



State of Alaska  
Department of Fish and Game  
Division of Sport Fish

Nomination Form  
Anadromous Waters Catalog

M JB

Region Arctic USGS Quad(s) Wainwright C-1  
 Anadromous Waters Catalog Number of Waterway 330-00-10940  
 Name of Waterway Kugrua River  USGS Name  Local Name  
 Addition  Deletion  Correction  Backup Information

For Office Use

Nomination # <u>09-262</u>	<u>[Signature]</u> Fisheries Scientist	<u>10/30/09</u> Date
Revision Year: <u>2010</u>	<u>[Signature]</u> Habitat Operations Manager	<u>10/30/09</u> Date
Revision to: Atlas _____ Catalog _____ Both <u>X</u>	<u>[Signature]</u> AWC Project Biologist	<u>05/20/09</u> Date
Revision Code: <u>A-1</u>	<u>[Signature]</u> Cartographer	<u>11/9/09</u> Date

OBSERVATION INFORMATION

Species	Date(s) Observed	Spawning	Rearing	Present	Anadromous
pink salmon	8/12 & 9/24 2008	Yes		Yes	<input checked="" type="checkbox"/>
chum salmon	8/12 & 9/24 2008	Yes		Yes	<input checked="" type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

**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: Extend 330-00-10940 w/ pink salmon spawning  
 Aerial surveys were conducted in a 206 fixed wing aircraft and the following counts were observed: 8/12; 1517 pink salmon and 100 chum salmon, 9/24; 23 pink and 1 chum.  
 The chum salmon were seen in the lower reaches of the river approximately to the following point: 70.6595687 159.05265  
 70.39.574 N, 159 03.159 W. Pink salmon were observed as far upstream as the following 70.34.527 158.61302  
 70.5784557845 N, 158 36.781 W. Recommend use for documentation and updating/extension of range.

Name of Observer (please print): Mike Parker  
 Signature: [Signature] Date: 3-6-09  
 Agency: Alaska Department of Fish and Game  
 Address: 1300 College Rd.  
Fairbanks, AK 99701

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 Anadromous Waters Catalog.  
 Signature of Area Biologist: Bonnie M. Beba Date: 3.6.09 Revision  
 02/08

**MEMORANDUM****STATE OF ALASKA  
DEPARTMENT OF FISH AND GAME**

TO: Bonnie Borba  
Fishery Research Biologist  
Division of Commercial Fisheries  
Fairbanks

DATE: 3/5/2009

FILE NO: NSlope aerials 2008.pdf

Telephone NO: 459-7324

FROM: Mike Parker  
Fishery Biologist  
Division of Commercial Fisheries  
Fairbanks

SUBJECT: North Slope Aerial  
Survey Summary

This memorandum summarizes the 2008 aerial surveys conducted on river systems draining Alaska's North Slope from Point Hope to the Canadian border. The purpose of these surveys was to document the presence and spawning of pink and chum salmon, update the Anadromous Waters Catalog (AWC), and identify areas of possible upwellings that may support egg/alevin survival over the winter.

Three separate efforts were made to cover the area in a timeframe that corresponded with the peak spawning period of both species. The first surveys were conducted on August 11<sup>th</sup> and 12<sup>th</sup> and were intended to coincide with the peak spawning period of pink salmon in the area. The surveys were performed by me with pilot Eric Seih from Hageland Aviation based out of Kotzebue. The surveys covered the North West coast from Point Hope to Barrow and included the following river systems known to support pink salmon spawning: Kokolik, Kukpowruk, Pitmegea, Utukok, and Kugrua Rivers. In the process of doing the surveys we were able investigate other river systems in the area and documented pink salmon in the following rivers which are in the process of being submitted to the AWC: Kaolak, Ivisaruk, and Mikigealiak Rivers. Salmon presence in these systems was significant enough to remove any doubt of them simply being strays from other systems. We scouted other rivers in the area but did not see any salmon in the following systems although they appeared to offer suitable habitat: Inaru, Kungok, Ketik, Avalik, and the Omikmuktusuk Rivers.

The next two sets of surveys were intended to target the peak spawning period of chum salmon and were divided into two areas; systems west of Barrow, and systems east of Barrow. The surveys west of Barrow were executed by ADF&G's Nome area manager Jim Menard and were based out of Unalakleet. The surveys were performed on the 23<sup>rd</sup>

and 24<sup>th</sup> of September with pilot Jim Tweto of Hageland Aviation. This set of surveys covered the following systems: Utukok, Kugrua, Kokolik, Pitmegea, Kukpuk (also known as: Sulupoaktak Channel), Kukpowruk, and Ayugatak Creek.

The final set of aerial surveys East of Barrow was conducted by me with pilot Morgan Stanton from Arctic Air Services located in Fairbanks. These surveys also focused on chum salmon and were performed between the 18<sup>th</sup> and 25<sup>th</sup> of September. Surveys were based out of the Kuparuk oil facility which allowed us billeting on their premises and an ideal location to adapt our surveys to highly variable weather conditions. The following systems were surveyed during that time period: Itkillik, Kuparuk, Turner, Kongakut, Egaksrak, Jago, Hulahula, Colville, Fish Creek, Canning/Staines, Kavik, Sagavanirktok, Atigun, Ivishak, Ublutuoch, Judy Creek, Chipp Creek, and Kugrua Rivers.

In summary, the first surveys (August 11<sup>th</sup> -12<sup>th</sup>) were most closely aligned with the peak spawning of both species and future surveys should strive to be performed by mid-August. A noticeable trend of earlier spawning to the West was observed and should also be taken into account when arranging chartered flights. Future flights should be arranged as far in advance as possible due to the limited capacity of air charters and the increased demand by hunters during this same time frame.

All of the surveys that I conducted were in a 206 fixed wing aircraft while surveys conducted by Jim Menard were in a 180 fixed wing aircraft. Due its larger size and faster speed the 206 is not considered the ideal aircraft for conducting surveys. The aircraft does have the advantage of a much longer range than a Super-Cub and also offers a more comfortable ride for long surveys. Both the 180 and 206 aircraft have a side by side seating arrangement that affects the efficiency of an aerial survey and often requires multiple passes over areas that could have been covered in one pass if the seats were in the same in-line configuration as that of the Super Cub. The 206 operated by Hageland Aviation and piloted by Eric Seih in Kotzebue was more suited for aerial surveys than the 206 operated by Arctic Air Services in Fairbanks. The advantages included a bubble window, a seat that lowered, and a local pilot who has had previous survey experience with the department. Jim Menard recommended the 180 as the preferred aircraft which is located in Unalakleet and is also owned by Hageland Aviation.

Relatively low water levels, especially during the month of September provided exceptional conditions for conducting aerial surveys. This was particularly the case for the third set of surveys conducted to the East of Barrow. Despite low water levels, the systems in the vicinity of Teshekpuk Lake were still far too turbid and meandering to adequately survey from the air. These rivers possess a much higher proportion of hunting and fishing camps and are in close proximity to both Barrow and Deadhorse. On the ground sampling with local traditional knowledge would be the preferred means of obtaining a species presence and population estimates from this area. Most other river systems were surprisingly clear but this may be partly attributed to the drastically low water conditions during this time period.

Deep water areas that may allow for over wintering habitat were generally associated with rivers flowing next to cliffs or nearby lakes which may not freeze solid. An aerial survey of this type was not conducive to determining if any of these areas would provide definite opportunity for winter survival. Future investigations will likely require the deployment of temperature data loggers to confirm conditions. The timing of future surveys may need to rely on in season observations and reports from department staff or pilots flying in the area. The arctic is an efficient ecosystem and evidence of salmon presence quickly disappears from high levels of predation and scavenging.

For Fairbanks staff, the completed survey forms are located in the aerial survey file cabinet in the 2008 folder designated for the North Slope. The survey forms, AWC nominations, and additional maps are also stored on the commercial fisheries shared drive at the following location: S:\Comm Fish Monitor\Aerial and Foot Surveys\2008 Aerial Surveys\North Slope Project. Data entry of the surveys will take place once the assignment of latitude and longitude references for each system are designated. The forms currently have the suggested latitude and longitude derived from the mapping program TOPO!®.

All nominations to the AWC are complete and are currently in the submission process for the next publishing of the catalog. Previously documented streams were given the recommendation to update the catalog from “presence” to “spawning”. This set of surveys resulted in a total of fifteen nomination forms which are in the submission process. Extensions of range will be determined by the AWC database manager. Table 1 summarizes the counts from each of the areas that were surveyed. Map 1 and Map 2 depict the approximate extent of each survey.

**Table 1 Summary of Aerial Survey Counts**

## Surveys conducted by Mike Parker August 11-12, 2008

	pink salmon			chum salmon		
	Live	Dead	Total	Live	Dead	Total
Kukpowruk	132	1030	1162	0	0	0
Kokolik	57	514	571	6	0	6
Pitmegea	8635	4706	13341	1400	0	1400
Utukok	64	777	841	0	0	0
Kugrua	1010	507	1517	100	0	100

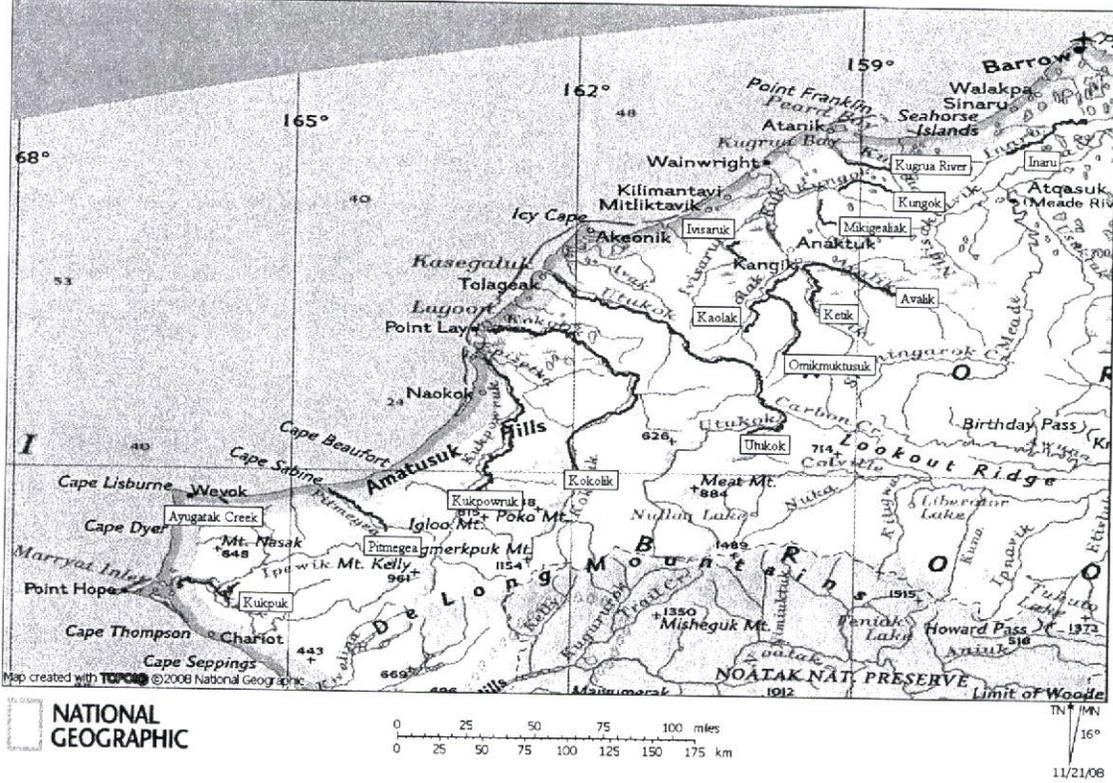
## Surveys conducted by Jim Menard September 23-24, 2008

	pink salmon			chum salmon		
	Live	Dead	Total	Live	Dead	Total
Kukpowruk	0	1106	1106	0	0	0
Kokolik	0	1475	1475	0	1	1
Pitmegea	0	215	215	1	0	1
Utukok	0	507	507	0	0	0
Kugrua	0	23	23	0	1	1
Kukupuk	35	655	690	0	0	0
Ayugatak Cr	0	3	3	0	0	0

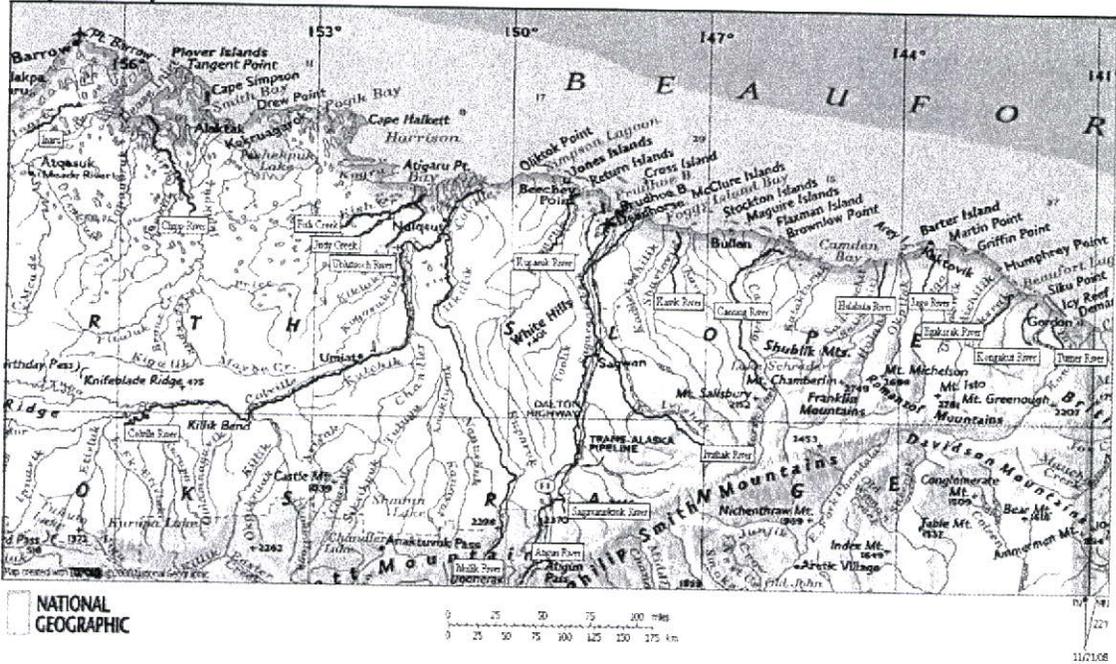
## Survey conducted by Mike Parker September 18-25, 2008

	pink salmon			chum salmon		
	Live	Dead	Total	Live	Dead	Total
Itkillik	0	0	0	141	16	157
Kuparuk	0	131	131	0	0	0
Kongakut	0	0	0	0	5	5
Kavik	0	39	39	0	0	0
Sagavanirktok	0	48	48	0	0	0
Kugrua	0	15	15	0	0	0

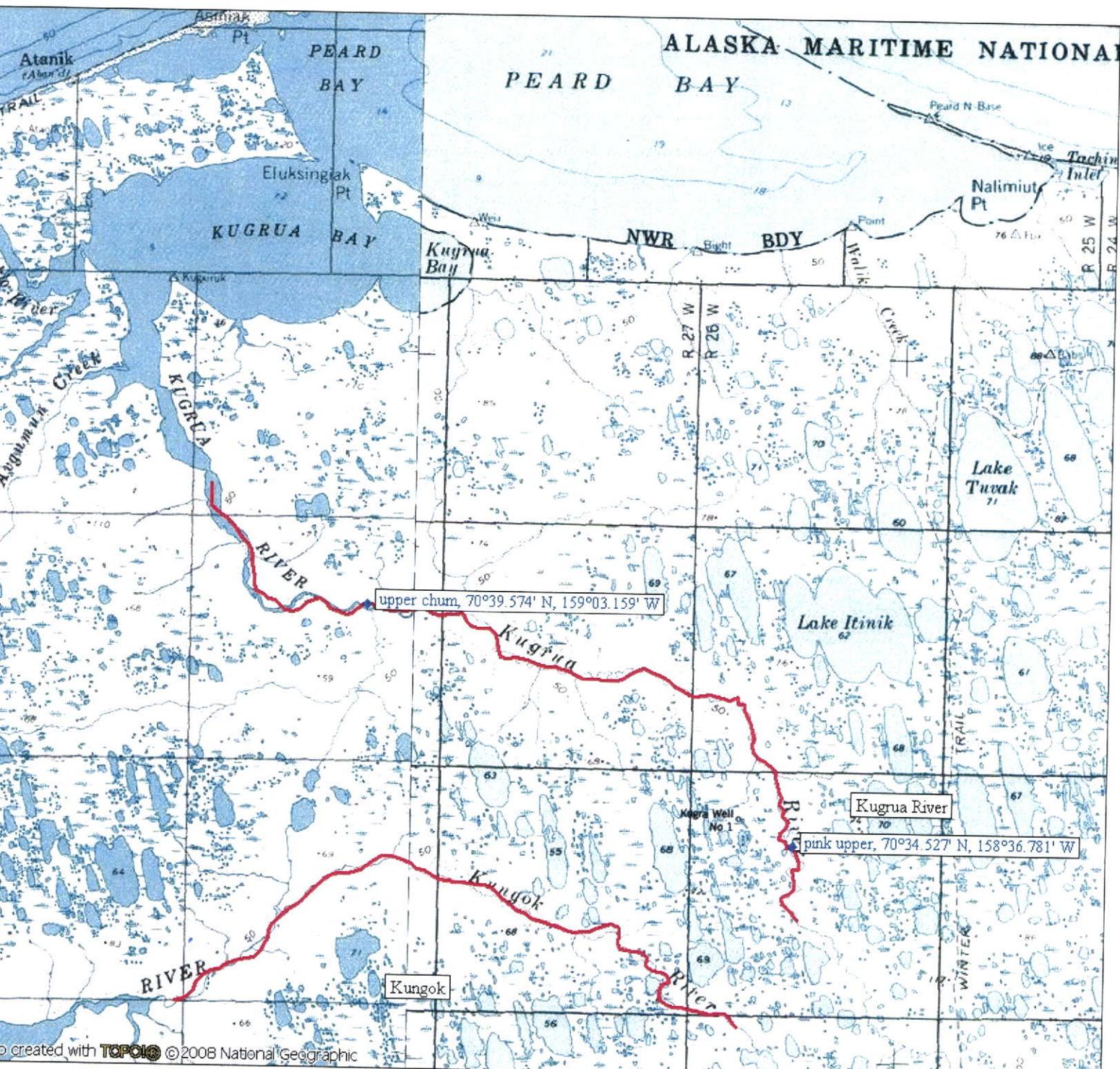
Map 1 Surveys West of Barrow



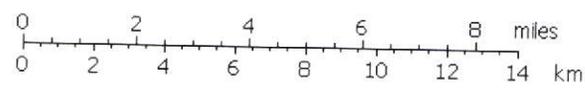
Map 2 Surveys East of Barrow



cc: Linderman, Bergstrom, Bue, Busher, Johnson



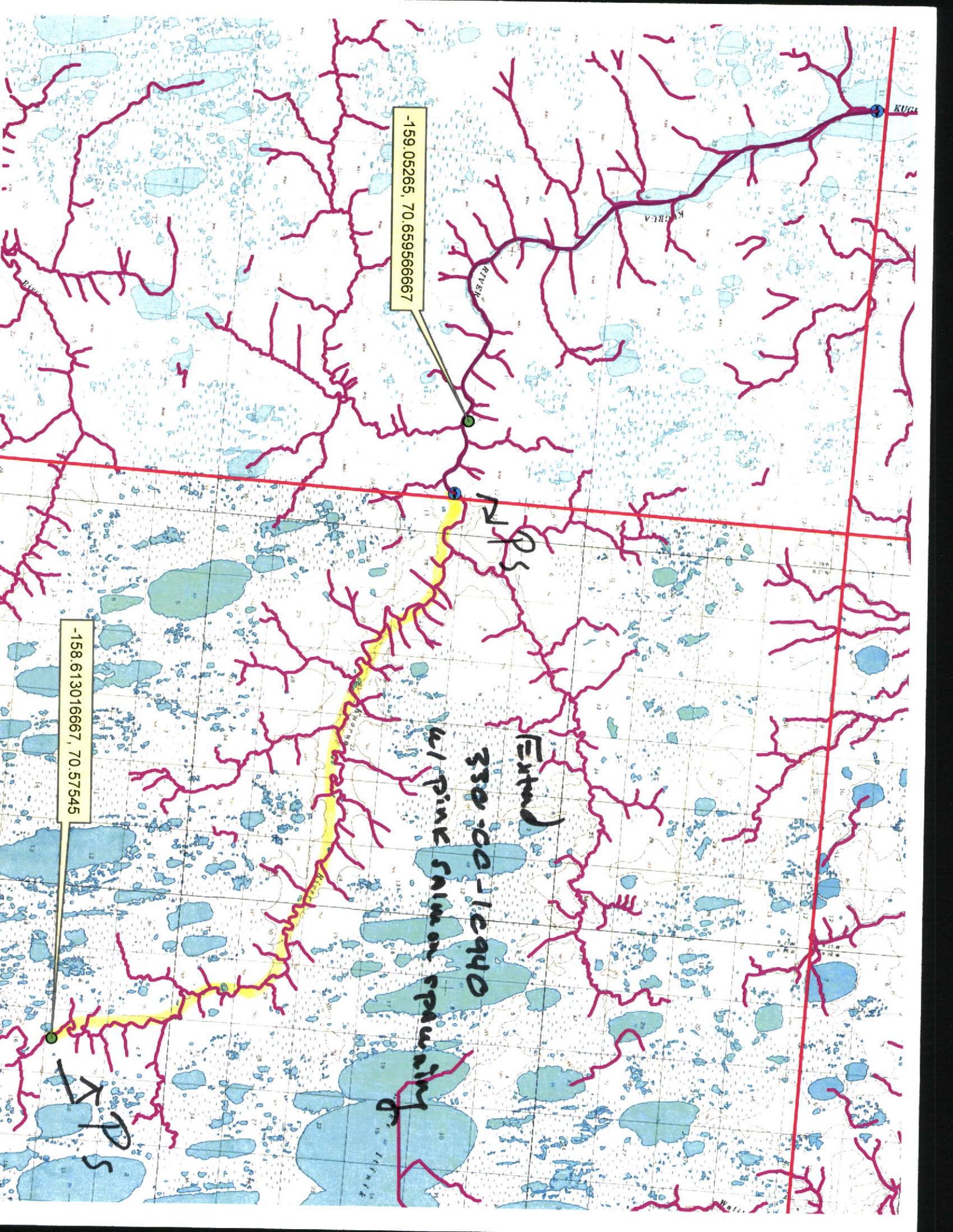
**NATIONAL GEOGRAPHIC**



TN ↑ MN

18°

02/09/09



-159,05265, 70,659566667

-158,613016667, 70,57545

Extend

350-00-11640

41 Pine Salam on spawning

KPS

KPS