

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

1986
 Year of Revision
 86-275

Anadromous Water Catalog Volume Southeast Region 1
 USGS Quad Sundum B-4 and C-4 (9)
 Name of Waterway Chuck River
 Anadromous Water Catalog Number of Waterway _____
110-32-10090-2019

Change to Atlas
 Catalog
 Both

Addition
 Deletion _____
 Correction _____

Name addition:
 USGS name _____
 Local name _____

ALASKA DEPT. OF
 FISH & GAME
 SEP 27 1985
 REGION II
 HABITAT DIVISION

For Office Use	
Nomination # _____	
<u>Richard Reed</u> Regional Supervisor	<u>9/25/85</u> Date
<u>OK</u> <u>SPS</u>	<u>10/23/85</u>
<u>TB</u> Drafted	<u>10-15-85</u> Date

Species	Date(s) Observed	Spawning	Rearing	Migration
<u>King, Cato, Gray, Pink</u>	<u>Annually during Comm. Fish Surveys</u>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

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

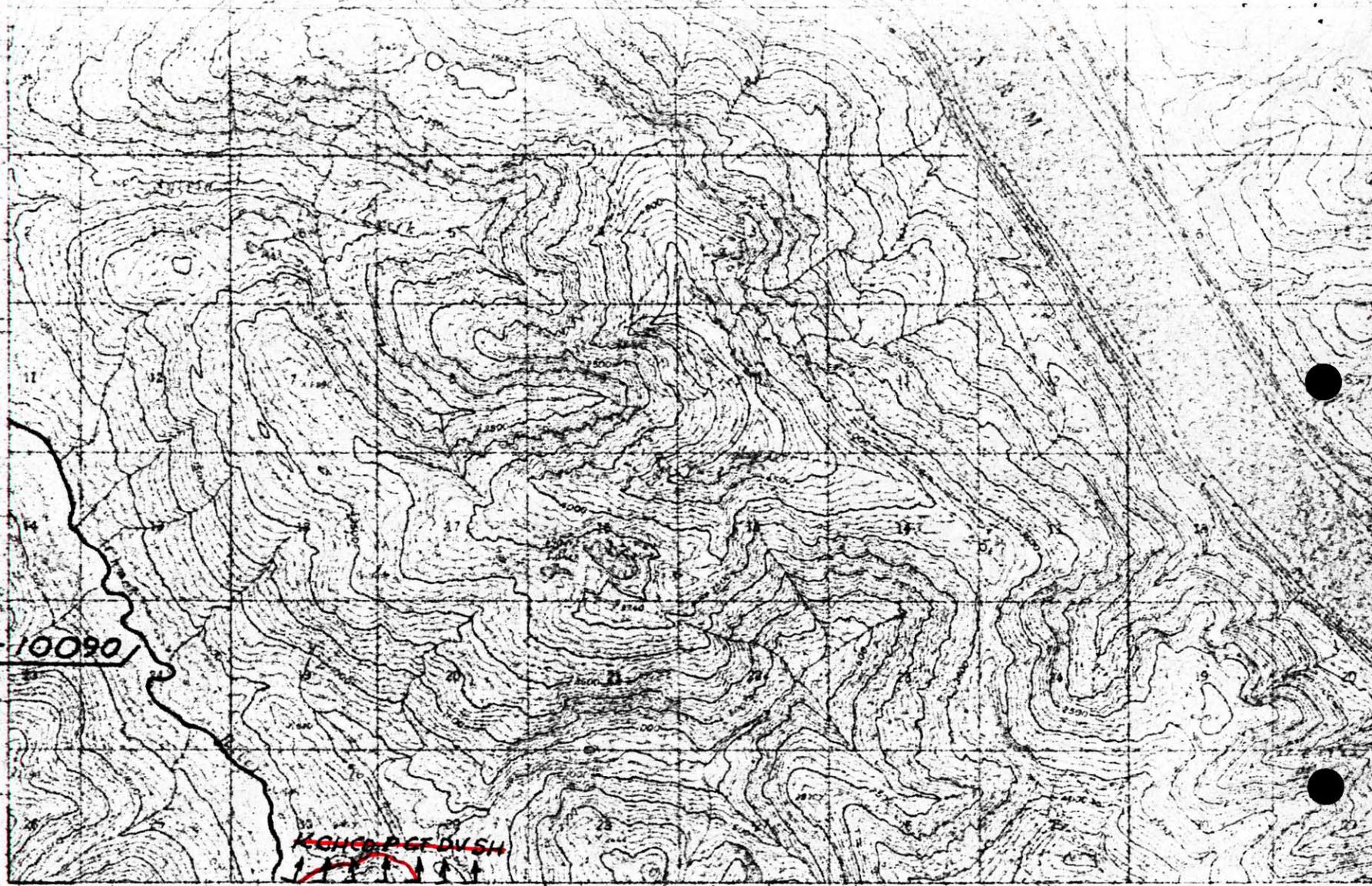
These sections of stream were inadvertently left off atlas when it was originally cataloged. These are historic reaches of stream which are annually surveyed during Comm. Fish surveys.

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) John Edgington
 Date: 9/10/85 Signature: John Edgington
 Address: ADFO 6 Box 667
Petersburg
 Signature of Area Biologist: Dr. Cornelius

110-32-10090

57° 30' 133° 20'



Planned, edited, and published by the Geological Survey
 Canada, USGS, and USC&GS, and International Boundary Commission
 Topography by stereo-anastigmatic methods from aerial photographs
 taken 1946 and 1967. This annotated 1:62,500 map not held of record
 Saturated hydrographic data collected from USC&GS
 Chart 8711 (1964). This information is not intended
 for navigational purposes.

Universal Transverse Mercator projection, 1947 North American Datum
 10,000 foot grid based on Alaska coordinate system, zone 1
 1000 meter Universal Transverse Mercator grid ticks,
 zone 2 shown in blue.

Contour lines represent undrained and combined drainage
 from all sources by the State of Alaska, Division of Lands
 and River Management.



CONTOUR INTERVAL: 100 FEET
 DATUM: MEAN SEA LEVEL
 DEPTH CURVES IN FEET DATUM IS MEAN LOWEST LOW WATER
 SHORELINE SHOWN REPRESENTS THE APPROPRIATE LINE OF MEAN HIGH WATER
 THE WATERLINE IS OF 200 FEET DEPTH

FOR SALE BY U.S. GEOLOGICAL SURVEY
 FAIRBANKS, ALASKA 99704, DENVER, COLORADO 80225, OR WASHINGTON, D.C. 20242
 A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

BOOK TITLE

HYDROLOGY/FISHERIES OVERVIEW

CHUCK RIVER DRAINAGE

C13-76

Chuck River drains into Windham Bay and is located approximately 40 miles south of Juneau (SE 34, T49S, R75E).

Physical Characteristics:

Basin Area: 71.5 mi²

Mean Basin Elevation: 1746 ft.

Basin Orientation: Northwest

Main Channel Lengths: 63 mi

Mean Annual Precipitation: 130 in.

Lake Area (% total): less than 1%

Alpine and Snowfield Area: 31%

Valley Type:

The Chuck River valley has a narrow U-shaped profile slightly modified by glaciation.

Basin Shape:

The Chuck River watershed somewhat elongated.

Stream Pattern:

Dominant stream pattern is dendritic. Trellis and rectangular pattern is evident in portions of the watershed with strong structural bedrock influence.

Lakes:

One small cirque basin lake occurs in the watershed.

Glaciers:

Several small alpine icefields (each less than 1 mi² in area) are scattered along the eastern watershed divide.

Geology:

Bedrock geology is predominantly of metamorphic origin (phyllite, schist, and quartzite). Major northwest trending fault zones have influenced basin morphology. Deposits of river outwash sediments occur infrequently in narrow bands adjacent to major valley bottom streams. Glacial till deposits are scattered along mid-slope (500 to 1,000 feet elevation) areas along the main valley.

Stream Channel Characteristics:*

Chuck River has a diverse stream channel network. The intertidal estuary (E1) channel extends upstream one mile almost to the main channel gorge. Channel form is sinuous, with a somewhat irregular or braided crosssectional profile (bank full width = 40 m., depth = 1 m.). Stream gradients are less than one percent and bed substrate consists of gravels with significant amounts of sand. One mile upstream from the beach the main valley is constricted to form a narrow gorge; resulting in a one mile long series of river cascades (C3A channel segment). This channel segment is contained by bedrock walls, consequently, stream banks and bed substrate are predominantly composed of boulders, rubble, and rock outcrops. Average gradient is 3% over a stairstep pattern of short cascades and plunge pools (bank full width = 20 m.).

At this point Silvia Creek joins Chuck River. Silvia Creek has high gradient bedrock controlled channel segments (C3B, A2) along most of its length. The bedrock controlled segments are deeply entrenched channels with steep rock faces forming upper stream banks. Stream channel bottoms are typified by rubble and boulder strewn cascades and waterfalls. More moderate gradient, gravel substrate B2A channel segment occurs along the middle part of Silvia Creek and at its confluence with Chuck River. The channels are shallowly or moderately entrenched into mixed alluvium and bedrock. Channel form is rectangular in cross-section (14 ___ average width) with a well defined pool riffle pattern (3% average channel gradient).

Three major tributaries converge seven miles upstream Chuck River. These tributaries are characterized by moderate to high gradient C3A channel segments alternate with low gradient (1.5%) floodplain (C2A or C1A) channels. The larger trib channels (C2A) (25 m. average width, 1m. mean depth) have gravel banks, substrate and shallow rectangular cross-sections. Organic debris accumulations are infrequent. The small^{er} of these upper valley trib (C1A channels) average 15m. in width and have less confined, irregular cross-sections with frequent accumulations of in-channel organic debris. Below this major confluence the main stem of Chuck River is a meandering, low gradient (C2A) floodplain channel. A broad^y (34 m. wide), meandering, low gradient (1%)^{channel} morphology characterizes this section of river. Organic debris accumulations are relatively common along banks and gravel bars away from main flow currents. This^{middle} section of Chuck River has a large, well developed floodplain with several small (B3A, B3B) and moderate (B2A) size feeder streams, originating in mountainslope V-notches or steep side-valleys

Many of the mountain slope tributaries (A1, A2, A4) that arise along the eastern and southern watershed divides are fed by alpine snowfields or small icefields. These high energy glacial torrents (D2, D3) contribute relatively large quantities of meltwater runoff that helps to sustain high base stream flow level during the spring and summer.

*Note: Channel type symbols; i.e., (C2A) refers to stream segments identified on the map in figure 1.

None to
bottom 113

Fisheries Characteristics:

A number of stream channel segments within the Chuck River drainage network have high quality anadromous fish habitat. Very high quality Pink and Chum salmon spawning habitat occurs in the one mile long estuary (E1) channel segment at the mouth of Chuck River. A variety of species including, pink, chum, coho, king salmon and steelhead probably utilize the main C2A floodplain channel and B3A, B2A feeder streams between the lower gorge and the major upstream (7 mile) confluence. The western^{most} tributary above the confluence has two miles of excellent quality pink and coho habitat in the C1A channel. Falls and cascades restrict anadromous fish useage of the other upper tribs. The middle fork has good coho spawning and rearing habitat in C2A and C1A channel segments. The eastern most trib has a small section of C1A channel that may have limited use for coho. Silvia Creek has minimal habitat except for a short section of B2A channel near the Chuck River confluence.

In 1973 or 1974, a large natural debris torrent occurred about 5 miles from the Chuck River estuary, on the northeast side of the stream. The debris torrent traveled about 1.5 miles downslope before reaching the river. As a result of extremely large sediment inputs generated by this debris torrent; pink salmon escapement dropped from 50,000 fish in 1973 to a low of 4,000 fish in 1976. Natural stream channel recovery aided by Alaska Department of Fish and Game (ADF&G) management enabled the system to recover in 5 years. By 1981, estimated pink salmon escapement was 77,000 fish. ADF&G surveys in August 1981, and harvest information from commercial seiners indicate that the 1982 escapement of pink salmon to Chuck River will match the 1968 record of escapement of 220,000 pinks.

The following chart displays VCU ratings for Chuck River as determined through the Tongass Land Management Plan process. (1 = poor, 5 = excellent):

<u>VCU</u>	<u>Sport Fisheries</u>	<u>Commercial Fisheries</u>	<u>Estuarine Sensitivity</u>
76	4	5	0

The following table summarizes observed fish escapement data for Chuck River.

OBSERVED ESCAPEMENTS

<u>Species</u>	<u>Maximum (Year)</u>	<u>Minimum (Year)</u>	<u>Mean (Years, Inc.)</u>
Chum	5,000 (1960)	NS (7 yrs.)	846 (1960-80)
Pink	220,000 (1968)	4,000 (1976)	49,488 (1960-80)
(Pink averages: Even Yrs. 63,155; odd years 34,455)			
Coho	100 (1961)	None Seen (exc. 1961)	5 (1960-80)
Chinook	45 (1973)	None Seen (13 yrs.)	7 (1960-80)

Figure 1 Chuck River Channel 14pc Map

