



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

Nomination Form
Anadromous Waters Catalog

MJB

Region Arctic

USGS Quad(s) Point Lay, Utukok ^{CS}
D-2, G-2, D1, C1

Anadromous Waters Catalog Number of Waterway 330-00-11200

Name of Waterway Kokolik River

USGS Name Local Name

Addition Deletion Correction Backup Information

For Office Use

| | | | |
|----------------|-----------------------------------------------------------------|----------------------------|-----------------|
| Nomination # | <u>09-272</u> | <u>[Signature]</u> | <u>10/30/09</u> |
| | | Fisheries Scientist | Date |
| Revision Year: | <u>2010</u> | <u>[Signature]</u> | <u>10/30/09</u> |
| | | Habitat Operations Manager | Date |
| Revision to: | Atlas <input type="checkbox"/> Catalog <input type="checkbox"/> | <u>[Signature]</u> | <u>3/25/09</u> |
| | Both <input checked="" type="checkbox"/> | AWC Project Biologist | Date |
| Revision Code: | <u>B-2</u> | <u>[Signature]</u> | <u>11/5/09</u> |
| | | Cartographer | Date |

OBSERVATION INFORMATION

| Species | Date(s) Observed | Spawning | Rearing | Present | Anadromous |
|-------------|------------------|----------|---------|---------|-------------------------------------|
| pink salmon | 8/11 & 9/23 2008 | Yes | | Yes | <input checked="" type="checkbox"/> |
| | | | | | <input 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: Aerial surveys conducted using a 206 fixed wing aircraft. Surveys on 8/11 were conducted by Mike Parker and counts were 57 live and 514 dead pink salmon and 6 live chum salmon. Surveys on 9/23 were conducted by Jim Menard and counts were 1,475 dead pink salmon and 1 dead chum salmon. The furthest point upstream that a carcass was observed was near 69.35.733 N, 161.43.491 W. Recommend change of status from present to spawning for pink salmon and further investigation of chum salmon spawning before catalog submission.

69.35733 N 161.43491 W Change pink salmon to pink salmon spawning

Name of Observer (please print): Mike Parker

Signature: [Signature] Date: 3/3/09

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. Baker Date: 3-3-09 Revision

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 11th and 12th 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 23rd

and 24th 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 18th and 25th 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 11th -12th) 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 |

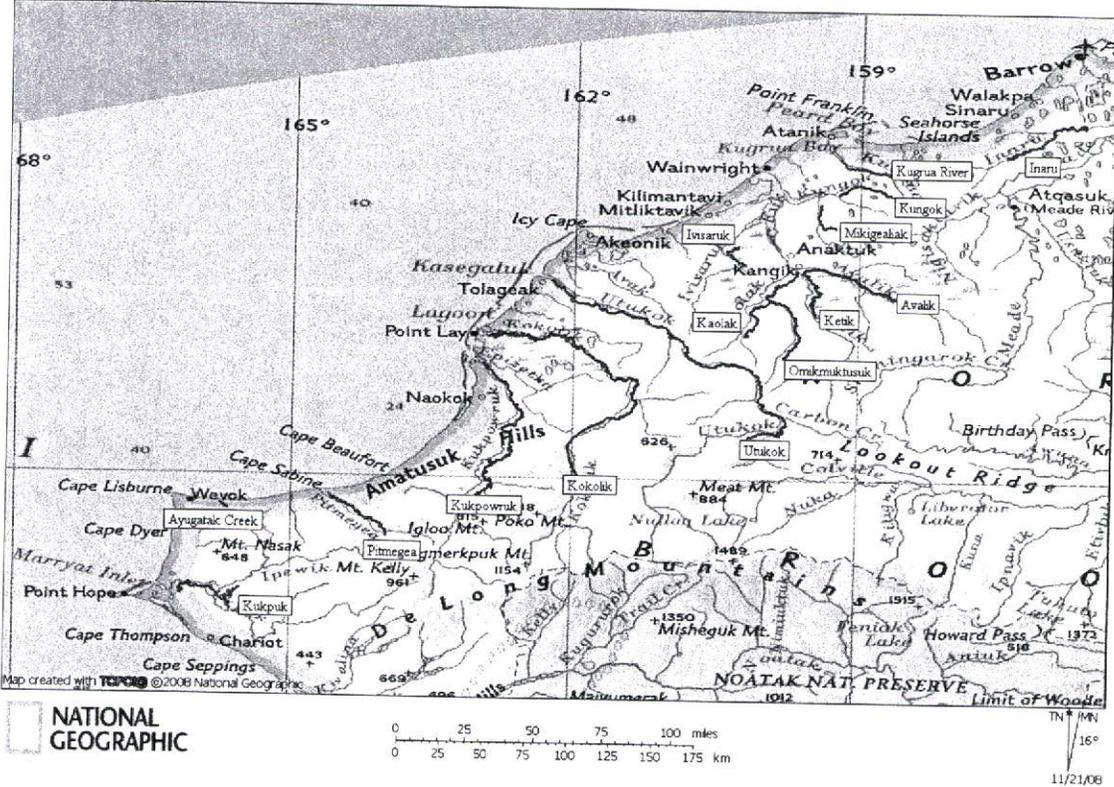
Surveys conducted by Jim Menard September 23-24, 2008

| | 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 |

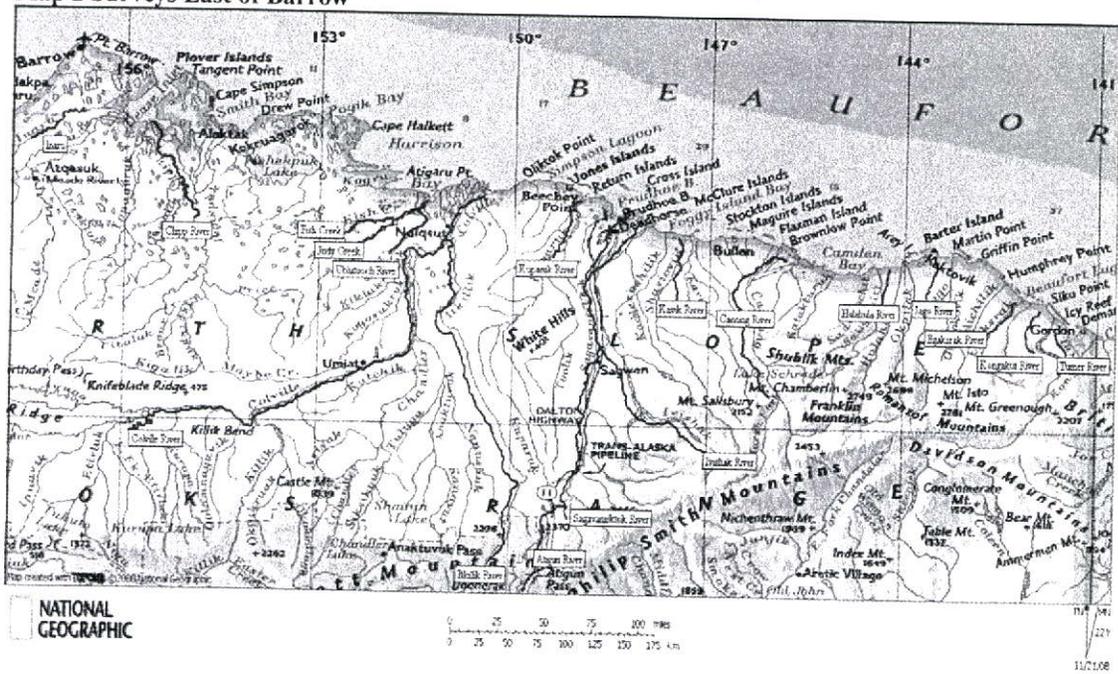
Survey conducted by Mike Parker September 18-25, 2008

| | 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 |

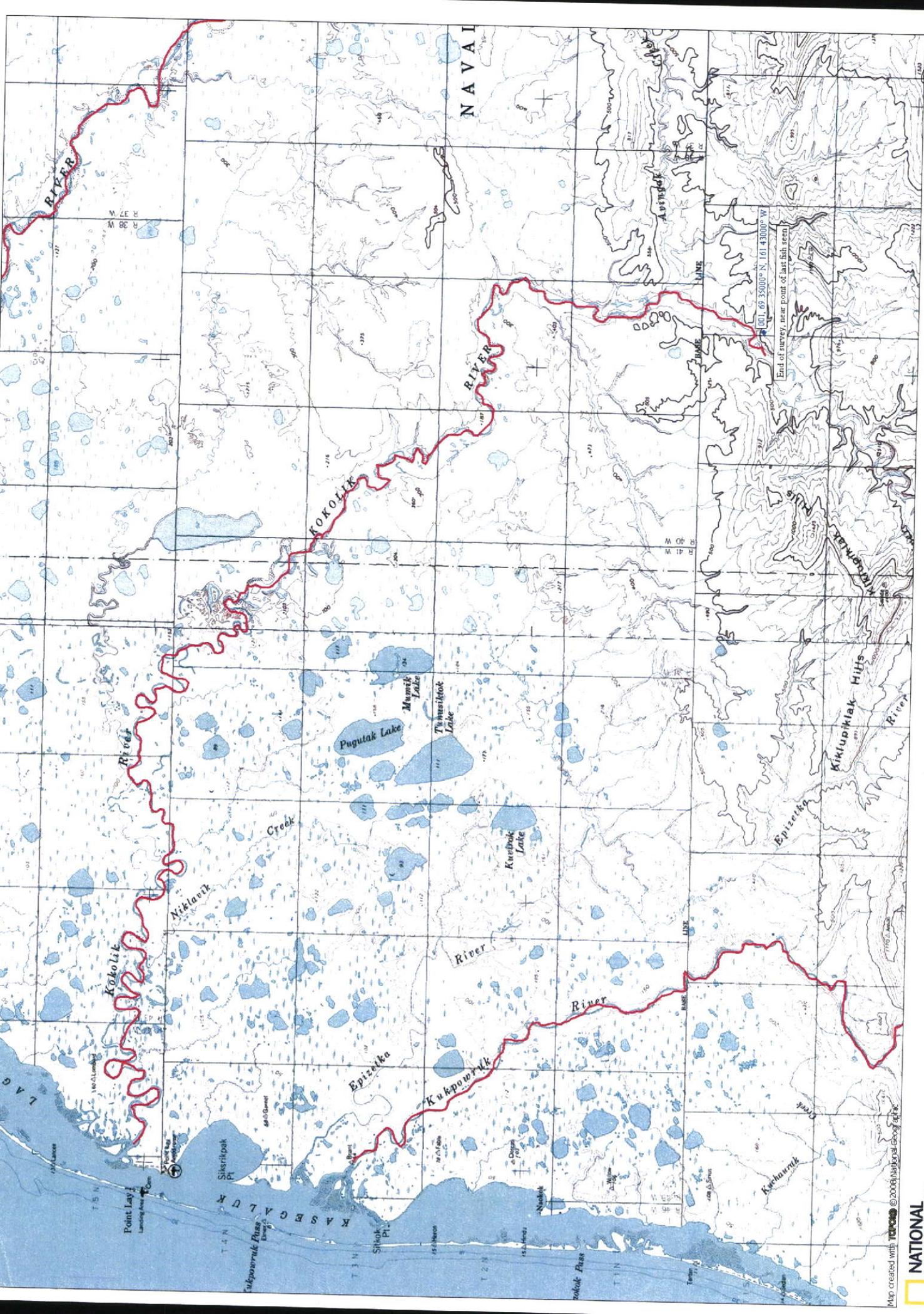
Map 1 Surveys West of Barrow



Map 2 Surveys East of Barrow



cc: Linderman, Bergstrom, Bue, Busher, Johnson



07/06/09

0 2 4 6 8 10 12 14 miles

0 2 4 6 8 10 12 14 km

U.T.M. 69 35000° N, 161 43000° W
End of survey, near point of last fish seen

Map created with **TECHNICAL** © 2008 National Geographic

NATIONAL GEOGRAPHIC

Change pink salmon
present to pink salmon
spawning in 330-00-11200
as indicated

-161.72485, 69.59555

↙
Ps

↘
Ps