

STRIVING TO KEEP A PROMISE: PLACE-BASED SALMON MANAGEMENT IN  
TAKU RIVER TLINGIT TERRITORY

by

Susan L. Dain-Owens

B.A. Dartmouth College, 2005

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

The Faculty of Graduate Studies

(Anthropology)

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

June, 2008

© Susan L. Dain-Owens, 2008

## **ABSTRACT**

The Taku River Tlingit First Nation of Northwest British Columbia harvests salmon for commercial, cultural, and sustenance purposes. In this case study I describe the current co-management process of the Taku River salmon fishery as it exists between the First Nation and the Canadian and Alaskan governments, drawing primarily on ethnographic fieldwork conducted in the summer of 2007. In the past, Tlingit families spent the summer on the lower Taku River and vicinity, fishing as part of the seasonal round. Today many families continue to fish on the Taku, and life downriver is a rhythmic blend of hard work and rest. I experienced the knowledge sharing, cooperation, and flexibility that exists downriver and caught a glimpse of a particular Tlingit worldview. There exists a sense of community on the river between the Tlingit fishers, the non-native fishers, and scientists from both Alaska and Canada. Interaction and cooperation between these stakeholders occurs at different scales from individual to international. In both politics and daily life downriver, worldviews become intertwined in a dynamic play between the groups. Though problems and misunderstandings can arise at these junctures, the potential for knowledge sharing across these boundaries exists and should be recognized. In order for the Taku River Tlingit to attain legalized co-management of their fisheries they must gain sovereignty through settled land claims. Once this is established they will be in a position to utilize their own ecological and local knowledge to continue working closely with government agencies and non-native fishers in the area.

## TABLE OF CONTENTS

<b>Abstract.....</b>	<b>ii</b>
<b>Table of Contents.....</b>	<b>iii</b>
<b>List of Tables .....</b>	<b>iv</b>
<b>List of Figures .....</b>	<b>v</b>
<b>List of Maps.....</b>	<b>vi</b>
<b>Preface.....</b>	<b>vii</b>
<b>Acknowledgments.....</b>	<b>ix</b>
<b>Chapter 1: Introduction: Co-Management between First Nations and Canada.....</b>	<b>1</b>
1.1 Overview.....	1
1.2 The People, the Place, and the Resources.....	4
<b>Chapter 2: Theory &amp; Methods.....</b>	<b>9</b>
2.1 The Importance of Scale.....	9
2.2 Worldviews, Epistemologies, and Knowledge Sharing.....	12
2.3 Methods.....	13
<b>Interlude: Going for a Drift.....</b>	<b>15</b>
<b>Chapter 3: Life Down River.....</b>	<b>17</b>
3.1 An Elder's Memory.....	17
3.2 A Commercial Fishing Economy.....	19
3.3 Family.....	20
3.4 Rhythms.....	21
3.5 Food Fish.....	23
<b>Chapter 4: Community Relations.....</b>	<b>26</b>
4.1 Wisdom.....	26
4.2 Cooperation.....	28
<b>Chapter 5: Worldviews and Co-Management Relationships.....</b>	<b>30</b>
5.1 Taku River Fishery Policies.....	30
5.1.1 Aboriginal Fisheries Strategy.....	30
5.1.2 The 1985 Pacific Salmon Treaty.....	31
5.2 Tlingit Knowledge in Management.....	32
5.2.1 Fishery Enhancement.....	33
5.2.2 Stream Alterations.....	34
5.3 Co-Management's Context within the Colonial Legacy.....	34
5.4 Bridging Boundaries.....	36
<b>Chapter 6: Conclusion.....</b>	<b>37</b>
6.1 Reflections on the Taku River Fishery.....	37
6.2 Looking Towards the Future.....	37
<b>Bibliography.....</b>	<b>40</b>

## **LIST OF TABLES**

Table 1: Popular Definitions of Traditional Ecological Knowledge.....	10
Table 2: Opinions on the Utilization of Traditional Ecological Knowledge in Co- Management.....	11

## **LIST OF FIGURES**

Figure 1: Layers of Interaction in the Taku River Fishery.....	9
--	---

**LIST OF MAPS**

The Taku River Watershed ..... 4

Taku River Tlingit Planning Area ..... 8

## **PREFACE: The Taku River Promise**

*“When the glacier was across the Taku River, the glacier was right across and the Tlingit didn’t know there was a river there, you see the big glacier... They settled in that area, and lots of people moved in there, and the whole place was a village right to Inklin...they went down to Inklin River, got down to Tulsequah, there was just a lake there, according to my grandpa, and the glacier was right close...then they know there was a river goin through the glacier. So the Indian doctor said he’s gonna work at it, it’s gonna take some time.*

*Two Indian doctors, one from the coast side and one from this side, but they both was from Alaska, they took each side. They finally came out with stories on how they gonna do it together (break through the glacier). They said they had to get a red dye to run across the glacier, they put four dyes across that glacier. They went up river and worshipped to the land, how they gonna do it.*

*Indian doctor said you guys gotta make a promise to Taku River, the promise is gonna be made and you gonna look after Taku River like a grandpa – it’s everybody’s Grandpa. Then the Indian doctor said we’re gonna go up and look for a dye...for that glacier...they got this dye, went across with the dye. My grandpa said they mixed that dye with salt water from the ocean. They had to make it like running water, so they can go from one side to the other, four lines.*

*One guy on either side, went across and passed each other, worship across...then they waited. But finally it was melting [a] hole through the bottom where the river was. Then the Indian doctor said we’re gonna have a volunteer from that side to go through the hole, with a canoe, he went through there. The glacier used to be much taller, but smaller... The Native peoples gotta keep their promise up, to volunteer to go through that hole. When he went through, the glacier went at it, started to melt, then it was gone. Then the promise was put together. Taku harbor, that’s where everybody gathered, and had a potlatch, and this promise to Taku River was put to the people, how you gonna look after the river. So the people...they all agreed they’re gonna keep it that way.*

*What I want the government to know...we like to keep our culture and our land... I don’t wanna sell my land up, it’s not for sale. I want to negotiate what’s in the land, like the mine for instance. What I wanna do, I wanna look after that mine pollution as an owner of the land, and we’re gonna hire the best geologists from the white man’s side to work together on it, then Mother Nature will recognize we’re doing things the right way. But the way we’re going now, nobody knows what’s going on with the mine, nobody tells us what’s going on. I know about the road they’re building,*

*when I flew over there, I saw the excavators. We should've been down there, by Taku Lodge there to meet them, and make an offering to the River, and talk to the River, then everything would go fine. Made the promise to the River.*

*We[ 're not] keeping our culture, we wanna go into the white man's system... We need to know our culture, to stick together... We have to work together. We wanna keep up the Taku promise.*

*If we don't treat the Taku River [right], it's gonna go across...all the glaciers - all the glaciers in Alaska is melting, except that one. Why? [chuckles]*

*We gotta look after Taku River how we are. When my Grandpa said the land belongs to anyone who walks on it, and in the Native culture that learn how to respect the Taku River and how to look after it, and this is what I want to advise people on how to work together... Because on the white man's side, there's no history behind it, like what we got. And that's really important to hear together. That's the way I look at it."*

A Tlingit elder told me this story in July 2007 during an interview in the town of Atlin, BC. I will refer to him as "Charlie." Charlie is a leader of the Wolf Clan of the Taku River First Nation, and spent his childhood on the Taku River. During our conversations he was eager to tell this story and to discuss the future of his territory. I rely on his words throughout this thesis, as they convey the connection to land that the Tlingit possess in ways that I cannot express.



## ACKNOWLEDGEMENTS

Many thanks to:

Dr. Felice Wyndham, my academic advisor, for her input, constructive criticisms, and general guidance throughout my time at the University of British Columbia (UBC).

Dr. Charles Menzies, who sat on my graduate committee, for his valuable advice and comments, as well as engaging coursework.

Dr. Patrick Moore, the MARC reader of this thesis, and the professor of a wonderful anthropology methods class at UBC.

The Anthropology department at UBC for all their assistance.

Dr. Chris Lockhart and Dr. Kim Heinemeyer of Round River Conservation Studies, for all their logistical help in Atlin, for helping me with the early stages of my thesis, and for supporting me in the field. Rick Tingey of Round River for helping me find maps for my thesis.

Mike Rawlings and Wayne Lewis for graciously coordinating my accommodations at the Taku Wild landing station in summer 2007.

Those who I interviewed in 2007 for their time, honesty, and contributions; I couldn't have done it without them.

The folks at Cranberry Island and Taku Wild for giving me a place to stay, for keeping me busy on the river, and for the delicious salmon!

Everyone on the Taku for letting me take part in life down river, for their company, conversations, and stories.

The Taku River Tlingit First Nation, who have taught me so much, for the memorable experiences in their territory.

My family and friends for their support and encouragement, for being there when I needed them, and for keeping me sane!

Gunalcheesh, Thank You.

## 1. INTRODUCTION: Co-Management between First Nations and Canada

*“We are inseparable from this place we call home and intend to be good stewards of these lands forever” (Taku River Tlingit First Nation 2003: 18).*

### 1.1 Overview

This is a case study of the co-management of salmon in the Taku River involving multiple stakeholders. I will describe the process of co-management between the Taku River Tlingit First Nation, the Canadian Department of Fisheries and Oceans (DFO), and the Alaskan Department of Fish and Game (ADFG). Drawing mostly upon my experience living with a Tlingit family on the Taku River during the summer of 2007, I describe life on the river and discuss themes of cooperation, knowledge sharing, and the interaction of world-views during these processes. In addition to my time on the river, I rely heavily on interviews with three key informants, including Charlie\*, a Tlingit elder.

This is neither a study of the traditional ecological knowledge of the Tlingit people nor an assessment of the ecological success of a fisheries management plan. This is a description of stakeholder relationships based on first hand accounts of interactions, cooperation, and knowledge sharing in Taku River Tlingit territory at different scales, from individual to international. The Taku River Tlingit First Nation presently has an “informal” co-management status with the Alaskan and Canadian governments. I argue that they cannot attain a fully equal status of legal co-management until they gain sovereignty through settling land claims in their territory or by signing a land-use agreement with the Canadian government.

The Taku River Tlingit First Nation shares a similar history with other First Nations in British Columbia (BC): that of struggle against government regulations and restrictions, and the perseverance to maintain a way of life and a set of rights. Beginning in 1878 with the Canadian Fisheries Act, government regulations imposed fishing closures and gear restrictions on Aboriginal fishers, including “eliminating the live-capture fishing technologies utilized by First

---

\* A pseudonym.

Nations peoples” (Brown 2006: 61). One year later the government created an Indian food fishery allowing First Nations to fish only for the purpose of feeding themselves but not for commercial sale. Essentially, “the government prevented Aboriginal people from continuing to draw their livelihood from fishing” (Butler 2006: 115).

This all changed with a monumental court case in 1990, *Regina v. Sparrow*. This case concerned an elder of the Musqueam First Nation who was charged with using fishing equipment not permitted under the Fisheries Act. In the ruling the Supreme Court of Canada declared the Constitution protected such Aboriginal rights. The *Sparrow* case is a success for First Nations because it prioritizes their subsistence fishing above the interests of other user groups, and provides a broad and flexible definition of Aboriginal rights (Newell 1993). Following, and likely in response to, this case the DFO’s Aboriginal Fishing Strategy of 1992 gave First Nations people the legal right to sell salmon (discussed in chapter 5).

In the midst of court cases, land claim settlements, and changing government regulations, other First Nations in BC struggle for an equal share of decision-making power regarding their fisheries. For example, on the Fraser River the Sto:lo First Nation has “little real self-determination regarding their fisheries” and is not allowed to sell food fish (Butler 2006: 117). Kimberly Brown discusses the Sto:lo fishers’ dilemma on the Fraser River: “Sto:lo fishers maintain they are the original commercial fishers and that their Aboriginal right to fish includes the right to trade, sell or barter their catch” (Brown 2005: 181). Sto:lo fishing rights are constantly in flux and the Nation treads a fine line between resistance and acceptance. The Fraser’s salmon fishery is in trouble today, and decreasing numbers threaten to close commercial fishing during summer 2008 (CBC News 2008).

The DFO called for experimental selective fishing strategies after a “Coho crisis” struck the west coast of BC in 1998. Experiments to decrease the Coho by-catch were performed by the Sto:lo of the Fraser River, the Tsimshian of the lower Skeena, the Gitksan/Wet’suwet’en fishers on Bulkley River drainage, N’lakapamux of the Thompson River drainage, and Nat’oot’en fishers

of Babine Lake. These experiments are described in Brown 2006. Ironically, decreasing the Coho by-catch was accomplished by bringing back traditional live-capture harvest techniques banned by the Canadian government in the late 1880s. Brown believes that DFO's change in fisheries management was too late to save the Coho fishery.

In Alaska, similar issues exist, though the history of Indigenous land rights and fishing regulations differs slightly. For example, Morgen Smith found that on the Chilkat River in SE Alaska, subsistence salmon management based on quantitative harvest data does not adequately provide for sound management (Smith 2003). Fishers there are unhappy with regulations on fishing quotas, timing, and harvest practices, which leads to dissonance between local fishers and ADFG policy makers. Regulations fail to recognize and incorporate local and traditional ecological knowledge and customary and traditional patterns of subsistence harvest and distribution. This results in a lack of trust and cooperation between stakeholders, and ultimately weaker management processes. Smith (2003) proposes solutions to improve harvest assessment including increased confidentiality in harvest reporting, community harvest quotas, and increased communication between stakeholders. Andrew Day and Evelyn Pinkerton offer a solution to fishery dilemmas in BC, stating: "Inclusive and fair representation is key in building the cooperation and trust necessary to manage [fisheries] effectively" (Day & Pinkerton 2000: 191). They emphasize the importance of working together and recognize that this is yet to happen with stakeholders in BC.

In the course of this case study I explore obstacles for co-management created by converging worldviews. The need for cooperation between stakeholders becomes clear in order for knowledge sharing to take place. As worldviews meet, the potential for Tlingit knowledge incorporation into conservation science exists between the cracks.

## 1.2 The People, the Place, and the Resources

The Taku River Tlingit First Nation's traditional territory lies in the northwest corner of British Columbia, encompassing coastal river systems, the Coast Range, and interior plateaus (see page 4). Oral histories tell of Tlingit people interacting with this environment since time immemorial, and archaeological evidence suggests human dwelling in this area for at least ten thousand years (TRTFN 2003, DeLaguna 1990). Tlingit oral history explains how their people came from the interior, travelling down river valleys to settle the upper Taku River. During the 19<sup>th</sup> and 20<sup>th</sup> centuries, most of the Inland Tlingit moved across the divide to the Atlin Lake area (McClellan 1981).

**Map 1: The Taku River Watershed** (©Round River Conservation Studies 2006; reproduced with permission). The Taku River watershed is situated in the northwest corner of British Columbia.



In the past the Tlingit lived in permanent seasonal villages along the Taku and Nakina Rivers, fishing the salmon-rich waters, hunting, trapping, and utilizing plant resources such as berries. Using an extensive system of trails, Tlingit families traveled on foot between the Taku watershed and the Atlin Lake area, depending on seasonal resource abundance (TRTFN 2003). These trails connected the coastal people with interior First Nations in a widespread trade network that resulted in cultural exchanges and intermarriage. The Tlingit also traded with the Europeans in the 1800s and acted as middlemen between coastal traders and interior First Nations during the fur trade. The Hudson's Bay Company established Fort Durham at the head of Taku Inlet in Alaska, though it only lasted from 1840 to 1843 (DeLaguna 1990). British Columbia entered the Canadian Confederation in 1871 and First Nations were "prevented from having any role in" these negotiations (Fisher 1992: 178).

By 1875 some Tlingit families began to live year-round in Atlin. They settled on the shores of Atlin Lake and in surrounding areas such as Pine Creek and Surprise Lake to the east (TRTFN 2003). Gold miners prospected in the town of Atlin and its surroundings in 1898 in an offshoot of the Klondike gold rush, and the area once supported at least 6,000 people (Dickinson & Smith 1995). Placer mining erupted across the landscape, eating away stream banks and hillsides, leaving a path still visible today. Missionaries followed the miners, bringing with them deliberate plans for the assimilation of the First Nations (Fisher 1992: 119). In 1915 the McKenna McBride Commission arrived in Atlin, with the purpose of "investigat[ing] the welfare of the province's aboriginal people" (Dickinson & Smith 1995: 280). This commission eventually designated reserves for the Tlingit people, including a small plot by Atlin Lake near the town and another larger reserve at Five Mile Point, south of the town site. To this day the Taku River Tlingit have not signed a treaty with the Canadian government. In the mid-twentieth century Tlingit children were sent to the Lower Post residential school, suffering cultural loss, and physical, sexual, and emotional abuses that continue to haunt them today.

The Taku River Tlingit still use and maintain the aforementioned trails, and cultural heritage sites such as cabins, grave houses, food cache pits, and culturally modified trees exist throughout the area. Families own cabins in their territory, and usually spend time there in the summer. The majority of the Taku River Tlingit live at the reserve at Five Mile Point, while non-native people predominantly live in the unincorporated town of Atlin. The population of about 400 is a mix of miners, laborers, business owners, artists, and retired people looking for solitude and natural beauty. Most people I have met in Atlin are independent, motivated, and have strong feelings about where they live and the resources surrounding them.

The Tlingit are in the process of government-to-government negotiations with the province in order to create a land-use plan for their territory. They aim to put such an agreement in place before their territory becomes further commercially developed for forestry, mining, and hunting. Current controversies over placer mining projects near Atlin and the proposed re-opening of a silver and gold mine on the Tulsequah River have led to a split community and conflicts over the Tlingit's right to land-use planning in their territory.

The Taku River watershed encompasses tributary rivers originating in the coastal mountains of British Columbia. The Taku River empties into Taku Inlet and eventually the Pacific Ocean near Juneau, Alaska, thus making it a transboundary river (see page 8). Both Alaskans and Canadians commercially fish on the river, with the Canadians fishing just north of the international border. Both small and large-scale mining has touched this area in the past century, most notably the Tulsequah Chief mine in the 1950s. Though there have not been large-scale contemporary forestry activities, it is evident that the Tlingit managed their forests in the past. The majority of the Taku River watershed's ecosystem remains intact. There are few roads, no commercial logging, no active mining or other large-scale industrial developments. The Taku River watershed supports stable populations of moose, bear, and eagles, and, unlike many North American river systems, almost 100 per cent wild salmon (not farmed). Hunting and sport fishing guides exist throughout the territory.

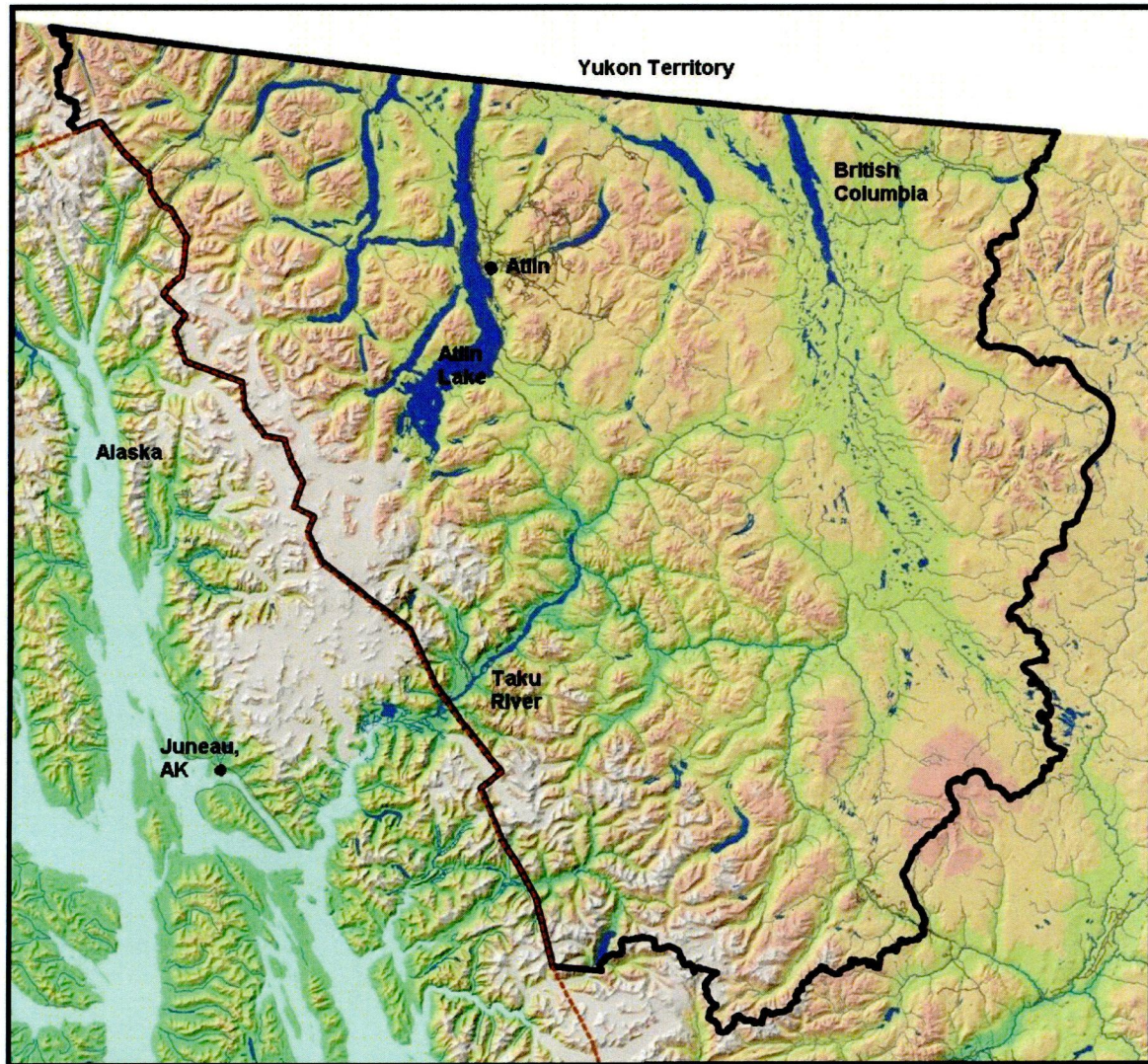


Round River Conservation Studies, a non-governmental organization committed to community-based conservation, recognizes the territory's value for conservation and sustainable development. Through a long-term relationship, they have assisted the Tlingit in a wide range of objectives, including capacity building, cultural education, and environmental conservation. Round River employees live in Atlin for up to six months out of the year, engaging in meetings, fieldwork, and research. With the consultation of Round River, the Taku River Tlingit published a Vision and Management Direction for Land and Resources document in 2003 for the land-use planning in their territory. This document outlines goals and strategies for managing wildlife, plants, and natural resources within Tlingit territory, and is done with the hope that the Tlingit will someday control their lands and resources in a formalized legal context.

Round River has conducted wildlife surveys in the Tlingit's territory. These surveys are the baseline information for the territory since few scientific surveys had been done prior to Round River's involvement. The Vision and Management document was produced using both traditional ecological knowledge and scientific surveys. During this process conservation science and traditional ecological knowledge was used side-by-side to create land-use planning strategies and to identify and prioritize at-risk areas and species. Surveys and interviews with the Tlingit have culminated in the Conservation Area Design for the territory (TRTFN 2003). Though this is not the first example of this type of document, it may serve as an excellent model for First Nations in similar situations.



**Map 2: Taku River Tlingit Territory** (©Round River Conservation Studies 2006; modified and reproduced with permission). The Taku River Tlingit's Territory is outlined in black. Also shown is the town of Atlin by Atlin Lake, the Taku River, and the city of Juneau, Alaska. The Taku River runs perpendicular to the international boundary between Alaska, USA and British Columbia, Canada, and empties into the Taku Inlet near Juneau.



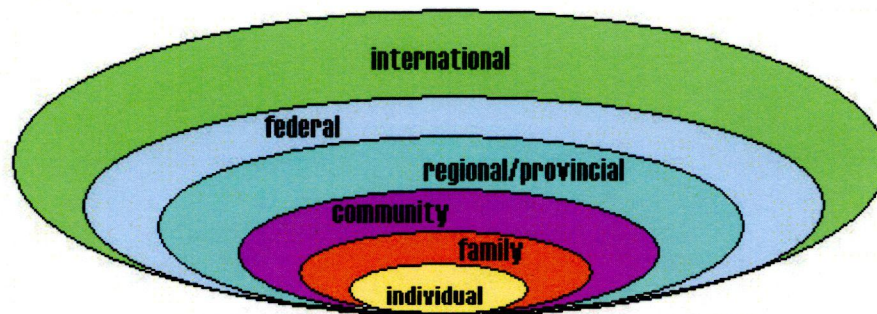


## 2. THEORY & METHODS

*“Local knowledge is never crudely encapsulated in closed traditions, but is produced through human encounters” (Cruikshank 2005: 4).*

### 2.1 The Importance of Scale

Fisheries regulations, management practices, and personal and political networks exist and operate at different levels. Knowledge is also learned and practiced at various scales, and the experience of an individual will differ from that of the community. I have identified a series of concentric layers to help understand stakeholder relationships in the co-management of salmon in the Taku River. Though artificial and simplistic, this diagram demonstrates interactions on the river and beyond, showing that everything relies upon the individual, the level that I focus on most.



**Figure 1: Layers of Interaction in the Taku River Fishery**

In chapter three I describe Tlingit fishing practices, policies, and management at each scale.

Throughout my discussion of co-management I would like to acknowledge the need for more participation by the Tlingit and the benefits of including traditional knowledge in wildlife and fisheries management. I will briefly review definitions of traditional ecological knowledge in anthropological and conservation literature, as well as opinions on how indigenous people can contribute to conservation through the application of their knowledge and beliefs (see Tables 1 and 2). I agree with many scholars and managers that traditional ecological knowledge can be helpful in resource management if, and only if, both sides are present and share the decision-

making power. Each stakeholder must be self-critical and reflexive, and treat each type of knowledge as legitimate and valid.

**Table 1: Definitions of Traditional Ecological Knowledge (TEK)**

<b>Author</b>	<b>Definition</b>
Fikret Birkes 1999	TEK is: “A cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment.” (Berkes 1999: 8)
Paul Nadasdy 1999	“Traditional knowledge is not so much knowledge, as it is a way of life.” Knowledge is culturally constructed, embedded in “networks of social relations, values, and practices which give them meaning.” (Nadasdy 1999: 4-5)
Deborah McGregor 2004	TEK is “not just about knowledge about relationships with Creation or the natural world; it is the relationship itself.” TEK includes the “process of learning this knowledge and the personal development that occurs along with this process.” (McGregor 2004: 391-2)
Charles Menzies & Caroline Butler 2006	TEK is based on practice, embedded in a cultural and historical context. It is: “Cumulative and long-term, dynamic, historical, local, holistic, embedded, and moral and spiritual.” (Menzies & Butler 2006: 7)

After reviewing theories on worldviews and knowledge sharing as a basis of discussion for this case study, I will delve into my ethnographic content. I hope the descriptions of interactions at each level of the hierarchy give the reader an in-depth understanding of the dynamics of life on the river and the distant policies that affect the fishers’ lives.

**Table 2: Opinions on the Utilization of Traditional Ecological Knowledge in Co-Management**

	<b>Usefulness of Utilization</b>	<b>Negative Effects of Utilization</b>
<b>Knowledge &amp; Power</b>	<ul style="list-style-type: none"> <li>• Research can and should be done in ways that include local people. This way they can maintain control over their knowledge, oral histories, and place names.</li> </ul>	<ul style="list-style-type: none"> <li>• It can remove the decision-making power from the local community.</li> <li>• Problems can arise with intellectual property rights to knowledge.</li> <li>• “There exists a power imbalance between those who have TEK knowledge and those who want it” (McGregor 2004: 399).</li> </ul>
<b>Differing World Views</b>	<ul style="list-style-type: none"> <li>• “Local knowledge of the world...has more similarities with contemporary science than differences from it” (Cruikshank 2001: 391).</li> <li>• “We need knowledge bridges that work from local concepts as well as from science” (Cruikshank 2001: 391).</li> </ul>	<ul style="list-style-type: none"> <li>• The “Positivist-reductionist paradigm is ill-suited as a framework for integrating Western science and traditional knowledge” (Berkes 1999: 177).</li> <li>• Different worldviews are incommensurable (Nadasdy 2003).</li> </ul>
<b>Integrating TEK and Western Science in Conservation</b>	<ul style="list-style-type: none"> <li>• Valuable for: Biological information and ecological insights, resource management, conservation of protected areas and biodiversity, environmental assessment, social development, environmental ethics.</li> <li>• TEK utilization “Can enhance existing resource management practices and be a way of establishing better relations...with local First Nations in the pursuit of existing resource management goals” (Schreiber and Newell 2006: 80).</li> </ul>	<ul style="list-style-type: none"> <li>• Extraction of “knowledge” by scientists and managers ...“distills out the social relations and practices that make it meaningful” and results in distortion (Nadasdy 2003: 129).</li> <li>• Bureaucratic practices cause indigenous people to “think, talk, and act in ways that are often incompatible with” their beliefs and practices” (Nadasdy 2003: 3).</li> <li>• “Scientisation:” (the act of documenting, particularizing, validating, and generalizing) “works against the very characteristics of indigenous knowledge” (Agrawal 2002: 293).</li> </ul>

## 2.2 Worldviews, Epistemologies, and Knowledge Sharing

In this case study I describe the processes in place at each scale of co-management, where stakeholders' differing worldviews come into contact. A worldview can be a people's frame of reference, perspectives, beliefs, values, ecological ethics, myths, and history that encompass their culture since time immemorial, that can change over time. This includes the way a culture interacts with their environment and how they define themselves in relation to other aspects of their human ecology. For example, "religions provide basic interpretive stories of who we are, what nature is, where we have come from, and where we are going...a worldview of a society" (Tucker & Grim 2001: xvi). Colin Scott, who has done research among the Cree people of Quebec, argues that:

Our conventional attitude is to assume fundamental differences between people and animals, while exploring the nature of their connections. The Cree disposition seems rather the converse: to assume common connections among people, animals, and other entities while exploring the nature of their differences (Scott 1996: 72).

Aspects of the Taku River Tlingit worldview are seen in the "Taku River Promise" story above; the Tlingit are equally concerned about themselves and the Taku River, and their values exist in order to maintain the well being of both.

Wisdom, knowledge, epistemologies, and beliefs contribute to a culture's worldview. In many indigenous cultures, knowledge has been described (by both indigenous people and scholars) as a process, a way of life. Berkes argues that "indigenous knowledge is *political* because it threatens to change power relations between indigenous groups and the dominant society" (Berkes 1999: 164, emphasis in original). Must there be conflict when individuals and organizations with differing worldviews come face to face? Can boundaries bend and overlap? How is this done? I explore these questions in this case study. I do not aim to dichotomize "western science" and "traditional ecological knowledge." I aim to promote discussion of how these are used in environmental management, and promote critical thinking for future co-management projects.

I draw upon Paul Nadasdy's work in the Yukon Territory (1999, 2003) to explore how bureaucracy and power structures affect co-management. His case study of the Kluane First Nation and the Ruby Range Sheep Steering Committee in the Yukon Territory initially sparked my own research interests. My research cannot provide a parallel account of Taku River fisheries co-management, and I have taken a different approach to discussing the co-management situation. I give descriptions of the ethnographic context and the day-to-day realities of life on the Taku. Through these snap-shots of Tlingit life I attempt to give a glimpse of how worldviews meet face to face and how this may lead to knowledge sharing.

Nadasdy observed a process of distillation and compartmentalization of knowledge and beliefs in the co-management project between the Kluane First Nation, biologists, and the Canadian government. He explains how scientists and government officials were interested in only "Dall sheep TEK," and ignored the relationships between species that are fundamental to the Kluane understanding of their world (Nadasdy 2003: 124). Scientists interpret traditional ecological knowledge and assign to it their own meanings, which can differ greatly from its original nature. They attempt to fit these bits of "data" into existing categories of their field; "since scientific knowledge of the environment is divided and compartmentalized, scientists treat TEK...as compartmentalizable along similar lines" (Nadasdy 1999: 6). However, Nadasdy argues: "whole aspects of aboriginal people's reality fall outside the established categories of scientific resource management" (Nadasdy 1999: 7). Just as this model can isolate knowledge, beliefs, and practices from their cultural context, it separates knowledge from the people who are crucial to its creation and practice (LaDuke 1997, Nadasdy 2003, McGregor 2004). This study inspired me to approach similar questions in the case of the Taku River Tlingit First Nation.

## **2.3 Methods**

This thesis is based on fieldwork conducted in the summer of 2007. I spent a total of two months in Taku River Tlingit territory, with a month spent on the Taku River and about four

weeks in the town of Atlin. On the Taku River I lived with a Tlingit family at their camp, which doubled as the Taku Wild commercial fishery's landing station. I participated in daily activities and work (discussed below) and helped keep the landing station running smoothly in the absence of one of its managers.

Most of my data has been drawn from my participant observation experience on the river as recorded in field notes. In July and August 2007 I conducted informal ethnographic interviews in Atlin with band members, as well as a biologist and a resource manager working for the First Nation. In accordance with a confidentiality agreement signed with the Tlingit, I do not reveal the names of those I interviewed and use pseudonyms instead. I transcribed the interviews and reviewed the text, pulling out repeated themes and quotes I felt were important on which to base my conclusions. Conversations with various Tlingit band members, Tlingit resource managers, fishers, and Atlin residents helped answer some of my lingering questions and gave me general impressions about the people and the place.

My ethnographic impressions are also partially based on time spent in the territory in summer 2005. I spent three months in Atlin and in the Taku River watershed as an unpaid intern with Round River Conservation Studies. Because I interned with Round River in 2005, and spent a week in July 2005 volunteering for Taku Wild at the landing station, some of the fishers and people in Atlin may have associated me with Round River while I was doing my M.A. fieldwork. This was usually a positive association, but I did explain my current research position as a student at the University of British Columbia in these circumstances. Round River gave me access to many resources, personal connections, and experiences that otherwise would have been difficult as a complete outsider. My experience in 2005 simply acts as a backdrop to my recent M.A. fieldwork, and gives me a broader perspective of life in Taku River Tlingit territory.

## **INTERLUDE: Going for a Drift**

The sun is out, and a gentle breeze blows puffy cottonwood seed pods onto the deck of the cabin I stay at. Camp is quiet; it is late afternoon and the fishing is slow. Derek\*, a young Tlingit fisherman, tromps up the stairs from the riverbank in his rubber boots. He enters the “cook-shack” and emerges later with a sandwich: processed meat and cheese on white bread. Smiling, he looks over and motions to his waiting skiff. “You wanna go for a drift?” Putting my book down, I respond without hesitation, “Sure!” I throw on my rubber bibs and boots and we are off.

Derek takes me out to the closest drifting area directly downriver from the landing station on Cranberry Island. He teaches me how, and when, to throw out the gill net. Standing in the bow of the boat I take the lead-line in one hand and the cork-line in the other and throw, as he reverses. I laugh, as the net does not make it very far out into the river from the boat. The current pulls the net out of the boat, and once the whole net is lying across the water, the lead-line on the bottom of the net sinks and the cork-line on the top floats on the surface. We drift.

We drift down the river for about five minutes in the sun, Derek at the motor and me sitting in the bow. I look into the cloudy glacial water even though I know I cannot see the fish we aim to catch. Derek navigates the river impressively. We narrowly pass by a sandbar and multiple trees lying in shallow spots, their branches reaching out towards us. The river seems to pull these trees up and spit them back out; after a storm we would see armadas of whole trees, root systems intact, floating downstream to their next destination.

In the small metal skiff, we feel when the net catches a fish, or, as the case today, a stick or snag. At the end of one drift I pull in the net. After one drift we caught a few fish – one large Chinook and a smaller Sockeye salmon. Their gills get tangled in the net, and I hoist them onto the floor of the boat, as they flop and bounce and pound on the metal. These fish are pure muscle, and it is no easy task to untangle one from the net. We hit them on the top of their back

---

\* A pseudonym.



with a baseball bat, just behind their head, and the twitching stops. Derek pulls the boat up to a large sandbar, where most of the Tlingit fishers go to clean and gut their fish, and occasionally treat themselves to a barbeque lunch.

I throw the few fish heads to the eagles, which swarm above the sandbar in a group of eight. These birds are huge and bold. They swoop down to the beach and snatch up the heads, fighting over them in the air. I listen to their high pitched calls as we climb back in the boat and head out to do it all over again.

### 3. LIFE DOWN RIVER

*“Our Tlingit Elders tell us that one of the most important things for people to know is who we are and where we came from” (TRTFN 2003: 8).*

#### 3.1 An Elder’s Memory

One of the goals outlined by the Tlingit in their Vision Document is the need to protect salmon habitat in their territory. To say salmon are important to the Taku River Tlingit, culturally and economically, is an understatement. Charlie, a Tlingit elder, explained to me how “salmon was pretty well respected” in the past and today. Salmon made up a huge part of the pre-contact diet of many First Nations in the Pacific Northwest and there were many innovative strategies for harvesting fish, managing fish populations, and enhancing them (Menzies & Butler 2006; Langdon 2006; Brown 2006). I see no reason to doubt that the Taku River Tlingit practiced similar management techniques, even if it has not been documented.

Charlie shared stories from his childhood experience growing up on the Taku River with his grandparents in what must have been the 1930s. Tlingit families lived at the village at Tulsequah, where the Tulsequah River converges with the Taku River. He described about four families living there year round, with about four more families coming down river from Atlin in the summer, or even from Juneau. He told me: “Long time ago, Taku River was another village just like Atlin was, there was lots of native people...when the people come from Alaska, that’s where they settled.”

Life on the river was busy and fulfilling. Charlie describes how hard his grandmother worked, doing everything from cutting and drying fish to gathering berries to doing beadwork: “My grandma was cripple, and she used to work so hard...we had dry meat, dry salmon, we put it away for the winter. We dried the fish up high where the wind could get at it and keep it fresh.” He describes how abundant salmon was: “As far as I remember there was lots of salmon all the time, lots of salmon.” He explained to me how his grandfather told him to treat the river just like another person: “Taku River is your Grandpa, he’s alive, that river, you gotta respect it, that’s

why I call it Grandpa. It's Grandpa to everybody." Charlie's family used to give offerings to the river; they would cook a meal and take it down to "feed the river." He learned to say "thank you Grandpa for the food, for the fish, and here's some of it, we feed you this." A common offering today is a bit of tobacco from hand-rolled cigarettes sprinkled into the river whilst saying a few words of thanks.

During our conversations in the Tlingit band office, Charlie described to me how the Tlingit people fished with gill nets for salmon, first from rowboats and later motorboats. They would either drift down the river trailing the net, or leave the net secured on the side of the river, in an eddy for example, and come back to retrieve the fish throughout the day. He describes the process of salmon fishing:

"Go out to check the net, bring the fish in, and right away Grandma helps, cut the fish...right out of the net. She had a big barrel, she put salt in, put the fish in there, and then after that it's ready to hang... Then my job was to make the smudge for underneath [to smoke the salmon]... The king salmon came first, my grandma had to cut it thin, because it's so fat, so it could dry. Then the Sockeye, then the Cohos. So we dry fish part of June, July, August, September. We had a big smokehouse..."

They mostly used cottonwood logs to smoke fish on the river, since these big trees were abundant on the river banks. He remembers when he was younger, "we had some wooden bowls, we used to put salmon heads and salt it down, and keep for the winter." The women primarily cut fish while the men caught it, though these roles were not exclusive. They did not waste any of the fish; they used everything including the fish eggs, liver, and heads.

Charlie's grandfather traveled to Atlin with his dog team to bring dried salmon to Atlin and a load of groceries back to the river. They also traded fish and berries with Tlingit people in Juneau. They took only dried salmon to Juneau, and traded or sold it very fast. He explains: "We take half the fish to Juneau, they can't dry fish because it's too wet down there. So we go down in the fall for winter supply of food, and we take fish. [I] run uptown, tell everyone salmon for sale – gone."

### **3.2 A Commercial Fishing Economy**

Commercial fishing licenses for Canadians were introduced in 1979, roughly a century after Alaska. Currently both the Taku River Tlingit First Nation and non-native Canadian fishers each hold eight commercial licenses for the Taku River. Tlingit families use the licenses held by the Nation, and most come back year after year with the same license. Once a person or family has established a camp or cabin downriver and arranged for their boats and equipment to be transported to the Taku through Juneau, they are more likely to fish each year than those who are not equipped. The same families will likely hold on to the licenses through the years, and new fishers will work for or with an established fisher before setting up their own camp.

In 2007 all Tlingit fishers on the Taku sold most or all of their catch to Taku Wild. Taku Wild is a Tlingit-run company; salmon sold to Taku Wild is shipped to Juneau, where it is either sold fresh or processed (smoked and packaged) and sold in various locations in North America, Europe, and Japan. Other fish buyers include the Taku Lodge, an Alaskan-run lodge that serves dinner to tourists flown in from Juneau for the day, and other buyers who sell fish in Atlin or Whitehorse. When the river level was very high in 2007 and people were not catching very many fish, a few of the non-native fishers sold to buyers other than Taku Wild, while most of the native fishers sold their catch to Taku Wild.

Taku Wild has been operating since 2004. With hard work, various upgrades to the landing station and camp facilities have been made in the intervening years. Before its existence, Tlingit fishers sold their fish to non-Tlingit buyers who operated a landing station upriver. From what I have heard from the fishers, this situation was not favorable for the Tlingit. There were ethnic tensions, and the fishers had to collect their own ice for storing salmon. This involved driving the boat to Twin Glacier Lake (about 20 minutes down river) and finding floating icebergs, some as large as a car, which had calved from the lake's namesake glaciers. Once an iceberg was chosen, one person would lean far out of the boat and attempt to break off fragments of the iceberg with a screwdriver and hammer (or something similar). Then they would quickly

lift up the chunk with either a large fishing net or their bare hands (this inevitably resulted in getting soaked, almost falling in, and/or losing the ice chunk or one of the tools). After collecting enough ice and returning to camp, they had to carry the heavy blocks of ice from the boat to the storage container. Nowadays, Taku Wild runs two ice machines that provide free ice to fishers, enabling them to fish more and store their fish for longer, and avoid the trip to Twin Glacier Lake.

Salmon continue to be very important to the Tlingit people. The Tlingit wish to have more authority over the salmon stocks in their territory, and strive to maintain their way of life, while harvesting salmon and protecting their habitat. As the First Nation states in their Vision Document: “The TRTFN should exert its authority and have a more prominent and influential role in the management of fish and aquatic habitat in the territory. We support the establishment of a TRT-controlled licensing and permitting for commercial and sport fishing within our territory” (TRTFN 2003: 30). Furthermore, they assert that “it is the fundamental right and responsibility of the Taku River Tlingit to ensure the long term health and viability of all wildlife populations and their habitats” (TRTFN 2003: 49).

### **3.3 Family**

Fishing on the Taku River has always been a family affair. Most Tlingit who fish down river over the summer do so with parents, brothers, sisters, and cousins. Two main families have been coming down for fifteen or twenty years and have well-established camps on the river. The Taku is a special place for these families; it is a place where kids can stay out of trouble, learn to fish, support themselves and their families, work hard, and get to know their cultural home. Children raised here continue to come back each summer, and know the river as a second home. In summer 2007 many teenage boys lived downriver, fishing, working at the landing station, or working at the ADFG camp. They were all related somehow, either brothers or cousins. Most of them spent May to September on the river. Though the main Taku Wild fish camp now has many

amenities for “the bush” – a diesel generator providing power for electronics, a refrigerator and freezer, running water, and Internet – it still sits on the bank of a glacier-fed river in a very remote region of BC.

Talking to the young people working on the river, I got a sense that most of them were very happy to be there. From all Tlingit fishers I felt their pride for being on the Taku River and fishing for their families and their community. For some of the teenage boys, pride often turned to arrogance, but I believe this was rooted in their connection to the place and the occupation, which is very important to them. Of course, these feelings were not without accompanying negative sentiments of boredom, discouragement when the fishing was not great, and occasional lack of enthusiasm to work. I noticed an interesting mix of pride, contentedness, and restlessness in those who lived and worked down river. I often engaged in conversations with youth about what we missed from the outside world, and what we would miss once we were off the river and “out of the bush.”

Restlessness was mostly present in the younger generation, rather than in the older fishers and adults who had been there for twenty plus years. A few older fishers told me how they had been working on the Taku for a long time – many of them had come down river as children with their grandparents. While they had not necessarily been coming back every year since then, they had come back in the past 20 years and maintained a connection to the place. In fact, many of them practically boasted about how long they had been coming down river – I could tell it meant a lot to them, and to other people on the river. Fishers who had been fishing on the Taku for many years were more respected by other fishers and scientists alike.

### **3.4 Rhythms**

Each person on the river was expected to work hard because they had obligations and responsibilities to their family members and other people they lived with in camp. Everyone had their own duties, whether outlined in a job contract as at the landing station, or simply implied. If

someone stayed and ate meals at a family's camp, they were expected to contribute by chopping firewood, washing dishes, or cooking dinner. Usually these "jobs" were fulfilled, but not always, and in one case, one fisherman's lax behavior resulted in him leaving the river. The logic being: if you did not pull your weight, you were letting down your fellow family members or crew workers, which was not tolerated. Each camp functioned as a whole, but only when everyone did their part.

Life on the Taku follows a definite rhythm, rising and falling much like the river itself. Commercial fishing openings began each Sunday, and lasted usually until Tuesday, Wednesday, or Thursday, or longer depending on the numbers caught that week. The Canadian Department of Fisheries and Oceans would set the openings and closings and would notify us by radio or in person if they extended the week's opening. During the commercial openings fishermen and women worked hard – waking sometimes before dawn, and spending anywhere from eight to 16 or even more hours on the river. If two fishers shared a license, often one would fish alone in the morning and afternoon, while the other person took over and fished in the evening and often through the night. This way they maximized time on the water with one license, and made efficient use of equipment if they only had one boat. Fishers usually ran one drift then parked their boat on a sand bar where they cleaned and gutted the fish before taking off again. Fishers shared the river, and though most people had certain favorite areas where they fished the most, people did not have exclusive claims to areas of the river. Most people drifted near their cabins or camp, and took turns. According to Charlie, this was the norm when he was growing up on the river as well.

Most people brought snacks or a soda in the boat with them, though sometimes they would stop at camp for a meal. Fishing is hard work, and a few of the older, more experienced fishers, would often remind the younger ones how much effort it took, and how important it was to fish hard even when they were not catching many fish. "You can't catch fish if your net isn't

in the water!” one fisherman said, scolding younger fishermen who were spending the afternoon playing video games and snacking during a slow opening.

On days off, the fishers would rest, fix nets, work on projects around camp, and boat to Juneau for supplies. During these days we would not see many people at the landing station, unless they came by to use our shower or phone, or complete their paperwork. After openings fishers cleaned their gear (the coolers and plastic tote boxes used to hold fish in their boats), hung up their nets, scrubbed out their boats, took showers, and did laundry.

At the landing station we were busy in fits and spurts during the fishing openings. Usually the fishermen and women would land their fish once in the late morning, once in the late afternoon, and maybe once around ten or eleven o’clock at night. This of course depended on how many fish they were catching; during one flood some fishers only landed a few fish a day at best (in high water the fish stayed in deeper water, or along the shore, and were challenging to catch in a drift net). When fishers landed their fish, we had the job of counting and weighing the salmon, recording this data, and then packing the fish in large bins of ice. The fishers landing fish at our dock sold their fish to Taku Wild, the Tlingit run company. Once or twice a week we loaded the bins of fish and ice onto a barge that took them to Juneau to be sold either in fresh markets or processed into smoked salmon for retail stores.

### **3.5 Food Fish**

In addition to commercial fishing, Tlingit fishers harvest food fish: fish that are not sold but distributed among community members in Atlin, Whitehorse, or other neighboring towns. To get the food fish from the river to Atlin or Whitehorse requires a floatplane, which in itself is quite expensive. Due to the expense, flights were only booked if it was certain that they could be filled. This meant that when people were coming on or off the river, they shared flights and tried to avoid having an empty plane go in either direction. If a person flew downriver from Atlin, they would usually put food fish on the return flight. This took considerable coordination: calls



between the band office, the small flight company, and the landing station, and conversations on the river between families and camps. Fishers had to be told well enough in advance about the flights to have time to catch the fish in the first place. In one case, there was a memorial potlatch in Atlin for an elderly woman who had passed away. Naturally, the potlatch hosts wanted salmon for the feast, but there was some confusion and the fishers were not given enough advance notice, and did not have time to catch food fish for the potlatch. I believe they used canned smoked salmon, from Taku Wild's office storage, at the potlatch instead.

The Tlingit community in Atlin loves salmon, and people in town always ask for Taku River salmon. Food fish is highly prized, and the elders especially covet delicacies such as the head and eggs. Some families travel by foot or helicopter to their cabins on the Nakina river to catch and smoke salmon, but not everyone can do this so instead they request it from fishers on the Taku River. However, it is expensive to get the food fish to Atlin. The fishers end up food fishing on their days off, using more gas in their boats. I heard some of the fishers express frustration about the food fishing; they felt their hard work was not adequately appreciated in the community. They wanted people to fly down from Atlin so they could take them out in their boats and fish together.

Not only is fishing culturally significant to the fishers on the Taku, but it is commercially important as well. Most fishers work on the river from May until September or October, and then live off of their earnings and/or financial assistance through the winter. This of course depends on how well the fishery does, and in June and July of 2007, they were not catching the numbers they had hoped. The high water and frequent flooding affected their income directly, and some of the younger fishers discussed leaving early since they were not making enough money. At times a few younger Tlingit expressed to me that they wish they had stayed in larger cities like Whitehorse so they could work at another job and make more money. Some younger fishermen told me about their future plans to explore work opportunities in the mining and oil industry, which were attractive because of higher pay. Even though the younger Tlingit at camp

sometimes expressed boredom, lack of motivation, and a desire to get out of “the bush,” they were all knowledgeable about fishing and keeping the camp in order. I was impressed by the independence each person had on the river, regardless of their age, and I appreciated how everyone worked and lived together as a community.

## 4. COMMUNITY RELATIONS

*“There’s a spirit life in the Mother land, it shows us in a good way...” (Charlie, Tlingit elder).*

### 4.1 Wisdom

The fishers’ deep knowledge about the river, the fish, and their equipment is evident every second of the day. Especially when water levels changed daily or weekly, successful fishing required knowledge of where snags were, and failure to read the river resulted in damaged boats, nets, or personal injury. I went on a boat ride up river with a woman who had been on the Taku for about twelve years and knew the meandering path of the deep water. In spite of her knowledge, she was in an unfamiliar boat, the river levels were varying day to day, and she had not been up a segment of the Taku and Tulsequah confluence before – she took us only as far as she felt comfortable.

During the Sockeye or Chinook openings there was occasional by-catch of Pink Salmon, Coho, or even Dolly Varden – which were not sold commercially, but often kept as food fish or simply thrown overboard. Some of the fishers talked about how they were still learning to tell the difference between species, and during my time on the river I learned how to identify fish according to basic characteristics. Usually if there was a fish in question at the landing station, we waited for the DFO technicians to arrive and settle the dispute. This was not a tense situation, but a learning opportunity, and most people were curious to know what was what.

Fishers often asked the Alaska Department of Fish and Game crew how many fish they were counting in the fish wheels to get an idea of the size of the salmon run and what they should be catching in their nets. Sharing of knowledge was common and important. This was apparent not only in how people fished and went about their days, but also in how the more experienced fishers taught younger novice fishers how to fish, take care of their equipment, and understand the ecosystem.

Part of knowing the river means knowing the fluctuations and flood cycles it undergoes each year. The experienced fishers on the Taku can predict when it would flood by watching the weather, the river's behavior and temperature, and other related ecosystem occurrences. For example, after a few hot days in July the river temperature dropped, causing a layer of mist to form above the water's surface. The fishers thought this meant that the Tulsequah Glacier, upriver from Cranberry Island, had broken and released the icy waters it had been holding through the winter and spring. When this happens, as it does every summer, the river level rises dramatically in a very short time. From my personal experience in 2005 and 2007, the river can rise about four or five feet within twelve hours, easily flooding camps and carrying away supplies. To check if the Tulsequah Glacier has broken, some fishermen drive boats upstream to the Tulsequah River confluence to check if the level of the Tulsequah has risen and if much woody debris has been carried down the river. When the river level is changing, native and non-native fishers also look to the ADFG crew for input. At the fish wheels ADFG measures the river level and records the river's daily vacillation. This knowledge sharing between fishers and scientists exemplifies the sense of community on the Taku, and ensures everyone's safety.

The floods trouble not only fishers on the river but also elders in Atlin, BC. The greater community is concerned about climate change in the north and the future of their territory. As we discussed flooding, Charlie told me: "What worries me now is that glacier, the one that floods all the time, there's something cookin' in there... I remember when there was only one flood every winter. My grandpa used to know when it would happen." He seems to believe that the glacier is somehow displeased with people's actions and is restlessly preparing consequences. His worries demonstrate the Tlingit worldview, in how the environment should be treated.

Charlie spoke to me about the need to document Tlingit wisdom for future generations, especially emphasizing learning about the Tlingit clan system, culture, and language. He told me openly, "I'm in a place where I am proud of what my grandpa taught me, and I don't like to take it along with me when I die, I want to leave it behind." He wants to work with someone to

document and teach the Tlingit clan system to Tlingit and non-native youth. He explained, “We trying to teach our people...what to do when you come across animals – and...we need to mark this down on a book so people can look at it, and let the people start reading.” This type of cross-cultural teaching would encourage cooperation and partnerships between community members that would hopefully foster understandings to bridge boundaries and worldviews.

## **4.2 Cooperation**

During the fishing openings, DFO technicians came to the landing station in the afternoons to collect data on the day’s catch. They would sample from 100 to as many as 250 fish, usually only Chinook and Sockeye salmon, and measure their length, take scale samples to determine the age, and recover any tags that might have been found in the fish. Fish were tagged with numbered plastic ties at the fish wheels downriver. DFO used the recovered tags (from caught fish) to determine where and when the salmon were running, and how many were returning to the Taku. There were four or five DFO fieldworkers, with two working at a time during fishing season. I got to know three of them in my month on the river, and one of them I had known from a previous summer there. This was his third summer on the river – most of the DFO employees return year after year and get to know the fishers. Two ADFG technicians stayed on the river all summer (from April until October). One was new, but the other one had been working on the river for about three or four years. A Tlingit fisheries employee stayed at their camp and worked for them on the fish wheels, funded by the Aboriginal Fisheries Strategy. The Tlingit and non-native fishers, most of whom have been fishing on the Taku at least five (or in some cases twenty) years, and the DFO and ADFG employees developed a community on the river. Friendships between these people reached across borders of ethnicity, class, and even international boundaries.

People occasionally threw parties at their camps on the river, and in most cases everyone was invited. In such a remote place people value the friendships made and welcome company

along with solitude. Tlingit and non-native alike shared beer, cigarettes, and food. People were always willing to give a helping hand, especially during this summer's fickle water levels.

Fishermen who did not work at the Taku Wild landing station occasionally helped us with the arduous task of loading and unloading the barge with salmon and ice. We would return the favor by helping with a project or offering a meal.

Apart from socializing, the DFO crew and the ADFG crew had friendly working relations with the Tlingit and non-native fishers as well. At the fish wheels on the Alaskan side of the border, ADFG, DFO, and a Tlingit representative worked together daily. Decisions regarding the length of each opening based on the data they collected. Each week DFO posted the commercial openings and I spoke with a few youth who noticed that it seemed like DFO alone made these decisions. Based upon my experience, openings were extended if the fishing was good - implying healthy fish stocks not in danger of being over-fished - or if the fishing was bad and DFO was unable to get their sample quota and the opening would be extended just until this was met. Openings were not extended when the fishing was simply "normal."

One recurring theme in my conversations with Charlie was the need for cooperation between his people, scientists, and the Canadian government to manage the natural resources in their territory. He explained his views to me:

The way I look at the whole thing: We gotta get together and learn our Tlingit side of the clan system government and put it together with white man government and then we gonna start going somewhere in a good way...To get back to where we can get a respect for our food, like we respect our friends.

He realizes the past conflicts between the two governments, but believes a successful future lies in breaking down boundaries and being forgiving. Cooperation would involve working together towards a common goal. Charlie said: "Let's get along and work together, and recognize how we're supposed to thank Mother Earth for look[ing] after us..."

## 5. WORLDVIEWS & CO-MANAGEMENT RELATIONSHIPS

*“They’re not averse to listening, and I think they understand...but...they maybe have different ideas or values” (Tom, Biologist).*

### 5.1 Taku River Fishery Policies

#### 5.1.1 Aboriginal Fisheries Strategy

In *Sparrow vs. the Queen* (1990), the Canadian Supreme Court determined that, “where an Aboriginal group has a right to fish for food, social and ceremonial purposes, it takes priority, after conservation, over other uses of the resource” (DFO 2005a: 1). In response to this ruling, DFO created the Aboriginal Fisheries Strategy (AFS) in 1992 in areas where DFO manages the fishery and land claims have not been settled. The AFS “seeks to provide for the effective management and regulation of fishing by Aboriginal groups through the negotiation of mutually acceptable and time-limited fisheries agreements between DFO and Aboriginal groups” (DFO 2005a: 1). The Department of Fisheries and Oceans funds the AFS with \$35 million annually, and about 125 AFS agreements are signed each year since the implementation of the program. According to DFO’s website, the AFS agreement has resulted in “better monitoring of Aboriginal fishing; improved cooperation on enforcement; more selective fishing; and the creation of approximately 1,300 seasonal jobs per year since 1993 in such areas as commercial fishing, processing, monitoring, and fishery enhancement activities” (DFO 2005a: 1).

The Aboriginal Fisheries Strategy offers: “Cooperative management projects for the improvement of the management of fisheries generally, such as stock assessment, fish enhancement and habitat management; and provisions related to communal licenses under the Allocation Transfer Program for obtaining access to commercial fisheries and/or other economic development opportunities” (DFO 2005a: 1). A biologist working for the Taku River Tlingit described it to me as basically a “project funding agreement” that “provides a means for us to meet with DFO, to cover costs, to discuss the larger political issues.” The AFS allows the Tlingit to be involved in the fishery, albeit in a limited capacity.

Tlingit positions funded by the AFS include salmon monitoring positions on the Taku (at the ADFG fish wheel) and at weirs at significant spawning areas (such as Silver Salmon and Kuthai Lake). This encourages Tlingit people to spend time in the watershed, provides jobs, and encourages participation in the management of the Taku salmon populations. However, though the AFS increases practical and individual participation in the Tlingit community, it is not the be-all-end-all of co-management for the Tlingit: “The AFS has provided limited authority to the Taku River Tlingit in the past but does not provide a foundation for true co-management” (TRTFN 2003: 61).

According to one biologist working with the Taku River Tlingit, whom I will refer to as Tom, the Taku River Tlingit initiated meetings with DFO, which gave rise to a mostly informal relationship between the two governments. The First Nation hopes to develop something more formal with DFO in the future. In the words of Tom, “We don’t have legislated co-management. We act like we do; that’s the only way to go, in the interim.”

### **5.1.2 The 1985 Pacific Salmon Treaty**

The Pacific Salmon Treaty dictates management of the Taku River watershed, a transboundary river. Signed by the United States and Canada, the treaty “provides a framework for the management of Pacific salmon, including conservation and sharing arrangements” (DFO 2003: 1). The Pacific Salmon Commission is in charge of the treaty and its renegotiation. Representatives from Canada and the United States, the First Nation Caucus group, and various panels (including the Transboundary panel) report to the commissioners. Tom, the biologist, explained to me that the Transboundary panel is made up of representatives from Canada, Canadian First Nations, and the U.S. (Alaska). The First Nations involved are the Taku River Tlingit, the Tahltan, and the Champaigne-Aishihik, representing the three transboundary rivers: the Taku, the Stikine, and the Alsek, respectively (DFO 2005a). Canada also has three non-native commercial or sport fisher representatives, one from each of the river drainages. There are also



six representatives on the American side. Each country has a co-chair: a DFO representative from Canada and an ADFG representative from the United States. According to Tom there is no voting on the panel, as decisions are based on consensus.

The Treaty is currently in the process of renegotiation. The Taku River Tlingit are not completely satisfied with the current harvest shares (18% to Canada, 82% to Alaska in 2007), they disagree with current fisheries enhancement practices, and want a more stock-specific approach to salmon management. They see this as an opportunity to make changes in these aspects of the treaty, resulting in healthier fish populations. The Taku River Tlingit First Nation has developed a policy (the Wild Salmon Policy) for sustainable salmon management for the Taku Watershed that they hope will be adapted in future versions of the Treaty (DFO 2005b).

## **5.2 Tlingit Knowledge in Management**

Over the millennia, the Taku River Tlingit have developed deep knowledge about the river, the fish, and the relationships composing the human ecology of their territory. The Tlingit fisheries department incorporates elders' knowledge into their database and uses this rich knowledge for management purposes. The fisheries crew mapped fish spawning areas in parts of their territory from aerial surveys and traditional knowledge interviews. Tom, who was involved in the project, said that the elders' knowledge of spawning sites "basically mapped out at par" with the aerial surveys. However, in the realm of co-management between DFO and the Tlingit Nation he observed, "there's probably only recognition [of this depth of knowledge] unfortunately as far as can get substantiated scientifically." Elders claim that the fish runs were larger historically, but Tom said that "it's difficult to validate, to get that utilized" in management. He suggests:

"It is often prudent to 'translate' traditional knowledge in a manner which affords its recognition as being technically sound, consistent with policy and in the best public interest...it becomes essential to understand both science (in order to identify its limitations) and traditional knowledge (in order to realize its historical success and importance for long-term conservation)."

In the negotiations surrounding the Pacific Salmon Treaty, Tom believes Alaska is “willing to take more risk for the economic gain, whereas First Nations are looking towards the next generation.” How are these two stakeholders satisfied, and what will be compromised in an attempt to make policies that work for both? He cautions:

“It is really a misconception that biologists can utilize science in itself to ‘manage’ fish populations. Ultimately fish know how to ‘manage’ themselves and our real role is to control the impacts to which we place upon them.”

However, Tom does not think the Tlingit’s diverse indigenous knowledge is “being used enough on the higher political end, like with the [Pacific Salmon] Treaty.” Two potential areas where DFO and ADFG could more adequately accommodate the First Nation’s concerns, salmon enhancement and stream alteration, are discussed below.

#### **5.2.1 Fishery Enhancement**

One arena of clashing worldviews in co-management is the Tatsamenie Lake Enhancement Project, put in place by the Pacific Salmon Treaty in 1991. According to Tom, salmon enhancement is when salmon eggs are taken from a lake to a hatchery then returned as salmon fry to the lake. This occurs in Tatsamenie Lake, BC, in an attempt by DFO to increase salmon runs by thousands. However, it is not working as well as was hoped. Tom states that Tlingit elders were concerned about taking the fish to the hatchery, outside of their natural home. These elders largely disapprove of DFO’s enhancement policy. Charlie explains to me the problems he sees with enhancement: “But this squeezing eggs out...I hear in Alaska, where the fish trying to go up, the fish don’t know where they’re going...the fish are getting lost...” Here the Tlingit worldview collides with that of the Canadian government regarding how to treat fish properly, the goals of management, and understanding the consequences of “enhancement” to fish’s well-being. Because Charlie’s experience has not been scientifically validated, his concerns are not seen as legitimate.

### **5.2.2 Stream Alterations**

The Canadian and Alaskan governments physically alter existing natural stream features in an attempt to increase the fish population. For example, ADFG removed boulders from a stream leading to an important spawning lake in the Taku River watershed. According to Charlie's account, now Dolly Varden are making it up the stream where as previously only Sockeye could make it past the natural boulder barrier. Consequently, the Dolly Varden eat the Sockeye eggs, decreasing their numbers. Charlie has proposed a program in which a Tlingit fisher would be stationed at the head of the stream to catch the overabundant Dollies and bring them back to the community as food fish. This could potentially increase, or at least maintain, the Sockeye population, a more prized and more threatened species. In the current informal management realm this elders' idea may never come to fruition. I believe mechanisms are needed for knowledge sharing and participation between Tlingit community members and policy makers.

### **5.3 Co-Management's Context within the Colonial Legacy**

The Taku River Tlingit First Nation has managed their territory's resources since time immemorial. They are just beginning the government-to-government processes and have not settled land claims. How can they negotiate land- and resource-use in their territory when they do not have full sovereignty over these lands and waters? From their perspective, why must their rights and sovereignty be validated by the state? The colonial legacy has created a system in which First Nations even without treaties must be legitimized by the state. Non-indigenous citizens of British Columbia now are stakeholders as well and claim rights to the same lands as First Nations. The assumption exists that First Nations' claims must be fought for, and validated, in order for their rights to be exercised. Must the road to legalized co-management continue to be a struggle for the Tlingit? A former lands manager for the Tlingit, whom I call David, tells me in an interview: "There's autonomous and there's joint decision-making, on a spectrum. Co-

management is anywhere in between. If you don't have 51% of the say, then basically you're running on goodwill and political capital." Equally evident in Nadasdy's research as well as my own, co-management discussions inevitably result in a final decision or recommendation being made by the government and not the First Nations. It is my contention that equal representation must occur at each level leading up to and including the final step.

However, the struggle does not exist exclusively between the Tlingit and the government for sovereignty over land claims. The non-indigenous residents of Atlin certainly will fight for their own rights and representation in any land-use discussions, as they have their own strong feelings about how the landscape should be utilized. From my observations it seems as though they feel they have just as much of a right to the land as the Tlingit.

Pure logistics also affect co-management participation. The Tlingit often must travel to major cities such as Whitehorse or Vancouver for meetings and conferences. Tlingit leaders and natural resource managers attend numerous meetings, at all levels: community meetings for band members, informal meetings with the DFO, meetings with the Transboundary Panel and the Pacific Salmon Commission. Tlingit government employees are not always able to access resources for such demanding travel. However, lack of participation would put them at a disadvantage.

In order to fully address the power dynamics in co-management in Taku River Tlingit territory more research involving the Tlingit and Canadian governmental agencies is required, perhaps in a similar fashion to Nadasdy's participation in the Yukon. Ideally, one would observe the entire Pacific Salmon Treaty renegotiation process, including meetings with the Pacific Salmon Commission, the Transboundary panel, and Tlingit community meetings. This would enable one to assess whether the concerns of Tlingit individuals are being recognized at the community level, and whether the Tlingit community is being heard at the inter-governmental level. I recommend future studies of this scope to fully understand power relationships in decision-making in the Taku River watershed.

## 5.4 Bridging Boundaries

Nadasdy argues: “By agreeing to play by the ‘rules of the game,’ First Nations...tacitly...[take] for granted the unequal power relations within which they are embedded” (2003: 6). This “game” involves adapting to a bureaucratic structure and process. In processes such as wildlife co-management and land claims negotiations, First Nations are forced (indirectly) to conform to the language of lawyers, scientists, and act in ways unfamiliar to them, “they have to think, talk, and act in ways that are often incompatible with (and even...undermine) the very beliefs and practices that this... relationship is supposed to be safeguarding” (Nadasdy 2003: 3). Nadasdy urges resource managers interested in the benefits of traditional ecological knowledge to ask the following questions: Who benefits from this project? Who controls this process? Who defines what is useful for this project? By whom and for whom is this research being done? These questions can unearth hidden power relations. Nadasdy deemed the Ruby Range Sheep Steering Committee project in the Yukon a failure because of the power imbalance and lack of understanding between the scientists, government officials, and the Kluane First Nation people involved. The barriers between these stakeholders prevented knowledge sharing in this co-management project.

I have attempted to identify how worldviews are bridged, where epistemologies collide, and where there is smooth collaboration or translation between parties in the process of co-management on the Taku River. Nadasdy argues, “different knowledge systems are truly incommensurable in that there is no way to integrate them that does not do violence to one or the other” (2003: 111). I hope that the Taku River case study offers a more optimistic view and that the potential exists for more sharing and utilizing of knowledge across boundaries. Considering that the Tlingit have no formal legal agreements with the Alaskan or Canadian governments, their co-management is quite successful, and excellent progress towards this end continues to be made. However, land claim settlements need to be finalized and sovereignty achieved before they will have truly equal decision-making power in their territory.

## **6. CONCLUSION**

*“The spirit of the people are still around here yet, like down on the Taku River. The people are still drumming down on Taku River...” (Charlie, Tlingit elder).*

### **6.1 Reflections on the Taku River Fishery**

In this case study of salmon management on the Taku River we have seen that the Taku River Tlingit do not have full legislated co-management, though they are involved in many aspects of the Taku salmon fishery. In some ways their fishery management is progressive – “cutting edge” as Tom says. In other ways, they do not have as much decision-making authority over their territory as they wish. Though the Tlingit progress in the right direction, the government-to-government land-planning process proves sluggish. Tom stated: “We want legislated co-management. In the interim we basically just agreed to pursue co-management, so it’s more informal...There is quite a bit of progress.”

One may ask if the Taku River fishery is a successful example of co-management between a First Nation and the Canadian state. Considering the complexity of the process, in some ways the answer is yes, but the Tlingit are not satisfied with every aspect of present co-management. Informal partnerships between the Tlingit Nation and the Department of Fisheries and Oceans, such as the Aboriginal Fisheries Strategy, are better than nothing. The Tlingit participate: they are on the river and in the watershed; they are at the table discussing Pacific Salmon Treaty renegotiations. Simply being present and involved makes a world of difference. However, it is not enough. The Tlingit still do not have the legislated co-management they yearn for. But for where they lie on the spectrum of co-management and on the road to land claim settlement, they are doing well in comparison to other First Nations in similar situations.

### **6.2 Looking Towards the Future**

The Taku River Tlingit First Nation actively takes steps toward more legislated co-management, though it is limited by political processes, treaties, funding, and capacity. Tlingit

fishers have rich experiential knowledge and enjoy long-term, nourishing relationships with their territory. This case study points to some important lessons. Firstly, we learn the importance of working together, in this case both on and off the river. Secondly, the importance of building capacity and creating partnerships with outside organizations, such as Round River, is evident. Thirdly, it is important to recognize the perceived need for a path to sovereignty and structured, legally defined relationships between First Nations and the Canadian state. This case study is relevant to the emerging field of traditional ecological knowledge integration in resource management, applied anthropology, as well as the anthropological discourse on knowledge, power, and colliding worldviews.

Without a doubt this is a complex process with challenges at each scale. One way to overcome the cultural barriers between stakeholders might be the appointment of an anthropologist to governmental environmental agencies, as well as non-governmental organizations, to ease the process of understanding and translating among stakeholders. Perhaps this would limit the distillation and compartmentalization of knowledge, as Nadasdy observed in Kluane territory, and give Tlingit fishers more authority in the management process.

Julie Cruikshank, who has done extensive work with Yukon First Nations documenting oral narratives, elegantly interweaves both indigenous and scientific narratives to understand how glaciers, climate change, and social history are connected in her book, *Do Glaciers Listen?* (2005). Her work ties in nicely with the story of the Taku River Promise told to me by Charlie. To the elders Cruikshank spoke with, and in the stories they told, “glaciers take action and respond...they listen. They make moral judgments and they punish infractions” (Cruikshank 2005: 3). Her collections of stories, in addition to Charlie’s, explain “how humans are responsible for making and maintaining the places where people dwell” (Cruikshank 2005: 74). In a sense, glaciers keep people in line with their worldviews and environmental ethics, indirectly controlling how they care for their surrounding human ecosystem and fellow living beings.

The Taku River Tlingit made a promise to the river that provides them cultural strength, food, and economic opportunity. They strive to take care of the place for future generations. By treating the river and the salmon with respect they aim to have their voices heard. In a conversation with Charlie before I flew down to the Taku River in 2007 he told me to talk to the river, to make an offering. Remembering his words, I threw a handful of tobacco into the river, “Grandpa.” Standing at the edge of the landing station, watching the murky glacial water consume the swirls of tobacco, I thanked it for providing all it has, and wished for the best future for it and the people that bring it to life.

Charlie spoke to me earnestly about the future of the Taku River Tlingit territory:

“I think about that glacier, we don’t know what’s underneath it. The floods breaking, it’s warning us, we’ll have a big one...Taku glacier is growing, the only one. ... We’re not too late yet, we can still make offerings and start doing something, to pull that glacier back. We gotta do something, there’s something cooking there in Taku...It’s a hard thing to believe...the reason why we don’t believe it is because we don’t know about the Tlingit history.”

The Tlingit people made a promise, and the glacier will respond, for better or for worse.



## 7. BIBLIOGRAPHY

- Agrawal, Arun. 2002. Indigenous Knowledge and the Politics of Classification. *International Social Science Journal* 54(173): 287-297.
- Berkes, Fikret. 1999. Sacred Ecology: Traditional Ecological Knowledge and Resource Management. Philadelphia: Taylor and Francis.
- Brown, Kimberly. 2005. "‘To Fish for Themselves:’ A Study of Accommodation and Resistance in the Sto:lo Fishery." Doctoral thesis, University of British Columbia.
- . 2006. "As it was in the Past: A Return to the Use of Live Capture Technology in the Aboriginal Riverine Fishery." In Traditional Ecological Knowledge and Natural Resource Management. Edited by Charles Menzies. Lincoln: University of Nebraska Press.
- Butler, Caroline. 2006. "Historicizing Indigenous Knowledge: Practical and Political Issues." In Traditional Ecological Knowledge and Natural Resource Management. Edited by Charles Menzies. Lincoln: University of Nebraska Press.
- CBC News. April 30, 2008. "First Nations to Ration Fraser River Salmon, Officials Say." Accessed May 22, 208. <http://www.cbc.ca/canada/british-columbia/story/2008/04/30/bc-first-nation-sockeye-ration.html>
- Cruikshank, Julie. 2001. Glaciers and Climate Change: Perspectives from Oral Tradition. *Arctic* 54(4): 377-393.
- . 2005. Do Glaciers Listen? Local Knowledge, Colonial Encounters, and Social Imagination. Vancouver: UBC Press.
- Day, Andrew and Evelyn Pinkerton. 2000. "Regional Co-Management in Pacific Salmon Fisheries." In State and Community in Fisheries Management: Power, Policy, and Practice. Edited by E. Paul Durrenberger and Thomas D. King. London: Bergin & Garvey.
- DeLaguna, Frederica. 1990. "Tlingit." In Handbook of North American Indians. Vol. 7, Northwest Coast, 203-228. Edited by Wayne Suttles. Washington, DC: Smithsonian Institution.
- Department of Fisheries and Oceans. 2005a. Aboriginal Fisheries Strategy. [http://www.dfo-mpo.gc.ca/communic/fish\\_man/afs\\_e.htm](http://www.dfo-mpo.gc.ca/communic/fish_man/afs_e.htm)
- . 2005b. "Canada's Policy for Conservation of Wild Pacific Salmon: Wild Salmon Policy." Vancouver: Fisheries and Oceans Canada.
- Department of Fisheries and Oceans. 2003. A History of the Pacific Salmon Treaty. [http://www.dfo-mpo.gc.ca/media/backgrou/1999/hq-ac29-113\\_e.htm](http://www.dfo-mpo.gc.ca/media/backgrou/1999/hq-ac29-113_e.htm)
- Dickinson, Christine, and Diane Smith. 1995. Atlin: The Story of British Columbia's Last Gold Rush. Atlin, B.C.: Atlin Historical Society.

- Fisher, Robin. 1992. Contact and Conflict: Indian-European Relations in British Columbia, 1774-1890. Vancouver: UBC Press.
- Hunn, E., D. Johnson, P. Russell, T. Thornton. 2003. Huna Tlingit Traditional Environmental Knowledge, Conservation, and the Management of a "Wilderness" Park. *Current Anthropology* 44(supplement): 79-103.
- LaDuke, Winona. 1997. "Voices From White Earth." In People, Land, and Community. Edited by Hildegard Hannum. New Haven: Yale University Press.
- Langdon, Steve. 2006. "Tidal Pulse Fishing." In Traditional Ecological Knowledge and Natural Resource Management. Edited by Charles Menzies. Lincoln: University of Nebraska Press.
- McClellan, Catherine. 1981. "Inland Tlingit." In Handbook of North American Indians. Vol. 6, Subarctic, 469-480. Edited by June Helm. Washington, DC: Smithsonian Institution.
- McGregor, Deborah. 2004. Coming Full Circle: Indigenous Knowledge, Environment, and Our Future. *American Indian Quarterly* 28(3, 4): 385-410.
- Menzies, Charles and C. Butler. 2006. "Introduction: Understanding Ecological Knowledge." In Traditional Ecological Knowledge and Natural Resource Management. Edited by Charles Menzies. Lincoln: University of Nebraska Press.
- Nadasdy, Paul. 1999. The Politics of TEK: Power and the 'Integration' of Knowledge. *Arctic Anthropology* 36(1-2): 1-18.
- . 2003. Hunters and Bureaucrats: Power, Knowledge, and Aboriginal-State Relationships in the Southwest Yukon. Vancouver: University of British Columbia Press.
- Newell, Dianne. 1993. Tangled Webs of History: Indians and the Law in Canada's Pacific Coast Fisheries. Toronto: University of Toronto Press.
- Nyman, Elizabeth and Jeff Leer. 1993. Gagiwdul.at: Brought Forth to Reconfirm: The Legacy of a Taku River Tlingit Clan. Whitehorse & Fairbanks: Yukon Native Language Centre and Alaska Native Language Center.
- Scott, Colin. 1996. "Science for the West, Myth for the Rest?" In Naked Science: Anthropological Inquiry into Boundaries, Power, and Knowledge. Edited by Laura Nader. New York: Routledge.
- Schreiber, Dorothee, and D. Newell. 2006. "Negotiating TEK in BC Salmon Farming: Learning from Each Other or Managing Tradition and Eliminating Contention?" *BC Studies* 150: 79-102.
- Smith, Morgen. 2003. "Managing by the Numbers? Examining Barriers to Harvest Assessment in a Southeast Alaska Subsistence Salmon Fishery." Master's thesis, University of British Columbia.
- Taku River Tlingit First Nation. 2003. "Our Land Is Our Future: Taku River Tlingit First Nation Vision and Management Direction for Land and Resources."

Tucker, Mary E., and John Grim. 2001. "Series Foreword." In Indigenous Traditions and Ecology: The Interbeing of Cosmology and Community. Edited by John Grim. Cambridge: Harvard University Press.