



**State of Alaska
Department of Fish and Game
Habitat and Restoration Division**

**Nomination for Waters
Important to Anadromous Fish**

Region SOUTHCENTRAL USGS Quad Seward B-4
 Anadromous Water Catalog Number of Waterway 226-20-16090
 Name of Waterway Unnamed tributary to Jackpot Bay USGS Name Local Name
 Addition Deletion Correction Backup Information

For Office Use

Nomination # <u>01 062</u>	<u>[Signature]</u>	<u>11/20/01</u>
Revision Year: <u>2001</u>	Regional Supervisor	Date
Revision to: Atlas _____ Catalog _____	<u>[Signature]</u>	<u>10/31/01</u>
Both <u>X</u>	AWC Project Biologist	Date
Revision Code: <u>D-1 C-9</u> <u>EQ</u>	<u>[Signature]</u>	<u>12/19/01</u>
	Drafted	Date

OBSERVATION INFORMATION

Species	Date(s) Observed	Spawning	Rearing	Present	Anadromous
Cutthroat Trout	7/22-23/2000		x		<input type="checkbox"/>
Dolly Varden	7/22-23/2000		x		<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

IMPORTANT: Provide all supporting documentation that this water body is important for the spawning, rearing or migration of anadromous fish, including: number of fish and life stages observed; sampling methods, sampling duration and area sampled; copies of field notes; etc. Attach a copy of a map showing location of mouth and observed upper extent of each species, as well as other information such as: specific stream reaches observed as spawning or rearing habitat; locations, types, and heights of any barriers; etc.

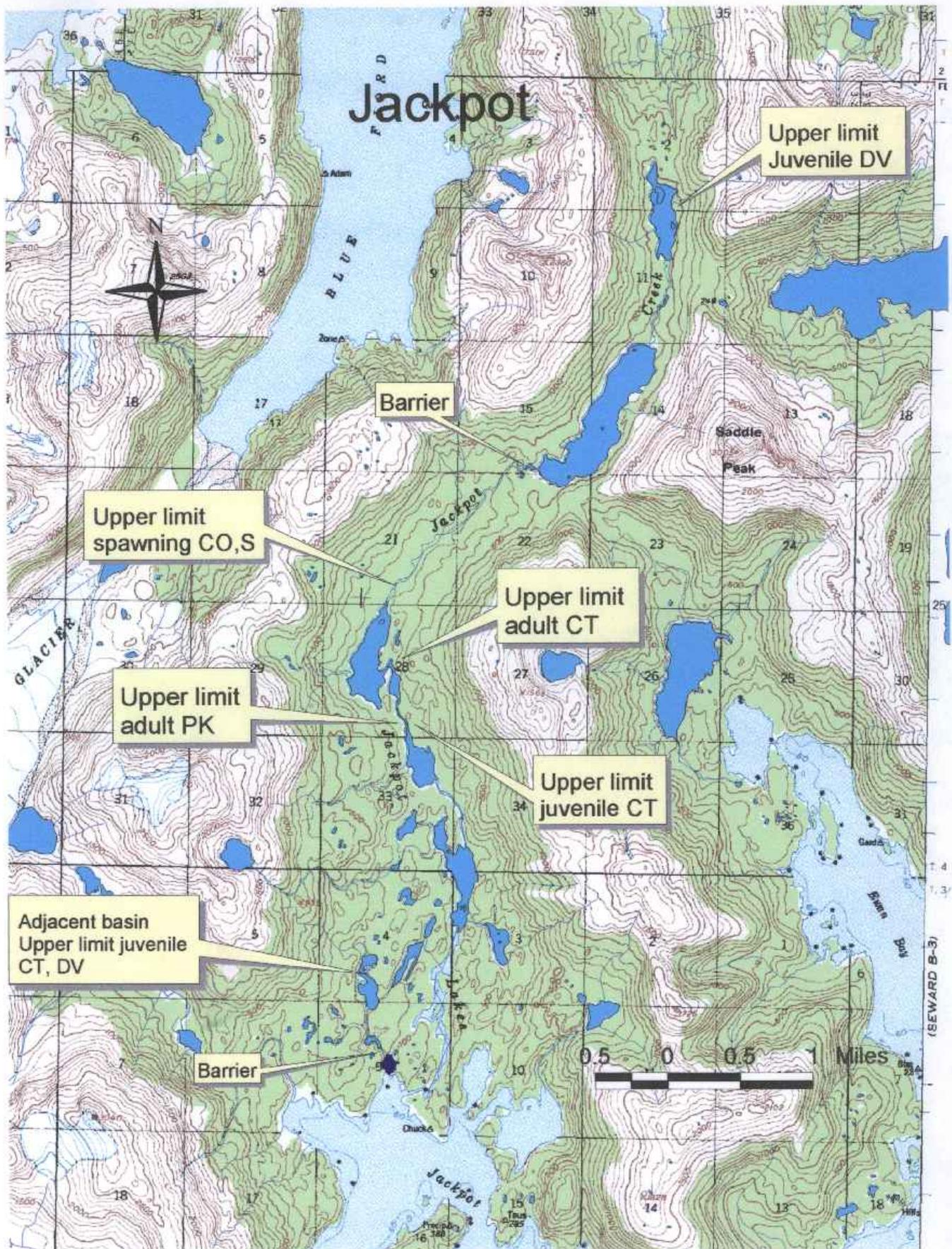
Comments:

Please see the attached document "Jackpot Basin New Lands Inventory" for supporting documentation.
 Believe TOTAL barrier 2-2.5m falls plus step pool high velocity from 50' above ITZ. INTERTIDAL SPawning. ARE Will Frost 10/31/01 PINKS SPawning IS INTERTIDAL.
 SHORTEN STREAM TO < 660' of habitat use

Name of Observer (please print): William D. Frost
 Signature: [Signature] Date: 12/13/00
 Address: P.O. Box 129
Girdwood, Alaska 99587

This certifies that in my best professional judgment and belief the above information is evidence that this waterbody should be included in or deleted from the Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes per AS 16.05.870.

Signature of Area Biologist: _____
 ALASKA DEPT. OF
 REGION II
 HABITAT AND RESTORATION
 DIVISION
 Revision 3/97
 JAN 31 2001



SHORFEN STREAM 226-20-16090
 use 



United States
Department of
Agriculture

Forest
Service

Glacier
Ranger
District

P.O. Box 129
Forest Station Road
Girdwood, AK 99587

File Code: 2620-3

Date: January 29, 2001

Edward W. Weiss
Habitat Biologist
Alaska Dept. of Fish and Game
333 Raspberry Rd.
Anchorage, AK 99518-1599

ALASKA DEPT. OF
FISH & GAME

JAN 31 2001

REGION II
HABITAT AND RESTORATION
DIVISION

Dear Sir:

The Glacier Ranger District conducted stream surveys on 19 streams in Prince William Sound (PWS) during the 2000 field season. Of those systems sampled the survey identified undocumented fish species in two basins in Jackpot Bay (ADF&G 226-20-16080-0020, 226-20-16090-999), three tributaries to Squaw Bay (ADF&G 222-30-12920, 222-30-199, and 222-30-199), one inlet to Nassau Fiord (ADF&G 226-20-194), one inlet stream to Port Wells (ADF&G 223-20-199), and two inlet streams to Puffin Cove (ADF&G 226-50-16106, 226-50-16098). Methodology to surveys conducted included minnow trapping, snorkel counts and hook-line. The results of these surveys indicate that a number of streams surveyed hold species of both adult and juvenile salmon, trout and char that are either missing from the Anadromous Waters Catalog or have partial coverage within the system.

Specifically, those undocumented species trapped within the Jackpot system comprised 654 juvenile coho salmon, and 19 cutthroat trout. Within the upper portion of the basin 235 juvenile Dolly Varden char were found in a previously undocumented region. A total of 121 adult coho, 3 king salmon and 16 cutthroat trout were observed or sampled by hook and line. Sampling was conducted on a small, unnamed basin in Jackpot Bay. Results of minnow trapping resulted in nine juvenile Dolly Varden and 11 juvenile cutthroat trout.

Streams surveyed in Squaw Bay were snorkeled and the fish species identified included (ADF&G 222-30-12920) 143 cutthroat trout found throughout the system. Additionally, one adult cutthroat trout was caught by hook and line. Another unnamed stream snorkeled in Squaw Bay (ADF&G 222-30-199) identified 5 juvenile coho salmon, one juvenile king and 5 juvenile cutthroat trout. The last stream in Squaw Bay was an unnamed stream (ADF&G 222-30-199) that was sampled by hook and line. A total of 15 adult cutthroat trout were identified in this system.

Trapping and snorkeling techniques were used on two streams in Puffin Cove. The first stream sampled (ADF&G 226-50-16106) using minnow traps caught 197 juvenile coho salmon and 55 Dolly Varden. Snorkeling produced 196 juvenile coho and 11 Dolly Varden. Adult red salmon totaling 67 fish were observed throughout the system. The second system sampled (ADF&G 226-50-16098) with minnow traps found 139 juvenile Dolly Varden, and snorkeling produced 836 Dolly Varden. A total of 6 adult Dolly Varden were sampled by hook and line.





One stream in Nassau Fiord was snorkeled and found 213 juvenile Dolly Varden and 1,760 juvenile coho salmon. Adult salmon totaling 2,000 pink and an undetermined amount of chum salmon were observed.

The last system sampled in PWS was an unnamed stream on the east side of Port Wells. Snorkel surveys indicated the presence of juvenile Dolly Varden.

If you have any questions please contact Rob Spangler, District Biologist at 754-2325.

Sincerely,

Deidre S. St. Louis
District Ranger

2004 juvenile coho salmon and 19 cutthroat trout within the Jackson system comprised juvenile Dolly Varden that were found in a previously undocumented region. A total of 131 adult coho salmon and 18 cutthroat trout were observed or sampled by hook and line. Sampling was conducted on a small, unnamed basin in Jackson Bay. Results of minnow trapping revealed 10 juvenile Dolly Varden and 14 juvenile cutthroat trout.

Stream surveys in Spaw Bay were conducted and the fish species identified included cutthroat trout (13 cutthroat trout found throughout the system. Additionally, one adult cutthroat trout was caught by hook and line. Another unnamed stream snorkeled in Spaw Bay (ADP&G 232-50-192) identified 2 juvenile coho salmon, one juvenile king and 2 juvenile cutthroat trout. The last stream in Spaw Bay was an unnamed stream (ADP&G 232-50-190) that was sampled by hook and line. A total of 12 adult cutthroat trout were identified in this stream.

Trapping and snorkeling techniques were used on two streams in Pullin Cove. The first stream sampled (ADP&G 232-50-18106) using minnow traps caught 197 juvenile coho salmon and 55 Dolly Varden. Snorkeling produced 196 juvenile coho and 11 Dolly Varden. Adult and juvenile salmon totaling 67 fish were observed throughout the system. The second system sampled (ADP&G 232-50-16098) with minnow traps found 139 juvenile Dolly Varden and snorkeling produced 68 Dolly Varden. A total of 6 adult Dolly Varden were sampled by hook and line.

New Lands Inventory

Jackpot Basin Habitat Assessment

Western Prince William Sound

Final Report
FY 2000

United States Department of Agriculture
Forest Service
Chugach National Forest
Glacier Ranger District

November, 2000

Sub-basin

Region 9

Region 9 was comprised of a 22 acres lake that was surveyed on July 23 and contained no stream habitat to conduct survey measurements on. No temperature data was available for this region. Because of time and logistical difficulty, only a 10 acres portion at the mouth of this lake was trapped. Available spawning area was not taken for this lake. Total CPUE for this lake was calculated at 0.08 fish/minute (Table 17).

Table 17. Total CPUE by species.

Lake	Species	CPUE
22 Acre	DV	0.03
22 Acre	CT	0.05

Dolly Varden and previously undocumented cutthroat species were caught in approximately equal quantities in this region. The majority of Dolly Varden was age class 1. Cutthroat trout were found in both age classes 1 and 2 (Figure.13).

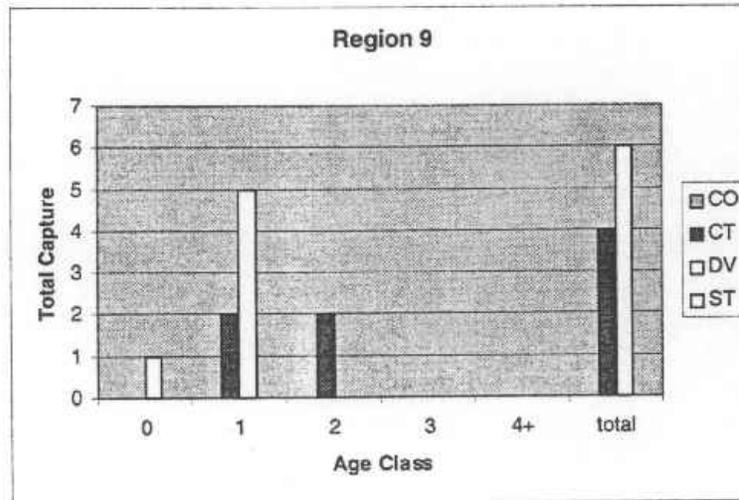


Figure.13. Region 9: species composition.

Region 10

Region 10 was surveyed and trapped July 22-23. Temperatures remained relatively stable during this period for both water and air. Water temperature in reach 12, 14 and 3.3 acres pond was 12°C. The air temperature ranged from a high of 13°C and a low of 12°C. Discharge taken for reach 12 was low at 0.7m³/s. Discharge was not measured for reaches 13 and 14.

Channel Morphology Characteristics

Reaches 12 and 14 were moderately confined by muskeg channels. Channels remained narrow and shallow, with gravel substrate and large flood prone areas. Reach 13 differed from the other reaches in that it was highly confined, with a high gradient and had boulder dominated substrate. Flood Prone width was low and incision high for reach 13 (Table 13).

Table 18. Channel morphology characteristics.

Reach	Chan. Type	Incision (m)	Flood Prone (m)	BF Width (m)	Entrench.(m)	Ave. Bed Width (m)	BF Depth (m)	Substrate	%Gradient
12	MM1	4	16	4	4	4.2	0.3	Gravel	<2
13	HC4	5	2.5	2.1	1.2	2.1	0.16	Boulder	10
14	PA1	0.7	100	1	100	1	0.12	Gravel	3

Physical Habitat Summary

Width to depth ratio was low for all reaches in region 10 due to narrow channel width. The only habitat in reach 13 was a high gradient riffle and subsequently residual pool volume and maximum pool depth were inapplicable to this reach. Available spawning area in reach 12 was calculated at 100% of the habitat. Spawning habitat in reaches 13 and 14 were not calculated. Large woody debris was high in this system and reflected the wooded nature of this region (Table.14).

Table 19. Physical habitat summary.

Reach	Total Length (m)	Pools/100m	LWD/100m	Residual. Pool Vol. m3	Mean Max. Pool Depth (m)	% Pools	Width/Depth Ratio (m)
12	312	14.2	16.3	184.3	1.09	25.3	24.3
13	39	15.4	5.1	NA	NA	0	12.5
14	52	10	5.8	0.4	0.3	3.8	8.3

Fish Population Information

CPUE for region 10 was measured for reach 12 and the 3.3 acres lake, only. CPUE for reach 12 was 0.05 fish/minute. CPUE for the 3.3 acres lake was 0.06 fish/minute (Table 20).

Table 20. Total CPUE by species.

Lake/Reach	Species	CPUE
3.3 Lake	DV	0.03
3.3 Lake	CT	0.03
12	CT	0.05

Lakes

Cutthroat and Dolly Varden were found in the 3.3acre lake in approximately equal numbers. Cutthroat trout were found in age classes 1 and 2, with a higher percentage in age class 1. Dolly Varden were found in equal numbers in age classes 0, 2 and 3. No adult cutthroat trout were observed, nor was any hook and line sampling taken.

Streams

Cutthroat was the only species caught in the stream portion of region 10. Age classes 0, 1, and 2 of cutthroat were found in equal numbers (Figure.14).

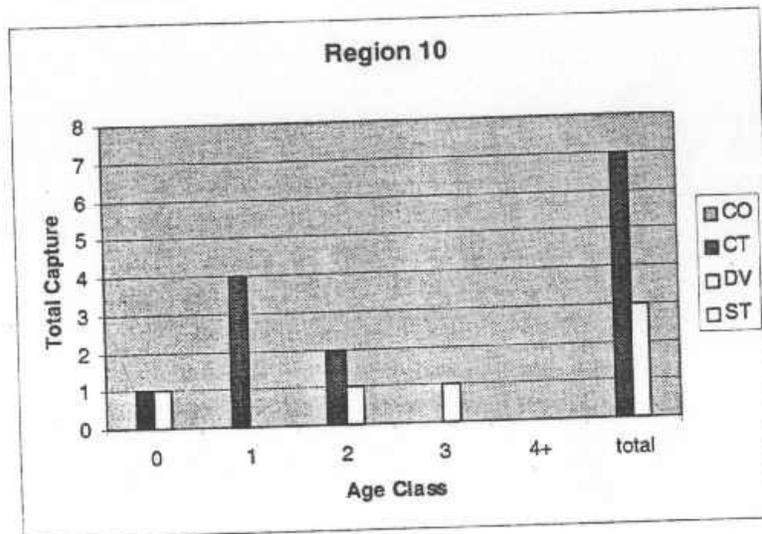


Figure 14. Region 10:species composition.

Region 11

Region 11 was sampled on July 22 with all measurements in reach 10 taken at low tide. Temperatures taken for water over both reaches were 12°C and air temperature of 12°C. Discharge was not taken in reach 11 because of topography; region 10 discharge was 2.64m³/s

Channel Morphology Characteristics

Reach 10 was a wide, fairly shallow estuarine channel type with moderate incision. Reach 11 is part of the highly contained process group and reflects the deep incision, high gradient and larger dominant substrate of this process group (Table 15).

Table 15. Channel morphology characteristics.

Reach	Chan. Type	Incision (m)	Flood Prone (m)	BF Width (m)	Entrench.(m)	Ave. Bed Width (m)	BF Depth (m)	Substrate	%Gradient
10	ES3	3	35	22	1.59	22	0.15	S.Cobbel	<2
11	HC2	10	12	10	1.2	8	0.4	Bould/Bedrk	>3

Physical Habitat Summary

Reach 10 contained only one habitat unit, a 9m low gradient riffle. Consequently residual pool volume was extremely low. Depth in reach 10 was minimal and resulted in a high width to depth ratio. Reach 11 was more heterogeneous, though it was dominated by high gradient riffle over much of the stream length (Table 16). Available spawning habitat in reach 10 was calculated at 30% of total area. Reach 11 spawning area was not taken but would be considered near 0 as the majority of substrate was boulder or exposed bedrock.

Table 16. Physical habitat summary.

Reach	Total Length (m)	Pools/100m	LWD/100m	Residual. Pool Vol. M3	Mean Max. Pool Depth (m)	% Pools	Width/Depth Ratio (m)
10	9	11.1	11.1	NA	NA	0	133.3
11	170	14.3	2.4	56	1	5.9	29.7

Fish Population Information

No trapping data was collected in this region because of the high stream velocity in reach 11 and insufficient water in reach 10.

Regions 6 and 7

Lakes A and B are utilized by both adult and juvenile fish. The majority of adult fish observed actively spawning was found at the outlet of the lakes, and may indicate groundwater influence. Stickleback was found in Lake B clustered in an area on the west side of the lake. It is unclear why they favored this area but may be due to the preference of cover type (Baskin, 1974) or a higher percentage of aquatic invertebrates. Juvenile coho and Dolly Varden was found randomly in both lakes. Most observed pink and chum salmon spawning occurred in these lakes and the lower portions of each lake being the preferred spawning location.

Region 8

Reach 1 is a large estuarine channel at the terminus of Jackpot Basin. No spawning activity was observed in this reach, but adult fish were found passing through on incoming tides. Due to the tidal influence, little habitat enhancement opportunities exist. Reach two had the highest percent of residual pool volume in any reach within the basin, although the percent of woody debris was considered poor. Trapping effort in this reach resulted in only three juvenile Dolly Varden caught. Habitat unit 1 has a high potential for improving available cover for rearing juvenile fish. The proximity to large standing trees adjacent to the habitat unit would make an ideal improvement project. Trees could be cut and anchored into the large pool (160m x 100m) to provide needed cover. Adult chum, coho and pink salmon was observed spawning in reach 2. Most of the available spawning habitat was located in reach one and two, this was also the location of the majority of spawning activity.

Regions 9, 10, 11

The three regions included in the basin adjacent to Jackpot drainage were regions 9, 10 and 11. Regions 9 and 10 were isolated from region 11 due to a barrier in reach 11. Fish found in these regions are considered resident populations. Limited sampling was conducted in region 9 due to inability to access portions of the lake due to terrain difficulties. Reach 12 contained the greatest amount of available spawning and rearing habitat in the 5 stream reaches surveyed. Both residual pool volume and woody debris are high in this reach as reflected in trapping success.

Conclusions

Data collected in this survey should be considered a first step in evaluating the full potential of Jackpot Basin. Information collected on the lakes indicated the presence and range of juvenile rearing but failed to present the total carrying capacity of Jackpot Lakes. Further data should be collected by gathering data on the zooplankton communities in lakes to assess carrying capacity. As time and money permit, lakes A through G should be sampled first because of the higher CPUE. Lakes H and I would be a low priority for production evaluation due to the apparent isolation to the lower basin and the short ice-free season. Potential habitat improvement projects exist in reaches 2, 4, 21 and 28. The cost to improve reach 2, habitat unit 1, would be lowest due to the location to Jackpot Bay and ability to install cover