

## Fisheries and Subsistence





Photo courtesy of University of Alaska Fairbanks, Rasmusson Archives

# An American-Canadian Traditional Ecological Knowledge Study of the Upper Tanana River Fisheries

by Connie Friend, Gary Holton and Norman Easton

## Abstract

This project examines ethnographic information collected from knowledgeable fishers in seven Native villages in the Upper Tanana River Valley, which runs through eastern Interior Alaska and into the Yukon Territory, Canada. The local governments of five of these villages had expressed concerns regarding the health and status of their fisheries. Researchers combined ethnographic interviews, linguistic documentation and analysis, mapping and survey techniques to provide a historic and contemporary picture of traditional ecological knowledge and subsistence practices among the Upper Tanana fisheries. Research results suggest there is significant local knowledge of natural laws of interdependence linking the various historic and contemporary fisheries in the Upper Tanana drainage. Such information can provide managers with additional information about relationship to place and the interdependence of traditional subsistence users and nature (*See Basso 1996*). Additionally, it provides a temporal and social context for a recent Upper Tanana telemetry study of humpback whitefish (*Coregonus pidschian*) seasonal movements (*Brown 2006*).

Mansfield Fish Weir  
circa 1940s or '50s.

## Introduction

Native villages began expressing concerns about the health and safety of their subsistence resources, especially fish, about the year 2000. Requests for studies came to the Tetlin National Wildlife Refuge from the villages of Northway, Tetlin, Tanacross, Dot Lake and Healy Lake. A three-year telemetry study of the whitefish (*Coregonus pidschian*) of the Upper Tanana River was begun in 2000 (Brown 2006), and the following year, *A Traditional Ecological Knowledge Study of the Fisheries of the Upper Tanana River* was initiated. Information for this monograph is derived primarily from the latter study (Friend et al. 2007). This paper focuses on a brief history of the fisheries, the historic and contemporary social aspects of the fisheries and the unique relationship of the people with the resource.

## Purpose

Our purpose was to document local knowledge developed over generations by indigenous people in seven Upper Tanana villages: Beaver Creek (Canada), Northway, Tetlin, Tok, Tanacross, Dot Lake and Healy Lake (Alaska). Through this process, past and current harvest information, adaptive patterns and especially traditional ecological knowledge regarding fisheries



Photo Tetlin NWR files

Figure 1. Tanana River upstream from Tanacross Village.

resources would be brought forward to assist in management decisions.

## Methods

Looking to recent Traditional Ecological Knowledge (TEK) studies that had been done, as well as trying to fill in some of the blanks for the western scientific study, specific questions were asked about seasonal movement, feeding patterns, diet, spawning sites as well as cultural traditions. Over a period of three years, 42 fishers were interviewed. Interviews were a combination of structured and non-structured inquiries done in groups whenever possible, in order for the dynamic to be more interactive. This was especially true for the linguistic component. Researchers also participated in culture camps held at fish camps in four separate fisheries.

## Linguistic Discussion

Crucial to the understanding of the Traditional Ecological Knowledge of fisheries is a thorough investigation of the indigenous fish taxonomy. Three distinct Native languages are spoken in the Upper Tanana River drainage: Southern Tutchone (in Canada), Upper Tanana and Tanacross (in Alaska). By including a linguistic component, a more thorough understanding of place names and their significance can be applied and other information gleaned. For example, when considering the generic word for fish, *tuug* (or *tuugn* in Upper Tanana), which is used in similar forms throughout Alaska and elsewhere, the meaning changes from salmon (the most common meaning) to whitefish in the Upper Tanana. Thus, the language re-enforces the priority of whitefish over salmon in the Upper Tanana region (see Figure 1). This is not to say that the Upper Tanana people did not eat salmon. They traveled long distances on foot (summer-long journeys) to the Yukon and Copper rivers to obtain salmon and to trade (Guédon 1974). Today, this practice continues with people visiting both rivers to bring home salmon. Elders also informed us that the Copper River people like to have whitefish for a change in their diet.

Language	Term	Specific meaning
Ahtna	łuk'ae	salmon
Dena'ina	tiq'a	salmon
Deg Xinag	łegg	salmon
Upper Kuskokwim	łuk'a	salmon
Koyukon	łook'e (łuk'E)	salmon
Gwich'in	łuk	salmon
Lower Tanana	łuk'a	salmon
Tanacross	łuug	whitefish
Upper Tanana	łuugn	whitefish

Figure 2. Athabascan Terms for 'Fish'.

## Results and Conclusions

The TEK research in the Upper Tanana conveyed an important message to resource management. The 42 consultants shared a basic belief: by right action and observance of cultural traditions, people would be able to influence natural events to the extent that their needs would be met and the resource—fish, plant or animal—would give itself freely. We have labeled this belief system, '*An Elemental Reciprocal Agreement*'. Central to it are traditional values of sharing, taking only what is needed, being respectful of the resource, and not wasting. This paradigm constitutes an ancient worldview that links the hunter-fisher-gatherer inextricably to the land and provides researchers and management with an ancient paradigm, which can be re-interpreted for present day conservation concerns (Cajete 2000).

Although whole villages are not migrating to fish camps as they once did, the fish camps continue to play a significant role in the lives of the indigenous people of the Upper Tanana today. The fish camps are still a place of laughter (Kawagley 2006) and respect learned. In Tetlin, the young people are taught to hang the fish in the same direction in which they were swimming as a sign of respect. At camp,

young people are taught not to play with their food, nor to take more than they can eat, to have right thoughts and attitudes, to share and not to waste. The traditional culture is taught at fish camp. Rather than being a quaint, outdated experience, the experience and the teachings are in-depth models of modern conservation principles (Cajete 2000).

To the traditional Upper Tanana Native person, there is a sacredness associated with the land and with the harvesting of foods. Fish camp is considered a sacred place; it is kept clean and treated with respect. Cares that come with living in the fast paced twenty-first century are put aside. A deep joy and connectedness settles in and prevails for a time. Fish camp provides a healing environment for Native people, particularly the elders. This sacred relatedness to the land and to each other is manifested in multiple ways that inform the ethics which govern the traditional Native person's actions. One elder expressed it succinctly:

*So when a chief comes to your door, he doesn't have to have an army. She doesn't have to have a judge. He doesn't have to have a warrant. He doesn't have to have accusations of any kind; because in a secular and a sacred society when violations occur on an individual basis, (they) are accepted by the individual. So when you say, 'traditions' today, you're really talking*

**Isaac Juneby, former Chief of Eagle village defines Traditional Knowledge as follows: ...Traditional Knowledge should not be over looked, discounted in addressing cultural resource management simply because it is not written down. Traditional Knowledge is the property of the people who possess it. Traditional Knowledge is respected, used and passed on. Traditional Knowledge also provides the Alaska Natives with an understanding of who they are.** (In speech to the Upper Tanana Cultural Resource Summit 2005, see also Berkes 1999).

*about an individual covenant and that's when you hear the old people say, not 'Our Law' (but) 'Our Way': our traditions. How that operates on a daily basis is relatively easy to understand. (Friend and De Fries 2005)*

In documenting the elders' Traditional Ecological Knowledge, we learned what fish eat, where fish eat, confirmed two spawning ground locations discovered by Brown's telemetry study (2006) and the basis of the 'Elemental Reciprocal Agreement'. Apart from the agreement, we have been learning about the uniqueness of each fishery.

### Scottie Creek

The Scottie Creek fisheries became the destination for people who walked there from the Wrangell-St. Elias mountains during two eruptions of Mt. Churchill. The first occurred plus or minus 1,900 years ago and the second, approximately 1,250 years before present (Richter *et al.* 1995). The Scottie Creek fishery, which has been visited by indigenous people from both Canada and Alaska for millennia, was recognized by elders to have once been a place of natural riches and prosperity. Even salmon (*Oncorhynchus keta* and *O. tshawytscha*), which are rare in the Upper Tanana, were said to have been abundant at Scottie Creek two or three generations ago.

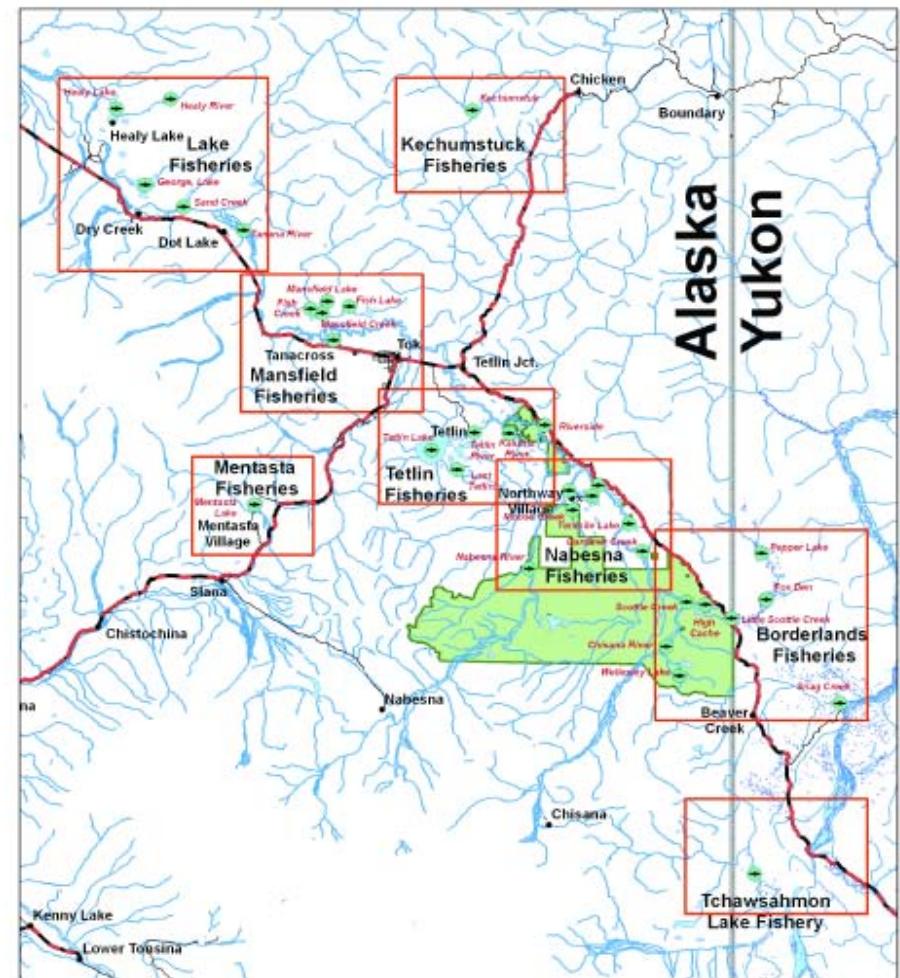


Figure 3. Upper Tanana Fisheries Map

## Last Tetlin

The Last Tetlin fishery (*Figure 3*) has been cited throughout past generations for the succulent, large, fat fish that abound there. In more recent times, there has been a decline in both numbers and the size of these fish (virtually all species). Two years ago there was a run of malnourished and diseased whitefish in the Tetlin River, while at the same time, the lake whitefish were fat and good tasting. One elder believes that part of the cause of the malnourished fish may be the shift in habitat caused by the Denali Fault earthquake in 2002. This earthquake registered 7.9 on the Richter scale (*US Geological Survey Fact Sheet 014-03*) and caused four-foot mud slides on the Tetlin River.

## Mansfield and Healy Lake

The Mansfield and Healy Lake fisheries rivaled Last Tetlin in the past for quality whitefish. Tanacross villagers currently cite beavers as building blockages in creeks, which prevent whitefish from coming upriver to spawn and also prevent water flow. Today there are fewer whitefish in



Figure 4. Beaver Creek, Yukon CA Culture Camp attended by Canadians and Alaskans at Pick Handle Lake, Yukon, Canada, Summer 2006.

Mansfield Creek and Lake and the size has decreased according to local fishers.

Numerous deformed fish have been found in the Healy Lake fishery causing concern about contaminants in the water. The military has done some remediation regarding numerous contaminants left in and around the lake more than 50 years ago. The Nabesna fisheries also share this concern as the military impacts to lands and waters in the area have been exposed and somewhat remediated.

## Recommendations

By considering the Native paradigm of multifaceted connections to place and resource, managers will be able to

incorporate other avenues of awareness and discernment to evaluate what may be necessary for quality stewardship and sustainability in a variety of circumstances.

Too few youth are receiving the teachings that will help them live lives that support sustainability of the resources. Elder-youth programs and teaching traditional values and activities need to be incorporated into school science programs and education and outreach workshops.

Native elders and leaders need to be encouraged to communicate their unique paradigm to resource managers and coordinators, youth and the general public and to sit on councils that make recommendations to the federal subsistence board.

## References

- Basso, Keith H. 1996.**  
*Wisdom Sits in Places: Landscape and Language Among the Western Apache.*  
University of New Mexico Press, Albuquerque, NM.
- Berkes, Fikret. 1999.**  
*Sacred Ecology.*  
Taylor and Francis. Philadelphia, PA.
- Brown, Randy J. 2006.**  
*Humpback Whitefish (Coregonus pidschian) of the Upper Tanana River Drainage.*  
Alaska Fisheries Technical Report Number 90.  
Fairbanks Fish and Wildlife Field Office.  
Fairbanks, Alaska.
- Cajete, Gregor, Ph.D. 1999.**  
*Native Science: Natural Laws of Interdependence.*  
Clear Light Publishers. Santa Fe, New Mexico.
- Friend, C. and De Fries, T. 2005.**  
*Upper Tanana Cultural Resource Summit, Tok, Alaska.*  
Sponsored by the Tetlin National Wildlife Refuge, and the Alaska Fire Service
- Friend, C., G. Holton, C. Brown, M. Koskey, N. Easton. 2007 in press.**  
*A Traditional Ecological Knowledge Study of the Fisheries of the Upper Tanana River.*  
U.S. Fish and Wildlife Service. Anchorage, Alaska
- Guedon, Marie-Francoise. 1974.**  
*People of Tetlin, Why Are You Singing?*  
Paper No. 9 Mercury Series.  
Ethnology Division, National Museum of Man, National Museums of Canada. Ottawa, Canada.
- Kawagley, Angayuqaq Oscar. 2006.**  
*A Yupiaq Worldview: A Pathway to Ecology and Spirit.* Second Edition.  
Waveland Press, Inc. Long Grove, Illinois.
- Richter, D.H., S.J. Preece, R.G. McGimsey, and J.A. Westgate. 1995.**  
*Mount Churchill, Alaska: The source of the late Holocene White River ash.*  
Canadian Journal of Earth Sciences 32:741-748
- U.S. Geological Survey Fact Sheet 014-03. 2003.**  
*Rupture in South-Central Alaska-The Denali Fault Earthquake of 2002.*