CHAMPAGNE and AISHIHIK First Nations

2006 Little Klukshu Sockeye Habitat Restoration Project

Final Report

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Date started: June 1, 2006

Date completed: September 27, 2006

Project Location

Where the project took place: Little Klukshu Creek

Name of Local Water shed: Tatshenshini – Alsek River Watershed

Major Drainage: Klukshu River & Tatshenshini River

Nearest Community: Klukshu Village and Haines Junction, Yukon

Geographic Information to locate the project: Boundary Ranges (Coast Mountains), adjacent to Kluane National Park.

Latitude: 60^0 20' Longitude: 136^0 55'

UTM Coordinates:

Grid Zone 8V Easting: 392000m Northing: 6692000m

Proponent Information

Contact Name: Linaya Workman – Renewable Resource Manager

Mailing Address: Champagne & Aishihik First Nation
Box 5310
Haines Junction, Yukon
Y0B 1L0

Phone: (867) 634-4211 **Fax:** (867) 634-2108

List of Partners

- David Petkovich – Fish Biologist,
- Pacific Salmon Commission, Northern and Transboundary Rivers Fund

Project Information

Project rationale

CAFN Community Salmon Management Plan was developed to address interests and concerns that have been raised from the community. One of those interests was to determine if it was possible to re-establish sockeye into the Little Klukshu system. Traditional knowledge indicates that this small system was an important spawning area for sockeye and that people used to set up a seasonal fish camp to catch and prepare fish for food. Since 1995 CAFN has been working on removing beavers out of the system and in 2002 we did an initial transplant of both eggs and adult sockeye. With the proposed work we will learn if the Little Klukshu system can contribute to the production of more Klukshu sockeye and if the trials are successful CAFN people can experience seeing sockeye again where they have not been for as long as many can remember.

Project Objectives:

1. Monitor the Little Klukshu to confirm the presence of sockeye fry/smolts and to determine what other species are in the system

    - Conduct a spring out migrant survey for sockeye smolt/fry.
    - Remove Beaver dams.
    - Ground monitoring of returning adults

Project Preparation:

In 1995, Fisheries and Oceans did an aerial survey of the area and found that there are abundant ground water discharges, a visible channel and extensive beaver activity. That was confirmed on the ground when CAFN conducted an initial habitat survey of the Little Klukshu Creek. We found that in areas near dams the substrate was poor and that the substrate improved farther away from dams. We did not find any evidence of recent spawning activity, but did determine that Dolly Varden were in the system.

From 1999 to 2001, CAFN conducted extensive beaver dam and beaver removals in an attempt to keep the system open. Basic water chemistry and temperature profiles were collected, and habitat and substrate information was mapped. After 2001 we have continued to remove any rebuilt beaver dams within the creek.

From 2002 to 2004, CAFN conducted adult sockeye transplants into the Little Klukshu Lake. The fall of 2005 was to be our last year for adult transplants, but the Klukshu had a record low sockeye run and it was determined that the

transplant would not be done that year. The proposed work for 2006 was to monitor for any sockeye fry/smolt activity.

Project Summary

Beaver and Beaver Dam Removal

Little Klukshu Creek is one of the two main tributaries of Klukshu Lake which is a major spawning and rearing lake within the Tatshenshini/Alsek drainage. In the past, beaver activity on the creek has resulted in limited access to upstream spawning grounds for migrating salmon.

The crew during this current field season focused their attention on known dam sites on the Little Klukshu Creek. No new dams have been developed and the one big dam that has created a large pond had been breached in several locations when we visited the site. We are assuming the spring runoff caused the breaching. No Beavers were removed

Monitoring: Out migration Survey

In the past years the monitoring program has two main components to it. One is too conduct an out migration survey of fry leaving the Little Klukshu system and the other is too monitor the transplanted adults and try to verify spawning locations. This year our main objective was to determine the presence of sockeye fry/smolts in the system

The same equipment has been used throughout the period of the project. The fyke trap dimensions were 46cm x 30cm with a mesh net attached to a PVC pipe approximately 140cm long. This pipe was connected to a 25l capacity capture container. The trap was set in a narrowing of the creek and small mesh wings were set up to help divert any fish coming down stream into the trap.

Last year (2005) we conducted the out migration survey one week earlier than we did in 2004. We were concerned with timing and we felt that we had just caught the end or the last of the out migrants. It turns out that in 2005 we were early and no fry/smolts were in the creek yet. In 2006, we visited the site during the same time period that we did in 2004. We arrived on June 1, 2006 and set the fyke trap for two days. We also set minnow traps above the fyke trap.

We had a total of 4 sets just down stream of the large beaver pond. This is the same site that we have used for the last three years. In 2005 we also utilized a site approximately 50 m downstream of the outlet of Little Klukshu Lake.

Set #	Location	Species	Total Captured
Set 1			
June 2, 2006	Beaver Pond	Dolly Varden	3
		Rainbow Trout	1
Set 2			
June 2, 2006	Beaver Pond	Coho	5
		Dolly Varden	3
		Rainbow Trout	1
Set 3			
June 2, 200	Beaver Pond	Coho	2
		Rainbow Trout	4
Set 4			
June 2, 2006	Beaver Pond	Rainbow Trout	6

In 2004 we captured a full range of samples of all 4 species including the prominent species which are Dolly Varden and Rainbow Trout. We were also able to confirm that both Sockeye and Coho were in the system. In 2005 we did not catch any fish of any kind. We were unable to confirm the presence or absence of Sockeye in the system. During the 2006 field season we once again caught out-migrants, but no sockeye were captured. Coho was present in the system as well as Dolly Varden and Rainbow Trout. We caught slimy sculpin in the minnow traps. The water temperature below the beaver pond was 9°C.

We were not able to confirm any returning adult Coho or sockeye into the Little Klukshu system. The Coho run continues well into October and access is an issue at that time of the year. No sockeye were seen, but the monitoring is strictly visual and very informal. From the out migration survey we know that Coho are continuing to use the Little Klukshu now that they are not impeded by beaver dams.

Conclusion

The Klukshu system is very important to the Champagne and Aishihik First Nations. This project allowed the First Nation to complete many of the objectives that we had. From the start of the program our main objective was to re-establish sockeye into the Little Klukshu and we had other objectives that ranged

from training and capacity building to reclaiming the substrate and doing reach assessments. At the close of the project CAFN will now have to re-evaluate the direction that we want to go in the future with the Klukshu system.

We still feel strongly that the reason sockeye were utilizing the Little Klukshu was because historical run sizes were a lot larger than they are now and fish moved farther up the system to utilize additional spawning areas especially in years when we had very large run sizes.

We now have to ask if enough time has gone by and enough changes have occurred that Little Klukshu Lake may no longer have enough suitable spawning habitat available or if some other variables are in play. There is definitely evidence of ground water sources and suitable substrate for sockeye spawning.

We will continue to work with Fisheries and Oceans on our overall management objectives for the Alsek/Tatshenshini Rivers.