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Champagne & Aishihik First Nations

Upper Nordenskiöld River Temperature Investigations 2005

January, 2005

Yukon River Panel - Restoration and Enhancement Fund

Project #: CRE-55-05

Abstract

Temperature loggers were placed in the upper Nordenskiöld River at two sites on September 30, 2005. Two loggers were placed at each site. Loggers that had been placed the previous year were no longer present at the locations they had been placed. It is likely they were dislodged and swept downstream during spring break-up. Funding for the project was provided by the Yukon River Panel's Restoration and Enhancement (R&E) Fund.

Introduction

Background

In 1998/99 Champagne & Aishihik First Nations (CAFN) were successful in obtaining funding from the Yukon River Panel's Restoration and Enhancement Fund to complete the first stage of a restoration and enhancement (R&E) plan, and a salmon & salmon habitat inventory for the Nordenskiöld River. Over the past five years the Yukon River Panel's Restoration & Enhancement (R&E) Program has been the primary funding agency for restoration activities on the CAFN Nordenskiöld restoration projects however, in 1999/2000, the Department of Fisheries & Ocean's Habitat Restoration and Salmon Enhancement Program (HRSEP) also contributed funding. The 1998/99 inventory and its restoration recommendations acted as a data resource and guide for planning future restoration activities in the upper Nordenskiöld River. The projects over the years have concentrated on:

- collecting juvenile chinook salmon (JCS) length and weight data;
- monitoring JSC utilization;
- obtaining stream temperature profiles through the placement of temperature data loggers;
- removing obstructions to salmon migration;
- collecting site specific salmon habitat and stream survey data;
- performing aerial spawning surveys; and
- collecting and cataloguing existing land use, biological, and traditional knowledge data for the area.

Yearly reports can be obtained from Yukon River Panel or the Champagne and Aishihik First Nations' offices (see references).

This current study only concentrated on collecting temperature data from the Nordenskiöld River.

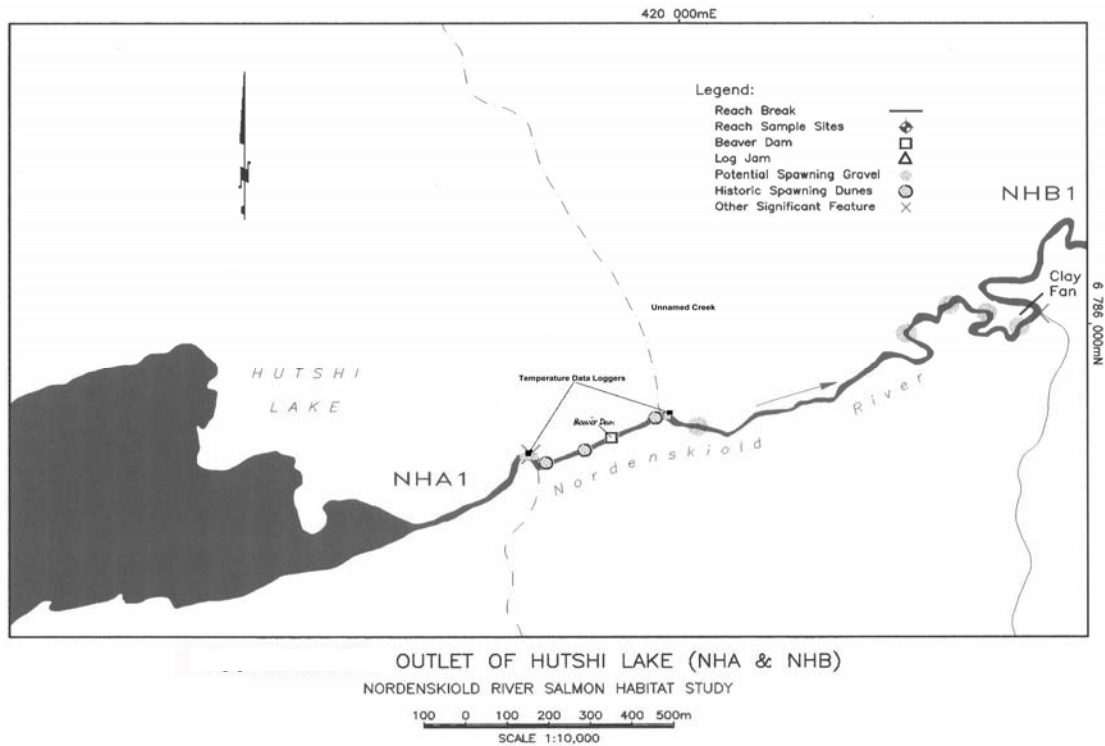
Study Area

The Nordenskiöld River drainage basin lies within the Central Yukon Plateau Eco-region. The region is characterised by rolling hills and plateaus separated by broad, deeply cut valleys. The most common forest types are white and black spruce. Black spruce are dominant in colder, poorly drained areas. As naturally recurring fires are frequent, several vegetation communities are prevalent. Lodgepole pine and trembling aspen most commonly colonize burnt-over areas. Shrub birch and willow, with occasional paper birch and alpine fir, dominate the sub-alpine vegetation. Extensive grasslands occur on lower south-facing slopes. These grassland slopes form a significant vegetation feature in the Nordenskiöld River Valley. The cold, semiarid climate of the region has a mean annual temperature of approximately -3.5°C , with a summer mean of 12.0°C and a winter mean of -19.0°C . The Nordenskiöld River drains an area of approximately 6370 square kilometres. The headwaters of the Nordenskiöld River are made up of Moraine Lake on the Kluane Plateau (elevation 910 meters) and Long Lake (elevation 1200 meters) both flowing

north-east to a chain of three lakes known as Hutchi (Hutshi) Lakes (elevation 750 meters). The Nordenskiöld River's (traditional - *Chu`ena Chù*) north-south trending out-wash valley flows from Hutchi Lakes (traditional - *Chu`ena Mä`n*) to its confluence with the Yukon River at Carmacks (elevation 525 meters). The major tributaries of the Nordenskiöld River include Long Lake Tributary, Moraine Lake Tributary (marked as *Nordenskiöld* on maps), Klusha Creek, Kirkland Creek, and Rowlinson Creek.

The Nordenskiöld River occurs within Champagne & Aishihik First Nations' (CAFN) traditional territory and contains partial overlaps with Little Salmon / Carmacks First Nation's (LSCFN) traditional territory. CAFN and LSCFN make up two of the 14 First Nation governments in the Yukon. Many CAFN members are descendents from or were past citizens of the historic Hutchi Village (traditional - *Chu`ena Keyi*) located on the southeast banks of the northern most Hutchi Lake. (Pumphrey, 2001)

Figure 1: Upper Nordenskiöld Study Area Showing Approximate Locations Of Temperature Logger Placement.



Temperature Data Loggers

Two temperature data loggers that were placed in the Nordenskiöld River during the August 2004 investigation were not recovered as they were not at the locations during

a site visit on September 30, 2005. It is likely that the loggers were dislodged from their respective sites and displaced downstream during spring break-up. Two new loggers were placed at each of the sites and secured in a different manner to increase their resistance to being dislodged during spring break-up conditions. One set of loggers were placed immediately upstream of a historic spawning dune on the left bank of the river (8V- 419449E - 6785822N Nad27). The other temperature data logger was placed a few hundred metres downstream of the unnamed creek confluence on the Nordenskiöld River (08V - 420247E - 6786034N - Nad 27 (see figure 1) also on the left bank of the river. The Habitat and Enhancement Branch of the Department of Fisheries and Oceans Canada, Whitehorse area office, supplied and pre-programmed two of the temperature data loggers (tidbit type loggers). The other two loggers (Vemco) were provided by Champagne and Aishihik First Nations. The data loggers were programmed to record temperature every hour.

References

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