24	20.7	17.4	21.3	12.3	19.5	21.6
Water	5.7	11.4	7.5	4.8	9.6	6.9	19.2
12. Water Type %: SS	5	40	10	25	30	10	30
DS	20	20	25	35	10	35	30
SF	70	25	20	30	50	35	35
DF	5	15	45	10	10	20	5
13. Substrate %:							
Bedrock	--	--	3	--	--	--	--
Boulder	--	--	--	--	--	--	--
Large Cobble	45	25	35	35	25	35	30
Small Cobble	30	35	30	30	40	40	40
Gravel	20	35	30	30	35	25	25
Sand	5	5	2	5	--	--	5
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	15/2	15/2	--	10/2	35/2	20/2	15/2
15. Rearing Area %	20	35	20	30	5	30	35
16. Pool Cover %	35	35	30	20	5	10	5
17. Riffle Cover %	--	--	--	--	--	--	--
18. Fish Observed (fry)SS	--	--	1	--	--	--	<6
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 15: Impoundment and clearcut unit continue along left bank. Extensive but compact cobble riffles provide limited ASA.

Section 16: Large steep sided bars common.

Section 17: Localized side slope failure results in instream clay deposit.

Section 18-21: Extensive cobble riffles provide good-excellent ASA. Fish sightings were sporadic and rearing habitat was enhanced by large instream organic debris.

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LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Reach Number	3	3	3	3	3	3	3
1. Section Number	22	23	24	25	26	27	28
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	136	191	193	194	215	152	159
4. Gradient	1.5	1.5	1.0	1.5	1.5	1.5	1.0
5. Water Quality	3	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	5	1	1	8	3	10	--
10. Undercut Bank Length	--	--	--	--	--	--	--
11. Stream Width:							
Channel	10.8	15.3	16.5	14.4	10.8	17.4	15.9
Water	8.7	12	16.5	6.3	6	7.8	12
12. Water Type %: SS	20	40	25	30	15	20	10
DS	30	3	35	35	50	20	5
SF	30	55	40	30	25	30	75
DF	20	2	--	5	10	30	10
13. Substrate %:							
Bedrock	--	--	--	--	5	--	--
Boulder	--	10	--	--	--	5	1
Large Cobble	30	35	30	25	25	30	24
Small Cobble	40	30	30	40	35	35	45
Gravel	25	20	30	30	30	30	30
Sand	5	5	10	5	5	--	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	10/2	2/2	--	10/2	5/2	10/2	15/2
15. Rearing Area %	30	20	20	25	20	15	10
16. Pool Cover %	5	5	5	20	5	15	--
17. Riffle Cover %	--	--	--	--	--	--	--
18. Fish Observed (fry)SS	--	--	1	--	--	1	>6
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 22: Stream side clearcut. Unit boundary ends. Enter old growth forest.
Section 23-24: Marginal rearing cover is primarily cobble/boulder induced.
Section 27: Localized side slope failure along left bank.

22. Investigators Ted Mickowski Date 8/12/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Reach Number	3	4	4	4	4	4	4
1. Section Number	29	30	31	32	33	34	35
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	163	195	161	158	192	170	208
4. Gradient	1.5	2	3	2	1.5	2	1.5
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	2/3	2/3	2/3	2/3	1/3	1/3	2/3
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	1	1	1	2	--	2	4
10. Undercut Bank Length	--	--	--	--	--	10	--
11. Stream Width:							
Channel	12.9	13.8	9.0	12	12.3	13.2	13.5
Water	7.2	8.1	6.9	7.5	8.4	9.0	12.6
12. Water Type %: SS	5	20	10	15	15	20	20
DS	17	10	20	10	25	15	15
SF	70	45	40	45	35	55	50
DF	8	25	30	30	25	10	15
13. Substrate %:							
Bedrock	--	20	20	15	20	30	35
Boulder	5	25	25	20	15	10	5
Large Cobble	25	15	20	25	35	30	20
Small Cobble	40	20	20	25	20	15	20
Gravel	30	20	15	15	10	10	20
Sand	--	--	--	--	--	5	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	10/2	--	--	--	--	--	7/2
15. Rearing Area %	20	20	15	15	20	20	20
16. Pool Cover %	5	10	20	15	10	15	15
17. Riffle Cover %	--	--	20	15	5	15	10
18. Fish Observed (fry)SS	>6	<6	<6	<6	<6	<6	<6
(juv)DV	1	--	--	--	--	--	--
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 29: Incised side slopes begin. Localized, left bank, side slope failures common.

Section 30-34: Channel negotiates a V-notch marking the advent of Reach IV. No ASA was observed and rearing habitat is limited to peripheral boulder induced pools. Localized side slopes failures common.

Section 33: Side slope gradient reduced.

Section 34: Channel climbs out of V-notch.

Section 35: Channel gradient moderates and a gravel riffle delineates the last 15 meters of the section.

22. Investigators Ted Mickowski Date 8/12/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Reach Number	5	5	5	5	5	6	6
1. Section Number	36	37	38	39	40	41	42
2. Section Length	100	100	100	100	160	300	300
3. Compass Bearing	199	195	221	229	225	210	172
4. Gradient	1.5	1.0	1.0	1.5	2	2	2.5
5. Water Quality	1	1	1	1	4	4	4
6. Bank Type	4	2	4	4	B	B	B
7. Bank Stability	2/2	1/1	2/2	2/2	1(2)	1(3,2)	2(2)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-3,5	1-3,5	1-3,5
9. Debris Loading	20	--	15	15	6	3	7
10. Undercut Bank Length	--	--	70	45	180	--	120
11. Stream Width:							
Channel	16.5	15.0	15.3	15.9	18	16	22
Water	8.4	5.7	9.0	11.4	12	8	10
12. Water Type %: SS	10	15	35	15	20	20	30
DS	45	15	30	25	25	35	30
SF	40	45	30	55	55	40	40
DF	5	25	5	5	--	5	--
13. Substrate %:							
Bedrock	--	15	--	--	--	10	5
Boulder	--	--	--	--	15	15	25
Large Cobble	20	35	40	45	20	25	30
Small Cobble	40	35	35	35	40	30	30
Gravel	30	15	20	15	25	20	10
Sand	10	--	5	5	--	--	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	10/2	5/2	5/2	5/2	15/3	8/3	2/2
15. Rearing Area %	40	25	45	30	35	30	35
16. Pool Cover %	40	10	35	40	7	2	40
17. Riffle Cover %	20	5	5	5	3	--	5
18. Fish Observed (fry)SS	>6	<6	>12	<6	SS	SS	SS
(juv)DV	--	1	1	--			
						CT	CT
19. Sampling	N	Y	Y	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 36: Reach V is characterized by a return to moderate gradients and a cobble/gravel substrate. An extensive clearcut unit borders a narrow left bank buffer strip, the source of copious blowdown. In addition to a large "negotiable" debris jam, blowdown and instream logging debris has resulted in exposed soil channel migration, and accelerated bar formation.

Section 37: Clearcut unit extends to left bank.

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LEVEL TWO HABITAT SURVEY
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Section 37: 60m; Main line logging road crosses the stream via a log stringer bridge providing access to an extensive clearcut bordering the left bank.

Section 38: Clearcut unit extends to left bank. Copious blowdown and instream logging debris has resulted in channel migration, increased bank undercutting, and accelerated bar formation. "Debris pools" however, were utilized to "some degree" by rearing salmon and trout.

Section 40: 0m; Unit left side with heavy debris load in stream.
40m; Leave unit. Enter mature forest cover with cobble substrate.

Section 41: 0m; Begin unit right bank. Small cobble/gravel substrate with moderate ASA.
200m; Bedrock banks for 100m.

Section 42: Large cobble substrate with patchy ASA. Unit right side. Right bank failures, slumps, and blowdown.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Reach Number	7	7	7	7	7	7	7
1. Section Number	43	44	45	46	47	48	49
2. Section Length	200	100	100	100	100	100	100
3. Compass Bearing	102	182	173	200	173	145	165
4. Gradient	2	2	2	1.5	2	2.5	2
5. Water Quality	4	4	4	4	4	4	4
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1(2)	1(2)	2(2)	1(2)	1(2)	1(2)	1(2)
8. Bank Vegetation	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5
9. Debris Loading	8	12	7	7	8	10	16
10. Undercut Bank Length	90	60	40	75	80	60	20
11. Stream Width:							
Channel	20	26	18	18	24	18	16
Water	8	4.5/5.0	7	18	4	18	3
12. Water Type %: SS	20	20	20	25	30	30	25
DS	25	20	30	35	30	40	50
SF	45	60	45	40	50	30	25
DF	10	--	5	--	--	--	--
13. Substrate %:							
Bedrock	5	--	10	1	--	--	--
Boulder	25	15	20	10	15	10	20
Large Cobble	30	35	30	40	35	35	30
Small Cobble	30	30	30	30	30	30	30
Gravel	10	10	10	19	20	25	20
Sand	--	--	--	--	--	--	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	--	--	--	8/3	5/3	5/3	--
15. Rearing Area %	40	35	35	40	35	40	60
16. Pool Cover %	10	10	5	5	10	10	15
17. Riffle Cover %	5	5	2	2	5	2	10
18. Fish Observed (fry)	SS	SS	SS	SS	SS	SS	SS
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 43: 0m; Leave unit, right side.
Section 44-46: Largely riffle over cobble substrate through gentle banks. Moderate amounts of SS fry observed.
Section 47-48: Well channelized stream between gentle banks over cobble substrate.
Section 49: 10m; Debris jam. Open canopy with 40 meter wide braided area strewn with debris. Alder & blowdown scattered throughout. Deer sign everywhere. Large concentrations of SS fry observed.

22. Investigators Gerry Merrigan Date 8/12/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Reach Number	7	8	8	8	8	8	8	8
1. Section Number	50	51	52	53	54	55	56	57
2. Section Length	100	100	100	100	100	100	100	100
3. Compass Bearing	60	152	140	115	84	143	122	170
4. Gradient	2	2	2	2.5	3	2	2.5	2
5. Water Quality	4	4	4	4	4	4	4	4
6. Bank Type	B	B	B	B	B	B	B	B
7. Bank Stability	1(3,1)	1(2,3)	1(2,3)	1(2,3)	1(2)	1(2,3)	2(2)	1(2,3)
8. Bank Vegetation	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5
9. Debris Loading	--	10	2	2	5	3	12	3
10. Undercut Bank Length	60	--	35	20	70	40	70	60
11. Stream Width:								
Channel	20	21	14	12	21	16	19	18
Water	8	5.0/4.0	12	5	8	4.0/2.0	10/1.0	3.5
12. Water Type %: SS	20	20	30	20	25	25	20	30
DS	50	20	40	30	25	20	25	30
SF	20	60	30	45	40	50	45	30
DF	10	--	--	5	10	5	10	10
13. Substrate %:								
Bedrock	15	5	10	15	5	5	5	--
Boulder	10	25	20	20	20	25	25	25
Large Cobble	20	30	30	30	35	35	35	35
Small Cobble	20	20	15	20	30	25	25	30
Gravel	25	20	20	15	20	10	10	10
Sand	20	--	5	--	--	--	--	--
Muck	--	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--	--
14. ASA %/Quality	--	--	--	--	15/2	--		--
15. Rearing Area %	70	40	60	30	30	25	30	25
16. Pool Cover %	2	10	10	2	15	10	20	5
17. Riffle Cover %	--	5	--	2	2	5	10	2
18. Fish Observed	SS	SS	SS	--	SS	SS	SS	SS
			CT			CT		
			DV					
19. Sampling	N	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N	N

Section 50: Large sand deposits indicate high velocity flows emerging from the upstream V-notch Reach.

Section 51: Stream doglegs left with open canopy over wide area. Considerable amounts of debris and blowdown with heavy concentrations of SS fry observed.

Section 52: Bedrock banks with moderate population of SS & trout fry. Deer sign prevalent.

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Section 53: Bedrock substrate with banks gradually flattening out. No fish observed.

Section 54: 20m; Debris jam.

Section 55: Banks steepening.
80m; Tributary left side. Water temperature, 12°C; pH, 7.0; water quality, light tan; about 1.5 cfs at high flow bearing 90°. Some ASA but chiefly rearing for SS/CT/DV fry.

Section 56: Large dogleg left with heavy windthrow both banks forming many debris jams.

Section 57: Cut banks and gravel bars indicate occasional high velocity flows.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Reach Number	8	8	8	8	8	8	8	8
1. Section Number	58	59	60	61	62	63	64	65
2. Section Length	100	100	100	100	100	100	100	100
3. Compass Bearing	175	160	164	228	205	190	228	150
4. Gradient	2	2.5	2	2	2	2.5	2.5	2.5
5. Water Quality	4	4	4	4	4	4	4	4
6. Bank Type	B	B	B	B	B	B	B	B
7. Bank Stability	1(2,3)	1(3,2)	1(3,2)	1(2)	1(3,2)	1(3,2)	1(3,2)	1(2)
8. Bank Vegetation	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5
9. Debris Loading	2	4	--	--	--	1	3	4
10. Undercut Bank Length	--	--	--	--	--	--	--	40
11. Stream Width:								
Channel	13	11	22	13	10.5	8	14	10
Water	6	4	9	9	9.1	8	12	9
12. Water Type %: SS	30	30	30	30	30	20	20	30
DS	20	30	25	10	30	10	35	20
SF	45	40	45	70	40	70	40	40
DF	5	--	--	--	--	--	5	10
13. Substrate %:								
Bedrock	5	10	10	5	10	10	25	10
Boulder	20	25	30	30	25	25	20	25
Large Cobble	35	35	35	35	25	35	30	30
Small Cobble	30	25	15	15	15	20	15	20
Gravel	10	15	10	15	25	10	10	15
Sand	--	--	--	--	--	--	--	--
Muck	--	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--	--
14. ASA %/Quality	--	7/2	--	--	15/1	--	--	10/2
15. Rearing Area %	20	35	20	20	30	20	25	35
16. Pool Cover %	2	5	--	--	--	--	2	5
17. Riffle Cover %	--	--	--	--	--	--	5	5
18. Fish Observed	--	--	--	--	DV	--	--	DV
					CT			CT
								SS
19. Sampling	N	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N	N

Section 58: Stream doglegs left.
Section 59&60: Continued trout habitat.
Section 62: Fair gravel beds overlying bedrock.
50m; Root wad slump right side.
Section 63: 85m; Clay deposit left side for 15 meters.
Section 64: 20m; Isolated bedrock exposure.
40m; Begin V-notch for 60m.
Section 65: Channel width increasing.

22. Investigators Gerry Merrigan Date 8/12/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Reach Number	8	9	9	9	9	9	9
1. Section Number	66	67	68	69	70	71	72
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	200	205	163	221	128	145	135
4. Gradient	2.5	3	2	2	2	2	2
5. Water Quality	4	4	4	4	4	4	4
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1(2)	2(2)	2(1)	2(2)	1(1,2)	2(2)	2(2)
8. Bank Vegetation	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5
9. Debris Loading	5	10	12	9	8	12	11
10. Undercut Bank Length	65	60	75	100	70	60	50
11. Stream Width:							
Channel	18	18	15.8	22	21	21	24
Water	2/3.2	3.6	4.7	4.0/6.0	21	4.2	5.0/9.0
12. Water Type %: SS	30	30	30	20	20	20	20
DS	25	30	20	25	25	20	10
SF	35	40	50	55	55	60	70
DF	10	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	20	15	10	20	20	15	15
Large Cobble	35	30	35	30	30	30	35
Small Cobble	30	30	30	35	35	35	30
Gravel	15	25	25	15	15	20	20
Sand	--	--	--	--	--	--	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	8/2	11/2	10/2	15/2	11/2	10/2	15/2
15. Rearing Area %	40	50	40	40	40	35	30
16. Pool Cover %	10	15	5	15	15	10	15
17. Riffle Cover %	5	5	10	10	5	10	5
18. Fish Observed	--	SS	SS	SS	SS	SS	SS
							CT
							DV
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 66: Unit right side beyond buffer.
Section 67: 30m; Enter unit. Begin braiding, heavy debris jam, undercut banks.
Section 69: 50m; Slumped bank right side.
Section 71: Continued braiding and channel migration.

22. Investigators _____ Date _____

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Reach Number	9	10	10	10	10	10	11
1. Section Number	73	74	75	76	77	78	79
2. Section Length	100	100	100	215	100	100	100
3. Compass Bearing	148	137	144	145	210	104	205
4. Gradient	2	1.5	1.5	2	2	2	2
5. Water Quality	4	4	4	4	4	4	4
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1(1)	1(1,2)	1(1,2)	1(1)	1(2,1)	2(2)	2(2)
8. Bank Vegetation	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5
9. Debris Loading	7	9	14	22	16	18	11
10. Undercut Bank Length	--	120	75	80	85	15	--
11. Stream Width:							
Channel	11	16	7.8	4.8	9.8	22	11.2
Water	7	8.8	3.2	3	6	11.8	4.8
12. Water Type %: SS	30	25	25	25	30	35	30
DS	25	20	20	15	25	25	20
SF	40	45	45	60	40	35	45
DF	--	10	10	--	5	5	5
13. Substrate %:							
Bedrock	--	--	--	--	--	--	5
Boulder	15	10	10	15	15	15	25
Large Cobble	30	30	30	35	25	25	35
Small Cobble	35	30	30	30	30	35	30
Gravel	20	30	30	20	30	25	5
Sand	--	--	--	--	--	--	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	13/3	12/3	16/3	10/2	12/3	10/3	--
15. Rearing Area %	40	35	40	35	45	45	35
16. Pool Cover %	10	10	15	15	20	20	10
17. Riffle Cover %	5	10	15	20	15	15	5
18. Fish Observed	SS	SS	--	SS	SS	SS	SS
	CT						CT
	DV						DV
19. Sampling	Y	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 73: 50m; Tributary left side, Survey Area "C".
100m; Leave unit right side, braided area.
Section 74: 50m; Dry channel right side with discontinuous pools.
Section 75: Old forest cover with moderate blowdown over cobble substrate.
10m; Tributary right side. Water temperature, 10°C; pH, 7.0; about 2 cfs at high flow stage; water quality, silty (road runoff); 8% gradient over cobble.

22. Investigators Gerry Merrigan Date 8/12/83

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Section 76: (Left channel) 115m; Debris jam. Moderate ASA but heavy amounts of blowdown and debris. Right channel is discontinuous flow.

Section 77: Alder and blowdown on banks. Begin with left side, active channel migration and braiding with many debris jams.

Section 78: Heavy concentration of blowdown. Abundant concentration of SS fry.

Section 79: 0m; Begin unit both banks. Heavy concentration of blowdown right side.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Reach Number	11	11	11	11	11	11	11
1. Section Number	80	81	82	83	84	85	86
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	198	173	200	164	134	182	144
4. Gradient	2	2	2	2	2	2	2
5. Water Quality	4	4	4	4	4	4	4
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1(2)	1(2)	1(2,3)	1(2,3)	1(2,3)	1(2,3)	1(2,3)
8. Bank Vegetation	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5	1-3,5
9. Debris Loading	12	6	2	3	2	8	8
10. Undercut Bank Length	--	5	--	--	--	--	--
11. Stream Width:							
Channel	15	26	14	10.2	10.5	9	14
Water	3	7.8	12	5.8	*	3.8	5
12. Water Type %: SS	30	30	25	30	30	20	25
DS	10	20	15	20	20	20	15
SF	55	45	60	45	50	50	45
DF	5	5	--	5	--	10	15
13. Substrate %:							
Bedrock	--	--	5	10	10	10	15
Boulder	30	30	30	25	30	25	30
Large Cobble	35	30	35	35	30	35	35
Small Cobble	25	25	20	20	20	20	15
Gravel	10	15	10	10	10	10	5
Sand	--	--	--	--	--	--	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	--	3/3	--	--	--	--	--
15. Rearing Area %	30	35	20	20	20	30	20
16. Pool Cover %	20	5	2	2	2	2	12
17. Riffle Cover %	5	5	5	2	2	5	5
18. Fish Observed	SS	SS	SS	SS	--	SS	SS
	CT						
	DV						
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 80: 10m; Begin multiple channels.
Section 81: 0m; Debris jam. End multiple channels. Stream width widening.
Section 82-85: Well channelized stream between steep banks with isolated bedrock exposure. Moderate amounts of SS observed.
Section 85-86: Debris jam.

*3.2/1.5

22. Investigators Gerry Merrigan Date 8/12/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Reach Number	11	11	11	11			
1. Section Number	87	88	89	90			
2. Section Length	100	100	100	100			
3. Compass Bearing	165	140	155	166			
4. Gradient	4	2	2	2.5			
5. Water Quality	4	4	4	4			
6. Bank Type	B	B	B	B			
7. Bank Stability	1(3,1)	1(2)	1(3)	1(3)			
8. Bank Vegetation	1-3,5	1-3,5	1-3,5	1-3,5			
9. Debris Loading	4	1	2	2			
10. Undercut Bank Length	--	--	--	--			
11. Stream Width:							
Channel	5	9	9	8			
Water	4	6.8	4.5	3			
12. Water Type %: SS	25	30	30	20			
DS	20	10	30	40			
SF	45	50	30	30			
DF	10	10	10	10			
13. Substrate %:							
Bedrock	10	5	15	20			
Boulder	25	30	30	25			
Large Cobble	35	35	20	30			
Small Cobble	20	15	15	15			
Gravel	10	15	20	10			
Sand	--	--	--	--			
Muck	--	--	--	--			
Other	--	--	--	--			
14. ASA %/Quality	--	--	--	--			
15. Rearing Area %	25	20	40	35			
16. Pool Cover %	10	--	2	5			
17. Riffle Cover %	2	2	2	5			
18. Fish Observed	SS	--	SS	--			
	DV		DV				
19. Sampling	Y	N	N	N			
20. Potential Barriers	Y	N	N	Y2			
21. Enhancement/Rehab	N	N	N	N			

Section 87-90: Debris jam.
Section 87: 10m; 3 meter falls with debris jam in jumping pool.
60m; Begin steep banks and well channelized stream.
85m; End debris.
Section 88: Predominantly riffle.
Section 89: Bedrock canyon walls about 8 meters high. Numerous bedrock pools. Many small tributaries (less than 1 cfs) entering at 20% gradient.
Section 90: 100m; 8 meter falls with log stringer bridge crossing above.

22. Investigators Gerry Merrigan Date 8/12/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Survey Area "B"

Reach Number	1	1	1	1	2	2	2
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	89	65	100	100	153
3. Compass Bearing	020	040	040	040	070	100	100
4. Gradient	.5	1.0	1.0	1.0	1.0	1.5	1.5
5. Water Quality	3	1	1	1	1	1	1
6. Bank Type	A	D	D	D	D	D	D
7. Bank Stability	3/3	3/3	3/3	3/3	3/3	3/3	3/3
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	20	15	10	40	10	10	10
10. Undercut Bank Length	30	10	100	10	40	30	30
11. Stream Width:							
Channel	7	4.4	15	13	10	7.2	10.6
Water	4.6	3.8	12	2.5	5.6	4.1	5.4
12. Water Type %: SS	15	15	20	50	20	20	20
DS	45	15	20	5	15	15	15
SF	5	40	40	40	35	35	35
DF	35	30	20	5	30	30	30
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	--	--	--	--	--	--	--
Large Cobble	2	--	--	--	--	5	10
Small Cobble	8	5	--	--	5	5	20
Gravel	25	20	5	10	30	30	40
Sand	50	20	10	60	40	45	30
Muck	10	10	10	10	20	10	--
Other	5/c	45/d	75/d	20/d	5/d	5/d	--
14. ASA %/Quality	1/1	2/1	--	--	3/1	5/1	7/1
15. Rearing Area %	70	30	20	40	30	30	30
16. Pool Cover %	30	40	20	70	10	10	10
17. Riffle Cover %	50	30	20	70	10	10	10
18. Fish Observed	SS	SS	SS	SS	SS	SS	SS
	DV	DV	DV	DV	DV	DV	DV
	CT	CT	CT	CT	CT	CT	CT
19. Sampling	N	Y	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: Originates at the beginning of Section 4: Survey Area "A". Low gradient, deep water, gravel imbedded in sand. Dense rinarian and debris cover.

Section 2: Faster water. Begin clay deposits along both banks at 45m. Extreme channel braiding. A major braid (section 4) enters the left bank at 71m. Substrate becomes 100% clay at 90m.

22. Investigators Mickowski, Merrigan & Ericksen Date 8/13/83

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Section 3: Clay is dominant substrate compoennt. Stream channel becomes extremely braided and unstable. Three major braids diverge and originate in a massive beaver complex. This complex has flooded a large area producing excellent rearing habitat. Two adult sockeye salmon were seen in the beaver pond. Two channels diverge from the pond, west of Trumpeter Creek, draining into Sweetwater Lake, forming two alternate creek mouths.

Section 4: A channel braid originating in Section 2. The stream contains 65m of good rearing habitat before draining the beaver complex. Substrate consists largely of sand, muck, and clay.

Section 5: Begins just above the beaver complex through an area of past beaver activity. Channel braiding is extensive. Predominantly sand substrate.

Section 6: Slight increase in gradient. Channel becomes more defined. Old beaver activity along the left bank.

Section 7: Increase in small cobble and gravel substrate. Good ASA. Stream merges back with main stem (Survey Area "A") at 153 meters.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Trumpeter Creek 2. ADF&G Catalog No. 106-30-040

Survey Area "C": Enters Main Stem Section 73: 50m; Left Side

Reach Number	1	1	1				
1. Section Number	1	2	3				
2. Section Length	100	100	100				
3. Compass Bearing	105	142	114				
4. Gradient	2	2.5	3				
5. Water Quality	4	4	4				
6. Bank Type	B	B	B				
7. Bank Stability	1(1)	1(1)	1(2)				
8. Bank Vegetation	1-3,5	1-3,5	1-3,5				
9. Debris Loading	8	10	7				
10. Undercut Bank Length	85	60	40				
11. Stream Width:							
Channel	9.2	3.8	3.9				
Water	7.0	2.0	2.8				
12. Water Type %: SS	25	25	20				
DS	10	15	10				
SF	65	60	65				
DF	--	--	5				
13. Substrate %:							
Bedrock	--	--	--				
Boulder	5	10	20				
Large Cobble	30	35	35				
Small Cobble	25	30	30				
Gravel	40	25	15				
Sand	--	--	--				
Muck	--	--	--				
Other	--	--	--				
14. ASA %/Quality	22/3	18/3	--				
15. Rearing Area %	25	30	30				
16. Pool Cover %	5	10	10				
17. Riffle Cover %	15	12	15				
18. Fish Observed	SS	SS	--				
19. Sampling	N	N	N				
20. Potential Barriers	N	N	N				
21. Enhancement/Rehab	N	N	N				

Section 1: 0m; Water temperature, 12°C; pH, 4.8; about 4 cfs at normal level; water quality, light tan; full canopy coverage with moderate amount of blowdown. Predominantly riffle over cobble/gravel.

Section 2: Increasing incidence of blowdown. Gradient steepening.

Section 3: 5m; Clay deposit. Increasing substrate size.
100m; End fish habitat. End Survey Area "C".

22. Investigators _____ Date _____

FISH SAMPLING FORM

Stream Name n/a ADF&G Catalog No. 106-30-040 Date 8/13/83

Identify Survey Area A Water Temp. 12°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1050	1240	SS - 1	--	Section 37: 9m above bridge crossing, along undercut left bank.
2	1300	1340	--	--	Section 38
3	1425	1500	RT - 6 SS - 1		Section 73: Midstream log.
4	1200	1225	--		Section 87: 60m; Midstream log.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100 m

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name Sweetwater Lake #1 2. ADF&G Catalog No. none
3. Latitude 55°54'35" Longitude 132°54'45"
4. Agency Unit 05 5. Mgmt. Area 573 K 6. USGS Map No. Craig D-3
7. Aerial Photo No. 8-26-79 12 30 610050 479-100
8. Bay/Drainage Sweetwater Lake 9. Access 1
10. Present Land Use none
11. Historical Land Use logged 1-5 years ago
12. Stream Origin 5 13. Estimated Flow 3.5 cfs 14. Flow Stage 2
15. Stream Temperature 13.0°C 16. pH 7.0 17. Beaver none
18. Temperature Sensitivity yes; small stream, southern exposure
19. Barrier none 20. Weather 1

Part III.

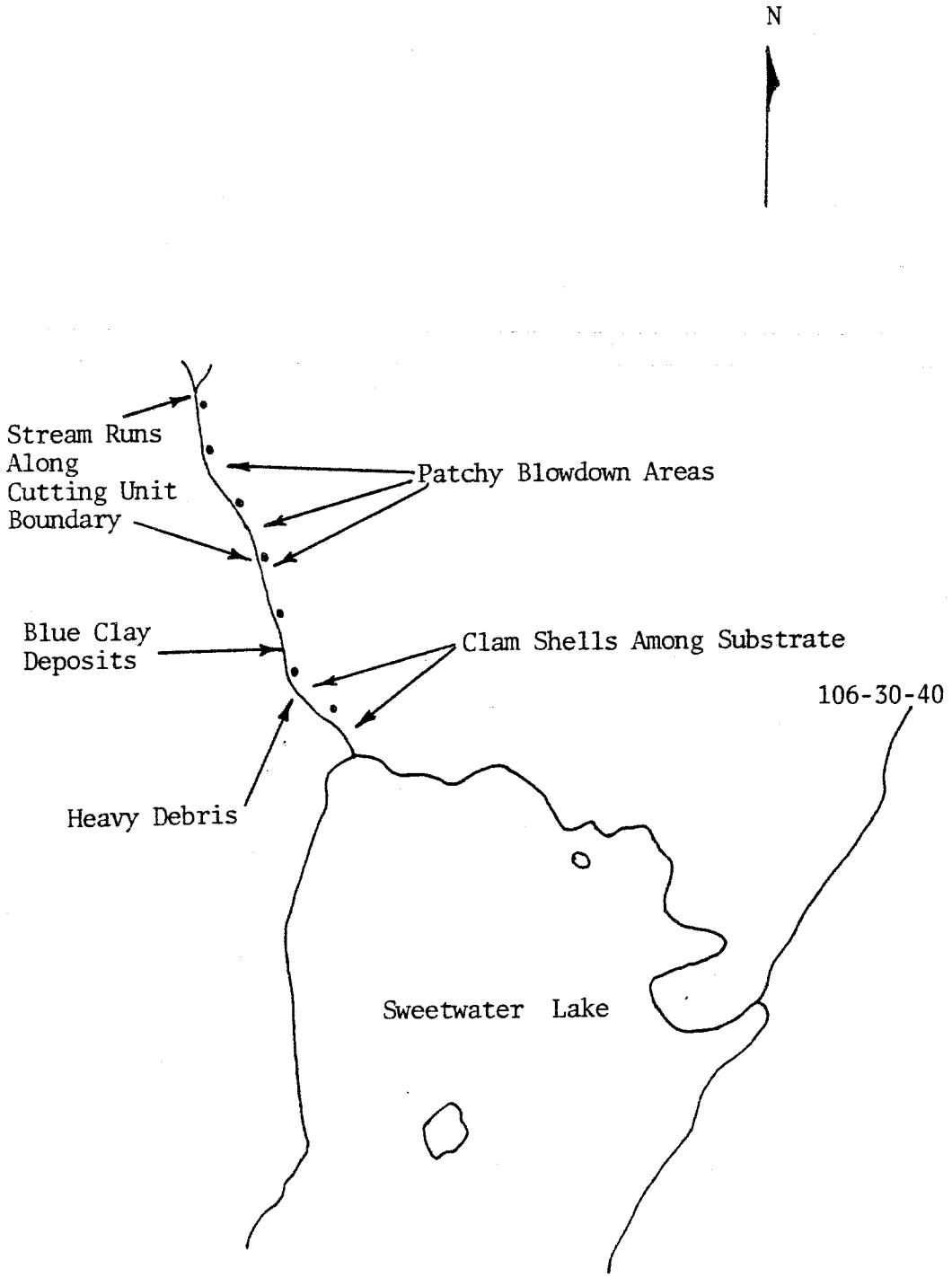
21. Intertidal ITZ is negligible
   A. Substrate: Fines ____% Gravel/S. Cob. ____%
      L. Cob/Boulder/Bedrock ____%
   B. Gradient ____%
   C. ASA % ____
   D. Schooling ____
   E. Shellfish ____
   F. Anchorage ____

22. Comments Stream Evaluation

This small stream enters the northwestern corner of Sweetwater Lake. The stream travels through 400 m of old growth forest before running along a cutting unit boundary. Old clam shells are present in the substrate for the first 200 m of stream indicating recent geological uplifting. Spawning habitat is poor to fair throughout the stream; fine substrate and a large percentage of pools. Rearing habitat is good because of debris cover and numerous large pools. Windthrow is prevalent along the unit boundary causing minor erosion problems.

23. Investigators Randy Ericksen 24. Date 8/12/83

Sweetwater Lake #1



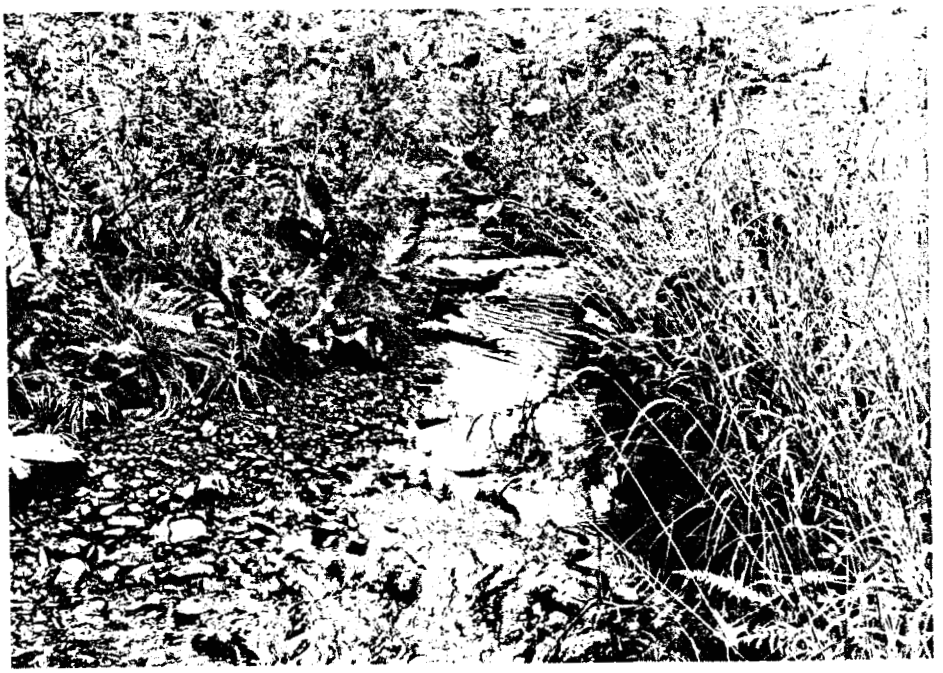
Sweetwater Lake #1

1. The creek mouth taken from Sweetwater Lake.

2. Section 2: The stream generally has very fine substrate. Debris loading is heavy in this section.

Sweetwater Lake #1

3. Section 5 looking downstream over a blowdown. area along the cutting unit boundary.



4. Section 6: The stream winds in and out of the cutting unit. There is an increase of small cobble substrate.

Sweetwater Lake #1

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	1.9	1	1.9					
2	100	1.7	1	1.7					
3	100	1.8	1	1.8					
4	100	1.9	--	--					
5	100	1.8	--	--					
6	100	2.0	3	6.0					
7	70	2.0	2	2.8					
Total				$14.2m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Sweetwater Lake #1 2. ADF&G Catalog No. n/a

Reach Number	1	1	1	1	2	2	2
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	70
3. Compass Bearing	290	020	000	350	330	310	320
4. Gradient	0.5	1.5	1.0	1.0	1.0	1.0	2.0
5. Water Quality	3	3	3	3	3	3	3
6. Bank Type	B	B	B	B	B/A	B/A	B/A
7. Bank Stability	2/2	1/1	2/3	2/1	3/3	2/3	2/3
8. Bank Vegetation	1-4	1,3,4	1,3-5	1,3,4	1-5	1,3-5	1,3-5
9. Debris Loading	15	50	20	25	60	50	50
10. Undercut Bank Length	100	120	100	90	60	40	20
11. Stream Width:							
Channel	1.9	1.9	1.8	1.9	1.8	2.0	2.2
Water	1.9	1.7	1.8	1.9	1.8	2.0	2.0
12. Water Type %: SS	60	55	40	40	45	40	40
DS	20	25	35	30	10	--	--
SF	20	20	25	30	45	60	60
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	--	--	--	--	--	--	--
Large Cobble	--	--	--	--	--	--	10
Small Cobble	2	5	2	2	2	30	40
Gravel	23	25	20	20	20	20	10
Sand	68	65	75	75	70	50	40
Muck	2	--	--	--	--	--	--
Other	5/c	5/c	3/c	3/c	8/d	--	--
14. ASA %/Quality	1/1	1/1	1/1	--	--	3/2	2/2
15. Rearing Area %	50	50	30	20	5	5	5
16. Pool Cover %	10	30	15	15	5	10	10
17. Riffle Cover %	30	60	30	30	5	10	10
18. Fish Observed	SS	SS	SS	SS	SS	SS	SS
	CT	CT	CT	CT	CT	CT	CT
	DV	DV	DV	DV	DV	DV	DV
19. Sampling	Y	N	N	N	Y	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: First 50 m is a wide, deep channel; then slight increase in gradient. Old clam shells scattered among the substrate indicating "recent" uplifting of land. Deer sign is prevalent.

Section 2: Heavy debris loading. Continue clam shells in substrate.

Section 3: White flagging along banks at 50 m. Blue clay deposits along left bank at 60 m.

Section 4: Section ends at edge of cutting unit. Windthrow is present.

22. Investigators Randy Ericksen Date 8/12/83

LEVEL TWO HABITAT SURVEY

Section 5: Stream runs in and out of cutting unit. Severe blowdown along unit edge. Trees have frequently fallen into the stream channel.

Section 6: Patchy blowdown continues. Cutting unit boundary marker along left bank at 100 m. Increase in small cobble substrate.

Section 7: Survey terminated at stream fork. The right fork runs into the cutting unit and the left fork flows out of unit. Neither fork contains significant fish habitat.

FISH SAMPLING FORM

Stream Name Sweetwater Lake #1 ADF&G Catalog No. n/a Date 8/12/83

Identify Survey Area A Water Temp. 13.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1350	1530	DV - 1 SS - 1 CT - 3		Section 1
2	1445	1515	--		Section 5

This form is used to record fish caught during Level Three, Four, or Five Surveys.

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas _____ 2. Section Length 50 m.

3. Historical Fish Species _____

Part II.

1. Stream Name Termination Creek 2. ADF&G Catalog No. 106-30-39

3. Latitude _____ Longitude _____

4. Agency Unit _____ 5. Mgmt. Area _____ 6. USGS Map No. Craig D-3

7. Aerial Photo No. _____

8. Bay/Drainage _____ 9. Access _____

10. Present Land Use _____

11. Historical Land Use _____

12. Stream Origin _____ 13. Estimated Flow .02 m^2/sec. 14. Flow Stage 2

15. Stream Temperature 55°F. 16. pH 6 17. Beaver _____

18. Temperature Sensitivity _____

19. Barrier _____ 20. Weather 1

Part III.

21. Intertidal

A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%

B. Gradient ____%

C. ASA _____

D. Schooling _____

E. Shellfish _____

F. Anchorage _____

---

22. Comments:

Turbidity 1
Alkalinity 2 g/gall.
D.O. 8 ppm
Silver salmon, Dolly Varden and cutthroat trout were present.

23. Investigators USFS/Krohn, Hibbard 24. Date 8/14/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Termination Creek 2. ADF&G Catalog No. 106-30-39

Reach Number			I				I
1. Section Number	1	2	3	4	5	6	7
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	124	133		104	171	94	
4. Gradient	4	3	4	7	10	9	-
5. Water Quality							
6. Bank Type L/R	u,g/u,g	g/g	u/g	g/g,u	g,u/g,s	g,u/g	,u
7. Bank Stability L/R	2/2	2/2	3/2	1/1	2/2	2/2	
8. Bank Vegetation							
9. Debris Loading	10	10					
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	1.4	1.6		1.5	1.5	1.5	
12. Water Type %: SS			17				15
DS							
SF			83				85
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	60	30		10	10	5	
15. Rearing Area %							
16. Pool Cover %	10	15		25	65	65	
17. Riffle Cover %							
18. Fish Observed							
19. Sampling			SS				
20. Potential Barriers	3	-		-	-	-	
21. Enhancement/Rehab							

Comments: Two small logs present a 1' high barrier to fry at low water

22. Investigators USFS/Krohn, Hibbard Date 8/14/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Termination Creek 2. ADF&G Catalog No. 106-30-39

Reach Number				I			
1. Section Number	8	9	10	11	12	13	14
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	128	128	140		138	109	143
4. Gradient	22	13	14	-	8	8	10
5. Water Quality							
6. Bank Type L/R	s/g	s/s	s/s		g,u/g,u	g,u/g,u	g,u/g,u
7. Bank Stability L/R	2/2	2/2	2/2		2/2	2/2	2/2
8. Bank Vegetation							
9. Debris Loading	17	8	12		15	30	20
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	1.5	2.0	1.5		1.0	1.2	1.5
12. Water Type %: SS				16			
DS							
SF				84			
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	78	84	88		5	10	5
15. Rearing Area %							
16. Pool Cover %	50	30	30		20	70	70
17. Riffle Cover %							
18. Fish Observed							
19. Sampling				ss,dv			
20. Potential Barriers	-	-	-?				
21. Enhancement/Rehab							

22. Investigators USUFS/Krohn, Hibbard Date 8/14/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Termination Creek 2. ADF&G Catalog No. 106-30-39

Reach Number	I				I		
1. Section Number	15	16	17	18	19	20	21
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing		158	130	138		120	137
4. Gradient	8	17	9	5	4	6	3
5. Water Quality							
6. Bank Type L/R		g,s/g,s	g,s/s	u,g/u,g		g,u/g,u	g,s/g
7. Bank Stability L/R		1/1	1/1	2/2		2/2	1/1
8. Bank Vegetation							
9. Debris Loading		15	15	25		60	50
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water		1.5	1.5	1.5		1.5	1.0
12. Water Type %: SS	17				15		
DS							
SF	83				85		
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality		2	15	30		10	5
15. Rearing Area %							
16. Pool Cover %		35	20	35		75	55
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers							
21. Enhancement/Rehab							

Comments: 20 m. long; 4 meter high moss covered bedrock falls-possible adult and fry barrier in Section 16
V-notch in Sections 16-18

22. Investigators USFS/Krohn, Hibbard Date 8/14/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas _____ 2. Section Length 50 m.

3. Historical Fish Species _____

Part II.

1. Stream Name Amanita Creek 2. ADF&G Catalog No. 106-30-38

3. Latitude _____ Longitude _____

4. Agency Unit 05 5. Mgmt. Area _____ 6. USGS Map No. Craig D-3

7. Aerial Photo No. _____

8. Bay/Drainage Sweetwater Lake 9. Access _____

10. Present Land Use _____

11. Historical Land Use _____

12. Stream Origin _____ 13. Estimated Flow .14 m^3/s. 14. Flow Stage 2

15. Stream Temperature 59^oF. 16. pH 5.3 17. Beaver _____

18. Temperature Sensitivity _____

19. Barrier _____ 20. Weather 3

Part III.

21. Intertidal

A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%

B. Gradient ____%

C. ASA _____

D. Schooling _____

E. Shellfish _____

F. Anchorage _____

---

22. Comments: Turbidity-1 (clear)
Alkalinity-1 mg/l
D.O.-8 ppm
Coho fry were observed in the stream along with cutthroat, cottids and sticklebacks

23. Investigators USFS/Crohn's Crews 24. Date 8/3/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Amanita Creek 2. ADF&G Catalog No. 106-30-38

Reach Number				I			
1. Section Number	1	2	3	4	5	6	7
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	210	126	126	260	260	152	172
4. Gradient	1	1	1	1	1	1	2
5. Water Quality							
6. Bank Type L/R	g,u/u	u/g,u	u/u	u/u	g/g	g/g	s/s,u
7. Bank Stability L/R	2/3	3/2	3/3	3/3	2/2	2/2	2/2
8. Bank Vegetation							
9. Debris Loading	20	35	30		35	35	30
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	2	2.5	2.5	3.1	4.0	4.0	3.0
12. Water Type %: SS				21			
DS							
SF				79			
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	70	80	80		60	50	30
15. Rearing Area %							
16. Pool Cover %	20	25	30		30	30	25
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	-
21. Enhancement/Rehab							

22. Investigators USFS/Crohn's Crews Date 8/3/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Amanita Creek 2. ADF&G Catalog No. 106-30-38

Reach Number		2				3		
1. Section Number		8	9	10	11	12	13	14
2. Section Length		50	50	50	50	50	50	50
3. Compass Bearing			111	119	165		170	193
4. Gradient		1	1.5	1	0.5	0.5		
5. Water Quality								
6. Bank Type	I/R	g/u,g	g,u/g,u	g/g,s	s/s	s/s	s/s	s/s
7. Bank Stability	L/R	2/2	2/2	1/1	1/1	1/1		
8. Bank Vegetation								
9. Debris Loading			15	30	10			
10. Undercut Bank %								
11. Stream Width:								
Channel								
Water		3.1	3.0	3.0	3.5		6.0	6.0
12. Water Type %:	SS	57				3		
	DS	2				97		
	SF	41						
	DF							
13. Substrate %:								
Bedrock								
Boulder								
Large Cobble								
Small Cobble								
Gravel								
Sand								
Muck								
Other								
14. ASA % Quality			50	15	0		1	1
15. Rearing Area %								
16. Pool Cover %			15	20	10		20	20
17. Riffle Cover %								
18. Fish Observed								
19. Sampling								
20. Potential Barriers		-	-	-	-	-	-	-
21. Enhancement/Rehab								

Comments: Section 9-River splits and rejoins at the next observational, at a bog.
Section 10-Some bedrock showing through. Much of the debris is marsh-grass as stream enters bog area.
Section 11-Bog area. Stream is totally bounded by marsh grass
Section 12-Old beaver dam. One coho was found.
Sections 13-15-Marsh area

22. Investigators USFS/Crohn's Crews Date 8/3/80

Abstracted Data from USFS Level IV Surveys

and Adapted to Level II Format

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Amanita Creek 2. ADF&G Catalog No. 106-30-38

Reach Number		4					
1. Section Number	15	16	17	18	19	20	21
2. Section Length	50	50	50	50	50	50	50
3. Compass Bearing	188		215	224	254	84	52
4. Gradient	0	0	0	0	0	.5	.5
5. Water Quality							
6. Bank Type L/R	s/s	s/s	s/s	s/s	s/s	s/s	s/s
7. Bank Stability L/R		1/1	2/2	2/2	2/2	1/1	1/1
8. Bank Vegetation							
9. Debris Loading	20						
10. Undercut Bank %							
11. Stream Width:							
Channel							
Water	5		4	4	3	3.5	3.5
12. Water Type %: SS							
DS		99					
SF		1					
DF							
13. Substrate %:							
Bedrock							
Boulder							
Large Cobble							
Small Cobble							
Gravel							
Sand							
Muck							
Other							
14. ASA % Quality	1	0	0	0	0	0	0
15. Rearing Area %							
16. Pool Cover %	20		5	5	5	15	15
17. Riffle Cover %							
18. Fish Observed							
19. Sampling							
20. Potential Barriers	-	-	-	-	-	-	-
21. Enhancement/Rehab							

Comments: Section 16-Marsh area. Waterlillies and marshgrass
Section 21-Lake-end of survey

22. Investigators USFS / Crohn's Crews Date 8/3/80

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100 m

3. Historical Fish Species PS

Part II.

1. Stream Name Barnes Lake SE Head 2. ADF&G Catalog No. 106-30-35
3. Latitude 56°00'37" Longitude 132°56'38"
4. Agency Unit 05 5. Mgmt. Area 552 K 6. USGS Map No. Petersburg A-3
7. Aerial Photo No. 79-29-479-114/115
8. Bay/Drainage Barnes Lakes 9. Access 2
10. Present Land Use none
11. Historical Land Use entire drainage clearcut to banks
12. Stream Origin 3, 4, 5, 6 13. Estimated Flow 2 cfs 14. Flow Stage 2
15. Stream Temperature 13°C 16. pH 6.3 17. Beaver no
18. Temperature Sensitivity yes; low flow, marginal canopy, and muskeg seeps
19. Barrier yes; low flow & debris 20. Weather 1

Part III.

21. Intertidal

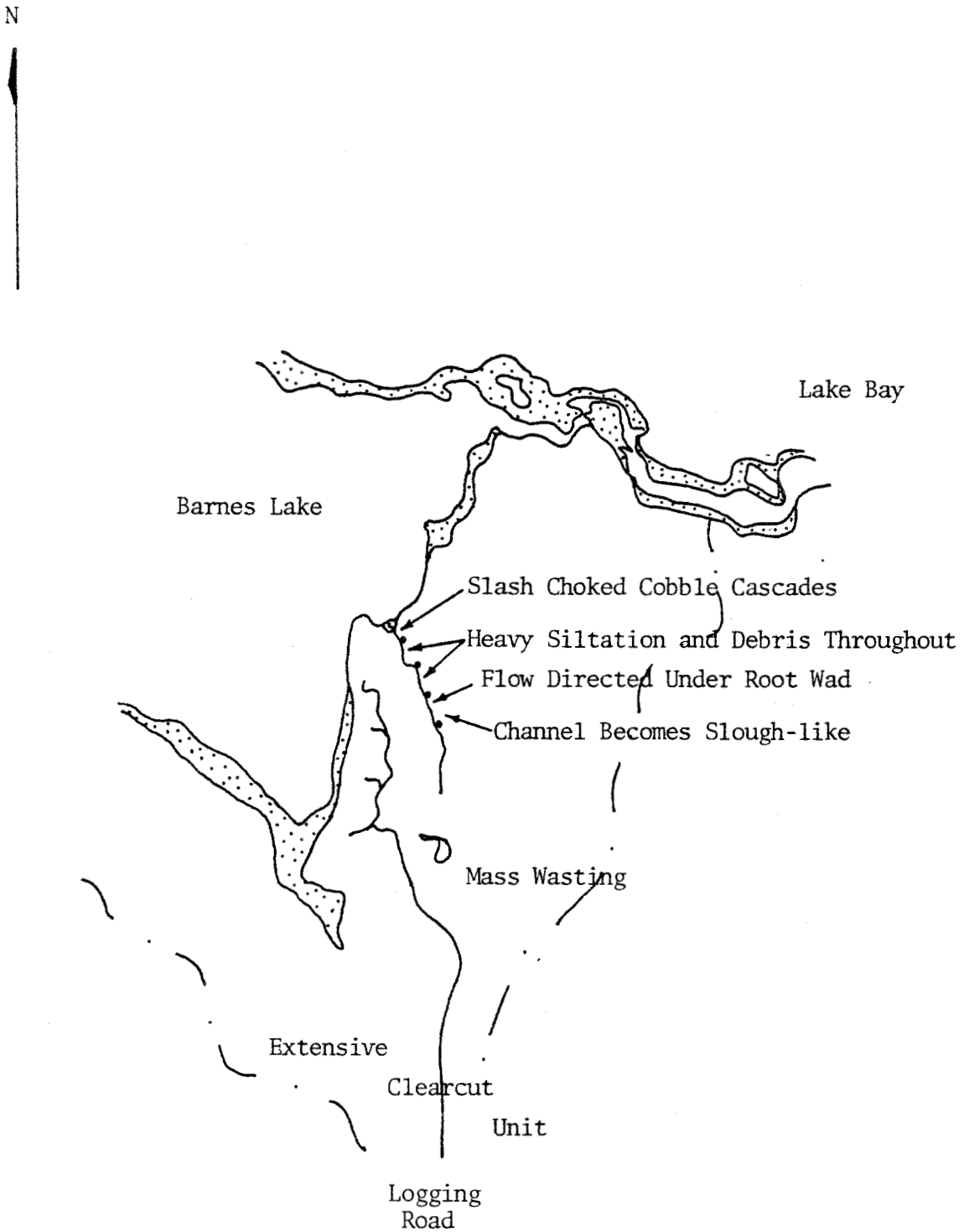
A. Substrate: Fines 35 % Gravel/S. Cob. 65 %
L. Cob/Boulder/Bedrock -- %
B. Gradient 4 %
C. ASA % 0
D. Schooling Barnes Lake
E. Shellfish common at mouth
F. Anchorage vessel in Lake Bay; skiff to Barnes

22. Comments: Stream Evaluation

This small watershed has been loogged to the banks throughout its entirety. Extreme debris loading and dense overhanging vegetation impeded the survey process, ultimately resulting in termination 300 meters above the lake confluence. Coniferous reproduction and bank stability appeared quite good, however, ubiquitous debris inhibited instream migration, and the gravel/small cobble substrate was heavily silted throughout. Muskeg seeps were common and several SS fry were observed rearing in slash pools. No enhancement or rehabilitation recommended.

23. Investigators Ted Mickowski 24. Date 8/14/83

106-30-35


N
Lake Bay
Barnes Lake
Slash Choked Cobble Cascades
Heavy Siltation and Debris Throughout
Flow Directed Under Root Wad
Channel Becomes Slough-like
Mass Wasting
Extensive
Clearcut
Unit
Logging
Road

Barnes Lake SE Head
106-30-35

1. Well established coniferous rerod borders slash choked ITZ.

2. Section 1: Muskeg seep, left. Copious debris and heavily silted riffles typify Reach 2.

3. Section 2: Ubiquitous debris and overhanging vegetation impeded survey and may prevent instream migration during periods of low flow.

4. Section 3: Channel becomes non-distinct and "slough-like" with no detectable flow, a primarily organic substrate, and dense riparian vegetation.

106-30-35

Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	4.2	5	21
2	100	1.2	5	6
3	100	1.8	5	9
Total				$36m^2$

Section	Length (m)	Width (m)	ASA %	ASA Total

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Barnes Lake SE Head 2. ADF&G Catalog No. 106-30-35

Reach Number	1	2	2				
1. Section Number	1I	2	2				
2. Section Length	100	100	100				
3. Compass Bearing	126	171	171				
4. Gradient	4	2	1				
5. Water Quality	3	3	3				
6. Bank Type	B	B	C				
7. Bank Stability	1/1	1/1	1/1				
8. Bank Vegetation	1,3-5	1,3-5	1,3-5				
9. Debris Loading	40	65	55				
10. Undercut Bank Length	15	--	--				
11. Stream Width:							
Channel	9.9	1.2	9.0				
Water	4.2	1.2	1.8				
12. Water Type %: SS	40	55	60				
DS	--	--	--				
SF	60	45	40				
DF	--	--	--				
13. Substrate %:							
Bedrock	--	--	--				
Boulder	--	--	--				
Large Cobble	10	--	5				
Small Cobble	20	15	20				
Gravel	45	60	35				
Sand	25	25	25				
Muck	--	--	15				
Other	--	--	--				
14. ASA %/Quality	5/3	5/3	5/3				
15. Rearing Area %	35	60	60				
16. Pool Cover %	55	70	60				
17. Riffle Cover %	35	60	45				
18. Fish Observed (fry)SS	12	3	--				
19. Sampling	Y	N	N				
20. Potential Barriers	N	N	N				
21. Enhancement/Rehab	N	N	N				

Section 1: ITZ ends at 60 m, demarcating the extent of Reach 1. The ITZ is characterized by slash choked cobble cascades, containing no ASA and marginal rearing.
60m; Muskeg seep, left borders instream skunk cabbage.
Gravel riffles throughout remainder of section are badly silted. SS fry observed rearing in debris induced pools.

Section 2: Ubiquitous debris and overhanging vegetation impeded survey and may prevent instream migration during periods of low flow.

22. Investigators Ted Mickowski Date 8/14/83

LEVEL TWO HABITAT SURVEY

106-30-35

Section 2: Substrate remains badly silted (see photo).

Section 3: 38m; Entire flow is directed under root wad, forming a potential low flow barrier.
62-100m; Channel becomes non-distinct and "slough-like" with no detectable flow, a primarily organic substrate, and dense riparian vegetation (see photo).

Reconnaissance beyond Section 3 revealed a return to "stream character", however, extreme debris loading, lack of fish sightings, and a tendency toward angular cobble negated additional surveying.

FISH SAMPLING FORM

Stream Name Barnes Lake SE Head ADF&G Catalog No. 106-30-35 Date 8/14/83

Identify Survey Area A Water Temp. 13°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1140	1240	SS - 5	--	Set in Section 1 debris pool.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

PEAK ESCAPEMENT RECORD

106-30-35

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
8/23/65	20,000			Aerial mouth count: Survey suggests inadequate habitat is available to sustain this magnitude of run.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas n/a 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name n/a 2. ADF&G Catalog No. 106-30-34
3. Latitude 56°00'49" Longitude 132°56'15"
4. Agency Unit 05 5. Mgmt. Area 552K 6. USGS Map No. Petersburg A-3
7. Aerial Photo No. 79-29-479-114/115
8. Bay/Drainage Barnes Lake 9. Access 2
10. Present Land Use none
11. Historical Land Use entire drainage is clearcut
12. Stream Origin 3, 4, 5, 6 13. Estimated Flow <1 cfs 14. Flow Stage 2
15. Stream Temperature -- 16. pH -- 17. Beaver --
18. Temperature Sensitivity --
19. Barrier -- 20. Weather 1

Part III.

21. Intertidal

A. Substrate: Fines 100% Gravel/S. Cob. -- %
L. Cob/Boulder/Bedrock -- %
B. Gradient -- %
C. ASA % --
D. Schooling Barnes Lake
E. Shellfish moderate throughout Lake Bay/Barnes Lake.
F. Anchorage vessel in Lake Bay, skiff to Barnes

22. Comments Stream Evaluation
106-30-34 represents nothing more than a "muskeg seep" with an indistinct channel and marginal flow. No fish or habitat observed, and no enhancement or rehabilitaion recommended.

23. Investigators Ted Mickowski 24. Date 8/14/83

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name n/a 2. ADF&G Catalog No. 106-30-33
3. Latitude 56°00'45" Longitude 132°55"25"
4. Agency Unit 05 5. Mgmt. Area 552 K 6. USGS Map No. Petersburg A-3
7. Aerial Photo No. 79-30-479-102/101
8. Bay/Drainage Lake Bay 9. Access 2
10. Present Land Use none
11. Historical Land Use none
12. Stream Origin 3, 4, 5, 6 13. Estimated Flow 1.5 cfs 14. Flow Stage 2.5
15. Stream Temperature 11.0 16. pH 6.3 17. Beaver no
18. Temperature Sensitivity yes
19. Barrier no 20. Weather 3

Part III.

21. Intertidal

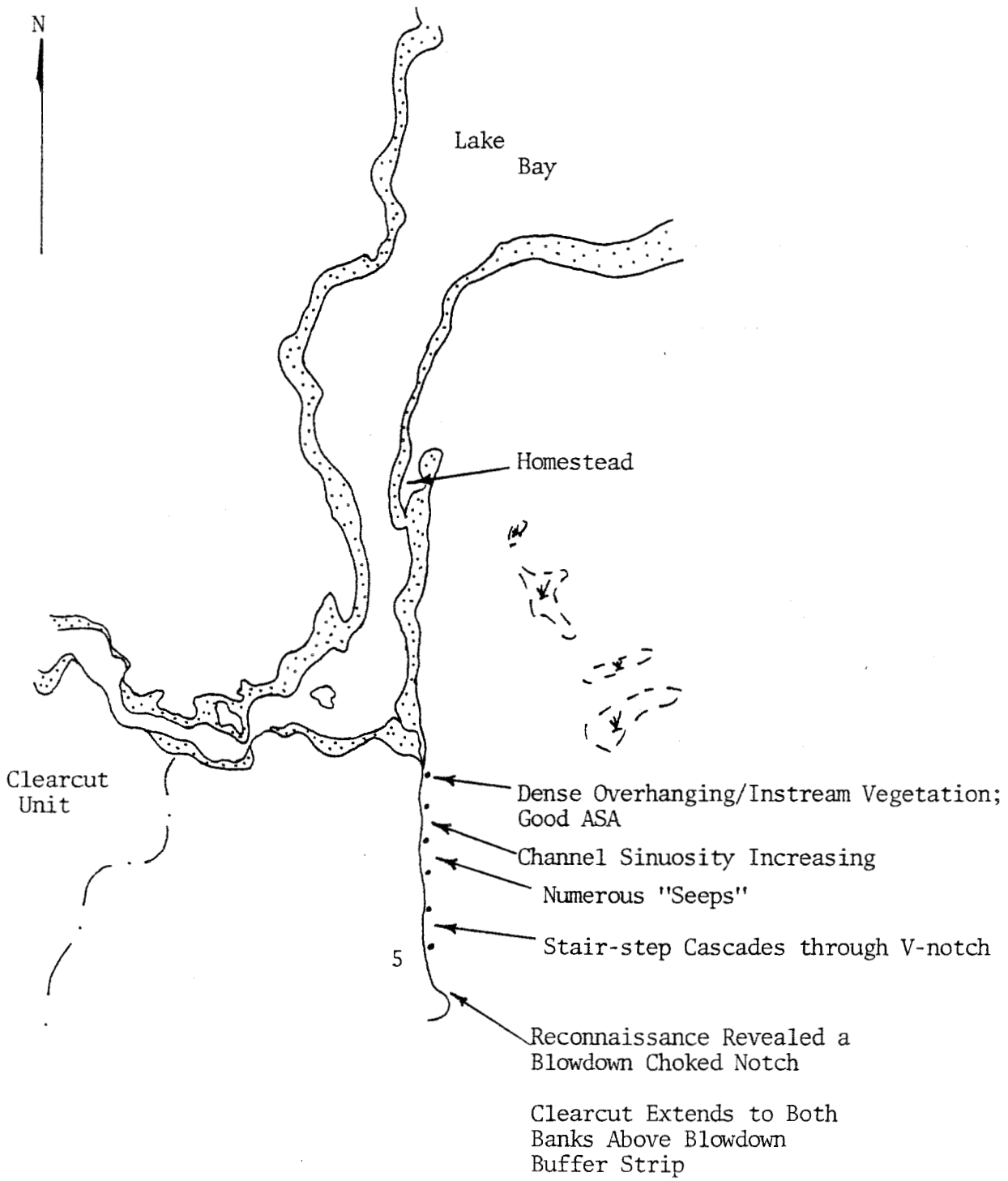
A. Substrate: Fines 8 % Gravel/S. Cob. 70 %
L. Cob/Boulder/Bedrock 22 %
B. Gradient 1.5 %
C. ASA % 45/good
D. Schooling Lake Bay
E. Shellfish moderate in Lake Bay
F. Anchorage Lake Bay

22. Comments Stream Evaluation

Small sinuous muskeg drainage contains good-excellent ASA in the ITZ and Reach 1. Undercut banks, overhanging vegetation, and moderate debris provide suitable rearing habitat; however, fish were conspicuously absent. Seeps were common throughout survey and copious instream vegetation suggest low flows are characteristic. Reach 2 is marked by a gradient increase as the boulder/cobble channel negotiates a notch. Survey was terminated due to lack of habitat and fish sightings. No rehabilitation or enhancement recommended.

23. Investigators Ted Mickowski 24. Date 6/21/83

106-30-33


N
Lake
Bay
Homestead
Clearcut
Unit
Dense Overhanging/Instream Vegetation;
Good ASA
Channel Sinuosity Increasing
Numerous "Seeps"
Stair-step Cascades through V-notch
5
Reconnaissance Revealed a
Blowdown Choked Notch
Clearcut Extends to Both
Banks Above Blowdown
Buffer Strip

1. The ITZ contains extensive cobble/gravel riffles interspersed by boulders.

2. View down lower ITZ across Lake Bay.

3. Narrow channel widths, overhanging banks and low flow typify stream.

4. Reconnaissance: Blowdown from a clearcut buffer chokes notch, creating a physical migratory impass.

106-30-33

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	3.3	20	66					
2	100	1.0	15	15					
3	100	1.2	10	12					
4	100	1.2	5	6					
Total				$99.0m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name n/a 2. ADF&G Catalog No. 106-30-33

Reach Number	1	1	1	2	2		
1. Section Number	1	2	3	4	5		
2. Section Length	100	100	100	100	100		
3. Compass Bearing	169	149	145	161	164		
4. Gradient	2.5	2.5	3.5	5	8		
5. Water Quality	3	3	3	3	3		
6. Bank Type	A/B	A/B	A/B	B	B		
7. Bank Stability	1/1	1/1	1/1	1/1	1/1		
8. Bank Vegetation	1,3-5	1,3-5	1,3-5	1,3-5	1,3-5		
9. Debris Loading	8	10	10	12	10		
10. Undercut Bank Length	70	50	45	40	35		
11. Stream Width:							
Channel	8.3	3.3	1.2	1.2	2.1		
Water	3.3	1.0	1.2	1.2	2.1		
12. Water Type %: SS	35	40	30	10	30		
DS	25	--	--	--	--		
SF	40	60	70	90	70		
DF	--	--	--	--	--		
13. Substrate %:							
Bedrock	--	--	--	--	--		
Boulder	2	--	--	5	5		
Large Cobble	10	10	15	20	15		
Small Cobble	40	50	50	45	50		
Gravel	48	35	30	25	25		
Sand	5	5	5	5	5		
Muck	--	--	--	--	--		
Other	--	--	--	--	--		
14. ASA %/Quality	20	15	10	5	--		
15. Rearing Area %	25	20	10	5	10		
16. Pool Cover %	15	15	15	10	10		
17. Riffle Cover %	5	5	5	10	10		
18. Fish Observed	N	N	N	N	N		
19. Sampling	Y	N	N	N	N		
20. Potential Barriers	N	N	N	N	N		
21. Enhancement/Rehab	N	N	N	N	N		

Section 1: Dense overhanging/instream vegetation. Undercut banks and debris common.
Section 2: Channel sinuosity increasing.
Section 3: Numerous seeps throughout.
Section 4: Gradient and boulder/large cobble incidence, increasing as "bed" climbs notch.
Section 5: Channel rapidly climbs notch via stair-step cascades. Survey terminated due to lack of habitat.

22. Investigators Ted Mickowski Date 6/21/83

Reconnaissance beyond survey end revealed upper portion of V-notch is choked with blowdown bordering a clearcut.

FISH SAMPLING FORM

Stream Name n/a ADF&G Catalog No. 106-30-33 Date 6/21/83

Identify Survey Area A Water Temp. 11.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1645	1905	SS - 1	--	Trap set in ITZ.
2	1705	1900	--		Section 1.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100 m

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name none 2. ADF&G Catalog No. 106-30-30

3. Latitude 56°01'20" Longitude 132°54'35"

4. Agency Unit 05 5. Mgmt. Area 552 K 6. USGS Map No. Petersburg A-3

7. Aerial Photo No. 8-26-79 12 30 610050 479-103

8. Bay/Drainage Lake Bay 9. Access 2

10. Present Land Use none

11. Historical Land Use none

12. Stream Origin 5 13. Estimated Flow 3 cfs 14. Flow Stage 3

15. Stream Temperature 11°C 16. pH 6.0 17. Beaver none

18. Temperature Sensitivity no

19. Barrier none surveyed 20. Weather 3

Part III.

21. Intertidal

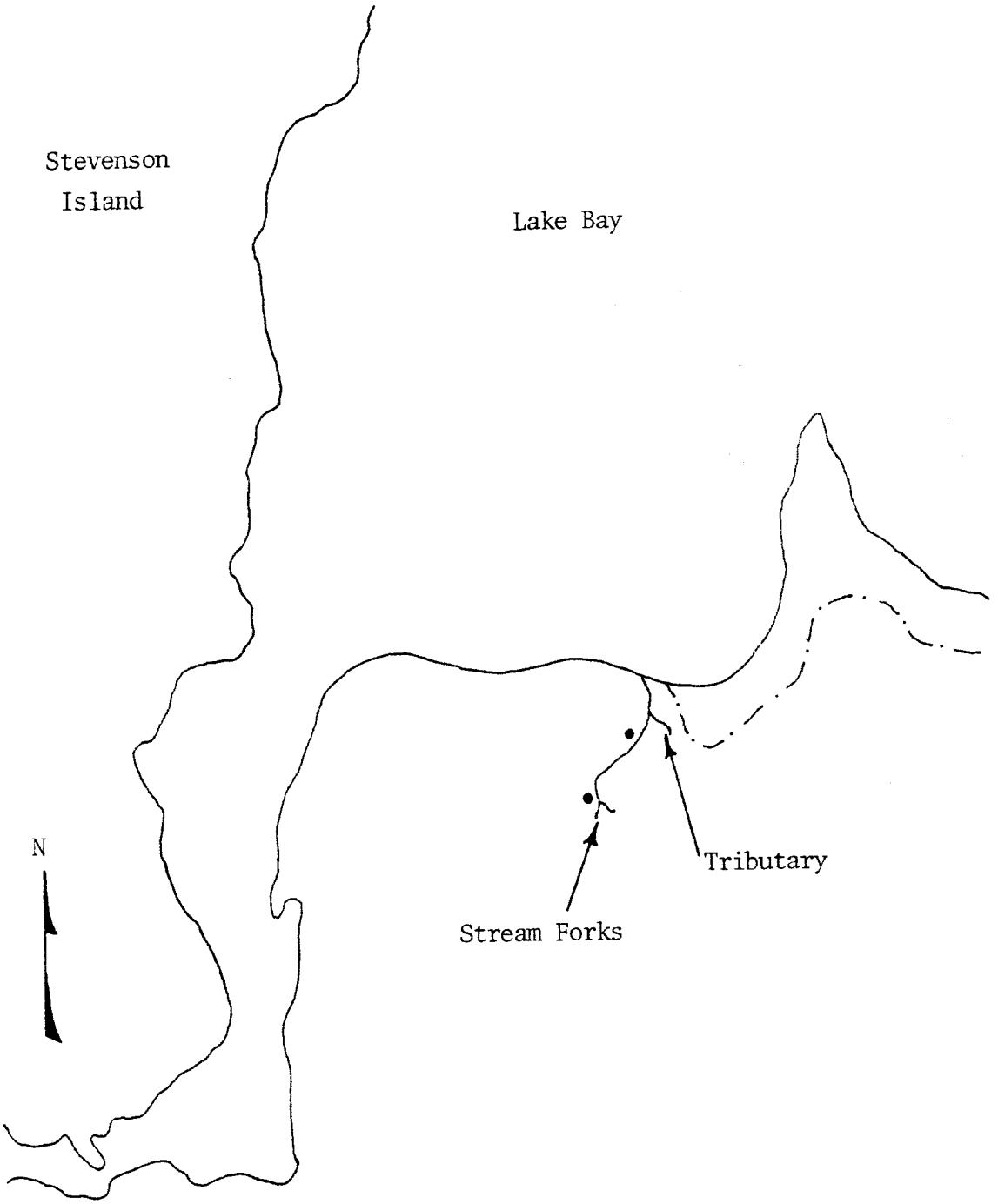
A. Substrate: Fines 30 % Gravel/S. Cob. 30 %
L. Cob/Boulder/Bedrock 40 %
B. Gradient 1.0 %
C. ASA % 5/good
D. Schooling no
E. Shellfish no
F. Anchorage Lake Bay

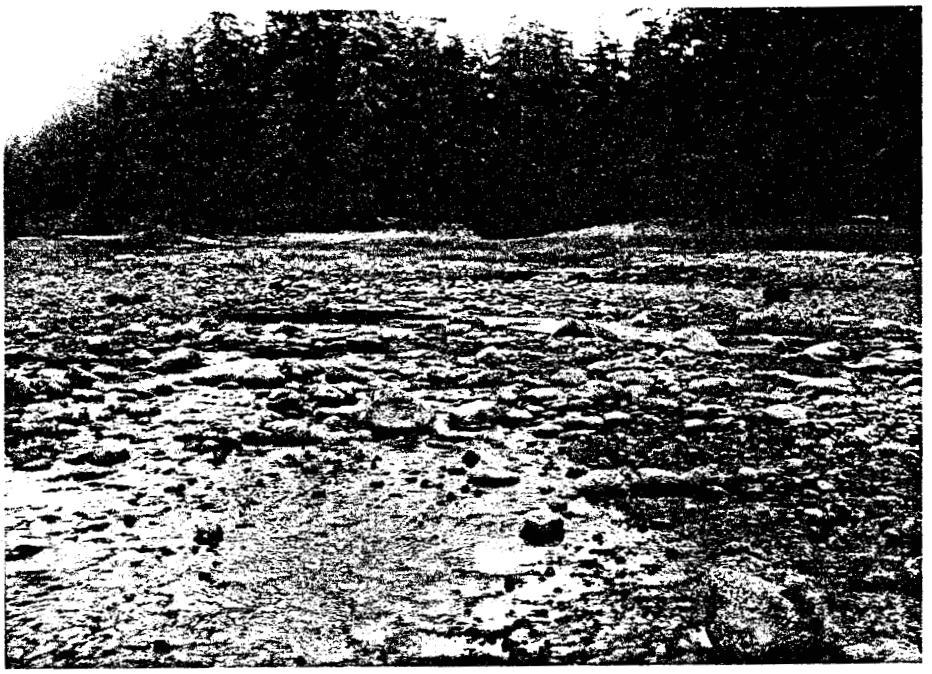
22. Comments Stream Evaluation

This small, dark stream had fair ASA and good rearing. Because of the dark color, fish observations were difficult. Riparian vegetation and debris provide good rearing for coho fry.

23. Investigators Randy Ericksen 24. Date 6/21/83

106-30-30





1. The ITZ looking toward the creek mouth. Pockets of small cobble and gravel are interspersed throughout the boulders producing some good ASA.

2. Section 1. Good riparian vegetation and debris provide cover for rearing fry.

106-30-30

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	3.0	6	18.0					
2	100	2.1	2	4.2					
Total				$22.2m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name n/a 2. ADF&G Catalog No. 106-30-30

Reach Number	1	1					
1. Section Number	1	2					
2. Section Length	100	100					
3. Compass Bearing	180	240					
4. Gradient	2.0	4.0					
5. Water Quality	4	4					
6. Bank Type	B	B					
7. Bank Stability	1/1	1/1					
8. Bank Vegetation	1,3,4	1,3,4					
9. Debris Loading	15	30					
10. Undercut Bank Length	40	5					
11. Stream Width:							
Channel	3.0	2.2					
Water	3.0	2.1					
12. Water Type %: SS	30	50					
DS	--	5					
SF	70	45					
DF	--	--					
13. Substrate %:							
Bedrock	--	--					
Boulder	--	--					
Large Cobble	10	10					
Small Cobble	25	10					
Gravel	25	30					
Sand	30	30					
Muck	10	20					
Other	--	--					
14. ASA %/Quality	6/2	2/2					
15. Rearing Area %	10	20					
16. Pool Cover %	15	30					
17. Riffle Cover %	10	10					
18. Fish Observed	SS	SS					
19. Sampling	Y	N					
20. Potential Barriers	N	N					
21. Enhancement/Rehab	N	N					

Section 1: Deer sign. Predominantly riffle. A tributary enters the left bank at 80 meters.

Section 2: Abundant debris; several deep pools. Creek forks into two small tributaries with no fish habitat at end of section.

22. Investigators Randy Ericksen Date 6/21/83

FISH SAMPLING FORM

Stream Name n/a ADF&G Catalog No. 106-30-30 Date 6/21/83

Identify Survey Area A Water Temp. 11°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1625	1655	SS - 1		Section 1

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas none 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name none 2. ADF&G Catalog No. 106-30-25
3. Latitude 56°00'55" Longitude 132°53'15"
4. Agency Unit 05 5. Mgmt. Area 552 K 6. USGS Map No. Petersburg A-3
7. Aerial Photo No. 8-26-79 12 31 610050 479-19
8. Bay/Drainage Lake Bay 9. Access 2
10. Present Land Use none
11. Historical Land Use none
12. Stream Origin 4, 5 13. Estimated Flow 3 cfs 14. Flow Stage 2
15. Stream Temperature 17°C 16. pH 5.5 17. Beaver yes
18. Temperature Sensitivity no
19. Barrier no 20. Weather 3

Part III.

21. Intertidal

A. Substrate: Fines 70 % Gravel/S. Cob. 25 %
L. Cob/Boulder/Bedrock 5 %
B. Gradient 0.5 %
C. ASA % 2/fair
D. Schooling no
E. Shellfish no
F. Anchorage Lake Bay

22. Comments Stream Evaluation

This small dark stream had an extensive intertidal zone but otherwise supplied rearing habitat only. Arriving at high tide one can take a small skiff well up into the grass flats near a large island of trees. About 500 meters of ITZ exists before a series of intertidal and beaver ponds produce rearing habitat but no ASA. No coho fry were seen during the survey.

23. Investigators Randy Ericksen 24. Date 6/25/83

1. Looking south, the ITZ travels through a large grassflat. Some ASA is present in patches of gravel interspersed throughout the ITZ.

2. A series of intertidal ponds and beaver ponds provide good rearing habitat.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas none 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name none 2. ADF&G Catalog No. 106-30-22

3. Latitude 56°00'45" Longitude 132°52'15"

4. Agency Unit 05 5. Mgmt. Area 552 K 6. USGS Map No. Petersburg A-3

7. Aerial Photo No. 8-26-79 12 31 610050 479-19

8. Bay/Drainage Lake Bay 9. Access 2

10. Present Land Use none

11. Historical Land Use none

12. Stream Origin 4, 5 13. Estimated Flow 2 cfs 14. Flow Stage 2

15. Stream Temperature 17°C 16. pH 6.0 17. Beaver yes

18. Temperature Sensitivity no

19. Barrier 4 20. Weather 3

Part III.

21. Intertidal

A. Substrate: Fines 70 % Gravel/S. Cob. 25 %
L. Cob/Boulder/Bedrock 5 %
B. Gradient 1.5 %
C. ASA % 2/fair
D. Schooling yes
E. Shellfish yes
F. Anchorage Lake Bay

22. Comments Stream Evaluation

This small stream ahd about 300 meters of ITZ, quite impressive for such a small stream. The stream is dark tan in color making fish observation difficult. No fish were seen or caught during the survey. The stream appears to have a low but stable flow as indicated by extensive growth of algae and skunk cabbage in the stream channel. A 1.5 meter high beaver dam probably blocks salmonid migration 70 meters up from the ITZ.

23. Investigators Randy Ericksen 24. Date 6/25/83

1. The ITZ is quite extensive, but a large percentage of interstitial fines limit the amount of ASA.

2. Extensive algal and skunk cabbage growth in midstream is an indication of low but stable flow.

FISH SAMPLING FORM

Stream Name n/a ADF&G Catalog No. 106-30-22 Date 6/25/83

Identify Survey Area n/a Water Temp. 17.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1255	1325	--		Below dam.
2	1255	1325	--		In pond above the dam.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas none 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name Coffman Cove #3 2. ADF&G Catalog No. none

3. Latitude 56°00'50" Longitude 132°50'55"

4. Agency Unit 05 5. Mgmt. Area 572 K 6. USGS Map No. Petersburg A-3

7. Aerial Photo No. 8-26-79 12 32 610050 479-12

8. Bay/Drainage Coffman Cove 9. Access 2

10. Present Land Use none

11. Historical Land Use none

12. Stream Origin 4, 5 13. Estimated Flow .5 cfs 14. Flow Stage 2

15. Stream Temperature 12.5°C 16. pH 6.5 17. Beaver none

18. Temperature Sensitivity yes, small stream

19. Barrier none 20. Weather 3

Part III.

21. Intertidal Shares ITZ with #2

A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%
B. Gradient ____%
C. ASA % ____
D. Schooling ____
E. Shellfish ____
F. Anchorage ____

22. Comments Stream Evaluation

This stream flows into a large tidal pond west of Coffman Cove #2. Coho fry were present in the stream. Fish habitat is limited mostly to rearing. ASA is minimal due to low flow and fine substrate. The stream originates from several muskeg seeps 50 meters up from the ITZ.

23. Investigators Randy Ericksen 24. Date 6/25/83

Coffman Cove #3

1. The creek mouth looking from the intertidal pond.

2. Good rearing habitat for coho fry but ASA is limited due to low flow and fine substrate.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas none 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name Coffman Cove #2 2. ADF&G Catalog No. none
3. Latitude 56°00'50" Longitude 132°50'50"
4. Agency Unit 05 5. Mgmt. Area 572 K 6. USGS Map No. Petersburg A-3
7. Aerial Photo No. 8-26-79 12 32 610050 479-12
8. Bay/Drainage Coffman Cove 9. Access 2
10. Present Land Use none
11. Historical Land Use none
12. Stream Origin 4, 5 13. Estimated Flow .5 cfs 14. Flow Stage 2
15. Stream Temperature 12°C 16. pH 6.5 17. Beaver none
18. Temperature Sensitivity yes; small stream
19. Barrier none 20. Weather 3

Part III.

21. Intertidal

A. Substrate: Fines 50 % Gravel/S. Cob. 10 %
L. Cob/Boulder/Bedrock 40 %
B. Gradient 1.5%
C. ASA % 2/fair
D. Schooling yes
E. Shellfish yes
F. Anchorage Coffman Cove

22. Comments Stream Evaluation

This small stream feeds a large intertidal zone. A large intertidal pond is formed at the terminus of the ITZ. Coffman Cove #2 and #3 both flow into this tidal pond. Coffman Cove #2 enters the pond on the east side. Sticklebacks and cottids were abundant in the ITZ. The stream itself provided good rearing habitat but marginal ASA. Substrate consists largely of sand and woody debris. Coho were common 70 meters upstream where the stream branched off into several muskeg seeps.

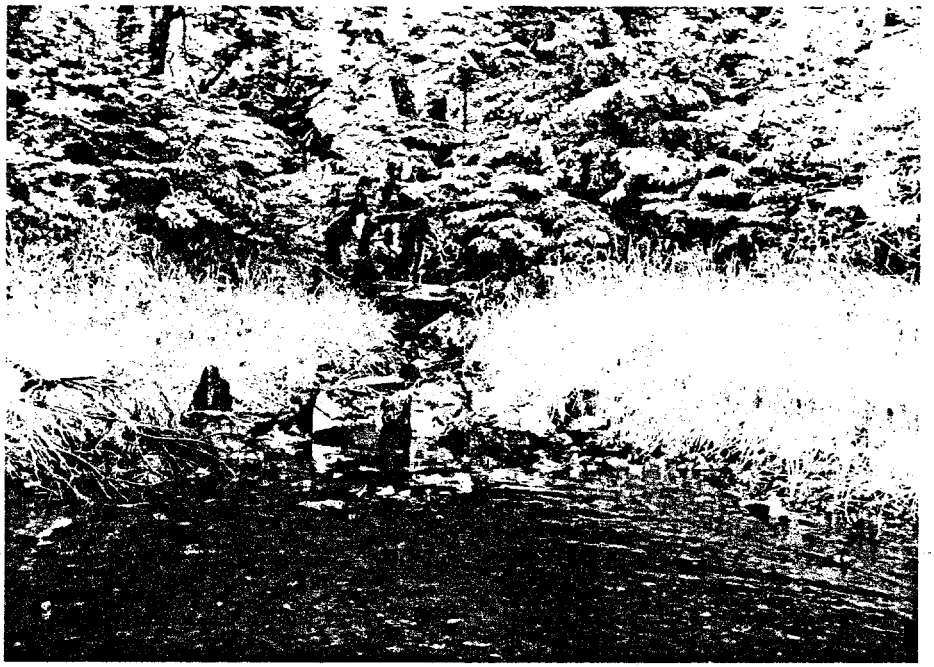
23. Investigators Randy Ericksen 24. Date 6/25/83

Coffman Cove #2

1. The common ITZ with #3 looking upstream at old yarding equipment. Intertidal ASA is limited due to interstitial fines and a mixture of larger substrate.

2. The common ITZ with #3 looking north from the intertidal pond. The pond provides habitat for cottids and sticklebacks.

Coffman Cove #2



3. The creek mouth looking from the intertidal pond. Large cobble and boulder substrate decrease the intertidal ASA.

4. Good rearing habitat for coho fry but ASA is marginal due to substrate fines.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas none 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name Coffman Cove #1 2. ADF&G Catalog No. none
3. Latitude 55°59'55" Longitude 132°51'30"
4. Agency Unit 05 5. Mgmt. Area 572 K 6. USGS Map No. Craig D-3
7. Aerial Photo No. 8-26-79 12 32 610050 479-10
8. Bay/Drainage Coffman Cove 9. Access 2
10. Present Land Use none
11. Historical Land Use logged 10-15 years ago
12. Stream Origin 5 13. Estimated Flow .5 cfs 14. Flow Stage 2
15. Stream Temperature 13°C 16. pH 6.5 17. Beaver none
18. Temperature Sensitivity yes, small stream with southern exposure
19. Barrier none 20. Weather 1, 3, 5

Part III.

21. Intertidal

A. Substrate: Fines 15 % Gravel/S. Cob. 85 %
L. Cob/Boulder/Bedrock 0 %
B. Gradient 1.5 %
C. ASA % 10/fair
D. Schooling no
E. Shellfish no
F. Anchorage Coffman Cove

22. Comments Stream Evaluation

This small stream shares the intertidal zone with Coffman Creek, 106-30-16. The stream contains 80 meters of fair fish habitat before forking into two smaller streams. Logging has taken place along both banks, subsequently debris and riparian cover are dense. Coho fry were common near the mouth but quickly became scarce moving upstream.

23. Investigators Randy Ericksen 24. Date 6/25/83

Coffman Cove #1

1. The intertidal zone looking toward the creek mouth at high tide. Intertidal appeared fair but an accurate assessment was difficult because of the tidal stage.

2. Dense cover is provided as a result of past logging operations.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A, B (B-1 & B-2) 2. Section Length 100 meters

3. Historical Fish Species PS, CS

Part II.

1. Stream Name Coffman Creek 2. ADF&G Catalog No. 106-30-015
3. Latitude 55°59'30" Longitude 132°51'20"
4. Agency Unit 05 5. Mgmt. Area 572K 6. USGS Map No. Craig D-3
7. Aerial Photo No. 1979 Photos Fl. Ln. 32 Photos 7-10; Fl. Ln. 33 Photo 148
8. Bay/Drainage Coffman Cove 9. Access 1
10. Present Land Use Active logging roads & harvesting in watershed.
11. Historical Land Use Older (20-25 Years) clearcuts at mouth of creek.
12. Stream Origin 3, 4, 5, 6 13. Estimated Flow about 30 cfs 14. Flow Stage 2
15. Stream Temperature 13°C 16. pH 7.0 17. Beaver Yes
18. Temperature Sensitivity Yes, extensive clearcutting in watershed.
19. Barrier Yes, isolated debris jams; Reach IV 20. Weather 1, 3

Part III.

21. Intertidal

A. Substrate: Fines 55 % Gravel/S. Cob. 30 %
L. Cob/Boulder/Bedrock 15 %
B. Gradient 1 %
C. ASA % Fair (Upper ITZ Only)
D. Schooling Yes, isolated cut banks.
E. Shellfish Abundant clams, mussels, Dungeness observed.
F. Anchorage Coffman Cove

22. Comments Stream Evaluation

The stream possesses moderate capability for productivity of pinks, chums, coho, Dolly Varden, cutthroat and steelhead. However, this moderate productivity has been further reduced by logging the stream side area on 75% of the available fish habitat (and 100% of the moderate or better habitat). Harvesting is as old as 25 years and as recent as April 1983. Moderate amounts of coho and trout fry were observed and sampled throughout the stream.

23. Investigators Gerry Merrigan 24. Date 6/25/83

Coffman Creek
106-30-015
Reach Analysis

ITZ

The lower ITZ consists of an extensive mudflat abundant in shellfish and predominantly bounded by old (about 20-25 years) clearcuts. The middle ITZ is largely grass meadow with numerous rearing sloughs and ponds. Deer were observed in this area. Numerous small streams join the ITZ here (on the north side, Coffman Cove #1; and on the south side, 106-30-014). An additional small drainage is located in the SW corner of the ITZ. Due to lack of aerial photo coverage, this stream (which does not have an ADF&G number or appear on a quad map) was not surveyed. However, this stream readily adapts itself to aerial photo reconnaissance since the timber in the watershed has been entirely removed. The stream's intertidal zone extends to the road above which the stream forks and heads upslope at a steep gradient. The stream appears to have intertidal rearing capability only.

This upper ITZ of Coffman Creek contains poor to moderate quality ASA in a stretch of compacted gravel with a coating of aquatic filamentous algae on the substrate just below the mouth.

Reach I: 200m

This Reach runs beneath a complete alder canopy and within an old clearcut (20-25 years). Filamentous algal growth completely covers the substrate. The gradient and velocity are respectively low and slow. Good rearing opportunity is present with considerable length of undercut banks but only Dolly Varden fry were observed.

Reach II: 1800m

This Reach runs through an old unit between gentle banks at a low gradient. Spawning gravel is consistently located in small sections throughout the Reach which is largely pool (riffle:pool about 1:3). The gravel is loose and of good quality with an occasional heavy deposition of sand. Coho fry were observed in heavy concentrations throughout the Reach. Rearing cover is good with a complete alder canopy, large amounts of instream logs and debris, and undercut banks. Some braiding and meandering occurs within the Reach. A steel girder bridge crossing occurs at Section 10: 20m. Old and inactive beaver sign was noted. Stream banks gradually steepen from Section 16 to Section 20.

Reach III: 200m

Here the stream enters a V-notch with poor fish habitat and steep gradient, but no barriers. Bedrock, boulder and large cobble substrate predominate.

Reach IV: 1100m

Here the stream then forms the lower boundary of a clearcut located on the right bank. The unit has been fairly recently harvested (less than 4 years old) with the buffer strip (right side) harvested in April 1983. Consequently, there was considerable logging debris and slash in the stream. Numerous soil slumps and bank failures were located streamside, largely associated with recent cutting and yarding activity. Strip trails were observed across the stream and up the river

there was considerable logging debris and slash in the stream. Numerous soil slumps and bank failures were located streamside, largely associated with recent cutting and yarding activity. Strip trails were observed across the stream and up the river bank from yarding timber across the stream from the left bank. Numerous debris jams had formed and in one instance, caused a major channel migration. That left a large small cobble/gravel area without stream flow. Isolated bedrock exposure was also noted. The stream is largely within or adjacent to the unit with occasional bends into old growth forests. For the most part, the stream has only partial canopy cover. Moderate amounts of coho and Dolly Varden fry were observed. A major tributary (Survey Area "B") enters the main stem via the right bank, Section 33: 100m.

Reach V: 400m

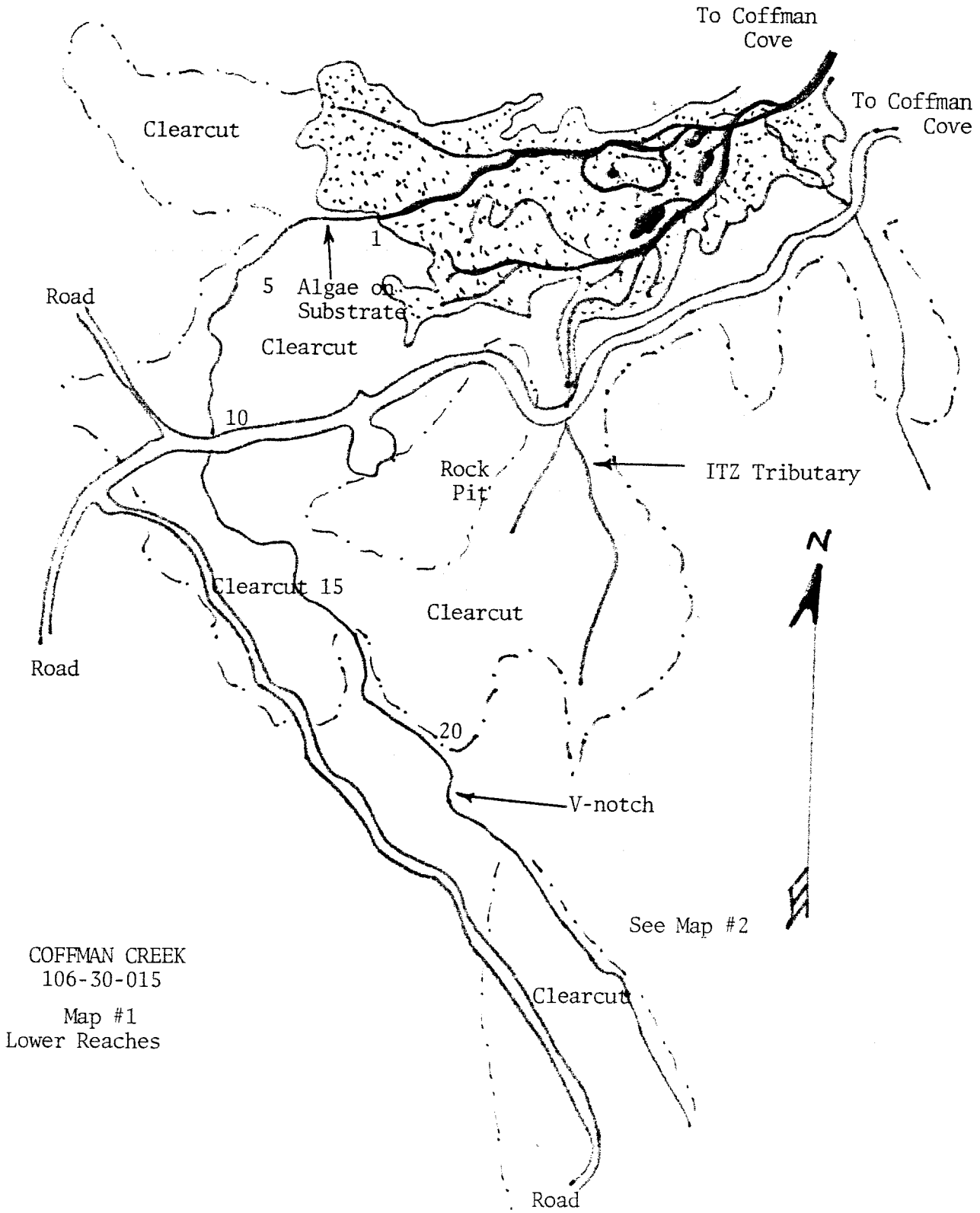
Here the stream reenters old growth forest with steep banks and cobble/gravel substrate. Moderate amounts of coho and Dolly Varden fry were observed. Substrate gradually increases in size throughout the Reach.

Reach VI: 600m

Gradient, velocity, substrate size and bank slope are all increasing as ASA declines. Numerous blowdown areas were observed along the steepening banks of the Reach. Primarily trout habitat, the stream eventually enters a bedrock V-notch and culminates in a 15 meter barrier falls.

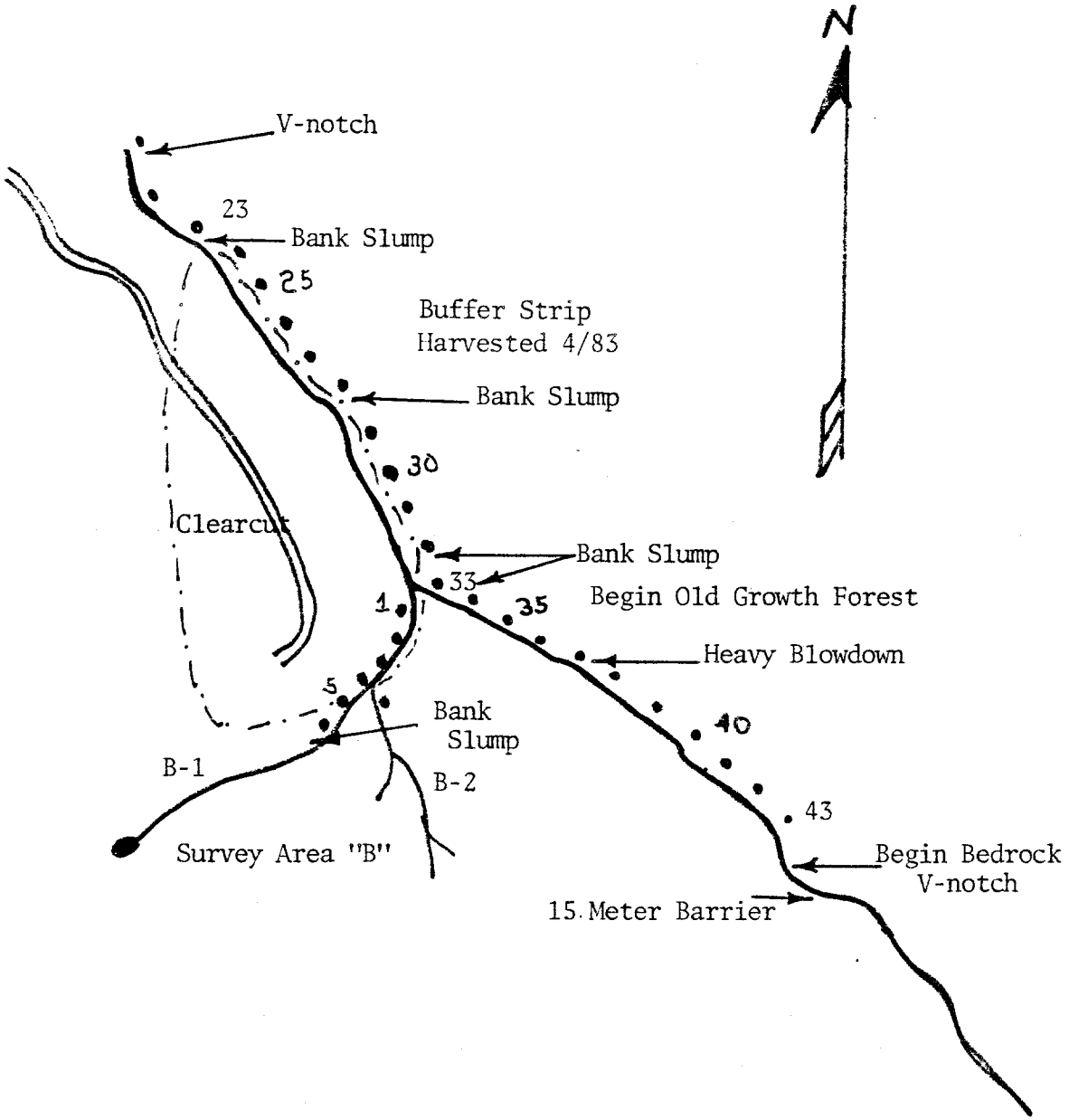
Survey Area "B": (Enters Main Stem Section 33: 100m)

This was a prime coho spawning and rearing tributary that was flagged and identified as such by the U.S.F.S. The stream forms the lower boundary of the unit as the main stem veers into the old growth forest. The tributary, adjacent to the unit for 600 meters, has considerable instream debris and bank side soil slumps. ASA is present in small patches with fair quality due to compaction and interstitial sediment deposition. No coho fry were observed at the time of the survey, only DV fry. Potential habitat ends as the gradient increases and the substrate becomes moss covered boulder at Section 6: 100m. The unit also leaves immediate stream side at this point. A small tributary enters the stream at Section 4: 20m, left side (old growth forest) and contains rearing habitat only. A "stream clean up begins here" flag was found on Seciton 5: 40m, indicating from that point downstream.



COFFMAN CREEK
106-30-015

Map #1
Lower Reaches



*Unit and Road Less Than 4 Years Old
Map Indicates Approximate Positions Thereon

Coffman Creek
106-30-015

Map #2

Upper Reaches

Coffman Creek
106-30-015

1. Lower ITZ mudflat with abundant shellfish. Old clearcuts both sides.

2. Downstream view of Lower ITZ with Coffman Cove community in background.

Coffman Creek
106-30-015

3. Grass meadow area of middle ITZ. Units left side.

4. Upper ITZ with spawning riffle of moderate quality; compacted with aquatic slime over substrate.

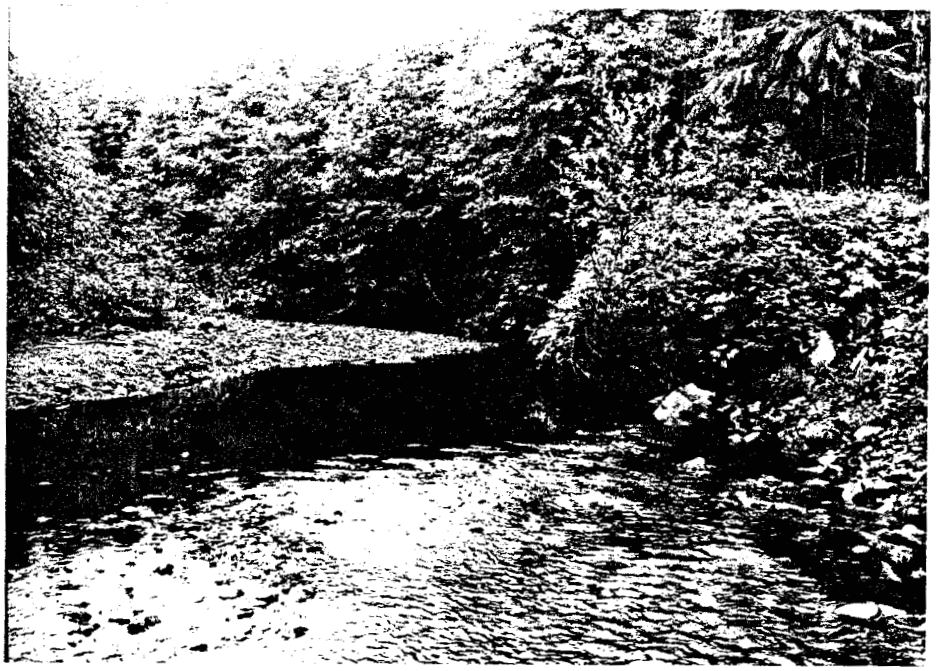
Coffman Creek
106-30-015

5. Mouth of stream with alder banks and units both sides. Gravel substrate with heavy aquatic vegetation.

6. Full alder canopy of Section 2: 0m.

Coffman Creek
106-30-015

7. Bridge crossing; Section 10: 20m.



8. Reach II Habitat. Good riffle-pool ratio over clean gravel with abundant DV/SS fry.

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9. Begin Reach IV: Section 23: 50m. Entering unit with heavy debris and windthrow.

10. Right bank soil slump. Buffer strip harvested three months previously, Section 28: 50m.

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11. Right bank skid trail. Timber from left bank yarded across stream and up right bank - Section 28: 60m.

12. Downstream view of debris jam causing channel migration to right, Section 32: 50m.

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13. Right bank slump with heavy residual logging slash in stream, Section 32: 75m.

14. Bank slump, right side - Section 33: 75m.

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15. Survey Area "B": Mouth of tributary entering main stem at Section 33: 100m, right side. Unit to right.

16. Survey Area "B": Section 3: 75m; flow over small cobble, unit right side.

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17. Mouth of Survey Area "B-2" located on Section 4: 20m of Survey Area "B".

18. Survey Area "A". Begin Reach V, Section 34: 0m. Stream leaves vicinity of unit and enters mature forest cover.

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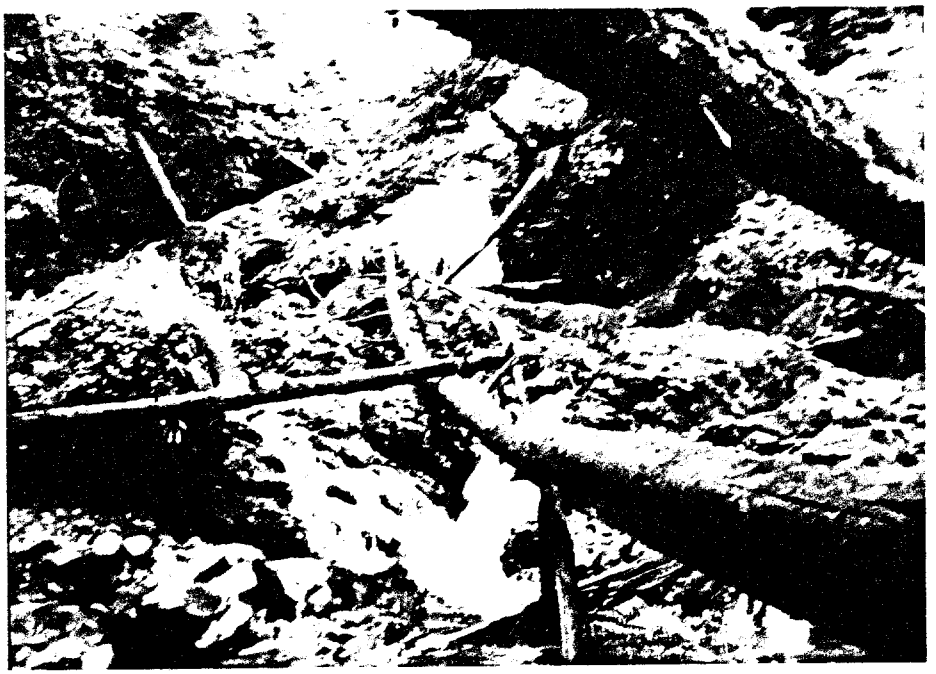
19. Reach VI: Section 38: 75m. Stream continues in old growth area but over boulder/cobble substrate.



20. 15 meter barrier falls, Reach VI, Section 43: 175m.

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Section	Length (m)	Width (m)	ASA %	ASA Total
Survey Area "A": Main Stem				
1	100	9.6	17	163.2
2	100	4.0	12	48
3	100	4.0	15	60
4	100	6.0	10	60
5	100	4.0	15	60
6	100	5.4	12	64.8
7	100	3.5	10	35
8	100	8.0	15	120
9	100	6.9	10	69
10	100	3.9	15	58.5
11	100	3.7	10	37
12	100	9.5	5	47.5
13	100	4.1	12	49.2
14	100	5.5	8	44
15	100	4.5	8	36
16	100	5.0	3	15
17	100	7.0	7	49
18	100	5.0	--	--
19	100	3.0	3	9
20	100	6.0	8	48
21	100	1.8	3	54
22	100	6.0	5	30
23	100	10.0	10	100
24	100	5.2	9	46.8
25	100	4.1	4	16.4
26	100	4.0	6	24
27	100	6.5	5	32.5
28	100	13.1	5	65.5
29	100	8.0	--	--
30	100	5.0	10	50
31	100	7.0	6	42
32	100	3.0	8	24
33	100	4.0	3	12
34	100	3.0	12	36
35	100	5.0	4	20
36	100	3.2	5	16
37	100	4.0	4	16
38	100	3.0	--	--
39	100	6.0	--	--
40	100	4.8	--	--
41	100	14.2	--	--
42	100	3.0	--	--
43	100	10.0	--	--
Total Survey Area "A"				$1658.4m^2$

Section	Length (m)	Width (m)	ASA %	ASA Total
Survey Area "B"				
"B-1"				
1	100	2.0	12	24
2	100	1.7	8	13.6
3	100	3.0	15	45.0
4	100	4.1	10	41
5	100	1.0	3	3
6	100	1.0	3	3
"B-2"				
1	100	0.8	--	--
Total Survey Area "B"				$129.6m^2$
Total of Survey Areas "A" & "B"				$1788.0m^2$

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Coffman Creek 2. ADF&G Catalog No. 106-30-015

Reach Number	1	1	2	2	2	2	2
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	260	270	250	180	230	225	150
4. Gradient	.5	1	1	1.5	1.5	1.5	1.5
5. Water Quality	3	3	3	3	3	3	3
6. Bank Type	A	A	A	A	A	A	A
7. Bank Stability	1(1)	1(1)	1(1)	2(1)	1(1)	2(1)	2(2)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	1	2	5	2	6	3	1
10. Undercut Bank Length	100	140	80	65	90	50	65
11. Stream Width:							
Channel	9.6	7.0	8.2	8.9	7.8	9.0	12.0
Water	9.6	4.0	4.0	6.0	4.0	3/2.4	3.5
12. Water Type %: SS	60	60	35	30	30	30	35
DS	10	10	30	35	35	35	35
SF	30	30	35	35	35	35	30
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	--	--	--	--	--	2	2
Large Cobble	--	--	5	5	10	13	13
Small Cobble	20	20	20	20	25	25	25
Gravel	60	65	55	55	50	45	45
Sand	20	15	20	20	15	15	15
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	17/1	12/2	15/2	10/3	15/3	12/3	10/3
15. Rearing Area %	50	40	55	50	50	60	60
16. Pool Cover %	5	5	10	10	15	15	10
17. Riffle Cover %	5	5	5	5	5	5	5
18. Fish Observed (fry)	DV	DV	DV	DV	DV	DV	DV
			SS	SS	SS	SS	SS
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: 0m; Begin old (20-30 year) clearcut, left bank. Poor lighting in tan water makes juvenile fish observations difficult. Orange "slime" on substrate. Undercut banks along with overhanging stream bank vegetation, provide good cover.
50m; Alder canopy. Old unit on both banks. No buffer.

Section 2: 0m; Gradient and velocity increasing. Slime covering on substrate diminishing.

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Section 4: 0m; End slime on substrate. Considerable root exposure in undercut banks. Heavier concentrations of DV fry than coho fry.

Section 5: 40m; Blowdown debris jam.

Section 6: Bank instability. Pool:riffle=3:1.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Coffman Creek 2. ADF&G Catalog No. 106-30-015

Reach Number	2	2	2	2	2	2	2
1. Section Number	8	9	10	11	12	13	14
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	185	180	185	180	130	130	95
4. Gradient	1.5	1.5	1.5	2	2	2	2
5. Water Quality	3	3	3	3	3	1	1
6. Bank Type	A	A	A	B	B	B	B
7. Bank Stability	1(1)	1(1)	1(2)	1(1)	1(1)	1(1)	1(1,3)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	2	2	1	3	2	1	1
10. Undercut Bank Length	55	70	50	70	40	50	55
11. Stream Width:							
Channel	12	10.9	13.2	10	11	6.3	12.0
Water	8	6.9	3.9	3.7	9.5	4.1	2.2/3.3
12. Water Type %: SS	30	30	35	30	20	30	40
DS	35	40	20	40	50	15	10
SF	35	30	45	30	30	55	50
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	--	2	2	--	10
Boulder	--	--	5	8	8	5	10
Large Cobble	15	15	20	20	15	20	25
Small Cobble	25	25	25	25	25	25	25
Gravel	45	45	45	40	45	45	25
Sand	15	15	5	5	5	5	5
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	15/3	10/3	15/3	10/3	5/3	12/3	8/3
15. Rearing Area %	30	30	35	45	65	40	35
16. Pool Cover %	35	30	45	10	10	10	5
17. Riffle Cover %	35	40	20	5	5	5	10
18. Fish Observed (fry)	DV	DV	DV	DV	DV	DV	DV
(fry)	SS	SS	SS			CT	
19. Sampling	N	Y	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 10: 20m; Steel girder bridge crossing.
35m; Old road crossing. Bridge pulled.
Section 11: 0m; Increasing substrate size.
50m; Bedrock outcrop right side. Banks steepening.
Section 12: 30m; Bedrock right side for 30 meters.
100m; Multiple dry channels for 75 meters.
Section 13: Water quality clear.
Section 14: 0m; Meandering stream course.
30m; Bedrock exposure left side for 30 meters.

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LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Coffman Creek 2. ADF&G Catalog No. 106-30-015

Survey Area "A": Main Stem

Reach Number	2	2	2	2	2	2	3
1. Section Number	15	16	17	18	19	20	21
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	155	110	140	150	180	120	150
4. Gradient	2	2	2	2	2	2	2.5
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	A	A	B	B	B	B	B
7. Bank Stability	1(2)	1(2)	1(2)	1(2)	1(2)	1(2)	1(2,3)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	3	1	3	3	6	7	5
10. Undercut Bank Length	35	60	20	45	25	30	--
11. Stream Width:							
Channel	12	9.7	10	11.3	10	9.8	7.8
Water	4.5	5.0	7.0	5.0	3.0	6.0	1.8
12. Water Type %: SS	30	40	30	30	30	35	30
DS	35	30	35	35	20	25	20
SF	35	30	35	30	50	40	40
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	10	5	10	10	10
Boulder	5	5	15	15	15	20	25
Large Cobble	25	30	30	30	30	30	30
Small Cobble	35	30	25	25	25	20	20
Gravel	30	30	25	20	15	15	10
Sand	5	5	5	5	5	5	5
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	8/3	3/3	7/3	--	3/3	8/3	3/3
15. Rearing Area %	45	50	40	45	30	40	35
16. Pool Cover %	10	5	10	10	2	15	5
17. Riffle Cover %	5	5	5	5	5	5	5
18. Fish Observed (fry)	DV	DV		DV	DV	DV	DV
(fry)	SS	SS		SS			
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 15: 0m; Banks flatten out.
100m; Old beaver sign.
Section 16: 0m; Left bank steepening.
Section 17: 60m; Bedrock exposure, left side. Leave unit, right side.
Section 18: 0m; Left bank flattens out.
50m; Right bank steepening.
Section 19: 75m; Bedrock outcrop right side. Left bank steepening. Cobble substrate.

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Section 20: 90m; Leave unit, left side.

Section 21: 0m; Enter V-notch.
50m; Begin large boulder.

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Part IV.

1. Stream Name Coffman Creek 2. ADF&G Catalog No. 106-30-015

Reach Number	3	4	4	4	4	4	4
1. Section Number	22	23	24	25	26	27	28
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	210	150	115	140	150	150	135
4. Gradient	2.5	1.5	1.5	1.5	1.5	1.5	1.5
5. Water Quality	1	3	3	3	3	3	3
6. Bank Type	B	B	B/A	A/B	A	A	B
7. Bank Stability	1(2,3)	2(2)	2(1)	2(2)	2(2)	2(2)	3(2)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	4	11	12	14	10	10	20
10. Undercut Bank Length	--	--	35	65	110	100	160
11. Stream Width:							
Channel	12.3	10	7.6	10	14.2	9.2	8/9.2
Water	6	10	5.2	4.1	4.0	6.5	6/7.1
12. Water Type %: SS	30	35	30	40	30	25	25
DS	20	20	25	20	30	30	30
SF	50	45	45	40	40	45	45
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	15	10	--	--	--	--	--
Boulder	25	20	5	15	10	10	10
Large Cobble	35	30	30	30	35	35	35
Small Cobble	15	20	35	30	30	30	30
Gravel	10	15	20	20	20	20	20
Sand	--	5	10	5	5	5	5
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	15/3	10/3	9/3	4/3	6/3	5/3	5/2
15. Rearing Area %	30	35	40	40	40	35	45
16. Pool Cover %	10	10	20	20	10	10	20
17. Riffle Cover %	5	5	15	15	10	15	30
18. Fish Observed (fry)	DV	DV	DV	DV	DV	DV	DV
(fry)					SS		
19. Sampling	N	N	N	N	Y	N	N
20. Potential Barriers	N	N	Y4	Y4	N	Y4	Y4
21. Enhancement/Rehab	N	Y	Y	Y	Y	Y	Y

Section 23: 0m; Begin unit (less than 5 years old), right side. Stumps in stream. No canopy cover.
10m; Slump right side. Steep banks logged to edge of stream.
50m; Gradient decrease. Right bank flattening.

Section 24: 100m; Debris jam.

Section 25: 0m; Left bank flattening.
90m; Debris jam with heavy fines deposit. Heavy debris in stream. Occasional stumps on left bank. Trees logged and taken across

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Section 25: stream from left bank to right bank. Recent cutting less than one year. Recent limb debris in stream.

Section 27: 20m; Debris jam.
75m; Island for 75 meters.

Section 28: 50m; Debris jam with recent slash. Slump, right side.
60m; Heavy sediments/slash in stream. Skid trail, right bank.
Island for 30 meters.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Coffman Creek 2. ADF&G Catalog No. 106-30-015

Survey Area "A": Main Stem

Reach Number	4	4	4	4	4	5	5
1. Section Number	29	30	31	32	33	34	35
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	140	120	140	180	140	130	130
4. Gradient	1.5	2	2	2	2	1.5	1.5
5. Water Quality	3	3	3	3	3	3	3
6. Bank Type	A	B/A	B/A	A/B	A/B	B/A	B
7. Bank Stability	2(2)	2(2)	2(2)	3(2)	3(2)	1(2)	1(2)
8. Bank Vegetation	1-5	1-5	1,3-5	1-5	1-5	1-5	1-5
9. Debris Loading	11	8	18	22	16	6	5
10. Undercut Bank Length	75	95	100	50	40	70	45
11. Stream Width:							
Channel	14.2	7.0	9.2	16.0	22.0	8.0	12.0
Water	8.0	5.0	7.0	3.0	4.0	3.0	5.0
12. Water Type %: SS	25	25	30	45	30	30	30
DS	30	25	15	20	20	30	30
SF	45	50	55	35	50	40	40
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	--	5	10	--	--
Boulder	10	20	15	20	20	10	10
Large Cobble	40	35	30	30	35	20	20
Small Cobble	30	30	25	15	10	35	35
Gravel	15	10	15	10	10	20	20
Sand	5	5	15	20	15	5	5
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	--	10/2	6/3	8/3	3/3	12/3	4/3
15. Rearing Area %	40	30	35	30	30	40	50
16. Pool Cover %	20	10	20	25	25	15	20
17. Riffle Cover %	30	10	25	30	25	10	10
18. Fish Observed (fry)	SS		SS	SS		SS	SS
(fry)	DV	DV	DV	DV	DV	DV	DV
19. Sampling	N	N	N	N	Y	N	N
20. Potential Barriers	N	Y4	Y4	Y4	N	N	N
21. Enhancement/Rehab	Y	Y	Y	Y	Y	N	N

Section 29: 75m; Braided area with heavy debris and sand deposits.
Section 30: 100m; Debris jam. Many sand bars.
Section 31: 75m; Debris jam for 25 meters.
Section 32: 50m; Debris jam causing channel migration.
75m; Blowdown and slump right side.
Section 33: 40m; Bedrock bank right side for 30 meters. Heavy amounts of instream slash. Stumps on left bank.

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LEVEL TWO HABITAT SURVEY
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Section 33: 75m; Slump right side.
100m; Tributary right side, Survey Area "B". Tributary follows unit. Main stem bears left into old growth forest.

Section 34: 0m; Begin mature forest. Left bank steep.

Section 35: 50m; Right bank steepening.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Coffman Creek 2. ADF&G Catalog No. 106-30-015

Survey Area "A": Main Stem

Reach Number	5	5	6	6	6	6	6
1. Section Number	36	37	38	39	40	41	42
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	140	90	140	110	150	130	180
4. Gradient	2	2	3	3.5	4.5	5	5
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1(2)	1(2)	1(2)	1(2)	1(2)	2(2)	1(2)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	5	8	6	8	9	12	8
10. Undercut Bank Length	60	70	25	60	50	25	--
11. Stream Width:							
Channel	8.9	12.0	10.0	9.8	8.2	25.0	18.6
Water	3.2	4.0	3.0	6.0	4.8	14.2	3.0
12. Water Type %: SS	20	30	30	30	20	20	30
DS	10	10	20	20	20	30	30
SF	70	60	50	50	60	50	40
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	--	--	--	3	3
Boulder	15	20	25	25	25	27	27
Large Cobble	30	35	35	35	35	35	35
Small Cobble	35	25	25	25	25	20	20
Gravel	15	15	15	15	15	10	10
Sand	5	5	--	--	--	5	5
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	5/3	4/3	--	--	--	--	--
15. Rearing Area %	25	30	20	20	20	40	25
16. Pool Cover %	20	25	25	25	25	25	10
17. Riffle Cover %	10	5	5	5	10	5	5
18. Fish Observed (fry)	DV	DV	--	DV	DV	DV	DV
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	Y4	Y4	Y4	Y4
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 36: 0m; Water temperature, 12°C; ph, 7.5.
50m; Begin braided area for 65 meters.
Section 37: 50m; Heavy blowdown left side. Substrate size increasing to large cobble/boulder.
Section 38: 10m; Tributary left side. No habitat.
Section 39: 30m; Blowdown and soil slump right side.
70&90m; Debris jam.
Section 40: 100m; Debris jam.

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LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Coffman Creek 2. ADF&G Catalog No. 106-30-015

Survey Area "A": Main Stem

Reach Number	6						
1. Section Number	43						
2. Section Length	100						
3. Compass Bearing	125						
4. Gradient	6						
5. Water Quality	1						
6. Bank Type	B						
7. Bank Stability	1(2)						
8. Bank Vegetation	1-5						
9. Debris Loading	9						
10. Undercut Bank Length	--						
11. Stream Width:							
Channel	11.2						
Water	10.0						
12. Water Type %: SS	20						
DS	25						
SF	35						
DF	20						
13. Substrate %:							
Bedrock	20						
Boulder	35						
Large Cobble	35						
Small Cobble	5						
Gravel	5						
Sand	--						
Muck	--						
Other	--						
14. ASA %/Quality	--						
15. Rearing Area %	20						
16. Pool Cover %	10						
17. Riffle Cover %	5						
18. Fish Observed (fry)	DV						
19. Sampling	N						
20. Potential Barriers	N						
21. Enhancement/Rehab	N						

Section 43: 0m; Increasing gradient. Higher incidence of bedrock in bank composition.
30m; Blowdown with soil slumps
100m; Begin bedrock V-notch.
Reconnaissance
Bedrock V-notch continued for 40 meters, followed by 35 meters of boulder substrate. A 15 meter falls terminates the survey.

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LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Coffman Creek 2. ADF&G Catalog No. 106-30-015

Survey Area "B-1" "B-2"

Reach Number							
1. Section Number	1	2	3	4	5	6	1
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	210	225	120	230	280	245	180
4. Gradient	3	3	3	3.5	3.5	4.5	4
5. Water Quality	3	3	3	3	3	3	3
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	2(2)	3(2)	3(2)	3(2)	2(2)	2(2)	1(2)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1,3-5
9. Debris Loading	8	11	11	10	8	6	3
10. Undercut Bank Length	40	30	60	90	45	40	20
11. Stream Width:							
Channel	4.1	3.3	3.8	4.2	3.0	3.0	1.8
Water	2.0	1.7	3.0	4.1	1.0	1.0	0.8
12. Water Type %: SS	30	30	30	30	30	30	20
DS	15	15	20	20	20	20	10
SF	55	55	50	50	50	50	70
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	20	--	--	--	--	--	--
Boulder	20	15	5	15	25	30	20
Large Cobble	35	30	25	35	35	30	35
Small Cobble	15	25	40	30	25	25	30
Gravel	10	25	25	20	15	15	15
Sand	--	5	5	--	--	--	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	12/2	8/2	15/2	10/2	3/2	3/2	--
15. Rearing Area %	25	30	35	25	20	20	20
16. Pool Cover %	20	25	30	20	20	10	10
17. Riffle Cover %	5	20	15	10	10	5	15
18. Fish Observed (fry)	DV	DV	DV	--	DV	DV	DV
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	Y	Y	Y	Y	Y	Y	N

Survey Area B joins the main stem at Section 33: 100m; right side, and forms the lower boundary of the unit, right side.

Section 1: 0m; Bedrock exposure, and unit right side with recent slash on substrate. "Orange" coloring on substrate.

Section 2: 50m; Severe bank slump, left side. Substrate orange tinged. Heavy debris.

Section 3: 0m; Forbs at edge of stream.
70m; Flow through root wad.

22. Investigators Gerry Merrigan Date 6/25/83

LEVEL TWO HABITAT SURVEY
Coffman Creek
106-30-015

Section 4: 20m; Forms 40% of the flow left to Survey Area "B-2".
100m; Increased amounts of boulder in substrate.

Section 5: 40m; U.S.F.S. flagging "Stream Cleanup Starts Here and Heads Downstream. Thank You".

Section 6: Moderate amounts of blowdown. Gradient increasing.
100m; Leave unit. Slump right side. Boulder substrate with moss covering. End of survey.

Survey Area "B-2"

Section 1: 0m; Small cobble/gravel substrate.
25m; Larbe cobble/small cobble substrate.
75m; Boulder/large cobble substrate.
100m; Forks into two streams, less than 0.5 meter side. End survey.

FISH SAMPLING FORM

Stream Name Coffman Creek ADF&G Catalog No. 106-30-015 Date 6/25/83

Identify Survey Area A Water Temp. 7°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1050	1825	SS - 10 CT - 2		Section 9: 85m (Below Bridge)
2	1345	1745	SS - 5 DV - 2		Section 25: 75m
3	1625	1725	--		Section 33: 95m

This form is used to record fish caught during Level Three, Four, or Five Surveys.

PEAK ESCAPEMENT RECORD

Coffman Creek
106-30-015

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
8/15/63		12		
9/12/70	50			
9/15/71	100			
9/04/75	750			
9/09/76	100			
8/22/78	1970			
8/28/79	500			
8/21/80	250			
9/22/81	690			
8/19/82	1200			

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100 m

3. Historical Fish Species PS

Part II.

1. Stream Name Coffman Cove S.E. 2. ADF&G Catalog No. 106-30-14

3. Latitude Head 55°59'50" Longitude 132°50'40"

4. Agency Unit 05 5. Mgmt. Area 572 K 6. USGS Map No. Craig D-3

7. Aerial Photo No. 79-32-479-9

8. Bay/Drainage Coffman Cove 9. Access 1

10. Present Land Use none

11. Historical Land Use drainage and adjacent areas clearcut

12. Stream Origin 3, 4, 5, 6 13. Estimated Flow 2 cfs 14. Flow Stage 2

15. Stream Temperature 12.0°C 16. pH 7.5 17. Beaver No

18. Temperature Sensitivity yes

19. Barrier no 20. Weather 2

Part III.

21. Intertidal

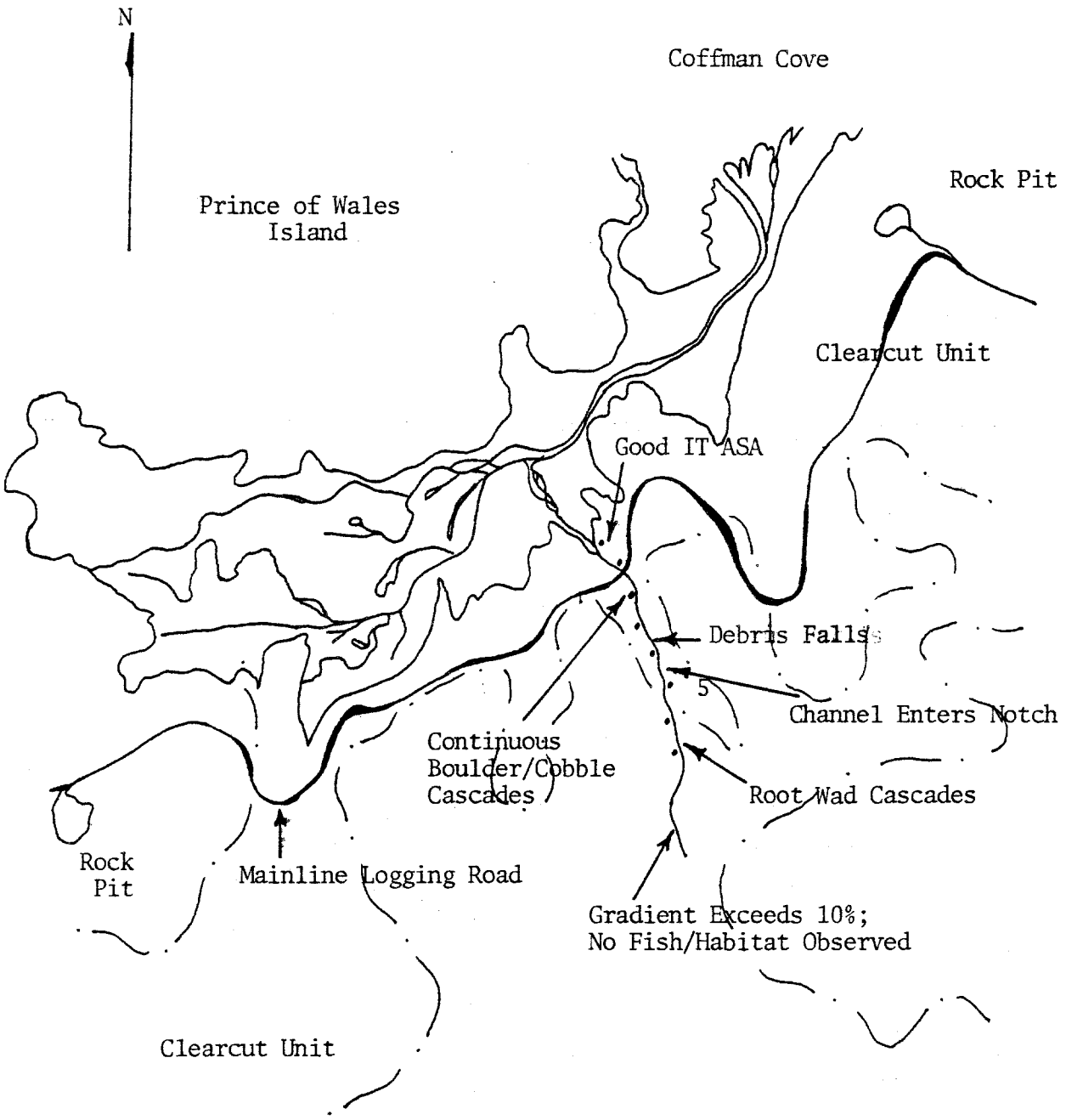
A. Substrate: Fines 5 % Gravel/S. Cob. 90 %
L. Cob/Boulder/Bedrock 5 %
B. Gradient 1.5 %
C. ASA % 60/good
D. Schooling Coffman Cove
E. Shellfish Coffman Cove supports moderate densities
F. Anchorage Coffman Cove

22. Comments Stream Evaluation

This small clearcut drainage contains good spawning/rearing habitat limited however, to the ITZ and Section 1. Reach 2 is characterized by a steeply climbing bedrock/boulder channel intermittently choked with logging slash. No fish were observed in Reach 2. No rehabilitation or enhancement recommended.

23. Investigators Ted Mickowski 24. Date 6/21/83

Coffman Cove: S.E. Head
106-30-14



Coffman Cove: S.E. Head
106-30-14

1. View down ITZ to Coffman Creek estuary. Note excellent IT spawning riffles.

2. Upper ITZ contains excellent spawning riffles. Note dense alder canopy.

Coffman Cove: S.E. Head
106-30-14

3. Section 3: Reach 2 is characterized by continuous boulder/cobble riffles and cascades. Stream is clearcut to both banks.

4. Section 6: Numerous debris jams create migratory barriers.

106-30-14

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	7.5	20	150					
2	100	2.5	2	5					
4	100	3.7	2	7.4					
6	100	4.0	4	16					
7	100	2.5	5	12.5					
Total				$190.9m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Coffman Cove S.E. Head 2. ADF&G Catalog No. 106-30-14

Reach Number	1	1	2	2	2	2	2
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	149	136	167	159	171	183	188
4. Gradient	1.5	2.0	5.0	8.0	8.0	>10	>12
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	2-5	2-5	2-5	1-5	1-5	1-5	1-5
9. Debris Loading	3	--	2	2	10	15	25
10. Undercut Bank Length	--	--	--	--	--	--	--
11. Stream Width:							
Channel	7.5	5.0	3.5	3.7	4.5	4.0	6.5
Water	7.5	2.5	3.5	3.7	4.5	4.0	2.5
12. Water Type %: SS	20	8	5	10	8	15	30
DS	--	7	4	--	--	10	5
SF	80	85	90	90	85	75	50
DF	--	--	1	--	7	--	15
13. Substrate %:							
Bedrock	---	--	--	5	15	15	10
Boulder	5	15	25	20	25	20	20
Large Cobble	25	25	35	35	30	25	25
Small Cobble	30	35	25	25	20	25	25
Gravel	35	25	15	15	10	15	20
Sand	5	5	--	--	--	--	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	20	2	--	2	--	4	5
15. Rearing Area %	12	8	5	5	--	10	10
16. Pool Cover %	20	10	20	20	12	15	20
17. Riffle Cover %	10	10	10	10	10	10	10
18. Fish Observed (fry) SS	<12	<6	--	--	--	--	--
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

SS fry were observed throughout the ITZ, along undercut banks and overhanging vegetation. Intertidal riffles provide good-excellent ASA.

Section 1: Channel enters dense alder canopy, drainage has been clearcut to banks. Gravel/small cobble riffles provide good ASA through section.

Section 2: Mainline logging road crosses stream via an unobstructed 6 foot diameter culvert.

22. Investigators Ted Mickowski Date 6/21/83

LEVEL TWO HABITAT SURVEY

Section 3: Channel gradient and composition change demarcate Reach 2. Nearly continuous boulder/cobble cascades provide little haven for fish. Dense second growth throughout remainder of survey.

Section 4: Channel continues to climb via continuous debris/gradient induced falls and cascades.

Section 5-7: Steeply climbing channel enters notch characterized by instream log and root wad induced "stair-step" jams. Gravel deposits were primarily located directly above jams. Survey terminated due to lack of habitat and fish sightings.

Reconnaissance revealed gradients exceeding 10%, copious debris, and no fish habitat.

FISH SAMPLING FORM

Stream Name Coffman Cove S.E. Head ADF&G Catalog No. 106-30-14 Date 6/21/83

Identify Survey Area A Water Temp. 12.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1245	1450	SS - 2	--	Trap set in ITZ.
2	1320	1445	--	--	Section 1

This form is used to record fish caught during Level Three, Four, or Five Surveys.

PEAK ESCAPEMENT RECORD
Coffman Cove S.E. Head
106-30-14

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
9/04/75	50			
8/12/80	180			

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A - Main Stem Only 2. Section Length 100 meters

3. Historical Fish Species PS, CS, ST

Part II.

1. Stream Name Chum Creek 2. ADF&G Catalog No. 106-30-012
3. Latitude 56°01'05" Longitude 132°49'20"
4. Agency Unit 05 5. Mgmt. Area 572K 6. USGS Map No. Psg A-3; Craig D-3
7. Aerial Photo No. 1979 Photos Fl. Ln. 33 Photo 144-146
8. Bay/Drainage Kashevarof 9. Access 1
10. Present Land Use Drinking water for Coffman Cove community.
11. Historical Land Use 80% of watershed logged about 20 years ago.
12. Stream Origin 3, 4, 5, 6 13. Estimated Flow about 8 cfs 14. Flow Stage 2
15. Stream Temperature 11°C 16. pH 7.5 17. Beaver Yes
18. Temperature Sensitivity Yes, extensive logging and canopy cover removal.
19. Barrier No 20. Weather 6

Part III.

21. Intertidal

A. Substrate: Fines 30 % Gravel/S. Cob. 50 %
L. Cob/Boulder/Bedrock 20 %
B. Gradient 2 %
C. ASA % Moderate in lower ITZ only.
D. Schooling No, in bay only.
E. Shellfish Abundant clams
F. Anchorage Coffman Cove

22. Comments Stream Evaluation

The stream is located east of Coffman Cove and appears to be the water source of the community, as an instream intake pipe and pumphouse are present. The proximity of the community has additional impacts on the stream: refuse and debris in the stream; presence of a dump at the right side of the mouth; and active roading throughout the length of the stream whose watershed has been extensively clearcut.

The initial reach of the stream is characterized by running through a unit having alder bank vegetation and presence of considerable debris and interstitial fines in the substrate. A logging road runs the majority of the length of the left bank, and at times the rock fill forms the stream bank. Excessive amounts of sediment are introduced to the stream via road runoff. Old inactive beaver sign was

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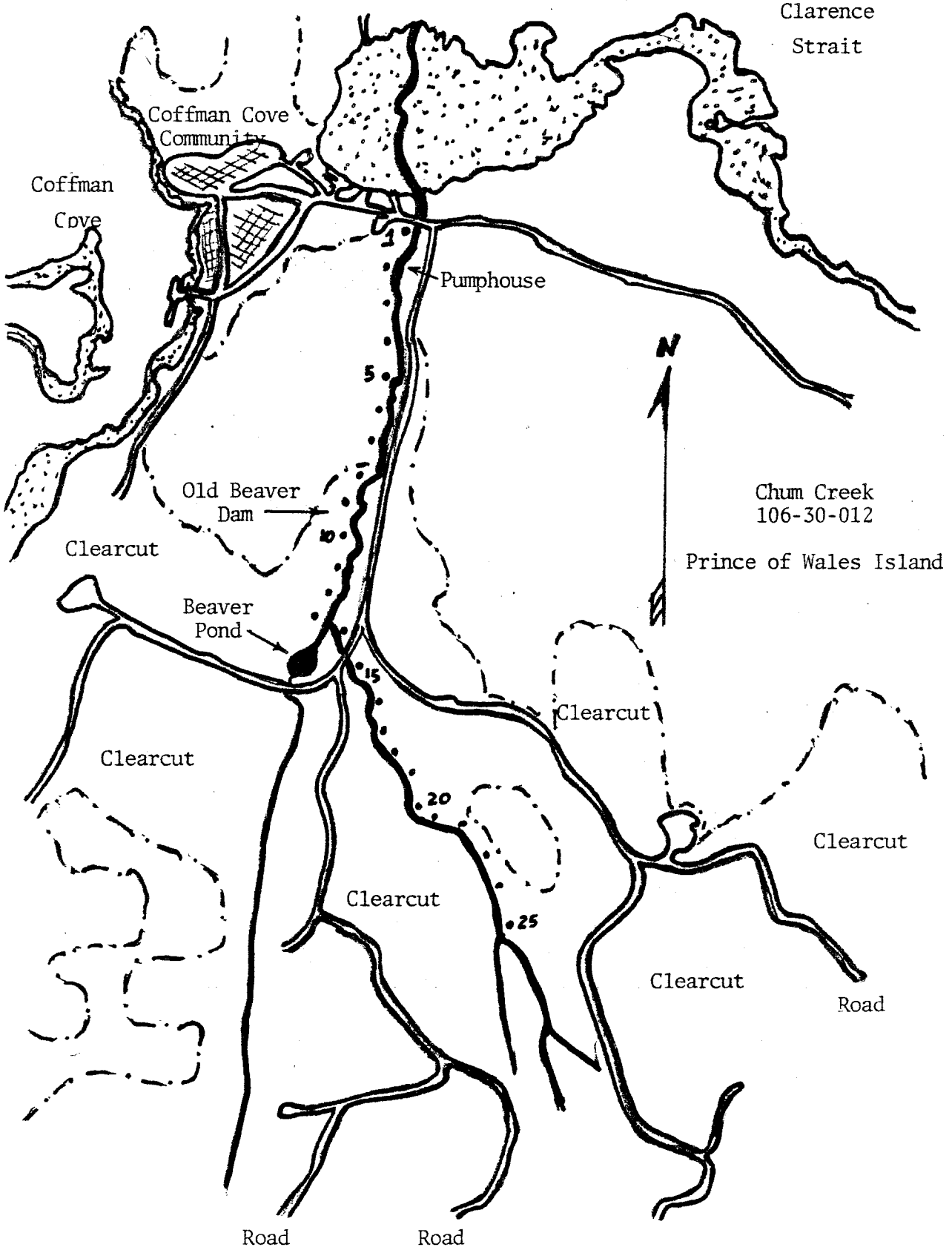
Stream Evaluation Cont.

was observed in this reach. Dolly Varden and coho fry were common in the Reach.

In Reach II, the gradient increases as well as the substrate size as the stream leaves the main road (via a 6' culvert crossing) and heads into another unit. A complete alder canopy over the boulder/cobble substrate typifies this reach. Fish habitat diminishes rapidly as the stream runs through the unit which is strewn with numerous debris dams and very few fish.


Clarence
Strait
Coffman Cove
Community
Coffman
Cove
Pumphouse
N
Old Beaver
Dam
Chum Creek
106-30-012
Clearcut
Prince of Wales Island
Beaver
Pond
Clearcut
Clearcut
Clearcut
Clearcut
Clearcut
Clearcut
Road
Road
Road
1
5
10
15
20
25

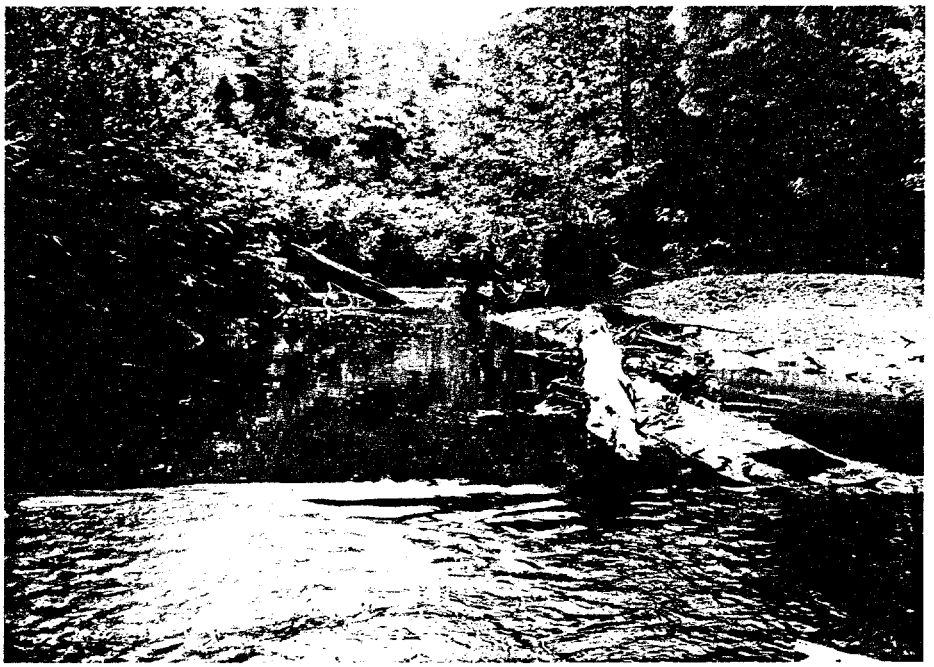
Chum Creek
106-30-012

1. Lower ITZ with moderate ASA. Coffman Cove dump to right of stream mouth.

2. Downstream view of upper ITZ from bridge crossing at high tide.

Chum Creek
106-30-012

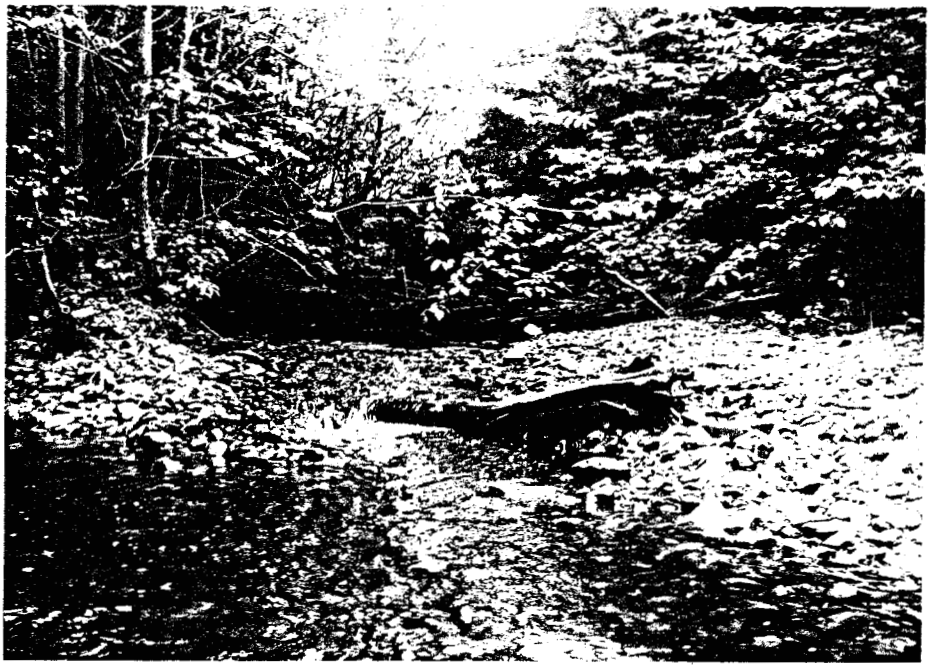
3. Mouth of stream above bridge; Section 1: 0m.



4. Reach I, Section 6: 70m; Habitat. Unit on both banks with alder stands. Considerable debris and fines in stream.

Chum Creek
106-30-012

5. Debris jam, Section 11: 60m; with 1.5 meter falls. Jumping and landing pools present.



6. Mouth of tributary entering Section 13: 25m. Right side of main stem.

Chum Creek
106-30-012

7. Road crossing with 6' diameter culvert at Section 14: 65m.

8. Reach II, Section 16: 55m; Habitat. Alder canopy over cobble substrate through an old clearcut.

Chum Creek
106-30-012

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	6.5	20	130.0					
2	100	4.0	15	60.0					
3	100	3.8	10	38.0					
4	100	4.0	7	28.0					
5	100	3.2	12	38.4					
6	100	3.0	12	36.0					
7	100	2.5	20	50.0					
8	100	3.0	7	21.0					
9	100	2.2	15	33.0					
10	100	1.8	10	18.0					
11	100	7.0	5	35.0					
12	100	8.8	25	220.0					
13	100	5.8	18	104.4					
14	100	3.0	5	15.0					
15	100	2.7	10	27.0					
16	100	4.0	--	--					
17	100	4.1	--	--					
18	100	4.8	--	--					
19	100	3.1	5	15.5					
20	100	4.1	--	--					
21	100	1.2	--	--					
22	100	3.0	--	--					
23	100	5.0	--	--					
24	100	2.2	5	11.0					
25	100	3.0	--	--					
Total ASA:				$880.3m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Chum Creek 2. ADF&G Catalog No. 106-30-012

Reach Number	1	1	1	1	1	1	1
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	200	210	155	170	195	180	205
4. Gradient	1.5	2.0	1.5	1.5	1.5	1.5	1.5
5. Water Quality	3	3	3	3	3	3	3
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	2(2)	2(1)	2(1)	2(1)	2(1)	2(2)	2(2)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	7	10	6	9	12	9	4
10. Undercut Bank Length	50	110	95	60	140	110	85
11. Stream Width:							
Channel	6.7	7.1	12.1	7.3	6.7	6.0	8.0
Water	6.5	4.0	1.6/2.2	4.0	3.2	3.0	2.5
12. Water Type %: SS	30	40	35	50	50	35	40
DS	25	15	30	20	20	30	10
SF	45	45	35	30	30	35	50
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	--	--	--	--	--	--	--
Large Cobble	15	5	5	5	5	15	20
Small Cobble	30	30	30	30	30	30	30
Gravel	40	45	40	40	40	35	20
Sand	15	20	25	25	25	20	30
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	20/2	15/2	10/2	7/2	12/2	12/2	20/1
15. Rearing Area %	50	35	60	70	60	55	35
16. Pool Cover %	20	25	15	20	20	15	20
17. Riffle Cover %	15	20	20	15	20	20	10
18. Fish Observed (fry)	DV	DV	DV		DV	DV	DV
(fry)		SS		SS	SS	SS	
(adult)			DV				
19. Sampling	Y	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: 0m; Log stringer bridge with heavily used gravel road to nearby Coffman Cove logging camp.
80m; Pumphouse, right side. Trash, building debris in stream.
100m; Water intake for pumphouse.

Section 2: 27m; Survey flagline transects stream.
70m; Stream height gauge. Windthrow with bank slump, right side forming debris dam.
80m; Braided area with heavy concentration of fines on gravel bars.

22. Investigators Gerry Merrigan Date 6/21/83

LEVEL TWO HABITAT SURVEY
Chum Creek
106-30-012

Section 2: 80m; Deer sign noted.

Section 3: Heavy sediment deposits.
65m; Leave mature forest cover. Begin unit with open canopy and streamside alder. Inactive old beaver sign on banks.

Section 4-6: Continued heavy amount of fines as well as debris.

Section 7: Begin road 1 meter distant from left bank. Fill is in stream and stream course has become increasingly channelized. Water temperature is now 12°C and interstitial silt has cemented gravel substrate into severe compactness.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Chum Creek 2. ADF&G Catalog No. 106-30-012

Reach Number	1	1	1	1	1	2	2
1. Section Number	8	9	10	11	12	13	14
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	205	230	180	215	210	270	180
4. Gradient	1.5	1.5	1.5	3.0	2.0	2.5	2.5
5. Water Quality	3	3	3	3	3	3	3
6. Bank Type	B	B	B	A	A/B	A/B	B
7. Bank Stability	2(2)	2(2)	2(2)	2(2)	2(2)	2(2)	2(2)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	6	12	8	5	3	6	2
10. Undercut Bank Length	90	100	70	60	80	55	30
11. Stream Width:							
Channel	4.0	6.0	11.0	7.5	8.8	7.1	5.5
Water	3.0	2.2	1.8	7.0	8.8	5.8	2/1
12. Water Type %: SS	30	20	35	35	30	30	30
DS	40	20	25	30	10	20	20
SF	30	60	40	35	60	50	50
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	--	--	--	--	2	2	5
Large Cobble	20	20	25	5	13	28	30
Small Cobble	40	30	20	40	35	30	30
Gravel	20	25	20	35	30	20	25
Sand	20	20	25	20	20	20	10
Muck	--	15	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	7/2	15/2	10/2	5/2	25/2	18/2	5/2
15. Rearing Area %	70	50	60	50	35	30	25
16. Pool Cover %	10	25	15	25	10	30	10
17. Riffle Cover %	20	15	15	10	10	15	10
18. Fish Observed (fry)	SS		SS	SS		SS	SS
(fry)	DV	DV		DV	DV		
19. Sampling	Y	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 8: 50m; Leave immediate proximity of road.
Section 9: 20m; Bedrock exposure right side.
55m; Blown out beaver dam. Unit on both banks. Heavy concentration of fines behind old dam site. Bear sign.
Section 10: 15m; Leave beaver pond.
100m; Begin close proximity of road, left side.
Section 11: Increased proportion of pool to riffles.

22. Investigators Gerry Merrigan Date 6/21/83

LEVEL TWO HABITAT SURVEY
Chum Creek
106-30-012

Section 11: 60m; Debris dam with 1.5 meter falls with jumping and landing pool. Heavy fines and braiding above dam for 40 meters.

Section 12: 0m; Forbs in stream.
30m; Steep bank, right side, with occasional bedrock outcrops.
90m; Slump, right side.

Section 13: 25m; Tributary right side. This tributary has no ASA and drains a beaver system within a clearcut. A 2 x 30 meter beaver dam is located 60 meters from the confluence with the main stem. Water temperature, 12.5°C; pH, 7.5; flow, 2 cfs; water color, light tan. Coho fry were observed in stream.
95m; Debris jam.

Section 14: 65m; Road crossing with 6' culvert. Wooden internal bracing in disrepair though not serious. Begin alder canopy.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Chum Creek 2. ADF&G Catalog No. 106-30-012

Reach Number	2	2	2	2	2	2	2
1. Section Number	15	16	17	18	19	20	21
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	165	150	170	120	170	150	135
4. Gradient	3	3	3.5	4	4	4	6
5. Water Quality	3	3	3	3	3	3	3
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1(2)	1(2)	1(2)	2(2)	2(2)	2(2)	2(2)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	8	2	3	3	8	9	12
10. Undercut Bank Length	60	35	20	25	35	25	25
11. Stream Width:							
Channel	4.5	8.1	7.0	6.0	4.2	5.0	8.0
Water	2.7	4.0	4.1	4.8	3.1	4.1	1.2
12. Water Type %: SS	30	30	30	30	20	20	35
DS	10	10	10	20	20	20	20
SF	60	60	60	50	60	60	45
DF	--	--	--	--	--	--	--
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	10	10	20	20	25	20	20
Large Cobble	35	35	35	35	40	35	30
Small Cobble	30	30	20	20	20	30	20
Gravel	15	20	15	15	10	10	20
Sand	10	5	10	10	5	5	10
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	10/2	--	--	--	5	--	--
15. Rearing Area %	35	15	20	20	20	20	30
16. Pool Cover %	10	5	25	10	10	10	10
17. Riffle Cover %	15	5	5	5	5	10	5
18. Fish Observed	DV	DV	--	DV	--	--	DV
				SS			
19. Sampling	N	N	N	N	N	N	Y
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 15: Increase in gradient and substrate size; decrease in concentration of of fines. Unit on both side; road on right side.
Section 16: pH, 7.5; water temperature, 12°C.
Section 18: 5m; Old road crossing. Bridge pulled.
95m; Debris jam.
Section 19: 75m; Debris jam.
Section 20: 0m; Steep bank, right side. Tributary left side with no significant habitat.

22. Investigators Gerry Merrigan Date 6/21/83

LEVEL TWO HABITAT SURVEY
Chum Creek
106-30-012

Section 20: 15m; Bedrock exposure, right side.
50m; Tributary left side with no significant habitat. Steep bank with slump, left side.
95m; Debris jam.

Section 21: 0m; Old road, left side, that is partially slumped into stream for 20 meters.
20m; Debris jam.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Chum Creek 2. ADF&G Catalog No. 106-30-012

Reach Number	2	2	2	2			
1. Section Number	22	23	24	25			
2. Section Length	100	100	100	100			
3. Compass Bearing	165	160	135	150			
4. Gradient	4	6	6	6			
5. Water Quality	3	3	3	3			
6. Bank Type	B	B	B	B			
7. Bank Stability	2(2)	1(2)	1(2)	1(2)			
8. Bank Vegetation	1-5	1-5	1-5	1-5			
9. Debris Loading	1	3	9	3			
10. Undercut Bank Length	--	--	--	--			
11. Stream Width:							
Channel	5.6	5.3	3.8	3.9			
Water	1/2	5.0	2.2	3.0			
12. Water Type %: SS	20	20	30	20			
DS	--	5	20	20			
SF	80	75	50	60			
DF	--	--	--	--			
13. Substrate %:							
Bedrock	--	15	--	--			
Boulder	25	30	20	35			
Large Cobble	35	25	35	30			
Small Cobble	25	15	25	20			
Gravel	10	10	15	15			
Sand	5	5	5	5			
Muck	--	--	--	--			
Other	--	--	--	--			
14. ASA %/Quality	--	--	5/2	--			
15. Rearing Area %	10	5	20	20			
16. Pool Cover %	--	15	15	20			
17. Riffle Cover %	5	5	5	5			
18. Fish Observed	--	--	--	--			
19. Sampling	N	N	N	N			
20. Potential Barriers	N	N	N	N			
21. Enhancement/Rehab	N	N	N	N			

Section 23: 80m; Debris jam.
85m; Bedrock substrate for 15 meters.
Section 24: 50m; Debris jam.
80m; Debris jam. Thinning slash on banks.
90m; Debris jam. Thinning slash in stream.
Section 25: 50m; Debris jam.
100m; Continued gradient increase over boulder. No habitat. End of survey.

22. Investigators Gerry Merrigan Date 6/21/83

FISH SAMPLING FORM

Stream Name Chum Creek ADF&G Catalog No. 106-30-012 Date 6/21/83

Identify Survey Area A Water Temp. 11°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1150	1630	DV - 1 CT - 1 CO - 1		Section 1: 20m; Left side.
2	1315	1617	--		Section 8: 70m; Midstream
3	1434	1545	DV - 1		Section 18: 0m; Left side.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

PEAK ESCAPEMENT RECORD

106-30-012

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
9/12/70	75			
9/15/71	60	20		
8/30/72	500			
8/23/76	700			
8/22/78	3100			
8/13/79	600			
8/06/80	50			
9/22/81	516			
10/06/82	482			

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas none 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name Luck Point #1 2. ADF&G Catalog No. n/a
3. Latitude 56°00'25" Longitude 132°47'50"
4. Agency Unit 5 5. Mgmt. Area 572 K 6. USGS Map No. Petersburg A-3
7. Aerial Photo No. 8-26-79 12 34 610050 138
8. Bay/Drainage Clarence Strait 9. Access 2
10. Present Land Use none
11. Historical Land Use none
12. Stream Origin 5 13. Estimated Flow 2 cfs 14. Flow Stage 2
15. Stream Temperature 11°C 16. pH 7.0 17. Beaver none
18. Temperature Sensitivity no
19. Barrier none 20. Weather 6

Part III.

21. Intertidal

A. Substrate: Fines 40 % Gravel/S. Cob. 50 %
L. Cob/Boulder/Bedrock 10 %
B. Gradient 1.0 %
C. ASA % none
D. Schooling no
E. Shellfish no
F. Anchorage none

22. Comments Stream Evaluation

This small stream had minimal fish habitat. No coho fry were seen or caught. Only Dolly Varden fry were seen. The stream parallels the beach for 90 meters through old growth. The stream is slow moving with predominantly sand, silt and gravel substrate. After 130 meters the stream forks into two small tributaries with no significant habitat.

23. Investigators Randy Ericksen 24. Date 6/21/83

Luck Point #1

1. The ITZ looking toward the creek mouth. Low flow through a sinuous channel produces no ASA.

2. Low flow over predominantly sand substrate produces fair rearing habitat for resident Dolly Varden but only marginal ASA.

FISH SAMPLING FORM

Stream Name Luck Point #1 ADF&G Catalog No. n/a Date 6/21/83

Identify Survey Area n/a Water Temp. 11.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1245	1310	--		60 meters from the creek mouth

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas none 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name Luck Point #2 2. ADF&G Catalog No. none

3. Latitude 56°00'50" Longitude 132°48'55"

4. Agency Unit 05 5. Mgmt. Area 534.1K 6. USGS Map No. Petersburg A-3

7. Aerial Photo No. 8-26-79 12 33 610050 379-143

8. Bay/Drainage Clarence Strait 9. Access 02

10. Present Land Use none

11. Historical Land Use none, small stream, low gradient

12. Stream Origin 5 13. Estimated Flow 2 cfs 14. Flow Stage 2

15. Stream Temperature 11.5°C 16. pH 6.5 17. Beaver none

18. Temperature Sensitivity yes

19. Barrier none surveyed 20. Weather 6

Part III.

21. Intertidal

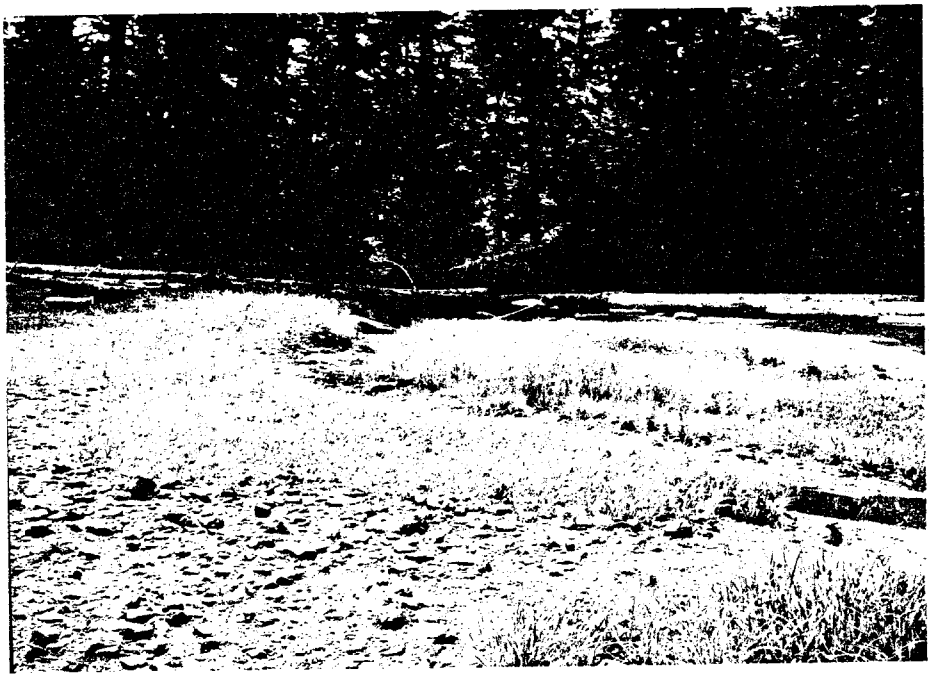
A. Substrate: Fines 30 % Gravel/S. Cob. 70 %
L. Cob/Boulder/Bedrock 0 %
B. Gradient 1.5 %
C. ASA % 10/fair
D. Schooling no
E. Shellfish no
F. Anchorage near mouth

22. Comments Stream Evaluation

This stream is located east of Chum Creek (106-30-12) near Coffman Cove. Coho fry were abundant in the ITZ and common in the stream itself. The first 30 meters of stream is completely covered by debris. The next 100 meters provides good riparian cover, predominantly cobble substrate, and a good pool/riffle ratio. Rearing habitat is good and ASA is fair.

23. Investigators Randy Ericksen 24. Date 6/21/83

Luck Point #2



1. Intertidal zone looking toward the creek mouth. Intertidal ASA is fair but limited by low flow and interstitial fines.

2. The creek provides fair ASA and rearing habitat.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100 m

3. Historical Fish Species PS, CS, SS, & RS

Part II.

1. Stream Name Eagle Creek 2. ADF&G Catalog No. 106-10-30
3. Latitude 55°58'00" Longitude 132°43'25"
4. Agency Unit 05 5. Mgmt. Area 581 K 6. USGS Map No. Craig D-3
7. Aerial Photo No. 79-35-379-60/61; 79-36-379-50/51
8. Bay/Drainage Clarence Strait 9. Access 1
10. Present Land Use none
11. Historical Land Use the mid and upper watershed are extensively logged
12. Stream Origin 1, 3, 4, 5, 6 13. Estimated Flow 25 cfs 14. Flow Stage 2.5
15. Stream Temperature 17°C 16. pH 7.7 17. Beaver 11; near lake
18. Temperature Sensitivity yes; lake source & muskeg seeps
19. Barrier no 20. Weather 3/1

Part III.

21. Intertidal

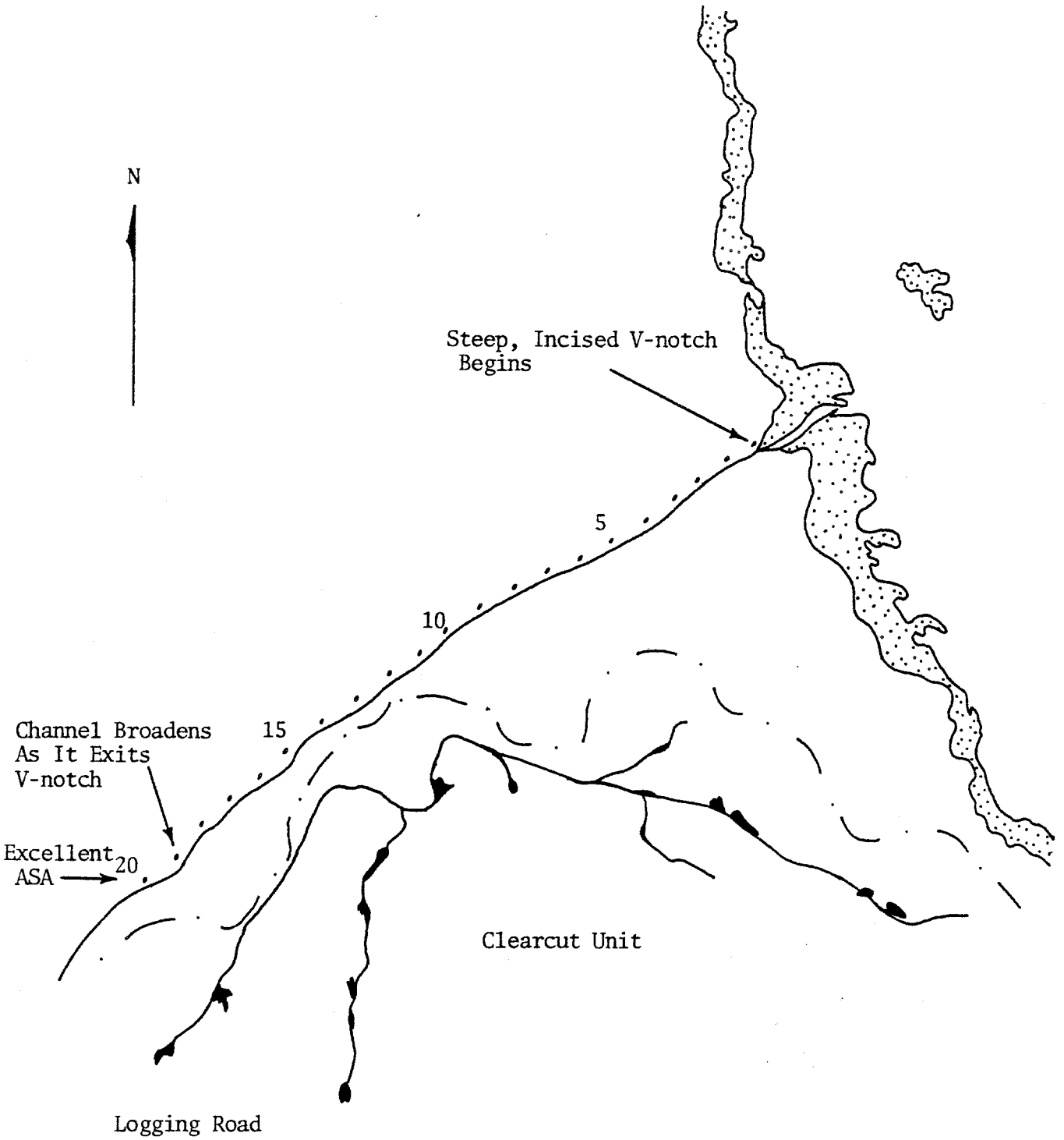
A. Substrate: Fines -- % Gravel/S. Cob. 10 %
L. Cob/Boulder/Bedrock 90 %
B. Gradient 1.5 % (high tides)
C. ASA % 0
D. Schooling Clarence Strait & ITZ
E. Shellfish none observed
F. Anchorage Clarence Strait

22. Comments Stream Evaluation

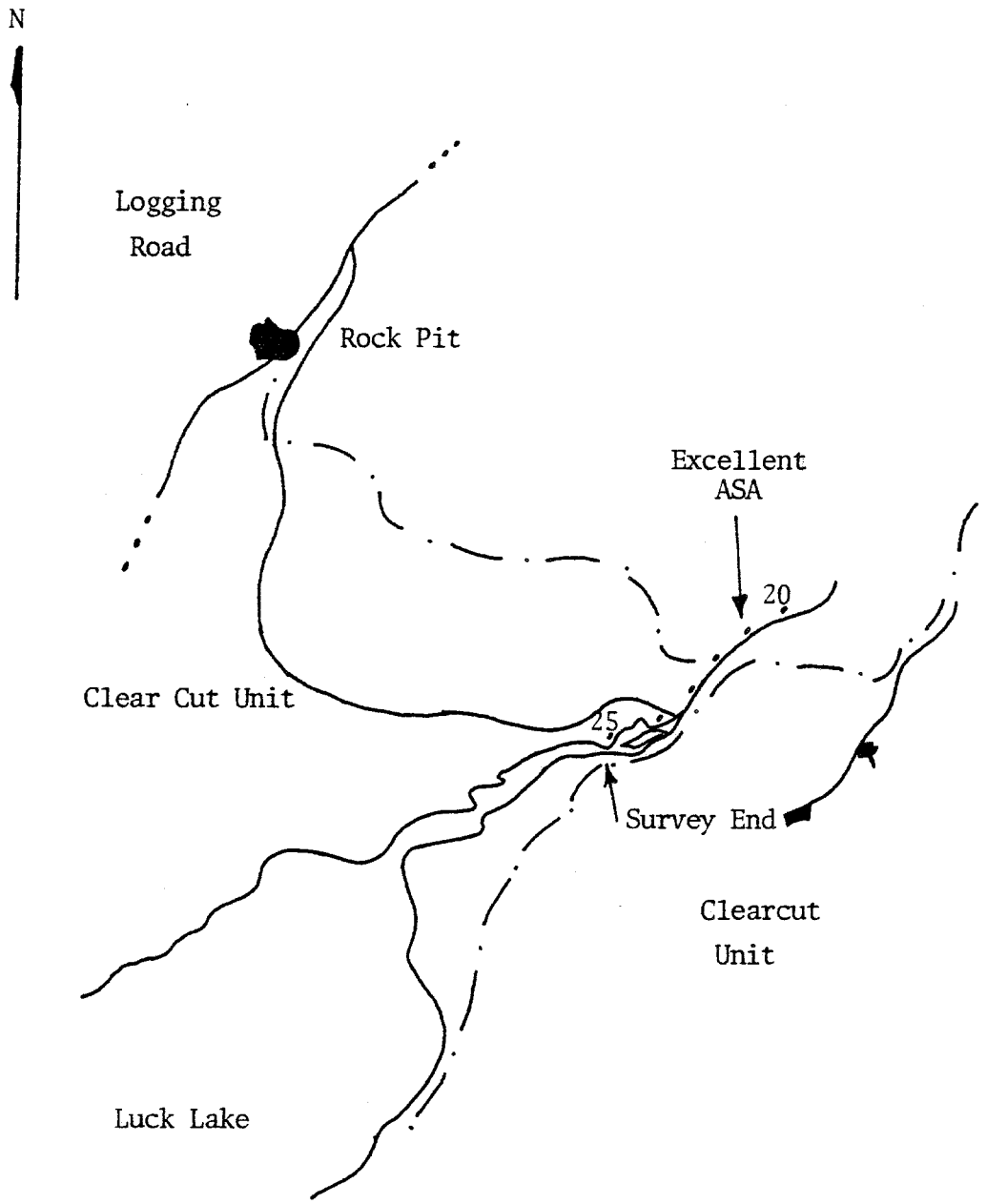
Eagle Creek has historically supported an outstanding sport fishery for steelhead, cutthroat trout, Dolly Varden, silver, pink and sockeye salmon; and provides access to the Luck Lake/Luck Creek system. Main stem spawning is concentrated in Reaches 2 and 4. Reach 1, 1800 meters in extent, is characterized by moderate-steep gradients, coarse substrate, and fast flows as the channel negotiates an incised V-notch. No ASA was observed in Reach 1 and rearing habitat is limited to peripheral boulder induced pools. Portions of the watershed have been clearcut to the banks and an old logging road provides sport fishing access in Section 24. Hundreds of rearing SS and DV fry were observed throughout the survey. No rehabilitation or enhancement recommended.

23. Investigators Ted Mickowski 24. Date 6/25/83

106-10-30
Eagle Creek



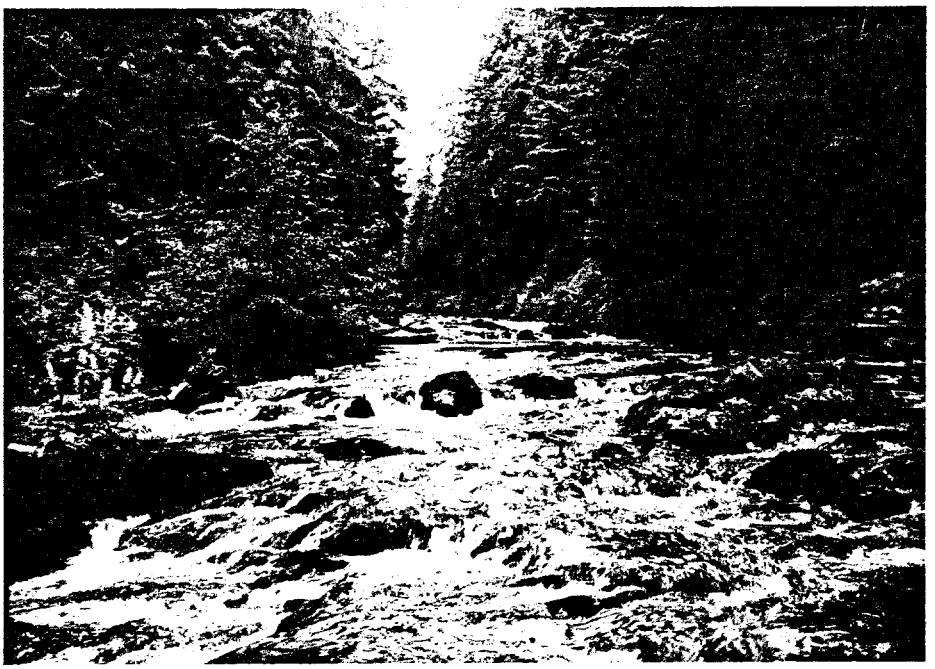
106-10-30
Eagle Creek



Prince of Wales Island

106-10-30
Eagle Creek

1. View down ITZ toward Clarence Strait. Channel remains steeply notched for 18 sections.



2. Section 5: Steep gradients, fast flows, and coarse substrate typify incised channel through Section 18.

3. Section 16: Boulder strewn channel climbs steep sided V-notch.

4. Section 19: Channel exits notch, broadens and provides excellent spawning substrate through Section 22.

5. Section 22: Channel widens substantially, providing good-excellent ASA. A remnant buffer borders the left bank, old growth right.

6. Section 24: Old bridge crossing is visible, center right.

7. Section 25: Channel spreads out substantially resulting in extensive cobble/gravel riffles. Hundreds of DV fry were observed rearing throughout section.

8. A slough-like channel extends from the lake outlet to an extensive debris jam approximately 400 meters downstream. The sectional survey ends at the slough/flowing stream ecotone.

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
15	100	17.1	3	51.3					
19	100	25	25	650.0					
20	100	33	30	990.0					
21	100	42	30	1260.0					
22	100	43.5	30	1305.0					
24	100	19.2	5	96.0					
25	100	45	35	1575.0					
Total				$5927.3m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Eagle Creek 2. ADF&G Catalog No. 106-10-30

Reach Number	1	1	1	1	1	1	1
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	229	233	237	232	245	242	242
4. Gradient	2	2	4	2.5	4	2	3
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	1,3-5	1,3-5	1,3-5	1,3-5	1,3-5	1-5	1-5
9. Debris Loading	1	1	1	--	1	--	1
10. Undercut Bank Length	--	--	--	--	--	--	--
11. Stream Width:							
Channel	10	24	9.6	18	18.3	19.5	21
Water	10	24	9.6	18	18.3	19.5	21
12. Water Type %: SS	5	5	1	1	1	1	1
DS	--	25	--	--	--	--	--
SF	85	45	80	80	80	95	85
DF	10	25	19	19	19	4	14
13. Substrate %:							
Bedrock	32	45	50	45	80	5	20
Boulder	30	25	20	25	5	35	30
Large Cobble	25	20	20	20	5	30	25
Small Cobble	5	5	5	5	5	20	15
Gravel	5	5	5	5	5	10	10
Sand	3	--	--	--	--	--	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	--	--	--	--	--	--	--
15. Rearing Area %	5	5	1	2	2	5	5
16. Pool Cover %	10	--	10	10	10	20	20
17. Riffle Cover %	10	15	5	5	--	20	20
18. Fish Observed (fry) SS	>12	>25					
(fry) DV	>50	>50	>25	<12	>12	>25	>25
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1-7: Channel cuts a steep V-notch and is characterized by coarse substrate, steep gradients, and fast flows. No spawning substrate and limited rearing habitat was observed. DV fry, however, were commonly seen in peripheral boulder pools. Old growth timber borders both banks.

22. Investigators Ted Mickowski Date 6/25/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Eagle Creek 2. ADF&G Catalog No. 106-10-30

Reach Number	1	1	1	1	1	1	1
1. Section Number	8	9	10	11	12	13	14
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	234	229	224	232	225	237	253
4. Gradient	3.5	3	2.5	2.5	2.5	1.5	1.5
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	1	1	1	2	1	1	1
10. Undercut Bank Length	--	--	--	--	--	--	--
11. Stream Width:							
Channel	19	13.5	21.3	20.4	16.5	26.1	10.2
Water	19	13.5	21.3	20.4	16.5	18	10.2
12. Water Type %: SS	1	2	5	3	5	5	5
DS	--	--	--	4	--	--	10
SF	85	85	75	70	80	65	55
DF	14	13	20	23	15	30	30
13. Substrate %:							
Bedrock	20	15	10	15	15	15	15
Boulder	30	30	35	30	30	30	30
Large Cobble	25	30	30	30	30	30	30
Small Cobble	15	15	15	15	15	15	15
Gravel	10	10	10	10	10	10	10
Sand	--	--	--	--	--	--	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	--	--	--	--	--	--	--
15. Rearing Area %	2	5	10	10	15	15	8
16. Pool Cover %	20	20	20	20	20	20	20
17. Riffle Cover %	20	20	20	20	20	20	20
18. Fish Observed (fry) SS	--	--	<12	--	--	>12	--
(fry) DV	--	>25	>50	>25	--	100+	200+
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 8-14: Incised channel negotiates a steep V-notch and is typified by coarse substrate, steep gradients, and fast flows. No spawning and limited rearing habitat was observed. DV fry, however, were commonly seen rearing in peripheral boulder pools.

Section 11: Clearcut unit borders left bank.

Section 12: A 2 cfs tributary enters the main stem via the right bank and steeply climbs a bedrock/boulder channel. No fish or habitat were observed.

22. Investigators Ted Mickowski Date 6/25/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Eagle Creek 2. ADF&G Catalog No. 106-10-30

Reach Number	1	1	1	1	2	2	2
1. Section Number	15	16	17	18	19	20	21
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	222	224	229	226	222	222	236
4. Gradient	1.5	2	2	2	1.5	1.5	1.5
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	A/B	B	B	B	A/B	A/B	A/B
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	1	1	1	1	1	1	1
10. Undercut Bank Length	--	--	--	--	--	--	5
11. Stream Width:							
Channel	18	39	12	11.1	26	33	42
Water	17.1	39	12	11.1	26	33	42
12. Water Type %: SS	15	5	2	2	5	5	10
DS	20	--	8	6	--	--	--
SF	60	55	40	65	80	95	90
DF	5	40	50	27	15	--	--
13. Substrate %:							
Bedrock	--	10	15	15	--	--	--
Boulder	15	40	35	35	3	--	--
Large Cobble	30	25	25	25	7	--	--
Small Cobble	25	15	15	15	50	50	50
Gravel	25	10	10	10	35	45	45
Sand	5	--	--	--	5	5	5
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	3/3	--	--	--	25	30	30
15. Rearing Area %	15	20	2	2	5	8	15
16. Pool Cover %	--	20	20	20	5	5	10
17. Riffle Cover %	20	20	20	20	5	--	--
18. Fish Observed (fry) SS	<12	100+	--	--	--	---	100+
(fry) DV	200+	200+	<12	<25	--	--	200+
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 15-18: Incised channel negotiates a steep V-notch and is typified by coarse substrate, steep gradients, and fast flows. Spawning substrate is minimal in quantity and rearing habitat is limited to peripheral boulder pools. Both SS and DV fry, however, were locally abundant.

Section 17: 90m; A 1 cfs tributary rapidly climbs an incised boulder channel to a clearcut unit. No fish or habitat were observed.

22. Investigators Ted Mickowski Date 6/25/83

Section 19: 17m; Channel broadens as it exits V-notch, demarcating Reach 2. Extensive cobble/gravel riffles provide excellent spawning substrate through Section 22.

Section 21: 34m; A less than 1 cfs tributary enters the main stem via the left bank and provides good-excellent spawning and rearing habitat near mouth. Hundreds of DV fry were observed rearing at/near the confluence. Channel is completely brushed over near the mouth, the result of an extensive clearcut.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Eagle Creek 2. ADF&G Catalog No. 106-10-30

Reach Number	2	3	3	4			
1. Section Number	22	23	24	25			
2. Section Length	100	100	100	100			
3. Compass Bearing	228	218	209	241			
4. Gradient	1.5	1.5	2	1.5			
5. Water Quality	1	1	1	1			
6. Bank Type	A/B	A/B	B	A/B			
7. Bank Stability	1/1	1/1	1/1	1/1			
8. Bank Vegetation	1-5	1-5	1-5	1-5			
9. Debris Loading	1	3	1	1			
10. Undercut Bank Length	--	--	--	--			
11. Stream Width:							
Channel	43.5	31.5	19.2	45			
Water	43.5	31.5	19.2	45			
12. Water Type %: SS	5	10	10	20			
DS	5	30	--	--			
SF	80	25	75	80			
DF	10	35	15	--			
13. Substrate %:							
Bedrock	--	25	10	--			
Boulder	15	20	10	3			
Large Cobble	25	20	20	20			
Small Cobble	35	15	40	40			
Gravel	20	15	20	30			
Sand	5	5	--	7			
Muck	--	--	--	--			
Other	--	--	--	--			
14. ASA %/Quality	30	--	5	35			
15. Rearing Area %	25	50	5	75			
16. Pool Cover %	20	10	15	15			
17. Riffle Cover %	20	20	20	25			
18. Fish Observed (fry) SS	200+	200+	--	200+			
(fry) DV	200+	200+	<6	200+			
19. Sampling	N	N	N	N			
20. Potential Barriers	N	N	N	N			
21. Enhancement/Rehab	N	N	N	N			

Section 22: Remant buffer borders left bank.
50m; Cobble/gravel riffles give way to a bedrock/boulder substrate, demarcating the advent of Reach 3.

Section 23: An extensive clearcut unit extends to both banks. Hundreds of riffle rearing fry were observed. Instream cover is provided by boulders and attached filamentous algae.

Section 24: 60m; Stream side road marks former bridge crossing and provides sport fishing access.

22. Investigators Ted Mickowski Date 6/25/83

Section 25: Channel broadens substantially, providing extensive spawning and riffle rearing habitat. Section and survey end at the base of a passable debris jam. Hundreds of rearing fry were observed.

Reconnaissance above survey end extended approximately 400 meters to lake outlet and encompassed a debris choked slough-like channel. Excellent holding and rearing areas were observed, however, deep, slow flow provided minimal ASA.

PEAK ESCAPEMENT RECORD

106-10-30

DATE	PINK	CHUM	OTHER SPECIES		REMARKS
8/29/61	36,500		9/23/82	11 SS	
8/30/62	20,000		9/04/64	4,000 RS	
8/21/63	7,000		9/01/66	2,750 RS	
9/24/64	85,000		9/15/71	240 RS	
10/01/65	75,000		9/18/72	2,000 RS	
9/01/66	60,000		9/04/74	4,000 RS	
9/05/67	12,000	300	8/21/75	2,100 RS	
10/02/68	2,000	1	8/23/76	1,600 RS	
9/05/69	25,100		8/08/77	200 RS	
8/26/70	13,000				
9/22/71	40,000				
9/18/72	30,000				
9/12/73	3,000				
8/28/74	13,000				
9/08/75	10,000				
10/06/76	43,000				
8/24/77	40,000				
9/13/78	24,000				
8/22/79	26,000				
10/13/80	12,600				
9/22/81	29,170	24			
9/23/82	81,128	72			

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length --

3. Historical Fish Species No escapement data available.

Part II.

1. Stream Name Eagle Creek N. #1 2. ADF&G Catalog No. 106-10-038
3. Latitude 55°57'10" Longitude 132°45'10"
4. Agency Unit 05 5. Mgmt. Area 581K 6. USGS Map No. Craig D-3
7. Aerial Photo No. 1979 Photos Fl. Ln. 35 Photo 60
8. Bay/Drainage Eagle Creek 9. Access 1
10. Present Land Use None
11. Historical Land Use Logged about 20-30 years ago.
12. Stream Origin 3, 4, 5, 6 13. Estimated Flow about 2 cfs 14. Flow Stage 2
15. Stream Temperature 15° 16. pH 6.3 17. Beaver Yes
18. Temperature Sensitivity Yes, beaver system within unit with S.E. exposure.
19. Barrier No 20. Weather 1

Part III.

21. Intertidal N/A

A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%
B. Gradient ____%
C. ASA % ____
D. Schooling ____
E. Shellfish ____
F. Anchorage ____

22. Comments Stream Evaluation

This stream is a beaver/pond marsh system within an old clearcut, creating rearing habitat for coho fry. The stream enters the right (north) bank of Eagle Creek near the confluence of Luck Lake.

23. Investigators Gerry Merrigan 24. Date 8/10/83

Eagle Creek N. #1
106-10-038

1. Mouth of beaver dam drain through marsh grass.

2. Continued marsh grass/beaver pond within old cutting unit.

FISH SAMPLING FORM

Stream Name Eagle Creek N. #1 ADF&G Catalog No. 106-30-038 Date 8/10/83

Identify Survey Area A Water Temp. 15°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1800	1815	SS - 1		In pond.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100 m

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name Luck Lake West #1 2. ADF&G Catalog No. n/a

3. Latitude _____ Longitude _____

4. Agency Unit 05 5. Mgmt. Area 581 K 6. USGS Map No. Craig D-3

7. Aerial Photo No. 79-35-379-60

8. Bay/Drainage Luck Lake 9. Access 1

10. Present Land Use none

11. Historical Land Use extensive portions of drainage clearcut

12. Stream Origin 3, 4, 5, 6 13. Estimated Flow 1.5 cfs 14. Flow Stage 2

15. Stream Temperature 12°C 16. pH 6.8 17. Beaver no

18. Temperature Sensitivity yes

19. Barrier no 20. Weather 1

Part III.

21. Intertidal n/a

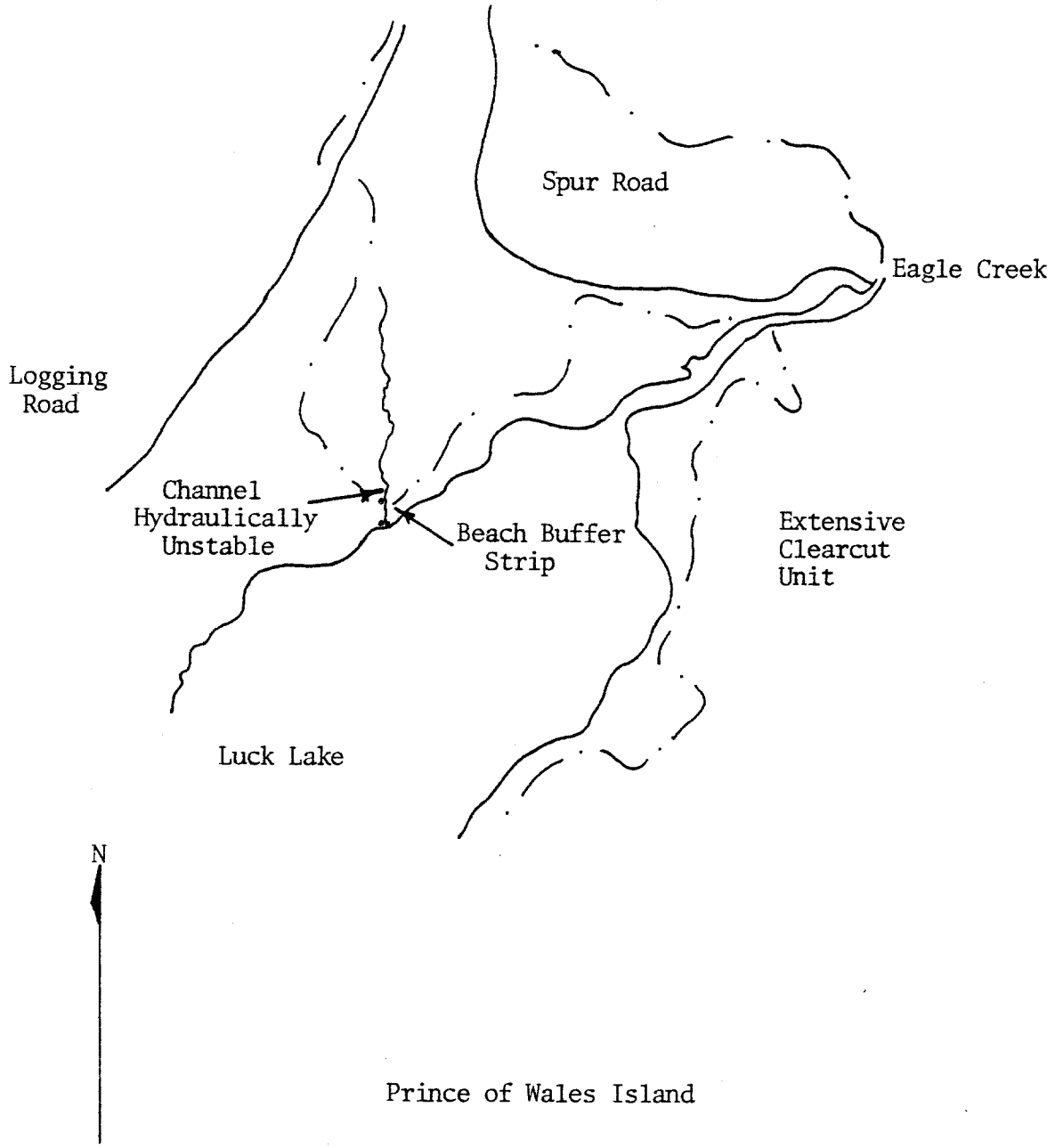
A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%
B. Gradient ____%
C. ASA % _____
D. Schooling _____
E. Shellfish _____
F. Anchorage _____

22. Comments Stream Evaluation

This small stream, the first from the outlet on the west side, is hydraulically unstable and is characterized by a beach buffer strip, copious debris, nearly continuous failing clay banks, and extremely compact gravel substrate. 121 meters above lake confluence, debris directed flow is actively cutting a new channel through a peripheral "lowland". Juvenile SS and DV were common throughout survey and two adult salmon skeletons were observed along upper banks. Marginal rearing habitat and evidence of extremely high flows suggest periods of lake rearing may occur during portions of the year. No rehabilitation or enhancement recommended.

23. Investigators Ted Mickowski 24. Date 8/10/83

Luck Lake West #1



Luck Lake West #1

1. Mouth of stream.

2. Unstable, sharply undercut banks have caused an influx of debris loading.

Luck Lake West #1

3. Looking downstream. Gravel is embedded in clay substrate.

Luck Lake West #1

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	2.4	7	16.8					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Lake West #1 2. ADF&G Catalog No. n/a

Reach Number	1						
1. Section Number	1						
2. Section Length	100						
3. Compass Bearing	327						
4. Gradient	1.5						
5. Water Quality	1						
6. Bank Type	B						
7. Bank Stability	3/3						
8. Bank Vegetation	1-5						
9. Debris Loading	20						
10. Undercut Bank Length	15						
11. Stream Width:							
Channel	2.4						
Water	2.4						
12. Water Type %: SS	35						
DS	--						
SF	65						
DF	--						
13. Substrate %:							
Bedrock	--						
Boulder	--						
Large Cobble	--						
Small Cobble	5						
Gravel	45						
Sand	25						
Muck	25						
Other	--						
14. ASA %/Quality	7/1						
15. Rearing Area %	15						
16. Pool Cover %	10						
17. Riffle Cover %	--						
18. Fish Observed (fry) SS	>25						
(juv) DV	>12						
19. Sampling	Y						
20. Potential Barriers	N						
21. Enhancement/Rehab	N						

22. Investigators Ted Mickowski Date 8/10/83

FISH SAMPLING FORM

Stream Name Luck Lake W. #1 ADF&G Catalog No. n/a Date 8/10/83

Identify Survey Area A Water Temp. 12°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1125	1142	SS - 3		Section 1

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A, B, C 2. Section Length 100 meters

3. Historical Fish Species No escapement data available.

Part II.

1. Stream Name Luck Lake West #2 2. ADF&G Catalog No. n/a

3. Latitude 55°56'50" Longitude 132°46'10"

4. Agency Unit 05 5. Mgmt. Area 581K 6. USGS Map No. Craig D-3

7. Aerial Photo No. 1979 Photos Fl. Ln. 35 Photo 61

8. Bay/Drainage Luck Lake 9. Access 2

10. Present Land Use none

11. Historical Land Use Logged about 20 years ago.

12. Stream Origin 3, 4, 5, 6 13. Estimated Flow about 2.0 cfs 14. Flow Stage 1

15. Stream Temperature 12.5 16. pH 7.5 17. Beaver No

18. Temperature Sensitivity Yes; S.E. Orientation; watershed logged.

19. Barrier No 20. Weather 1

Part III.

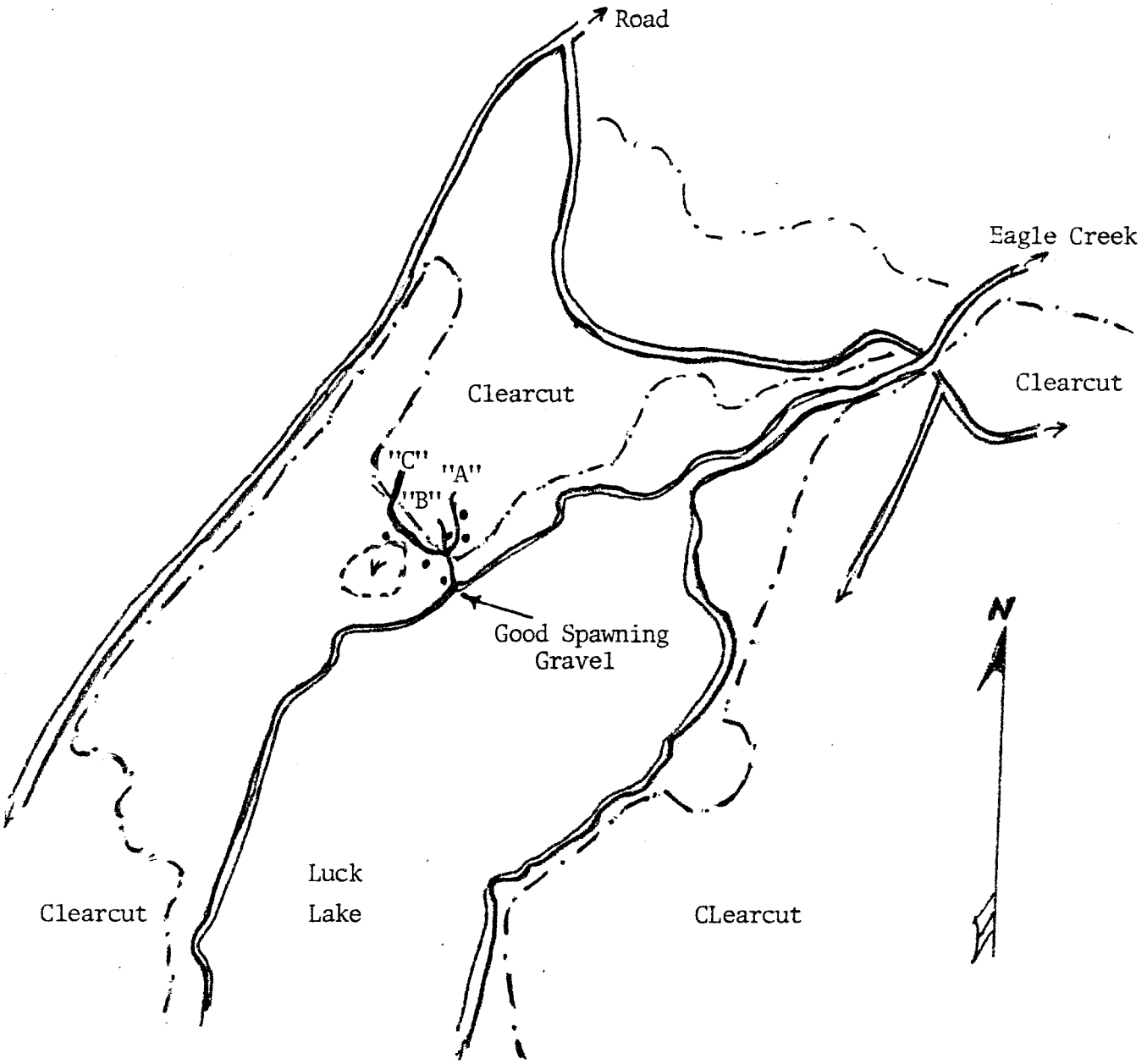
21. Intertidal None - lake system.

A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%
B. Gradient ____%
C. ASA % ____
D. Schooling ____
E. Shellfish ____
F. Anchorage ____

22. Comments Stream Evaluation

This is a small tributary entering the western shore of Luck Lake. The stream has good spawning gravel at the confluence with the lake and the first 50 meters of the stream. At this point, the stream forks three times into very small streams with little fish habitat. Fish observations end at this point. All three forks eventually enter an old logging unit.

23. Investigators Gerry Merrigan 24. Date 8/10/83



Luck Lake West #2
Prince of Wales Island

Luck Lake West #2

1. Mouth of Luck Lake West #2 with spawning riffle before entering alder cover.

2. Habitat Survey Area "A", Section 1: 60m; Low velocity flow over small cobble/gravel substrate.

Luck Lake West #2

3. Gravel/alder dry wash area in Survey Area "A", Section 2: 50m.

Luck Lake West #2

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
Survey Area "A"									
1	100	1.0	18	18					
2	50	1.0	3	3					
Survey Area "B"									
1	100	1.0	2	2					
Survey Area "C"									
1	100	1.0	5	5					
2	100	1.0	--	--					
Total				$28.0m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Lake West #2 2. ADF&G Catalog No. n/a

Reach Number							
1. Section Number	1	2		1		1	2
2. Section Length	100	50		100		100	100
3. Compass Bearing	10	42		320		310	378
4. Gradient	1	2		1.5		1.5	1.5
5. Water Quality	1	1		3		3	3
6. Bank Type	A	A		A		B	B
7. Bank Stability	2(2)	2(2)		2(2)		1(1)	1(1)
8. Bank Vegetation	1-5	1-5		1-5		1-5	1-5
9. Debris Loading	15	20		25		10	8
10. Undercut Bank Length	40	30		60		120	100
11. Stream Width:							
Channel	1	2		1		1	1
Water	1	1		1		1	1
12. Water Type %: SS	30	30		30		40	40
DS	15	10		20		20	20
SF	55	60		50		40	40
DF	--	--		--		--	--
13. Substrate %:							
Bedrock	--	--		--		--	--
Boulder	--	--		--		--	--
Large Cobble	10	10		--		--	--
Small Cobble	25	25		20		20	20
Gravel	50	50		45		40	40
Sand	15	15		20		20	30
Muck	--	--		15		20	10
Other	--	--		--		--	--
14. ASA %/Quality	18/3	3/3		2/3		5/3	--
15. Rearing Area %	30	20		20		35	35
16. Pool Cover %	15	15		25		20	20
17. Riffle Cover %	5	15		30		20	15
18. Fish Observed	SS						
	DV						
19. Sampling	Y	N		N		N	N
20. Potential Barriers	N	N		N		N	N
21. Enhancement/Rehab	N	N		N		N	N

Survey Area "A": Section 1: 0m; Gravel delta at lake confluence with good ASA.
15m; Enter full alder canopy.
50m; Confluence of Survey Areas "B" &"C". Continue with right fork.
Section 2: 50m; Enter large gravel/alder dry wash with discontinuous flow in old unit.

22. Investigators Gerry Merrigan Date 8/10/83

LEVEL TWO HABITAT SURVEY
Luck Lake West #2

Survey Area "B": Middle Fork

Section 1: Slow moving stream with less than .5 cfs and forbs in stream. Primarily a muskeg drain with no fish observed.

Survey area "C": Left Fork

Section 1: Muskeg drain with isolated patches of blue clay.

Section 2: 0m; Begin unit right side.
100m; Enter unit.

FISH SAMPLING FORM

Stream Name Luck Lake West #2 ADF&G Catalog No. n/a Date 8/10/83

Identify Survey Area A Water Temp. 12.5°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1209	1300	SS - 12 DV - 2 CT - 1		Section 1: 50m

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 126 m

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name Luck Lake West #3 2. ADF&G Catalog No. none
3. Latitude 55°56'20" Longitude 132°46'20"
4. Agency Unit 05 5. Mgmt. Area 581 K 6. USGS Map No. Petersburg A-3
7. Aerial Photo No. 8-26-79 12 35 610050 379-61
8. Bay/Drainage Luck Lake 9. Access 2
10. Present Land Use none
11. Historical Land Use none
12. Stream Origin 5 13. Estimated Flow 1.5 cfs 14. Flow Stage 2
15. Stream Temperature 13°C 16. pH 7.5 17. Beaver none
18. Temperature Sensitivity yes, small, low gradient Western exposure
19. Barrier none surveyed 20. Weather 1

Part III.

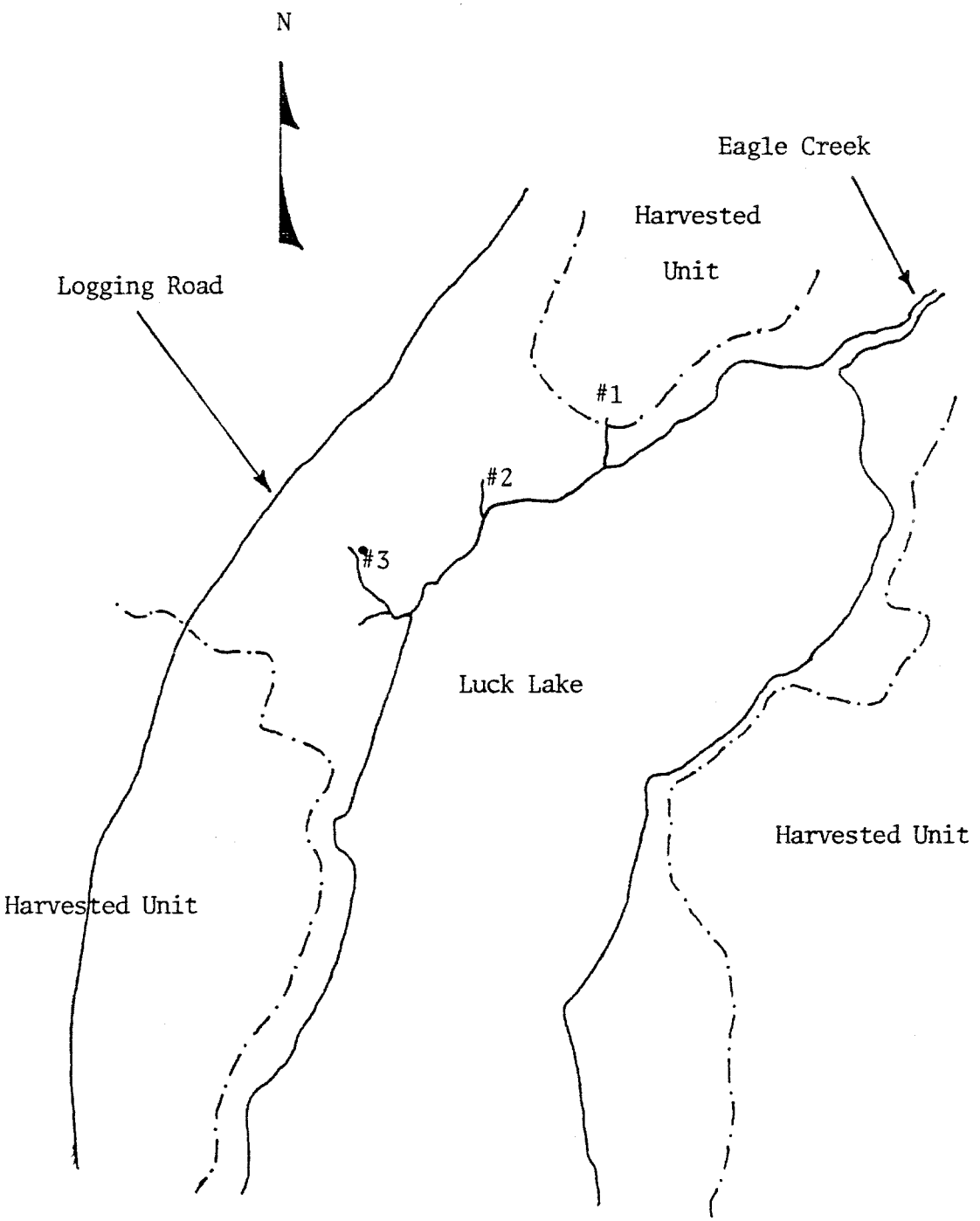
21. Intertidal No Intertidal Zone on This Creek
   A. Substrate: Fines ____% Gravel/S. Cob. ____%
      L. Cob/Boulder/Bedrock ____%
   B. Gradient ____%
   C. ASA % ____
   D. Schooling ____
   E. Shellfish ____
   F. Anchorage ____

22. Comments Stream Evaluation

This stream provides excellent rearing habitat for coho fry and resident Dolly Varden, cutthroat trout, and sticklebacks. Adult salmon skeletons were noted along the length of stream surveyed. Beaver and deer sign were frequent along the stream. Sharply undercut banks and dense riparian vegetation provide excellent cover. A small (.5 cfs) stream enters the left bank at 48 meters. This sinuous tributary had minimal fish habitat due to low flow and sand substrate. The stream gradient increases abruptly after 126 meters causing a deterioration of the fish habitat.

23. Investigators Randy Ericksen 24. Date 8/10/83

Luck Lake West #3



Luck Lake West #3

1. The creek mouth taken from Luck Lake.

2. Dense riparian vegetation and sharply undercut banks provide cover for coho fry below the fork.

Luck Lake West #3

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	126	2.2	4	$11.0m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Lake West #3 2. ADF&G Catalog No. n/a

Reach Number	1						
1. Section Number	1						
2. Section Length	126						
3. Compass Bearing	300						
4. Gradient	2.0						
5. Water Quality	1						
6. Bank Type	B						
7. Bank Stability	1/1						
8. Bank Vegetation	1,3-5						
9. Debris Loading	30						
10. Undercut Bank Length	100						
11. Stream Width:							
Channel	2.2						
Water	2.2						
12. Water Type %: SS	70						
DS	--						
SF	30						
DF	--						
13. Substrate %:							
Bedrock	--						
Boulder	--						
Large Cobble	--						
Small Cobble	5						
Gravel	70						
Sand	20						
Muck	5						
Other	--						
14. ASA %/Quality	4/1						
15. Rearing Area %	60						
16. Pool Cover %	70						
17. Riffle Cover %	70						
18. Fish Observed	DV						
	SS						
	SB						
	CT						
19. Sampling	Y						
20. Potential Barriers	N						
21. Enhancement/Rehab	N						

See Stream Evaluation for comments.

22. Investigators Randy Ericksen Date 8/10/83

FISH SAMPLING FORM

Stream Name Luck Lake West #3 ADF&G Catalog No. n/a Date 8/10/83

Identify Survey Area A Water Temp. 13.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1220	1305	SS - 1 CT - 2		Below Tributary
2	1230	1300	SS - 3 DV - 5 CT - 1		Above Tributary

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas "A" 2. Section Length 100 m

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name n/a 2. ADF&G Catalog No. 106-10-36

3. Latitude 55°56'30" Longitude 132°46'26"

4. Agency Unit 05 5. Mgmt. Area 581 K 6. USGS Map No. Craig D-3

7. Aerial Photo No. 79-34-379-131

8. Bay/Drainage Luck Lake 9. Access 1

10. Present Land Use none

11. Historical Land Use substantial portion of watershed is clearcut

12. Stream Origin 3, 5, 6 13. Estimated Flow less than 1 cfs 14. Flow Stage 2

15. Stream Temperature 10.5°C 16. pH 7.3 17. Beaver no

18. Temperature Sensitivity no

19. Barrier yes; low flow and debris obstruction 20. Weather 1

Part III.

21. Intertidal n/a

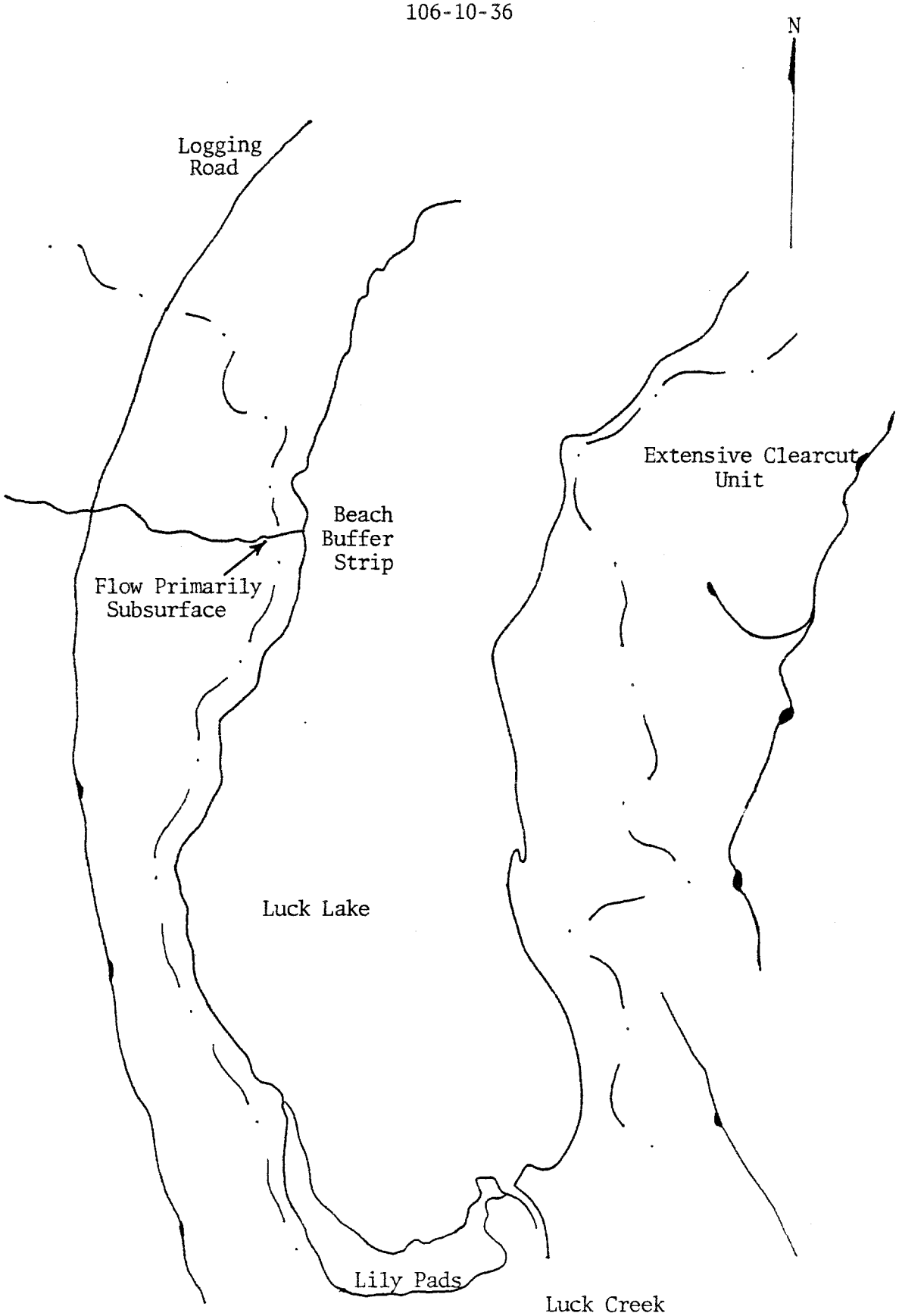
A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%
B. Gradient ____%
C. ASA % ____
D. Schooling ____
E. Shellfish ____
F. Anchorage ____

22. Comments Stream Evaluation

This small stream is hydraulically unstable and is characterized by a beach buffer strip, copious debris, undercut/overhanging banks and extensive cobble bars. 80 m above lake confluence, channel becomes obscured by rootwads, cut logs and dense overhanging vegetation. Survey was terminated as flow became primarily subsurface leaving a "wetted" debris choked channel. Marginal rearing habitat and evidence of extremely high flows suggest periods of lake rearing may occur during portions of the year. No rehabilitation or enhancement recommended.

23. Investigators Ted Mickowski 24. Date 8/10/83

106-10-36


N
Logging Road
Extensive Clearcut Unit
Beach Buffer Strip
Flow Primarily Subsurface
Luck Lake
Lily Pads
Luck Creek

1. Mouth is characterized by low flow and extensive gravel deposits.

2. Section 1: Nearly continuous undercut left bank and extensive cobble bars, suggest flow variation is quite severe.

106-10-36

3. Section 1: Flow is undermining root mass along bend.

106-10-36

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	.9	2	1.8					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name n/a 2. ADF&G Catalog No. 106-10-36

Reach Number	1						
1. Section Number	1						
2. Section Length	100						
3. Compass Bearing	242						
4. Gradient	6						
5. Water Quality	1						
6. Bank Type	B						
7. Bank Stability	3/3						
8. Bank Vegetation	1-5						
9. Debris Loading	25						
10. Undercut Bank Length	45						
11. Stream Width:							
Channel	3.3						
Water	.9						
12. Water Type %: SS	20						
DS	--						
SF	80						
DF	--						
13. Substrate %:							
Bedrock	--						
Boulder	5						
Large Cobble	40						
Small Cobble	20						
Gravel	25						
Sand	10						
Muck	--						
Other	--						
14. ASA %/Quality	2/3						
15. Rearing Area %	10						
16. Pool Cover %	20						
17. Riffle Cover %	--						
18. Fish Observed (fry) SS	>12						
19. Sampling	Y						
20. Potential Barriers	N						
21. Enhancement/Rehab	N						

22. Investigators Ted Mickowski Date 8/10/83

FISH SAMPLING FORM

Stream Name n/a ADF&G Catalog No. 106-10-36 Date 8/10/83

Identify Survey Area A Water Temp. 10.5°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1300	1330	SS - 2		Section 1

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas Luck Creek 2. Section Length 100 m

3. Historical Fish Species PS, CS, RS

Part II.

1. Stream Name Luck Creek 2. ADF&G Catalog No. 106-10-34

3. Latitude 55°55'39" Longitude 132°45'50"

4. Agency Unit 05 5. Mgmt. Area 581 K 6. USGS Map No. Craig D-3

7. Aerial Photo No. 79-35-379-63/64/65 79-34-379-121-128

8. Bay/Drainage Luck Lake 9. Access 1

10. Present Land Use none

11. Historical Land Use logging throughout watershed

12. Stream Origin 3, 4, 5, 6 13. Estimated Flow 10.0 cfs 14. Flow Stage 1.5

15. Stream Temperature 12°C 16. pH 7.7 17. Beaver yes

18. Temperature Sensitivity yes; primarily open canopy due to clearcutting

19. Barrier yes 20. Weather clear

Part III.

21. Intertidal n/a

A. Substrate: Fines ____% Gravel/S. Cob. ____%
L. Cob/Boulder/Bedrock ____%
B. Gradient ____%
C. ASA % ____
D. Schooling ____
E. Shellfish ____
F. Anchorage ____

22. Comments Stream Evaluation

Numerous "jumpers" and pink salmon schools were observed milling off mouth.

The headwater of the Luck Lake/Eagle Creek system, Luck Creek provides the bulk of spawning/rearing habitat available to historical salmon species as well as coho salmon, Dolly Varden, steelhead and cutthroat trout. The entire eastern portion of the watershed is heavily clearcut with the exception of distinct buffers and marshy areas containing undersized trees. Removal of old growth to banks may have elevated stream temperatures but has also kept instream cut logs to a minimum. However, several logging induced, hydraulic modifying debris jams were observed. Patches of buffer strip and opposite bank "leading edge" blowdown was also noted throughout

23. Investigators Mickowski, Merrigan & Ericksen 24. Date 8/9/83 & 9/27/83

Stream Evaluation Cont.

the survey. Typically, large organic debris input, provided rearing habitat and induced accelerated bar formation. See sectional survey comments for noteworthy exceptions. The extent of "main stem" habitat and adjoining tributaries warrant separate reach analysis as follows.

Reach 1

2400 m in extent, this section of main stem is bounded by the lake confluence and a change in substrate composition, occurring 100 m below a bedrock cascade/falls. The substrate is primarily composed of a gravel/small cobble matrix with varying amounts of interstitial sand. Gradients were moderate throughout with most sections containing both excellent spawning and rearing habitat. Owing to the homogeneous nature of the substrate, prime rearing habitat was directly related to the incidence of pooling, undercut banks, and debris. Most of the left bank and portions of the right bank are clearcut, however, dense stands of alder have maintained side slope stability and coniferous reproduction appears good. All adult fish observed are enumerated in the sectional survey and indicate the bulk of the "runs" have yet to enter the stream. The total available spawning area observed in Reach 1 is 8,190.6m^2.

Reach 2

Reach 2 begins at an abrupt gradient increase and continues 500 m (600 m total length) past the first major cascade barrier (upper limit of pink and chum salmon) to a resumption of low gradient. This barrier contains the remnants of a fish way. The substrate is composed mostly of bedrock and large cobble. Spawning habitat is almost non-existent being limited to pockets of cobble interspersed above the cascade. Coho fry were present throughout the reach confined to protected side pools. Logging has occurred along both banks for all but the final 100 meters of stream.

Reach 3

Flowing mostly through a buffer strip, this reach is distinguished from the bordering reaches by smaller substrate and generally lower gradient. The substrate is composed largely of small cobble and gravel producing good to excellent ASA. Channel braiding, undercut banks, moderate instream debris, and numerous pools combine to produce good rearing habitat.

Reach 4

Increasingly steep gradient climaxes at a 10 m high cascade in Section 31 and then stabilizes at a moderate level through the remainder of the reach. The stream flows through a buffer strip initially but enters a cutting unit just above the cascade. Moderate to steep gradient, lack of substantial cover, and bedrock/cobble substrate unite to create poor to fair fish habitat.

LEVEL TWO HABITAT SURVEY

Luck Creek
106-10-34

Stream Evaluation Cont.:

Reach 5

This reach is characterized by low gradient and extensive instream beaver activity resulting in deep, slow water and good rearing habitat. ASA is poor due to low water velocities and fine substrate. This reach was logged along both banks the entire length. Survey Area "A" was terminated 350 m into the reach due to lack of daylight and homogenous nature of the upstream habitat. This low gradient/beaver system habitat continues approximately 2 km upstream. The main stem was surveyed further using a subsample survey method. An attempt was made to subsample each change in habitat type beginning with Survey Area "E".

Survey Area "B": 250m: Enters main stem at Section 12: 16m

This is a small tributary which primarily flows through and/or adjacent to an old clearcut. Heavy accumulations of debris and blowdown have resulted in channel migration and multiple mouths entering the main stem. Rearing and spawning habitat is good with coho, DV, and CT fry observed. The tributar forks at 110 m; the right fork becoming a muskeg drain and the left fork continuing in the blowdown periphery of the unit until flow becomes discontinuous in gravel substrate.

Survey Area "C": Enters main stem at Section 15: 85m

Reach 1: 1200m

This reach runs through an old clearcut with an alder canopy varying from partial to full coverage. Heavy debris and sand deposition is found in this reach as well as many instream logs. Loose clean gravel allows for good spawning areas scattered consistently throughout the reach. Coho fry were common throughout the reach. Stream temperature was 12°C; pH, 7.5; and stream flow; about 5 cfs.

Reach 2: 300m

Still within an old clearcut, the stream gradient, velocity and substrate are increasing as ASA and fish observations are decreasing. Eventually, the substrate becomes wholly bedrock. At Section 15: 150m; A 4.0 m barrier falls occurs. Enhancement is not feasible as habitat above the falls is not worth accessing.

Study Area "D" 420m: Enters main stem at Section 25: 63m

This stream enters the main stem just below a series of falls where an unsuccessful fish way had been installed in years previous. The tributary runs through an old clearcut on both banks, and possessed spotty ASA behind

LEVEL TWO HABITAT SURVEY

Luck Creek
106-10-34

Stream Evaluation Cont.

Study Area "D" 420m: Enters main stem at Section 25: 63m

instream logs. Moderate amounts of DV, CT, and SS were observed. Gradually gradient and substrate size increases and the stream eventually becomes cascades over bedrock with no fish habitat. At this point, the survey was concluded.

Survey Area "E": 800m:

This main stem subsample has very loose clean gravel with a riffle/pool ratio of approximately 1:4. Spawning and rearing habitat is excellent with heavy concentrations of coho fry observed. Considerable deposition of sand is located on exposed gravel bars, and debris was deposited along the upper banks indicating occasional high discharge levels. The confluence of Survey Area "F" (beaver system) occurs at Section 5: 0m. A small tributary draining a beaver system also occurs at Section 8: 75m. Main stem stream temperature was 7.0°C and pH was 6.8.

Survey Area "F": 300m:

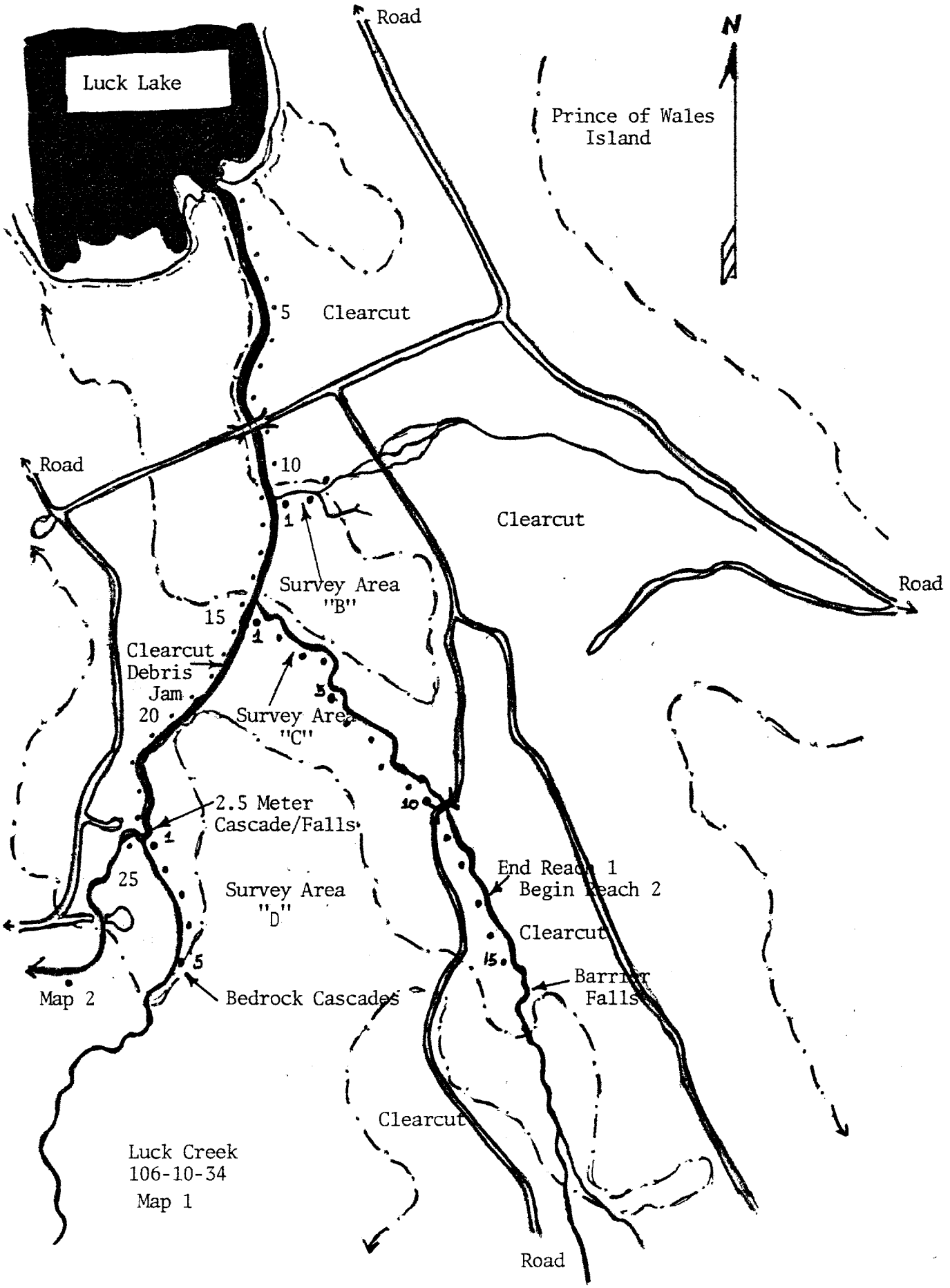
This moderate sized tributary enters the main stem at Survey Area "E". A beaver system dams flow 100 m up from the confluence. Below the dam, low gradient, deep, slow water, sharply undercut banks and good riparian cover provide excellent rearing habitat. Extremely high concentrations of coho fry were found in this section but were notably scarce upstream indicating the fry probably increases as the stream flows through the forest. Fast water over gravel substrate results in somewhat higher ASA but diminished rearing habitat.

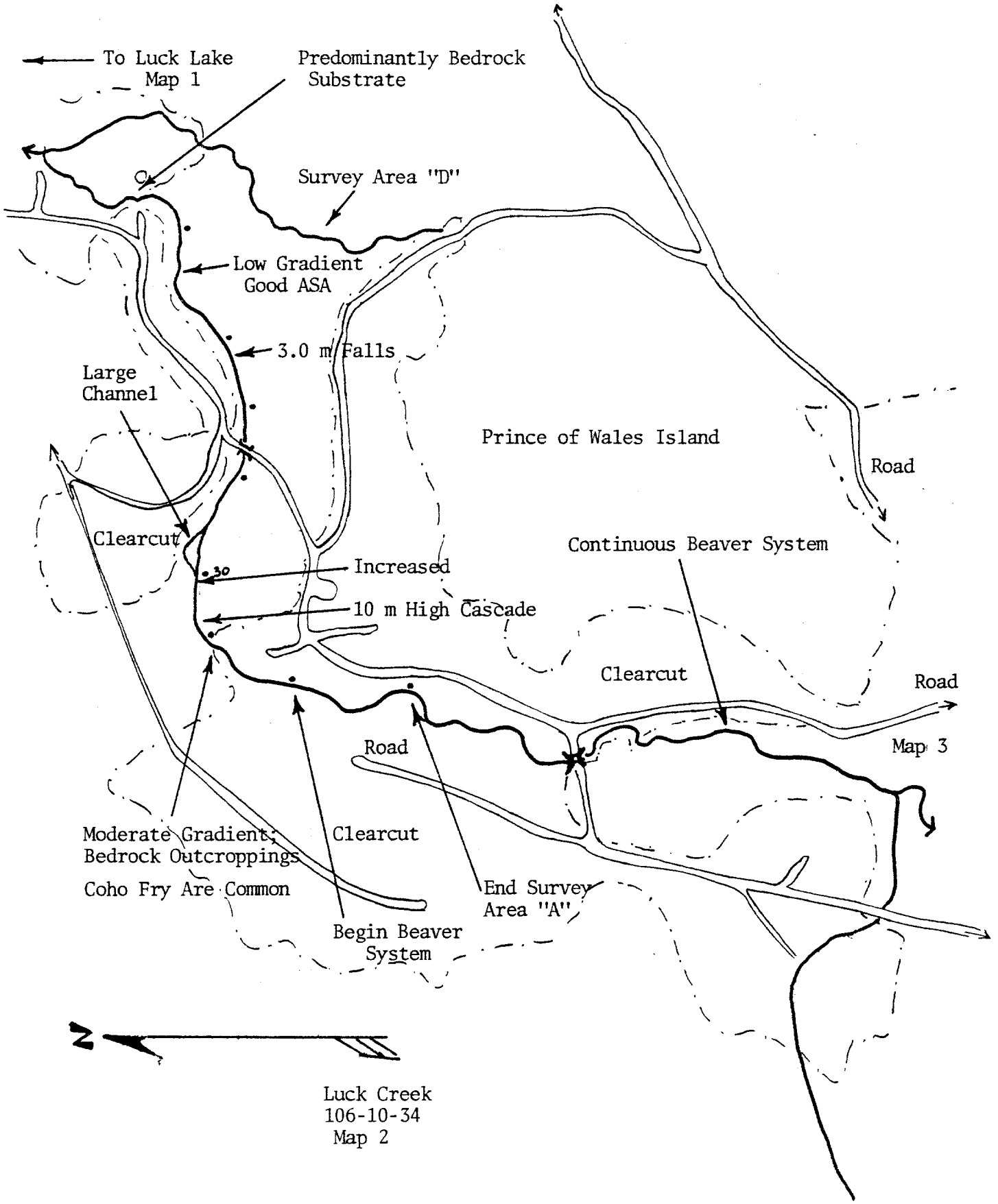
Survey Area "G": 400m:

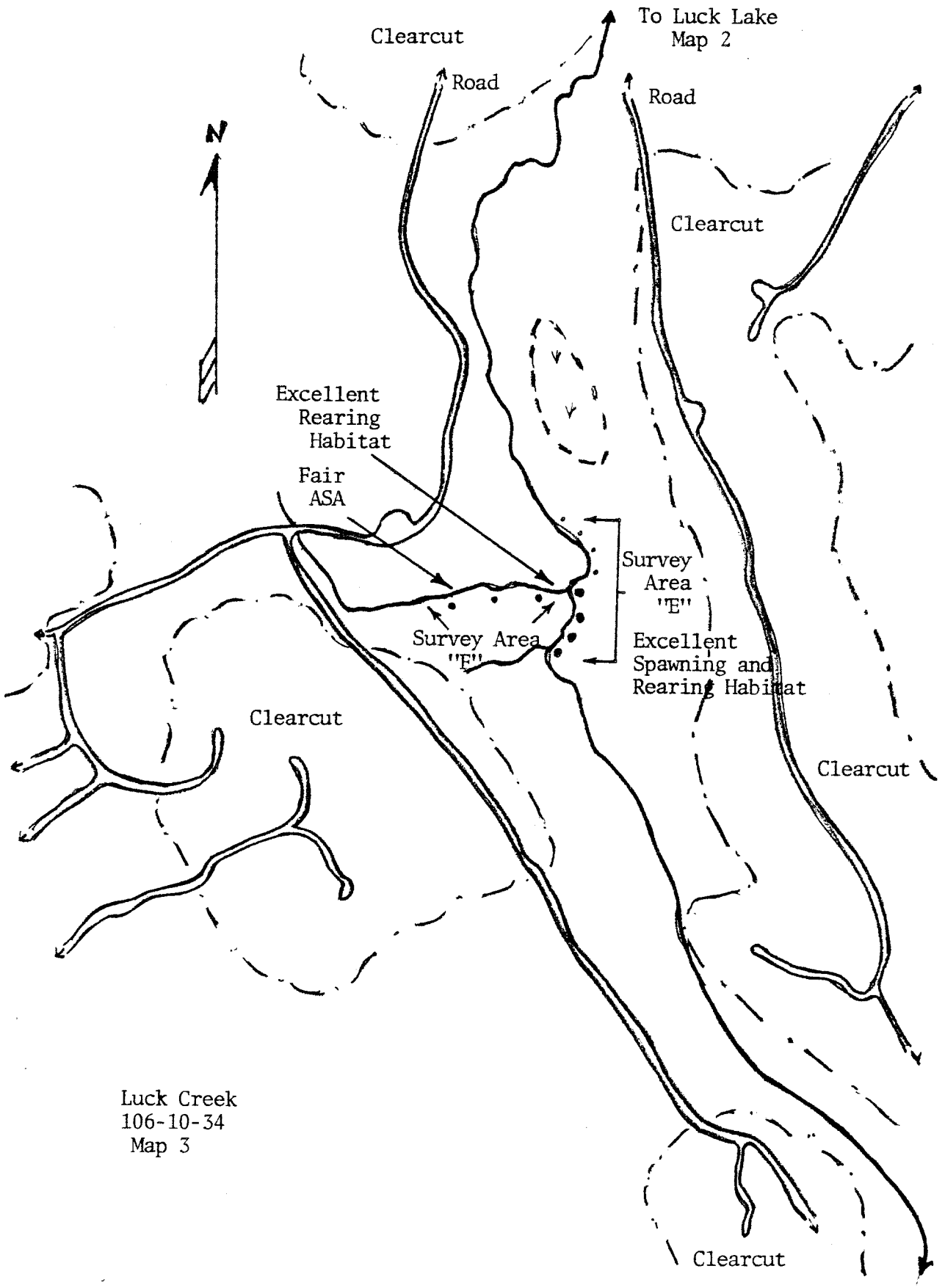
Accessed by helicopter, this portion of upper Luck Creek is characterized by an extensive clearcut unit bordering the left bank, copious instream logging debris, moderate-steep gradients, and channel instabilities. No ASA was observed and rearing was limited to peripheral debris induced pools. One SS fry was seen. The upper portion of Area "G" is marked by steep gradients and coarse substrate, resulting in nearly continuous high velocity cascades.

Survey Area "H": 585m:

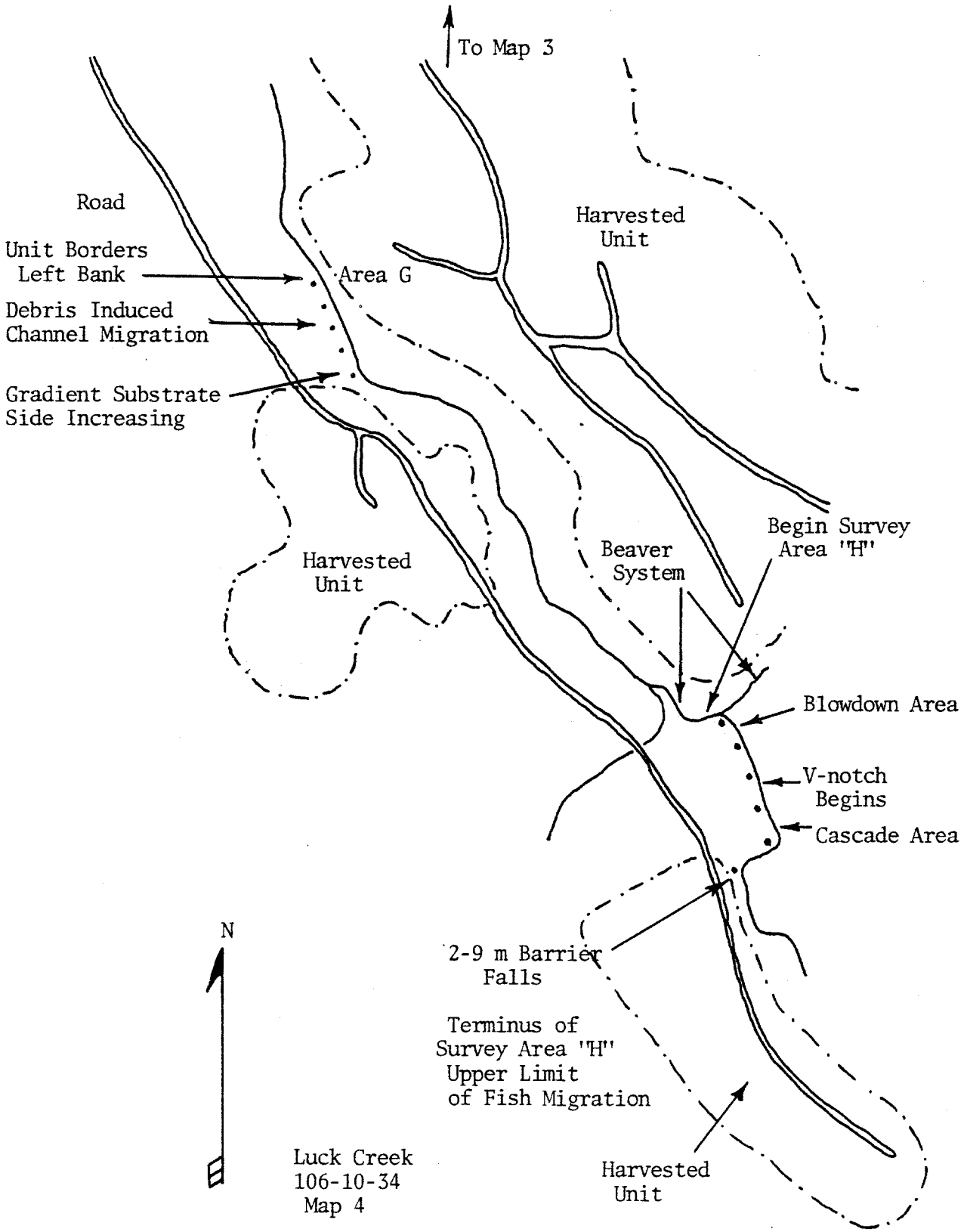
Beginning at the upstream terminus of a large main stem beaver system, this survey area encompasses two reaches before it terminates at a 9 meter barrier falls. The survey area is bounded on either end by a cutting unit but is wholly within a buffer strip of old growth timber.


Road
N
Luck Lake
Prince of Wales Island
5
Clearcut
Road
10
1
Clearcut
Survey Area "B"
Road
15
1
Clearcut Debris Jam
20
Survey Area "C"
5
2.5 Meter Cascade/Falls
10
1
25
Survey Area "D"
End Reach 1
Begin Reach 2
Clearcut
15
5
Barrier Falls
Map 2
Bedrock Cascades
Clearcut
Luck Creek
106-10-34
Map 1
Road

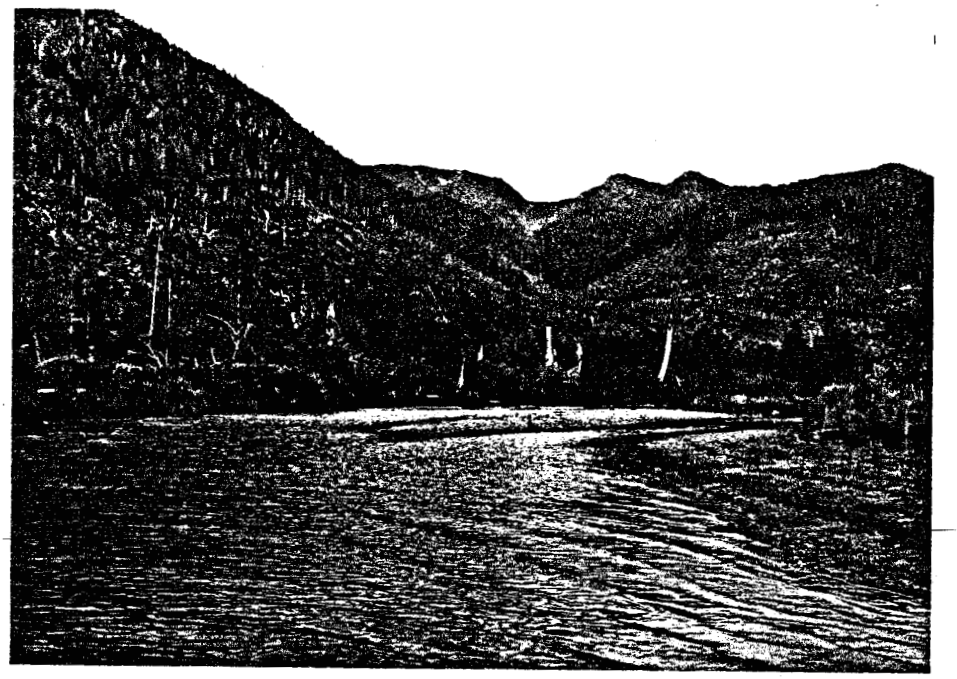

To Luck Lake
Map 1
Predominantly Bedrock
Substrate
Survey Area "D"
Low Gradient
Good ASA
3.0 m Falls
Large
Channel
Prince of Wales Island
Road
Clearcut
Continuous Beaver System
Increased
10 m High Cascade
Clearcut
Road
Map 3
Road
Moderate Gradient;
Bedrock Outcroppings
Coho Fry Are Common
Clearcut
End Survey
Area "A"
Begin Beaver
System
N
Luck Creek
106-10-34
Map 2



Luck Creek
106-10-34
Map 3


To Map 3
Road
Unit Borders
Left Bank
Area G
Debris Induced
Channel Migration
Gradient Substrate
Side Increasing
Harvested
Unit
Harvested
Unit
Beaver
System
Begin Survey
Area "H"
Blowdown Area
V-notch
Begins
Cascade Area
N
2-9 m Barrier
Falls
Terminus of
Survey Area "H"
Upper Limit
of Fish Migration
Harvested
Unit
Luck Creek
106-10-34
Map 4

Luck Creek
106-10-34

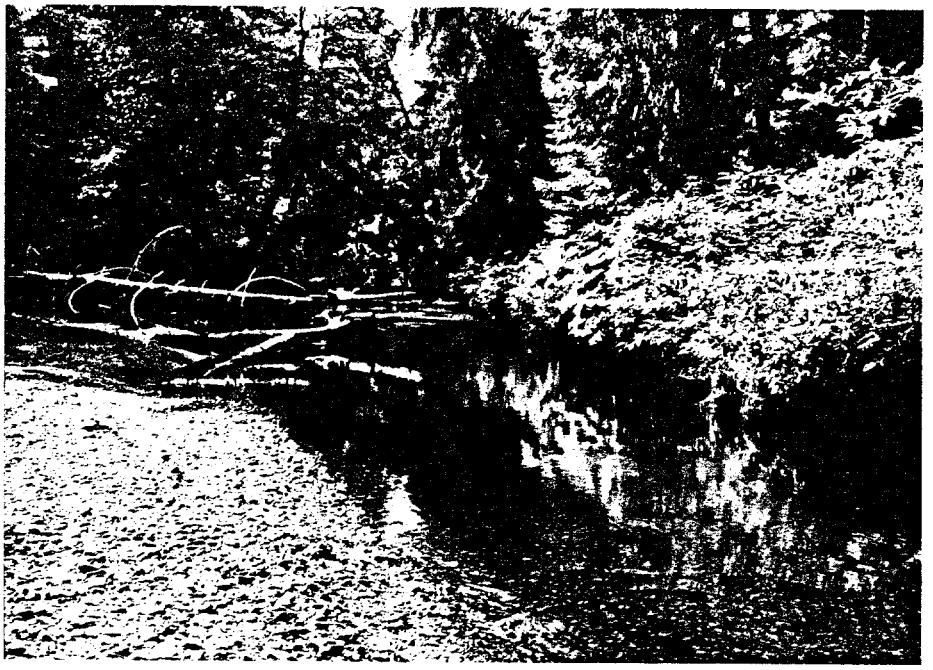


1. Upstream view of confluence of Luck Creek and Luck Lake. Backed up flow results in primarily DS/SS pools. Adult SS, RS, PS and DV were observed holding along undercut left bank. Numerous jumpers and PS schools were noted at the lake/stream ecotone.

2. Upstream view near mouth shows channel broadening, with numerous gravel bars, riffles, and instream debris. Extensive clearcutting throughout drainage is evident along left bank.

Luck Creek
106-10-34

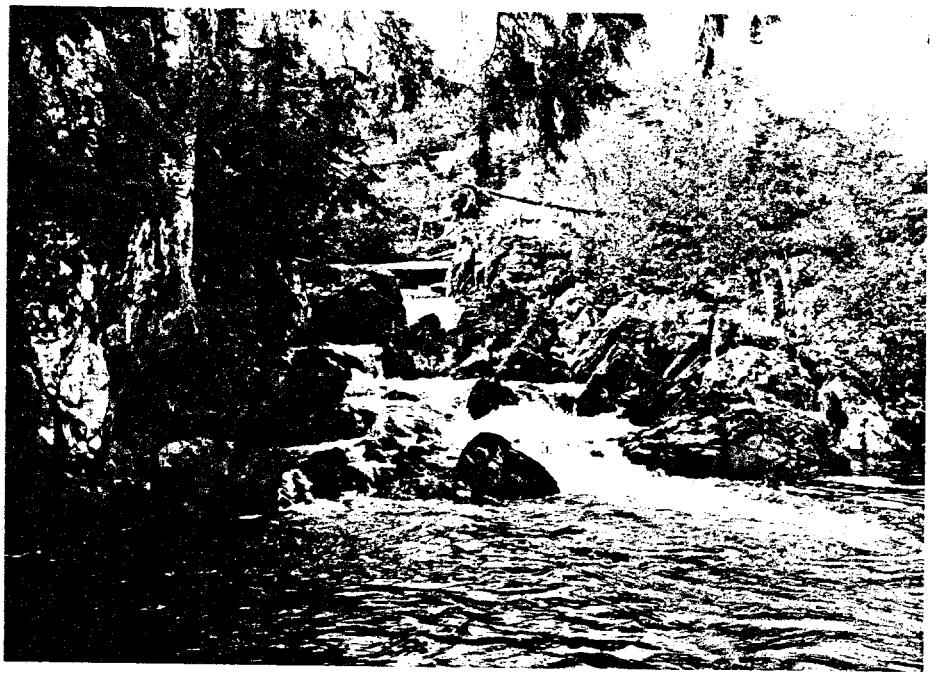
3. Section 7: Extensive gravel/small cobble riffle provides excellent ASA. Rearing and holding areas are also abundant.



4. Section 12: Buffer strip begins left bank. Extensive pooling and overhanging vegetation provide excellent rearing and holding habitat. Note gravel/small cobble substrate in foreground.

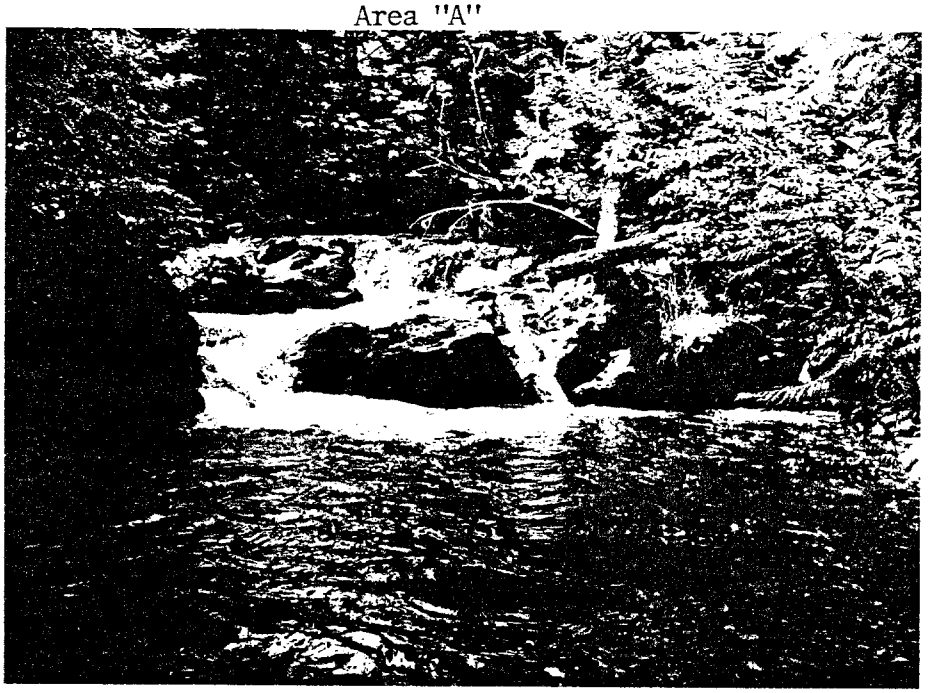
Luck Creek
106-10-34

5. Section 18: Copious logging slash impounds flow for 43 m before diverging around downstream bar. Clearcut unit extends to both banks.



6. Section 25: This three tiered high velocity cascade culminates in a 2.5 m falls and represents a probable PS barrier. SS and DV fry were observed above the falls and several adult DV were observed jumping. A remnant fish ladder was also sighted.

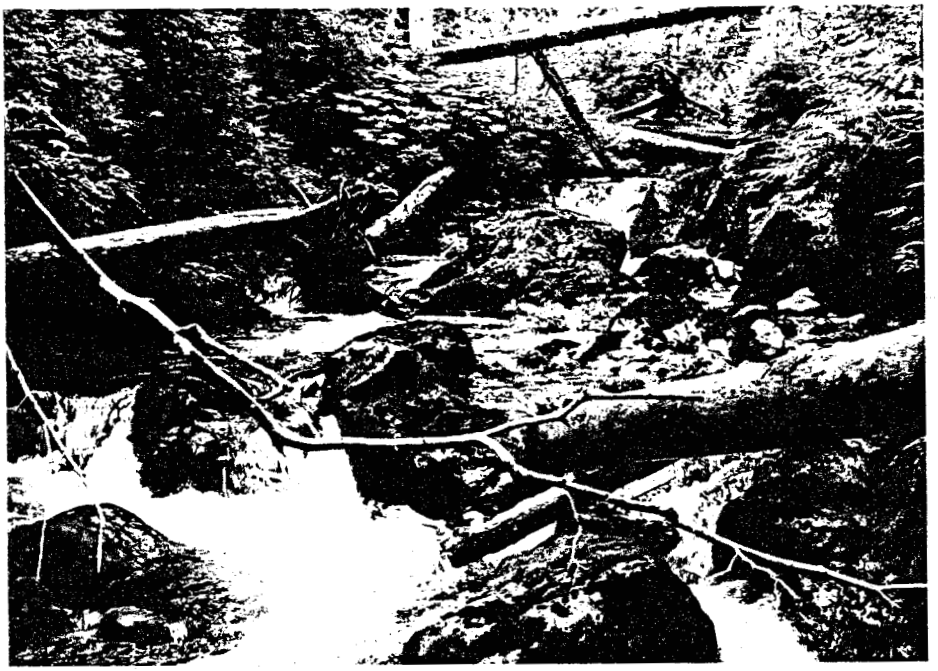
Luck Creek
106-10-34
Area "A"



7. Section 28: A 3 m bedrock cascade is probably an additional barrier to pink and chum salmon.

8. Section 28: Above the 3 m barrier, small cobble and gravel substrate provide excellent ASA.

Luck Creek
106-10-34
Area "A"



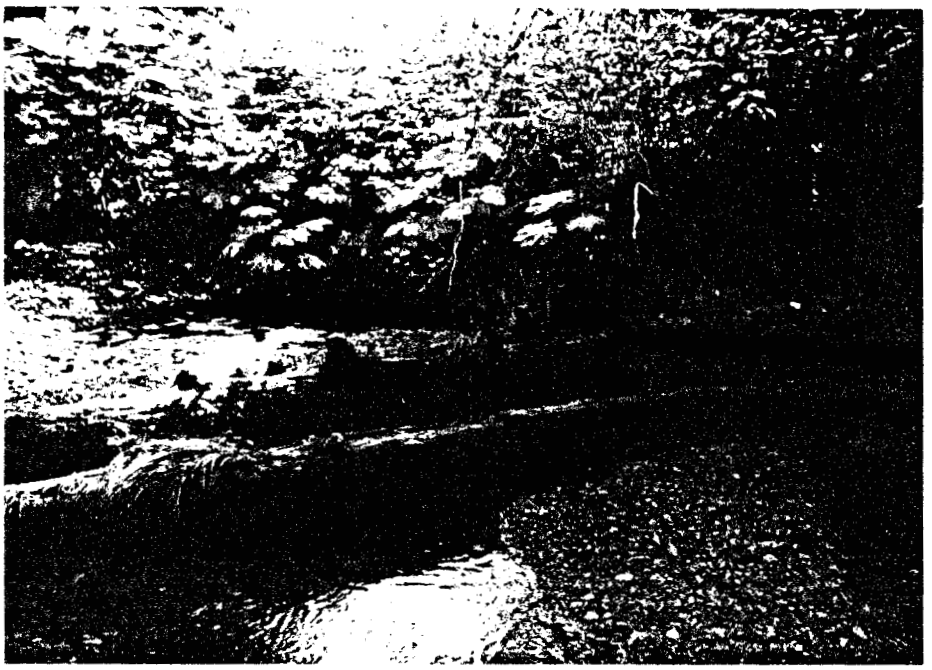
9. Section 31: The stream cuts a channel through a steep bedrock V-notch forming a 10 m high cascade; an additional barrier to pink and chum salmon.

10. Section 32: The stream flows through a large beaver complex, logged along both banks. Excellent rearing habitat but no ASA.

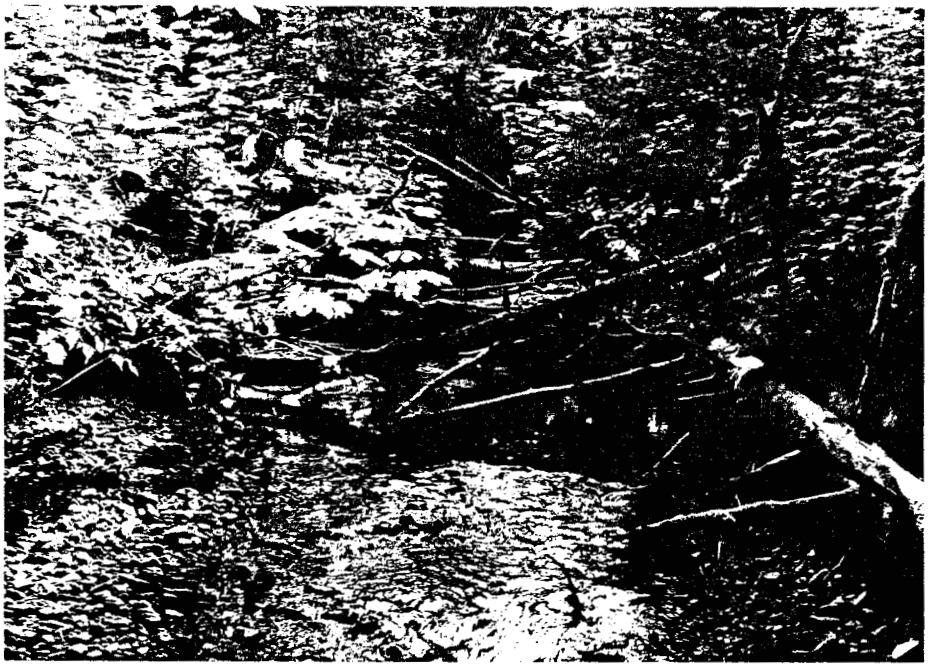
Luck Creek
106-10-34
Area "A"

11. An aerial view showing a non-surveyed portion of stream between Survey Area "A" and the subsample, Survey Area "E" on the main stem. Fish habitat is relatively homogeneous for approximately 2 km; low gradient and extensive beaver activity result in a sinuous, deep channel providing good to excellent rearing habitat but negligible ASA.

Luck Creek
106-10-34
Area "B"



1. Mouth of Survey Area "B"; Good vegetative cover.



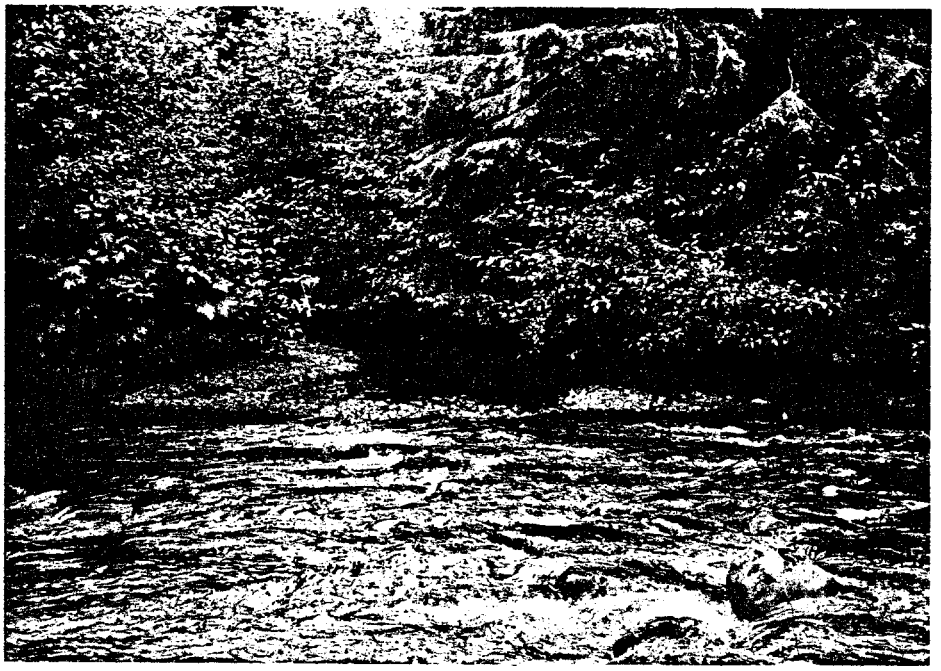
2. Stream flow over clean loose gravel; Section 1: 60 m.

Luck Creek
106-10-34
Area "C"

1. Mouth of Survey Area "C" with excellent spawning riffle at confluence with S15: 85 m main stem.

2. 4.0 m barrier falls with soil slump and blowdown left side, debris jam right side of Section 15: 150 m, Reach 2 Survey Area "C".

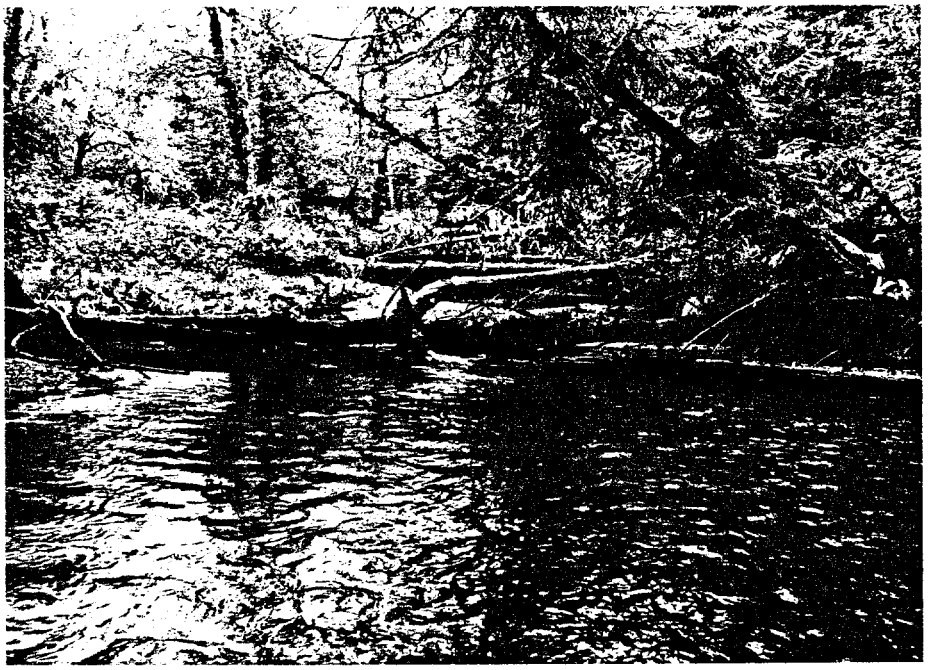
Luck Creek
106-10-34
Area "D"



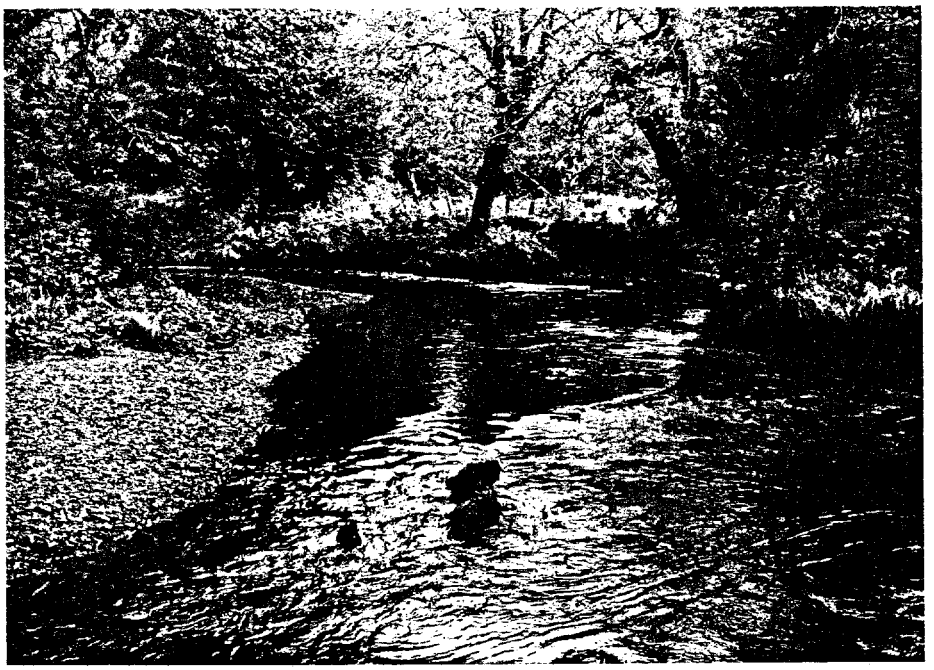
1. Mouth of Survey Area "D" at confluence with main stem at Section 25: 63m. Old unit both banks.

2. Bedrock cascade marking end of fish habitat and survey at Section 5: 20 m, Survey Area "D".

Luck Creek
106-10-34
Area "E"



1. Section 1: Gravel riffles, instream debris, undercut banks, and extensive pooling provide excellent spawning and rearing habitat.



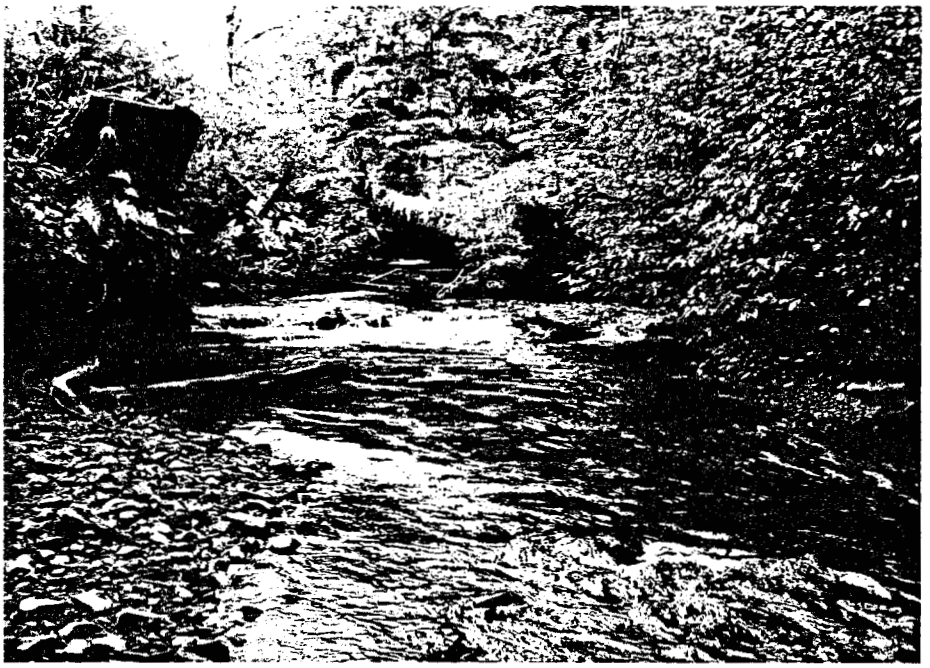
2. Section 4: Gravel riffles and undercut, overhanging banks, provide good-excellent spawning and rearing habitat.

Luck Creek
106-10-34
Area "F"

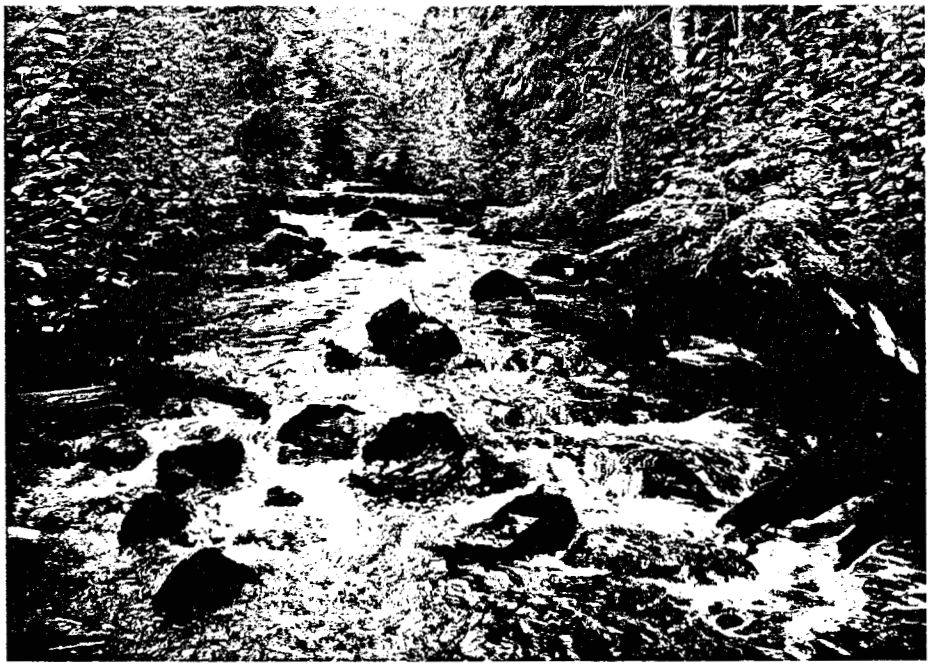
1. The mouth of Survery Area "F". Section 1 is a slough area draining a beaver system. Rearing habitat is excellent.

2. Section 2: Beginning immediately above the beaver system, gradient increases as the stream flows through the forest. ASA improves slightly, but rearing habitat is reduced. Fry were present but scarce.

Luck Creek
106-10-34
Area "G"



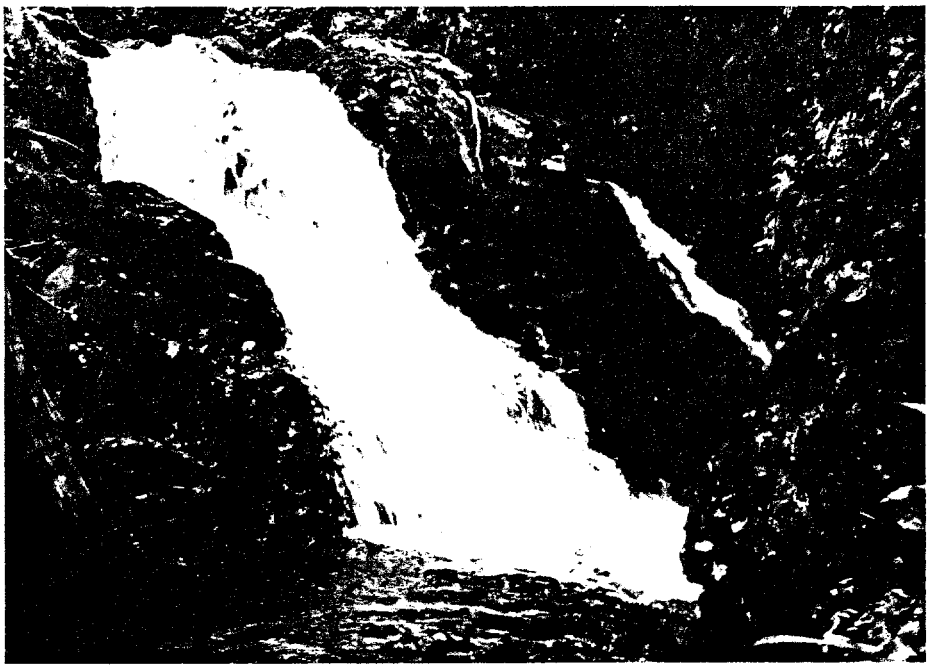
1. Section 2: An extensive clearcut unit borders the right bank throughout the survey. Fast flows, copious debris, and bank undercutting characterize Sections 1-3.



2. Section 4: Increasing gradient and substrate size demarcate Reach 2. No fish or habitat were observed.

Luck Creek
106-10-34
Area "H"

1. Section 2: Riffle over small cobble and gravel substrate produces good ASA. A large area of blowdown across the stream channel is visible in the background.



2. Section 6: A 9 m barrier falls at 100 m terminates the survey of Luck Creek. About 30 adult Dolly Varden were observed milling below the falls. Above this barrier a similar falls and poor fish habitat upstream make enhancement unattractive.

Luck Creek
106-10-34

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
Survey Area " A "									
1	100	16.5	5	82.5	29	200	7.1	10	142
2	100	30.0	45	1350	30	300	13.8	5	207
3	100	25.3	30	759	32	350	15.2	1	53.2
5	100	13.8	20	276	Total				$9327.8m^2$
6	100	15.9	20	318					
7	100	40.5	35	1417.5					
8	100	17.1	10	171					
9	100	9.3	2	186					
10	100	11.7	3	35.1					
11	100	10.5	35	367.5					
12	100	7.2	5	36					
13	100	10.5	20	210					
15	100	9.0	60	540					
16	100	16.5	30	495					
17	100	28.2	35	987					
18	100	14.1	15	211.5					
19	100	9.0	20	180					
20	100	11.1	10	111					
21	100	10.5	20	210					
22	100	13.8	5	69					
23	100	9.9	15	148.5					
24	100	6.0	5	30					
26	500	8.4	1	42					
27	200	8.4	15	252					
28	300	9.8	15	441					

Luck Creek
106-10-34

Section	Length (m)	Width (m)	ASA %	ASA Total
		Area "B"		
1	100	1.0	25	25
2	50	1.5	18	13.5
3	100	1.0	12	12
Total				$50.5m^2$
		Area "C"		
1	100	14.0	20	280
2	100	7.0	15	105
3	100	8.5	15	127.5
4	100	3.2	12	38.4
5	100	9.0	15	135
6	100	3.5	10	35
7	100	5.0	20	100
8	100	4.2	10	42
9	100	5.1	8	40.8
10	100	7.3	5	36.5
11	100	3.5	8	28
12	100	5.0	5	25
13	100	3.0	3	9
14	100	9.5	3	28.5
Total				$1030.7m^2$

Section	Length (m)	Width (m)	ASA %	ASA Total
		Area "D"		
1	100	1.8	12	21.6
2	100	3.5	10	35
3	100	2.1	8	16.8
4	100	5.0	2	10
Total				$83.4m^2$
		Area "E"		
1	100	12.9	25	322.5
2	100	15.0	18	270
3	100	9.9	25	247.5
4	100	12.9	18	232.2
5	100	10.2	22	224.4
6	100	15.6	17	265.2
7	100	12.1	13	157.3
8	100	18.0	30	540
Total				$2259.1m^2$
		Area "F"		
2	100	2.7	2	5.4
3	100	2.5	1	2.5
Total				$7.9m^2$
		Area "G"		
NO ASA				$0m^2$

Luck Creek
106-10-34

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
	Area "H"								
1	85	4.4	7	26.2					
2	100	4.5	10	45					
3	100	3.9	5	19.5					
4	100	3.0	3	9					
5	100	4.6	1	4.6					
Total				$104.3m^2$					

Total Stream ASA: $12,863.7m^2$

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek 2. ADF&G Catalog No. 106-10-34

Survey Area "A"

Reach Number	1	1	1	1	1	1	1
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	119	164	154	150	161	189	200
4. Gradient	0.5	1.0	1.0	0.5	0.5	1.0	1.0
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	1	1	1	2	2	2	2
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	3-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	5	5	1	2	5	10	5
10. Undercut Bank Length	70	35	25	30	40	90	35
11. Stream Width:							
Channel	21.6	38.0	37.0	19.5	25.2	18.0	42.6
Water	16.5	30.0	*	14.7	13.8	15.9	40.5
12. Water Type %: SS	50	15	40	65	20	15	20
DS	45	10	5	35	60	5	30
SF	5	70	40	--	20	40	40
DF	--	5	15	--	--	40	10
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	--	--	--	--	--	--	--
Large Cobble	--	--	--	--	2	--	--
Small Cobble	20	15	10	5	10	20	20
Gravel	50	70	75	80	40	70	70
Sand	15	10	15	15	28	10	10
Muck	15	5	--	--	20	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	5/3	45/3	30/3	--	20/3	20/3	35/3
15. Rearing Area %	60	10	10	35	60	15	40
16. Pool Cover %	15	15	3	5	10	20	10
17. Riffle Cover %	--	--	--	--	--	--	--
18. Fish Observed							
(fry/adult) SS	>50/--	>50/--	--	--	>25/--	--	>25/--
(fry/adult) DV	--	>50/--	--	>25/--	>25/--	--	>25/--
(adult) PS	--	--	8	1	--	--	--
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: The confluence of Luck Creek and Luck Lake is characterized by backed up flow resulting in primarily DS/SS pools. Adult SS, RS, PS and DV were observed holding along the vegetated, undercut left bank. Numerous "jumpers" and PS schools were noted at the lake/stream ecotone. An extensive clearcut unit extends to the left bank (Photo 1).

*L19/R6.3

22. Investigators Ted Mickowski Date 8/9/83

LEVEL TWO HABITAT SURVEY

Comments Cont.

Section 1: Channel broadens, as flow becomes evident, with numerous gravel bars, riffles and instream debris. Extensive clearcutting throughout drainage is evident along left bank (Photo 2).

Section 2: Channel braids around bar, providing both excellent ASA and good rearing habitat.

Section 3: 8 adult PS observed holding in pool. Excellent ASA and good rearing throughout.

Section 4: Channel pools around bar, providing excellent rearing habitat.

Section 6: Channel diverges at a minor log jam, flowing around an alder covered bar. Several "useable" riffles and debris induced pools were noted.

Section 7: Extensive gravel/small cobble riffle provides excellent ASA. Rearing and holding areas are also abundant (Photo 3).

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek 2. ADF&G Catalog No. 106-10-34

Survey Area "A"

Reach Number	1	1	1	1	1	1	1
1. Section Number	8	9	10	11	12	13	14
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	193	147	164	175	196	179	207
4. Gradient	1.0	1.0	1.0	1.0	1.0	1.5	0.5
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	10	4	2	7	4	8	8
10. Undercut Bank Length	25	30	--	--	35	20	35
11. Stream Width:							
Channel	17.1	21.9	20.7	19.5	23.7	23.7	24.0
Water	17.1	9.3	11.7	10.5	7.2	10.5	16.5
12. Water Type %: SS	10	20	30	40	50	25	35
DS	50	45	50	15	25	40	60
SF	20	15	15	40	20	35	--
DF	20	20	5	5	5	--	5
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	--	--	--	--	--	--	--
Large Cobble	--	--	--	--	--	--	--
Small Cobble	20	25	25	20	20	20	20
Gravel	70	60	60	70	60	55	50
Sand	10	15	15	10	15	15	15
Muck	--	--	--	--	5	10	15
Other	--	--	--	--	--	--	--
14. ASA %/Quality	10/3	2/3	3/3	35/3	5/3	20/3	--
15. Rearing Area %	60	60	60	35	30	40	35
16. Pool Cover %	20	10	10	15	10	15	10
17. Riffle Cover %	--	--	--	--	--	--	--
18. Fish Observed (fry) SS	>6	>6	>6	>25	>6	>25	>6
(juv) DV		>6/--	>6/--	>25/--	>6/--	>25/>50	>6/--
(adult) PS		>2				>50	
(adult) SS			2				
19. Sampling	N	N	N	N	N	Y	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 8: Extensive pooling and debris provide excellent holding and rearing habitat.

Section 9: 80-90m; Spur road crosses main stem via log stringer bridge. 2 adult PS were observed holding in pool beneath bridge.

Section 10: A less than 1 cfs seep enters the main stem via the left bank. No fish or habitat was observed. 2 adult SS were seen in a large D/S pool containing submerged debris and providing excellent holding and rearing habitat.

22. Investigators Ted Mickowski Date 8/9/83

Comments Cont.

Section 11: Gravel riffles and pooling provide both excellent spawning and rearing habitat.

Section 12: 0m; Buffer strip begins along left bank.
16m; Survey Area "B" enters the main stem via the left bank (see sectional survey).
Extensive pooling and overhanging vegetation provide excellent rearing and holding habitat (Photo 4).

Section 13: 0m; 10 adult PS observed holding in SS pool.
Flood channel containing marginal flow undercuts right bank.
90m; Large blown over tree with root wad forms DS pool containing 50+ adult PS and 50+ adult DV. SS fry and juvenile RB/CT were also common.

Section 14: 0m; Runoff from small beaver impoundment enters main stem via the left bank. Reduced gradient induces extensive pooling. Good-excellent rearing habitat and extensive gravel bars common.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek 2. ADF&G Catalog No. 106-10-34

Survey Area "A"

Reach Number	1	1	1	1	1	1	1
1. Section Number	15	16	17	18	19	20	21
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	189	194	208	194	227	228	221
4. Gradient	1.0	1.0	1.0	1.0	1.0	1.0	1.0
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	--	1	7	20	2	5	2
10. Undercut Bank Length	--	--	15	25	70	65	70
11. Stream Width:							
Channel	23.4	17.4	28.2	27.6	11.4	14.4	18.6
Water	9.0	16.5	28.2	*	9.0	11.1	10.5
12. Water Type %: SS	15	15	15	15	15	15	50
DS	--	20	35	30	30	45	10
SF	80	60	45	50	50	35	40
DF	5	5	5	5	5	5	--
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	--	--	--	--	--	--	--
Large Cobble	--	--	--	--	--	--	--
Small Cobble	25	30	30	25	35	35	35
Gravel	70	65	65	55	55	50	60
Sand	5	5	5	15	10	10	5
Muck	--	--	--	5	--	5	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	60/2	30/2	35/2	15/3	20/3	10/2	20/3
15. Rearing Area %	5	15	40	30	20	35	35
16. Pool Cover %	--	5	15	20	5	15	10
17. Riffle Cover %	--	--	--	--	--	--	--
18. Fish Observed (fry) SS		>6	>25	>25	>6	>12	>12
(juv) DV		>6	>25	>25	>6	>12	>25
(adult) PS					2	7	6
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 15: Extensive gravel/small cobble riffles provide excellent spawning habitat. Gravel bars reduced in size and frequency. 85m; Survey Area "C" enters the main stem via the left bank.

Section 17: Clearcut unit extends to both banks; alder revegetation dense.

Section 18: Copious logging slash impounds flow for 43 m before diverging around alder covered bar. Clearcut unit extends to both banks. (Photo 5).

22. Investigators Ted Mickowski Date 8/9/83

*R9.0/L5.1

LEVEL TWO HABITAT SURVEY

Comments Cont.

Section 19: 2 adult PS observed in riffle zone.

Section 21: Pooling and gravel/small cobble riffles provide excellent spawning, rearing and holding habitat. A clearcut unit extends to the right bank while a buffer begins along the left. 7 adult PS were noted in the riffle zone.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek 2. ADF&G Catalog No. 106-10-34

Survey Area "A"

Reach Number	1	1	1	2	2	3	3
1. Section Number	22	23	24	25	26	27	28
2. Section Length	100	100	100	100	500	200	300
3. Compass Bearing	234	167	189	166	260	250	260
4. Gradient	1.0	1.5	1.0	7.0	4.0	2.5	2.5
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B	A
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-4	1-5
9. Debris Loading	3	2	1	--	3	4	7
10. Undercut Bank Length	50	35	25	--	30	90	100
11. Stream Width:							
Channel	13.8	9.9	21.0	12.6	9.4	11.0	13.4
Water	13.8	9.9	6.0	8.7	8.4	8.4	9.8
12. Water Type %: SS	5	--	30	--	20	20	30
DS	75	25	10	30	10	20	10
SF	15	60	60	50	40	50	55
DF	5	15	--	20	30	10	5
13. Substrate %:							
Bedrock	3	--	--	25	40	5	10
Boulder	7	2	5	15	10	5	5
Large Cobble	10	--	20	25	15	15	15
Small Cobble	20	33	40	15	15	40	40
Gravel	45	60	30	15	10	30	20
Sand	15	5	5	5	6	2	5
Muck	--	--	--	--	2	1	--
Other	--	--	--	--	2/C	2/C	5/C
14. ASA %/Quality	5/3	15/2	5/2	--	1/2	15/3	15/3
15. Rearing Area %	50	30	15	15	25	20	30
16. Pool Cover %	10	5	5	10	5	5	10
17. Riffle Cover %	--	--	--	--	10	5	5
18. Fish Observed (fry) SS	>12	>6	>6	--	SS	SS	SS
(juv/adult) DV	>12	--	--	1			
(adult) PS	1	--	--	--			
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	Y	N	N	Y
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 23: Channel diverges around alder covered isle in bend.

Section 24: This section demarcates the transition between Reach 1 and Reach 2 owing to a change in substrate composition.

Section 25: Reach 2 begins amidst increasing gradient and substrate size. Channel makes a series of perpendicular turns as bedrock outcrops direct flow.

22. Investigators Ted Mickowski Date 8/9/83

Comments Cont.

Section 25: 63m; Survey Area "D" enters the main stem via the left bank (see sectional survey).
Section end is identified by a three-tiered high velocity cascade which culminates in a 2.5 m falls and represents a probable PS barrier. SS and DV fry were observed above the falls and several adult DV were observed jumping. A remnant fish ladder was also sighted.

Section 26: Section begins immediately above the "barrier" falls at a sharp bend in the stream channel. The substrate consists largely of bedrock with interspersed patches of mixed cobble. The stream travels through a logged unit for 400 m before entering an old growth buffer strip. Coho fry were common in pools throughout the section.

Section 27: Stream continues through buffer strip. Significant decrease in gradient and substrate size resulting in good ASA.

Section 28: Stream traverses the unit boundary. The left bank is forested but the right bank is logged. A beaver system enters the right bank at 29 m (1 cfs). A 3 m falls is probably an additional barrier to pink and chum salmon at 50 m.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek 2. ADF&G Catalog No. 106-10-34

Survey Area "A"

Reach Number	3	3	4	4	5		
1. Section Number	29	30	31	32	33		
2. Section Length	200	300	150	350	350		
3. Compass Bearing	310	260	240	190	170		
4. Gradient	2.0	3.0	5.0	3.0	0.5		
5. Water Quality	1	1	1	1	1		
6. Bank Type	A	A/B	B	B	A		
7. Bank Stability	1/1	1/1	1/1	1/1	1/1		
8. Bank Vegetation	1-4	1-5	1-5	1-5	1-5		
9. Debris Loading	10	20	15	15	5		
10. Undercut Bank Length	80	60	--	40	100		
11. Stream Width:							
Channel	14.8	15.0	13.5	15.2	15.0		
Water	7.1	13.8	7.0	15.2	15.0		
12. Water Type %: SS	25	15	10	10	40		
DS	10	15	25	15	50		
SF	50	60	35	40	10		
DF	15	10	30	35	--		
13. Substrate %:							
Bedrock	5	5	30	35	--		
Boulder	5	5	10	10	--		
Large Cobble	25	30	20	30	--		
Small Cobble	40	40	20	5	20		
Gravel	15	10	10	5	10		
Sand	5	10	5	5	30		
Muck	3	--	2	5	40		
Other	2/C	--	3/C	5/C	--		
14. ASA %/Quality	10/3	5/2	--	1/2	--		
15. Rearing Area %	20	10	30	15	90		
16. Pool Cover %	15	20	5	5	10		
17. Riffle Cover %	10	5	10	5	--		
18. Fish Observed	SS	SS	SS	SS	SS		
19. Sampling	Y	N	N	N	N		
20. Potential Barriers	N	N	Y	N	N		
21. Enhancement/Rehab	N	N	N	N	N		

Section 29: A functional road bridge crosses the stream at 125 m. Channel becomes extremely braided.

Section 30: A major braid converges via the right bank at 200 m. The stream flows mostly through the buffer strip occasionally winding out into the cutting unit. The braid runs along the clearcut boundary diverging from the main stem at the end of the section.

22. Investigators Ericksen, Mickowski, Merrigan Date 8/9/83

LEVEL TWO HABITAT SURVEY

Section 31: Gradient increases. Substrate is mostly bedrock and large cobble. A 10 m cascade would be an additional barrier to pink and chum salmon at 100 m. The stream flows through a V-notch adjacent to an active logging road just above this cascade.

Section 32: Stream enters a cutting unit. Gradient is moderate. Substrate is bedrock with patches of large cobble. Coho fry are present.

Section 33: Continues through cutting unit. Low gradient. Stream enters a large beaver complex. Coho fry are common. Several large, unidentified fish were seen.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek 2. ADF&G Catalog No. 106-10-34

Survey Area "B": Enters Main Stem Section 12: 16 m; Left bank

Reach Number	1	RF	LF				
1. Section Number	1	2	3				
2. Section Length	100	50	100				
3. Compass Bearing	120	120	102				
4. Gradient	1.5	1.0	1.5				
5. Water Quality	1	1	1				
6. Bank Type	B	B/A	B/A				
7. Bank Stability	2(1)	2(1)	2(1)				
8. Bank Vegetation	1-3, 5	1-5	1-3,5				
9. Debris Loading	20	12	22				
10. Undercut Bank Length	100	60	120				
11. Stream Width:							
Channel	3.0	3.5	4.5				
Water	1.0	1.5	1.0				
12. Water Type %: SS	25	30	35				
DS	20	20	15				
SF	55	50	50				
DF	--	--	--				
13. Substrate %:							
Bedrock	--	--	--				
Boulder	--	--	5				
Large Cobble	20	20	25				
Small Cobble	30	20	25				
Gravel	45	30	35				
Sand	5	20	10				
Muck	--	10	--				
Other	--	--	--				
14. ASA %/Quality	25/3	18/3	12/3				
15. Rearing Area %	35	30	25				
16. Pool Cover %	25	30	25				
17. Riffle Cover %	20	35	35				
18. Fish Observed	SS	SS	SS				
	DV						
	CT	CT					
19. Sampling	Y	N	N				
20. Potential Barriers	N	N	N				
21. Enhancement/Rehab	N	N	N				

Section 1: 0m; Braided mouth with recent channel migration. Old clearcut to left side. Good brush and canopy cover over well scoured gravel. Heavy coho and trout fry concentrations. Many logs and considerable debris in stream.
55m; Flow through root wad.
60m; Undercut banks with root exposure. Newly formed unstable gravel bars.

22. Investigators Gerry Merrigan Date 8/9/83

LEVEL TWO HABITAT SURVEY
Survey Area "B"

Section 2: 10m; Stream forks. Follow right fork.
25m; Leave clearcut. Flow under spruce root wad for 3 m.
50m; Gravel substrate becoming predominantly sand. Forbs in stream which forks into two minor muskeg drains. End right fork survey.

Section 3: Left Fork - 0m - enter blowdown periphery of unit.
70m; Moderate concentration of coho fry.
80m; Reenter unit. Discontinuous flow in gravel.
100m; End of flow. Dry channel.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek 2. ADF&G Catalog No. 106-10-34

Survey Area "C": Enter Main Stem Section 15: 85 m; Left bank

Reach Number	1	1	1	1	1	1	1
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	148	173	112	142	125	91	111
4. Gradient	1.5	1.5	1.0	1.5	1.5	2.0	2.0
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	A	A	B	B	B	B	B
7. Bank Stability	2(1)	2(1)	2(1)	2(1)	1(2)	2(1)	2(1)
8. Bank Vegetation	2,3,5	2,3,5	1-3,5	2,3,5	2,3,5	1-3,5	2,3,5
9. Debris Loading	4	3	2	6	3	12	10
10. Undercut Bank Length	140	95	130	100	120	120	90
11. Stream Width:							
Channel	14.0	11.0	9.2	5.8	9.0	7.0	9.0
Water	14.0	7.0	8.5	3.2	9.0	3.5	2.0/3.0
12. Water Type %: SS	30	30	30	30	30	35	25
DS	25	30	35	40	35	30	25
SF	35	30	30	30	35	35	40
DF	10	10	5	--	--	--	10
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	--	--	--	--	--	--	--
Large Cobble	--	--	--	--	--	--	10
Small Cobble	20	25	30	30	35	30	40
Gravel	70	60	50	50	40	50	35
Sand	10	15	20	15	20	20	15
Muck	--	--	--	--	--	--	--
Other	--	--	--	B5	Clay 5	--	--
14. ASA %/Quality	20/3	15/3	15/3	12/3	15/3	10/3	20/3
15. Rearing Area %	40	50	60	50	50	35	30
16. Pool Cover %	20	15	10	15	10	15	20
17. Riffle Cover %	10	5	10	10	5	20	15
18. Fish Observed	SS	SS	SS	SS	SS	SS	SS
	DV						
19. Sampling	Y	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: 0m; Many gravel bars with heavy sand deposition. Undercut banks with root exposure. Moderate amount of SS fry.
20m; Begin alder canopy.

Section 2: Many pools with abundant SS fry.
100m; End full alder canopy; begin unit.

Section 3: Undercut banks both sides. Increasing pools and less riffles. Heavy concentration of SS fry.

Section 4: Alder on banks. Increased amount of debris, but stable.

22. Investigators Gerry Merrigan Date 8/9/83

LEVEL TWO HABITAT SURVEY
Survey Area "C"

Section 5: 80m; Blue clay deposits for 15m. SS fry moderated.

Section 6: 75m; Debris jam causing channel migration.

Section 7: Gradient/substrate size/velocity, all increasing. Decrease in fish observations. Coho fry few.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek 2. ADF&G Catalog No. 106-10-34

Survey Area "C": Enters Main Stem Section 15: 85m; Left bank

Reach Number	1	1	1	1	1	2	2
1. Section Number	8	9	10	11	12	13	14
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	190	110	120	173	144	176	130
4. Gradient	1	1.5	2	1.5	1.5	1.5	1.5
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	2(1)	2(2)(1)	2(1)	2(1)	1(1)	1(1)(3)	1(1)(2)
8. Bank Vegetation	1-3,5	2,3,5	1-3,5	2,3,5	1-3,5	2,3,5	2,3,5
9. Debris Loading	12	18		15	8	3	2
10. Undercut Bank Length	80	60	50	80	60	--	--
11. Stream Width:							
Channel	8.0	10.0	7.3	7.8	16.0	13.0	10.5
Water	4.2	5.1	7.3	1/2.5	3.0/2.0	3.0	9.5
12. Water Type %: SS	30	35	35	30	30	25	30
DS	30	20	20	30	35	30	20
SF	40	35	35	40	35	35	50
DF	--	--	--	--	--	10	--
13. Substrate %:							
Bedrock	--	--	--	--	--	10	5
Boulder	--	--	--	--	--	20	20
Large Cobble	5	10	10	10	15	20	25
Small Cobble	30	35	35	35	35	30	30
Gravel	45	35	35	40	35	20	20
Sand	20	20	20	15	15	--	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	10/3	8/3	5/3	8/3	5/3	3/2	3/2
15. Rearing Area %	35	30	30	35	35	25	20
16. Pool Cover %	20	20	30	25	20	10	5
17. Riffle Cover %	15	25	25	20	10	5	5
18. Fish Observed	SS	SS	SS	SS	SS	--	SS
							CT
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 8: Moderate amounts of coho fry.
Section 9: 15m; Debris jam with 1.0 m falls. Considerable blowdown.
Section 10: 50m; Log stringer bridge crossing. Abundant SS.
Section 11&12: Heavy debris. Abundant SS.
Section 13: Banks steepening. Stream becoming more channelized with increase in gradient and substrate size.
Section 14: Partial alder canopy. Few coho and cutthroat fry observed.

22. Investigators Gerry Merrigan Date 8/9/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek 2. ADF&G Catalog No. 106-10-34

Survey Area "C": Enter Main Stem Section 15: 85 m; Left side

Reach Number	2						
1. Section Number	15						
2. Section Length	100						
3. Compass Bearing	180						
4. Gradient	2						
5. Water Quality	1						
6. Bank Type	B						
7. Bank Stability	1(1)(3)						
8. Bank Vegetation	1-3,5						
9. Debris Loading	1						
10. Undercut Bank Length	0						
11. Stream Width:							
Channel	9.0						
Water	3.0						
12. Water Type %: SS	25						
DS	10						
SF	45						
DF	20						
13. Substrate %:							
Bedrock	10						
Boulder	25						
Large Cobble	25						
Small Cobble	15						
Gravel	15						
Sand	10						
Muck	--						
Other	--						
14. ASA %/Quality	0						
15. Rearing Area %	25						
16. Pool Cover %	10						
17. Riffle Cover %	5						
18. Fish Observed	SS						
19. Sampling	N						
20. Potential Barriers	Y2						
21. Enhancement/Rehab	N						

Section 15: Increased amount of boulder in substrate.
90m; Bedrock left bank. Sixteen adult DV observed.

Reconnaissance: Continued bedrock substrate up to a 4.0 m barrier falls. Twenty-four adult DV observed below falls. A debris jam is located at the top of the falls. Slumping and blowdown located left bank at top of falls. Enhancement is not recommended since additional debris jams and barrier falls continue above the 4.0 m falls.

22. Investigators Gerry Merrigan Date 8/9/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek 2. ADF&G Catalog No. 106-10-34

Survey Area "D": Enters Main Stem Section 25: 63m; Left bank

Reach Number	1	1	1	1	1		
1. Section Number	1	2	3	4	5		
2. Section Length	100	100	100	100	20		
3. Compass Bearing	153	152	150	155	199		
4. Gradient	1.5	1.5	1.5	2.0	15		
5. Water Quality	1	1	1	1	1		
6. Bank Type	B	B	B	B	B		
7. Bank Stability	1(1)(3)	1(1)	1(1)	1(1)(3)	1(3)		
8. Bank Vegetation	2,3,5	2,3,5	2,3,5	1-3,5	1-3,5		
9. Debris Loading	3	4	6	3	10		
10. Undercut Bank Length	--	--	--	--	--		
11. Stream Width:							
Channel	4.0	5.5	4.6	5.2	4.8		
Water	1.8	3.5	2.1	5.0	3.0		
12. Water Type %: SS	30	40	40	30	20		
DS	20	20	20	20	20		
SF	50	40	40	50	60		
DF	--	--	--	--	--		
13. Substrate %:							
Bedrock	--	--	--	--	30		
Boulder	5	5	5	35	30		
Large Cobble	10	5	10	30	20		
Small Cobble	25	30	35	20	10		
Gravel	45	50	45	10	10		
Sand	15	10	5	5	--		
Muck	--	--	--	--	--		
Other	--	--	--	--	--		
14. ASA %/Quality	12/3	10/3	8/3	2/3	--		
15. Rearing Area %	40	30	40	30	15		
16. Pool Cover %	5	5	10	5	2		
17. Riffle Cover %	5	5	10	5	5		
18. Fish Observed	SS		SS	--	--		
	DV	DV	DV				
		CT	CT				
19. Sampling	Y	N	N	N	N		
20. Potential Barriers	N	N	N	N	Y4		
21. Enhancement/Rehab	N	N	N	N	N		

Section 1: 0m; Stream is clear over clean gravel. Moderate amounts of SS & DV.. Numerous instream logs.

Se 5m; Begin clearcut both banks. Partial alder canopy.

Section 2: ASA excellent but spotty above instream logs. Isolated boulders in substrate. Moderate amount of DV/CT fry.

Section 3: Moderate amounts of SS/CT/DV fry.

Section 4: 25m; Boulder outcrops left side. Leave unit left side. Increasing gradient. No fish observed.

22. Investigators Gerry Merrigan Date 8/9/83

LEVEL TWO HABITAT SURVEY
Survey Area "D"

Section 5: 0m; Begin cascade over boulder/bedrock.
20m; 2.0 m cascade over bedrock. End survey.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek Area E 2. ADF&G Catalog No. 106-10-34

Reach Number	1	1	1	1	1	1	1
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	134	195	135	133	132	195	203
4. Gradient	1.5	1.5	1.5	1.5	1.5	1.5	1.0
5. Water Quality	1	1	1	1	3	3	3
6. Bank Type	B/C	B/C	B/C	B/C	A	A	A
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	8	8	6	3	6	8	7
10. Undercut Bank Length	45	40	65	75	120	140	80
11. Stream Width:							
Channel	15	19.2	9.9	12.9	10.2	15.6	12.1
Water	12.9	15	9.9	12.9	10.2	15.6	12.1
12. Water Type %: SS	10	10	20	20	20	20	20
DS	10	30	25	10	20	20	35
SF	65	35	45	50	50	35	25
DF	15	25	10	20	10	25	20
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	--	--	--	--	--	--	--
Large Cobble	--	--	--	--	--	--	--
Small Cobble	30	25	15	10	40	35	30
Gravel	60	65	70	70	40	40	40
Sand	10	10	15	20	15	20	25
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	C5	C5	C5
14. ASA %/Quality	25/2	18/2	25/2	18/2	22/3	17/3	13/3
15. Rearing Area %	20	25	30	25	60	50	75
16. Pool Cover %	20	20	25	20	10	15	5
17. Riffle Cover %	--	--	--	--	10	10	10
18. Fish Observed (fry) SS	>6	--	--	>12			
						DV	DV
19. Sampling	N	N	Y	Y	Y	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1-4: Gravel riffles, instream debris, undercut banks and side channels provide excellent spawning and rearing habitat. Bar and interstitial fines common. Rearing SS fry were locally abundant.

Section 5: 0m; Begin above confluence of Survey Area "F". Begin drained area with heavy fines deposition on gravel bars. Gravel loose and of excellent quality. Moderate amounts of SS fry observed.

Section 6: Moderate amount SS fry observed.
55m; Dry channel, right side.

Section 7: 100m; Enter open grass flat.

22. Investigators Mickowski & Merrigan Date 9/27/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek Area E 2. ADF&G Catalog No. 106-10-34

Reach Number	1						
1. Section Number	8						
2. Section Length	100						
3. Compass Bearing	230						
4. Gradient	1						
5. Water Quality	3						
6. Bank Type	A						
7. Bank Stability	1/1						
8. Bank Vegetation	1-5						
9. Debris Loading	7						
10. Undercut Bank Length	110						
11. Stream Width:							
Channel	20.2						
Water	18.0						
12. Water Type %: SS	20						
DS	35						
SF	25						
DF	20						
13. Substrate %:							
Bedrock	--						
Boulder	--						
Large Cobble	5						
Small Cobble	50						
Gravel	40						
Sand	20						
Muck	--						
Other	C5						
14. ASA %/Quality	30/3						
15. Rearing Area %	75						
16. Pool Cover %	5						
17. Riffle Cover %	10						
18. Fish Observed	SS						
19. Sampling	N						
20. Potential Barriers	N						
21. Enhancement/Rehab	N						

Section 8: 75m; Tributary drains beaver system, right side. Heavy concentration of SS fry. Evidence of occasional high velocity flows, such as heavy fines deposition and debris high up on banks.

22. Investigators Mickowski & Merrigan Date 9/27/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek 2. ADF&G Catalog No. 106-10-34

Area "F"

Reach Number	1	1	1				
1. Section Number	1	2	3				
2. Section Length	100	100	100				
3. Compass Bearing	230	240	240				
4. Gradient	0.5	1.5	1.5				
5. Water Quality	3	1	1				
6. Bank Type	A	B	B				
7. Bank Stability	1/1	1/1	1/1				
8. Bank Vegetation	1-5	1-3	1-3				
9. Debris Loading	2	20	30				
10. Undercut Bank Length	20	20	20				
11. Stream Width:							
Channel	3.0	2.7	2.5				
Water	3.0	2.7	2.5				
12. Water Type %: SS	20	30	30				
DS	80	20	20				
SF	--	50	50				
DF	--	--	--				
13. Substrate %:							
Bedrock	--	--	--				
Boulder	--	--	--				
Large Cobble	--	5	5				
Small Cobble	5	10	10				
Gravel	5	60	60				
Sand	30	10	10				
Muck	60	10	10				
Other	--	--	---				
14. ASA %/Quality	---	2/2	1/2				
15. Rearing Area %	100	10	5				
16. Pool Cover %	20	20	40				
17. Riffle Cover %	--	20	20				
18. Fish Observed	SS						
19. Sampling	Y	N	N				
20. Potential Barriers	N	N	N				
21. Enhancement/Rehab	N	N	N				

Section 1: Slough area drainingag a moderate beaver system. Coho fry are abundant. Banks are lined with grass and intermittent alder stands. Excellent rearing habitat.

Section 2: Begins above the beaver system at resumption of flow. Moderate gradient and debris loading. Fair ASA and rearing habitat.

Section 3: Increase in debris. Dense riparian cover. Fry are scarce.

22. Investigators Randy Ericksen Date 9/27/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek Area "G" 2. ADF&G Catalog No. 106-10-34

Reach Number	1	1	1	2			
1. Section Number	1	2	3	4			
2. Section Length	100	100	100	100			
3. Compass Bearing	173	114	124	139			
4. Gradient	3	3	4	5.5			
5. Water Quality	1	1	1	1			
6. Bank Type	B	B	B	B			
7. Bank Stability	1/1	1/1	1/1	1/1			
8. Bank Vegetation	1-5	1-5	1-5	1-5			
9. Debris Loading	17	17	45	3			
10. Undercut Bank Length	--	--	--	--			
11. Stream Width:							
Channel	12.6	8.4	11.1	7.8			
Water	8.7	6.0	7.8	7.8			
12. Water Type %: SS	5	5	5	5			
DS	10	10	15	--			
SF	25	40	40	50			
DF	60	45	40	45			
13. Substrate %:							
Bedrock	--	--	--	25			
Boulder	--	--	5	50			
Large Cobble	20	20	25	20			
Small Cobble	20	25	25	5			
Gravel	45	45	40	--			
Sand	15	10	5	--			
Muck	--	--	--	--			
Other	--	--	--	--			
14. ASA %/Quality	--	--	--	--			
15. Rearing Area %	15	10	10	--			
16. Pool Cover %	15	15	15	--			
17. Riffle Cover %	--	--	--	--			
18. Fish Observed (fry) SS	--	1	--	--			
19. Sampling	N	N	N	N			
20. Potential Barriers	N	N	N	N			
21. Enhancement/Rehab	N	N	N	N			

An extensive clearcut unit borders the right bank throughout the survey area.

Section 1-3: Moderate gradient, fast flows, copious debris, and active bank undercutting typify Reach 1. No ASA was observed and rearing area was limited to peripheral debris induced pools.

Section 3: 56-81m; A debris jam has induced the formation of an active side channel. Debris loading approaches 50% over the length of this section.

22. Investigators Ted Mickowski Date 9/27/83

Section 4: Reach 2 is characterized by increasing gradient, substrate size, and nearly continuous boulder cascades. No fish or habitat were observed. A steep, approximately 4 cfs tributary enters the main stem via the left bank and demarcates survey end. No fish were observed during reconnaissance, however, moderate rearing and isolated spawning habitat were seen before this short tributary gives way to sumpy lowlands. The main stem continues to climb via continuous boulder cascades at a rate exceeding 10%, representing a potential migratory impass.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Luck Creek 2. ADF&G Catalog No. 106-10-34

Area "H"

Reach Number	1	1	1	1	2	2	
1. Section Number	1	2	3	4	5	6	
2. Section Length	85	100	100	100	100	100	
3. Compass Bearing	120	150	170	170	--	180	
4. Gradient	1.5	2.5	3.0	4.0	6.0	15.0	
5. Water Quality	1	1	1	1	1	1	
6. Bank Type	A	B	B	B	B	B	
7. Bank Stability	1/1	2/2	2/2	1/3	1/3	1/3	
8. Bank Vegetation	1-4	1-4	1-4	1,3,4	1,3,4	1,3,4	
9. Debris Loading	20	40	20	5	5	5	
10. Undercut Bank Length	30	40	40	--	--	--	
11. Stream Width:							
Channel	6.7	6.4	5.6	3.9	4.6	4.6	
Water	4.4	4.5	3.9	3.0	4.6	4.6	
12. Water Type %: SS	20	10	30	20	5	5	
DS	5	5	10	20	30	30	
SF	70	80	50	40	20	20	
DF	5	5	10	20	45	45	
13. Substrate %:							
Bedrock	--	--	--	10	40	40	
Boulder	--	--	5	20	20	20	
Large Cobble	5	5	10	30	20	20	
Small Cobble	45	45	35	20	10	10	
Gravel	45	45	40	15	10	10	
Sand	5	5	10	5	--	--	
Muck	--	--	--	--	--	--	
Other	--	--	--	--	--	--	
14. ASA %/Quality	7/2	10/2	5/2	3/2	1/3	--	
15. Rearing Area %	10	5	5	2	2	2	
16. Pool Cover %	10	10	5	2	2	2	
17. Riffle Cover %	10	10	20	2	2	2	
18. Fish Observed	SS			DV	DV	DV	
19. Sampling	N	N	N	N	N	N	
20. Potential Barriers	N	N	N	N	Y	Y	
21. Enhancement/Rehab	N	N	N	N	N	N	

Section 1: Begins at resumption of flow upstream of a beaver system. Coho fry common. Good ASA and rearing habitat. A small beaver system enters the left bank at 35 m. Last sighting of coho fry.

Section 2: Major blowdown area across the stream channel (originating from a north wind). Continue beaver activity along the left bank. Good ASA.

Section 3: Moderate gradient. Clay deposits interspersed among bedrock areas along the stream banks.

22. Investigators Randy Ericksen Date 9/27/83

LEVEL TWO HABITAT SURVEY

Section 4: Stream enters a V-notch. Gradient and substrate size increase. Six adult Dolly Varden char were sighted in a large plunge pool.

Section 5: Steep gradient. V-notch becomes more pronounced. Stream becomes cascaded with a series of 2 meter vertical drops which may be a barrier to some salmon.

Section 6: Stream continues through the V-notch. The survey was terminated at a 9 meter barrier falls with another 9 meter falls immediately upstream. Approximately 30 adult Dolly Varden were observed milling in a plunge pool below the first falls.

LEVEL TWO HABITAT SURVEY

Reach 1

This reach is typified by low to moderate gradient, a braided channel, and fast water over small cobble and gravel. ASA is generally good while rearing habitat is initially good but diminishes moving upstream. Coho fry were abundant immediately above the beaver system but soon became scarce. No coho fry were observed above this reach.

Reach 2

Gradient becomes increasingly steep moving up the reach as the stream flows through a sharp V-notch. Substrate becomes larger, eventually changing to bedrock. The stream is progressively cascaded culminating in the barrier falls. No fry were observed in this reach, but several localized schools of adult Dolly Varden were noted.

FISH SAMPLING FORM

Stream Name Luck Creek ADF&G Catalog No. 106-10-34 Date 8/9/83

Identify Survey Area A, B, & C Water Temp. 12°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1310	1800	SS - 19 RB - 2		Section 13
2	1420	1810	SS - 5 RB - 1 DV - 4	Area "A"	Section 28
3	1053	1143	SS - 4	Area "B"	Section 1 water temperature, 10°C.
4	1220	1610	SS - 5	Area "C"	Section 1: water temperature, 12°.
5	1645	1730	SS - 5 CT - 1	Area "D"	Section 5: water temperature, 13°.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

FISH SAMPLING FORM

Stream Name Luck Creek ADF&G Catalog No. 106-10-34 Date 9/27/83

Identify Survey Area E & F Water Temp. 7.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1417	1445	--	Area "E"	Section 3
2	1410	1500	SS - 8 RB - 1 DV - 4	Area "E"	Section 4
3	1411	1445	SS - 10 CT - 1	Area "E"	Section 5
4	1400	1420	SS - 32	Area "F"	Section 1

This form is used to record fish caught during Level Three, Four, or Five Surveys.

PEAK ESCAPEMENT RECORD

106-10-34

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
9/5/78	900	--	9/5/78 - 1950 RS	
9/16/80	--	10	9/17/80 - 2800 RS	
9/20/82	4250	--	8/25/81 - 2700 RS	
			8/29/82 - 902 RS	

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100 m

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name none 2. ADF&G Catalog No. 106-10-31

3. Latitude 55°57'15" Longitude 132°45'10"

4. Agency Unit 05 5. Mgmt. Area 581 K 6. USGS Map No. Petersburg A-3

7. Aerial Photo No. 8-26-79 12 35 379 61

8. Bay/Drainage Eagle Creek 9. Access 2

10. Present Land Use none

11. Historical Land Use logged 5-10 years ago

12. Stream Origin 5 13. Estimated Flow 3 cfs 14. Flow Stage 2

15. Stream Temperature 13°C 16. pH 7.0 17. Beaver none

18. Temperature Sensitivity yes, small channel

19. Barrier 248 m up from mouth 20. Weather 1

Part III.

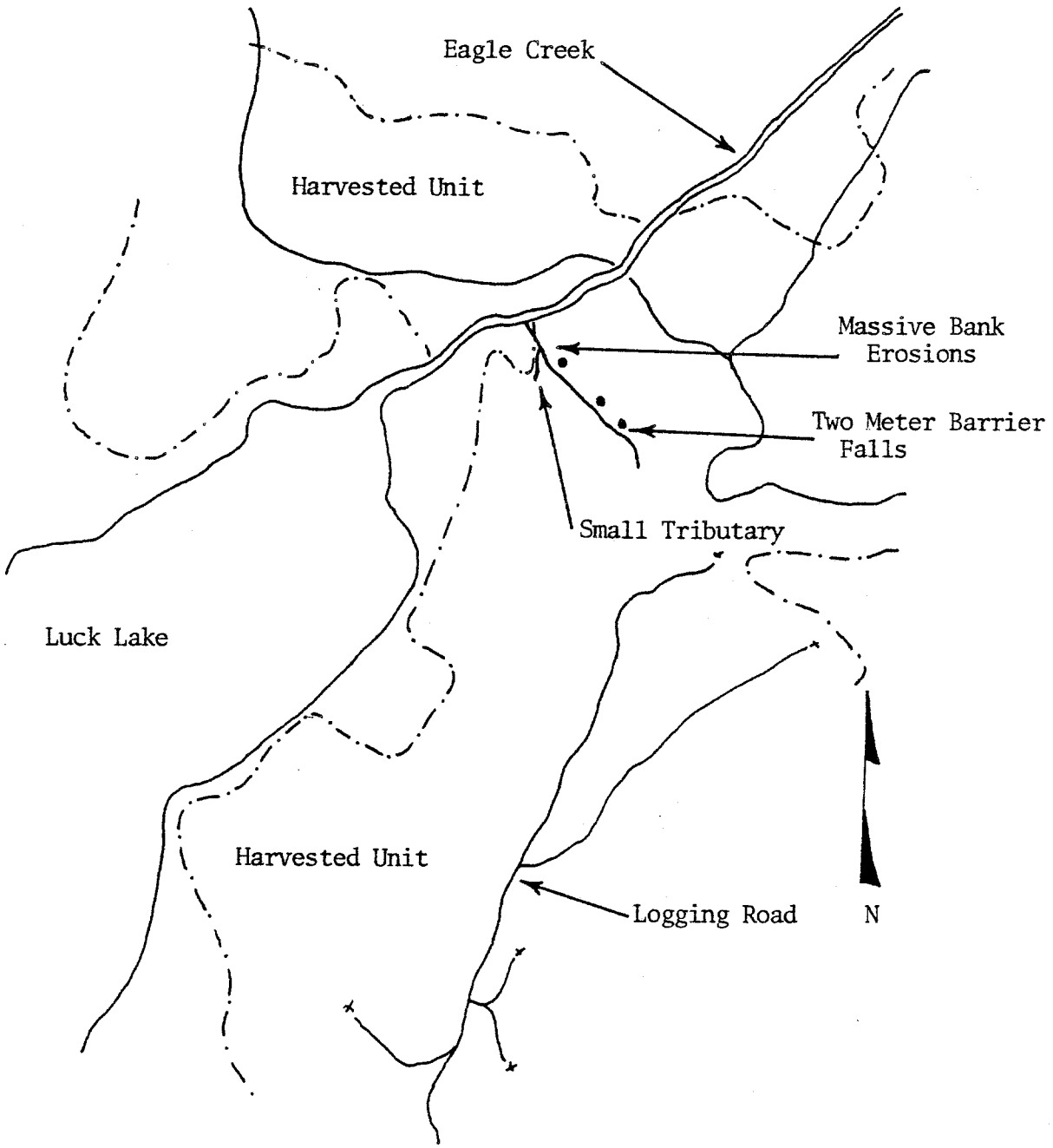
21. Intertidal - No Intertidal Zone

A. Substrate: Fines ____ % Gravel/S. Cob. ____ %
L. Cob/Boulder/Bedrock ____ %
B. Gradient ____ %
C. ASA % ____
D. Schooling ____
E. Shellfish ____
F. Anchorage ____

22. Comments Stream Evaluation

This stream is a tributary of Eagle Creek which drains Luck Lake. Substrate consists largely of rounded, small cobble and gravel. Cover and pool formation are good. Logging along the stream banks has caused extensive braiding and erosion in some areas. Coho and Dolly Varden fry were abundant near the mouth of the stream.

23. Investigators Randy Ericksen 24. Date 8/10/83


Eagle Creek
Harvested Unit
Massive Bank Erosions
Two Meter Barrier Falls
Small Tributary
Luck Lake
Harvested Unit
Logging Road
N

1. Stream mouth taken from Eagle Creek.

2. Section 1: Extreme bank erosion caused by logging.

3. Section 2: Sharply undercut bank and dense riparian cover.

4. Section 3: A 2 meter falls may be a barrier to anadromous fish.

Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	2.6	20	52.0
2	100	2.9	10	29.0
3	48	2.3	5	5.5
Total				$86.5m^2$

Section	Length (m)	Width (m)	ASA %	ASA Total

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name n/a 2. ADF&G Catalog No. 106-10-31

Reach Number	1	1	1				
1. Section Number	1	2	3				
2. Section Length	100	100	48				
3. Compass Bearing	135	120	150				
4. Gradient	3.0	4.5	4.5				
5. Water Quality	1	1	1				
6. Bank Type	A	A	B				
7. Bank Stability	3/3	3/3	3/3				
8. Bank Vegetation	1-4	1-4	1-4				
9. Debris Loading	70	5	10				
10. Undercut Bank Length	120	40	10				
11. Stream Width:							
Channel	5.7	4.0	4.2				
Water	2.6	2.9	2.3				
12. Water Type %: SS	10	10	10				
DS	30	5	20				
SF	60	80	65				
DF	--	5	5				
13. Substrate %:							
Bedrock	--	--	3				
Boulder	--	2	2				
Large Cobble	5	13	15				
Small Cobble	40	50	50				
Gravel	45	30	25				
Sand	7	5	5				
Muck	--	--	--				
Other	3/clay	--	--				
14. ASA %/Quality	20/2	10/2	5/2				
15. Rearing Area %	40	5	20				
16. Pool Cover %	80	30	50				
17. Riffle Cover %	80	30	50				
18. Fish Observed	SS	SS	DV				
	DV	DV	CT				
	CT	CT					
19. Sampling	Y	N	N				
20. Potential Barriers	N	N	Y				
21. Enhancement/Rehab	N	N	N				

Section 1: Stream enters a harvested cutting unit at 10 meters. Riparian and debris cover are dense. A small 1 cfs tributary enters the right bank at 60 meters. The channel becomes extremely braided at 85 meters causing massive bank erosion into the stream channel. Coho and Dolly Varden fry are abundant.

Section 2: Debris loading is minimal. Good riparian cover. Fish population density decreases moving upstream.

22. Investigators Randy Ericksen Date 8/10/83

LEVEL TWO HABITAT SURVEY

Section 3: A two meter falls may be a barrier to anadromous fish. A reconnaissance upstream discovered little significant fish habitat and no visible fish, survey terminated at 48 meters.

FISH SAMPLING FORM

Stream Name n/a ADF&G Catalog No. 106-10-31 Date 8/10/83

Identify Survey Area A Water Temp. 13.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1810	1900	DV - 17 SS - 4 CT - 2		Section 1

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length n/a

3. Historical Fish Species No escapement data available.

Part II.

1. Stream Name Eagle Creek S. #1 2. ADF&G Catalog No. n/a
3. Latitude 55°57'10" Longitude 132°45'10"
4. Agency Unit 05 5. Mgmt. Area 581K 6. USGS Map No.
7. Aerial Photo No. 1979 Photos Fl. Ln. 35 Photo 60
8. Bay/Drainage Eagle Creek 9. Access 2
10. Present Land Use None
11. Historical Land Use Logged about 20-25 years ago.
12. Stream Origin 3, 4, 5, 6 13. Estimated Flow about 2 cfs 14. Flow Stage 3
15. Stream Temperature 16. pH 6.2 17. Beaver No
18. Temperature Sensitivity Yes; watershed harvested.
19. Barrier No 20. Weather 1

Part III.

21. Intertidal None

A. Substrate: Fines % Gravel/S. Cob. %
L. Cob/Boulder/Bedrock %
B. Gradient %
C. ASA %
D. Schooling
E. Shellfish
F. Anchorage

22. Comments Stream Evaluation

This stream enters the left (south) bank of Eagle Creek below its confluence with Luck Lake and downstream of 10-10-31 which also enters the south bank of Eagle Creek. The stream runs entirely through a clearcut and has complete vegetative and debris cover. The first 15 meters has good spawning gravel. After 15 meters the substrate is moss covered cobble. At 50 meters the stream disappears under logging debris/vegetative cover. Coho fry were observed at the mouth of the stream. The stream is primarily rearing habitat since the stream flow appears to be ephemeral and insufficient at low water for spawners.

23. Investigators Gerry Merrigan 24. Date 8/10/83

Eagle Creek S. #1

1. Mouth of Eagle Creek S. #1 as stream enters old clearcut.

2. Dense vegetative cover over stream with clearcut.

FISH SAMPLING FORM

Stream Name Eagle Creek S. #1 ADF&G Catalog No. n/a Date 8/10/83

Identify Survey Area A Water Temp. 12.5 Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1820	1832	SS - 2		Mouth of stream.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas n/a 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name 526 N. Ck. 2. ADF&G Catalog No. n/a
3. Latitude 55°56'52" Longitude 132°41'35"
4. Agency Unit 05 5. Mgmt. Area 582 K 6. USGS Map No. Craig D-3
7. Aerial Photo No. 79-37-279-182
8. Bay/Drainage Clarence Strait 9. Access 2
10. Present Land Use none
11. Historical Land Use none
12. Stream Origin 3, 5, 6 13. Estimated Flow 2 cfs 14. Flow Stage 2.5
15. Stream Temperature 10°C 16. pH 7.5 17. Beaver no
18. Temperature Sensitivity no
19. Barrier yes; velocity and gradient 20. Weather 2

Part III.

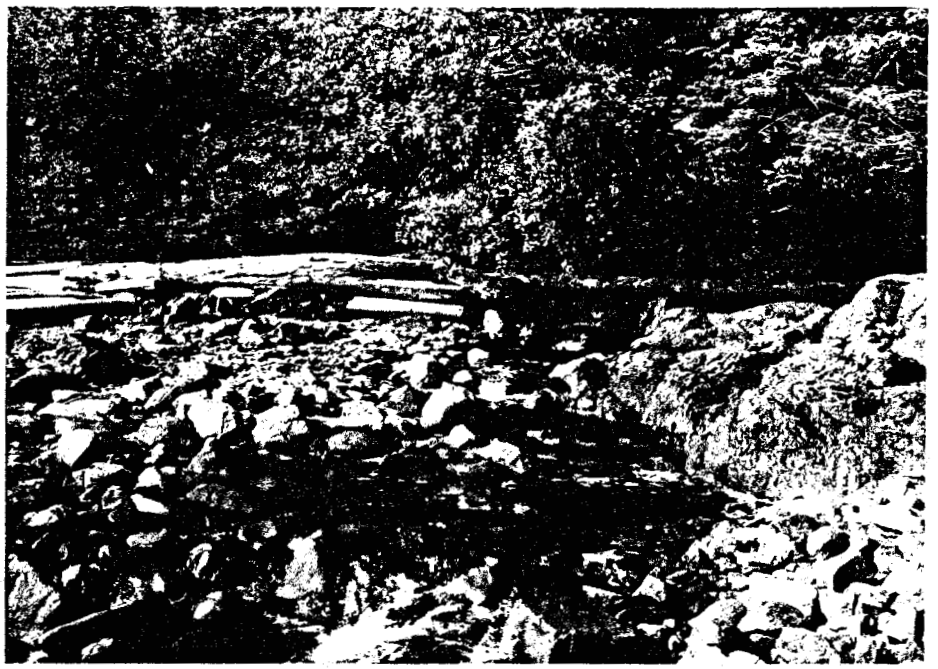
21. Intertidal

A. Substrate: Fines -- % Gravel/S. Cob. 30 %
L. Cob/Boulder/Bedrock 70 %
B. Gradient 9 %
C. ASA % 0
D. Schooling Clarence Strait
E. Shellfish none observed
F. Anchorage Clarence Strait

22. Comments Stream Evaluation

This small stream enters the ITZ via a bedrock cascade and continues a rapid ascent through a V-notch choked with blowdown. Substrate is primarily boulder/large cobble/bedrock and gradients are on the order of 15-20%. No fish or habitat observed. No rehabilitation or enhancement recommended.

23. Investigators Ted Mickowski 24. Date 6/21/83



1. First stream south of Eagle Creek. A bedrock cascade demarcates the extent of the ITZ. No fish or habitat were observed as gradients exceed 15% just inside treeline.

2. First stream south of Eagle Creek. View down boulder strewn ITZ across Clarence Strait to Etolin Island.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas none 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name Baird Creek 2. ADF&G Catalog No. none

3. Latitude 55°56'25" Longitude 132°40'25"

4. Agency Unit 05 5. Mgmt. Area 582 K 6. USGS Map No. Craig D-3

7. Aerial Photo No. 8-25-79 12 38 279 145

8. Bay/Drainage Clarence Strait 9. Access 2

10. Present Land Use none

11. Historical Land Use none

12. Stream Origin 1, 5 13. Estimated Flow 7 cfs 14. Flow Stage 2

15. Stream Temperature 10°C 16. pH 7.5 17. Beaver none

18. Temperature Sensitivity no

19. Barrier 2, 7 meter barrier 160 m 20. Weather 6

Part III.

21. Intertidal

A. Substrate: Fines 10 % Gravel/S. Cob. 15 %
L. Cob/Boulder/Bedrock 75 %
B. Gradient 4.0 %
C. ASA % 5/poor
D. Schooling no
E. Shellfish no
F. Anchorage none

22. Comments Stream Evaluation

This moderate sized, clear stream had a 7 meter barrier falls 160 meters up from the ITZ. Fish habitat was minimal. The beginning 100 meters had 5.0% gradient with 4% fair ASA. The remaining 60 meters of stream was predominantly bedrock with 8.5% gradient. No fish were seen in the stream during the survey.

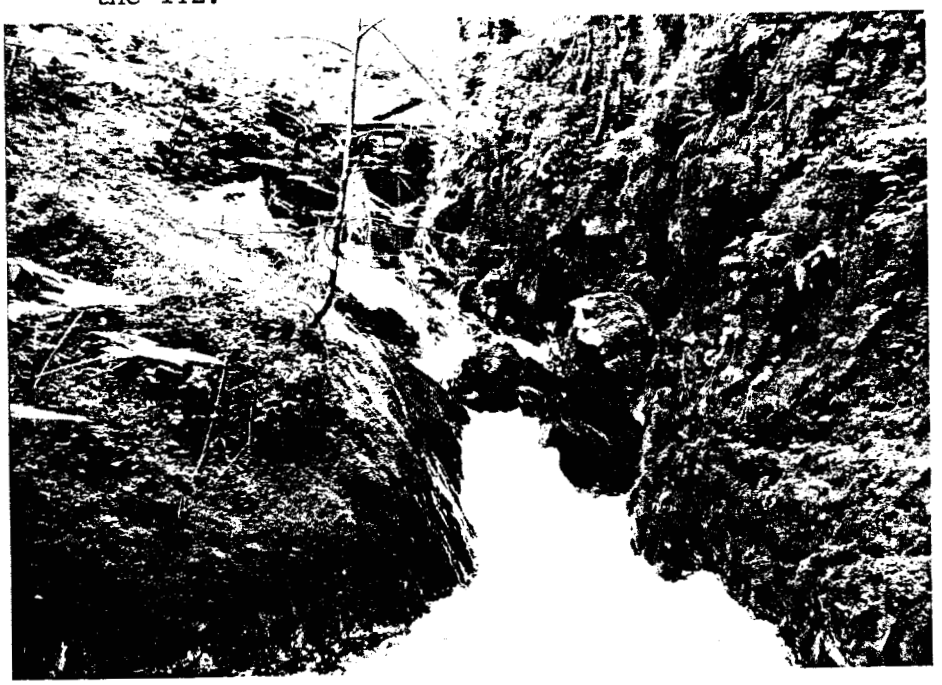
23. Investigators Randy Ericksen 24. Date 6/21/83

Baird Creek

1. The intertidal zone looking upstream toward the creek mouth. Intertidal ASA is poor due to large substrate.

2. The intertidal zone looking downstream toward Clarence Strait.

3. The creek provides patches of ASA just above the ITZ.



4. A 7 meter barrier 160 meters up from the ITZ.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length 100 m

3. Historical Fish Species PS

Part II.

1. Stream Name Ratz Harbor Head: North Arm 2. ADF&G Catalog No. 106-10-11

3. Latitude 55°53'41" Longitude 132°37'09"

4. Agency Unit 05 5. Mgmt. Area 583 K 6. USGS Map No. Craig D-2

7. Aerial Photo No. 79-39-279-138/39

8. Bay/Drainage Ratz Harbor 9. Access 2

10. Present Land Use none

11. Historical Land Use A-frame logging to banks

12. Stream Origin 3,4,5,6 13. Estimated Flow 2 cfs 14. Flow Stage 2

15. Stream Temperature 10°C 16. pH 7.5 17. Beaver

18. Temperature Sensitivity yes; beaver impoundments and shallow depths

19. Barrier no 20. Weather 3

Part III.

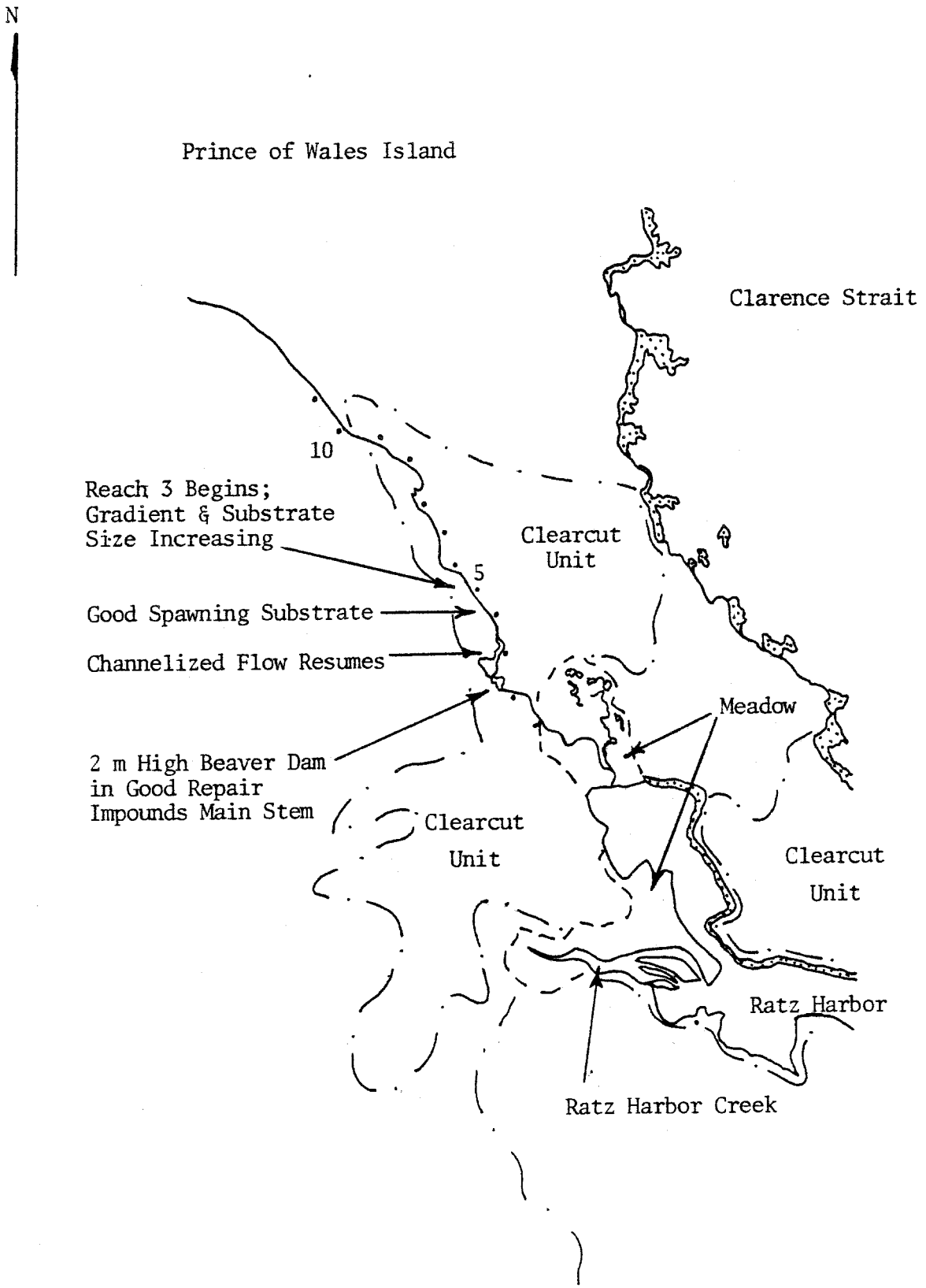
21. Intertidal

A. Substrate: Fines 15 % Gravel/S. Cob. 85 %
L. Cob/Boulder/Bedrock -- %
B. Gradient 1.0 %
C. ASA % 20/good
D. Schooling Ratz Harbor and IT lagoon
E. Shellfish mussels dense in IT lagoon
F. Anchorage Ratz Harbor

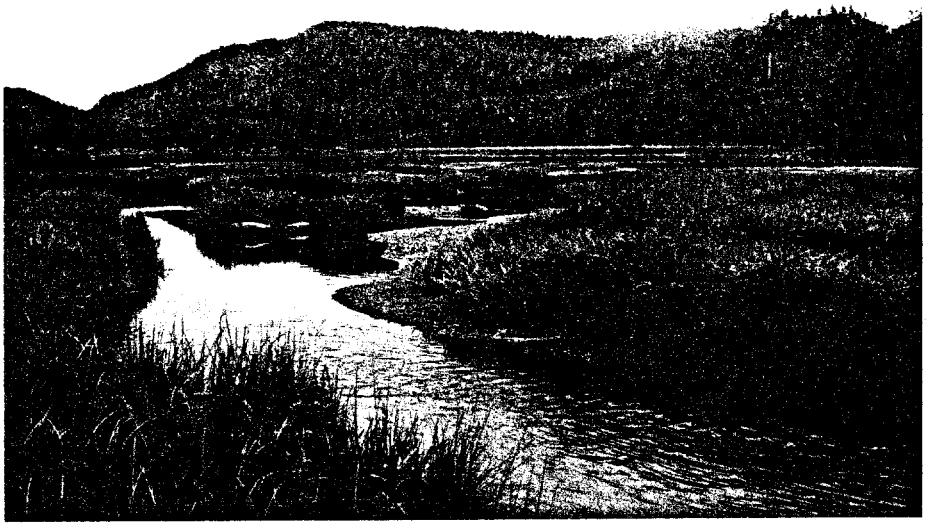
22. Comments Stream Evaluation

The north arm of Ratz Harbor and an extensive sinuous ITZ provide excellent rearing for anadromous juveniles and shellfish. Reach 1 of North Arm Creek is characterized by a gravel/small cobble channel which meanders through grassy "low lands" draining an extensive beaver impoundment. Portions of Reach 1 contain both excellent spawning and rearing areas. Channelized flow resumes in Section 3 via a cobble/gravel bed, providing good-excellent ASA. Rearing, however, is limited by fast flows throughout remaining survey. Reach 3 is characterized by steep gradients, course substrate, few fish sightings, isolated habitat, and bank/channel instabilities. No rehabilitation or enhancement recommended.

23. Investigators Ted Mickowski 24. Date 6/20/83


N
Prince of Wales Island
Clarence Strait
10
Reach 3 Begins;
Gradient & Substrate
Size Increasing
5
Clearcut
Unit
Good Spawning Substrate
Channelized Flow Resumes
Meadow
2 m High Beaver Dam
in Good Repair
Impounds Main Stem
Clearcut
Unit
Clearcut
Unit
Ratz Harbor
Ratz Harbor Creek

Ratz Harbor Head: North Arm
106-10-11



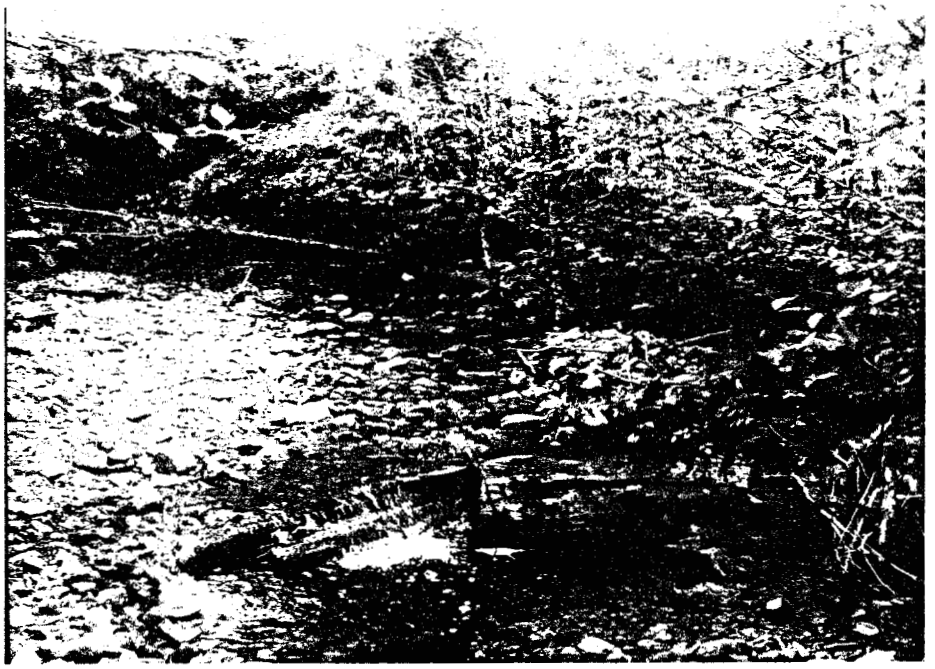
1. A sinuous ITZ and an extensive marsh characterize the north arm of Ratz Harbor.

2. View of upper ITZ and stream mouth ecotone. An extensive beaver impoundment lies just beyond timberline.

Ratz Harbor Head: North Arm
106-10-11

3. Section 2: Channel drains an extensive impoundment created by an active 2 m high beaver dam.

4. Section 2: A multilevel impoundment provides excellent rearing habitat.



5. Section 4: Cobble/gravel channel above impoundment provides good spawning substrate.

6. Section 8: Reach 3 habitat is characterized by unstable hydraulics and boulder/cobble riffles. Fish habitat and fish sightings were extremely limited.

106-10-11

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	4.3	15	64.5					
2	100	3.0	5	15.0					
3	100	9.7	25	242.5					
4	100	9.7	20	194.0					
5	100	4.0	10	40.0					
6	100	5.5	5	27.5					
7	100	3.4	5	17.0					
9	100	2.5	10	25.0					
10	100	3.4	10	34.0					
Total				$659.5m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Ratz Harbor Head North Arm 2. ADF&G Catalog No. 106-10-11

Reach Number	1	1	2	2	2	3	3
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	335	284	340	324	319	334	319
4. Gradient	1	7	1	2	3.5	3.5	3.5
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	A	A	A	A	A	B	A/B
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	1-5	2-5	2-5	2-5	2-5	2-5	2-5
9. Debris Loading	2	20	20	3	3	4	1
10. Undercut Bank Length	70	40	25	--	--	--	--
11. Stream Width:							
Channel	4.3	7.4	Beaver	15	8	8.3	6
Water	4.3	3	Dam	*	4	5.5	6
12. Water Type %: SS	28	15	15	20	5	4	5
DS	2	40	50	--	--	1	2
SF	70	45	35	80	95	95	90
DF	--	--	--	--	--	--	3
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	--	--	--	--	5	15	15
Large Cobble	--	--	5	20	20	40	40
Small Cobble	35	20	30	50	45	30	30
Gravel	60	30	20	30	30	15	15
Sand	5	10	--	--	--	--	--
Muck	--	40	45	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	15/3	5/3	25/3	20/3	10/3	5/3	5/3
15. Rearing Area %	15	30	35	5	5	5	5
16. Pool Cover %	15	25	25	5	10	10	10
17. Riffle Cover %	--	--	--	--	10	10	10
18. Fish Observed (fry) SS	>12	<12	>12	--	<6	<6	<6
19. Sampling	Y	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: Channel forks at treeline. Left fork flows 30 meters terminating at an extensive beaver impoundment. Right fork meanders beneath an alder canopy with extensive beaver reservoirs along both banks.

Section 2: 40m; Overflow channel from beaver dam enters "main stem" via left bank.
60m; 2.0 m high beaver dam in good repair impounds "main stem", forming an extensive reservoir. No fish were observed in the impoundments, however, one beaver was sighted.

22. Investigators Ted Mickowski Date 6/20/83

LEVEL TWO HABITAT SURVEY

Section 3: 50m; Channelized flow resumed in a cobble/gravel bed, providing good-excellent ASA (Reach 2).

Section 4: Good-excellent ASA throughout sections.

Section 5-11: Reach 3 is delineated by increasing gradients, a shift toward coarse substrate, isolated spawning/rearing habitat, and less frequent fish sightings.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Ratz Harbor Head North Arm 2. ADF&G Catalog No. 106-10-11

Reach Number	3	3	3	3			
1. Section Number	8	9	10	11			
2. Section Length	100	100	100	100			
3. Compass Bearing	327	309	346	322			
4. Gradient	6	7	7	>12			
5. Water Quality	1	1	1	1			
6. Bank Type	A/B	A/B	A/B	A/B			
7. Bank Stability	1/1	3/3	3/3	3/3			
8. Bank Vegetation	2-5	2-5	2-5	2-5			
9. Debris Loading	3	20	5	20			
10. Undercut Bank Length	--	--	--	--			
11. Stream Width:							
Channel	5.1	6.4	3.4	7.0			
Water	4.2	2.5	3.4	7.0			
12. Water Type %: SS	4	5	2	--			
DS	3	--	3	--			
SF	90	95	95	100			
DF	3	--	--	--			
13. Substrate %:							
Bedrock	5	--	--	--			
Boulder	25	20	20	30			
Large Cobble	35	35	35	35			
Small Cobble	25	30	30	25			
Gravel	10	15	15	10			
Sand	--	--	--	--			
Muck	--	--	--	--			
Other	--	--	--	--			
14. ASA %/Quality	--	10/3	10/3	--			
15. Rearing Area %	2	--	5	--			
16. Pool Cover %	10	15	15	--			
17. Riffle Cover %	10	10	10	10			
18. Fish Observed (fry) SS	6	--	<12	--			
(juv) CT/RB	2	--	--	--			
19. Sampling	N	N	N	N			
20. Potential Barriers	N	N	N	N			
21. Enhancement/Rehab	N	N	N	N			

Section 9: Steep gradients and a constricted channel result in numerous cascades. Bank cutting, side slope failure, and resultant instream debris are common.

Section 10: Recent channel braiding and bank undercutting has accelerated bar formation and ASA "deposits".

Section 11: Gradients on the order of 10-15%, numerous boulder/large cobble cascades, copious debris, and nearly continuous unstable banks, demarcate habitat and survey end.

22. Investigators Ted Mickowski Date 6/20/83

FISH SAMPLING FORM

Stream Name Ratz Harbor Head North Arm ADF&G Catalog No. 106-10-11 Date 6/20/83

Identify Survey Area A Water Temp. 10°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1645	1950	SS - 2	--	Set in ITZ.
2	1710	1945	SS - 2 CO - 3		

This form is used to record fish caught during Level Three, Four, or Five Surveys.

PEAK ESCAPEMENT RECORD
106-10-11

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
8/07/63	2,000			
8/20/80	30			
8/25/81	200			

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A,B,C,D,E,F 2. Section Length 100 m

3. Historical Fish Species PS, CS, & RS

Part II.

1. Stream Name Ratz Harbor Creek 2. ADF&G Catalog No. 106-10-10
3. Latitude 55°53'28" Longitude 132°37'22"
4. Agency Unit 05 5. Mgmt. Area 583 K 6. USGS Map No. Craig D-2
7. Aerial Photo No. 1979 Photos Fl. Ln. 40 Photo 74-78/ Fl. Ln. 39 134-139/ Fl. Ln. 38-Photo 154-156
8. Bay/Drainage Ratz Harbor 9. Access 1; Put to bed
10. Present Land Use none
11. Historical Land Use Extensive logging throughout watershed
12. Stream Origin 1, 3, 4, 5, 6 13. Estimated Flow 25 cfs 14. Flow Stage 2.5
15. Stream Temperature 14 16. pH 7.4 17. Beaver yes
18. Temperature Sensitivity yes; headwater lakes and extensively clearcut
19. Barrier no 20. Weather 3

Part III.

21. Intertidal

A. Substrate: Fines 5 % Gravel/S. Cob. 60 %
L. Cob/Boulder/Bedrock 35 %
B. Gradient 2 %
C. ASA % 20/good-excellent
D. Schooling Ratz Harbor & ITZ at high tide
E. Shellfish Mussels dense in ITZ
F. Anchorage Ratz Harbor

22. Comments Stream Evaluation

The stream is a large producer of pinks, chums, sockeye, coho, steelhead, Dolly Varden and cutthroat trout. The stream system consists of a large ITZ, two large lakes, and a main stem with a major fork as well as a headwater stream to the upper lake. Nearly all portions of this stream and the majority of the watershed have been extensively logged.

23. Investigators Merrigan, Mickowski, & Ericksen 24. Date 6/20/83

Ratz Harbor Creek
106-10-10

Survey Area "A": ITZ to Trumpeter Lake

Reach 1: 1460 m

This portion of stream begins at the end of the ITZ and extends to the beginning of the flatwater outlet slough of Trumpeter Lake. The majority of this reach has a wide channel width within a clearcut approximately 20-30 years old. However there is a stretch of 300 m in a V-notch of old growth forest.

With almost the entire watershed logged, the stream habitat has been significantly altered. Multiple channels, heavily undercut banks, and instream root wads reflect logging induced changes in stream hydrology. The warm water temperature (about 14°C) is due to the presence of headwater lakes and total absence of stream canopy.

With the streamflow primarily riffle, ASA is high with quality only diminished by moderate amounts of interstitial fines. Rearing is limited in this reach but the upstream lakes provide more than enough habitat. Dolly Varden fry are scattered throughout the Reach with heavy concentration of coho fry in the upper half.

A major tributary (Survey Area "B") enters the main stem at Section 15: 30 m just before the Reach ends at the flatwater approach to Trumpeter Lake. This low elevation, warm water lake has been entirely logged down to the shoreline on the eastern side.

Survey Area "B":

This clearcut boulder strewn cobble channel enters the main stem via the right bank at Section 15: 30m and demarcates the lower extent of Trumpeter Lake "Slough". Spawning and rearing habitat is isolated and of marginal quality due to the coarse nature of the substrate and typically fast flows. Alder canopies dominate sideslopes and current beaver activity was noted. Survey terminated 880 m above the confluence at a 4.0 vertical meter bedrock falls. No fish were observed above Section 5 and no rehabilitation or enhancement recommended.

Survey Area "C": Trumpeter Lake to Big Lake

Reach 1: 200 m

This reach begins where the streamflow resumes as the gradient increases above Trumpeter Lake and the beaver impounded inlet stream. The flow is of low velocity over small cobble and gravel. Good rearing habitat is present with heavy concentrations of coho fry observed. ASA is diminished in quality by lack of aeration due to low flow. The Reach is entirely within a clearcut with an old roadcrossing (bridge pulled).

Reach 2: 400 m

As the gradient increases, the substrate size increases to large cobble, boulder and bedrock with greatly reduced fish habitat. The stream leaves the clearcut and enters a bedrock V-notch with old growth forest on both banks. A 6.0 m cascade/falls with no landing pool occurs in the V-notch. Coho fry were observed above the falls, however, at high water, this could possibly be a velocity barrier. Cascades continue for 180 m until the V-notch ends and fish habitat begins again.

Reach 3: 900 m

Emerging from the preceding V-notch, the well-channelized stream continues through steep old forest foot slopes. Muskegs are adjacent to the stream midway through the Reach. Predominantly riffle over small cobble, the stream has good ASA. Rearing habitat is best in adjacent beaver pond systems, though few coho fry were observed. The Reach ends as the gradient and substrate size increases and a clearcut begins on the left bank. This concludes the level two survey in Survey Area "C".

Survey Area "D":

Reach 1:;

This reach was surveyed by point sampling supported by helicopter and aerial photo reconnaissance. Coho fry were observed in a debris jam approximately 500 m upstream from the end of Reach 3. This Reach is typified by increased gradient with higher velocity flow over large cobble. Thus ASA is poor, but rearing habitat is present though moderate. The Reach ends with further increase in gradient and substrate size.

Reach 2:

With narrowing stream width and increasing gradient, the stream velocity accelerates forming continuous deep, fast water (predominantly rapids). The substrate varies from large cobble to boulder and bedrock. Stream banks change from adjacent muskeg and clearcut to footslopes with an adjacent logging road, left side, upslope. Fish habitat is minimal with little rearing or spawning opportunity. The Reach terminates with the beginning of the flatwater portion of the outlet for Big Lake.

Survey Area "E": Headwater of Big Lake

The immediate area around Big Lake and its headwater stream has been entirely logged down to the shoreline and banks respectively. The headwater stream is lined by dense alder stands often forming complete canopy coverage. No fry were observed but adult cohos were seen jumping off the stream mouth. The stream is sinuous and braided with many gravel bars. Stream flow is mostly fast riffle over gravel/small cobble. ASA is diminished in quality due to compaction, sediment deposition and channel instability. Bank instability

Survey Area "E": Headwater of Big Lake (cont.)

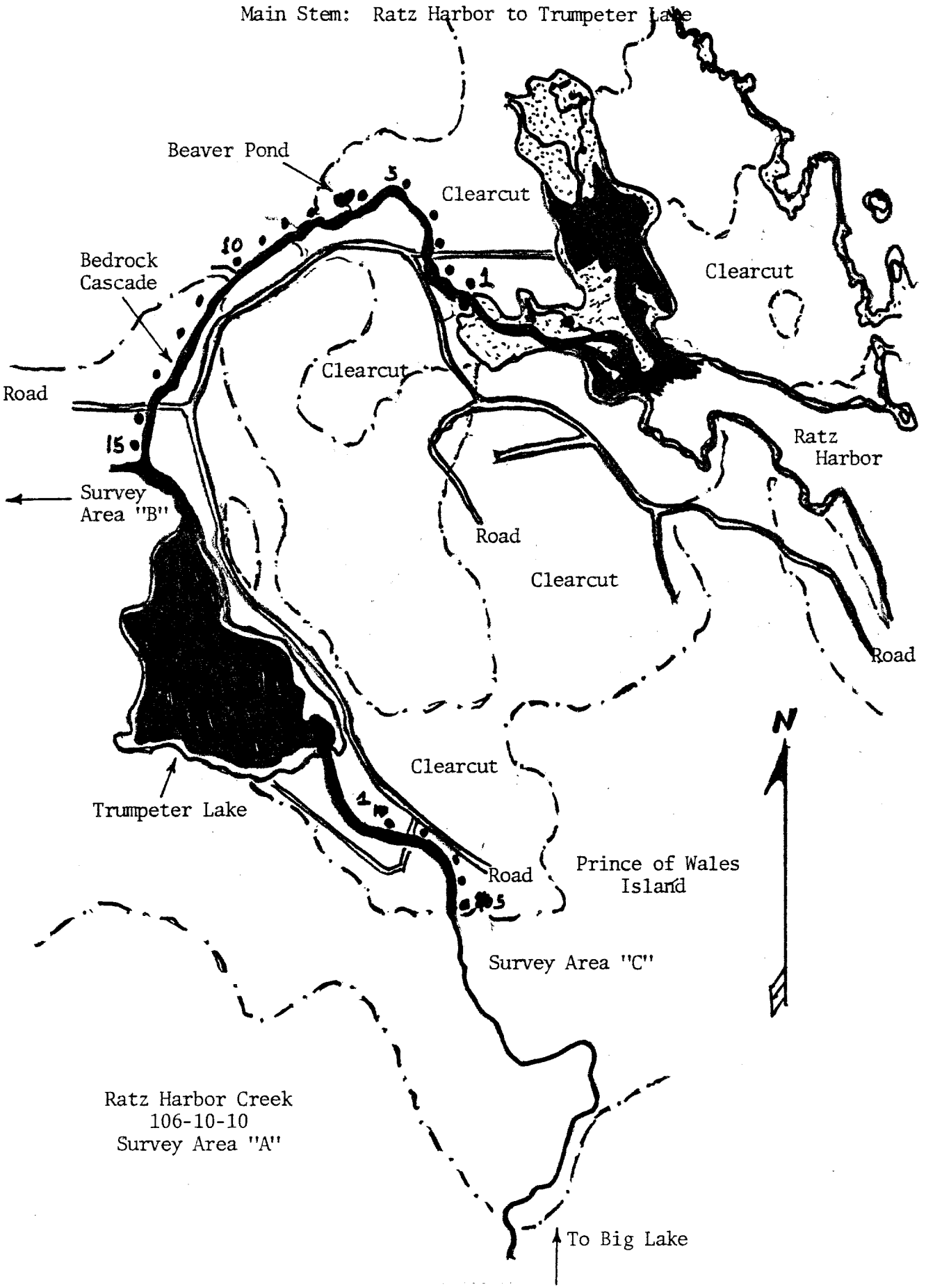
occurs in Sections 5 and 6. Survey Area "E-1" converges at Section 4 and diverges at Section 6. At this divergence, there is a large debris jam which may have caused the downstream braiding originally. Above the debris jam, the stream enters a forested V-notch, and the survey concludes at a 6.0 m barrier falls. No fish habitat was found above the falls.

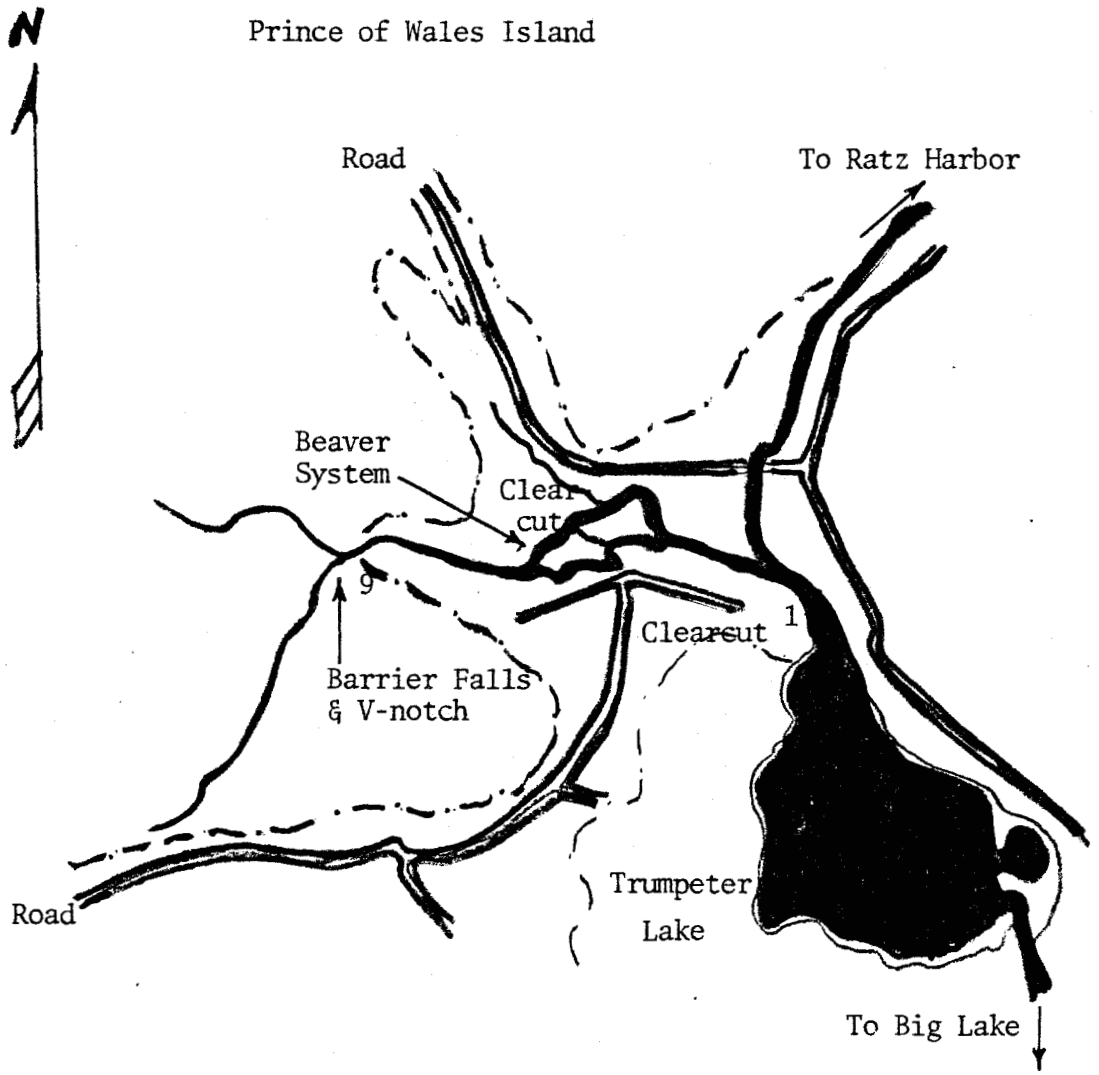
Survey Area "E-1":

This is a major (4 cfs) braid off Survey Area "E". Portions of this braid were evidently part of a large tributary which enters the braid via the right bank near the survey area terminus. Road construction, logging activities, and resultant debris loading have all combined to divert and rechannel flow forming the present channel. Two major debris jams obstruct high water flows; backing up water 200 m upstream and diverting water over the streambanks. ASA and rearing habitat are fair despite a notable lack of fry (one DV was sighted).

At Section 4: 60 m a tributary enters the right side amidst an 80 m wide slide area strewn with large debris piles. The slide is relatively recent (early 1983) and forms the boundary of an old upslope clearcut. Leaving the slide area, the stream reenters the alder canopy and joins the main stem of Survey Area "E" at a large debris jam.

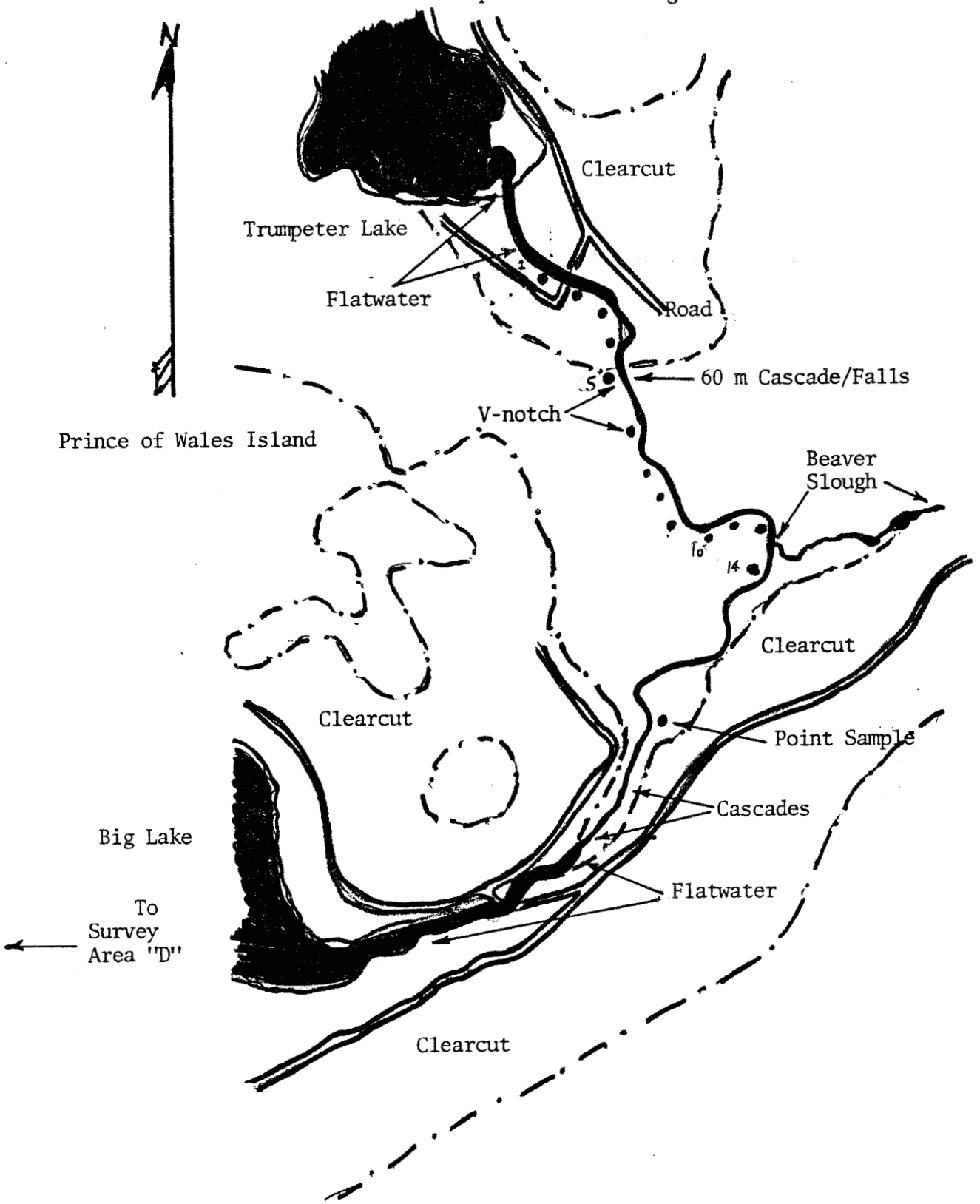
Main Stem: Ratz Harbor to Trumpeter Lake



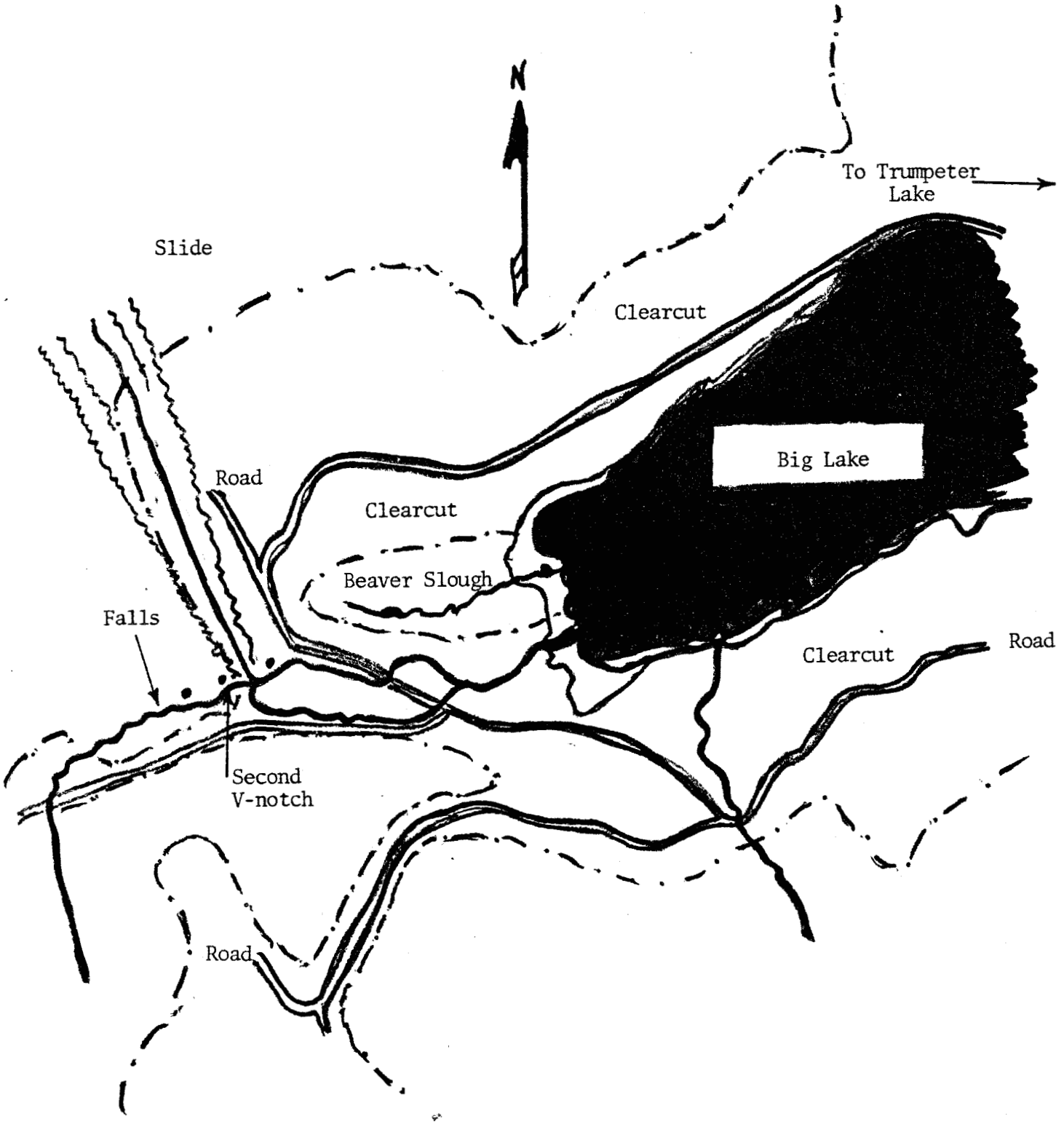


Ratz Harbor Creek
106-10-10
Survey Area "B"
(Enters Main Stem at Section 15: 30m)

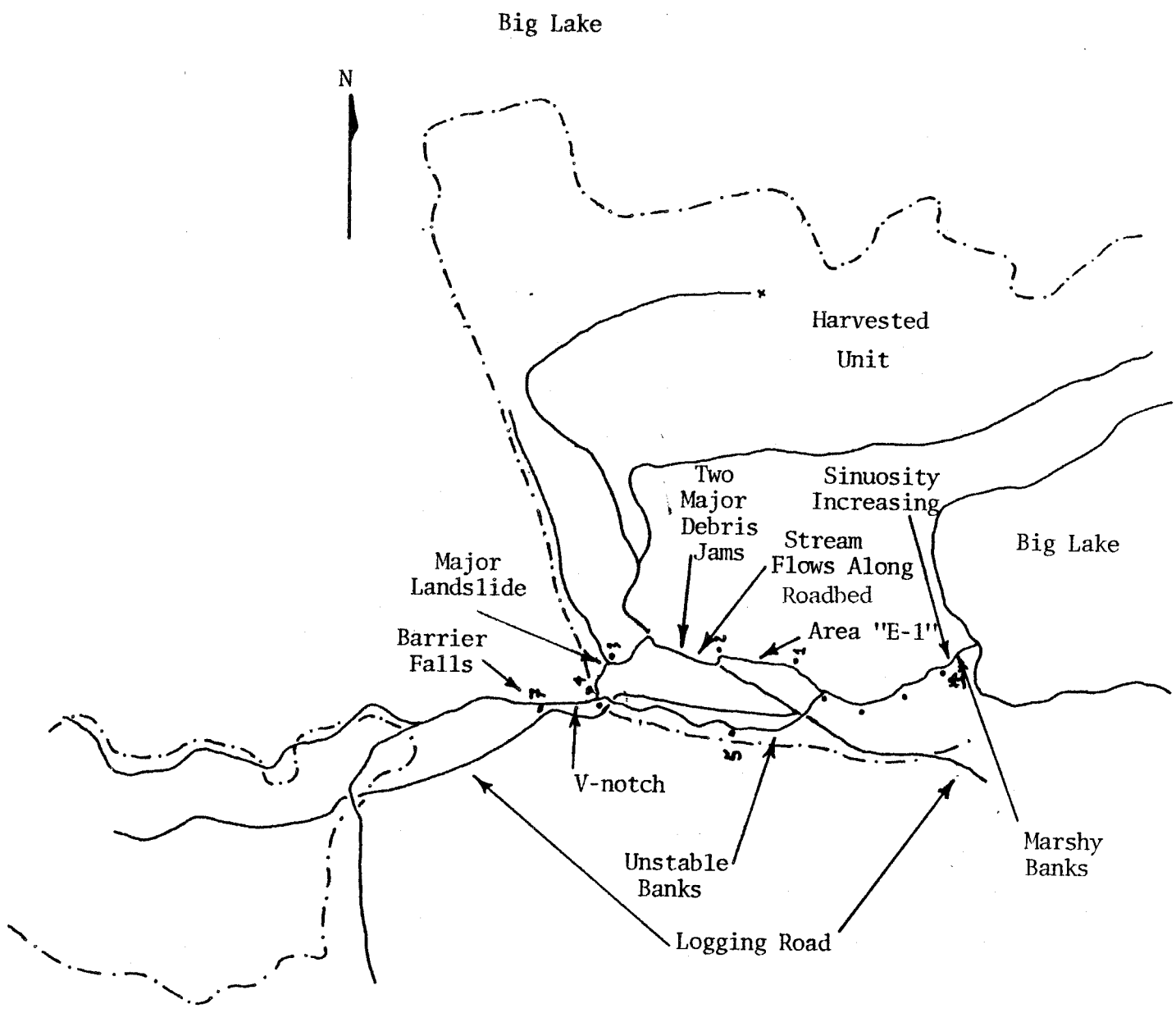
Main Stem: Trumpeter Lake to Big Lake



Ratz Harbor Creek
106-10-10
Map 3: Survey Area "C"

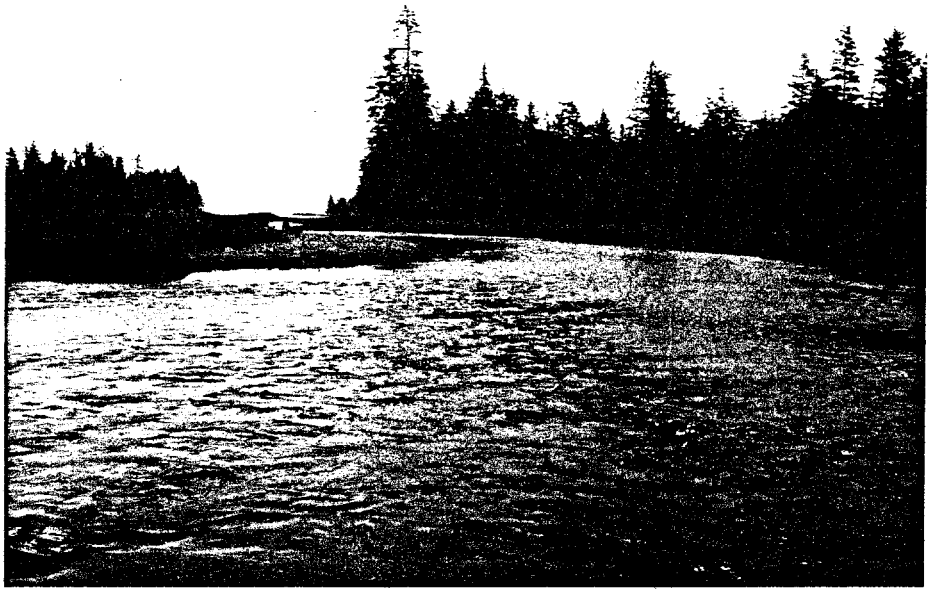


Ratz Harbor Creek
106-10-10
Map 4: Survey Area "D"
Headwaters to Big Lake



Ratz Harbor Creek
106-10-10
Map 4: Survey Area "E" & "E-1"

Ratz Creek
Area "A"



1. View down upper ITZ to Ratz Harbor, shows excellent gravel/cobble riffles.

2. Mouth of stream with multiple channels; buffer strips both banks.

Ratz Creek
Area "A"

3. Reach 1: Habitat and old bridge crossing from unit extending to both banks.

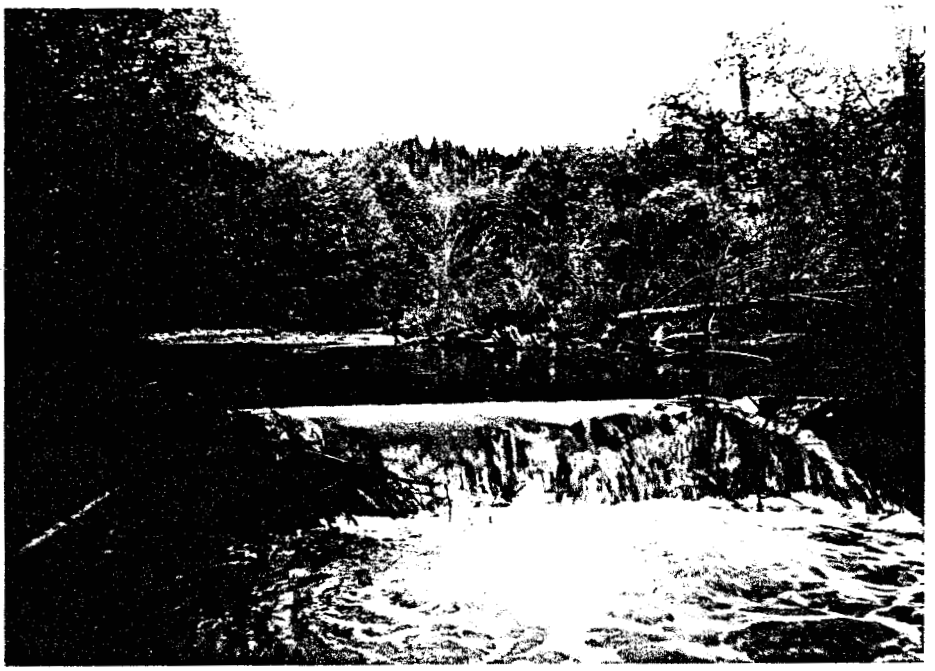
4. Flatwater slough above Section 15: 30 m leading to Trumpeter Lake.

Ratz Creek
Area "B"

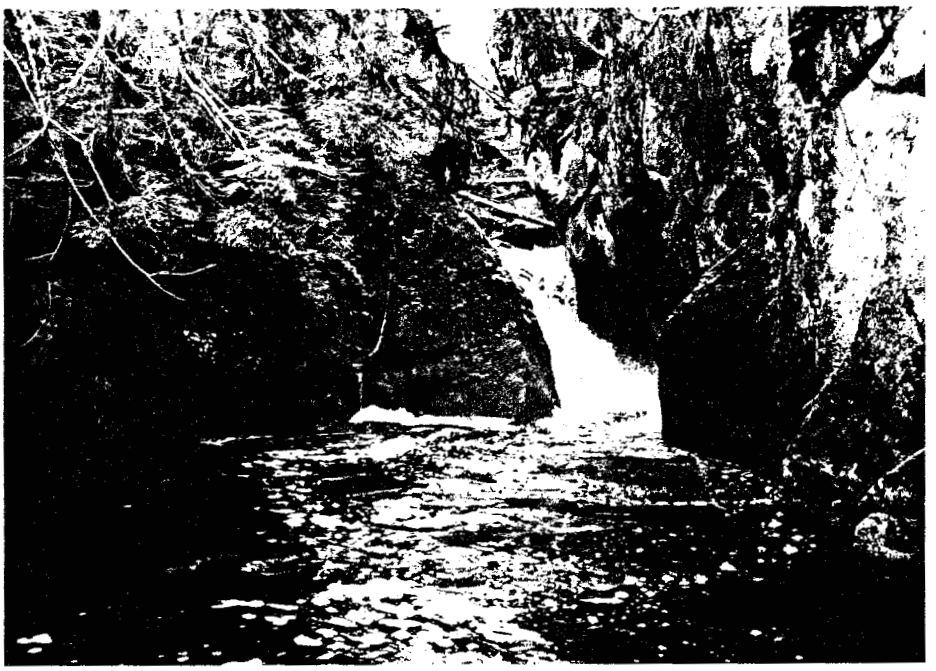
1. Tributary B converges with Ratz Harbor Creek just below Trumpeter Lake. Note lake "slack water", left center.

2. Section 1: Cobble/boulder riffles provide unsuitable spawning substrate. Old logging unit extends to both banks.

Ratz Creek
Area "B"



3. Section 4: Active beaver dam under construction. Old logging unit extends to both banks.



4. Section 9: 4.0 vertical meter high velocity chute represents a migratory impass. Helicopter reconnaissance above falls revealed additional barriers on both forks.

Ratz Creek
Area "C"

1. Reach 1: Flow resumes above Trumpeter Lake with unit on both banks.

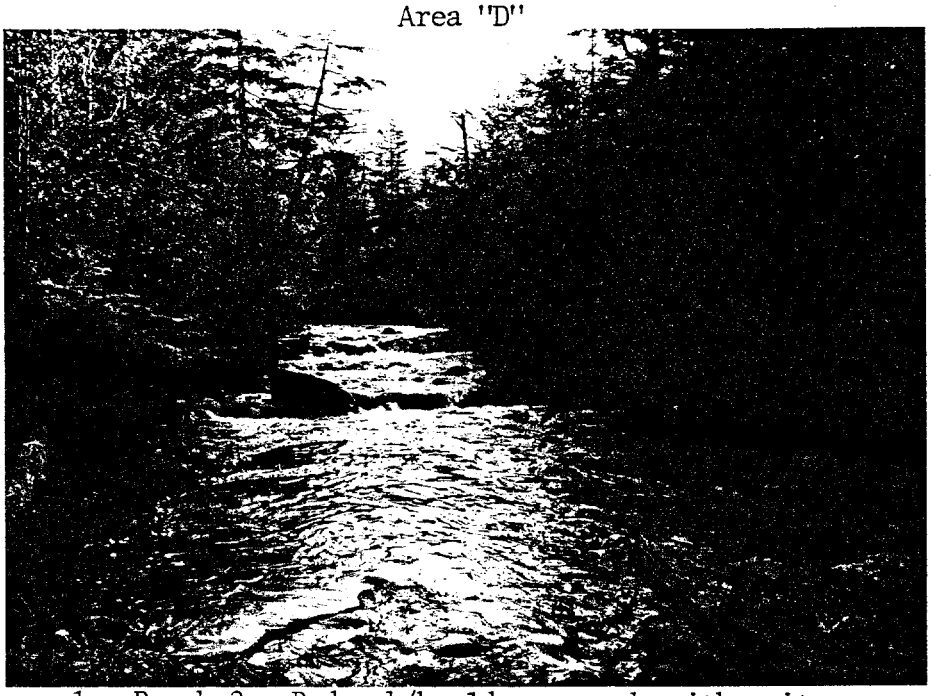
2. Reach 2: Gradient increase over boulder/ cobble substrate.

Ratz Creek
Area "C"

3. Reach 2: Section 5: 20m; Six meter falls/ cascade with no landing pool.

4. Reach 3: Above barrier falls; riffle over small cobble/gravel substrate.

Ratz Creek
Area "D"



1. Reach 2: Bedrock/boulder cascade with unit along both banks.

2. Reach 1: Habitat increasing gradient over cobble substrate.

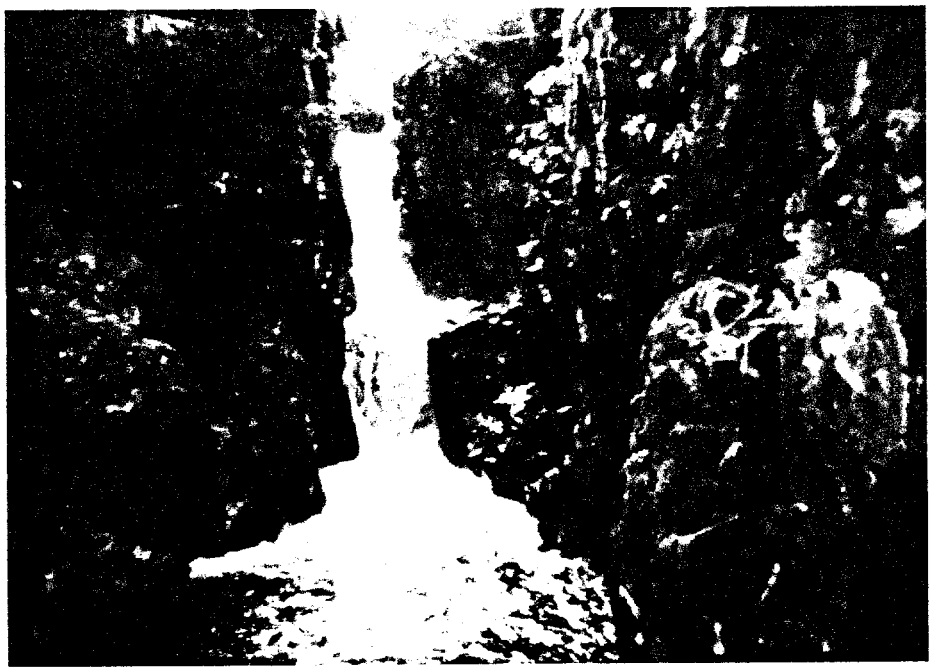
Ratz Creek
Area "E"

1. The confluence of Big Lake Inlet and Big Lake is delinated by gravel riffles.

2. Section 2: Channel meanders through an alder canopy via cobble/gravel riffles and SS pools. Extensive bars were encountered throughout Reach 1.

Ratz Creek
Area "E"

1. Section 5: Unstable sand and gravel banks are quickly eroded by high water flows. Small cobble and gravel substrate provides good ASA.



2. Six meter barrier falls within bedrock V-notch, Section 7: 120 m.

Ratz Creek
Area "E-1"

1. The mouth of Survey Area "E-1" taken from Section 4, Survey Area "E".

2. Section 3: The first of two major debris jams. These jams are a potential barrier to fish and cause major erosion during high water.

Ratz Creek
Area "E-1"

3. Section 3: Good ASA above the debris jams. Note bank scars from high water along the left bank.

4. Mouth of tributary and slide area extending Area "E-1" at Section 4: 60m.

Ratz Harbor Creek
106-10-10

Section	Length (m)	Width (m)	ASA %	ASA Total
		Survey Area "A"		
1	100	21.5	12	258
2	100	14.0	10	140
3	100	27.5	20	550
4	100	16.0	8	128
5	100	15.2	20	304
6	100	25.0	30	750
7	100	16.5	10	165
8	100	16.0	30	480
9	100	26.5	15	397.5
10	100	15.0	5	75
11	100	18.0	25	450
12	100	17.0	35	595
13	100	11.0	17	187
14	100	17.2	25	430
15	60	11.0	40	440
Total				5,349.5m^2
		Survey Area "B"		
1	100	10.8	--	--
2	100	8.2	5	41
3	100	5.5	--	--
4	100	4.5	--	--
5	100	13.0	5	65
6	100	6.5	2	13
7	100	9.0	--	--
8	100	10.7	--	--
9	80	7.6	--	--
Total				119.0m^2
		Survey Area "C"		
1	100	23.0	35	805
2	100	17.0	20	340
3	100	17.0	5	85
4	100	19.0	--	--
5	200	13.0	--	--
6	100	10.0	17	170
7	100	13.6	12	163.2
8	100	10.0	25	250
9	100	10.0	20	200
10	100	9.8	22	215.6
11	100	10.5	16	168
12	100	20.6	10	206
13	100	13.5	10	135
14	100	12.0	5	60
Total				2,797.8m^2

Section	Length (m)	Width (m)	ASA %	ASA Total
		Survey Area "E"		
1	100	18.0	30	540
2	100	6.3	10	63
3	100	7.5	10	75
4	100	8.4	10	84
5	235	6.9	15	243.2
6	300	4.5	15	202.5
7	120	5.0	5	30
Total				1,237.7m^2
		Survey Area "E-1"		
1	100	4.5	5	22.5
2	200	3.0	5	30.0
3	300	5.1	5	76.5
4	160	3.0	5	24.0
Total				153.0m^2
Total A, B, C, E, & E-1				9,657.0m^2

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Ratz Harbor Creek 2. ADF&G Catalog No. 106-10-10

Survey Area "A"

Reach Number	1	1	1	1	1	1	1
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	305	330	00	330	295	220	260
4. Gradient	1	1	1.5	1.5	2	2	3
5. Water Quality	3	3	3	3	3	3	3
6. Bank Type	A	A	A	B	B	B	B
7. Bank Stability	2(2)	2(2)	2(1)	2(1)	2(1)	2(1)	1(2)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-3,5
9. Debris Loading	12	7	3	3	10	2	10
10. Undercut Bank Length	160	90	170	120	160	180	40
11. Stream Width:							
Channel	28.5	25.0	27.5	20.5	15.2	25.0	16.5
Water	*	14.0	27.5	**	15.2	25.0	16.5
12. Water Type %: SS	30	30	25	20	20	20	30
DS	20	20	10	20	15	20	20
SF	35	35	55	40	45	60	40
DF	15	15	10	20	20	--	10
13. Substrate %:							
Bedrock	--	--	--	2	--	--	--
Boulder	--	5	10	8	15	5	5
Large Cobble	30	25	40	40	40	30	15
Small Cobble	30	30	20	15	20	30	20
Gravel	30	30	20	25	15	30	40
Sand	10	10	10	10	10	5	15
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	Clay/5
14. ASA %/Quality	12/3	10/3	20/3	8/3	20/3	30/3	10/3
15. Rearing Area %	70	50	30	20	35	20	40
16. Pool Cover %	15	20	25	5	20	5	5
17. Riffle Cover %	5	5	2	10	5	10	50
18. Fish Observed fry	--	--	--	DV	DV	DV	DV
fry							SS
19. Sampling	Y	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: 0m; Undercut banks with spots of instability. Many logs instream, begin unit both banks. Channel migration between banks. Begin midstream island for 50 m. Heavy aquatic slime on substrate; water temperature, 10°C.

Section 2: 80m; Old road crossing (bridge pulled).

Section 4: 70m; Blue clay deposit.

Section 5: Gradient and substrate size increasing. Braided area.

22. Investigators Gerry Merrigan Date 6/20/83

LEVEL TWO HABITAT SURVEY

Section 6: 50m; Beaver pond right side with numerous drains. Main channel substrate primarily cobble. Side channel substrate "gravel".

Section 7: 10m; Bedrock left side for 15 m.
30m; Debris jam forming slide above. Begin old growth forest.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Ratz Harbor Creek 2. ADF&G Catalog No. 106-10-10

Survey Area "A": Main Stem

Reach Number	1	1	1	1	1	1	1
1. Section Number	8	9	10	11	12	13	14
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	260	225	220	200	155	190	180
4. Gradient	1.5	1.5	1.5	2	2	2.5	2.5
5. Water Quality	3	3	3	3	3	3	3
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	2(1)	1(2)	1(2)	1(2)	1(2)	1(2)	1(2)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	3	1	2	2	1	1	1
10. Undercut Bank Length	140	35	20	100	50	30	40
11. Stream Width:							
Channel	16	26.5	15	18	17	12.5	17.2
Water	16	26.5	15	18	17	11	17.2
12. Water Type %: SS	20	20	25	20	20	10	20
DS	10	15	30	15	--	15	5
SF	70	55	25	60	70	55	50
DF	--	10	20	15	10	20	25
13. Substrate %:							
Bedrock	3	--	10	--	--	25	5
Boulder	7	15	20	10	15	20	25
Large Cobble	20	35	30	40	40	30	40
Small Cobble	30	25	20	25	25	15	20
Gravel	25	20	15	20	18	10	10
Sand	15	5	5	5	2	--	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	30/3	15/3	5/3	25/3	35/3	17/3	25/3
15. Rearing Area %	30	20	35	20	15	10	20
16. Pool Cover %	5	2	2	10	10	1	5
17. Riffle Cover %	15	10	5	5	1	5	10
18. Fish Observed (fry)	SS	SS	SS	SS	SS	--	SS
(fry)				DV	DV		DV
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 9: 50m; Banks steepening.
70m; Clay bank left side for 20 m.

Section 10: 5m; Tributary right side approximately 2.5 cfs at high flow rate. Water temperature, 10°C; pH - 5.6. Tan in color. Flow over moss covered boulder. Rearing habitat only. No fish observed.
70m; Begin unit both banks.

Section 11: 10m; Right channel for 60 m with excellent ASA.

Section 12: 20m; Cascade over bedrock for 20 m.

Section 14: 0m; Old road crossing (bridge pulled).

22. Gerry Merrigan Date 6/20/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Ratz Harbor Creek 2. ADF&G Catalog No. 106-10-10

Survey Area "A"

Reach Number	1						
1. Section Number	15						
2. Section Length	60						
3. Compass Bearing	180						
4. Gradient	2						
5. Water Quality	3						
6. Bank Type	B						
7. Bank Stability	1(2)						
8. Bank Vegetation	1-5						
9. Debris Loading	2						
10. Undercut Bank Length	30						
11. Stream Width:							
Channel	11.0						
Water	11.0						
12. Water Type %: SS	10						
DS	--						
SF	80						
DF	10						
13. Substrate %:							
Bedrock	--						
Boulder	20						
Large Cobble	40						
Small Cobble	25						
Gravel	15						
Sand	--						
Muck	--						
Other	--						
14. ASA %/Quality	40/3						
15. Rearing Area %	10						
16. Pool Cover %	35						
17. Riffle Cover %	5						
18. Fish Observed fry	SS						
19. Sampling	N						
20. Potential Barriers	N						
21. Enhancement/Rehab	N						

Section 15: 30m; Right fork, Survey Area "B".
60m; Riffle ends. Begin flatwater slough to lake; end Reach 1.

22. Investigators Gerry Merrigan Date 6/20/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Ratz Harbor Creek Right Fork 2. ADF&G Catalog No. 106-10-10

Survey Area "B"

Reach Number	1	1	1	1	1	1	1
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	287	293	254	270	269	284	298
4. Gradient	2.5	2.5	3.5	6	4	3	3
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	A	A	A/B	A	A	A	A/B
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	2-5	2-5	2-5	2-5	2-5	2-5	2-5
9. Debris Loading	1	1	1	8	5	--	1
10. Undercut Bank Length	--	--	--	--	--	--	--
11. Stream Width:							
Channel	10.8	17.3	17.5	11.8	13	21.5	11
Water	10.8	8.2	5.5	4.5	13	6.5	9
12. Water Type %: SS	5	5	--	5	5	8	5
DS	--	5	2	25	10	--	--
SF	95	75	80	30	70	75	70
DF	--	15	18	40	15	17	25
13. Substrate %:							
Bedrock	--	--	--	--	--	--	15
Boulder	15	15	20	15	15	20	30
Large Cobble	40	40	40	40	40	40	30
Small Cobble	28	28	25	30	28	25	15
Gravel	15	15	15	15	15	15	10
Sand	2	2	--	--	2	--	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	--	5	--	--	5	2	--
15. Rearing Area %	5	5	--	20	10	1	1
16. Pool Cover %	10	12	10	10	10	10	10
17. Riffle Cover %	10	10	10	10	10	10	10
18. Fish Observed (fry) SS	<12	>12	--	<12	<6	--	--
19. Sampling	Y	N	N	Y	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: Rearing cover primarily cobble/boulder induced.

Section 2: A 1.5 cfs, heavily overgrown, muskeg drainage enters the right fork via the right bank and provides good ASA for 100 m and rearing for 300 m. Debris is locally concentrated, flow disappears under root wads, and the channel becomes a muskeg slough at 300 m. SS fry and resident trout were common throughout reconnaissance, however, none were seen above the habitat transition. No rehabilitation or enhancement recommended.

22. Investigators Ted Mickowski Date 6/20/83

LEVEL TWO HABITAT SURVEY

Section 3: 75m; Old road bed across both banks and remnant log stringer bridge mark left bank undercutting.
A 300 m long cobble/boulder strewn side channel converges with the main stem via the right bank and sustains a flow of approximately 1.5 cfs. Habitat, as in the main stem, is marginal, however, approximately 50 SS fry were observed rearing in DS pools.

Section 4: 75m; Active beaver dam under construction. Numerous seeps along both banks have been dammed, creating moderately sized impoundments.

Section 5: Side channel diverges from main stem via right bank.

Section 6-7: Nearly continuous cobble/boulder riffles throughout sections. Bars common.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Ratz Harbor Creek Right Fork 2. ADF&G Catalog No. 106-10-10 Survey Area "B"

Reach Number	1	1					
1. Section Number	8	9					
2. Section Length	100	80					
3. Compass Bearing	299	256					
4. Gradient	3	9					
5. Water Quality	1	1					
6. Bank Type	A/B	A/B					
7. Bank Stability	1/1	1/1					
8. Bank Vegetation	2-5	2-5					
9. Debris Loading	--	--					
10. Undercut Bank Length	--	--					
11. Stream Width:							
Channel	10.7	7.6					
Water	10.7	7.6					
12. Water Type %: SS	5	5					
DS	--	30					
SF	70	40					
DF	25	25					
13. Substrate %:							
Bedrock	10	15					
Boulder	35	35					
Large Cobble	30	30					
Small Cobble	15	10					
Gravel	10	10					
Sand	--	--					
Muck	--	--					
Other	--	--					
14. ASA %/Quality	--	--					
15. Rearing Area %	1	--					
16. Pool Cover %	10	10					
17. Riffle Cover %	10	10					
18. Fish Observed	N	N					
19. Sampling	N	N					
20. Potential Barriers	N	Y					
21. Enhancement/Rehab	N	N					

Section 9: 80m; Channel constricts through bedrock notch, culminating in a 4 vertical meter bedrock falls. This migratory impass represents both a velocity and vertical height barrier.

22. Investigators Ted Mickowski Date 6/20/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Ratz Harbor Creek 2. ADF&G Catalog No. 106-10-10

Survey Area "C"

Reach Number	1	1	2	2	2	3	3
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	200	100	100
3. Compass Bearing	130	115	135	210	170	225	135
4. Gradient	.5	.5	2	3	20	1.5	2
5. Water Quality	3	3	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1(1)	1(1)	1(1)	1(2)	1(1)	1(2)	1(2)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-3,5	1-5	1-5
9. Debris Loading	2	1	3	4	--	--	2
10. Undercut Bank Length	15	40	200	130	--	130	160
11. Stream Width:							
Channel	23	17	17	19	13	10	13.6
Water	23	17	17	19	13	10	13.6
12. Water Type %: SS	60	50	20	20	55	30	20
DS	40	30	10	10	30	20	20
SF	--	20	50	60	5	40	50
DF	--	--	20	10	--	10	10
13. Substrate %:							
Bedrock	--	--	--	20	35	--	--
Boulder	--	1	25	30	30	10	10
Large Cobble	5	9	35	30	20	25	15
Small Cobble	20	15	20	20	10	35	35
Gravel	50	45	10	10	5	25	30
Sand	20	20	10	--	--	10	10
Muck	--	--	--	--	--	--	--
Other	c10	c10	--	--	--	--	--
14. ASA %/Quality	35/2	20/2	5/3	--	--	17/3	12/3
15. Rearing Area %	100	70	20	5	--	40	25
16. Pool Cover %	5	5	30	5	--	15	2
17. Riffle Cover %	--	5	10	2	--	15	5
18. Fish Observed fry	SS	SS	--	--	--	--	CT
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	Y2	N	N
21. Enhancement/Rehab	N	N	N	N	Y	N	N

Section 1: 0m; Begin flow above Trumpeter Lake. Slow flow over small cobble/gravel with limited aeration.
100m; Old road crossing (bridge pulled).

Section 3: 0m; Begin sharp increase in gradient and substrate size.
55m; Two channels for 45 meters.

Section 4: 80m; Begin mature forest both banks. Begin bedrock V-notch.

Section 5: 20m; Barrier falls 6.0 m; jumping pool only, continued V-notch and cascades for 180 m.

Section 6: 0m; End bedrock V-notch and cascades. Begin small cobble/gravel substrate with mild footslopes and broad channel width.

22. Investigators Gerry Merrigan Date 6/20/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Ratz Harbor Creek 2. ADF&G Catalog No. 106-10-10

Survey Area "C"

Reach Number	3	3	3	3	3	3	3
1. Section Number	8	9	10	11	12	13	14
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	160	150	85	75	160	195	290
4. Gradient	2	1.5	1.5	1.5	1.5	1.5	2
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	A	A/B
7. Bank Stability	1(2)	1(2)	1(2)	1(2)	1(1)	1(1)	1(1)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	2	5	5	8	12	4	2
10. Undercut Bank Length	175	120	160	100	130	160	100
11. Stream Width:							
Channel	10	10	9.8	10.5	20.6	13.5	12.0
Water	10	10	9.8	10.5	20.6	13.5	12.0
12. Water Type %: SS	20	20	30	35	30	30	20
DS	20	20	10	20	20	25	10
SF	50	50	60	45	50	45	50
DF	10	10	--	--	--	--	20
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	10	5	5	5	5	5	15
Large Cobble	15	15	15	25	30	35	40
Small Cobble	35	35	35	35	30	30	25
Gravel	30	30	30	25	25	20	15
Sand	10	10	10	10	10	10	5
Muck	--	--	--	--	--	--	--
Other	--	c5	c5	--	--	--	--
14. ASA %/Quality	25/3	20/3	22/3	16/3	10/3	10/3	5/3
15. Rearing Area %	30	30	35	35	50	50	15
16. Pool Cover %	10	10	15	25	20	20	5
17. Riffle Cover %	5	5	5	5	10	15	15
18. Fish Observed fry	CT	--	--	--	--	--	SS(2)
19. Sampling	Y	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 8: 65m; pH - 7.5; Temperature - 14°C.
Section 9: Muskeg close to bank right side.
Section 10: Muskeg left side.
Section 11: 0m; Bank steepens left side for 130 m.
60m; Stream widens; braided area.
Section 12: 30m; Rearing slough and beaver pond left side.
90m; End braiding.
Section 13: 100m; Begin unit/alder left side. Substrate size increasing.
Section 14: Two coho fry observed.

22. Investigators Mickowski, Merrigan & Ericksen Date 9/27/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Ratz Harbor Creek 2. ADF&G Catalog No. 106-10-10

Survey Area "E"

Reach Number	1	1	1	1	1	1	1
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	235	300	120
3. Compass Bearing	270	190	230	243	220	280	273
4. Gradient	1	1	1	1.5	2.5	3.0	18
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	B	B/C	B	B	A	A	B
7. Bank Stability	1/1	1/1	1/1	1/1	3/2	2/2	1/3
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-4	1-4	1-4
9. Debris Loading	1	1	1	1	5	5	1
10. Undercut Bank Length	50	30	20	45	10	40	--
11. Stream Width:							
Channel	18	11.7	13.8	12.9	9.0	6.6	7.1
Water	18	6.3	7.5	8.4	6.9	4.5	2.0/3.0
12. Water Type %: SS	10	10	10	10	25	30	10
DS	5	5	10	40	5	10	10
SF	80	80	75	35	70	60	40
DF	5	5	5	15	--	--	40
13. Substrate %:							
Bedrock	--	--	--	--	5	--	70
Boulder	--	--	--	--	10	--	10
Large Cobble	--	--	10	20	5	5	10
Small Cobble	35	50	45	40	30	30	5
Gravel	50	40	35	30	40	50	5
Sand	15	10	10	10	10	15	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	30/2	10/2	10/2	10/2	15/2	15/2	5/3
15. Rearing Area %	15	15	15	15	5	10	3
16. Pool Cover %	15	15	15	15	2	5	0
17. Riffle Cover %	--	--	--	--	3	3	2
18. Fish Observed	N	N	N	N	N	N	N
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

The primary inlet to Big Lake, this 10 cfs stream has been extensively logged. Dense alder stands line banks and numerous adult silver salmon were observed jumping off mouth.

Section 1: Numerous gravel riffles provide excellent ASA. Bank vegetation is comprised of a single line of mature alder and an extensive stand of marsh grasses.

22. Investigators Mickowski, Merrigan & Ericksen Date 9/27/83

LEVEL TWO HABITAT SURVEY

Section 2: 14m; A beaver impoundment enters the main stem via the right bank and a .5 cfs grass/muck channel. No fish or habitat were observed. Channel adopts a sinuous nature through a dense alder canopy, and extensive bars become common.

Section 3: Channel maintains sinuosity and bars remain common. Cut over stumps visible along banks.

Section 4: Cobble/gravel substrate becoming slightly compact. ASA is concentrated at riffle "heads". A large secondary channel (Survey Area "E-1") enters the right bank at the end of the section.

Section 5: Predominantly shallow fast water of small cobble and gravel. Good ASA. Old road crossing site at 55 m. Stream has erratic flows. Banks are unstable, composed of sand and gravel.

Section 6: Channel braiding is prevalent. Moderate/steep gradient. Survey ends at divergence of Survey Area "E-1".

Section 7: 0m; Debris jam. Braided area within old unit with alder bank vegetation..
20m; Leave unit. Predominantly cobble substrate.
30m; Enter V-notch.
70m; 2.0 m cascade.
120m; 6.0 m barrier falls. Continuous falls and cascades above in boulder V-notch.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Ratz Harbor Creek 2. ADF&G Catalog No. 106-10-10
Major Inlet to Big Lake
Survey Area "E-1"

Reach Number	1	1	1	1			
1. Section Number	1	2	3	4			
2. Section Length	100	200	300	160			
3. Compass Bearing	260	290	250	245			
4. Gradient	2.0	2.5	3.0	3.0			
5. Water Quality	1	1	1	1			
6. Bank Type	A	A	A	A			
7. Bank Stability	1/2	2/2	3/1	3/2			
8. Bank Vegetation	1-4	1-4	1-4	1-5			
9. Debris Loading	2	5	30	20			
10. Undercut Bank Length	10	--	--	--			
11. Stream Width:							
Channel	6.8	4.6	7.0	10.8			
Water	4.5	3.6	5.1	3.0			
12. Water Type %: SS	50	40	30	20			
DS	--	--	--	20			
SF	50	60	70	60			
DF	--	--	--	--			
13. Substrate %:							
Bedrock	--	--	--	--			
Boulder	--	10	10	10			
Large Cobble	5	15	10	35			
Small Cobble	40	35	15	35			
Gravel	40	20	30	20			
Sand	15	20	35	--			
Muck	--	--	--	--			
Other	--	--	--	--			
14. ASA %/Quality	5/2	5/2	5/1	12/2			
15. Rearing Area %	20	10	5	10			
16. Pool Cover %	5	5	2	10			
17. Riffle Cover %	5	5	2	5			
18. Fish Observed	N	DV	N	N			
19. Sampling	N	N	N	N			
20. Potential Barriers	N	N	Y	Y3			
21. Enhancement/Rehab	N	N	Y	N			

Section 1: Begins at the end of Section 4, Survey Area "E". Low gradient. Good pool/riffle ratio. Substrate is mostly small cobble and gravel.

Section 2: Some channel braiding. Beaver system along the right bank. Substrate becomes large cobble and boulders near section end. One DV was seen in this section.

Section 3: Two massive debris jams have blocked stream flow creating a potential barrier to fish. At high water these jams have diverted flow over the banks causing soil erosion.

22. Investigators Merrigan, Mickowski, Ericksen Date 9/27/83

Section 3: Banks are scarred 2 meters high 200 meters upstream of the jams.
230m; Clay deposit along the right bank.
300m; Enter slide area. Large debris jams on right bank. Left bank heavily undercut and unstable.

Section 4: 60m; Tributary right side running in slide channel. A clear stream with approximately 2 cfs, pH of 6.5, and water temperature of 6.5°C. It is 1.0 m wide within a 80 m wide slide area strewn with large debris piles. Slide is recent, possibly early 1983. Foliage is still present on some debris. The slide path is on the edge of an old clearcut and follows a small tributary's drainage.
80m; Leave slide area; enter braided area beneath alder canopy with cobble substrate intermixed with heavy concentrations of debris.
160m; Debris jam. Survey Area "E-1" resumes Survey Area "E".

FISH SAMPLING FORM

Stream Name Ratz Harbor Creek ADF&G Catalog No. 106-10-10 Date 6/20/83&9/27/83

Identify Survey Area as indicated Water Temp. as indicated Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	6/20/83 0915	1555	SS - 2 CO - 3	Survey Area "A"	Reach 1; Section 1; 70m 13°C
2	1200	1415	SB - 18	Trumpeter Lake	Outlet Slough 14.5°C
3	1430	1530	--	Survey Area "C"	Reach 3; Section 8; 65m 14.0°C
4	1155	1350	SS - 8	Survey Area "B"	Section 1; 11.5°C
5	1225	1335	SS - 1	Survey Area "B"	Section 2; 11.5°C
6	9/27/83 1715	1745	--	Survey Area "D"	Sub-sample; Above Potential Barrier
7	1720	1750	SS - 8	Survey Area "D"	" " " " "

This form is used to record fish caught during Level Three, Four, or Five Surveys.

PEAK ESCAPEMENT RECORD

106-10-10

DATE	PINK	CHUM	OTHER SPECIES		REMARKS
9/20/62	17,000		9/20/62	100 RS	
8/16/63	2,300				
9/02/64	5,000		9/02/64	100 RS	
			8/27/65	1700 RS	
9/05/69	12,100		9/08/69	67 RS	
8/26/70	15,000				
9/10/70	--	10			
9/22/71	20,000				
8/30/72	10,000				
8/22/73	7,800				
			8/28/74	700 RS	
9/11/74	12,200				
9/08/75	9,000		9/08/75	1000 RS	
8/29/76	20,000				
8/24/77	23,300				
9/13/78	22,700				
8/22/79	15,000				
9/16/80	--	10			
9/17/80	12,800		9/17/80	3800 RS	
9/21/81	16,446				
9/20/82	28,200				
			9/22/82	285 RS	

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length n/a

3. Historical Fish Species No escapement data available.

Part II.

1. Stream Name South Ratz Harbor 2. ADF&G Catalog No. 106-10-007
3. Latitude 55°52'35" Longitude 132°35'50"
4. Agency Unit 05 5. Mgmt. Area 583K 6. USGS Map No. Craig D-2
7. Aerial Photo No. 1979 Photos Fl. Ln. 40 Photo 76
8. Bay/Drainage Little Ratz Harbor 9. Access 1
10. Present Land Use None
11. Historical Land Use Logged about 20-30 years ago.
12. Stream Origin 3, 5, 6 13. Estimated Flow about 1.5 cfs 14. Flow Stage 3
15. Stream Temperature 10° 16. pH 7.0 17. Beaver No
18. Temperature Sensitivity No
19. Barrier No 20. Weather 1

Part III.

21. Intertidal

A. Substrate: Fines 15 % Gravel/S. Cob. 45 %
L. Cob/Boulder/Bedrock 40 %
B. Gradient 2.5 %
C. ASA % --
D. Schooling in bay only
E. Shellfish none observed
F. Anchorage Ratz Harbor

Stream Evaluation

22. Comments

This is a low velocity small stream that had been crossed by a road in the ITZ (culvert pulled). Heavy logging debris (cable, bridge stringers, and so on) is scattered in the ITZ. Stream course flows through woods with forbs in the stream bed. The gradient increases to 7% as this stream enters a V-notch with heavy windthrow 200 meters from the mouth. There is no ASA, and no fish were observed in the stream or ITZ.

23. Investigators Gerry Merrigan 24. Date 6/20/83

South Ratz Harbor
106-10-007

1. ITZ with old road crossing.

2. Downstream view of ITZ looking toward Ratz Harbor.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length n/a

3. Historical Fish Species No escapement data available.

Part II.

1. Stream Name Intertidal #2 2. ADF&G Catalog No. n/a
3. Latitude 55°51'30" Longitude 132°34'35"
4. Agency Unit 05 5. Mgmt. Area 584K 6. USGS Map No. Craig D-2
7. Aerial Photo No. 1979 Photos Fl. Ln. 41 Photo 67
8. Bay/Drainage Little Ratz Harbor 9. Access 1
10. Present Land Use None
11. Historical Land Use Harvested about 20 years ago.
12. Stream Origin 3, 5, 6 13. Estimated Flow about 3 cfs 14. Flow Stage 3
15. Stream Temperature 11.5 16. pH 6.0 17. Beaver Yes
18. Temperature Sensitivity Yes; beaver system with slow flow.
19. Barrier Yes, beaver dam at 55 meters 20. Weather 1

Part III.

21. Intertidal

A. Substrate: Fines 20 % Gravel/S. Cob. 30 %
L. Cob/Boulder/Bedrock 50 %
B. Gradient 4 %
C. ASA % --
D. Schooling No, in bay only.
E. Shellfish Moderate
F. Anchorage Little Ratz Harbor

22. Comments Stream Evaluation

This stream enters the upper ITZ meadow of Little Ratz Creek about 30 meters below the mouth on the right hand side. Essentially the stream is a beaver system within a 20 year old clearcut. There is an old road crossing (bridge pulled) 10 meters from the mouth and 2 meter beaver dam 55 meters from the mouth. Coho and DV fry were observed in the pond and stream respectively.

23. Investigators Gerry Merrigan 24. Date 6/19/83

Intertidal #2

1. Mouth of Intertidal #2 with unit both sides.

2. Beaver dam (2 x 30m) 55 meters from mouth of Intertidal #2.

FISH SAMPLING FORM

Stream Name Intertidal #2 ADF&G Catalog No. n/a Date 6/19/83

Identify Survey Area A Water Temp. 11.5°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1340	1440	--		Right side, root wad.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A, B 2. Section Length 100 meters

3. Historical Fish Species PS, CS, ST

Part II.

1. Stream Name Little Ratz Creek 2. ADF&G Catalog No. 106-10-006

3. Latitude 55°51'30" Longitude 132°34'35"

4. Agency Unit 05 5. Mgmt. Area 584K 6. USGS Map No. Craig D-2

7. Aerial Photo No. 1979 Photos Fl. Ln. 41 Photo 67; Fl. Ln. 40 Photo 79

8. Bay/Drainage Little Ratz Harbor 9. Access 1

10. Present Land Use None

11. Historical Land Use Harvested about 20 years ago.

12. Stream Origin 3, 4, 5, 6 13. Estimated Flow about 20 cfs 14. Flow Stage 3

15. Stream Temperature 11° 16. pH 7.2 17. Beaver Yes

18. Temperature Sensitivity Yes, canopy removed.

19. Barrier Yes; Section 5: 70m; and Section 12: 100m Main Stem 20. Weather 1

Part III.

21. Intertidal

A. Substrate: Fines 20 % Gravel/S. Cob. 50 %
L. Cob/Boulder/Bedrock 30 %
B. Gradient 2 %
C. ASA % Fair
D. Schooling High tide only.
E. Shellfish Moderate
F. Anchorage Little Ratz Harbor

22. Comments Stream Evaluation

The majority of the stream surveyed was located within a clearcut. The best fish habitat of the stream also occurs in the clearcut. The stream has been highly impacted by logging as indicated by unstable undercut banks, instream root wads, debris jam, channel migration, clay bank exposure, lack of buffer strip, and so on. These impacts have impaired the fish productivity of the stream. At 570 meters, a potential barrier falls is located. Above this falls the stream soon enters old growth forest and eventually enters a V-notch with the survey terminating at a succession of barrier falls. Trout and coho fry were observed in the stream, and historical records indicate use by pinks, chums, and steelhead. The stream has one major tributary (Area "B"), which is a beaver dominated system of rearing significance only.

23. Investigators Gerry Merrigan & Ted Mickowski 24. Date 6/19/83

LEVEL TWO HABITAT SURVEY
Little Ratz Creek
106-10-006

ITZ

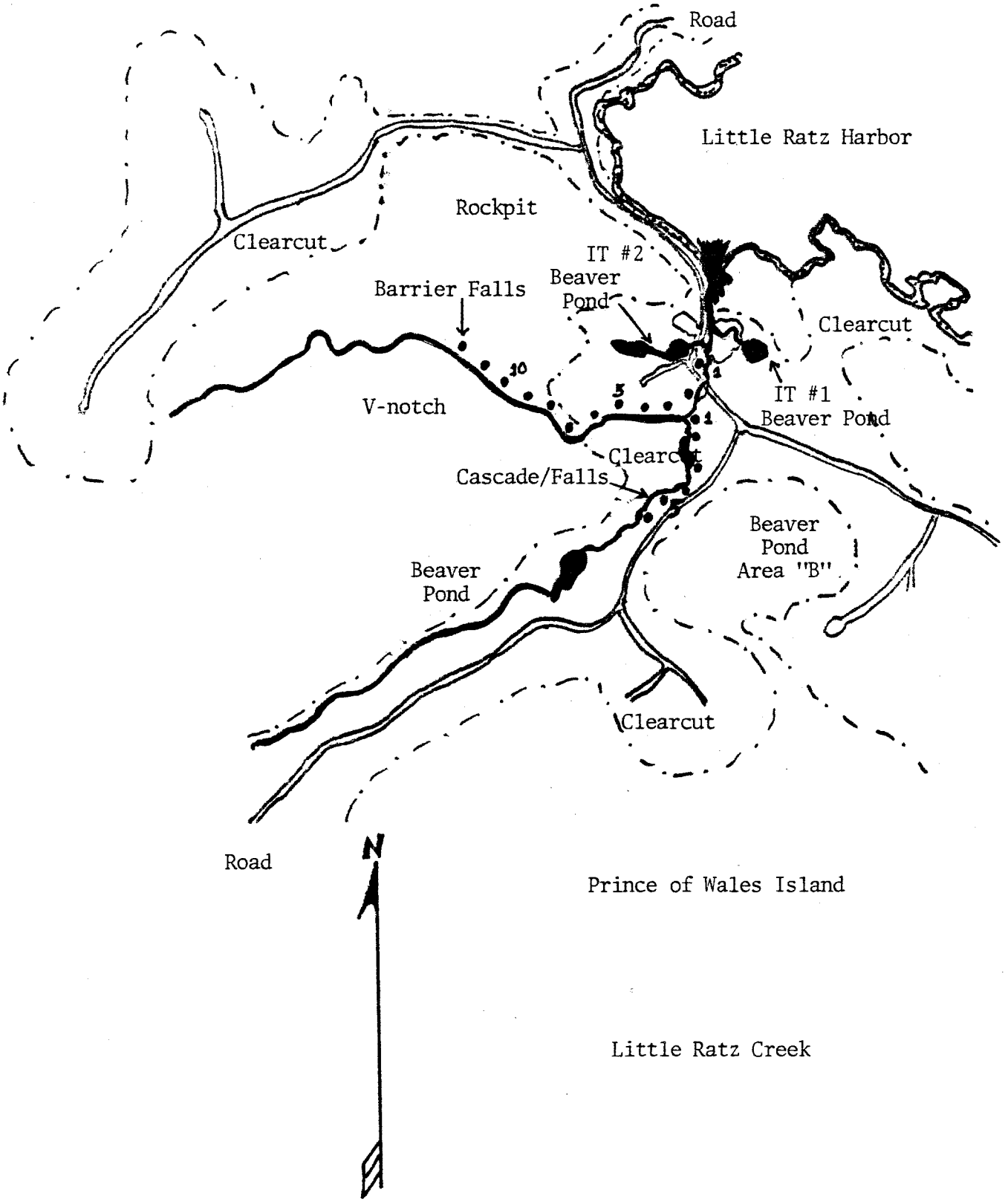
The lower ITZ is a narrow V-notch over boulder and large cobble at 2.5% gradient. An old roadbed and clearcut are located on the right bank. There is no ASA in the lower ITZ.

The upper ITZ flows through a grass meadow over boulder surrounded by small cobble, gravel and fines with moderate ASA. Two small stream (IT #1&2) join the ITZ here. Both banks have been harvested. Coho fry were observed in the upper ITZ.

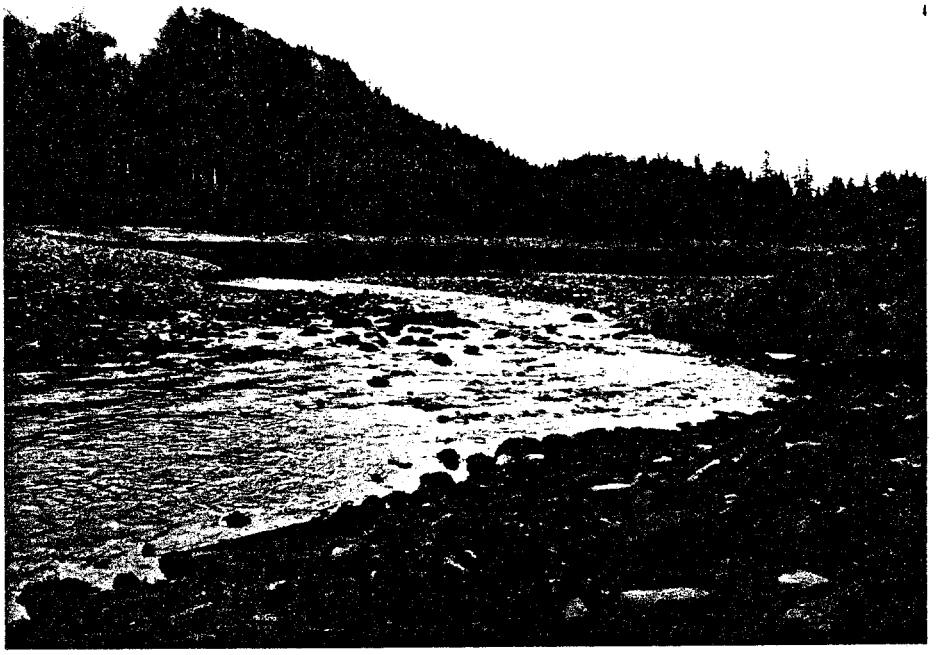
Survey Area "A": Main Stem

Reach 1: 570 m

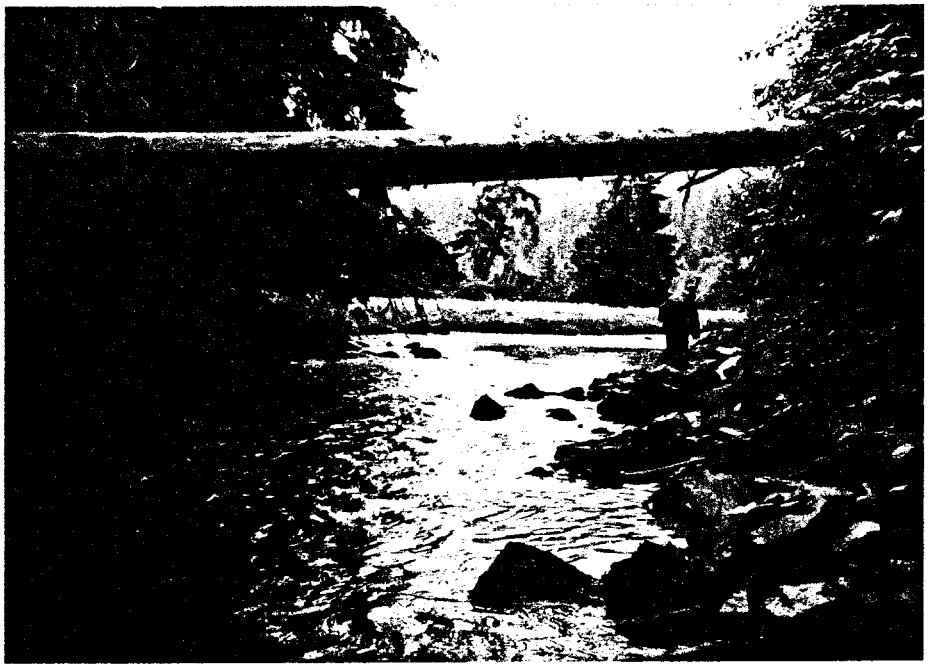
The stream runs through an old clearcut with no buffer strip remaining. The resulting impacts are evident such as: extremely undercut, unstable banks; instream root wads and debris jams; channel migration and multiple channels; and clay bank exposure. The substrate is primarily cobble and gravel with moderate ASA. DV trout and coho fry were observed throughout the reach. At Section 2: 50m, a tributary enters from the left side (Survey Area "B"). The reach ends with a bedrock V-notch with cascades. A 2.0m bedrock cascade marked the terminus of the Reach. This cascade is a potential barrier to all but coho and at very high water levels, it would be a velocity barrier to all species.


Road
Little Ratz Harbor
Rockpit
Clearcut
IT #2
Beaver
Pond
Barrier Falls
Clearcut
10
5
1
IT #1
Beaver Pond
V-notch
1
Clearcut
Cascade/Falls
Beaver
Pond
Area "B"
Beaver
Pond
Clearcut
Road
N
Prince of Wales Island
Little Ratz Creek

Little Ratz Creek
106-10-006

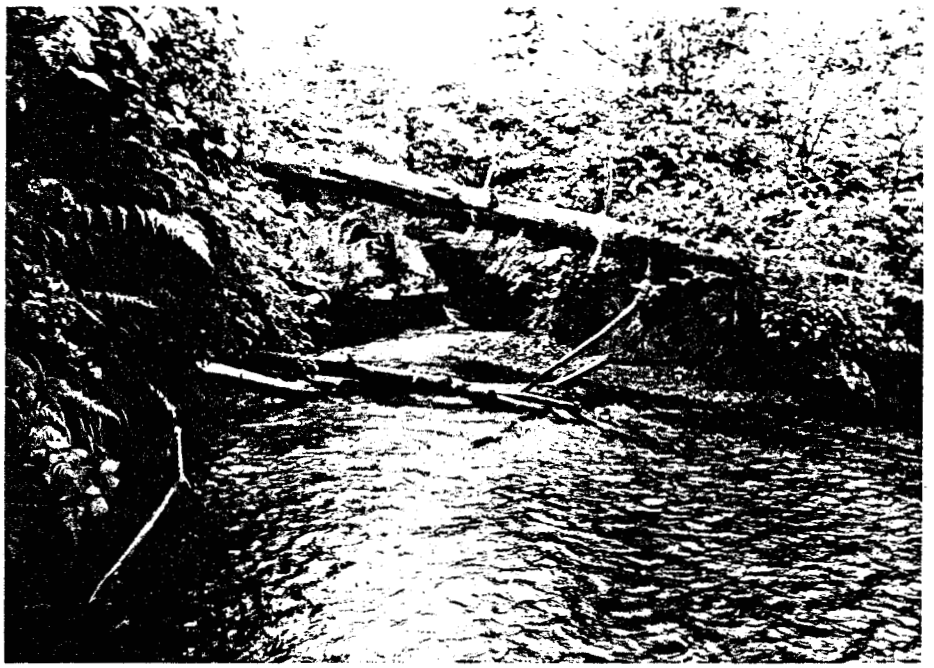


1. Downstream view of lower ITZ looking toward Little Ratz Harbor.

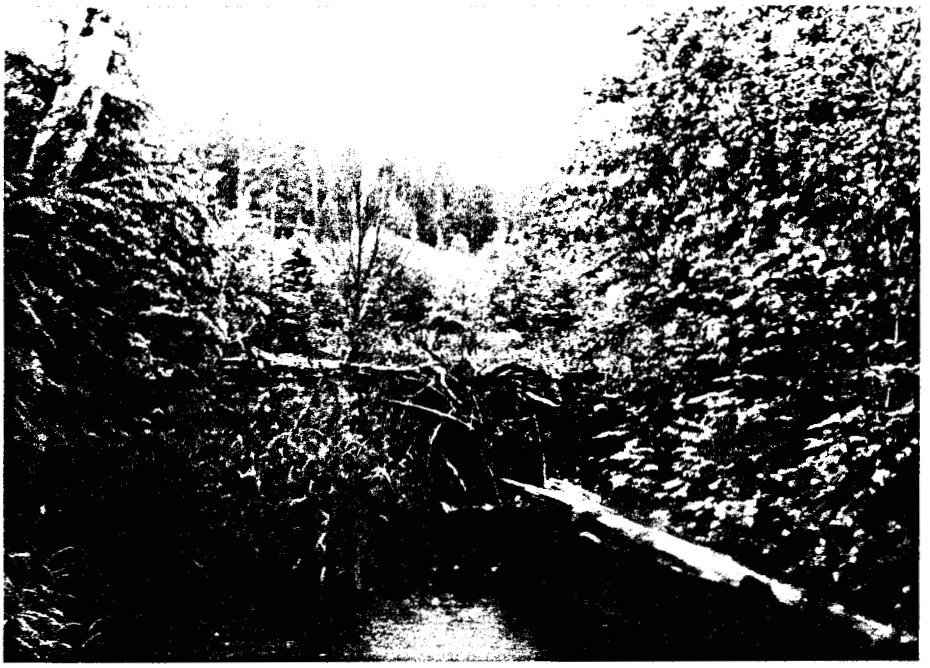


2. Upper ITZ with grass meadow in background.

Little Ratz Creek
106-10-006



1. Mouth of Survey Area "B", tributary entering main stem at Section 2: 50m, left side.

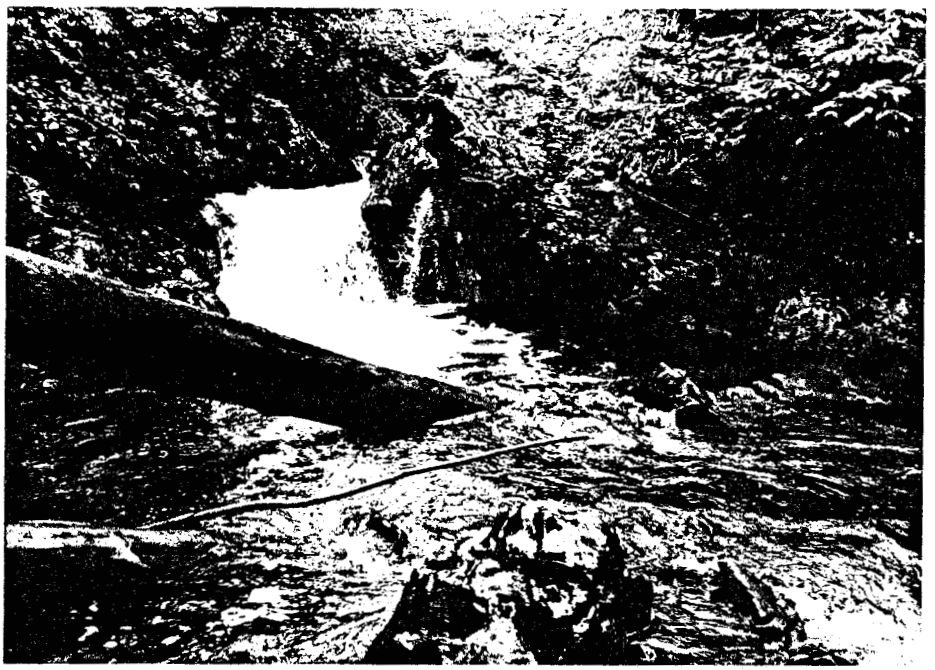


2. Beaver dam (1.5 x 35m), Section 1: 35m, Survey Area "B".

Little Ratz Creek
106-10-006

3. Mouth of stream with unit on both banks and midstream debris.

4. Reach 1: Section 3 habitat. Stream flow through clearcut with undercut unstable banks and midstream debris.



5. Section 5: 2.0 vertical meter high velocity cascade represents a potential barrier to pink salmon. Rearing SS fry, however, were observed through Section 11.

6. Section 8: Boulder/large cobble riffles typify section, however, undercut banks and peripheral pools provide moderate rearing habitat.

Little Ratz Creek
106-10-006

7. Section 12: Channel enters narrow notch, characterized by bedrock/boulder cascades, culminating in a three-tiered barrier falls.

8. Section 12: Largest tier of a three-tiered barrier falls, 7 vertical meters in height, demarcates survey end.

Little Ratz Creek
106-10-006

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
Survey Area "A": Main Stem									
1	100	12.8	15	192					
2	100	8.0	5	40					
3	100	11.7	10	117					
4	100	17.0	10	170					
5	70	9.2	--	--					
6	100	7.0	8	56					
7	100	10.5	4	42					
8	100	11.0	--	--					
9	100	11.0	--	--					
10	100	8.5	--	--					
11	100	6.0	--	--					
12	100	9.0	--	--					
Total				$617m^2$					
Survey Area "B"									
1	35	3.0	5	5.3					
2	100	35.0	--	--					
3	30	6.0	--	--					
4	100	2.7	--	--					
5	100	3.0	--	--					
6	100	2.2	--	--					
Total				$5.3m^2$					
Total Survey Areas "A" & "B":				$622.3m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Little Ratz Creek 2. ADF&G Catalog No. 106-10-006

Survey Area "A": Main Stem

Reach Number	1	1	1	1	1		
1. Section Number	1	2	3	4	5		
2. Section Length	100	100	100	100	70		
3. Compass Bearing	195	210	275	270	270		
4. Gradient	1.5	1.5	1.5	2	1.5		
5. Water Quality	3	3	3	3	3		
6. Bank Type	B	B	B	B	B		
7. Bank Stability	3(2)	3(2)	2(2)	2(2)	1(2)		
8. Bank Vegetation	1-3,5	1-5	1-5	1-5	1-5		
9. Debris Loading	12	15	6	12	3		
10. Undercut Bank Length	200	75	80	105	30		
11. Stream Width:							
Channel	18.6	8.6	21.8	17.0	18.2		
Water	12.8	8.0	5.7/6	17	6.2/3		
12. Water Type %: SS	20	20	30	40	30		
DS	25	35	20	30	35		
SF	45	35	50	30	20		
DF	10	10	--	--	15		
13. Substrate %:							
Bedrock	--	--	--	3	30		
Boulder	5	10	5	12	15		
Large Cobble	30	25	35	40	20		
Small Cobble	25	25	25	20	15		
Gravel	15	15	20	10	10		
Sand	15	20	15	15	10		
Muck	--	--	--	--	--		
Other	--	--	--	--	--		
14. ASA %/Quality	15/2	5/2	10/2	10/2	--		
15. Rearing Area %	30	50	35	45	50		
16. Pool Cover %	20	30	20	15	15		
17. Riffle Cover %	20	35	10	20	5		
18. Fish Observed (fry)		DV	DV	DV			
(fry)	SS	SS	SS	SS	SS		
19. Sampling	Y	N	N	Y	N		
20. Potential Barriers	N	N	N	N	Y2		
21. Enhancement/Rehab	N	N	N	N	N		

Section 1: 0m; Begin clearcut both sides; no buffer strip; unstable banks; stumps instream.
60m; Old road crossing, bridge pulled. Extremely undercut banks.
80m; Active beaver, left side. Isolated clay bank exposure.
Section 2: 50m; Tributary, left side. Survey Area "B".
Section 3: Clay bank for 5 meters.
Section 4: Substrate size increasing to loose cobble with isolated bedrock banks becoming more stable though channel is still migrating between banks.

22. Investigators Gerry Merrigan Date 6/19/83

LEVEL TWO HABITAT SURVEY
Little Ratz Creek
106-10-006

Section 5: 30m; Begin bedrock V-notch.
50m; Begin cascade.
70m; 2.0 meter cascade/falls over bedrock. Oxbow bend in stream course in bedrock. End Reach 1.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Little Ratz Creek 2. ADF&G Catalog No. 106-10-006
Survey Area "A": Main Stem

Reach Number	2	2	2	2	2	2	2
1. Section Number	6	7	8	9	10	11	12
2. Section Length	100	100	100	100	100	100	100
3. Compass Bearing	263	324	314	314	314	309	275
4. Gradient	4	2.5	2	2.5	3	3.5	6
5. Water Quality	4	1	1	1	1	1	4
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	1	1	1	1	1	1	1
10. Undercut Bank Length	10	40	100	130	75	40	--
11. Stream Width:							
Channel	7	12.4	11.5	11	8.5	6.7	9
Water	7	10.5	11	11	8.5	6	9
12. Water Type %: SS	10	10	5	3	3	3	5
DS	5	15		2	7	7	10
SF	40	60	70	80	60	50	40
DF	45	15	15	15	30	40	45
13. Substrate %:							
Bedrock	10	--	15	--	15	15	30
Boulder	30	18	20	30	30	30	30
Large Cobble	20	40	28	35	30	30	25
Small Cobble	20	25	20	20	15	15	10
Gravel	15	15	15	15	10	10	5
Sand	5	2	2	--	--	--	--
Muck	--	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	8/3	4/3	--	--	--	--	--
15. Rearing Area %	10	10	10	10	5	3	--
16. Pool Cover %	10	30	30	30	12	15	10
17. Riffle Cover %	10	10	10	10	10	10	10
18. Fish Observed (fry)	>12	<6	<12	<6	--	1	--
19. Sampling	Y	N	N	N	N	Y	N
20. Potential Barriers	N	N	N	N	N	N	Y
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 6: Section begins above 2.0 vertical meter bedrock cascade. Clearcut to bank, left.

Section 7: Old growth timber along both banks. ASA spotty and rearing habitat marginal in quality with peripheral boulder pools and undercut banks the preferred types.

Section 10: Gradient and the incidence of boulders increasing. Upper portion of Section enters notch with bedrock cascade.

22. Investigators Ted Mickowski Date 6/19/83

LEVEL TWO HABITAT SURVEY
Little Ratz Creek
106-10-006

Section 12: 40m; Channel enters narrow notch characterized by bedrock/boulder cascades, culminating in three-tiered barrier falls 7 vertical meters in height.

Reconnaissance above barrier falls revealed a primarily boulder/cobble channel with a mean gradient of 2%. Several moderate deposits of spawning substrate were observed and debris pools provided good rearing; however, no fish were observed. Water width varied from 6.7-11.5 meters and localized bank failures were observed. No enhancement or rehabilitation recommended.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Little Ratz Creek 2. ADF&G Catalog No. 106-10-006

Survey Area "B": Tributary Section 2: 50m - Main Stem

Reach Number	1	1	2	2	2	2
1. Section Number	1	2	3	4	5	6
2. Section Length	35	100	30	100	100	100
3. Compass Bearing	180	190	180	170	260	255
4. Gradient	1	<.5	<.5	2	2	3.5
5. Water Quality	3	3	3	3	3	3
6. Bank Type	B	B	B	B	B	B
7. Bank Stability	2(1)	1(1)	2(2)	2(2)	2(2)	2(2)
8. Bank Vegetation	1-5	1-5	1-5	1-5	1-5	1-5
9. Debris Loading	25	20	10	15	15	20
10. Undercut Bank Length	25	--	40	45	120	100
11. Stream Width:						
Channel	3.8	35	6	2.7	3	2.2
Water	3.0	35	6	2.7	3	2.2
12. Water Type %: SS	30	30	30	25	30	30
DS	10	70	20	5	10	15
SF	60	--	50	70	60	65
DF	--	--	--	--	--	--
13. Substrate %:						
Bedrock	--	--	--	30	--	20
Boulder	--	--	30	20	20	30
Large Cobble	10	--	30	20	20	10
Small Cobble	30	--	15	15	15	5
Gravel	40	--	15	10	15	5
Sand	10	--	10	5	20	20
Muck	--	100	--	--	B10	B10
Other	--	--	B10	--	--	--
14. ASA %/Quality	5/2	--	--	--	--	--
15. Rearing Area %	--	100	60	15	40	25
16. Pool Cover %	30	20	30	30	20	20
17. Riffle Cover %	20	--	10	5	20	20
18. Fish Observed (fry)	SS	--	--	--	--	--
19. Sampling	Y	N	N	N	N	N
20. Potential Barriers	Y4	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N

Section 1: 0m; Heavy debris; pH, 6.5; water temperature, 11°C; about 5 cfs; high flow.
30m; Beaver dam 1.5 x 35m.
Section 2: Beaver pond through old clearcut for 100 meters.
Section 3: 0m; End pond; resume flow.
Section 4: 30m; Cascade over bedrock for 20 meters.
Section 5: Low velocity flow with heavy fines and forbs in stream.

22. Investigators Gerry Merrigan Date 6/19/83

LEVEL TWO HABITAT SURVEY
Little Ratz Creek
106-10-006

Section 6: 0m; Blown out beaver dam in disrepair.
100m; Increasing gradient (8%) over moss covered bedrock/boulder with heavy debris. Stream is still within unit with alder canopy. No fish observed. End Survey Area "B".

FISH SAMPLING FORM

Stream Name Little Ratz Creek ADF&G Catalog No. 106-10-006 Date 6/19/83

Identify Survey Area A Water Temp. _____ Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1130	1415	SS - 5 DV - 2		Section 6
2	1240	1400	--		Section 11
3	1017	1333	SS - 1 DV - 1 CO - 1		Section 1: 0m Midstream Log
4	1247	1315	DV - 4		Section 4: 0m
5	1103	1209	--		Survey Area "B": Section 2: 50m

This form is used to record fish caught during Level Three, Four, or Five Surveys.

PEAK ESCAPEMENT RECORD

Little Ratz Creek
106-10-006

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
9/12/70	200			
9/22/71	2020			
8/18/72	200			
9/11/74	2000			
8/26/75	2000			
9/1/76	1500			
9/28/77	2770			
8/28/78	11200			
8/30/79	3290			
9/16/80	2782			
9/21/81	1900	8		
9/20/82	5700			

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length n/a

3. Historical Fish Species No escapement data available.

Part II.

1. Stream Name Intertidal #1 2. ADF&G Catalog No. n/a
3. Latitude 55°51'30" Longitude 132°34'35"
4. Agency Unit 05 5. Mgmt. Area 584K 6. USGS Map No. Craig D-2
7. Aerial Photo No. 1979 Photos Fl. Ln. 41; Photo 67
8. Bay/Drainage Little Ratz Harbor 9. Access 1
10. Present Land Use None
11. Historical Land Use Logged about 20 years ago.
12. Stream Origin 3, 4, 5, 6 13. Estimated Flow about 3 cfs 14. Flow Stage 3
15. Stream Temperature 13.5 16. pH 5.7 17. Beaver Yes
18. Temperature Sensitivity Yes; slow flowing beaver system.
19. Barrier No 20. Weather 3

Part III.

21. Intertidal

A. Substrate: Fines 40 % Gravel/S. Cob. 40 %
L. Cob/Boulder/Bedrock 20%
B. Gradient 1 %
C. ASA % --
D. Schooling In bay only.
E. Shellfish Moderate
F. Anchorage Little Ratz Harbor

22. Comments Stream Evaluation

This stream enters the upper ITZ meadow of Little Ratz Creek, about 60 meters below the mouth on the left hand side. The stream flows through 120 meters of grass meadow rearing habitat and ends at a 1.5 x 35 meter beaver dam. Coho fry were observed in the meadow area of the stream.

23. Investigators Gerry Merrigan 24. Date 6/19/83

Intertidal #1

1. Mouth Intertidal #1 with rearing habitat in the meadow.

2. Beaver dam 1.5 x 35 meters located 120 meters from mouth.

FISH SAMPLING FORM

Stream Name Intertidal #1 ADF&G Catalog No. n/a Date 6/19/83

Identify Survey Area A Water Temp. 13.5 Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1405	1435	SS - 1		10 meters from mouth in meadow.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas none 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name In Between Creek 2. ADF&G Catalog No. none
3. Latitude 55°50'25" Longitude 132°32'00"
4. Agency Unit 05 5. Mgmt. Area 584 K 6. USGS Map No. Craig D-2
7. Aerial Photo No. 8-25-79 42 610050 279-4
8. Bay/Drainage Clarence Strait 9. Access 2
10. Present Land Use none
11. Historical Land Use none
12. Stream Origin 5 13. Estimated Flow 7 cfs 14. Flow Stage 2
15. Stream Temperature 10°C 16. pH 7.0 17. Beaver none
18. Temperature Sensitivity no
19. Barrier 2 20. Weather 1

Part III.

21. Intertidal

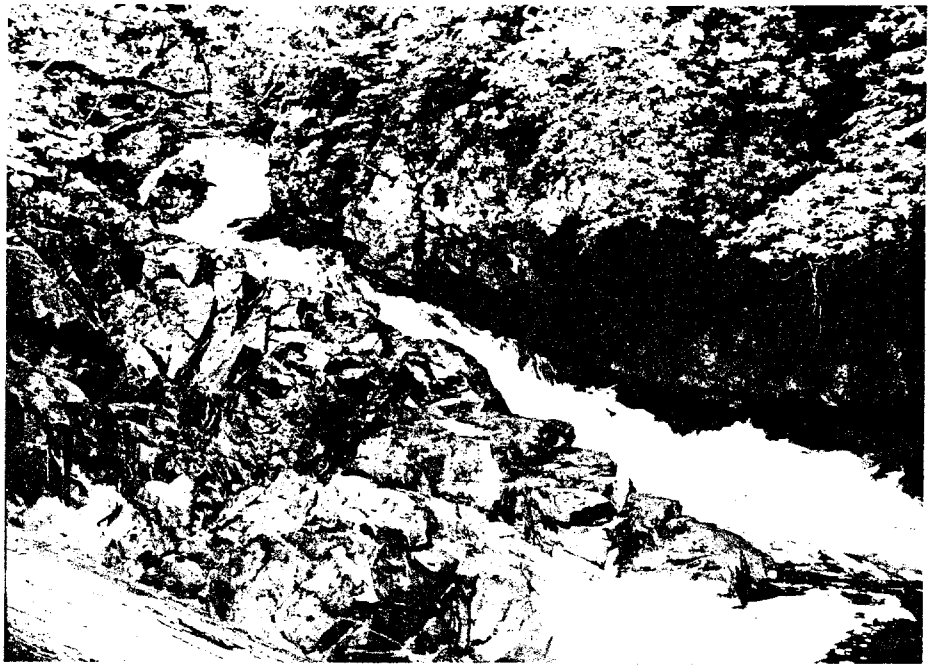
A. Substrate: Fines 0 % Gravel/S. Cob. 10 %
L. Cob/Boulder/Bedrock 90 %
B. Gradient 4.0 %
C. ASA % 3/poor
D. Schooling no
E. Shellfish no
F. Anchorage none

22. Comments Stream Evaluation

A five meter barrier cascade at the intertidal zone prevents migration of anadromous fish into the stream. Fish habitat above the falls is marginal, providing about 3% fair ASA and 5% fair rearing. Gradient is moderate to steep (6%) for 200 meters before entering a V-notch valley and terminating at a three meter barrier falls. No fish were seen or caught in this creek.

23. Investigators Randy Ericksen 24. Date 6/19/83

In Between Creek



1. Five meter cascade/falls barrier at the end of the intertidal zone.

2. Three meter barrier falls 200 meters above the intertidal zone.

FISH SAMPLING FORM

Stream Name In Between Creek ADF&G Catalog No. n/a Date 6/19/83

Identify Survey Area n/a Water Temp. 10.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1100	1135	--		Just above first barrier falls.
2	1105	1130	--		100 meters above ITZ.

This form is used to record fish caught during Level Three, Four, or Five Surveys.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas Main Stem A, Tributaries B & C 2. Section Length variable

3. Historical Fish Species PS, CS

Part II.

1. Stream Name Sal Creek 2. ADF&G Catalog No. 106-10-04

3. Latitude 55°48'40" Longitude 132°30'35"

4. Agency Unit 05 5. Mgmt. Area 584 K 6. USGS Map No. Craig D-2

7. Aerial Photo No. (8-25-79 12) 43 610050 179-202 & 42 610050 279-7

8. Bay/Drainage Clarence Strait 9. Access 01

10. Present Land Use none

11. Historical Land Use logged 5-15 years ago

12. Stream Origin 5 13. Estimated Flow 15 cfs 14. Flow Stage 2

15. Stream Temperature 11.0°C 16. pH 7.0 17. Beaver mainly activity along tributaries

18. Temperature Sensitivity no

19. Barrier 2 at end of survey 20. Weather 3

Part III.

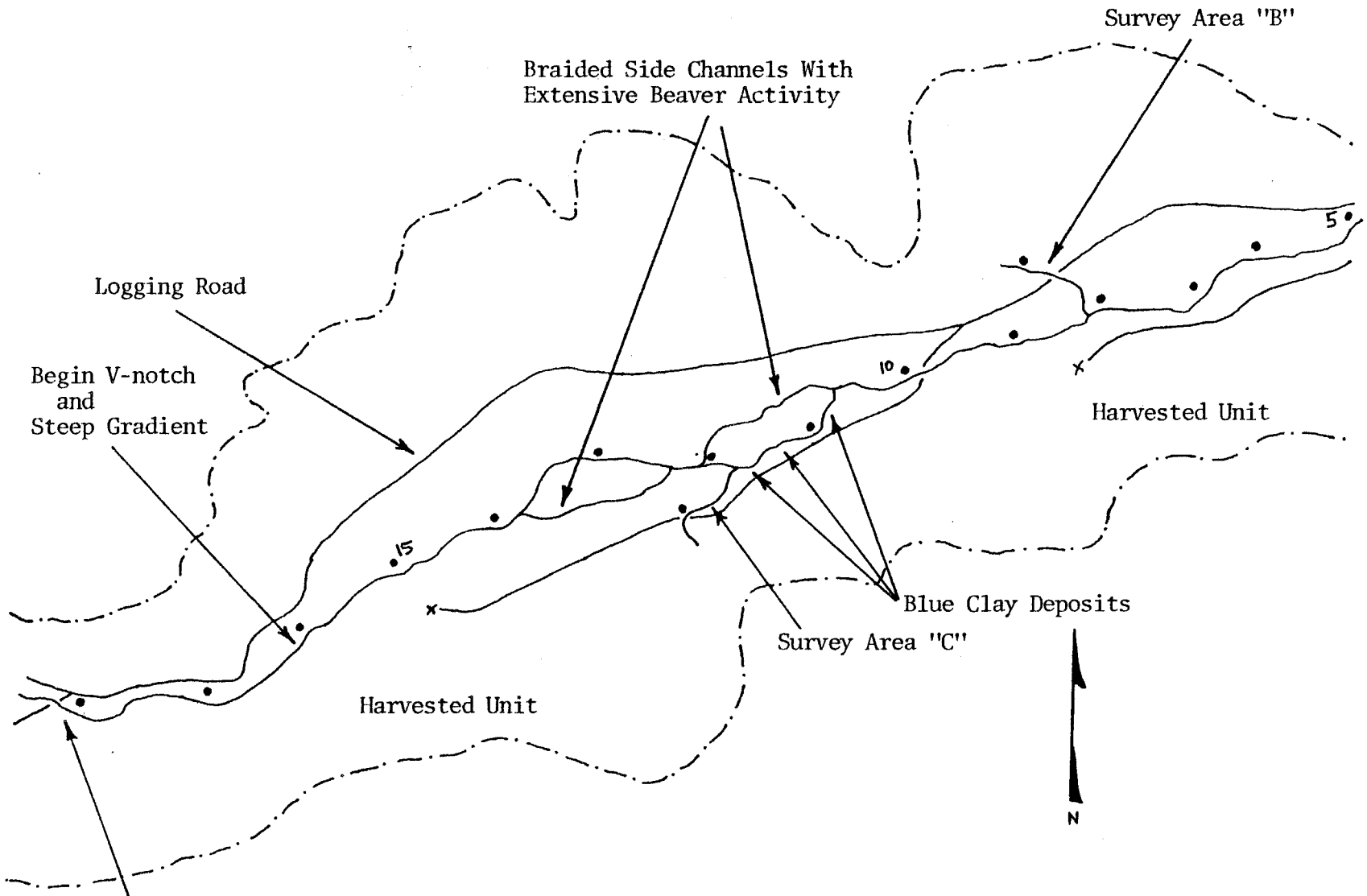
21. Intertidal

A. Substrate: Fines 15 % Gravel/S. Cob. 75 %
L. Cob/Boulder/Bedrock 10 %
B. Gradient 1.0 %
C. ASA % 40/good
D. Schooling yes
E. Shellfish no
F. Anchorage mouth of stream for skiff

22. Comments Stream Evaluation

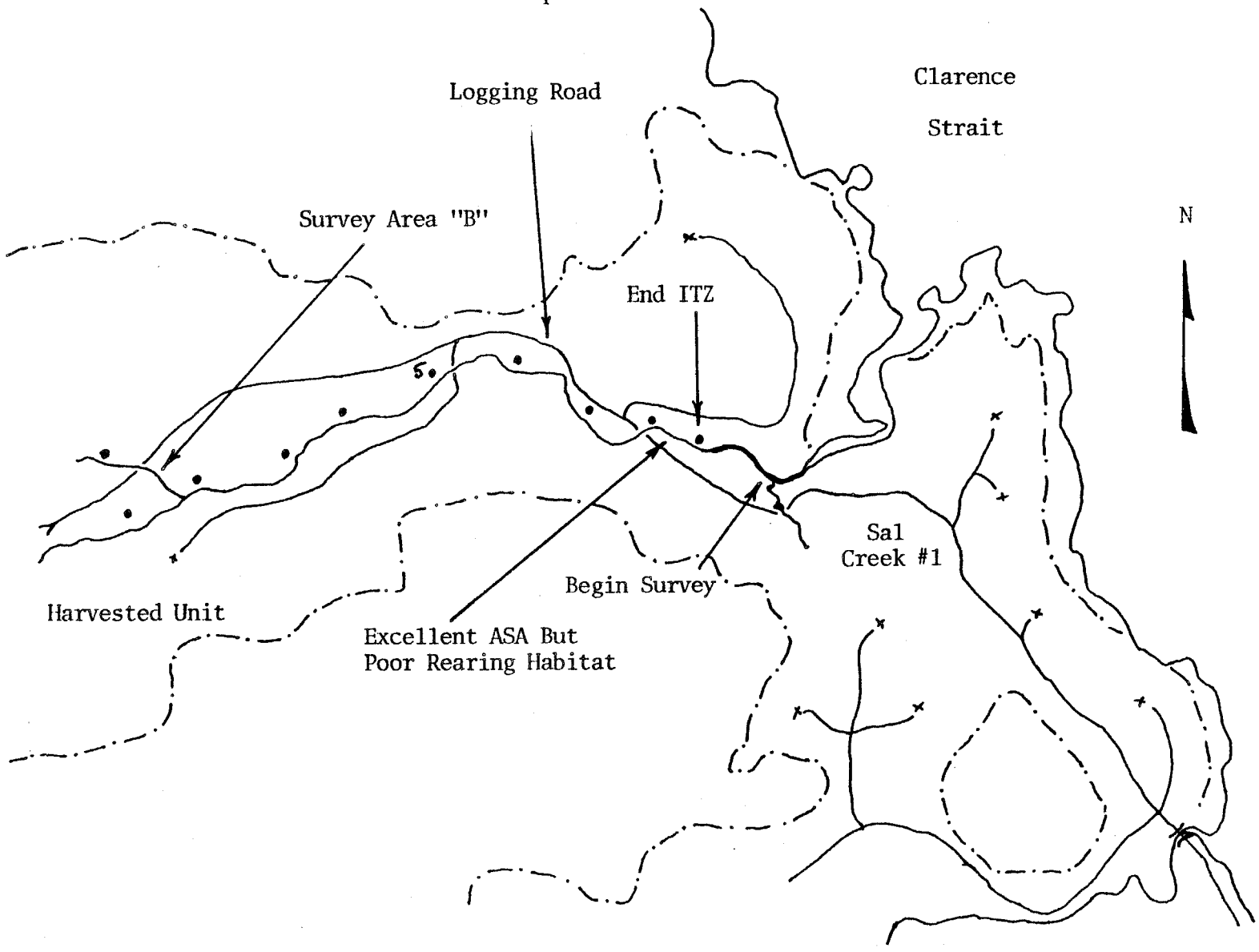
Sal Creek is a known pink and chum salmon stream. The ITZ is extensive and merges with the ITZ of Sal Creek #1. Logging has occurred along the whole length of stream surveyed, with several road crossings evident. Substrate consists predominantly of rounded, small cobble and gravel creating good to excellent ASA. Rearing habitat is generally very good. Coho fry were common throughout the second reach, but were not seen after Section 16. The middle sections of the main stem became quite braided. Beaver activity is primarily limited to the major braids and tributaries.

23. Investigators Randy Ericksen 24. Date 6/20/83



Sal Creek
106-10-04

Map #1



Sal Creek
106-10-04

Sal Creek
106-10-04

1. The stream mouth.

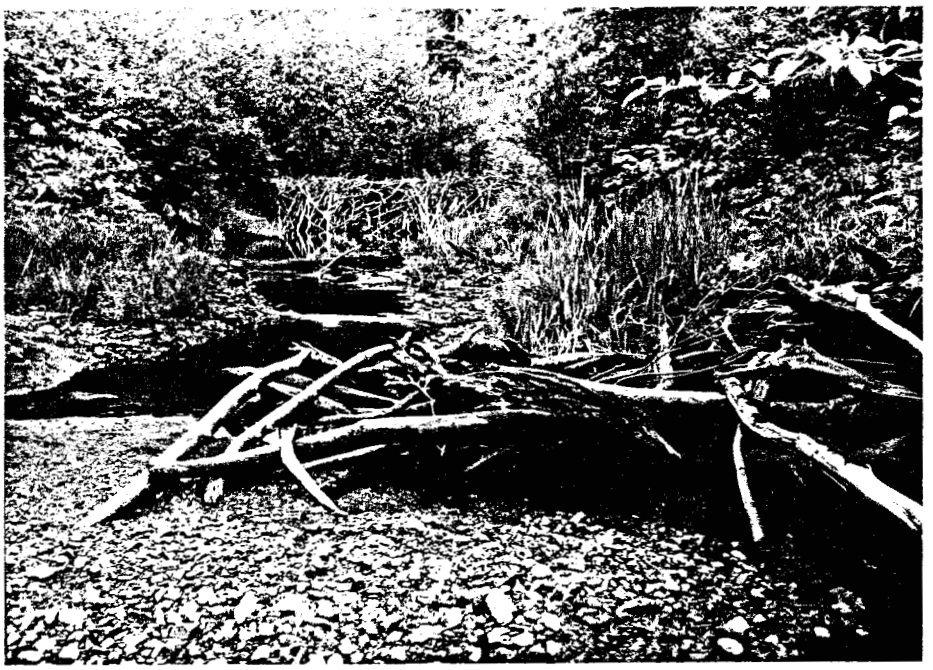
2. The ITZ looking downstream. The lower portion of the ITZ contains fine substrate and little ASA.

Sal Creek
106-10-04

3. Section 1I: This section provides excellent intertidal ASA. Taken looking downstream.

4. Section 2: Excellent ASA; fair rearing habitat.

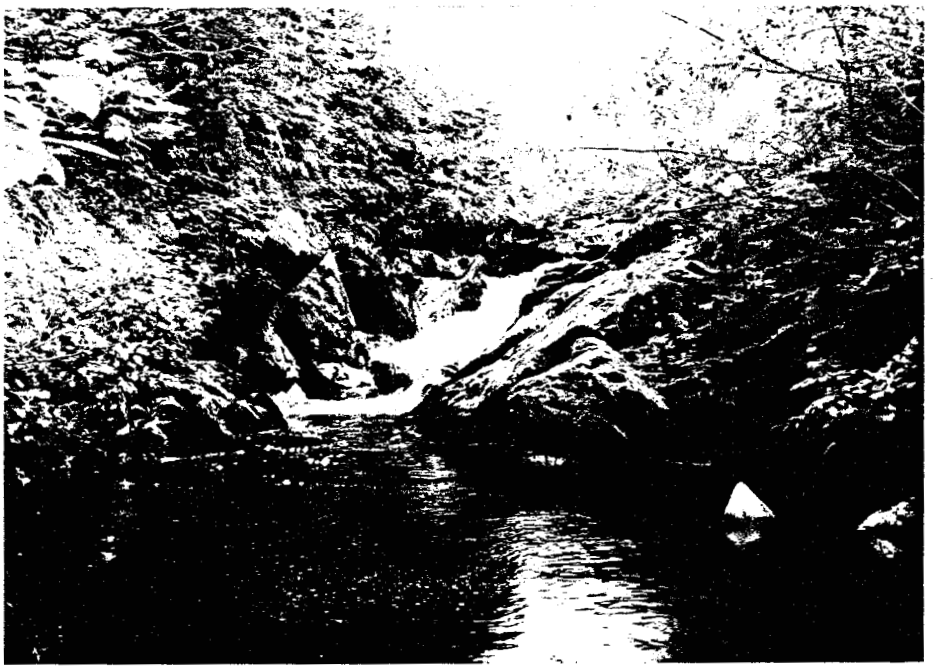
5. Section 9: Excellent pool/riffle ratio provides good rearing habitat.



6. The mouth of a major side channel with extensive beaver activity off Section 11.

Sal Creek
106-10-04

7. Section 18. Stream enters a V-notch. Gradient and substrate size increase significantly.



8. Section 18. A 7 m cascade barrier at the survey terminus.

Sal Creek
106-10-04

9. Mouth of Survey Area "B".

10. Survey Area "B". Dense riparian vegetation and debris loading provide excellent rearing habitat.

Sal Creek
106-10-04

11. Mouth of Survey Area "C".

12. Survey Area "C". Heavy riparian cover and a good pool/riffle ratio create good rearing habitat. ASA is good.

Sal Creek
106-10-04

Section	Length (m)	Width (m)	ASA %	ASA Total
Survey Area "A"				
1I	200	10.0	40	800
2	100	7.4	50	370
3	200	10.0	20	400
4	200	7.6	15	228
5	300	7.8	15	351
6	200	7.0	15	210
7	300	10.5	15	472.5
8	200	8.4	15	252
9	300	8.4	20	504
10	200	7.3	15	219
11	200	6.0	10	120
12	300	8.6	10	258
13	200	4.5	15	135
14	300	4.6	10	138
15	200	6.2	20	248
16	300	7.2	15	324
17	200	4.8	15	144
18	270	5.0	--	--
Total				$5,173.5m^2$
Survey Area "B"				
1	190	1.5	3	$8.6m^2$

Section	Length (m)	Width (m)	ASA %	ASA Total
Survey Area "C"				
1	140	2.0	10	$28.0m^2$
Total ASA				$5,210.1m^2$

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Sal Creek 2. ADF&G Catalog No. 106-10-04

Reach Number	1	2	2	2	2	2	2
1. Section Number	1I	2	3	4	5	6	7
2. Section Length	200	100	200	200	300	200	300
3. Compass Bearing	200	305	345	280	210	260	270
4. Gradient	1.0	1.0	1.0	1.0	1.0	1.5	1.0
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	A	B	B	B	B	B	B
7. Bank Stability	1/1	1/1	1/1	1/1	1/1	1/1	1/1
8. Bank Vegetation	5	1-5	1-4	2-4	1-4	1-5	2-4
9. Debris Loading	--	2	5	5	10	5	5
10. Undercut Bank Length	--	--	20	5	40	10	40
11. Stream Width:							
Channel	15.0	9.8	11.5	8.6	16.2	9.2	12.0
Water	10.0	7.4	10.0	7.6	7.8	7.0	10.5
12. Water Type %: SS	20	15	20	35	25	35	35
DS	--	--	15	15	20	10	10
SF	80	85	60	45	50	50	50
DF	--	--	5	5	5	5	5
13. Substrate %:							
Bedrock	--	5	5	10	5	5	--
Boulder	--	2	10	10	10	5	2
Large Cobble	10	13	20	15	20	20	13
Small Cobble	30	25	20	20	25	25	25
Gravel	40	35	30	25	20	35	35
Sand	20	15	10	20	20	10	20
Muck	--	5	5	--	--	--	5
Other	--	--	--	--	--	--	--
14. ASA %/Quality	40/2	50/2	20/3	15/3	15/3	15/2	15/2
15. Rearing Area %	5	10	20	25	30	30	30
16. Pool Cover %	--	--	10	10	30	20	20
17. Riffle Cover %	2	2	5	10	15	5	5
18. Fish Observed	SS	SS	SS	SS	SS	SS	SS
	CO	DV	DV	DV	DV	DV	DV
19. Sampling	N	N	N	Y	N	Y	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1I: Begin survey above mouth of Sal Creek #1 in the ITZ. This intertidal section provides good ASA.
Section 2: Stream channel is wide and straight. Very few pools.
Section 3: Increase in pools. Slight increase in substrate size.
Section 5: Good riffle/pool ratio. Increase in riparian vegetation and debris loading. Excellent rearing habitat. Coho fry abundant.
Section 6: Slight increase in gradient.

22. Investigators Randy Ericksen Date 6/20/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Sal Creek 2. ADF&G Catalog No. 106-10-04

Reach Number	2	2	2	2	2	2	2
1. Section Number	8	9	10	11	12	13	14
2. Section Length	200	300	200	200	300	200	300
3. Compass Bearing	230	240	290	190	250	270	230
4. Gradient	1.0	1.0	1.5	1.5	2.0	1.0	1.0
5. Water Quality	1	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B	B
7. Bank Stability	1/1	1/1	1/1	3/3	3/3	2/2	2/2
8. Bank Vegetation	2-4	2-5	2-5	2-4	2-5	2-4	2-4
9. Debris Loading	10	10	5	5	15	10	5
10. Undercut Bank Length	60	60	50	60	30	--	40
11. Stream Width:							
Channel	13.5	11.0	14.2	7.4	12.0	7.0	8.6
Water	8.4	8.4	7.3	6.0	8.6	4.5	4.6
12. Water Type %: SS	35	30	30	35	30	30	35
DS	10	30	30	25	25	15	15
SF	50	30	35	40	40	55	45
DF	5	10	5	--	5	--	5
13. Substrate %:							
Bedrock	--	--	--	--	--	--	--
Boulder	5	--	--	--	--	--	--
Large Cobble	10	5	--	5	5	5	5
Small Cobble	20	35	35	35	40	45	45
Gravel	35	35	40	35	35	35	35
Sand	25	20	20	25	15	15	10
Muck	5	5	5	--	5	--	5
Other	--	--	--	--	--	--	--
14. ASA %/Quality	15/2	20/2	15/2	10/2	10/2	15/2	10/2
15. Rearing Area %	30	35	40	35	40	30	35
16. Pool Cover %	20	30	15	15	35	30	10
17. Riffle Cover %	5	5	5	10	10	5	5
18. Fish Observed	SS	SS	SS	SS	SS	SS	SS
	DV	DV	DV	DV	DV	DV	DV
19. Sampling	N	N	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 8: Beaver activity along banks.

Section 9: Continue excellent rearing habitat. A moderate size tributary (Survey Area "B") enters the right bank at 185 meters.

Section 11: A major braided channel enters the right bank at 135 meters. The braid is dammed by beavers after 30 meters providing good rearing habitat for coho fry.
200m; Blue clay deposits along both banks.

22. Investigators Randy Ericksen Date 6/20/83

LEVEL TWO HABITAT SURVEY

Section 12: Increased gradient. Blue clay deposits throughout the section. 115m; A small tributary (Survey Area "C") enters the left bank.

Section 13: Channel is braided.

Section 14: Continue channel braiding. Beaver system along right bank at 200 meters. Dead cutthroat trout fry found in stream channel.

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Sal Creek 2. ADF&G Catalog No. 106-10-04

	Survey Area "A"				"B"	"C"
Reach Number	2	2	3	3		
1. Section Number	15	16	17	18	1	1
2. Section Length	200	300	200	270	190	140
3. Compass Bearing	230	220	210	300	320	190
4. Gradient	2.0	2.5	3.0	6.0	5.0	2.0
5. Water Quality	1	1	1	1	1	1
6. Bank Type	B	B	B	B	B	B
7. Bank Stability	1/2	1/2	1/2	1/1	2/2	1/1
8. Bank Vegetation	2-4	2-5	2-4	2-4		
9. Debris Loading	5	5	5	2	60	30
10. Undercut Bank Length	--	--	--	--	40	--
11. Stream Width:						
Channel	8.0	8.6	7.2	5.0	1.5	2.0
Water	6.2	7.2	4.8	5.0	1.5	2.0
12. Water Type %: SS	30	30	5	10	40	70
DS	--	10	20	10	--	--
SF	70	60	60	80	60	30
DF	--	--	5	--	--	--
13. Substrate %:						
Bedrock	--	--	5	15	--	--
Boulder	2	5	10	15	5	--
Large Cobble	13	15	20	30	35	--
Small Cobble	60	60	50	30	30	45
Gravel	25	20	15	10	30	45
Sand	--	--	--	--	--	5
Muck	--	--	--	--	--	5
Other	--	--	--	--	--	--
14. ASA %/Quality	20/2	15/2	5/2	--	3/2	10/2
15. Rearing Area %	5	10	15	5	20	80
16. Pool Cover %	--	15	5	--	60	40
17. Riffle Cover %	2	5	10	10	100	60
18. Fish Observed	SS	SS	DV	CT	SS	SS
	DV	DV	CT		DV	
	CT	CT				
19. Sampling	N	Y	N	N	Y	N
20. Potential Barriers	N	N	N	2	N	N
21. Enhancement/Rehab	N	N	N	N	N	N

Section 15: Increased gradient. Decrease in rearing habitat.
Section 17: Increase in gradient and bedrock substrate. Stream enters a V-notch.
Section 18: Sharp increase in gradient continues through a V-notch. Increase in substrate size. Survey terminated at 7 m cascade barrier.

22. Investigators Randy Ericksen Date 6/20/83

LEVEL TWO HABITAT SURVEY

Survey Area "B":

This moderate sized tributary enters Survey Area "A" at Section 9. The creek was logged along the length surveyed. Riparian cover and debris loading are dense. Coho fry were prolific along the first 50 meters. The survey of this tributary was terminated at a dramatic gradient increase. At time of survey the pH was 7.0, water temperature was 10.0°C, and flow was 4 cfs.

Survey Area "C":

This small sized tributary enters Survey Area "A" at Section 12. Beaver activity begins 100 meters up the creek providing good rearing habitat for coho fry. Logging has created dense riparian cover and debris loading. The survey of this Survey Area was terminated when the creek branched off into several small tributaries. Water temperature at time of survey was 11.0°C, flow was 3 cfs, and pH was 6.0.

FISH SAMPLING FORM

Stream Name Sal Creek ADF&G Catalog No. 106-10-04 Date 6/20/83

Identify Survey Area A & B Water Temp. 11.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1050	1730	DV - 1		Section 3
2	1135	1720	--		Section 5
3	1530	1620	--		Section 15
4	1205	1230	DV - 5 SS - 4		Survey Area "B"

This form is used to record fish caught during Level Three, Four, or Five Surveys.

PEAK ESCAPEMENT RECORD

Sal Creek
106-10-04

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
1965	200			
1970	20			
1971	220			
1972	100			
1974	1000			
1975	500			
1976	5000	60		
1977	755			
1978	12,500			
1979	--			
1980	1,836			
1981	1,250			
1982	5,000			

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas none 2. Section Length n/a

3. Historical Fish Species no escapement data available

Part II.

1. Stream Name Sal Creek #1 2. ADF&G Catalog No. none

3. Latitude 55°48'40" Longitude 132°30'35"

4. Agency Unit 05 5. Mgmt. Area 584 K 6. USGS Map No. Craig D-2

7. Aerial Photo No. 8-25-79 12 43 610050 179-202

8. Bay/Drainage Sal Creek 9. Access 1

10. Present Land Use none

11. Historical Land Use logged 5-10 years ago

12. Stream Origin 4, 5 13. Estimated Flow 3 cfs 14. Flow Stage 2

15. Stream Temperature 12°C 16. pH 5.5 17. Beaver yes

18. Temperature Sensitivity yes, small stream

19. Barrier 4 20. Weather 3

Part III.

21. Intertidal

A. Substrate: Fines 60 % Gravel/S. Cob. 35 %
L. Cob/Boulder/Bedrock 5 %
B. Gradient 2.5 %
C. ASA % 10/fair
D. Schooling yes, in Sal Creek
E. Shellfish no
F. Anchorage skiff anchored at mouth of Sal Creek

22. Comments Stream Evaluation

This small creek enters the ITZ of Sal Creek. The exclusive ITZ meanders through a small grassy area and includes a small tidal pond which provided rearing habitat for numerous coho fry. Logging has occurred along the length of stream surveyed, subsequently debris loading and riparian cover are dense. The creek provides about 10% compacted ASA for 75 meters before a large beaver dam prevents fish migration.

23. Investigators Randy Ericksen 24. Date 6/20/83

Sal Creek #1

1. ITZ looking toward the creek mouth. In the background, a small intertidal pond provides rearing habitat for coho fry.

2. Stream is logged along both banks creating dense riparian cover. In the background a large beaver dam creates a barrier.

LEVEL TWO HABITAT SURVEY

Part I.

1. Survey Areas A 2. Section Length variable

3. Historical Fish Species PS

Part II.

1. Stream Name Narrow Point Creek 2. ADF&G Catalog No. 106-10-02
3. Latitude 55°48'10" Longitude 132°29'40"
4. Agency Unit 02 5. Mgmt. Area 584 K 6. USGS Map No. Craig D-2
7. Aerial Photo No. 8-25-79 12 43 610050 179-200
8. Bay/Drainage Clarence Strait 9. Access 1
10. Present Land Use none
11. Historical Land Use logged 5-10 years ago
12. Stream Origin 5 13. Estimated Flow 6 cfs 14. Flow Stage 2
15. Stream Temperature 12°C 16. pH 6.0 17. Beaver sign, but none observed
18. Temperature Sensitivity no
19. Barrier none surveyed 20. Weather 1

Part III.

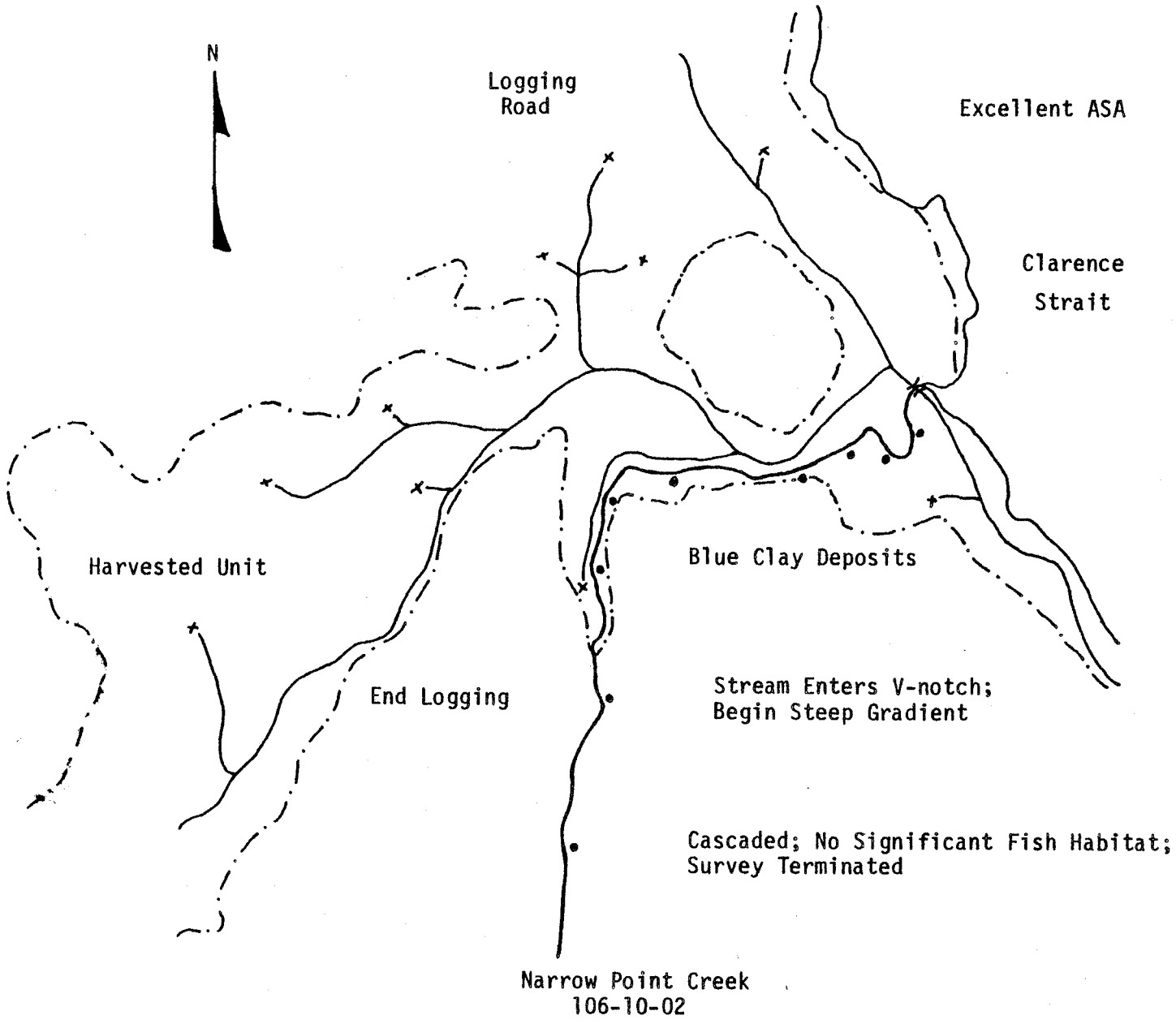
21. Intertidal

A. Substrate: Fines 0 % Gravel/S. Cob. 20%
L. Cob/Boulder/Bedrock 80 %
B. Gradient 3.5%
C. ASA % 5/poor
D. Schooling no
E. Shellfish no
F. Anchorage none

22. Comments Stream Evaluation

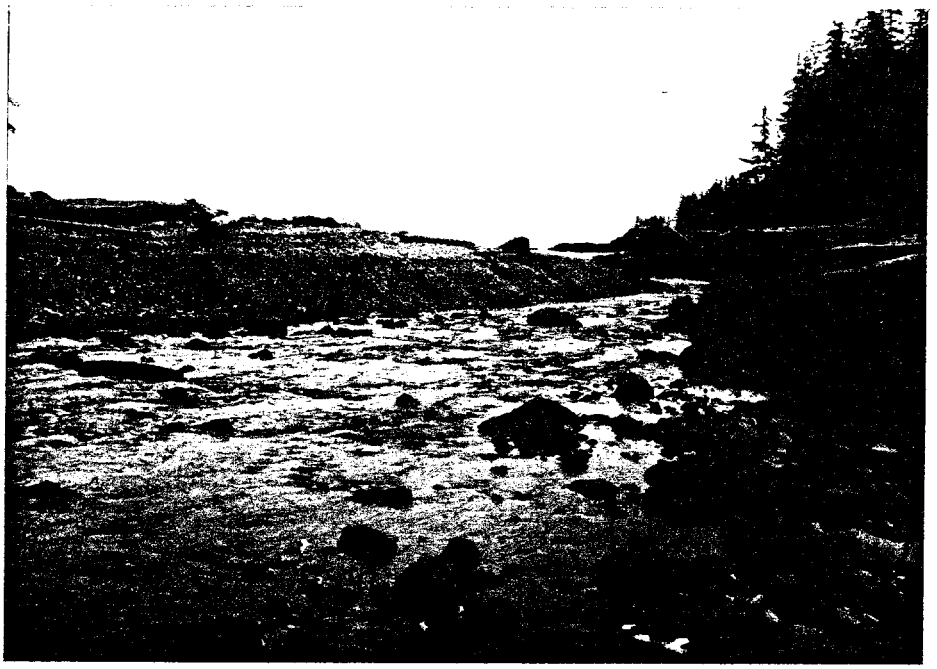
This moderate sized stream was logged along both banks the first 300 m. The stream was dark tan in color. Deer tracks and beaver sign were seen the length of the survey although no beaver communities were observed. ASA was good to excellent along the first reach consisting largely of small rounded cobble. Coho, Dolly Varden, and trout fry were present but not common. Coho fry were not seen after Section 7. Fish habitat was drastically reduced in Reach 2 when the stream entered a V-notch and became cascaded.

23. Investigators Randy Ericksen 24. Date 6/19/83


N
Logging Road
Excellent ASA
Clarence Strait
Harvested Unit
Blue Clay Deposits
End Logging
Stream Enters V-notch; Begin Steep Gradient
Cascaded; No Significant Fish Habitat; Survey Terminated
Narrow Point Creek
106-10-02

Narrow Point Creek
106-10-02

1. ITZ looking upstream toward the stream mouth. Large substrate limits intertidal ASA.



2. ITZ looking downstream.

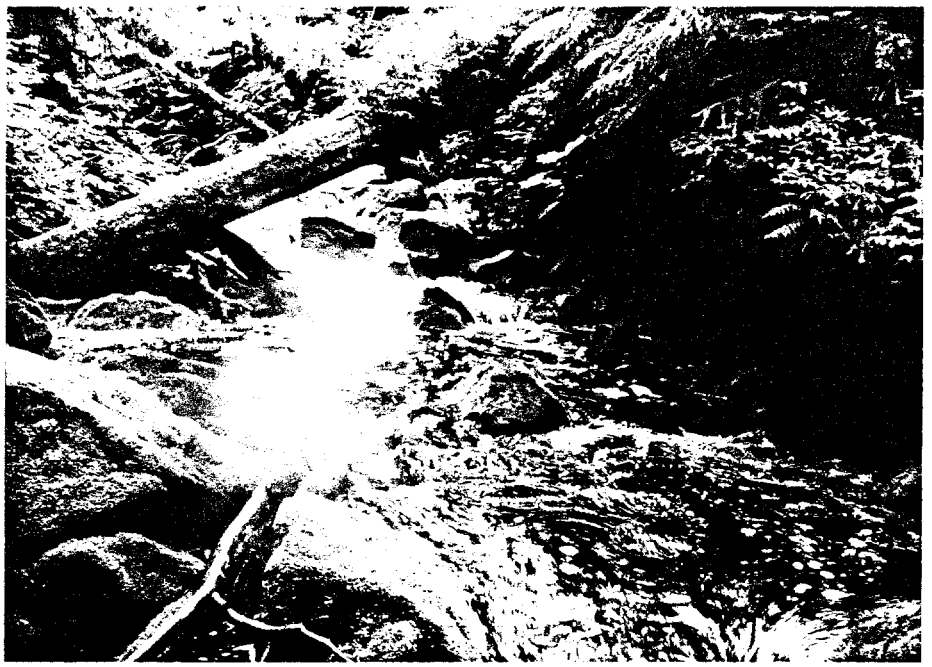
Narrow Point Creek
106-10-02

3. Section 2: Logged along both banks. Instream debris is low, subsequently pool formation is poor. Riffle over rounded cobble produces good ASA.

4. Section 4: Excellent ASA quality.

Narrow Point Creek
106-10-02

5. Section 8: Increased gradient and substrate size as stream enters V-notch.



6. Section 9: Stream travels through a V-notch. Steep gradient; no fish habitat.

Narrow Point Creek
106-10-02

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	4.5	10	45					
2	100	5.5	10	55					
3	100	9.0	10	90					
4	100	4.6	50	230					
5	300	6.5	15	292.5					
6	200	4.3	10	86					
7	200	4.8	4	38.4					
8	300	4.8	--	--					
9	300	4.3	--	--					
Total				$836.9m^2$					

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Narrow Point Creek 2. ADF&G Catalog No. 106-10-02

Reach Number	1	1	1	1	1	1	1
1. Section Number	1	2	3	4	5	6	7
2. Section Length	100	100	100	100	300	200	200
3. Compass Bearing	160	320	210	240	270	210	160
4. Gradient	5.0	3.5	3.5	1.5	2.0	2.5	3.0
5. Water Quality	4	4	4	4	4	4	4
6. Bank Type	B	B	B	A	B	B	B
7. Bank Stability	3/1	2/1	3/1	2/1	2/1	3/3	2/2
8. Bank Vegetation	3-4	3-4	3-4	1-5	1,3-5	1,3,4	1,3-5
9. Debris Loading	3	2	5	--	--	5	2
10. Undercut Bank Length	10	--	--	20	10	--	--
11. Stream Width:							
Channel	6.9	7.9	9.0	11.9	8.2	9.0	7.3
Water	4.5	5.5	9.0	4.6	6.5	4.3	4.8
12. Water Type %: SS	10	25	30	5	10	15	15
DS	10	10	10	25	5	5	--
SF	75	60	60	70	85	80	85
DF	5	5	--	--	--	--	--
13. Substrate %:							
Bedrock	5	5	10	5	5	5	5
Boulder	5	10	10	5	5	10	20
Large Cobble	25	30	30	10	40	40	45
Small Cobble	30	30	30	40	35	35	25
Gravel	20	20	20	35	10	10	5
Sand	10	5	--	5	5	--	--
Muck	5	--	--	--	--	--	--
Other	--	--	--	--	--	--	--
14. ASA %/Quality	10/3	10/2	10/2	50/3	15/2	10/2	4/2
15. Rearing Area %	30	10	10	20	2	5	5
16. Pool Cover %	5	1	2	--	--	2	--
17. Riffle Cover %	2	2	2	--	5	2	2
18. Fish Observed	DV	DV	DV	DV	DV	DV	DV
	CT	CT	CT	CT	CT	CT	CT
	SS	SS	SS	SS	SS	SS	SS
19. Sampling	N	Y	N	N	N	N	N
20. Potential Barriers	N	N	N	N	N	N	N
21. Enhancement/Rehab	N	N	N	N	N	N	N

Section 1: Begin survey just above road bridge. Logged along both banks. Moderate/steep gradient. Deer tracks along bank.
Section 2: Slight decrease in gradient.
Section 4: Excellent ASA; low/moderate gradient.
Section 6: Blue clay banks at 100 m.
Section 7: Slight increase in gradient and substrate size.

22. Investigators Randy Ericksen Date 6/19/83

LEVEL TWO HABITAT SURVEY

Part IV.

1. Stream Name Narrow Point Creek 2. ADF&G Catalog No. 106-10-02

Reach Number	2	2					
1. Section Number	8	9					
2. Section Length	300	300					
3. Compass Bearing	180	180					
4. Gradient	6.5	5.5					
5. Water Quality	4	4					
6. Bank Type	B	B					
7. Bank Stability	1/1	1/1					
8. Bank Vegetation	1,3-5	1,3-5					
9. Debris Loading	5	5					
10. Undercut Bank Length	--	--					
11. Stream Width:							
Channel	7.3	5.9					
Water	4.8	4.3					
12. Water Type %: SS	20	20					
DS	--	--					
SF	80	80					
DF	--	--					
13. Substrate %:							
Bedrock	5	5					
Boulder	25	30					
Large Cobble	50	50					
Small Cobble	15	15					
Gravel	5	--					
Sand	--	--					
Muck	--	--					
Other	--	--					
14. ASA %/Quality	--	--					
15. Rearing Area %	5	2					
16. Pool Cover %	10	5					
17. Riffle Cover %	2	5					
18. Fish Observed	CT	CT					
19. Sampling	N	N					
20. Potential Barriers	N	N					
21. Enhancement/Rehab	N	N					

Section 8: Stream enters V-notch. Steep gradient. Logging ends at 200 m. Substrate consists predominantly of large cobble and boulder.

Section 9: Continue through V-notch. Habitat cascaded; no significant fish habitat. Survey terminated.

22. Investigators Randy Ericksen Date 6/19/83

FISH SAMPLING FORM

Stream Name n/a ADF&G Catalog No. 106-10-02 Date 6/19/83

Identify Survey Area A Water Temp. 12.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1340	1550	2 - CT 1 - DV		Section 2

This form is used to record fish caught during Level Three, Four, or Five Surveys.

PEAK ESCAPEMENT RECORD

Narrow Point Creek
106-10-02

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
1979	1275			

ACKNOWLEDGEMENTS

Personnel that contributed toward this publication are Ted Mickowski, Randy Ericksen, Gerry Merrigan, Jackie Tyson, Liz Roundtree, Mark Tishman and June Grant.

APPENDIX A

Level II Aquatic Survey Method

AQUATIC SURVEY METHOD

LEVEL TWO surveys are generated by field work and should contain enough information to attempt answers to questions about what fisheries habitat is there and relative amounts of it. There should also be adequate information to determine whether potential enhancement or rehabilitation opportunities exist. The data derived at Level II is generally not statistically reliable within reasonable confidence limits.

Definition of When to Use. Level II surveys are used when general observations are needed about the fishery habitat of a specific stream. Questions like, "Where is the actual streamcourse as compared to habitat?". or even, "Approximately how much spawning area is available?"; can be answered.

How to Use. Mainly, the data is used in situations where a question comes up about an area and the user examines all the data and tries to formulate a general answer. In addition there are some specific figures that can be assimilated out of the data. A partial list of these figures follows:

1. Available spawning area (gravels between 2-128 mm in diameter) contained in the survey area.

2. Amount of the stream that is pool according to our rule that a pool is any section of water flowing at less than 30cm/sec.

3. Amount of debris in the survey area.

4. Water temperature data may be used for tracking entry of different water sources to the stream. Groundwater sources may even be noted since it is frequently two or more degrees cooler. Final interpretation of the data is the responsibility of the user.

Equipment Needed

Level Two Survey Forms
Field notebook
Pencils
Maps, USGS quads and aerial photographs
50 meter tape measure
Abney level or clinometer
Camera with film
Minnow traps (3) and bait
Dip Net

Equipment Needed (cont.)
Fish measuring ruler (metric)
Range finder
Pocket altimeter
pH meter
Scientific sampling permit

Procedure. There are several phases of data collection for Level Two survey: preplanning before starting field work; field work broken down into data that is entered once for each survey area; data that is entered once at least every 100 meters along the stream; and office work to be done after the field work.

Preplanning annd data collection before starting field work includes the following: Make required entries once for every survey area on the first part of the form.

1. Survey Areas — Use ADF&G numbering system

2. Historical Fish — List the species observed or sampled by entering the appropriate species code.

KS - king salmon	DV - Dolly Varden
SS - silver salmon	RT - rainbow trout
RS - red salmon	CT - cutthroat trout
CS - chum salmon	SM - smelt
PS - pink salmon	ST - steelhead
NP - northern pike	BT - brook trout
CO - cottids	GR - grayling
LT - lake trout	BU - burbot
SB - stickleback	OT - other

AQUATIC SURVEY METHOD

Data entered once per survey area. The following items should be recorded while at the stream once for each survey area.

Item	Explanation
1. Stream Name	Record the stream name as listed on the map or as commonly known.
2. ADF&G Catalog No.	Enter appropriate State Fish and Game Catalog number and sub-numbers for stream surveyed.
3. Latitude and Longitude	Record the latitude and longitude to the nearest five seconds for the lower end of the survey area. Use appropriate geodetic scale to interpolate precise latitude and longitude off a USGS quad. Identify the USGS quadrangle and legal description.
4. Agency Unit	Enter the appropriate land area code as assigned to each agency. 02 Stikine 10-19 BLM 03 Chatham 20-29 National Park 04 Chugach 30-39 State Park System 05 Ketchikan 40-49 F&WS 50-69 Native Corporations
5. Management Area	Enter the appropriate agency subunit code and VCU Number. (List of management area code to be developed and distributed by each agency).
6. USGS Map No.	List map number.
7. Aerial Photo No.	If an aerial photo is used, record the flight line, roll, photo, year and grid.
8. Bay/Drainage	Name bay or stream
9. Access	Enter up to two codes from this list: 1. Roaded (list road number) 2. Unroaded

AQUATIC SURVEY METHOD

Item	Explanation
10. Present Land Use	Note any activities associated with man's present use or planned use such as logging, mining, roads, dump sites, etc.
11. Historical Land Use	Note any evidence of historical land use such as logging (and approximate year), mining, abandoned cannery sites, etc.
12. Stream Origin	Enter appropriate codes describing source of water at that point on the stream. 1 - lake 2 - glacial 3 - groundwater 4 - muskeg 5 - surface runoff 6 - subsurface runoff 7 - other
13. Estimated Flow	Embody method.
14. Flow Stage	Enter best estimate as to flow at time of survey. (See glossary for diagram of terms). 1 = low; 2 = normal; 3 = high
15. Temperature	Hand-held thermometer to nearest degree C^{o}.
16. pH	pH, record to nearest .5 increment using a Universal Wide-range color wheel or electronic pH meter. The pH should be taken above the intertidal zone.
17. Beaver	Note if beaver were present in the watershed.
18. Temperature	A temperature sensitive stream is identified as a stream where water temperature will rise to undesireable levels if shade producing canopy is removed. Stream gradient (measured elsewhere), substrate composition (measured elsewhere) and stream water source are critical factors affecting temperature increases. Stream orientation (south-southwesterly orientated streams have the highest degree of susceptibility for adverse temperature changes) is also critical. Only streams between 55-57° latitude (Ketchikan to Sitka) need to be included in temperature sensitivity analysis since adverse increases have not been found to be present above 57° latitude (Sheridan 1977). Streams with average widths greater than 75 feet should also not be included, since the effect of tree shading is minimized as the stream becomes larger.

AQUATIC SURVEY METHOD

Item	Explanation
19. Barrier	Note whether or not a barrier is present. Specifics listed in survey comments.
20. Weather Conditions	Enter the appropriate code from the key. If there is an unusual situation, enter in comments. 1 - rain 2 - clear 3 - overcast 4 - snowing 5 - fog 6 - partly cloudy
21. Intertidal Zone	An intertidal zone is defined as that portion of the stream channel between the high, high water mark (generally tree line) to the edge of the saltwater (if available, low, low water mark). If there is an intertidal zone within the survey area take the following data: A. Gradient in the intertidal zone measured with an Abney level or clinometer. Record to nearest .5 percent. B. Bottom Type: estimate % fines (2mm or smaller) % gravel/small cobble (2-128mm) % large cobble/boulders/bedrock (128mm+) the sum should equal 100% C. Available spawning area: estimate quality as poor, fair, good or excellent. D. Note yes or no whether schooling areas are present in the estuary or lower sections of the stream. If yes, describe in comments. E. If survey coincides with low tide, note yes or no shellfish potential, and if yes, describe in comments. F. Describe known anchorages, or ones used during the survey, and their exposure.
22. Comments	Add any comments that are important to the aquatic resources or required to answer other items on the list.
23. Investigators	Enter names of people doing the field work.

AQUATIC SURVEY METHOD

Item	Explanation
24. Date	Enter numerical designation of Month/Day/Year
Photos	Take one black and white print photo at each survey area and every readily identifiable change in habitat type, unique situation, barrier falls and the intertidal area. Photos will be taken facing upstream unless specifically noted in the photo records.
	Data Entered Once Every Section
Reach	Number each successive reach, defined as section of stream of similar gradient, substrate and bank type. Boundaries between reaches may be definite like a migration barrier, or they may be very subtle gradual changes of habitat.
1. Section Number	The stream is divided into sequential samples every 100 meters. Numbering should start at the furthest downstream point and increase consecutively upstream. Sections in the intertidal zone should be labeled with the code "I".
2. Section Length (m)	100 m. in length. Note if less than 100 m.
3. Compass Bearing	Sight upstream for bearing at start of section.
4. Gradient	Measure gradient over the section being surveyed with an Abney level or clinometer. Record to the nearest percent.
5. Water Quality	Enter appropriate codes from key:
	a. color: 1-clear 2-glacial 3-light tan 4-tan
	b. turbidity, record how deep you can see: 1-clear (no noticeable suspended material) 2-slight (noticeable suspended materials, bottom features are easily discernable) 3-turbid (suspended materials are not noticeable, bottom features are difficult or impossible to discern)

6.	Bank Type	Record lower bank type for left and right banks using key: A 1 GS-gently sloping (100%) B or 2 SS-steeply sloping (100%-200%) C 3 U-Undercut
7.	Bank Stability	Rating. Enter appropriate code from key left and right banks: 1-good stability--banks consist almost entirely (90%) of (1) soil with well developed vegetation cover/root masses and/or (2) exposed soil with high proportion (65%) of rock material and/or (3) bedrock. No evidence of active erosion. 2-fair stability--banks consist of (1) 50% of bank cover with well developed vegetation cover/root masses and/or (2) exposed soil with moderate proportion (40-65%) of rock and/or (3) 50% of the banks consist of bedrock. Evidence of some erosion within the last year exists.
8.	Bank Vegetation	Qualitatively describe the upland or upper streambank vegetation, other than the canopy, according to the following: 1-conifers (spruce/hemlock) 2-hardwoods (alders) 3-shrubs (salmonberry, blueberry, etc.) 4-forbs (skunk cabbage) 5-grasses/sedges (muskeg)
9.	Debris Loading	Percent area covered by debris. Indicate whether the debris is composed of small (10 cm diameter) or large (10 cm diameter) materials. This includes both suspended and submerged debris.
10.	Undercut Banks	Record length of undercut bank (in meters) for each bank.
11.	Water Width	A) record active channel width to the nearest 1/10 meter. B) Record water width to the nearest 1/10 meter. Width of multiple channels

11. continued

should be recorded separately

C) Identify (1) channel braiding
(2) back-water sloughs and
(3) off-channel areas.

12. Water Type. Partition each section by indicating the percentage of each of the following water types:

SS- shallow (50 cm deep)
slow (30 cm/sec)

SF- shallow (50 cm deep)
fast (30 cm/sec)

DS- deep (50 cm deep)
slow (30 cm/sec)

DF- deep (50 cm deep)
fast (30 cm/sec)

13. Substrate

Indicate the percent of each stream bottom substrate type according to the following:

(1) boulders (250 mm, 10")
(2) cobble (65-250 mm, 2.5-10")
(3) gravel (2-64 mm)
(4) sand (0.1-2.0 mm)
(5) organic muck
(6) other, coded as (a) bedrock (b) sunken log (c) other

14. ASA/Quality

Percent available spawning area.

Indicate gravel quality as:
(1) compact
(2) moderate compact
(3) loose

15. Rearing Area %

Within the section, the percent of rearing type cover is estimated to give a total of pools, undercut banks and suitable habitat.

16. Pool Cover %

The percent of riparian vegetation hanging over the pools within the section.

17. Riffle Cover % — The percent of riparian vegetation hanging over riffles within the section.

18. Fish Observed — The species of fish is indicated and presence or absence noted by yes or no or the observer may indicate relative numbers per section.

19. Fish Sampling — Enter yes or no if traps were set in the section. Fill out form to show catch data.

20. Potential Barriers — Enter yes or no if a fish migration barrier is present. If yes, record the type of barrier.

1-velocity	4-beaver dam
2-falls	5-manmade
3-debris jam	6-other

Photograph the barrier.

21. Enhancement/Rehabilitation — Enter yes or no as to potential for stream improvement work and discuss in narrative.

Office Work Done After Fieldwork. After completing fieldwork, the following things should be done to the data in the office.

1. Diagrammatic Map — Draw a single line schematic map using the information from the survey. The scale should be 4" to the mile at a minimum. One way to do it is trace the streamcourse over an aerial photo, then mark on the map:

   a. Notations marking boundaries of the 100 m. sections.

   b. Upper limits of spawning area if known.

   c. Barriers.

   d. Upper limits of anadromous habitat if known.

1. Diagrammatic Map (cont.)

   e. Obvious soil hazard conditions such as V-notches, slumps, mass wasting, blue clay, braided stream channels and windthrow areas as they relate to the stream.

   f. Water flow direction.

   g. Where all tributaries enter.

2. Narrative

   Write a general narrative highlighting:

   a. Special entries on the diagrammatic map.

   b. Summarizing anything unusual from the comments section.

   c. Generalize about the quality of spawning and rearing habitat.

   d. Explain any deviations from the prescribed survey procedure.

3. Photos

   a. Mount photos on paper and type a clear legend under each one. Include in the legend:

      (1) date
      (2) survey area by river mile
      (3) section number

   b. Establish a filing system for the negatives.

4. Binding

   Arrange forms and photos for an entire stream or survey area into a booklet. Put narrative first, then schematic map(s), forms in sequential order with its accompanying photos. If the stream is divided into survey areas, arrange all forms relating to section A first, followed by B, etc.

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