ADF&G TECHNICAL DATA REPORT NO. 106
(Limited Distribution)

STATE OF ALASKA
Bill Sheffield, Governor

REVISED ANADROMOUS STREAM CATALOG OF SOUTHEASTERN ALASKA

District 106

North Prince of Wales Island

Volume I

By:
John Edgington
and
Ted Mickowski

February 1984

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 revisions will be made via errata sheets. Major revisions will be made in the form of revised reports.

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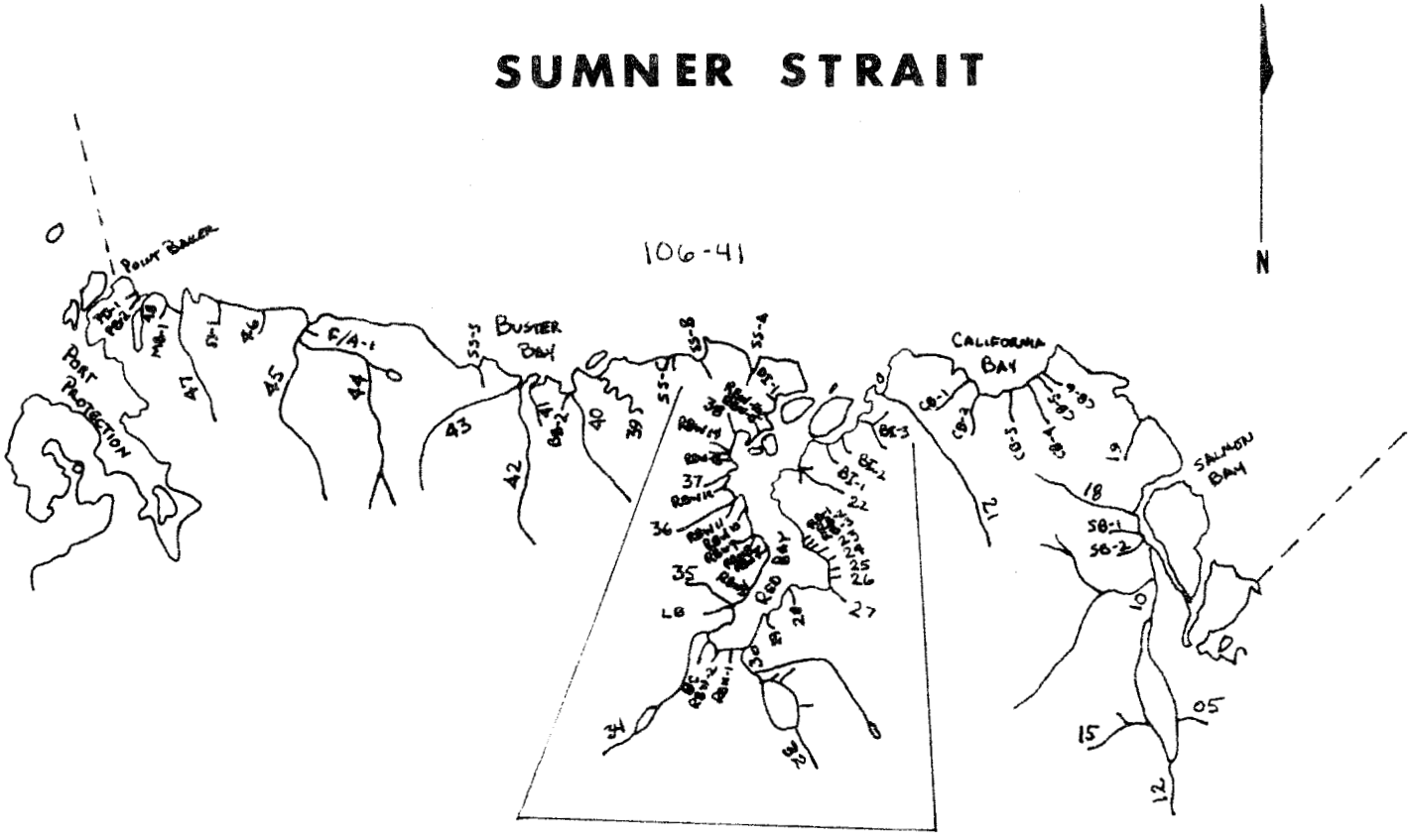
Explanation

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 organized the listings by the Bay/Drainage listed for each stream.

Mae Tanner
July 21, 2006

SUMNER STRAIT



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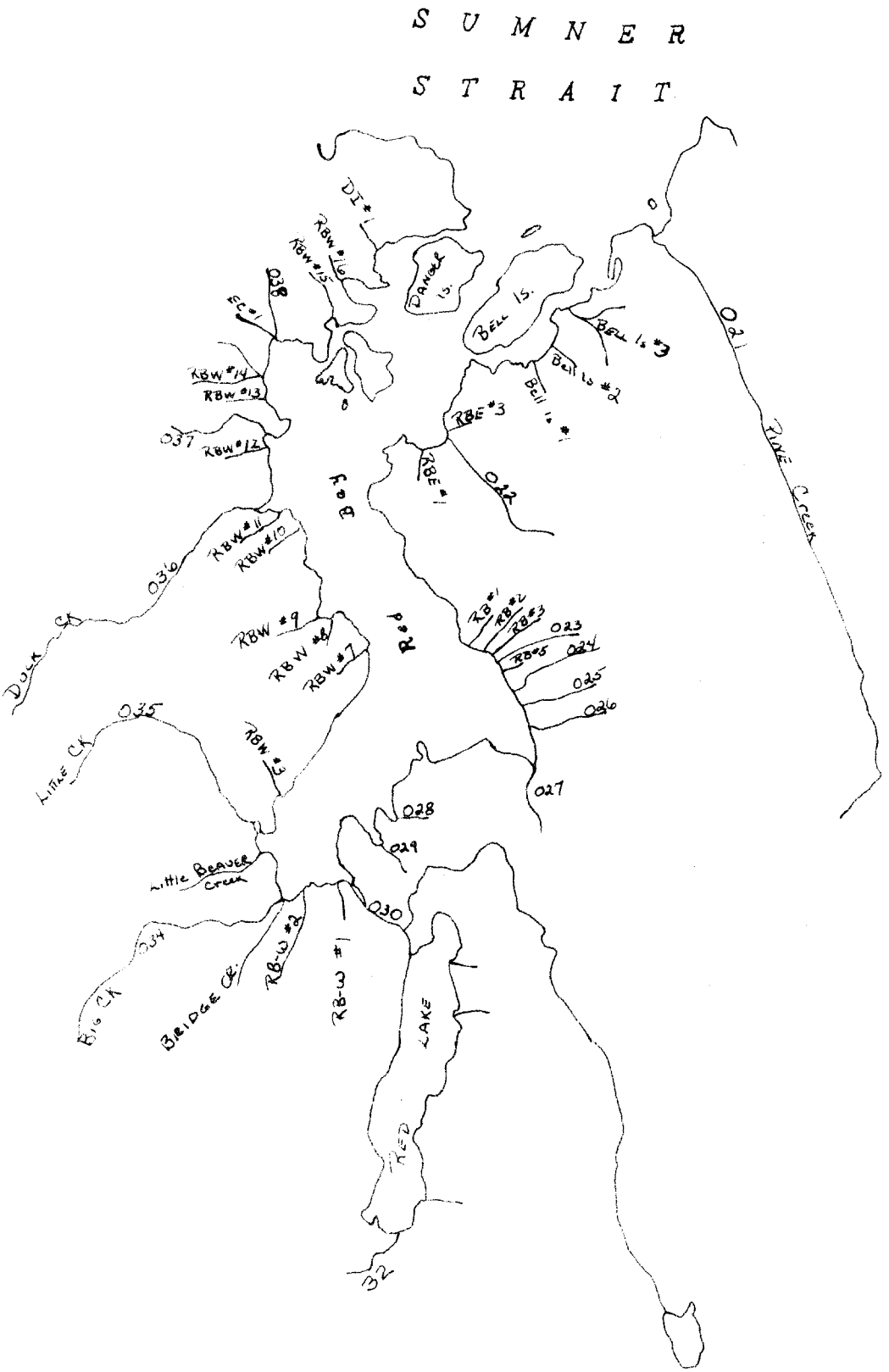
PRINCE OF WALES ISLAND


SUMNER
STRAIT
DI #1
RBW #16
RBW #15
038
EC #1
Danger Is.
Bell Is.
Bell Is #3
Bell Is #2
Bell Is #1
021
Pine Creek
RBW #14
RBW #13
037
RBW #12
RBE #3
RBE #1
042
Bay
RBW #11
RBW #10
036
Duck Ck
RBW #9
RBW #8
RBW #7
Bay
RB #1
RB #2
RB #3
023
RB #5
024
025
026
035
Little Ck
RBW #6
027
028
029
Little Beaver Creek
030
034
Big Ck
Bridge Ck
RB-W #2
RB-W #1
Red Lake
032

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Pt. Baker #1 3. Lat. 56°21'15"

2. ADF&G Catalog No. 3. Long. 133°36'25"

4. Agency Unit 05 5. Mgmt Area 527 K 6. USGS Map No. Psg B-5

7. Aerial Photo No. 71-11-5-143

8. Bay/Drainage Sumner Straits 9. Access 4, 5, 7 10. Camping 4

11. Present Land Use a. None 11b. bear/deer trails, heavy ~~blowdown~~

12. Historical Land Use None

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow _____, _____, _____, _____, _____, estimated, less than 1 cfs
method width depth length constant time grid flow

16. Temp. Sensitivity Muskeg source, low flows.

17. Beaver 5 18. Type aquatic Veg. 1, 4 19. Density Aquatic Veg. 1

20. Adult Salmon N 21. Intertidal a. gradient 1%

b. bottom type % fines 80 % c. ASA 0

gravel small cobble 5 % d. schooling Y

large cobble/boulders/bedrock 15 % e. shellfish N

f. small boat anchorage in deep, narrow bight off rocky shoreline

22. Comments

1. 21 d. Deep water cove at base of intertidal zone.
2. High tide 0853 hours.
3. ITZ is approximately 75m long with heavy debris.
4. Above ITZ: Stream enters wooded area with dense canopy at 164° compass bearing. The clear water stream has a pH of 6.5, 10°C temperature, and a water channel width of 1 - 1 1/2m. The substrate is moss covered boulders and sand with skunk cabbage growing in stream channel. No fish or ASA observed. Side slopes became 45% in narrow ravine. Stream flow disappears under roots and debris for short sections, and gradient increases to 8-10% approximately 75m above the intertidal zone.

23. Investigators Murph/Mickowski

24. Date 8/13 /82 25. Time 0950 (start) 1015 (end) 26. Weather 2

27. Photos

R-10 2609-3a (1/81)

Pt. Baker #1

1. Approximately 50 Meters Above Intertidal Zone Looking Upstream.

2. Upper Intertidal Zone With Heavy Driftwood and Blowdown Debris.

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X
3. Historical Fish Species No escapement data available.
4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name a. Point Baker #2 b. ____ Lat. 56°21'05"
2. ADF&G Catalog No. ____ 3. Long. 133°36"20"
4. Agency Unit 05 5. Mgmt Area 527 K 6. USGS Map No. Psg B-5
7. Aerial Photo No. 71-11-5-143
8. Bay/Drainage Sumner Straits 9. Access 4, 5, 7 10. Camping 4
11. Present Land Use a. NONE 11b. bear/deer trails
12. Historical Land Use NONE
13. Stream Origin 4 6 5 3 14. Flow Stage 2
15. Flow ____ (method), ____ (width), ____ (depth), ____ (length), ____ (constant), ____ (time), ____ (grid), <1 cfs (flow)
16. Temp. Sensitivity muskeg source, low flows
17. Beaver 5 18. Type aquatic Veg. 1, 4 19. Density Aquatic Veg. 2
20. Adult Salmon N 21. Intertidal a. gradient 2%
b. bottom type % fines 85 %
gravel small cobble 5 %
large cobble/boulders/bedrock 10%
c. ASA 0
d. schooling N
e. shellfish N (a few clams)
f. small boat anchorage along left bank of cove
22. Comments
1. Low tide at 1435 hours
2. ITZ is approx 160m long with sand/muck substrate. CO observed.
3. Above ITZ: Compass bearing 193°-clear stream enters moderate forest canopy at 1% gradient, 90% SS pools, and a sand/muck/sunken debris substrate with dense growth of skunk cabbage in a 0.5-1.0m wide stream channel. A moderate floodplain occurred between side slopes of approx. 25%. 50m upstream a short stretch of gravel/sand, but 80% debris loading. No SS nor ASA observed. Temperate 10.5°C. Stream is marginal habitat for salmon.

23. Investigators Murph/Mickowski
24. Date 8 / 13/ 82 25. Time 1055 (start) 1125 (end) 26. Weather 2
27. Photos ____

R-10 2600-3a (1/81)

Pt. Baker #2

1. Upper Intertidal Zone Showing Heavy Driftwood and Debris in Channel.

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A, B 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Point Baker #3 3. Lat. 56°21'00"

2. ADF&G Catalog No. 106-41-48 3. Long. 133°36'05"

4. Agency Unit 05 5. Mgmt Area 527 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-11-5-143

8. Bay/Drainage Sumner Strait 9. Access 4, 5, 7 10. Camping 4

11. Present Land Use a. None 11b. bear/deer trails; human use for sport fish

12. Historical Land Use None

13. Stream Origin 1 3 4 5 6 14. Flow Stage 1

15. Flow ____ (method), ____ (width), ____ (depth), ____ (length), ____ (constant), ____ (flow estimated time), ____ (grid), <3.5 cfs (flow)

16. Temp. Sensitivity Lake source, low flows, shallow stream & beaver impoundments

17. Beaver 1 18. Type aquatic Veg. 1, 4 19. Density Aquatic Veg. 1

20. Adult Salmon N 21. Intertidal a. gradient 6%

b. bottom type % fines 80 %

gravel small cobble 5 %

large cobble/boulders/bedrock 15 %

c. ASA 0

d. schooling Y

e. shellfish N

f. small boat anchorage in small cove in front of intertidal zone along left bank.

22. Comments

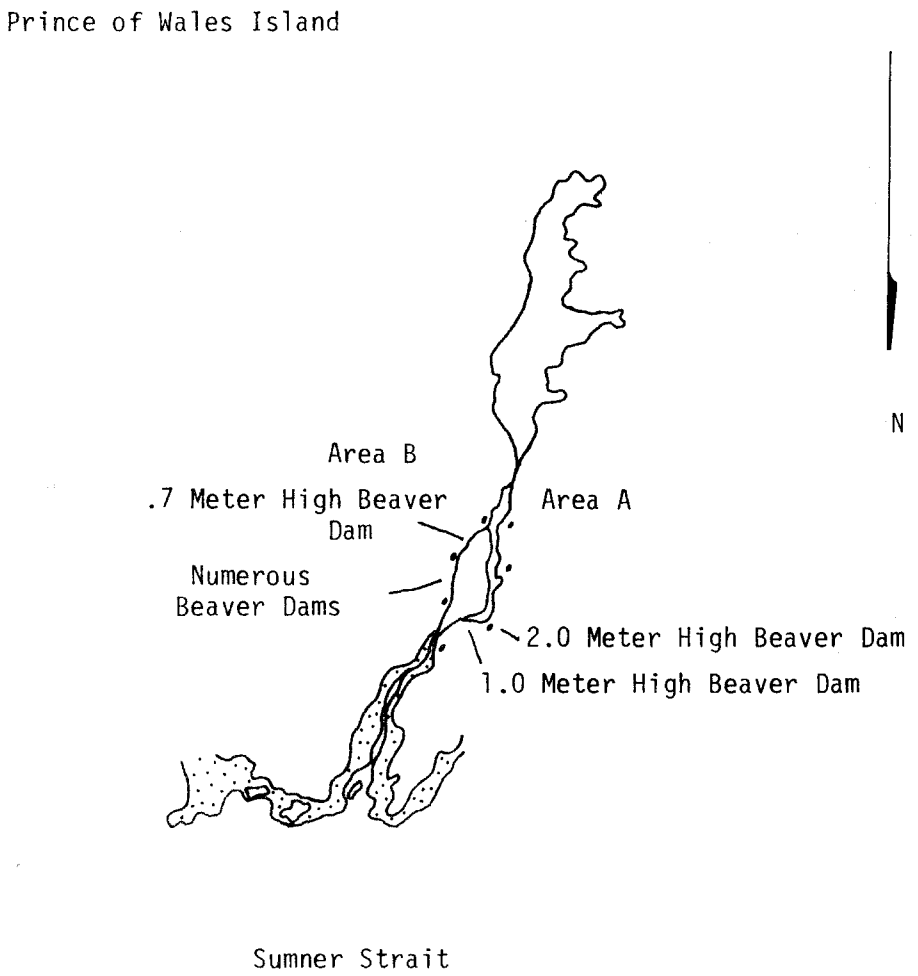
1. Low tide at 1435 hrs
2. 21d. Schooling in bay in front of intertidal zone

23. Investigators Murph/Mickowski

24. Date 8 /13 /82 25. Time 1210 (start) 1500 (end) 26. Weather 2

27. Photos

R-10 2600-3a (1/81)


Prince of Wales Island
N
Area B
.7 Meter High Beaver Dam
Area A
Numerous Beaver Dams
2.0 Meter High Beaver Dam
1.0 Meter High Beaver Dam
Sumner Strait

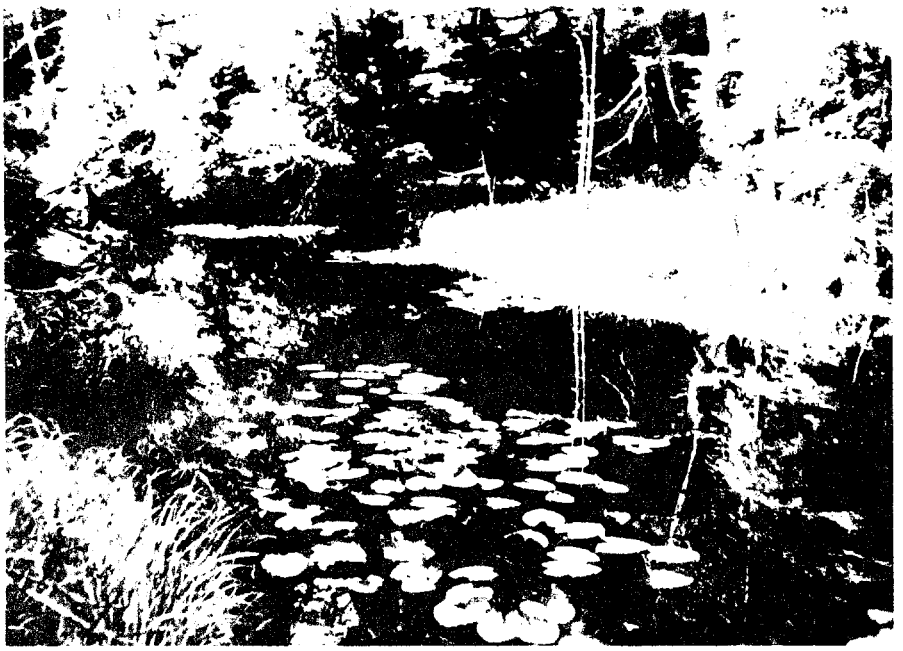
1. Intertidal Looking Upstream. Channel Forks Mid Photo. Both Channels Contain Numerous Beaver Dams Culminating in a .6 Mile Long "Lake".

2. Section 1I: Right Fork. A Short Section of Boulders and Cobbles. Terminates at the Base of the First Dam.

3. Section 1I: Left Fork Series of Pools Connected by Less Than 2 CFS Flow. Heavy Sedimentation Throughout Section.

4. Section 2: Right Fork. 2 Meter High Active Beaver Dam. Slough-like Impoundment Extends to the Lake Proper.

106-41-48



5. Section 2: Right Fork. Slough-like Impoundment is Characterized by Heavy Vascular Plant Colonization. Excellent Trout Habitat. No Coho Sighted.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Point Baker #3 (with lake) ADF&G Catalog No. 106-41-48

				Area A		Area B		
1. Section No.			1I	2	3	1I	2	3
2. Compass Bearing			149	180	130	149	132	191
3. Gradient			9	2	0	9	3	3
4. Temperature:	Air		15.5	16	16	16	16.5	16.5
	Water		10.5	18	18	14	18	18
5. Water qual:	a. color		1	1	1	1	1	1
	b. turbidity		1	1	1	1	1	1
	c. pH		--	7.5	7.5	--	7.5	7.5
6. Streambottom Substrate		1	30	--		30	15	
		2	5	--		10	10	
		3	5	--		10	5	
		4	20	--	Beaver Pond	30	15	Beaver Pond
		5	10	22		15	20	
b) sunken logs		6	25	70		5	30	
c) decaying Veg		7	c) 5	b) 3 c) 5		--	c) 5	
7. ASA	a. percent		0	0	0	0	0	0
	b. quality		--	--	--	--	--	--
8. Water Width	a. channel		24.5	4.5	17	24.5	16	14.5
	b. water		10	4.5	17	10	16	14.5
	c. floodplain		1	1	1	1	1	1
9. Stream Pools	a. percent		65	100	100	70	100	100
	b. category		SS	DS	DS	SS	SS	DS
10. Rearing Area			35	80	80	25	80	80
11. Debris Loading			15	4	6	8	15	8
12. Potential Barriers			N	N	N	N	N	N
13. Enhancement/Rehab			N	N	N	N	N	N
14. Streambank Veg.			1-5	1&3-5	1&3-5	1-5	1-5	1-5
15. Upper Bank	a. Left		38	37	35	38	23	25
	b. Right		24	31	30(est)	24	18	35
b. indic	Left		N	N	N	N	N	N
	Right		N	N	N	N	N	N
c. veg	Left		N	N	N	N	N	N
	Right		N	N	N	N	N	N
16. Lower Bank	Left		GS	SS	SS	GS	GS	U
	Right		GS	U	SS	GS	GS	U
17. Stab rating	Left		1(2)	1(1)	1(1)	1(2)	1(2)	1(1)
	Right		1(3)	1(3)	1(1)	1(3)	1(2)	1(1)
18. Stream Canopy Cover			3	2	3	3	3	2
19. Fish Species		CO	>6			>6		
	Unident. Trout		--	2	--			
		SB				>40	2	
		CT						2
20. Sampling			Y	N	N	N	N	Y

21. Comments

1. 38.5m up ITZ channel forks. ITZ ends 40m up right channel and 68m up left channel. Left channel is larger (13.5m), but the right channel has more flow (approx. 1.5 cfs vs. 2 cfs).

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

2. Area A (Right Fork)

Section 1I: A steep boulder/cobble "bed" flows 68.5m (photo 2) from the base of a 1.0m high beaver dam, converging with the left fork in the ITZ. Section 2 is delineated by a 2.0m high beaver dam (photo 4) and its resultant impoundment (photo 5). Slough-like reservoir appears "stable" (i.e., nearly constant water levels) and is characterized by dense vascular plant colonization (i.e., lily pads, elodea, and other "pond weeds").

3. Area B (Left Fork)

Section 1I: Typically a wide channel with very low flow (i.e., less than 2.0 cfs), primarily in the form of interconnected pools (photo 3). Heavy sedimentation and copious debris throughout. "Flood channels" from the impoundment on the right fork enter channel via the right bank at 72m and 100m.

Section 2: 13m; Active beaver dam impounds shallow pond with copious aquatic "grasses".
68m; Second beaver dam impounds pond with dense "in stream" skunk cabbage.
90m; 1.3m beaver dam.

Section 3: 21m; 0.7m high beaver dam impounds channel to juncture with right fork at 46m.

Above junction of right and left forks, slough-like impoundment extends several hundred meters to "lake" proper. Habitat was similar to that shown in photo #5.

Reconnaissance of "tributaries" entering the lake revealed them to be muskeg seeps with dense overhanging vegetation. No ASA or SS were observed.

Cutthroat and stickleback were plentiful and fishing tackle was found indicating occasional sport use. Aquatic insects and freshwater mussel shells were also abundant.

FISH SAMPLING FORM

Stream Name Point Baker #3 ADF&G Catalog No. 106-41-48 Date 8/13/82

Identify Survey Area A & B Water Temp. 18°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1310	1535	14 SB	--	Right fork impoundment
2	1425	1525	7 SB	--	Left fork
3	1430	1530	--	--	Juncture of forks in slough-like impoundment

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

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No Escapement Data Available.

4. Section Length --

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Merrifield Bay #1 3. Lat. 56°21'05"

2. FWS&G Catalog No. -- 3. Long. 133°35'35"

4. Agency Unit 05 5. Mgmt Area 529 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-11-5-143

8. Bay/Drainage Merrifield Bay 9. Access 4, 5, 6 10. Camping 4

11. Present Land Use a. None 11b. None

12. Historical Land Use None

13. Stream Origin 3 4 5 6 14. Flow Stage 1

15. Flow ____, ____, ____, ____, ____, ____, ____, 0
method width depth length constant time grid flow

16. Temp. Sensitivity muskeg source

17. Beaver 5 18. Type aquatic Veg. 1 19. Density Aquatic Veg. 1

20. Adult Salmon N 21. Intertidal a. gradient 3%

b. bottom type % fines 100 % c. ASA 0

gravel small cobble -- % d. schooling Y

large cobble/boulders/bedrock -- % e. shellfish Y

f. Small boat anchorage along left bank of cove inside Merrifield Bay. Large boat anchorage along left side of Merrifield Bay.

22. Comments

1. Low tide 1435 hours.
2. 21d. Schooling in front of intertidal zone and in Merrifield Bay.
3. 21e. 3-4" Dungeness observed in cove.
4. Stream forks inside intertidal zone after entering treeline; both forks become riparian wet areas, i.e., channels become indefinite, turning into skunk cabbage (seepages). No fish observed. "Stream" is ephemeral with intermittent flows.

23. Investigators Murph/Mickowski

24. Date 8 /03 /82 25. Time 1530 (start) 1600 (end) 26. Weather 2

27. Photos

R-10 2600-3a (1/81)

Merrifield Bay #1

1. Left Fork Above Intertidal Zone.

2. Upper Intertidal Area of Right Fork.

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Baker Creek Merrifield Creek 3. Lat. 56°20'50"

2. ADF&G Catalog No. 106-41-47 3. Long. 133°35'05"

4. Agency Unit 05 5. Mgmt Area 529 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-11-141 71-11-142 71-11-143 71-11-144

8. Bay/Drainage Merrifield Bay 9. Access 2, 4, 5, 6 10. Camping 4

11. Present Land Use a. Logging unit planned 11b. Lots of deer & bear sign

12. Historical Land Use None

13. Stream Origin 5 3 4 6 14. Flow Stage 2

15. Flow Em (method), 6.0m (width), 0.13m (depth), 15m (length), 0.8 (constant), 37.2sec (time), -- (grid), 0.26m³/sec (flow)

16. Temp. Sensitivity Shallow with bedrock - N/S oriented - beaver impoundment

17. Beaver 6 18. Type aquatic Veg. 2 19. Density Aquatic Veg. 3

20. Adult Salmon No 21. Intertidal a. gradient 1%

b. bottom type % fines 10 % c. ASA 45%

gravel small cobble 60 % d. schooling Y

large cobble/boulders/bedrock 30 % e. shellfish Y

f. to right of stream mouth along bank

22. Comments

20c. Good-excellent intertidal ASA.

20d. Estuary bay area for schooling

20e. Clamshells and geysers, juvenile Dungeness observed.

23. Investigators Murph/Mickowski

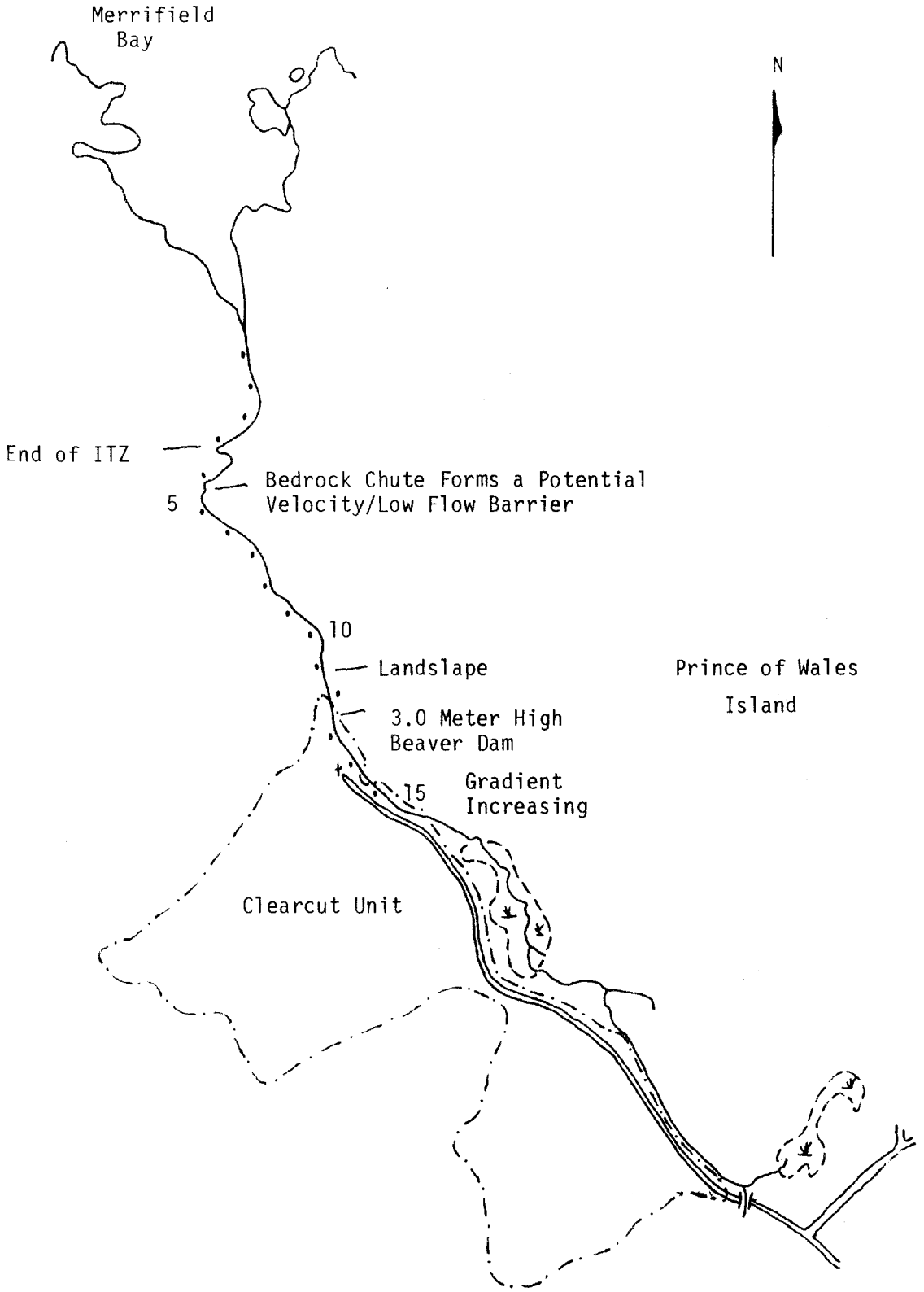
24.* Date 7 /13 /82 25. Time 1115 (start) 1730 (end) 26. Weather 3

27. Photos

*Sections: 1-7 Date: 7/13/82 Time: 1115-1730 Weather: 3 R-10 2600-3a (1/81)
" 8-15 " 7/14/82 " 0800-1730 " 3

GSA JUNEAU 1613

106-10-47


Merrifield
Bay
N
End of ITZ
Bedrock Chute Forms a Potential
Velocity/Low Flow Barrier
5
10
Landslape
Prince of Wales
Island
3.0 Meter High
Beaver Dam
15
Gradient
Increasing
Clearcut Unit

106-41-47
Baker Creek

1. Intertidal, Two Hours Before Low Tide (3.7').

106-41-47
Baker Creek

2. Section 5: Predominantly Bedrock Cascades.

3. Section 10: Representative Bedrock Cascades.

4. Section 12: Left Upper Bank Failure and Blowdown Across Channel.

106-41-47
Baker Creek

5. Section 13: Active Beaver Dam Approximately 3m High; Low Flow, Anadromous Barrier. Potential Rehabilitation Site.

6. Section 13: Impoundment Behind Active Beaver Dam.

106-41-47
Baker Creek

7. Section 15: Logging Generated Debris in Channel, Directly Beneath Landing Area.

8. Section 16: V-Notch With Gradients Exceeding 10%. Bedrock Cascades and Abundant Debris Demarcates End of Habitat.

BAKER CREEK
106-41-47

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1	100	10.5	85	892.5					
2	100	6	10	60					
3	100	5.8	30	174					
4	100	6.5	60	390					
5	100	11.5	5	57.5					
6	100	6	20	120					
7	100	3.3	7	231					
8	100	4.8	15	72					
9	100	8.3	5	41.5					
10	100	2.4	10	24					
11	100	2.7	15	40.5					
12	100	3.7	15	55.5					
Total				2,158.5m^2					

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Baker Creek ADF&G Catalog No. 106-41-47

1. Section No.		1I	2I	3I	4I	5	6	7	8
2. Compass Bearing		111	116	111	131	173	143	95	95
3. Gradient		1	1.5	2.5	1.5	6	4	1.5	1.5
4. Temperature:	Air	14	13	13	14	14	14	12.5	12.5
	Water	12	12	12	12	12	12	12	12
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	--	--	--	--	8	8	8	8
6. Streambottom Substrate	1.	--	--	--	2	10	10	10	20
	2.	5	10	5	15	10	20	13	20
	3.	25	10	15	25	5	30	12	20
	4.	60	10	25	45	4	25	10	15
	5.	10	30	20	5	1	5	5	15
	6.	--	40	20	3	--	--	--	5
	7.	--	--	c)15	c)5	a)70	a)10	a)50	a)5
7. ASA	a. percent	85	10	30	60	5	20	7	15
	b. quality	3	3	3	3	3	3	2	2
8. Water Width	a. channel	10.5	6	5.8	16	10	10	4.6	6
	b. water	10.5	6	5.8	6.5	11.5	6	3.3	4.8
	c. floodplain	2	1	1	1	1	1	1	1
9. Stream Pools	a. percent	--	5	25	25	7	15	5	7
	b. category	--	SS	SS	SS	SS	SS	SS/DS	SS
10. Rearing Area		0	0	20	25	5	15	10	15
11. Debris Loading		1	3	15	5	5	8	1	4
12. Potential Barriers		N	N	N	N	Y	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1,2	1-4	1-3	1,3,5	1,3,4	1,3,4	1-4	1-3
15. Upper Bank	a. Left	35	60	100	58	68	45	10	72
	b. Right	30	60	70	55	62	12	9	11
b. indic	Left	N	N	N	VN-*	N	N	N	N
	Right	N	N	N	VN-*	N	N	N	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	SS	SS	SS	SS	SS	SS	GS	U
	Right	GS	SS	SS	SS	SS	GS	U	GS
17. Stab rating	Left	1(3)	1(1)	1(3)	1(2)	1(1)	1(1)	1(1)	1(1)
	Right	1(1)	1(1)	1(1)	1(2)	1(1)	1(1)	1(1)	1(1)
18. Stream Canopy Cover		3	3	3	3	2	2	2	2
19. Fish Species		--	--	CO	SS	SS	--	SS	CT
				SS					SS
20. Sampling		N	N	N	N	Y	N	N	N

21. Comments *- thin soil

Section 1I: Fish observed jumping in estuary below the mouth of the creek. Heavy marine algae and barnacles on rocks.

" 2I & 3I: Dense debris/blowdown in and over stream. Good rearing areas in debris induced eddies. Bedrock cliff on left side of stream.

" 3I & 4I: Coho fry observed in debris induced pools. Isolated pockets of blue clay observed.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.
Section 4I: 100m; End of intertidal zone.

Section 5: Habitat change occurs in this section. Bedrock chutes with 14% gradient forms a potential velocity barrier; stream rehabilitation projection where debris jams have formed.

Section 6: 82m; Small tributary converges on right side; 2m wide channel, copious debris and overhanging vegetation. No fish or ASA observed, however, "rearing potential" appears good; less than 1 cfs.

Section 7: 36m; Beginning of small cascade with 4% slope.

Section 8: 89m; Two stream channels converge with majority of flow in right channel. Channels diverge 35m upstream.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Baker Creek ADF&G Catalog No. 106-41-47

1. Section No.	9	10	11	12	13	14	15	
2. Compass Bearing	89	79	74	76	106	110	66	
3. Gradient	4	3	3	4.5	1.5	4	9	
4. Temperature: Air	12.5	12.5	12.5	12.5	12.5	13.5	13.5	
Water	12	12	12	12	12	12.5	13	
5. Water qual: a. color	1	1	1	1	1	1	1	
b. turbidity	1	1	1	1	1	1	1	
c. pH	8	8	8	8	8	8.5	8.5	
6. Streambottom Substrate 1.	15	15	10	20	15	30	70	
2.	15	15	15	29	15	30	20	
3.	10	5	20	15	15	20	5	
4.	8	10	15	15	5	10	--	
5.	2	5	15	15	10	10	--	
6.	--	--	5	1	5	--	--	
7.	a) 50	a) 50	a) 20	a) 5	a) 35	--	a) 5	
7. ASA a. percent	5	10	15	15	--	--	--	
b. quality	2	3	2	2	--	--	--	
8. Water Width a. channel	2.6/5.7	3.8	5.5	5.5	5.5	3.5	7.5	
b. water	2.6/5.7	2.4	2.7	3.7	3	3.5	7.5	
c. floodplain	1	1	1	1	1	1	1	
9. Stream Pools a. percent	2	1	25	20	50	15	2	
b. category	SS	SS	SS/DS	SS/DS	DS	SS	SS	
10. Rearing Area	5	1	25	20	50	15	--	
11. Debris Loading	4	3	5	8	8	10	7	
12. Potential Barriers	N	N	N	N	Y	N	N	
13. Enhancement/Rehab	N	N	N	N	Y	N	N	
14. Streambank Veg.	1-4	1-4	1,3,4	1,3,4	1,3,4	1,3,4	1,3,4	
15. Upper Bank a. Left	59	23	70	55	47	65	55	
b. Right	62	66	45	80	65	80	20	
b. indic Left	N	N	N	N	N	N	N	
Right	N	N	N	N	N	N	N	
c. veg Left	N	N	N	N	N	N	N	
Right	N	N	N	N	N	N	N	
16. Lower Bank Left	U/U	U	U	SS	SS	U	U	
Right	U/U	SS	U	GS	GS	SS	U	
17. Stab rating Left	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	
Right	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	
18. Stream Canopy Cover	2	2	1	3	2	3	3	
19. Fish Species	SS	--	CO	SS	SS	DV	--	
			SS		DV	SS		
					CT			
20. Sampling	N	N	N	N	Y	Y	N	

21. Comments

Section 9: 42m; Beginning of 28m long cascade over an 8% slope.
Section 10: 23m; Debris induced cascade over a 3.5% slope.
Section 12: Blowdown on left bank; numerous trees in and over stream channel; land slide on upper left bank.
Sections 11 & 12: Generally increased "fines".

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 13: Beginning of clearcut on right bank.
Ephemeral tributary on right side of stream.
52m; Small tributary on right.
65m; 3m high beaver dam with 35m long impoundment bordered by a clearcut unit. Majority of the stream side buffer has been blown down into the stream channel and formed the nucleus of the beaver dam.

Section 15: End of survey due to lack of habitat. Above the beaver dam, the gradient rapidly increased forming cascades over bedrock/boulder substrate.

Reconnaissance: Above end of survey revealed lesser gradients, improved habitat, and several beaver dams. Four traps were set above Section 15 (see stream map for trap locations) catching numerous CT and DV (overnight set).

FISH SAMPLING FORM

Stream Name Baker Creek ADF&G Catalog No. 106-41-47 Date 7/13/82

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

Trap	Time In	Time Out	Species	Length	Comments
1	1115	1415	0	--	3 traps set in Section 5 along banks near debris sheltered pools just above intertidal zone
2	1116	1415	3 - CO 1 - SS	-- 5.5mm	
3	1117	1415	1 - CO 2 - SS	-- 5.2mm 4.5mm	

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

FISH SAMPLING FORM

Stream Name Baker Creek ADF&G Catalog No. 106-41-47 Date 7/14/82

Identify Survey Area A Water Temp. 12.5°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1050	1535	2 - CT 2 - SS	135, 70mm 45, 50mm	Section 14: along bank in debris above the beaver dam
2	1055	1530	1 - DV	--	Section 14
3	1105	1450	6 - CT 2 - DV	123, 125, 130, 110 135mm 100, 105mm	Section 13: in beaver impoundment under a log in deep pool; trout and beaver were observed
4	1110	1435	3 - CT 1 - DV	105, 85, 70mm 70mm	Section 13: 11m below beaver dam in shallow pool under a stump
* 5	1730	0840	15 - CT 2 - DV	101 to 150mm 101 to 125mm	Set above beaver dam approx. 30m off #1600 road
6	1730	0845	1 - CT 1 - DV	-- --	Below beaver dam
7	1730	0850	5 - CT 6 - DV	125 to 150mm 50 to 100mm	4m below road (#1600) culvert in a deep slough (1.2m wide by 1m deep) in grass flat
8	1730	0850	4 - CT 2 - DV	76 to 125mm 76 to 100mm	On the right side of road 13m from culvert on #1600 road

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

*Traps #5 through #8 were set 7/14/82 and pulled 7/15/82
The end of survey (see map).

Date: 10/13/82

FISHERIES REHABILITATION AND/OR ENHANCEMENT
NEW PROJECT OPPORTUNITY FORM

1. WHAT (give a brief description):

   Stream clean up of logging debris and blowdown over entire stream length, especially in area where logging activity has occurred along the right bank of the stream.

2. WHERE (be specific):

   Baker Creek, North Prince of Wales Island
   Between 500m and +1500m above the mouth of this stream, has dense debris and blowdown.

3. BENEFITS:

   Prevention of further debris dams and channel migration causing bank erosion and failures.

4. SUBMITTED BY: (name, address, telephone, etc.):

   L. Murph and T. Mickowski
   ADF&G
   P.O. Box 667
   Petersburg, Alaska 99833

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name a. Sumner Straits #1 b. Lat. 56°21'10"

2. ADF&G Catalog No. 3. Long. 133°34'20"

4. Agency Unit 05 5. Mgmt Area 529 K 6. USGS Map No. Psg B-5

7. Aerial Photo No. 71-11-142 71-11-143 71-11-144

8. Bay/Drainage Sumner Straits 9. Access 4 5 10. Camping 4

11. Present Land Use a. None 11b. deer and bear sign on beach

12. Historical Land Use None

13. Stream Origin 1 3 4 5&6 14. Flow Stage 2

15. Flow Em (method), 2m (width), .076m (depth), 5.9m (length), 0.8 (constant), 27.9 sec (time), (grid), 0.026 m^3/sec (flow)

16. Temp. Sensitivity lake (beaver ponds) source, shallow ponds and stream

17. Beaver 1 18. Type aquatic Veg. 2 19. Density Aquatic Veg. 3

20. Adult Salmon No 21. Intertidal a. gradient 2%

b. bottom type % fines 5 % c. ASA 75%

gravel small cobble 85 % d. schooling Yes

large cobble/boulders/bedrock 10 % e. shellfish No

f. Can anchor small boat/skiff inside bight at mouth of stream; appears to be reef in front of small bay/estuary.

22. Comments

1. 21 d. An estuary-cove area provides marginal schooling at mouth.
2. Copious blowdown and washed up driftwood in intertidal area. 150-200 coho fry seen in intertidal Section 11 and in Stream Section 2.
3. Two female mallards observed flying toward salt water from fourth impoundment.

23. Investigators Murph/Mickowski

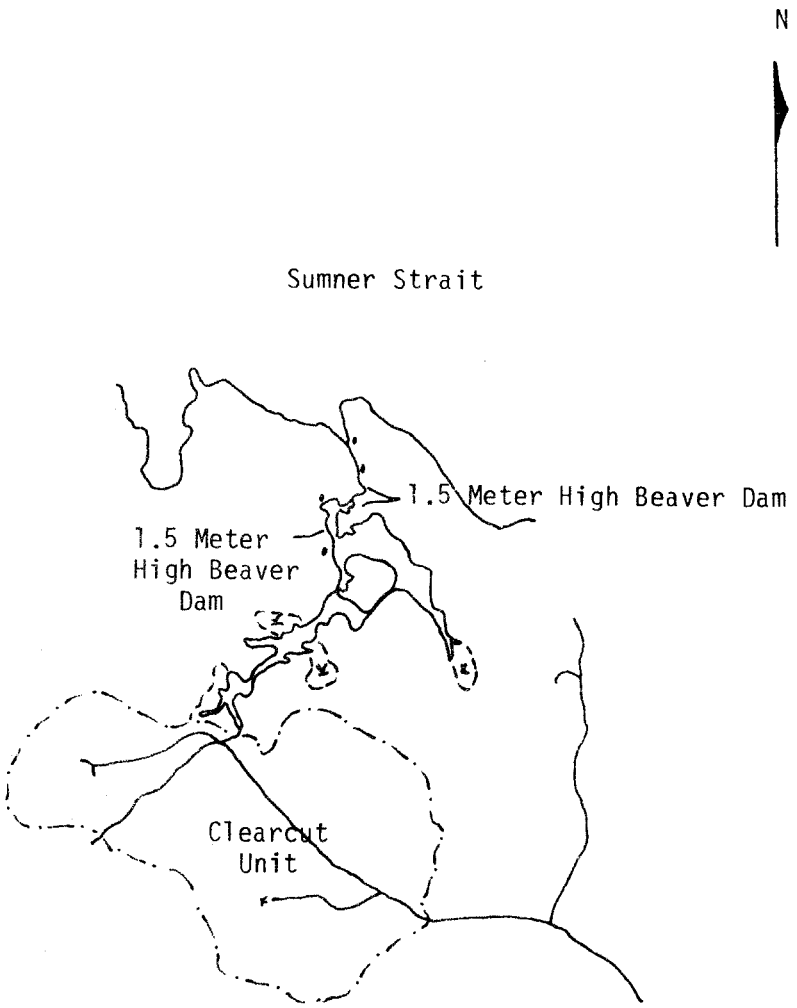
24. Date 7 / 15/ 82 25. Time 1116 (start) 1400 (end) 26. Weather 2

27. Photos

R-10 2600-3a (1/81)

CSA JUNEAU 1613

Sumner Strait #1



Sumner Straits #1

1. Intertidal Area Two Hours After a 11.2' High Tide. Blowdown and Driftwood Common.

2. Section 2: Blowdown Common. Active Beaver Dam and Impounded Snags Visible Mid-photo.

Sumner Straits #1

3. Section 2: Active Beaver Dam. Coho Rearing in Impoundment.

Sumner Straits #1

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1I	100	22	75	165					
2	100	2	20	40					
Total				205 m^2					

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Sumner Straits #1 ADF&G Catalog No. --

1. Section No.			1I	2	3					
2. Compass Bearing			91	133	89					
3. Gradient			2	1	0					
4. Temperature:	Air		18	16	17					
	Water		13.5	14	16					
5. Water qual:	a. color		1	1	1					
	b. turbidity		1	1	1					
	c. pH		--	8	8					
6. Streambottom	Substrate	1	5	--	--					
		2	5	5	--					
		3	15	20	5					
		4	70	20	--					
		5	5	25	30					
		6	--	25	50					
		7	--	b)2c)3	b)5c)10					
7. ASA	a. percent		75	20	0					
	b. quality		3	3	--					
8. Water Width	a. channel		19	9	19.5					
	b. water		2.2	2	19.5					
	c. floodplain		1	1	1					
9. Stream Pools	a. percent		35	65	100					
	b. category		SS	DS	DS					
10. Rearing Area			75	75	100					
11. Debris Loading			25	30	30					
12. Potential Barriers			N	Y	Y					
13. Enhancement/Rehab			N	N	N					
14. Streambank Veg.			1-5	1-3&5	1&3-5					
15. Upper Bank	a. Left		7	23	15(est)					
	b. Right		25	35	15					
b. indic	Left		N	N	N					
	Right		N	N	N					
c. veg	Left		N	N	N					
	Right		N	N	N					
16. Lower Bank	Left		GS	SS	U					
	Right		GS	U	U					
17. Stab rating	Left		1(1)	1(1)	1(1)					
	Right		1(1)	1(1)	1(1)					
18. Stream Canopy Cover			3	3	3					
19. Fish Species			CO	SB	SB					
			SS	SS						
20. Sampling			N	Y	Y					

21. Comments

Section 1I: Section is 75m long with heavy blowdown and large driftwood; Approximately 300 SS fry observed

Section 2: 52m: Beaver dam 1.5-2m high in good repair. Coho fry observed in the impoundment. Excellent rearing habitat in 0.8 - 1.0m deep by 16m wide pond.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 2: 74m; Second older active beaver dam 1.5-2m high impounds a 1-2m deep (101x21m) reservoir.

Section 3: 49m; Third beaver dam approximately 1.5m high impounding a large, deep pond with copious snags. The dam is in good repair though old and covered with vegetation.

Reconnaissance: Revealed a fourth large beaver dam in good repair approximately 90m above the third dam. The impoundment was large with no end in sight. No coho fry were trapped or observed above the second dam.

8/16/82: Set a trap (trap #5) in the feeder stream to the beaver ponds which flows through a clearcut unit and crosses a spur road through a culvert. Rearing habitat only above the first dam in Section 2. Above the road crossing, the feeder stream flows down a steep ravine off a hillside with no salmon habitat.

FISH SAMPLING FORM

Stream Name SS - 1 ADF&G Catalog No. -- Date 7/15/82

Identify Survey Area Sumner Strait Water Temp. 14° Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1140		13 - SB 1 - CT SS SS SS SS SS SS	 4.5 cm 5.6 " 4.5 " 4.7 " 4.9 " 5.4 "	25m below first beaver dam; 50-100 coho seen in area
2	1235	1418	0	--	Above second beaver dam in impoundment under logs, good cover
3	1325	1410	0	--	Above third beaver dam in impoundment, good cover
4	1340	1412	0	--	Above third beaver dam in impoundment, good cover
8/16/82 5	1145	1235	1 - DV 1 - CT	-- --	Trap set above beaver ponds below 1700 road crossing in logging unit. Steep hill-side drainage. H_2O Temp: 13°C

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

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Sumner Straits #2 3. Lat. 56°20'50"

2. ADF&G Catalog No. 106-41-46 3. Long. 133°33'10"

4. Agency Unit 05 5. Mgmt Area 529 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-11-142 71-11-143 71-12-147 71-12-149

8. Bay/Drainage Sumner Strait 9. Access 4 6 10. Camping 4

11. Present Land Use a. Logging Unit (1980) 11b. bear sign on beach

12. Historical Land Use None

13. Stream Origin 3 4 5 6 14. Flow Stage 1

15. Flow ____ (method), ____ (width), ____ (depth), ____ (length), ____ (constant), ____ (time), ____ (grid), 0 (flow)

16. Temp. Sensitivity dry at time of survey

17. Beaver 1 18. Type aquatic Veg. -- 19. Density Aquatic Veg. --

20. Adult Salmon No 21. Intertidal a. gradient --

b. bottom type % fines -- % c. ASA ---

gravel small cobble -- % d. schooling N

large cobble/boulders/bedrock -- % e. shellfish yes

f. Large tide flat; no sheltered anchorage near stream

22. Comments

1. (11a) Stream runs through logging unit
2. During observation stream channel was dry. Recommend further survey of this stream later in year when flow is up due to indicated size of stream system on 1971 aerial photo.
3. 21e. Large tidal flat; clam shells observed.

23. Investigators Murph/Mickowski

24. Date 7/ 5/ 82 25. Time 1530 1600 26. Weather 2

Second Survey 8/ 13/ 82 start 1630 end 1705 2

27. Photos

R-10 2600-3a (1/81)

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

22. Comments
August 13, 1982 Time: 1630-1705 Weather: 2

Rechecked this stream channel. Still NO water in 7m wide channel above intertidal zone. Left bank is undercut. Sand/heavy silt/"slate" cobble streambed substrate. Photo 5/11: intertidal approximately 25m inside tree line. Very even age timber along banks. A recent clearcut on right side of stream approximately 150m away. 20% debris loading in stream channel.

Approximately 100m above intertidal zone (approximately 150m inside tree line) moss covered bedrock with 16% gradient over 15m length fills channel (Photo 5/12). Complete canopy and dense devils club.

We walked approximately 200m above the intertidal zone; aerial photo shows beaver ponds above but low water in ponds must be keeping the channel dry at time of survey.

106-41-46

1. Sumner Straits 2; Dry Channel.

2. Completely Dry Channel, 25 Meters Inside Tree Line.

106-41-46

3. Moss Covered Bedrock in Dry Channel, 150 Meters Inside Tree Line.

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species PS

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Flicker Creek 3. Lat. 56°20'20"

2. ADF&G Catalog No. 106-41-45 3. Long. 133°32'05"

4. Agency Unit 05 5. Mgmt Area 529 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-12-147 71-12-149 71-12-151

8. Bay/Drainage Sumner Straits 9. Access 4 5 10. Camping 4

11. Present Land Use a. Logging units on both sides of drainage 11b. Many game trails

12. Historical Land Use Old logging unit on left side of lagoon 15+ years old

13. Stream Origin 6 3 4 5 14. Flow Stage Z

15. Flow Em (method), 7.97m (width), 0.44m (depth), 13.0m (length), 0.8 (constant), 26.2 sec (time), (grid), 1.24 m^3/sec (flow)

16. Temp. Sensitivity None

17. Beaver 1 18. Type aquatic Veg. 2 19. Density Aquatic Veg. 2

20. Adult Salmon No 21. Intertidal a. gradient 1.0

b. bottom type % fines 15 %

gravel small cobble 45 %

large cobble/boulders/bedrock 40 %

c. ASA 25-30%

d. schooling yes

e. shellfish yes

f. small boat/skiff anchorage in lagoon area

22. Comments
Alder and Flicker Creeks come together at the head of the lagoon and the shoreline drops off rapidly with steep banks on both sides. Survey began at low tide mark on Flicker Creek.
21d. Deep lagoon into which Flicker and Alder Creeks drain. Excellent schooling.
21e. Crab seen in lagoon - Dungeness

Sections 1I-7:	Date:	7/18/82	Time:	1320-1800	Weather:	1
8-16:	"	7/16/82	"	1115-1630	"	1, 3
17-30	"	7/17/82	"	1000-1730	"	3
31-35	"	7/18/82	"	0950-1230	"	1, 3
Recon	"	8/16/82	"	1000-1110	"	3

23. Investigators Murph/Mickowski

24.* Date 7 / 16 / 82 25. Time 1115 (start) 1630 (end) 26. Weather 1/ 3
Above

27. Photos

R-10 2600-3a (1/81)

FLICKER CREEK
106-41-45

Habitat Reconnaissance

Upper Flicker Creek is accessed via a bridge crossing on Road #1500, a spur of the north Prince of Wales main line, Road #1000.

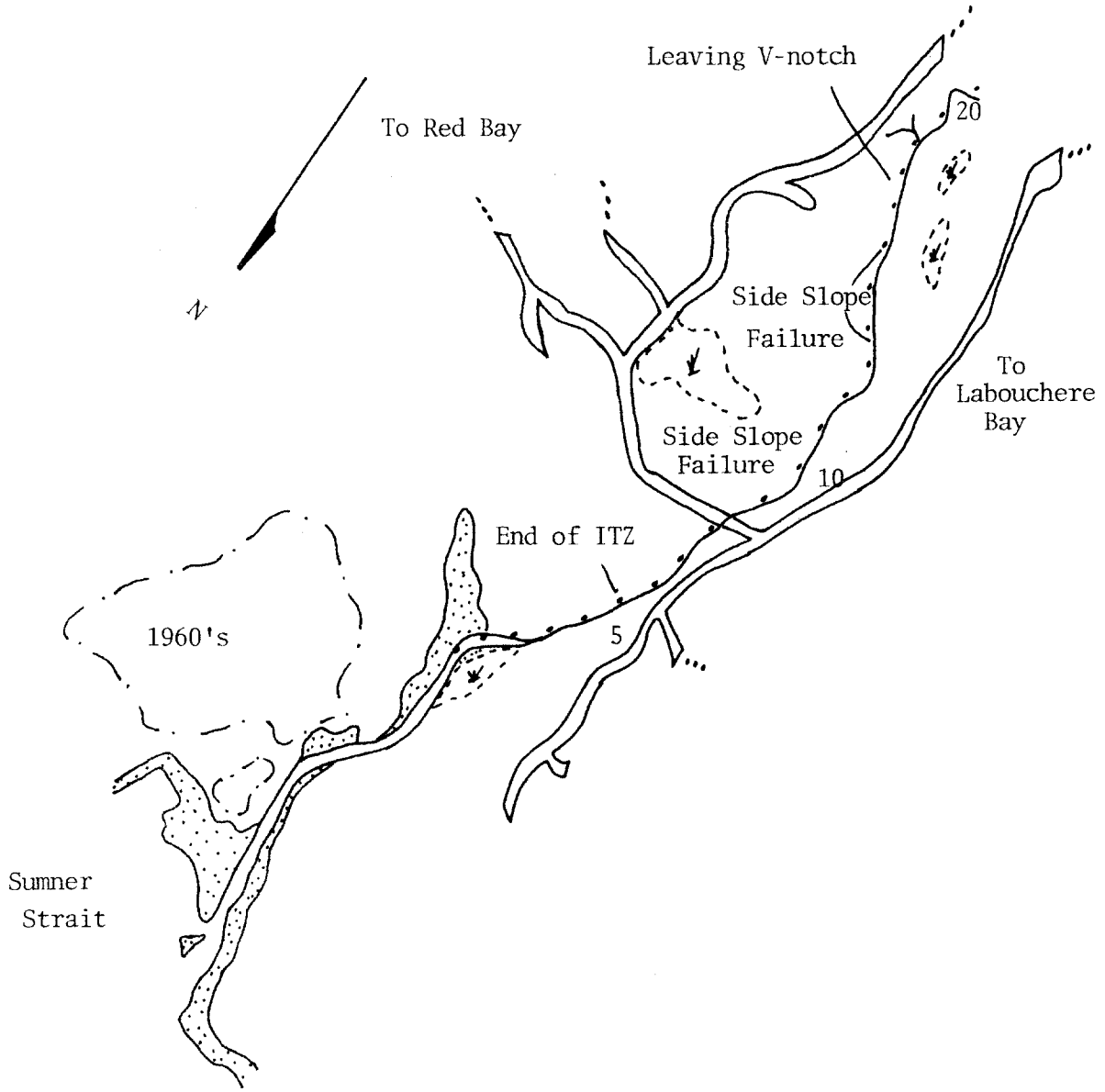
Above the upper bridge crossing, the channel drains old growth forest and is characterized by moss covered boulders/large cobbles, isolated gravel pockets, and small peripheral pools. No fish were observed and habitat is marginal "resident" spawn/rear at best. Gradient is approximately 3-5%.

Flicker Creek, from the upper bridge crossing to approximately 400m downstream is characterized by a 70% boulder/large cobble, 25% gravel/small cobble, 5% fines substrate, and a 3-4% gradient. Natural pools are isolated and SF, however, numerous debris induced pools exist (approximately 10% of total), a product of a large clearcut unit bordering the upper right bank. It appears some of the large organic debris has accelerated bank undercutting, exposing several localized blue clay deposits and induced channel migration and accelerated bar formation.

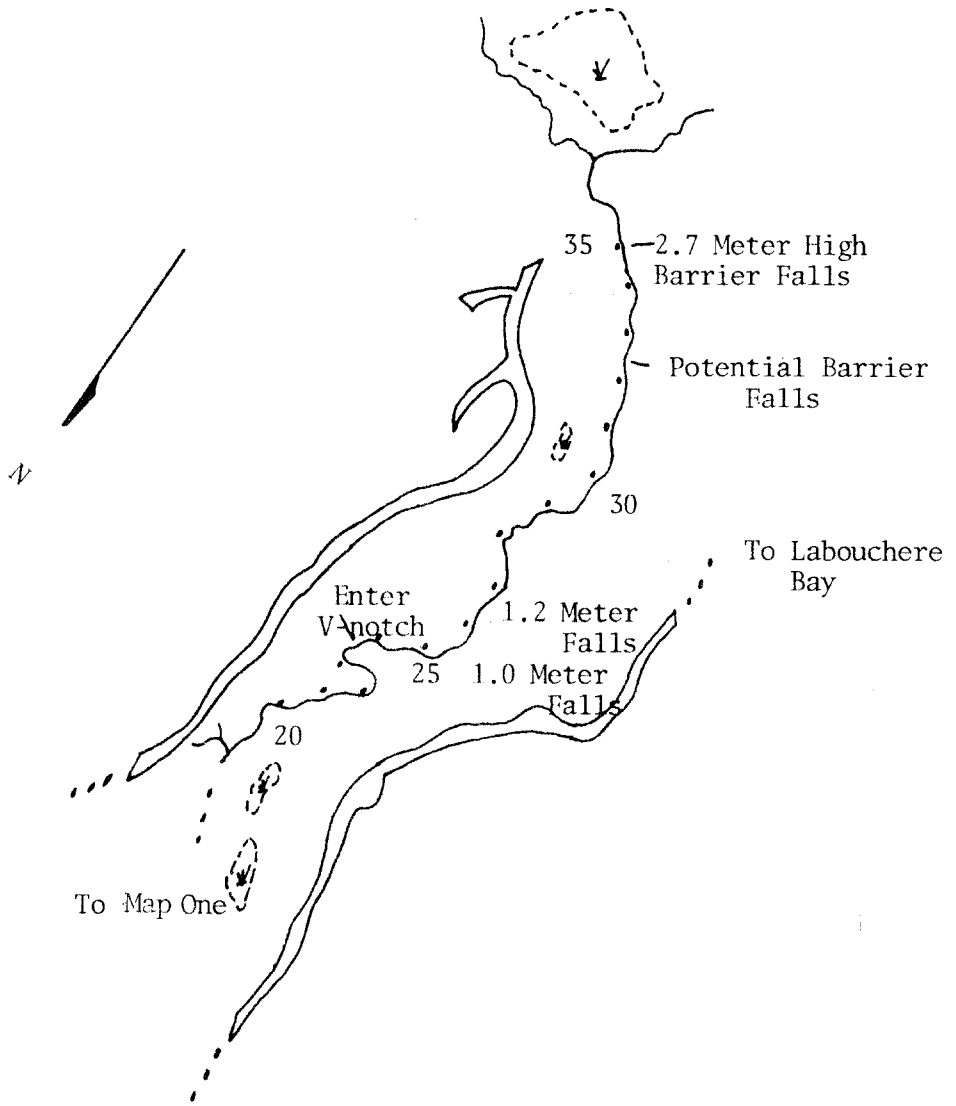
Several short, small cobble/gravel riffles yield small amounts of ASA suitable to coho and chum salmon. No fish were trapped, however, 1 juvenile CT and 1 immature DV were observed.

No enhancement is recommended at the "barrier falls" in Section 35 of the Flicker Creek stream survey due to paucity of habitat in the upper watershed.

Flicker Creek
106-41-45

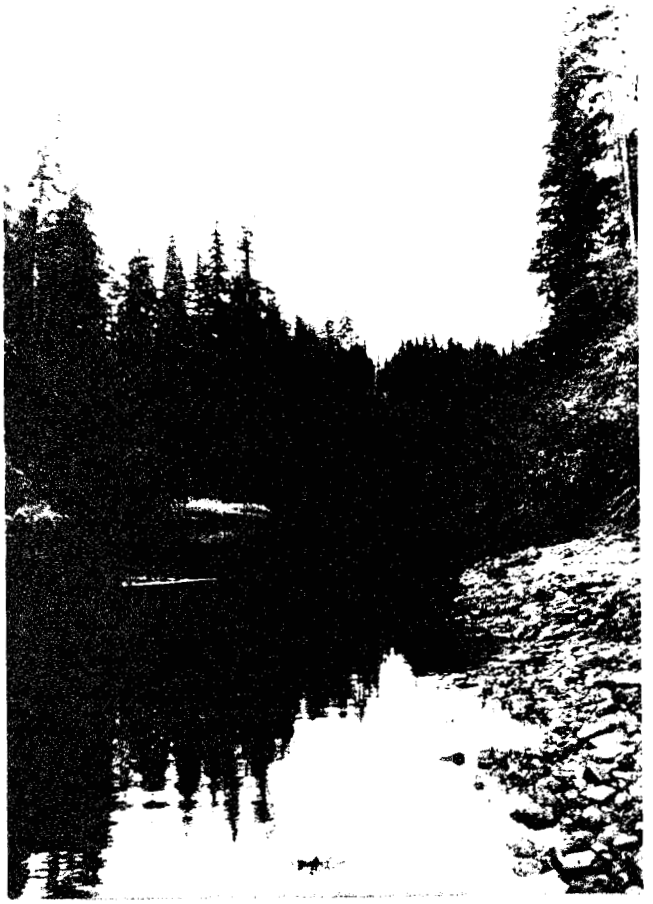


Flicker Creek
106-41-45



Prince of Wales Island

106-41-45
Flicker Creek



1. Mouth of Flicker/Alder Lagoon.

2. Section II: Upchannel View From the Confluence of 106-41-45 and 106-41-44; a Saltwater Lagoon.

106-41-45
Flicker Creek

1. 300m Below Upper Road Bridge. Undercut Banks, Debris, and Large Cobble Common.

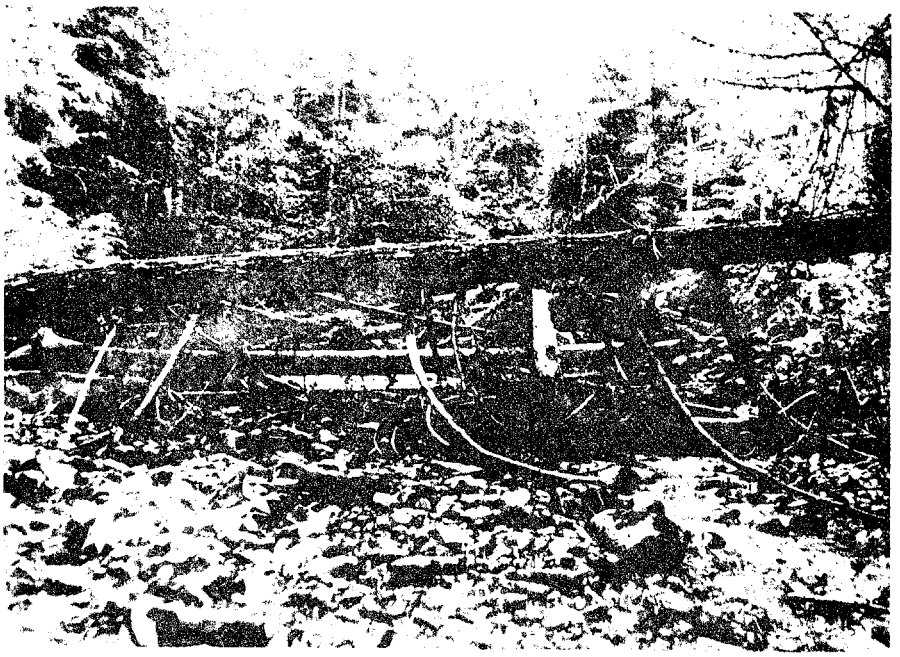
2. 200m Below Upper Road Bridge. Localized Blue Clay Deposits Common.

106-41-45
Flicker Creek

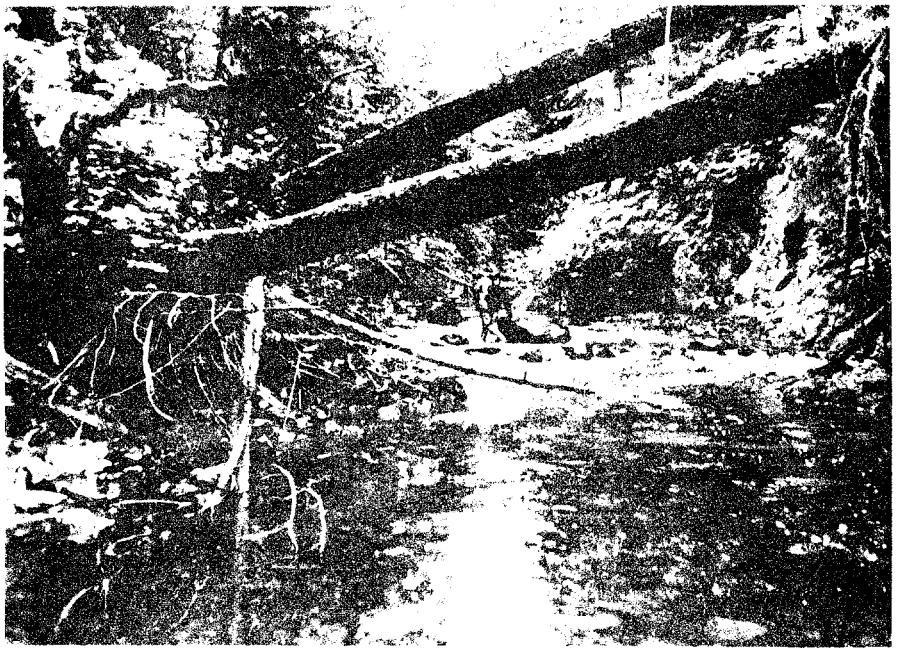
3. Section 5: 15m Upper Extent of the Intertidal Zone. Good PS Spawning Habitat Found Throughout Intertidal Zone.

4. Section 10: Characteristic Habitat Sections 8, 9, and 10.

106-41-45
Flicker Creek



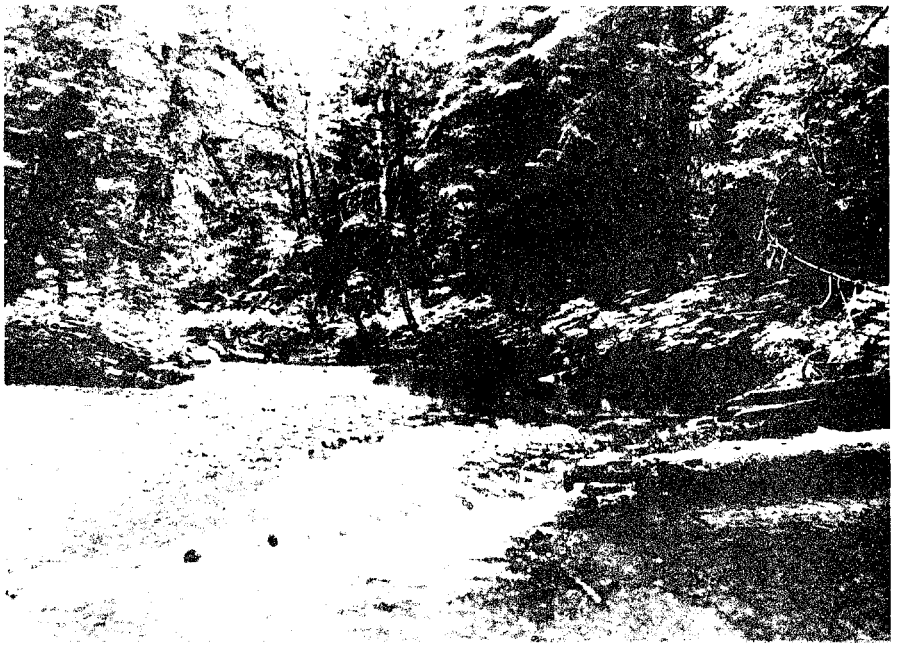
5. Section 11; Heavy Blowdown Area and Current Beaver Activity. Potential Rehabilitation Project.



6. Section 14; V-Notch: Slope Failures, Undercut Banks and Debris.

106-41-45
Flicker Creek

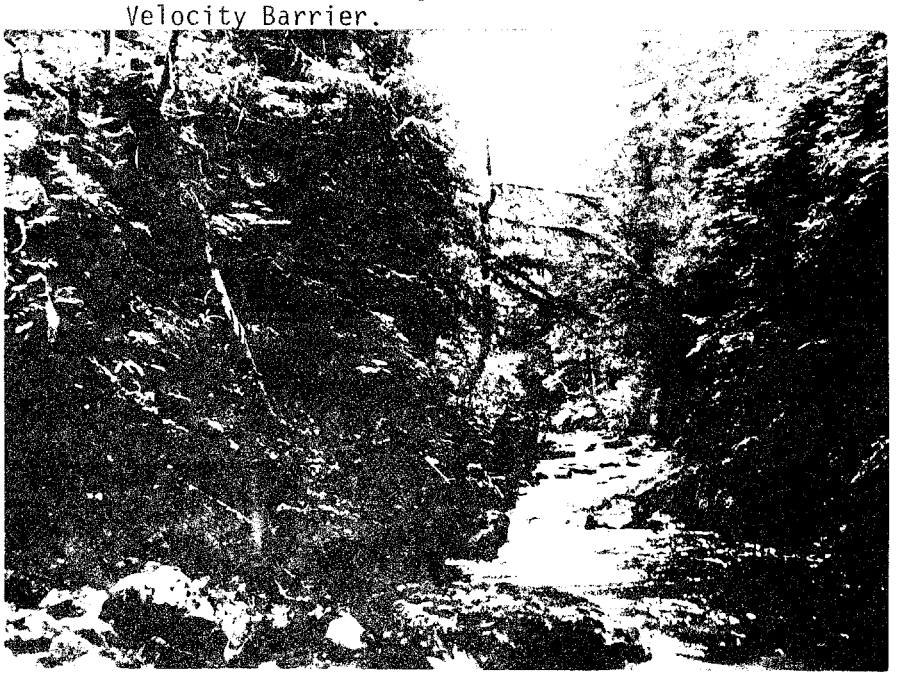
7. Section 18; Riffles, Pools and Bedrock.



8. Section 21; Nice Gravel Riffles and Excellent Rearing Habitat.

106-41-45
Flicker Creek

9. Section 27; 1.2m High Waterfall. Potential Velocity Barrier.



10. Section 28; V-notch. Bedrock and Boulders Common.

106-41-45
Flicker Creek

11. Section 32; Bedrock Falls. No Barrier. Deep, Narrow Holding Pool Below.

12. Section 32; Potential Velocity Barrier. No Coho Fry Observed Above.

13. Section 34; Bedrock/Boulder Substrate and Limited Pooling Characterize the Main Stem from Section 32 to the Barrier in Section 35.

14. Section 35; 39.5m, A 3.0 Vertical Meter Bedrock Waterfall Represents an Anadromous Barrier.

Flicker Creek

106-41-45

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1I	100	43.4	50	2170	21	100	8.8	30	264
2I	100	14	25	350	22	100	6.5	30	195
3I	100	11	30	330	23	100	7.2	30	216
4I	100	17	55	935	24	100	12.5	5	62.5
5	100	16	30	480	25	100	10.5	15	157.5
6	100	15	7	105	26	100	16	8	128
7	100	9.2	7	64.4	29	100	10.5	25	262.5
8	100	8.2	10	82	30	100	12	20	240
9	100	8.6	15	129	31	100	8.2	4	32.8
10	100	13.8	8	110.4	32	100	8.6	1	8.6
11	100	9.3	15	139.5	35	100	5.6	3	16.8
12	100	14.5	30	435		TOTAL:			8,112.4m^2
13	100	12.5	2	25					
14	100	7.6	2	15.2					
15	100	5.8	1	5.8					
16	100	8.4	1	8.4					
17	100	6.6	15	99					
18	100	11.5	30	345					
19	100	8.8	25	220					
20	100	16	30	480					

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Flicker Creek ADF&G Catalog No. 106-41-45

1. Section No.		1I	2I	3I	4I	5	6	7	8
2. Compass Bearing		179	188	168	151	155	143	133	151
3. Gradient		.5	1.0	1.0	1.0	1.5	1	1	2
4. Temperature:	Air	11.0	12.0	12.0	12.0	11.5	11.5	11.5	11
	Water	12.0	10.0	10.0	10.0	10.0	10.0	10.0	9.5
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	--	--	--	--	8.5	8.5	8.5	8.5
6. Streambottom Substrate	1	1	2	7	10	15	15	20	35
	2	14	38	28	25	15	30	20	35
	3	50	25	30	35	20	25	30	15
	4	20	20	25	20	30	20	15	10
	5	15	15	10	10	20	10	15	5
	6	0	0	0	0	0	0	0	0
	7	0	0	0	0	0	0	0	0
7. ASA	a. percent	50	25	30	55	30	7	7	10
	b. quality	3	2	2	1	1	2	2	2
8. Water Width	a. channel	58	48	15.5	26	20.0	16	12.6	11.5
	b. water	43.4	14	11.0	17.0	16.0	15.0	9.2	8.8
	c. floodplain	2	2	1	1	1	1	1	1
9. Stream Pools	a. percent	0	0	10	35	60	12	7	10
	b. category	--	--	SF	SF	SS	SF	SS	DF
10. Rearing Area		0	10	18	40	60	15	7	10
11. Debris Loading		0	0	1	2	2	1	1	1
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1,5	1-3&5	1-3&5	1-5	1-3&5	1-3&5	1,3,5	1-4
15. Upper Bank	a. Left	1	20	98	72	65	95	136	25
	b. Right	1	1	67	36	52	47	57	50
b. indic	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	GS	GS	GS	GS	UC	GS	UC	SS
	Right	GS	GS	GS	UC	GS	UC	UC	SS
17. Stab rating	Left	1(2)	1(2)	1(3)	1(1)	1(2)	1(1)	1(3)	1(1)
	Right	1(2)	1(2)	1(2)	1(1)	1(2)	1(1)	1(1)	1(1)
18. Stream Canopy Cover		3	3	3	3	3	3	3	3
19. Fish Species		--	--	SS	SS	SS	SS	SS	SS
				DV					
20. Sampling		N	N	N	N	N	N	N	N

21. Comments

Section 1I: Section is 54m long; very small seep (<.5 cfs) on right side; no habitat; ephemeral.

Section 2I: 1 1/2m wide by 11m long, band of clay on left bank; crabapple trees on left upper bank and large grassy flat on right bank; two kingfishers observed.

Section 3I: One adult DV observed in stream.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 5I: 15m; end of intertidal zone; hillside seep over rock face on right side; no habitat.

" 1I-5I: Intertidal area is good pink salmon spawning area.

" 7: 38m; tributary on right side; 1m wide channel; shallow (1-2" water depth); possible rearing area, no ASA. Three adult deer observed crossing stream.

" 8: 10.5m; 1000 main road bridge crossing; juvenile kingfisher observed in stream.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Flicker Creek ADF&G Catalog No. 106-41-45

1. Section No.		9	10	11	12	13	14	15	16
2. Compass Bearing		186	121	106	161	91	96	101	111
3. Gradient		2	1	1.5	1.0	0.5	2	1.5	1.5
4. Temperature:	Air	11	11	12	13	13	13	12	12
	Water	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
6. Streambottom Substrate	1	20	30	25	18	40	45	45	30
	2	25	30	25	30	30	25	20	20
	3	25	20	20	20	15	10	10	15
	4	20	10	15	20	5	7	7	7
	5	8	7	10	10	5	3	3	3
	6	0	0	2	--	--	--	--	--
	7	a) 2	a) 3	a) 3	a) 2	a) 5	a) 10	a) 15	a) 25
7. ASA	a. percent	15	8	15	30	2	2	1	1
	b. quality	2	2	2	2	2	1	1	1
8. Water Width	a. channel	11.5	15	11	14.5	17	11	8.8	9.6
	b. water	8.6	13.8	9.3	14.5	12.5	7.6	5.8	8.4
	c. floodplain	1	1	1	3	1	1	1	1
9. Stream Pools	a. percent	10	5	20	35	1	1	1	3
	b. category	DS/SF	DS/SS	DS	DS	SF	SF	DS	SS
10. Rearing Area		10	8	25	35	3	1	1	3
11. Debris Loading		1	0	7	3	0	1	1	1
12. Potential Barriers		N	N	Y	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1,3,4	1,3,4	1-4	1-4	1,3,4	1,3,4	1-4	1-4
15. Upper Bank	a. Left	62	33	49	99	106	138	118	128
	b. Right	59	79	99	5	89	122	142	83
b. indic	Left	N	N	N	N	N	*V-NOT	V-NOT	V-NOT
	Right	Y	N	N	N	N	V-NOT	V-NOT	V-NOT
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	Y	N	Y
16. Lower Bank	Left	SS	U	U	SS	U	SS	SS	SS
	Right	GS	SS	U	GS	SS	SS	GS	U
17. Stab rating	Left	1(1)	1(1)	1(1)	1(1)	1(1)	1(3)	1(3)	1(3)
	Right	3(2)	1(1)	1(1)	1(1)	1(1)	1(3)	1(3)	1(3)
18. Stream Canopy Cover		2	2	2	2	3	3	2	2
19. Fish Species (observed)		SS	SS	SS	SS	--	--	SS	--
20. Sampling		N	N	N	N	N	N	Y	N

21. Comments *V-Notch; Thin Soil

Section 11: Recent soil failure and large tree blown down from right bank; pioneer vegetation is beginning

" 11: Area of heavy debris in and over stream channel causing stream to fork. 44m; two channels converge. 68m; recent beaver activity to dam left channel - not a complete barrier at this time. Fish passage in right stream channel. Beaver dam has caused large

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 11: pools, yielding excellent rearing area.

Section 12: 44m: dry flood channel on right; 40m up flood channel a seep converges with flood channel on right.

Section 12 (upper 50m): Stream becomes fast riffle/cascade over a
through 16 cobble/boulder substrate.

Section 14: Bank failure in the past year exposing thin soil over bedrock causing root failure and silting into stream. The terrain is becoming steeper and entering a V-notch.

Section 16: Recent soil failure on upper bank; some pioneer vegetation has begun to grow stabilizing soil movement.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Flicker Creek ADF&G Catalog No. 106-41-45

1. Section No.		17	18	19	20	21	22	23	24
2. Compass Bearing		111	136	104	161	211	21	246	198
3. Gradient		1.5	1.0	1.0	0.5	0.5	1.0	2.0	1.5
4. Temperature:	Air	12	12	12	12	13	13	13	13
	Water	9	9	9	9	9	9	10	10
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	8.5	8.5	8.5	8.5	8.5	8.5	8.0	8.5
6. Streambottom Substrate	1	15	7	10	15	7	5	5	25
	2	20	13	20	10	20	20	30	20
	3	25	20	20	18	40	25	35	20
	4	20	30	25	30	20	25	20	14
	5	5	10	20	20	8	10	8	10
	6	--	--	--	--	--	--	--	--
	7	a) 15	a) 20	a) 5 b) 1	a) 7	a) 5	a) 15	a) 1 b) 1	a) 10 b) 1
7. ASA	a. percent	15	30	25	30	30	30	30	5
	b. quality	2	1	1	1	2	2	2	2
8. Water Width	a. channel	8	17	11.7	17	14	13.7	13	15.5
	b. water	6.6	11.5	8.8	16	8.8	6.5	7.2	12.5
	c. floodplain	1	1	1	1	3	2	3	3
9. Stream Pools	a. percent	7	25	40	25	20	40	30	15
	b. category	DF	DS	DS	SF	SS/DS	SF/DS	SS/DS	DS/SS
10. Rearing Area		10	30	60	30	3	2	4	1
11. Debris Loading		2	1	2	2	50	80	50	15
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1,3,4	1-4	1-4	1-4	1-4	1,2,3	1-5	1-3&5
15. Upper Bank	a. Left	>150	49	>150	53	10	61	8	8
	b. Right	54	56	57	48	70	8	8	21
b. indic	Left	V-Not	N	N	N	N	N	N	N
	Right	V-Not	N	N	N	N	N	N	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	SS	U	SS	SS	GS	U	GS	U
	Right	SS	U	U	U	U	GS	U	GS
17. Stab rating	Left	1(3)	1(1)	1(3)	1(1)	1(1)	1(1)	1(2)	1(1)
	Right	1(3)	1(1)	1(1)	1(2)	1(1)	1(1)	1(1)	1(2)
18. Stream Canopy Cover		3	3	3	2	3	2	2	2
19. Fish Species		SS	SS	SS	SS	SS	SS	SS	SS
					DV				
20. Sampling		N	N	N	N	Y	Y	N	N

21. Comments

Section 17: 63m; Small tributary on left side flowing out of a logging unit approximately 100m above the main stream - shallow cascades over boulder/cobble substrate & 25% gradient; 10°C water temperature; 1m wide channel (at mouth); flagged orange/white striped by USFS.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 18: Leaving V-notch area; increased ASA and pool/riffle ratio; good rearing habitat; moderate side slopes, large amount of bedrock is still present.

Section 19: 10m; Small ephemeral tributary on the left side flowing out of a logging unit (100-200m above main stream) - .5m wide channel (at mouth) with less than 1 cfs flow over large cobble substrate; no fish habitat observed.

Section 21: 35; Small tributary converges on right side - an intermittent drainage .5m wide channel; 10% gradient.

Section 11-22: Spawning and rearing habitat is improving in main stem.

Section 22: 87m; Small tributary on left (at bend in main channel); active beaver dams: two (7mx1m) structures occur at 25.5m and 29.2m, with a third 2.0m high structure at 52m. Impoundment temperatures average 13°C and the substrate is primarily composed of organic muck. No SS fry observed though ponds are potentially excellent rearing area.

Section 23: 90m; Flood channel converges on left at bend in main channel; contains good rearing area in pools.
100m; Dry flood channel converges on right side.

Section 24: 10m; Flood channel diverges on left.
50m; Entering V-notch, decreased ASA for next 150 meters.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Flicker Creek ADF&G Catalog No. 106-41-45

1. Section No.		25	26	27	28	29	30	31	32
2. Compass Bearing		171	136	78	146	213	144	91	117
3. Gradient		3	2.5	3.5	3.5	4	1	1.5	1
4. Temperature:	Air	13	12.5	12.5	12	12	12	12	12
	Water	10	10	9.5	9	9	9	8.5	8.5
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
6. Streambottom Substrate	1	20	15	30	40	8	25	35	25
	2	30	10	15	15	15	25	25	20
	3	17	20	8	2	25	25	15	10
	4	13	15	5	2	15	20	5	3
	5	15	5	2	1	2	5	5	2
	6	--	--	--	--	--	--	--	--
	7	a) 5	a) 40	a) 35	a) 40	a) 35	--	a) 15	a) 40
7. ASA	a. percent	15	8	--	--	25	20	4	1
	b. quality	2	1	--	--	2	2	1	1
8. Water Width	a. channel	16.5	16	14.2	6.6	12	14	12	10.5
	b. water	10.5	16	12.6	5	10.5	12	8.2	8.6
	c. floodplain	2	3	1	1	1	1	1	1
9. Stream Pools	a. percent	25	15	10	8	5	5	1	3
	b. category	DS	SS	DF	DF	SS	SF	SF	SF
10. Rearing Area		2	2	10	8	15	10	4	3
11. Debris Loading		35	15	1	--	2	--	--	--
12. Potential Barriers		N	N	Y	N	N	N	N	Y
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-3&5	1-3&5	1-3&5	1-3&5	1-3&5	1-5	1-3&5	1-3&5
15. Upper Bank	a. Left	25	10	75	138	14	39	18	39
	b. Right	38	5	33	>150	67	75	79	25
b. indic	Left	N	N	N	V-Not	N	N	N	N
	Right	N	N	N	V-Not	N	N	N	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	U	GS	SS	SS	GS	GS	GS	U
	Right	GS	U	U	GS	U	GS	U	U
17. Stab rating	Left	1(1)	1(2)	1(3)	1(3)	1(1)	1(1)	1(1)	1(3)
	Right	2(2)	1(1)	1(1)	1(3)	1(1)	1(1)	1(1)	1(3)
18. Stream Canopy Cover		2	2	2	2	3	2	2	2
19. Fish Species		SS	SS	0	0	SS	0	SS	--
20. Sampling		N	N	N	Y	Y	N	N	N

21. Comments

Section 25: 15m; Small tributary on right side with more than 30% slope; 11°C water temperature; and a near vertical waterfall 20m high.

Section 26: 51.5m; 1m high vertical waterfall with a 2.5% gradient increase over falls. Not a barrier to coho migration.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 27: A "notched" bedrock cascade, 50m in length, culminates in a 1.2 vertical meter falls (potential high flow velocity barrier). Above falls, channel cuts a 90^{0} bend to the right.

Section 28: Poor habitat overall; no ASA; bedrock/boulder substrate.

Section 30: Rearing habitat and ASA improving.

Section 31: 17m; Tan colored tributary with debris/gravel/cobble substrate enters the main stem via the right bank. Water temperature $12.5^{0}C$; coho fry observed in pools near confluence.

Sections 31 & 32: A primarily bedrock/boulder channel yields marginal ASA and rearing area.

Section 32: 51m; Vertical bedrock falls represent a potential migratory barrier.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Flicker Creek ADF&G Catalog No. 106-41-45

1. Section No.		33	34	35					
2. Compass Bearing		115	93	64					
3. Gradient		4	2	2					
4. Temperature:	Air	12	12	12					
	Water	8	8	8					
5. Water qual:	a. color	1	1	1					
	b. turbidity	1	1	1					
	c. pH	8.5	8.5	8.5					
6. Streambottom Substrate	1	20	25	--					
	2	2	2	--					
	3	1	1	--					
	4	1	1	--					
	5	1	1	--					
	6	--	--	--					
	7	a) 75	a) 70	a) 100					
7. ASA	a. percent	--	--	3					
	b. quality	--	--	1					
8. Water Width	a. channel	11.2	1.8	7.2					
	b. water	9.4	8.6	5.6					
	c. floodplain	1	1	1					
9. Stream Pools	a. percent	1	1	25					
	b. category	SS	SS	DF					
10. Rearing Area		1	1	15					
11. Debris Loading		1	1	--					
12. Potential Barriers		N	N	Y					
13. Enhancement/Rehab		N	N	N					
14. Streambank Veg.		1-5	1-3&5	1-3&5					
15. Upper Bank	a. Left	87	142	122					
	b. Right	37	73	120					
b. indic	Left	N	N	V-Not					
	Right	N	N	V-Not					
c. veg	Left	N	N	N					
	Right	N	N	N					
16. Lower Bank	Left	U	U	SS					
	Right	U	GS	SS					
17. Stab rating	Left	1(3)	1(3)	1(3)					
	Right	1(3)	1(1)	1(3)					
18. Stream Canopy Cover		3	1	1					
19. Fish Species		--	--	--					
20. Sampling		Y	N	N					

21. Comments

Section 35: 39.5m; Barrier falls in a 2.4 meter wide gorge with bedrock walls. The waterfall is a +2.7 meter vertical drop into a deep pool below.

FISH SAMPLING FORM

Stream Name Flicker Creek ADF&G Catalog No. 106-41-45 Date 7/16/82

Identify Survey Area A Water Temp. 9.5°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1325	1740	0	--	10.5m below 1000 Rd Bridge under log in good cover, nice pool Section #8.
2	1625	1720	2-SS	4.5 mm	Section #15: in pool along left bank below cascade; gravel substrate with logs and boulders for cover. SS observed in area.

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

FISH SAMPLING FORM

Stream Name Flicker Creek ADF&G Catalog No. 106-41-45 Date 7/17/82

Identify Survey Area A Water Temp. 9.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1230	1730	0	--	Section #21 beside log in stream (80m) upstream SF pool near riffle area right bank.
2	1240	1725	7 - SS 5 - DV	7.5mm 7.3mm 8.1mm 6.8mm 7.0mm 7.2mm	Section #22 (40m) upstream under root wad in large DS pool along left bank.
3	1550	1715	0	--	Section #28 (90m) upstream in large pool between cascades. bedrock/boulder/silt substrate; very small fry seen in area (no ID on fry).
4	1630	1700	2 - SS	4.5mm 4.5mm	Section #29 (64m) upstream in small pool on right side of stream (possible SS observed); sand/gravel substrate; debris/log cover.

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

FISH SAMPLING FORM

Stream Name Flicker Creek ADF&G Catalog No. 106-41-45 Date 7/18/82

Identify Survey Area A Water Temp. 8.5°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1000	1231	0	--	Section #33: 24.5m upstream under good cover and in eddy behind rock above falls over bedrock; gravel/small cobble substrate.
2	1005	1232	0	--	Section #33: 33m upstream above bedrock falls by log in pool with sand/gravel/ cobble substrate.

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

FISH SAMPLING FORM

Stream Name Flicker Creek ADF&G Catalog No. 106-41-45 Date 8/16/82

Identify Survey Area A Water Temp. 9°C. Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1007	1107	0	--	Debris pile in mid channel approximately 28m above the second bridge crossing of Flicker Creek.
2	1007	1104	0	--	Approximately 50m below second bridge crossing under a sunken log.
3	1009	1103	0	--	Approximately 70m below second bridge crossing under a sunken root wad.

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

Trapping and reconnaissance was conducted in the Upper Flicker Creek drainage above a suspected barrier falls (see survey data) to document the occurrence or absence of salmonids. District FS personnel indicated electroshocking surveys had "produced" only resident species. Access was provided via a bridge crossing on the #1500 spur.

PEAK ESCAPEMENT RECORD

Flicker Creek

106-41-45

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
1967	Surveyed-	None seen		
1970	Surveyed-	None seen		
8/11/75	2			
9/1/77	10			

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A - J 2. Equipment X

3. Historical Fish Species PS CS

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Alder Creek 3. Lat. 56°20'10"

2. ADF&G Catalog No. 106-41-44 3. Long. 133°31'55"

4. Agency Unit 05 5. Mgmt Area 529 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-12-147 71-12-149 71-13-151 71-13-159

8. Bay/Drainage Sumner Straits 9. Access 4, 5, 6 10. Camping

11. Present Land Use a. Historical and Proposed 11b. Game Trails

12. Historical Land Use Logging units in drainage; commercial gillnetting near mouth.

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow Est. (method), 11.2m (width), .165m (depth), 24m (length), 0.8 (constant), 33 sec (time), --- (grid), 38.4 cfs (flow)

16. Temp. Sensitivity NONE

17. Beaver 6 18. Type aquatic Veg. 2 19. Density Aquatic Veg. 2

20. Adult Salmon Yes 21. Intertidal a. gradient 1%

b. bottom type % fines 20 %

gravel small cobble 65 %

large cobble/boulders/bedrock 15 %

c. ASA 50%

d. schooling Yes

e. shellfish Yes

f. Small boat anchorage in lagoon at mouth of Alder Creek

22. Comments

Excellent schooling and rearing area in sheltered lagoon.

Dungeness crab observed in lagoon.

23. Investigators Mickowski/Murph

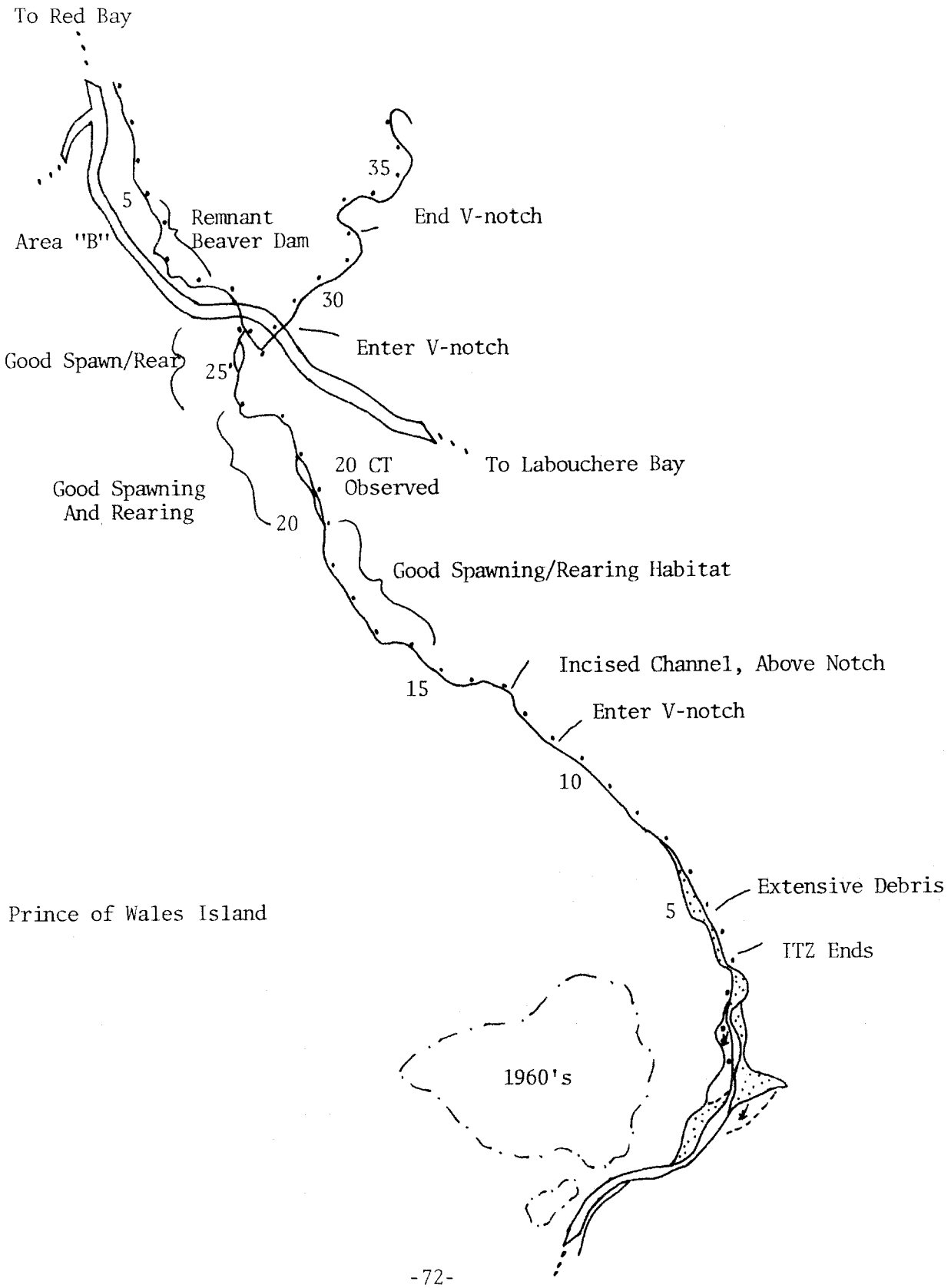
24. Date 7/19/82 25. Time 0915 (start) 1730 (end) 26. Weather 3

27. Photos

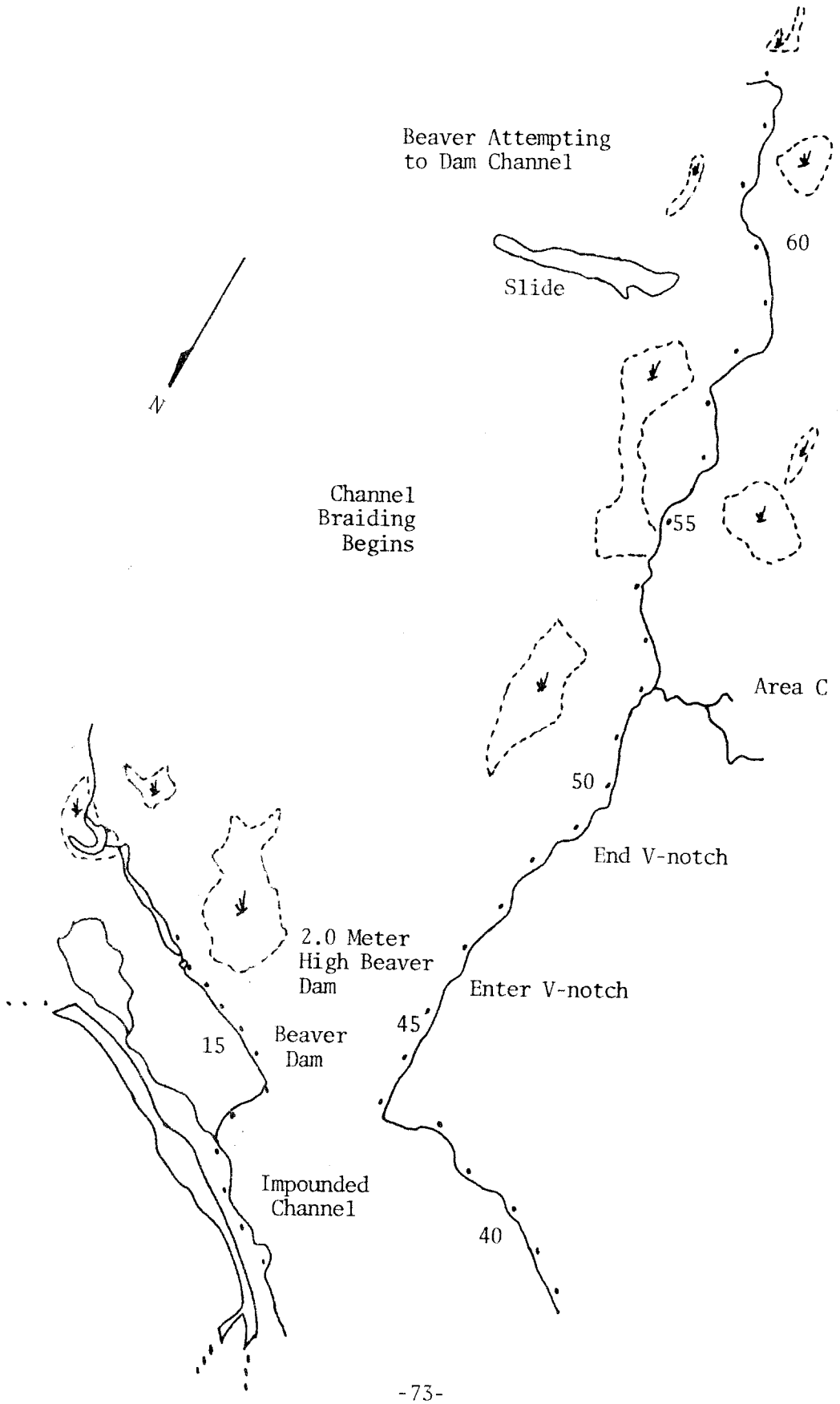
R-10 2600-3a (1/81)

GSA JUNEAU 1613

Alder Creek
106-41-44

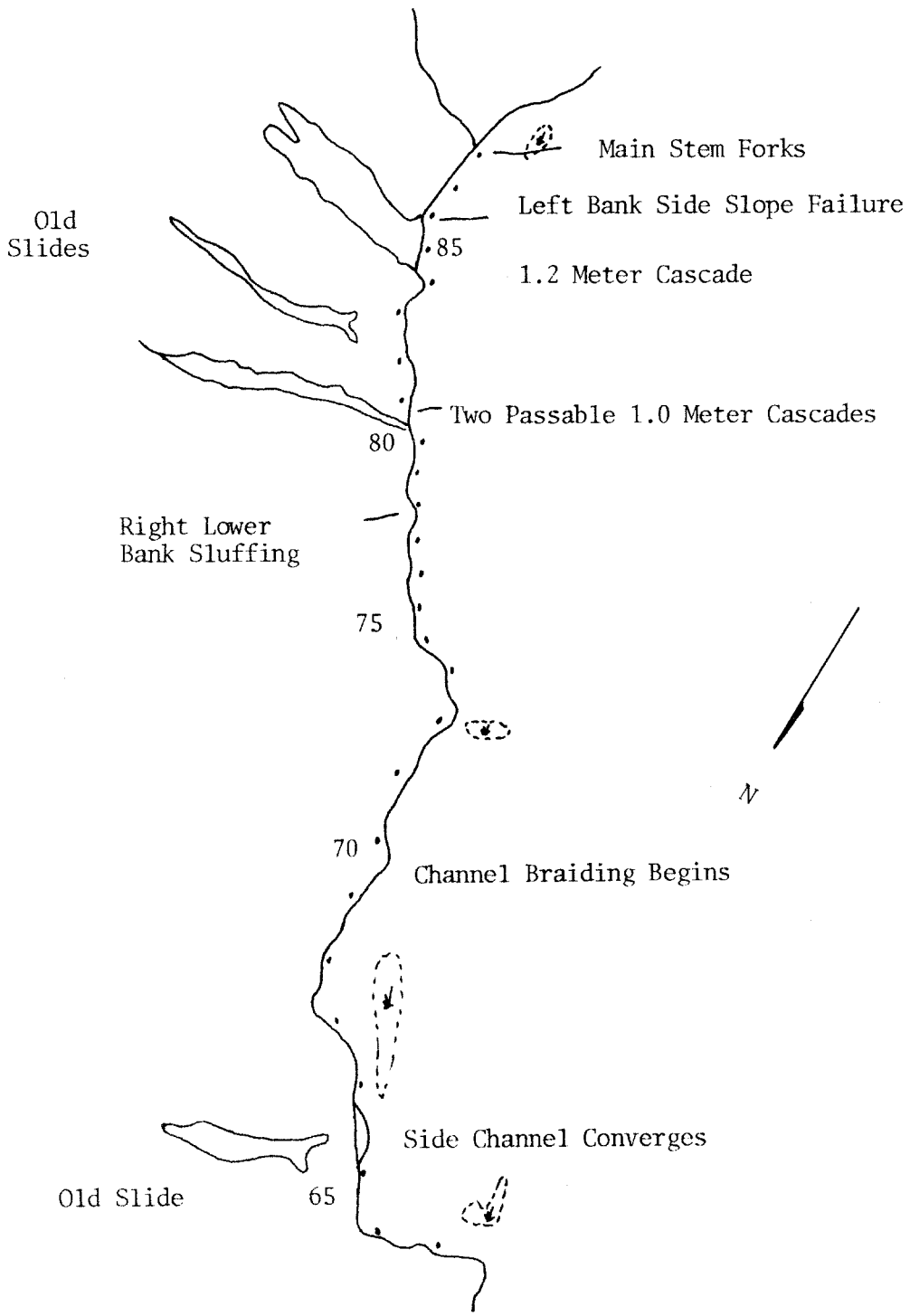


Alder Creek
106-41-44

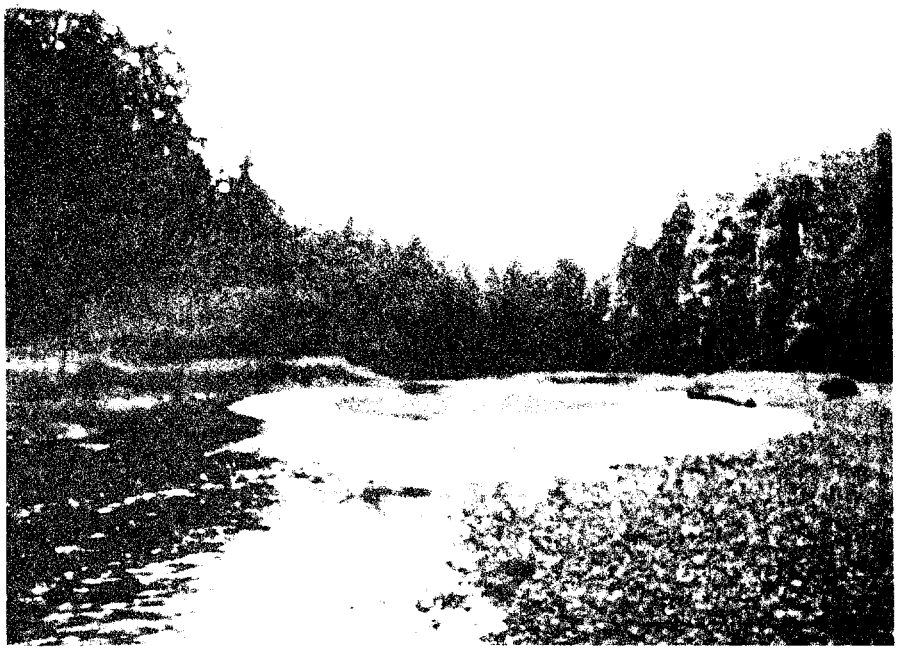


Alder Creek
106-41-44

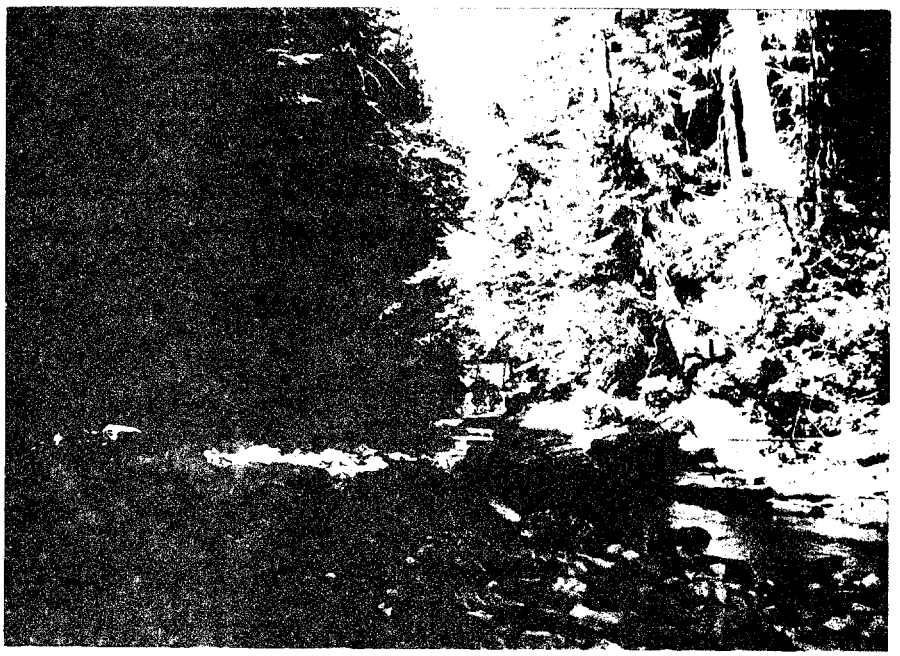
Prince of Wales Island



106-41-44
Alder Creek
Main Stem

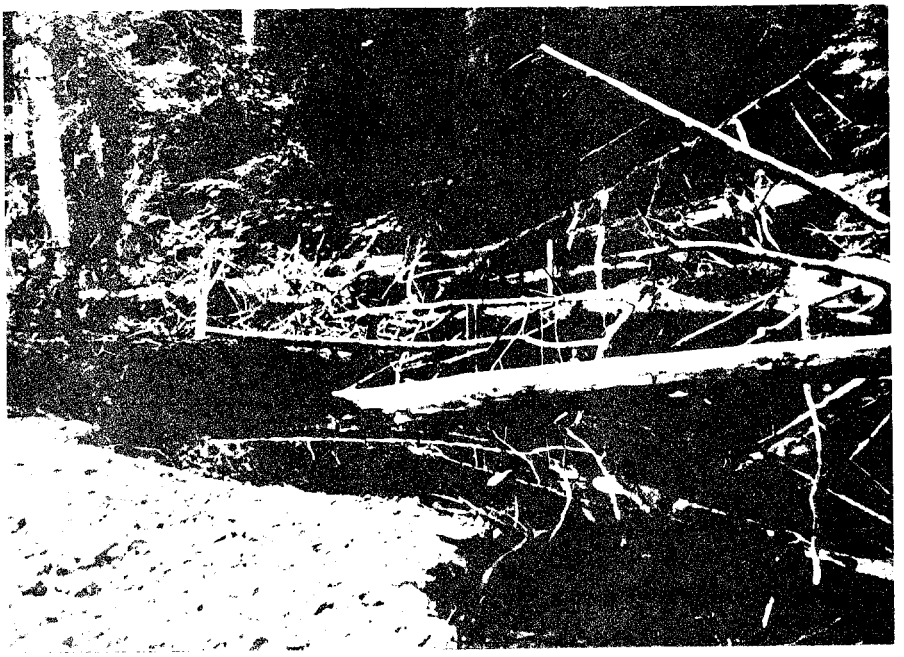


1. Intertidal Zone Looking Upstream Through Grass Flats to Break in Timber.

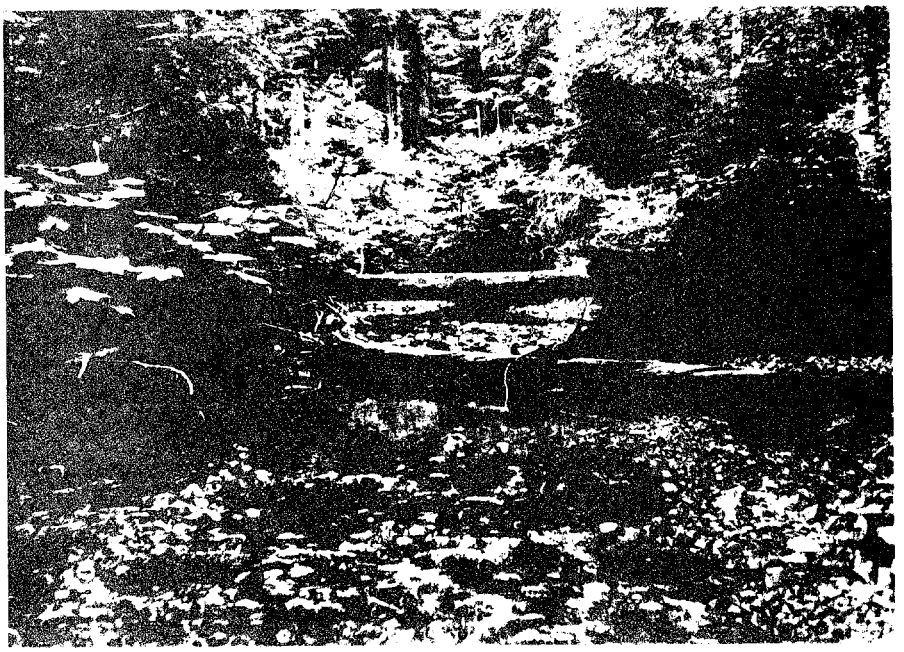


2. Section 46; Bedrock/Boulder Substrate.

106-41-44
Alder Creek
Main Stem



3. Section 61; Typical Debris Problems in Sections 56-69.



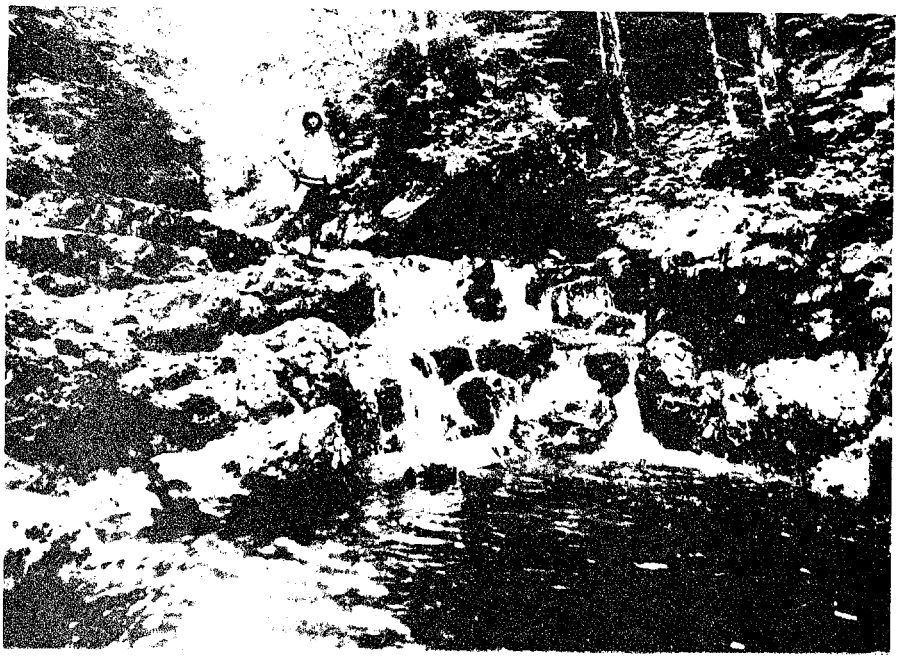
4. Section 65; Main Stem Side Channel. Excellent Rearing, Marginal Spawning Habitat.

106-41-44
Alder Creek
Main Stem

5. Section 76; Upper Slope Failure Due to Road Construction in Blue Clay Zone.

6. Section 85; Bedrock/Boulder Cascades and Pools. ASA Spotty but Coho Fry Common.

106-41-44
Alder Creek
Main Stem



7. Section 86; A Passable Series of Bedrock Cascades 1.0 Vertical Meters Each. Adequate Holding Pools Present.

8. Section 88; Channel Forks. Biologist Seated Right of Center is Located at Point of Convergence.

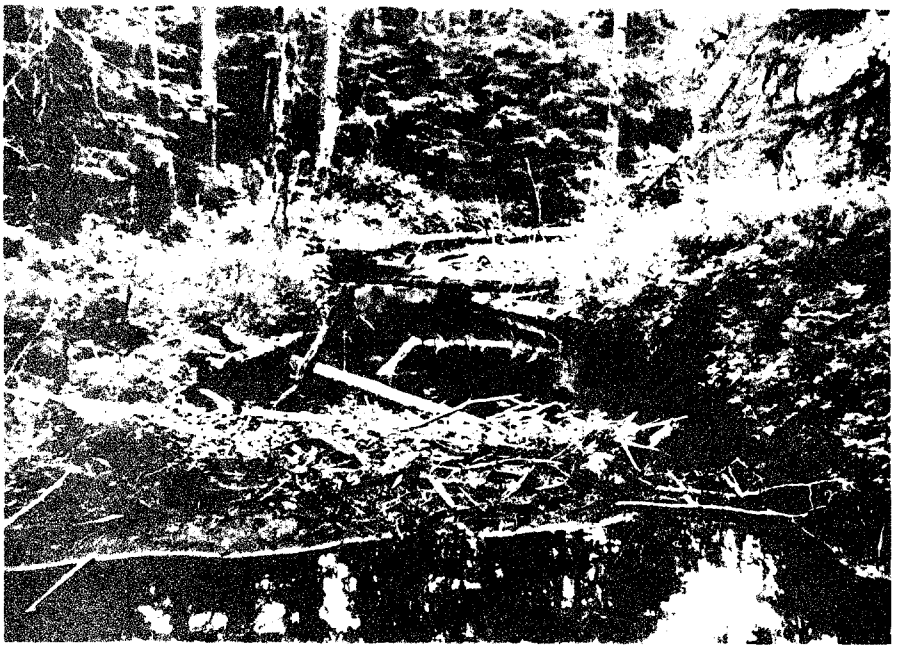
106-41-44
Alder Creek
Main Stem

9. Left Fork; Approximately 150m Above Confluence. Unsuitable Habitat and Increasing Gradient Typifies Channel.

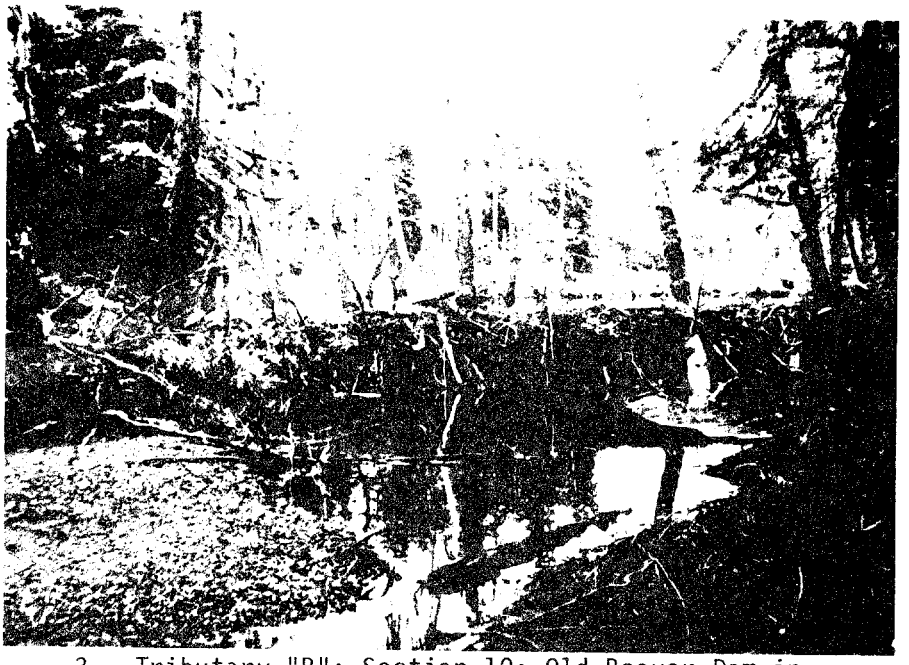
10. Right Fork; Approximately 350m Above Confluence. Unsuitable Habitat and Gradients in Excess of 15% Typify Channel.

106-41-44
Alder Creek
Tributaries

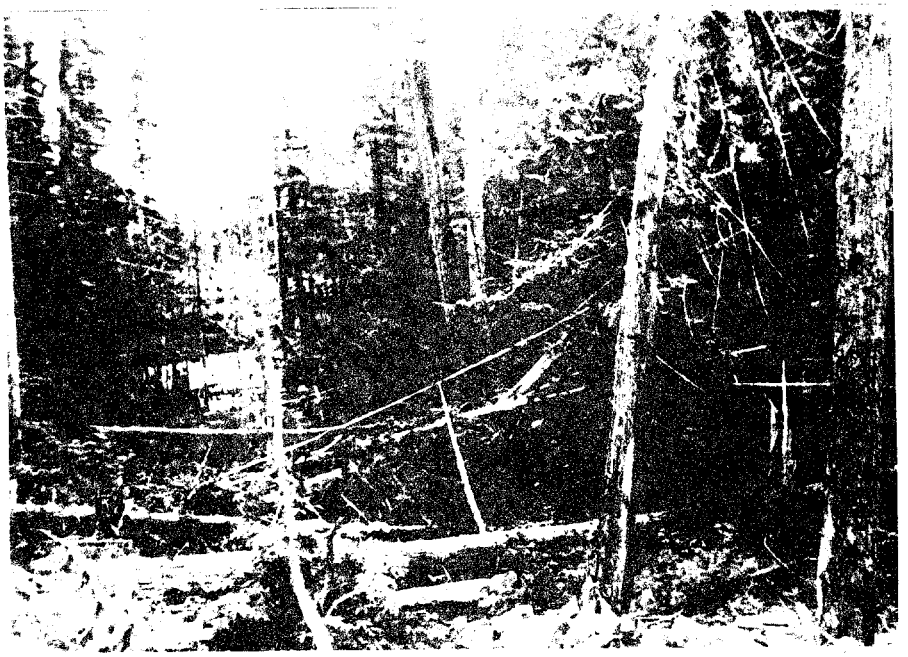
1. Confluence of Tributary "B" and Alder Creek. Remnant Beaver Dam at Mouth.



2. Tributary "B"; Section 4; Remnant Beaver Dam and Continuous Impoundments.

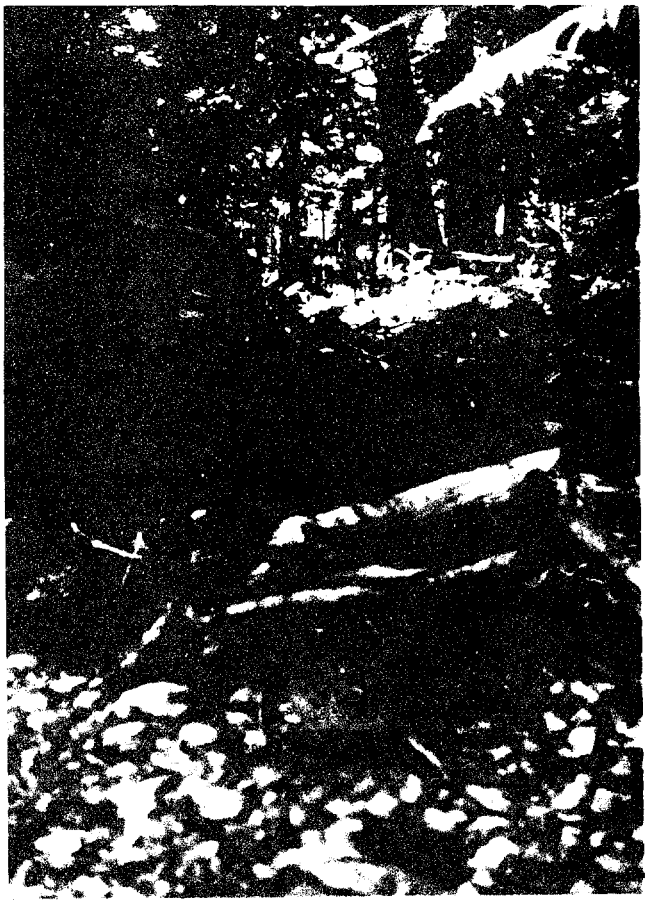


3. Tributary "B"; Section 19; Old Beaver Dam in Good Repair, 2m High. Potential Barrier. No Coho Fry Seen Above Dam.



4. Tributary "B"; Headwater Lake is Impounded by a Series of Beaver Dams and Visible From the Main Line Logging Road System.

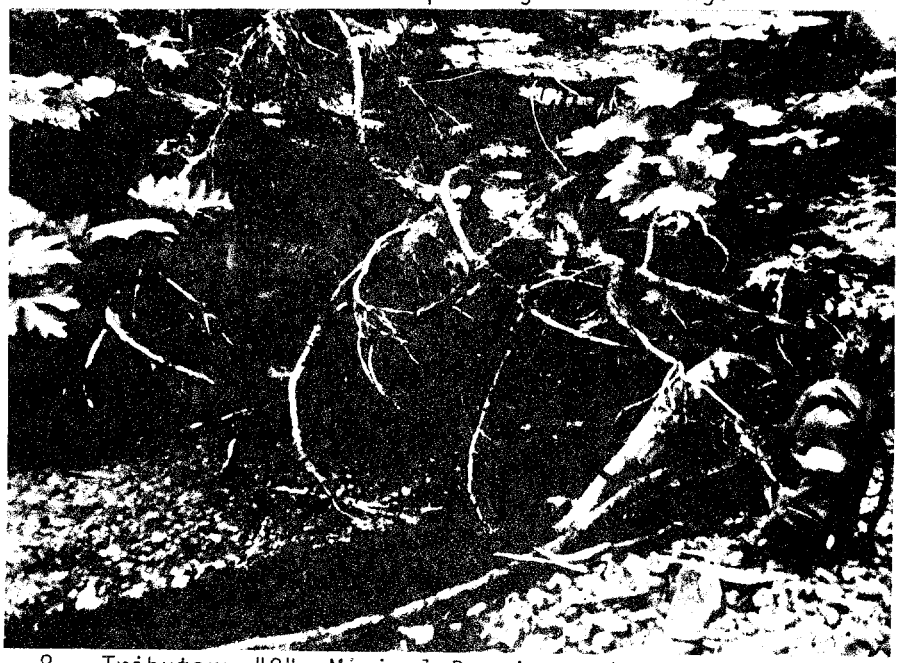
106-41-44
Alder Creek
Tributaries



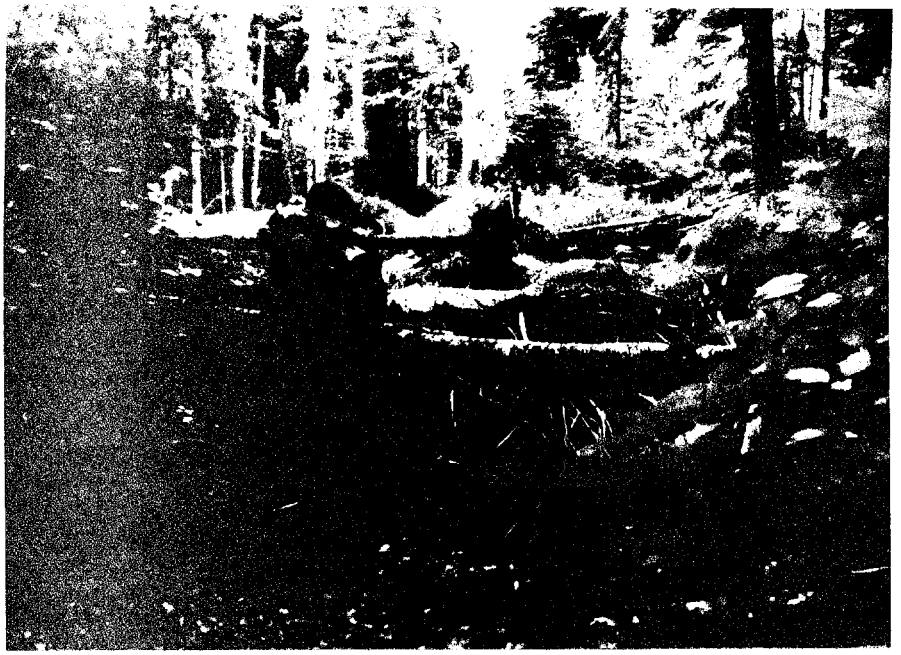
5. Tributary "D" Mouth; No Spawning, Moderate Rearing.

6. Tributary "E" Mouth; No Indication of Fish Habitation.

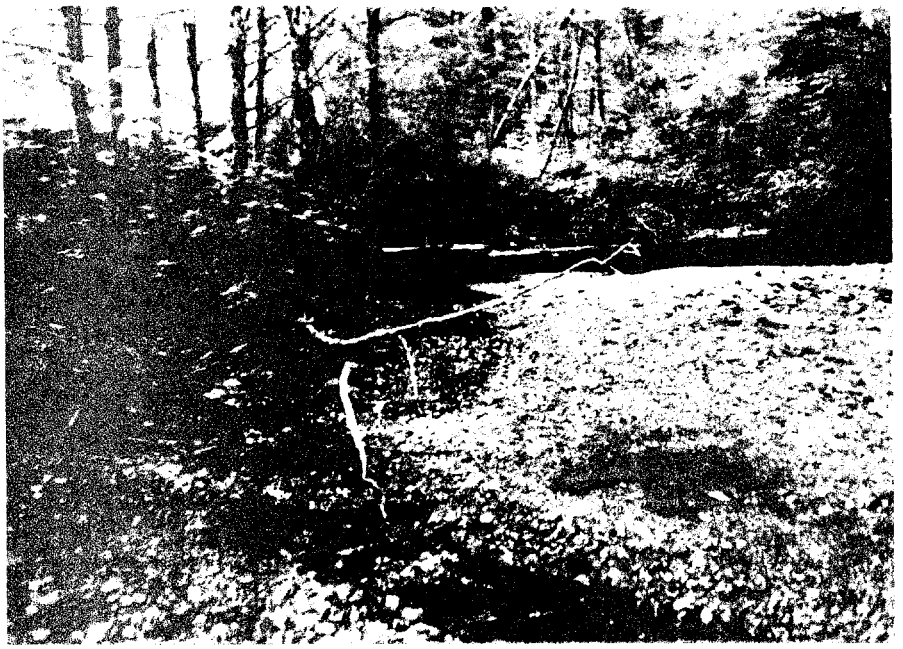
7. Tributary "F" Mouth; Steeply Sloping Bedrock Substrate. Minimal Spawning and Rearing.



8. Tributary "G"; Minimal Rearing and No Spawning Potential.



9. Tributary "H"; Beaver Impoundment. Moderate Rearing; No Spawning.



10. Tributary "I"; Less Than 1 CFS, Minimal Rearing; No Spawning Habitat.

106-41-44
Alder Creek
Tributaries

11. Tributary "J"; Excellent Resident Rearing and Spawning Habitat. Moderate Anadromous Use as Well.

12. Right Fork as Seen From Bridge Near End of Logging Unit Spur Road. Marginal Rearing and No Spawning Habitat.

106-41-44
Alder Creek

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
Area A									
1I	100	12.5	50	625	26	100	17.9	25	447.5
2I	100	24	30	720	27	100	4.9	15	73.5
3I	100	14	2	28	29	100	11	35	385
4	100	10.5	65	682.5	30	100	10	5	50
5	100	10.5	45	472.5	31	100	11	5	55
6	100	7.9	35	276.5	32	100	15.5	2	31
7	100	20	80	1600	34	100	11.5	15	172.5
8	100	22	70	1540	35	100	12	10	120
9	100	19	65	1235	37	100	11	8	88
10	100	17	15	255	38	100	16	20	320
12	100	11.2	4	44.8	39	100	7.8	25	195
13	100	8.6	25	215	40	100	8	30	240
14	100	9	25	225	41	100	6	10	60
15	100	15.5	20	310	42	100	12	5	60
16	100	11	10	110	43	100	9.4	20	188
17	100	2.5	25	62.5	44	100	16.5	20	330
18	100	12.1	20	242	45	100	12.5	8	100
19	100	13.5	40	540	50	100	11	25	275
20	100	9	20	180	51	100	7.6	2	15.2
21	100	12	35	420	54	100	5	3	15
22	100	6.6	50	330	55	100	3.1	10	31
23	100	12	20	240	56	100	11	5	55
24	100	11	40	440	57	100	8.4	13	109.2
25	100	7.4	30	222	58	100	12.6	2	25.2

106-41-44
Alder Creek

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
Area A									
59	100	13.2	12	158.4					
60	100	8	10	80					
61	100	7	10	70					
62	100	13	2	26					
63	100	10.5	2	21					
64	100	11.9	5	59.5					
65	100	5.2	10	52					
66	100	6.5	17	110.5					
67	100	9.5	2	19					
69	100	13	2	26					
70	100	8.2	1	8.2					
73	100	13	5	65					
74	100	7	7	49					
77	100	5.5	5	27.5					
83	100	3.5	1	3.5					
84	100	10	1	10					

Total ASA for Area A: 15,242.5m^2

106-41-44
Alder Creek

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
Area B									
1	100	1	10	10					
2	100	6	12	72					
5	100	3.3	10	33					
6	100	3.35	5	16.75					
Total				131.75m^2					
Area C									
1	100	2.56	2	5.12					
2	100	2.16	3	6.48					
Total				11.60m^2					
Area J									
1	100	1	10	1					
2	100	1.5	10	15					
3	100	1.5	10	15					
Total				31.0m^2					

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area A ADF&G Catalog No. 106-41-44

1. Section No.		1I	2I	3I	4	5	6	7	8
2. Compass Bearing		97	72	127	137	67	69	70	49
3. Gradient		1	1	2	1	1	1	.5	.5
4. Temperature:	Air	11	11	11	11	11	13	13	13
	Water	12	12	12	11.5	11.5	11.5	11.5	11.5
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	--	--	--	7.5	7.5	7.5	7.5	7.5
6. Streambottom Substrate	1	1	1	35	7	3	1	4	1
	2	14	9	15	13	10	4	5	10
	3	35	15	13	30	30	30	20	40
	4	30	45	12	30	35	40	60	35
	5	20	30	24	20	20	25	10	13
	6	--	--	--	--	--	--	--	--
	7	--	--	C)1	--	--	--	B)1	B)1
7. ASA	a. percent	50	30	2	65	45	35	80	70
	b. quality	2	2	2	1	1	1	1	2
8. Water Width	a. channel	20	30	41	20	16.5	39	23	24
	b. water	12.5	24	14	10.5	10.5	7.9	20	22
	c. floodplain	2	2	2	1	1	1	1	1
9. Stream Pools	a. percent	25	60	30	40	45	50	45	80
	b. category	DF/SS	DS	DF	DS/SF	DS	DF	DS	SS
10. Rearing Area		5	60	30	50	50	55	60	45
11. Debris Loading		--	--	1	2	15	10	3	2
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	Y	Y	N	N
14. Streambank Veg.		1,5	1,2,5	1-3&5	1-3&5	1-3&5	1-3&5	1-5	1-5
15. Upper Bank	a. Left	1	1	~10	35	30	19	26	25
	b. Right	1	1	1	43	29	30	18	56
b. indic	Left	N	N	TS	N	N	TS	N	N
	Right	N	N	N	N	N	N	N	N
c. veg	Left	N	N	Y	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	GS	GS	SS	UC	UC	UC	GS	UC
	Right	GS	GS	GS	UC	GS	GS	GS	UC
17. Stab rating	Left	1(1)	1(1)	1(1)	1(2)	1(1)	1(2)	1(2)	1(1)
	Right	1(1)	1(1)	3(2)	1(2)	1(2)	3(2)	1(2)	1(1)
18. Stream Canopy Cover		3	3	3	3	2	3	3	3
19. Fish Species	fry SS	N	N	N	Y	Y	N	N	Y
	CO	Y	N	N	N	N	N	N	N
20. Sampling		N	N	N	Y	N	N	N	N

21. Comments

Section 3I: A small tributary enters the main stem via the right bank at 86m 1.5m wide at the mouth; this less than 2 cfs stream provides moderate coho rearing and small, sporadic patches of ASA; is 121m long, to encompass the intertidal zone.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 5: Left bank undercutting and downstream bar formation has been accelerated by instream debris (i.e., root wads and logs) during periods of peak flows. The debris itself has formed the lattice of a potentially extensive and debilitating jam. Removal is recommended (see new project opportunity form); clay bands visible in channel.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area A ADF&G Catalog No. 106-41-44

1.	Section No.		9	10	11	12	13	14	15	16
2.	Compass Bearing		51	51	43	46	67	32	43	50
3.	Gradient		.5	.5	2.5	1	2	2	.5	1
4.	Temperature:	Air	13	13	12	12	12	12	12	16
		Water	11.5	11.5	11.5	11.5	11.5	11.5	11.5	14.5
5.	Water qual:	a. color	1	1	1	1	1	1	1	1
		b. turbidity	1	1	1	1	1	1	1	1
		c. pH	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6.	Streambottom Substrate	1	9	20	16	5	20	8	9	2
		2	14	2	1	4	15	5	5	3
		3	35	13	1	4	13	25	20	17
		4	25	12	1	10	25	30	40	25
		5	15	8	1	2	2	20	15	30
		6	--	--	--	--	--	3	5	3
		7	A)$_1$B)$_1$	A)$_{45}$	A)$_{80}$	A)$_{75}$	A)$_{25}$	*	A)$_5$B)$_1$	A)$_{20}$
7.	ASA	a. percent	65	15	0	4	25	25	20	10
		b. quality	2	2	--	1	1	1	1	2/3
8.	Water Width	a. channel	20	18	10	14	14	17.5	25	13
		b. water	19	17	8.6	11.2	8.6	9	15.5	11
		c. floodplain	1	1	1	1	1	1	2	1
9.	Stream Pools	a. percent	100	35	0	5	15	75	80	90
		b. category	SS/DS	DS/DF	--	SF	DF	DS	DS	SS
10.	Rearing Area		45	20	2	4	20	80	80	75
11.	Debris Loading		1	3	2	2	1	8	2	3
12.	Potential Barriers		N	N	N	N	N	N	N	N
13.	Enhancement/Rehab		N	N	N	N	N	N	N	N
14.	Streambank Veg.		1,3,5	1-3&5	1-5	1-5	1-5	1-5	1-5	1-5
15.	Upper Bank	a. Left	40	90	124	42	45	31	18	45
		b. Right	122	127	140	125	89	132	15	31
	b. indic	Left	N	N	V-Not	V-Not	N	N	N	N
		Right	N	N	V-Not	V-Not	N	N	N	N
	c. veg	Left	N	N	N	N	N	N	N	N
		Right	N	N	Y	N	N	N	N	N
16.	Lower Bank	Left	UC	UC	GS	GS	GS	GS	UC	UC
		Right	GS	GS	GS	UC	UC	SS	UC	UC
17.	Stab rating	Left	1(1)	1(1)	1(3)	1(2)	1(3)	2(2)	1(1)	1(1)
		Right	1(2)	1(2)	1(3)	1(1)	1(2)	1(3)	1(1)	1(1)
18.	Stream Canopy Cover		2	2	2	1	2	2	2	2
19.	Fish Species	fry SS	N	N	--	Y	Y	Y	Y	>100
		juv. CT	N	N	N	N	N	N	Y	Y
		juv. DV	N	N	N	N	N	N	Y	Y
		CO	N	N	N	1	N	N	N	1
20.	Sampling		N	N	N	N	N	N	Y	Y

21. Comments *a)$_5$b)$_2$c)$_2$

Sections 11 and 12: Thin soil over bedrock, some erosion and soil/root wad failure on upper banks of V-notch.

Section 13: Above V-notch, habitat improving but still in deep cut.

Section 14: Hillside blowdown on right upper bank and in channel.

Section 15: Small side channel; 3m wide

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Sections 15-20: Excellent rearing and good to excellent ASA throughout these sections. Cover was abundant and several hundred CT, SS and DV fry were observed.

Extremely dry weather during the course of this survey has resulted in a .17m drop in water levels over a seven day period.

Sections 16: Caddis fly larvae present in moderate amounts. A small tributary enters the main stem via the right bank at 68m. 0.5m wide at the mouth, this less than 1.5 cfs trib. provides sporadic SS rearing in debris induced pools; substrate is primarily muck and a remnant beaver dam is located 45m from the confluence.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area A ADF&G Catalog No. 106-41-44

1. Section No.		17	18	19	20	21	22	23	24
2. Compass Bearing		6	61	65	80	76	70	66	355
3. Gradient		1.5	1	1	.5	.5	1	1	1
4. Temperature:	Air	18	22	23.5	23.5	24	24	22	20
	Water	14	14	12	12	11.5	11.5	15	15
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.5	7.5	7.5	7.5	8	8	8	7.5
6. Streambottom Substrate	1	--	5	2	2	3	3	30	12
	2	5	4	4	2	2	6	5	15
	3	38	25	25	45	35	40	15	30
	4	35	35	50	25	30	35	30	20
	5	15	20	15	20	25	15	10	10
	6	--	5	--	--	3	--	--	--
	7	$A)_5 C)_2$ *		$A)_3 C)_1$	$A)_5 C)_1$	$A)_1 C)_1$	$C)_1$	$A)_{10}$	$A)_{13}$
7. ASA	a. percent	25	20	40	20	35	50	20	40
	b. quality	2	2	2	2	2	2	2	2/3
8. Water Width	a. channel	13	27.5	18.2	29.5	17.5	32.8	21	19
	b. water	2.5	$L)_5 R)_8$	13.5	9	12	6.6	12	11
	c. floodplain	2	1	2	2	1	2	1	1
9. Stream Pools	a. percent	75	80	60	80	60	45	80	60
	b. category	SS	DS/SS	SS	SS	SS	SS	SS	SS/DS
10. Rearing Area		100	100	100	100	100	100	100	100
11. Debris Loading		5	4	2	3	5	2.5	1	1
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
15. Upper Bank	a. Left	46	20	29	94	29	24	24	15
	b. Right	11	40	10	10	57	13	12	33
b. indic	Left	TS	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	Y	N	Y	N	N
16. Lower Bank	Left	SS	UC	UC	UC	UC	UC	UC	GS
	Right	UC	UC	GS	UC	UC	UC	UC	UC
17. Stab rating	Left	1(3)	1(1)	1(1)	1(1)	1(1)	1(1)	1(2)	1(2)
	Right	1(1)	1(1)	1(2)	1(1)	1(3)	1(1)	1(1)	1(3)
18. Stream Canopy Cover		3	1	1	3	2	2	2	3
19. Fish Species fry	SS	>75	>50	>100	>100	>50	>50	25	18
juv.	CT	Y	Y	Y	Y	Y	20	Y	Y
	DV	N	N	N	N	N	N	N	N
	CO	N	N	N	N	N	N	N	N
20. Sampling		Y	N	N	N	N	N	N	N

21. Comments *$a)_3$ $b)_1$ $c)_2$

Section 17: 19m; channel braids converge

Section 17: 22m; a steep, less than 1 cfs tributary enters main stem from left bank. Marginal rearing and no spawning potential.

Section 18: Braids diverge.

Section 19: Many SS fry were trapped in pools above the current stream level

Section 20: " " " " " " " " " " " "

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 21: 58m; stream braids around mid channel; debris pile.

Section 22: 11m; muskeg seep and dry channel along right bank; dry channel contained isolated pools with SS and CT fry. 35m; observed approximately 20 anadromous CT in a debris induced pool.

Section 23: 100m; a small muskeg seep, less than 0.05m wide at the mouth with a gradient exceeding 13% drains the right bank.

Sections 20-24: Excellent rearing and good to excellent ASA throughout these sections. Cover was abundant and several hundred SS and CT fry were observed.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area A ADF&G Catalog No. 106-41-44

1. Section No.		25	26	27	28	29	30	31	32
2. Compass Bearing		86	99	179	129	135	142	96	148
3. Gradient		1.5	1	.5	.5	1	1	1	1
4. Temperature:	Air	19	21	13	16	16	16	16.5	19
	Water	16	16.5	14	14	14	14	14	15
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6. Streambottom Substrate	1	10	1	5	20	15	20	30	30
	2	20	4	11	15	20	10	8	3
	3	30	40	20	10	20	15	12	2
	4	20	25	35	20	20	10	8	2
	5	10	25	25	20	5	5	2	3
	6	--	--	--	--	--	--	--	--
	7	a)10	a)3c)2	a)2c)2	a)15	a)20	a)40	a)40	a)60
7. ASA	a. percent	30	25	15	0	35	5	5	2
	b. quality	2	2	1	--	1	2	2	2
8. Water Width	a. channel	26	24.4	19.9	14	11.5	13	18.5	20
	b. water	7.4	*	4.9	13	11	10	11	15.5
	c. floodplain	3	1	2	1	1	1	1	1
9. Stream Pools	a. percent	30	60	80	100	60	30	60	50
	b. category	SF/DS	DS	SS	SS/DS	SS/SF	SF	SS/DS	SS
10. Rearing Area		70	75	80	60	40	40	30	50
11. Debris Loading		5	10	15	1	1	--	1	--
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
15. Upper Bank	a. Left	26	36	18	Under	98	60	56	24
	b. Right	>140	13	9	Bridge	114	99	98	30
b. indic	Left	N	N	N	N	TS	TS	N	TS
	Right	N	N	N	N	TS	TS	TS/PV	N
c. veg	Left	N	N	Y	N	N	N	N	Y
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	UC	UC	UC	UC	UC	GS	GS	UC
	Right	UC	GS	GS	UC	GS	UC	SS	UC
17. Stab rating	Left	1(1)	1(2)	3(1,3)	1(2)	1(3)	1(3)	1(1)	1(1)
	Right	1(2)	1(2)	2(1)	1(2)	1(3)	1(3)	1(3)	1(1)
18. Stream Canopy Cover		3	2	3	3	1	2	3	2
19. Fish Species	(fry) SS	25	Y	75	15	Y	40	12	>50
	(juv) CT	Y	Y	Y	Y	Y	Y	Y	Y
	(juv) DV							N	Y
20. Sampling		N	N	N	N	Y	N	N	Y

21. Comments *L)12.4R)5.5

Section 26: 18m; Channel diverges around a large, unvegetated gravel bar. 81m; Tributary "B" enters the mainstem through a broken beaver dam along the left bank.
Debris and resulting pools, common.

Sections 25&26: Excellent rearing and good to excellent ASA throughout these sections. Cover was abundant and several hundred SS and CT fry were observed.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 27: Debris and resulting pools common. Fresh beaver cuttings observed. Left lower bank is being rapidly undermined by debris altered stream course.

Section 28: 00m; center of mainline logging road, #1000, bridge crossing. 68m; entering V-notch, habitat change; steeper side slopes, less debris and a greater proportion of bedrock/boulders.

Section 29: 8m; 10m by 2m band of blue clay in mid-channel. 34m; end of large continuous pool which began in Section 27.

Section 31: Aquatic mosses common throughout section.

Section 32: Left bank slope failure due to bedrock overlain with thin soils; vegetation is moderating factor here. End V-notch; jagged bedrock outcrops common; banks heavily undercut with abundant overhanging vegetation.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area A ADF&G Catalog No. 106-41-44

1. Section No.		33	34	35	36	37	38	39	40
2. Compass Bearing		140	133	39	105	66	72	43	41
3. Gradient		1	1	1.5	1	1	.5	.5	.5
4. Temperature:	Air	19	19	23.5	24	22	14	16	15
	Water	15	15	15.5	16	16	13	13	13
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6. Streambottom Substrate	1	15	10	2	20	1	15	15	5
	2	25	15	18	10	3	20	15	10
	3	20	20	20	10	6	20	17	25
	4	20	28	30	19	7	15	25	40
	5	4	15	25	10	3	5	8	5
	6	1	2	--	--	--	--	--	--
	7	a) 15	a) 9 c) 1	a) 2 c) 3	a) 30 c) 1	a) 80	a) 25	a) 20	a) 15
7. ASA	a. percent	--	15	10	--	8	20	25	30
	b. quality	--	1	2	--	2	2	2	2
8. Water Width	a. channel	13	18	18.5	19	15	17	32	16.5
	b. water	5.8	11.5	12	16.5	11	16	7.8	8
	c. floodplain	1	1	2	1	1	1	1	1
9. Stream Pools	a. percent	30	60	60	100	50	60	70	75
	b. category	DS	SS/DS	DS	SS/DS	SF	SS	DS/SS	SS/SF
10. Rearing Area		35	70	70	100	40	60	50	60
11. Debris Loading		1	4	15	2	1	2	5	1
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-5	1-5	1-5	1-5	1,3,5	1,3,5	1-5	1-5
15. Upper Bank	a. Left	106	15	8	7	37	43	11	25
	b. Right	68	8	8	10	35	19	98	13
b. indic	Left	TS	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	SS	UC	UC	GS	SS	UC	GS	GS
	Right	UC	GS	UC	UC	UC	UC	UC	SS
17. Stab rating	Left	1(3)	1(2)	1(1)	1(1)	1(1)	1(1)	1(1)	1(3)
	Right	1(1)	1(1)	1(2)	2(2)	1(3)	1(1)	1(3)	1(1)
18. Stream Canopy Cover		1	1	3	1	3	2	1	3
19. Fish Species		Y	>50	Y	18	Y	40	Y	Y
		Y	Y	Y	Y	Y	Y	Y	Y
		Y	Y	N	N	N	N	N	N
20. Sampling		N	Y	N	N	N	N	Y	N

21. Comments

Section 33: 97m; An estimated 2.5 cfs tributary enters main stem via right bank. A steep, primarily boulder/cobble channel rapidly climbs 30 meters to the base of a .8 meter high beaver dam in excellent repair. Dense brown algae on substrate throughout. Moderate rearing; no ASA. No SS Fry sighted above dam. Water Color: Lightbrown; pH; 6.5; Water Temperature; 14°C.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 35: Minimal braiding around debris; moderate caddis larvae densities.

Section 37: 52m; Tributary "C" enters main stem via right bank.

Section 38: Abundant overhanging riparian vegetation.

Section 39: 50m; Tributary "D" enters main stem via right bank.

Section 40: Abundant overhanging riparian vegetation.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area A ADF&G Catalog No. 106-41-44

1. Section No.		41	42	43	44	45	46	47	48
2. Compass Bearing		83	11	17	122	121	124	138	130
3. Gradient		1	1	2	1	1	1.5	1.5	1.5
4. Temperature:	Air	15	16	16	17	17	17	19	19
	Water	13.5	13.5	14	15	15	16	16.5	16.5
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6. Streambottom Substrate	1	25	25	23	20	20	25	25	30
	2	10	25	20	20	20	15	10	3
	3	15	14	25	20	9	7	10	3
	4	15	10	15	25	9	7	4	2
	5	5	1	5	5	7	6	1	2
	6	--	--	--	--	--	--	--	--
	7	a) 30	a) 25	a) 12	a) 10	a) 35	a) 40	a) 50	a) 60
7. ASA	a. percent	10	5	20	20	8	--	--	--
	b. quality	2	2	2	2	2	--	--	--
8. Water Width	a. channel	18	13	15	16.5	13.5	11	12	13
	b. water	6	12	9.4	16.5	12.5	10	7.5	9
	c. floodplain	1	1	1	1	1	1	1	1
9. Stream Pools	a. percent	30	25	30	50	45	40	25	25
	b. category	SF	SF	SS/SF	SS	SS/SF	SF	SF	SF/SS
10. Rearing Area		30	50	65	70	50	40	30	25
11. Debris Loading		1	1	3	1	1	2	1	1
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-5	1-5	1,3,5	1-5	1-5	1-5	1-5	1-5
15. Upper Bank	a. Left	144	30	118	22	95	>150	>150	>150
	b. Right	33	38	14	55	72	118	115	>150
b. indic	Left	N	N	N	N	N	N	V-Not	V-Not
	Right	N	N	N	N	N	N	V-Not	V-Not
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	SS	UC	SS	UC	UC	SS	SS	SS
	Right	UC	SS	UC	UC	SS	UC	GS	SS
17. Stab rating	Left	1(3)	1(1)	1(3)	2(2)	1(1)	1(3)	1(3)	1(3)
	Right	1(1)	1(1)	1(1)	1(1)	1(2)	1(1)	1(2)	1(3)
18. Stream Canopy Cover		1	1	2	3	2	1	1	2
19. Fish Species	fry SS	9	45	35	>25	Y	Y	Y	Y
	juv. CT	Y	Y	Y	Y	Y	Y	Y	Y
	juv. DV	N	N	N	Y	Y	N	N	N
	CO	N	N	N	1	N	N	N	N
20. Sampling		N	N	Y	N	N	Y	N	N

21. Comments

Section 42: Abundant overhanging riparian vegetation.

Section 43: 21m; tributary "E" enters main stem via left bank. Abundant overhanging riparian vegetation.

Section 44: Abundant overhanging riparian vegetation.

Section 45: 6m; tributary "F" enters main stem via left bank.

Section 46: Sparse moss and green algae on boulders. Localized left upper bank slope failures. Bedrock highly fractured. Entered V-notch.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21: Comments Cont.

Section 47: Left bank near vertical; exposed bedrock cliff, approximately 14m high.

Section 48: Molten-like bedrock forms right lower bank. Rearing is sporadic amidst boulders/fractured bedrock.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area A ADF&G Catalog No. 106-41-44

1. Section No.		49	50	51	52	53	54	55	56
2. Compass Bearing		130	120	135	129	107	106	114	106
3. Gradient		2	1.5	1.5	1.5	2	1	2	3
4. Temperature:	Air	19	20	15.5	15.5	15.5	15.0	15.0	16.5
	Water	16.5	16.5	14.5	14.5	14.5	14.0	--	--
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6. Streambottom Substrate	1	20	15	20	20	15	20	10	--
	2	5	20	10	15	5	5	10	20
	3	5	25	15	10	10	15	24	35
	4	5	20	10	5	20	10	15	25
	5	5	5	5	5	10	5	5	10
	6	--	--	--	--	--	--	--	--
	7	a) 60	a) 15	a) 40	a) 45	a) 40	a) 45	a) 35 c)	b) 9 c)
7. ASA	a. percent	--	25	2	--	--	3	10	5
	b. quality	--	2	2	--	--	2	2	2
8. Water Width	a. channel	11	16	15	18	12	10.5	16	21
	b. water	5.3	11	7.6	7.0	5.5	5.0	3.1	11.0
	c. floodplain	1	1	1	1	1	1	1	3
9. Stream Pools	a. percent	20	35	10	35	50	20	40	75
	b. category	DF/SS	SF	SS	SS	SS	SS	SS	SS/DS
10. Rearing Area		30	40	20	15	25	15	30	70
11. Debris Loading		2	--	2	2	2	1	3	35
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-5	1-5	1-5	1-3&5	1-3&5	1-5	1-5	1-5
15. Upper Bank	a. Left	>150	68	45	>150	90	140	105	14
	b. Right	135	63	28	65	45	110	65	10(est)
b. indic	Left	V-Not	V-Not	N	N	N	V-Not	V-Not	N
	Right	V-Not	V-Not	N	N	N	V-Not	V-Not	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	SS	UC	UC	UC	UC	GS	UC	GS
	Right	GS	UC	UC	UC	UC	UC	GS	UC
17. Stab rating	Left	1(3)	1(1)	1(1)	1(3)	1(3)	1(3)	1(3)	1(1)
	Right	1(3)	1(1)	1(1)	1(1)	1(3)	1(1)	1(1)	1(1)
18. Stream Canopy Cover		2	1	3	2	3	3	2	3
19. Fish Species	fry SS	Y	Y	6	1	+20	+20	+20	>100
	juv. CT	Y	Y	2	N	N	N	N	N
	CO								
	DV	N	N						
20. Sampling		N	N	N	N	N	N	N	N

21. Comments

Section 49: 59m; End of V-notch. Exposed 3m by 1m band of blue clay, mid channel.

Section 50: Abundant, overhanging riparian vegetation.
85m; Tributary "G" enters main stem via left bank.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Reach Evaluation: Sections 51-55; Generally steep side slopes; nearly complete canopy; substrate is near continuous bedrock overlain by varying amounts of boulders, cobbles and gravels; gradient, 1-2%; debris loading minimal; silver salmon common.

Section 55: Tributary "I" enters Alder Creek at the 41 meter mark via the right bank.

Section 56: Dry "overflow" channel from tributary "I" emerges from right bank.

See Sections 57-64 for remaining comments on Section 56.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area A ADF&G Catalog No. 106-41-44

1. Section No.		57	58	59	60	61	62	63	64
2. Compass Bearing		73	105	118	129	123	95	97	140
3. Gradient		1	2	1.5	2	2	1	2	2
4. Temperature:	Air	15.5	15.5	17	18	18	17	18	18.5
	Water	14	14	14	14	14	14	14	14
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6. Streambottom	Substrate 1	2	3	3	2	--	2	3	7
	2	15	25	20	30	20	30	30	30
	3	37	25	30	30	30	25	13	20
	4	25	22	30	20	25	20	30	25
	5	15	18	12	15	20	20	20	15
	6	--	--	--	--	--	--	--	--
	7	a)3 b)2 c)1	a)2 b)3 c)2	b)3 c)2	b)2 c)1	b)3 c)2	b)2 c)1	b)3 c)1	b)2 c)1
7. ASA	a. percent	13	2	12	10	10	2	2	5
	b. quality	2	2	2	2	2	2	2	2
8. Water Width	a. channel	20	17.5	18	30	24	19	12	17.5/7.9
	b. water	5.5/2.9	12.6	13.2	8	7	13	10.5	9.5/24
	c. floodplain	1	1	3	2	3	2	3	2
9. Stream Pools	a. percent	70	80	75	75	60	75	85	70
	b. category	SS/DS	SS/DS	SS/DS	SS/DS	DS/SS	DS/SS	DS/SS	DS/SS
10. Rearing Area		60	70	65	65	60	65	70	50
11. Debris Loading		30	40	40	25	25	15	30	20
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-3,5
15. Upper Bank	a. Left	25	12	8	10	10	5	13	0/0
	b. Right	8	10	10	12	8	13	9	0/0
b. indic	Left	N	N	N	N	N	N	N	TS/N
	Right	N	N	N	N	N	N	N	TS/N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	UC	SS	UC	UC	UC	GS	UC	UC/UC
	Right	UC	GS	UC	UC	UC	UC	GS	UC/UC
17. Stab rating	Left	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	3(1)	*
	Right	1(1)	1(1)	1(1)	1(1)	1(1)	1(2)	1(1)	**
18. Stream Canopy Cover		3	3	2	3	3	2	3	3
19. Fish Species	fry SS	+20	>100	>50	>25	>25	10	>25	>25
	juv. CT	N	<10	N	N	N	N	N	N
20. Sampling		N	N	N	N	N	N	N	N

21. Comments *3(2)/2(1) **3(2)/3(1)
Sections 56-65: Generally a highly braided stream with copious blowdown and undercut trees. Substrate varies but is primarily composed of cobbles/gravels/sand. Nice timber; spruce throughout reach. Possible KV projects site; bucking up the blowdown, etc.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.
Sections 56-60: Extensive debris loading has greatly increased the incidence of DS pools.

Section 62: Beaver are attempting to dam the main stem.

Section 64: Channel braids on either side of an alder covered bar.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area A ADF&G Catalog No. 106-41-44

1. Section No.		65	66	67	68	69	70	71	72
2. Compass Bearing		141	113	113	61	76	71	112	115
3. Gradient		2	2	2	2	2	2.5	1	2
4. Temperature:	Air	18	15	14	14	13.5	13.5	13.5	14
	Water	14	13.5	13.5	13.5	13.5	13.5	13.5	13
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6. Streambottom Substrate	1	6	3	13	6	3	3	3	15
	2	20	25	25	30	20	30	30	35
	3	30	30	25	25	30	25	30	25
	4	20	25	15	20	30	25	25	15
	5	20	15	20	15	15	15	10	10
	6	--	--	--	--	--	--	--	--
	7	b)$_3$ c)$_1$	b)$_2$	b)$_2$	b)$_4$	b)$_2$	b)$_2$	a)$_1$ b)$_1$	b)$_2$
7. ASA	a. percent	5+5	12+5	2	0	2	1	0	0
	b. quality	2	2	2	--	2	1	--	--
8. Water Width	a. channel	16.5	10	15	26	17	10	28	20
	b. water	1.5/3.7	6.5	9.5	16	13	8.2	3.5	3.2
	c. floodplain	2	1	3	3	3	1	3	3
9. Stream Pools	a. percent	70	60	70	65	70	60	75	45
	b. category	DS/SS	DS/SS	DS/SS	DS/SS	DS/SS	DS/SS	SS	SS/DS
10. Rearing Area		50	45	65	65	70	60	30	30
11. Debris Loading		35	12	30	40	35	17	10	10
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-5	1-5	1-5	1-5	1,3-5	1-5	1-5	1-5
15. Upper Bank	a. Left	10	5	8	10	20	20	12	20
	b. Right	16	35	18	5	10	21	12	5
b. indic	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	UC	UC	UC	UC	UC	UC	UC	UC
	Right	UC	UC	UC	UC	UC	GS	UC	GS
17. Stab rating	Left	2(1)	1(1)	1(1)	2(1)	1(1)	2(2)	2(1)	1(1)
	Right	2(1)	1(1)	1(1)	1(2)	2(2)	3(2)	2(2)	1(1)
18. Stream Canopy Cover		3	3	3	3	2	2	3	2
19. Fish Species	fry SS	>50	>75	>25	>25	>25	>25	>25	>25
	juv. CT/Rb	N	N	1	>6	>6	<6	<6	<6
20. Sampling		N	Y	N	Y	N	N	N	N

21. Comments

Section 65: 186 meter long "side channel" converges with main stem along left bank.

Section 66: "Side channel" diverges, left, at 78 meters.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 67: Tributary "J" enters via right bank at 44 meters. Braiding begins at 71 meters.

Section 70: Braiding begins at 67 meters.

Section 71: Less than 1 cfs, ephemeral, enters main stem via right bank, 57 meters.

Section 72: Tributary "K" enters main stem via right bank, 61 meters.

Reach Evaluation - Sections 66 through 74

Highly braided channels with numerous flood channels and heavy undercutting. Copious debris and a lot of lower bank leaners. Generally more than 50%, primarily debris induced, pools. Excellent rearing habitat. CT sitings increasing, but SS remain common. Riffles are generally large cobbles with a small percentage of small cobbles/gravels at the head. Most of the small cobble ratings are for the larger end of the spectrum (i.e., 5" cobbles). Gravels mainly occur throughout the SS sections and along edges of pools. Few localized clay deposits seen in stream bed. Side slope gradients less than 25%. Numerous (i.e., less than 2m wide) ephemeral channels enter main stem. Breaks in timber and dead trees along upper banks suggest beaver activity and muskegs are common.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area A ADF&G Catalog No. 106-41-44

1.	Section No.		73	74	75	76	77	78	79	80
2.	Compass Bearing		62	47	23	72	82	67	79	49
3.	Gradient		2.5	1.5	3	12	4	4	3	4
4.	Temperature:	Air	14	13.5	15	16	16	15	14	14
		Water	13	13	13	13	13	13	13	13
5.	Water qual:	a. color	1	1	1	1	1	1	1	1
		b. turbidity	1	1	1	1	1	1	1	1
		c. pH	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6.	Streambottom Substrate	1	18	20	30	35	25	30	35	60
		2	30	25	30	30	20	35	25	25
		3	25	20	20	18	20	15	15	10
		4	17	20	15	10	20	15	10	5
		5	8	12	4	5	10	5	5	3
		6	--	--	--	--	--	--	--	--
		7	b) 2	b) 2 c) 1	b) 1	b) 2	a) 3 b) 2	--	a) 10	--
7.	ASA	a. percent	5	7	0	0	5	0	0	0
		b. quality	2	2	--	--	2	--	--	--
8.	Water Width	a. channel	14.5	12.5	15	8	12.5	17	14	8 / 12
		b. water	13	7	4.2/4.0	7	5.5	4.2	11.5	0 /2.3
		c. floodplain	2	2	2	1	3	2	2	2
9.	Stream Pools	a. percent	45	75	20	40	50	40	45	10
		b. category	SS/DS	SS/DS	SS	SS/DS	SS/DS	SS/DS	SF/SS	SF
10.	Rearing Area		45	45	15	25	35	20	30	5
11.	Debris Loading		35	20	5	25	30	15	5	5
12.	Potential Barriers		N	N	N	N	N	N	N	N
13.	Enhancement/Rehab		N	N	N	N	N	N	N	N
14.	Streambank Veg.		1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
15.	Upper Bank	a. Left	8	27	13	30est	10	11	15 est	15
		b. Right	38	14	21	28	26	72	45	27
	b. indic	Left	*	*	N	N	N	N	N	N
		Right	N	N	N	N	**	N	N	N
	c. veg	Left	N	N	N	N	N	N	N	N
		Right	N	N	N	N	N	N	N	N
16.	Lower Bank	Left	GS	UC	UC	GS	UC	GS	UC	UC
		Right	UC	UC	UC	SS	GS	UC	GS	UC
17.	Stab rating	Left	1(1)	2(2)	1(1)	1(2)	2(1)	2(2)	1(1)	1(1)
		Right	2(1)	2(1)	1(1)	1(1)	1(2)	1(1)	1(2)	1(2)
18.	Stream Canopy Cover		2	2	1	2	1	2	2	1
19.	Fish Species	fry SS	>50	>25	>12	>12	>12	>12	>25	<25
		juv. CT	> 6	N	N	N	N	< 6	> 6	N
		" DV	N	N	N	N	N	N	1	N
		CO	1	N	N	N	N	N	N	N
20.	Sampling		Y	N	N	N	N	N	N	N

21. Comments *Pioneer vegetation; **Thin soil

Section 76: Massive upper slope failure borders right bank for approximately 25m. Boulders, large cobble and debris from the slide create an artificial gradient of 9%. Fish passage is no problem at this time.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 78: Right lower bank sluffing; 15m in extent; 20m long blue clay deposit along lower right bank.

Section 80: Dry flood channel along right bank.

Reach Evaluation - Sections 75 through 81

Gradients are picking up. The incidence of boulders, cobbles and bedrock outcrops is increasing. Gravel and sand is deposited in debris induced pools. Debris itself is becoming less frequent. Braided channels are less frequent but flood channels are still numerous. Coho fry are still numerous but smaller (i.e., average 45mm). Cutthroat are appearing more frequently and are larger. Side slope gradients increasing. Pools, less frequent.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area A ADF&G Catalog No. 106-41-44

1. Section No.		81	82	83	84	85	86	87	88
2. Compass Bearing		61	92	126	130	129	111	123	134
3. Gradient		12	9	7	3	10	13	10	8
4. Temperature:	Air	15	15	15	15	15	15	15	15
	Water	13	13	13	13	13	12	12	12
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.5	7.5	7.5	7.5	7.5	7.7	7.7	7.7
6. Streambottom Substrate	1	15	45	45	45	35	30	25	30
	2	5	15	20	25	15	10	6	20
	3	5	5	10	15	7	5	4	10
	4	4	4	10	14	7	4	4	9
	5	1	1	1	1	1	1	1	1
	6	--	--	--	--	--	--	--	--
	7	a) 70	a) 30	a) 14	--	a) 35	a) 50	a) 60	a) 30
7. ASA	a. percent	0	0	1	1	0	0	0	0
	b. quality	--	--	1	1	--	--	--	--
8. Water Width	a. channel	18	9.5	7	13	11.5	11	12.5	9.5
	b. water	6.5/1	5	3.5	10	10.5	3.6	3.4	4.7
	c. floodplain	1	1	1	2	1	1	1	1
9. Stream Pools	a. percent	10	25	20	10	25	10	15	10
	b. category	SS/SF	DS/SS	SF	SF	SS	DS	DS	SF
10. Rearing Area		5	20	15	5	15	7	10	5
11. Debris Loading		1	1	2	1	1	1	1	1
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-5	1-5	1-5	1-5	1-5	1,3,5	1-5	1-5
15. Upper Bank	a. Left	38	60	80	30	45	>150	33	19
	b. Right	57	45	45	17	47	55	55	70
b. indic	Left	N	V-not	V-not	N	N	*	N	N
	Right	V-not	V-not	V-not	N	N	V-not	V-not	Thin Soil
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	GS	GS	SS	UC	UC	SS	GS	GS
	Right	UC	SS	SS	GS	SS	GS	SS	SS
17. Stab rating	Left	1(3)	1(2)	1(3)	1(1)	1(1)	1(3)	1(2)	1(3)
	Right	1(1)	1(3)	1(3)	1(2)	1(2)	1(2)	1(3)	1(3)
18. Stream Canopy Cover		2	3	2	2	1	2	2	1
19. Fish Species	fry SS	<12	<12	<6	<6	0	0	0	0
	juv. CT	N	>6	N	N	N	1	N	N
	juv. DV	N	6	N	N	N	1	N	N
20. Sampling		N	N	N	N	N	N	N	N

21. Comments *V-notch; Pioneer vegetation
Section 81: Two passable 1m vertical bedrock cascades.
Section 85: Passable 1.2m vertical cascade; good holding pool beneath.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 86: Steep side slope failure, more than 150%, created a boulder induced .6m vertical cascade. Two sequential non-barrier, 1.4m bedrock falls account for 20% of the section.

Section 88: Main stem splits into two forks of nearly identical flow at 48m. Barometer reading indicated close proximity to 500' contour. Reconnaissance of Right Fork indicated moderate spawning and excellent rearing in the first 150m. Above 150m the substrate is composed primarily of boulders and large cobble with gradients in excess of 8%. Reconnaissance of Left Fork revealed only isolated rearing habitat and no ASA. The substrate is primarily composed of bedrock and boulders with gradients in excess of 7%.

Reach Evaluation - Sections 81 through 88

Steep gradients, numerous bedrock cascades and pools. Substrate primarily bedrock/boulders; primary cover in pools is boulder induced, generally reduced rearing; little or no ASA; little debris, fewer fish sightings.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area A ADF&G Catalog No. 106-41-44

		Right Fork		Left Fork			
1. Section No.							
2. Compass Bearing							
3. Gradient		2		~6.5			
4. Temperature: Air		15		15			
Water		11		13			
5. Water qual: a. color		1		1			
b. turbidity		1		1			
c. pH		7.7		7.7			
6. Streambottom Substrate 1		10		40			
2		25		15			
3		30		10			
4		20		--			
5		15		15			
6		--		--			
7		--		a) 20			
7. ASA a. percent		10		--			
b. quality		2		--			
8. Water Width a. channel		--		15-20			
b. water		--		3-4			
c. floodplain		1		1			
9. Stream Pools a. percent		60		10			
b. category		SS/DS		SS			
10. Rearing Area		45		10			
11. Debris Loading		15		1			
12. Potential Barriers		N		N			
13. Enhancement/Rehab		N		N			
14. Streambank Veg.		1-5		1-5			
15. Upper Bank a. Left		--		60			
b. Right		--		30			
b. indic Left		N		N			
Right		N		N			
c. veg Left		N		N			
Right		N		N			
16. Lower Bank Left		SS		SS			
Right		GS		SS			
17. Stab rating Left		1(1)		1(1)			
Right		1(1)		1(1)			
18. Stream Canopy Cover		2		N			
19. Fish Species fry SS		>20		<12			
juv. CT		>6		N			
juv. DV		N		N			
20. Sampling		N		N			

21. Comments

Reconnaissance of the Alder Creek Road (i.e., 8.5 mile spur of main line #1000), revealed an upper right fork bridge crossing. Habitat was marginal resident; substrate was primarily composed of boulder/cobble substrate and gradients were in the order of 6%. Two traps yielded no fish, however, 2 juvenile DV were observed.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area B ADF&G Catalog No. 106-41-44

1.	Section No.		1	2	3	4	5	6	7	8
2.	Compass Bearing		91	35	12	118	86	80	91	84
3.	Gradient		2	3	5	1	2	2	2	3
4.	Temperature:	Air	15	15	15	15.5	16.5	15.5	15.5	16
		Water	14.5	14.5	14.5	15	15	15	15	15
5.	Water qual:	a. color	1	1	1	1	1	1	1	1
		b. turbidity	1	1	1	1	1	1	1	1
		c. pH	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
6.	Streambottom	Substrate 1	2	7	8	5	1	8	20	10
		2	3	13	15	13	18	22	25	20
		3	30	25	15	17	22	22	15	15
		4	40	35	15	20	27	15	15	5
		5	20	17	30	34	29	20	15	5
		6	--	--	3	--	--	--	--	--
		7	a) 2 b) 1 c) 2	b) 2 c) 1	a) 2 b) 5 c) 7	a) 1 b) 5 c) 5	b) 1 c) 2	a) 10 b) 3	a) 10	a) 45
7.	ASA	a. percent	10	12	0	0	10	5	0	0
		b. quality	1	1	--	--	2	2	--	--
8.	Water Width	a. channel	2.5	6	6	6.5	9	6.5	7	5.5
		b. water	<1	6	5	4.2	3.3	3.35	5.5	4.7
		c. floodplain	1	2	1	2	3	2	2	1
9.	Stream Pools	a. percent	70	80	95	95	85	75	70	25
		b. category	SS	SS	SS	SS	DS/SS	SS/DS	DS/SS	SS
10.	Rearing Area		70	80	85	90	80	55	50	15
11.	Debris Loading		15	10	30	15	15	4	20	3
12.	Potential Barriers		N	N	N	N	N	N	N	N
13.	Enhancement/Rehab		N	N	N	N	N	N	N	N
14.	Streambank Veg.		1-5	1,3-5	1-5	1,3-5	1-5	1-5	1-5	1,3-5
15.	Upper Bank	a. Left	0	42	15	40	23	15	26	45
		b. Right	10	27	19	13	10	39	11	48
	b. indic	Left	*	N	N	N	N	N	N	N
		Right	*	N	N	N	N	N	N	N
	c. veg	Left	Y	N	N	N	N	N	N	N
		Right	Y	N	N	N	N	N	N	N
16.	Lower Bank	Left	UC	UC	UC	GS	UC	GS	UC	UC
		Right	UC	UC	UC	UC	GS	UC	UC	UC
17.	Stab rating	Left	3(1)	1(1)	1(1)	1(3)	1(1)	1(1)	1(1)	1(1)
		Right	3(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
18.	Stream Canopy Cover		3	2	2	3	2	1	1	1
19.	Fish Species	fry SS	>25	>12	>25	>12	>12	>12	>12	>12
		juv. CT	> 6	--	>12	<6	>6	>6	<6	>6
		juv. DV	>12	--	>12	<6	--	--	--	>6
20.	Sampling		N	N	N	N	N	N	N	N

21. Comments *Pioneer vegetation
Tributary "B" enters main stem, Section 26: 81 meters via left bank. An inactive broken beaver dam marks confluence.
Section 1: 73.5m; Mainline road bridge crossing.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section(s) 2-5: Stream channel is characterized by remnant beaver dams; heavy sand/silt and debris loading. Dams form a series of back to back impoundments providing excellent rearing and sporadic, marginal spawning habitat.

Section 7: 10m; Steep tributary enters via left bank. Marginal pool rearing, no spawning habitat. Less than 1.0 cfs.

Section 8: 70m; Dry channel along left bank.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area B ADF&G Catalog No. 106-41-44

1. Section No.		9	10	11	12	13	14	15	16
2. Compass Bearing		67	86	59	85	101	111	98	63
3. Gradient		5	.5	2.5	5	3	2.5	5	2.5
4. Temperature:	Air	13.5	15.5	15.5	14.5	15	15	15	15
	Water	16	17	17	16	15	15	15	15
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
6. Streambottom Substrate	1	5	--	--	10	25	15	5	3
	2	15	--	--	10	15	15	10	7
	3	10	--	--	5	15	10	5	10
	4	15	20	40	25	5	15	20	40
	5	25	20	20	20	5	32	25	35
	6	20	40	20	5	--	--	15	--
	7	b) 5 c) 5	c) 20	c) 20	a) 15 c) 10	a) 35	a) 10 b) 3	a) 5 b) 1 c) 14	b) 1 c) 4
7. ASA	a. percent	0	0	0	0	0	0	0	0
	b. quality	--	--	--	--	--	--	--	--
8. Water Width	a. channel	7	7	7.5	6.5	5.5	5	7.5	10.5
	b. water	4.8	7	6.5	2.1	2.4	1/1.5	5.5	9
	c. floodplain	2	3	3	2	1	1	1	1
9. Stream Pools	a. percent	70	100	100	85	80	80	90	95
	b. category	DS/SS	SS/DS	SS/DS	SS	SS/SF	SS/DS	SS/DS	SS/DS
10. Rearing Area		65	85	85	65	45	65	70	75
11. Debris Loading		10	20	15	10	5	10	10	10
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-5	5	5	5	1-5	1,3,5	1,3-5	1,3,5
15. Upper Bank	a. Left	19	10	10	35	65	62	49	39
	b. Right	9	15	5	18	41	20	47	31
b. indic	Left	N	N	N	V-not	V-not	V-not	V-not	V-not
	Right	N	N	N	N	N	N	N	V-not
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	UC	GS	UC	SS	SS	UC	GS	GS
	Right	UC	GS	UC	SS	UC	UC	UC	GS
17. Stab rating	Left	2(1)	1(1)	1(1)	1(1)	3(2)	2(1)	2(2)	1(1)
	Right	2(1)	1(1)	2(1)	2(1)	1(1)	2(1)	2(1)	1(1)
18. Stream Canopy Cover		1	3	3	3	1	1	1	3
19. Fish Species	fry SS	>12	>12	>12	>12	<12	>12	< 6	>12
	juv. CT	<6	--	--	1	4	>6	--	--
	juv. DV	--	--	--	--	--	--	1	--
20. Sampling		N	N	N	N	N	N	N	N

21. Comments

Section 9: 37m; Beaver dam in good repair. Impoundment extends to Section 12. Large muskeg area along both banks extends to Section 12.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 12: 21m; Channel forks. Survey continued up the larger or right fork.

Section 12: 53m; Channel reenters timber.

Section 15: 30m; Active beaver dam in muskeg area contains a 100m impoundment.

Section 16: 00m; Channel reenters timber; section is 91 meters long.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area B ADF&G Catalog No. 106-41-44

1. Section No.			17	18	19					
2. Compass Bearing			60	50	67					
3. Gradient			1.5	3	4					
4. Temperature:	Air		15	15	15					
	Water		15	15	15					
5. Water qual:	a. color		1	1	1					
	b. turbidity		1	1	1					
	c. pH		7.5	7.5	7.5					
6. Streambottom	Substrate	1	6	13	--					
		2	14	20	5					
		3	10	20	20					
		4	35	20	20					
		5	30	20	20					
		6	--	--	30					
		7	b) 1 c) 4	a) 1 b) 2 c) 4	b) 1 c) 4					
7. ASA	a. percent		0	0	0					
	b. quality		--	--	--					
8. Water Width	a. channel		6.5	8.5	6					
	b. water		6.5	2.9	1/<.5					
	c. floodplain		1	1	2					
9. Stream Pools	a. percent		100	65	60					
	b. category		SS	SS	DS					
10. Rearing Area			80	50	55					
11. Debris Loading			12	25	10					
12. Potential Barriers			N	N	Y					
13. Enhancement/Rehab			N	N	N					
14. Streambank Veg.			1,3-5	1-5	1-3,5					
15. Upper Bank	a. Left		44	30	30					
	b. Right		22	35	28					
b. indic	Left		V-not	V-not	V-not					
	Right		V-not	V-not	N					
c. veg	Left		N	N	N					
	Right		N	N	N					
16. Lower Bank	Left		GS	UC	UC					
	Right		UC	UC	GS					
17. Stab rating	Left		1(1)	2(1)	1(2)					
	Right		1(1)	2(1)	2(2)					
18. Stream Canopy Cover			3	1	1					
19. Fish Species	fry	SS	>12	<12	--					
	juv.	CT	>6	>6	--					
	juv.	DV	--	--	--					
20. Sampling			N	N	N					

21. Comments

Section 17: Beaver impoundment through V-notch.

Section 18: 95m; 2 meter high beaver dam in good repair. No "ponding" evident as flow is primarily subsurface.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.
Section 19: 29m; Broken beaver dam.
48m; Large active dam contains deep, elongated impoundment. No holding pools beneath dam; potential anadromous barrier. No silver salmon observed above dam. Wolf, bear, deer, mink, and beaver sign observed.
100m; End of survey.

A foot reconnaissance was performed beyond Section 19 and the following was noted: Impoundment, originating in Section 19, 48m, extends 150m to the base of another dam in poor repair. A series of silted gravel pools connected by small gravel riffles provide approximately $16m^2$ of ASA. Twelve juvenile CT were observed. The channel beyond braids through a marsh area of grasses/sedges and copious debris and provides "little" opportunity for anadromous or resident exploitation.

A foot reconnaissance of the left fork of Area B was performed from the point of convergence, Section 12: 21m to a moderately sized seepage fed impoundment. The channel is characterized by a deep, heavily wooded V-notch with 80% side slopes, heavy debris and blowdown, 10% gradients, and bedrock/boulder/cobble substrate. No fish were observed. Immediately beyond the V-notch, three large active beaver dams form a series of impoundments, the last of which was previously noted. CT and SB were observed in the impoundments. Overall, extensive rearing above V-notch but no ASA observed.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area C ADF&G Catalog No. 106-41-44

1. Section No.			1	2	3					
2. Compass Bearing			136	172	166					
3. Gradient			3	3.5	2.0					
4. Temperature:	Air		23	23	23					
	Water		16	16	16					
5. Water qual:	a. color		1	1	3					
	b. turbidity		1	1	1					
	c. pH		7.5	7.5	7.5					
6. Streambottom	Substrate	1	30	30	30					
		2	25	20	27					
		3	10	15	20					
		4	15	10	10					
		5	5	5	5					
		6	0	0	0					
		7	a) 15	a) 20	a) 8					
7. ASA	a. percent		2	3	0					
	b. quality		2	2	-					
8. Water Width	a. channel		5.15	5.5	4.62					
	b. water		1/1.5	2.16	3.15					
	c. floodplain		1	1	1					
9. Stream Pools	a. percent		40	55	20					
	b. category		SS	SS	SF					
10. Rearing Area			90	90	90					
11. Debris Loading			3	3	3					
12. Potential Barriers			N	N	N					
13. Enhancement/Rehab			N	N	N					
14. Streambank Veg.			1,3,5	1&3-5	1&3-5					
15. Upper Bank	a. Left		27	30	5					
	b. Right		22	33	14					
b. indic	Left		N	N	N					
	Right		N	N	N					
c. veg	Left		N	N	N					
	Right		N	N	N					
16. Lower Bank	Left		GS	UC	GS					
	Right		UC	SS	UC					
17. Stab rating	Left		1(1)	1(2)	1(1)					
	Right		1(1)	1(3)	1(1)					
18. Stream Canopy Cover			1	1	1					
19. Fish Species	fry	SS	35	Y	Y					
	juv.	CT	Y	Y	Y					
	juv.	DV		Y	Y					
20. Sampling			N	N	N					

21. Comments

Tributary "C" enters the main stem via the right bank; 52m in Section 37.

Section 1: Moderate braiding around debris.
Volume; less than 5 cfs.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area D ADF&G Catalog No. 106-41-44

1.	Section No.		1
2.	Compass Bearing		101
3.	Gradient		<3
4.	Temperature:	Air	16
		Water	12
5.	Water qual:	a. color	4
		b. turbidity	1
		c. pH	7.5
6.	Streambottom Substrate	1	2
		2	3
		3	15
		4	15
		5	35
		6	30
		7	--
7.	ASA	a. percent	--
		b. quality	--
8.	Water Width	a. channel	.5/3
		b. water	.3/.8
		c. floodplain	1
9.	Stream Pools	a. percent	50
		b. category	SS
10.	Rearing Area		50
11.	Debris Loading		1
12.	Potential Barriers		N
13.	Enhancement/Rehab		N
14.	Streambank Veg.		1&3-5
15.	Upper Bank	a. Left	53
		b. Right	8
	b. indic	Left	N
		Right	N
	c. veg	Left	N
		Right	N
16.	Lower Bank	Left	UC
		Right	UC
17.	Stab rating	Left	1(1)
		Right	1(1)
18.	Stream Canopy Cover		1
19.	Fish Species	fry SS	20
		juv. CT	Y
		juv. DV	N
20.	Sampling		N

21. Comments

Tributary "D" enters the main stem via the right bank, 50m into Section 39. This highly sinuous, dark brown stream appears to be primarily fed by muskeg. Dense mid-channel skunk cabbage provides excellent cover. It has less than 1 cfs flow, moderate rearing, and no spawning potential.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area E ADF&G Catalog No. 106-41-44

1.	Section No.		1
2.	Compass Bearing		303
3.	Gradient		>11
4.	Temperature:	Air	16
		Water	11.5
5.	Water qual:	a. color	4
		b. turbidity	1
		c. pH	7.5
6.	Streambottom Substrate	1	70
		2	1
		3	1
		4	1
		5	25
		6	2
		7	0
7.	ASA	a. percent	--
		b. quality	--
8.	Water Width	a. channel	.5/1.
		b. water	.3/.5
		c. floodplain	1
9.	Stream Pools	a. percent	60
		b. category	SS
10.	Rearing Area		--
11.	Debris Loading		1.
12.	Potential Barriers		N
13.	Enhancement/Rehab		N
14.	Streambank Veg.		1&3-5
15.	Upper Bank	a. Left	30
		b. Right	12
	b. indic	Left	N
		Right	N
	c. veg	Left	N
		Right	N
16.	Lower Bank	Left	UC
		Right	UC
17.	Stab rating	Left	1(1)
		Right	1(1)
18.	Stream Canopy Cover		2
19.	Fish Species	fry SS	N
		juv. CT	N
		juv. DV	N
20.	Sampling		N

21. Comments

Tributary "E" enters main stem via left bank, 21m into Section 43. No fish were sited in the dark brown, muskeg drained water. Steeply sloping at mouth, channel flows underground for 1-2m at a stretch. No rearing or spawning potential.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area F ADF&G Catalog No. 106-41-44

1. Section No.			1
2. Compass Bearing			30
3. Gradient			25
4. Temperature:	Air		17
	Water		14
5. Water qual:	a. color		4
	b. turbidity		1
	c. pH		7.5
6. Streambottom	Substrate	1	50
		2	15
		3	13
		4	10
		5	2
		6	--
		7	10
7. ASA	a. percent		--
	b. quality		--
8. Water Width	a. channel		5
	b. water		1./1.5
	c. floodplain		1
9. Stream Pools	a. percent		30
	b. category		SS
10. Rearing Area			--
11. Debris Loading			2
12. Potential Barriers			N
13. Enhancement/Rehab			N
14. Streambank Veg.			1&3-5
15. Upper Bank	a. Left		85
	b. Right		45
b. indic	Left		N
	Right		N
c. veg	Left		N
	Right		N
16. Lower Bank	Left		UC
	Right		SS
17. Stab rating	Left		1(2)
	Right		1(1)
18. Stream Canopy Cover			1
19. Fish Species	fry	SS	N
	juv.	CT	N
	juv.	DV	1
20. Sampling			N

21. Comments

Tributary "F" enters main stem, Section 45: 6m via left bank. Stream is characterized by nearly continuous moss covered bedrock/boulder cascades with gradients in excess of 25%. Marginal pool rearing and no spawning potential.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area G ADF&G Catalog No. 106-41-44

1. Section No.			1	2						
2. Compass Bearing			85	35						
3. Gradient			6	--						
4. Temperature:	Air		14.5	14.5						
	Water		13.5	13.5						
5. Water qual:	a. color		1	1						
	b. turbidity		1	1						
	c. pH		7.5	7.5						
6. Streambottom Substrate		1	25	--						
		2	20	--						
		3	20	--						
		4	10	--						
		5	3	--						
		6	1	--						
		7	a) 20 c) 1	--						
7. ASA	a. percent		0	0						
	b. quality		--	--						
8. Water Width	a. channel		2.16	2.3						
	b. water		1	2.3						
	c. floodplain		1	1						
9. Stream Pools	a. percent		20	--						
	b. category		SS	--						
10. Rearing Area			25	--						
11. Debris Loading			10	--						
12. Potential Barriers			N	N						
13. Enhancement/Rehab			N	N						
14. Streambank Veg.			1-5	1-5						
15. Upper Bank	a. Left		37	14						
	b. Right		18	45						
b. indic	Left		N	N						
	Right		N	N						
c. veg	Left		N	N						
	Right		N	N						
16. Lower Bank	Left		GS	UC						
	Right		UC	GS						
17. Stab rating	Left		1(1)	1(1)						
	Right		1(1)	1(2)						
18. Stream Canopy Cover			3	1						
19. Fish Species	fry	SS	Y	N						
	juv.	CT	N	N						
	juv.	DV	N	N						
20. Sampling			N	N						

21. Comments

Tributary "G" enters main stem, Section 50; 85m via left bank. Moderately steep channel characterized by bedrock/boulder cascades leads 117m to the base of a 2m high beaver dam in good repair. Dam may represent a barrier as no holding pool is available beneath. No fish observed in the extensive impoundment. Marginal pool rearing and no spawning habitat. Less than 1 cfs.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area H ADF&G Catalog No. 106-41-44

1.	Section No.		1
2.	Compass Bearing		163
3.	Gradient		1.5
4.	Temperature:	Air	14.5
		Water	17
5.	Water qual:	a. color	3
		b. turbidity	1
		c. pH	6.5
6.	Streambottom Substrate	1	--
		2	--
		3	5
		4	10
		5	25
		6	48
		7	a) b) c) 2 5 5
7.	ASA	a. percent	--
		b. quality	--
8.	Water Width	a. channel	6.5
		b. water	3.1
		c. floodplain	1
9.	Stream Pools	a. percent	25
		b. category	SS
10.	Rearing Area		20
11.	Debris Loading		10
12.	Potential Barriers		N
13.	Enhancement/Rehab		N
14.	Streambank Veg.		1-5
15.	Upper Bank	a. Left	18
		b. Right	45
	b. indic	Left	N
		Right	N
	c. veg	Left	N
		Right	N
16.	Lower Bank	Left	UC
		Right	GS
17.	Stab rating	Left	1(1)
		Right	1(2)
18.	Stream Canopy Cover		2
19.	Fish Species	fry SS	<25
		juv. CT	N
		juv. DV	N
20.	Sampling		N

21. Comments

Tributary "H" enters main stem, Section 55; 41m via right bank. Less than 1.0 cfs. Broken, inactive beaver dam; 10.5m. A primarily muck channel meanders 90m through old impoundment to a 1.2m active beaver dam in good repair. No fish observed above dam. Moderate rearing and no spawning habitat.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area I ADF&G Catalog No. 106-41-44

Ephemeral

1.	Section No.		1
2.	Compass Bearing		108
3.	Gradient		1.5
4.	Temperature:	Air	12
		Water	11
5.	Water qual:	a. color	1
		b. turbidity	1
		c. pH	6.5
6.	Streambottom Substrate	1	--
		2	60
		3	20
		4	10
		5	5
		6	5
		7	--
7.	ASA	a. percent	--
		b. quality	--
8.	Water Width	a. channel	14
		b. water	1
		c. floodplain	2
9.	Stream Pools	a. percent	40
		b. category	SS
10.	Rearing Area		20
11.	Debris Loading		30
12.	Potential Barriers		N
13.	Enhancement/Rehab		N
14.	Streambank Veg.		1-5
15.	Upper Bank	a. Left	0
		b. Right	15
	b. indic	Left	TS
		Right	N
	c. veg	Left	N
		Right	N
16.	Lower Bank	Left	GS
		Right	GS
17.	Stab rating	Left	3(2)
		Right	1(1)
18.	Stream Canopy Cover		1
19.	Fish Species	fry SS	6
		juv. DV	<6
		juv. CT	N
20.	Sampling		N

21. Comments

Tributary "I" enters main stem, Section 67; 44m via right bank and is fed by numerous, less than 2m wide, active channels. Main channel is "dry" but ~.25 cfs sporadically alternates between surface and subsurface flow. Substrate indicates minimal rearing and no spawning potential. SS and CT fry were observed rearing in "isolated" pools.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Alder Creek Area J ADF&G Catalog No. 106-41-44

			L Fork	R Fork						
1. Section No.			1	2	3					
2. Compass Bearing			102	85	179					
3. Gradient			3	3	2					
4. Temperature:	Air		12	12	12					
	Water		11.5	11.5	11.5					
5. Water qual:	a. color		1	1	1					
	b. turbidity		1	1	1					
	c. pH		7.5	7.0	7.5					
6. Streambottom Substrate		1	5	2	5					
		2	28	8	15					
		3	35	45	25					
		4	20	35	35					
		5	10	10	20					
		6	--	--	--					
		7	2	--	--					
7. ASA	a. percent		10	10	10					
	b. quality		2	1	2					
8. Water Width	a. channel		4.7	3.5	5.					
	b. water		<1	1.5	1.5					
	c. floodplain		1	1	2					
9. Stream Pools	a. percent		65	75	25					
	b. category		SS	SS	SS/SF					
10. Rearing Area			85	85	20					
11. Debris Loading			15	35	15					
12. Potential Barriers			N	N	N					
13. Enhancement/Rehab			N	N	N					
14. Streambank Veg.			1-5	1&3-5	1,3,5					
15. Upper Bank	a. Left		--	14	10					
	b. Right		--	3	15					
b. indic	Left		N	N	N					
	Right		N	N	N					
c. veg	Left		N	N	N					
	Right		N	N	N					
16. Lower Bank	Left		UC	UC	UC					
	Right		GS	UC	UC					
17. Stab rating	Left		2(2)	1(1)	1(1)					
	Right		2(2)	1(1)	1(1)					
18. Stream Canopy Cover			1	3	2					
19. Fish Species	fry	SS	>25	>6	--					
	juv.	DV	>12	>25	--					
	juv.	CT	>6	>6	--					
20. Sampling			N	N	N					

21. Comments

Tributary "J" enters main stem, Section 72; 61m via right bank. Excellent resident rearing and spawning; moderate anadromous spawning and rearing. Channel forks at 41m. Both channels cross the 8.5 mile spur of the main line road, approximately 200m above the point of divergence. Flow is drastically reduced and muskeg "seeps" become common. DV and CT were the dominant species observed.

FISH SAMPLING FORM

Stream Name Alder Creek ADF&G Catalog No. 106-41-44 Date 7/19/82

Identify Survey Area "A" Water Temp. 11.5°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1135	1715	1 - CO 1 - RB		Trap set in Section 4, First section above the Intertidal Zone; in pool along left bank near root wad.
2	1137	1720	1 - SS	75	

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

FISH SAMPLING FORM

Stream Name Alder Creek ADF&G Catalog No. 106-41-44 Date 7/27/82

Identify Survey Area "A" Water Temp. 14°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
3	1015	1700	7-SS 6 - CT	70, 69, 71 65, 74, 53 77	Trap set in Section 15. DV and SS fry observed in large numbers. Excellent rearing; good cover along banks. Trap set in pool near log along right bank.
4	1010	1705	1- SS 2 - DV 2 - CT	60	Trap set in Section 16. CT and SS fry observed in large numbers. Excellent rearing, good cover along banks. Trap set in deep pool behind debris pile. Beaver sign observed in debris.
5	1130	1640	2- CT	65, 65	Trap set in Section 17. Several CT and SS fry observed.

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

FISH SAMPLING FORM

Stream Name Alder Creek ADF&G Catalog No. 106-41-44 Date 7/28/82

Identify Survey Area "A" Water Temp. 14°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
6	1035	1730	5 - SS 1 - DV 6 - CT	63, 71, 62 43, 77	Trap set in Section 29 under root wad and along right bank
7	1150	1725	7 - SS 2 - DV 5 - CT	48, 72, 71 66, 49, 44	Trap set in Section 32 in pool and under root wad.
8	1357	1710	6 - SS 13 - DV 15 - CT	65, 74, 59 47, 64, 60	Trap set in Section 34 in middle of debris pile along left bank

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

FISH SAMPLING FORM

Stream Name Alder Creek ADF&G Catalog No. 106-41-44 Date 7/29/82

Identify Survey Area "A" Water Temp. 14°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
9	1110	1705	15 - SS	66, 47, 78, 79, 63, 48, 80, 73, 44, 70, 49, 66, 67, 64, 48	Trap set in Section 39 near undercut - left bank with overhanging riparian vegetation and behind a debris pile.
			6 - CT		Confluence of Tributary "E" just upstream.
			8 - DV		
10	1225	1652	10 - SS	71, 70, 59, 79, 75, 65, 80, 72, 65, 78	Trap set in Section 43 in pool and under debris pile.
			13 - DV		
			14 - CT		
			1 - CO		
11	1500	1645	6 - SS	63, 65, 71, 49, 74, 48	Trap set in Section 46 under large boulder in center of stream.
			2 - DV		
			2 - CT		

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

FISH SAMPLING FORM

Stream Name Alder Creek ADF&G Catalog No. 106-41-44 Date 8/1/82

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

Trap	Time In	Time Out	Species	Length	Comments
12	1000	1745	1 - CT/RT	--	Section 66; along right bank in pool under overhanging root wad.
			2 - DV	--	
			5 - SS	73mm 75mm 79mm 68mm 67mm	
13	1040	1735	1 - CT/RT	--	Section 68; along right bank under log next to UC in DS pool
			1 - DV	--	
			2 - SS	68mm 43mm	
14	1240	1725	1 - CT/RT	--	Section 73; under log along right bank.
			3 - DV	--	

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

Date: 10/29/82

FISHERIES REHABILITATION AND/OR ENHANCEMENT
NEW PROJECT OPPORTUNITY FORM

1. WHAT (give a brief description):

Debris removal from stream 106-41-44. In channel root wads and logs are accelerating bank cutting and downstream bar formation and form the nucleus for a potentially extensive and debilitating jam.

2. WHERE (be specific):

500m up 106-41-44 from the confluence of 106-41-45. In channel bordering flagged logging unit 18-7, accessed by the 1800 spur road, approximately 10 miles east of Labouchere Bay.

3. BENEFITS:

Retard accelerated bank cutting and bar formation. Preserve downstream ASA. Maintain anadromous access to upstream spawning and rearing areas.

4. SUBMITTED BY (name, address, telephone, etc.):

Ted Mickowski and Laura Murph
ADF&G
P.O. Box 667
Petersburg, Alaska 99833

907-772-3801

Date: 10/29/82

FISHERIES REHABILITATION AND/OR ENHANCEMENT
NEW PROJECT OPPORTUNITY FORM

1. WHAT (give a brief description):

Debris removal from Alder Creek-instream logs and root wads are presently directing the flow against the left stream bank, undermining it. The lower bank in this area is comprised wholly of fine silts and muck, and represent a potentially degrading influence on downstream anadromous and resident fish habitat.

2. WHERE (be specific):

Debris begins 119m below Alder Creek (106-41-44) bridge crossing and extends upstream, approximately 30m. The bridge crossing is located on the mainline road (#1000), nine miles east of Labouchere Bay.

3. BENEFITS:

Removal of in channel debris would permit the stream to return to its original bed. At present the flow is directed against the left lower bank of a former beaver impoundment causing bank sluffing and introduction of "fines" into the system. Excellent spawning grounds below this area would benefit from the removal of this "fines" source.

4. SUBMITTED BY (name, address, telephone, etc.):

Ted Mickowski and Laura Murph
ADF&G
Box 667
Petersburg, Alaska 99833

Phone 907-772-3801

PEAK ESCAPEMENT RECORD
106-41-44
Alder Creek

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
1965	Surveyed	- None Seen		
1970	Surveyed	- None Seen		
8/7/74	1603			
8/11/75	1000			
9/1/77	280			
8/28/79	2400			

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No Escapement Data Available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Sumner Straits 3 3. Lat. 56°19'55"

2. ADF&G Catalog No. -- 3. Long. 133°27'15"

4. Agency Unit 05 5. Mgmt Area 530 K 6. USGS Map No. Psg B-5

7. Aerial Photo No. 71-14-9-213

8. Bay/Drainage Sumner Straits 9. Access 4, 5, 7 10. Camping 4

11. Present Land Use a. None 11b. Heavy slash and debris. Deer/bear/mink sign & trails.

12. Historical Land Use +20 year old clearcut logging unit on and over stream.

13. Stream Origin 3 4 5 6 14. Flow Stage 1

15. Flow ____ (method), ____ (width), ____ (depth), ____ (length), ____ (constant), ____ (time), Estimated (grid), 2.0 cfs (flow)

16. Temp. Sensitivity Low velocity flow; shallow water depths; open canopy.

17. Beaver 5 18. Type aquatic Veg. 1, 4 19. Density Aquatic Veg. 1

20. Adult Salmon N 21. Intertidal a. gradient 4%

b. bottom type % fines 30 %

gravel small cobble 30 %

large cobble/boulders/bedrock 40 %

c. ASA 0

d. schooling N

e. shellfish N

f. No anchorage; easy to beach skiff and survey on incoming tide.

22. Comments

1. 21d. Bay is very shallow and mucky with rock outcrop in front of intertidal zone approximately 75m into bay.
2. Intertidal Zone: Stream channel is indistinct with sedge grasses growing in water. Very silty and mucky stream. Channel highly braided with heavy debris loading (small debris and wood in stream substrate).
3. Walked approximately 200m above intertidal zone to find a 1m wide stream channel with $\bar{x}$=6" water depths under very heavy (90%) debris loading with open canopy (due to clearcut). Sunken debris/muck/sand/gravel

23. Investigators Murph/Mickowski

24. Date 8 /14 /82 25. Time 1630 (start) 1700 (end) 26. Weather 2

27. Photos

R-10 2600-3a (1/81)

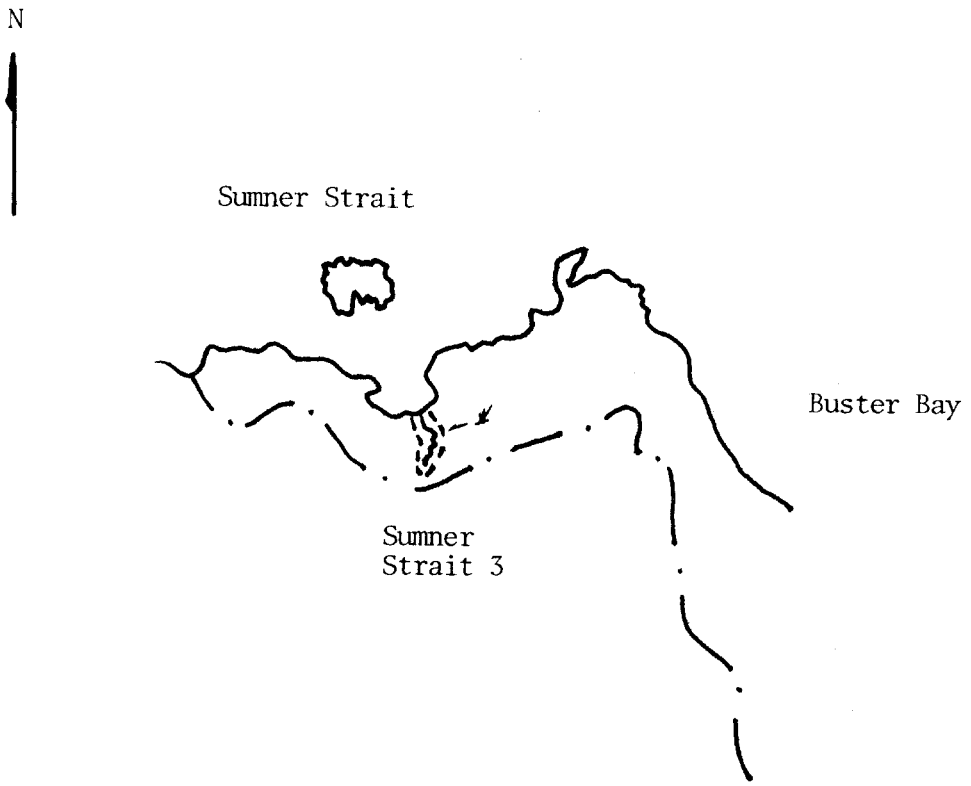
USA JUNEAU 1613

LEVEL THREE - HABITAT SURVEY FORM (Part 1 and 2)

22. Comments Cont.
substrate. No ASA (heavy silt); 19-20% side slopes; undercut lower banks. 3 CT and 1 SB observed in intertidal zone pools. 80% pools with short riffles between pools; 4% stream gradient. Flow often lost under debris and riparian vegetation. 130° compass bearing; 7.8 pH; approximately 6 CT observed; less than 6 SB observed; Water: 12°C; Air: 15°C.

No escapement data available.

Sumner Strait 3



Sumner Strait #3

1. Debris Strewn Intertidal Zone Looking up Channel Through Old Logging Unit.

2. Intertidal Zone Looking up Through Slash Choked Channel. Both Banks Have Been Logged up to the Channel. Debris and Regrowth Heavy. Extensive Siltation of Substrate. No ASA. Marginal Rearing. No Coho Observed.

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length ---

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Flicker/Alder Creeks Lagoon 3. Lat. 56°20'30"

2. ADF&G Catalog No. -- 3. Long. 133°31'30"

4. Agency Unit 05 5. Mgmt Area 529 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-12-149 71-13-158

8. Bay/Drainage Flicker/Alder Cks. 9. Access 4, 5, 7 10. Camping 4

11. Present Land Use a. NONE 11b. heavy brush/blowdown

12. Historical Land Use +20 year old clearcut to edge of lagoon

13. Stream Origin 3 5 6 14. Flow Stage 1

15. Flow ____, ____, ____, ____, ____, ____, ____, <1 cfs
method, width, depth, length, constant, time, grid, flow

16. Temp. Sensitivity Low velocity flow, shallow water depths

17. Beaver 5 18. Type aquatic Veg. 1 19. Density Aquatic Veg. 1

20. Adult Salmon N 21. Intertidal a. gradient 4%

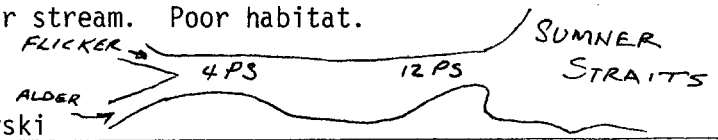
b. bottom type % fines 5 % c. ASA 0

gravel small cobble 85% d. schooling Y

large cobble/boulders/bedrock 5 % e. shellfish Y

f. Small boat anchorage in lagoon

22. Comments
1. 21d: Schooling observed in lagoon area (i.e., 30-40 ps).
2. 21e: Dungeness crab observed in lagoon.
3. Intertidal zone is approximately 50m long, no ASA.
4. In intertidal zone, stream forks; right channel becomes a seepage which disappears approximately 10m above intertidal zone with a sunken debris substrate. Left channel has <1cfs flow over boulder/large cobble substrate with few pools, no ASA. Drains out of old clearcut unit. Heavy debris in and over stream. Poor habitat.



23. Investigators Murph/Mickowski

24. Date 8/13/82 25. Time 1745 (start) 1805 (end) 26. Weather 2

27. Photos 5/13: Top of IZ, Left channel; 5/14: Top of IZ, Right channel

R-10 2600-3a (1/81)

Flicker/Alder Lagoon

1. Upper Intertidal Zone Looking Into Left Channel as It Enters Tree Line; Heavy Debris.

2. Upper Intertidal Zone Looking Into Right Channel as It Enters Tree Line Under Debris.

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A-1 and A-2 2. Equipment X

3. Historical Fish Species No Escapement Data Available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Shine Creek 3. Lat. 56°19'35"

2. ADF&G Catalog No. 106-41-43 3. Long. 133°26'30"

4. Agency Unit 05 5. Mgmt Area 530 K 6. USGS Map No. Psbg B-5

7. Aerial Photo No. 71-15-202 71-14-213 71-14-214

8. Bay/Drainage Buster Bay 9. Access 4 6 10. Camping 4

11. Present Land Use a. Planned logging 11b. deer/bear trails

12. Historical Land Use 1960's logging unit first 500m of stream.

13. Stream Origin 3 4 5 6 14. Flow Stage 1

15. Flow _____, _____, _____, _____, _____, Estimated at, 1.5 cfs
method width depth length constant time grid flow

16. Temp. Sensitivity muskeg source, low velocity, beaver pond/lakes

17. Beaver 1 18. Type aquatic Veg. 1 19. Density Aquatic Veg. 3

20. Adult Salmon N 21. Intertidal a. gradient 1.0

b. bottom type % fines 20 % c. ASA 20

gravel small cobble 60 % d. schooling Y

large cobble/boulders/bedrock 20 % e. shellfish N

f. Anchorage for small skiff in Buster Bay.

22. Comments

21d. Schooling in Buster Creek/Shine Creek Estuary; sheltered from Sumner Strait

23. Investigators Murph/Mickowski

24. Date Area A:7 30 82 B:8/14 /82 25. Time 1000 0915 start 1100 1300 end 26. Weather 2 6

27. Photos

R-10 2600-3a (1/81)

Shine Creek
106-41-43

Shine Creek survey is composed of two segments. The lower portion or Area A-1 extends from the confluence of Buster Creek (106-41-42) to the base of an extensive beaver impoundment/marsh system, a distance of 200m. Sections 1 and 2 are characterized by variable flow, predominantly cobble/gravel substrate infiltrated by moderate to heavy "fines", and abundant debris. Spawning area was moderate, however rearing habitat appeared excellent as hundreds of coho fry were observed.

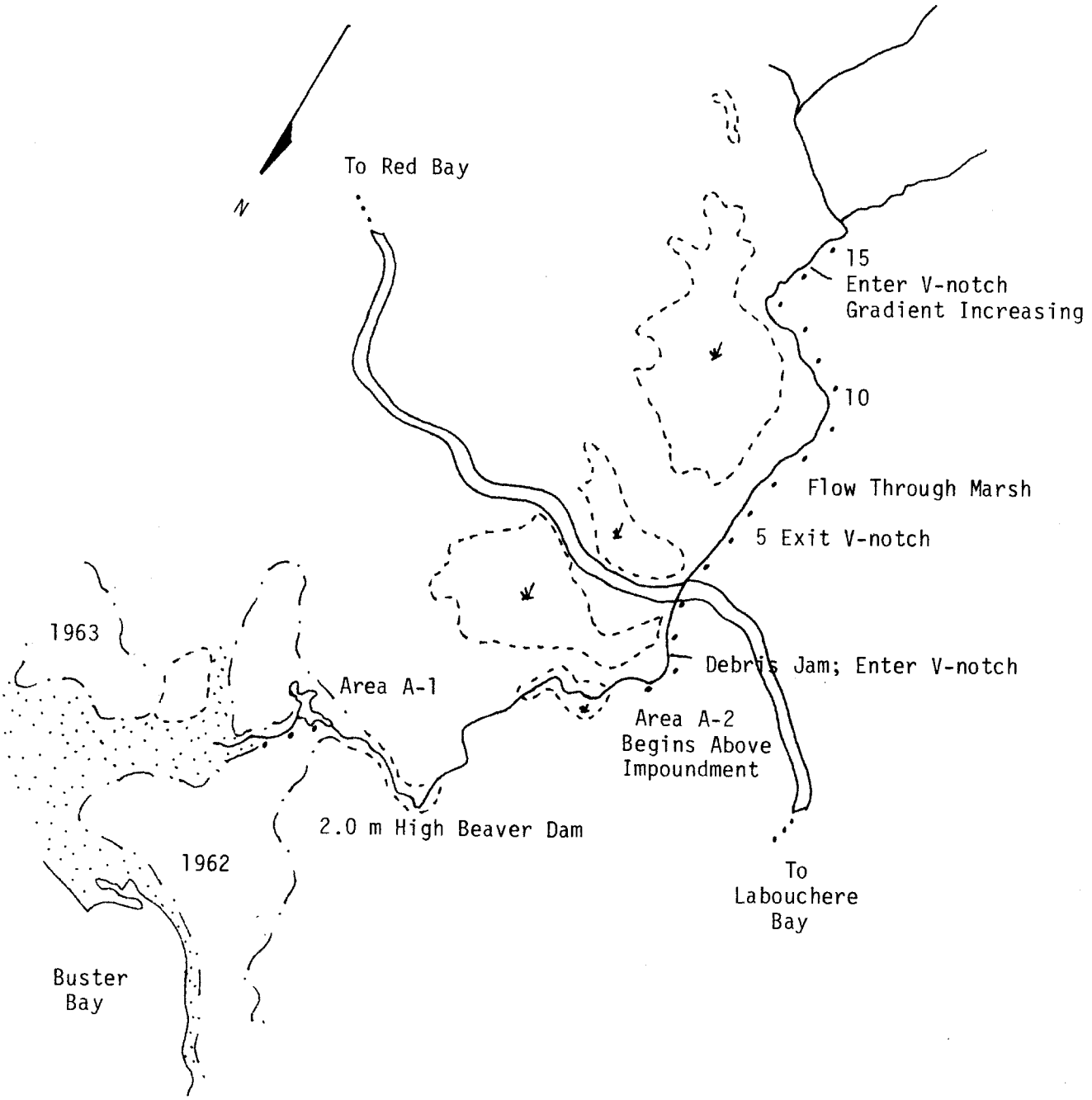
The aforementioned pond/marsh system extends approximately 1000m and separates area A-1 from A-2. Several 1-1.2m high beaver dams create an extensive lake/slough area extending approximately 200m to a 150-200m section of "stream" flowing over organically stained gravel/sand/muck substrate and between damp ponds (possibly part of impoundments during normal and high flows). A second series of dams create an additional 600m of reservoir which is delineated at its upper extent by free flowing area A-2.

Reach Evaluation - Beaver Pond(s) Area:

Flow was less than 2 cfs. The banks were low grass/marsh areas riddled with sloughs on both sides of the pond. The water was tan colored with heavy silt, which hid substrate composition. Ponds ranged from shallow (.3-.6m) to very deep (1m+) behind dams showing recent beaver activity. Canopy was generally open. Excellent rearing area, but no ASA observed. No fish observed in ponds. The habitat transition above the beaver ponding is quite drastic with low relief grassy, marsh-like terrain giving way to generally increased stream gradients (i.e. 3-5%) and bank slopes. The substrate changes from gravel/silt to bedrock/cobble/gravel.

Reach Evaluation - Above Beaver Impoundments - Area A-2:

Northern Prince of Wales main line road #1000 crosses at Section 3: 90m. Stream meandered through V-notch where bedrock was encountered and gradients increased; though many sections had minimal gradients (primarily induced by sunken logs) and extensive cobble/gravel deposits. Most ASA was concentrated below and near bridge crossing due to flow regimes. Generally a small stream with localized ASA and good to excellent rearing potential (where debris increased, rearing increased). More CT than SS observed and the stream character suggests trout habitat (vs. salmon habitat). Flow is minimal (approximately 1.5-2.0 cfs). Some beaver activity noted, but no impoundments were observed above bridge. From Section 1 on, increasing gradients reflected changing topography (vs. debris induced gradient changes). Low flows at time of survey possibly resulted in understimated ASA by factor of 2. No enhancement is recommended as the system is small with no habitat above the end of survey except on a limited basis for resident fish (DV, CT).


To Red Bay
N
15
Enter V-notch
Gradient Increasing
10
Flow Through Marsh
5 Exit V-notch
1963
Area A-1
Debris Jam; Enter V-notch
Area A-2
Begins Above
Impoundment
2.0 m High Beaver Dam
1962
To
Labouchere
Bay
Buster
Bay

106-41-43

1. Section 1I: Intertidal Confluence With 106-41-42; Gravel Heavily Silted; Logging Debris Common.

2. Area A-1; Section 2: First in a Series of Extensive Dams and Reservoirs.

3. Typical Impoundment in Unsurveyed Portion of Lower Shine Creek. Excellent Coho Rearing, but No Observed ASA.

4. Area A-2; Section 3: Habitat Characteristic of First Five Sections Above Beaver Impoundments.

5. Section 5: Abrupt Substrate Change. Bedrock and Boulders Common.

6. Section 15: Anadromous Barrier; 2 Meter Vertical Drop With No Holding Pool Beneath.

Shine Creek
106-41-43

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
Area A-1									
1I	100	2.7	20	54					
2	100	4.7	10	47					
Total				101 m^2					
Area A-2									
1	100	4.9	15	73.5					
2	100	2	10	20					
4	100	1.5	10	15					
6	100	2.6	5	13					
7	100	3.7	5	18.5					
8	100	3	5	15					
11	100	1.5	1	1.5					
12	100	1.7	2	3.4					
13	100	1	2	2					
Total				161.9m^2					

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Shine Creek ADF&G Catalog No. 106-41-43

Survey Area "A" -1

1. Section No.			1I	2						
2. Compass Bearing			210	182						
3. Gradient			1.0	1.0						
4. Temperature:	Air		13.0	14.0						
	Water		17.0	16.0						
5. Water qual:	a. color		3	3						
	b. turbidity		1	1						
	c. pH		7.5	7.5						
6. Streambottom	Substrate	1	0	--						
		2	20	15						
		3	35	20						
		4	25	35						
		5	16	20						
		6	4	10						
		7	a) 0	--						
7. ASA	a. percent		20	10						
	b. quality		1	2						
8. Water Width	a. channel		10.5	13.8						
	b. water		2.7	4.7						
	c. floodplain		1	2						
9. Stream Pools	a. percent		60	60						
	b. category		SS	SS/DS						
10. Rearing Area			70	85						
11. Debris Loading			10.0	25.0						
12. Potential Barriers			N	N						
13. Enhancement/Rehab			N	N						
14. Streambank Veg.			5	1,3,5						
15. Upper Bank	a. Left		0.0	24						
	b. Right		0.0	0						
b. indic	Left		thin	thin						
	Right		soil	soil						
c. veg	Left		Y	Y						
	Right		Y	Y						
16. Lower Bank	Left		UC	UC						
	Right		UC	UC						
17. Stab rating	Left		2(2)	2(2)						
	Right		2(2)	2(2)						
18. Stream Canopy Cover			3	3						
19. Fish Species	fry	SS	100+	100+						
			Sculpin	Stb						
20. Sampling			N	N						

21. Comments

Variable large flow, red stained stream. (15c. beach grass holding bank.) Hundreds of coho observed in pools. Heavy blowdown across stream. Bear/wolf droppings seen. Excellent rearing in pool.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.
Section 2: 66.5m; A 2m high active beaver dam impounds an extensive reservoir bordering wetlands. Channel borders base of dam for 24m to outlet. No SS fry were observed above the dam. Several mallard ducks were observed in the impoundment. Survey ended at impoundment outlet; 90.5m.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Shine Creek (above beaver dam ponds) ADF&G Catalog No. 106-41-43

Survey Area A-2

1. Section No.			1	2	3	4	5	6	7	8
2. Compass Bearing			137	139	124	122	129	112	122	119
3. Gradient			1	1.5	2	2.5	7	2.5	1	5
4. Temperature:	Air		11.5	11.5	12.5	12.5	12.5	14	14	12
	Water		11	11	11	11	11	11	11	11
5. Water qual:	a. color		1	1	1	1	1	1	1	1
	b. turbidity		1	1	1	1	1	1	1	1
	c. pH		7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6. Streambottom	Substrate	1	0	9	20	20	13	15	15	10
		2	7	20	25	15	12	23	25	20
		3	30	35	10	20	10	18	15	28
		4	49	25	10	25	20	15	27	28
		5	10	7	5	7	5	7	8	7
		6	0	0	0	0	0	0	0	0
		7	b) 1 c) 3	a) 3 b) 1	a) 30	a) 13	a) 40	a) 20 b) 2	a) 10	a) 5 b) 2
7. ASA	a. percent		15	10	0	10	0	5	5	5
	b. quality		1	1	--	1	--	2	2	2
8. Water Width	a. channel		4.9	4.3	4.8	4.5	4.2	3.8	5	4.3
	b. water		4.9	2.0	4.4	1.5	2.6	2.6	3.7	3.0
	c. floodplain		3	3	1	1	1	2	3	3
9. Stream Pools	a. percent		85	85	70	50	45	60	80	75
	b. category		SS/DS	SS	SS	SS	SS	SS/DS	SS	SS
10. Rearing Area			60	50	25	15	10	25	40	40
11. Debris Loading			7	7	1	1	3	4	15	10
12. Potential Barriers			N	Y	N	N	N	N	N	N
13. Enhancement/Rehab			N	N	N	N	N	N	N	N
14. Streambank Veg.			1-5	1-5	1-5	1,3-5	1-5	1-5	1-5	1-5
15. Upper Bank	a. Left		3	14	32	29	50	16	26	8
	b. Right		13	2	30	37	51	17	1	2
b. indic	Left		N	N	V-not	V-not	V-not	N	N	N
	Right		N	N	V-not	V-not	V-not	N	N	N
c. veg	Left		N	N	N	N	N	N	N	N
	Right		N	N	N	N	N	N	N	N
16. Lower Bank	Left		SS	U	U	SS	U	U	U	U
	Right		SS	U	U	U	U	U	GS	SS
17. Stab rating	Left		1(1)	1(1)	1(1)	1(3)	1(1)	1(2)	1(2)	1(1)
	Right		1(1)	1(1)	1(1)	1(1)	1(2)	1(3)	1(1)	2(1)
18. Stream Canopy Cover			2	1	1	3	1	1	2	2
19. Fish Species		SS	>6	>6	>6	--	--	--	--	>15
		CT	>6	>6	>6	>6	>6	4	>6	>12
		DV	--	--	--	--	--	--	--	1
20. Sampling			N	Y	Y	N	N	N	N	N

21. Comments

Survey begun above long pond of last beaver impoundment. Stream channel makes an 82° turn to the right (from 248° to 166°).

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 2: 48m; A potential rehabilitation project. A debris jam (1.1x5.5m) represents a potential low flow barrier to anadromous fish.

60m; Stream enters V-notch.

Section 3: 90m; #1000 road bridge crossing (a log stringer bridge).

Section 5: 6m; Debris jam.

71m; This is the base of a 9m length of cascades over bedrock at a 6% stream gradient. Change to bedrock/boulders in Section 5. A male and female spruce grouse observed on gravel bar in this section.

90m; Leave V-notch.

Section 6: 60m; A small muskeg seep on right side with less than 1 cfs flow and small/large cobble substrate.

Section 7: 36m; Entered grassy marsh area with heavy debris in channel for the next 50m.

Section 8: 27m; Muskeg seep on right side with less than 1 cfs flow and dense riparian growth in flow channel.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Shine Creek (above beaver dam ponds) ADF&G Catalog No. 106-41-43
Survey Area A-2

1.	Section No.		9	10	11	12	13	14	15	
2.	Compass Bearing		95	--	98	78	30	71	131	
3.	Gradient		5	9	3	3	4	7	14+	
4.	Temperature:	Air	13	13	14	14	12.5	12.5	12.5	
		Water	11	11	11	11	11	11	11	
5.	Water qual:	a. color	1	1	1	1	1	1	1	
		b. turbidity	1	1	1	1	1	1	1	
		c. pH	7.5	7.8	7.7	7.7	7.7	7.7	7.7	
6.	Streambottom Substrate	1	10	5	20	8	5	20	15	
		2	25	15	34	25	20	35	1	
		3	20	8	18	38	43	25	5	
		4	25	9	12	20	25	15	5	
		5	3	3	5	7	5	3	4	
		6	0	0	0	0	0	0	0	
		7	a) 15 b) 2	a) 60	a) 10 b) 1	b) 2	b) 2	b) 2	a) 70	
7.	ASA	a. percent	0	0	1	2	2	0	0	
		b. quality	--	--	2	2	2	--	--	
8.	Water Width	a. channel	4.3	4.9	3.5	2.8	6.0	3.15	7.8	
		b. water	2.5	2.2	1.5	1.7	1.0	1.0	2.3	
		c. floodplain	3	1	1	1	2	2	1	
9.	Stream Pools	a. percent	70	35	70	60	45	45	30	
		b. category	SS/DS	SS	SS	SS/DS	SS/DS	SS	SS	
10.	Rearing Area		20	10	25	30	30	30	5	
11.	Debris Loading		3	4	3	5	8	18	4	
12.	Potential Barriers		N	N	N	N	N	N	Y	
13.	Enhancement/Rehab		N	N	N	N	N	N	N	
14.	Streambank Veg.		1-5	1-5	1-5	1-5	1-5	1-5	1-5	
15.	Upper Bank	a. Left	38	36	20	5	0	15	14	
		b. Right	1	28	20	7	28	20	25	
	b. indic	Left	*	**	N	N	N	N	V-Not	
		Right	N	V-Not	N	N	N	N	V-Not	
	c. veg	Left	N	N	N	N	N	N	N	
		Right	N	N	N	N	N	N	N	
16.	Lower Bank	Left	U	U	GS	U	SS	U	SS	
		Right	SS	GS	U	GS	U	GS	U	
17.	Stab rating	Left	1(1)	1(3)	1(3)	1(2)	1(1)	1(1)	1(1)	
		Right	1(1)	1(3)	1(3)	1(1)	1(1)	1(1)	1(1)	
18.	Stream Canopy Cover		1	1	3	1	2	1	1	
19.	Fish Species	SS	--	--	1	6	--	--	--	
		CT	2	--	4	4	>6	>6	--	
		DV	--	--	2	1	--	--	>6	
20.	Sampling		N	N	N	N	N	N	N	

21. Comments *Steep Slope **Thin Soil; V-Not

Section 9: 34m; Muskeg seep on left side with less than 1 cfs flow; dense moss covering rocks and skunk cabbage in channel flow.
89m; Beginning of stream flow over steep, slanted slate type bedrock in a V-notch.

Section 10: 61m: Beginning of cascades over bedrock; Series of .3-.6m falls over a 10% stream gadient over a 25m length. 80m; End of V-Notch (begun in Section 9).

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 11: 6m; A less than 1 cfs tributary enters the main stem via the right bank.
98m; Exposed instream blue clay deposit, .5x1.0m.

Section 12: 39m; A less than .5 cfs seep enters the main stem via the right bank.

Section 13: 46m; Seep along right bank.

Section 14: 50m; Small tributary enters right bank flood channel.
53m; Stagnant seep along left bank.
53-88m; Recent heavy blowdown/in-channel debris dam.

Section 15: Entering bedrock V-notch with gradients approaching 15%. Several bedrock/boulder chutes, including a 1.5 vertical meter falls with no holding/jumping pool beneath, presents a potential barrier to migratory fish. Low stream flows at time of survey effectively prevent fish migration over falls.

Reconnaissance above Section 15 revealed gradients in excess of 15%, broadening of the channel to 8m, and a primarily boulder/large cobble substrate. Channel forks 50m beyond survey end. Right fork becomes subterranean within 10m; left fork cuts a V-notch with gradients exceeding 20%; DV observed. Left fork flagged by USFS for DV (logging unit 65-5) on 10/78.

FISH SAMPLING FORM

Stream Name Shine Creek ADF&G Catalog No. 106-41-43 Date 8/14/82

Identify Survey Area A-2 Water Temp. 11.5°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1000	1550	2 - CT 2 - DV	-- --	Section #3 above beaver impoundments.
2	1015	1553	2 - CT 6 - SS	-- 620mm 520mm 560mm 580mm 420mm 710mm	Section #2 above beaver impoundments under undercut bank with large pool and overhanging riparian vegetation.

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

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A,B,C,D,E,F 2. Equipment X

3. Historical Fish Species PS CS

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Buster Creek 3. Lat. 56°19'25"

2. ADF&G Catalog No. 106-41-42 3. Long. 133°26'20"

4. Agency Unit 05 5. Mgmt Area 530 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-15-9-202 through 71-15-9-209

8. Bay/Drainage Buster Bay 9. Access 4 10. Camping 4

11. Present Land Use a. Future units to lower banks. 11b. deer trails

12. Historical Land Use 1961-63 A-frame logging unit along left bank, intertidal.

13. Stream Origin 3 4 5 6 14. Flow Stage 1

15. Flow Em (method), 7.6m (width), 0.12m (depth), 20m (length), 0.8 (constant), 75:98 sec (time), -- (grid), 0.19m³/sec (flow).

16. Temp. Sensitivity Yes, Beaver impoundments, muskeg seeps & low velocity flow

17. Beaver 1 18. Type aquatic Veg. 1,2,3 19. Density Aquatic Veg. 2

20. Adult Salmon No 21. Intertidal a. gradient <1%

b. bottom type % fines 13 %

gravel small cobble 72 %

large cobble/boulders/bedrock 15 %

c. ASA 10% (pink)

d. schooling Yes

e. shellfish No

f. Small skiff anchorage at mouth of intertidal zone.

22. Comments

1. 21c. 10% good pink salmon ASA in gravel/cobble riffles.
2. 21d. Schooling in cove along left and right sides of bay; abundant sand and blue clay along right tidal flat; long intertidal area; possible rearing.

August 12, 1982: Approximately 12 chum salmon observed in Section 2I along undercut bank.

September 28, 1982: Helicopter survey of upper main stem.

* Note:	Sections	Date	Time	Weather
	1-15	7/30/82	1000-1600	5, 2
	16-44	8/10/82	0910-1730	1
	45-53	8/11/82	1150-1700	6

23. Investigators Murph, Mickowski, and Edgington

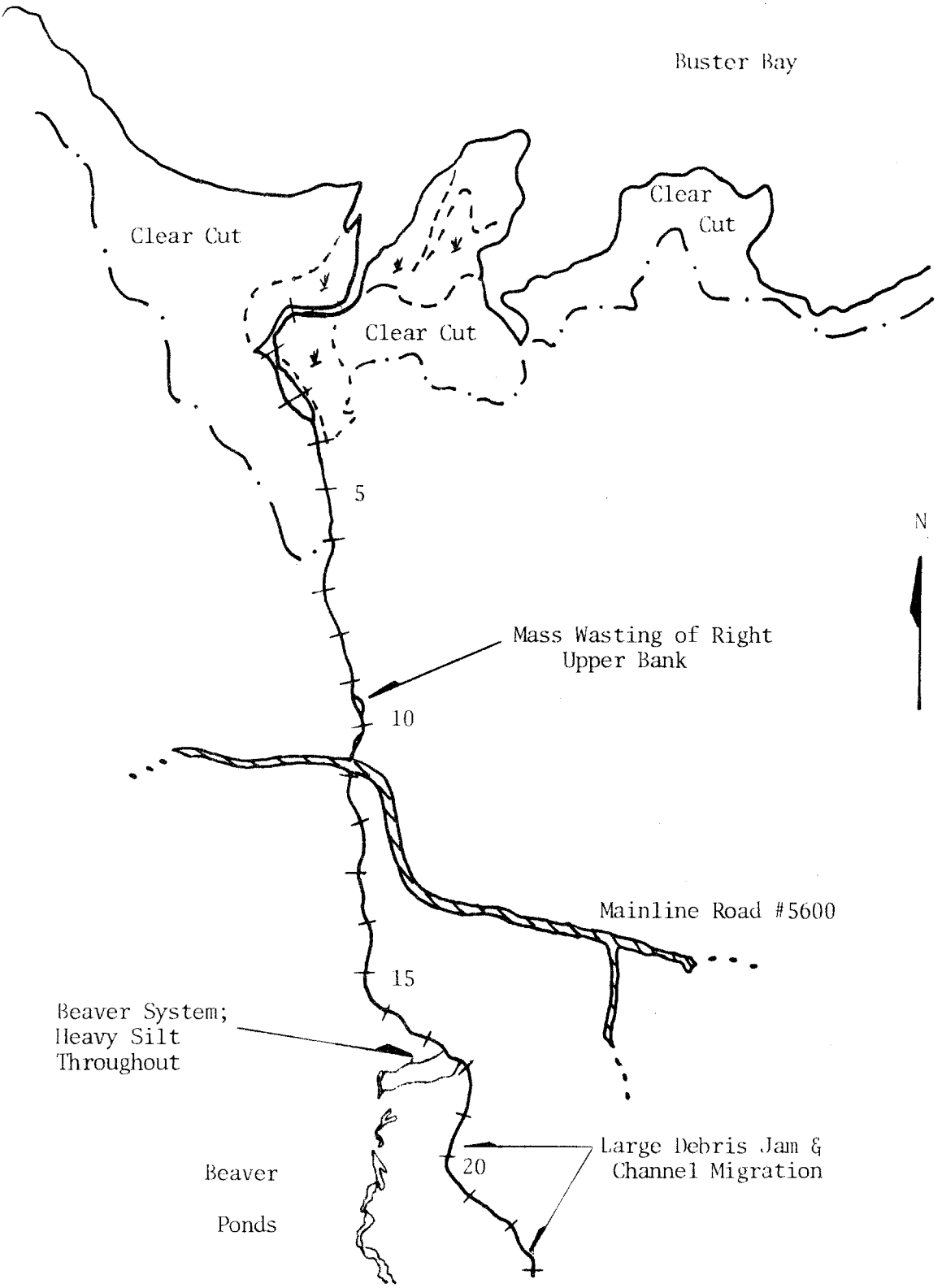
24. Date * 7/30/82 25. Time 1000 (start) 1600 (end) 26. Weather 5, 2

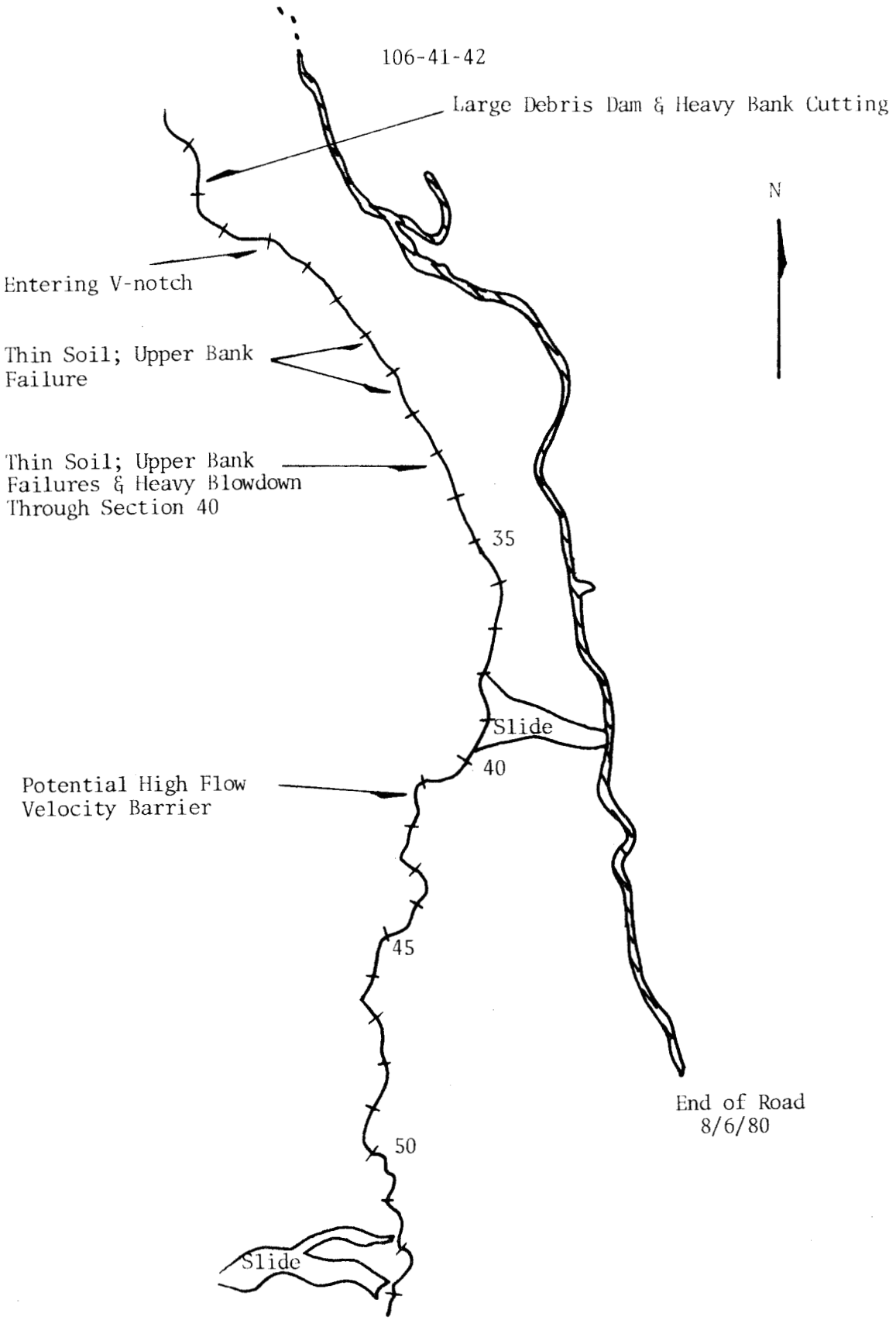
27. Photos Roll #3

Helicopter Survey Areas D, E, & F on 9/28/82 from 1030-1200; Weather: 2

R-10 2609.3[illegible] (1/[illegible])

106-41-42

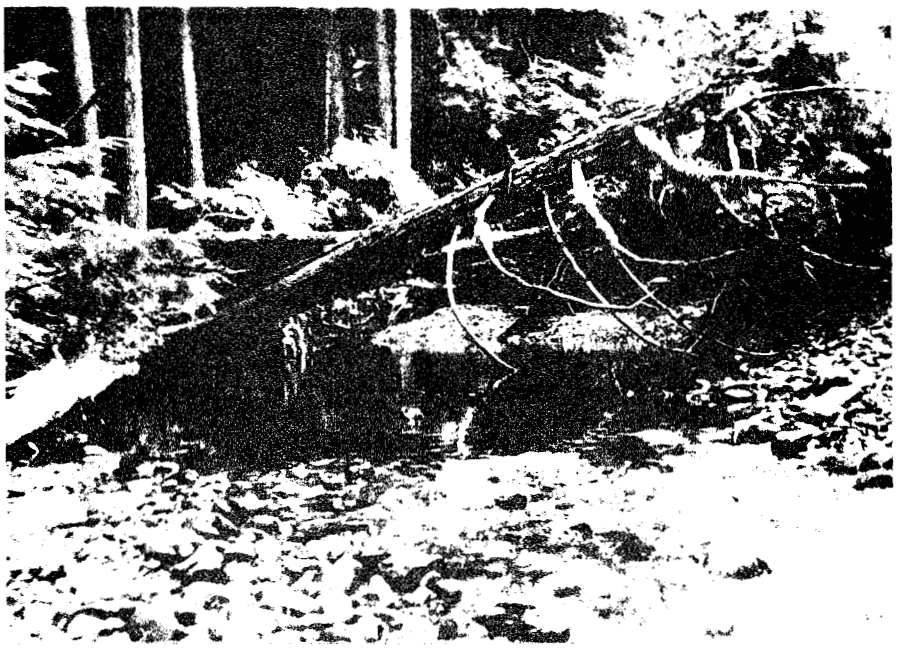

Buster Bay
Clear Cut
Clear Cut
Clear Cut
5
N
Mass Wasting of Right Upper Bank
10
Mainline Road #5600
15
Beaver System; Heavy Silt Throughout
Large Debris Jam & Channel Migration
20
Beaver Ponds


106-41-42
Large Debris Dam & Heavy Bank Cutting
N
Entering V-notch
Thin Soil; Upper Bank Failure
Thin Soil; Upper Bank Failures & Heavy Blowdown Through Section 40
35
Slide
40
Potential High Flow Velocity Barrier
45
End of Road 8/6/80
50
Slide

1. Section 3I. Broad Channel and Flood Plain. Moderate Spawning and Good Rearing Potential.

2. Section 9: Flood Channel; Mass Wasting and Blowdown.

3. Section 16: Mouth of Small Tributary Draining an Active Beaver Dam 100m up From Confluence. Heavy Siltation Throughout Entire Substrate.



4. Section 22: Debris Induced Channel Migration.

5. Section 3O: Mass Wasting, Right Bank.

6. Section 3I: Mouth of Tributary "B"; Less Than 5 CFS, No Fish Sighted.

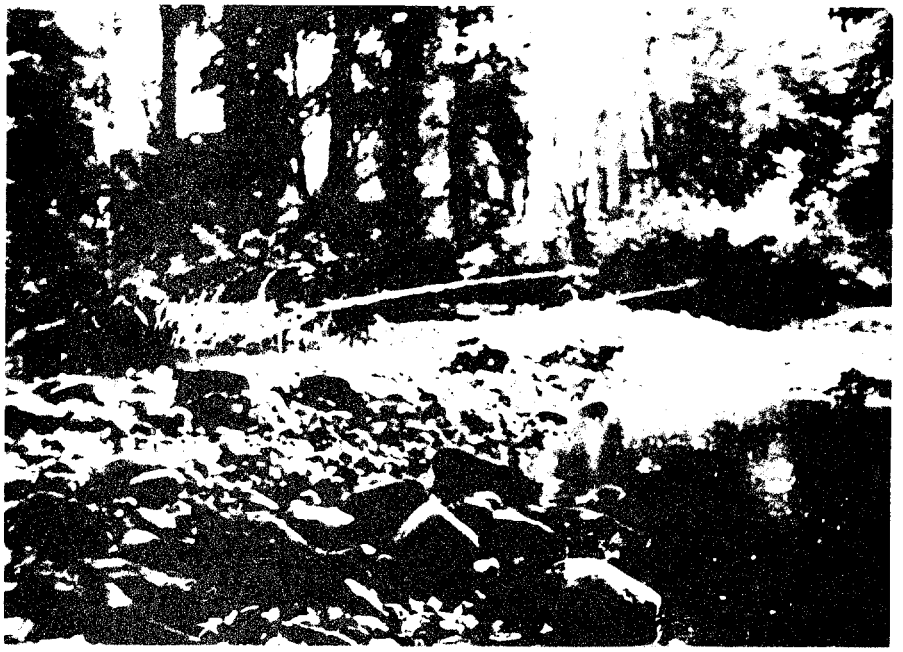
7. Section 4I: V-notch Bedrock Cascades With Gradients in Excess of 12%. No Barrier. Coho Fry Sighted Above V-notch.

8. Section 47: Habitat Change Above V-notch.

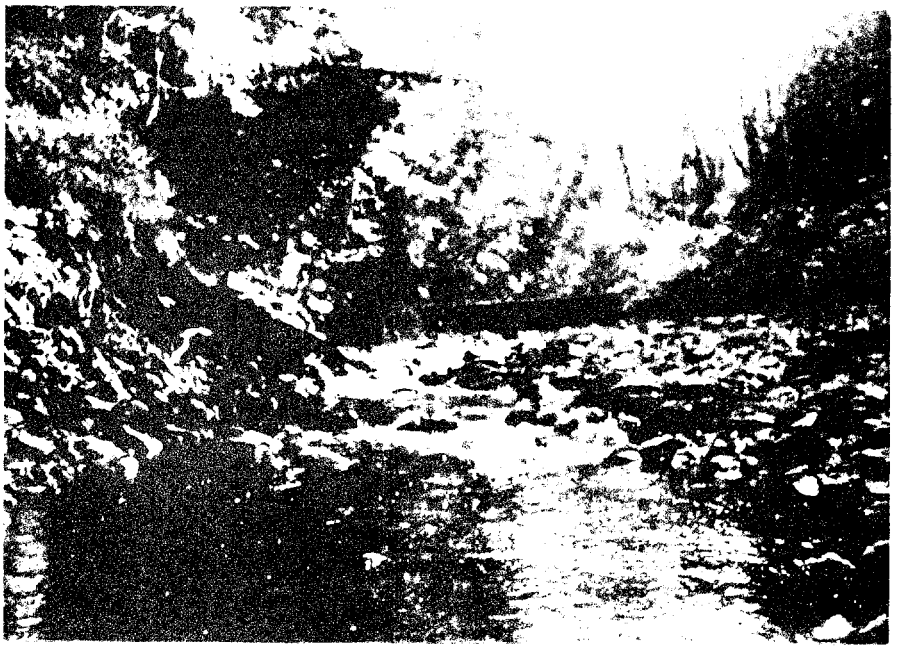
9. Section 50: Mouth of Tributary "C"; Coho Fry Observed Rearing in Pools Above Mouth. No ASA; Trout Common.

10. Section 51: Lower Bank Instability, Blue Clay in Stream (8m by 2m).

106-41-42
Survey Area "D"



1. Section 1: 10m; Typical Stream Character in This Section. Moderate Spawning and Good Rearing Potential.



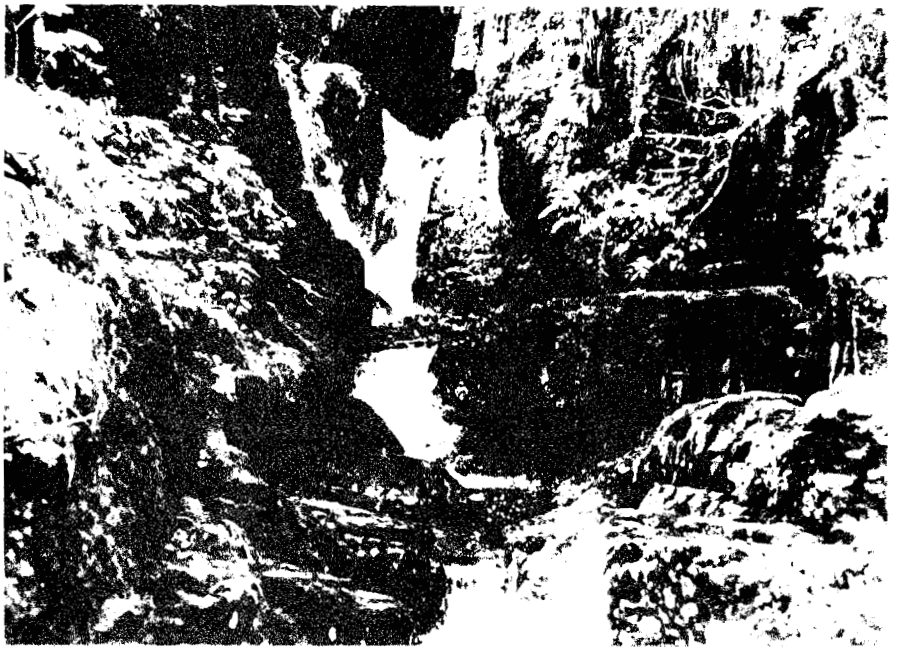
2. Section 3: 80m; Typical Stream Habitat in This Section. Moderate Spawning/Rearing.

106-41-42
Survey Area "E"

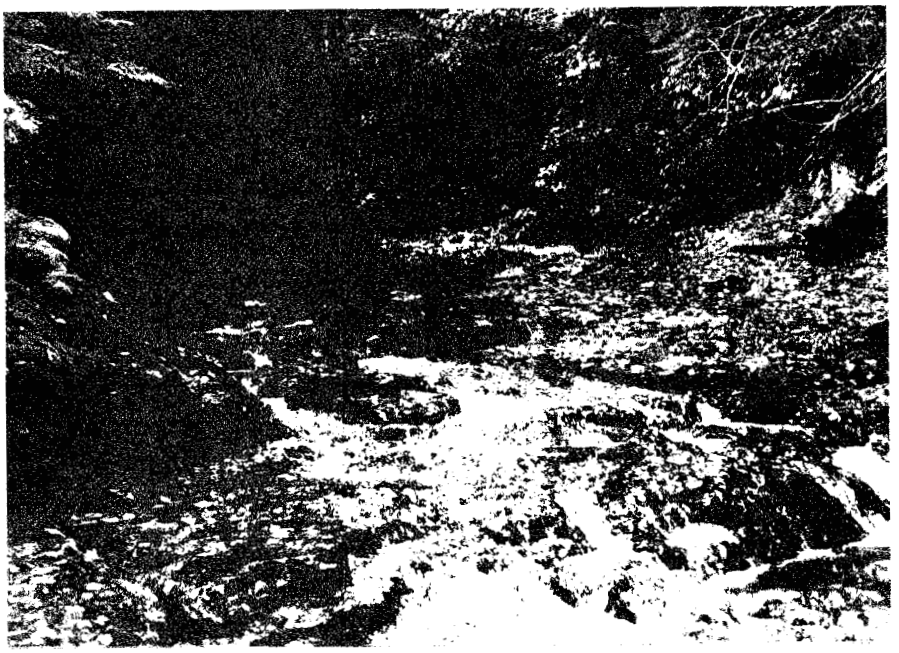
1. Section 1: Typical Stream Habitat With Primarily Bedrock/Boulder Substrate.

2. Section 4: 44m; Barrier Falls 8 to 10 Meters High.

106-41-42
Survey Area "F"



1. Section 4: An Impassable 5.0 Vertical Meter Bedrock Falls. Traverses a V-notch.



2. Section 1: 25 Meter Long Bedrock Slab Cascade.

Buster Creek
106-41-42

Section	Length (m)	Width (m)	ASA %	ASA Total
Area A				
1I	100	25.2	15	378
2I	100	15	5	75
3I	100	11	5	55
4I	100	19	15	285
5	100	25	25	625
6	100	24	5	120
7	100	11.5	10	115
8	100	12.5	5	62.5
9	100	6.5	5	32.5
10	100	10.5	5	52.5
11	100	15	25	375
12	100	9.2	8	73.6
13	100	16	10	160
14	100	12.4	15	186
15	100	8.2	10	82
16	100	9	10	90
17	100	9	15	135
18	100	9	5	45
19	100	12.5	15	187.5
20	100	27.5	15	412.5
21	100	6	5	30
22	100	5.7	15	85.5
23	100	7.5	5	37.5
24	100	9	10	90
25	100	13.5	20	270
28	100	7.5	2	15
29	100	13	1	13
30	100	12	5	60
35	100	9.5	2	19
37	100	12	3	36
38	100	12.5	1	12.5
39	100	5.5	1	5.5
40	100	10	10	100
44	100	5	10	50
45	100	7	33	231
46	100	19.7	22	433.4
48	100	7	5	35
49	100	9.5	25	237.5
50	100	12.5	7	87.5
51	100	6	5	30
52	100	6.8	4	27.2
53	100	12.5	8	100
Total				5,552.7m^2
Area D				
1	100	13	10	130
2	100	14	6	84
3	100	11	10	110
Total				324m^2

BUSTER CREEK
106-41-42

Reach Evaluation (Sections 1 through 15):

Pink, coho and chum salmon spawning area is available in nearly all sections. Channel gradient is less than 2% with primarily small cobble/gravel substrate. Abundant pools and undercut banks provide excellent SS and CT rearing habitat. Stable upper banks and gentle slopes result in marginal debris loading throughout the reach. Rearing SS and CT juveniles are common.

Reach Evaluation (Sections 16 through 25):

Coho and chum salmon spawning area is available in nearly all sections. Channel gradient is less than 2.5% with primarily large/small cobble and gravel substrate (gravel concentrated on edges of pools) Copious debris results in approximately 60% pools, providing excellent rearing habitat. Several large debris dams induce channel migration, heavy erosion and left bank rootmass failures. Gently sloping banks and an extensive floodplain are traversed by several flood channels. Rearing SS and CT juveniles are common.

Reach Evaluation (Sections 26 through 43, 32m):

This reach is typified by steep gradient induced falls/cascades over 50-60% bedrock/boulder substrate in narrow V-notch areas. Sections 27-36 had little ASA and reduced (between 5% to 20%) rearing areas. Heavy blowdown areas along the right and left banks (25m to 50m from the stream channel in Sections 36-39 and Sections 43-44) produce dense alder groves and pioneer vegetation. Channel gradients averaged 2 to 3.5% with localized gradients of 12% (Sections 41), 9% (section 42) and 8% (Section 43) over narrow gorges with chute-like falls and DF pools below. Side slopes are characterized by thin soils, steep gradients and subsurface clay deposits resulting in localized root failures. Debris loading is $\leq$5%. Very few SS fry or resident trout were observed.

Reach Evaluation (Sections 43, 32m through 51):

An abrupt change in substrate composition (50-60% bedrock/boulder to large cobble/gravel and reduced gradients, demarcate this reach. Blowdown areas along both banks cause heavy debris loading (20-30%) resulting in multiple flood channels and channel braiding. Lower bank "sloughing" and exposed clay deposits common. Debris induced habitat improved rearing to approximately 45%; ASA common. Rearing SS, CT, and DV were observed.

Helicopter Survey (Areas D, E, F):

A chopper and muskeg access were utilized to sample the upper Buster Creek watershed (see air photo map #3). SS fry were observed in the main stem through Area D. Several juvenile DV were observed in Area E and no fish were sighted in Area F.

Migratory barriers were observed in both Areas E and F (reference individual surveys for additional comments). An aerial survey was conducted above Area F, revealing no enhancement potential due to lack of habitat and steep channel gradients.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Buster Creek ADF&G Catalog No. 106-41-42

1. Section No.		1I	2I	3I	4I	5	6	7	8
2. Compass Bearing		100	113	120	121	126	142	105	128
3. Gradient		1	1	.5	1	1	.5	2	2
4. Temperature:	Air	13	14	14	15	15	16	20.5	19
	Water	17	19.5	17	17	14	14	15	15.5
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	--	--	--	--	--	7.5	7.5	7.5
6. Streambottom Substrate	1	0	0	0	0	0	0	0	0
	2	10	10	20	25	20	10	15	20
	3	25	30	30	30	20	15	20	25
	4	50	50	40	30	25	35	40	25
	5	10	10	10	15	30	35	24	25
	6	5	0	0	0	4	3	0	3
	7	0	0	0	0	c) 1	c) 2	c) 1	a) 1 c) 1
7. ASA	a. percent	15	5	5	15	25	5	10	5
	b. quality	1	1	2	1	1	1	2	2
8. Water Width	a. channel	58.2	54	47	30	29.7	26	20	19
	b. water	*	15	11	19	25	24	11.5	12.5
	c. floodplain	3	3	3	1	1	1	1	2
9. Stream Pools	a. percent	50	80	90	70	70	100	70	60
	b. category	SS	SS	SS	SS	SS	SS/DS	SS/DS	DS
10. Rearing Area		40	40	30	45	50	60	60	70
11. Debris Loading		0	0	5	2	4	8	5	15
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		5	1,3,5	1-3,5	1-5	1-5	1-5	1-5	1-5
15. Upper Bank	a. Left	0	0	0	12	15	21	12	14
	b. Right	0	10	43	3	32	32	45(est)	13
b. indic	Left	N	Thin	N	Thin	N	N	N	N
	Right	N	Soil	N	Soil	N	N	N	N
c. veg	Left	Y	Y	Y	Y	N	N	N	N
	Right	Y	Y	N	N	N	N	N	N
16. Lower Bank	Left	GS	U	U	U	GS	GS	GS	U
	Right	U	GS	U	U	GS	U	U	GS
17. Stab rating	Left	1(2)	2(2)	2(2)	1(1)	2(2)	1(1)	1(1)	2(2)
	Right	2(2)	1(1)	2(2)	2(2)	1(1)	1(1)	2(2)	1(1)
18. Stream Canopy Cover		3	3	3	3	3	2	3	2
19. Fish Species		N	N	N	SS	SS	SS	SS	SS
20. Sampling		N	N	N	N	N	N	N	Y

21. Comments *19/6.2

Intertidal Sections 1-4:

Survey begun in midintertidal zone. A very dense population of pleopods were observed in estuary. Dense Enteromorpha sp. on rocks in first 200m and moderate to sparse in upper intertidal area. No SS fry observed.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 7: 15m length of blue clay along left bank. ASA is primarily 4" cobble useable by chum salmon.

Section 8: Blue clay along left bank approximately 10m long by 1.5m wide.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Buster Creek- ADF&G Catalog No. 106-41-42

1. Section No.		9	10	11	12	13	14	15	16
2. Compass Bearing		121	141	120	107	115	129	141	96
3. Gradient		1	2	2.5	1	2	1	2	2.5
4. Temperature:	Air	20	21	20	20	23	23	23	11.5
	Water	15.5	16	16	16	16	17	17	11.5
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6. Streambottom Substrate	1	1	0	5	3	3	3	10	3
	2	20	30	30	20	15	20	25	25
	3	40	41	25	30	30	40	20	35
	4	27	15	15	25	40	25	20	20
	5	10	10	15	15	10	12	15	5
	6	0	2	5	--	--	--	--	--
	7	a) 2	c) 2	a) 3 c) 2	a) 5 b) 2	b) 2	--	a) 8 b) 2	a) 10 b) 1 c) 1
7. ASA	a. percent	5	5	25	8	10	15	10	10
	b. quality	2	2	3	2	2	2	2	1
8. Water Width	a. channel	40	22.5	28	23	27	20	24.7	21
	b. water	6.5	10.5	15	9.2	16	12.4	8.2	9
	c. floodplain	2	2	2	2	2	2	2	1
9. Stream Pools	a. percent	80	70	20	80	80	70	60	60
	b. category	SS	SS	DS/SF	DS/SF	DS/SF	SS/SF	DS/SF	SS/DS
10. Rearing Area		50	60	20	70	40	10	50	40
11. Debris Loading		3	10	5	5	3	1	5	15
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-5	1-5	1-5	1-5	1-5	1-5	1-5	1-5
15. Upper Bank	a. Left	26	33	16	32	20	42	40	9
	b. Right	>150	16	30 est	23	20 est	21	19	8
b. indic	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	U	GS	U	U	SS	U	U	GS
	Right	SS	U	U	GS	U	GS	GS	SS
17. Stab rating	Left	1(2)	1(2)	1(1)	1(1)	2(2)	2(2)	1(3)	1(1)
	Right	1(1)	2(2)	2(2)	1(2)	1(1)	1(2)	1(1)	1(1)
18. Stream Canopy Cover		2	3	2	2	3	2	3	3
19. Fish Species		SS	SS	SS	SS	--	SS	--	--
		--	--	--	--	SS	--	--	--
20. Sampling		Y	N	N	N	N	N	N	N

21. Comments

Section 9: Right Upper Bank; mass wasting results from debris induced flow migration.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 10: 72.5m; #5600 Road (AKA #1000 Rd) crosses stream with a metal expansion bridge. ASA is 3-4" cobble in a riffle with steep gradient.

Section 16: 64m; Tributary along right bank with beaver dam approximately 100m above confluence with main stem. Stream substrate is heavy silt and muck over gravel. Less than 1 cfs flow; water temperature: 13.5°C.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Buster Creek Survey Area A ADF&G Catalog No. 106-41-42

1. Section No.		17	18	19	20	21	22	23	24
2. Compass Bearing		74	81	134	152	89	73	123	100
3. Gradient		2	1	2.5	2	2	1	2.5	1.5
4. Temperature:	Air	11.5	11.5	13	12.5	11.5	11.5	11.5	11.5
	Water	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6. Streambottom	Substrate 1	5	--	--	3	9	4	2	9
	2	20	20	30	25	22	35	25	25
	3	25	30	30	30	28	33	30	35
	4	15	25	30	25	32	22	30	25
	5	5	20	5	10	8	5	10	5
	6	--	--	--	--	--	--	--	--
	7	a) 30	b) 2 c) 3	b) 2 c) 3	a) 5 b) 2	b) 1	b) 1	b) 3	b) 1
7. ASA	a. percent	15	5	15	15	5	15	5	10
	b. quality	2	2	2	2	2	1	2	2
8. Water Width	a. channel	18	19	18.5	41	16	18.5	20	20
	b. water	9	9	12.5	27.5	6	5.7	7.5	9
	c. floodplain	2	2	1	3	2	2	3	2
9. Stream Pools	a. percent	25	65	55	70	70	65	55	70
	b. category	SS	DS/SS	DS/SS	SS/DS	SS	SS/DS	SS/DS	SS
10. Rearing Area		15	50	45	35	30	40	35	40
11. Debris Loading		4	20	30	4	4	20	20	20
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-5	1-5	1-5	1-5	1-3,5	1-5	1-5	1-5
15. Upper Bank	a. Left	3	3	5	4	8	5	11	6
	b. Right	8	12	6	6	5	5	8	3
b. indic	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	GS	U	GS	U	SS	U	U	GS
	Right	U	U	GS	GS	U	U	GS	U
17. Stab rating	Left	1(2)	1(1)	1(1)	3(1)	1(1)	2(2)	2(1)	1(1)
	Right	2(1)	1(2)	1(1)	1(1)	1(1)	2(1)	1(2)	3(1)
18. Stream Canopy Cover		3	3	2	3	2	2	3	3
19. Fish Species	SS	--	--	6	--	6	6	6	6
	CT	--	--	1	--	--	--	--	--
20. Sampling		N	N	N	N	N	N	N	N

21. Comments

Section 17: 85m; Tributary on left bank with possible rearing and no ASA.

Section 18: 59m; Dry flood channel converges with main stem along left side and later diverges at 80m.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 19: 60.5m; Flood channel along right bank diverges.
92m; Large flood channel along left bank; recent beaver activity noted.
70-100m; A large debris jam has caused the main flow to divert into three channels. The majority of the flow is in the right two channels with channel migration and bank cutting occurring on left bank.

Section 20: End of debris dams; 3 channels converge. Many alder occurring on banks.

Section 21: 42m; Dry stream channel along right bank.

Section 22: 71m; Large debris jam (47m long) has rerouted the main flow along the left bank causing some bank failure and large bankside trees to be undermined, falling into the channel.

Section 23: 13m; Dry tributary channel along left bank.

Section 24: 71-89m; A large debris dam causing heavy cutting of left bank.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Buster Creek Survey Area A ADF&G Catalog No. 106-41-42

1. Section No.		25	26	27	28	29	30	31	32
2. Compass Bearing		123	92	58	85	91	95	95	109
3. Gradient		2.5	4	2	3	2.5	2.5	3.5	3
4. Temperature:	Air	12	11.5	11.5	11.5	11.5	11.5	12.5	12.5
	Water	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6. Streambottom Substrate	1	20	25	40	30	40	35	25	25
	2	15	20	20	20	15	16	15	20
	3	20	15	5	15	15	16	10	10
	4	15	10	5	15	17	18	10	7
	5	5	5	5	5	3	5	5	3
	6	--	--	--	--	--	--	--	--
	7	a) 24 b) 1	a) 25	a) 25	a) 15	a) 10	a) 10	a) 35	a) 35
7. ASA	a. percent	20	--	--	2	1	5	--	--
	b. quality	2	--	--	1	1	1	--	--
8. Water Width	a. channel	15	15.5	12.5	11.5	18	12	11	12
	b. water	13.5	9	9	7.5	13	12	5.2	10
	c. floodplain	1	1	1	1	1	1	1	1
9. Stream Pools	a. percent	15	55	15	15	30	15	20	30
	b. category	SF	SS/SF	SS/SF	SS	SS	SF	SS/SF	DS
10. Rearing Area		5	20	5	5	10	5	5	20
11. Debris Loading		3	7	2	--	2	3	3	2
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	Y	N	N
14. Streambank Veg.		1-3,5	1-5	1-5	1-5	1-5	1-5	1-3,5	1-5
15. Upper Bank	a. Left	21	16	26	71	54	69	58	78
	b. Right	8	45	52	36	46	60	71	91
b. indic	Left	N	N	N	V-not	V-not	V-not	V-not	V-not
	Right	N	*	**	V-not	V-not	V-not	***	****
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	Y	N
16. Lower Bank	Left	GS	GS	U	SS	SS	SS	SS	GS
	Right	SS	SS	SS	GS	GS	SS	SS	SS
17. Stab rating	Left	1(2)	1(2)	1(1)	1(3)	1(2)	1(3)	1(3)	1(2)
	Right	3(2)	1(3)	1(3)	1(1)	1(1)	1(3)	1(3)	1(3)
18. Stream Canopy Cover		3	2	1	1	3	2	2	2
19. Fish Species	SS	<6	--	1	--	--	--	--	--
	CT	--	--	--	--	--	--	--	--
	DV	--	--	--	--	--	--	--	--
20. Sampling		N	N	N	N	N	N	N	N

21. Comments *Pioneer Vegetation; **Steep Slope; ***V-notch, Pioneer Vegetation; ****V-notch, Thin Soil

Section 26: Cascades over bedrock and boulders as slope increases.

Section 27: Entering V-notch.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 30: 10m; A 1 meter falls over debris/sunken logs in stream; a possible rehabilitation project.
66m; Recent right upper bank failure of thin soil over bedrock, 10m wide by 30m high. No pioneer vegetation.

Section 31: Old bank failures evident on both upper banks due to thin soil over bedrock in a V-notch.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Buster Creek Survey Area A ADF&G Catalog No. 106-41-42

1. Section No.			33	34	35	36	37	38	39	40
2. Compass Bearing			103	103	103	117	143	141	129	166
3. Gradient			2.5	3.5	2	2.5	1.5	2	3	1.5
4. Temperature:	Air		12.5	12.5	12	12	12	12	12	12
	Water		11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
5. Water qual:	a. color		1	1	1	1	1	1	1	1
	b. turbidity		1	1	1	1	1	1	1	1
	c. pH		7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6. Streambottom Substrate		1	15	25	33	35	35	20	20	20
		2	5	10	20	25	25	25	18	20
		3	5	8	15	15	18	20	20	20
		4	4	7	10	15	17	25	25	25
		5	1	1	2	5	5	5	7	9
		6	--	--	--	--	--	--	--	--
		7	a)70	a)49	a)20	a)5	--	a)5	a)10	a)5c) 1
7. ASA	a. percent		--	--	2	--	3	1	1	10
	b. quality		--	--	1	--	2	2	1	2
8. Water Width	a. channel		12.5	10.5	12.5	15.5	17	20	9	13
	b. water		8	5.5	9.5	8.5	12	12.5	5.5	10
	c. floodplain		1	1	1	1	2	2	3	2
9. Stream Pools	a. percent		30	30	40	45	50	60	70	60
	b. category		DF	SF	SS	SS/DS	SS/SF	SS/DS	SS/DS	SS/DS
10. Rearing Area			20	20	25	25	20	25	30	35
11. Debris Loading			4	1	1	3	5	1	2	3
12. Potential Barriers			N	N	N	N	N	N	N	N
13. Enhancement/Rehab			N	N	N	N	N	N	N	N
14. Streambank Veg.			1-3,5	1-3,5	1-3,5	1-5	1-5	1-5	1-5	1-5
15. Upper Bank	a. Left		62	83	80	30	45	49	53	22
	b. Right		84	54	60	33	17	20	8	47
b. indic	Left		*	*	**	*	***	***	***	****
	Right		*****	******	******	thin soil	thin soil	thin soil	N	N
c. veg	Left		N	N	N	N	N	N	N	N
	Right		N	N	N	N	N	N	N	N
16. Lower Bank	Left		SS	SS	GS	GS	GS	U	SS	GS
	Right		SS	GS	GS	GS	U	GS	SS	GS
17. Stab rating	Left		1(3)	1(3)	1(3)	1(2)	1(2)	1(1)	1(2)	1(2)
	Right		1(3)	1(3)	1(3)	1(2)	1(1)	1(2)	1(2)	3(2)
18. Stream Canopy Cover			3	2	3	3	3	2	3	3
19. Fish Species		SS	2	--	--	--	--	--	--	5
		CT	--	12	--	--	--	--	--	1
		DV	1	--	--	--	--	--	--	--
20. Sampling			N	N	N	N	N	N	N	N

21. Comments *V-Notch, Thin Soil; **V-Notch, Rock Face; ***Steep Slope; ****Thin Soil, Pioneer Vegetation; *****V-Notch, Pioneer Vegetation; ******V-Notch, Thin Soil, Pioneer Vegetation

LEVEL THREE - HABITAT SURVEY (Part 3)

21. Comments Cont.

Sections 33-40: Large amounts of blowdown and bank failures due to thin soil over a bedrock substrate on both right and left upper banks begins in Section 33; blowdown ends on the right in Section 38, 70m but continues on left side through Section 40.

Section 38: 70m; Flood channel diverges along right bank and converges in Section 39, 19m.

Section 39: 30 meters of exposed blue clay along right side of channel.

Section 40: 28m; Dry flood channel along left bank.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Buster Creek Survey Area A ADF&G Catalog No. 106-41-42

1. Section No.		41	42	43	44	45	46	47	48
2. Compass Bearing		210	150	116	123	81/191	*	123	156
3. Gradient		12	9	8	1.5	1.5/1.5	2/1	1	1.5
4. Temperature:	Air	12	13	13	15	12/13	12/13	12	13
	Water	11.5	11.5	11.5	11	11	11	11	11
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6. Streambottom Substrate	1	25	23	10	10	3/4	3/2	10	5
	2	15	25	27	25	22/30	30/20	27	35
	3	10	15	23	35	35/31	30/35	23	30
	4	10	10	13	20	30/25	25/30	34	25
	5	5	2	2	7	7/8	9/12	5	4
	6	--	--	--	--	--	1/0	--	--
	7	a) 35	a) 25	a) 25	b) 3	b) 3 b) 2	b) 2 b) 1	b) 1	b) 1
7. ASA	a. percent	--	--	--	10	18/15	4/18	--	5
	b. quality	--	--	--	1	1/1	2/1	--	1
8. Water Width	a. channel	7	4.8	15.5	5.5	16/14	28/18	17	14
	b. water	7	4.8	5.7	5	*	*	17	7
	c. floodplain	1	1	1	3	2/3	3/3	3	3
9. Stream Pools	a. percent	30	15	45	40	40/45	45/45	65	40
	b. category	DS/DF	SS	SS/DS	SS/SF	SS/DS	SS/DS	DS/SS	DS/SS
10. Rearing Area		15	10	35	40	40/45	45/45	40	40
11. Debris Loading		4	3	30	35	30/8	15/8	7	12
12. Potential Barriers		Y	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-3,5	1-3,5	1-3,5	1,3,5	1-5	1-5	1-5	1-5
15. Upper Bank	a. Left	35	70	32	10 est	0/6	0/0	0	45
	b. Right	44	100	40	20	0/5	5/24	0	7
b. indic	Left	N	N	N	N	N/N	*	N	*
	Right	N	N	*	N	N/N	*	N	N
c. veg	Left	N	N	N	N	N/N	N/N	N	N
	Right	N	N	N	N	N/N	N/N	N	N
16. Lower Bank	Left	SS	SS	SS	U	GS/SS	U/U	SS	GS
	Right	GS	SS	SS	U	SS/GS	U/U	U	GS
17. Stab rating	Left	1(3)	1(3)	1(3)	3(1)	*	*	3(1)	1(2)
	Right	1(3)	1(3)	1(3)	3(1)	*	*	2(2)	1(2)
18. Stream Canopy Cover		3	1	3	1	3/2	3/3	3	2
19. Fish Species	SS	>12	--	1	>6	>6/>40	>25/>12	>6	>6
	CT	>6	1	--	2	1/>6	2/2	--	>6
	DV	--	--	--	2	0/>6	0	--	--
	CO	1							
20. Sampling		N	N	N	Y	N	N	N	N

21. Comments *43.15c.Right: Pioneer Vegetation
*45.8b.: 2/1.5/3.5
*45.17 Left: 1(1)/2(1) and 45.17 Right: 2(1)/1(2)
*46.2: 189/131
*46.8b: 5/11/3.7
*46.15b Left: Thin Soil/N
*46.15c Right:Thin Soil/N
*46.17 Right: 3(1)/1(2) and 46.17 Left: 3(1)/1(1)
*48.15b Left: Steep Slope

LEVEL THREE - HABITAT SURVEY (Part 3)

21. Comments Cont.

Section 41: 0m; Opening of a narrow gorge emptying into a large deep pool below.
22m; Falls and cascades over bedrock (7% slope); a possible velocity barrier at high flows.
75.5m; .3-.5m falls in a narrow gorge over bedrock "chute" openings; deep pools below falls; large amounts of bedrock and debris; 12% gradient.

Section 42: 5m; 1m-1.5m cascade in V-notch.
68m; Beginning of 200m of heavy blowdown along both banks.
88m; Beginning of steep cascade over bedrock substrate.

Section 43: 32m; 1m vertical falls with .5-1m deep pool below. Extremely heavy debris in channel area. Large alder stands along banks.

Section 44: 89m & 100m; Stream channel braids with the right channel converging at 100m and the left channel converging at 89m and 100m (a divided flow at confluence due to blowdown/ root wad in channel).

Left Channel: 217m long

Section 45: 15m to 20m of blue clay exposed along right bank; flood channel along left bank.

Section 46: Very large floodplain with flood channels and braiding between right and left forks. Very heavy debris/blowdown.

Right Channel: 223m long

Sections 45-46: Heavy bank erosion; extremely dense debris and blowdown.

Section 47: 0m; Right and left channels diverge. Left bank becomes steeply sloped with bedrock/boulder banks while right bank remains a floodplain.

Section 48: Flood channel along left bank. 75m of blowdown observed on left upper bank approximately 50m from the edge of the stream channel.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Buster Creek Survey Area A ADF&G Catalog No. 106-41-42

1. Section No.			49	50	51	52	53			
2. Compass Bearing			130	114	143	154	103			
3. Gradient			1	1.5	2	1.5	1.5			
4. Temperature:	Air		13	14	16	16	12.5			
	Water		11	11	11.5	11.5	11.5			
5. Water qual:	a. color		1	1	1	1	1			
	b. turbidity		1	1	1	1	1			
	c. pH		7.5	7.5	7.5	7.5	7.5			
6. Streambottom	Substrate	1	2	2	8	8	6			
		2	25	30	35	30	35			
		3	35	30	30	30	30			
		4	30	30	20	25	20			
		5	7	6	5	5	8			
		6	--	--	--	--	--			
		7	b)$_1$	b)$_2$	b)$_2$	b)$_2$	b)$_1$			
7. ASA	a. percent		25	7	5	4	8			
	b. quality		1	1	1	1	2			
8. Water Width	a. channel		20.5	19	13	15	17.5			
	b. water		9.5	12.5	6	6.8	12.5			
	c. floodplain		3	2	3	1	2			
9. Stream Pools	a. percent		45	70	40	40	35			
	b. category		DS/SS	SS/DS	DS/SF	DS/SS	SS			
10. Rearing Area			35	50	25	30	25			
11. Debris Loading			6	5	23	20	8			
12. Potential Barriers			N	N	N	N	N			
13. Enhancement/Rehab			N	N	N	N	N			
14. Streambank Veg.			1-5	1-5	1-5	1-5	1-5			
15. Upper Bank	a. Left		8	19	22	23	3			
	b. Right		14	5	5	11	10			
b. indic	Left		N	N	*	N	N			
	Right		N	N	N	N	N			
c. veg	Left		N	N	N	N	N			
	Right		N	N	N	N	N			
16. Lower Bank	Left		U	GS	SS	U	GS			
	Right		GS	U	SS	U	U			
17. Stab rating	Left		3(1)	1(1)	1(1)	2(1)	1(1)			
	Right		1(2)	1(1)	1(1)	3(2)	1(1)			
18. Stream Canopy Cover			3	1	1	1	3			
19. Fish Species		SS	>25	>50	>25	>25	--			
		CT	4	>6	>6	2	--			
		DV	--	--	2	--	--			
20. Sampling			N	N	N	N	N			

21. Comments *Steep Slope

Section 49: 32m; Tributary "C" along left bank.

Section 50: 100m; Stream channel takes a 90° turn to right. Flood channel along the left bank with less than 1 cfs flow; mostly pools and heavy debris.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 51: 81m; Flood channel diverges with very heavy debris and blowdown in channel.
81-91m; Blue clay exposed along left bank.

Section 52: Right and left lower banks are heavily eroded causing frequent bank failure.

Section 53: 71m; 8-10m wide tributary channel converges on right side. Several large pools with trapped SS fry due to the lack of flow between pools were observed.
The substrate is gravel and small cobble over a 1% gradient. Excellent rearing area.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Buster Creek Tributaries ADF&G Catalog No. 106-41-42

		Area "B"				Area "C"			
1. Section No.		1				1			
2. Compass Bearing		--				36			
3. Gradient		10				6%			
4. Temperature:	Air	12.5				13			
	Water	11				11.5			
5. Water qual:	a. color	1				1			
	b. turbidity	1				1			
	c. pH	8.0				7.5			
6. Streambottom Substrate	1	Primarily Bedrock and Boulder Substrate				Primarily Bedrock and Boulder Substrate			
	2								
	3								
	4								
	5								
	6								
	7								
7. ASA	a. percent	0				0			
	b. quality	--				--			
8. Water Width	a. channel	4.6				5			
	b. water	4.0				<1			
	c. floodplain	1				2			
9. Stream Pools	a. percent	25				30			
	b. category	SS				SS/SF			
10. Rearing Area		15				30			
11. Debris Loading		10				15			
12. Potential Barriers		N				N			
13. Enhancement/Rehab		N				N			
14. Streambank Veg.		1-5				1-5			
15. Upper Bank	a. Left	68				0			
	b. Right	53				0			
b. indic	Left	V-not				N			
	Right	V-not				N			
c. veg	Left	N				N			
	Right	N				N			
16. Lower Bank	Left	U				U			
	Right	SS				U			
17. Stab rating	Left	1(3)				2(1)			
	Right	1(3)				2(1)			
18. Stream Canopy Cover		1				1			
19. Fish Species	juvenile DV	--				<6			
	juvenile CT	--				<6			
20. Sampling		N				N			

21. Comments

Area "B": Tributary converges with main stem survey in Section 31, 50m. Flagged blue/white by USFS. Approximately 1 cfs flow over several falls in a narrow V-notch with 14% gradient. 65m above confluence with main stem the gradient "levels out" to 10% slope. Marginal fish habitat.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.
Area "C": Tributary converges with main stem survey in Section 49, 89m. DV and CT throughout survey and a few SS fry observed in confluence. Reconnoitered approximately 400m upstream over primarily boulder/large cobble substrate and abundant debris. Local clay deposits observed. No ASA, though rearing was good around debris and boulders. Approximately 1 cfs flow.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Buster Creek ADF&G Catalog No. 106-41-42
Survey Area D

1. Section No.		1	2	3					
2. Compass Bearing		60	94	130					
3. Gradient		3%	2.5%	2.5%					
4. Temperature:	Air	6°	6	6					
	Water	8°	8	8					
5. Water qual:	a. color	1	1	1					
	b. turbidity	1	1	1					
	c. pH	7.6	7.6	7.6					
6. Streambottom Substrate	1	5	10	15					
	2	25	40	40					
	3	40	30	25					
	4	20	10	15					
	5	5	10	5					
	6	--	--	--					
	7	b) 5	--	--					
7. ASA	a. percent	10%	6	10%					
	b. quality	1	2	1					
8. Water Width	a. channel	15	17	8%					
	b. water	13	14	11%					
	c. floodplain	1	1	1					
9. Stream Pools	a. percent	35%	40%	40%					
	b. category	DS/SF	DF	DS/DF					
10. Rearing Area		50%	65%	70%					
11. Debris Loading		10%	7%	5%					
12. Potential Barriers		N	N	N					
13. Enhancement/Rehab		N	N	N					
14. Streambank Veg.		1-3,5	1-3,5	1-3,5					
15. Upper Bank	a. Left	15%	12%	8%					
	b. Right	10%	15%	11%					
b. indic	Left	N	N	N					
	Right	N	N	N					
c. veg	Left	N	N	N					
	Right	N	N	N					
16. Lower Bank	Left	U	U	U					
	Right	SS	U	SS					
17. Stab rating	Left	1(1)	1(1)	1(1)					
	Right	1(2)	1(2)	2(2)					
18. Stream Canopy Cover		<2	3	1					
19. Fish Species	Juv. SS	6	--	--					
	Adult DV	--	--	<12					
20. Sampling		Y	N	N					

21. Comments
Flow-low; approximately 8 cfs; vegetation in stream; sparse mosses.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.
Section 2: 54-86m; Cascade over bedrock in a V-notch.

Section 4: 14m; Seep on right bank, less than 1 cfs flow over 15% gradient.
24m; Mouth of a narrow gorge with barrier falls.
44m; Barrier falls with a 3-4.6 meter vertical drop over bedrock. No jumping/holding pool below falls.

Survey Area "E" Evaluation:

A steep (8-10%) gradient over a bedrock/boulder substrate. Two large falls over bedrock in narrow V-notch. The second fall is a barrier to anadromous fish. No ASA and minimal rearing area (due to lack of pooling) was observed. Very fast flows with cascades and falls throughout survey area.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Buster Creek Survey Area E ADF&G Catalog No. 106-41-42

1. Section No.		1	2	3	4				
2. Compass Bearing		145	174	209	149				
3. Gradient		45	12	9	25				
4. Temperature:	Air	9	9	9	9				
	Water	7	7	7	7				
5. Water qual:	a. color	1	1	1	1				
	b. turbidity	1	1	1	1				
	c. pH	7.5	7.5	7.5	7.5				
6. Streambottom Substrate	1	30	30	30	10				
	2	10	10	20	15				
	3	10	6	15	5				
	4	10	4	10	10				
	5	--	--	--	--				
	6	--	--	--	--				
	7	a) 40	a) 50	a) 25	a) 60				
7. ASA	a. percent	0	0	0	0				
	b. quality	--	--	--	--				
8. Water Width	a. channel	14	12	8.2	10				
	b. water	8	8	6.5	3.2				
	c. floodplain	2	1	2	1				
9. Stream Pools	a. percent	5	35	10	10				
	b. category	SF	DS/SF	SF/SS	SS				
10. Rearing Area		5	25	5	5				
11. Debris Loading		3	0	0	0				
12. Potential Barriers		N	N	N	Y				
13. Enhancement/Rehab		N	N	N	N				
14. Streambank Veg.		1-5	1-5	1-5	1-5				
15. Upper Bank	a. Left	30	13	62	62				
	b. Right	21	42	26	38				
b. indic	Left	N	N	*	V-not				
	Right	N	N	**	N				
c. veg	Left	N	*	N	***				
	Right	N	N	N	N				
16. Lower Bank	Left	GS	GS	SS	GS				
	Right	SS	U	GS	GS				
17. Stab rating	Left	1(2)	1(2)	1(3)	2(2)				
	Right	1(1)	2(1)	1(2)	2(2)				
18. Stream Canopy Cover		3	2	2	2				
19. Fish Species	DV	1	--	2	--				
20. Sampling		N	Y	N					

21. Comments *Steep slope; thin soil **Bedrock ***V-notch; thin soil
Section 1: 100m; Tributary on left side with +10% gradient over cobble/boulder substrate. No ASA; pH 7.5; Water temperature: 9°C; approximately 1 cfs.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 1: 50m; Channels diverge; begin gravel bar.
62m; Channels combine; end gravel bar.
80m; Debris dam.

Section 1 characterized by braided channels flowing over cobble substrate with many cobble/gravel bars midstream. Blowdown both sides medium concentration. Pool/riffle ratio of 35/65.

Section 2: 0m; Channels diverge; left channel 65%; right, 35%; beaver pond 29m long.
95m; Channels converge. No ASA in left channel; smaller gravel in right channel.

Section 3: Large cobble substrate; pool/riffle ratio, 40/60.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Buster Creek Survey Area F ADF&G Catalog No. 106-41-42

1. Section No.		1	2	3	4				
2. Compass Bearing		170	127	170	171				
3. Gradient		10	6	8	25				
4. Temperature:	Air	5.5	5.5	5.5	5.5				
	Water	6.5	6.5	6.5	6.5				
5. Water qual:	a. color	1	1	1	1				
	b. turbidity	1	1	1	1				
	c. pH	7.5	7.5	7.5	7.5				
6. Streambottom Substrate	1	25	15	20					
	2	20	10	20					
	3	15	10	10					
	4	5	5	10					
	5	--	--	--					
	6	--	--	--					
	7	a) 35	a) 60	a) 40					
7. ASA	a. percent	--	--	--	--				
	b. quality	--	--	--	--				
8. Water Width	a. channel	13	8	5	5				
	b. water	4	5	3.5	3				
	c. floodplain	3	3	3	3				
9. Stream Pools	a. percent	35	30	50	--				
	b. category	SS/SF	SS/SF	SF/SS	--				
10. Rearing Area		15	10	20	--				
11. Debris Loading		--	--	--	--				
12. Potential Barriers		N	N	N	N				
13. Enhancement/Rehab		N	N	N	N				
14. Streambank Veg.		1-5	1-5	1-5	1-5				
15. Upper Bank	a. Left	53	45	82	>150				
	b. Right	50	68	91	>150				
b. indic	Left	V-not	V-not	V-not	V-not				
	Right	V-not	V-not	V-not	V-not				
c. veg	Left	N	N	N	N				
	Right	N	Y	N	N				
16. Lower Bank	Left	SS	SS	SS	SS				
	Right	SS	SS	SS	SS				
17. Stab rating	Left	1(3)	1(3)	1(3)	1(3)				
	Right	1(3)	1(3)	1(3)	1(3)				
18. Stream Canopy Cover		3	1	3	2				
19. Fish Species									
No Fish Observed.									
20. Sampling		N	N	Y	N				

21. Comments Evaluation: Survey Are "F" is characterized by steep gradients and bedrock substrate in a V-notch. No fish were sighted in an area of marginal rearing and no spawning habitat. Section 4 was at the base of a two tiered bedrock barrier falls, 4.3 and 1.2 vertical meters. (See photo). Helicopter survey above this area revealed no enhancement potential due to bedrock/ boulder substrate and steep gradients.

FISH SAMPLING FORM

Stream Name Buster Creek ADF&G Catalog No. 106-41-42 Date 7/30/82

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

Trap	Time In	Time Out	Species	Length	Comments
1	0925	1430	3 - CT 14 - SS	83,73,71mm 82,73,71, 73,76,73, 81,83,71, 76,48,44, 46mm	Section 9 in high flow channel under overhanging root wad cover.
2	0930	1410	1 - SS 1 - CT 2 - CO	76mm 190mm 100,95mm	Section 8 above a large pool along left bank.
3	0935	1345	11 - SS 1 - CT	84,74,80 90,73,84, 67,73,44, 62,88mm --	Section 8 under root wad and debris along left bank.

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

FISH SAMPLING FORM

Stream Name Buster Creek ADF&G Catalog No. 106-41-42 Date 8/11/82

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

Trap	*Time In	*Time Out	Species	Length	Comments
1	1725	1153	4 - CT 1 - SS	-- 95mm	Section 44
2	1725	1155	1 - DV	--	Section 44
3	1725	1157	1 - DV 6 - SS	-- 71,43,71, 65,45,42mm	Section 44
					*Traps set 8/10/82 " pulled 8/11/82

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

FISH SAMPLING FORM

Stream Name Buster Creek ADF&G Catalog No. 106-41-42 Date 9/29/82

Identify Survey Area D Water Temp. 8°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1030	1135	1 - CT	--	Sec 1 0m- under midstream log
			1 - DV	--	
			5 - SS	68,63,46, 53,54mm	

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

FISH SAMPLING FORM

Stream Name Buster Creek ADF&G Catalog No. 106-41-42 Date 9/28/82

Identify Survey Area E Water Temp. 7.0°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1030	1130	0	--	Section 2, 40m

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

FISH SAMPLING FORM

Stream Name Buster Creek ADF&G Catalog No. 106-41-42 Date 9/28/82

Identify Survey Area F Water Temp. 6.5°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1040	1154	0	--	Section 3 in large deep bedrock/cobble pool at base of barrier falls.
2	1100	1130	0	--	In pool at base of bedrock cascade.

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

PEAK ESCAPEMENT RECORD
Buster Creek
106-41-42

DATE	PINK	CHUM	OTHER SPECIES	REMARKS
8/02/67	200	0		
9/13/70	10	0		
8/27/70	300/35			
1971	Surveyed:	None seen		
8/13/74	150	5/33		
8/26/76	90	0		
9/1/77	300	0		
8/08/79	25	0		
1980	Surveyed:	None seen		
1981	Surveyed:	None seen		

Date: 10/20/82

FISHERIES REHABILITATION AND/OR ENHANCEMENT
NEW PROJECT OPPORTUNITY FORM

1. WHAT (give a brief description):

   A rehabilitation project: Removal or break up of a debris dam located 200m below bridge crossing.

2. WHERE (be specific):

   Approximately 200m below #1000 road bridge on Buster Creek.

3. BENEFITS:

   The debris jam is not a barrier to spawning coho, but a probable barrier to spawning chum and pink salmon.

4. SUBMITTED BY (name, address, telephone, etc.):

   Laura Murph and Ted Mickowski
   ADF&G
   Box 667
   Petersburg, Alaska 99833

   Phone 907-772-3801

Date: 10/29/82

FISHERIES REHABILITATION AND/OR ENHANCEMENT
NEW PROJECT OPPORTUNITY FORM

1. WHAT (give a brief description):

   Clean up of debris in the stream channel.

2. WHERE (be specific):

   Buster Creek (106-41-42) 3,000m (1.89 miles) above the mouth of the stream.

3. BENEFITS:

   Debris has already induced some lower bank failures from channel migration which increases siltation detrimental to downstream ASA. Clean up would prevent further stream channel migration and bank undercutting.

4. SUBMITTED BY (name, address, telephone, etc.):

   Laura Murph and Ted Mickowski
   ADF&G
   Box 667
   Petersburg, Alaska 99833

   Phone 907-772-3801

FISH HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No Escapement Data Available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Buster Bay #1 3. Lat. 56°19'30"

2. AGI&G Catalog No. 106-41-41 3. Long. 133°24'10"

4. Agency Unit 05 5. Mgmt Area 530 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-15-9-208 71-15-9-207

8. Bay/Drainage Buster Bay 9. Access 4, 5 10. Camping 4

11. Present Land Use a. None 11b. Small game trails, dense brush and debris

12. Historical Land Use 1960's logging unit on both banks of stream.

13. Stream Origin 4 5 6 14. Flow Stage 1

15. Flow Em (method), 4.15m (width), 0.028 (depth), 9m (length), 0.8 (constant), 56.54 sec (time), -- (grid), .52 cfs (flow)

16. Temp. Sensitivity No canopy due to logging, beaver dam pond source

17. Beaver 1 18. Type aquatic Veg. 1, 4 19. Density Aquatic Veg. 3

20. Adult Salmon N 21. Intertidal a. gradient 1%

b. bottom type % fines 70 %

gravel small cobble 30 %

large cobble/boulders/bedrock 0 %

c. ASA 10%

d. schooling Y

e. shellfish N

f. Possible skiff anchorage on left side of cove.

22. Comments

Tide was a 3.2 foot low at 1343 hours.

21c. Large amounts of sand in substrate reduced ASA. Some good to excellent pink salmon ASA in riffles.

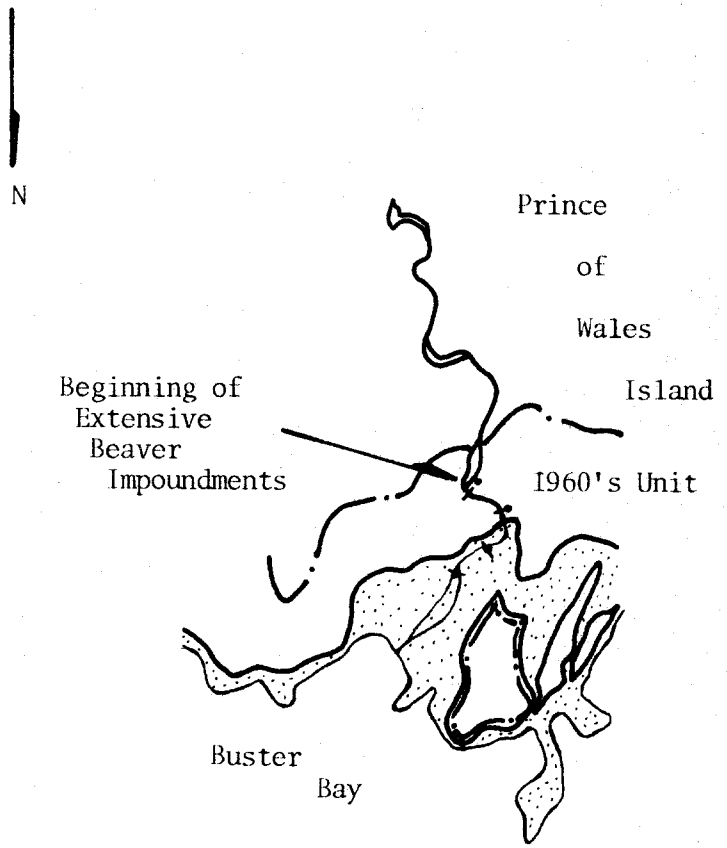
21d. Schooling area along left side of cove in deeper part of bay.

23. Investigators Murph/Mickowski

24. Date 8 / 12 / 82 25. Time 1230 (start) 1500 (end) 26. Weather 6

27. Photos

R-10 2600-3a (1/81)


N
Prince
of
Wales
Island
Beginning of
Extensive
Beaver
Impoundments
1960's Unit
Buster
Bay

1. Intertidal Looking Upstream to Channel Through Old Logging Unit.

2. Section 3I: 2m High Active Beaver Dam. Small Pool at Base, Potential Barrier. No Fish Seen Above Dam.

Buster Bay #1
106-41-41

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1I	100	3.3	20	66					
2I	100	3.6	12	43.2					
Total				$109.2m^2$					

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Buster Bay #1 ADF&G Catalog No. 106-41-41

1. Section No.		1I	2I	3I	4				
2. Compass Bearing		180	74	135	173				
3. Gradient		.5	.5	.5	7				
4. Temperature:	Air	15	15	12	13.5				
	Water	19	17.5	13.5	13.5				
5. Water qual:	a. color	1	1	1	1				
	b. turbidity	1	1	1	1				
	c. pH	--	--	7	7				
6. Streambottom Substrate	1	--	--	10	2				
	2	1	5	10	4				
	3	30	35	15	2				
	4	54	45	25	2				
	5	15	15	20	2				
	6	--	--	--	--				
	7	--	--	a) 20	a) 1				
7. ASA	a. percent	20	12	--	--				
	b. quality	1	1	--	--				
8. Water Width	a. channel	8	13.5	5.6	10.3				
	b. water	3.3	3.6	3.1	10.3				
	c. floodplain	3	2	2	1				
9. Stream Pools	a. percent	50	60	80	100				
	b. category	SS	SS	SS	SS/DS				
10. Rearing Area		2	20	25	75				
11. Debris Loading		--	5	2	12				
12. Potential Barriers		N	N	N	Y				
13. Enhancement/Rehab		N	N	N	N				
14. Streambank Veg.		5	1,2,5	1,3,5	1-5				
15. Upper Bank	a. Left	-	0	10	16				
	b. Right	0	0	0	31				
b. indic	Left	N	N	N	N				
	Right	N	N	N	N				
c. veg	Left	N	N	N	N				
	Right	N	N	N	N				
16. Lower Bank	Left	GS	U	U	U				
	Right	U	GS	GS	U				
17. Stab rating	Left	1(2)	1(1)	2(1)	1(1)				
	Right	1(2)	1(2)	1(2)	2(1)				
18. Stream Canopy Cover		3	3	2	2				
19. Fish Species	CO	>2	>6	>6	--				
	SB	--	40	40	--				
	juvenile CT	--	--	--	2				
20. Sampling									

21. Comments

Section 1: 0m; Edge of grass flats. Small cobble/gravel substrate heavily permeated with sand; thus reduced ASA.

Section 3: 48m; Beginning of bedrock in substrate and gradient increase; end of intertidal area. More silt observed in substrate above the ITZ.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.
Section 4: 13.5m; An active beaver dam five feet high with a 2-3' deep beaver pond filling a 20-25m wide ravine.

Reconnaissance:

Survey ended with Section 4; then walked upstream 250 meters beyond. 125 meters above the first dam, flow was observed over a 90% bedrock substrate with a 3.5% gradient for 30-40 meters to a second beaver dam with an elongate impoundment extending 100+ meters beyond. No fish sighted; no ASA. Muskeg on right and left upper banks.

LEVEL WADE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A, B 2. Equipment X

3. Historical Fish Species No Escapement Data Available.

4. Section Length 66m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Buster Bay #2 3. Lat. see comments

2. ADF&G Catalog No. -- 3. Long.

4. Agency Unit 05 5. Mgmt Area 530 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-15-9-207

8. Bay/Drainage Buster Bay 9. Access 4 5 10. Camping 4

11. Present Land Use a. None 11b. Dense brush & debris; small game trails

12. Historical Land Use 1960's clearcutting unit

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow ____ (method), ____ (width), ____ (depth), ____ (length), ____ (constant), ____ (time), estimated (grid), 1.5 cfs (flow)

16. Temp. Sensitivity Muskeg source, shallow water depth, low velocity flow

17. Beaver 5 18. Type aquatic Veg. 3, 5 19. Density Aquatic Veg. 2

20. Adult Salmon N 21. Intertidal a. gradient 2%

b. bottom type % fines 70 % c. ASA 20

gravel small cobble 25 % d. schooling Y

large cobble/boulders/bedrock 5 % e. shellfish N

f. Anchorage off rocky point on the right side of cove inside Buster Bay.

22. Comments

3. 2A: 56°19'30" Lat., 133°25'00" Long.: 2B: 56°19'30" Lat., 133°24'50" Long.

21c. Fair pink salmon ASA in intertidal zone.

21d. Schooling area in cove at mouth of stream.

NOTE: Survey areas A & B are two channels approximately 100m apart in the intertidal zone which drain a common clearcut bordering the shore. Small amounts of good to excellent ASA and SS fry were observed in both areas.

23. Investigators Murph/Mickowski

24. Date 9/17/82 25. Time 1710 (start) 1745 (end) 26. Weather 2

27. Photos

R-10 2600-3a (1/81)

GSA JUNEAU 1613

Buster Bay #2

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
Area A									
1I	100	1.5	8	$12m^2$					

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Buster Bay #2 ADF&G Catalog No. None
Survey Area "A"

1. Section No.			1I							
2. Compass Bearing			106							
3. Gradient			2							
4. Temperature:	Air		13							
	Water		11							
5. Water qual:	a. color		3							
	b. turbidity		1							
	c. pH		6.5							
6. Streambottom	Substrate	1	--							
		2	--							
		3	50							
		4	35							
		5	15							
		6	--							
		7	--							
7. ASA	a. percent		8							
	b. quality		2							
8. Water Width	a. channel		1.5							
	b. water		1.5							
	c. floodplain		3							
9. Stream Pools	a. percent		15							
	b. category		SF							
10. Rearing Area			20							
11. Debris Loading			1							
12. Potential Barriers			N							
13. Enhancement/Rehab			N							
14. Streambank Veg.			5							
15. Upper Bank	a. Left		0							
	b. Right		0							
b. indic	Left		N							
	Right		N							
c. veg	Left		Y							
	Right		Y							
16. Lower Bank	Left		GS							
	Right		GS							
17. Stab rating	Left		2(2)							
	Right		2(2)							
18. Stream Canopy Cover			3							
19. Fish Species	Juvenile	SS	6							
		CO	1							
20. Sampling			N							

21. Comments
Survey Area "A":
Section 1: 0m; Survey begun at edge of grass line on left side of stream.
22m; Edge of brush/tree line on left side.
66m; Stream becomes subsurface under debris, root wads, and reprod. End of survey.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Survey Area "B":

A second channel approximately 100m west of Area "A". The habitat is very similar to Survey Area "A" in that it can be surveyed for 50m, then it is obscured by brush, old logging slash and debris. Some ASA, but unable to assess due to debris over sand/gravel substrate. Excellent rearing area. 2 SS fry observed.

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Strait Creek 3. Lat. 56°19'35"

2. ADF&G Catalog No. 106-41-40 3. Long. 133°24'50"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-15-207 71-15-208

8. Bay/Drainage Buster Bay 9. Access 4 5 10. Camping 4

11. Present Land Use a. None 11b. game trails

12. Historical Land Use 1963 logging unit to right of stream; intertidal zone

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow Em body, 3.57m, .07m, 13m, 0.8, 24.75sec, --, 3.8 cfs
method width depth length constant time grid flow

16. Temp. Sensitivity muskeg source

17. Beaver 5 18. Type aquatic Veg. 3 19. Density Aquatic Veg. 3

20. Adult Salmon Y 21. Intertidal a. gradient 1.5

b. bottom type % fines 45 % c. ASA 15

gravel small cobble 40 % d. schooling Y

large cobble/boulders/bedrock 15 % e. shellfish N

f. anchorage off rocky point on right side of cove

22. Comments
20. 33 adult pink salmon observed in first 1100m of the survey.
21c. Fair pink salmon ASA of compact gravel.
21d. Schooling area in several DS pools in the intertidal zone. Heavy marine algae (Enteromorpha sp.) on rocks in Section 1I and 2I.

No escapement data available.

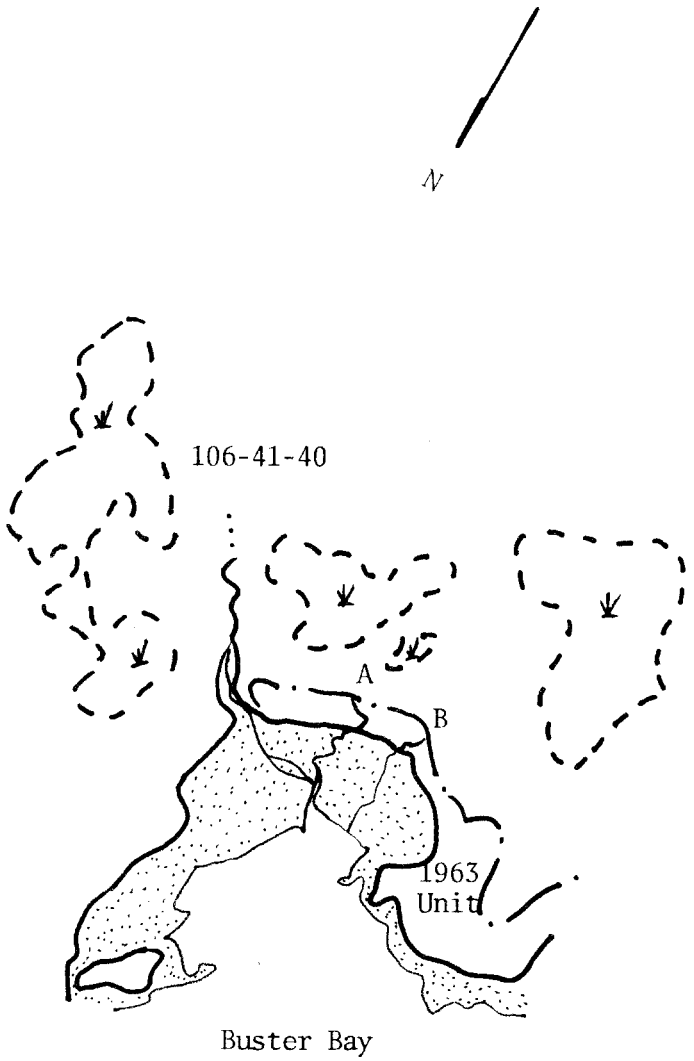
23. Investigators Murph/Mickowski

24. Date 9/17/82 25. Time 0950 start 1645 end 26. Weather 5, 2

27. Photos

R-10 2600-3a (1/81)

106-41-40
Buster Bay A & B



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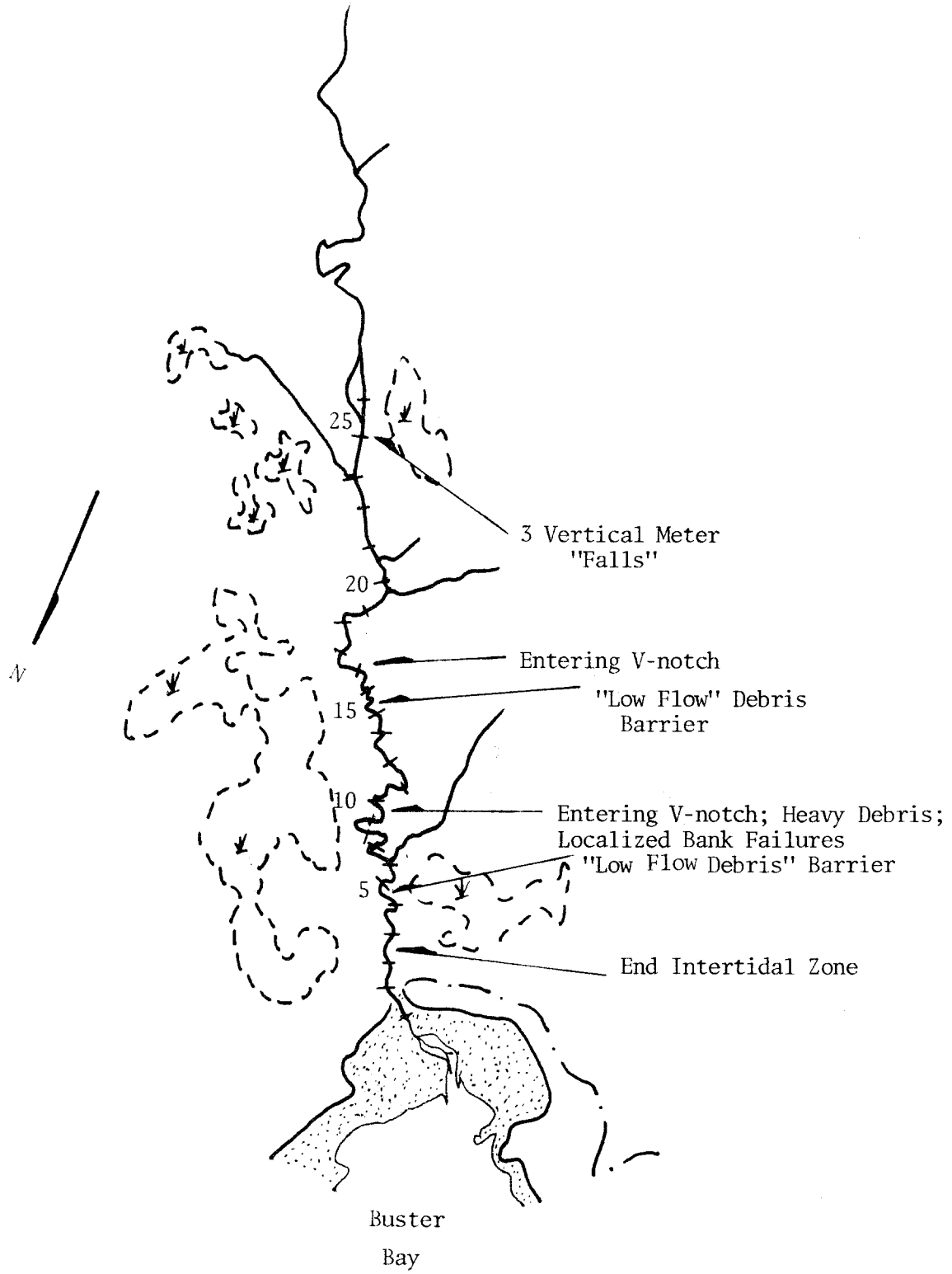
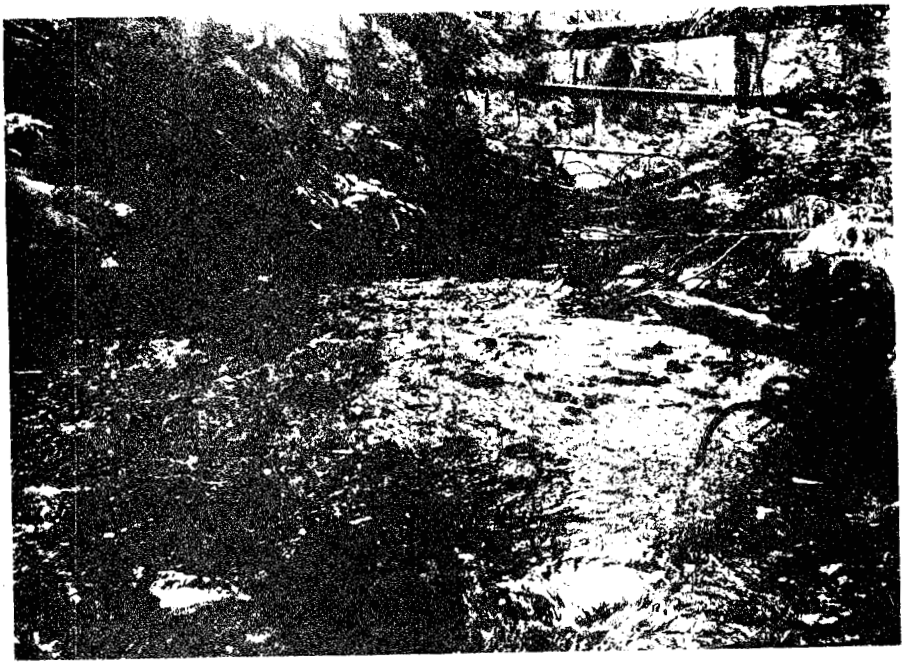

25
20
15
10
5
N
3 Vertical Meter "Falls"
Entering V-notch
"Low Flow" Debris Barrier
Entering V-notch; Heavy Debris; Localized Bank Failures
"Low Flow Debris" Barrier
End Intertidal Zone
Buster Bay

Strait Creek
106-41-40

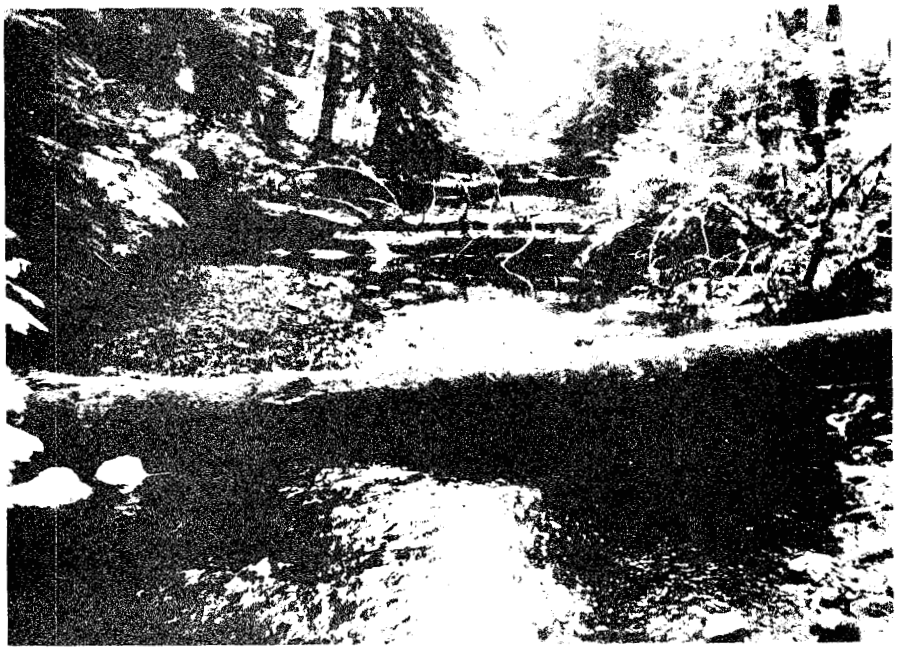
1. The ITZ Looking up Toward the Stream Mouth.

2. The ITZ Looking Downstream Toward Sumner Strait.

Strait Creek
106-41-40



3. Section 5: Copious Instream Debris Culminates in a Potential Low Flow Barrier at 83 m.



4. Section 12: Sideslopes Moderate. Debris Pools Provide Excellent Rearing; However, a Compact Cobble Substrate Provides Marginal Spawning.

Strait Creek
106-41-40

5. Section 18: Steep Channel Gradient and Coarse Substrate Provide Marginal Isolated Rearing and No ASA.

6. Section 19: Steep Channel Gradient and Coarse Substrate Provide Marginal Isolated Rearing and No Appreciable ASA. Blowdown is Common Throughout.

Strait Creek
106-41-40

7. Section 24; 75m; Three Meter Falls in Bedrock V-notch. Potential High Flow Barrier. Adult DV Observed Trying to Leap Falls.

8. Section 25: 45m; Stream Emerges From Bedrock V-notch and Gradient Decreases Over Boulder/ Cobble Substrate.

Strait Creek
106-41-40

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
3I	100	6.2	3	18.6					
4	100	6.5	5	32.5					
5	100	5.6	2	11.2					
7	100	5.2	6	31.2					
8	100	3.5	2	7					
9	100	3.1	3	9.3					
12	100	7.3	2	14.6					
19	100	7.3	1	7.3					
25	100	4	5	20					
Total				$151.7m^2$					

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Strait Creek ADF&G Catalog No. 106-41-40

1. Section No.		1I	2I	3I	4	5	6	7	8
2. Compass Bearing		65	94	113	85	84	78	87	71
3. Gradient		2	3	2	3	~6	3	3	4
4. Temperature:	Air	13	13	13	13	13	13	13	13
	Water	10	10	10	10	10	10	10	10
5. Water qual:	a. color	3	3	3	3	3	3	3	3
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	--	--	--	7.7	7.7	7.7	7.7	7.7
6. Streambottom Substrate	1	7	5	10	20	15	15	10	17
	2	13	22	25	30	35	39	25	35
	3	35	40	40	35	30	30	30	27
	4	30	20	15	10	10	9	20	15
	5	10	5	5	2	1	1	8	3
	6	--	--	--	--	--	--	--	--
	7	a) 5	a) 8	a) 5	a) 3	a) 9	a) 5 b) 1	a) 5 b) 2	b) 3
7. ASA	a. percent	--	--	3	5	2	--	6	2
	b. quality	--	--	1	1	1	--	1	1
8. Water Width	a. channel	11.7	14.1	23	14.6	6.4	9.9	8.5	5.7
	b. water	11.0	2.7	6.2	6.5	5.6	6.8	3.7/1.5	3.5
	c. floodplain	3	2	2	1	1	2	2	2
9. Stream Pools	a. percent	55	15	25	25	30	20	25	15
	b. category	SS/DS	SS	SS/DS	SS	DS/SS	DS	DS/SS	DS/SS
10. Rearing Area		20	20	25	30	35	20	25	20
11. Debris Loading		6	1	7	7	10	2	7	7
12. Potential Barriers		N	N	N	N	Y	N	N	N
13. Enhancement/Rehab		N	N	N	N	Y	N	N	N
14. Streambank Veg.		--	1-3,5	1-3,5	1-3,5	1-5	1-5	1-5	1-5
15. Upper Bank	a. Left	0	15	12	7	71	32	48	12
	b. Right	0	15	16	29	68	4	5	45
b. indic	Left	N	N	N	V-not	V-not	*	*	N
	Right	N	N	N	*	V-not	N	N	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	GS	GS	U	GS	SS	U	U	U
	Right	GS	U	U	U	SS	GS	U	GS
17. Stab rating	Left	1(2)	1(2)	2(2)	3(2)	1(2)	3(1)	1(1)	1(1)
	Right	1(2)	1(1)	1(1)	1(2)	3(2)	1(1)	1(2)	1(1)
18. Stream Canopy Cover		3	3	3	2	2	3	2	3
19. Fish Species	SS	--	--	1	2	--	--	3	--
juveniles	CT	--	--	--	--	--	--	1	--
	DV	--	--	--	--	--	--	--	--
spawning	PS	--	--	15	6	2	2	4	--
adults	DV	--	--	--	--	--	--	--	--
20. Sampling		N	N	N	N	Y	N	N	N

21. Comments *Steeply Sloping
Section 1I: 61m; Treeline/grasses begin.
61-100m; 20 year old clear cut on right upper bank.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 3I: 63m; End of intertidal zone.
95m; Beginning of 15m of log debris across channel (some recent blowdown from right bank).
88-100m; Localized clay deposit 1m wide by 12m long.

Section 4: 90m of Section is in V-notch with exposed bedrock walls and root wad failures from left upper bank.

Section 5: 15m; End of V-notch.
71-83m; Heavy log debris in stream; potential barrier at 83m caused by debris dam.

Section 6: 15m; Small tributary on right side; sand/gravel substrate; good rearing area, no fish observed; forbs in channel; 10°C water temperature; less than 1 cfs flow.

Section 7: 13-30m; Log debris and debris jam in channel.
68m; Debris jam.

Reach Evaluation - Sections 1 through 9

Spawning and rearing habitat was minimal and sporadic throughout this very sinuous reach. Gradient was moderate, but increasing and pools were primarily debris/bedrock induced. The channel moved in and out of a V-notch and the left bank was consistently steep sloped with thin soil (often less than 6cm deep) causing root failures and moderate debris loading of the stream. Few juvenile fish were sighted; 30 PS adults were tallied. The substrate is stained brown and consists largely of boulders/cobble with bedrock outcrops. A reach change occurs in Section 10.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Strait Creek ADF&G Catalog No. 106-41-40

1. Section No.		9	10	11	12	13	14	15	16
2. Compass Bearing		87	106	74	112	121	105	104	33
3. Gradient		4	5	~7	3	3	~8	~8	5
4. Temperature:	Air	13	13	12.5	12.5	12.5	13	14	14
	Water	10	10	10	10	10	10	10	10
5. Water qual:	a. color	3	3	3	3	3	3	3	3
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.7	7.7	7.7	7.7	7.7	7.7	7.8	7.8
6. Streambottom Substrate	1	15	30	18	20	15	20	35	35
	2	25	25	30	30	30	30	25	30
	3	35	20	30	35	35	30	15	20
	4	13	10	15	10	15	13	9	10
	5	2	2	3	3	3	2	1	1
	6	--	--	--	--	--	--	--	--
	7	a) 8 b) 2	a) 13	b) 4	b) 2	b) 2	b) 5	a) 15	a) 4
7. ASA	a. percent	3	--	--	2	--	--	--	--
	b. quality	1	--	--	1	--	--	--	--
8. Water Width	a. channel	8.1	6.0	6.2	10.7	9.6	10.2	18.8	8.7
	b. water	3.1	4.8	5.4	5.5/2	2.6	3.7	6.8	2.7
	c. floodplain	2	1	2	2	3	2	2	3
9. Stream Pools	a. percent	10	10	20	20	30	15	10	10
	b. category	SS	DS	DS	SS/DS	DS/SS	DS	DS	DS
10. Rearing Area		15	15	25	25	35	20	15	15
11. Debris Loading		15	1	8	7	9	20	7	6
12. Potential Barriers		N	N	N	N	N	Y	N	N
13. Enhancement/Rehab		N	N	N	N	N	Y	N	N
14. Streambank Veg.		1-5	1-3,5	1-5	1-5	1-3,5	1-5	1-5	1-5
15. Upper Bank	a. Left	29	53	19	0	3	6	24	25
	b. Right	32	51	5	12	22	24	36	16
b. indic	Left	V-not	V-not	N	N	N	N	N	*
	Right	V-not	V-not	N	N	N	N	*	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	GS	GS	GS	U	GS	U	SS	GS
	Right	GS	U	U	U	U	GS	U	U
17. Stab rating	Left	2(2)	1(2)	1(2)	2(1)	1(1)	3(2)	1(1)	2(2)
	Right	1(1(	1(2)	2(1)	1(1)	1(1)	1(1)	3(2)	1(1)
18. Stream Canopy Cover		2	2	1	2	1	1	3	1
19. Fish Species	SS	--	--	3	6	--	--	--	--
juveniles	CT	--	--	1	2	1	1	--	--
	DV	1	--	1	--	--	--	--	--
spawning	PS	--	--	4	--	--	--	--	--
adults	DV	--	--	--	--	--	--	--	--
20. Sampling		N	N	Y	N	N	N	N	N

21. Comments *Steep Slope

Section 9: 12m; Entering V-notch with heavy blowdown from right upper bank for next 23m.

81m; Right upper bank failure/ (5m high by 6.5m wide) into the stream channel.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 10: 54m; Log/slash debris jam.
67m; End of V-notch; left side is still very steeply sloping.
83m; Small tributary on right side; 2m wide channel; 45cm water width; ~1.5% gradient; 10.5°C water temperature; gravel/small cobble substrate; good rearing area; possible small amounts of ASA, less than 1 cfs.
100m; Left bank is no longer steeply sloping.

Reach Evaluation - Sections 1 through 9

See previous page for Section 9 data.

Section 11: 44m; Debris jam with sunken logs.
70m; Beginning of blowdown in left floodplain for next 54m.
80m; "Slough-like" tributary on right side; forbs in channel, heavy iron bacteria; 11.5°C water temperature; ~.5cfs; gravel/small cobble/sand substrate.

Section 12: 00-24m; Blowdown from left side across stream channel.

Section 13: 61m; 1m by 2m blue clay deposit on left bank in wetted channel and lower bank.

Section 14: 0-18m; Heavy log/branch debris and debris jam.
78m; Potential low flow barrier of debris/sunken logs form a 1.5m vertical cascade.

Section 15: 23-76m; Very steep side slopes of bedrock and thin soil on right upper banks; many unstable trees on a near vertical bank.
62m; Tributary on right side flows through narrow bedrock ravine at a 10-15% gradient, converging with main stem. No ASA.

Section 16: 0m; Entering V-notch with steep slopes and thin soil over bedrock, boulder/cobble substrate and continuous cascades in series.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Strait Creek ADF&G Catalog No. 106-41-40

1. Section No.		17	18	19	20	21	22	23	24
2. Compass Bearing		68	94	92	101	94	81	93	74
3. Gradient		6	6	6	5	4	4	~8	~20
4. Temperature:	Air	14	14	14	14	14	13	13	13
	Water	10	10	10	10	10	10	10	10
5. Water qual:	a. color	3	3	3	3	3	3	3	3
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.8	7.8	7.8	7.8	7.8	7.8	7.8	7.8
6. Streambottom Substrate	1	29	40	25	35	20	22	23	25
	2	25	25	20	20	20	20	20	15
	3	25	15	25	20	25	20	15	15
	4	10	9	14	10	13	10	10	5
	5	1	1	1	1	1	1	1	1
	6	--	--	--	--	--	--	--	--
	7	a) 10	a) 10	a) 15 b) 2	a) 14	a) 20 b) 1	a) 24 b) 3	a) 29 b) 2	a) 39
7. ASA	a. percent	--	--	1	--	--	--	--	--
	b. quality	--	--	1	--	--	--	--	--
8. Water Width	a. channel	5.6	9.8	8.8	10.8	7.4	8.7	5.5	6.6
	b. water	5.0	8.7	7.3	4.2	7.2	3.8	2.2	5.3
	c. floodplain	1	1	2	1	1	2	1	1
9. Stream Pools	a. percent	10	10	15	10	10	30	15	10
	b. category	SS	SS	SS	SF	SS	SF/SS	SS/SF	DF
10. Rearing Area		15	15	15	10	10	30	15	5
11. Debris Loading		12	3	9	5	5	7	9	7
12. Potential Barriers		N	N	N	N	N	N	N	Y
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-3,5	1-3,5	1-5	1-5	1-3,5	1-3,5	1-3,5	1-3,5
15. Upper Bank	a. Left	74	82	52	60	54	65	98	76
	b. Right	76	41	15	35	52	50	54	81
b. indic	Left	*	*	**	V-not	*	*	*	*
	Right	*	V-not	N	V-not	*	*	*	*
c. veg	Left	N	N	N	***	Y	Y	Y	Y
	Right	N	Y	N	Y	Y	Y	Y	Y
16. Lower Bank	Left	SS	SS	GS	GS	SS	U	SS	GS
	Right	SS	U	U	U	GS	GS	GS	U
17. Stab rating	Left	1(2)	3(3)	2(3)	1(3)	2(2)	1(2)	3(3)	2(2)
	Right	1(3)	2(1)	2(1)	2(2)	1(2)	1(2)	2(2)	3(2)
18. Stream Canopy Cover		2	3	3	1	3	3	1	1
19. Fish Species	juveniles SS	--	--	1	--	--	--	--	--
Spawning adults	DV	--	--	--	--	--	--	--	3
20. Sampling		N	N	N	N	Y	N	N	N

21. Comments *V-notch, thin soil **Steep slope; thin soil ***Bedrock
Section 17: 92m; Non-barrier debris/slash jam.
Section 18: 0-19m; Exposed bedrock face with 11-12m vertical height.
18m; Debris jam.
75m; End V-notch; left side continues to be steeply sloping.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 20: Heavy debris throughout section.

Section 22: 46m; Hillside seep on left side; no rearing or spawning habitat; 15% gradient over bedrock/cobble substrate.

Section 23: 0-33m; Major upper bank slope failures on right and left sides of stream.

Section 24: 33m; Base of 42m long cascade/falls over bedrock in narrow V-notch.
75m; 3m high falls in 1-2m wide gorge. Adult DV observed trying to leap falls.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Strait Creek ADF&G Catalog No. 106-41-40

1. Section No.			25							
2. Compass Bearing			84							
3. Gradient			~9							
4. Temperature:	Air		13							
	Water		10							
5. Water qual:	a. color		3							
	b. turbidity		1							
	c. pH		7.8							
6. Streambottom Substrate		1	25							
		2	20							
		3	20							
		4	14							
		5	1							
		6	--							
		7	a) 20							
7. ASA	a. percent		5							
	b. quality		1							
8. Water Width	a. channel		8.1							
	b. water		4.0							
	c. floodplain		1							
9. Stream Pools	a. percent		20							
	b. category		SF/SS							
10. Rearing Area			15							
11. Debris Loading			8							
12. Potential Barriers			N							
13. Enhancement/Rehab			N							
14. Streambank Veg.			1-3,5							
15. Upper Bank	a. Left		102							
	b. Right		74							
b. indic	Left		*							
	Right		*							
c. veg	Left		Y							
	Right		Y							
16. Lower Bank	Left		GS							
	Right		SS							
17. Stab rating	Left		1(1)							
	Right		2(2)							
18. Stream Canopy Cover			2							
19. Fish Species	Juvenile DV		2							
20. Sampling			N							

21. Comments *V-notch; thin soil

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 25: 45m; End bedrock cascades.
98m; Two forks converge:
Right Fork: Contains approximately 30% of flow;
23m; Flow "falls" approximately 6.5 meters over a vertical rock face as channel exits a 5-8m wide V-notch, forming an effective migratory barrier.
Left Fork: Channel steeply climbs (i.e., 5-10% gradient), a cobble bed with extensive "sections" of cascades over boulders/bedrock. ASA was sporadic and isolated, and rearing was confined to peripheral boulder/debris induced pools. End of survey.

Reconnaissance of Left Fork: A primarily bedrock/boulder channel providing marginal rearing, no ASA, and 10% debris, "drains" a series of 1-2m vertical bedrock falls negotiating a V-notch at approximately 200m. Notch gradients exceeded 25%. Several juvenile DV were observed below the aforementioned notch.

Reach Evaluation - Section 10 to 25+:

Isolated ASA and minimal rearing is the "norm" - channel gradients range from moderate to steep as the boulder/cobble "bed" negotiates several notches, culminating in bedrock/boulder falls/cascades.

FISH SAMPLING FORM

Stream Name Strait Creek ADF&G Catalog No. 106-41-40 Date 9/17/82

Identify Survey Area A Water Temp. 10°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1110	1645	1 - CT 1 - CO	-- --	Section 5: 95m deep pool on right under debris (above a potential debris barrier).
2	1205	1630	1 - DV 1 - SS	71mm	Section 11: 44m hanging set in deep pool under debris.
3	1420	1605	0	--	Section 21: 90m

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

Date: 10/29/82

FISHERIES REHABILITATION AND/OR ENHANCEMENT
NEW PROJECT OPPORTUNITY FORM

1. WHAT (give a brief description):

   Heavy log debris and debris dams in two areas of the stream causing channel migration and bank undermining.

2. WHERE (be specific):

   Strait Creek (106-41-40) approximately 500m and again approximately 1400m above the mouth of this stream.

3. BENEFITS:

   Debris cleanup would end channel migrations and subsequent bank failures. Bank failures release silt into the stream affecting downstream ASA and add to the debris already in the stream.

4. SUBMITTED BY (name, address, telephone, etc.):

   Laura Murph and Ted Mickowski
   ADF&G
   P.O. Box 667
   Petersburg, Alaska 99833

   907-772-3801

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A and B 2. Equipment

3. Historical Fish Species No escapement data available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Camp Creek 3. Lat. 56°19'45"

2. ADF&G Catalog No. 106-41-39 3. Long. 133°24'10"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-16-37 through 71-16-40

8. Bay/Drainage Buster Bay 9. Access 4, 5, 6 10. Camping 4

11. Present Land Use a. upland logging road 11b. game trails

12. Historical Land Use beach accessed clearcut, 100m west of mouth

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow E (method), 4.85 (width), .18 (depth), 10 (length), .8 (constant), 45.5 (time), -- (grid), 5.5 cfs (flow)

16. Temp. Sensitivity east/west orientation; beaver impoundments and low flow

17. Beaver 1 & 2 18. Type aquatic Veg. 4 19. Density Aquatic Veg. 3

20. Adult Salmon No 21. Intertidal a. gradient 0.5%

b. bottom type % fines 10%

gravel small cobble 65%

large cobble/boulders/bedrock 25%

c. ASA Fair

d. schooling high tide only/ Red Bay

e. shellfish No

f. Skiff anchorage in Buster Bay

22. Comments

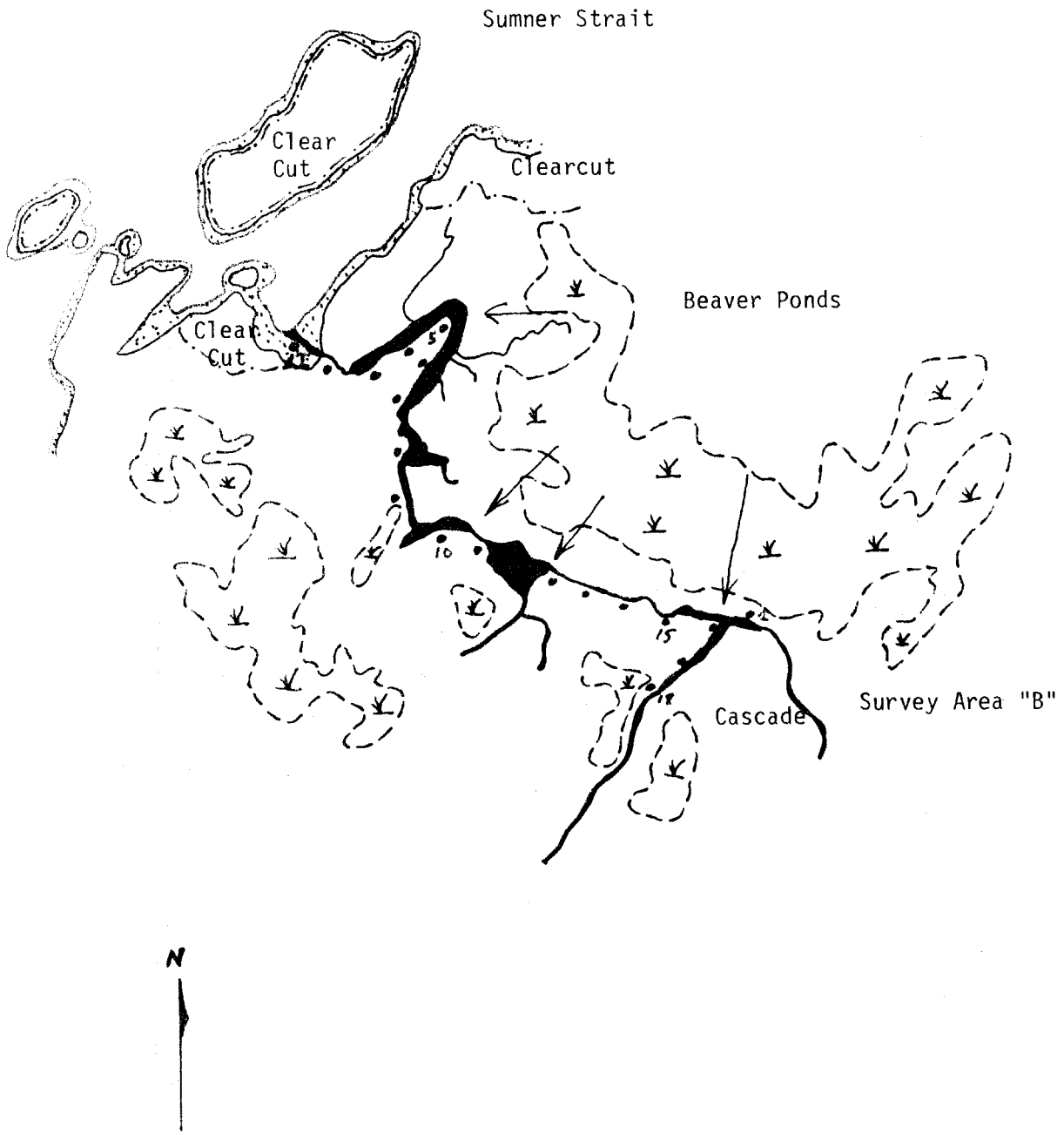
Intertidal zone has moderate deposits of spawning substrate suitable for pink salmon; however, no adult salmon were observed.
Camp Creek is characterized by abundant beaver dams and extensive impoundments. Moderate quantities of ASA is found above and below the impounded sections. Overall, excellent rearing and moderate spawning potential. Many of the aforementioned dams represent "low flow barriers".

23. Investigators Gerry Merrigan

24. Date 9/17/82 25. Time 1030 (start) 1800 (end) 26. Weather 6

27. Photos

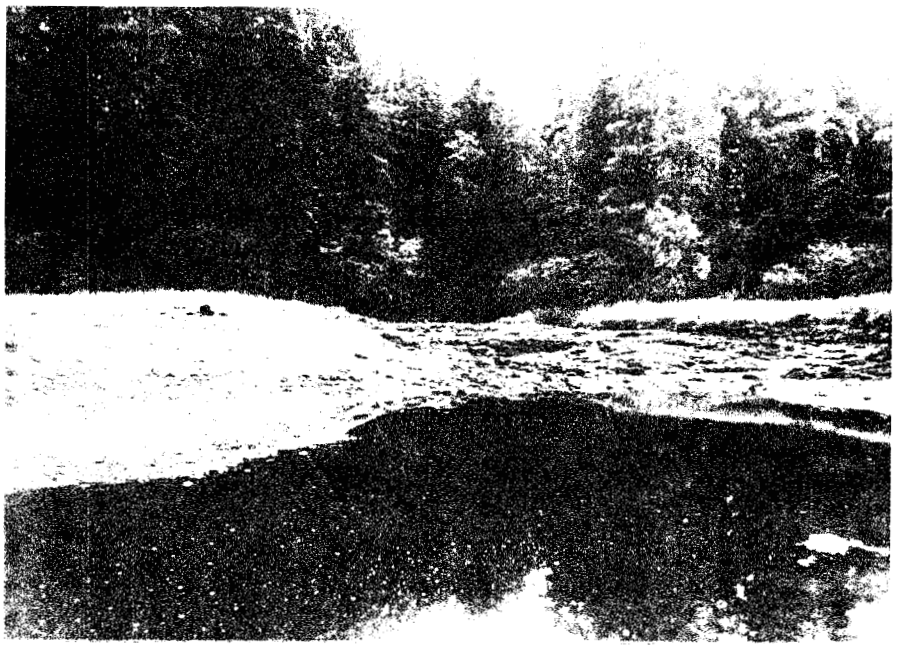
R-10 2600-3a (1/81)



Camp Creek
106-41-39

Prince of Wales Island

1. Downstream View of Intertidal Zone From Section II.



2. Upstream View of Intertidal Zone From Section II.

3. Section 2: 41m; Inactive Beaver Dam in Good Repair; 1.3m by 15m.

4. Section 5: 22m; Inactive Beaver Dam in Good Repair; 1.75m by 30m.

106-41-39

5. Section 13: 77m; Channelized Flow Commences. Gravel Riffles Provide Excellent Spawning Habitat.

6. Section 15: 7m; Inactive Beaver Dam in Good Repair, 1m by 10m. Resultant Impoundment Provides Excellent SS Rearing Habitat.

7. Section 15: 95m; A Tributary, Area B, Sustains 40% of the Total Flow and Enters the "Main Stem" Via the Left Bank.

8. Area B, Section 1: 70m; Inactive Beaver Dam in Poor Repair, 2m by 18m. No Fish Sighted Above Impoundment.

Camp Creek
106-41-39

Section	Length (m)	Width (m)	ASA %	ASA Total
Area A				
1I	100	6	15	90
2	100	4.5	10	45
13	100	10.5	20	210
14	100	3.5	20	70
16	100	4.7	20	94
17	100	2.2	5	11
Total				$520m^2$

Section	Length (m)	Width (m)	ASA %	ASA Total
Area B				
1	70	4.2	8	23.5
Total				$23.5m^2$

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Camp Creek Area A ADF&G Catalog No. 106-41-39

1. Section No.		1I	2	3	4	5	6	7	8
2. Compass Bearing		41	81	4	359	26	161	156	141
3. Gradient		2	1.0	0	0	0	0	0	0
4. Temperature:	Air	15	15	15	15	15	15	15	15
	Water	11	11	11	11	11	11	11	11.5
5. Water qual:	a. color	1	3	3	3	3	3	3	3
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	--	7.0	7.0	7.0	7.0	7.0	7.0	7.5
6. Streambottom	Substrate 1	10	2	0	0	0	0	0	0
	2	15	14	0	0	0	0	0	0
	3	10	16	0	0	0	0	0	0
	4	20	5	0	0	0	0	0	0
	5	5	0	0	0	0	0	0	0
	6	--	38	100	100	100	100	100	100
	7	a) 40	a) 25	0	0	0	0	0	0
7. ASA	a. percent	15	10	0	0	0	0	0	0
	b. quality	2	1	0	0	0	0	0	0
8. Water Width	a. channel	19.0	7.9	24	20	18	24	20.5	18
	b. water	6.0	4.5	24	20	18	24	20.5	18
	c. floodplain	2	1	1	1	1	1	1	1
9. Stream Pools	a. percent	50	12	100	100	98	100	100	100
	b. category	DS	DS	DS	DS	DS	DS	DS	DS
10. Rearing Area		50	30	100	100	98	100	100	100
11. Debris Loading		0	5	15	20	10	5	3	5
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1,2,5	1,3,5	1,3,5	1,3,5	1,3,5	1,3,5	1,3,5	1,3,5
15. Upper Bank	a. Left	0%	37%	17%	29%	28%	6%	11%	17%
	b. Right	25%	25%	10%	17%	8%	10%	12%	25%
b. indic	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	GS	SS	SS	GS	U	GS	SS	SS
	Right	SS	SS	GS	GS	GS	SS	GS	SS
17. Stab rating	Left	1(2)	1(3)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
	Right	1(3)	1(3)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
18. Stream Canopy Cover		1	3	1	1	1	1	1	1
19. Fish Species	SS	N	N	N	N	N	N	N	N
20. Sampling		N	Y	N	N	N	N	N	N

21. Comments

Section 1I: 0m; Dogleg in intertidal, NW to E. Rock outcrop and timber 10m west. 20m pool.
32m; 28m cascade.
77m; 20m pool, schooling/holding area.
80m; Small stream less than 1.5 cfs flow converges on left.
Minimal ASA and moderate rearing potential. No fish observed.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.
Section 1I: 87m; Intertidal ends. Begin cascade over bedrock and V-notch.

Section 2: 38m; Debris dam.
41m; End V-notch. Beaver dam 1.3m high by 15m across. Begin beaver ponds.

Section 3: 100m of beaver pond.

Section 4: 15m; Beaver dam .3m high by 10m across.

Section 5: 22m; Beaver dam 1.75m high by 30m across.
43m; Beaver dam .5m high by 35m across.

Section 6: 100m of beaver pond.

Section 7: 100m of beaver pond.

Section 8: Impoundment forks. Left fork is 15m in width at the confluence and is sustained by a small tributary. A 1.5m high by 3.0m wide beaver dam in good repair demarcates the 100m point and represents a potential barrier. Excellent rearing. No ASA observed.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Camp Creek Area A ADF&G Catalog No. 106-41-39

1. Section No.		9	10	11	12	13	14	15	16
2. Compass Bearing		93	111	113	12	321	87	105	123
3. Gradient		0	0	0	0	.5	1.5	.5	2.0
4. Temperature:	Air	15	15	15	15	15	15	15	15
	Water	11.5	11.5	11.5	11.5	11	11	11	11
5. Water qual:	a. color	3	3	3	3	3	3	3	3
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
6. Streambottom Substrate	1	0	0	0	0	2	8	--	25
	2	0	0	0	0	5	12	--	20
	3	0	0	0	0	5	15	--	15
	4	0	0	0	3	63	30	--	13
	5	0	0	--	--	5	5	--	2
	6	100	100	100	97	20	--	90	20
	7	0	0	--	--	--	a) 30	a) 10	a) 5
7. ASA	a. percent	0	0	0	0	20	20	0	20
	b. quality	0	0	0	0	2	2	0	1
8. Water Width	a. channel	13.5	20	29	18	18	5.4	4.7	4.7
	b. water	13.5	6.2	20	7.8	10.5	3.5	4.7	4.7
	c. floodplain	1	1	1	1	1	2	1	2
9. Stream Pools	a. percent	99	99	100	99	70	40	82	20
	b. category	DS	DS	DS	DS	DS	DS	DS	DS
10. Rearing Area		99	99	100	99	85	60	82	40
11. Debris Loading		6	12	4	11	5	2	10	4
12. Potential Barriers		N	N	N	N	N	N	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1,3,5	1,3,5	1,3,5	1,3,5	1,3,5	1-5	1,3-5	1-5
15. Upper Bank	a. Left	18%	5%	12	6	18	55	18	6
	b. Right	7%	30%	10	16	8	6	55	2
b. indic	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	SS	SS	SS	SS	GS	U	SS	SS
	Right	SS	GS	GS	SS	U	GS	U	GS
17. Stab rating	Left	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)	1(1)
	Right	1(1)	1(1)	1(1)	1(1)	2(1)	1(1)	1(3)	1(1)
18. Stream Canopy Cover		1	1	1	1	1	3	2	2
19. Fish Species	SS	N	3	--	--	<6	--	--	<8
20. Sampling		N	Y	N	N	N	Y	N	N

21. Comments

Section 9: 25m; Beaver dam .3m high.

Section 10: 60m; Beaver dam 1m high by 30m across.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 11: 0m; Ten Canada geese.
90m; The first 26m of a less than 1 cfs tributary is impounded by the dam located in Section 10. Low flow, in-stream forbes, and cobble/gravel substrate characterize channel above the impoundment. Good rearing and moderate spawning potential. No fish observed.

Section 12: 44m; Beaver dam 1m in height by 11m across.

Section 13: 0m; Heavy blowdown right bank.
77m; Channelized flow commences.

Section 14: 75m; Substrate primarily large boulders and bedrock.
90m; Passable 10 meter cascade.

Section 15: 7m; Beaver dam 1m high by 10m across.
22m; Beaver dam 2m high by 16m across.
95m; A tributary sustaining 40% of the total flow enters the main stem via the left bank. (See Area B).

Section 16: 25m; Channelized flow commences.
71m; Isolated, distinct ASA. Boulders/bedrock commences.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Camp Creek Area A ADF&G Catalog No. 106-41-39

1. Section No.			17
2. Compass Bearing			166
3. Gradient			5.0
4. Temperature:	Air		14°
	Water		11°
5. Water qual:	a. color		1
	b. turbidity		1
	c. pH		7.8
6. Streambottom	Substrate	1	10
		2	20
		3	10
		4	23
		5	2
		6	--
		7	a) 35
7. ASA	a. percent		5
	b. quality		1
8. Water Width	a. channel		2.2
	b. water		2.2
	c. floodplain		1
9. Stream Pools	a. percent		15
	b. category		SF
10. Rearing Area			35
11. Debris Loading			1
12. Potential Barriers			N
13. Enhancement/Rehab			N
14. Streambank Veg.			1-5
15. Upper Bank	a. Left		63
	b. Right		43
b. indic	Left		N
	Right		N
c. veg	Left		N
	Right		Y
16. Lower Bank	Left		SS
	Right		U
17. Stab rating	Left		1(3)
	Right		1(1)
18. Stream Canopy Cover			2
19. Fish Species			--
20. Sampling			N

21. Comments

Section 17: 35m; Passable, 13 meter cascade.
100m; Increasing gradients, a primarily bedrock channel, lack of habitat and fish sitings and close proximity to a large muskeg precluded additional surveying.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Camp Creek Area B ADF&G Catalog No. 106-41-39

1. Section No.		1							
2. Compass Bearing		0							
3. Gradient		2							
4. Temperature:	Air	14							
	Water	11.5							
5. Water qual:	a. color	3							
	b. turbidity	1							
	c. pH	7.5							
6. Streambottom Substrate	1	--							
	2	5							
	3	5							
	4	15							
	5	5							
	6	45							
	7	a) 25							
7. ASA	a. percent	8							
	b. quality	1							
8. Water Width	a. channel	4.2							
	b. water	4.2							
	c. floodplain	3							
9. Stream Pools	a. percent	60							
	b. category	DS							
10. Rearing Area		65							
11. Debris Loading		3							
12. Potential Barriers		N							
13. Enhancement/Rehab		N							
14. Streambank Veg.		1-5							
15. Upper Bank	a. Left	2							
	b. Right	2							
b. indic	Left	N							
	Right	N							
c. veg	Left	N							
	Right	N							
16. Lower Bank	Left	SS							
	Right	GS							
17. Stab rating	Left	1(1)							
	Right	1(1)							
18. Stream Canopy Cover		3							
19. Fish Species		0							
20. Sampling		N							

21. Comments

Section 1: 0m; Area B, sustains 40% of the total flow and enters a forked impoundment via the left bank, S15; 95 meters.
26m; Channelized flow commences.
52m; Beaver dam .75m high by 2m wide.
70m; Beaver dam 2m high by 18m wide. No fish sighted.
Survey concluded.

FISH SAMPLING FORM

Stream Name Camp Creek ADF&G Catalog No. 106-41-39 Date 9/17/82

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

Trap	Time In	Time Out	Species	Length	Comments
1	1150	1730	0	--	Section 2: 38m; left bank, under log.
2	1320	1410	3-SS	86,78,82mm	Section 10: 0m; right bank, under log
3	1555	1709	1-SS 4-SB	38mm	Section 14: 62m; under midstream log.

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

FIELD DATE - STREAM SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No Escapement Data Available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Sumner Straits "C" 3. Lat. 56°21'05"

2. AH&G Catalog No. -- 3. Long. 133°22'20"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-16-37

8. Bay/Drainage Sumner Straits 9. Access 4 5 10. Camping 4

11. Present Land Use a. None observed 11b. Game trails

12. Historical Land Use 20+ year old beach logging on both sides of stream

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow ____, ____, ____, ____, ____, ____, estimated, 3 cfs
method width depth length constant time grid flow

16. Temp. Sensitivity No canopy (due to logging); beaver ponds

17. Beaver 1 18. Type aquatic Veg. 2 19. Density Aquatic Veg. 1

20. Adult Salmon N 21. Intertidal a. gradient 3.5

b. bottom type % fines 20 % c. ASA 1%

gravel small cobble 50 % d. schooling N

large cobble/boulders/bedrock 30 % e. shellfish N

f. Reef in front of cove; anchored off rocky shore to left of stream mouth.

22. Comments

1. Incoming tide.
2. 21c. 1% fair PS spawning area in silty small cobble/gravel.
3. Intertidal zone extends to base of beaver dam. No traps set. Dense aquatic algae on substrate to base of dam. No fish sighted. Heavy second growth on both banks. No canopy cover.
No escapement data available.

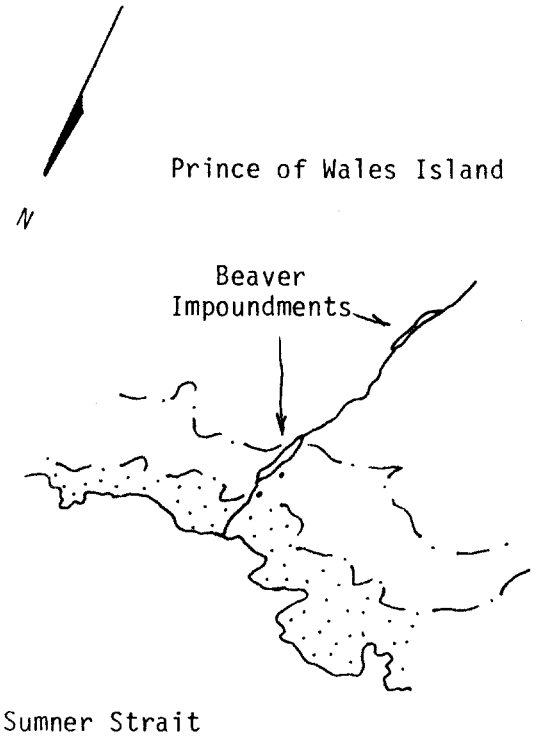
23. Investigators Mickowski/Murph/Merrigan

24. Date 9 / 21 / 82 25. Time 1410 (start) 1430 (end) 26. Weather 6

27. Photos

R-10 2600-3a (1/81)

Sumner Strait C



Sumner Straits C

1. Lower Intertidal Area (High Tide) Looking out to Sumner Straits (Fog on Straits).

2. Upper Intertidal Zone Shows Cobble/Boulder Riffles.

Sumner Straits C

3. Barrier Beaver Dam, 3 Meters High and in Good Repair. Intertidal Zone Extends to the Base of This Dam.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Sumner Straits "C" ADF&G Catalog No. --

1. Section No.		1I							
2. Compass Bearing		118							
3. Gradient		2							
4. Temperature:	Air	12							
	Water	10							
5. Water qual:	a. color	3							
	b. turbidity	1							
	c. pH	7.7							
6. Streambottom Substrate	1	20							
	2	20							
	3	30							
	4	15							
	5	15							
	6	--							
	7	--							
7. ASA	a. percent	--							
	b. quality	--							
8. Water Width	a. channel	7.0							
	b. water	3.8							
	c. floodplain	3							
9. Stream Pools	a. percent	15							
	b. category	SF							
10. Rearing Area		--							
11. Debris Loading		7							
12. Potential Barriers		Y							
13. Enhancement/Rehab		N							
14. Streambank Veg.		1-3,5							
15. Upper Bank	a. Left	10							
	b. Right	14							
b. indic	Left	N							
	Right	N							
c. veg	Left	N							
	Right	N							
16. Lower Bank	Left	GS							
	Right	GS							
17. Stab rating	Left	1(2)							
	Right	1(2)							
18. Stream Canopy Cover		1							
19. Fish Species		--							
NO FISH SIGHTED									
20. Sampling		N							

21. Comments

Section 1I; 0m; Stream enters treeline on right side (grass on left side).
23m; End intertidal.
38m; Beaver dam, 3m high by 28m wide creates 30m wide pond extending out of sight (approximately 60m).

LEVEL II SIE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No Escapement Data Available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Sumner Straits "B" 3. Lat. 56°20'00"

2. ADF&G Catalog No. -- 3. Long. 133°21'25"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-17-9-31

8. Bay/Drainage Sumner Strait 9. Access 4 5 10. Camping 4

11. Present Land Use a. None observed 11b. Bear trails

12. Historical Land Use Twenty+ year old clearcut units on left and right banks. No buffer strips.

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow ____ (method), ____ (width), ____ (depth), ____ (length), ____ (constant), ____ (time), estimated (grid), 3.5 cfs (flow)

16. Temp. Sensitivity Yes, open canopy due to clearcut, and shallow water.

17. Beaver 1 18. Type aquatic Veg. 1, 2 19. Density Aquatic Veg. 1

20. Adult Salmon N 21. Intertidal a. gradient 2.5%

b. bottom type % fines 25 %

gravel small cobble 70 %

large cobble/boulders/bedrock 5 %

c. ASA 10%

d. schooling N

e. shellfish N

f. A deep anchorage off rocky shore on right side of cove used during survey.

22. Comments

1. Outgoing tide.

2. 21c. Intertidal zone gravel/cobble substrate was good quality, moderately compact PS spawning area.

23. Investigators Murph/Mickowski/Merrigan

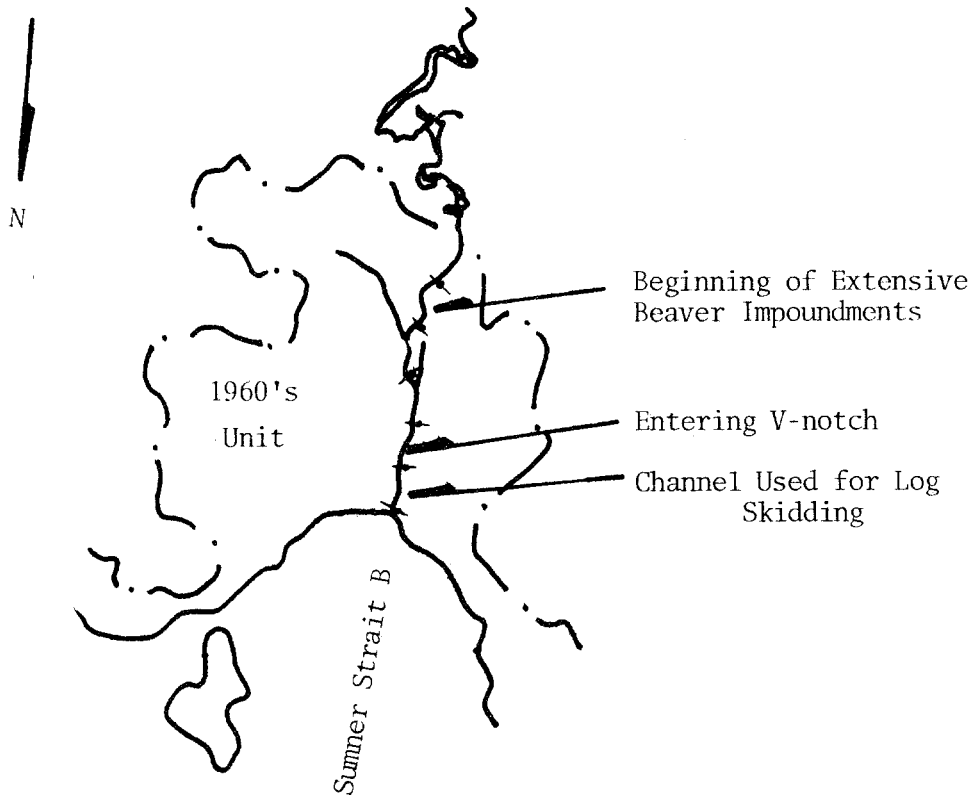
24. Date 9 /21 /82 25. Time 1100 (start) 1230 (end) 26. Weather 6, 5

27. Photos

R-10 2600-3a (1/81)

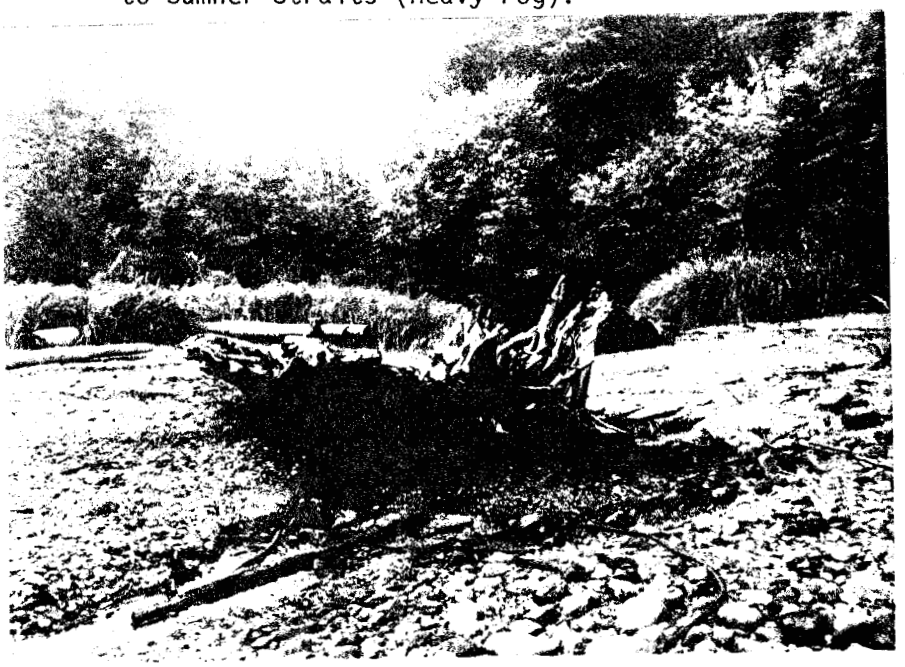
Sumner Strait "B"

Prince of Wales



Sumner Strait

1. Lower Intertidal Zone looking Across Flats to Sumner Straits (Heavy Fog).



2. Upper Intertidal Channel up to Timberline. Heavy Alder Growth over Channel. Debris From Logging Activity is Visible in Photo.

3. Section 2: Boulder/Cobble Riffle in a Narrow Channel With Decreasing Stream Gradients Toward the Top of the Section. It Appears That Logs Were Yarded Down the Channel.

4. Section 4: Extensive Slash in Stream and Heavy Regrowth on Both Banks.

5. Section 5: Second and Third Beaver Dams in the Series.

6. A Continuing Series of Beaver Dams Beyond Survey End.

Sumner Straits "B"

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
2	100	2.25	4	9					
3	100	1.3	6	7.8					
4	100	2.3	3	6.9					
Total				$23.7m^2$					

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Sumner Straits "B" ADF&G Catalog No. --

1. Section No.		1I	2	3	4	5			
2. Compass Bearing		96	80	104	93	145			
3. Gradient		~7	6	5	5	~11			
4. Temperature:	Air	10	10	10	12.5	12.0			
	Water	10	10	10	10	10			
5. Water qual:	a. color	1	1	1	1	1			
	b. turbidity	1	1	1	1	1			
	c. pH	--	8.0	8.0	8.0	8.0			
6. Streambottom Substrate	1	22	15	10	4	1			
	2	25	15	15	5	2			
	3	25	29	35	15	13			
	4	15	19	25	50	12			
	5	9	7	13	25	10			
	6	--	--	--	--	47			
	7	a)3 b)1	a)14 b)1	a)1 b)1	b)1	b)3 c)12			
7. ASA	a. percent	--	4	6	3	--			
	b. quality	--	2	2	2	--			
8. Water Width	a. channel	3.7	2.4	2.65	2.34	~1.3			
	b. water	2.4	2.25	~1.3	2.3	~.8			
	c. floodplain	1	2	1	2	1			
9. Stream Pools	a. percent	10	25	30	25	65			
	b. category	SF/SS	SS/SF	SS/SF	SS/SF	DS/SS			
10. Rearing Area		10	20	30	25	25			
11. Debris Loading		4	3	7	9	20			
12. Potential Barriers		N	N	N	N	Y			
13. Enhancement/Rehab		N	N	N	N	N			
14. Streambank Veg.		2,3,5	1,3,5	1,3,5	1,3,5	1,3,5			
15. Upper Bank	a. Left	15	47	66	12	61			
	b. Right	55	47	61	22	31			
b. indic	Left	N	N	N	N	N			
	Right	Y	N	N	N	N			
c. veg	Left	N	N	N	N	N			
	Right	Y	N	N	N	N			
16. Lower Bank	Left	GS	GS	GS	GS	SS			
	Right	U	SS	GS	GS	SS			
17. Stab rating	Left	2(2)	1(2)	1(2)	1(2)	2(2)			
	Right	2(2)	1(2)	3(2)	2(1)	3(2)			
18. Stream Canopy Cover		3	1	1	1	1			
19. Fish Species		0	0	0	0	0			
20. Sampling		Y	Y	Y	N	N			

21. Comments

Section 1I: 0m: Stream enters treeline.
10m: End intertidal zone.
18m: Debris dam.
70m-80m: Bedrock substrate along right bank.
0m-70m: Disturbed area with dense alder canopy, — possible skidding route.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 2: 0m; Stumps on left bank.
15m; Entering V-notch with logged banks and smoothed out streambed. Exposed bedrock and loose cobble substrate.

Section 3: 0m; Decreasing gradient.
2-22m; Bedrock exposed on right bank.
39m; Skid path joins stream on right bank. End of V-notch and reenter cutting unit on both banks.

Section 4: 28m; Debris dam. Loose debris/slash on banks.
45-55m; Exposed bedrock on left side.
96m; 5m of debris dam with dense brush cover. +40m of cat road on right side of stream and +60m on left side.

Section 5: 0m; Heavy brush/slash.
15-31m; Debris cover.
38m; Beaver Dam #1; 1.8m high dam forming pool 12m long.
43m; Beaver Dam #2; 1m high by 20m wide forming pool 35m long.
62m; Beaver Dam #3; 2.3m high by 30m wide forming pool 40m long.
100m; Beaver pond. End of survey.

Reconnaissance beyond end of survey revealed continuing beaver dams and ponds for next +150 meters.

Stream Evaluation

Entire drainage has been extensively logged. Logs were skidded across and yarded down the stream, leaving exposed bedrock substrate and heavy debris dams throughout. First 200m is steeply sloping with cascades over boulder/cobble substrate and localized exposed bedrock. Little ASA (small cobble) and minimal rearing. The next 200m had moderate gradient, eroding banks exposing cobble, periodic debris dams, heavily silted pools, some ASA of good quality and moderate rearing. In Section 5; 38m; a long series of beaver dams/pond extending +250m surveyed and reconnoitered.

No escapement data available.

FISH SAMPLING FORM

Stream Name Sumner Straits "B" ADF&G Catalog No. -- Date 9/21/82

Identify Survey Area A Water Temp. 10.5°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1105	1150	--	--	Section 1, 77m SF pool on right undercut bank. 1 DV observed.
2	1110	1155	2 DV	--	Section 2, 71m SF pool on right undercut bank.
3	1155	1240	--	--	Section 3, under log and debris in DS pool.
4	1200	1235	1 DV 1 CO 2 SS	-- -- 81 mm 79 mm	Section 3, quiet pool under debris.

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

FISH HABITAT - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A, B 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Sumner Straits "A" 3. Lat. 56°19'55"

2. ADF&G Catalog No. -- 3. Long. 133°20'10"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-17-9-31

8. Bay/Drainage Sumner Straits 9. Access 4 5 10. Camping 4

11. Present Land Use a. None 11b. Game Trails

12. Historical Land Use Approx. 1963 old beach/skid logging on both sides of stream; 100m standing leave strip on either side.

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow ____ (method), ____ (width), ____ (depth), ____ (length), ____ (constant), ____ (time), estimated (grid), 3.5 cfs (flow)

16. Temp. Sensitivity None

17. Beaver 1 18. Type aquatic Veg. 4 19. Density Aquatic Veg. 2

20. Adult Salmon N 21. Intertidal a. gradient 2%

b. bottom type % fines 45 %

gravel small cobble 40 %

large cobble/boulders/bedrock 15 %

c. ASA 15

d. schooling N

e. shellfish N

f. Deep anchorage on right side of cove along rocky shore; for small boats.

22. Comments

1. Geese observed in intertidal zone.
2. 21c. Marginal PS ASA in intertidal zone, but reduced percentage due to large amounts of fines in substrate. Approximately 20m of upper intertidal zone is solid bedrock outcrop.
3. At 95m of Section 1I of main stem of stream, and at 84m of Section 1I of Tributary "A" (on right side of main stem) is a large, active beaver dam.

23. Investigators Murph/Mickowski/Merrigan

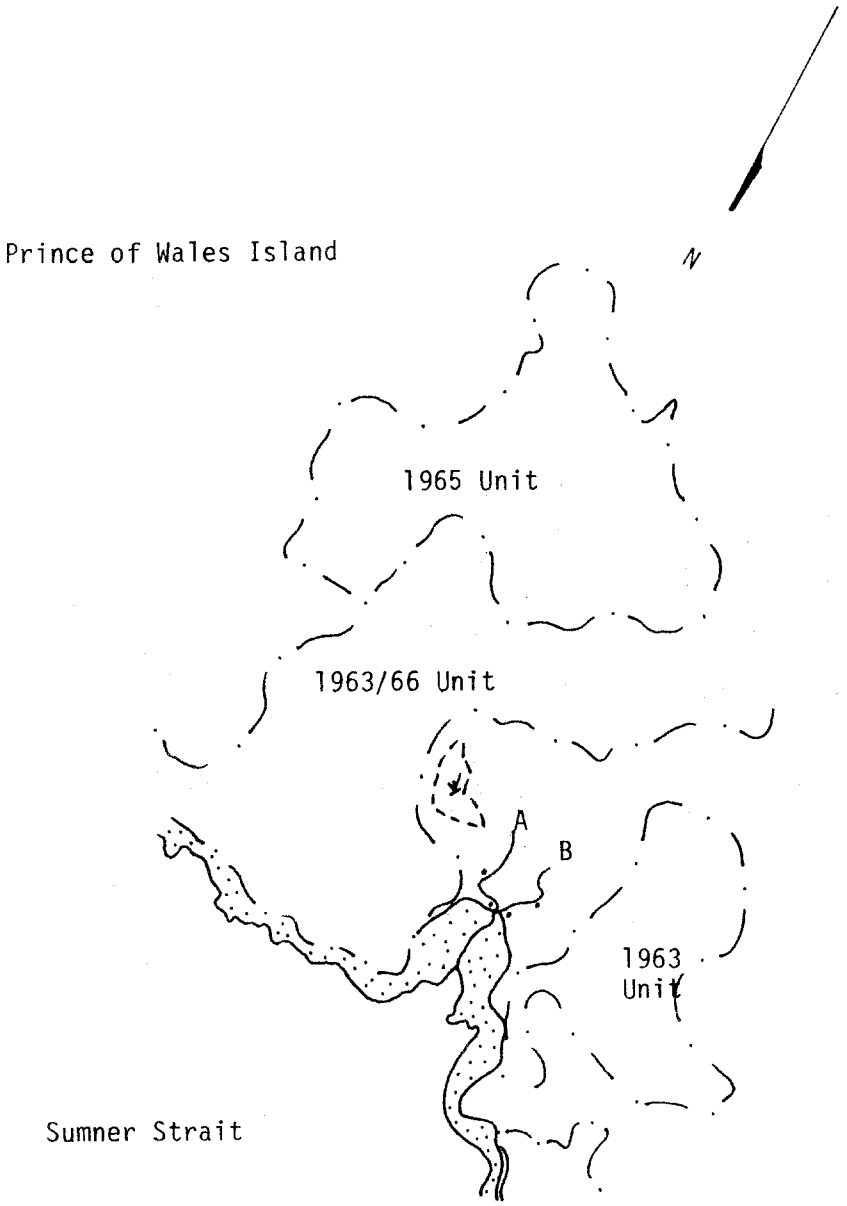
24. Date 9/21/82 25. Time 0905 (start) 1020 (end) 26. Weather 5, 6

27. Photos

R-10 2600-3a (1/81)

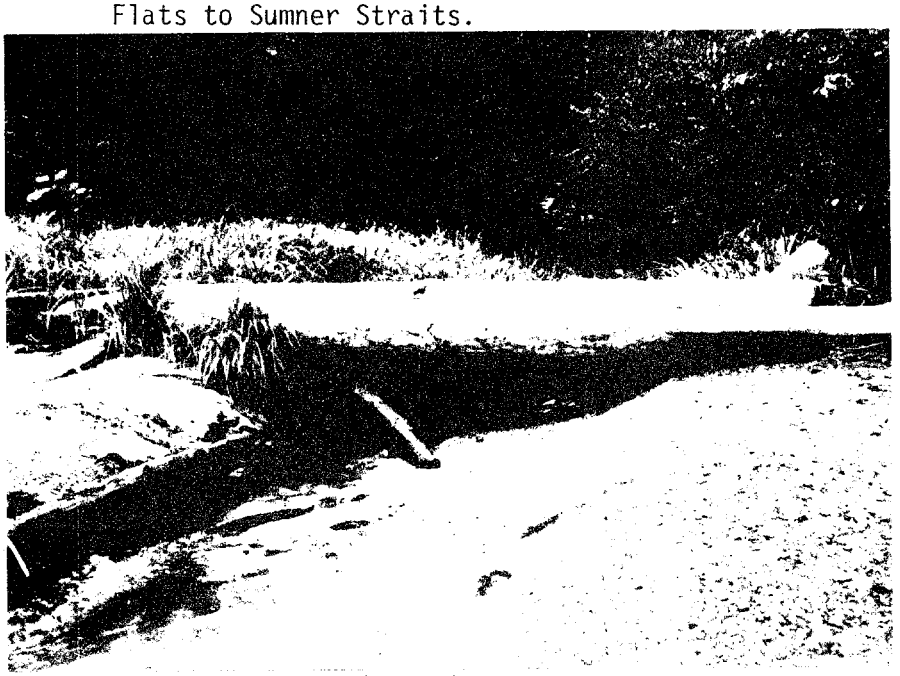
CSA JENSAL 1613

Sumner Strait A



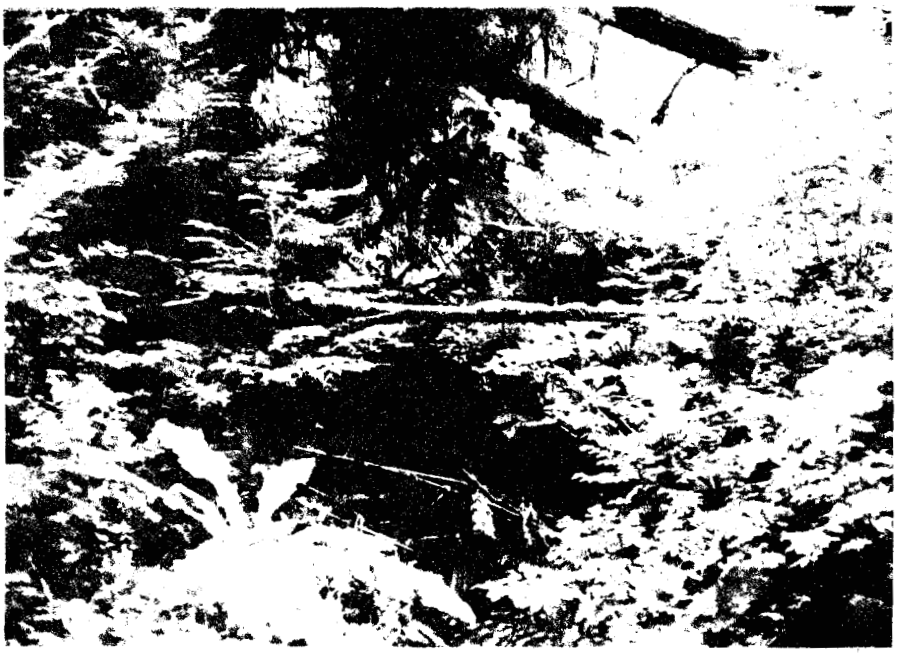
Sumner Straits A

1. Lower Intertidal Zone Looking Across the Flats to Sumner Straits.



2. Intertidal Zone (Upper) Looking up to Channel in Timber.

3. Section 1I: Pools and Heavy Herbaceous Vegetation, Skunk Cabbage, and Debris in Channel.



4. Section 1I, 68m: Steep Left Bank With Heavy Blowdown and Some Down-slope Boulder Movement; Clearcut unit extends to edge of notch.

5. Section 1I: Beaver Dam at 96 Meters. End of Survey.

6. Tributary "A", Section 1I is Characterized by a Muck/Sand Channel and Dense Overhanging Vegetation.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Sumner Straits "A" ADF&G Catalog No. --

		Main Stem Area A				Tributary "A": Area B			
1. Section No.		1I				1I			
2. Compass Bearing		43				198			
3. Gradient		2				3			
4. Temperature:	Air	12				12			
	Water	11				11			
5. Water qual:	a. color	1				1			
	b. turbidity	1				1			
	c. pH	7.6				7.6			
6. Streambottom Substrate	1	--				--			
	2	--				--			
	3	5				--			
	4	30				20			
	5	25				25			
	6	20				20			
	7	a) 5 b) 5 c) 10				a) 15 b) 5 c) 15			
7. ASA	a. percent	--				--			
	b. quality	--				--			
8. Water Width	a. channel	2.1				3.7			
	b. water	1.8				1.0			
	c. floodplain	3				1			
9. Stream Pools	a. percent	75				60			
	b. category	SS				SS			
10. Rearing Area		30				20			
11. Debris Loading		20				40			
12. Potential Barriers		Y				Y			
13. Enhancement/Rehab		N				N			
14. Streambank Veg.		1-3&5				1-5			
15. Upper Bank	a. Left	12				32			
	b. Right	2				20			
b. indic	Left	N				N			
	Right	N				N			
c. veg	Left	N				N			
	Right	N				N			
16. Lower Bank	Left	U				GS			
	Right	GS				U			
17. Stab rating	Left	1(1)				2(1)			
	Right	1(1)				1(1)			
18. Stream Canopy Cover		3				2			
19. Fish Species									
No Fish Observed.									
20. Sampling		Y				N			

21. Comments

Main Stem (Area A)

0m; Tributary "A" converges with main stem where stream enters treeline. Excessive slash and debris in mouth. Tributary contains approximately 30% of combined flow. Less than 1.0 cfs.

20m; End intertidal zone.

60m; Begin blowdown area off steep left bank.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

95m: Beaver dam - 1.5m high; 25m across. End of section.

Tributary "A" (Area B)

0-4m: Flow is under root wad and debris.

6m-12m: Bedrock along right side.

18m: End intertidal zone.

24m: Begin flowing stream.

Stream Evaluation:

Area A: First 20m contains moderate debris and dense salt grass; second 20m is interconnected "near stagnant" muck pools. No ASA or rearing and approximately 1.5 cfs flow. 95m, a 1.5m high old beaver dam with no active sign observed where survey ended. No fish observed.

Area B: Less than 1 cfs flow with sand/muck substrate. At 89m the stream enters a grass marsh and is flowing out of right side of beaver pond/marsh behind dam in mainstream at Section 1I, 95m. Stream channel is often "non-distinct" with lily pads and debris. No ASA and marginal rearing area. No fish sighted. Tributary is draining marsh lands and the beaver dam impoundment found on the mainstream.

FISH SAMPLING FORM

Stream Name Sumner Straits "A" ADF&G Catalog No. -- Date 9/21/82

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

Trap	Time In	Time Out	Species	Length	Comments
1	0930	1020	--	--	Section 1I in large SS pool under forbes above intertidal zone.
2	0935	1015	--	--	Section 1I in large DS pool under overhanging tree/debris.

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

FISH HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment --

3. Historical Fish Species No escapement data available.

4. Section Length 127m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Danger Isle I 3. Lat. 56°19'30"

2. ADF&G Catalog No. n/a 3. Long. 133°19'30"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-4

7. Aerial Photo No. 71-18-8-100

8. Bay/Drainage Red Bay 9. Access 4 6 10. Camping 4

11. Present Land Use a. None 11b.

12. Historical Land Use Watershed was clearcut from beach.

13. Stream Origin 3 5 6 4 14. Flow Stage 1

15. Flow ____, ____, ____, ____, ____, ____, estimated grid <1 cfs flow
(method, width, depth, length, constant, time)

16. Temp. Sensitivity No

17. Beaver 5 18. Type aquatic Veg. 1, 4 19. Density Aquatic Veg. 1

20. Adult Salmon No 21. Intertidal a. gradient 5%

b. bottom type % fines 20 %

gravel small cobble 80 %

large cobble/boulders/bedrock 0 %

c. ASA Poor/Heavily Compacted

d. schooling No

e. shellfish None Observed

f. Anchorage in Red Bay. Strong tide rip/mud flat west of Danger Island.

22. Comments

Stream is located SW of the Narrow Passage between the NW tip of Danger and Prince of Wales Islands., amidst a 20 year plus beach logged clearcut. The intertidal zone contains the bulk of the cobble/gravel within the system as the channel was used for skidding logs, scouring the channel to bedrock. Steep gradients, lack of suitable substrate and heavily compacted intertidal cobbles and gravels result in a fisheries production value of near zero. No fish sighted. Flow becomes subsurface 127m above intertidal zone.

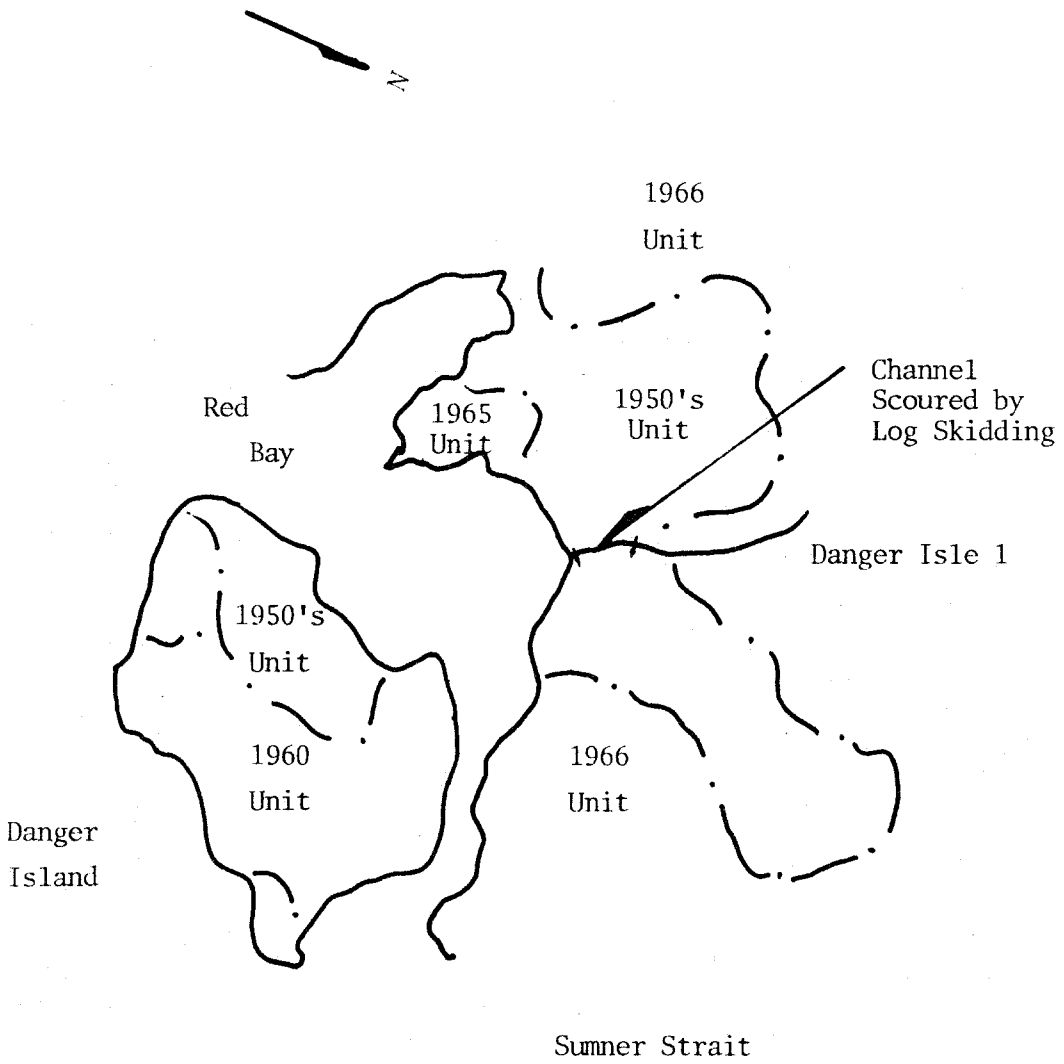
23. Investigators Mickowski/Merrigan

24. Date 9/ 19/ 82 25. Time 1300 (start) 1345 (end) 26. Weather 6

27. Photos

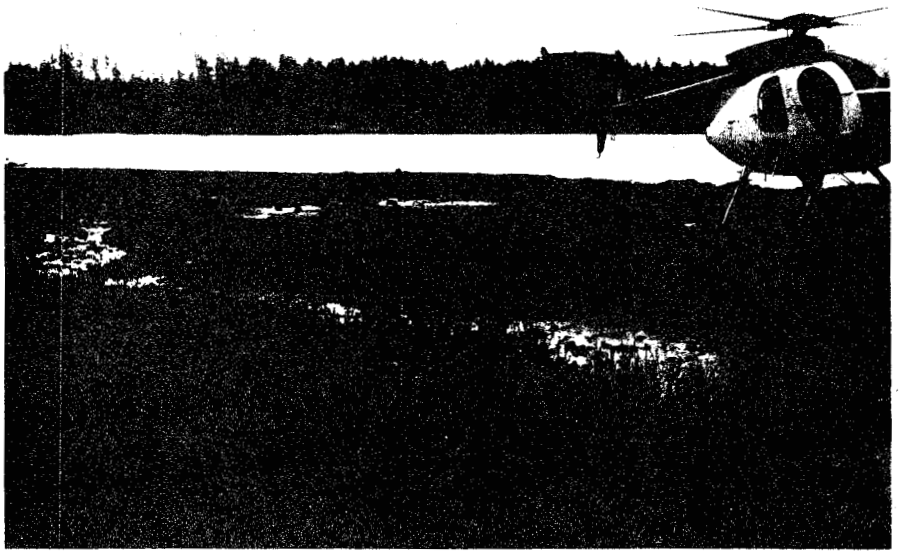
R-10 2600-3a (1/81)

Danger Island 1



Danger Isle I

1. Nondistinct Channel is Heavily Brushed Over With Alder at the Upper ITZ.



2. View Down ITZ Across Narrow Passage to Danger Island.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Danger Isle #1 ADF&G Catalog No. N/A

1.	Section No.		1
2.	Compass Bearing		258
3.	Gradient		~12
4.	Temperature:	Air	17
		Water	9
5.	Water qual:	a. color	1
		b. turbidity	1
		c. pH	8
6.	Streambottom Substrate	1	--
		2	--
		3	5
		4	5
		5	5
		6	13
		7	a) 72
7.	ASA	a. percent	--
		b. quality	--
8.	Water Width	a. channel	5.2
		b. water	1
		c. floodplain	3
9.	Stream Pools	a. percent	10
		b. category	SS
10.	Rearing Area		--
11.	Debris Loading		--
12.	Potential Barriers		N
13.	Enhancement/Rehab		N
14.	Streambank Veg.		1-3,5
15.	Upper Bank	a. Left	24
		b. Right	4
	b. indic	Left	N
		Right	N
	c. veg	Left	N
		Right	N
16.	Lower Bank	Left	UC
		Right	GS
17.	Stab rating	Left	1(1)
		Right	1(1)
18.	Stream Canopy Cover		3
19.	Fish Species		
	No Fish Observed.		
20.	Sampling		N

21. Comments

Section 1: Begun at intertidal/freshwater interface.
16m; Dense alder canopy begins. Gradients on the order of 12-16%.
86m; Log landing, pooling of flow in depressions, channel becomes indistinct.
127m; Flow becomes subsurface; end of survey.

FISH HABITAT - PHYSICAL SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length 64m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Red Bay - West #16 3. Lat. 56°19'15"

2. AHP&G Catalog No. -- 3. Long. 133°19'00"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-18-8-101 71-17-9-31

8. Bay/Drainage Red Bay 9. Access 4 5 10. Camping 4

11. Present Land Use a. None 11b. Game trails

12. Historical Land Use None observed.

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow method, width, depth, length, constant, time, estimate grid, 1 cfs flow

16. Temp. Sensitivity Shallow water depth; low velocity flow; E/W oriented

17. Beaver 5 18. Type aquatic Veg. 1 19. Density Aquatic Veg. 1

20. Adult Salmon N 21. Intertidal a. gradient 5%

b. bottom type % fines 75 % c. ASA 2%

gravel small cobble 20 % d. schooling N

large cobble/boulders/bedrock 5 % e. shellfish N

f. Anchored behind Danger Is. along rocky shore during rising tide.

22. Comments

1. Low tide at 0929 hours.
2. 21c. 2% fair pink salmon ASA of gravel/sand substrate in mid intertidal zone.
3. Upper intertidal zone is primarily muck with no ASA.

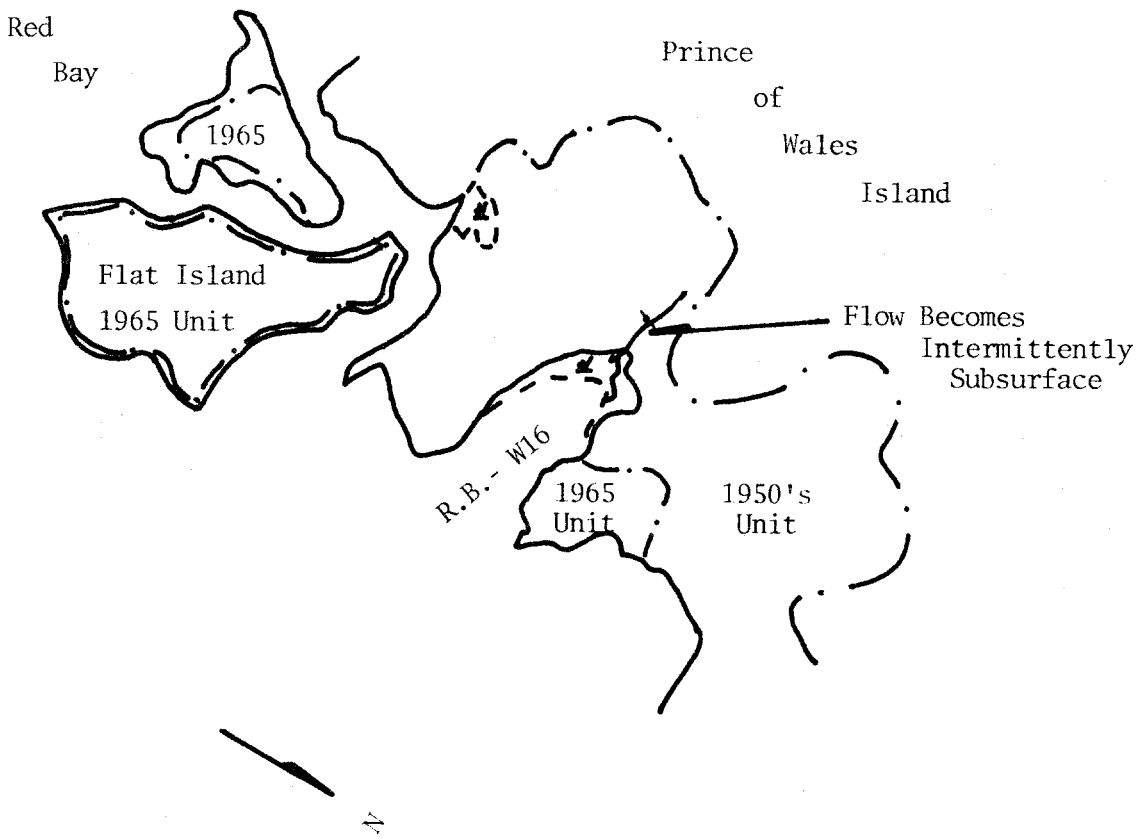
23. Investigators Murph

24. Date 9 /19 /82 25. Time 1330 (start) 1420 (end) 26. Weather 2

27. Photos

R-10 2600-3a (1/81)

Red Bay West #16



Red Bay West #16

1. Intertidal Zone Looking Upstream at Tree Line Entrance (High Tide).

2. Intertidal Zone Looking out (Downstream) Into Red Bay/Danger Island (High Tide).

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Red Bay - West #16 ADF&G Catalog No. --

1. Section No.			1I
2. Compass Bearing			206
3. Gradient			12
4. Temperature:	Air		15
	Water		10
5. Water qual:	a. color		1
	b. turbidity		1
	c. pH		8
6. Streambottom Substrate		1	10
		2	5
		3	10
		4	25
		5	10
		6	20
		7	a)20
7. ASA	a. percent		0
	b. quality		--
8. Water Width	a. channel		6.8
	b. water		4.6
	c. floodplain		2
9. Stream Pools	a. percent		10
	b. category		SS/SF
10. Rearing Area			10
11. Debris Loading			20
12. Potential Barriers			N
13. Enhancement/Rehab			N
14. Streambank Veg.			5
15. Upper Bank	a. Left		0
	b. Right		5
b. indic	Left		N
	Right		N
c. veg	Left		N
	Right		N
16. Lower Bank	Left		SS
	Right		U
17. Stab rating	Left		1(1)
	Right		1(1)
18. Stream Canopy Cover			3
19. Fish Species			1 -CO
20. Sampling			N

21. Comments

Section 1I: 30m; Stream enters treeline.
40m; End of intertidal zone.
64m; Stream flows out from under root wad and continues underground, appearing only in 1-2m lengths under roots for next 40m. Unable to follow stream beyond the end of Section 1.

FISH HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Red Bay - West #15 3. Lat. 56°19'00"

2. ADF&G Catalog No. -- 3. Long. 133°20'05"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-17-9-31

8. Bay/Drainage Red Bay 9. Access 4 5 10. Camping 4

11. Present Land Use a. None 11b. deer/game trails

12. Historical Land Use 20 year old clearcut above Section #3 on right side of stream survey

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow ____ (method), ____ (width), ____ (depth), ____ (length), ____ (constant), ____ (time), estimated (grid), 1 cfs (flow)

16. Temp. Sensitivity Shallow water depth, low velocity

17. Beaver 5 18. Type aquatic Veg. 4 19. Density Aquatic Veg. 3

20. Adult Salmon N 21. Intertidal a. gradient 8%

b. bottom type % fines 80% c. ASA 0

gravel small cobble 15 % d. schooling N

large cobble/boulders/bedrock 5 % e. shellfish N

f. Anchor off east side of Flat Is. (Can negotiate tide flat during high tide to tree line.

22. Comments

1. Tide low at 0929 hours.
2. Stream Evaluation: 500-600m long intertidal zone of large, shallow tide pools and mostly muck substrate. Upper intertidal zone (~300m) has ~2% gradient and wide grassy lower banks. Survey begun where stream enters tree line. First 200m is primarily a muck/gravel/sand substrate with ~1% gradient and grassy "meadow-like" lower banks. DV observed in Section #2. Section #3 had increased gradient, cobble/gravel/boulder substrate, heavy blowdown/debris & 25-30 cm falls/cascades. No ASA & minimal rearing area observed during this survey. No minnow trapping due to insufficient water depths.

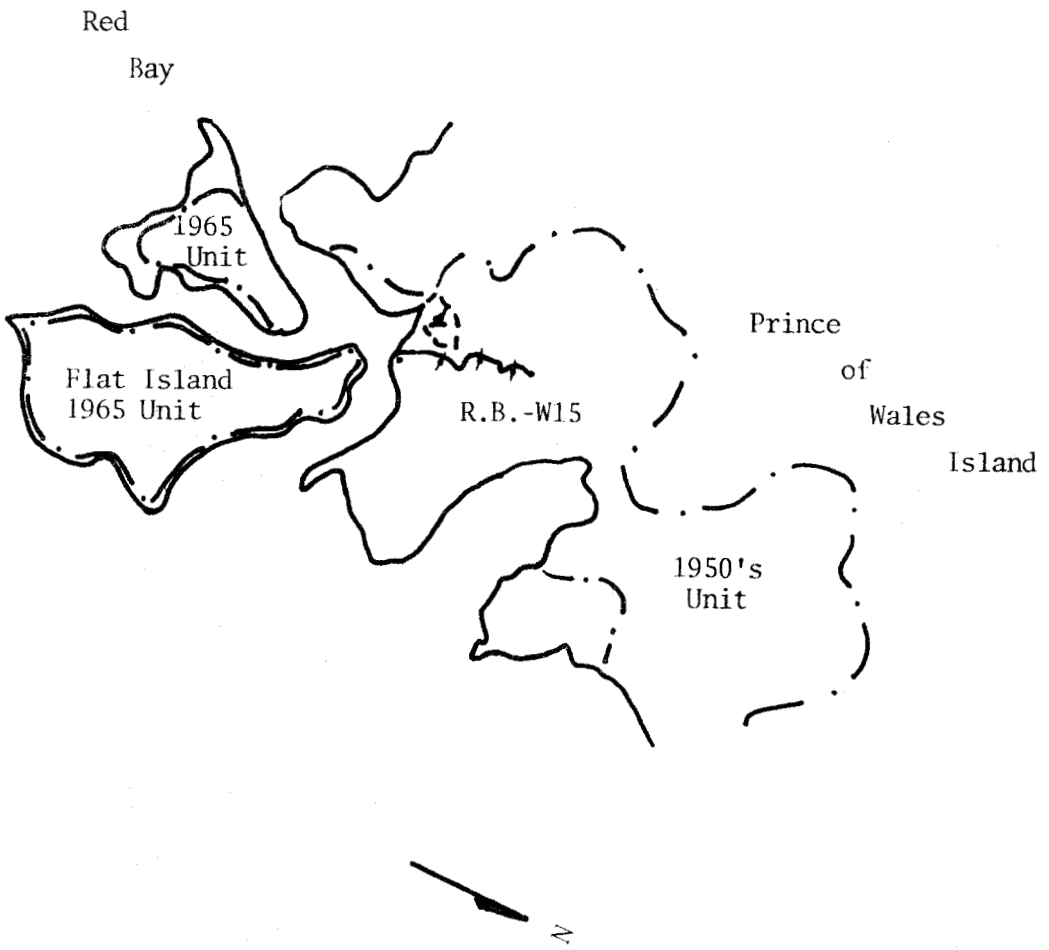
23. Investigators Murph

24. Date 9 / 19/ 82 25. Time 1120 (start) 1240 (end) 26. Weather 2

27. Photos

R-10 2600-3a (1/81)

Red Bay West #15



Red Bay West #15

1. Lower Intertidal Area (Low Tide) Looking Downstream at RB-W #14 (Across the Cove).

2. Mid-Intertidal Zone at High Tide Looking "Downstream".

Red Bay West #15

3. Upper Intertidal Area Looking Upstream Where Stream Enters the Timberline.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Red Bay - West #15 ADF&G Catalog No. --

1. Section No.			1I	2	3					
2. Compass Bearing			253	250	224					
3. Gradient			.5	.5	5					
4. Temperature:	Air		13	12	12					
	Water		9	9	9					
5. Water qual:	a. color		1	1	1					
	b. turbidity		1	1	1					
	c. pH		7.8	7.8	7.8					
6. Streambottom	Substrate	1	1	1	5					
		2	--	3	5					
		3	--	--	15					
		4	20	10	30					
		5	40	60	30					
		6	35	25	5					
		7	*	a) 1	a) 5 c) 5					
7. ASA	a. percent		0	0	0					
	b. quality		--	--	--					
8. Water Width	a. channel		5	1	1.25					
	b. water		1	1	1					
	c. floodplain		2	2	2					
9. Stream Pools	a. percent		10	40	5					
	b. category		SS	SS	SS					
10. Rearing Area			10	20	3					
11. Debris Loading			8	6	20					
12. Potential Barriers			N	N	N					
13. Enhancement/Rehab			N	N	N					
14. Streambank Veg.			1-5	1-5	1-5					
15. Upper Bank	a. Left		6	8	10					
	b. Right		2	20	12					
b. indic	Left		N	N	N					
	Right		N	N	N					
c. veg	Left		N	N	N					
	Right		N	N	N					
16. Lower Bank	Left		GS	GS	U					
	Right		GS	GS	GS					
17. Stab rating	Left		1(2)	1(1)	1(1)					
	Right		1(1)	1(1)	1(2)					
18. Stream Canopy Cover			3	1	1					
19. Fish Species			0	6 DV	0					
20. Sampling			N	N	N					

21. Comments *a) 1 b) 1 c) 2

Section 1I: 0m; Stream enters treeline on left bank.
60m; End of intertidal zone. Grassy slopes extend from stream edge to timber.

Section 2: 10-70m; Long "meadow" area of grasses.

Section 3: 10m; Habitat change - gravel/cobble substrate and increased gradient.

LEVEL OFFICE - INITIAL SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A, B 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Mud Creek 3. Lat. 56°18'55"

2. ADF&G Catalog No. 106-41-38 3. Long. 133°20'45"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-17-9-31

8. Bay/Drainage Red Bay 9. Access 4 6 10. Camping 4

11. Present Land Use a. -- 11b. Game trails

12. Historical Land Use Clearcut approximately 20 year old beach unit

13. Stream Origin 3 5 6 14. Flow Stage 2

15. Flow E (method), 1.6m (width), .063m (depth), 5.0m (length), .9m (constant), 20:98 sec (time), -- (grid), .02m³/sec. .77 cfs (flow)

16. Temp. Sensitivity none

17. Beaver 2 18. Type aquatic Veg. 1 19. Density Aquatic Veg. 2

20. Adult Salmon No 21. Intertidal a. gradient 2%

b. bottom type % fines 93 %

gravel small cobble 4 %

large cobble/boulders/bedrock 3 %

c. ASA 0

d. schooling bay only

e. shellfish none observed

f. anchorage in Red Bay

22. Comments

Small forked stream draining into an extensive mud flat. The "mainstem" and left fork are characterized by bedrock outcrops forming minor cascades and "fines" filled pools. 53m into section 2, the left fork flow becomes subsurface. Dense herbaceous vegetation along banks and over stream throughout. The right fork or area B drains an old logging unit and contains an active beaver impoundment and copious slash. Contains minimal rearing habitat and no ASA. Several 100mm+ CT's were observed.

23. Investigators Mickowski/Merrigan

24. Date 9/19/82 25. Time 0930 (start) 1130 (end) 26. Weather 5, 6

27. Photos

R-10 2600-3a (1/81)

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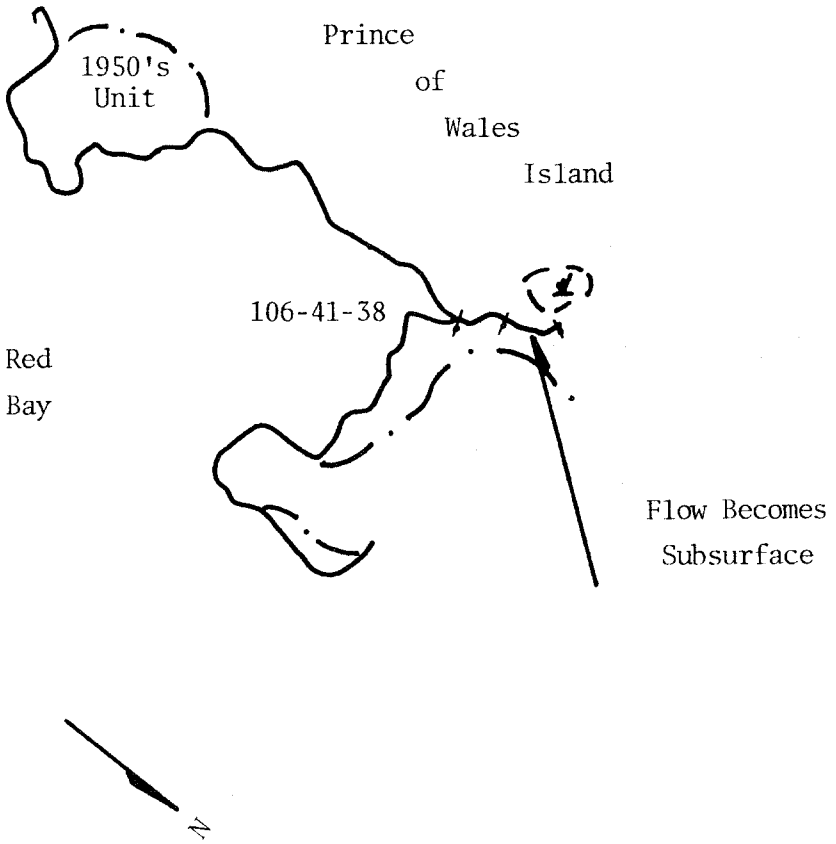
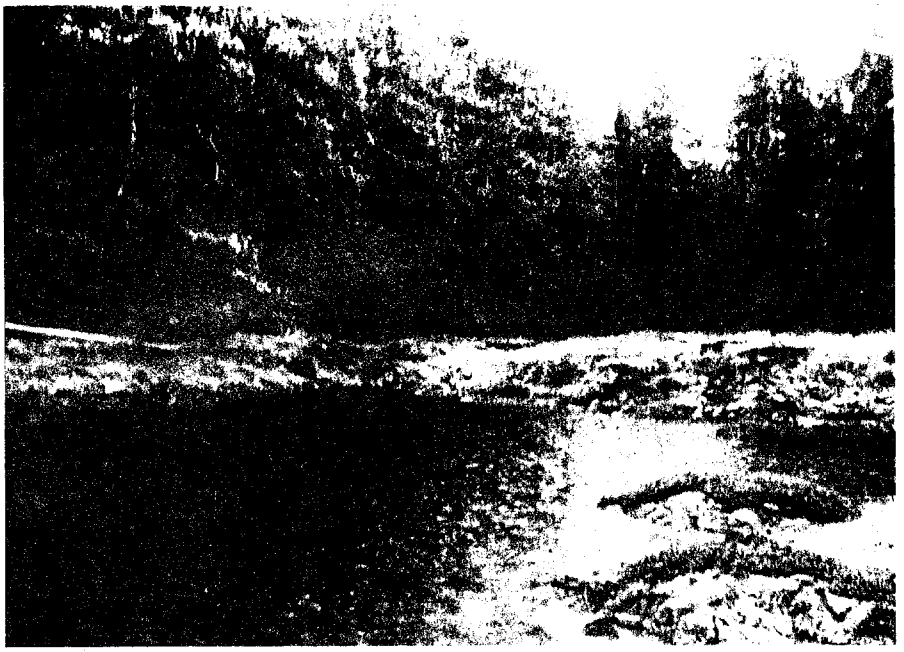
106-41-38


1950's
Unit
Prince
of
Wales
Island
106-41-38
Red
Bay
Flow Becomes
Subsurface
N

Mud Creek
106-41-38



1. ITZ at High Tide.

2. Downstream View of ITZ Toward Red Bay.

Mud Creek
106-41-38

3. Tributary "B" Enters Main Stem Beneath Midstream Log at Section 1: 90 m.

4. Section 2: 15 m Habitat With Low Velocity Flow.

Mud Creek
106-41-38

5. Tributary "B" Section 1: 8m; 1.2 m Beaver Dam and Pond.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Mud Creek Area A ADF&G Catalog No. 106-41-38

Section 2 is a 53m section.

1. Section No.			1	2						
2. Compass Bearing			295	220						
3. Gradient			~6	~9						
4. Temperature:	Air		11.5	11.5						
	Water		7	7						
5. Water qual:	a. color		1	1						
	b. turbidity		1	1						
	c. pH		--	8						
6. Streambottom	Substrate	1	--	--						
		2	5	--						
		3	5	5						
		4	10	20						
		5	20	40						
		6	--	15						
		7	a) 60	a) 20						
7. ASA	a. percent		--	--						
	b. quality		--	--						
8. Water Width	a. channel		6.8	2.4						
	b. water		3.1	~1.2						
	c. floodplain		3	1						
9. Stream Pools	a. percent		15	20						
	b. category		SS	SS						
10. Rearing Area			15	15						
11. Debris Loading			7	7						
12. Potential Barriers			N	N						
13. Enhancement/Rehab			N	N						
14. Streambank Veg.			1,2,5	1,3,5						
15. Upper Bank	a. Left		17	2						
	b. Right		11	6						
b. indic	Left		N	N						
	Right		N	N						
c. veg	Left		N	N						
	Right		N	N						
16. Lower Bank	Left		GS	U						
	Right		SS	U						
17. Stab rating	Left		1(3)	1(1)						
	Right		1(3)	1(3)						
18. Stream Canopy Cover			1	3						
19. Fish Species	Juv.	DV	0	6						
20. Sampling			N	Y						

21. Comments

Section 1: 5m; Cascade, 1m long.
20m; Cascade, 1m long.
32m; End intertidal zone. Timber begins right bank.
90m; Tributary enters right.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Mud Creek - Area B ADF&G Catalog No. 106-41-38

1. Section No.			1							
2. Compass Bearing			328							
3. Gradient			~7							
4. Temperature:	Air		11.5							
	Water		11							
5. Water qual:	a. color		1							
	b. turbidity		1							
	c. pH		7.7							
6. Streambottom Substrate		1	--							
		2	--							
		3	--							
		4	--							
		5	28							
		6	62							
		7	c/10							
7. ASA	a. percent		--							
	b. quality		--							
8. Water Width	a. channel		~1							
	b. water		~1							
	c. floodplain		1							
9. Stream Pools	a. percent		72							
	b. category		DS							
10. Rearing Area			72							
11. Debris Loading			25							
12. Potential Barriers			N							
13. Enhancement/Rehab			N							
14. Streambank Veg.			1,3,5							
15. Upper Bank	a. Left		17%							
	b. Right		2%							
b. indic	Left		N							
	Right		N							
c. veg	Left		N							
	Right		N							
16. Lower Bank	Left		U							
	Right		U							
17. Stab rating	Left		1(3)							
	Right		1(1)							
18. Stream Canopy Cover			3							
19. Fish Species		CT	3							
		DV	1							
20. Sampling			Y							

21. Comments Tributary "B" enters main stem, Section 1I; 90 meters, via the right bank.

Section 1: 8m; 1.2 meter high beaver dam in good repair. Impoundment substrate, primarily sand.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont. Mud Creek "B"
Section 1: 35m; Second dam in good repair. Impoundment substrate primarily muck and decaying vegetation.
67m; Single, small channel through forbes and copious debris; 100% loading. Third dam in good repair.
100m - end of survey.

A foot reconnaissance beyond end of survey revealed 90% of the flow becomes subsurface at 110 meters above the point of convergence with the "main stem".

Heavy debris, dense vascular plant colonization, and beaver dam induced "ponding" result in 72 meters of excellent rearing habitat. 3 CT and 1 DV observed, however, no SS were sighted.

Mud Creek "A"
Section 2: 16m; Forbs in streambed, minimal flow.
50m; Four juvenile DV observed; too shallow to trap.
53m; Flow becomes subsurface; approximately .5 cfs.

FISH SAMPLING FORM

Stream Name Mud Creek ADF&G Catalog No. 106-41-38 Date 9/19/82

Identify Survey Area A Water Temp. 7°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1050	1110	0	--	Section 2: 40m, Trap set in pool, along right bank, under undercut bank.

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

FISH SAMPLING FORM

Stream Name Mud Creek ADF&G Catalog No. 106-41-38 Date 9/19/82

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

Trap	Time In	Time Out	Species	Length	Comments
1	1010	1715	1 - DV	--	Section 1: 9m; Trap set in beaver impoundment along left bank near debris and aquatic vegetation.

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

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length --

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Ephemeral Creek #1 Intermittent stream 70m SSW Mud Creek 3. Lat. 56°18'50"

2. ADF&G Catalog No. ADF&G #106-41-38 -- 3. Long. 133°20'45"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No.

8. Bay/Drainage Red Bay 9. Access 4 6 10. Camping 4

11. Present Land Use a. None 11b. Game trails

12. Historical Land Use Adjacent to an approximately 20 year old clearcut.

13. Stream Origin 3 5 6 14. Flow Stage 2

15. Flow _____, _____, _____, _____, _____, _____, estimated <1 cfs
method width depth length constant time grid flow

16. Temp. Sensitivity --

17. Beaver 5 18. Type aquatic Veg. -- 19. Density Aquatic Veg. --

20. Adult Salmon No 21. Intertidal a. gradient 4%

b. bottom type % fines 20 % c. ASA 0

gravel small cobble 10 % d. schooling in bay

large cobble/boulders/bedrock 70 % e. shellfish none observed

f. Anchorage in Red Bay

22. Comments

Channel forks near intertidal boundary, gradient 3%, no ASA or rearing area. Right Fork: 32m of boulder/cobble channel climbs at 5% before flow becomes subsurface. A series of unconnected pools extend an additional 20m upslope. No fish sighted. No ASA. Water temperature: 8°C; pH: 7.6.

Left Fork: Flow becomes subsurface within 10m. Boulder and cobble substrate. NO ASA. Water temperature: 7°C; pH 7.8.

23. Investigators Mickowski/Merrigan

24. Date 9 / 19 / 82 25. Time 1130 (start) 1140 (end) 26. Weather 6

27. Photos

R-10 2600-3a (1/81)

USA JUNEAU 3613

FISH HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A, B 2. Equipment X
3. Historical Fish Species No escapement data available.
4. Section Length 100m

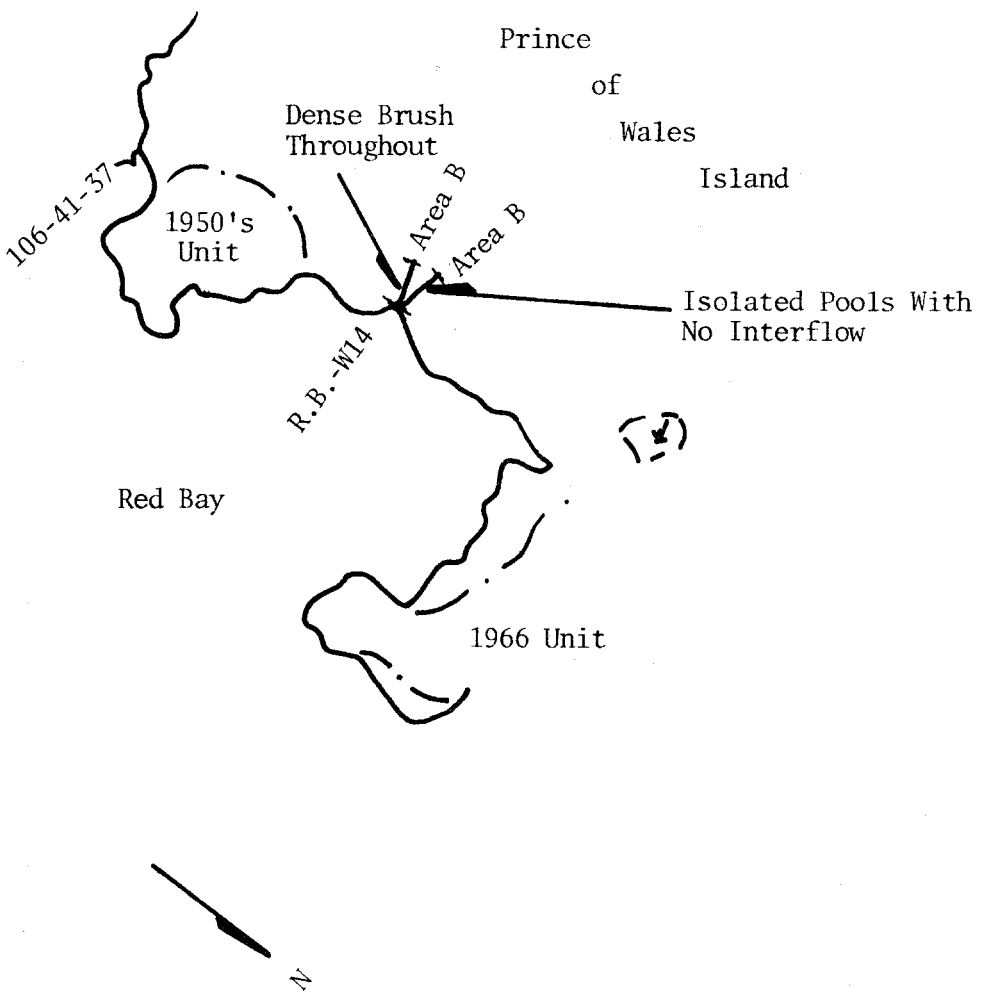
Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Red Bay - West #14 3. Lat. 56°18'40"
2. ADF&G Catalog No. -- 3. Long. 133°20'45"
4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5
7. Aerial Photo No. 71-17-9-30 & 31
8. Bay/Drainage Red Bay 9. Access 4 5 10. Camping 4
11. Present Land Use a. None 11b. Game trails, dense brush & blowdown debris.
12. Historical Land Use None observed
13. Stream Origin 3 5 6 14. Flow Stage 2
15. Flow ____ (method), ____ (width), ____ (depth), ____ (length), combined flow (constant), in ITZ (time), is estimated (grid), 1.5 cfs (flow).
16. Temp. Sensitivity Shallow water depth.
17. Beaver 5 18. Type aquatic Veg. 1 19. Density Aquatic Veg. 3
20. Adult Salmon N 21. Intertidal a. gradient 5%
b. bottom type % fines 65 %
gravel small cobble 25 %
large cobble/boulders/bedrock 10 %
c. ASA 1%
d. schooling Y
e. shellfish N
f. Deep anchorage available off rocky point approximately 1/8 mile to left of stream mouth.
22. Comments
1. Tide low at 0929 hours.
2. 21c. 1% poor PS ASA in gravel.
3. Stream forks in intertidal zone. Survey Area "A": Left fork (approximately 1 cfs flow); Survey Area "B": Right Fork (approximately .5 cfs flow).

23. Investigators Murph
24. Date 9 / 19/ 82 25. Time 0930 (start) 1045 (end) 26. Weather 5
27. Photos

R-10 2600-3a (1/81)

Red Bay West #14



Red Bay West #14

1. Lower Intertidal (Low Tide) Looking Downstream Into Heavy Fog Layer.

2. Upper Intertidal Area Where Stream Forks and Enters Tree Line.

Red Bay West #14
Survey Area "B"

3. Section 1; 31m: Good ASA in Sand/Gravel Substrate of the Riffles.

Red Bay - West #14

Section	Length (m)	Width (m)	ASA %	ASA Total
Area A				
1I	100	0.3	3	0.9
2	100	0.5	3	1.5
Total				$2.4m^2$

Section	Length (m)	Width (m)	ASA %	ASA Total
Area B				
1	100	0.7	3	$2.1m^2$

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Red Bay - West #14 ADF&G Catalog No. --
Survey Area "A"

1. Section No.			1I	2						
2. Compass Bearing			196	164						
3. Gradient			15	3						
4. Temperature:	Air		9	9						
	Water		8	8						
5. Water qual:	a. color		1	1						
	b. turbidity		1	1						
	c. pH		8	8						
6. Streambottom Substrate		1	5	--						
		2	5	2						
		3	10	8						
		4	23	35						
		5	30	50						
		6	--	--						
		7	a) 25 c) 2	b) 5						
7. ASA	a. percent		3	3						
	b. quality		2	2						
8. Water Width	a. channel		.7	2.2						
	b. water		.3	.5						
	c. floodplain		3	1						
9. Stream Pools	a. percent		25	20						
	b. category		SS/SF	SS						
10. Rearing Area			15	15						
11. Debris Loading			80	50						
12. Potential Barriers			N	N						
13. Enhancement/Rehab			N	N						
14. Streambank Veg.			5	1,3,5						
15. Upper Bank	a. Left		0	15						
	b. Right		0	9						
b. indic	Left		N	N						
	Right		N	N						
c. veg	Left		N	N						
	Right		N	N						
16. Lower Bank	Left		U	GS						
	Right		GS	U						
17. Stab rating	Left		1(2)	1(2)						
	Right		1(2)	1(1)						
18. Stream Canopy Cover			3	1						
19. Fish Species										
No Fish Observed.										
20. Sampling			N	N						

21. Comments

Section 1I: 0m; Confluence with survey area "B".
18m; Enter treeline.
23m; End of intertidal zone.
0-40m; Primarily bedrock substrate with a 15% gradient. Heavy recent blowdown.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont. Survey Area "A"
Section 1I: Above 40m gradient decreases to 3.5% with sand/gravel substrate. Heavy brush/devil's club on bank. Side slopes of 10-15% under a complete forest canopy. Some available spawning areas in gravel riffles. No fish observed.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Red Bay - West #14 ADF&G Catalog No. --

Survey Area "B"

1.	Section No.		1I
2.	Compass Bearing		247
3.	Gradient		15
4.	Temperature:	Air	9.5
		Water	8
5.	Water qual:	a. color	1
		b. turbidity	1
		c. pH	7.8
6.	Streambottom Substrate	1	5
		2	5
		3	5
		4	20
		5	50
		6	--
		7	*
7.	ASA	a. percent	3
		b. quality	1
8.	Water Width	a. channel	1.25
		b. water	.7
		c. floodplain	3
9.	Stream Pools	a. percent	10
		b. category	SF
10.	Rearing Area		20
11.	Debris Loading		40
12.	Potential Barriers		N
13.	Enhancement/Rehab		N
14.	Streambank Veg.		5
15.	Upper Bank	a. Left	0
		b. Right	0
	b. indic	Left	N
		Right	N
	c. veg	Left	N
		Right	N
16.	Lower Bank	Left	GS
		Right	GS
17.	Stab rating	Left	1(2)
		Right	1(2)
18.	Stream Canopy Cover		3
19.	Fish Species		1 - DV
20.	Sampling		N

21. Comments *a) 10 b) 4 c) 1

Section 1I: 0m; Grassline. 5m; Confluence with Survey Area "A" on left side of channel. 22m; Enter treeline. 28m; End intertidal zone. 57m; Flow emerges under bank to converge with existing channel. Above this point the channel is composed of isolated pools with no visible flow beneath.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Stream Evaluation:

35 meters to left of channel, flow again appears with a 90% debris/muck substrate. Majority of flow beneath heavy blowdown. Observed ASA is 31m to 57m of Section 1I only. Good rearing in pools. Above intertidal zone the side slopes are 10-15% with even age timber and extensive blowdown. 1 DV observed at 50m.

LEVEL ONE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R 10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R 10 Section 330.42.

1. Stream Name Red Bay - West #13 3. Lat. 56°18'35"

2. AHAG Catalog No. -- 3. Long. 133°20'45"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-17-9-30

8. Bay/Drainage Red Bay 9. Access 4 5 10. Camping 4

11. Present Land Use a. None 11b. Game trails

12. Historical Land Use None observed

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow _____, _____, _____, _____, _____, _____, estimated, 2 cfs
method width depth length constant time grid flow

16. Temp. Sensitivity Shallow water depth.

17. Beaver 5 18. Type aquatic Veg. 1 19. Density Aquatic Veg. 2

20. Adult Salmon N 21. Intertidal a. gradient 11%

b. bottom type % fines 0 % c. ASA 0

gravel small cobble 0 % d. schooling Y

large cobble/boulders/bedrock 100% (90% bedrock) e. shellfish High tide

f. Anchor along rocky shore on left side of stream.

22. Comments
1. High tide at 1509 hours.
2. 21d. Schooling areas in cove to left of stream mouth.

23. Investigators Murph

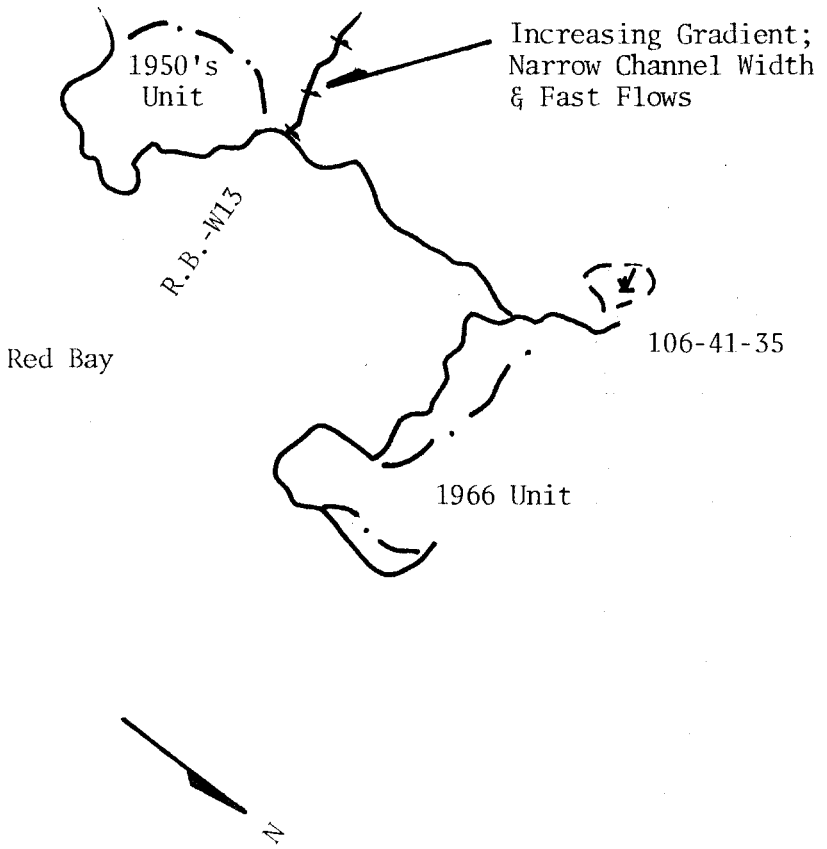
24. Date 9 /18 /82 25. Time 1630 (start) 1725 (end) 26. Weather 2

27. Photos

R-10 2600-3a (1/81)

Red Bay West #13

Prince of Wales Island



Red Bay West #13

1. Upper Intertidal (High Tide) as Stream Enters the Tree Line. Note Bedrock Slab in Substrate.

2. Lower Intertidal (High Tide) Taken From the Tree Line out to Red Bay.

Red Bay West #13

3. Section 1; 24m: Falls/Cascade Over Bedrock for 9 Meters at 32% Gradient.

4. Section 2: Typical Stream Habitat.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Red Bay - West #13 ADF&G Catalog No. --

1. Section No.			1I	2						
2. Compass Bearing			208	154						
3. Gradient			15	8						
4. Temperature:	Air		13	13						
	Water		8.5	8.5						
5. Water qual:	a. color		1	1						
	b. turbidity		1	1						
	c. pH		--	8.0						
6. Streambottom Substrate		1	2	1						
		2	2	10						
		3	10	10						
		4	15	20						
		5	25	35						
		6	--	--						
		7	a)45 b)1	a)20 b)4						
7. ASA	a. percent		2	0						
	b. quality		3	--						
8. Water Width	a. channel		3.8	.75						
	b. water		2.0	.75						
	c. floodplain		3	2						
9. Stream Pools	a. percent		20	10						
	b. category		SF/SS	SF						
10. Rearing Area			15	1						
11. Debris Loading			30	60						
12. Potential Barriers			N	N						
13. Enhancement/Rehab			N	N						
14. Streambank Veg.			5	1,3,5						
15. Upper Bank	a. Left		0	5						
	b. Right		0	18						
b. indic	Left		N	N						
	Right		N	N						
c. veg	Left		N	N						
	Right		N	N						
16. Lower Bank	Left		GS	GS						
	Right		GS	GS						
17. Stab rating	Left		1(2)	1(1)						
	Right		1(3)	1(2)						
18. Stream Canopy Cover			3	2						
19. Fish Species			0	0						
20. Sampling			N	N						

21. Comments

Section 1I: 0m; Edge of grassline
6m; Enter treeline.
9m; End intertidal zone.
24m; Cascade/falls over bedrock outcrop for 9m at 32% gradient.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 1I: 0-45m; Very steep gradient (+15%) over 100% bedrock substrate. 55-100m; Lesser gradient (3%) with 30% bedrock and 70% gravel/ sand substrate.

Section 2: Section is characterized by increasing gradient, narrow channel width and fast flow. No ASA or rearing habitat observed. Gravel substrate is present, but it is compact and often covering bedrock. Large amounts of sand in riffles.

Red Bay - West #13

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1I	100	2.0	2	$4m^2$					

LEVEL ONE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Goose Creek 3. Lat. 56°18'20"

2. ADF&G Catalog No. 106-41-37 3. Long. 133°20'45"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-17-9-30

8. Bay/Drainage Red Bay 9. Access 4 5 10. Camping 4

11. Present Land Use a. None 11b. dense brush & debris interference

12. Historical Land Use 20 year old A-frame logging unit on left bank.

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow ____ (method), ____ (width), ____ (depth), ____ (length), ____ (constant), ____ (time), estimated (grid), 2 cfs (flow)

16. Temp. Sensitivity Shallow water depth, E/W oriented; low velocity flow

17. Beaver 5 18. Type aquatic Veg. 1,2 19. Density Aquatic Veg. 2

20. Adult Salmon Y 21. Intertidal a. gradient 4%

b. bottom type % fines 50 %

gravel small cobble 40 %

large cobble/boulders/bedrock 10 %

c. ASA 10%

d. schooling Y

e. shellfish Y

f. Anchorage off rocky point to right of creek mouth.

22. Comments
1. High tide at 1545 hours.
2. 20. 1 adult PS observed in intertidal zone at high tide.
3. 21c. 10% good pink salmon ASA of gravel/small cobble.
4. 21d. Lower intertidal zone pools.
5. 21e. Many clam geysers observed.
6. Some PS & SS ASA in Sections 1I & 2 but poor rearing area due to high velocity flow & lack of pooling. Gradients increase rapidly after Section 1 to +15%.

23. Investigators Murph

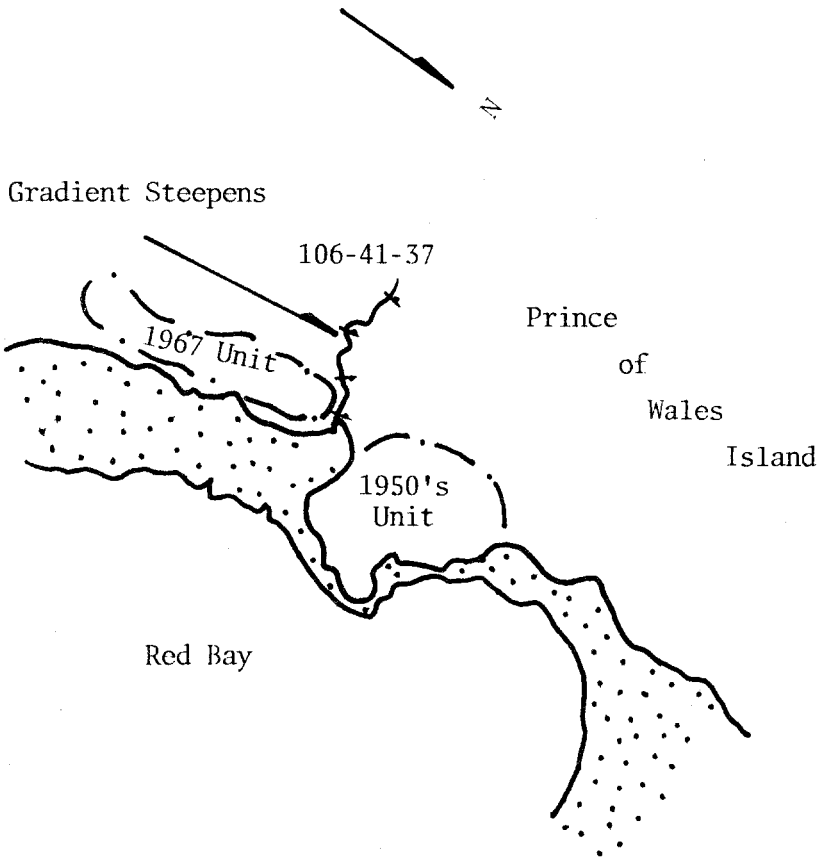
24. Date 9/18/82 25. Time 1250 (start) 1415 (end) 26. Weather 2

27. Photos

R-10 2600-3a (1/81)

GSA FORM 1613

106-41-37


N
Gradient Steepens
106-41-37
1967 Unit
Prince
of
Wales
Island
1950's
Unit
Red Bay

Goose Creek
106-41-37

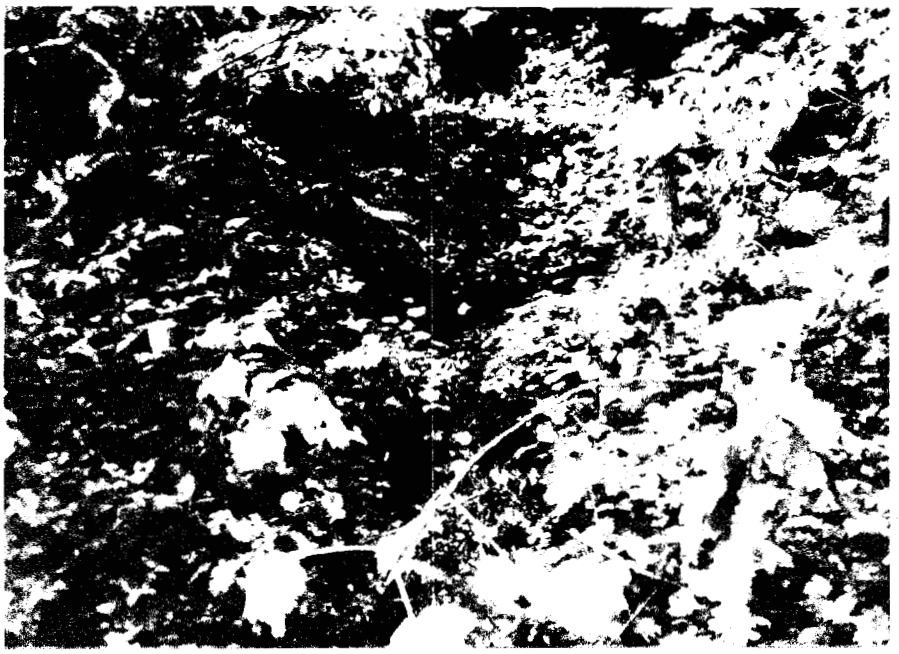
Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1I	100	8.1	20	162					
2	100	2.4	10	24					
Total				$186m^2$					

106-41-37
Goose Creek

1. Lower Intertidal Zone Looking Downstream (Near High Tide).

2. Upper Intertidal Zone (Stream Enters Tree Line in Alders on Far Right Side of Photo).

106-41-37
Goose Creek



3. Typical Stream Habitat in Sections 2 and 3 With Narrow Channel and Sand/Gravel/Moss Substrate.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Goose Creek ADF&G Catalog No. 106-41-37

1. Section No.		1I	2	3					
2. Compass Bearing		174	183	221					
3. Gradient		4	+15	+15	-estimated due to brush/debris				
4. Temperature:	Air	16	16	15	interference				
	Water	9.5	9	9					
5. Water qual:	a. color	1	1	1					
	b. turbidity	1	1	1					
	c. pH	--	7.5	7.5					
6. Streambottom Substrate	1	2	3	--					
	2	--	5	--					
	3	--	15	--					
	4	30	15	20					
	5	35	45	65					
	6	5	--	--					
	7	*	*	b) 5 c) 10					
7. ASA	a. percent	20	10	--					
	b. quality	2	2	--					
8. Water Width	a. channel	8.1	2.4	.3					
	b. water	8.1	2.4	.3					
	c. floodplain	3	1	1					
9. Stream Pools	a. percent	10	5	5					
	b. category	SF	SF	SF					
10. Rearing Area		10	5	--					
11. Debris Loading		80	60	40					
12. Potential Barriers		N	N	N					
13. Enhancement/Rehab		N	N	N					
14. Streambank Veg.		5	1,3-5	1,3,5					
15. Upper Bank	a. Left	0	5	11					
	b. Right	0	9	6					
b. indic	Left	N	N	N					
	Right	N	N	N					
c. veg	Left	N	N	N					
	Right	N	N	N					
16. Lower Bank	Left	GS	U	GS					
	Right	GS	U	GS					
17. Stab rating	Left	2(2)	1(1)	1(1)					
	Right	2(2)	1(1)	1(1)					
18. Stream Canopy Cover		3	2	1					
19. Fish Species	CO	3	--	--					
	CT	3	3	--					
	DV	--	--	--					
20. Sampling		N	N	N					

21. Comments *a) 8 b) 10 c) 10 *a) 2 b) 5 c) 10
Section 1I: 0m; Grassline.
56m; End intertidal zone; enter treeline with heavy logging slash and debris from clearcut on left bank; obscured stream.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 2: 15m; End clearcut on left bank, entering even aged stand of timber with extensive old blowdown on ground and over stream. Increasing gradient induces several 30-45cm falls and long riffle/cascades as stream flows down a steep hillside of +15% gradient.

Section 3: Very steep gradient with several 45-60cm falls; narrow stream channel. Channel substrate primarily sand/gravel; instream moss common. Stream is often lost under debris and root wads. End survey due to lack of habitat.

FISH SAMPLING FORM

Stream Name Goose Creek ADF&G Catalog No. 106-41-37 Date 9/18/82

Identify Survey Area A Water Temp. 9.5°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1300	1415	0	--	Section 1; In shallow pool under debris. Muck/debris substrate.

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

FISH HABITAT - INITIAL SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X
3. Historical Fish Species No Escapement Data Available.
4. Section Length 100m

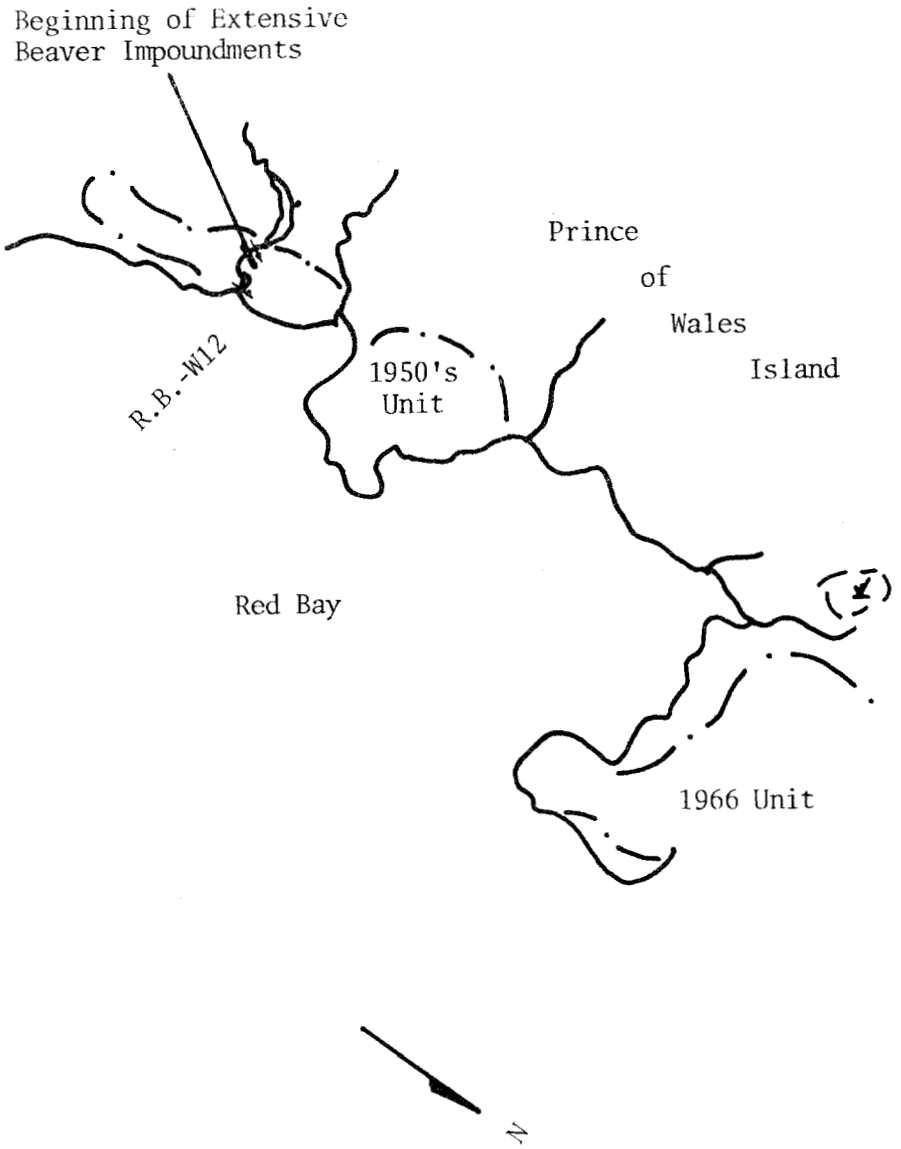
Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Red Bay - West #12 3. Lat. 56°18'20"
2. AH&G Catalog No. Pine Creek on navigation chart 3. Long. 133°20'45"
4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5
7. Aerial Photo No. 71-17-9-30
8. Bay/Drainage Red Bay 9. Access 4 5 10. Camping 4
11. Present Land Use a. None 11b. Dense brush and debris
12. Historical Land Use 20 year old clearcut unit on both sides of stream.
13. Stream Origin 3 4 5 6 14. Flow Stage 2
15. Flow ____ (method), ____ (width), ____ (depth), ____ (length), ____ (constant), ____ (time), estimated (grid), 2.5 cfs (flow)
16. Temp. Sensitivity E/W orientation, muskeg source, shallow water depth.
17. Beaver 1 18. Type aquatic Veg. 2, 4 19. Density Aquatic Veg. 3
20. Adult Salmon N 21. Intertidal a. gradient 3.5%
b. bottom type % fines 55 % c. ASA 10%
gravel small cobble 35 % d. schooling N
large cobble/boulders/bedrock 10% e. shellfish N
f. Possible anchorage in bay to left of stream mouth.
22. Comments

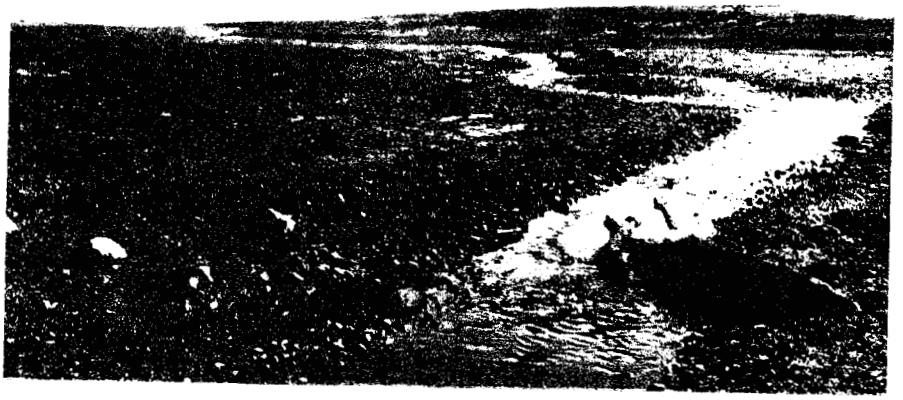
23. Investigators Murph
24. Date 9 /16 /82 25. Time 1730 (start) 1800 (end) 26. Weather 3
27. Photos

R-10 2600-3a (1/81)

Red Bay West #12



Red Bay West #12

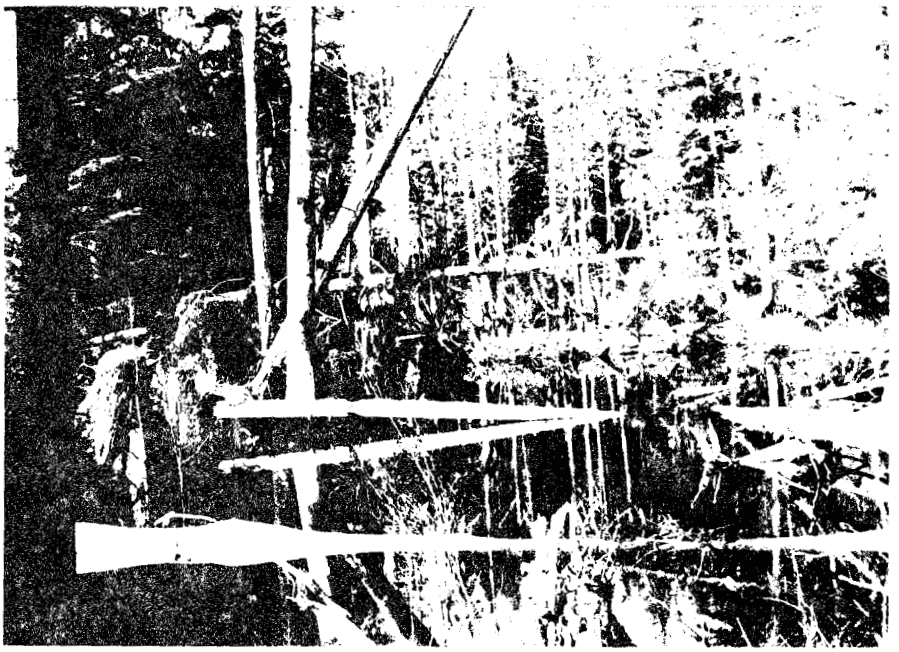


1. Lower Intertidal Zone Looking Downstream at Red Bay.

2. (Pine Creek). Upper Intertidal Zone. Note Heavy Debris at Top of Intertidal Zone.

Red Bay West #12

3. Section 2: Next Three Dams of a Long Series of Beaver Dams (Taken From Top of First Dam of Series) With Continuous Impoundment Ponds Between Dams.



4. 60m Above Section 2 Showing Continued Beaver Dam/Impoundment Series for Next 100+ Meters.

Red Bay - West #12

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1I	100	1.0	15	$15m^2$					

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Red Bay - West #12 ADF&G Catalog No. --

1. Section No.			1I	2						
2. Compass Bearing			229	226						
3. Gradient			10	8						
4. Temperature:	Air		12	13						
	Water		11	11						
5. Water qual:	a. color		1	1						
	b. turbidity		1	1						
	c. pH		--	7.5						
6. Streambottom Substrate		1	2	--						
		2	3	--						
		3	12	--						
		4	15	--						
		5	20	--						
		6	35	80						
		7	*	b) 10 c) 10						
7. ASA	a. percent		15	--						
	b. quality		2	--						
8. Water Width	a. channel		1.5	28						
	b. water		1.0	28						
	c. floodplain		3	2						
9. Stream Pools	a. percent		40	100						
	b. category		DS/SS	DS						
10. Rearing Area			30	50						
11. Debris Loading			20	5						
12. Potential Barriers			Y	Y						
13. Enhancement/Rehab			N	N						
14. Streambank Veg.			5	1,3-5						
15. Upper Bank	a. Left		0	0						
	b. Right		0	5						
b. indic	Left		N	N						
	Right		N	N						
c. veg	Left		Y	N						
	Right		Y	N						
16. Lower Bank	Left		GS	SS						
	Right		GS	GS						
17. Stab rating	Left		2(2)	1(1)						
	Right		2(2)	1(1)						
18. Stream Canopy Cover			3	3						
19. Fish Species			0	0						
20. Sampling			N	N						

21. Comments

Section 1I: 0m; Survey begun at grassline.
26m; Enter treeline.
48m; End intertidal zone.
70m; Beginning of series of beaver dams all of which are in good repair with deep impoundments. First beaver dam is 1.5m high.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.
Section 1I: 81m; Second beaver dam, .75-1m high.
84m; Third beaver dam approximately 1 meter high.
98m; Fourth beaver dam approximately 1.5 meters high.

Section 2: Continued beaver dams and impoundment extending more than 200 meters beyond end of this section.

FISH SITE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A, B, C 2. Equipment

3. Historical Fish Species No Escapement Data Available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Duck Creek 3. Lat. 56°17'58"

2. AHG Catalog No. 106-41-36 3. Long. 133°20'45"

4. Agency Unit 05 5. Mgmt Area 6. USGS Map No. Petersburg B-5

7. Aerial Photo No.

8. Bay/Drainage Red Bay 9. Access 1, 4, 6 10. Camping 4

11. Present Land Use a. None 11b. Bear/deer trails near mouth.

12. Historical Land Use Stream traverses extensive clearcut units

13. Stream Origin 3 5 6 14. Flow Stage 2

15. Flow E (method), 7.57 (width), .136 (depth), 18 (length), .8 (constant), 85.9 (time), (grid), .173m³/sec, 6.16 cfs (flow)

16. Temp. Sensitivity SE/NW orientation; minimal canopy coverage

17. Beaver 5 18. Type aquatic Veg. 1 19. Density Aquatic Veg. 3

20. Adult Salmon Yes 21. Intertidal a. gradient 2

b. bottom type % fines 40%

gravel small cobble 55 %

large cobble/boulders/bedrock 5 %

c. ASA Poor/heavily compacted

d. schooling High tide only & in bay

e. shellfish Yes

f. Skiff anchorage off point south of mouth.

22. Comments

Moderate densities of clams observed throughout the intertidal zone. Stream sustains a SS, PS and CS run and contains moderate deposits of spawning gravel. Channel traverses a unit the length of anadromous habitat. Instream logging slash is dense, forming physical barriers and dentrimentally modifying channel hydraulics and morphology. Debris is abundant throughout system, continually being added from lower banks during "flood" flows. Only one CS negotiated the debris "barrier" in Section 4:23m. Considerable bedrock exposures, undercut banks, and signs of soil movement throughout stream.

23. Investigators Mickowski/Merrigan

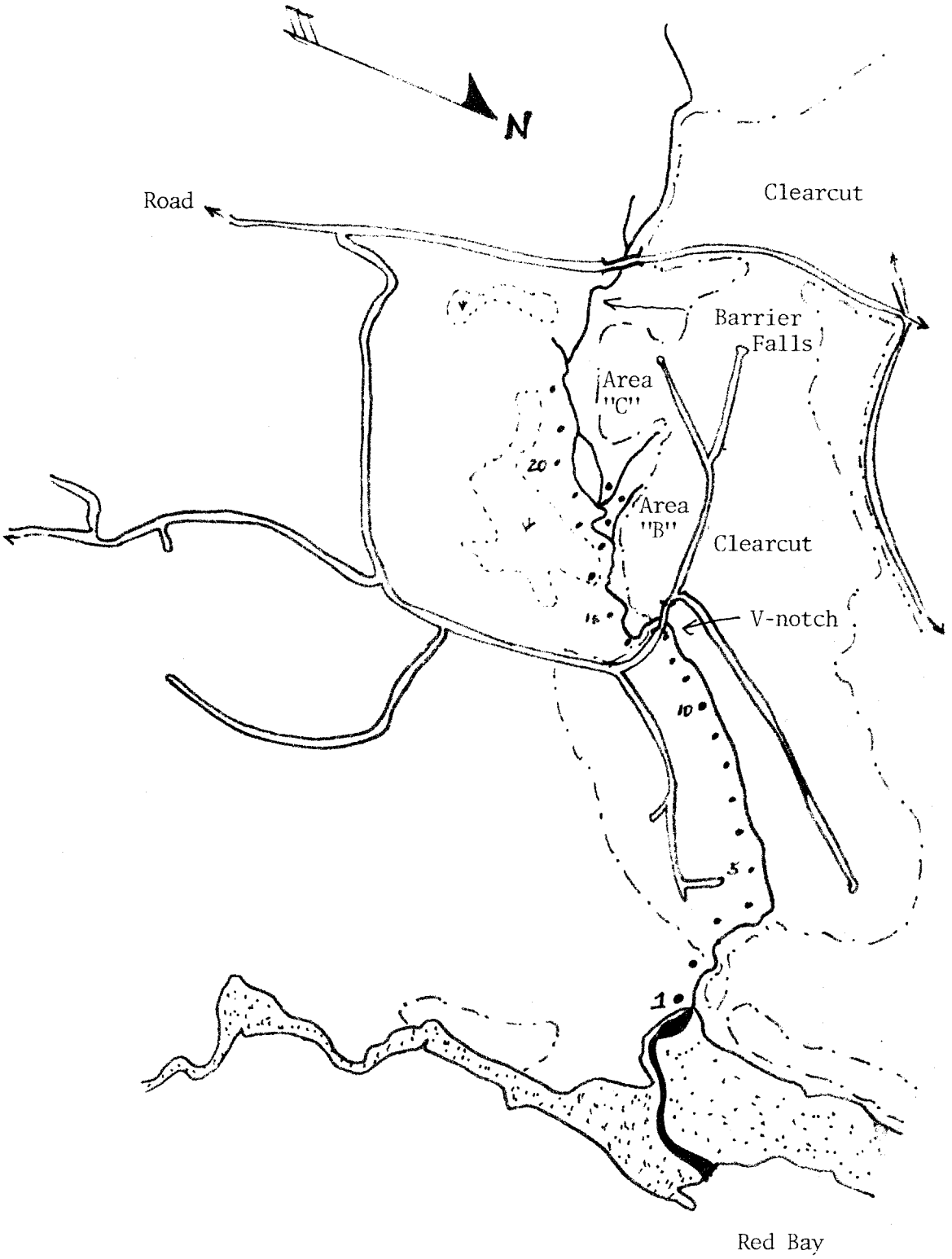
24. Date 9/16/82 (9 18 82) 25. Time 1605 (start 0900) 1800 (end 1900) 26. Weather 5

27. Photos

R-10 2600-3a (1/81)

GSA JENSEN 1613

Duck Creek
106-41-36

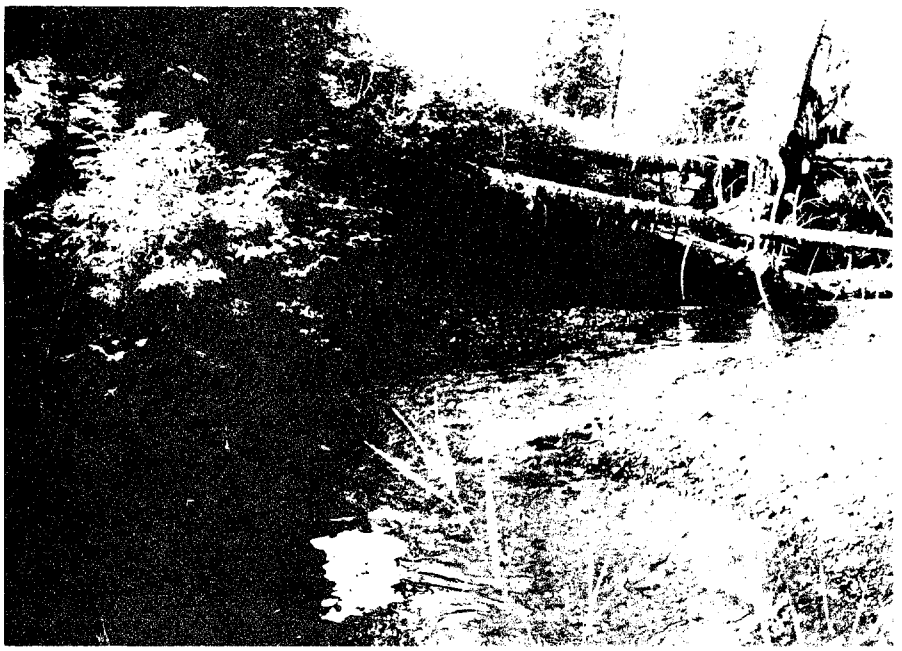


Duck Creek
106-41-36

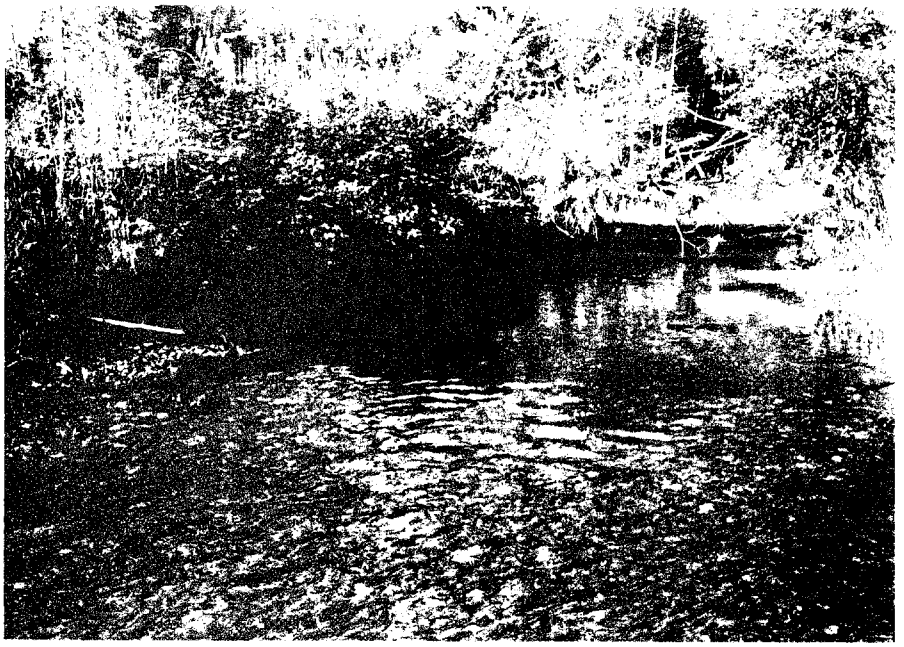
1. The Upper ITZ Contains Several Riffles Providing Moderate ASA. The Drainage Has Been Extensively Clearcut as Seen Upper Center.

2. View of Lower ITZ and Red Bay.

Duck Creek
106-41-36

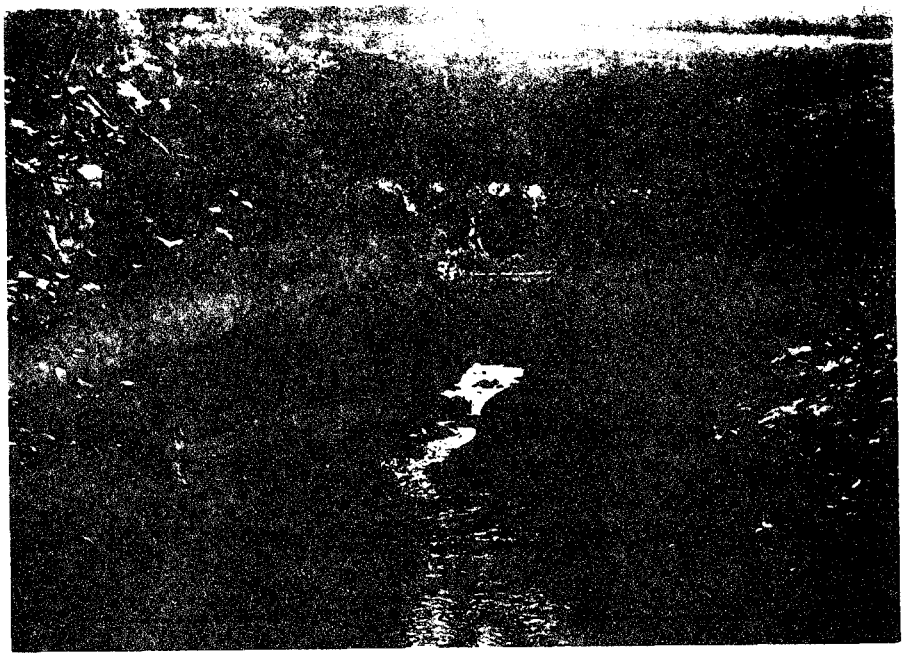


3. Section 2: Cobble/Gravel Channel Meanders Amidst a Blowdown Buffer and Unstable Sideslopes.

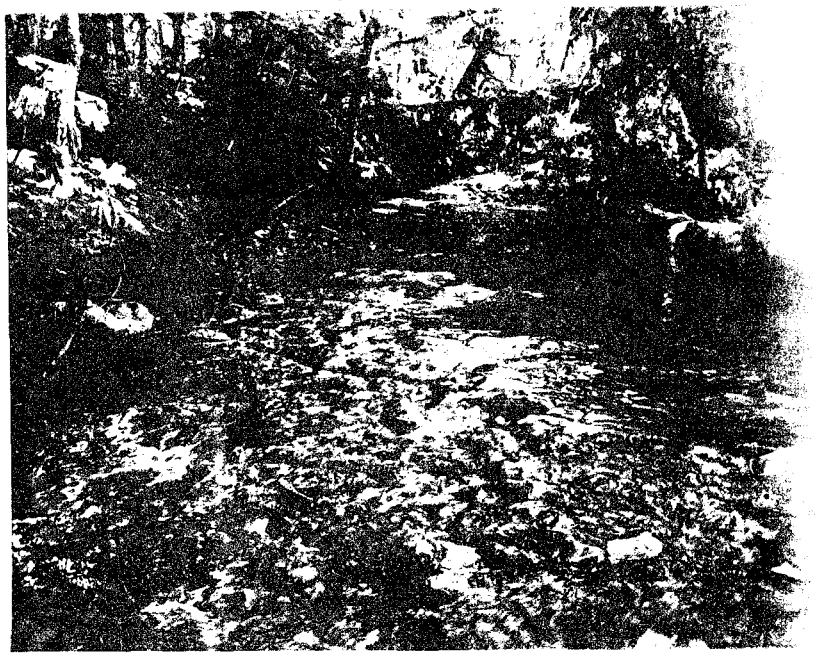


4. Section 3: Clearcut Unit Extends to Both Banks. Logging Debris and Blowdown are Common. Riffles Contain "Substantial" Interstitial Fines.

Duck Creek
106-41-36



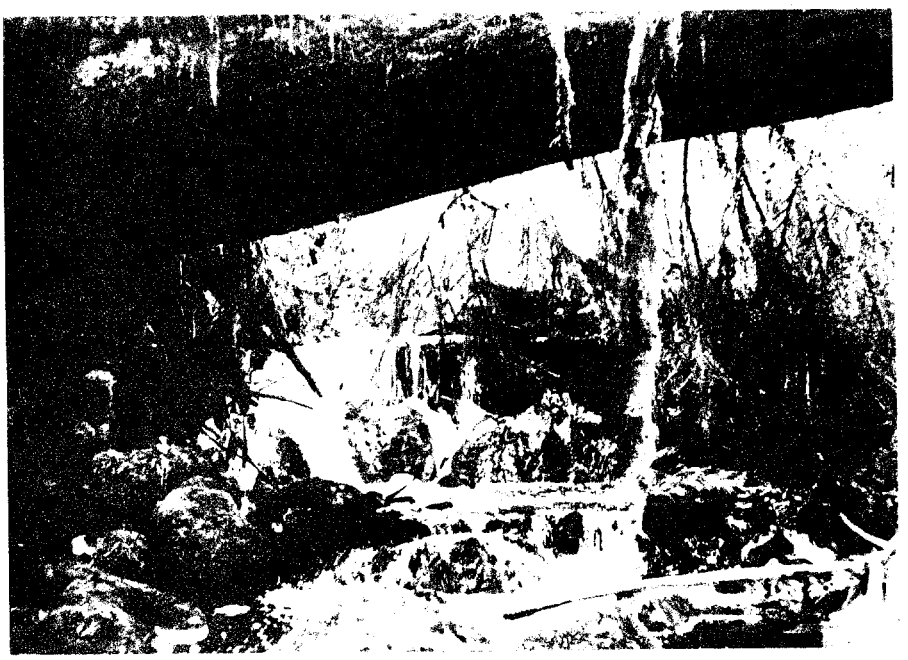
5. Section 13: Deeply Incised Bedrock V-notch is Crossed Via a Log Stringer Bridge.



6. Section 14: Old Growth Timber Borders the Left Bank and a 10 m Wide Buffer Skirts the Right. Boulder/Cobble Riffles Provide Isolated ASA.

Duck Creek
106-41-36

7. Section 21: 55m; Bank Failure Right Side. Unit is Adjacent to Right Bank. Blowdown is From Buffer Strip.



8. Section 22: A 2.0 Vertical Meter Bedrock/Debris Falls Without Jumping Pool, Represents a Potential Migratory Impass.

Duck Creek
106-41-36

9. Reconnaissance Revealed a 3.0 m Barrier Falls 200 Meters Above the Section 22 "Potential Barrier". Bedrock Cascades Continued an Additional 200 Meters to a Second Bridge Crossing.

Duck Creek
106-41-36

Section	Length (m)	Width (m)	ASA %	ASA Total
Area A				
1I	100	9.4	12	112.8m^2
2	100	6	15	90.0m^2
3	100	3.3	35	115.5m^2
4	100	5.3	7	37.1m^2
7	100	5.2	3	15.6m^2
8	100	3.8	15	57.0m^2
9	100	9.5	13	123.5m^2
10	100	4.2	8	33.6m^2
11	100	5.6	7	39.2m^2
12	100	5.7	7	39.9m^2
14	100	3.9	1	3.9m^2
Total				668.1m^2

Section	Length (m)	Width (m)	ASA %	ASA Total
Area B				
1	100	1	18	18.0m^2
2	100	1.6	3	4.8m^2
Total				22.8m^2
Area C				
1	100	1	10	10.0m^2

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Duck Creek Area A ADF&G Catalog No. 106-41-36

1. Section No.		1I	2	3	4	5	6	7	8
2. Compass Bearing		201	271	231	251	226	191	157	150
3. Gradient		2.5	2.5	4	8+	6	~3	~3	~4
4. Temperature:	Air	10	11.5	11.5	12	11	11	12	13
	Water	9	10	10	10	9	9	9	9
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	--	8	8	8	8	8	8	8
6. Streambottom Substrate	1	--	--	--	5	--	6	10	5
	2	15	10	10	20	15	40	35	30
	3	40	45	50	45	35	20	25	30
	4	30	30	30	20	25	15	15	20
	5	15	14	8	7	15	15	10	10
	6	--	--	--	--	--	--	--	--
	7	--	b) 1	b) 2	b) 3	a) 7 b) 3	a) 2 b) 2	a) 1 b) 4	a) 1 b) 4
7. ASA	a. percent	12	15	35	7	--	--	3	15
	b. quality	1	1	1	2	--	--	1	1
8. Water Width	a. channel	12.2	13	8.4	6.2	9.7	5.3	5.2	5.9
	b. water	9.4	6	3.3	5.3	6.6	4.1	5.2	3.8
	c. floodplain	3	3	2	2	1	1	1	2
9. Stream Pools	a. percent	45	40	25	35	40	25	20	25
	b. category	SS	SS/DS	SS/DS	SS/DS	DS/SS	DS/SF	DS/SS	DS/SS
10. Rearing Area		50	45	35	40	45	30	25	30
11. Debris Loading		4	8	18	25	30	18	20	25
12. Potential Barriers		N	N	N	Y	Y	N	N	N
13. Enhancement/Rehab		N	N	N	N	Y	N	N	Y
14. Streambank Veg.		1-3,5	5	1-3,5	2,3,5	2,3,5	2,3,5	1-3,5	2,3,5
15. Upper Bank	a. Left	19%	0%	16%	11%	2%	24%	10%	2%
	b. Right	2%	0%	2%	15%	10%	4%	25%	58%
b. indic	Left	N	N	N	PV	PV	N	N	PV
	Right	N	N	N	PV	PV	N	N	N
c. veg	Left	N	N	N	N	Y	N	N	Y
	Right	N	N	N	Y	Y	Y	N	N
16. Lower Bank	Left	GS	GS	U	GS	U	GS	SS	GS
	Right	GS	U	U	U	U	U	U	SS
17. Stab rating	Left	1(1)	2(2)	2(1)	2(2)	2(1)	1(3)	1(2)	2(1)
	Right	1(1)	2(1)	2(1)	2(1)	2(1)	2(1)	1(2)	1(3)
18. Stream Canopy Cover		1	1	2	2	1	2	2	1
19. Fish Species Adult/Juv.	SS				-/>20	-/<6	-/>12	-/>25	-/>12
	CT								
Adult/Juv.	DV		<10/-	<6/-					
	PS	1	25	8					
	CS		12	20					
20. Sampling		N	N	N	Y	N	N	N	N

21. Comments

Section 1I: 0m; Survey begins at grass flat along right bank.
60m; Clay-lower bank, left, 4m by 1m.
100m; Intertidal ends.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 2: 0m; Clearcut unit buffer has blown across gravel bar and channel.
10m; Clay-lower bank, right, 4m by 2m.
42m; Clay-lower bank, left, 20m in extent.

Section 3: Bear killed PS and CS, abundant. Great blue heron observed.

Section 4: 0m; Clearcut unit visible through buffer along right bank.
23m; Instream log induced debris jam forms a 1 vertical meter falls. Nice pool beneath. Potential PS and CS barrier.
28m; Potential PS and CS barrier.
73m; Unit borders both banks. Heavy in-channel debris has induced channel migration. Blowdown and root wads common.

Section 5: 12m; Potentially impassable debris barrier.
91m; Passable bedrock cascade, 9m.

Section 6: Blowdown and debris heavy throughout.

Section 7: Blowdown and debris heavy throughout.

Section 8: 70m; Forks converge. Right fork channels 10% of the flow, and the left fork channels 90% of the flow.
100m; Forks diverge at the base of a 1m high root wad based log jam. Potential rehabilitation project.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Duck Creek Area A ADF&G Catalog No. 106-41-36

1. Section No.		9	10	11	12	13	14	15	16
2. Compass Bearing		166	146	141	187	168	38	171	157
3. Gradient		~8	4	6	8	6	7	5	~7
4. Temperature:	Air	12	12	14	16	16	15	15	15
	Water	9	9	9	9	9	9	9	9
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	8	8	8	8	8	8	8	8
6. Streambottom Substrate	1	5	2	3	16	15	7	25	20
	2	15	10	17	25	25	20	30	30
	3	40	45	35	27	18	30	25	30
	4	25	30	30	20	5	15	15	16
	5	9	9	12	8	2	1	1	1
	6	--	--	--	--	--	--	--	--
	7	a) 1 b) 5	a) 1 b) 3	b) 3	a) 2 b) 2	a) 35	a) 25 b) 2	a) 1 b) 3	b) 3
7. ASA	a. percent	13	8	7	7	--	1	--	--
	b. quality	1	1	1	1	--	1	--	--
8. Water Width	a. channel	11	5.4	8.6	10.3	5.7	5.8	7.2	4.2
	b. water	9.5	4.2	5.6	5.7	4.6	3.9	5.7	3.3
	c. floodplain	1	2	1	1	1	1	1	1
9. Stream Pools	a. percent	60	35	30	25	15	15	15	20
	b. category	DS/SS	DS/SS	DS/SS	DS/SS	SF/DS	DS/SS	SF/SS	DS/SF
10. Rearing Area		65	40	35	30	15	15	15	20
11. Debris Loading		25	12	9	15	4	12	12	10
12. Potential Barriers		N	N	Y	Y	N	N	N	N
13. Enhancement/Rehab		N	N	Y	Y	N	N	N	N
14. Streambank Veg.		1-3,5	1,3,5	1-3,5	1-3,5	1-3,5	1,3,5	1-3,5	1,3,5
15. Upper Bank	a. Left	11%	17%	35%	22%	58%	47%	16%	24%
	b. Right	37%	75%	11%	22%	47%	37%	12%	22%
b. indic	Left	N	PV	N	N	N	N	N	N
	Right	N	N	N	PV	N	N	N	N
c. veg	Left	N	N	N	N	N	N	N	N
	Right	N	N	N	Y	N	N	N	N
16. Lower Bank	Left	GS	SS	GS	U	SS	SS	U	U
	Right	SS	SS	U	U	SS	SS	SS	U
17. Stab rating	Left	1(2)	2(1)	1(1)	1(3)	1(3)	1(3)	1(2)	2(2)
	Right	1(1)	1(3)	2(1)	2(1)	1(3)	1(3)	1(1)	1(2)
18. Stream Canopy Cover		1	1	1	1	1	1	3	2
19. Fish Species	Adult/Juv. SS	-/>25	-/>15	-/>25	-/>40				-/2
	CT							-/1	-/3
	Adult/Juv. DV		-/4	1/-					-/1
	PS								
	CS								
20. Sampling		N	N	N	Y	N	Y	N	N

21. Comments

Section 9: Gradients increasing through step pools.
22m; Passable 1.0 vertical meter high log induced falls.
62m; Clay-lower bank, right, 20m in extent.

Section 10: 40m; Passable debris jam.
90m; Passable debris jam.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 11: 4m; Channel braids.
21m; A 1.5 cfs, light tan colored, tributary traverses a unit and V-notch, entering the main stem via the left bank. Minimal spawning and rearing habitat. No canopy or fish observed. Copious debris.
50m; Instream log diverts flow through root wad along right bank. Potential low flow impass to PS and CS.

Section 12: 23m; 2m high debris dam. Potential barrier to PS and CS.

Section 13: 0m; Bedrock V-notch begins.
72m; A small tributary traverses a unit and enters the main stem via a right bank 2.0 vertical meters bedrock falls. Marginal rearing and spawning habitat. Copious debris; no fish observed.

Section 14: 17m; .75m cascade over a passable debris jam.
20m; V-notch ends.
40m; Channels fork at debris jam. Complete canopy to left bank. 10m wide buffer along right bank.
65m; Forks converge.

Section 15: Habitat change. Substrate primarily boulder/cobble with nearly continuous riffles.
81m; Passable debris jam. Channel forks. Left fork is primarily a flood channel.

Section 16: 10m; Instream blue-clay deposit along right bank; .5m by 2.5m.
20m; Channels converge.
51m; Channels diverge.
80m; Channels converge.
83m; Passable log debris jam.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Duck Creek Area A ADF&G Catalog No. 106-41-36

1. Section No.		17	18	19	20	21	22		
2. Compass Bearing		204	177	209	164	149	160		
3. Gradient		~7	~8	~7	~7	~7	20+		
4. Temperature:	Air	15	13	13	13	13	13		
	Water	9	9	9	9	9	9		
5. Water qual:	a. color	1	1	1	1	1	1		
	b. turbidity	1	1	1	1	1	1		
	c. pH	8	8	8	8	8	8		
6. Streambottom Substrate	1	10	20	29	30	25	25		
	2	15	27	29	25	25	25		
	3	15	20	28	30	30	20		
	4	14	9	9	12	15	10		
	5	1	1	1	1	2	1		
	6	--	--	--	--	--	--		
	7	a) 45	a) 20 b) 3	b) 4	b) 2	b) 3	a) 17 b) 2		
7. ASA	a. percent	--	--	--	--	--	--		
	b. quality	--	--	--	--	--	--		
8. Water Width	a. channel	9	5.7	3.4	4.3	5.2	8.1		
	b. water	6	3.5	1	3.9	3.1	5.8		
	c. floodplain	2	1	2	1	1	1		
9. Stream Pools	a. percent	35	15	15	15	20	15		
	b. category	SS/SF	DS/SS	DS/SF	SS/SF	SS/SF	SS/SF		
10. Rearing Area		35	15	15	10	10	10		
11. Debris Loading		6	10	12	20	25	20		
12. Potential Barriers		N	N	N	N	N	Y		
13. Enhancement/Rehab		N	N	N	N	N	N		
14. Streambank Veg.		1,3,5	1,3,5	1,3,5	1-3,5	1,3,5	1,3,5		
15. Upper Bank	a. Left	4%	22%	16%	26%	4%	12%		
	b. Right	2%	20%	2%	45%	35%	35%		
b. indic	Left	N	N	N	N	N	N		
	Right	N	N	N	N	N	N		
c. veg	Left	N	N	N	N	N	N		
	Right	N	N	N	N	N	N		
16. Lower Bank	Left	SS	U	U	SS	U	U		
	Right	GS	GS	GS	U	GS	SS		
17. Stab rating	Left	1(1)	2(2)	2(2)	1(2)	1(1)	1(1)		
	Right	1(1)	1(2)	1(2)	2(1)	1(1)	1(1)		
18. Stream Canopy Cover		2	2	3	2	2	3		
19. Fish Species	Adult/juv. SS	-/>20							
	" " CT	-/1							
	" " DV						-/1		
20. Sampling		N	Y	N	N	N	N		

21. Comments

Section 17: 36m; Bedrock cascade extends through 80m.
76m; Survey Area B enters the main stem via the right bank.

Section 18: 29m; Bedrock V-notch extends through 75m.
75m; Survey Area C enters the main stem via the right bank and provides 35% of the flow.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 19: 38m; Passable debris jam.
92m; V-notch begins.

Section 20: Unit borders right bank; buffer one tree thick.
15m; Passable debris jam.
77m; V-notch ends.

Section 21: Right bank buffer, five trees thick. Localized lower bank failures and copious logging slash throughout.
55m; Heavy blowdown; bank erosion extends through 87m.
87m; Passable debris jam.

Section 22: 10m; Passable debris jam.
32m; 2.0 vertical meter bedrock/debris falls. No holding pool; potential SS barrier. A 14 inch DV "mort" was observed in a dry channel below the barrier.
100m; Survey was terminated due to lack of habitat, fish sightings, and the aforementioned barrier.

A foot reconnaissance beyond end of survey revealed:
Gradients on the order of 16%.
Nearly continuous cascades over bedrock and boulders.
Heavy blowdown and continually eroding banks along the right bank.
Extensive debris jams, 30 and 45 meters beyond Section 22.
Overall enhancement potential slim due to lack of good habitat and the "debris reservoir" throughout the system.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Duck Creek Area B ADF&G Catalog No. 106-41-36

1. Section No.			1	2						
2. Compass Bearing			176	251						
3. Gradient			~2.5	~5						
4. Temperature:	Air		13	13						
	Water		10	10						
5. Water qual:	a. color		1	1						
	b. turbidity		1	1						
	c. pH		8	8						
6. Streambottom Substrate		1	--	15						
		2	10	20						
		3	20	20						
		4	40	20						
		5	10	15						
		6	--	--						
		7	a) 18 b) 2	a) 10						
7. ASA	a. percent		18	3						
	b. quality		1	1						
8. Water Width	a. channel		1.3	1.6						
	b. water		1	1.6						
	c. floodplain		1	1						
9. Stream Pools	a. percent		15	15						
	b. category		SS/SF	SS/SF						
10. Rearing Area			20	15						
11. Debris Loading			18	20						
12. Potential Barriers			N	N						
13. Enhancement/Rehab			N	N						
14. Streambank Veg.			1-3,5	1-5						
15. Upper Bank	a. Left		12%	52%						
	b. Right		4%	10%						
b. indic	Left		N	N						
	Right		N	N						
c. veg	Left		N	N						
	Right		N	N						
16. Lower Bank	Left		U	U						
	Right		GS	SS						
17. Stab rating	Left		1(1)	1(1)						
	Right		1(2)	1(1)						
18. Stream Canopy Cover			3	2						
19. Fish Species		SS	<20	--						
20. Sampling										

21. Comments

Tributary enters main stem; Section 17: 78m. Heavy debris and vegetation cover throughout. Moderate spawning and rearing habitat; SS fry common.

Section 1: 70m; Instream blue-clay deposit along left bank, .5m by 2m.

Section 2: 12m; Channel enters unit. 30m; Clay bank, .5m by 3m. 42m; Unit borders right bank. 70m; End of section. Gradient rapidly increasing and copious debris observed.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Duck Creek Area C ADF&G Catalog No. 106-41-36

1.	Section No.		1
2.	Compass Bearing		228
3.	Gradient		~4
4.	Temperature:	Air	13
		Water	8
5.	Water qual:	a. color	1
		b. turbidity	1
		c. pH	8
6.	Streambottom Substrate	1	--
		2	15
		3	30
		4	35
		5	15
		6	--
		7	c) 5
7.	ASA	a. percent	10
		b. quality	1
8.	Water Width	a. channel	3.6
		b. water	1
		c. floodplain	1
9.	Stream Pools	a. percent	10
		b. category	SF
10.	Rearing Area		10
11.	Debris Loading		20
12.	Potential Barriers		N
13.	Enhancement/Rehab		N
14.	Streambank Veg.		1,3,5
15.	Upper Bank	a. Left	4%
		b. Right	34%
	b. indic	Left	N
		Right	N
	c. veg	Left	N
		Right	N
16.	Lower Bank	Left	GS
		Right	SS
17.	Stab rating	Left	1(2)
		Right	1(3)
18.	Stream Canopy Cover		3
19.	Fish Species	SS	--
20.	Sampling		

21. Comments

Tributary enters main stem, Section 18: 75m; Channel is covered completely by a canopy of ferns, huckleberry, devil's club, and skunk cabbage.

Section 1: 29m; Dry channel along left bank.
80m; Subsurface flow for 7m.
92m; Forbes in streambed.

A foot reconnaissance beyond end of survey revealed flow becomes intermittently subsurface as it approaches a cutover unit and disappears altogether at 130m.

FISH SAMPLING FORM

Stream Name Duck Creek ADF&G Catalog No. 106-41-36 Date 9/18/82

Identify Survey Area Area A Water Temp. 9.5°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1050	1840	DV-2	--	Section 4: 70m; midstream log.
			SS	47mm	
			SS	50	
			SS	55	
			SS	55	
			SS	55	
			SS	45	
			SS	60	
			SS	45	
			SS	55	
			SS	57	
			SS	48	
			SS	55	
3	1354	1810	DV-9	--	Section 14: 40m; Right side, log jam.
			SS	104	
			SS	90	
			SS	68	
			SS	55	
			SS	45	
			SS	55	
2	1235	1305	--	--	Section 12: 9m; midstream log.
4	1530	1700	CT-1	--	Section 18: 90m; root wad left side.
			DV-4	--	
			SS	67mm	

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

LEVEL ONE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No escapement Data Available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Red Bay - West #11 3. Lat. 56°17'55"

2. ADF&G Catalog No. -- 3. Long. 133°20'30"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-17-9-29

8. Bay/Drainage Red Bay 9. Access 4 5 10. Camping 4

11. Present Land Use a. None 11b. Game trails

12. Historical Land Use None

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow ____ (method), ____ (width), ____ (depth), ____ (length), ____ (constant), ____ (time), estimated (grid), 1.5 cfs (flow)

16. Temp. Sensitivity Shallow depth, low velocity flow, muskeg source, bedrock substrate.

17. Beaver 5 18. Type aquatic Veg. 3 19. Density Aquatic Veg. 2

20. Adult Salmon N 21. Intertidal a. gradient 14%

b. bottom type % fines -- %

gravel small cobble -- %

large cobble/boulders/bedrock 100 %

c. ASA 0%

d. schooling Y

e. shellfish N

f. Anchorage off point to right of Duck Creek or in Duck Creek Estuary during high tides.

22. Comments

Low tide at time of survey.

21d. DS pools in Duck Creek intertidal area.

23. Investigators Murph

24. Date 9/16/82 25. Time 1630 (start) 1650 (end) 26. Weather 6

27. Photos

R-10 2600-3a (1/81)

GSA JUNEAU 1613

Red Bay - West #11

Section	Length (m)	Width (m)	ASA %	ASA Total	Section	Length (m)	Width (m)	ASA %	ASA Total
1I	100	1.0	3	$3m^2$					

Red Bay West #11

1. Approximately 40 Meters Upstream From Tree Line Showing Typical Habitat.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Red Bay - West #11 ADF&G Catalog No. --

1.	Section No.		11
2.	Compass Bearing		79
3.	Gradient		.5
4.	Temperature:	Air	12
		Water	9.5
5.	Water qual:	a. color	1
		b. turbidity	1
		c. pH	7.8
6.	Streambottom Substrate	1	--
		2	--
		3	--
		4	22
		5	30
		6	5
		7	a) 40 c) 3
7.	ASA	a. percent	3
		b. quality	2
8.	Water Width	a. channel	2
		b. water	1
		c. floodplain	3
9.	Stream Pools	a. percent	75
		b. category	SS
10.	Rearing Area		50
11.	Debris Loading		2
12.	Potential Barriers		N
13.	Enhancement/Rehab		N
14.	Streambank Veg.		1-5
15.	Upper Bank	a. Left	3
		b. Right	3
	b. indic	Left	N
		Right	N
	c. veg	Left	N
		Right	N
16.	Lower Bank	Left	GS
		Right	U
17.	Stab rating	Left	1(2)
		Right	2(1)
18.	Stream Canopy Cover		2
19.	Fish Species		
20.	Sampling		N

21. Comments

0m; Flow is over vertical marble face (a potential barrier at low tide which is eliminated at high tide.

0-40m; 90% bedrock substrate with sand/gravel scattered on top.

40-100m; Stream channel becomes a narrow slough in small muskeg area with sand/gravel/muck spawning in riffles. Flow continues into timbered area with similar habitat. Very shallow flow: 4-10cm deep.

FISH HABITAT - MARINE SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No Escapement Data Available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Red Bay - West #10 3. Lat. 56°17'50"

2. AH&G Catalog No. -- 3. Long. 133°20'25"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-17-9-29

8. Bay/Drainage Red Bay 9. Access 4 5 10. Camping 4

11. Present Land Use a. None 11b. Very dense brush & debris

12. Historical Land Use 20 year old A-frame logging on left side of creek bank.

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow ____ (method), ____ (width), ____ (depth), ____ (length), ____ (constant), ____ (time), estimated (grid), 1.5 cfs (flow)

16. Temp. Sensitivity Muskeg source.

17. Beaver 5 18. Type aquatic Veg. 1,2,4 19. Density Aquatic Veg. 2

20. Adult Salmon N 21. Intertidal a. gradient 4%

b. bottom type % fines 5 %

gravel small cobble 5 %

large cobble/boulders/bedrock 90 % (80% bedrock)

c. ASA 0

d. schooling Y

e. shellfish N

f. Anchored off beach at mouth of stream.

22. Comments
21d. Duck Creek/Red Bay Estuary at mouth of creek.

23. Investigators Murph

24. Date 9/16/82 25. Time 1430 (start) 1550 (end) 26. Weather 3

27. Photos

R-10 2600-3a (1/81)

GSA GENERAL 1413

Red Bay West #10

1. Intertidal Zone Looking Downstream (High Tide) to Red Bay.

2. Upper Intertidal Zone Looking Upstream at Tree Line. Note Bedrock Outcrops.

Red Bay West #10

3. Typical Stream Habitat Below Beaver Dams. Note Heavy Debris Loading.

4. End of Survey. The Last and Largest of a Series of Three Beaver Dams. Photo Shows Right Side of Dam and Part of Impoundment.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Red Bay - West #10 ADF&G Catalog No. --

1. Section No.			1I	2						
2. Compass Bearing			161	214						
3. Gradient			12	10						
4. Temperature:	Air		12.5	12.5						
	Water		9	9						
5. Water qual:	a. color		1	1						
	b. turbidity		1	1						
	c. pH		7.8	7.8						
6. Streambottom	Substrate	1	2	--						
		2	5	--						
		3	5	5						
		4	15	10						
		5	25	15						
		6	5	50						
		7	*	*						
7. ASA	a. percent		0	0						
	b. quality		--	--						
8. Water Width	a. channel		3.8	1.5						
	b. water		3.8	1.0						
	c. floodplain		3	2						
9. Stream Pools	a. percent		10	90						
	b. category		SF	DS/SF						
10. Rearing Area			5	70						
11. Debris Loading			80	25						
12. Potential Barriers			N	Y						
13. Enhancement/Rehab			N	N						
14. Streambank Veg.			5	1,3-5						
15. Upper Bank	a. Left		0	19						
	b. Right		0	15						
b. indic	Left		N	N						
	Right		N	N						
c. veg	Left		N	N						
	Right		N	N						
16. Lower Bank	Left		GS	U						
	Right		GS	GS						
17. Stab rating	Left		1(3)	1(1)						
	Right		1(3)	2(1)						
18. Stream Canopy Cover			3	3						
19. Fish Species			0	0						
20. Sampling			N	N						

21. Comments *a) 40 b) 1 c) 2 *a) 5 b) 10 c) 10

Section 1I: 0m; Survey began at grassline on right side.
19m; Treeline, end of intertidal zone.
0-40m; 100% bedrock substrate.

Large amounts of recent blowdown across the stream channel and several large root wads in flow channel causing channel migration and bank failures.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 2: 16m; Small recent beaver dam approximately 45 cm high and impounds a 1m deep reservoir. Not a barrier.
29m; Second recently constructed beaver dam about 30-45cm high.
40.5m; 1.5m high beaver dam with long, 1-1.5m deep impoundment; probable barrier.
76m; 2-2.5m high beaver dam in good repair; very deep pond with many dead and dying trees. Dam is of recent construction.

All dam construction appears to be related to recent blowdown in and over stream.

FISH HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No Escapament Data Available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Red Bay - West #9 3. Lat. 56°17'20"

2. AMAG Catalog No. -- 3. Long. 133°20'15"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-17-9-29

8. Bay/Drainage Red Bay 9. Access 4 5 10. Camping 4

11. Present Land Use a. None 11b. Game trails

12. Historical Land Use None

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow ____ (method), ____ (width), ____ (depth), ____ (length), ____ (constant), ____ (time), estimated grid, 1.5 cfs flow

16. Temp. Sensitivity E/W orientation, pond source.

17. Beaver 1 18. Type aquatic Veg. 1,3,4 19. Density Aquatic Veg. 2

20. Adult Salmon N 21. Intertidal a. gradient 10%

b. bottom type % fines 20 % c. ASA 0

gravel small cobble 20 % d. schooling Y

large cobble/boulders/bedrock 60 % e. shellfish N

f. Anchorage in cove and along shore for large and small boats.

22. Comments

21d. Schooling in cove below stream mouth.
No minnow trapping due to stream character.

Stream Evaluation:
The stream was steeply sloping in a narrow V-notch with falls and cascades over debris dams and bedrock/boulder substrate. Few pools (all were SF) and no observed rearing area except in beaver impoundments. All three dams were well established, stable and in good repair. Dam removal is NOT recommended due to lack of ASA and fish habitat.

23. Investigators Murph

24. Date 9/16/82 25. Time 1150 (start) 1405 (end) 26. Weather 3

27. Photos

R-10 2600-3a (1/81)

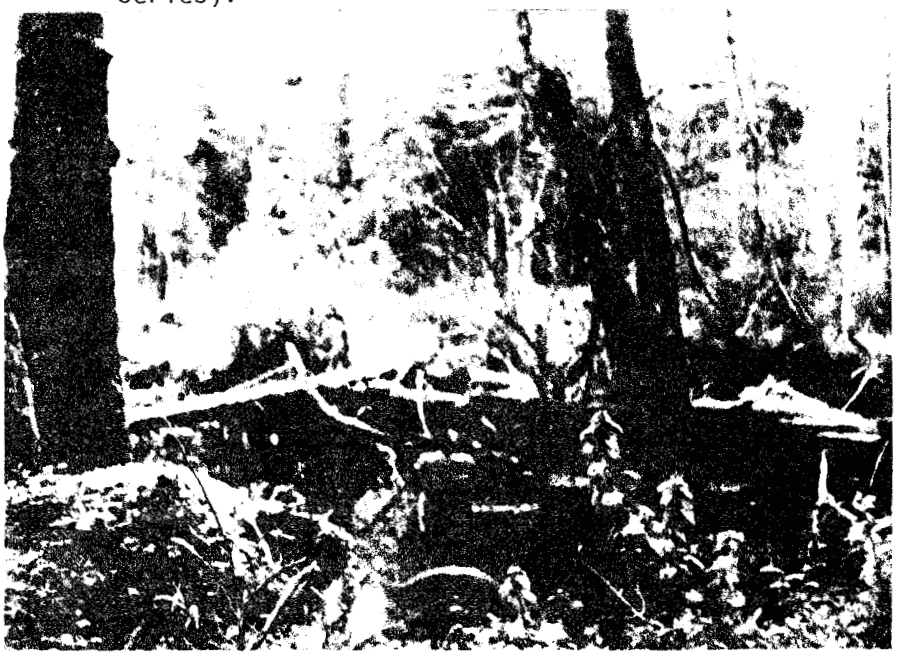
GSA FORM 1613

Red Bay West #9

1. Lower Intertidal Zone (High Tide) Looking Downstream from Tree Line out to Red Bay.

2. Upper Intertidal Zone Looking Upstream Where Flow Enters Tree Line.

3. Section 3; 24m: Beaver Dam (First in a Series).



4. Section 3: Impoundment of First Beaver Dam and a Second, Grass-covered Dam Approximately 5 Feet High and in Good Repair. Large Muskeg Area in Far Background.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Red Bay - West #9 ADF&G Catalog No. --

1. Section No.		1I	2	3					
2. Compass Bearing		200	193	181					
3. Gradient		13	12	8					
4. Temperature:	Air	12	12	12					
	Water	1	1	1					
5. Water qual:	a. color	1	1	1					
	b. turbidity	8	8	8					
	c. pH	20	20	10					
6. Streambottom Substrate	1	30	20	3					
	2	20	10	1					
	3	5	5	1					
	4	20	15	5					
	5	--	--	70					
	6	a) 2 b) 3	*	a) 10					
	7	0	0	0					
7. ASA	a. percent	--	--	--					
	b. quality	--	--	--					
8. Water Width	a. channel	5.7	4.5	2					
	b. water	5.7	3.9	1.75					
	c. floodplain	3	1	1					
9. Stream Pools	a. percent	5	20	70					
	b. category	SF	SF	DS					
10. Rearing Area		--	--	70					
11. Debris Loading		15	25	5					
12. Potential Barriers		Y	N	Y					
13. Enhancement/Rehab		N	N	N					
14. Streambank Veg.		5	1,3,5	1,3,5					
15. Upper Bank	a. Left	0	43	29					
	b. Right	0	66	12					
b. indic	Left	N	V-not	**					
	Right	N	V-not	N					
c. veg	Left	N	N	N					
	Right	N	N	N					
16. Lower Bank	Left	GS	U	SS					
	Right	GS	U	GS					
17. Stab rating	Left	1(2)	1(1)	1(2)					
	Right	1(2)	1(1)	1(2)					
18. Stream Canopy Cover		3	2	2					
19. Fish Species		0	0	0					
20. Sampling									

21. Comments *a)25b)3c)2 ** Steep slope

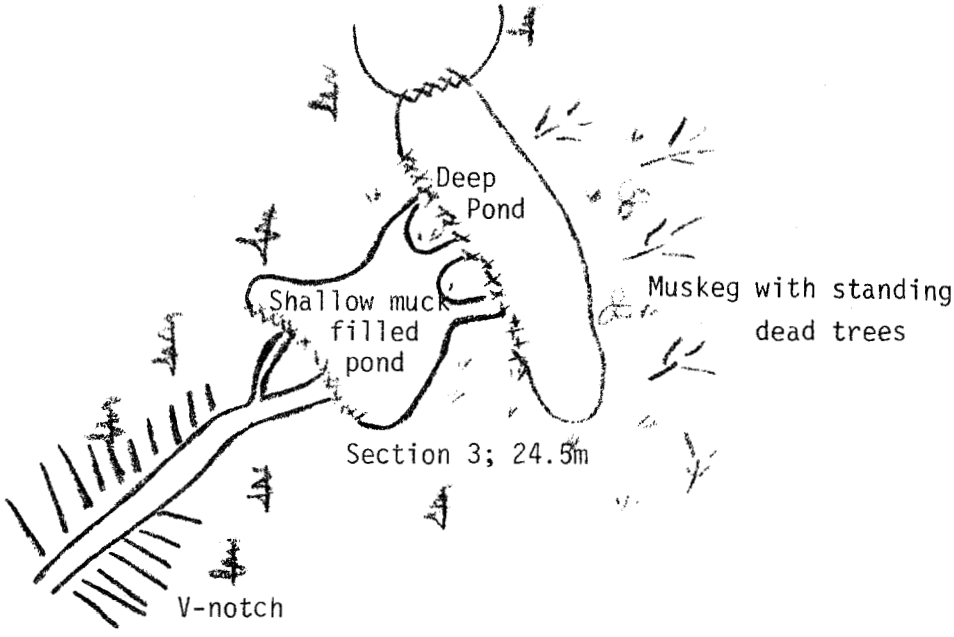
Section 1I: 0m; Edge of grassline in intertidal zone.
20m; Treeline, end intertidal zone. Inside the treeline the stream enters a V-notch with side slopes of 33% (right) and 57% (left).
99m; Debris dam which is a possible fish barrier due to lack of pooling below.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 2: 45-79m; Heavy debris in stream and a debris jam at 79m.
83m; End of V-notch; left bank remains steeply sloping.

Section 3: 24.5m; Beaver dam in good repair, approximately 2m high, shallow impoundment pond with muck substrate. A probable anadromous fish barrier due to lack of a pool below the dam for holding and jumping.
54m; Second beaver dam with a deep impoundment and muskeg behind pond. Dam is heavily overgrown with grasses and forbes, but in good repair.
99m; Third beaver dam.



[illegible] (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No Escapement Data Available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Red Bay - West #8 3. Lat. 56°17'20"

2. ADF&G Catalog No. -- 3. Long. 133°20'05"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-17-9-29

8. Bay/Drainage Red Bay 9. Access 4 5 10. Camping 4

11. Present Land Use a. none 11b. dense brush interference

12. Historical Land Use none

13. Stream Origin 3 5 6 14. Flow Stage 2

15. Flow _____, _____, _____, _____, _____, _____, estimated, <1 cfs
method width depth length constant time grid flow

16. Temp. Sensitivity _____

17. Beaver 5 18. Type aquatic Veg. 1 19. Density Aquatic Veg. 1

20. Adult Salmon N 21. Intertidal a. gradient 15%

b. bottom type % fines 60 % c. ASA 0

gravel small cobble 25 % d. schooling N

large cobble/boulders/bedrock 15% e. shellfish N

f. Deep water anchorage on point to left of cove.

22. Comments
Above the intertidal zone (inside treeline) dense brush over the stream channel. Flow is over moss covered bedrock for first 50m with a 12 to 15% gradient. No ASA or rearing habitat was observed. H_2O temperature: 7°C; Air temperature: 12.5°C; pH: 8.0. No fish sighted.

23. Investigators Murph

24. Date 9 /16 /82 25. Time 1100 start 1125 end 26. Weather 5

27. Photos _____

R-10 2600-3a (1/81)

CSA JUNEAU 1613

Red Bay West #8

1. Lower Intertidal Zone Looking Downstream.

2. Upper Intertidal Zone Looking Upstream. Note 10 Meters of Bedrock Which Extends Inside Tree Line Above Intertidal Zone.

LEVEL THREE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No Escapement Data Available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Red Bay - West #7 3. Lat. 56°17'20"

2. ADF&G Catalog No. -- 3. Long. 133°20'00"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-17-9-29

8. Bay/Drainage Red Bay 9. Access 4 5 10. Camping 4

11. Present Land Use a. none 11b. heavy brush interference

12. Historical Land Use none

13. Stream Origin 3 5 6 14. Flow Stage 2

15. Flow _____, _____, _____, _____, _____, _____, estimate, <.5 cfs
method width depth length constant time grid flow

16. Temp. Sensitivity None

17. Beaver 5 18. Type aquatic Veg. 1 19. Density Aquatic Veg. 1

20. Adult Salmon N 21. Intertidal a. gradient 8%

b. bottom type % fines 40 % c. ASA 0

gravel small cobble 50 % d. schooling N

large cobble/boulders/bedrock 10% e. shellfish N

f. anchorage on left side of cove

22. Comments

Stream Evaluation: Above the intertidal zone the stream has a 15% gradient over sand/gravel substrate with dense moss on rocks. Pools are connected by cascades and riffles in densely forested area. Heavy brush interference and blowdown debris in and over stream. No salmon habitat or ASA was observed. Water temperature 8°C; air temperature 13°C; pH 8.0.

23. Investigators Murph

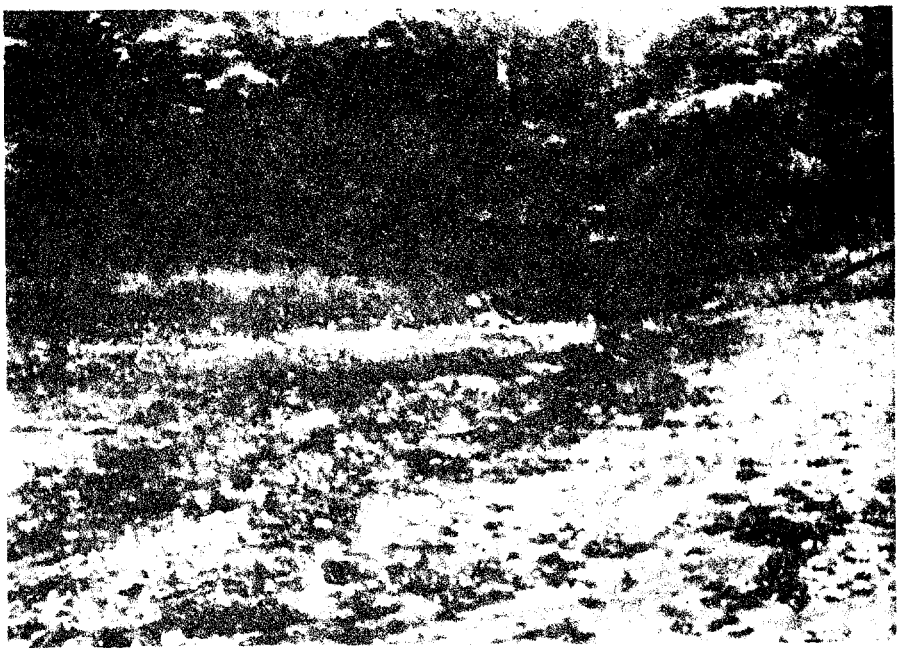
24. Date 9 /16 /82 25. Time 1020 start 1045 end 26. Weather 5

27. Photos

R-10 2600-3a (1/81)

CSA JUNEAU 1613

Red Bay West #7



1. Intertidal Zone Looking Upstream. Note Heavy Blowdown at Top of Intertidal Zone.

FIELD HOME - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A 2. Equipment X

3. Historical Fish Species No Escapement Data Available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Red Bay - West #3 3. Lat. 56°16'20"

2. ADF&G Catalog No. -- 3. Long. 133°20'35"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-17-9-27

8. Bay/Drainage Red Bay 9. Access 4 5 10. Camping 4

11. Present Land Use a. None 11b. None

12. Historical Land Use None

13. Stream Origin 3 5 6 14. Flow Stage 2

15. Flow _____, _____, _____, _____, _____, _____, estimated, <.5 cfs
method width depth length constant time grid flow

16. Temp. Sensitivity Shallow water depth, low velocity flow

17. Beaver 5 18. Type aquatic Veg. 2, 4 19. Density Aquatic Veg. 3

20. Adult Salmon N 21. Intertidal a. gradient 4%

b. bottom type % fines 60% c. ASA 0

gravel small cobble 30% d. schooling Y

large cobble/boulders/bedrock 10% e. shellfish N

f. Skiff anchored off rocky shoreline by creek mouth in deep water.

22. Comments

21d. In bay/estuary off mouth of creek

Stream Evaluation: Dense grass growing in the intertidal channel; muck substrate. The flow branches into 4 smaller streams in upper intertidal zone. The left 3 channels become "muskeg-like" seeps flowing out of riparian wetland areas with dense skunk cabbage in channel and muck/sand substrate. The channel on the right has the greatest flow of the 4 streams over sand/gravel substrate with inner gravel flow between pools. No fish or fish habitat observed.

23. Investigators Murph

24. Date 9 /15 /82 25. Time 1545 start 1610 end 26. Weather 2

27. Photos

R-10 2600-3a (1/81)

CSA JUNEAU 1613

Red Bay West #3

1. Upper Intertidal Zone Looking Upstream. Stream Enters Tree Line to Right of Photo Center.

2. Lower Intertidal Zone Looking Upstream.

FIELD TABLE - HABITAT SURVEY FORM (Parts 1 and 2)

Part 1 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.41.

1. Survey Areas A, B 2. Equipment X

3. Historical Fish Species No escapement data available.

4. Section Length 100m

Part 2 - Instructions for completing this part are found in FSH 2609.23 R-10 Section 330.42.

1. Stream Name Little Creek 3. Lat. 56°16'15"

2. ADF&G Catalog No. 106-41-35 3. Long. 133°20'50"

4. Agency Unit 05 5. Mgmt Area 532 K 6. USGS Map No. Petersburg B-5

7. Aerial Photo No. 71-17-9-28 71-16-9-42

8. Bay/Drainage Red Bay 9. Access 1, 4, 6 10. Camping 4

11. Present Land Use a. Upland logging road 11b. Game trails

12. Historical Land Use None

13. Stream Origin 3 4 5 6 14. Flow Stage 2

15. Flow Em (method), 4.25 (width), .2 (depth), 11. (length), .8 (constant), 42.3 (time), -- (grid), 0.18m^3/sec (flow) 6.3 cfs

16. Temp. Sensitivity Beaver impoundments.

17. Beaver 2 18. Type aquatic Veg. 2 19. Density Aquatic Veg. 3

20. Adult Salmon Y 21. Intertidal a. gradient 1.0

b. bottom type % fines 30 %
gravel small cobble 60 %
large cobble/boulders/bedrock 10 %

c. ASA Poor

d. schooling High Tide/Red Bay

e. shellfish Clams/Dungeness

f. Anchorage in Red Bay; extensive mud flat near mouth.

22. Comments
Several clams and dungeness crabs were sporadically observed throughout the intertidal zone.
A moderately productive stream. Good spawning and rearing habitat, in the first three sections, gives way to a bedrock V-notch. Above the V-notch, rearing is good but ASA is spotty and isolated. Upper survey area is greatly influenced by beaver activity, past and present. Silver salmon fry were moderate throughout but appeared to be blocked by the 3m high beaver dam demarcating survey's end. Habitat beyond survey's end is unsuitable for anadromous and to a large degree, resident fish.

23. Investigators Mickowski/Merrigan

24. Date 9/15/82 (9 16 82) 25. Time 1315 (start 0900) 1800 (end 1500) 26. Weather 3, 5

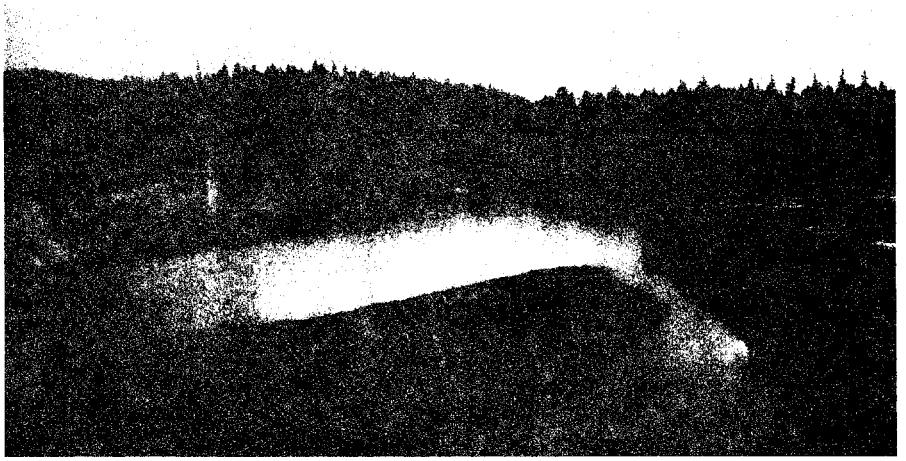
27. Photos

R-10 2600-3a (1/81)

GSA GENERAL 1613

Little Creek
106-41-35

1. Copious Interstitial Fines Result in Poor ASA Throughout the ITZ.



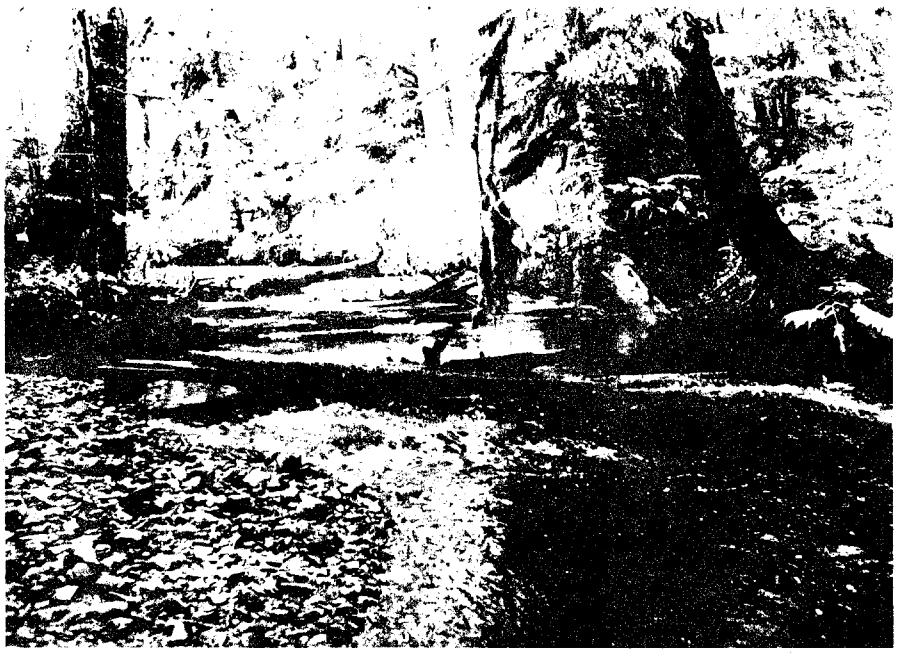
2. Downstream View of Lower ITZ Extending Toward Red Bay.

Little Creek
106-41-35

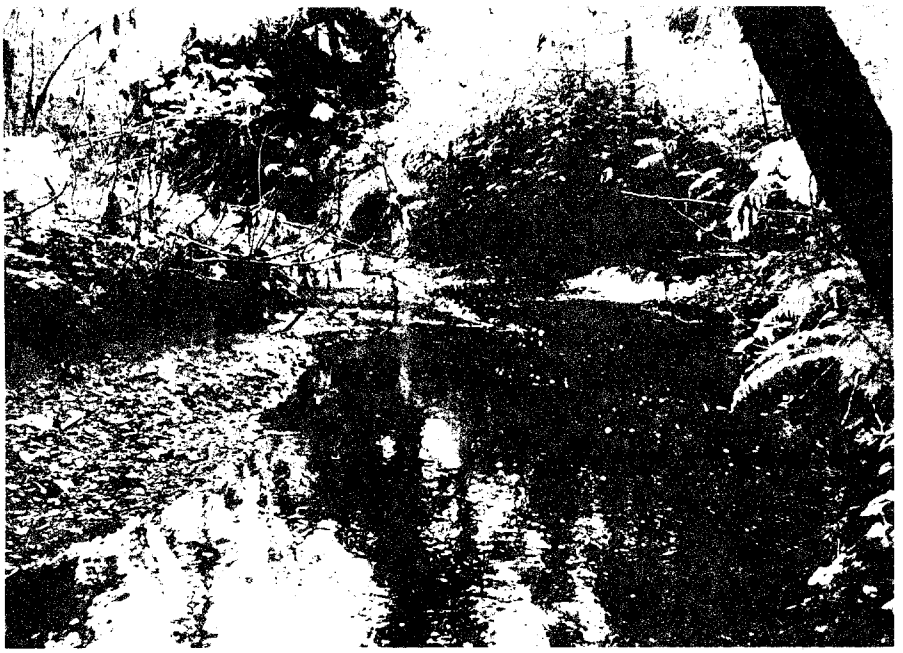
3. Section 5: Steep Gradient, Bedrock/ Boulder Substrate and Marginal, Isolated Rearing Habitat Characterize a Narrow V-notch That Extends From Section 4 Through Section 6.

4. Section 6: Narrow Incised V-notch Culminates in a Vertical Meter Bedrock Falls. Rearing Silver Salmon Fry Were Common Above This "Potential Low Flow Barrier".

Little Creek
106-41-35



5. Section 7: Above Notch, Gradient Moderates and Cobble Riffles, Instream Log Induced Pools, and Undercut Banks Provide Good Rearing and Spawning Habitat.



6. Section 10: Area "B" Enters the Main Stem Via the Right Bank, Flowing 100 m From an Extensive Beaver Impoundment.

Little Creek
106-41-35

7. Section 17: A 3.0 m High by 60 m Wide Beaver Dam Forms an Extensive Impoundment and Represents a Potential Barrier.

Little Creek
106-41-35

Section	Length (m)	Width (m)	ASA %	ASA Total
Area A				
1	100	4.5	20	90
2	100	4.4	20	88
3	100	6.1	35	213.5
7	100	7.8	10	78
8	100	4.2	13	54.6
9	100	7.2	10	72
10	100	7.6	15	114
11	100	2.8	5	14
12	100	2.2	10	22
13	100	1.0	3	3
15	100	4.1	5	20.5
Total				769.6m^2

Section	Length (m)	Width (m)	ASA %	ASA Total
Area B				
1	100	2.4	7	16.8m^2

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Little Creek Area A ADF&G Catalog No. 106-41-35

1. Section No.		1	2	3	4	5	6	7	8
2. Compass Bearing		298	213	216	291	298	251	249	346
3. Gradient		1.5	~6	~4	~8	~10	~25	2	3
4. Temperature:	Air	16.5	16.5	16	16.5	16	16	16	17
	Water	10	10	10	10	10	10	10	11
5. Water qual:	a. color	1	1	1	1	1	1	1	1
	b. turbidity	1	1	1	1	1	1	1	1
	c. pH	8	8	8	8	8	8	8	8
6. Streambottom Substrate	1	5	--	3	5	10	15	2	3
	2	20	5	10	18	10	10	10	7
	3	40	32	40	12	5	10	30	40
	4	25	30	32	10	4	5	30	25
	5	8	25	10	5	1	--	7	7
	6	0	0	0	0	0	0	0	0
	7	b) 2	a) 5 b) 3	a) 2 b) 3	a) 50	a) 70	a) 60	a) 20 b) 1	a) 15 b) 3
7. ASA	a. percent	20	20	35	--	--	--	10	13
	b. quality	1	1	1	--	--	--	1	1
8. Water Width	a. channel	15	6.5	7.6	4.8	2.2	6.8	10	12
	b. water	4.5	4.4	6.1	4.6	2.2	6.8	7.8	4.2
	c. floodplain	3	2	3	2	1	1	1	1
9. Stream Pools	a. percent	25	30	40	10	10	10	30	25
	b. category	SS/SF	SS/DS	DS/SS	DS/SS	SF/SS	DF	SS/DS	SS/DS
10. Rearing Area		30	35	45	15	10	10	35	30
11. Debris Loading		6	20	20	2	4	3	9	7
12. Potential Barriers		N	N	N	N	N	Y	N	N
13. Enhancement/Rehab		N	N	N	N	N	N	N	N
14. Streambank Veg.		1-3,5	1-3,5	1-3,5	1,3,5	1,3,5	1,3,5	1,3,5	1-3,5
15. Upper Bank	a. Left	5	2	2	14	60	37	3	10
	b. Right	15	10	0	65	40	25	5	35
b. indic	Left	N	N	N	N	V-not	V-not	N	N
	Right	N	N	N	N	V-not	V-not	N	N
c. veg	Left	N	N	Y	N	N	N	N	N
	Right	N	N	N	N	N	N	N	N
16. Lower Bank	Left	GS	U	U	SS	SS	U	GS	U
	Right	U	U	GS	U	SS	SS	GS	GS
17. Stab rating	Left	1(1)	2(1)	2(1)	2(1)	1(3)	1(3)	1(1)	1(1)
	Right	2(2)	2(2)	2(2)	2(3)	1(3)	1(3)	1(1)	1(3)
18. Stream Canopy Cover		3	1	2	3	3	2	2	2
19. Fish Species	fry/adult SS	15/2	15/1	50+/ -	N	N	2/-	12/-	N
	juv/adult CT	1/-	N	1	N	N	N	-/1	N
	juv/adult DV	-/15	N	N	N	N	N	3/-	N
	CS	1	N	N	N	N	N	N	N
	PS	N	1	N	N	N	N	N	N
20. Sampling		Y	N	N	Y	N	Y	N	N

21. Comments
One spawned-out, dead CS observed in intertidal zone 5m below intertidal/stream interface.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 1: 0m; Intertidal/stream interface.
Overall, excellent pool/riffle ratio. 2 adult SS and 1 adult CS carcass observed.
28m; Small muskeg seep, approximately 1m wide and 1 cfs enters main stem via right bank. Substrate heavily silted, instream forbs common. Limited rearing and no spawning habitat. No fish observed.

Section 2: 1 PS carcass and 1 adult SS observed. Extensive blowdown generated "fines" throughout.
18m; Stream forks into two equally sized channels around an "island" amidst heavy blowdown.
25m; Blownout beaver dam, left fork .
27m; Left fork.
A .5m wide, 1 cfs, 5% gradient stream with cobble substrate enters main stem via the left bank. No spawning, limited rearing potential. No fish observed.
90m; Forks converge.
93m; Stream forks around two, 30m wide forested "islands" amidst heavy debris. Right fork is primarily gravel riffles, providing excellent ASA. Left fork is characterized by heavy debris and deep slow pools.

Section 3: 40m; Left fork. .5m high, log debris "cascades".
53m; Forks converge.

Section 4: 42m; Enter V-notch.
45m; Habitat change. 1.6m high by 8m long bedrock cascade with terminal plunge pool containing several adult DV. Gradient increasing.

Section 5: 6m; Bedrock cascade; 1m high by 4m long.
55m; 1.3m high bedrock cascade.

Section 6: 1m; A .5m wide, .5 cfs, 7% gradient stream with large cobble substrate enters main stem via the right bank. No spawning, limited rearing potential. No fish observed.
60m; Bedrock cascade; 1.5m high by 4m long.
75m; 4-5m vertical bedrock falls with long, deep plunge pool. Potential height and velocity barrier. A dry, "step-like" boulder chute located along the right bedrock wall may provide passage around "barrier falls" during high flows.
86m; V-notch ends.

Section 7: Habitat change; decreasing gradient and bedrock exposure. Pools, rearing habitat, and debris increasing. Approximately 12 SS fry were observed, indicating SS escapement does occur above the Section 4-6 V-notch.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Little Creek Area A ADF&G Catalog No. 106-41-35

1. Section No.		9	10	11	12	13	14	15	
2. Compass Bearing		310	296	241	256	293	156	90	
3. Gradient		2	2.5	3	4.5	3.5	4.5	~6	
4. Temperature:	Air	17	17	14.5	14	13	13	13	
	Water	11	11	10	9.5	9	9	9	
5. Water qual:	a. color	1	1	1	1	1	1	1	
	b. turbidity	1	1	1	1	1	1	1	
	c. pH	8	8	7.7	7.7	7.7	7.7	7.7	
6. Streambottom Substrate	1	--	--	--	2	5	5	--	
	2	5	3	7	5	23	18	3	
	3	45	50	45	50	35	35	18	
	4	30	32	30	30	25	25	12	
	5	8	8	15	10	10	15	10	
	6	0	0	--	--	--	--	45	
	7	a) 10 b) 2	a) 5 b) 2	b) 3	b) 3	b) 2	b) 2	b) 2 c) 10	
7. ASA	a. percent	10	15	5	10	3	--	5	
	b. quality	1	1	1	1	2	--	1	
8. Water Width	a. channel	7.4	7.8	4.4	3	3.7	1.7	4.3	
	b. water	7.2	7.6	2.8	2.2	1	.5	4.1	
	c. floodplain	1	1	1	1	1	1	1	
9. Stream Pools	a. percent	20	20	25	30	15	30	60	
	b. category	DS/SS	DS/SS	SS	SS	SS	DS/SS	DS/SS	
10. Rearing Area		25	30	20	35	20	35	60	
11. Debris Loading		9	9	10	18	5	7	15	
12. Potential Barriers		N	N	N	N	N	N	Y	
13. Enhancement/Rehab		N	N	N	N	N	N	N	
14. Streambank Veg.		1,3,5	1-3,5	1-3,5	1-3,5	1-3,5	1,3,5	1-3,5	
15. Upper Bank	a. Left	12	8	24	26	7	12	11	
	b. Right	10	12	11	4	5	58	24	
b. indic	Left	N	N	N	N	N	N	N	
	Right	N	N	Y	PV	N	Y	N	
c. veg	Left	N	N	N	N	N	N	N	
	Right	N	N	N	N	N	N	N	
16. Lower Bank	Left	U	U	U	U	U	GS	U	
	Right	SS	U	U	GS	U	SS	SS	
17. Stab rating	Left	2(1)	1(1)	2(1)	1(1)	1(1)	2(1)	1(1)	
	Right	1(1)	2(2)	2(1)	2(2)	1(1)	1(3)	1(1)	
18. Stream Canopy Cover		3	2	2	3	3	2	2	
19. Fish Species	fry/adult SS	15/-	15/-	6+/-	10+/-	6/-	6/-	6+/-	
	juvenile DV				4				
20. Sampling		N	N	Y	N	N	N	N	

21. Comments

Section 9: Instream blue clay deposit, 4m by 2m, left bank.

Section 10: Section is 131.5 meters long. Area B enters main stem via the right bank at Section's end. Instream blue clay deposit; 2m by 2m, right bank.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

21. Comments Cont.

Section 11: Channel runs NW along the large beaver impoundment "headwaters" of area B and is fed by numerous small seeps from the reservoir.

Section 12: 57m; a 1m wide, 1.5 cfs, 3% gradient stream with cobble substrate enters main stem via the right bank. Patchy ASA, frequent blue clay deposits, and extremely low flow precluded an in-depth survey. Four juvenile DV and two SS were observed near mouth.
75m; Instream blue clay deposit, 1m by 3m, right bank.
85m; Instream blue clay deposit, 1m by 1m, left bank.
92m; Instream blue clay deposit, 2m by 1m, right bank.

Section 13: Channel completely "brushed" over with herbaceous and forb growth. Large cobble/boulder association common.

Section 14: 82m; Inactive beaver dam in good repair, 1m high by 11m across. A small section of the dam along the left bank has blown out permitting unrestricted fish migration. SS fry observed in impoundment.

Section 15: 1m; Ephemeral spring flows 13 "surface" meters to enter main stem via the right bank.
30m; Inactive beaver dam in good repair, 1m high by 25m across. Impoundment floods alder stand and grass flats. SS fry observed in impoundment.
40m; Active beaver dam in good repair, 1m high by 4m across.
72m; Inactive beaver dam in good repair, .5m high by 14m across.
90m; A .5m wide, less than 1 cfs, 2% gradient stream with cobble/gravel substrate enters impounded area via the right bank. Patchy ASA was observed in the first 30 meters. Increasing gradient and unsuitable substrate precluded survey. No fish were observed.
99m; Inactive beaver dam in good repair, 3m high by 60m wide forms an extensive impoundment/marsh system and represents a probable anadromous barrier.

A foot reconnaissance was conducted beyond Section 15 and the following was noted:

Channelized flow feeding the impoundment enters the right bank of the reservoir 40 meters above the dam.

Two traps set in channel, 45 and 50 meters above the impoundment, yielded no catch; however, 3 juvenile CT were sighted.

Stream forks at 95 meters crossing under the mainline logging road #1000 via two small unobstructed culverts.

Both channels are primarily composed of cobbles/boulders. No spawning or rearing habitat was observed.

LEVEL THREE - HABITAT SURVEY FORM (Part 3)

Stream Name Little Creek Area B ADF&G Catalog No. 106-41-35

1.	Section No.		1
2.	Compass Bearing		314
3.	Gradient		2
4.	Temperature:	Air	12
		Water	10
5.	Water qual:	a. color	1
		b. turbidity	1
		c. pH	7.7
6.	Streambottom Substrate	1	--
		2	2
		3	50
		4	30
		5	17
		6	--
		7	b) 1
7.	ASA	a. percent	7
		b. quality	1
8.	Water Width	a. channel	3
		b. water	2.4
		c. floodplain	1
9.	Stream Pools	a. percent	25
		b. category	SS/DS
10.	Rearing Area		30
11.	Debris Loading		11
12.	Potential Barriers		N
13.	Enhancement/Rehab		N
14.	Streambank Veg.		1-3,5
15.	Upper Bank	a. Left	0
		b. Right	0
	b. indic	Left	N
		Right	N
	c. veg	Left	N
		Right	N
16.	Lower Bank	Left	GS
		Right	U
17.	Stab rating	Left	2(1)
		Right	2(1)
18.	Stream Canopy Cover		3
19.	Fish Species	fry/adult SS	15/1
		juv/adult CT	6/1
		juv/adult DV	1/-
20.	Sampling		Y

21. Comments

Area B enters the main stem via the right bank at 00 meters, Section 11. Approximately 45% of the total flow, channel terminates at and drains an extensive beaver impoundment. The dam is several hundred meters in extent, in good repair, and varies in height from 1.3-2.6 meters. Orientation of the reservoir is such that both Area A and B run along diverging sides of the structure, receiving numerous "uninhabitable" feeders. Coho fry were observed in pools at the base of the dam, but no fish were sighted within the impoundment itself.

FISH SAMPLING FORM

Stream Name Little Creek Area A ADF&G Catalog No. 106-41-35 Date 9/15/82

Identify Survey Area A Water Temp. 10°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1400	1750	1 SS 1 CT 15 CO	80 -- --	Trap set in Section 1; 93m, along left bank near log.
2	1500	1742	--	--	Trap set in Section 4, 62m along left bank.
3	1620	1735	2 SS	45, 55	Trap set in Section 6; 90m near midstream log.
4	1132	1433	8 SS 1 CT 5 DV	85, 79, 42, 44, 49, 45, 44, 45 -- --	Trap set in Section 11; 80m along right undercut bank.
5	1315	1354	--	--	Trap set in channel, under root mass, approximately 70m beyond Section 15.
6	1355	1420	--	--	Trap set in channel, under debris pile, approximately 80m beyond Section 15.

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

FISH SAMPLING FORM

Stream Name Little Creek ADF&G Catalog No. 106-41-35 Date 9/16/82

Identify Survey Area Area B Water Temp. 10°C Bait Used Liverworst

Trap	Time In	Time Out	Species	Length	Comments
1	1040	1110	SS DV	82 --	Trap set in Section 1; 95m, near midstream log in pool.

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

APPENDIX A

Level III Fisheries Surveys Handbook

330 - Level Three is a field survey. It is designed to provide adequate baseline and summary information for managment of unmanipulated habitats. It provides both measured and estimated information of individual parameters, as well as judgmental summaries on certain aspects of the stream environment. The emphasis is on efficient use of time so the fish habitat in areas where we anticipate low levels of land use, such as those of wilderness status or equivalent to land use designations I or II can be surveyed in a timely manner.

330.1 - Objective of Level Three is to meet management needs for streams not proposed for manipulation by major land use activities or where time factors and priorities do not allow more intensive surveys. The survey is designed to be accomplished quickly and efficiently with a minimum of equipment and field time yet still provide baseline information about the fisheries habitat, potential high-risk areas to development and identification of possible enhancement sites.

330.2 - Standards of Level Three are at a minimum for quantitative data and a maximum for qualitative data.

Specific standards for the procedure to accomplish Level Three are listed below. These standards should be interpreted to mean that at the minimum, data collected in the survey shall be at least as accurate as specified, and at least all the parameters listed should be included.

1. Major types of streamside vegetation and fish species in the stream will be collected and identified visually to species by a knowledgeable observer.

2. Volume of streamflow will be measured with a method at least as reliable as the Embody Method.

3. Quantity of aquatic vegetation in the stream will be estimated visually.

4. The source of water, bank stability along the stream, stream bottom material, water turbidity, streamflow stage, water color, barriers to upstream migration, water impoundments, will be subjectively determined.

5. Quality and area of salmonid spawning gravel will be estimated subjectively.

6. Juvenile salmon rearing area, pool riffle ratio, and stream cover will be included.

7. Date and climatic conditions at time of survey will be included.

8. Water and air temperature will be measured to nearest degree C.

9. pH will be measured to the nearest half unit.

10. Stream gradient will be measured to the nearest 1/2 percent.

11. Water width will be measured to the nearest 1/2 meter with a range finder or tape measure.

12. A system of photographs will be established for the stream.

13. A schematic map will be drawn for the stream.

14. A narrative describing sport fish potential, wildlife observations, land use influences, accessibility and enhancement potentials will be written.

330.3 - Equipment Needed

Level Three Survey Forms 2600-3a, 3b and 2600-5b
Section 330.4 of the handbook reproduced on waterproof paper
Field notebook
Mechanical pencils
Maps, USGS quads and aerial photographs
50 Meters tape measure
Abney level or clinometer
Centigrade Thermometer
Camera with film
Compass
Minnow traps (6) and bait
Tricaine methanesulfanate
Dip net
Fish measuring ruler (metric)
Range finder
Pocket altimeter
pH meter
Scientific sampling permit

330.4 - Procedure. There are several phases of data collection for Level Three survey: preplanning before starting field work; field work broken down into data that is entered once for each survey area and date that is entered once at least every 100 meters along the stream; and office work to be done after the field work.

330.41 - Preplanning and data collection before starting field work includes the following: Make required entries once for every survey area on the first part of form 2600-3a (1/81).

1. Survey Areas — If a stream system has major tributaries entering the main stream, the survey can be divided into survey areas (at the discretion of the biologist conducting the survey). The main stream is designated as "A" and major tributaries as "B", "C", "D", etc., going upstream as tributaries enter the main stream. Before starting, the survey areas should be specified. Record yes or no if survey areas are used. If yes, specify by sketching a map on back of form and labeling areas.

2. Equipment — The field crew should double-check equipment to make sure everything is there and in working order. Date when check is made.

3. Historical Fish Species — If a Level Two survey hasn't been done for the stream, it will be necessary to check ADF&G escapement records to determine which species are known to occur in the stream. Enter appropriate code from the key. Other information relative to Level Two survey should be accumulated whenever you come across it.

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	WH - whitefish
SB - stickleback	BU - burbot
	OT - other

4. Section Length — Various items of data are collected at 100 meter intervals or less (at the discretion of the biologist conducting the survey) along the entire survey area. Record here the length of sections used in the survey.

330.42 - Data entered once per survey area. The following items should be recorded on the second part of form 2600-3a (1/81) while at the stream once for each survey area.

Item	Explanation
1. Stream Name	a. Record the stream name as listed on the map or as commonly known. b. Identify survey area if designated.
2. ADF&G Catalog No.	Enter appropriate State Fish and Game Catalog number 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.
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 appropraite agency subunit code. (List of management area codes to be developed and distributed by each agency).
6. USGS Map Number	Identify number of USGS Quadrangle containing the system.
7. Aerial Photo Number	If an aerial photo is used, record the flight line, roll, photo, year and grid.
8. Bay/Drainage	Include complete name of drainage system or bay containing the stream.

FSH 1/81 R-10 TRANS

9.	Access	Enter up to two codes from this list: 1-satisfactory for modern car 2-appropriate for pick-up 3-appropriate for 4-wheel drive 4-available by boat 5-available by air 6-trail for horse or foot 7-no trail to area (undeveloped).
10.	Camping Facilities	Enter appropriate code which may influence use on this part of the stream. "Private Organization" would include both those provided by State and Federal organizations. 1-private organization (lodge or motel) 2-government campground 3-public cabin (Gov't owned cabins rented to public) 4-undeveloped.
11.	Present Land Use	a. Note any activities associated with man's present use or planned use such as logging, minimg, roads, dumpsites, etc. b. Note any game or human trails and the amount of brush interference while surveying.
12.	Historical Land Use	Note any evidence of historical land use such as logging (and approximate year), minimg, abandoned cannery sites, etc.
13.	Stream Origin	Enter appropriate codes describing source of water at that point on the stream. If other is specified note source in comments. 1-lake 4-muskeg 2-glacial 5-surface runoff 3-groundwater 6-subsurface runoff 7-other
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.	Flow Measurement	Measure with flow meter or Embody Method. (See glossary for explanation of Embody Method). Take measurement where physical conditions are appropriate somewhere within one survey area. If the Embody is used, record "E", water width, depth, length, constant, time, and location where measurement is taken by using the aerial photo grid number (form 2600-5a). If a flow meter is used, record "Y" and the amount to the nearest 1/10 cubic meter. If stream is too large to physically measure (i.e., you cannot stand in the stream) then estimate flow or get it from hydrological records. Indicate on the form if estimated or cite the records.
16.	Temperature Sensitivity	Comment briefly as to whether the stream appears temperature sensitive based on whether it is an east-west oriented stream, influenced by muskeg or lake source, bedrock stream bottom, shallow water depth or low velocity.
17.	Beaver	Enter appropriate code from key: 1-active beaver dam 2-inactive beaver dam, good repair 3-inactive beaver dam, poor repair 4-old dam, little effect on stream 5-no beaver activity 6-beaver activity but no dams
18.	Type of Aquatic Vegetation	Enter appropriate code from key: 1-mosses 2-filamentous algae 3-periphyton 4-vascular plants
19.	Density of Aquatic Vegetation	Enter appropriate code from key: 1-dense (abundant vegetation on rocks or over the entire area) 2-medium (1/2 of all rocks with vegetation 3-sparse (vegetation seldom observed).

20.	Adult Salmonids	Mature salmon and trout are counted when in schools or when dispersed on the spawning gravels. Tabulate numbers by stream section in 330.43 No. 19. The presence of fish bones are very important where noted during the survey, especially for those streams with no past escapement record. Record yes or no if there were adult salmon.
21.	Intertidal Zone	If there is an intertidal zone within the survey area take following data: a. Gradient in the intertidal zone measured with a clinometer or abney level. Record to nearest 1/2 percent. b. Bottom type: estimate; % fines (2mm or smaller) % gravel/small cobble (2-128mm or up to 5 1/2") % large cobble/boulders/bedrock (128mm+ or 5 1/2"+) 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.
24.	Date	Enter numerical designation for Month/Day/Year.
25.	Time	Record military times of when field parts of survey start and end.

26. 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

27. Photos — At least one black and white print photo is required for every survey area and at every readily identifiable change in habitat type, unique situation, barrier falls, and the intertidal area. Photos should be taken facing upstream unless specifically noted in the photo records.

Since it is impossible to look back at several rolls of film and properly lable them, prior identification is needed. Make a label with the date, stream name, survey area, and section number written on it and photograph it in the frame immediately proceeding the frames of the stream. In addition record each photo in a notebook. Number each roll with a number on the film canister before use. As an example, the first roll of film being used by Jim Boyle in 1979 would be labeled JD-79-1, the second JD-79-2, etc. Under this number in his notebook he would list each photo as it's being taken and identify date, stream name, survey area, and section number.

Record the roll number and how many photos were taken in the space on the form.

330.43 - Data Entered Once Every 100 Meters. The following items should be recorded on form R-10 2600-3b (1/81) while at the stream once for at least every 100 meter section of stream in the survey area. The form is designed to have one column filled in for each successive 100 meter section, identified by item 1, section number.

1. Section Number — The stream is divided into sequential samples at least 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.	Compass Bearing	Take magnetic compass reading of general direction of stream channel, shoot upstream, record to the nearest degree taking into consideration declination.
3.	Gradient	Measure gradient over the section being surveyed with a clinometer or abney level. Record to nearest 1/2 percent.
4.	Temperature	Record both air and water temperatures to the nearest degree centigrade at time of survey. Record tempertature of tributaries entering this section under comments.
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) c. 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.
6.	Available Spawning	a. Percent ASA: record ASA as an estimated % of the stream area being surveyed. b. Spawning Gravel Compactness: By feeling the gravel with your foot pressure estimate: 1-compact 2-moderate 3-loose
7.	Water Width	a. Record active channel width to the nearest 1/10 meter. Active channel width is defined as to the edge of streamside vegetation. b. Record water width (bankfull stage) to the nearest 1/10 meter. Width of multiple channels should be recorded separately.

c. Indicate whether a floodplain exists according to the key.

1 - no floodplain, stream always flows within channel banks
2 - small floodplain occurs, it is less than 5 X the active channel width
3 - large floodplain occurs, it is greater 5 X the active channel width

8. Stream Pools

a. Estimate percent of stream containing pools. Pools are distinguishable areas of the stream where water velocities are less than 30 cm/sec.

b. Categorize majority of pools according to key as:

SS - shallow (less than 50 cm deep), slow (less than 30cm/sec)
SF - shallow (less than 50 cm deep), fast (greater than 30cm/sec)
DS - deep (greater than 50 cm deep), slow (less than 30cm/sec)
DF - deep (greater than 50 cm deep), fast (greater than 30cm/sec)

9. Debris Loading

Estimate percent area covered by debris. Picture all the debris for that section piled up in one place and compute the % area it would cover.

10. 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.

11.	Enhancement/ Rehabilitation Opportunity	If there is enhancement or rehabilitation potential in the sample being surveyed, complete an Enhancement/Rehabilitation Survey form. Enter yes or no whether one was done.
12.	Upper Bank	a. Record percent slope for left and right banks (facing upstream). Stand on outside edge of lower bank and shoot at least 30 meters up the upper bank. If you cannot cross the stream then estimate percent slope and indicate it is an estimation on the form. b. Indicate yes or no whether potential soil movement is indicated by pioneer vegetation, a V-notch or thin soil. c. Use codes yes or no to indicate whether vegetation is the primary factor contributing to stability.
13.	Lower Bank Type	Record lower bank type for left and right banks using key: GS-gently sloping (100%) SS-steeply sloping (100%-200%) U-undercut
14.	Lower Bank	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.

3-poor stability--banks consist of (1) 50% of bank area with well-developed vegetation cover/root masses or (2) exposed soil with small proportion (40%) of rock and (3) virtually no bedrock. Evidence of major erosion within the last year exists.

15. Streambank Vegetation

Qualitatively describe the upland or upper streambank vegetation, other than the canopy, according the following:

1-conifers (spruce/hemlock)
2-hardwoods (alders)
3-shrubs (salmonberry, blueberry, etc.)
4-forbs (skunk cabbage)
5-grasses/sedges (muskeg)

16. Stream Canopy Cover

Qualitatively describe the stream canopy by standing midstream looking up and noting the canopy as:

1-complete (66-100%) coverage of stream
2-moderate (33-66%) coverage of stream
3-open (0-33%) coverage of stream

17. Rearing Areas

Estimate percent of the sample section which is good salmonid rearing area. Describe qualitatively the rearing habitat under comments.

18. Streambottom Substrate

Record quantity (in percent) of all substrate sizes according to the following types.

1-boulder (greater than 256 mm, 10")
2-large cobble (129-255 mm, 5"-10")
3-small cobble (65-128 mm, 2 1/2-5")
4-gravel (2-64 mm)
5-sand/silt (2mm)
6-organic muck
7-other, coded as:
  a-bedrock
  b-sunken log
  c-decaying vegetable matter
  d-other

19. Fish Species Identification

Collect and identify fish species and determine their general distribution and relative abundance. The surveyor has the option to use a fine-meshed dip net, stream seine, or electro-fishing unit, but minnow traps, baited with preserved pink salmon eggs, are recommended. As a hint, when using a dip net squirt some pureed pink salmon eggs into a pool, then scoop up the fish. Enter the appropriate code from key into item 19 and write notes under comments about general distribution and relative abundance.

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	WH - whitefish
SB - stickleback	BU - burbot
	OT - other

20. Fish Sampling

Fill out a fish sampling form R-10 2600-5 (1/81) if fish are captured during the survey. Enter yes or no if a form is completed.

21. Comments

Note such things as:.
--past logging signs
--icing scars on bark of trees or banks
--vegetation (moss, grass) growing in streambed
--blue clay deposits along banks or streambed
--beaver or other haulouts along banks
--bird psecies sited
--bear sign and trails
--windfalls in vicinity of the stream and direction of fall
--bedrock and substrate types such as shale, sandstone, granite, etc.

FSH 1/81 R-10 TRANS

330.44 - Office Work Done After Fieldwork. After completing field work, the following things should be done to data in office setting.

1. Diagrammatic Map

Draw a single line schematic map on gridded paper 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 include on the map:

1-notations marking boundaries of the 100 meter (or less) sections.
2-mark upper limits of spawning area if known.
3-mark barriers.
4-mark upper limits of anadromous habitat if known.
5-mark 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.
6-mark water flow direction.
7-mark elevation of each sample site. Use topo map as data source and record to the nearest 100 feet.

2. Narrative

Write a general narrative highlighting:

1-special entries on the diagrammatic map.
2-summarizing anything unusual from the comments sections.
3-generalize about the quality of spawning and rearing habitat.
4-explain any deviations from the prescribed survey procedure.

3. Photos

Mount photos on paper and type a clear legend under each one. Include in the legend:
1-date
2-survey area
3-section number
Establish a filing system for negatives.

4. Forms	Copy or type forms over if necessary for clarity or ease in further duplicaiton.
5. Binding	Arrange forms and photos for an entire stream or survey area into a booklet. Put narrative first, then schematic map(s), then forms following each form with its accompanying photos. If the stream is divided into survey areas, arrange all forms relating to section A first, followed by B, etc.
6. Duplication and Distribution	Duplicate and distribute the booklet as directed by the Area/Forest Program Manager.

APPENDIX B

Level II Fisheries Surveys Handbook

Modified Level III
Final Methodology Will be Available
in Late 1984 from the
Regional Forest Service Office

320.3 - 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 questions 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. The figure should be used with caution; under no circumstances would any particular species of salmon utilize all that area to an optimum.

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
Section 330.4 of the handbook reproduced on waterproof paper
Field notebook
Pencils
Maps, USGS quads and aerial photographs
50 meter tape measure
Abney level or clinometer
Camera with film
Minnow traps (6) and bait
Tricaine methanesulfanate
Dip net

Fish measuring ruler (metric)
Range finder
Pocket altimeter
pH meter
Scientific sampling permit

320.4 - 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.

320.41 - Preplanning and data collection before starting field work includes the following: Make required entries once for every survey area on the first part of form 2600-3a (1/81).

1. Survey Areas — Use ADF&G numbering system.

2. Historical Fish — List 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

320.42 - Data entered once per survey area. The following items should be recorded on the second part of form 2600-3a (1/81) while at the stream once for each survey area.

(Data Order)

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).
(7.) 6. Aerial Photo Number	If an aerial photo is used, record the flight line, roll, photo, year and grid.
(9.) 7. Access	Enter up to two codes from this list: 1. Roaded (list road number) 2. Unroaded
(10.) 8. Land Use	a. Note any activities associated with man's present use or planned use such as logging, mining, roads, dump sites, etc. b. Note any evidence of historical land use such as logging (and approximate year), mining, abandoned cannery sites, etc.

(Data Order)

(14.) 9. 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.) 10. Temperature

A temperature sensitive stream is identified as a stream where water temperature will rise to undesirable levels if shade producing canopy is removed. Stream gradient (measured elsewhere), substrate composition (measured elsewhere), and stream water source are cr tical 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.

Enter appropriate codes describing source of water at that point on the stream.

1 - lake	4 - muskeg
2 - glacial	5 - surface runoff
3 - groundwater	6 - subsurface runoff
7 - other	

c. 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.

(Data Order)

(21.) 11. 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 following data:

a. Gradient in the intertidal zone measured with a clinometer or abney level. 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.) 12. Comments

Add any comments that are important to the aquatic resources or required to answer other items on the list.

(23.) 13. Investigators

Enter names of people doing the field work.

(24.) 14. Date

Enter numerical designation for Month/Day/Year.

(20.) 15. 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

16. Photos — At least one black and white print photo is required for every survey area and at every readily identifiable change in habitat type, unique situation, barrier falls, and the intertidal area. Photos should be taken facing upstream unless specifically noted in the photo records.

Since it is impossible to look back at several rolls of film and properly label them, prior identification is needed. Make a label with the date, stream name, survey area, and section number written on it and photograph it in the frame immediately preceding the frame of the stream. In addition record each photo in a notebook. Number each roll with a number on the film canister before use. As an example, the first roll of film being used by Jim Doyle in 1979 would be labeled JD-79-1, the second, JD-79-02, etc. Under this number in his notebook he would list each photo as it's being taken and identify date, stream name, survey area, and section number.

Record the roll number and how many photos were taken in the space on the form.

320.43 - Data Entered Once Every 500 Meters. The following items should be recorded on form R-10 2600-3b (1/81) while at the stream once for at least every 500 meter section of stream in the survey area. The form is designed to have one column filled in for each successive reach (see glossary) identified by item 1, section number.

(Data Order)

(1.) 1. Section — The stream is divided into sequential samples at least every 500 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".

(4.) 4. Gradient — Measure gradient over the section being surveyed with a clinometer or abney level. Record to nearest 1/2 percent.

(5.) 3. Water Quality — Enter appropriate codes from key:

color: 1-clear 2-glacial
3-light tan 4-tan

(Data Order)

(14.)	4.	Available Spawning	a. Percent ASA: recorded ASA as an estimated % of the stream area being surveyed. b. % ASA is defined as the % of gravel 2-128mm in size in shallow fast and shallow slow water types.
(11.)	5.	Water Width	a. Record active channel width to the nearest 1/10 meter. Active channel width is defined as to the edge of streamside vegetation. b. Record water width (bankfull stage) to the nearest 1/10 meter. Width of multiple channels should be recorded separately. c. Identify channel braiding and off-channel scanning areas.
(12.)	6.	Water Type	a. Categorize water type according to key as: SS - shallow (50 cm deep), slow (30cm/sec) SF - shallow (50 cm deep), fast (30cm/sec) DS - deep (50 cm deep), slow (30 cm/sec) DF - deep (50 cm deep), fast (30 cm/sec) b. Measure the lineal length of undercut banks (in meters). Undercut banks are defined as areas under streambanks large enough to hide fish.
(9.)	7.	Debris Loading	Estimate percent area covered in pools by debris. Picture all the debris in pools for that section piled up in one place and compute the % area it would cover. *Dennis Hubartt will provide additional information.
(8.)	8.	Streambank Vegetation	Qualitatively describe the upland or upper streambank vegetation, other than the canopy, according to the following: 1. Floodplains Spruce Alder/cottonwood Devil's Club — overflow channels Salmonberry — overland flooding

(Data Order)

(8.) 8. Streambank Vegetation (Cont.)

Qualitatively describe the upland or upper streambank vegetation, other than the canopy, according to the following:

2. Footslopes not flooded (good containment)

   Hemlock
   Blueberry

3. Edge of Muskegs

   Blueberry
   Sedge
   Hemlock

4. Unstable Ground

   Alder/Salmonberry
   Hemlock/Alder/Salmonberry

   Muskeg

   Sedge

9. Rearing Areas

For "Pool rearing" species determine:

a. total reach area
b. % shallow slow
   % deep slow
c. % debris in pools
d. length of undercut bank

For "Riffle rearing" species determine:

a. total reach area
b. % shallow fast
   % deep fast
c. % cover in riffles

For "Lake rearing" species determine

a. Morphoeadaphic index

(Data Order)

(13.) 10. Streambottom Substrate

Record quantity (in percent) of all substrate sizes according to the following types (from soil conservation service).

1 - boulders (250mm, 10")
2 - large cobble (129-250mm, 5-10")
3 - small cobble (65-128mm, 2.5-5")
4 - gravel (2-64mm)
5 - sand (2.0-.1mm)
6 - organic muck
7 - other, coded as:
  a - bedrock
  b - sunken log
  c - decaying vegetable matter
  d - other

(18.) 11. Fish Species Identification

Collect and identify fish species and determine their general distribution and relative abundance. The surveyor has the option to use a fine-meshed dip net, stream seine, or electro-fishing unit, but minnow traps, baited with preserved pink salmon eggs, are recommended. As a hint, when using a dip net, squirt some pureed pink salmon eggs into a pool, then scoop up the fish. Enter the appropriate code from key into item 19, method of capture, and note under comments the general distribution and relative abundance (high, medium, low).

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	WH - whitefish
SB - stickleback	BU - burbot
OT - other	

(19.) 12. Fish Sampling

Fill out a fish sampling form R-10 2600-5b (1/81) if fish are captured during the survey. Enter yes or no if a form is completed.

(Data Order)

(22.) 13. Comments

- past logging signs
- icing scars on bark of trees or banks
- vegetation (moss, grass) growing in streambed
- blue clay deposits along banks or streambed
- bird species sighted
- bear sign and trails
- windfalls in vicinity of the stream and direction of fall
- bedrock and substrate types such as shale, sandstone, granite, etc.

- Beaver
  active beaver dam
  inactive beaver dam, good repair
  inactive beaver dam, poor repair
  old dam, little effect on stream
  no beaver activity
  beaver activity but no dams

- Aquatic Vegetation
  mosses
  filamentous algae
  periphyton
  vascular plants
  density
  dense (abundant vegetation on rocks or over the entire area)
  medium (1/2 of all rocks with vegetation)
  sparse (vegetation seldom observed)

- Potential Barriers
  1 - velocity 4 - beaver dam
  2 - falls 5 - manmade
  3 - debris jam 6 - other
  Photograph the barrier.

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   1 - notations marking boundaries of the 500 meter (or less) sections.
   2 - mark upper limits of spawning area if known.
   3 - mark barriers.
   4 - mark upper limits of anadromous habitat if known.
   5 - mark 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.
   6 - mark water flow direction.

2. Narrative — Write a general narrative highlighting:

   1 - special entries on the diagrammatic map
   2 - summarizing anything unusual from the comments sections.
   3 - generalize about the quality of spawning and rearing habitat.
   4 - explain any deviations from the prescribed survey procedure.

3. Photos — Mount photos on paper and type a clear legend under each one. Include in the legend:
   1 - date
   2 - survey area
   3 - section number
   Establish a filing system for negatives.

4. Forms — Copy or type forms over if necessary for clarity or ease in further duplication.

5.	Binding	Arrange forms and photos for an entire stream or survey area into a booklet. Put narrative first, then schematic map(s), then forms following each form with its accompanying photos. If the stream is divided into survey areas, arrange all forms relating to section A first, followed by B, etc.
6.	Duplication and Distribution	Duplicate and distribute the booklet as directed by the Area/Forest Program Manager.

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