State of Alaska
Department of Fish and Game
Sportfish Division

Nomination Form
Fish Distribution Database

RECEIVED
OCT 2 4 2005
STATE OF ALASKA
FISH & GAME

A-3
Fort Yukon A-2 B-3 B-4 B-5 B-6

Region: INT

USGS Quad(s): ~~Circle C-4, [illegible]~~

Fish Distribution Database Number of Waterway: 334-40-11000-2860-3030-4080-5120

Name of Waterway: Preacher Creek

☒ USGS Name ☐ Local Name

☒ Addition ☐ Deletion ☐ Correction ☐ Backup Information

Add SHp to 334-40-11000-2900

~~Fort Yukon~~ ~~B-6~~ ~~B-5~~ ~~B-4~~ ~~B-3~~ ~~A-3~~ ~~A-2~~ ~~C-12~~ ~~D-2~~ ~~D-3~~ ~~D-4~~

For Office Use

Nomination #	05-081	[signature] ADF&G Fisheries Scientist	1/6/06 Date
Revision Year:	2007	[signature] ADNR OHMP Operations Mgr.	1/6/06 Date
Revision to: Atlas ___ Catalog ___ Both ✓		[signature] FDD Project Biologist	12/14/05 Date
Revision Code:	A-2, B-1	[signature] Cartographer	1 20 06 Date

Add SHp to 334-40-11000-2860, 334-40-11000-2860-3030, 334-40-11000-2860-3030-4080

OBSERVATION INFORMATION

Species	Date(s) Observed	Spawning	Rearing	Present	Anadromous
Chinook Salmon	7/25/2005			Adult Migrating (1)	☒
Chum salmon	7/27/1995 7/28/95			x (2)	☒
Sheefish	7/28/95			x	☒
					☐
					☐

Add CHp SHp to new stream 334-40-11000-2860-3030-4080-5120

IMPORTANT: Provide all supporting documentation that this water body is important for the spawning, rearing or migration of anadromous fish, including: number of fish and life stages observed; sampling methods, sampling duration and area sampled; copies of field notes; etc. Attach a copy of a map showing location of mouth and observed upper extent of each species, as well as other information such as: specific stream reaches observed as spawning or rearing habitat; locations, types, and heights of any barriers; etc.

Comments: One adult chinook salmon was observed migrating in Preacher Creek approximately 1/4 mile upstream of the confluence of North Fork Preacher Creek and mainstem Preacher Creek. The creek was running clear in this area but became quite turbid directly below the North Fork and remained that way throughout the drainage. There was still quite a bit of fire activity along the creek and no doubt erosion from the burned areas ~~were~~ was contributing to increase sediment loads in the drainage. I captured adult chinook and chum salmon the summer of 1995 →

Name of Observer (please print): Ingrid McSweeny / Collin Cogley

Signature: [signature] Date: 10/18/2005

Agency: BLM - Fairbanks District office

Address: 1150 University Avenue
Fairbanks, AK. 99709

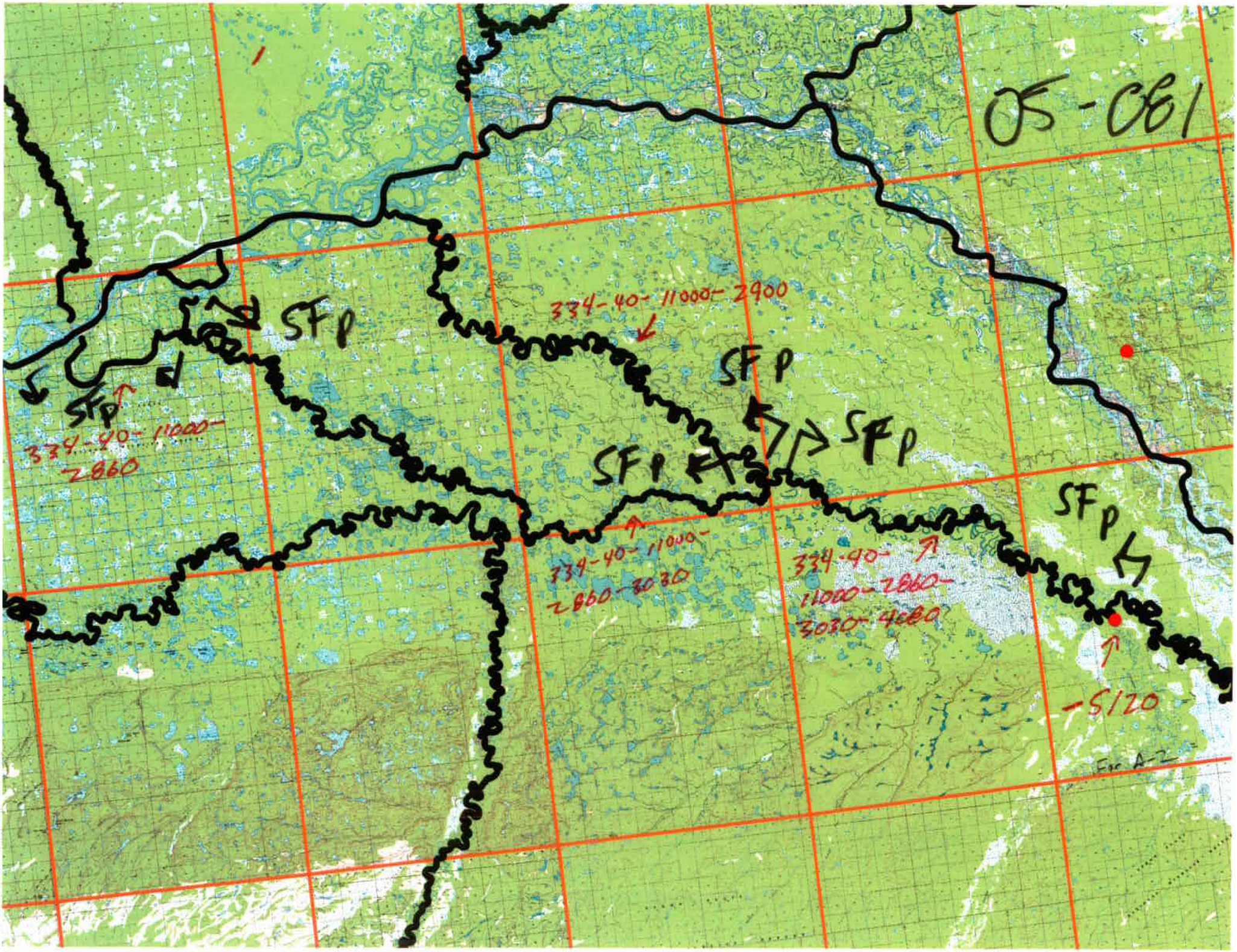
474-2360

This certifies that in my best professional judgment and belief the above information is evidence that this waterbody should be included in or deleted from the Fish Distribution Database.

Signature of Area Biologist: Andra Brase Date: 12/15/05

Name of Area Biologist (please print): VID email

Revision 02/05


05-061
SFP
334-40-11000-2900
SFP
SFP
SFP
SFP
334-40-11000-2860
334-40-11000-2860-3030
334-40-11000-2860-3030-4080
-5120

Anadromous Fish Observations in Birch Creek, Alaska 1995

1. **July 25, 1995** - Three juvenile chinook salmon were captured by minnow trap (baited with salmon roe, 1/4" mesh, .3m water depth, CPUE = one king per 78.3 trap hour) at the confluence of Birch and Harrison Creek **(Latitude 65° 20.25' North, Longitude 144° 44.56' West)**.

2. **July 26, 1995** - One adult female chum salmon was captured by variable mesh gill net (approximately 2.8m water depth) in mainstem Birch Creek **(Latitude 66° 07.40' North, Longitude 144° 53.24' West)**.

3. **July 27, 1995** - One adult male chum salmon was captured by variable mesh gill net (approximately 1.8m water depth, 11.7° C, conductivity 30 us/cm, dissolved oxygen 10.15 mg/L, total dissolved solids 21.0 mg/L) at the confluence of Birch and Preacher Creek **(Latitude 66° 07.43' North, Longitude 144° 50.30' West).** Additionally, on July 28, 1995, another adult chum salmon was captured by variable mesh gill net and three sheefish were taken by hook and line at this same location.

4. **September 8, 1995** - Eleven chinook salmon juveniles were captured by minnow trap (baited with salmon roe, 1/4" mesh, .45m water depth, temp 5.5° C, conductivity 145.4 us/cm, dissolved oxygen 12.5 mg/L @ 98.3% saturation, total dissolved solids 72.8 mg/L, CPUE= one king per 15.8 trap hour) in mainstem Birch Creek **(Latitude 65° 26.33' North, Longitude 144° 16.40' West)**.

Anadromous Fish Observations in Birch Creek, Alaska 1995							
Date	Species	Fork Length (mm)	Weight (g)	Sex	Location	Remarks	CPUE
25-Jul	KS	65	2.8		Harrison Creek	minnow trap	one king per 78.3 trap hour
25-Jul	KS	62	2.2		Harrison Creek	minnow trap	one king per 78.3 trap hour
25-Jul	KS	67	2.7		Harrison Creek	minnow trap	one king per 78.3 trap hour
26-Jul	CS	645	2500	F	Birch Creek	gill net	
27-Jul	CS	654	2800	M	Preacher Creek	gill net	
27-Jul	CS	667	2700	M	Preacher Creek	gill net	
27-Jul	SF	678	2500		Preacher Creek	hook and line	
27-Jul	SF	688	2800		Preacher Creek	hook and line	
27-Jul	SF	518	1100		Preacher Creek	hook and line	
9-Sep	KS	78			Birch Creek	minnow trap	one king per 15.8 trap hour
9-Sep	KS	75			Birch Creek	minnow trap	one king per 15.8 trap hour
9-Sep	KS	70			Birch Creek	minnow trap	one king per 15.8 trap hour
9-Sep	KS	74			Birch Creek	minnow trap	one king per 15.8 trap hour
9-Sep	KS	69			Birch Creek	minnow trap	one king per 15.8 trap hour
9-Sep	KS	74			Birch Creek	minnow trap	one king per 15.8 trap hour
9-Sep	KS	76			Birch Creek	minnow trap	one king per 15.8 trap hour
9-Sep	KS	80			Birch Creek	minnow trap	one king per 15.8 trap hour
9-Sep	KS	78			Birch Creek	minnow trap	one king per 15.8 trap hour
9-Sep	KS	84			Birch Creek	minnow trap	one king per 15.8 trap hour
9-Sep	KS	76			Birch Creek	minnow trap	one king per 15.8 trap hour

YUKON RIVER DRAINAGE FISHERIES ASSOCIATION

725 CHRISTENSEN DRIVE, SUITE 3-B • ANCHORAGE, ALASKA 99501
TELEPHONE: (907) 272-3141 • 1-877-99-YUKON (9-8566)
FAX: (907) 272-3142 • E-MAIL: YRDFA@ALASKA.COM

BIRCH CREEK
JUVENILE AND ADULT SALMON SURVEYS

July-August, 2000

Prepared by
Alan H. Townsend, Habitat Biologist

December, 2000

A publication of the Yukon River Drainage Fisheries Association pursuant to National Oceanic and Atmospheric Administration Award No. NA06FM0316. The views expressed do not necessarily reflect views of NOAA or any of its sub-agencies.

Table of Contents

Abstract.....i
Introduction.....1
Study Area.....1
Methods
Lower Reach Birch Creek.....2
Middle Reach Birch Creek.....4
Upper Reach Birch Creek.....6
Results
Lower Reach Birch Creek.....2
Middle Reach Birch Creek.....5
Upper Reach Birch Creek.....7
Recommendations.....8
References.....10

List of Figures

Figure 1. A map of the entire route of the Birch Creek study.

Appendices

Appendix A. Anadromous Fish Observations in Birch Creek, Alaska 1995.

ABSTRACT

Birch Creek heads at the confluence of Ptarmigan Creek and Bates Creek near Steese Highway milepost 101 and flows north approximately 200 stream miles to divide into Lower Mouth Birch Creek and Upper Mouth Birch Creek, its distributaries, before entering the Yukon River in interior Alaska. Gold was discovered in the Birch Creek drainage in the early 1890's and extensive placer mining activities occurred until the mid-1990's with lesser mining activity occurring during the past few seasons. Chinook and chum salmon sightings have periodically been reported in Birch Creek.

This project was an initial survey for possibly rebuilding the returns of select Yukon River stocks through habitat reclamation. With significant mining activity throughout the entire drainage at the turn of the century and current mining still ongoing, it is generally understood that the production potential of salmon streams in these areas is likely below pre-mining levels. Surveyors looked for salmon, as well as for restoration opportunities like realignment or regarding of the stream channel, stream bank reclamation or stabilization, changing the floodplain or opening up the stream channel to allow juvenile or adult spawning access.

Mr. Al Townsend, Habitat Biologist for the Yukon River Drainage Fisheries Association (YRDFA) and Erich Ott, YRDFA Fisheries Technician sampled three reaches of Birch Creek from July 20 to August 18, 2000. The sample area was divided into three reaches and three sample periods: (1) Lower Birch Creek- from Big Creek to Crooked Creek, sampled from July 20-23, 2000. (2) Middle Birch Creek – from above Crooked Creek to Harrison Creek (including the lower 5 miles of Harrison Creek), sampled from August 8 to 10, 2000. (3) Upper Birch Creek, from above Harrison Creek to Twelvemile Creek, including Frying Pan Creek, was sampled from August 15 to 18, 2000.

In lower Birch Creek, fish sample methods included baited minnow traps, seines, spinning rods and lures and personal observation. In middle reach Birch Creek, methods included use of all terrain vehicles (ATV's) and minnow traps. Sampling in upper reach Birch Creek utilized ATV's and baited minnow traps were used in Frying Pan Creek.

INTRODUCTION

Birch Creek heads at the confluence of Ptarmigan Creek and Bates Creek near Steese Highway milepost 101 and flows north approximately 200 stream miles to divide into Lower Mouth Birch Creek and Upper Mouth Birch Creek, its distributaries, before entering the Yukon River. Gold was discovered in the Birch Creek drainage in the early 1890's (Orth 1967). Extensive placer mining activities occurred at the headwaters and mid-drainage tributaries through the mid-1990's, with lesser mining activity occurring during the past few seasons (Alaska Department of Fish and Game [ADF&G] Placer files). Chinook and chum salmon sightings have periodically been reported in Birch Creek near the Steese Highway crossing by casual observers. Little data exists on actual fisheries studies for this drainage. A Sport Fish Division (ADF&G) employee reported observing an adult Chinook salmon from the Steese Highway bridge in the mid-1960's (Appendix A). In 1995, Ingrid McSweeny (Bureau of Land Management) reported capturing chum salmon (*O. keta*) near Preacher Creek and juvenile Chinook salmon near Birch Creek (mile 55 and 82) (Appendix B). Also in 1995, Alan Townsend and Carl Hemming (ADFG) caught a juvenile Chinook salmon in Twelvemile Creek near Steese Highway milepost 93. Spawning areas for Chinook and chum salmon have not been identified.

STUDY AREA

A fish sample study was conducted in Birch Creek from Big Creek (N65° 51.466', W144° 16.849') to "new" Crooked Creek (N65° 13.135', W147° 04.568'). The sample area was divided into three reaches and three sample periods. (1) Lower Birch Creek - from Big Creek to Crooked Creek, sampled from July 20 to 23, 2000. (2) Middle Birch Creek - from above Crooked Creek to Harrison Creek (including the lower 5 miles of Harrison Creek), sampled from August 8 to 10, 2000. (3) Upper Birch Creek, from above Harrison Creek to Twelvemile Creek, including Frying Pan Creek, sampled from August 15 to 18, 2000. (See Figure 1 - a map of the entire route.)

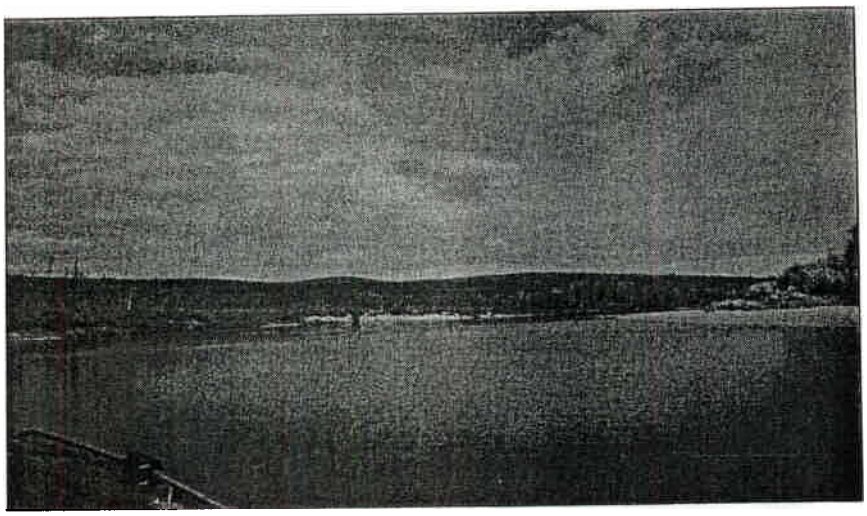


Photo #2. Typical gravel bar and riffle reach on Birch Creek below the Steese Highway.

Minnow traps were set for a total of 456 hours and caught one 55 mm slimy sculpin (*Cottus cognatus*). Northern pike (100-300 mm est. FL) were abundant -- 3 to 30 juvenile Northern pike were observed/counted along every gravel bar where minnow traps were set along this reach of Birch Creek.

Sixteen seine (20' x 4' x ¼" mesh) hauls yielded 115 Arctic grayling (*Thymallus arcticus*) (31-170 mm), 16 longnose suckers (*Catostomus catostomus*) (19-54 mm), 17 slimy sculpin (20-60 mm), 2 Northern pike (41 and 130 mm), 1 burbot (*Lota lota*) (36 mm), and 1 humpback whitefish (*Coregonus pidschian*) (70 mm).

Sport fishing gear was used to capture 13 Northern pike (135-560 mm) (photo #3) and one Arctic grayling (140 mm).

RESULTS

Minnow traps caught 14 juvenile Chinook salmon (61-79 mm) and one slimy sculpin (93 mm). All juvenile Chinook salmon were caught within 50 meters of the Harrison/Birch Creek confluence. Harrison Creek water temperature was 49°F.

Minnow traps caught 5 juvenile Chinook salmon (69-72 mm) and one slimy sculpin (50 mm) in Birch Creek. Two Chinook salmon were captured approximately 400 meters above Harrison Creek (photo #5) and 3 were captured approximately 150 meters below Harrison Creek (photo #6). Birch Creek water temperature was 49°F.

Photo #5. View upstream on Birch Creek from its confluence with Harrison Creek.

Photo #6. View downstream on Birch Creek below Harrison Creek.

Photo #7. Erich Ott checking minnow trap on Upper Birch Creek near Butte Creek. Note absence of pools and sparse bank cover.

RESULTS

Twelve minnow traps set in Frying Pan Creek caught two slimy sculpin (87 and 96 mm). Approximately 1.5 miles of Frying Pan Creek was walked while conducting visual search for fish. One slimy sculpin was observed near minnow trap number 8, no other fish were observed. Water temperature was 33° F.

In the two mile sample area of Upper Birch Creek, 10 slimy sculpin (51-113 mm) and 2 Arctic grayling (106 and 106 mm) were captured in 216 minnow trap hours. Nine Arctic grayling (86-206 mm) and 1 slimy sculpin (119 mm) were caught in 3 seine hauls. Larger Arctic grayling (est. 150-300 mm) were observed in several scour holes in the downstream portion of the sample area where the channel appeared to be directed by bedrock.

Birch Creek and Twelvemile Creek below Steese Highway milepost 94 do not appear to have been physically altered by placer mining. Substrate in both streams in this sample reach is gravel to cobble with approximately 3 to 1 riffle to pool ratio. One hundred forty-four minnow trap hours captured 6 slimy sculpin (40-85 mm) and 1 Arctic grayling (90 mm).

fish and possibly to adult Chinook salmon this high in the drainage. Adult Chinook salmon can likely pass this site at higher water levels when the vertical differential is lessened. However, water velocity at higher flow would still likely be a barrier to small fish. This is an excellent area to look for salmon, both adult and juvenile Chinook salmon, in late July and early August. The site is inaccessible except by canoe (downstream 40 miles from Steese Highway), river boat (shallow draft jet drive) from the Steese Highway bridge (approximately 90 miles) or helicopter (see maps- Figure 1).

Appendix A

Anadromous Fish Observations in Birch Creek, Alaska 1995
Ingrid McSweeny
Field Notes

1. July 25, 1995 Mile 55: Three juvenile chinook salmon were captured by minnow trap (baited with salmon roe, ¼" mesh, .3m water depth, CPUE = one king per 78.3 trap hour) at the confluence of Birch and Harrison Creek.
(Latitude 65 ° 20.25' North, Longitude 144° 44.56' West)

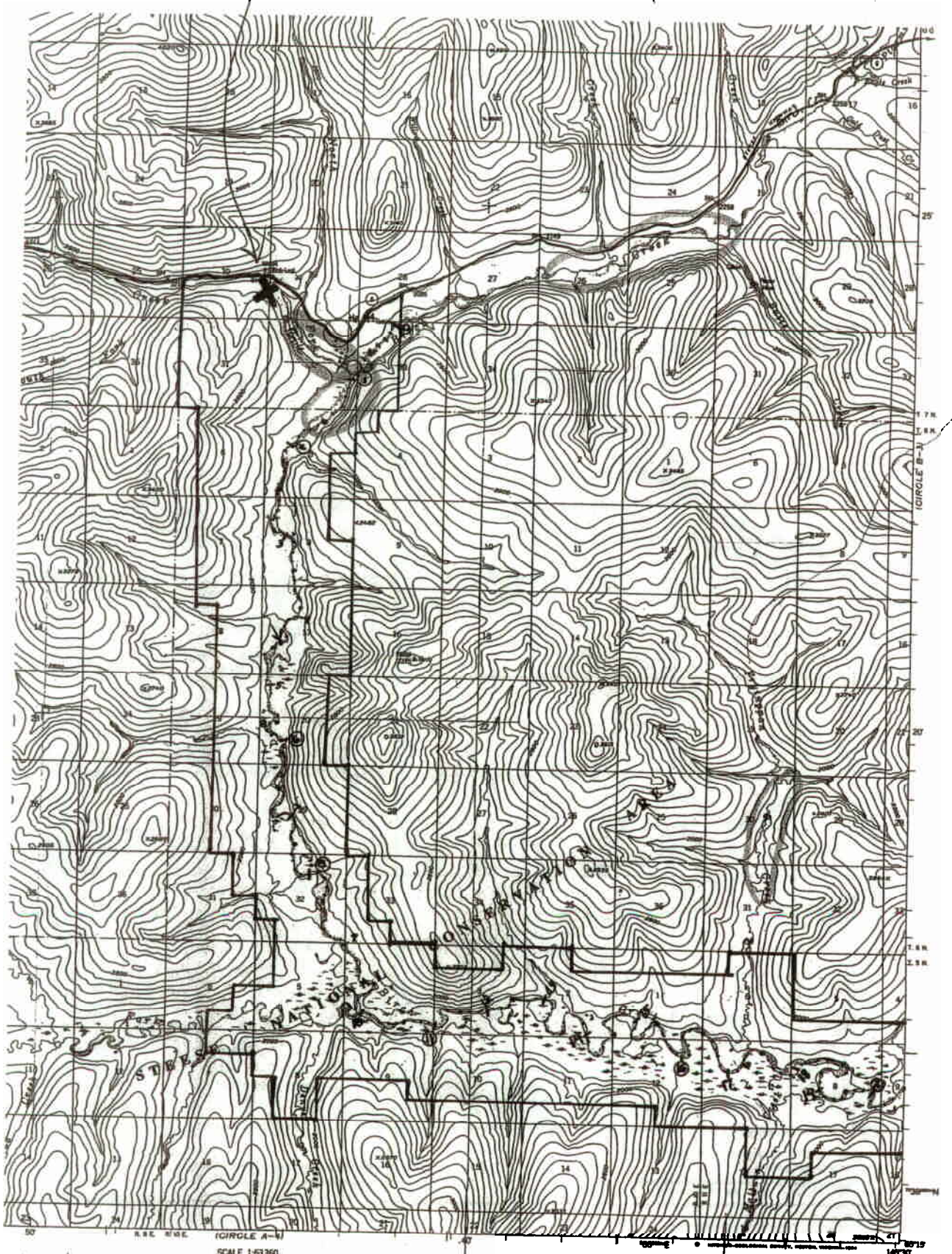
2. July 26, 1995 One adult female chum salmon was captured by variable mesh gill net (approximately 2.8m water depth) in mainstem Birch Creek.
(Latitude 66° 07.40' North, Longitude 144° 53.24' West)

3. July 27, 1995 One adult male chum salmon was captured by variable mesh gill net (approximately 1.8 water depth, 11.7° C, conductivity 30 us/cm dissolved oxygen 10.15 mg/L, total dissolved solids 21.0 mg/L) at the confluence of Birch and Preacher Creek.
(Latitude 66° 07.43' North, Longitude 144° 50.30'West)
Additionally, on July 28, 1995, another adult chum salmon was captured by variable mesh gill net and three sheefish were taken by hook and line at this same location.

4. September 8, 1995 Mile 82: Eleven chinook salmon juveniles were captured by minnow trap (baited with salmon roe, ¼" mesh, .45 water depth, temp 5.5° C, conductivity 145.4 us/cm, dissolved oxygen 12.5 mg/L @ 98.3% saturation, total dissolved solids 72.8 mg/L, CPUE = one king per 15.8 trap hour) in mainstem Birch Creek.
(Latitude 65° 26.33' North, Longitude 144° 16.40' West)

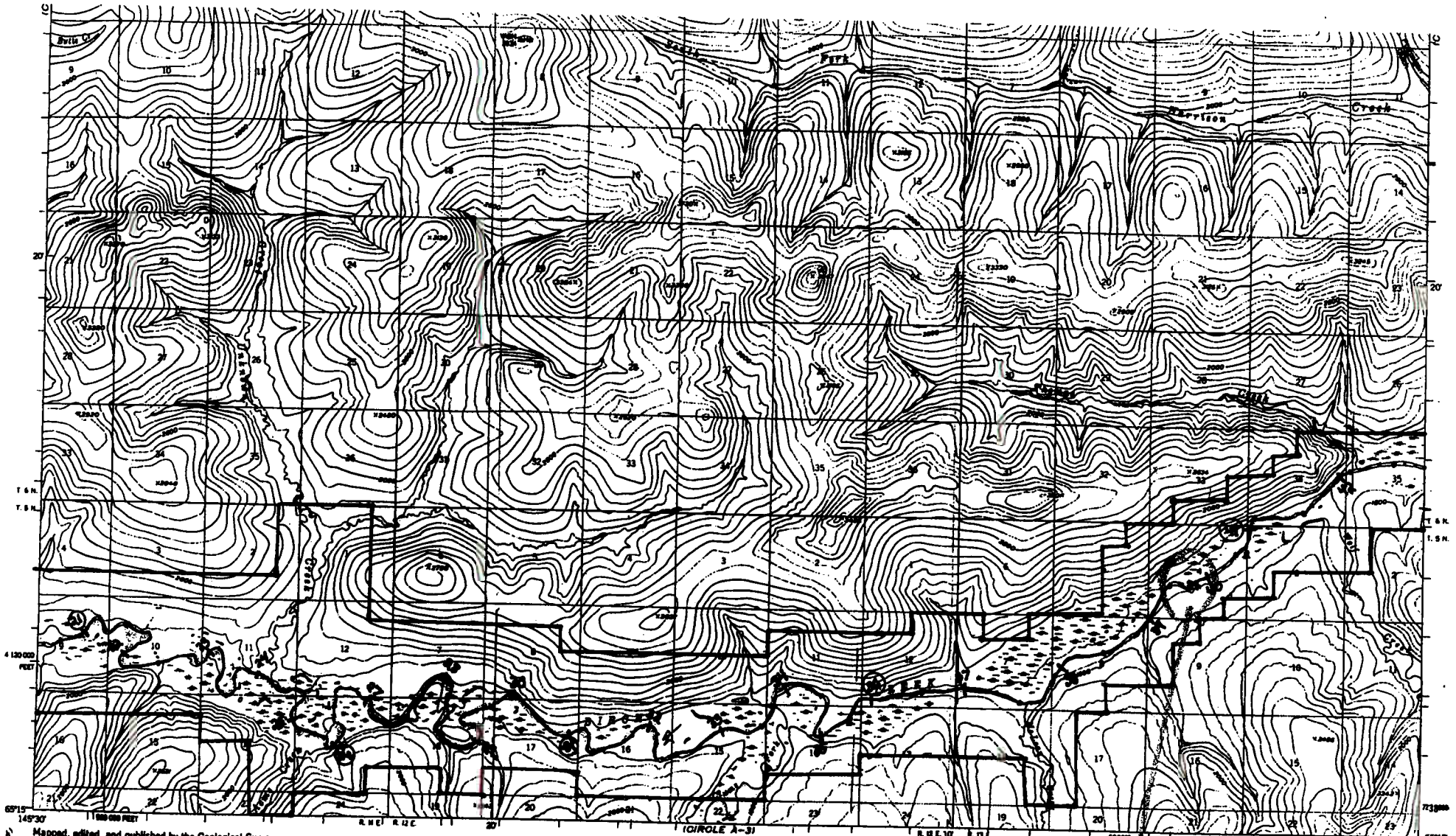
Hemming
1995 Chinook

Aug 2005
sample
area



FOR SALE BY U.S. GEOLOGICAL SURVEY
FAIRBANKS, ALASKA 99701, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

CIRCLE (B-4), ALASKA
N6515-W14630/15X30
1952
MINOR REVISION 1984



Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1951, field annotated 1955. Has not been field checked

Universal Transverse Mercator projection, 1927 North American datum
10,000-foot grid based on Alaska coordinate system, zone 3
1000-meter Universal Transverse Mercator grid ticks, zone 6, shown in blue

Land lines represent unsurveyed and unmarked locations predetermined by the Bureau of Land Management
Folio F-7, Fairbanks Meridian

Swamps, as portrayed, indicate only the wetter areas, usually of low relief, as interpreted from aerial photographs

APPROXIMATE MEAN DECLINATION, 1955

SCALE 1:63 360

CONTOUR INTERVAL 100 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

ROAD CLASSIFICATION

Light-duty ——— Unimproved dirt .....

State Route

FOR SALE BY U. S. GEOLOGICAL SURVEY
FAIRBANKS, ALASKA 99701, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

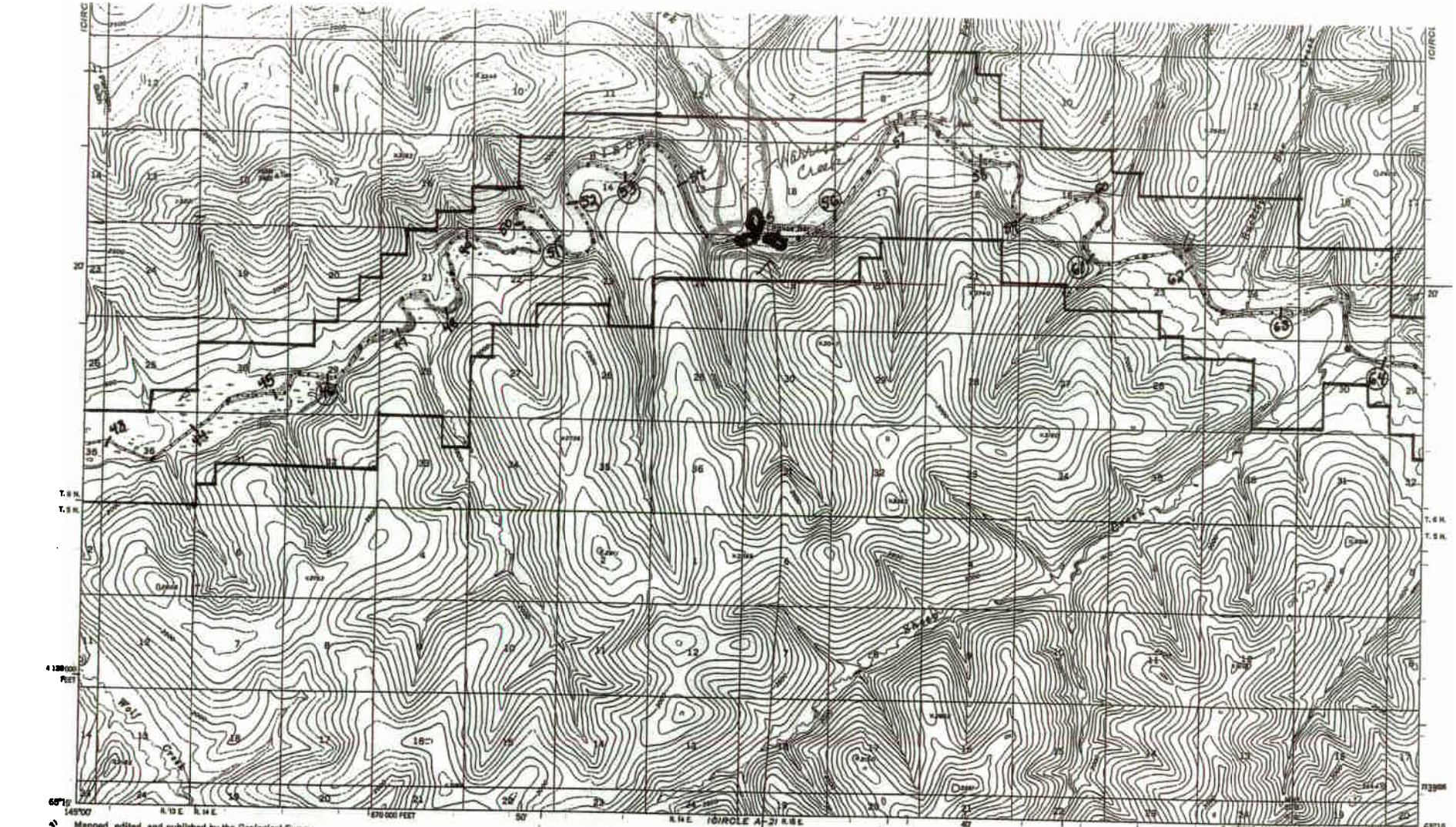
QUADRANGLE LOCATION

CIRCLE (B-3), ALASKA

N6515—W14500/15X30

1955

MINOR REVISIONS 1974



Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1951, 1953, and 1955, field annotated 1955. Map not field checked

Universal Transverse Mercator projection. 1927 North American datum
10,000-foot grid based on Alaska coordinate system, zone 3
1000-meter Universal Transverse Mercator grid ticks, zone 6, shown in blue

Land lines represent unsurveyed and unmarked locations predetermined by the Bureau of Land Management
Folio F-7, Fairbanks Meridian

Swamps, as portrayed, indicate only the wetter areas, usually of low relief, as interpreted from aerial photographs

TRUE NORTH
MAGNETIC NORTH
APPROXIMATE MEAN DECLINATION, 1955

SCALE 1:63 360

CONTOUR INTERVAL 100 FEET
DASHED LINES REPRESENT 50-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

FOR SALE BY U. S. GEOLOGICAL SURVEY
FAIRBANKS, ALASKA 99701, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

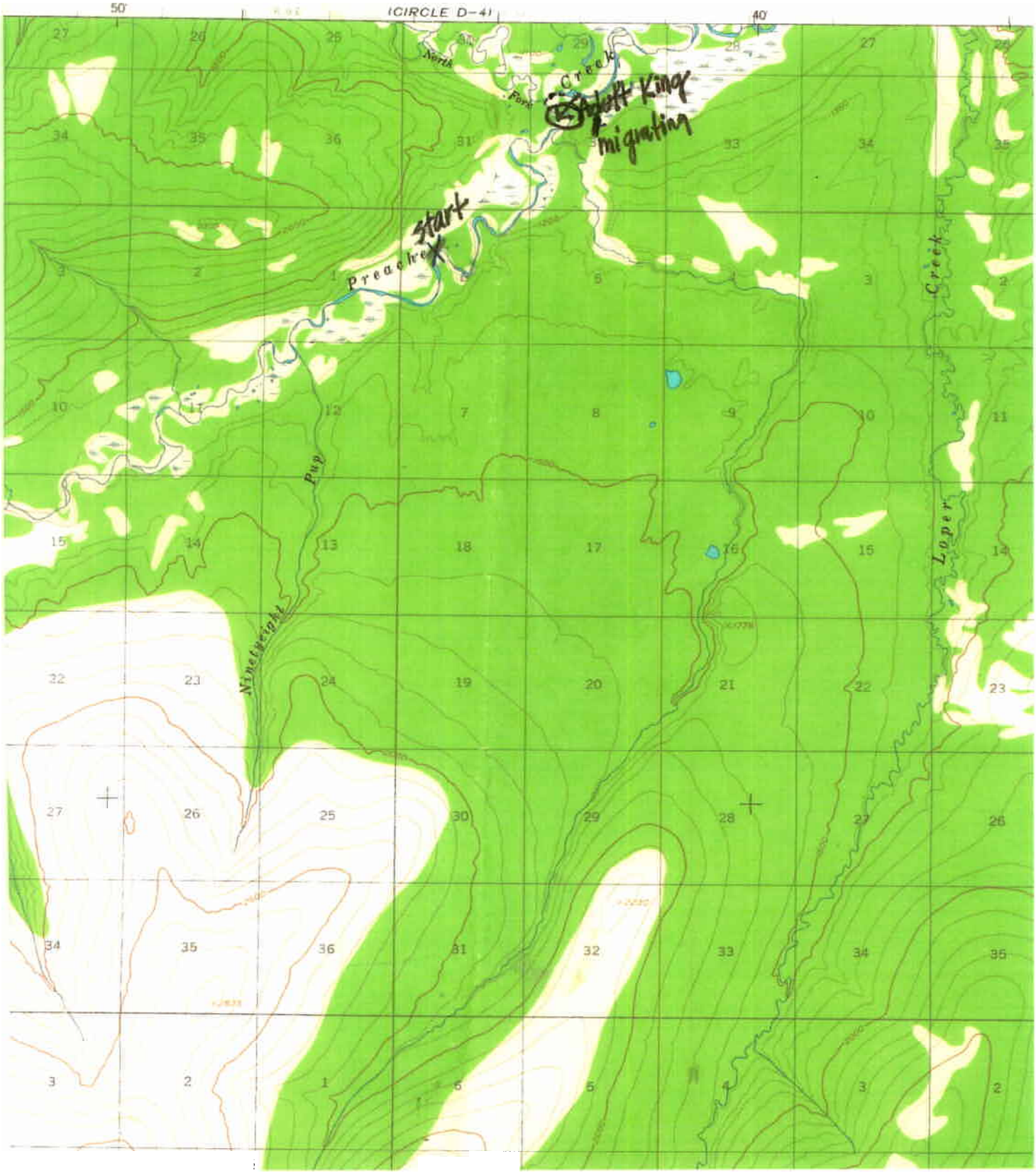
ALASKA
QUADRANGLE LOCATION

ROAD CLASSIFICATION

Light-duty ——— Unimproved dirt - - - - - -

CIRCLE (B-2), ALASKA
N6515—W14430/15X30

1956
MINOR REVISIONS 1971



(CIRCLE D-4)
50'
40'
North Fork
Creek
Adult King
migrating
start
Preacher
Pup
Ninetyeight
Loper
Creek

directly above the mouth of Preacher Creek (in Preacher Creek). I was wondering if (Judy Gordon USFWS) sent this information to ADF&G for inclusion in the database. I will probably go through my files and resubmit this information. Preacher creek is currently not designated as an anadromous water body.

Lat/Long for migrating Chinook salmon Adult 2005

N 65 43.542
W 145 44.459

65.7257 N
-145.740983 W

JD Johnson

From: Audra Brase [audra_brase@fishgame.state.ak.us]
Sent: Thursday, December 15, 2005 11:54 AM
To: j_johnson@fishgame.state.ak.us
Subject: RE: Preacher Creek nomination

This looks good Jay.

How do I "endorse" it??

Thanks.

Audra

-----Original Message-----
From: JD Johnson [mailto:j_johnson@fishgame.state.ak.us]
Sent: Thursday, December 15, 2005 6:44 AM
To: 'Audra Brase'
Subject: RE: Preacher Creek nomination

Preacher Creek nomination attached

J. Johnson
Alaska Department of Fish and Game
FDD Project Biologist
333 Raspberry Rd
Anchorage, AK 99518
907-267-2337 office
907-267-2464 FAX
j_johnson@fishgame.state.ak.us

-----Original Message-----
From: Audra Brase [mailto:audra_brase@fishgame.state.ak.us]
Sent: Wednesday, December 14, 2005 4:16 PM
To: j_johnson@fishgame.state.ak.us; 'Bonnie Borba (E-mail)'
Cc: 'Fronty Parker (E-mail)'
Subject: RE: Preacher Creek nomination

Please fax me a copy of the nomination Jay (456-2259).

Thanks!

Audra

-----Original Message-----
From: JD Johnson [mailto:j_johnson@fishgame.state.ak.us]
Sent: Wednesday, December 14, 2005 1:19 PM
To: Audra Brase; Bonnie Borba (E-mail)
Cc: Fronty Parker (E-mail)
Subject: Preacher Creek nomination

Greetings
I recently received a nomination to the FDD from Ingrid McSweeny w/BLM in Fairbanks. Based on sampling conducted in 1995 and 2005, she nominated Preacher Creek (a trib of Birch Creek, a trib of the Yukon River for inclusion in FDD w/chum salmon and sheefish present. The FDD currently documents chum salmon in Birch Creek and Sheefish in the Yukon River. Since Ingrid is not a dept employee I'm looking for a dept endorsement for this

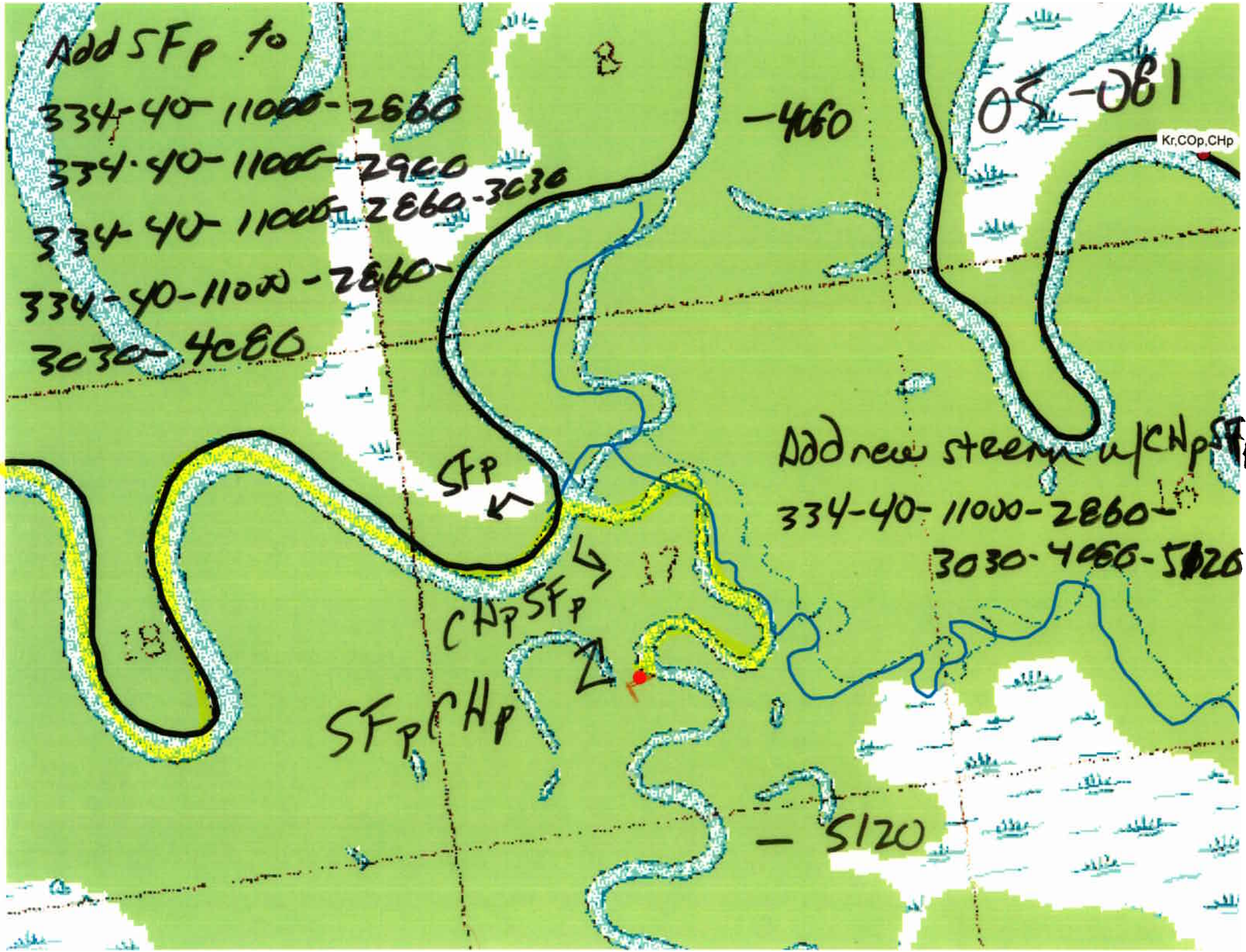
JD Johnson

From: Ingrid_McSweeny@ak.blm.gov
Sent: Monday, December 12, 2005 1:14 PM
To: j_johnson@fishgame.state.ak.us
Subject: RE: Nominations to Fish Distribution Database

Hello J. Johnson,
I found the Preacher Creek/Salmon data from 1995. The information was just sent out to you FED EX.

Two adult male chums were captured by gillnet at the confluence of Preacher and Birch Creek. The net was set about 200 feet upstream from the confluence of Preacher and Birch Creek (in Preacher Creek).

Sincerly,
Ingrid


Add SFp to
334-40-11000-2660
334-40-11000-2960
334-40-11000-2860-3030
334-40-11000-2860-
334-40-1100N-2860-
3030-4080
-4460
05-081
Kr,COp,CHp
SFp
Add new stream w/CHpSFp
334-40-11000-2860-
3030-4960-5020
CHpSFp
SFpCHp
- 5120