FINAL REPORT
KLUSHA CREEK AND TATCHUN CREEK HABITAT MONITORING PROGRAM

Project number: RE-13-01

Written by
Little Salmon Carmacks First Nation
And
Habitat Steward, Yukon Salmon Committee

Date: March 31, 2002

Abstract

Objectives:
The objectives of this project is to remove beaver dams and log jams on Klusha creek and Tatchun creek to restore salmon habitat as well as monitor both creeks for spawning salmon.

Results:
The project was successful. Salmon redds have been observed on Klusha Creek and spawning salmon observed on Tatchun creek were abundant.

Recommendations:
Ongoing monitoring of both areas must be done to ensure the restoration done now will pay off in the long run.

Purpose

1. To restore and maintain Chinook salmon access in Klusha Creek and Tatchun Creek. This monitoring program will continue the maintenance of previous work to restore habitat.

2. Monitor habitat utilization and distribution using fry trap method.

3. To begin creating access up stream from Twin Lakes to Little Braeburn Lake on Klusha Creek.

4. Prepare for potential stock enhancement projects

5. Perform stock assessment through a fall helicopter spawning survey.

6. Continue the development of a management plan for both creeks.

7. Continue stewardship opportunities. This monitoring program allows community people from the Little Salmon Carmacks First Nation to continue training in watershed activities.

Introduction

Location:

South central Yukon. Yukon River Mid-mainstream sub-basin.

The Klusha Creek watershed lies in the south central Yukon. Klusha Creek itself is a tributary of the Nordenskiold River, which is a tributary of the Yukon River. The study area is approximately 50km south of the community of Carmacks. The area is accessible off of the Klondike highway to the west, which runs along side of the stream anywhere from a couple of meters to a kilometer. Tatchun Creek is a tributary of the Yukon River connecting the river with Tatchun Lake, approximately 5km upstream from the confluence with the river. Tatchun Creek is located approximately 25km north of the community of Carmacks, accessible by the Klondike highway, which crosses Tatchun Creek near the confluence of the creek and the river.

Project Background:

In March of 2000, the community of Carmacks had a beaver management workshop to deal with reports of very high numbers of beavers within the Traditional Territory. It was decided that the management goal for Klusha Creek was to restore the salmon run to Braeburn Lakes while maintaining habitat values for waterfowl, moose and grayling. For Tatchun Creek, the management goal was to maintain habitat for Chinook salmon.

In the summer of 2000, a crew covered 24 miles from the Yukon River, up the Nordenskiold River to Airport Lake. They made 32 breaches of 25 dams and restored water flow in Klusha Creek.

Also in the summer of 2000, a partnership between LSCFN and the Yukon Conservation Society (YCS) sent a field crew to Klusha Creek to do an assessment of the quantity and quality of potential Chinook spawning habitat between Airport Lake and Little Braeburn Lake. The report from this work found significant areas of potential Chinook salmon and rearing habitat.

Stream Significance:

Klusha Creek was once a stream that was a significant spawning ground for Chinook salmon, according to Elders in the community. It has been many years since salmon occupied the stream, something that this project has intended to change. The area has traditionally been fished for not only salmon but also other species of freshwater fish. Tatchun Creek is, of course, well known for salmon habitat. It is one of the most important salmon spawning streams in the upper Yukon River watershed. Since the construction of the Klondike Highway, and the YTG campgrounds at Twin Lakes and Tatchun Creek, both areas are easily accessible by residents, sport fishers and tourists. The monitoring of these streams is very important.

Project Description:

Klusha Creek:
A Flight survey in July of 2001 established the locations of creek obstructions. The field crew breached 31 dams in July. Another crew set 4 fry traps for one 24-hour period in two separate locations.
In early winter a beaver trapping course was taught to the high school students from Tantalus school in Carmacks. The course was used as an incentive to get the students trained on beaver trapping and Klusha Creek was to be used as the field component to the training. Unfortunately, the weather was too warm and the ice too thin to bring the students out into the field. It was then decided that the trapline concession holder was to be paid to trap beavers in March of 2002 when beaver pelts were prime.

Tatchun Creek:
The field crew walked the entire creek and found no obstructions. For three days in early to mid August, the crew walked the entire creek and counted salmon to establish Tatchun Creek as an index creek for long-term monitoring and to supplement the Department of Fisheries and Oceans numbers on stock strength.

Project Significance:
This Project is significant because salmon habitat is very important, and restoring salmon habitat will ensure that salmon use the area for future generations. Since the trapping lifestyle is slowly fading, beavers multiply in numbers, making streams inaccessible by fish. One theory why beavers have inhabited the Klusha Creek area is the accessibility of ideal vegetation for the building of dams. Forest fires that burned in the 1950's removed old growth and provided this type of ideal vegetation.

Methods:

1) Helicopter survey in mid-July from Yukon River, up Nordenskiold and up Klusha Creek to Little Braeburn Lake with the Lands & Resources Manager, Field Crew Leader and Habitat Steward to evaluate previous habitat access work and identify current obstructions.

2) A crew of three persons (One crew leader and two crew members) were hired for this project to breach dams and walk along creeks. The crew was trained to follow *"The Guidelines for Management of Beaver in Fish-bearing Streams in the Yukon"*. This crew was equipped with hand tools and chest waders. The crew walked the entire Tatchun Creek from the lake outlet to the confluence at the Yukon River. The crew walked into Klusha creek from the Klondike highway at several locations (see Appendix: Field notes) between Twin Lakes and Little Braeburn Lake.

3) Fry traps were set in accordance to the methods set out in *"Protocol for the baiting of Gee-Type Minnow Traps for the Capture of Juvenile Chinook Salmon in the Yukon River Drainage"*. Four Gee-Type traps were set for approximately 21 hours 10-50m downstream from Airport Lake. Four Gee-Type traps were also set for approximately 21 hours 5-10m downstream from the old wooden bridge located approximately 3-5km downstream from the outlet at Twin Lakes.

4) The Tatchun Creek stock assessment was a walk survey of the entire creek on three separate days during spawning season. The surveyors walked from the outlet of Tatchun Lake to the mouth of the Yukon River in hip-waiters and holding counters while visually counting salmon. The Habitat Restoration Biologist from DFO and the Yukon Salmon Committee Habitat Steward joined the crew for one day.

5) The Beaver Trapping Training Workshop was set up by the LSCFN Cultural Education Co-ordinator and the Habitat Steward, YSC. The training was delivered by the Yukon trappers Association

Summary of Results:

Helicopter survey in mid-July: the work done the year continued to be satisfactory, with excellent water flow. There were large dams missed in 2000 by the crew that were located using GPS equipment. Much of the flow of the Nordenskiold River was heavy in sediment. A creek with heavy mud flow from a avalanche came into the Nordenskiold River beside Jensen's ranch.

No obstructions were found in the walk survey in Tatchun Creek. Any previous dam breeching resulted in the beavers re-locating. The Field Crew breached 31 dams in 12 days in Klusha Creek. No beavers were trapped or killed in any manner. (see appendix field notes for details). In mid-August on an overflight of Klusha, the habitat biologist for DFO observed Chinook salmon spawning. A follow-up field trip revealed five redds approximately 100m downstream from the old wooden bridge near the Twin Lakes outlet.

No Fry were caught in any of the traps. (see Appendix for details).

A total of 414 salmon were counted in Tatchun Creek on three separate days in August (see appendix field notes). No obstructions were found as the dam removal work done the year before was successful. Spawning dunes were found at the outlet of Tatchun Lake.

A total of eight LSCFN members were involved in this project.

Conclusions / Recommendations

The project was very successful, as our intention to bring spawning salmon back to the Klusha creek area looks positive. On-going monitoring will be essential to see if salmon continue to use the creek. To avoid any disturbances, the area with redds can be observed from the high ridge nearby during spawning season. This restoration project will also help other species of freshwater fish such as whitefish, jackfish and grayling. Since the project was partly driven by traditional knowledge, the community as a whole will benefit from these enhanced stocks. The crew worked hard to achieve the objectives since beaver management on Klusha Creek started two years ago. The creek itself is long, the vegetation is thick and there are many bear signs.
The continuation of this project in following years should include an assessment of the hydrology and habitat impacts to waterfowl and other wildlife in the Klusha Creek wetlands upstream from Twin Lakes. This area has management goals to retain wetlands values, yet beaver dam management on upstream habitat has unknown impacts.

On Tatchun Creek, the project has also been successful as spawning dunes were observed higher up the creek than in previous years. The stock count should continue each year to allow LSCFN to develop an index year for fisheries management. A better communication plan should be established between LSCFN and DFO to utilize the stock assessment numbers during in-season. Next year will include a similar project with the addition of an interpretative sign at the Tatchun Creek campground to build awareness to locals and tourist of this ecologically sensitive and culturally significant area.

Winter trapping of beavers is the most traditional way to eliminate beavers from the creeks. The pelt is prime in mid-November and mid-March and the meat can be eaten by Elders. At the time this report was written we are attempting to co-ordinate a trappers incentive to trap beavers from Klusha.

2001
Klusha Creek and Tatchun Creek Field notes

by Ted Fairclough

July 3 — Tatchun Creek: Drove to Tatchun Lake. Dropped two workers off. Walk Tatchun Creek. No Beaver Dams. One Log Jam. Fish can go through

July 9 — Klusha Creek: 4 dams just above Twin Lakes. 3 were opened and opened a **fourth** dam. Creek is clear- gravel bottom.
Stop 1: 3 kms on highway from south end of Twin Lakes

July 10 — Klusha Creek: Continued walking Klusha. Good gravel bottom-fast water, no obstructions.
Stop 2: 3 kms past stop 1

July 11 — Klusha Creek: Walked most of the day in chest waders. Approx. 10 dam already broken through. A **couple** we cleared out more.
Stop 3 2.2 mile past stop 2

July 12 — Klusha Creek: Pulled **5** major dams. 1 opened in 2 places, 2 opened in 3 places. 3,4,5 opened in 1 place. Lots of water. Release of dams lowered water approximately 1.5 feet.
2.9 km past stop 3 on highway

July 13 — Klusha Creek: walked Klusha to NoMore Lake. 3 washed out dams. Water flow good.
2.9 km past stop 4 highway

July 14 — Found 5 dams all washed out. Gravel bottom
1.4 kms past

July 16 — Flew the Nordenskoild River and Klusha Creek to Little Braeburn Lake

July 17 — Klusha Creek: Took out **two** dams- creeks spread into channels.
1.1 km on highway

July 18 — Klusha Creek: Took out **four** dams. Water 5-6 feet deep
1.3km km on highway

July 19 — Klusha Creek: Took out **2** dams, other dams washed out. Deep water.
1.1km km on highway

July 22 — Klusha Creek: Took out **5** big dams, one in two places. Creeks spread across valley in channels. Hard to keep on main creek. More dams upstream.
1 km on highway

July 23 Opened **8** large dams. Creeks spread out into smaller channels. Think we're through the dams? 0.8 km on highway

July 24 Opened **two** dams then walked the creek to Little Braeburn. 1.1 kms in highway.

Total Dams breeched: 31

Animal Signs: Deer, Bull Moose, Cow Moose, calf, Grizzley, Black Bear Grayling, Lingcod, Mallards, Red Wing Blackbird, Grouse.

2001

Tatchun Creek Salmon Spawning Survey Field notes

by Ted Fairclough

August 5: Walked Tatchun Creek
Ted Fairclough, Bryan Tom
No fish seen

August 15: Walked Tatchun Creek
Ted Fairclough, Bryan Tom, Al vonFinster, Bev Brown
122 salmon counted

August 21: Walked Tatchun Creek
Ted Fairclough, Paul Johnny, Dion Blackjack
292 salmon counted

2001
Klusha Creek Beaver Dam Management:
Fry Trapping Field notes

by Bev Brown

August 1

Field crew: Bev Brown, Chris Sam, Dion Blackjack

1. Four juvenile fry traps set downstream from the outlet of Airport Lake

Trap #	Location	Time set	Time retrieved	species	
1	10m downstream from Airport Lake outlet: right bank	Aug 1 2:50pm	Aug 2 12:20pm	O	
2	30m downstream from Airport Lake outlet: right bank	2:55	12:25	O	
3	45m downstream from Airport Lake outlet: right bank	3:00	!2:30	O	
4	50m downstream from Airport Lake outlet: right bank	3:05	12:35	O	

Weather: clear and sunny
Water turbidity: >23 inches
Water temperature: 18° C
Stream condition: n/a (high water)

2. Four juvenile fry traps set downstream from the old wooden bridge downstream from Twin Lakes outlet

Trap #	Location	Time set	Time retrieved	species	
1	100m downstream from old wooden bridge: right bank	Aug 1 2:15pm	Aug 2 11:25pm	O	
2	75m downstream from old wooden bridge: right bank	2: 10pm	11:30	O	
3	30m downstream from old wooden bridge: right bank	2:02pm	11:35	O	
4	5m downstream from old wooden bridge: right bank	2:00pm	11:45	O	

Weather: clear and sunny
Water turbidity: >30 inches
Air temperature: 22°C
Water temperature: 18°C
Stream condition (%bankful) wetful channel width/bankful channel width: 13.5/14.2= 95% bankful

Klusha Creek Stream Restoration Project: Klusha Creek 2002

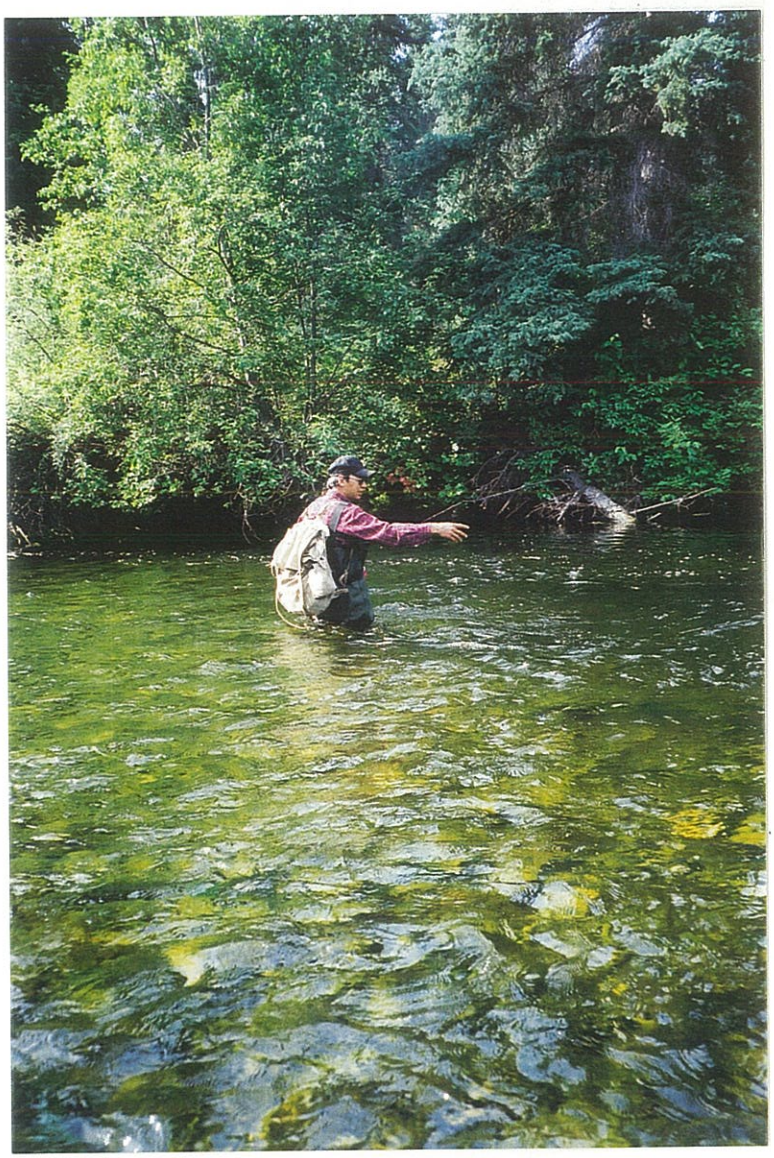
Klusha Creek Stream Restoration Project: Klusha Creek 2002

Klusha Creek Stream Restoration Project: Klusha Creek 2002

Chinook Salmon
Spawning Survey

Tatchun Creek

August 15, 2002



Beaver Trapping Training for Tantalus School Students