

**Stewart River Chum Pilot  
Project CRE-20N-06**

Prepared for the Yukon River Panel  
Restoration and Enhancement Fund

by

Richard Mahoney  
Na Cho Nyak Dun First Nation  
Mayo, Yukon

May, 2007

## Introduction

The Stewart River is a major tributary of the Yukon River that enters 2400km upstream of the mouth. It is one of the largest sub-basins in the Canadian portion of the drainage, and supports approximately 10% of the annual Chinook salmon escapement into the upper Yukon River (Osborne, 2004).

The Stewart River also has a spawning population of fall chum salmon. Very little information, however, exists regarding this population: its relative size, timing or, in particular, spawning location(s). Anecdotal information indicates fall chum spawn in the McQuesten River somewhere near the mouth of Fortymile Creek and Na Cho Nyak Dun First Nation (NND) elders report of a historical dog food fishery in this area. Fall chum are periodically seen in the Stewart in front of the village of Mayo as well as at Fraser Falls. Warm springs entering both the South and North Stewart Rivers maintain ice-free reaches in these streams in winter (pers. observation) and may provide conditions favourable to fall chum spawning if fish pass Fraser Falls.

The presence of chum in the Stewart River system begs not only for more scientific information but also for more general and specific knowledge with an end to potentially augmenting the subsistence food base. Dependence upon the Chinook salmon resource has sustained First Nations peoples of the area with a presumed sufficiency for several millennia. In recent times it appears that little use has been made of fall chum for subsistence purposes, however, changes in natural regimes of large magnitude portending today suggest it may be prudent to explore their potential as an alternate local resource.

This pilot project is a first preliminary attempt to ascertain information about Stewart River fall chum stocks.

## **Materials and Methods**

Two of three gillnets purchased by NND Lands and Resources Department for the project were used in the Stewart River. The third net, intended for use in the McQuesten River was not deployed. The nets were 60'X45MD, 5 1/4" mesh.

An outboard-powered Lowe 19 1/2' aluminum boat was used to scout prospective eddies for net sites. Fishing was done from a smaller aluminum boat owned by the fisherman/contractor. A GPS was used to determine net site locations.

Fishing was done in two 3-day sets, on September 18-19-20 and 28-29-30, 2006; nets were checked daily. A paper punch was used to obtain tissue samples from the operculum for DNA analysis. Samples were saved in 95% Anhydrous Ethyl Alcohol and forwarded to Department of Fisheries and Oceans (DFO).

## **Results**

During the two fishing periods only four fall chum salmon were caught, two in each period, respectively. Many other species common to the river were also caught, however, and considerable difficulty and net damage was experienced from debris and a beaver.

## **Discussion**

The intention of Yukon River Panel Restoration and Enhancement Fund (R&E) Project CRE-20N-06 was to collect DNA samples from 200-250 fall chum salmon (or as many up to that number as could be caught) in the Stewart River, downstream of the McQuesten River.

Three gillnets were purchased by the NND Lands and Resources Department for the purpose. Mesh size appropriate to fall chum (5 ¼") was selected on the advice of an experienced commercial fisherman in Dawson. It was planned that both banks of the Stewart should be fished downstream of the McQuesten, and, if possible, to fish the third net in the McQuesten (local knowledge indicates that there is a spawning run of fall chum in this river and that there was once a dog food fishery near where it is joined by Fortymile Creek).

It was intended that the project would be conducted by two NND citizens with guidance and assistance from Lands Office staff. A temporary, riverside camp was envisioned that would be established near the net sites and that fishing could be conducted from there on a periodic basis dictated by the timing and strength of the run. Inquiries were made early in the summer to locate prospective fishermen. Unfortunately, efforts to engage this help proved largely fruitless due to a spike in local employment occasioned by an enlargement of operations at the United Keno Hill Mines' site in Elsa.

Without the prospect of providing employment and perhaps introducing fishing to some younger individuals from the First Nation, the alternative was to approach Mr. Robert Hager, one of the most experienced and able fishermen in the community. Mr. Hager operates a fish camp on the Stewart River just above the confluence of the McQuesten. That he could operate from his own well established camp would thus obviate the need for an impromptu camp. He was approached and agreed to take on the work, and would engage his own assistants. A contract was drawn up (attached) to meet the terms he required while still attempting to stay within budget and timing parameters.

Sebastian Jones, Dawson Community Steward and longtime commercial fisherman with much experience with Yukon River fall chum, volunteered his time to assist in locating appropriate eddies/net sites for the project. In early September a trip was made downriver from the Hager fish camp by Mr. Hager, Sebastian and myself to scout for prospects. What was being sought were eddies or short reaches with water slow enough to set a net, proximity to the main channel, of sufficient depth for good fishing ("...one catches more in deeper water"), and of a size sufficient to hold at least 15 meters of net. Signs looked for while scouting were: a steep bank, indicating the likelihood of deep water and channel, flat water, indicating lack of a reverse current, and a point of land or similar feature that would cause an eddy to form.

In 15 or more miles of travel, prospects were not encouraging. We inspected both banks from the mouth of the McQuesten to the mouth of Clear Creek, and found little of promise. Looking at the map and what was discernible downriver, we concluded there was little to be gained by proceeding further. Given the river's configuration and the demands of efficiency, it was decided that using three of the marginal eddies we had found would be making the best of the situation. (Map and location coordinates attached.)

Mr. Hager fished for three days during the period September 18-20 and another three days, September 28-30. His total catch for the two periods was four fall chum. Samples were taken and subsequently delivered to DFO. No fishing was attempted in the McQuesten River because the contractor's requirements precluded any additional effort and cost beyond what would be expended on the effort in the Stewart River.

### **Recommendations**

It remains the intention of NND to gain more information on Stewart and McQuesten River fall chum salmon. In fall 2007, depending on Yukon River run strength, an effort will be made to fish as late as is feasible at Fraser Falls (low water can make it challenging to travel there) in an effort to procure DNA samples. It is also planned that NND Lands staff attempt to go to Fortymile Creek on the McQuesten River via an overland trail in hopes of locating the spawning area reported to be in that vicinity.

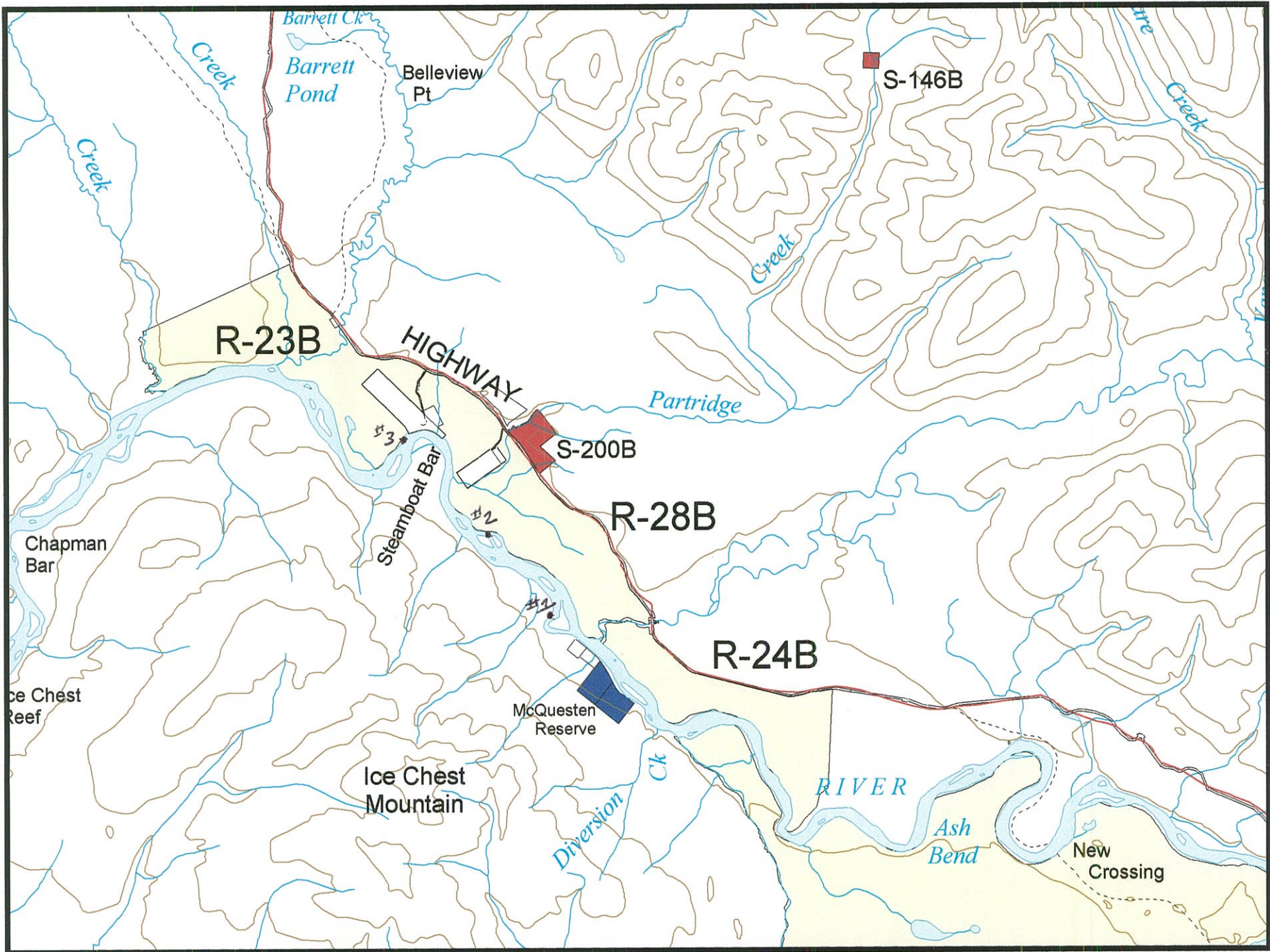
In a future year, when strong returns of fall chum are forecast for the upper portion of the Yukon Basin, application will again be made to the Yukon River Panel for R&E Funding for a more involved and far reaching project. This will likely include not only DNA sampling, but most importantly, a telemetry component to aid in locating spawning areas.

Eddy coordinates (map to follow):

EDDY #1, S Bank  
N63.57069  
N63.60024

EDDY #2 N Bank  
W137.56340  
W137.51473

EDDY #3 S BANK  
N63.59305  
W137.60346



First Nation of Na-Cho Nyäk Dun  
P.O. Box 220  
Mayo, Yukon. T Y0B 1M0  
Phone: (867) 996-2265  
Fax: (867) 996-2107



Sept. 14, 2006

Robert Hager  
General Delivery  
Mayo, YT Y0B 1M0

Dear Robert;

As per our conversations regarding the Chum fishing run I propose the following agreement.

- You will fish for 3 days between September 15 and 20<sup>th</sup> at the rates set below.
- Keep daily records of the number of fall Chum caught  
note the condition of the fish  
identify each fish as male or female  
take one punch sample per fish
- Notify myself of the numbers, etc. by September 20<sup>th</sup>

Once we have the figures on Sept. 20<sup>th</sup> I will ask you to fish another three days to be determined then. Which should be between the 20<sup>th</sup> and the end of the month.

Please note that we are on an extremely limited budget given the costs agreed to below and I may not be able to support any other fishing days. The three fish nets need to be returned to NND lands.

Fees:

NND agrees to pay:  
-\$250 per day for yourself  
-\$150/day for a helper  
-part time helper 4 hrs per day @ \$20/hr \$80  
\$75 for boat rental  
two drums of fuel (which is included in the round trips to camp)

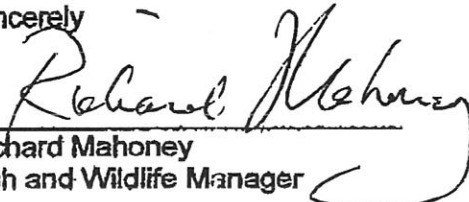
ROBERT FISHED SEPT - 28 - 29 - 30  
3 DAYS @ \$250/DAY FOR ROBERT HAGER  
3 " " \$150/DAY " CAROLINE HAGER  
3 " BOAT RENTAL @ \$75.00/DAY

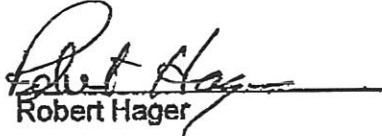
Richard Mahoney  
Oct. 10/06

Attached is a PO for two drums of fuel. Please invoice me with your time and the payment information for your self and your helpers (they need to be paid separately)

Please sign below that this agreement is as you understand.

Sincerely

  
Richard Mahoney  
Fish and Wildlife Manager

  
Robert Hager

## INVOICE

TO: NND LANDS

FROM: ROBERT T HAGER

DATE: SEPT 21 2006

- 3 days fishing Robert Hager  
\$ 750
- 3 days fishing assistant Fabian  
Germaine  
\$ 450
- Boat Rental \$ 75 / day 3 days  
\$ 225

As per attached contract:

Please have check ready  
for Friday Sept 22/06

First Nation of Na-Cho Nyäk Dun  
P.O. Box 220  
Mayo, Yukon. T Y0B 1M0  
Phone: (867) 996-2265  
Fax: (867) 996-2107



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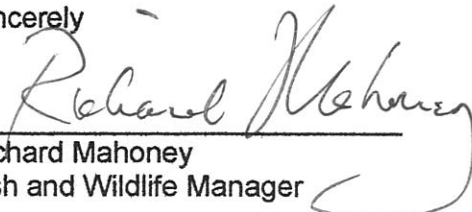
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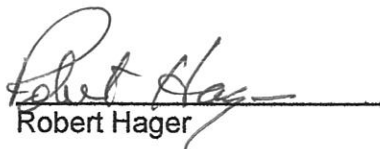
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Fish and Wildlife Manager

  
Robert Hager