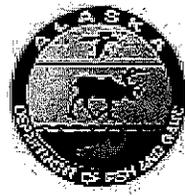


**Black Bear Watershed  
Project Summary  
BBC12**



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



**Southeast Regional Office  
Island Center Building  
P.O. Box 240020  
Douglas, AK 99824-0020**

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## Report Summary

<b>Project Area</b>	Black Bear Watershed
<b>Watershed Number</b>	1901010303470000
<b>Watershed Acreage</b>	11409.5
<b>Number of Lakes in Watershed</b>	2
<b>Lake Acreage in Watershed</b>	272.9
<b>Field Sampling Dates</b>	July 24-31, 2002
<b>Field Crew</b>	D. Gregovich C. Schmale
<b>Total Number of Streams Mapped</b>	5
<b>Total Number of Miles Mapped</b>	0.8
<b>Number of Stream Crossing Structures Encountered</b>	18
<b>Number of Problem Structures</b>	4
<b>Number of Nominations to AWC</b>	5

## Introduction

### Project Area:

The Black Bear Watershed is located near the community of Klawock on Prince of Wales Island in southern Southeast Alaska (Figure 1). This watershed encompasses 11409.5 acres and includes two lakes: 187 acre Black Bear Lake and 85.9 acre Black Lake (Figure 2).

### Project Background:

Alaska Power and Telephone (AP&T) operates the Black Bear Lake Hydroelectric system that draws water from Black Bear Lake. This water then flows into Black Bear Creek. AP&T also intends to construct a 2 MW "run-of-river" hydroelectric facility on the South Fork tributary of Black Bear Creek (Figure 3). (Romey, 2001)

### Goals and Objectives:

The ADF&G, Division of Habitat and Restoration (H&R) had four primary objectives in the Black Bear Watershed: 1) determine fish presence below the existing power house; 2) map the perimeter of a beaver pond complex; 3) map stream hydrography and determine upper extent of anadromous fish habitat in Spring Fork and South Fork; 4) document the presence of anadromous tributaries flowing into Black Bear Creek below Black Lake.

## Methods

H&R crew conducted stream mapping and surveying between July 24 and July 31, 2002. Additional time was spent after the field season compiling the data, making maps and integrating the datasets into GIS.

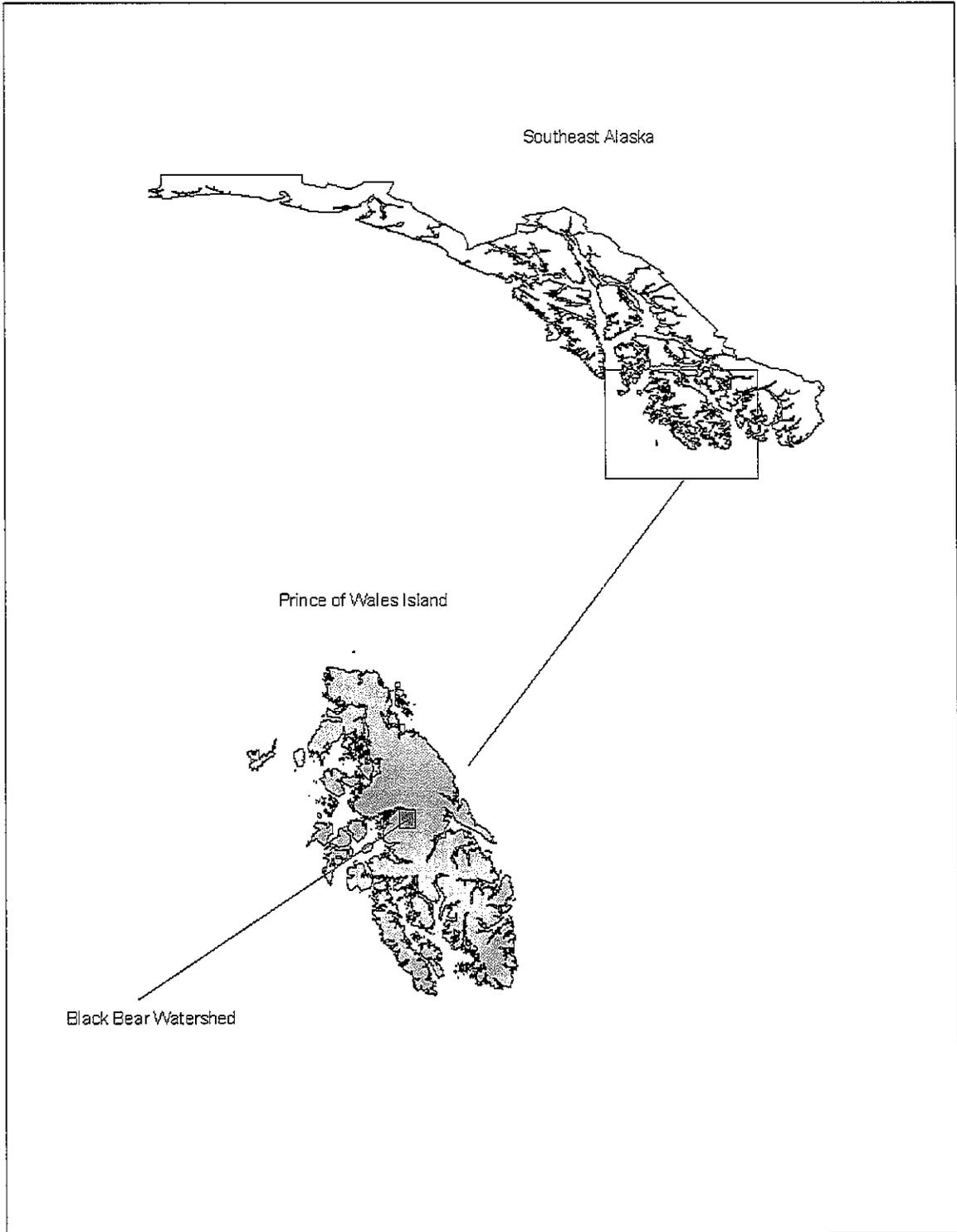
### Stream Mapping and Surveying:

The crew started at the mouth/confluence of the streams and sampled for juvenile salmon with minnow traps. When salmon were documented at the beginning of a survey, the crew would continue mapping and sampling upstream to identify the upper extent of salmonids for that stream.

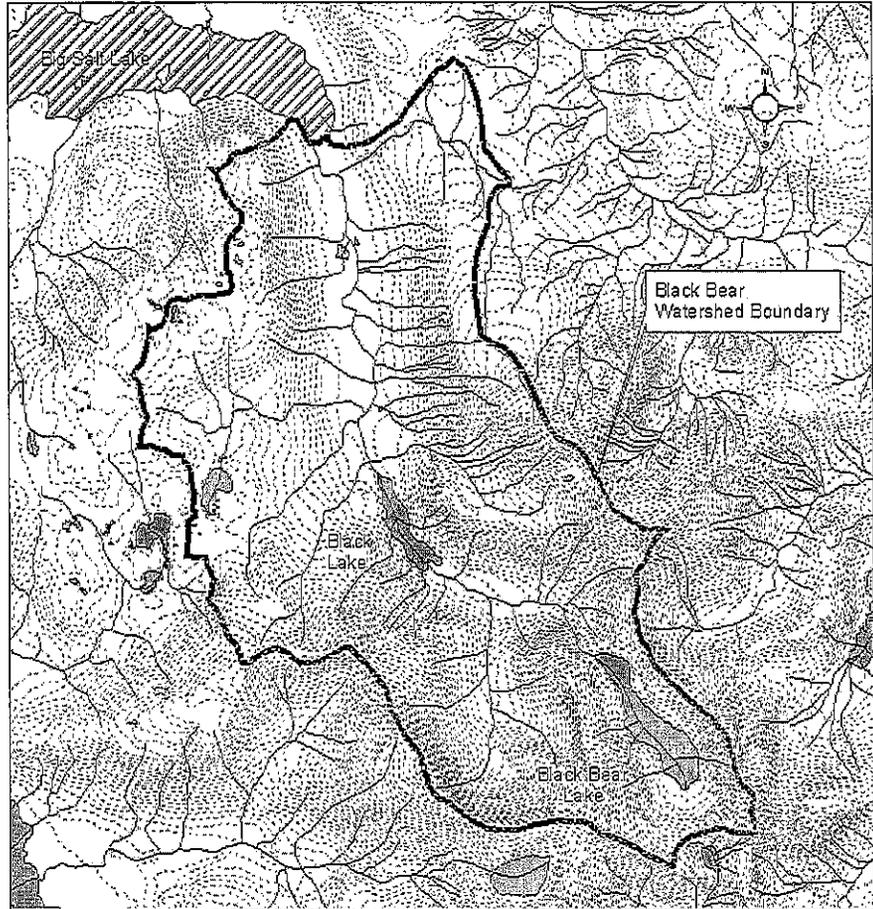
GPS waypoints were captured for:

- Beginning of stream of survey
- Systematic mapping points approximately every 50 meters, more or less depending on channel sinuosity.
- Stream features (confluence, barrier, etc)
- Fish trapping points
- Upper extent of fish distribution and/or end of survey

Waypoints were captured with a Garmin 76 GPS unit.



**Figure 1. Prince of Wales Island in Southern Southeast Alaska**

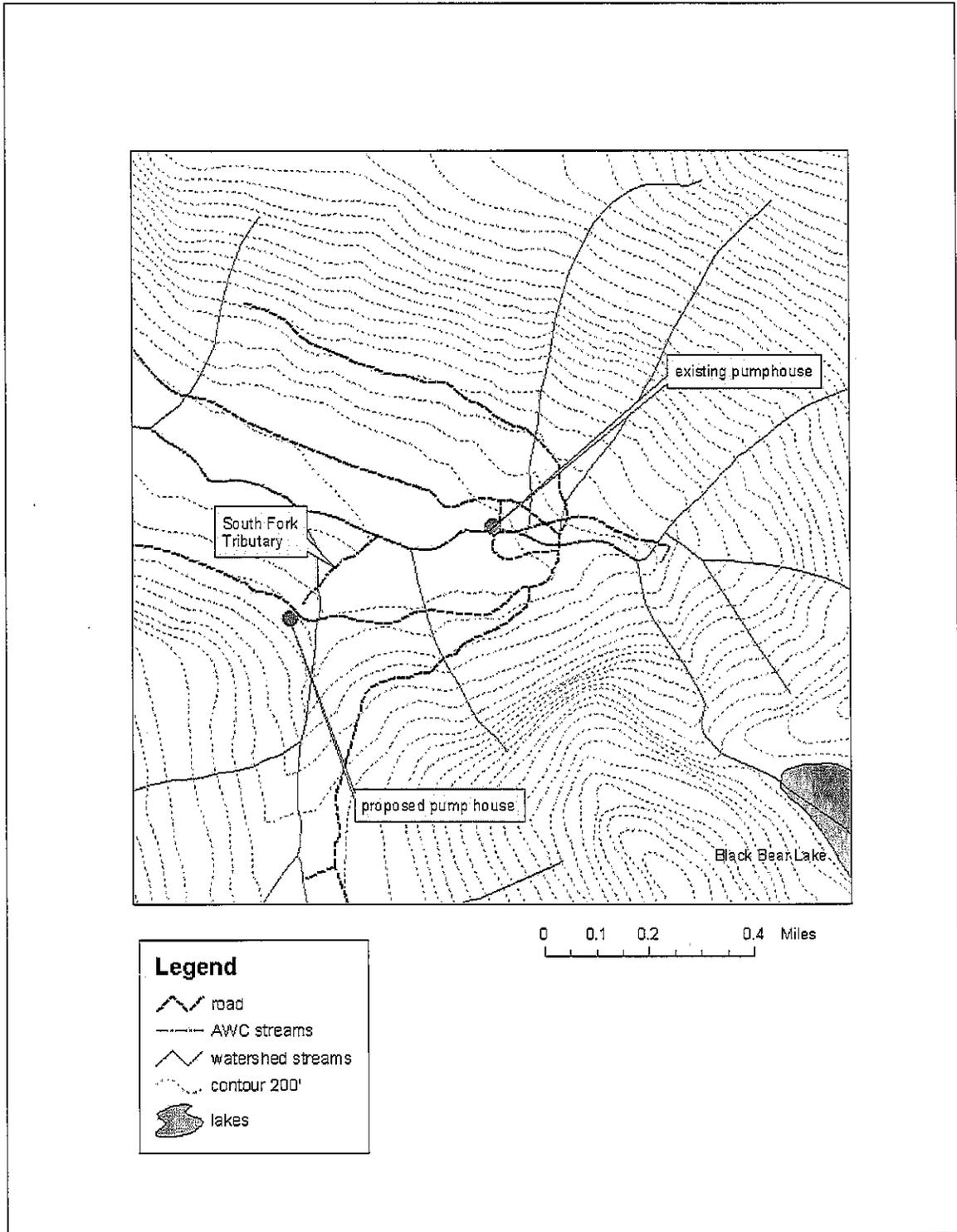


0 0.5 1 2 Miles

**Legend**

-  watershed streams
-  contour 200'
-  lakes
-  saltwater

**Figure 2. Location of Black Bear Watershed on Prince of Wales Island**



**Figure 3. Existing and proposed hydroelectric facilities within the Black Bear project area on Prince of Wales Island**

### **Fish Trapping:**

The streams were sampled for juvenile salmonids with minnow traps that were baited with Betadine treated salmon eggs. Each trap was marked with a piece of flagging with the corresponding waypoint written on it and allowed to soak for at least an hour. Once the traps were retrieved the trapped fish were removed, counted by species, and returned to the stream.

### **Flagging:**

Blue and white striped flagging was placed along the stream courses on all streams where salmon were found in order to document anadromous habitat. At the upper extent of fish habitat flagging was placed that had "upper extent fish" written on it along with the date, crew initials and "ADF&G".

### **Stream Crossings:**

Stream crossings are defined as points on the temporary or permanent roads where a stream of any size crosses the road surface with or without a crossing structure in place.

Minnow traps were set in all tributaries crossing the temporary road that appeared to be potential anadromous fish habitat (see Fish Trapping section for details). At each of these locations a waypoints was recorded as well as the type of crossing (e.g., culvert, log stringer bridge, modular bridge) and specific measurements. Traps were set upstream and downstream of each crossing. Blue and white flagging was placed at the stream crossings where salmonids were captured.

## **Results**

The H&R staff recorded 133 waypoints during work on the watershed. Waypoints were recorded to map streams channels, beaver pond habitat and locations of stream crossings on the temporary road leading into the watershed (Figure 4).

### **Stream Mapping:**

H&R crews mapped 5 streams with a combined total of 0.8 miles. Two of these streams, South Fork and Black Bear Creek, have previously been identified as anadromous in the Anadromous Waters Catalog (ADF&G, 2002) and the portions mapped covered approximately 0.5 miles. The remaining streams were verified as anadromous through our fish trapping efforts and will be nominated for addition into the AWC during the next cycle of updates scheduled in 2004 (Figures 5 and 6).

### **Fish Trapping Associated with Stream Mapping:**

H&R crew baited and set 38 minnow traps at 36 locations to determine fish presence and distribution patterns. Coho salmon, *Oncorhynchus kisutch*, were the only anadromous species captured in H&R trapping efforts on the watershed and were captured at 16 sites. Dolly Varden, *Salvelinus malma* were captured at 18 sites.

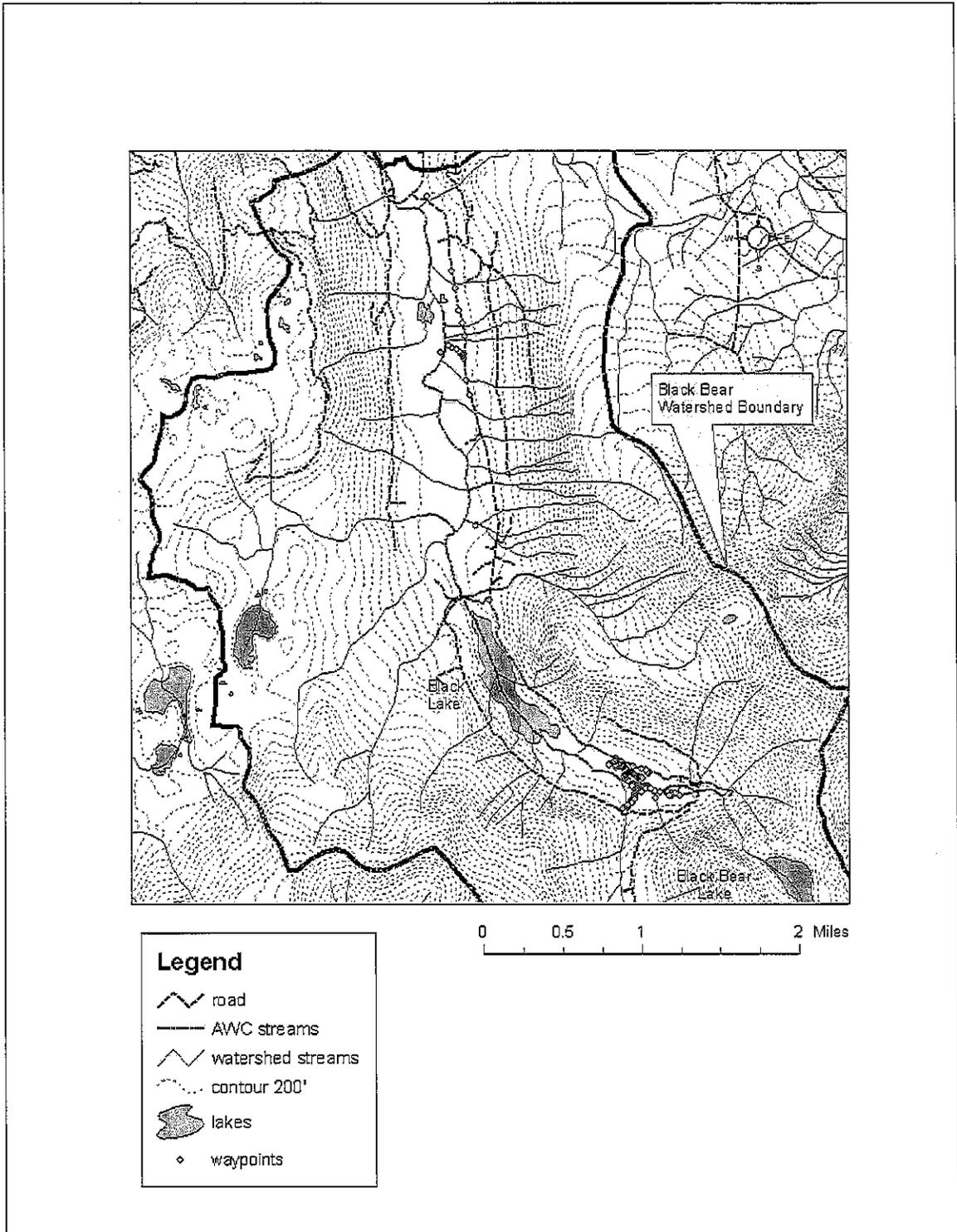
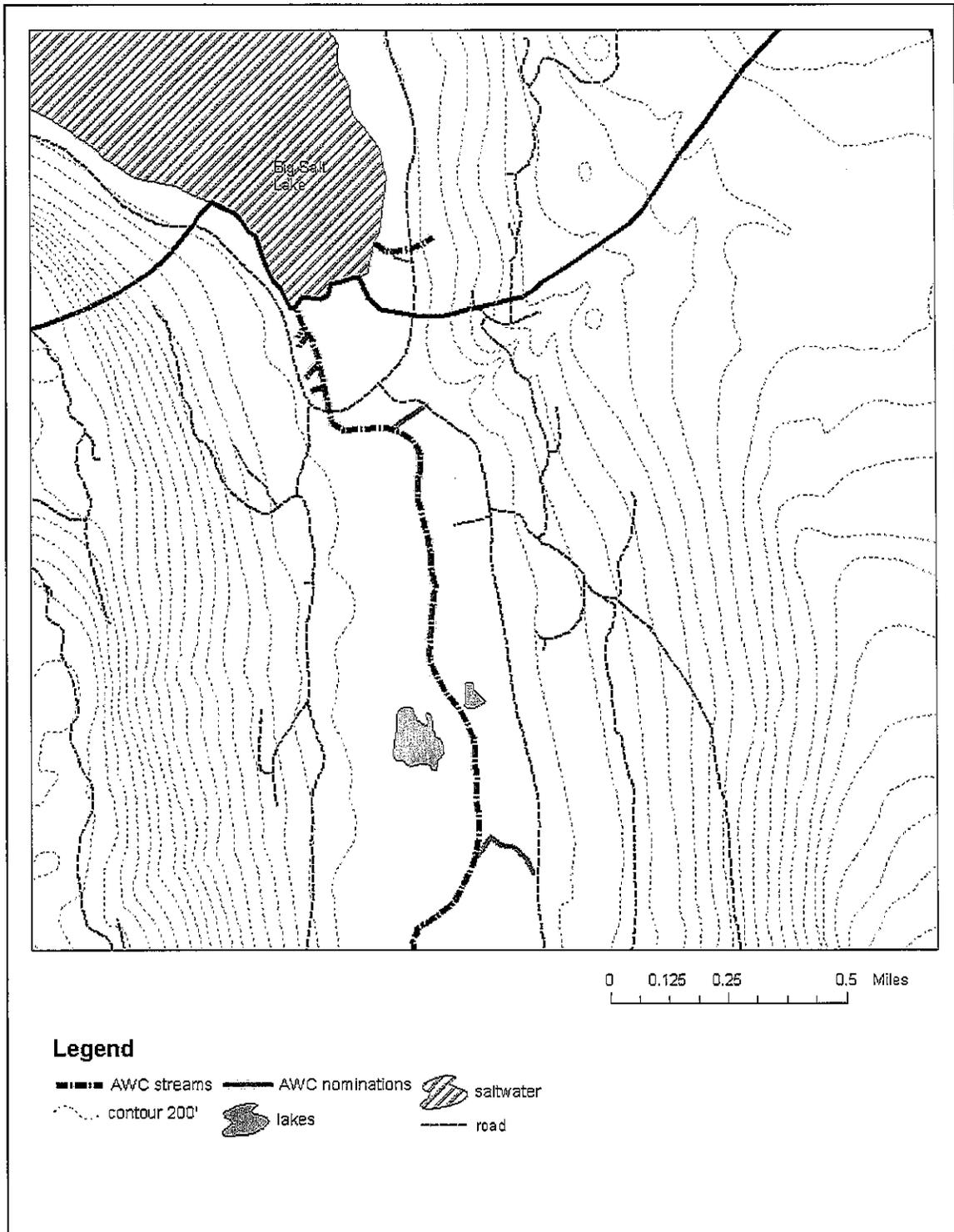


Figure 4. Location of all waypoints recorded in the Black Bear Watershed, Prince of Wales Island.



**Figure 5. AWC stream nomination in Black Bear Watershed on Prince of Wales Island**

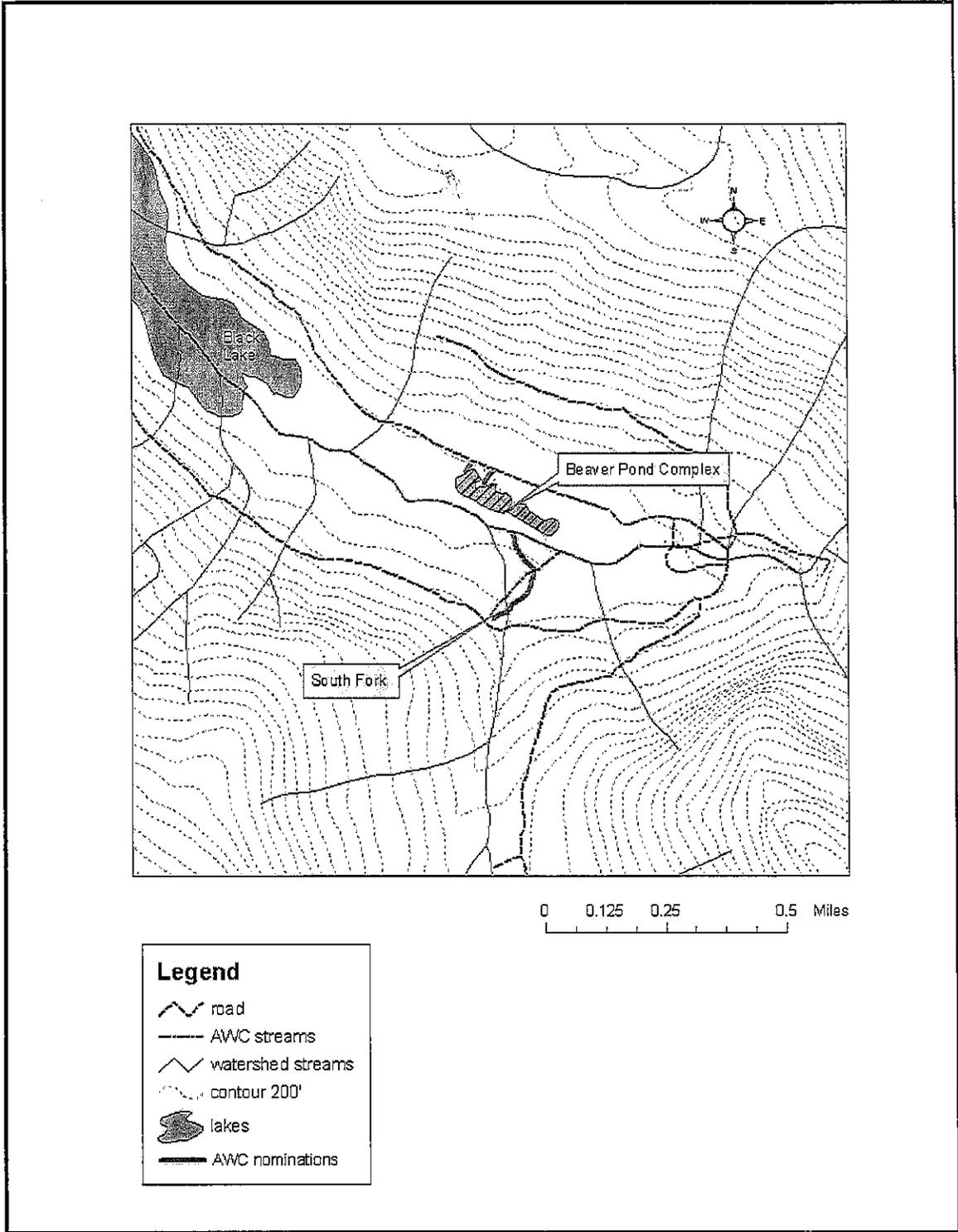
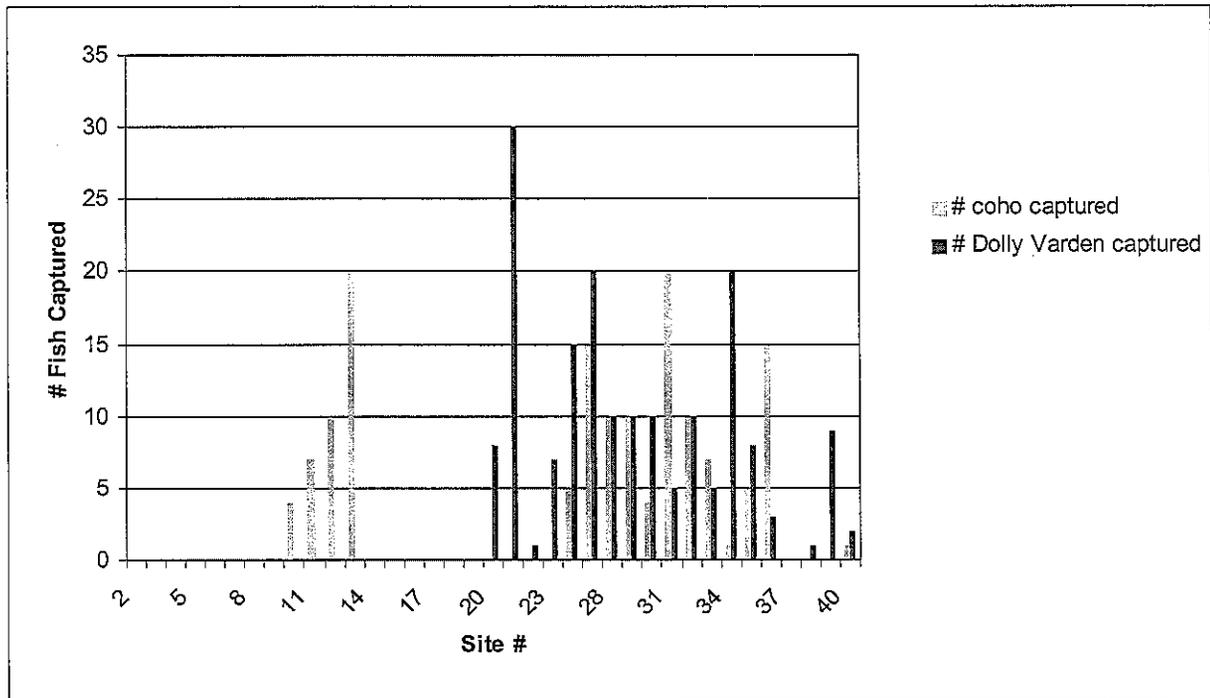


Figure 6. AWC stream nomination in Black Bear Watershed on Prince of Wales Island



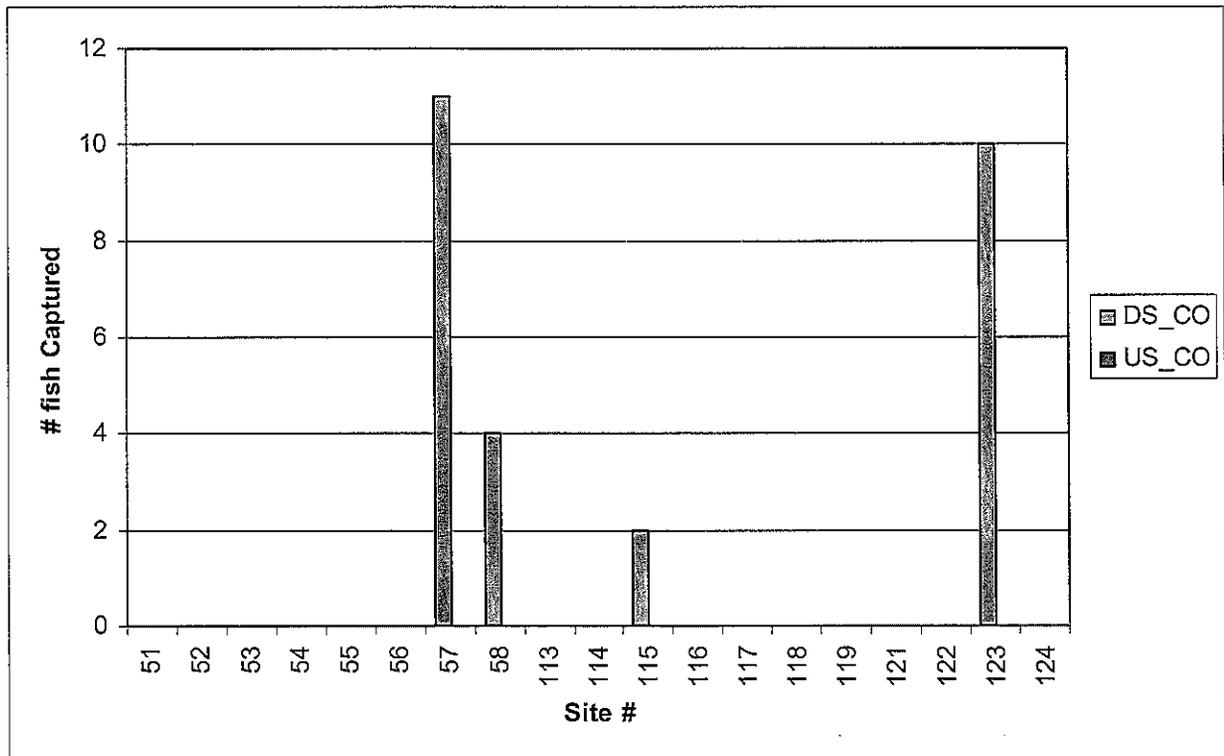
**Figure 7. Fish trapping results associated with stream mapping of Black Bear Creek tributaries**

**Fish Trapping Associated with Stream Crossings:**

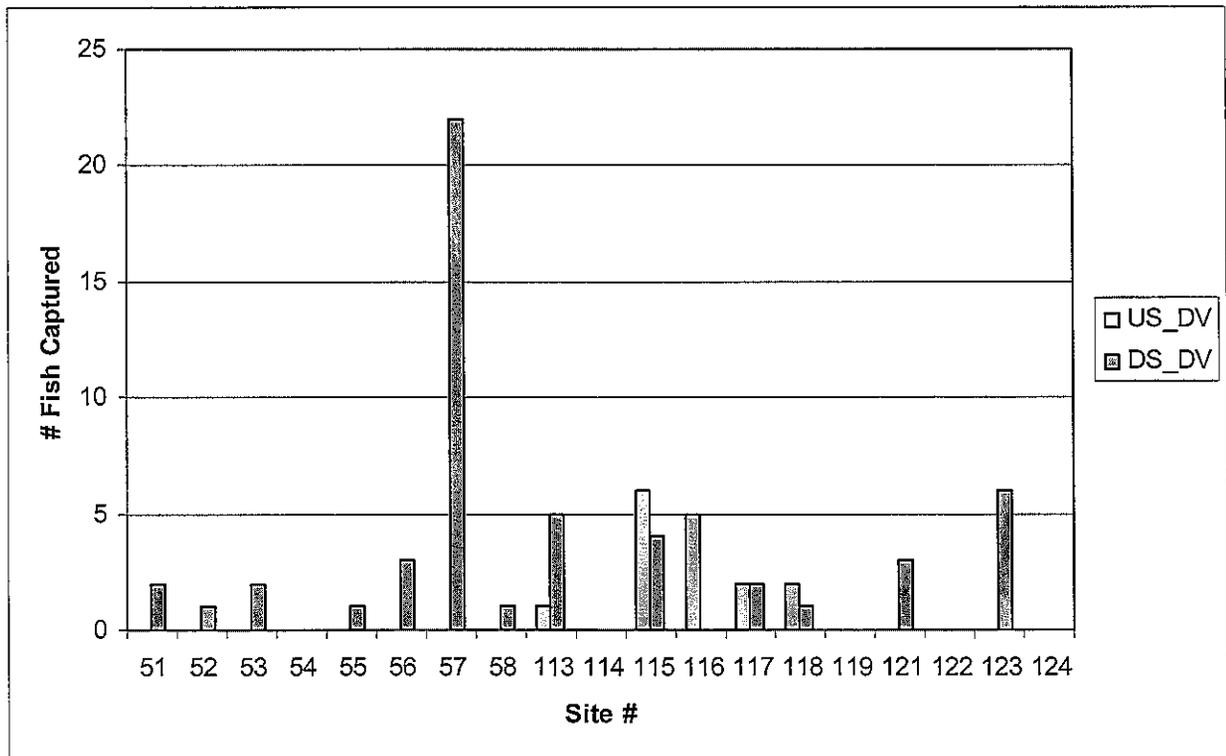
H&R crew baited and set 30 minnow traps at 19 locations to determine fish presence at stream crossings. Coho salmon were the only anadromous species captured in H&R trapping efforts on the watershed and were captured at 4 sites. Coho were only captured downstream of crossing structures.

Dolly Varden were captured at 14 sites. At 9 of these sites Dolly Varden were only captured downstream of the crossing structure. At one site Dolly Varden were only captured above the crossing structure.

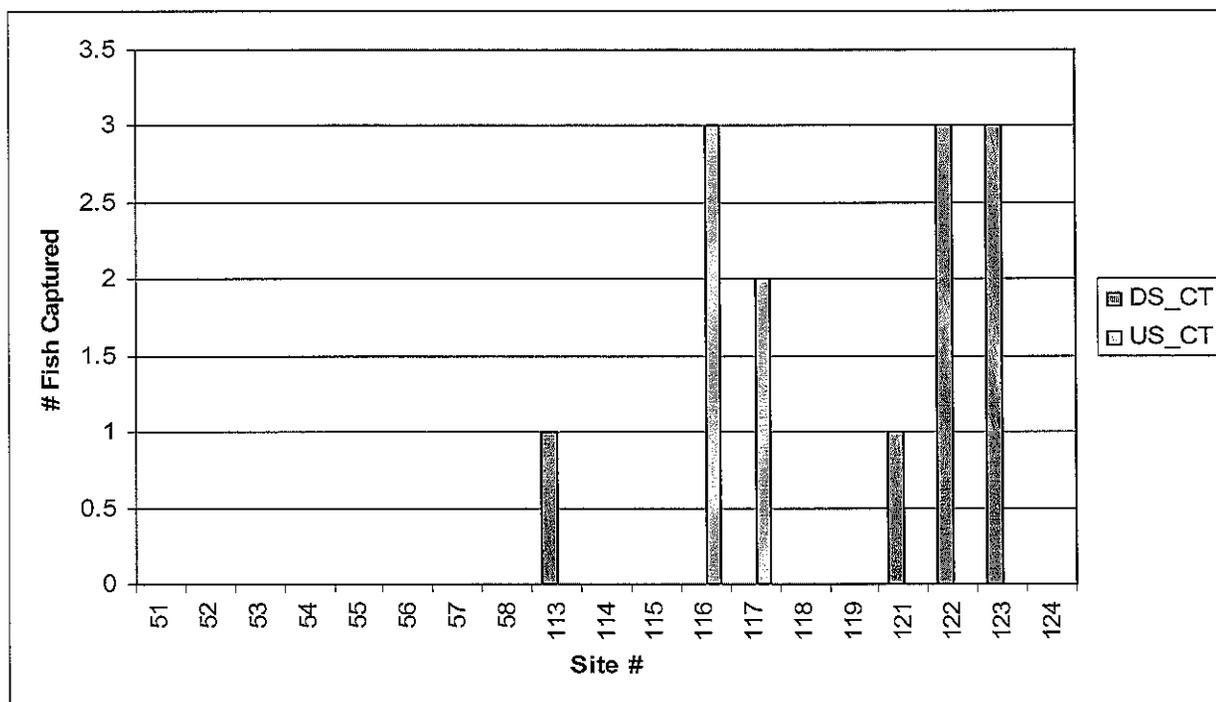
Cutthroat trout, *Onchorhynchus clarki*, were captured at 6 sites. Cutthroat trout were captured below the crossing structure only at 4 locations and above the crossing structure only at the remaining 2 locations.



**Figure 8. Coho trapping results associated with stream crossing structures on the temporary road paralleling Black Bear Creek**



**Figure 9. Dolly Varden trapping results associated with stream crossing structures on the temporary road paralleling Black Bear Creek**



**Figure 10. Cutthroat trout trapping results associated with stream crossing structures on the temporary road paralleling Black Bear Creek**

**Stream Crossings:**

The H&R crew collected data at 18 stream crossings on the logging road paralleling Black Bear Creek.

**Culvert Pipes:**

The H&R crew collected data on 13 corrugated metal pipes. Of the 13 pipes, 3 of them were perched and 1 was damaged.

**Log Stringer Bridges:**

The H&R crew collected data on 4 log stringer bridges, all of which were working properly.

**Modular Bridges:**

The H&R crew collected data on 1 modular bridge, which was working properly.

**Anadromous Waters Catalog Nominations and Edits:**

Four streams will be nominated to the AWC during the next cycle of nominations in 2004 (Table 1).

Table 1. Streams to be nominated to the AWC

Stream Code	Length of Stream	# coho trapped at stream crossing
103-60-10310-A	0.08 miles	10
103-60-10310-B	0.16 miles	2
103-60-A	0.03 miles	4
103-60-B	0.03 miles	11

Stream 103-60-10310-2044, will be nominated for edits to more accurately represent the stream course.

## REFERENCES

Alaska Department of Fish and Game (ADF&G). Habitat Division. 2002. Draft version of digital Catalog of waters important for spawning, rearing or migration of anadromous fishes. 6 vols. Alaska Department of Fish and Game, Anchorage, Alaska. Revised periodically.

Romey, B. and Beamesderfer, R. 2001. Aquatic & Biological Assessment of the South Fork to Black Bear Creek, Prince of Wales Island, Alaska.