

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

1993
Year of Revision

Anadromous Water Catalog Volume Arctic V
USCS Quad HARRISON BAY A-2
Name of Waterway Colville River 330-00-10700
Anadromous Water Catalog Number of Waterway _____

Change to _____ Atlas
_____ Catalog
_____ Both
Addition _____
Deletion _____
Correction _____

ADDITIONAL
INFO X

Name additions:

USCS name _____
Local name _____

For Office Use

Nomination # <u>93 083</u>	
<u>Paul H. McLean</u> Regional Supervisor	<u>10/2/92</u> Date
_____	_____
Drafted _____	Date _____

Species	Date(s) Observed	Spawning	Rearing	Migration
Rainbow Smelt	Pink salmon (64)	- near Skillick R.		
Broad Whitefish	Chum salmon (29)	near umiat moving upstream		
Arctic Char	King salmon (1)	near Etivluk R.		
Arctic Cisco				
Humpback whitefish				

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

Bendock, T.N. 1979. Inventory and Cataloging of Arctic Area Waters. ADF&G, SF; Study G-I-I, Vol 20: 1-64.

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) _____

Date: 3/29/90

lit. search

Signature: _____

Address: _____

Signature of Area Biologist: _____

ALASKA DEPT. OF
FISH & GAME

OCT 15 1992

REGION II
HABITAT DIVISION

Paul H. McLean

STATE OF ALASKA

Jay S. Hammond, Governor



Annual Performance Report for

INVENTORY AND CATALOGING OF
ARCTIC AREA WATERS

by

Terrence N. Bendock

ALASKA DEPARTMENT OF FISH AND GAME
Ronald O. Skoog, Commissioner

SPORT FISH DIVISION
Rupert E. Andrews, Director

FINDINGS

Lake and Stream Surveys - Colville River System

A total of 16 species of fish representing six families was encountered within the study area. The main reaches of the Colville River offered the greatest diversity and abundance of fish. Three additional species, rainbow smelt, *Osmerus mordax* (Mitchill), fourhorn sculpin, *Myoxocephalus quadricornis* (Linnaeus), and Arctic flounder, *Liopsetta glacialis* (Pallas), are reported to occur in the Colville Delta (Kogl, 1971) which was not surveyed during this study. Alaska blackfish, *Dallia pectoralis* Bean, are also reported from North Slope waters, but were not captured in the study area. Species diversity and abundance in the Colville River decrease in an upstream direction.

Stream surveys and gill netting were conducted throughout the main stem of the Colville River between the Itkillik River (lat. 70°90'N, long. 50°56'W) and the Nuka River (lat. 69°01'N, long. 158°55'W) as well as for varying distances into the lower reaches of all major tributary streams. Much of the data on seasonal distribution and movements is based on net catches at Umiat.

Ice breakup in the Colville River progressed from the headwaters to the delta and occurred at Umiat on May 31, 1977 and June 1, 1978. The Colville River was free of ice by June 10, at which time gill net catches near Umiat consisted of grayling, round whitefish, broad whitefish, burbot, longnose sucker, slimy sculpin, and ninespine stickleback. Grayling, longnose sucker, and ninespine stickleback began spawning in the third week of June in 5° to 8°C (41° to 46°F) water. Small tributaries that by mid-summer may become discontinuous, such as Seabee, Rainy, and Fossil creeks are used extensively by grayling for spawning, as are the major tributaries to the Colville River. Most spawning by grayling was completed by the end of June, at which time large numbers of "spent" fish were captured near the confluence of minor tributaries in the Colville River. Grayling also utilize the main stem of the Colville River for spawning (most notably above the Etivluk River) and appear to prefer slow moving or slack water less than 0.9 m (3 f') deep.

Longnose suckers spawn in the lower reaches of small tributaries, as well as in the main stem of the Colville and major tributaries. Spawning ninespine stickleback were captured in slow moving water in the lower portions of small tributaries.

The composition of net catches at Umiat throughout July and early August was similar to that following breakup. Arctic char and lake trout were captured infrequently at sites between the Anaktuvuk and Etivluk rivers throughout the open water season, and three mature Arctic cisco were captured at Umiat in early July, 1977.

A large run of mature humpback whitefish and immature and mature broad whitefish occurred at Umiat the third week of August, with peak numbers of fish captured in the last days of the month. Humpback and broad whitefish spawn during September throughout the lower and middle reaches of the Colville River; however, precise spawning locations within the drainage have not been delineated at this time.

A total of 64 pink, 29 chum, and 1 king salmon was captured in the Colville River between the Itkillik and Etivluk rivers during 1978. Pink salmon were spawning near the Itkillik River on August 11 and at Umiat on August 19. Chum salmon were moving upstream past Umiat on August 19 and were not yet ripe. A single king salmon that had not spawned was captured near the mouth of the Etivluk River on September 4, 1978.

Table 2 presents species composition of stream survey locations in the Colville River drainage. Preliminary information on the timing of instream migrations and spawning for several species is presented in Fig. 2. This information is based on net catches at Umiat. Data on the duration of spawning periods are incomplete at this time. The distribution of Colville River species is shown in Fig. 3.

Stream waters in the Colville River drainage are characteristically soft. Total hardness at stream survey locations ranged from 34 to 119 ppm and averaged 75 ppm. Alkalinity ranged from 17 to 103 ppm (\bar{x} 62 ppm) and pH varied between 7 and 8.

Due to physiographic difference in stream morphology and discharge, the main stem of the Colville was divided into the four sections mentioned previously in this report. Most of the survey effort was in Sections II and III during 1977 and in Sections II and IV during 1978.

Section I:

Section I of the Colville River extends from Harrison Bay up to the confluence with the Itkillik River and consists of the two main channels of the Delta. Fishery values for this section of the Colville are described by Kogl (1971) and Kogl and Schell, 1975.

Section II:

Section II of the Colville River extends from the mouth of the Itkillik River to the confluence with the Killik River (Fig. 4). Section II is heavily braided, traversing a broad river valley that rises approximately 150 m (500 ft) in 402 km (250 miles). Much of this section is bordered by high bluffs on the west and north banks. Potential overwintering habitat is abundant in this section of the Colville, with the greatest number of deep holes (to 10.5 m [35 ft]) occurring along bluffs between the Itkillik and Anaktuvuk rivers. The river bed at several locations near the Itkillik River lies at or below sea level. In Section II, the Colville River is bordered by extensive gravel bars that are covered with thick stands of willow and alder. Following breakup, the water is turbid and clears up only for brief periods during mid-summer when precipitation on the watershed is low. A jet unit is required for boat travel throughout most of the open water season.

Table 2 lists the species of fish captured in Section II. All of the species captured appear to spawn, rear, and overwinter in this reach of the Colville or its tributaries. With the exception of late summer and fall migrations of whitefish and salmon, the seasonal distribution of species inhabiting Section II remains unchanged. Few Arctic char were