

State of Alaska
 Department of Fish and Game
 Nomination for Waters
 Important to Anadromous Fish

1988
 Year of Revision

Anadromous Water Catalog Volume Arctic II
 USGS Quad Unalakleet C-2
 Name of Waterway _____
 Anadromous Water Catalog Number of Waterway _____
333-60-10100-2400

OTCA

Change to Atlas
 Catalog
 Both

Addition
 Deletion _____
 Correction _____

Name addition:
 USGS name _____
 Local name _____

For Office Use

| | |
|---------------------------------------|-------------------------|
| Nomination # | <u>05-2035</u> |
| <u>R. Mott</u> Regional Supervisor | <u>11/10/87</u> Date |
| <u>STS</u> | <u>12/1/87</u> |
| <u>FI</u> Drafted | <u>11/30/87</u> Date |

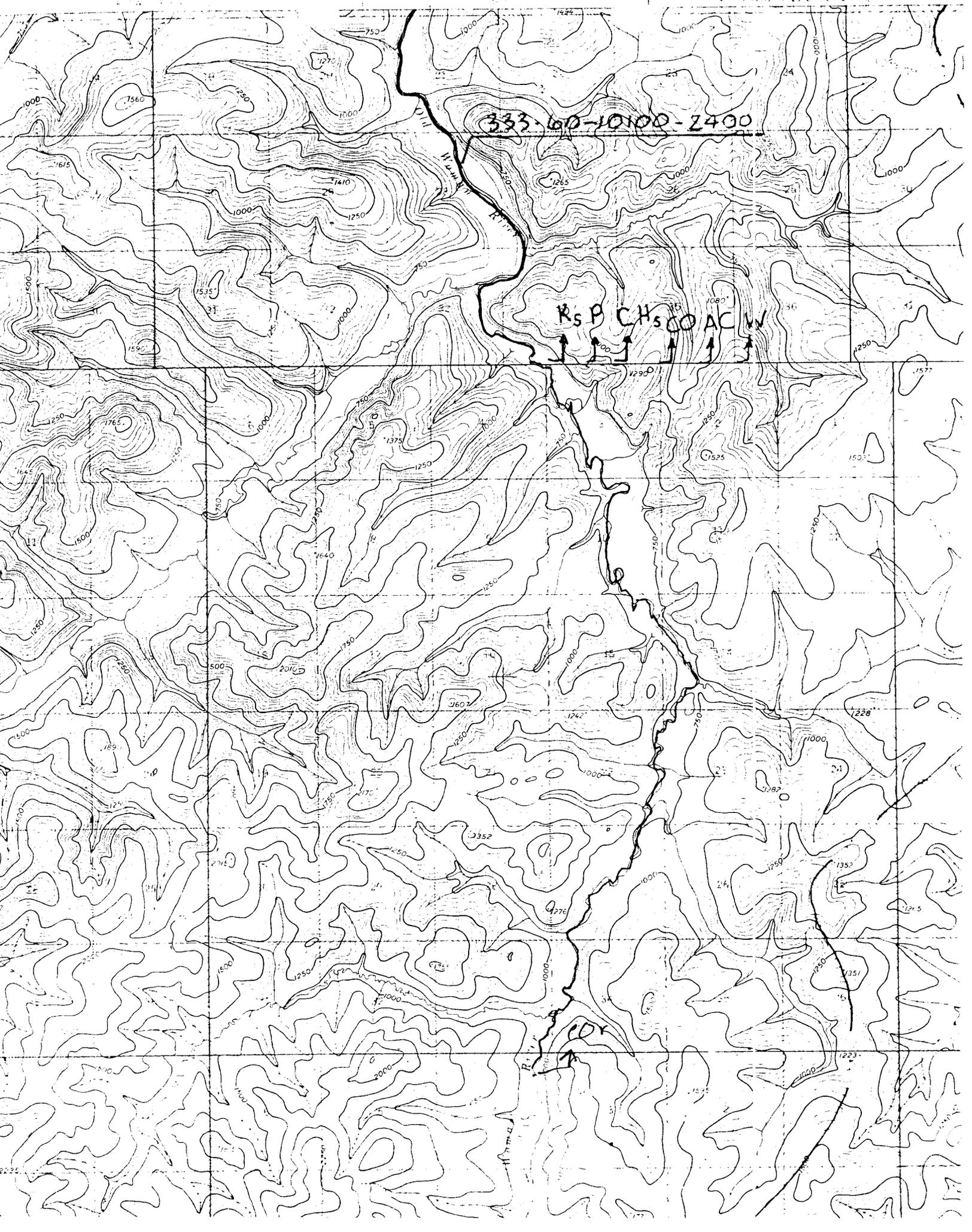
| Species | Date(s) Observed | Spawning | Rearing | Migration |
|-------------|------------------|----------|----------|-----------|
| <u>Coho</u> | <u>7/15/88</u> | | <u>X</u> | |
| | | | | |
| | | | | |
| | | | | |

Comments: Provide any clarifying information, including number of fish observed, location of fish survey data, etc.

Extend coho rearing as shown. Based on Unalakleet River Salmon Distribution Inventory (attached)

Attach a copy of a map showing location of mouth and upper points of each species, specific stream reaches identified for spawning or rearing, locations of barriers, such as falls. Attach a copy of the fish survey data, if available.

Name of Observer (please print) Mike Scott
 Date: 9 Nov Signature: Mike Scott
 Address: Fisheries Biologist
BLM Anchorage District Office
 Signature of Area Biologist: Chris Lee



UNALAKLEET RIVER SALMON DISTRIBUTION INVENTORY

July 1985

Mike Scott, Anchorage District Office
Joe Webb, Fairbanks District Office
Bureau of Land Management

Introduction

The Anchorage and Fairbanks District Offices of the Bureau of Land Management (BLM) conducted a joint inventory of fish habitat in the Unalakleet River watershed during July, 1985. The surface management of the watershed is shared jointly by the two districts while the National Wild River Corridor is under management of a river management plan developed by the Anchorage District Office (ADO). Native allotments and ANCSA selections cover some of the land adjacent to the lower river. The upper river watershed is within the Northwest Resource Area's Central Yukon Planning Area and the area's high fishery values will be given special consideration in the draft plan. The primary objective of this inventory effort was to define upper limits of distribution of arctic (Dolly Varden) char and four species of pacific salmon (chinook, coho, chum, pink).

This inventory is one phase of ADO's Unalakleet River Master Aquatic Habitat Management Plan. Other HMP projects implemented during the summer were a cooperative sport fishing creel census with the Alaska Department of Fish and Game (ADF&G) and collections of arctic (Dolly Varden) char for an age and growth study. Char were also collected for a genetics study. Results from these studies will be available during the spring and summer, 1986.

Materials and Methods

The inventory was conducted during the period July 9-16, 1985.

A helicopter was used to get to predetermined sampling sites from base camp on the Unalakleet River. Visual observations determined concentrations of adult salmon as we flew up tributaries to sampling areas for juvenile upper limit determination. Hook and line, minnow traps, seines and electrofishing gear were used to determine species present at the pre-selected sampling sites. Minnow traps were baited with salmon eggs, set overnight, and picked up the next day.

Results

Table 1 shows the results of sampling. The data are arranged by major drainages within the Unalakleet River Watershed. The column in the table that is headed "area sample number" corresponds to numbers on the maps showing sampling locations. (Figures 1 and 2.)

A total of 36 locations were sampled for presence of fish. Table 1 shows the results obtained at 26 of these locations. The data not shown was omitted due to negative results (i.e., no salmon or char collected) or the sample area was downstream from an area already confirmed to have salmon or char. All but 2 of the 10 omitted sampling sites had fish of some species, often grayling and sculpin. Char and coho salmon fingerlings were found in nearly all of the small tributary streams sampled. Many of these fish were young-of-the-year, about one to two inches long. Some rearing size (large fingerlings) char and dwarf stream resident char were captured in some areas.

Concentrations of adult salmon, char, and grayling were observed at the confluence of Old Woman River and Ten Mile Creek with the Unalakleet River. While flying to upstream sample locations, we attempted to follow the stream to observe adult chinook and chum salmon. In the lower reaches of the stream, high colored water precluded observations of salmon. Very few adult salmon were seen in the upper reaches where viewing conditions were usually good (clear water). It is our opinion that salmon had not distributed into the upper reaches of the tributaries when we conducted our inventories and that spawning of chums and chinooks was later than normal. The escapement for the Unalakleet River chums and chinooks was about average or slightly above according to ADF&G with 1,475 chinooks seen in their aerial inventories and 4,687 chums. Pink salmon run on an odd/even year cycle, therefore in 1985 few pink salmon returned.

Discussion

As stated earlier, the primary objective of the inventory was to define the upper limits of distribution of salmon and char in the Unalakleet system. Consequently, sampling efforts were concentrated in the upper reaches of the major tributary streams (Chiroskey, North, North Fork, Old Woman, and Upper Unalakleet) and many of their smaller tributaries. Time and money limitations precluded sampling all potential salmon and char habitats.

Figure 1. UNALAKLEET WATERSHED FISH SAMPLING LOCATIONS.
(Norton Bay, Quadrangle)

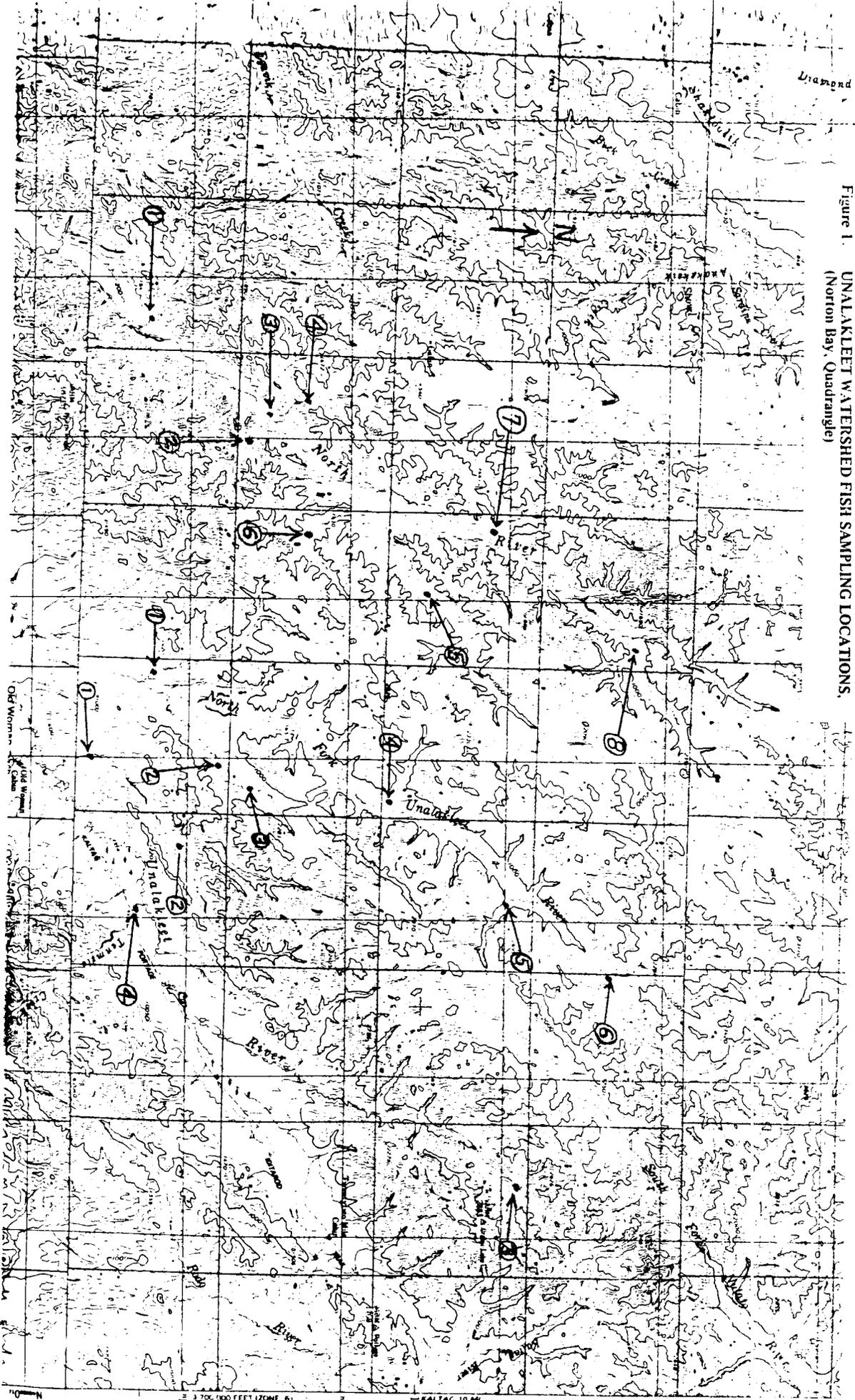


Figure 2: UNALAKLEET WATERSHED FISH SAMPLING LOCATIONS, (Unalakleet, Quadrangle)

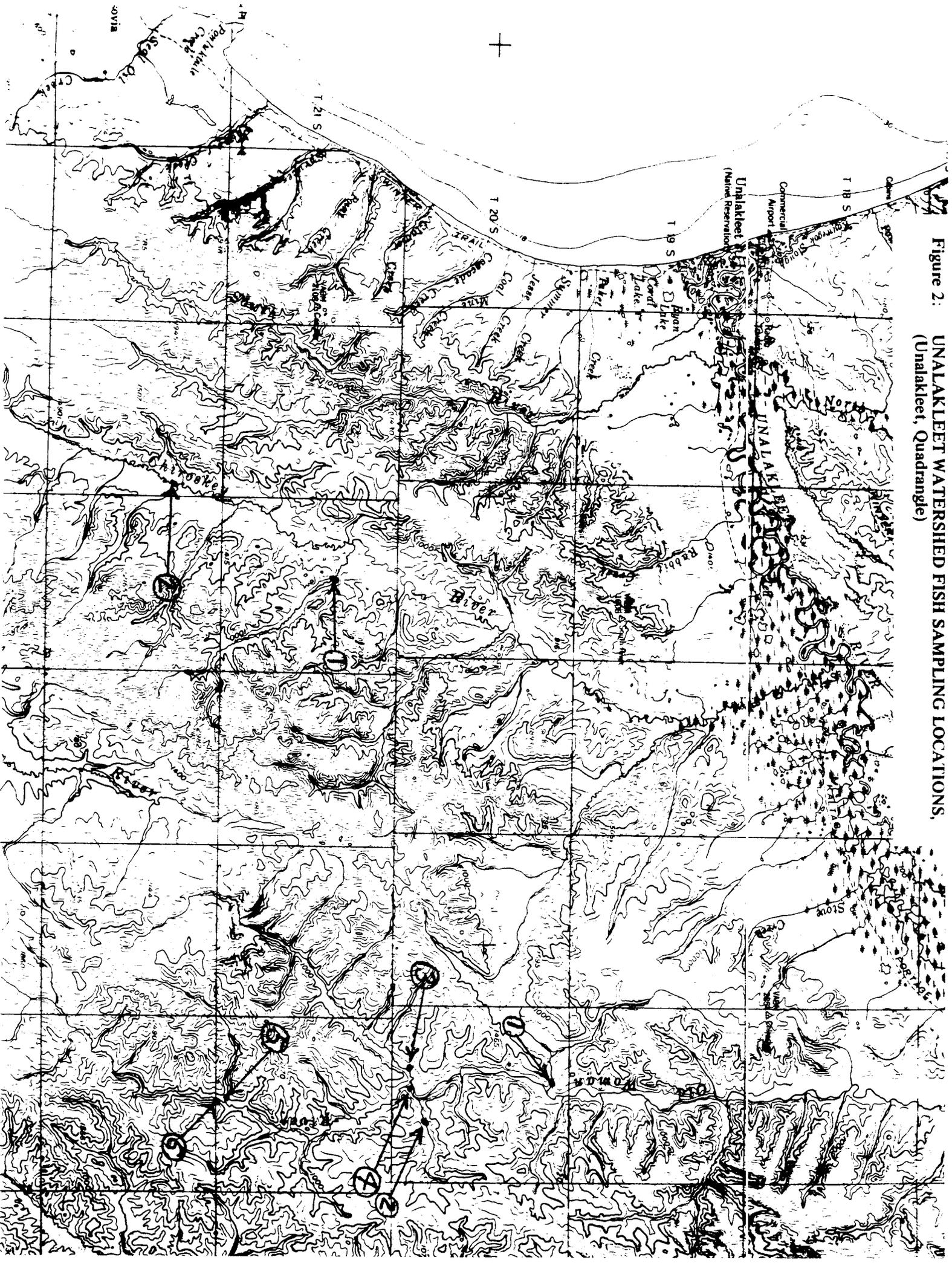


Table 2 compares our findings and interpretations with data found in the Alaska Department of Fish and Game Anadromous Stream Atlas. As shown in Table 3, we have discovered 12 anadromous fish areas previously not listed. Additionally, we have documented new sightings of species for 12 other areas that are listed for other reasons. We believe many of these small streams to have spawning habitat for coho salmon and char due to collecting 1 to 2-inch total length fish in upper reaches above areas having significant impediments to upstream movement of fry or small fingerlings. (High stream velocities in some areas and beaver dams would likely prevent significant upstream movement of 1-inch fish.) Also, small headwater streams are known to serve as spawning habitat for coho and char in other areas. Results of inventories conducted in the Tulaksak River drainage in 1983 suggest coho and char spawn and rear in the headwaters of tributaries (Franciso and Sunberg, 1983). Many of these small tributaries likely serve as spawning habitat for chum salmon, but we were in the area too early to document this. Chum salmon fry migrate towards the ocean during or right after break-up in the spring, therefore chum salmon fry were not collected. Char and coho are late summer and fall spawners and rear in fresh water one to two years.

A generalized description of the "typical" small stream habitat area for char and coho we sampled is as follows: total length 5 to 15 miles; width in lower reaches 10 to 25 feet; gravel substrate; mixed stream velocities, slow to torrential; evidence of past and present use by beavers; riparian vegetation mixed and variable (willow, spruce, beaver ponded bogs, muskeg); valleys are narrow, usually one mile or less. Also, the slimy sculpin was usually found in the same areas. Grayling and whitefish were usually not present.

The ADF&G shows many of the small tributaries to be chinook salmon rearing habitat, but we did not collect any young chinook in our inventories of these areas.

Conclusions

Small tributary streams and headwater areas of the major streams in the Unalakleet River system are used for spawning and rearing habitat by coho salmon and arctic (Dolly Varden) char. There was no observations to indicate that any one of these streams was of crucial importance to the population as a whole, but collectively they constitute habitat of great importance to char and salmon populations utilizing the Unalakleet system.

TABLE 1: UNALAKLEET RIVER UPPER LIMITS SALMONID DISTRIBUTION (7/9-16/85)

| Major Tributary System | Stream Name | Location of Mouth | Date | Sample Area Location | Methods | Sample Location Number | Results |
|------------------------|-----------------------|--|---------|---|----------------------|------------------------|--------------------------|
| North River (6) | 1) Unnamed | NW 1/4 T. 16 S., R. 9 W., Sec. 25. Norton Bay A-3. | 7/10/85 | T. 16 S., R. 9 W., Sec. 23, 24, Norton Bay A-3. | Electrofishing | 1 | Char (1-2"), Coho (1-2") |
| | 2) Unnamed | T. 15 S., R. 8 W., Sec. 28, SW 1/4 (east side) Norton Bay A-3. | 7/10/85 | T. 15 S., R. 8 W., Sec. 34. | Electrofishing | 2 | Coho 1-2", Char 1-2" |
| | 3) Main Stream | ----- | 7/10/85 | T. 15 S., R. 8 W., Sec. 28, SW 1/4. | Electrofishing | 3 | Coho (1"-2") |
| | 4) Unnamed | T. 15 S., R. 8 W., Sec. 28, NE 1/4. Norton Bay A-3. | 7/10/85 | T. 15 S., R. 8 W., Sec. 20. | Electrofishing | 4 | Char (1-4"), Coho (1-2") |
| | 5) Unnamed | T. 14 S., R. 8 W., Sec. 36, SW 1/4. Norton Bay A-3. | 7/09/85 | T. 14 S., R. 7 W., Sec. 27. | Electrofishing | 5 | Char (1-3") |
| | 6) Unnamed | T. 14 S., R. 8 W., Sec. 36, SW 1/4. Norton Bay A-3. | 7/10/85 | T. 15 S., R. 7 W., Sec. 19. | Minnow Traps | 6 | Coho (1-2"), Char (1-3") |
| | 7) Unnamed | T. 14 S., R. 7 W., Sec. 17, NW 1/4. Norton Bay B-3. | 7/09/85 | T. 14 S., R. 7 W., Sec. 7, SE 1/4. | Electrofishing | 7 | Char (1") |
| | 8) Main Stream | ----- | 7/09/85 | T. 13 S., R. 7 W., Sec. 13. Norton Bay B-2. | Electrofishing | 8 | Char (1") |
| North Fork (1) | 1) Unnamed | T. 16 S., R. 6 W., Sec. 19. (west side) Norton Bay A-2. | 7/14/85 | T. 16 S., R. 6 W., Sec. 19. | Electrofishing | 1 | Char (1-2") |
| | 2) Unnamed | T. 16 S., R. 6 W., Sec. 17. Norton Bay A-2. | 7/14/85 | T. 16 S., R. 6 W., Sec. 3. | Minnow Traps | 2 | Char (1-6") Coho (2") |
| | 3) Unnamed Same as 2. | T. 16 S., R. 6 W., Sec. 17. Norton Bay A-2. | 7/14/85 | T. 15 S., R. 6 W., Sec. 35. NE 1/4. | Minnow Traps | 3 | Char (1-6") Coho (2") |
| | 4) Unnamed | T. 14 S., R. 6 W., Sec. 36 Norton Bay A-2. | 7/14/85 | T. 14 S., R. 6 W., Sec. 36. | Electrofishing | 4 | Char (1-2") |
| | 5) Unnamed | T. 14 S., R. 5 W., Sec. 3, SW 1/4 (east side) Norton Bay B-2. | 7/13/85 | T. 14 S., R. 5 W., Sec. 3. | Electrofishing | 5 | Char (1-2") Coho (2") |
| | 6) Main Stream | ----- | 7/14/85 | T. 13 S., R. 4 W., Secs. 18, 19. T. 13 S., R. 5 W., Secs. 13, 24. Norton Bay B-2. | (3) Minnow (3) Traps | 6 | Char (1-5") Coho (2") |

TABLE 1: UNALAKLEET RIVER UPPER LIMITS SALMONID DISTRIBUTION (7/9-16/85) continued

| Major Tributary System | Stream Name | Location of Mouth | Date | Sample Area Location | Methods | Sample Location Number | Results |
|------------------------|--|---|---------|---|---------------------------------|------------------------|--|
| Old Woman River | 1) Unnamed 2) Unnamed 3) Unnamed 4) Main Stream | T. 20 S., R. 6 W., Sec. 4. Unalakleet D-2. T. 20 S., R. 6 W., Sec. 34. Unalakleet C-2. T. 20 S., R. 6 W., Sec. 33. Unalakleet C-2. ----- T. 21 S., R. 6 W., Sec. 33. Unalakleet C-2. ----- | 7/15/85 | T. 20 S., R. 6 W., Sec. 4. Unalakleet D-2. | Electrofishing | 1 | Char, Coho (1-2") |
| | | | 7/15/85 | T. 20 S., R. 6 W., Sec. 26. Unalakleet C-2. | Electrofishing | 2 | Char (1-2") |
| | | | 7/15/85 | T. 20 S., R. 6 W., Sec. 33. Unalakleet C-2. | Electrofishing | 3 | Char (1-2") Coho (1") |
| | | | 7/15/85 | T. 20 S., R. 6 W., Sec. 33. Unalakleet C-2. | Visual Obser. Electrofishing | 4 | 5 Chum salmon spawning activity noted. |
| | | | 7/15/85 | T. 21 S., R. 6 W., Sec. 33. Unalakleet C-2. | Electrofishing | 5 | Char (1-2") Coho (1-2") |
| | | | 7/15/85 | T. 21 S., R. 6 W., Sec. 33. Unalakleet C-2. | Electrofishing | 6 | Char (1-2") Coho (1-2") |
| Chiroskey River | 1) Unnamed 2) Mainstream | T. 21 S., R. 9 W., Sec. 8. Unalakleet C-3. ----- | 7/14/85 | T. 21 S., R. 9 W., Sec. 16, NE $\frac{1}{2}$. Unalakleet C-3. | Electrofishing | 1 | Char (3-4") |
| | | | 7/14/85 | T. 22 S., R. 10 W., Sec. 12. Unalakleet C-4. | Visual Observation | 2 | Adult Chum |
| Unalakleet River | 1) Unnamed 2) Unnamed 3) Main Stream | T. 17 S., R. 6 W., Sec. 2, SW $\frac{1}{4}$. Norton Bay A-2. ----- ----- T. 16 S., R. 5 W., Sec. 22. Norton Bay A-2. | 7/15/85 | T. 16 S., R. 6 W., Sec. 34. | Electrofishing | 1 | Char (2") Coho (1-2") |
| | | | 7/15/85 | T. 16 S., R. 5 W., Sec. 8. | Electrofishing | 2 | Char (2") Coho (1-2") |
| | | | 7/16/85 | T. 13 S., R. 3 W., Sec. 34. Norton Bay B-1. | Electrofishing | 3 | Char (2-4") |
| | | | 7/14/85 | T. 16 S., R. 5 W., Sec. 22. Norton Bay A-2. | Visual Observation | 4 | Chinook, Chum Adults moving upstream. |

TABLE 2: COMPARISON OF THIS STUDY RESULTS WITH ADF&G
ANADROMOUS STREAM ATLAS DATA

| Sample Area | ADF&G LISTED STREAM | | ADF&G Listed Use | Probable New Use |
|----------------|-----------------------|----|---|-------------------------------------|
| | Yes | No | | |
| Old Woman - 1 | 3240 | | Chinook Salmon Rearing | Char, Coho spawning and rearing. |
| Old Woman - 2 | | No | | Char spawning and rearing. |
| Old Woman - 3 | | No | | Char, Coho spawning and rearing. |
| Old Woman - 4 | 333-60- 10100-2400 | | Chinook and Chum spawning upper limits of pink, coho, char. | Char, Coho spawning and rearing. |
| Old Woman - 5 | | No | | Char, Coho spawning and rearing. |
| Old Woman - 6 | | No | | Char, Coho spawning and rearing. |
| Chiroskey - 1 | 3251 | | Chum Salmon upper limits. | Char rearing |
| Chiroskey - 2 | 333-60- 10100-2130 | No | No use listed this far upstream | Chum salmon upper limits extension. |
| Unalakleet - 1 | 2411 | | Chinook salmon rearing. | Char, Coho spawning and rearing. |
| Unalakleet - 2 | 2411 | No | No use listed up this far. | Char, Coho spawning and rearing. |
| Unalakleet - 3 | 333-60- 10100 | No | No use listed up this far. | Char spawning and rearing. |
| Unalakleet - 4 | 2480 | | Chinook salmon rearing. | Chinook and Chum spawning. |