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ALASKA DEPT. OF FISH & GAME
SEP 17 1990
REGION II
HABITAT DIVISION

MEMORANDUM **State of Alaska**

To: Alvin G. Ott
Regional Supervisor
Habitat Division

Date: September 11, 1990

File No:

Telephone Number: 451-6192

From: Alan H. Townsend
Habitat Biologist
Habitat Division
Department of Fish and Game

Subject: Fortymile River
Fish Sampling

On August 6, I met Al von Finster at Clinton Creek and we boated up the Fortymile River to a campsite near the Alaska border. We set out six minnow traps enroute and two at camp. August 7 we continued setting minnow traps up river, three more in Canada and 36 in Alaska. The last traps were set immediately upstream from Mr. David Likins mine.

We stopped at Likins mine and discussed our project with him on August 7 and again on August 8 to show him the catch in the trap we recovered from the upper site near his mine (trap no. 40).

All traps were baited with frozen, untreated chinook salmon roe tied in thin film sandwich bags which had been perforated. We used von Finster's bait and traps. The Fortymile River rose six inches between 6:00 pm August 6 and 7:00 am August 7. The river rose another 12 inches between 7:00 am and 6:00 pm August 7, and another 12-18 inches between 6:00 pm August 7 and 7:00 am August 8. Only 13 of the 44 traps set were recovered on August 8. High water and the accompanying high velocities washed the other 31 traps away from the marked set sites. However, traps 19 and 20 each had a juvenile chinook salmon at 5:30 pm August 7 when we spot checked them on our return to camp.

Mr. von Finster had experienced trap losses to high water during previous projects and had astutely substituted all trap closure snaps with grocery type paper covered wire ties. This ensures the traps will pop open when they are washed out and lost which prevents the traps from fishing indefinitely thus reducing fish mortalities.

A total of 20 juvenile chinook salmon were captured (16 in Alaska and 4 in Canada) along with 6 juvenile suckers and 1 slimy sculpin.

Figure A shows the Alaska Fortymile River area and Figure B shows Alaska trap sites. Trap sites and results are listed below:

Canada

Trap No. 1, 2, & 3 - North bank Fortymile River near Bruin Creek off gravel bar. Set 8/6/90 at 1700 hr., all three lost to high water.

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Trap No. 4, 5, & 6 - North bank Fortymile River near unnamed tributary ("Old Faithful"). Set 8/6/90 at 1730 hr., all three lost to high water.

Trap No. 7 & 8 - North bank Fortymile River about 5 miles below border at camp. No. 7 lost to high water, No. 8 caught 4 chinook about 80 mm forklength. Set 8/6/90 at 1900 hr, pulled 8/8/90 at 0700 hr.

Trap No. 9, 10, & 11 - North bank Fortymile River along cobble bar one mile below Montgomery Creek. Set 8/7/90 at 1200 hr., checked 8/8/90 at 0930 hr., all lost to high water.

Alaska

Trap No. 12, 13, & 14 - South bank Fortymile River between border and Sam Patch Creek (Site A) along cobble bar. Set 8/7/90 at 1240 hr., checked 8/8/90 at 1000 hr., all lost to high water.

Trap No. 15, 16, & 17 - North bank Fortymile River 200 yards above Sam Patch Creek (Site B) among boulders and along steep drop-off. Set 8/7/90 at 1300 hr., pulled 8/8/90 at 1020 hr. No.s 15 and 17 lost to high water, No. 17 70 mm sculpin.

Trap No. 18, 19, & 20 - South bank Fortymile River about 500 yards below Snow Creek along cobble bar. Set 8/7/90 at 1350 hr., checked at 1720 hr. (No. 19 had one 80 mm chinook and one 90 mm sucker, No. 20 had one 80 mm chinook). All three traps lost to high water 8/8/90 at 1040 hr.

Trap No. 21, 22, & 23 - South bank Fortymile River about 100 yards above Snow Creek along gravel/cobble bar. Set 8/7/90 at 1400 hr. Pulled 8/8l/90 at 1050 hr. No 21 lost to high water, No. 22 had 4 chinook (80, 82, 78, and 80 mm forklength), and No. 23 had one chinook (78 mm forklength).

Trap No. 24, 25, & 26 - South bank Fortymile River about 660 yards above Snow Creek along grassy cutbank. Set 8/7/90 at 1410 hr. Pulled 8/8/90 at 1105 hr. No. 24 and 25 empty, No. 26 had 4 suckers (90-100 mm forklength).

Trap No. 27, 28, & 29 - North bank Fortymile River near base of gravel bar 1/2 mile above Snow Creek. Set 8/7/90 at 1425 hr. Pulled 8/8/90 at 1110 hr. No. 27 and 28 empty and No. 29 lost to high water.

Trap No. 30, 31, & 32 - North bank Fortymile River about 1,100 yards above Snow Creek near the head of a gravel/cobble bar. Set 8/7/90 at 1440 hr. Pulled 8/8/90 at 1130 hr. No. 30 and 31 lost to high water, No. 32 had two chinook (80 and 84 mm forklength).

Trap No. 33, 34, & 35 - North bank Fortymile River about 1,500 yards above Snow Creek along sandy gravel bar with boulders. Set 8/7/90 at 1500 hr. Pulled 8/8/90 at 1140 hr. No. 33 had 6 chinook (72, 72, 75, 73, 75, and 83 mm forklength), No. 34 and 35 lost to high water.

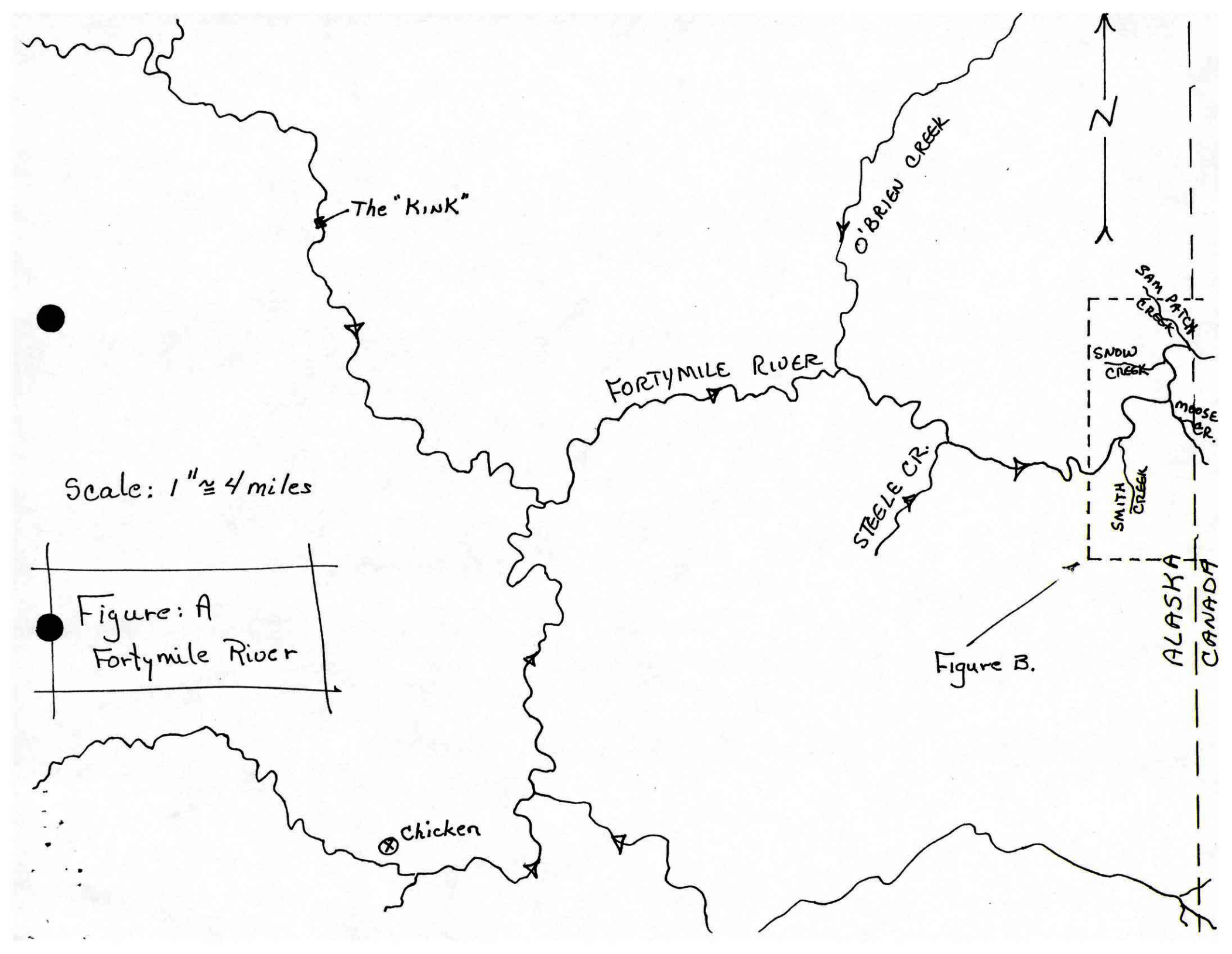
Trap No. 36, 37 & 38 - South bank Fortymile River near old bucketline dredge remains on sandy bar with boulders at head about 400 yards below Moose Creek. Set 8/7/90 at 1540 hr. All lost to high water 8/8/90 at 1200 hr.

Trap No. 39, 40, & 41 - South bank Fortymile River about 100 yards above Moose Creek along steep boulder bank where Likins suggested sets. Set 8/7/90 at 1630 hr. Pulled 8/8/90 at 1220 hr. No. 39 and 41 lost to high water, No. 40 had one chinook (80 mm forklength) and one about 90 mm sucker. Showed fish to Likins.

Trap No. 42, 43, & 44 - North bank Fortymile River along gravel/cobble bar at head of riffle across from Moose Creek. Set 8/7/90 at 1645 hr. Pulled 8/8/90 at 1310 hr. No 42 empty and No. 43 and 44 lost to high water.

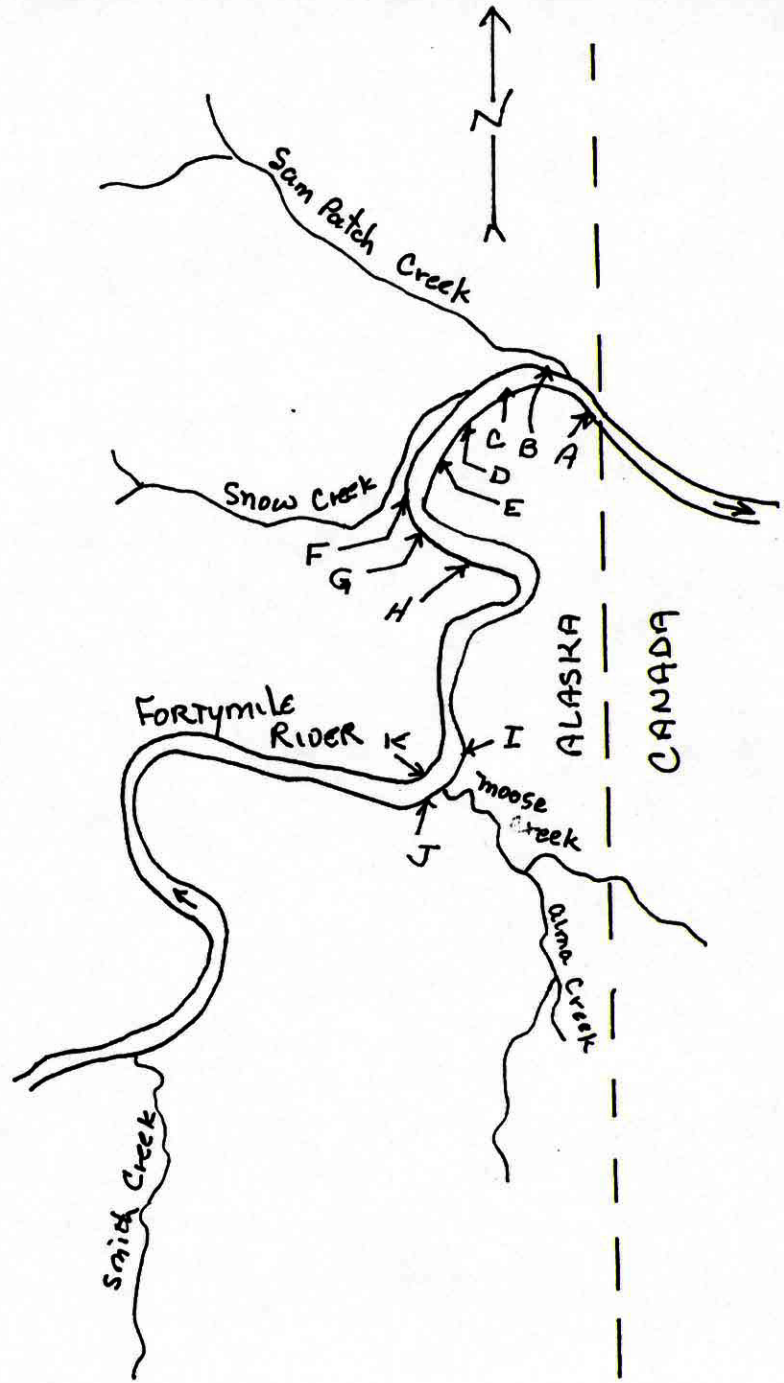
The loss of 31 traps (70%) reduced the number of fish caught, for example; traps 19 and 20 each had one chinook 3.5 hr. after being set, but were lost to high water the next day and the high water caused increased velocities at many sets. This water velocity increase caused fish mortalities in the recovered traps and likely decreased fish presence in the vicinity of other traps. Therefore, the one chinook per 13.4 trap hour is a lower catch per unit effort (CPUE) than would be expected during a stable river flow.

The distribution of juvenile chinook salmon throughout the sampled area and the presence of many areas with 50-150 mm gravel substrate indicate to me that chinook salmon spawn in the Fortymile River. Spawning areas will be difficult to specifically locate because of the stained water, and extensive netting or a sonar site may be required to verify adult chinook salmon in the Fortymile River.


The "KINK"
O'BRIEN CREEK
N
SAM PATCH CREEK
SNOW CREEK
MOOSE CR.
FORTYMILE RIVER
STEELE CR.
SMITH CREEK
ALASKA
CANADA
Figure B.
Scale: 1" ≅ 4 miles
Figure: A
Fortymile River
Chicken

Minnow trap Locations in Alaska

A – Trap No.s 12, 13, 14
B – Trap No.s 15, 16, 17
C – Trap No.s 18, 19, 20
D – Trap No.s 21, 22, 23
E – Trap No.s 24, 25, 26
F – Trap No.s 27, 28, 29
G – Trap No.s 30, 31, 32
H – Trap No.s 33, 34, 35
I – Trap No.s 36, 37, 38
J. – Trap No.s 39, 40, 41
K. – Trap No.s 42, 43, 44



Scale: 1" ≅ 1 mile

Figure: B

Lower Fortymile River Area sampled August 6-8, 1990.