(8)

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 (100) Norton Bay B-2

Name of Waterway

Anadromous Water Catalog Number of Waterway
333-60-10100-2331-3220

Change to \ Atlas
Catalog
X Both

Addition X

Deletion

Correction

Name addition:

USGS name

Local name

For Office Use

Nomination # 88202

Regional Supervisor 11/10/87 Date

12/1/87

F1 Drafted 11/30/87 Date

Species	Date(s) Observed	Spawning	Rearing	Migration
Coho	7/13/85		X	

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

Extend COH as shown Based on Unalakleet River Salmon Distribution Inventory (attached)

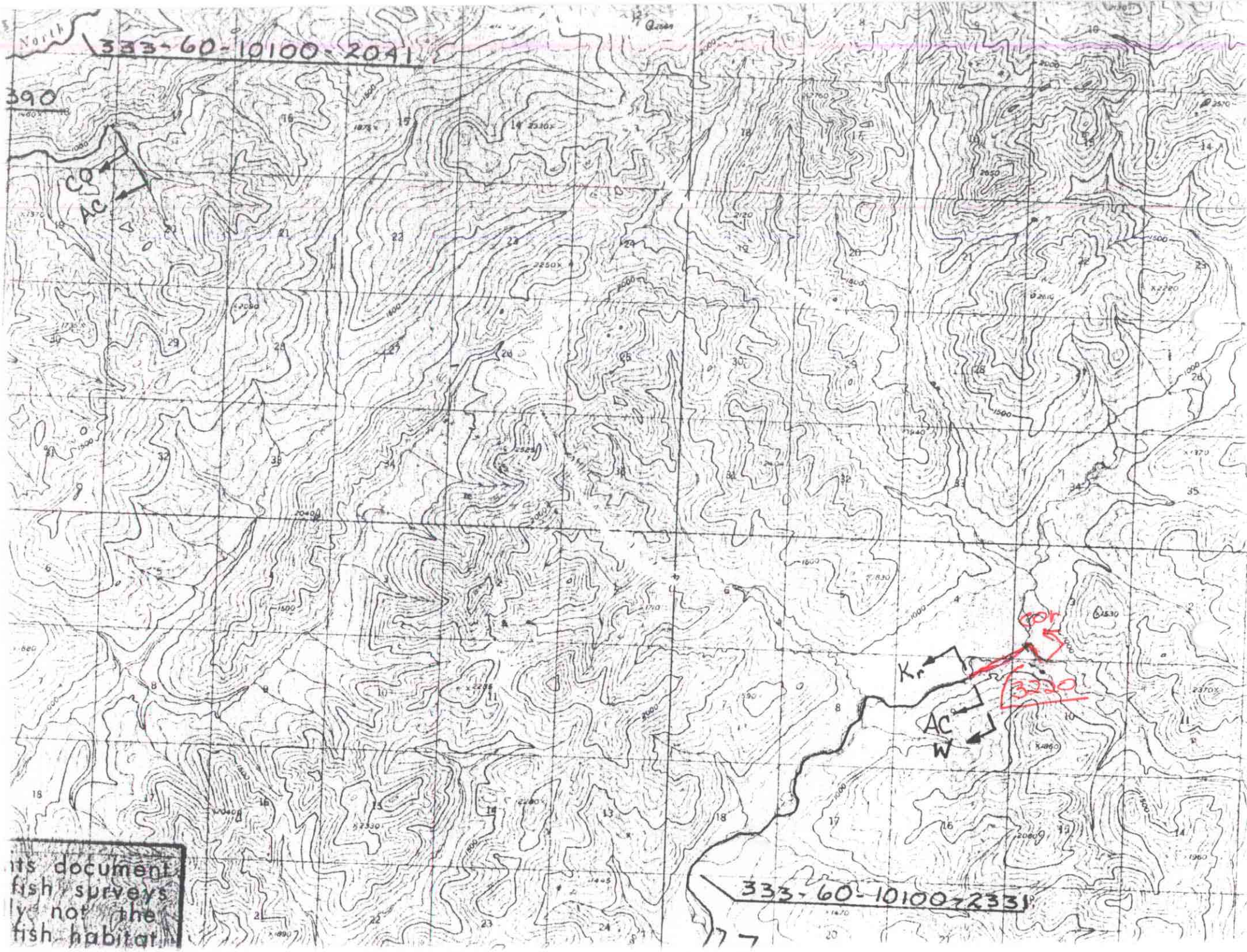
Attach a copy of a map showing location of mouth and upper points of each species, specific stream reaches identified for spawning or rearing, locations of barriers, such as falls. Attach a copy of the fish survey data, if available.

Name of Observer (please print) Mike Scott

Date: 9 Nov Signature: Mike Scott

Address: Fisheries Biologist
BLM Anchorage District Office

Signature of Area Biologist: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UNALAKLEET RIVER SALMON DISTRIBUTION INVENTORY

July 1985

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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)

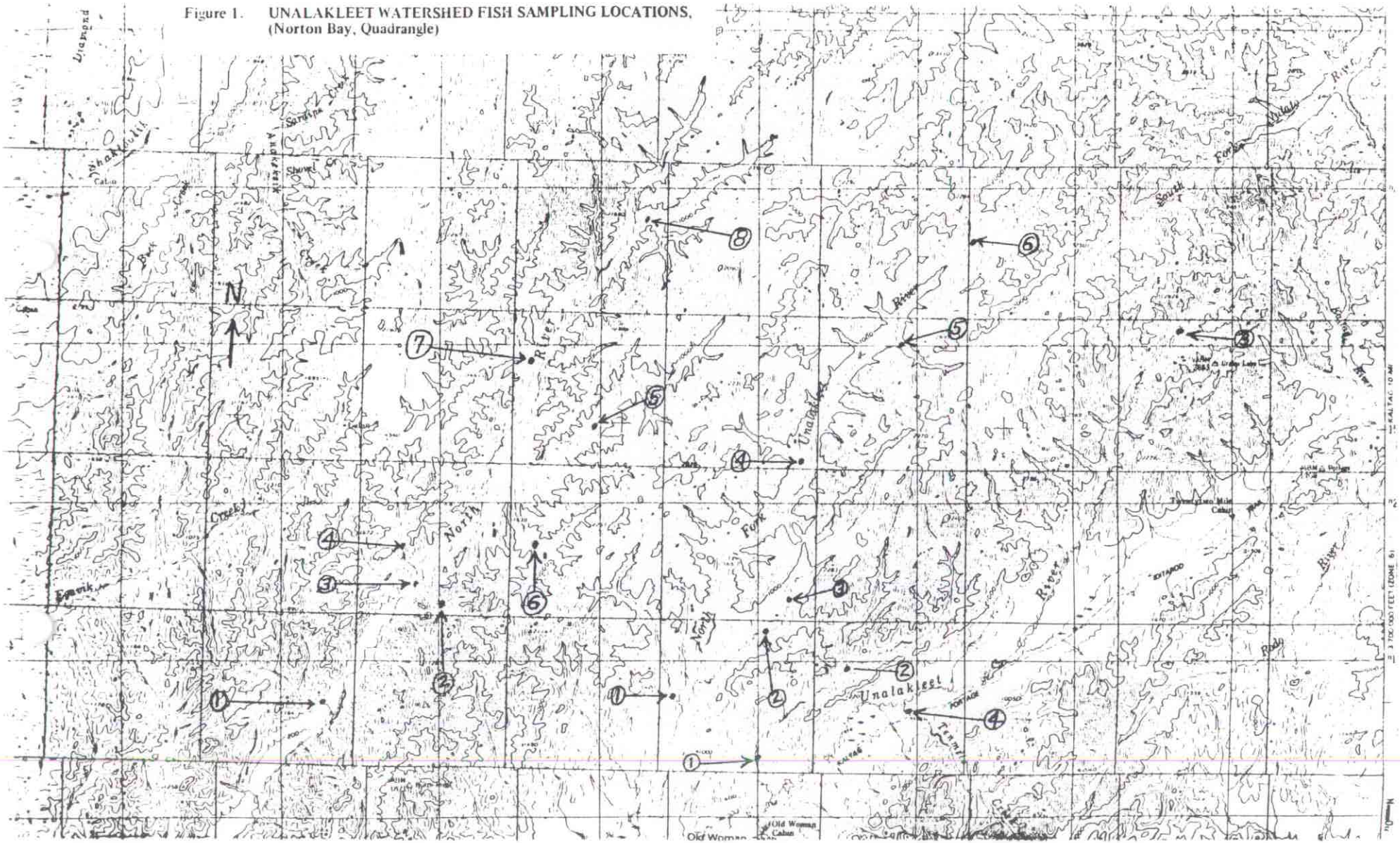

Figure 2: UNALAKLEET WATERSHED FISH SAMPLING LOCATIONS, (Unalakleet, Quadrangle)

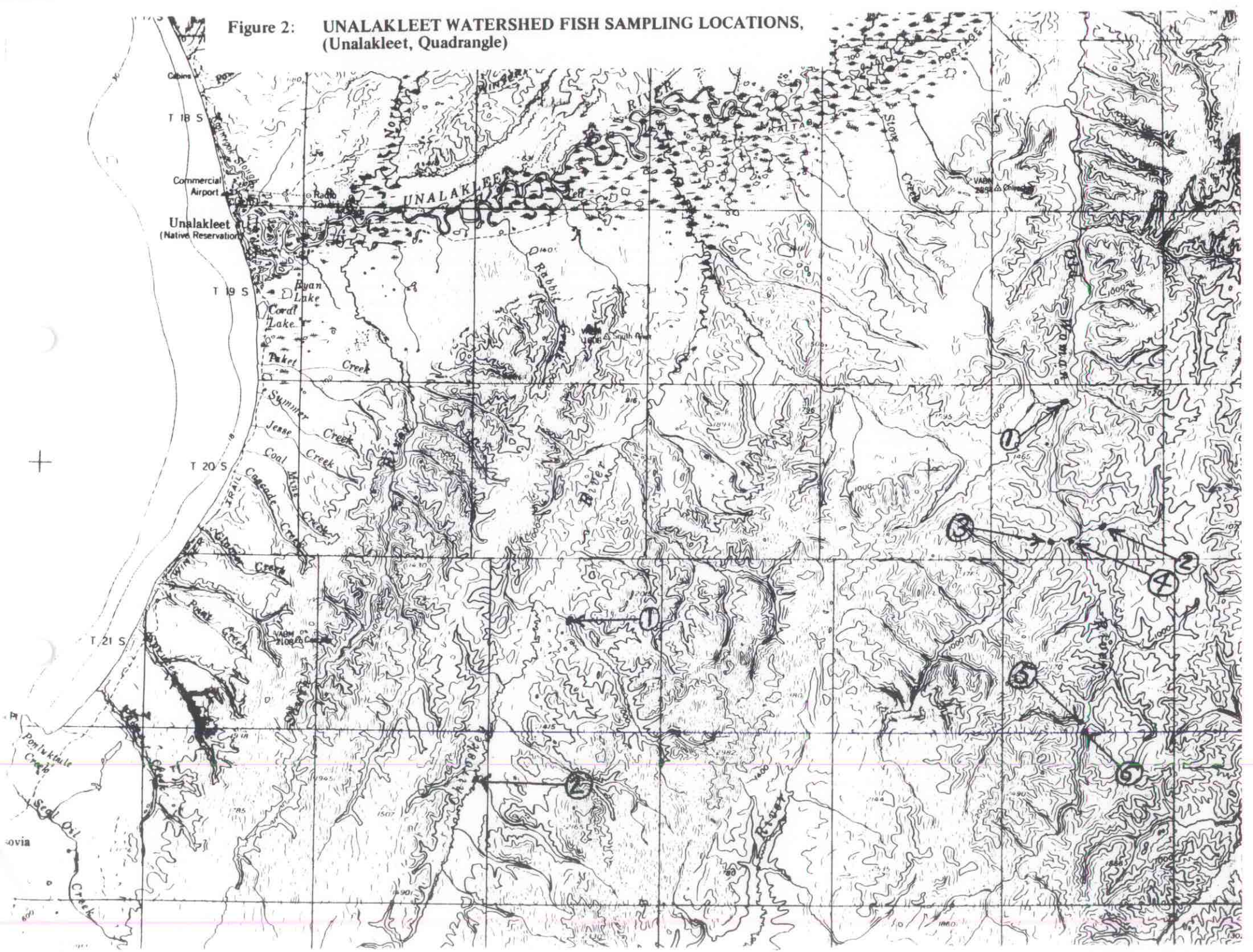

Table 2 compares our findings and interpretations with data found in the Alaska Department of Fish and Game Anadromous Stream Atlas. As shown in Table 3, we have discovered 12 anadromous fish areas previously not listed. Additionally, we have documented new sightings of species for 12 other areas that 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	1) Unnamed	NW¼ 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.	Electrofish	1	Char (1-2"), Coho (1-2")
	2) Unnamed	T. 15 S., R. 8 W, Sec. 28, SW¼(east side) Norton Bay A-3.	7/10/85	T. 15 S., R. 8 W., Sec. 34.	Electrofish	2	Coho 1-2", Char 1-2"
North River	3) Main Stream	----------	7/10/85	T. 15 S., R. 8 W., Sec. 28, SW¼.	Electrofish	3	Coho (1"-2")
	4) Unnamed	T. 15 S., R. 8 W., Sec. 28, NE¼. Norton Bay A-3.	7/10/85	T. 15 S., R. 8 W., Sec. 20.	Electrofish	4	Char (1-4") Coho (1-2")
	5) Unnamed	T. 14 S., R. 8 W., Sec. 36, SW¼. Norton Bay A-3.	7/09/85	T. 14 S., R. 7 W., Sec. 27.	Electrofish	5	Char (1-3")
	6) Unnamed	T. 14 S., R. 8 W., Sec. 36, SW¼. 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, NW¼. Norton Bay B-3.	7/09/85	T. 14 S., R. 7 W., Sec. 7, SE¼.	Electrofish	7	Char (1")
North River	8) Main Stream	----------	7/09/85	T. 13 S., R. 7 W., Sec. 13. Norton Bay B-2	Electrofish	8	Char (1")
North Fork	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.	Electrofish	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. NE¼.	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.	Electrofish	4	Char (1-2")
	5) Unnamed	T. 14 S., R. 5 W., Sec. 3, SW¼(east side) Norton Bay B-2.	7/13/85	T. 14 S., R. 5 W., Sec. 3.	Electrofish	5	Char (1-2") Coho (2")
North Fork	6) Main Stream			T. 13 S., R. 4 W., Secs. 18, 19 T. 13 S., R. 5 W., Secs. 13, 24	(3) Minnow 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	T. 20 S., R. 6 W., Sec. 4. Unalakleet D-2.	7/15/85	T. 20 S., R. 6 W., Sec. 4. Unalakleet D-2.	Electrofish	1	Char, Coho (1-2")
	2) Unnamed	T. 20 S., R. 6 W., Sec. 34. Unalakleet C-2.	7/15/85	T. 20 S., R. 6 W., Sec. 26. Unalakleet C-2.	Electrofish	2	Char (1-2")
	3) Unnamed	T. 20 S., R. 6 W., Sec. 33. Unalakleet C-2.	7/15/85	T. 20 S., R. 6 W., Sec. 33. Unalakleet C-2.	Electrofish	3	Char (1-2") Coho (1")
	4) Main Stream	----------	7/15/85	T. 20 S., R. 6 W., Sec. 33. Unalakleet C-2.	Visual Obser. Electrofish	4	5 Chum salmon spawning activity noted.
	5) Unnamed	T. 21 S., R. 6 W., Sec. 33. Unalakleet C-2.	7/15/85	T. 21 S., R. 6 W., Sec. 33. Unalakleet C-2.	Electrofish	5	Char (1-2") Coho (1-2")
	6) Mainstream	----------	7/15/85	T. 21 S., R. 6 W., Sec. 33. Unalakleet C-2.	Electrofish	6	Char (1-2") Coho (1-2")
Chiroskey River	1) Unnamed	T. 21 S., R. 9 W., Sec. 8. Unalakleet C-3.	7/14/85	T. 21 S., R. 9 W., Sec. 16, NE¼. Unalakleet C-3.	Electrofish	1	Char (3-4")
	2) Mainstream	----------	7/14/85	T. 22 S., R. 10 W., Sec. 12. Unalakleet C-4.	Visual Observation	2	Adult Chum
Unalakleet River	1) Unnamed	T. 17 S., R. 6 W., Sec. 2, SW¼. Norton Bay A-2.	7/15/85	T. 16 S., R. 6 W., Sec. 34.	Electrofish	1	Char (2") Coho (1-2")
	2) Unnamed	----------	7/15/85	T. 16 S., R. 5 W., Sec. 8.	Electrofish	2	Char (2") Coho (1-2")
Unalakleet River	3) Main Stream	----------	7/16/85	T. 13 S., R. 3 W., Sec. 34. Norton Bay B-1.	Electrofish	3	Char (2-4")
	4)Tenmile River	T. 16 S., R. 5 W., Sec. 22. Norton Bay A-2.	7/14/85	T. 16 S., R. 5 W., Sec. 22.	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.