AN ABSTRACT OF THE THESIS OF

Sara Anne Thompson for the degree of Master of Science in Forest Resources presented on March 14, 2006.
Title: TEK and Tribal-Federal Collaboration: Three Case Studies in the Western United States.

Abstract approved:

Signature redacted for privacy.

John C. Bliss

The goal of this research is to understand factors influencing the use of TEK in natural resource management collaborations between tribes and federal agencies. This includes what evidence exists that TEK is being used, what tribal factors influence the use of TEK, what agency factors influence the use of TEK, and how different collaborative arrangements influence the use of TEK. This research uses a case study approach and multiple sources of data to understand three collaborative agreements between American Indian Tribes and Federal Agencies in natural resource management. The three case studies consist of one case representing a co-management agreement and two cases representing contractual agreements. Data sources include interviews with tribal and federal managers and decision makers, the observation of management practices and meetings, and the analysis of secondary data such as meeting minutes and project implementation documents including the written agreement, communication protocols, and NEPA documents. Findings from this research indicate that TEK can be incorporated into natural resource management through a collaborative agreement. However, tribes need to be clear on how TEK is defined and how it is going to be applied. Failure to do so may jeopardize the agreement by introducing conflict into the project. Furthermore, the findings also tell us that the distribution of power, organizational capacity and the collaborative process impact the success of the collaborative agreements.

TEK and Tribal-Federal Collaboration: Three Case Studies in the Western United States

by
Sara Anne Thompson

A THESIS

submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Master of Science

Presented March 14, 2006
Commencement June 2006

ACKNOWLEDGEMENTS

I would like to express my sincere appreciation to John Bliss, my advisor and the other members of my graduate committee Ellen Donoghue and Deanna Kingston. I have been for fortunate to have you as my committee. I would also like to thank the USDA Forest Service, PNW Research Station for funding the research, in addition to the Maidu, Nez Perce, and Grand Ronde communities that accepted me into their lives and participated in the research. Finally, I want to thank my husband and family, friends, and fellow graduate students for their support throughout this process.

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

TABLE OF CONTENTS (Continued)

Page

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

In the last decade natural resource managers have begun to explore the traditional ecological knowledge (TEK) of tribes as an approach to holistic resource management. Berkes, et al. (2000) define TEK as

> "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 with one another and the environment."

Since the early 1980's there has been a growing interest in TEK for its ability to provide insight into indigenous and local practices within ecosystem management (Berkes et al., 2000). As federal resource agencies look towards adaptive management techniques (Berkes, et al., 2000), TEK is becoming increasingly important in management practices. This is because many of the management prescriptions of TEK are consistent with adaptive, ecosystem management (Berkes et al., 2000). The value of TEK and its role in resource management is recognized on an international scale. The United Nation's Convention on Biological Diversity (2006) Section 8(j) addresses the use of indigenous and traditional knowledge in natural resource management:

> "Each contracting Party shall, as far as possible and as appropriate:
>
> Subject to national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices."

In recent years, natural resource managers have pursued collaboration as a means of effective natural resource management (Selin and Chavez, 1995). Collaborative efforts between federal agencies, the public, private landowners, special interest groups, tribes and a number of other stakeholders are taking an increasing role in natural resource management. Recent changes in the philosophical views regarding science and politics have helped to facilitate this change (Cortner et al., 1996). Moreover, the public is demanding greater accountability for agency decisions (Beckley, 1998) and is demonstrating a preference for the ecosystem management that replaced the product-oriented management of past federal decision making practices (Carr et al., 1998).

Collaboration in natural resource management is also mandated through federal laws and policies. The National Environmental Policy Act (NEPA) of 1968 mandates public participation in federal land management decisions. Moreover, other federal mandates specifically require government-to-government consultation between federal agencies and American Indian tribes. The 1974 Self-Determination and Education Assistance Act (P.L.93-638) reaffirmed tribes as sovereign nations and gave tribal governments the authority to self-govern. This set the stage for consultation between the U.S. government and tribal governments as independent nations and governments. In 1998, President Clinton established Executive Order 13084 to create regular and meaningful consultation and collaboration between Indian tribal governments and the U.S. federal government. This consultation and collaboration includes federal agencies with natural resource management authority.

1.1 Research Goal and Questions

1.1.1 Research Goal

The goal of this research is to understand factors influencing the use of TEK in natural resource management collaborations between tribes and federal agencies.

1.1.2 Research Questions

1) What evidence exists that TEK is being used in selected natural resource management collaborative arrangements between tribes and federal agencies?

Question 1.1: What is TEK within the context of the specific cases chosen for the study?

Question 1.2: To what extent is TEK implemented on-the-ground under various natural resource collaborative arrangements?

Question 1.3: In what way is TEK implemented into the management practices?

2) What tribal factors influence the use of TEK in selected natural resource collaborative arrangements?

Question 2.1: What is the role of tribal politics in collaborative arrangements?

Question 2.2: What is the influence of tribal policies in collaborative arrangements?

Question 2.3: How do tribal beliefs influence the use of TEK in collaborative arrangements?

Question 2.4: How do individual personalities affect the use and execution of collaborative agreements?

Question 2.5: How do changes in personnel affect the use of TEK in natural resource management?

Question 2.6: How can the strength of TEK within the tribe influence its use in collaboration?

Question 2.7: How can the value of TEK within the tribe influence its use in collaboration?

3) What agency factors influence the use of TEK in selected natural resource collaborative arrangements?

Question 3.1: What is the role of agency policies on the use of TEK in collaborative arrangements?

Question 3.2: What is the role of agency politics on the use of TEK in collaborative arrangements?

Question 3.3: How do agency beliefs influence the use of TEK in natural resource management?

Question 3.4:How do individual personalities affect the use and execution of collaborative agreements?

Question 3.5: How do changes in personnel affect the use of TEK in natural resource management?

4) How do different collaborative arrangement types between tribes and federal agencies influence the use of TEK?

Question 4.1: What is the role of TEK in various collaborative arrangement types?

Question 4.2: To what extent are tribes incorporated into the decision-making process?

Question 4.3: To what extent is TEK incorporated into the decision-making process?

Question 4.4: Does the use of TEK influence power sharing among stakeholders in the collaborative arrangement?

Question 4.5: Does the level of mutual dependency among stakeholders change as TEK is incorporated into different types of arrangements?

Question 4.6: Is the level of trust between tribes and agencies influenced through collaborative arrangements and the incorporation of TEK into these agreements?

Question 4.7: Do Tribal and Federal cultures change as collaborative arrangements evolve and incorporate TEK?
Question 4.8: Is TEK incorporated into management policies that result from the collaborative arrangement?
Question 4.9: Has the use of TEK influenced the land management practices of the individual stakeholders involved in the collaborative arrangement?
Question 4.10: Has the use of TEK influenced the land management philosophies of the individual stakeholders in the collaborative arrangement?

1.2 Justification and Expected Outcomes

Exploring and understanding the role of TEK in collaborative arrangements between tribes and federal agencies can provide important information to natural resource managers. Scientists, managers, and community members are experiencing a shift in natural resource management from single species (product-based) management to a holistic, ecosystem management approach (Cortner et al., 1996). Associated with this shift is awareness by agency personnel that cross-ownership management is important in today's land management practices (Cortner et al., 1996), including lands that cross tribal and federal ownership.

There has been an increased interest in TEK by agencies and managers as an adaptive ecosystem management approach. Its holistic approach is viewed as a way to respond to, and manage, the processes and functions of complex systems (Berkes, et al., 2000). Agency participants at meetings and conferences recognize the importance of tribal participation, opportunities for co-management, and the need to incorporate TEK into current natural resource management practices (Clark, 1996). A significant amount of information can be gained by researching the role of TEK in collaborative arrangements and natural resource management. This research provides insight into how both agency and tribal "culture" and other factors affect collaborative arrangements between relevant stakeholders. In addition,

it discusses current and potential avenues for incorporating TEK into natural resource management practices.

2 LITERATURE REVIEW

This review is divided into 2 major areas: 1) collaboration and 2) traditional ecological knowledge. I will examine the following aspects of collaboration:

- theory on collaboration,
- collaboration in natural resource management,
- barriers to collaboration,
- characteristics of successful collaboration,
- collaboration between American Indian tribes and the federal government

I will examine the following aspects of traditional ecological knowledge

- defining knowledge,
- defining traditional ecological knowledge,
- TEK, science and other ways of knowing,
- bridging TEK and western science

2.1 Theory on Collaboration

2.1.1 Defining Collaboration

Gray (1985) defines collaboration as: 1) the pooling of resources (money, labor, etc.), 2) by two or more stakeholders, 3) to solve a set of problems which neither can solve individually. This definition is used to define collaboration in other literature (Wondollek and Yaffee, 2000; Selin and Chavez, 1995).

2.1.2 Collaboration Process

Gray (1985) describes a process model of collaboration that addresses three stages: 1) problem setting, 2) direction setting and 3) structuring. The first stage (problem setting) identifies stakeholders, acknowledges stakeholder issues, and provides legitimacy to the stakeholders and their issues. In the direction setting stage of collaboration, the collaborative group begins to

identify and appreciate a sense of common purpose. Stakeholders discuss their individual pursuits and a commonality among stakeholders defines the group's common purpose (Gray, 1985). The structuring stage of collaboration is an on-going, appreciative process that manages stakeholder interactions. This process allows for the continued, mutually agreed upon self-regulation of the group, and facilitates changes within the collaborative framework (e.g. the redistribution of power) (Gray, 1985).

Research by Selin et al. (1995) expanded this three-stage model to include outcomes of the collaboration process. The continual assessment of the collaboration's impacts and re-evaluation of individual interests allow the collaborative process to be interactive in nature (Selin and Chavez, 1995). As individual interests and the impacts of the collaboration change, further collaboration can be addressed through a broadening purpose in the problem setting stage (Selin and Chavez, 1995). By incorporating an assessment of outcomes into the collaborative model, collaborative efforts extend beyond a specific issue, and prevent the dissolution of the collaborative group once that single issue is resolved (Selin and Chavez, 1995).

2.2 Collaboration in Natural Resource Management

Collaboration is becoming an important component of natural resource management both locally and internationally for a number of reasons. Carr et al. (1998) and Dalal-Clayton et al. (2001) describe collaboration as a means to more efficient large-scale resource management and implementation, an approach to conflict resolution among stakeholders, and an avenue for gathering local knowledge and information from the stakeholders.

2.2.1 Reasons for Collaboration

Research on collaboration in natural resource management has historically focused on the factors that facilitate or inhibit collaboration. Generally speaking, commonalities among stakeholders, desires to address conflict, and mandates have provided the foundation for collaborative

arrangements. Williams et al. (1997) found that shared values, conflict among stakeholders, and administrative or judicial rulings are some of the factors that assist in the formation of collaborative partnerships. Later research expanded these factors to include opportunities for financial gain (capacity-driven collaboration), political advantages, and personnel dedicated to the collaborative ideology (commitment-driven collaboration) (Michaels et al. 1999). Michaels et al. argue that considerations of place (place-based partnerships) and an individual's motivation (commitment v. capacity driven) are important for an organization's participation.

2.2.2 Organizational Capacity

Although Michaels et al. (1999) talk about capacity-driven factors that influence collaboration, literature on the role of organizational capacity in natural resource collaboration is limited. According to organizational theory, organizations function through their structure and design. Structure includes the composition of the organization, power, task allocation, and coordination processes to establish understanding of the organization's environment (Robbins et al., 1994). This determines how organizations achieve their goals (organizational design) (Robbins et al., 1994). Horton et al. (2003) define organizational capacity as an organization's ability to perform and successfully apply skills and resources to accomplish its goals and satisfy its expectations. This includes the resources, knowledge, and processes used by the organization (Horton et al., 2003).

According to Wondolleck and Yaffee (2000), collaboration in natural resources provides the opportunity to share expertise and knowledge. However, they argue that federal agencies need to look beyond information sharing and develop the skills of employees to address diversity in attitudes and perceptions (Wondolleck and Yaffee, 2000).

Burns (2001) argues that the organizational capacity of all stakeholders is significant in community-based and collaborative processes. He states that each organization must have or develop the capacity to participate in and

accomplish building new relationships and participate in open learning and participatory planning (Burns 2001). For the agency, this requires that they learn how to share information in ways that members of the general society can understand. Members of local organizations need to establish the knowledge and skills to include their values and perspectives into planning activities, management, and stewardship activities (Burns, 2001).

Baker and Kusel (2003) discuss the significance of capacity building on equity in the collaborative process. When talking about equity (the distribution of power, knowledge, and economic benefit) within the collaborative process, they argue that organizations must develop higher capacity to improve communication between groups with different languages, cultures, traditions, and histories (Baker and Kusel, 2003).

2.2.3 Power

Mintzberg (1983) defines power as the ability or capacity to effect (or affect) organizational outcomes. This definition of power includes one's ability to change behavior and the potential outcomes that are associated with those behaviors (Mintzberg, 1983).

Much of the research conducted on power within collaborative agreements has focused on power as a barrier to collaboration and sources of power for the stakeholders. Research by the Pinchot Institute (2001); Selin et al. (1995); Dalal-Clayton et al. (2001); has identified that differences in power between stakeholders is one barrier to collaborative efforts. Agencies reluctance to defer any control over federal lands to other organizations (Pinchot Institute, 2001), and significant power differences between stakeholders produce barriers to collaboration (Williams and Ellefson, 1997; Selin and Chavez, 1995). Wondolleck and Yaffee (2000) support the idea that the fragmentation of power between stakeholders makes the collaborative process difficult. Dalal-Clayton and Dent (2001) argue that federal authorities fear more participation in collaborative planning by other organizations because it challenges the existing distribution of power. However, research by

Hickey and Nelson (2005) found that the distribution of power within an agency facilitates, not hinders, collaboration.

Research on the co-management of natural resources addresses the role of power in the collaborative processes. Berkes (1991) defines co-management as the sharing of power and responsibility between the government and local resource users. Pinkerton (1989) says co-management agreements have equal decision making authority and each stakeholder has veto authority over any decisions. However, Beckly (1998) argues that the power structure in co-management is consensual, not equal. His research showed that local resource users have less decision-making power and therefore, serve as advisory boards to the government agencies.

2.2.4 Barriers to Collaboration

Barriers to collaboration tend to focus on agency practices, current policies, and individual perceptions regarding collaborative resource management. Research conducted by Selin et al. (1995), Cortner et al. (1996), the Pinchot Institute (2001) and Schuett et al. (2001) examine the institutional and situational barriers and constraints to collaboration in natural resource management. These barriers include: significant differences in power among the stakeholders (Selin and Chavez, 1995); legal constraints and administrative policies of agencies (Cortner et al., 1996; Pinchot Institute, 2001); agency fears of losing control (Schuett et al., 2001); funding availability (Pinchot Institute, 2001); administrative policies and different components of an agencies organizational culture (attitudes, perceptions) (Cortner et al., 1996; Pinchot Institute, 2001). Research by Cortner et al. (1996) also identified five problems of institutions when addressing collaborative decision-making. These problems include: existing laws, policies, and regulations that constrain collaboration; uncertainty associated with managing across jurisdictions; the need for internal reorganization and improved relations with the public; the re-examination of theories guiding management practices; and

insufficient methodologies for answering institutional questions (Cortner et al., 1996).

2.2.5 Characteristics of Successful Collaboration

Stakeholder representation and their involvement in the collaborative process influence the success of collaborative arrangements. For a collaborative agreement to be successful, stakeholder representation needs to address the equal representation of stakeholders, commonalities among the stakeholders, and legitimacy of stakeholder involvement (Gray, 1985; Williams and Ellefson, 1997; Schuett et al. 2001). The success of collaborative processes is affected by: shared and open decision making process, open communication about the process and individual perceptions, goal setting early on in the process, and the sharing of information throughout the process (Gray, 1985; Williams and Ellefson, 1997; Schuett et al. 2001). The willingness of stakeholders involved in the collaborative process also influences the success of the collaboration. Stakeholders' willingness to provide adequate resources, acknowledge other stakeholders and their legitimacy, to be flexible throughout the process and to trust the other stakeholders involved affect the success of the collaborative arrangement (Gray, 1985; Williams and Ellefson, 1997; Schuett et al. 2001). These factors to successful collaboration go beyond the initial stages of the collaborative effort. As collaborative groups mature, continued relationship and team building, as well as the recognition of group accomplishments, are important factors in successful collaborative efforts (Schuett, et al., 2001).

2.3 Collaboration between American Indian tribes and the Federal Government

2.3.1 History of Tribal Sovereignty

The history of relations between American Indian tribes and the U.S. Government is one that reflects changes in government policy and beliefs regarding tribes. The relationships between tribes and the U.S. government

have been, and continue to be, contentious. While tribes have always been sovereign nations (as evident through their treaties) the recognition of that sovereignty is inconsistent through time. This relationship is commonly broken into six eras: the pre-constitution era, the removal and relocation era, the allotment and assimilation era, the reorganization era, the termination era, and the self determination era (American Indian Policy Center, 2004; Nez Perce Tribe, 2003).

Pre-constitution Era: 1532-1789

Before the formation of the United States, British, Spanish and other colonial government administrators negotiated treaties with Indian tribes. The treaties established equal status between tribes and colonial governments (American Indian Policy Center, 2004), recognized tribes as sovereign nations and established reservations for tribes (Mitchell, 1997; American Indian Policy Center, 2004). They recognized tribes with a status equivalent to colonial governments and became the basis for defining tribes legally and politically.

Removal and Relocation Era: 1789-1871

During this time the U.S. Government took over responsibility for entering into treaties with American Indian tribes (American Indian Policy Center, 2004). These treaties established reservations and Indians were removed from their original lands and moved to the reservations. At the heart of treaty authority is the U.S. constitution's commerce clause that states: "Congress shall have the power to.... regulate commerce with foreign nations and among the several states, and with Indian tribes." It established that policy with tribes is a federal, not state, policy. A series of Supreme Court decisions known as the Marshall Trilogy further defined the relationship between the U.S. government and Indian tribes. These decisions established a doctrine of federal trust responsibility between the government and tribes (American Indian Policy Center, 2004).

Allotment and Assimilation Era: 1871-1928

During this time frame the U.S. Government stopped making treaties with tribes and encouraged the assimilation of American Indians into "white" society (American Indian Policy Center, 2004). To encourage this, Congress passed the General Allotment act of 1887 (24 Stat. 388-97). Under this act, the community ownership of tribal lands was divided into individual allotments that were then given to males over the age of 18 (American Indian Policy Center, 2004; Mitchell, 1997). Any additional lands not allotted were sold to non-Indians (Mitchell, 1997). Moreover, the 1924 Indian Citizenship Act (43 Stat. 253 ante 420) granted U.S. citizenship to American Indians for the first time (American Indian Policy Center, 2004).

Reorganization: 1928-1945

The Merriam Report of 1928 detailed the government's shortcomings in providing services to reservations and declared the allotment practices unsuccessful. This report led to the passing of the Indian Reorganization Act of 1934 (48 Stat 984). Under the act, the allotment of tribal lands was deemed a disaster and reservation business councils began to govern tribes (American Indian Policy Center, 2004; Mitchell, 1997). This act "enables tribes to organize for their common welfare and to adopt federally approved constitutions and bylaws". Its goal was to improve tribal economies and strengthen tribal governments (Hensen, 1996). For the first time in years, these bylaws and constitutions included reconstructing their traditional ways (American Indian Policy Center, 2004).

Termination Era: 1945-1961

From 1945-1961 congress passed a number of resolutions and other legislation that reversed tribal recognition, terminated tribal governments and the federal government's trust responsibility to American Indian tribes (American Indian Policy Center, 2004). During this period more then 50 tribal governments were terminated and the federal government no longer recognized them as Indian nations (American Indian Policy Center, 2004). The

termination policy was to eliminate the federal budget (and the government's trust responsibility) for Indians (University of Montana, 2004). In addition, Public Law 280 (28 U.S.C. §1360) gave six states mandatory and substantial criminal and civil jurisdiction over lands once owned by Indians (American Indian Policy Center, 2004; Mitchell, 1997). Many other states soon adopted similar laws.

Self-Determination Era: 1961-Present

Today, American Indian tribes are experiencing an increasing recognition of tribal powers, authority and self-government. Several major pieces of legislation, and the sense that termination failed, facilitated this change (University of Montana, 2004). The 1961 Indian Civil Rights Act (25 U.S. C. §1301-03) imposed the basic requirements of the Bill of Rights to American Indians (Mitchell, 1997). Some tribes have regained federal recognition as sovereign nations and the right to self-govern. The Indian Self-Determination and Education Assistance Act of 1975 (88 Stat. 2203; 25 U.S.C. 450.) encouraged tribes to take responsibility for tribal programs previously administered by the Bureau of Indian Affairs. As a result, many tribes no longer rely on the Bureau of Indian Affairs to speak on their behalf and deal directly with other federal and state agencies. Today, the practices and beliefs of American Indians have been protected under various acts, including the American Indian Religious Freedom Act (42 U.S.C. 1996 & 1996a) and the Native American Graves Protection and Repatriation Act (104 Stat. 3048) (American Indian Policy Center, 2004; Mitchell, 1997).

2.3.2 History of Tribal-Federal Collaboration

Collaboration between Tribes and the Federal Government

Collaboration between American Indian tribes and the U.S. Government is a relatively new concept. Although federal agencies began considering tribal rights in land management activities in the late 1800's and early 1900's, consultation and collaboration with tribes has evolved in the past 35 years.

The Forest Reserve Act of 1897 (26 Stat. 1095) and Transfer Act of 1905 (33 Stat. 628) established national forest lands on lands once inhabited by tribes, directed land management of those areas to the agencies, while considering tribal rights regarding the land (Mitchell, 1997; Lesko et al, 2001). More recently, government policies toward American Indian tribes have evolved from consideration to government-to-government consultation. Today American Indians and Alaskan Natives hold 4.2% of the land area within the United States (Mitchell, 1997). Although federal lands are publicly owned, agencies must collaborate with tribes where: tribal rights are reserved by treaty, spiritual and cultural values and practices exist, public lands are adjacent to tribal or trust lands, and tribal water rights may be affected (Mitchell, 1997).

Since the 1980's, natural resource managers have looked to tribes, and their knowledge, as a way to implement ecosystem management and as a way to respond to and manage the processes and functions of complex systems (Berkes et al., 1994, 2000). During the treaty-making years with tribes, tribes retained certain rights to specific resources on lands that were ceded to the U.S. government. Today there is a large effort to recognize the rights of tribes to co-manage these resources (Mauro et al., 2000). Mauro et al. argue that these treaty rights entitle tribes to be included in the federal policy and management of those resources.

Important Legislation and Decisions

The recent collaboration between American Indian tribes and the U.S. Government has been facilitated by a number of legislative efforts and Supreme Court decisions. They protect tribal treaty rights, facilitate agency protection of tribal interests, and mandate agency consultation and coordination with tribes.

Collaboration with tribes can be seen indirectly in the government support and protection of American Indian rights and interests. In 1978 the

American Indian Religious Freedom Act (42 U.S.C. 1996 &1996a) made it a policy of the U.S. to protect and preserve the religious rights, practices, and beliefs of American Indians, Eskimo, Aleut, and Native Hawaiians (Lesko et a., 2001; Mitchell, 1997). This includes providing access to sacred sites on national forest lands. Under Executive Order 13007, President William J. Clinton (1996) strengthened the government's policy on sacred sites. E.O. 13007 mandated that federal agencies provide access to and ceremonial use of Indian sacred sites by Indian religious practitioners. It also prevented agencies from adversely affecting the physical integrity of these sites (Clinton, 1996). Both of these mandates require agencies to work with tribes for access to, and the protection of, the sacred sites of tribes on federal lands.

The 1971 Alaska Native Claims Settlement Act (ANCSA) (43 U.S.C. § 1639) and the 1974 decision in the Supreme Court case *U.S. v. Washington* (Boldt Decision) (Case no C70-9213, 1974) have been two important factors in protecting the rights of tribes and tribal members. A clause in the ANCSA protected the rights of Alaskan natives to continue to harvest marine mammals for subsistence purposes (Lesko and Thakali, 2001). This act recognizes their specific rights to the continued harvest of animals that can not be harvested by the ordinary Alaskan citizen. Three years later in Washington State the Boldt Decision greatly impacted tribal treaty rights and fisheries management. The center of the debate was a clause of the 1854 treaty with tribes that assured "the right of taking fish at usual and accustomed grounds and stations is further secured to said Indians in common with all citizens of the territory" (Case no. C70-9213). Judge Boldt interpreted this cause to mean that tribes had the right to harvest fifty percent of the harvestable salmon and steelhead in Washington (Pinkerton, 1992). Moreover, he found that the tribes were responsible for managing their half of the state's fish population (Pinkerton, 1992). As a result, the tribe and the State were responsible for managing the fishery together.

While the Boldt Decision mandated tribal-agency collaboration in the management of Washington's fishery, other legislation facilitated similar relationships. Cooperation between agencies and tribes is seen in the 1966 (amended in 1992) National Historic Preservation Act (16 U.S.C. 470). This act was designed to preserve the historical and cultural foundations of the nation as a living part of community life. In addition, it required cooperation between federal agencies, American Indian tribes and native Hawaiians (Lesko and Thakali, 2001; Mitchell, 1997). In 1970, the National Environmental Policy Act (NEPA) (42 U.S.C. 4321-4347) introduced tribes into federal land management decisions. The public participation (scoping process) of NEPA allowed agencies to invite tribes to participate in land management projects that could potentially affect the tribes (Lesko and Thakali, 2001, Mitchell, 1997).

In 1990, two pieces of legislation specifically addressed the coordination and consultation between tribes and federal agencies. They are the Native American Graves Protection and Repatriation Act (NAGPRA) (104 Stat. 3048) and the National Indian Forest Management Act (NIFMA) (104 Stat. 4532). NAGPRA recognizes the federal government's responsibility to protect the cultural and religious beliefs of Native Americans (Lesko, et al. 2001, Mitchell, 1997). Moreover, it requires the consultation with tribes that may be affected be federal actions (Lesko and Thakali, 2001; Mitchell, 1997). NIFMA specifically addresses coordination and collaboration in natural resource management activities. It ordered national forest managers to plan, consult, and coordinate forest management activities with Indian tribes (Lesko and Thakali, 2001, Mitchell, 1997). First in 1996, and then in 2000, President William J. Clinton established executive orders that addressed the government-to-government consultation between American Indian tribes and federal agencies. Executive Order (E.O.) 13175 (2000) established regular and meaningful consultation and collaboration between with tribal officials in the development of federal policies (Clinton, 2000; Lesko and Thakali, 2001).

Moreover, it strengthened the government-to-government relationship between the entities and reduced the unfunded mandates on tribes (Clinton, 2000; Lesko and Thakali, 2001). In 2004, the Tribal Forest Protection Act (118 Stat. 868-871; 25 U.S.C. 3101-315a) signed by President George W. Bush provided the federal government flexibility in the implementation of stewardship contracts with tribes to carry out projects on federal lands in an effort to protect Indian forest lands.

2.4 Traditional Ecological Knowledge

Literature on TEK includes research on TEK, traditional knowledge, indigenous knowledge, and local knowledge. This literature discusses the importance of TEK, comparisons between TEK and widely acknowledged "Western Science" and thought processes, the use and importance of TEK in land management, and cautions when addressing TEK in research and management.

2.4.1 Defining Knowledge

There are two main approaches to learning: knowledge as a product of research and knowledge as a product of society and culture. Traditionally, knowledge has been viewed as the product of interpretative judgments that is derived from research, procedures, and universal principles (Nadasdy, 1999; Bouwen and Taillieu, 2004; Fisher, 2000). However, this is beginning to shift toward an anthropological view of learning that views knowledge as socially and culturally constructed (Fisher, 2000; Nadasdy, 1999) and the product of social interaction (Bouwen and Taillieu, 2004).

2.4.2 Defining Traditional Ecological Knowledge

Berkes, et al. (2000) defines TEK as 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 with one another and the environment". To clarify this definition of TEK, I am using knowledge to mean a culturally constructed way of knowing rather than

an abstract product of human intellect (Nadasdy, 1999). TEK is a system of cultural processes that exist within different networks; networks of social relations, values and practices give meaning to TEK (Cruikshank, 1998). Western science tends to treat TEK as intellectual products that can be separated from their culture (Nadasdy, 1999).

2.4.3 TEK, Western Science, and other ways of Knowing

According to User (2000), western science combines a particular set of values with systems of knowing based on empirical observations, rationality, and logic opposed to perceived truths or "lived" perceptions. TEK is fundamentally based in environmental feedback that continuously addresses changes within ecosystems in its management techniques (Berkes, 1995). When comparing TEK and indigenous knowledge to western science, TEK is often generalized as being moral, ethically-based, spiritual, intuitive and holistic. TEK's philosophies emphasize process, the assumption that nature can not be controlled, and that environmental conditions always change (Berkes et al., 2000). This knowledge has a social context and integrates knowledge with practice and belief (Berkes et al., 1994; Pierotti and Wildcat, 2000). TEK is based on detailed observation of the natural environment, feedback learning, links between society and the environment, and resilience to changes within the environment (Berkes and Folke, 1998; Berkes 1999). In contrast, western science has emphasized efficiency in terms of physical and monetary yields on the basis of understanding small parts of a larger system (Berkes et al., 1994; Berkes 1999). Western science also separates humans from the natural world (Pierotti and Wildcat, 2000; Berkes 1999). Western science management techniques that focus on human benefits eliminates change from the ecosystem to increase the efficiency of management and the productivity of the resource (Berkes, 1995; Berkes 1999).

2.4.4 Combining TEK and Western Science

Messerschmidt (1993) argues that forest management needs to be based on the accumulated knowledge and insights of the individuals that the policy impacts. Generally speaking, TEK has the potential to create more effective conservation and biodiversity in natural resource systems (Berkes et al. 1994) because many of its philosophies and ideologies are consistent with adaptive management techniques (Berkes et al., 2000) and ecosystem management (Berkes et al., 1998). Sherry et al. (2002) found that TEK can contribute to natural resource management in a number of ways. Looking at the Vuntut Gwitchin as a case study, Sherry et al. found that TEK can contribute factual knowledge, insight into human uses and their impacts, acceptable conservation (wise use) practices, and the community values needed to inform management decisions. Moreover, Sillitoe (1998) found that the incorporation of TEK may contribute to a long-term positive change that promotes culturally appropriate and environmentally sustainable adaptations to people. More specifically, the introduction of TEK introduces multi-cultural perspectives into current management practices, provides new biological insights, cross-validation of scientific hypothesis, and concrete evidence for patterns in nature (Kimmerer, 2002).

2.4.5 Cautions surrounding TEK implementation

Although much of the current TEK research focuses on documenting, describing, and integrating TEK with scientific knowledge in resource and land management practices, there are cautions that need to be addressed in researching and the using TEK. Nadasdy (1999) argues that those with "power" determine the use of knowledge in management practices. Moreover, addressing TEK as an "integration" problem with western science imposes specific (non-native) ideals about knowledge and the life experiences of native people. This integration forces researchers to compartmentalize and distill indigenous beliefs, values and experiences according to non-native criteria and distorts the beliefs, values and experiences of TEK (Nadasdy, 1999). Therefore, when addressing TEK in research, management, and education, it

is important to address the knowledge within the cultural context (practice, beliefs, and values) in which it exists (Cruikshank, 1998; Kimmerer, 2002). According to Cruikshank (1998) the reification of TEK as quantifiable science has costs. Once written, codified, or taken outside of its cultural context, TEK assumes different meanings that are associated with a framework outside of the culture (Cruikshank, 1998). She argues that TEK is a process that needs to be practiced and demonstrated by the tribe and not a product that can be studied (Cruikshank, 1998). Projects that are responsive to local native concern should do so at all stages-planning, implementation and review, will more likely gain community support and cooperation (Fienup-Riordan, 2001). Failure to include the communities and present their knowledge within its own cultural context will prove a disservice to the knowledge and those who possess it.

Although research argues that TEK should not be standardized according to outside criteria, it is important to understand that TEK is individualistic within tribal communities. According to Cruikshank (1998) the differences surrounding TEK within a tribal community can complicate the implementation of TEK. The acceptance and implementation of TEK models in a tribal community can create inequalities and a hierarchy within the tribe, and create competition within the tribal community (Cruikshank, 1998).

3 METHODS

3.1 Preliminary Work

This research was developed from a project with the USDA PNW Research Station that examined different collaborative arrangements between American Indian tribes and federal natural resource management agencies across the U.S. Information was collected through a number of conversations with agency and tribal individuals who were directly involved with the collaborative agreement. From this information, ten case studies were categorized into five different types of collaborative arrangements (See Table 1). They are: conservation easements, cooperative, co-management, contractual, and working relationships. These categorizations were based on: who retains decision making authority, whether or not there is a transfer of money, the level of mutual dependency among the stakeholders, the recognition of mutual benefit among the stakeholders, whether or not there was a transfer of knowledge, and who was responsible for the implementation of on-the-ground work (Thompson and Donoghue, 2005). Using that classification scheme, this research focused on two types of collaborative arrangements: co-management and contractual. Co-management agreements are characterized by joint decision making authority, transfer of funding to support the project, high level of mutual dependency, recognition of a mutual benefit, high transfer of knowledge between the stakeholders, and joint implementation of on-the-ground management activities. In contractual agreements the decision making authority remains with the resource management authority and there is a transfer of funding to support the project. There is a variable level of mutual dependency, recognition of mutual benefit, a high level knowledge transferred between the stakeholders, and on-the-ground work is implemented by the tribe.

Table 1: Characterizations of Tribal-Federal Collaborative Arrangements.

Types of Collaboration	Components of Collaboration: Decision making authority	Transfer of Funding	Level of dependence on each other	Recognition of mutual benefit	Transfer of Knowledge	Implementation of on-the-ground work
Co-management	Joint	Yes	High	Yes	High (with TEK)	Joint
Contractual	Resource Management Agency	Yes	Variable	Yes	High	Tribe
Cooperative	Shared	Variable	Variable	High (overarching benefit)	Variable	Variable
Working relationship	Independent	No	High	Yes	Variable	Independent-with coordination
Conservation easement	Independent-within agreed limits	Yes	Moderate	Yes	Low	Independent-with coordination

3.2 Research Approach

3.2.1 Case Study Design

The proposed research design involves a case study approach. A case study is a research technique that focuses on developing an in-depth analysis of a single case or multiple cases (Robson, 2003). Case studies involve empirical investigations of a particular contemporary phenomenon within its real life context using multiple sources of evidence (Robson, 2003).

I selected three case studies of tribal-federal collaboration in natural resource management. One case represents a co-management arrangement and two case studies represent contractual arrangements. The three case studies selected for this research originally included one co-management, one contractual, and one working relationship. These three of cases were chosen because they provided a broad representation of the types of tribal-federal collaboration. Furthermore, these case studies were chosen because they were known to be active agreements, there were indications that TEK was part of the agreements, and the location of the projects made field research feasible. However, during the research process the proposed working

relationship case study was replaced with the second contractual case study because the original case study was not able to be completed. The second contractual case study was selected because of its close proximity to the University, the existing relationship between the researcher and the Tribe, and ease of data collection given time constraints.

A case study approach typically involves multiple methods of data collection to understand a unit of analysis (Yin, 1994). The unit of analysis for the proposed research is the individual case. Data sources include interviews, participant observation, and secondary data analysis and documentation. Interviews were with tribal and federal managers, and stakeholder decision makers. I reviewed management policies and the implementation of management practices and attended local decision-making meetings. The scope of inference is limited to the populations within the selected case studies. Although no statistical generalizations can be made beyond these populations, this study may inform future tribal-federal collaborative arrangements in other communities. Little research has been done to understand the different types of collaborative arrangements that exist between tribes and federal agencies. This research provides insight into these arrangements and the different factors that may influence the use of TEK (or local knowledge) in land management practices.

3.2.2 Rationale for Case Study Design

Case study research is employed when the researcher is looking to explain the how or why of situation, the research addresses a contemporary issue, and the researcher has no control over the access to the behavioral elements of the situation (Yin, 1994). Case studies clarify the presumed causal links in a real life situation, describe the real life context in which it occurs, illustrate certain topics, and explain situations in which the situation being evaluated has no clear, single set of outcomes (Yin, 1994).

A case study design was appropriate for this research because I wanted to explain the factors that influence the use of TEK, and how and why

TEK is being implemented in real life circumstances. Furthermore, as a researcher I am not able to control the implementation of TEK or the collaborative agreement; therefore, the only option was to study these factors within their real life context.

3.2.3 Application of Case Study Research

There has been a significant amount of debate over case studies and other types of qualitative research. A positivist's view of science assumes that:

- Research is free of values,
- Research tests hypothesis against facts and that facts are gained from direct experience or observation,
- Science's goal is to develop universal laws, and
- That researchers can transfer the assumptions and methods of natural science to social science.

Given this perception of science, case study research and qualitative research has been viewed as a softer version of science. However, under the realist view of science:

- Knowledge is a product of society and history,
- Research creates theory to explain reality,
- Research is concerned with the mechanisms that produce events,
- A law is a characteristic pattern of activity,
- Reality is complex and stratified onto social realities, and
- Events can be explained even when they can not be predicted (Robson, 2003).

Case studies are a valid approach to research design that is fundamentally different than other approaches (Robson, 2003). Based on the realist interpretation of science and knowledge, case studies are scientific because the central issue to the case study is not excluded in principle but

studied based on specific methods (Robson, 2003). Furthermore, by choosing a multiple case study approach, replication is built into the research design. This replication allows more generalizations and broader conclusions to be made beyond the initial case study (Yin, 1994). This provides external validity to the research findings.

3.3 Data Collection and Analysis

3.3.1 Population and Sampling

I used purposive sampling to select interview informants. A purposive sample allows the researcher to select informants based on expertise or involvement in the area of study. This allowed me to address and satisfy the specific needs of the research. Therefore, informants included prior contacts established through the previous research and new contacts established in the field. For Research Questions 2 (tribal factors) and 3 (agency factors), I selected informants through conversations with tribal members, personnel, and agency staff. Informants included 1) tribal/agency decision makers, 2) tribal/agency personnel involved in collaborative agreements and 3) tribal/agency members and staff involved in tribal decision making processes. For research question 4, this list of informants expanded to include 1) tribal members that contribute to TEK and 2) tribal members that are dependent on the specific resource's continued management.

For Research Questions 1 and 3, I selected informants that are familiar with the different roles of individual stakeholders within the collaborative arrangement. This included tribal/agency personnel responsible for implementing the agreement, tribal/agency decision makers, and those tribal representatives providing knowledge and expertise within TEK and its components. Secondary data included collaborative management plans, written collaborative agreements among stakeholders, meeting minutes, memos and other communications.

3.3.2 *Key Informant Interviews*

Key informants included those individuals identified in previous research and those individuals associated with the project but who were not included in the previous research. Key informants were first identified using the initial contact information from the previous research. Additional key informants were identified through contact with the tribes and agencies involved in the specific collaborative arrangement. Once contacted, informants were explained the proposed research and given the opportunity to ask any questions about the study. Questions were answered, and the informant was asked if they would like to participate.

Semi-structured interviews were conducted with informants. Informants included tribal/agency leaders, tribal/agency decision-makers, tribal elders, and other individuals who were involved in the collaborative arrangement. Interviews were recorded with the consent of the informants and then transcribed. A total of 34 interviews were completed for this research. These included 11 for the Maidu case study, 14 or the Nez Perce case study, and 9 with the Grand Ronde case study. The Maidu case study included 5 tribal associates, 4 agency associates, and 2 individuals that have been involved with the agreement peripherally. The Nez Perce case study included 11 tribal associates and 3 agency associates. The Grand Ronde case study involved 5 tribal associates and 4 agency associates. Table 2 shows the breakdown of informants by case study and affiliation.

Table 2. Interviewees from the three case studies and their affiliations.

Maidu Case Study		Nez Perce Case Study		Grand Ronde Case Study	
Name	Affiliation	Name	Affiliation	Name	Affiliation
Farrell	Tribal	John*	Tribal	Mike	Tribal
Lorena	Tribal	Aaron	Tribal	Cliff	Tribal
Warren	Tribal	Josia	Tribal	Pete	Tribal
Anne*	Tribal	Nakia	Tribal	Kelly	Tribal
Clark*	Tribal	Curt	Tribal	Reyn	Tribal
Sharon	Agency	Keith	Tribal	George	Agency
Karen*	Agency	Gary	Tribal	Wayne	Agency
Jim	Agency	Sam	Tribal	Jose	Agency
Annie*	Agency	Robert*	Tribal	Don	Agency
Jan*	Independent	Scott*	Tribal		
James*	Independent	Kyle*	Tribal		
		Steve	Agency		
		Carter	Agency		
		Mark	Agency		

* indicates pseudonym

Interview transcripts and notes were theoretically coded. Theoretical coding is the process of identifying and categorizing text for the purpose of theme identification (Robson, 2003) that progresses through different levels of increasing abstraction. The levels of abstraction are known as open coding, axial coding, and selective coding (Glazer and Strauss, 1967). Open coding is a process that draws meaning from the interview text and compares it with other perspectives. Axial codes show relationships within the data; selective coding links axial codes to a core category that is central to the research project (Strauss, 1987). Atlas ti, a computer program for qualitative data analysis, was used to code the interviews in the open and axial stages of analysis. During this process my interpretation was formed by patterns that emerged from the data and my own self-reflections recorded in my field journal. Information collected provided the data regarding tribal and agency factors that influence the use of TEK into collaborative arrangements. Moreover, it provided information about collaborative arrangements and their

influence on the use of TEK and self-reported evidence of TEK implementation.

3.3.3 Participant Observation

I observed and documented tribal and/or agency personnel and associates within the context of their surroundings. Opportunities for participant observation included agency and tribal decision-making meetings, collaborative decision-making meetings and community meetings. Furthermore, I sought out opportunities to participate in the collaborative arrangement and other participant observation opportunities with tribes, the agency and/or the collaborative group.

Notes from participant observations were analyzed using the same theoretical coding process described in key informant interviews. I then compared themes among participant observation activities. These data provided information on tribal and agency factors that influence the use of TEK into collaborative arrangements. Moreover, they provided information about collaborative arrangements and their influence on the use of TEK and evidence of TEK utilization.

3.3.4 Archival Research

Secondary (non-interview) data relevant to tribal and agency decision-making processes and the Tribal-Federal collaborations were also collected. This included tribal and/or agency policies, decisions, news releases, management plans, etc. Other sources of secondary data included written agreements between the stakeholders, joint management plans, joint meeting minutes, and statements and/or decisions from the collaborative arrangement. Collection of this information allowed me to address tribal and agency factors that affect the use of TEK and explore how different types of collaborative arrangements may affect the use of TEK. These data were analyzed using theoretical coding as described in the section on key informant interviews.

3.3.5 Field Investigation

When possible I investigated and observed management activities in the field to identify evidence of TEK application. This included field trips to management areas and visits with organizations not directly involved with the collaborative effort. In addition, I studied maps specific to management areas identified under the collaborative arrangement, investigated tribal assistance and monitoring in management areas, and investigated other practices that were attributed to TEK. I documented evidence by taking detailed notes on what occurred and included self-reported evidence of TEK use by interview respondents.

Self reported evidence of TEK use was reported as presented by the individual. Researcher notes' were analyzed using the same theoretical coding as described in the section on key informant interviews.

4 CASE STUDIES

4.1 Cultural and Ecological Restoration on the Plumas National Forest

> "There was nothing tangible for kids that would ever tell them in any way that there was value in being Indian. Especially here, there was nothing except family beliefs which of course is where it all starts anyway. But nothing beyond that that made any kid understand why they should try and be Indian. I think if this project is successful that there will be that idea that we're special. We have something special to offer, and we're lucky to be Maidu."
>
> ~Anne

4.1.1 Introduction

In Northern California the Maidu Cultural and Development Group (MCDG) is working with the US Forest Service (Forest Service) to restore 1530 acres of federal lands using Maidu TEK and traditional management practices. Not federally recognized, the MCDG is a non-profit organization that was developed by members within the Maidu community to address a declining Maidu culture and restore traditional values into the community. Known as the Maidu Stewardship Project, it was developed to demonstrate Maidu TEK and traditional management practices on federal lands in an effort to retain Maidu culture, beliefs, and values. Originally awarded in 1998 as one of the Forest Service's original 22 pilot stewardship projects, a contract was signed in 2004 that outlined the implementation of the Maidu Stewardship Project. However, different perceptions of TEK and how TEK should be implemented has made the implementation of the Maidu Stewardship Project difficult.

4.1.1.1 Background

4.1.1.1.1 History of the Maidu

California was once home to one of the largest, and most varied populations of Native Americans north of Mexico (Josephy, 1970). Residing primarily on the coast, lower parts of rivers, and interior valleys, they once numbered more then 350,000 people (Josephy, 1970). Located in the interior valley and lowlands of the Sierra Nevada Mountain Range are the Maidu people. They are a part of the Californian Penutian language family and are divided into three dialects of three Maidu cultural groups: Nisenan or "Southern Maidu", Concow or "Valley Maidu", and the northeastern Maidu or "Mountain Maidu" (London, 2002).

For the Maidu, land was not really owned and its use was free and common to all members of the tribe (Kroeber, 1925). Although certain fishing holes and specific hunting areas may have been family-specific, a member of the tribal community was allowed to search for and pursue resources throughout the entire territory (Kroeber, 1925). Travel throughout the territory was common even though the distances varied with the location. Those that resided in valleys would travel long distances to hunt, fish or gather while mountain Maidu were less likely to travel such distances (Kroeber, 1925).

The territorial lands of the Maidu were actively managed by the tribe, primarily through fire. By consistently burning, they were able to maintain open country and many of the resources they depended on for food, clothing and basketry (Kroeber, 1925). Burning kept fields clear for hunting, shrubs were at a minimum, and grasses (such as beargrass) flourished (London, 2002).

Table 3 outlines the impacts of federal policy on the Maidu. The years following the handover of tribal lands to federal and state ownership were characterized by the forced removal of the Maidu to existing reservations and prison camps (London, 2002). Those that escaped relocation found work on non-native ranches as ranch hands. Although the relationship between

rancher and Maidu was oppressive, it allowed the Maidu to remain on their ancestral lands (London, 2002).

Table 3: Federal policy and its impacts on the Maidu.

Era	Act	Date Passed	Impacts to the Maidu
Relocation Era	Treaty with the Maidu	1851	Maidu ceded lands for a reservation
			Treaty was never ratified
			Maidu had no reservation
			Maidu were not federally recognized
	Lands Claim Act	1851	Made all of California lands public lands
Allotment Era (1887-1930)	Dawes Act	1887	Maidu Tribal members received no allotments because they had no Reservation lands
	Plumas and Lassen National Forest Created	1907	Maidu ancestral lands became national forests

Numerous changes in forest management techniques under the Forest Service have resulted in significant ecological changes to the area and many of the oak woodland areas that the Maidu once used for food, medicine, and weaving materials have been lost (London, 2002). With the loss of these resources, the Maidu's cultural and economical foundation has become threatened (London, 2002). Although the Maidu continue to gather subsistence resources from federal lands, they do so invisibly (London, 2002) and without treaty rights. This prevents the Maidu from assisting in the management of those resources that their culture depends on (London, 2002).

Today the Maidu are not federally recognized and are struggling to assert themselves in the management of their historical homelands (London, 2002). Although there have been numerous efforts to regain federal recognition, the historical disruptions of the Maidu makes it difficult to achieve

the Bureau of Indian Affairs' standards of cultural, social, and political continuity (London, 2002).

4.1.1.1.2 Relationship between Maidu and the environment

Although TEK means different things to different members of the Maidu community, there are components of TEK that all Maidu recognize. Maidu TEK consists of a relationship between human Maidu and non-human Maidu. Natural resources such as beargrass, willow, trees, and animals are referred to as non-human Maidu by members of the Maidu community. This relationship exists on a number of levels: as a kinship relationship with the land and the resources, as a subsistence relationship, and as a physical presence of humans on the lands.

A relationship between human and non-human beings can be seen in the Maidu community through their views of a kinship relationship with the land and its resources. When talking about human's relationship to chokecherry, Farrell, a member of the Maidu community, said:

> "Is this plant a commodity, or is it a relation? Is it neither of these two but an independent being who we are going to respectfully approach and ask to help it, to allow us to get through this world. Or maybe it is all three of these things and in fact it would be."

Lorena, a member of the MCDG, supported the idea that the relationship between human and non-human Maidu is a kinship relationship. She believes that you treat the environment the same as you would your family because they are your relatives: "TEK is tied into the way you feel about your land and your spirituality and how that plants and the land everything have spirits and how they are a part of your relatives."

According to members of the MCDG and the Maidu community, the relationship that exists between humans and the environment is also a subsistence relationship. Lorena explained that the health of the environment is related to the health of the community. She said: "we always talk about

healthy forests, healthy community, healthy family and you tie it all together." This subsistence relationship is one that has existed throughout the Maidu's existence on the landscape. According to Warren: "working with the resource was at one time the livelihood of our people," and although he implies that the Maidu people's subsistence relationship with the landscape was historical, subsistence activities still occur. While in the Maidu community I observed Maidu members making acorn soup, homes with native bulbs, and corms drying for human consumption.

Another important component in the Maidu's understanding of the relationship between humans and the environment is that the Maidu feel that the land responds to human activity and presence on the landscape. For the Maidu, the health of the land is directly related to the management of the land by the Maidu people. When talking about land management activities Warren said:

> "We want them all to receive attention and care because we feel that the plants recognize attention, they know when they're being treated, when they're being talked to, when they're being respected."

For one member of MCDG the response of the land to human activity has been seen immediately. In our interview Lorena said that: "just [having] people being out here, we're having a lot of plants coming up now and I firmly believe it's just because we're out here on the land."

4.1.1.1.3 Relationships within the environment

The Maidu's understanding of TEK is not only about an understanding of relationships between humans and the environment but also recognizes the ecological relationships that exist within the landscape. Farrell explained: "when I look at the relationships I understand that there are other beings in this world, there's insects and there's bugs and there's competition." Lorena supported this when she talked about the importance of willow:

> "The big ones have a purpose too, they're feed for animals and they provide shade, if they are along creeks they provide shade and make the water cooler for fish."

Warren, a member of MCDG, a Maidu elder, and subcontractor on the project implements the land management activities for the project. When talking about TEK and TEK land management activities, he explained:

> "Caring for the plants, knowing how to take care of them, how to dig for their roots and the tubers which is killing the soil and that helps their reproduction of other plants. The knowledge of animals, where they live, where they sleep, where they drink, where they eat ties right in with tending to the plants."

4.1.1.2 Forest Restoration on the Plumas National Forest

4.1.1.2.1 Overview of the Maidu Stewardship Project

The MCDG was developed in 1995 in order to address a decline in Maidu culture and traditional values, and to provide an avenue for members of the Maidu Tribe to be involved in forest management on their ancestral lands (London, 2002). In 1998, the MCDG developed a Maidu Sense of Place Action Plan that was designed to improve economic conditions in the Maidu community while enhancing local Maidu culture. The MCDG used this plan to apply for a special use permit that would allow them to implement some of the components of the action plan. However, the Forest Service denied the permit on three bases: it was an inappropriate use for public lands for activities that should occur on tribal lands, the history of the federal lands that were acquired by the federal government based on the loss of lands from the Maidu, and the status of the Maidu as an unrecognized tribe by the federal government (London, 2002).

As a result of this denial, the MCDG took the ideas and components of the Maidu Sense of Place Action Plan and applied to the National Stewardship Pilot program. This proposal had two components: 1) collaborative

communication protocols, and 2) the demonstration of Maidu TEK (Forest Service, 2004). In September of 1998 a notice of selection was sent to the MCDG from the Washington D.C. office of the Forest Service; the MCDG had been awarded one of the 22 original stewardship pilot projects (Forest Service, 2004). The Maidu Stewardship Project consists of 2030 acres of Forest Service land located in the northern Sierra Nevada Mountains of northern California. Approximately 1530 acres of this is located on the Plumas National Forest and the remaining 500 acres in on the Lassen National Forest. From 1998-2004 the MCDG and the Mount Hough Ranger District on the Plumas National Forest of the Forest Service worked to develop communication protocols that outlined the collaborative process (MCDG, 2000), the Environmental Assessment (Forest Service, 2003), the Landscape Analysis (Forest Service, 2004), and developed a contract that outlined how the Maidu Stewardship Project would be implemented (Forest Service, 2004). The contract was signed in March of 2004 and on-the-ground management began later that year.

4.1.1.2.2 Overview of the collaborative agreement

The Maidu Stewardship Project is governed through a contract that was signed by the Forest Service and MCDG. The purpose of this contract is to:

> "Implement the Maidu Stewardship Project. The Maidu Stewardship Project was developed to demonstrate Maidu TEK of land stewardship on lands that contain significant cultural resources. Stewardship activities are designed to improve forest, meadow, and riparian health by incorporating indigenous knowledge into progressive forestry..." (Forest Service, 2004).

The contract also lists vegetation management objectives for the stewardship area, which will be achieved through the use of TEK. These are:

> "enhance habitats for culturally important plant species, manage riparian areas for increased availability of quality maple and certain types of willow used by basket weavers, manage for beargrass,

> enhance food sources such as bulbs, corms, and tubers; promote general beautification of the forest; reduce wildfire risk by establishing fuel modification areas" (Forest Service, 2004).

According to the contract, the project area is 1,500 acres and stewardship activities will occur on 1,300 acres. Furthermore, the contract outlines the number of acres for a given activity. For example, it states that oak management will occur on 550 acres, enhancement of culturally important plants will occur on 195 acres, and willow management will occur on 45 acres (Forest Service, 2004). The contract also describes the desired end result and states that the end results will be accomplished by the work outlined in the Environmental Analysis (Forest Service, 2004).

4.1.1.2.3 The Implementation of Maidu TEK

The Maidu Stewardship Project was designed to provide the MCDG with the authority to implement Maidu TEK and traditional Maidu management practices. At the time of this research the MCDG was implementing some form of Maidu TEK for the stewardship project. However, it became clear that individuals within the MCDG and Maidu community have different perceptions of what Maidu TEK is and how it should be implemented. As a result, whether or not Maidu TEK is being implemented is a contentious issue within the organization and community. Lorena made this point when she said:

> "What other people have thought was TEK may not be, their idea of TEK may be different than my idea of TEK and I think that's where some of the conflict has come in on this project. People had different ideas of what TEK was."

There are two major philosophies regarding what Maidu TEK is and whether or not it is being implemented. For some members of the Maidu community and MCDG, TEK is about returning the forest to a healthy condition. Warren illustrated this point when he said:

> "When you go through and have everything spaced out and in an even way, then that doesn't look natural, it's unnatural. How friendly is that to the wildlife, I think we need to restore the forests health, we need to make it as natural as possible."

For others TEK is about a series of relationships between human and non-human Maidu. According to Farrell, TEK is about maximizing relationships: "for all of the different Maidu in this landscape, we have to maximize our relationships with each other so that each of us can reach our ultimate potential." Clark believes that TEK has a specific relationship to Maidu language, specific plants, and ecological processes. He said that TEK is: "learning the language and identifying the plants, knowing where they stand and the seasons they grow in is vitally important to native ecology."

Associated with the different understandings of what Maidu TEK is, individuals within the MCDG and the Maidu community disagree over whether or not TEK is being implemented. According to those who believe that TEK is defined by maximizing relationships TEK is not being implemented in current land management activities:

> "This is a standard timber sale with a hint at TEK or at least the idea that we sure wish we could do TEK. So instead of removing the oaks for example, we are leaving oaks but that's nothing exceptional." [Farrell]

However, those who believe that TEK is about restoring forest health; believe that TEK is being implemented. According to Warren, TEK is being implemented by improving forest health and increasing the natural state of the forest. He illustrated that point when he told me: "that part of the forest now is thinned, it's healthy, it's fire safe." Furthermore, Lorena added that TEK is being implemented because the Maidu and MCDG are actively taking care of the plants:

> "TEK is taking care of the plants. We are opening it up, thinning out the dead trees, thinning the bushes down. I just tell people, wait until next spring with the more sunlight coming down it's going to be green all the way through here, where before the trees were so thick that it was dark underneath and there weren't many plants on the ground."

The disagreement over whether or not TEK is being implemented remains a contentious issue within the MCDG and Maidu community. Failure to come to an understanding on how TEK will be implemented may damage the project by causing problems within MCDG and the Maidu community.

The Forest Service has influenced the MCDG's implementation of TEK by taking a hands-off approach to the implementation of on-the-ground management activities. From the beginning, many individuals within the Forest Service approached this project from the standpoint that this was the MCDG's project and they would implement Maidu TEK. According to Karen, a Forest Service employee who has worked on the project, there was no need for the agency to understand TEK because MCDG was responsible for demonstrating the knowledge:

> "One of the things we did up front early on was to say that the intent of this is for them to demonstrate it not for us, not for them to teach us. For them to demonstrate it and for them to be able to explain what it is when they are done."

Sharon, a Forest Service employee who has worked on the project, understands that when the MCDG implements TEK, it will appear different than standard Forest Service management practices. She said:

> "I think I will see TEK, I anticipate that there will be some taking care of individual plants, transplanting, and burning of beargrass clumps. By contrast the Forest Service typically does broadcast burning."

4.1.1.2.4 Validation of being Maidu

The MCDG and Maidu Stewardship Project were developed in an effort to retain cultural knowledge and demonstrate Maidu TEK. Individuals associated with the MCDG indicated the significance of the cultural legacy that this project can provide. According to Clark, this project is simply about being Maidu. He stated that: "we want to see it succeed just for our namesake and being Maidus we were able to accomplish this." Lorena indicated that the legacy of the project would be cultural preservation:

> "I think our goal, our vision is cultural preservation ... We want our kids, our grandkids to be able to take care of the land in the same way... That's why it's important that we make it work."

This view was supported by the Proposed and Need Action in the Environmental Assessment for the stewardship project. It states: "the primary purpose of the Maidu Stewardship Project is to develop an understanding of Maidu Indian culture by demonstrating TEK" (Forest Service, 2003).

4.1.2 Factors Influencing the Collaborative Agreement

The analysis of the Maidu stewardship case study presents four insights into factors that influence the collaborative arrangements between American Indian tribes and federal agencies. These factors are: 1) different perceptions of project goals, 2) the distribution of power and control, 3) organizational capacity, and 4) the collaborative process.

4.1.2.1 Different Perceptions of Project Goals

The MCDG, and its members, and the Forest Service have different understanding of the project goals. These differences can be attributed to the differences in the ecological, economic, and cultural goals of the individual organizations. Karen, a Forest Service employee who worked on the project said:

> "When somebody says just basic things like what do you picture when you picture a trail, their vision of a trail and my vision of a trail were totally different and it took a long time to figure out that we were talking about something totally different."

The contract states that:

> "The purpose of this contract is to implement the Maidu Stewardship Project. The Maidu Stewardship Project was developed to demonstrate Maidu Traditional Ecological Knowledge (TEK) of land stewardship on lands that contain significant cultural resources. Stewardship activities are designed to improve forest, meadow, and riparian health by incorporating indigenous knowledge into progressive forestry" (Forest Service, 2004).

This includes: enhancing habitats for culturally significant plants, managing riparian areas for increased availability of quality maple and certain types of willow used by basket weavers, managing for beargrass, enhancing food sources such as bulbs, corms, and tubers, enhancing acorn production, promoting general beautification of the forest, and reducing wildfire risk by establishing fuel modification areas (Forest Service, 2004).

The Forest Service's understanding of the project is based on their ecological goals and how they perceive the economic and cultural goals of the project. It became apparent through interviews with staff members that the ecological goals of Forest Service management have been focused on a few species, namely species of pine and other merchantable timber products. The holistic approach to management in the Maidu Stewardship Project was a new concept. This was acknowledged by Warren: "in the past, the focus has been on trees to the extent that they've [the Forest Service] wanted to destroy a lot of other vegetation." Karen, a Forest Service employee, said that the Forest Service has never really addressed ecosystem management:

> "We hardly ever have conversations about more of a holistic approach to vegetation and actually talking about the forbs and the understory vegetation and all of that as one. We mostly talk about acres of harvesting timber and then regenerating timber and those kinds of things."

However, the Forest Service appreciates the cultural goals of the project for the MCDG. Sharon made this point clear when she said:

> "I do think that one of the side benefits that MCDG is shooting for is preserving Maidu culture and traditions so these do not go away....having your kids do traditional practices keeps the culture alive."

Karen also recognized the cultural significance of this project. She said that this project was an opportunity for members of the Maidu community to reconnect with TEK and historical management practices:

> "There are people on the MCDG who have a very strong vision of being back on the land, implementing TEK, sharing that with others because there were eons of time where people were actually out on the landscape doing things and sustaining the landscape which doesn't appear to be happening anymore today."

Much like TEK, there are different perceptions of the project's goals within the MCDG and the Maidu community. These differences are based on the ecological and economic goals of the project. For some members of the MCDG and Maidu community the ecological goals of the project focus around managing for priority species. Priority species are those species that have the most cultural significance (such as oaks, willow, and beargrass) to the Maidu. According to Lorena: "this is an open canopy, a more nurtured understory for food, basket materials, medicine, berries and nurture the oaks instead of the conifers." Farrell stated that the goal of the project was to enhance oak growth and restore the forest to pre-contact conditions:

> "to create or recreate a mixed forest condition which would have existed here in the pre-contact era because oaks, being a primary food source for the Maidu, oaks were a favored tree species."

However, others within the MCDG view the project's ecological goals as overall forest health and not on a priority basis. According to Warren:

> "It's not trying to stay away from certain plants, it's getting rid of unwanted growth. It's looking at the trees, the ones healthiest, fastest growing ones and trying to save them. Taking out the suppressed, slow growing ones. It's like culling a herd, leaving the strongest and taking out the weakest."

In addition to struggling with different opinions over the ecological goals of the project, the MCDG also struggles with the role of economics. The Maidu Sense of Place Action Plan emphasized using Maidu culture to integrate economic development in the local community (London, 2002). Providing economic opportunities was one way to secure the community, an important component of the Maidu Stewardship Project. However, the significance of economic goals in this project varies within the organization. For some, the project focuses on economic development, and for others the project is about physically being back on the land. These differences are illustrated through interviews with MCDG and Maidu members. Lorena said that the goals and vision for the project have changed over time:

> "the vision has not changed from what is in the stewardship proposal. Somewhere along the way it got twisted to where you have to cut merchantable timber to pay the bills."

Farrell said that more of an emphasis has been placed on production:

> "I think we have begun to more of an emphasis on overall production but I couldn't quite understand it because we had written a proposal that made this basically a service contract without the need for revenue generation."

According to Lorena, the economic benefit of this project is minimal: "we don't want to make money, but we at least want to break even and we don't want to lose money doing it." However, for Warren, economic development is a major driver to the project. He said: "It's sad to see some real family people that are responsible not being able to work when they want to, so that was part of the idea behind this, as well as working with the natural resources."

4.1.2.2 Distribution of Power

When looking at the distribution of power within Maidu Stewardship Project it became apparent that power influences this project on three levels: 1) within the Forest Service, 2) within the MCDG, and 3) within the implementation of the contract.

The centralized, top-down model of the Forest Service's power structure is one factor that influenced the collaborative agreement through the project's initial approval. The approval for this project was handed down from the national office of the Forest Service in Washington D.C. to the Plumas National Forest (Forest Service, 2004). Karen, a Forest Service employee said that the project came to the local office from the D.C. office of the agency: "We (the Forest Service) received a letter from the Washington Office that said this project has been approved." Farrell added that the top-down direction from the Washington D.C. office allowed the project to move forward at the local level. He said:

> "He (Forest Supervisor) is a Forest Service officer so when he got direction from the regional level he went ahead and said well, ok we're going to move forward with the project. Now we had some problems and we weren't moving very quickly and so again, we had maybe resorted to some influence from the regional office and the regional office again contacted him."

Lorena supported this idea that the Maidu Stewardship Project has more support at the regional and national level than the local level. She said:

> "It seems like at the regional level we have real good relationships with the Forest Service that we can get more done regionally...if we have to go over their heads again, we'll have to do it. I mean we've done it in the past when we've had to and if we have to do it again we will."

The internal power structure of the MCDG is another factor that influences the collaborative agreement. Though interviews with individuals associated with the MCDG and the Maidu community, it became apparent that some individuals believe that MCDG is influenced and driven by a select few members of the organization's board. According to Farrell, this is a significant problem for the MCDG:

> "We have a problem on the board with power dynamics and some people think that they are in charge of the project even though they are one board member or two. Other people don't know what's going on with the project and feel completely disempowered with it."

According to Anne, the power structure of the MCDG once included all of the major families within the Maidu community and now it doesn't:

> "I think in this charismatic leader phase that we've been in, we've had most of the big families represented. The Washoes, the Marinos, Gorbets and Cunninghams and now I don't see that."

According to Jane, there is a lack of community involvement in the MCDG:

> "I think the one thing I worry about with MCDG is that they need more community involvement from the community at large. I would like to see other people step in."

In the Maidu Stewardship Project, the distribution of power between the MCDG and the Forest Service to interpret the contract is not equal because the majority of the power to implement the contract remains with the MCDG. The contract goal specifically states that Maidu TEK would be implemented (Forest Service, 2004) but does not specify what Maidu TEK is or how it will be

implemented. Therefore, under the collaborative arrangement the MCDG has the authority to interpret the contract and its implementation because they retain Maidu TEK. Sharon, a Forest Service employee supported this point when she said:

> "Their authority is the same as the Forest Service, equal authority. Contractually, MCDG has the authority to do the things on the ground. They decide what trees to take out, what plants to eradicate, enhance, or improve. How the landscape will end up is all under their authority."

Karen said:

> "It's their project. We've said that all along. It's not a Forest Service project. It's being done on public lands but it's their project demonstrating their knowledge to interpret to the world however they are going to do that."

Farrell, a member of the Maidu community also said that it is MCDG's responsibility to interpret the contract: "of course it's all interpretation of the contract and so maybe one of the challenges has been who has the right to interpret in that contract; and we would contend that MCDG has that right."

4.1.2.3 Capacity of MCDG to implement the project

The MCDG's organizational capacity is another factor that has the potential to influence the collaborative agreement and the implementation of TEK. This includes the MCDG's internal capabilities as well as the Forest Service's influence on the MCDG's abilities.

4.1.2.3.1 MCDG's internal capacity

The MCDG's capacity to implement the project is influenced by three factors: 1) the personnel to implement the project, 2) the retention of Maidu TEK, and 3) the cohesiveness of the MCDG board. Karen first said that MCDG represents a limited number of individuals: "MCDG and who they represent is a very, very small entity, I mean very few people are involved.

Everybody's related to everybody else." Lorena expanded on this idea when she said that MCDG is a small entity with an expanding workload:

> "We [MCDG] are stretched thin because we are working other things besides the land stewardship and that has caused problems because with only two part time employees it's been hard to do everything that needs to be done and we can't do everything."

According to Clark, there isn't the interest in the Maidu community to be involved in MCDG or the project. He also explained that those currently on the board are limited in their abilities:

> "On the board right now we've got two positions that are vacant and I don't have any idea how we are going to fill those positions. I think they should be filled by younger people for one thing, if I had my way about it but I see those that are on the board limited in their ability."

The second factor that was identified by interviewees regarding MCDG's capacity to implement the project is the retention of Maidu TEK within the Maidu community. Some members of the MCDG believe that the project is limited in who has the knowledge and expertise to implement the project goals and Maidu TEK. This was first pointed out by Lorena. She said: "for actually getting out and working on it, on the project, we don't have too many board members that can do that." Anne also made this point. She said:

> "If you look at the board, it's old...It's people that because of what happened to this community , there's this whole age group that was never raised traditional and that age group is quite concerned about the loss of the elders and that loss of culture in the children."

However, there are individuals who have a knowledge base to work from. Although Lorena said that they are limited in who has the knowledge, she did talk about two members of the Maidu community that do have knowledge. She stated: "they took the Maidu Ecology class, they know what plants that we

want to monitor and they know how to set the sites up." Moreover, Warren also said that he has the knowledge to implement this project:

> "I've been involved with this type of project before, not only on our land but other private lands. Not to the extent on federal lands or public lands because they haven't really allowed this type of project in the past."

The third factor that influences MCDG's capacity to implement the project is the level of respect within the MCDG board. All of the interviewees who were members of the MCDG stated that there is a lack of respect and cohesion within the board:

> "It use to be more cohesive, when there were less decisions to make, less hard decisions. I also think who gets to be an elected officer, it's always a mystery. All I know is that each time it happens there's more and more hard feelings." [Anne]

According to Warren there are noticeable differences in the level of respect between initial and current board members:

> "We have to trust each other, we have to respect each other, and that was a goal at the initial board, that was a big thing. We trusted and respected each other and treated each other the same way we would treat the plants."

Farrell also shared concerns that the current board members are not respectful toward each other and questions how they can implement the project with this lack of respect:

> "We need to be respectful, polite. When we say that we're going to be good to this landscape; we're going to treat them like our relatives, how are we going to do that if we can't even be good to each other."

4.1.2.3.2 Forest Service's support of the project

In addition to internal factors influence MCDG's capacity to implement the project, the Forest Service also influences MCDG's capacity through their

support of the project. The MCDG and the Forest Service have different perceptions of the Forest Service's support for the project. According to three different Forest Service employees, the agency has been supportive of this project. When talking about internal agency support, Sharon said that everyone is supportive of the project:

> "I have yet to meet someone who is not supportive of the project, past or present. The agency appropriates funding every year to support the project. The agency funding in conjunction with RAC funding supports the project and the project is tenuous without the funding."

Jim also saw agency support for the project through continued agency funding. He said: "even though it took a little bit longer then some of the other pilots to get started and get going, we kept pushing it and getting the agency to give us more time and money to make it happen." Karen said that without the agency funding this project wouldn't have happened. She said: "if we [the Forest Service] hadn't had the funding it would have fallen by the wayside for other priorities."

Although Forest Service employees feel the agency has supported the project financially, the MCDG does not believe that the agency has been supportive of the project's implementation. One way that members of the MCDG feel that the Forest Service is not supportive is in the inflexibility in implementing on-the-ground work. Lorena stated this when she said:

> "it gets frustrating sometimes when they come in and say, well you can't do this, you can't do that, or you need to do this, you need to do that when it's something that we didn't plan on doing."

Warren and Clark both stated that the Forest Service's restrictions on work days has been damaging to the progress of the project. Warren stated:

> "those days we've had to quit at one o-clock [due to fire danger], just like we did today... we can't just keep going like this, we're going to have trouble making our next payroll."

As a result of the different work hours, Clark noticed a change in progress. He said: "the Forest Service stepped in and gave them [the logging crew] different hours to work, hoot hours [ending a work day at 1:00 p.m. due to fire danger], and so consequently the work has lagged behind."

In addition to feeling that the Forest Service has not been supportive in the on-the-ground implementation, some members of the MCDG believed that the agency was not supportive in the decision-making process between the MCDG and the Forest Service. Lorena first said this when she talked about the pace at which things move through the Forest Service:

> "At the local level they were still working on it and doing what is required of them but they are doing it in a slow, snail, turtle, tortoise speed when they could have done it faster and they always come up with these excuses that they don't have enough money, or they don't have enough personnel."

Jane showed concern over the agencies lengthy processes. When talking about the agency's time to respond to drafts she said: "The Plumas would take two months to respond so that's when I started questioning [Agency] disappointments about [MCDG's] capacity."

4.1.2.4 The Collaborative Processes

The collaborative process is another factor that may influence the collaborative agreement. This includes the flexibility of the contract, trust, turnover in personnel, and the standardization of that process.

4.1.2.4.1 Flexibility in the contract

According to individuals associated with MCDG and the Forest Service, the contract was the desired form of collaborative arrangement for both organizations. Lorena illustrated the point that MCDG fought for the contract because of its binding nature:

> "We kept telling them and holding out for a contract because we wanted a contract, not a participatory agreement because to us it wasn't as binding. Not just binding on us, binding on the Forest Service. If we have a contract then they have to stick to the contract where it seemed like an agreement was easier for them to get out of."

For the Forest Service, a contract is the way business is done on the forest level. Karen conveyed that message to me when she said:

> "The reason we went with contract is because that is the world we live in right now. If the intent is sustainability, jobs in the community, people able to feed their families and stay here and try and find year round work, contracting is the way that is done on federal lands and it was a way to bring the Indian community into that world."

For some associated with the Maidu Stewardship Project, the regulations associated with developing the contracting authority have not been restricting. According to Karen, there are a number of ways to interpret the laws and regulations when developing the contract: "there are a lot of ways to follow the rules." Farrell, who was involved in the development process for MCDG, supported this: "the Forest Service has made some nice interpretations of the law and those interpretations are generally in our favor where possible."

According to MCDG and the Forest Service, the pilot status associated with this project provides additional flexibility to the collaborative process. According to two individuals interviewed with the Forest Service, the pilot status gives them a lot of flexibility in the project. Jim said: "because it is a pilot, we have a lot of flexibility to do what we need to do to meet the objectives." Karen explained: "having the title pilot project attached to the end of your description helps because you get to invent things as you go along." Lorena also recognizes the flexibility of being a pilot project. She said:

> "they haven't had a stewardship contract so it is something new to them too; and we keep reminding them that this is a pilot stewardship, it's made to try new things."

According to Forest Service personnel there has been an effort to build flexibility into the contract agreement. Karen made this point when she said: "we put a lot of energy into making the contract a flexible document on purpose so that it would allow flexibility for some things we saw coming." Jim supported this statement when he talked about the specifications of the contract:

> "The way the contract is set up is the mechanism to get the treatments done is specified, the methods to be used are specified as those TEK practices and...that is built into the premise of the contract."

One member of the MCDG and Maidu community agreed that the contract was not inflexible in implementing TEK. According to Farrell:

> "The working contract is a small part of the project and is a good means of on the ground management of TEK. I don't think the contract is preventing the implementation of TEK. We can work within its bounds."

4.1.2.4.2 Trust between the MCDG and the Forest Service

Another important component of the collaborative process is trust. Through interviews with individuals associated with the project, it became apparent that building trust in the collaborative process takes time. According to Karen, the pace of the collaborative process helps in building trust:

> "It's moving as fast as it's meant to move and... we've had several reviews where everybody has said it has been really nice to be able to go slow at the times we needed to go slow but that's where we built trust and that's where we could focus on being clear on something that we wanted to do and then move forward by leaps an bounds after that."

James added that trust is about individuals being involved at a personal level: "It's showing up at events, showing up at beardance, showing up at their ceremonies and that's part of the deepening of trust over time."

Although some individuals associated with the project believe that trust exists, others do not trust, or feel trusted by others involved. The distrust within the Maidu Stewardship Project exists on two levels: within MCDG, and between MCDG and the Forest Service. According to Karen, the distrust and fear is one of the more difficult components of this project within MCDG. She said: "The distrust and the fear is a really hard part of collaboration, if somebody thinks that somebody is getting something that they're not getting." Clark, a MCDG member, believes that the distrust within MCDG is one reason why there is a lack of involvement by other members of the Maidu community: "I think the board is going to have to realize that we do have some intelligent people, but they are not involved because of the distrust."

Although Sharon feels trusted by the MCDG, there is still a significant amount of distrust between the MCDG and the Forest Service. Some members of the MCDG do not believe that the Forest Service trusts them. Lorena said that she feels constantly watched by the Forest Service: "they've got more people keeping an eye on us or they just don't trust our judgment." Anne added that this distrust results from a lack of personal relationships. She said:

> "For ourselves to deal with the bureaucracy instead of going on personal relationships, on the integrity of individuals and shared commitment, for example when we do sit down and renegotiate this contract we're going to have to come in with all kinds of documentation that wouldn't have been necessary if the personal relationships were stronger."

4.1.2.4.3 Turnover in key personnel

According to individuals associated with the Maidu Stewardship Project, turnover in personnel has affected the general understanding of the project. Jim first made this point when he said that turnover with both organizations affects communication and implementation of the project:

> "As things go on, different players come in and out, on both sides and they aren't necessarily up to speed on the objectives, or what was the intent, and things like that."

Farrell said that turnover within the project was expected:

> "I thought as long as we had a consistent base then we had an organization that maintained a memory; some type of organizational memory that could push through with this project. Now that's still in place except that that I don't think the memory is there."

In addition to affecting the institutional memory of the project, turnover may also influence the support for the project. Lorena believed that uncertainty in the project accompanies changes in personnel:

> "You never know what the climate is going to be like. When Terri Simon-Jackson was the District Ranger we had a real good relationship with the Forest Service because she really believes in our project. Before that we didn't, [and] since then they have just had acting District Rangers, it hasn't been the same."

Anne said: "you either get people who are invested in it, or you don't. So I feel like I'm flipping a coin, we have to be prepared for both outcomes."

4.1.2.4.4 Standardization

Although there has been an effort to keep the contract as a flexible document, there is concern that the project has become standardized. Informants with both the Forest Service and the MCDG showed concern that the implementation process for the project has become standardized

(conformed to an outside standard). Farrell said that the project's implementation has been standardized toward a timber sale contract. He said: "It's becoming more and more standardized and less and less exceptional in that it is being standardized toward the timber sale format." Karen, a Forest Service employee recognized that the standardization of the project by the Forest Service has been frustrating for the MCDG. She said: "they were very frustrated about all the rules and regulations and paperwork...but we had no exceptions to any of those rules so we had to follow them."

According to some members of the Maidu community, the implementation process has not been the only aspect of the project being standardized. They believe that MCDG as an organization has become standardized. Farrell first said that MCDG became standardized out of simplicity: "it just turned out to be so much simpler to just run it [MCDG] as a standard organization." However, according to Lorena this change has allowed the MCDG to become involved in other projects:

> "MCDG is able to do a lot more in a year because of these changes. Things like the Maidu Summit meetings, FERC meetings, working to get land back for the Maidu. Before, there were great ideas, now they are becoming a reality."

Karen also believes that the standardization of MCDG into an organization was a conscious decision of the board in response to the fact that the Maidu are not a federally-recognized tribe:

> "It is an institutional mechanism that was a conscious decision made by the board, they couldn't just sit around waiting for tribal recognition. So we developed a non-profit for the expressed purpose of trying to create jobs and trying to maintain culture, and provide some basic access to institutional decision making given that there is no tribe."

Both Forest Service personnel and members of the MCDG recognize the potential impacts of such standardization on Maidu TEK. According to Farrell, Maidu TEK has never been practiced in a standard format:

> "for the knowledge, it's never been practiced in this way; there was no standard format, so standardization means that we standardized ourselves out right out of Maidu tradition."

Annie, a Forest Service employee working on the project also has fears that TEK is being lost due to over-standardization:

> "I am afraid that a little bit of the initial vision is going to be lost. It is difficult to combine contract relationship with the art of TEK. Once into the contract relationship, the vision or art were getting lost."

4.1.3 Summary

The MCDG has overcome a number of challenges to implement a collaborative agreement that gives them the authority to demonstrate Maidu TEK and integrate traditional management practices into the management of federal lands. This is an accomplishment not shared by many, if any, other tribes. In an effort to retain Maidu TEK, culture, and traditional management practices, the MCDG entered into a contract under the pilot stewardship authority to achieve these goals. They have done so without federal recognition and without tribal lands. Today, some form of Maidu TEK is being implemented on 1300 acres of the Plumas National Forest. However, different perceptions of what TEK is, how it should be implemented, and what it looks like on the ground threatens the success of the project. It divides the MCDG and Maidu community based on their beliefs over TEK's implementation, creates a lack of respect and trust within the organization, and presents a power structure that favors one belief over the other.

4.2 Wolf Recovery in Central Idaho: An Effort between the USFWS, the Nez Perce Tribe, and the State of Idaho

> "They were poisoning them, trapping them, shooting them. They poisoned us with blankets that had disease in them, measles and small pox, and so they poisoned us, they tried to starve us out, they killed us, they shot us, they declared war on us, they scalped, they paid money for Indian scalps, and all of this and yet we are still here so to me since we are still here we need to help our brothers, the wolf to survive."
>
> ~ John
> Member of the Nez Perce Tribe

4.2.1 Introduction

The relationship between the Nez Perce Tribe and grey wolves runs deep: it goes beyond respect for wolves as a species, predator, and independent being, to include a life and history that parallels that of the Nez Perce Tribe. Therefore, when the opportunity presented itself, the Tribe became an active participant with the US Fish and Wildlife Service to reintroduce wolves into central Idaho. This case study explores the collaborative agreements between the Nez Perce Tribe and the USFWS as well as the agreement between the Nez Perce Tribe and the State of Idaho. These arrangements facilitate the management of Idaho's wolf populations.

4.2.1.1 Background

4.2.1.1.1 History of the Nez Perce

Before European settlement the Nez Perce Tribe consisted of a number of villages, bands, and composite bands that were families and extended families that were bound by a commonality in language, land, and family. The Nez Perce Treaty of 1855 was signed by sixty headmen, indicating that there were at least sixty villages and bands of the Nez Perce Tribe at that time (Nez Perce 2003). Table 4 outlines federal policies and their impacts to the Nez Perce Tribe.

Table 4. Federal policies and their impact to the Nez Perce Tribe

Era	Act	Date Passed	Impacts to the Nez Perce Tribe
Relocation Era	Treaty of 1855	1855	Established a 7.5 million acre Reservation. Reserved the Tribe's right to hunt, fish, and gather in their ceded lands.
	Treaty of 1863	1863	Reduced the Reservation to 750,000 acres. Signed by some, but not all tribal representatives. This Treaty created tension within the Tribe.
Allotment Era (1887-1930)	Dawes Act	1887	Decreased tribal lands to 30,000 acres within the Reservation boundary. Created a checkerboard ownership within the Reservation boundaries.
Reorganization Era (1934-1960)	Indian Reorganization Act	1934	Recognized tribal governments and sovereignty rights. Provided federal funds to acquire additional lands.
Termination Era (1953-1970)	House Concurrent Resolution 108	1953	"Freed" Indians from federal control. Granted Indians full citizenship rights. Nez Perce Tribe rejected the government's offer of termination.
	Relocation Act	1954	Encouraged movement of Indians from the Reservation.
Self Determination Era (1970-Present)	Public Law 93-638	1975	Gave tribes the ability to contract certain services from the federal government. Nez Perce Tribe voted down self determination to retain the rights reserved under treaty.

Today the Nez Perce Tribe is located in north central Idaho on the Clearwater River. Their Reservation is 750,000 acres and includes river canyons, high grass prairie and ponderosa pine forests. The Tribe owns approximately 13% (97,500) acres of the 750,000 acres within the Reservation boundary (See Figure 1). The remaining 652,500 acres are privately owned.

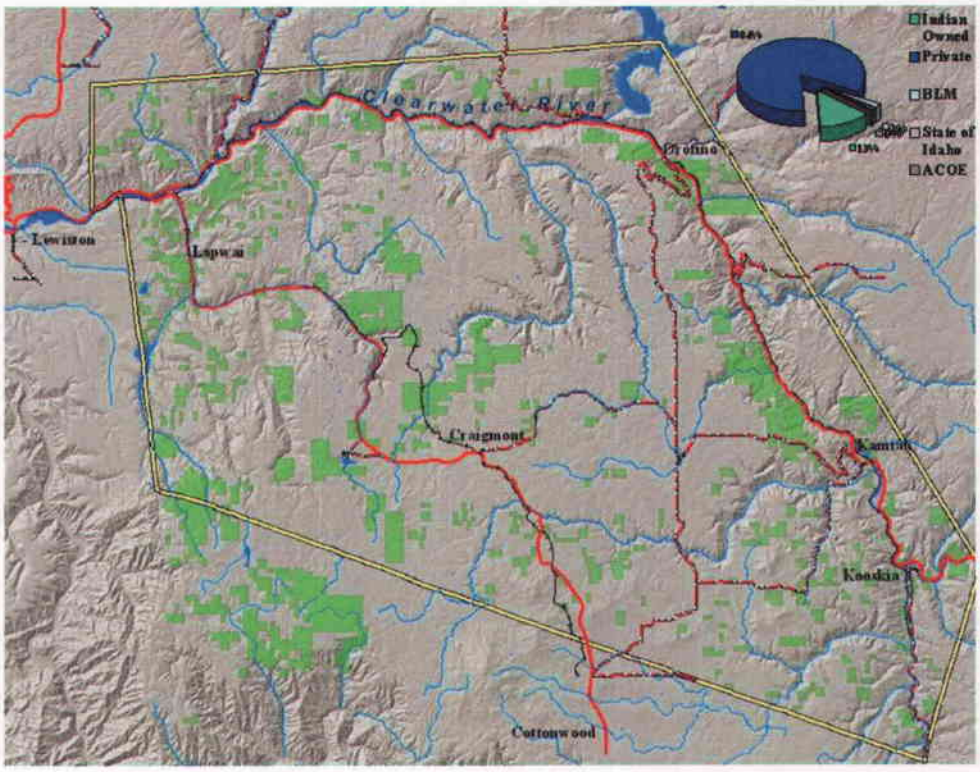

Figure 1. Distribution of land ownership on the Nez Perce Reservation.

4.2.1.1.2 Nez Perce Tribe's relationship to wolves

The Nez Perce tribal members have a strong personal relationship with wolves, recognize that wolves' survival parallels their own, and view wolves as an important component to the environment independent of humans.

Wolves are a brother, guide, and teacher to tribal members

The Tribal creation story teaches tribal members that humans were placed on the landscape after animals and therefore, the relationship between animal and human is that of brothers. Aaron Miles, the Natural Resource Manager for the Tribe, illustrated this relationship: "they are regarded as an equal to humans, especially the Nez Perce, so they're basically our brothers." Josia Pinkum, a member of the Nez Perce Tribe supported this statement. However, for him the wolf is held in a place of reverence because they are an elder relation to the Nez Perce:

> "It's a different relationship in that I'm down here and the wolves are up there. It's something that we look up to. Those are our older brothers. That's your elder kinsman because you look to them for guidance. They teach you how to live here because they've been here a lot longer than we have."

Nakia Williamson, another member of the Tribe expanded on this relationship when he talked about wolves as another tribe:

> "In some ways our people looked upon them as being like another tribe or another group of people. They're animal people, and they lived, and they hunted and they lived together in groups much the same that we did."

Robert said that all beings, as kinship to the Tribe, have a right to exist independent of humans. He said: "these animals, four-legged, winged, fin brothers are out there, were given a space here too, so why not honor that."

Both tribal members and non tribal members recognize that the wolf is a significant teacher to the Nez Perce Tribe. For a select few, the wolf is a spiritual guide that comes to them through "wyekin" a spiritual quest and spiritual guide:

> "The person that is blessed with that spiritual relationship is a conduit for that wolf lifestyle permeating the Nez Perce village, and that it's up to that key individual what to teach the rest of the people and what to keep private and personal, because there are things that that spirit requires that individual to do that can't be told to anybody else." [Josia]

Although this relationship is very personal and not talked about openly, tribal members respect it and do not question that it exists. Nakia illustrated this when he said:

> "It was something that was real to our people, not the everyday wolf you see that is in the mountains, but the essence or the spirit of that wolf would reveal itself or take pity on our people, on a young person, try to help them and give them certain attributes. And one man that had that kind of power had the ability to smell things much like he could smell the enemy, he could smell different things from a long distance away. And he used that in the 1877 war. That was one of the things that were given to him by a wolf."

This example that Nakia mentions is Yellow Wolf (H´imiin maqs maqs). He is a Nez Perce Warrior that attributed his success in the Nez Perce War of 1877 to his wyekin, the wolf. (McWhorter, 2000).

The lessons that the Nez Perce Tribe have gained from the wolf can be seen in Tribal structure and subsistence practices. The Tribe is comprised of a number of extended families known as bands that are similar to the extended family structures of wolf packs. Furthermore, wolves taught the Tribe about the importance of leadership. Josia said:

> "They're pack animals. Wolves, they teach you how to stick together. They have a pecking order. They teach about who should be in command. And those are important elements of any society that need to be in place in order for you to successfully make it through any kind of a tough situation."

The Nez Perce Tribe attributes their ability to hunt and stalk prey to wolves. Since humans were placed on the landscape among animals, they relied on the animal people to teach them how to survive (Nez Perce Tribe, 2003). This relationship is appreciated by Curt Mack, a non tribal staff member for the Tribe. He explained:

> "Of course the wolf is a big game hunter and they respected the wolf as a premier hunter, the wolf moved around the country, moved through great distances and traveled through the country, as the seasons changed, following game, and of course the Nez Perce Tribe folks did that as well."

Robert supported the idea that the Nez Perce Tribe learned to hunt from observing wolf packs. He also explained that the Tribe's approach to raising children is similar to the way that wolves raise their young:

> "We learned how to hunt; we even learned how to care for our children as earliest native as we watched the alpha male and female go off and hunt, as we understand that they, the Beta, the members of the family, might remain and stay, the whole pack stay, and care for the children."

Josia expanded this idea to illustrate that the Nez Perce Tribe learned many lessons from not only wolves but other animals as well. Learning from the animals that existed before them was a natural learning process for tribal members:

> "The grizzly bears taught the Nez Perce people how to travel and how to get huckleberries, roots, eat deer, eat salmon. And then the wolves came along and taught them how to stick together, how to hunt, and do some other things. And so it's like a natural transgression of teachings over the many, many generations that brought us to the point where we're at now."

Wolves' survival parallels the Nez Perce Tribe's survival

In addition to connecting to wolf as a brother, guide, and teacher, the Nez Perce Tribe and wolves share similar struggles with western expansion. Both the Tribe and grey wolves were viewed as barriers to the expansion of the West and experienced times when others sought to terminate their existence. John, a Nez Perce Tribal member, explained this idea clearly:

> "The United States government got in that same mode of completely wiping out the Indians and then the non-Indians could then take over all of the territory and have everything...the wolf was kind of put in the same deal, ranchers, would bring in their sheep and cattle and move them right into the areas where the wolves lived and then as they did, they started to decide that we didn't want the wolf...they were paid for wolf hides, wolf pelts, and so they made it legal to go out and kill wolves."

Nakia said:

> "To see them [wolves] being persecuted in such a way where there are those that say that they have no right to exist, you know, that they come into conflict with humans it parallels what happened to Indian people at that time where we came into conflict with these new people that came to this land because we didn't fit to their idea of the way humans should be."

Robert explained that this similar past creates an understanding between wolves and the Tribe that no one else may understand:

> "You [settlers] hated the wolf, you hated the Indian. You feared the wolf, you feared the Indian, you killed the wolf, you killed the Indian, you drove the wolf off the land, you drove my people from the lands. So I have a feeling and a relationship and an understanding of this conflict that mirrors my own history, my own lifestyle, my own hardships are woven and tied to those sort of treatments and understandings."

Wolves are an important component in a functioning ecosystem

Members of the Nez Perce Tribe also view wolves as a significant component of a functioning ecosystem. During an interview, Keith Lawrence, the Tribe's Wildlife Program Coordinator, said that western society tries to control the environment so that they may understand it. In doing so, they fail to see the relationships that exist independent of people:

> "I think that we just have it within ourselves from that orientation that we want to control things, and we haven't stopped to study the interrelationships and how the redundancy in the systems works. And I think we've reduced that by simplifying things to decisions that we can understand."

According to Josia, the wolf is an important part of the local landscape and ecology that the Tribe is dependent upon:

> "[wolf removal is] not compatible with this land. It's not compatible with the relationship with the land, because they [wolves] are an important part of our microcosm. They're important to the biodiversity."

When talking to Scott, a tribal member, he said that because wolves are an important component to the ecosystem when they are absent the system does not function properly:

> "We believe that all living things are a part of our way of life, all animals and birds, insects. Anything that lives on the ground and in the ground, in the water, they are all part of our way of life. Anything that lives or grows is part of our circle of life. So when one of them was completely gone, it's off balance."

Nakia explained that the role of wolves within the environment is the same as humans and therefore have a rightful place on the landscape alongside humans: "We survived on the deer. We survived on the elk. Other predators such as wolves, such as grizzly bears, and they have their own claim to that just as well as we have." Nakia went on to explain his pride in the Tribes' involvement in wolf recovery. For him, the recovery is about returning wolves to an ecosystem that needs them:

> "I'm pretty proud that our Tribe took such an active role in that whole process, and that's probably the least that we could do, to re-establish them in areas. Because it's not only the wolves, the wolves need to live, the wolves need to have a place to be, they deserve that right to live, but the land needs them."

4.2.1.2 Wolf Recovery

4.2.1.2.1 Timeline of wolf recovery in the United States.

The decline in wolf populations can directly be attributed to the expansion of settlers into the West. As settlers came to the West they brought with them cattle and agriculture. Wolf habitat was converted to agricultural lands and predator extermination programs encouraged settlers to kill wolves. By the 1930s, wolves had been eliminated from the western United States. From the 1940s until their reintroduction, wolves remained scarce.

In 1973, grey wolves were listed as endangered under the Federal Endangered Species Act (ESA) (16 U.S.C. 35). This gave the US Fish and Wildlife Service (USFWS) legal authority to oversee wolf recovery. By 1987, the USFWS had developed the Northern Rocky Mountain Wolf Recovery Plan. This plan established three recovery areas: the Yellowstone Recovery Area, the Northwestern Montana Recovery area, and the Central Idaho Recovery Area. The plan listed the species as a non-essential experimental population, allowing lethal and non-lethal control measures to be taken under section 10(j) of the ESA. By 1991, a wolf management committee presented a plan that would allow reintroductions into the Central Idaho and Yellowstone recovery areas as non-essential experimental populations. The final Environmental Impact Statement (EIS) released in 1994 stated that both States and Tribes may have roles in the statewide recovery effort (USFWS, 1994).

Although the legal authorities were in place, in response to the controversy surrounding wolf recovery, the Idaho State Legislature passed Idaho Code § 36-75 (Wise et al., 1991). It prevented the Idaho Department of Fish and Game from having any involvement in wolf reintroduction (Wise et al., 1991). Therefore, the Nez Perce Tribe and the USFWS took responsibility for the reintroduction and recovery effort. In order to reintroduce wolves into central Idaho, the Nez Perce Tribe developed a statewide wolf recovery plan. Once this plan was approved in 1995, the USFWS and the Nez Perce Tribe

entered into cooperative agreement #14420-5-J040A. This agreement delegates management authorities and responsibilities between the USFWS and the Nez Perce Tribe (USFWS, 2005).

In 1995 and 1996 a total of 35 wolves were reintroduced into central Idaho. Under the Northern Rocky Mountain Recovery Plan, 10 breeding pairs of wolves were necessary to establish a self sustaining population for de-listing from the ESA. By 1999 these recovery goals had been met (Mack et al., 2005). In 2002, all three recovery areas had achieved their recovery goals and the USFWS began the process of downlisting grey wolves from endangered to threatened.

At this time the State of Idaho entered the wolf recovery effort so they could assume management authority over wolf populations within the State once de-listing occurred. The Office of Species Conservation and the Legislative Wolf Oversight Committee developed Idaho's Wolf Conservation and Management Plan in 2002. This plan lists wolves as a game and furbearer species upon de-listing from the ESA and allows the State to manage the population as such (State of Idaho, 2002). In 2003 Idaho's Legislature passed House Bill 294, which formally removed the restrictions on the State and allowed the Idaho Department of Fish and Game to implement the State of Idaho's Wolf Conservation and Management Plan.

In 2003 the USFWS officially downlisted wolves. However, on January 31, 2005 a federal judge reversed the down-listing rule and wolves were re-listed from a threatened to an endangered species. The judge found that in order to de-list wolves the recovery goals must be accomplished in each distinct population segment and that each state must have a management plan approved by the USFWS. Although Montana and Idaho both have management plans in place, Wyoming and the USFWS have yet to agree on a management plan. The court took the position that wolves were listed as a single population and will be de-listed as a single population.

On February 7, 2005, a new 10(j) rule went into effect which allows states in the recovery area to petition the USFWS and the Department of Interior (DOI) to assume management authorities from the USFWS (50 C.F.R. 17). The State of Idaho petitioned the DOI for management authority and the agencies signed that agreement on January 5, 2006.

In response to this shift from federal to state management, the Chair of the Nez Perce Tribe Anthony Thompson and Governor Dirk Kempthorn of Idaho entered into a Memorandum of Agreement (Tribal-State MOA) in April of 2005. This agreement coordinates wolf conservation and management activities in the State of Idaho between the Tribe and Idaho Department of Fish and Game.

4.2.1.2.2 Overview of the collaborative agreements

The Nez Perce Tribe's agreement with the US Fish and Wildlife Service

The agreement between the US Fish and Wildlife Service and the Nez Perce Tribe was first signed in 1995 and was revised in 1998 and 2005. The changes between these agreements are minimal and therefore the one discussed here is the 2005 agreement that they currently function under.

The purpose of the agreement is:

> "[to] delegate management authority to the Nez Perce Tribe for the implementation of wolf recovery, [while] the USFWS retains overall responsibility in the wolf recovery program, and that the USFWS acknowledges and supports the implementation of the Tribal-State MOA" (USFWS, 2005).

This agreement states that:

> "the USFWS maintains responsibility for the recovery and management of wolves, retains law enforcement responsibilities, answers to the Secretary of the Interior regarding all policy issues, cooperates with the Tribe in the development of informational and educational materials, provides technical and field assistance, and coordinates

> with the Tribe and other parties involved." (USFWS, 2005).

It also directs the Tribe to: implement the operational aspects and shared roles and responsibilities as outlined in the Tribal-State MOA, monitor the activities, movements, distribution of wolves in the Clearwater and McCall sub-regions, cooperate in managing problem wolves by conducting proactive outreach efforts or implementing non lethal control measures, and conducting information and education activities, assist the USFWS in conducting such activities among affected agencies, local governments etc..., and support the USFWS in investigating dead wolves (USFWS, 2005). Furthermore, the agreement recognizes the funding allocation formula outlined in the Tribal-State MOA and states that they will support the Tribal-State MOA but that they are not responsible for funding the agreement for amounts that are in excess of their appropriated budget.

The Nez Perce Tribe's agreement with the State of Idaho.

The memorandum of agreement between the Nez Perce Tribe and the State of Idaho was signed in 2005. The purpose of the agreement is to:

> "promote coordination and communication in the conservation of wolves in Idaho, in which the Tribe and the State share a mutual concern, designate responsibilities for each party with respect to wolf conservation in Idaho, outline strategies for jointly obtaining funds for wolf conservation, and delineate a process for considering and recommending quantity of sport and subsistence harvest of wolves according to a fair share agreement between the Tribe and State" (State of Idaho, 2005).

The agreement lists four principles:

> "biology should drive wolf population and harvest decisions, the Idaho Department of Fish and Game and the Tribe will coordinate at technical and policy levels to achieve the terms and conditions of the agreement, the State and Tribe retain respective harvest management authorities independent of each other, and wolf population and harvest goals are established collaboratively" (State of Idaho, 2005).

The roles and responsibilities of both the State and the Tribe are outlined in the MOA based on sub-regions. According to the agreement the Tribe is responsible for monitoring, outreach, and information and education in the McCall and Clearwater sub-regions while the Idaho Department of Fish and Game is responsible for these activities in the rest of the State. Furthermore, the agreement states that research and funding will be coordinated between the Idaho Department of Fish and Game and the Tribe and that both parties will assist in control measures in their designated areas (State of Idaho, 2005). This agreement also establishes technical and policy committees, determines a fair share allocation of harvestable surplus, allocates funding between the Idaho Department of Fish and Game and the Tribe, and calls for close coordination between the parties (State of Idaho, 2005).

4.2.1.2.3 Implementation of TEK in the collaborative agreement

Nez Perce TEK of wolves is an important component to the collaborative agreements and the Tribe's motivating factor for recovering wolf populations into central Idaho. The Tribe has used management techniques consistent with western science to achieve the cultural and spiritual recovery surrounding wolves. Furthermore, this emphasis on western scientific management techniques can be seen in the Memorandum of Agreement between the State of Idaho and the Nez Perce Tribe. It states that "biology should drive wolf population and management" (State of Idaho, 2005). Although Nez Perce TEK is the motivating factor behind their involvement in wolf recovery, the Tribe has taken the approach that biology and other western

sciences would drive the recovery effort. This decision was made because the Tribe believed that this approach would provide the Tribe's wolf program with a certain level of transparency to other institutions. This approach would allow other agencies, such as the USFWS and the State of Idaho, and their biologists the ability to look at the tribal program and understand the science and techniques that they have employed. Keith Lawrence said that this transparency has always been important to the Tribe's efforts: "the program has been built on science so that there's long transparency on why the effort is doing what it's doing." He added that this approach provides validation to the Tribe's program. He said: "using the best science keeps it very clear on what the Tribe is doing and why it's doing it. It validates the program that we have."

This emphasis on science and biology within the recovery program does not minimize the role of TEK; rather tribal members believe that the persistence of TEK is a personal responsibility. Their beliefs surrounding TEK and tribal culture require that individuals have a responsibility to learn, share, and practice TEK independently. Josia said:

> "Culture doesn't come to you. You have to go to it, it doesn't care about, what color you are, it doesn't care about your grades or anything else. It responds to interest...I was told that...one of these days you're going to see that white people are doing your culture, and they're going to be good at it, and that's to remind you that this culture, this way of life and the language, it's not here for you to take advantage [of], take for granted. You have to earn that, and so do your best."

For Robert, this personal responsibility for cultural persistence includes teaching his grandchildren about wolf, the spirit of the wolf, and hunting wolf for personal and spiritual growth. He said:

> "I am a hunter, I am a fisher and there will come a time, where I will want to hunt the wolf. And I will take my grand children, and I will teach them about what it is when we go after this spirit and its wisdom, its strength and the cunning it will take to meet at a level, at a plateau, this animal's skill and belief and gift. If you are able to achieve that then we might retain a portion of that spirit power and wisdom and apply it throughout life and we would grow with it."

Nakia expanded on this idea to explain that individual responsibility for cultural persistence is more important today because of a shift towards western society as a dominant culture. He said:

> "People are beginning to think more and more like the dominant culture, and our way of thinking is kind of being pushed aside, our original way of thinking... The elders, their voice and the ones that truly have the teachings, that have gained those teachings through their elders are being minimized, they're being silenced to some extent, and [it's] really up to the younger people now to really seek out that true knowledge that is rare and all of the elders have."

4.2.1.2.4 Validation of the Nez Perce Tribe's management abilities

The wolf recovery effort in Idaho provided the Nez Perce Tribe with the opportunity to prove themselves as effective natural resource managers across a large geographic scale. This is important because, according to John, the Tribe struggles more than western society to achieve similar goals: "we have to fight three times as hard to get the same win."

The success of the wolf recovery effort in the State of Idaho has been a large stepping stone for the Tribe as natural resource managers. Keith said that this opportunity was significant because it included treaty lands and was an opportunity for the Tribe to demonstrate their abilities:

> "There was an opportunity here to be involved in a fairly large sense to show what the Tribe can do, a big geographic area, staking that claim to the treaty territory, getting recognition that the Tribe is able to handle complex management issues and to demonstrate that."

Curt said that this was an opportunity for the Tribe to show their expertise:

> "if we become the primary government, sovereign entity that is recovering wolves in the State of Idaho what a great opportunity to show the Tribe's expertise as a natural resource manager."

Not only did the Nez Perce Tribe accomplish the goals that they set out to achieve, they did so faster than the Yellowstone or Northwestern Montana Recovery areas (USFWS, 2004). The central Idaho recovery effort was the last to be implemented and the first to reach its recovery goals (USFWS, 2000). Carter Niemeyer, the Wolf Recovery Coordinator with the USFWS, supported the idea that Idaho's recovery effort was a significant success when he compared Idaho's program to Montana and Wyoming:

> "I think we've got a better program in Idaho than Montana or Wyoming has. I think we're on top of things. Our wolf population is growing. We've killed the fewest wolves throughout the year. We have some depredations, but proportionately the wolf population here is larger than in the other two states and we have less problems."

Through their success in the recovery effort the Tribe has gained the recognition of outside institutions. Their efforts have won the Harvard Self Governance Award (John F. Kennedy School of Government, Harvard University, 2006), and the Tribe's lead staff biologist on the recovery effort was named to the Audubon Society's list of top 100 biologists. (Audubon Society, 2006)

4.2.2 Factors Influencing the Collaborative Arrangements

4.2.2.1 Power in the Tribal-Agency relationship

4.2.2.1.1 Tribe's utilization of the State Government's structure

The power structure within the State of Idaho's government is an important component of the Tribal-State MOA. The Tribe's status as a sovereign government provides them with the opportunity to enter into agreements with top level staff within agencies, completely bypassing local offices and staff. This is what occurred in the Nez Perce-State MOA. As mentioned earlier, the agreement was signed between Governor Kempthorn and the Tribal Chair, Anthony Thompson, for the Nez Perce Tribe. Without this direction from the governor, the agreement would not exist. According to Steve Nadeau, the Large Carnivore Program Coordinator with Idaho Department of Fish and Game, the Idaho Department of Fish and Game would not have sought out this agreement with the Nez Perce Tribe and the Tribe's responsibility in the project would be significantly less:

> "It was up to the State, and the governor decided that's what he wanted...If it was up to the Fish &Game, we would have had probably a different arrangement...We probably wouldn't have given them the...agreement that they got. As a matter of fact, I'm sure we wouldn't have. We would have gone with something much different. This was an agreement between the governor and the Tribe."

Research in Canada that looked at collaboration between First Nations and the forest industry found that a top-down power structure is one of the most important ingredients in the success of these agreements (Hickey and Nelson, 2005). A strong commitment by the leadership of both parties is necessary to formalize that commitment (Hickey and Nelson, 2005). Therefore, if changes in personnel or priorities occur, both parties remain bound by the prior commitments. This commitment between leadership resulted in the current agreement and shared responsibilities between the Idaho Department

of Fish and Game and the Nez Perce and without it the Tribe's role in wolf recovery would be further reduced or non-existent. When talking about the harvest allocation of wolves between the Nez Perce Tribe and State of Idaho that is outlined in the agreement, Steve with the Idaho Department of Fish and Game questions whether or not the agreement is going to work. He said:

> "what good is an agreement if we don't know whether that agreement is ever met? We don't think that it's [the agreement is] worthwhile doing, but they're [the Tribe is] pushing to do it so that they [Tribe] have an allocation guaranteed."

However, Steve also recognizes that it is his responsibility to implement the agreement: "it doesn't matter what my view is now. I mean, the MOA is signed, and I do what I have to do to work through this."

4.2.2.1.2 Nez Perce treaty right to harvest wolves

The Nez Perce Tribe's legal right to be involved in wolf recovery is based on their treaty with the federal government. The Treaty of 1855 retained the Tribe's right to "hunt, gather, and to pasture livestock in open and unclaimed land, and naturally to take fish at all usual and accustomed places inside and outside Reservation boundaries" (Nez Perce Tribe, 2003). According to Curt, the legal underpinning for the Tribe's involvement is their treaty right to harvest wolves. He said: "when we negotiate things we have to boil it down to if this doesn't work, we are going to court, where are the legal footholds? The legal foothold is a treaty right to harvest wolves." Sam Penny, a member of the Nez Perce Tribal Executive Committee, also said that their involvement in wolf recovery is a treaty right:

> "When we ceded millions of acres of land to the federal government it also created... a unique and legal relationship [trust relationship] between the federal government and the Tribe. The Department of Interior is a federal department, they have a trust responsibility to the Nez Perce Tribe which includes the USFWS."

According to Robert, the assertion of these treaty rights and tribal sovereignty are the most important components to the agreements:

> "It is an assertion of that treaty, it is an assertion of your sovereignty, but you have to be willing to stand behind it, and you have to gamble, a little bit and in today's times and with the government that is in place."

However, according to Steve with Idaho Fish and Game, the Tribe's treaty rights are with the federal government and not the state government:

> "The feds have a treaty obligation with the Tribe...the State doesn't...We don't have those agreements and those requirements, and we feel that our requirements are much different than the feds. The feds can give them the money. The feds can do those sorts of things that they have to do...the State as part of the United States has to fulfill the fed's obligations, but we still don't have those requirements."

Robert also talked about the State's inability to accept the Tribe's treaty rights in the absence of federal involvement:

> "You had a treaty and it reserved these things, and all was rosy in a sense of what you gave and provided and to [be] held in trust by the federal government but the federal government is diminished now and we are here, and they are gone, so forget that too."

This discussion of tribal sovereignty and state's rights is a contentious issue within tribal policy. In Idaho's wolf recovery, similar and overlapping responsibilities between the State and Tribal governments have created a jurisdictional dispute. The State feels that it can not give up its authority to manage wildlife, whereas the Tribe argues that it has a right to co-manage wolves in the State of Idaho. According to Steve, the Tribe does not have the right to co-manage wolves within the State of Idaho:

> "One of the things that we don't want to do is co-manage. The Tribe wants to co-manage. The State does not want to lose any of our management authorities, so we do not want to co-manage. We removed "management" as a term from our MOA with the Tribe. We changed the term to "conservation" of wolves, because we cannot co-manage. We cannot relinquish any of our federally granted State rights."

He also emphasized that this is not only an issue for the Idaho Department of Fish and Game but other state agencies as well. He said:

> "I speak with other agency employees, and some of the toughest things in our careers have been dealing with the Tribes and tribal rights, because they're trying to increase their authorities, take away from our authorities and management abilities."

The relationship between the Nez Perce Tribe and the State of Idaho is strained and uncertain. Although the agreement outlines the specific roles and responsibilities of the stakeholders, the different interpretations of the agreement and its implementation will cause problems between the State and the Tribe. This will only compound the already difficult relationships that exist between Tribes and States.

4.2.2.2 Common goals in the collaborative agreements

The collaborative agreements have been one avenue to achieve common goals in wolf recovery and management. Kyle, a staff member for the Tribe said: "the agreements are signals that we're on a common trajectory for agreeing to what wolf recovery [is], what needs to happen in terms of wolf management." The detailed nature of the collaborative agreements allows the stakeholder to have a single approach to the tasks outlined in the agreements. According to Curt, a common approach to management and recovery was a conscious decision by those involved:

> "If you have multi-agencies or governments, in this State we have tribal, federal and state governments involved in the same program, if we are going to have an effective program we have to be speaking with one word. So we have to have the same message with the same kind of outward philosophy anyway and same approach to resolving issues and conflicts that arise."

Kyle also stated that the technical components of the collaborative agreements are an important component to the project. He said: "[the agreements address] the technical elements of ... how many packs represent a successful wolf recovery in Idaho." This technical component not only defines a successful recovery but includes data analysis, protocols, reports, and outreach to address public concerns. Curt said:

> "Another issue has been to try to work with all the cooperating agencies and work on coordination, communication, and consistency of approach. Consistency in protocols, consistency in messages going to the public that is an ongoing issue that we have worked very hard on and I think we have made good progress on."

Furthermore, the agreements support a consistent approach and state that coordination and cooperation is to occur at a technical level. Both the Tribal-State MOA and the Tribal-USFWS collaborative agreements support common goals by outlining coordination for technical and policy committees, information sharing, data collection, report writing, articles, publications, and informational media (State of Idaho, 2005; USFWS, 2005).

Despite collaborative agreements and common goals, individuals may interpret their roles and responsibilities differently. The Tribal-State MOA states that the Nez Perce Tribe is responsible for monitoring, outreach, and information and education within the McCall and Clearwater sub-regions (State of Idaho, 2005). According to Steve with the Idaho Department of Fish

and Game, the Tribe's authority is restricted to the Reservation and outside of that; the Tribe is a contractor for the State:

> "I'm the designated agent to handle wolves for the State. The Tribe is not the designated agent except on the Reservation, but we have an agreement with the Tribe to count wolves."

4.2.2.3 Ownership in the collaborative process

Both the Tribal-State and Tribal-USFWS collaborative agreements define distinct roles and responsibilities for the individual stakeholders. According to Curt, these agreements are designed to prevent overlap in individual responsibilities. He said: "the cooperative agreement outlined who had what responsibilities and made sure that they were coordinated and we didn't overlap." This view is supported by the written agreements. According to the agreements, parties fall into either a leadership role or assistance role depending on the situation. For example, the cooperative agreement between the USFWS and the Nez Perce Tribe states that the Tribe is responsible for on-the-ground management activities. The agreement also states that the USFWS will provide assistance to the Tribe when time, money and resources allow (USFWS, 2005). Therefore, in a management situation the Tribe has a leadership role while the federal agency assists. Under the agreement with the State, the State of Idaho leads the recovery effort outside of the McCall and Clearwater sub-regions. In those areas the State is in a leadership role and the Tribe assists (State of Idaho, 2005).

This view is further supported by individuals associated with the project. According to Curt the Tribe's agreement with the USFWS outlines that the Tribe is responsible for the day-to-day management of wolves:

> "It [agreement] also outlined those responsibilities that the service would transfer to the Nez Perce Tribe and the Tribe would have responsibilities for and that was basically all the day-to-day wolf recovery, management, biology sorts of things."

Carter with the USFWS said that the Tribe took over the day to day management under their agreement:

> "The role of the Tribe is the same as it's been; they are the principal field representative. Like I'm the Wolf Recovery Coordinator, but I have no one under me. I have no one to manage, and through our co-op agreement with the Tribe, we hand those responsibilities over to the Tribe."

Keith said that the USFWS has primary responsibility for law enforcement:

> "we never took on any law enforcement function or the policy function, the policy of deciding which wolves lived and which wolves died and how to take care of depredation, the Fish & Wildlife Service made those decisions."

These defined roles and responsibilities provide each stakeholder with shared ownership in the project because they contribute something unique to the overall effort. The Tribe and State have ownership through their management responsibilities, whereas the USFWS has ownership through their federal oversight of the project. The coordinated effort between the stakeholders accomplishes a common goal; the recovery and management of grey wolves in Idaho.

4.2.2.4 Impacts to the Tribe's ownership in the recovery process.

A major challenge for the Nez Perce Tribe has been the change in tribal responsibilities with the introduction of the State into the management process. Although the Tribal-State MOA defines individual responsibilities, the Tribe maintains that its work is being turned over to the State from the USFWS. Their ownership in the management process is being decreased.

The Tribe's frustration is grounded in the belief that they took responsibility for what would have been traditionally the State's role and the State did not want to be involved until the recovery was successful. John made this frustration clear when he said:

> "Their legislation did a resolution and sent it to congress saying they didn't want the wolf in the State of Idaho and you know it was a big resolution and it explained why they didn't want it and all of that but they just flat out didn't want wolves and then after the Tribe took it and brought the wolf back now they want to be involved."

John also points out here that there is a belief that the Tribe's work is being given to the State and that it is a disservice to the work that the Tribe has accomplished. When talking about the involvement of the State through the Tribal-State MOA, said that: "the way that things were worked out I think it is a slap in the face." Robert also showed frustration over the Tribe's current role in the recovery and management of wolves:

> "The current situation is that we have been diminished, we are on the sidelines, we are on the bench, we are watching wolves being taken, we haven't the opportunity to assert a treaty right of harvest, our co-management has been reduced to a tribal Reservation boundary, funding for the government has been cut immensely, a respect and a relationship with a State government has been harmed."

Aaron said that the Tribe's role is being diminished through an unequal allocation of funding by the government: "they're trying to give them [the State] a head start by giving them federal appropriations that we've worked for through the U.S. Fish & Wildlife Service." Carter, with the USFWS, also believes that the change in funding allocation between the Tribe and the State has been a way to fast track management to the State of Idaho:

> "You just see by the way the money is being distributed or being directed that more funding is going to the State than the Tribe, so I see that allowing the State, of course, to build a bigger infrastructure and have a greater role by just the amount of resources they have."

Carter believes that this shift in funding and management responsibility is the result of political influence. He voiced this concern when he said:

> "I see there's going to be a vulnerability as the State transitions into this...I see them much more vulnerable to political pressure because you've got the Fish & Game Commission, you've got county commissioners, you've got the Cattle Association, Wool Growers, the legislature, the governor... there's going to be people saying: "Okay. Now we've got these wolves. We're managing them, we're calling the shots, and I want something done about this." "

There is a fear that funding and management will be influenced by the sportsmen and other individuals who are outspoken against the recovery effort. Carter said that he has concern over the impact of outside lobbying on the budgets. He said:

> "The budgets are obtained through Senator Craig and you know Idaho Cattle and other people out there, other entities, the governor's office, all of these people are lobbying for this money."

However, this view is not shared by Steve with the Idaho Department of Fish and Game. He believes that the Tribe is adequately funded for their responsibilities:

> "They're getting almost as much money as I am to count wolves. I have to count wolves outside of the Clearwater panhandle. We're counting wolves throughout the rest of the State...I'm getting about $50,000 more than they are but we also have statewide law enforcement, statewide management of wolves, cooperative management with the Fish & Wildlife Service, and really their responsibilities primarily are for counting wolves in those areas. So they've got a real healthy budget in comparison to ours for what their responsibilities are."

4.2.2.5 Social acceptability of wolf reintroduction

Although project biologists argue that the State of Idaho could support more wolves biologically, they recognize that they are reaching the social carrying capacity for the State. Social carrying capacity refers to the number of animals that the citizens of the State will tolerate. With the contentious history of wolf recovery, there has been an ongoing struggle to counteract the misperceptions that surround wolves. Robert said that for him, it was a matter of time before the conflicts between wolves and society was revealed. He said:

> "Even though in my heart I knew this was just the initial beginning... of a problem, the conflict of domestic animal and the management of wolves, and the political side of jurisdiction of tribal and state and federal government."

Josia talked about society's negative perceptions toward wolves when he said:

> "There's a lot of bad mythology, or it's misinterpreted, there's something about their relationship with the wolf that places them in the darkness; wolves are placed in the darkness. They're the unknown, and they become something that they're scared of."

He went on to explain that this can be seen in European philosophies toward wolves:

> "That's a different relationship than the one that's portrayed through Little Red Riding Hood and those kinds of stories. That's deep in the American psyche, that those animals are kind of painted in that [negative] way."

Both Little Red Riding Hood and the Three Little Pigs struggled against the big, bad wolf; and America's predator control policies encouraged the killing of wolves (Wilson, 1999). Therefore, to successfully recover wolves the Tribe and the USFWS needed to address these societal issues.

Wolf predation on livestock is a concern that individuals have had throughout the development of the West. Robert said that wolf predation has always been a concern for livestock owners: "someone would always say to me, why would you want wolves back, they are vicious killers, look what they have done to our sheep and our cattle." According to Keith, it was the Tribe's responsibility to minimize and buffer human-wolf and livestock-wolf interactions. He said: "we needed to be in-between people and wolves where they were meeting up and having issues." Aaron said that the Tribe's responsibility was to identify and fix the problems between humans and wolves: "identifying the train wrecks between livestock and wolf interactions, knowing where they occur all the time, trying to fix those problems."

A second concern that has been identified in Idaho's wolf recovery effort is the potential impact of wolf predation on ungulate populations, one of wolves' main sources of prey. When talking about sportsmen's concerns toward recovery Robert said:

> "the prey base, always that is a concern and the conflict there again another component the hunter, the sports hunter, he is looking and saying here in Idaho the wolf is killing off all of my opportunity and I am no longer as successful as I was."

Keith believes that sportsmen are becoming intolerant of wolves as a predator even though their impact on the herds has not been determined:

> "We're feeling like we've reached the limit of that tolerance. We've gotten a lot of concern from sportsmen now of what are the impacts of another predator being on the scene."

Robert expanded on the idea that wolves may not be the cause to a declining ungulate population:

> "There is some influence that wolf has provided there, made a greater hardship for you but so many other factors are involved, the actual habitat and the landscapes been altered by cattle, the encroachment of human, the depletion and diminishment of water quality, the prey base for other species that the wolf preys upon, how can you ever focus upon one single little species to say this is why my world is upside down."

In order to address these problems the Nez Perce Tribe has relied on personal and consistent relationships in the field. It became apparent to the Tribe that personal relationships between the Tribal biologists and livestock owners are important when addressing livestock owners' fears and concerns. Keith made this point when he said:

> "Those folks [livestock owners] get comfortable with what's going on. They understood their rights and responsibilities. They knew the names of the biologists. They had seen them come through."

Furthermore, the management and recovery plans outline how the parties will work to prevent wolf-livestock interactions. This includes using technology to scare away individual wolves from allotment areas, closely monitoring wolf activity near private lands, and building trust with local communities by keeping the public informed about wolf activity. This is accomplished by holding public meetings, establishing biologists within the communities, keeping community members informed of the activity, and providing communities with necessary contact information. The State of Idaho addressed sportsmen's concerns in their management plan by actively monitoring wolf populations in conjunction with other species (State of Idaho, 2003). All of the parties involved work with independent researchers to conduct studies that address these concerns and determine the impact of wolves on other species.

4.2.3 Summary

> "In translocating 35 wolves from Alberta and British Columbia and landing them here, releasing them, watching them grow to several hundred, and then also watching conflict grow to where it is dividing communities, and it is providing mistrust with federal governments, state government at times, tribal government, it is building upon times when I would consider prejudice, and hard feelings amongst native and non-native community."
>
> ~ Robert
> Nez Perce Tribal Member

Nie (2003) found that the debate over wolf reintroduction extends into land use conflicts, government, science, wilderness, biodiversity, compromise, rural communities and tribal participation. This debate impacted Idaho's recovery effort by influencing the State of Idaho's involvement, allowing the Nez Perce Tribe to become a significant stakeholder in the recovery, and continues to shift management responsibilities between the USFWS, Nez Perce Tribe, and the State of Idaho. TEK and the validation of the Tribe's abilities as natural resource managers are important motivations for the Tribe's involvement in the recovery effort. In this case study the distribution of power, common project goals, personal ownership in the process, and social carrying capacity are all factors that influence the Tribe's collaborative agreements with the USFWS and the State of Idaho. The recent change from federal to state management authority has impacted the role of the Tribe within the recovery effort and presents a future that is new and somewhat uncertain.

4.3 Grand Ronde-Forest Service Watershed Management on the South Yamhill

> "There was nothing more sacred to a logger than timber because timber is what kept you, so we were also interested in the rotation and all of that because that was your living, it wasn't like we wanted to abuse it."
>
> ~Reyn Leno
> Grand Ronde Tribal Council

4.3.1 Introduction

Through a number of federal policies, the Confederated Tribes of Grand Ronde (Tribes) found themselves in the South Yamhill basin by ceding much of Western Oregon for a Reservation that was located around the present day community of Grand Ronde. Today the Reservation is 10,052 acres of Douglas-fir timberland located approximately nine miles north of the community of Grand Ronde. Landowners surrounding the Reservation include the US Forest Service, Bureau of Land Management, timber companies, and private landowners. In 1998, employees of the local Forest Service office began talking about developing a watershed approach to managing the South Yamhill basin. Since Grand Ronde is a major landowner in the basin, the project became a joint effort between the Forest Service and the Tribes.

4.3.1.1 Background

4.3.1.1.1 History of five western Oregon tribes

The lands included in this agreement were once occupied by the Confederated Tribes of Grand Ronde as part of the Tribes' historical Reservation and ancestral lands. Through five different treaties with the federal government, the Molalla, Kalapuya, Chasta, Umpqua, and Rogue River tribes ceded lands that once covered most of western Oregon from the crest of the Cascade Mountain Range to the eastern slopes of the Coast Range (Figure 2.).

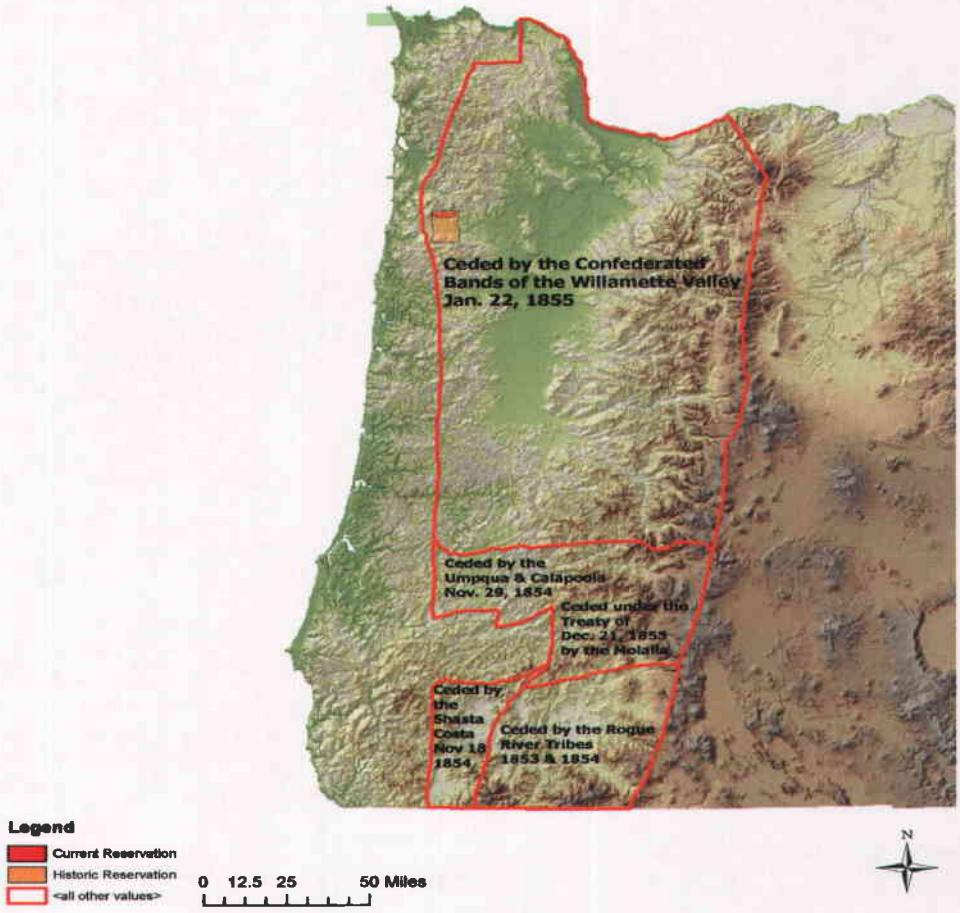

Figure 2. Lands ceded under treaty by the Confederated Tribes of Grand Ronde.

The Molalla Tribe consisted of two different bands, the southern band that was located around Oregon City and east of Salem, and the mountain band that was located around Mt. Hood (Beckham, 2000; CTGR, 1999). Both of these bands relied on salmon and steelhead as part of their diet. They used spear and basket fishing to harvest fish while the mountain band of the Molalla also used dug out canoes (CTGR, 1999). The mountain band of the Molalla Tribe adapted to a life in the mountains and hunted large game using bows and arrows and rope traps (Beckham, 2000; CTGR, 1999). The southern band

of the Molalla Tribe was more dependent on roots and small game that were common in the Willamette Valley.

The Kalapuyan Tribe was dependent on a number of different resources for subsistence that were found in the Willamette Valley. The men of the Tribe hunted deer and elk while the women gathered camas, tarweed, wapato, hazelnuts, and acorns (CTGR, 1999). In addition to being a hunter-gatherer population, the Kalapuyan Tribe actively managed the landscape (CTGR, 1999). Men used slash burning of fields to manage for deer and elk browse as well as camas and tarweed plants (CTGR, 1999). Women used baskets to spread camas seeds from individual plants to encourage the following year's growth before harvesting the plants (CTGR, 1999).

The Umpqua Tribe was semi-nomadic and followed the seasons of the year. In the fall they relied on the prairies and in the spring they followed the salmon up river into the mountains and high plateaus (CTGR, 1999). Living in southern Oregon, hunters used bows made from yew trees, snares, and pitfall traps to hunt large and small game (Bakken, 1973, CTGR 1999). Salmon and trout were caught in the rivers and lakes using baskets, spears, and traps. Both camas and acorns were gathered as a part of their diet (Bakken, 1973; CTGR, 1999). Similar to the Kalapuyan Tribe, the Umpqua Tribe used fire to manage the landscape to attract game and enhance wild blackberry growth.

Living south of the Siskiyou Mountains, the Chasta Tribe was dependent on seasonal fish runs, deer, and small game for subsistence. Using bows and arrows to hunt, it's believed that men would tip their arrows with the livers of rattlesnakes to act as a poison (CTGR, 1999). Berries, camas, and acorns were also gathered as part of their subsistence lifestyle. Women would process acorns to create a mush that was consumed or dried for storage (CTGR, 1999).

The Rogue River Tribe could be found between Table Rock in the Cascades, along the Rogue River, and into the northwestern valleys of California (Beckham, 2000). Tribal members were dependent on natural

resources for subsistence, wealth, and beauty. The Tribe relied on salmon, acorns, camas, grass seeds, pine nuts, and some game for subsistence while an abundance of dentalium shells was a sign of wealth (CTGR, 1999). These shells were also displayed on their clothing, along with porcupine quills, feathers, and otter skins for beauty.

4.3.1.1.2 History of the Confederated Tribes of Grand Ronde

During the relocation era (1855-1887) these tribes and bands entered into a number of treaties that facilitated the transfer of their aboriginal lands in exchange for food, supplies, and an education from the United States Government. The treaties were negotiated by Joe Palmer, BIA Superintendent to the Oregon Country and the headmen to the tribes. In the end, the tribes had ceded much of their homelands and were given a Reservation of just over 60,000 acres on the eastern slopes of the Oregon Coast Range (CTGR, 1999; Leavellle, 1999).

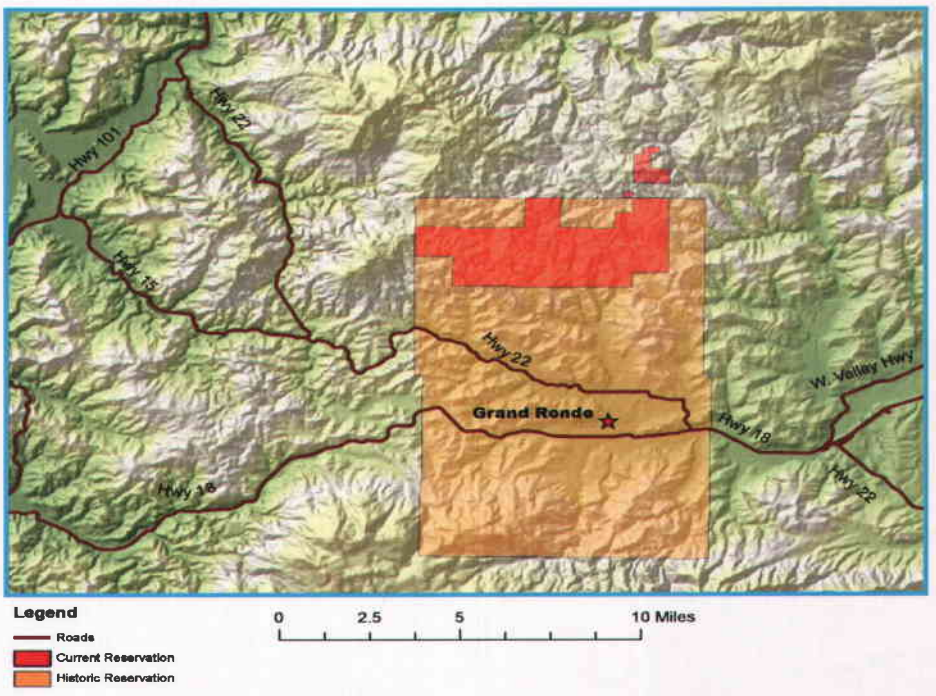

Figure 3. Historical and current Reservation for the Confederated Tribes of Grand Ronde.

Although similarities existed between the subsistence lifestyles of the five original tribes, different languages were spoken among the tribes. These included three different dialects of Kalapuyan, Athapaskan, Upper Chinookan, and Takelman (Beckham, 2000; Leavelle, 1998; CTGR, 1999). Tribal members relied on Chinook Jargon, the trade language of the region, to communicate during the early years on the Reservation.

On the Reservation the US Government's policy toward assimilation focused on agriculture and Christianity (Leavelle, 1998). This included raising livestock, and farming wheat, oats, potatoes and other root vegetables (Leavelle, 1998). Unfortunately, the agricultural practices on the Reservation had little success. As a result, tribal members began to explore ways to supplement their lifestyle. They began to use more traditional foods and left the Reservation to find jobs. Men hunted and fished while the women dug camas and wapato and gathered berries (Beckham, 2003; Leavelle, 1998). Government officials on the Reservation developed a pass system that allowed tribal members to leave the Reservation. They were allowed to leave in order to visit their homelands, work as agricultural laborers in the Willamette Valley, and to hunt and gather traditional foods (Beckham, 2003; Leavelle, 1998).

Table 5. Federal policies and their impacts to the Grand Ronde Tribes.

Era	Act	Date Passed	Impacts to the Grand Ronde Tribes
Relocation Era	Treaty with the Molalla	1855	Ceded Tribal lands
			Moved the Molalla Tribe to the Umpqua Reservation and then to Grand Ronde
	Dayton Treaty	1855	Ceded Tribal lands
			Moved the Kalapuyan Tribe to the Grand Ronde Reservation
	Treaty with the Umpqua	1853	Treaty signed by the lower Umpqua Tribe
			Ceded Tribal lands
			Established a temporary Reservation along the Umpqua River
			Moved the Umpqua Indians to the Grand Ronde Reservation
		1854	Treaty signed by the Upper and Yoncalla Bands of the Umpqua Tribe
	Treaty of Table Rock	1853	Treaty signed with the Chasta and Rogue River Tribes
			Moved the Chasta and Rogue River Tribes to a temporary Reservation
			In 1855 the First members of the Chasta and Rogue River Tribes were moved to Grand Ronde and Siletz Reservations
			In 1858 the remainder of the Tribal members were moved.
Allotment Era (1887-1930)	Dawes Act	1887	260 allotments of land were issued to tribal members totaling 33,000 acres
			The remaining Reservation lands were sold to European settlers
Reorganization Era (1934-1960)	Indian Reorganization Act	1934	In 1935 the Grand Ronde Tribes were able to purchase lands for their members
Termination Era (1953-1970)		August 13, 1954	Federal government terminated all of their responsibilities with the Grand Ronde Tribes
			Terminated the Tribes' authority to self govern
			Placed Tribes under state authority
Self Determination Era (1970-Present)	Public Law 93-638	1975	Gave tribes the ability to contract certain services from the federal government
	House Resolution 3885	1983	Recognized the Tribes of Grand Ronde as a single unit, to self govern, establish an enrollment, and the opportunity to acquire a Reservation
	Public Law 100-425	September 9, 1988	Established a 9,811.32 acre Reservation for the Tribes.

4.3.1.1.3 Relationship between Grand Ronde and the environment

Historically, the five tribes were semi-nomadic people that relied on seasonal change and resources for subsistence. However, once on the Grand Ronde Reservation, federal assimilation policies forced tribal members to rely on agriculture and Christianity. Traditional subsistence practices such as hunting and gathering became supplemental and secondary to this new lifestyle. This shift from living off the land through a subsistence lifestyle to tribal members making a living off of the land through commercial resource extraction can be seen in the current culture of the Grand Ronde Tribes. The Tribes' Restoration Act and Reservation Act supported this cultural shift. Section 8 (a)(B) of the Restoration Act states that a Reservation established for the Grand Ronde Tribes must be a "sufficient area, and with sufficient natural resources, to provide a viable economy for the Tribe and its members" (97 Stat 1064). When the Grand Ronde Reservation Act was approved in 1988 it required that the Tribes establish a separate account for economic development that is supported by 30% of the Tribes' income from tribal timber resources for 20 years after the enactment (102 Stat 1594).

According to interviews of the Grand Ronde Tribes, the Tribes' management goals are focused around enhancing forest health, protecting the natural resources, and providing income for the local community. Mike Wilson, a member of the Grand Ronde Tribes said:

> "We wanted to take better care of our resources, better care of the streams that come down through the Reservation and the community. We wanted to take better care of the forest itself around us, habitat, better stand conditions."

Pete Wakeland, a tribal member and the Tribes' Natural Resource Manager said that the goal of tribal management practices is to protect the forest while providing for the community: "we're trying to minimize our overall impact on the resource of the stand, make it healthy, and at the same time provide for

jobs, for fish, wildlife; be good stewards." According to Reyn Leno, a tribal council member, taking care of the environment is cultural:

> "I want to take care of the land so it produces deer and elk, and fish and all the things that are naturally out there. Just because I think that is what nature is there for. I wouldn't feel good about impacting something in that way....I wouldn't go in there and just clear cut it to make money."

He went on to explain that logging was, and remains, an important part of the culture for the Tribes and for himself:

> "Coming from this community here, I lived here all of my life, I worked in the woods, been a logger, I certainly believe a lot of the people within our community believe that way... So I believe that natural resources in this community has always been a high priority, even though we are a logging community people always believed you [don't] go out and cut all of these trees down"

This idea that the tribal community's culture included logging and other aspects of natural resource management was supported by other individuals within the Tribes. According to Pete, Reservation culture has always focused on the extraction of resources from the environment:

> "At least here in this local community, a lot of these people that have always lived out here on the Reservation were loggers or mill workers, and to me it almost seems like a part of local tribal culture that evolved since the turn of the century has included the extraction of resources from the timber, from the forest."

Cliff Adams, the former Natural Resources Manager responsible for developing the project, said that the goal of this project was to provide timber resources while protecting water quality, wildlife habitat, and streams: "it was an integrated approach to all the resources out there and try to enhance, and at the same time to allow some harvest on some of those lands."

4.3.1.2 Watershed Management in the South Yamhill Basin

4.3.1.2.1 Project overview

The mix of ownerships in the South Yamhill basin presents a problem to natural resource managers because the different landowners take different approaches to land management. In an effort to improve watershed conditions, the Grand Ronde Tribes and the USDA Forest Service, Siuslaw National Forest, entered into Participative Agreement (#PA-99-06-12-38). The agreement includes 6,600 acres of Forest Service lands that are part of the Northern Coast Adaptive Management Area of the Northwest Forest Plan. This plan encourages the Forest Service to explore innovative approaches to management. However, all management activities proposed by the Tribes must comply with the National Environmental Policy Act, the Endangered Species Act, the Northwest Forest Plan, and other laws that may be applicable (Forest Service, 1999).

4.3.1.2.2 Overview of the collaborative agreement

The agreement was signed in 1999 by the Chair of the Confederated Tribes of Grand Ronde, and the Forest Supervisor of the Siuslaw National Forest. Through this agreement the parties wanted to improve forest health and watershed conditions by "restoring habitat and providing long term coordinated management of aquatic, riparian, and upland resources" (Forest Service, 1999). The goal of this agreement was to "coordinate the development of long-term ecosystem-based forest management plans for national forest and tribal lands in the South Yamhill basin" (Forest Service, 1999).

In an effort to coordinate land management activities, the agreement states that the Confederated Tribes of Grand Ronde will inventory, assess, and propose management activities on 6,600 acres of national forest lands that are adjacent to the Reservation. This includes inventorying timber stand characteristics, threatened and endangered species, water quality, and other

information important in determining forest conditions. Upon completion, the Tribes will propose management activities for those lands for a ten year period. The agreement also states that the Forest Service is responsible for providing funding to the Tribes for the activities that they performed on federal lands. Moreover, it states that the Forest Service retains authority over the lands and is required to give final approval for any management activities in that area (Forest Service, 1999).

From 2000-2003 the Forest Service funded the Tribes to conduct inventories outlined in the agreement, and data was shared between the two parties. The surveys collected data on: presence/absence of threatened and endangered species, stream habitat conditions, down woody debris, and timber stand composition and age structure within the area. These inventories showed the current conditions of the forest lands within the agreement area, the current conditions of stream habitat and stream temperatures, and the activity level of spotted owl and marbled murrelets in the area. As of 2004, no additional work has occurred on the project and no proposals had been developed for potential management activities.

4.3.1.2.3 Implementation of TEK

TEK is defined through a tribe's relationship with the environment, is an adaptive process, and therefore can change through time. In the Grand Ronde Tribes, the relationships between the Tribes and the environment, and thus TEK, have undergone a cultural shift from hunter-gatherers to commercial resource extraction.

It is important to note that TEK has not been implemented in this project, not because it doesn't exist, because the project stalled before management activities could be accomplished on the ground. The Grand Ronde Tribes was not given the opportunity to implement TEK into the management of these lands. According to Reyn, he thought the Tribes would be actively managing the Forest Service lands at this point:

> "I thought we would actually by this time, be up there actively thinning some of it, maintaining the roads, really doing the management part of it just like we do on the Rez [Reservation]. But that hasn't happened."

Don Gonzales, the District Ranger that was involved with the development of the project, said that the Tribes' cultural knowledge was something that could have been utilized in the management component of the project:

> "Up until the time I was there we used their knowledge, [and] of course resources, but nothing on cultural historic uses...that would come into play when you get around to developing your restoration or management activities, that you'd say: "Okay. Here's what we want to promote over here. We don't want to do this," and that kind of stuff."

Turnover in personnel, changes in personal ownership in the collaborative agreement, changes in management priorities, uncertainties regarding the future of the project, and the Tribes' current workload have resulted in the current status of the collaborative agreement.

4.3.1.2.4 Validation of Tribal land management practices

Although the Grand Ronde Tribes entered into this collaborative agreement to enhance watershed conditions, it provided an important opportunity to demonstrate tribal management practices off of the Reservation. Mike Wilson said that this was significant to the Tribes when the project was being developed:

> "[The Tribes] really wanted to show the community, that we were good stewards. I know there have been questions out there when we were getting the Reservation... we'd just have a big clear cut up there and then have all our money, or would we be able to take care of the lands. So we wanted to demonstrate to the community, to our congressional representatives, and to other tribes out there, [to] showcase what we're doing up here."

According to Reyn, the Tribes' management goal for the federal lands was to improve the forest health of those lands to the same level of the Reservation lands. He said: "I think our goals would be the same as what we do on the Reservation; to show that we can manage that land to the upmost of our ability, to a very high standard." He went on to explain that the Forest Service's desire to enter into the agreement with the Tribes validated the Tribes' ability as a natural resource manager:

> "I think it shows that we have taken care of the 10,000 acres that we were given by the government as our Reservation land in such a high standard, that they were willing to look at, and go into the stewardship [agreement]. So it told us something about our own department and how our people have worked."

Pete said that this was an opportunity for the Tribes to share management skills and knowledge with the Forest Service:

> "The Tribes were managing their own lands and their forest was healthy and their ecosystems were working, that it would be logical that they would be able to supply some knowledge through this plan that maybe the agencies hadn't looked at. I think that was the whole thrust of it; that it would be a new perspective on management of federal forests."

4.3.2 Factors Influencing the Collaborative Agreement

Although Grand Ronde's tribal culture has shifted to incorporate logging and commercial resource extraction, this does not explain the current status of the collaborative agreement between Grand Ronde and the Siuslaw National Forest. This inactivity has prevented the implementation of TEK and therefore, it is important to understand what factors contributed to the current inactivity of the project. These are: turnover of personnel within the Tribes and the Forest Service, and the organizational capacity of the Tribes.

4.3.2.1 Turnover in key personnel

Since the agreement was signed there has been a change in personnel at the management levels of both the Forest Service and the Tribes: namely the Forest Supervisor, District Ranger, and Tribal Natural Resource Manager. Just after the agreement was signed in 1999, Jim Furnish the Forest Supervisor for the Siuslaw National Forest left the Forest and was replaced by Gloria Brown. In 2004, Gloria left the Forest Supervisor position and was replaced by Jose Linnares, who is currently in that position. Don Gonzales, the District Ranger involved in the development of the agreement left his position in 2001 and was replaced by George Buckingham, the current District Ranger. Within the Tribes, Cliff Adams, the Natural Resources Manager that was involved with the development of the project assumed the Tribes' General Manager position in January 2002. His position was filled within the Tribes by Pete Wakeland, a tribal forester in April of that year. In April of 2003, Mike Wilson, the other tribal staff member involved within the development of the project, was moved from Natural Resources office to assume more general responsibilities for the Tribes. By 2003, all of the individuals involved with the development of the project were no longer involved. However, turnover within the Tribes had a lesser impact upon the agreement because the changes in personnel were internal and they did not involve bringing staff from outside of the Tribes' Natural Resources office into the collaborative arrangement.

Turnover within both parties has negatively impacted the participative agreement by influencing personal ownership of the agreement, changing management priorities for the stakeholders, and introducing a level of uncertainty into the working relationship. Turnover within the Forest Service has impacted the collaborative agreement more significantly because individuals from forests outside of the area were brought in to fill those positions. As a result, new staff members are not familiar with the project and are less likely to support the project.

4.3.2.1.1 Turnover influences personal ownership

Personal ownership refers to a vested interest by individuals in the collaborative process, goals and success of the collaborative agreement that is not facilitated by federal mandates or staff direction, but a belief in the project and the desire to see the project succeed. During the creation of the participative agreement, participants supported the project, wanted to see it succeed, and worked to develop it. However, when they left those positions to assume other responsibilities, their personal dedication and ownership of the project was lost:

> "Everybody from the Forest Service is changed, either retired or moved on. So there's not really folks there that have worked on it all the way through that have any stake in it."

Cliff, the previous Natural Resources Manager, also said that this project was very important to those individuals that were involved from the beginning and that with turnover that ownership had decreased: "I can see why they would maybe not embrace this one as closely as they may have some other pet projects that they were doing." Jose Linnares, the Forest Supervisor for the Siuslaw National Forest, also recognizes the personal ownership that the previous Forest Supervisor had in this project. When talking about the project he said: "he [the previous forest supervisor] really wanted to get it done before he left and so I think we, the forest, might have rushed to get it finalized."

4.3.2.1.2 Turnover influences management priorities

When turnover occurs at the upper level of management the priorities of the organizations may also change. Cliff illustrated this point when he said:

> "People come and go and different people became involved and they didn't have the background leading up to this, they weren't there at the beginning, so maybe they didn't feel they had the ownership that the other folks did, and so they had other projects that were probably higher on their priority list"

Don, the previous District Ranger involved with the project, said that he should have had other individuals involved so that the project had ownership at multiple levels:

> "I put in a lot of time on it instead of getting others to get invested into it, and then when you have a change in leader, that may not be his priority. Or he may not let things go through those kind of things, so it just kind of dies."

4.3.2.1.3 Turnover introduces uncertainty

Turnover within the leadership positions introduced a level of uncertainty into the collaborative process. Pete talked about his uncertainty when he became involved after taking over the Natural Resources Manager position for the Tribes:

> "It was a lot like being given something that I really didn't have the first clue about. I wasn't involved in the development of it; there were a lot of unanswered questions."

George Buckingham, the District Ranger for the Hebo office of the Forest Service, also had uncertainty and confusion over the project when he came into that position: "Well, I think initially I was relatively confused about what it is exactly that was going to be done and I think over time I did develop an understanding." He went on to explain that this uncertainty still exists for him: "I'm not 100-percent sure that not all of my confusion has been eliminated because four or five years have passed, and I still can't look at the end and see the end very clearly." This uncertainty extends beyond the intent and goals of the project and also includes where the project is heading. Jose, the Forest Supervisor showed uncertainty in the future of the agreement because he is unclear about the Tribes' desire to continue the project:

> "I think the interest is still there from my perspective and I think from a district's perspective as well, but we do want so sit down with the Tribes and just see what their interest is and see if it is something that they are interested in continuing to pursue."

4.3.2.2 Organizational Capacity of the Tribes

Although changes in personnel have significantly impacted the status of the agreement, the Tribes' organizational capacity to implement the project is also a factor, particularly finding the time to necessary to make the project successful. Individuals with both agencies indicated that the Tribes' workload is not conducive to the additional work on Forest Service lands.

4.3.2.2.1 Tribes' ability and knowledge

Employees of the Forest Service recognize that the Tribes are good natural resource managers and have the knowledge to implement the agreement. Therefore, the Tribes' abilities are not a concern to the Forest Service. Wayne Patterson, an employee on the Hebo Ranger Station, made this clear when he said:

> "They're good natural resource managers. We view them as partners in a lot of these projects, as good partners; people who are very knowledgeable about what's out there and how to do it."

Don said that the Tribes went beyond the requirements of the Forest Service in the early part of the project:

> "Most of the stuff they wanted to do would be probably beyond what our standards were. It seemed like the studies they wanted were pretty vigorous. There were things that we probably could have got by on with less detail or statistically provable results. But they had standards."

The employees of the Forest Service that have worked with tribal staff on this project recognize that the Tribes are competent and knowledgeable natural resource managers. The Tribes are knowledgeable about the resources, resource management, and monitoring. Furthermore, the Forest Service recognizes that the Tribes' standards in natural resources are equal to, or exceed, those of the Agency. However, collaborative agreements must exist long enough to allow the implementation of that knowledge and skill.

4.3.2.2.2 Tribes' current workload

According to Kelly Dirksen, the Tribes' Wildlife Program Coordinator, the workload of the Tribes' Natural Resources Department has made the agreement with the Forest Service a low priority:

> "I think one of the issues with the Tribes is the Tribes is exceptionally busy and has their plate full without the stewardship. So no one is just ready to drop everything and work on the stewardship... It is pretty easy at this point to just kind of put it on the back burner and wait until somebody tells you."

George, who works with the Forest Service, also said that the Tribes' busy workload has impacted the collaborative agreement:

> "I think they were just too busy this year. It had nothing to do with their willingness or unwillingness to continue with the agreement... It's probably that we're both victims of the same model, that we have plenty to do and not enough people and resources to do it."

To address this issue, those staff members working on the agreement need direction from their managers to establish the project as a priority. According to Wayne with the Hebo Ranger Station, the direction that the agreement will take is up to the managers: "[those decisions will be made] by the different managers and what they feel they can go ahead and do and the dollars when they're available." Kelly said that tribal leaders, or the department manager, will have to dictate to him that something needs to occur under the agreement in order for it to become a priority:

> "Someone just has to tell me to do it, that I need to do it. I don't have any say on that project so if the Forest Service or tribal council all decided they needed to move forward and there was funding to do that, we would obviously move forward."

4.3.2.3 Power structure of the Forest Service and Tribes

The power structure within the Forest Service is an important component to the collaborative agreement because it facilitates agency priorities, mandates a consultation process with American Indian Tribes, determines what collaborative agreements can be entered into and why, and provides a focus for agency staff who may not agree with the project.

4.3.2.3.1 Agency power structure and management priorities.

The project's importance within the Forest Service is largely determined by the Forest Service's power structure. Don, the previous District Ranger with the Forest Service, explained that higher levels within the hierarchy of the Forest Service need to maintain the project as a priority for those that at the lower levels of the agency:

> "I was heavily involved in it. The next person comes in and unless their boss says: "Hey, this is top priority. You make sure this happens," they may not take it on as something they really want... and it just kind of goes by the wayside."

He went on to explain that if you have both the Forest Supervisor and District Ranger supporting the project, it remains a priority for the forest unless the Regional Forester determines otherwise. He said: "if you got those two in line, it's hard to kill it, unless of course the Regional Forester comes out and says "no," throws her trump card on it, but that didn't happen that I am aware of."

Early on in the collaborative process, those in the top levels of the Siuslaw National Forest and Hebo Ranger District maintained the project as a top priority for the agency. Mike Wilson, said that both the Forest Supervisor and District Ranger made this project a priority early on:

> "The Forest Service seemed like they really wanted to do it. Jim Furnish, lots of support. Don Gonzales of Hebo, he was there and seemed very interested in making it happen, also; not just spending the time on it because Furnish wanted him to, but to see it happen."

However, when turnover occurred in these top positions, support for this project declined. Jose, the Forest Supervisor said that the project is not a high priority because it is not in a priority watershed and therefore is not as significant as others:

> "It just comes down to a matter of priorities and look at the area that we are working in and we set priorities by watershed. From a forest perspective I don't know that this has been our highest priority area to do work in."

The success of this agreement early on can be attributed to personal ownership in the project at the top levels of the agreement. However, the success of the agreement changed as individuals within the decision-making positions changed; as the project has not been a priority for new administrators in the Forest Service, the project has become inactive.

4.3.2.3.2 Federal land management authorities

A number of management authorities and legislative requirements facilitate what the agency can, and cannot, do. Both the Forest Supervisor and District Ranger that are currently involved with the collaborative agreement view the agreement as part of the government-to-government consultation with tribes that is mandated by the federal government. When talking about why the Forest Service wanted to work with the Tribes, George said: "I think a lot of it probably rested with just the interest in continuing to work collaborative on a government-to-government basis with Tribes." Jose, the Forest Supervisor, supports the idea that this project is part of the government-to-government consultation process with Tribes distinct from the federal government's relationship with the public or other organizations.

Additional authorities within the Forest Service outline what collaborative arrangements are appropriate in a given situation and determine what requirements must be met in the management of federal lands.

According to Wayne, the Forest Service needs to have authority from Congress to enter into different agreements:

> "For us to be able to go ahead and enter into any kind of agreement for instance, where we agree to go ahead and provide funding to the Tribes, we have to have some kind of an authority from Congress to go ahead and do that."

Individuals with the Forest Service stated that when the agency entered into the participative agreement with the Tribes, the authorities were not in place to support the agreement. The Partnership Guide produced by the National Forest Foundation, USDA Forest Service, (2005) states that the Forest Service can enter into participating agreements for

> "cooperatively-performed, mutually beneficial projects for cooperative pollution abatement, cooperative manpower, cooperative environmental education, and forest protection."

George said that whether or not the project fit within these Forest Service guidelines was uncertain: "the authority at that time was pretty questionable. There was a lot of discussion back and forth about an agreement or a contract." However, in the end, the individuals in the Grants and Agreements Office of the Forest Service determined that the participative agreement was the appropriate tool for the project. Don explained their reasoning for this decision:

> "In an MOU you don't exchange any money, and the participatory agreement you can fund excessive balances [additional projects], that's why they went that way. The other thought was that they had some specialty area that [the Forest Service] didn't really have experts on."

Changes within these management authorities have forced the Forest Service to re-evaluate what type of collaborative agreement is appropriate for this project and potentially change it from its current form to either a

stewardship contract or service contract. According to Wayne, the Grants and Agreements Office would not approve this type of arrangement today:

> "I think it would be really difficult to do the same thing now. I think our grants and agreements people would tell us very clearly we'd be outside the bounds and that we can't step over that line, because Congress is looking really closely at us through the Office of Budget and Management."

George added that the original process was not faulty, but that federal authorities have simply changed over time and therefore the agency is re-evaluating what they are doing. He said:

> "I can't say for certain that the decision-making process that went into the original participative agreement was faulty... I mean, that's been eight years ago. Eight years is potentially an opportunity for change. So it might be that the interpretation we got this past year was really based on new policies and direction and even new regulations that came about in the last three to five years."

He also said that there is emphasis from the Forest Service at the national level for the agency to work with Tribes using the stewardship contracting authority:

> "The second thing that has come along is that the Congress has passed the stewardship contract authority, and our agency overall nationwide has put an emphasis on working with Tribes and other partners and entities through that, using that authority for that purpose."

Jose supports this shift from a participative agreement to a stewardship contract because it adds flexibility into the collaborative agreement:

> "I would look at trying to do it [project] under our new stewardship authority which gives us a little bit more flexibility and the ability to retain the receipts from any of that activity that occur on the ground to put back into additional work on the ground."

Although stewardship contracting and the NW Forest Plan allow for flexibility in the collaborative agreement, authorities do have specific requirements built into the collaborative process and that activities must comply with federal law. Therefore, the Forest Service is required to approve management activities on federal lands. George said:

> "One of the things I'm not able to do, or I'm allowed to do is to give away my decision authority, federal decision authority. I can't do that. So I still have to approve those things"

This view is supported by the agreement; it states that all management activities must comply with federal law; and that the Forest Service retains the final decision making authority for all management activities proposed on those lands (Forest Service, 1999).

4.3.3 Summary

The Grand Ronde Tribes have undergone a transition that has impacted tribal culture by shifting their relationship with the environment from a hunter-gatherer population to an agricultural lifestyle on the reservation, and then introduced commercial resource extraction. Although they continue to focus on resource and forest health, there is an emphasis on providing natural resources to support local communities. In an effort to enhance forest health and provide resources to local mills and the community, a few individuals from the Forest Service and the Grand Ronde Tribes developed and implemented a participative agreement that was designed to enhance watershed conditions in the South Yamhill Watershed. Divided into three stages, this agreement provides for the collection of watershed information, allows the Tribes to develop management activities based on that information, and gives the Tribes the opportunity to implement those activities. However, changes in Tribal and Forest Service personnel, the Tribes' inability to implement the project, and the distribution of power within the project have resulted in an agreement that exists but is not being implemented. The current inactivity of

the agreement has not allowed the Tribes an opportunity to implement management practices as defined by tribal culture and TEK. Although the interest to continue the project exists within the Tribes and Forest Service, how that will be accomplished remains uncertain.

5 DISCUSSION AND CONCLUSION

Table 6. The findings of this research address those factors that influence the implementation of TEK and those factors that influence the collaborative agreements.

Factors influencing the use of TEK
• TEK can be implemented through collaborative agreements. • A common understanding of TEK between tribal members is an important component to the implementation of TEK.
Factors influencing the collaborative agreements
• Power is an important component to the development and implementation of collaborative agreements. • Collaborative agreements are an opportunity for tribes to demonstrate their capacity as natural resource managers. • Federal resource agencies influence a tribe's capacity through the allocation of funding and federal mandates. • The collaborative process influences these agreements through turnover in personnel, personal ownership in the collaborative process, and the structure of the collaborative agreement.

5.1 Key Factors Influencing the Implementation of TEK

TEK is a living process that provides a link between the past, present, and future. The Tribes involved in the three case studies have gone through a number of changes that have directly impacted their relationship with the environment and their TEK. The Maidu lost their ancestral lands, the Nez Perce Tribe lost the wolf from the landscape, and the Grand Ronde Tribes underwent a cultural shift from hunter-gatherers to an agricultural community, to a community that is dependent on commercial use of natural resources. In response to these changes, all three Tribes have altered themselves in some way so they may continue to survive in their given situations and accommodate the needs of the Tribes in today's society. According to Berkes et al. (1994), self interest is important to biodiversity conservation by indigenous communities and traditional knowledge represents a summation of

ecological adaptation to diverse and changing landscapes. The Maidu community developed the MCDG in an effort to restore Maidu culture, the Nez Perce Tribe used western science to establish a cultural and spiritual reintroduction around wolves, and the Grand Ronde Tribes redefined their culture to allow the Tribes to adjust to life on the Reservation.

Whether or not TEK is implemented through collaborative agreements varies within individual perceptions and beliefs. The power of the Tribe under the co-management agreement between the MCDG and the Forest Service has allowed the Maidu to implement Maidu TEK into on-the-ground natural resource management. In the contractual agreement between the Nez Perce and USFWS, the Nez Perce Tribe has incorporated their TEK of wolves as one of the Tribe's motivating factors for the Tribe's involvement in the recovery effort. The role of TEK in the Grand Ronde-Forest Service agreement was less obvious because at the time of this research because the collaborative arrangement had become inactive before any on-the-ground management activities were planned or occurred.

5.1.1 TEK and the collaborative agreement.

The Grand Ronde-Forest Service agreement illustrates an important point regarding the implementation of TEK through collaborative agreements; the collaborative agreements must be in place long enough to allow tribes to plan and implement TEK and on-the-ground management activities. Since the Grand Ronde-Forest Service project became inactive before any management activities could be planned or implemented, the Tribes were not able to fully demonstrate their abilities under the agreement. Even if the Grand Ronde Tribes had intended to utilize TEK in on-the-ground management activities under the collaborative agreement, the agreement never matured to the point where that was possible. This raises the question, what use is TEK as an innovative and new approach to land management if the collaborative

agreement breaks down before land management activities can be planned or implemented?

For both the MCDG-Forest Service and Nez Perce-USFWS collaborative agreements, TEK is incorporated as a part of the collaborative effort: 1) as a motivating factor for a tribes' involvement in a natural resource issue and 2) as a management tool for on-the-ground resource management. In the contractual agreement TEK is a motivating factor for the Nez Perce Tribe's involvement, while in the MCDG-Forest Service co-management arrangement, TEK has been incorporated in on-the-ground management activities.

The significance of Nez Perce TEK of wolves can not be minimalized as a significant motivating factor in their collaborative arrangement with the USFWS. However, the contract nature of the collaborative agreement presents a situation where the Nez Perce Tribe is cautious about the techniques used in the management and recovery of wolves because the USFWS retains authority over the recovery effort. Introducing TEK management practices into this situation would complicate the collaborative process by presenting a knowledge base that is not understood by western scientists. Therefore, the Nez Perce Tribe has utilized western science to facilitate the recovery of a species that is fundamental in Nez Perce culture. The power inequalities of contractual arrangements (where agencies retain overall decision making authority) complicate the implementation of TEK into collaborative agreements and on-the-ground management practices because the authority of the Tribe is decreased. In collaborative agreements regarding TEK, Tribes need the power and authority to implement their knowledge as they understand it. This is difficult when collaborative arrangements are designed where the overall management authority remains with the agencies.

In the MCDG-Forest Service Stewardship project, the collaborative arrangement is not a barrier to the implementation of TEK because it has been designed to incorporate Maidu TEK and traditional management practices.

Using a stewardship contract the MCDG was given the power and authority to apply Maidu TEK under the agreement. The agreement states: "this contract will use a traditional Native American approach to vegetation management" (Forest Service, 2004). Furthermore, the scope of the contract specifically states that the purpose of the contract is to demonstrate Maidu TEK and land stewardship on lands that contain significant cultural resources (Forest Service, 2004). By framing the agreement in this manner, the MCDG has full authority and power to implement Maidu TEK. Research on the distribution of power has indicated that knowledge does not exist in a pure form independent of power (Nadasdy, 1999). Nadasdy (1999) argues that power remains with those who retain the knowledge. This is true within the MCDG-Forest Service collaborative agreement because the MCDG, as the knowledge bearers, have more power in the implementation of the agreement and on-the-ground management practices than the Forest Service.

The idea that the MCDG retain more power in the implementation of the agreement was supported by Forest Service staff. In the Maidu Stewardship Project, the US Forest Service staff members have helped to facilitate the project by taking a hands-off approach to the implementation of Maidu TEK. Karen, an employee of the Forest Service, said:

> "It's their project; we've said that all along, it's not a Forest Service project. It's being done on public lands but it's their project demonstrating their knowledge to interpret to the world however they are going to do that."

This approach has given the MCDG the ability to implement Maidu TEK that has been defined by them and not as the Forest Service interprets it. According to Cruikshank (1998) the reification of TEK with quantifiable and empirical science may threaten TEK through the politicisizing of that knowledge. Therefore, traditional groups need to be represented by themselves, and not by others (Cruikshank, 1998). Sherry and Myers (2002) found that in a co-management agreement the role of the state needs to be

redefined to support and complement, rather then replace local management systems (Sherry and Myers, 2002).

Co-management agreements are more likely than contractual agreements to incorporate TEK into on-the-ground management activities because the authority and power to implement the knowledge into on-the-ground management activities resides with the Tribes. This allows TEK to be implemented from the perspective of the Tribe and not as interpreted by researchers and scientists from outside tribal organizations. By using this approach the knowledge is less likely to be compartmentalized or distilled according to external criteria imposed by western society (Nadasdy, 1999). However, the implementation of TEK can be influenced by internal criteria from personnel within the tribe and the tribal community. This presents a challenge to have a common understanding of what TEK is, how it will be implemented, and what TEK management practices look like on the ground.

5.1.2 Common understanding of TEK within a Tribe.

Although the collaborative agreement is not a barrier to the implementation of Maidu TEK in on-the-ground management activities, differences in the MCDG's understanding and perception of what TEK is, how it will be implemented, and what TEK management practices look like on the ground is an area that needs to be addressed. Current literature on TEK discusses how TEK is defined, how TEK compares to western science, how the two may be bridged, and what TEK can contribute to natural resource management (Huntington, et al., 1999; Berkes et al., 2000; Berkes et al., 1994; Berkes et al., 1998; Berkes, 1999). However, the literature does not address how TEK may differ within tribal organizations. According to Cruikshank (1998) the applicability of TEK models within heterogeneous communities is difficult because different claims to knowledge can create inequality and competition within tribal communities. Individuals within a tribe have different understandings and perceptions of what TEK is. These

differences are based on the differences in personal relationships with the land and the resources that they use. Within the MCDG there are different understandings and perceptions about what Maidu TEK is, whether or not it is being implemented in the project, and what TEK management activities should look like on the ground.

For some members of the MCDG and the Maidu community, TEK is about restoring forest health. Others believe that TEK is about enhancing the relationships between human and non-human Maidu. These different perceptions and understandings of TEK lead to different approaches in implementing TEK and ideas regarding what TEK management includes. Those that feel that TEK is about forest health believe that TEK is being implemented because the forest has been thinned and the risk of fire has been reduced. Those who view TEK as maximizing relationships do not believe TEK is being implemented because they feel that the relationships between different plant species are damaged through competition between the plants over sunlight, water, and nutrients. These different views of what Maidu TEK is and how it should be implemented has created tension within the MCDG.

In order to successfully implement the Maidu Stewardship Project and Maidu TEK, members within MCDG and Maidu community need to come to a common understanding of what Maidu TEK is, a strategy for its implementation, and what TEK will look like once implemented on the ground. To accomplish this, members of the MCDG and Maidu community need to discuss the underlying relationships of TEK. This would allow the MCDG to build on the commonalities within those relationships and develop a strategy to implement TEK in a manner that reflects those areas of agreement. Without coming to this agreement, the Maidu community may continue to disagree over the implementation of TEK into on-the-ground management activities. This may continue to divide the Maidu community, create a lack of trust and

respect within MCDG and the community members, and as a result detract from the goals of the project.

5.2 Key Factors Influencing Collaborative Arrangements

If the goal of tribal-federal collaborative agreements can implement TEK, it is important to understand those factors that influence the implementation, longevity, and success of the collaborative agreements themselves. Those factors that influence the collaborative agreements also influence the implementation of TEK into the project and on-the-ground management activities. This research has identified four factors that influence the collaborative arrangements between tribes and federal agencies: 1) power in the tribal-federal relationship, 2) the organizational capacity of those involved, 3) federal agencies' influence on the Tribe's abilities, and 4) the collaborative process.

5.2.1 Power from federal mandates and tribal sovereignty facilitate collaborative agreements.

Mintzberg (1983) defines power as the capacity to affect organizational outcomes. Mintzberg explains that there are three bases of power: a resource, a technical skill, or a body of knowledge critical to the organization (1983). In all three case studies, power is also a significant component of tribal-federal collaboration through federal mandates and the power structure within federal agencies.

5.2.1.1 Federal mandates for government-to-government consultation

The Federal government's relationship with American Indian tribes is defined through a number of federal policies that address government-to-government consultation, tribal sovereignty, trust responsibility, and treaties. However, the way government-to-government consultation occurs may vary. It ranges from agency notification of activities through a letter to the tribe, to the agencies seeking the advice and knowledge of the tribes (Lesko and

Thakali, 2001). Policies which influence government-to-government consultation include President Clinton's 1996 Executive Order 13007, the National Indian Forest Resources Management Act of 1990 (Pub. Law 101-630 Title III, 104 Stat. 4532; Lesko and Thakali, 2001) and the Tribal Forest Lands Protection Act of 2005 (118 Stat. 868-871, 25 U.S.C. 3115-3115a). For both the Nez Perce-USFWS and the Grand Ronde-Forest Service agreement, federal mandates have influenced the collaborative arrangements; federal mandates have not been a factor in the MCDG-Forest Service agreement because the Maidu are not federally recognized as a tribe.

Individuals associated with the Nez Perce-USFWS and Grand Ronde-Forest Service collaborative agreements identified that government-to-government consultation between sovereign governments as an important component of the agreements. They found that the unique relationship between the federal government and American Indian tribes plays a significant role in the projects and is a motivating factor for federal agencies to enter into collaborative arrangements with tribes. This relationship unique to American Indian tribes allows collaborative agreements that are not available to the public or public organizations.

The Nez Perce Tribe also reserves a source of power that is not available to the Grand Ronde Tribes; rights that were outlined in their treaty with the US Government in 1855. According to Curt Mack, a tribal employee, the legal basis for the agreement with the USFWS is a treaty right to harvest wolves. He said: "when we negotiate things, we have to boil it down to if this doesn't work, we are going to court, where are the legal footholds? The legal foothold is a treaty right to harvest wolves." Those rights outlined in the treaties that American Indian tribes signed with the federal government are a source of power to tribes because the federal government has a responsibility to recognize and uphold those rights.

Treaty rights are a source of power for the Nez Perce because their federal recognition was never terminated and so they still function under their

original treaties. Even though the Confederated Tribes of Grand Ronde are federally recognized as a sovereign entity and is included in federal policies mandating consultation, when Grand Ronde was terminated in 1953, its treaty with the federal government was also terminated. Although the Restoration Act of 1983 restored some rights of the original treaty it did not restore the Tribes' hunting, fishing, and gathering rights (97 Stat 1064, 25 U.S.C. 14 §713). The Grand Ronde Tribes are legally bound by what is outlined in their Restoration Act and not their treaties.

According to the current research on collaboration the legal authorities of federal agencies are one of the barriers to collaboration (Pinchot Institute, 2001: Williams and Ellefson, 1997; and Carr et al., 1998). However, current research has not addressed the unique status of tribes as sovereign entities and the legal mandates that surround tribal governments. In this research, the federal mandates associated with tribes have been an important factor in both the Grand Ronde-Forest Service and Nez Perce-USFWS agreements by acting as a catalyst for the collaborative agreements with the tribes. This finding is supported by Gray (1985) and Williams and Ellefson (1997), who found that external mandates are one factor that can facilitate the structuring of collaborative agreements.

5.2.1.2 Tribe's utilization of an agencies' structure

For all three case studies, federal agencies' power structures have been important components to the implementation of the collaborative agreements. In the Nez Perce-State MOA and the MCDG-Forest Service agreements, the unique status of tribes as sovereign entities has provided tribes with the opportunity to address staff at the top-level of an agency at the federal, regional, and state levels, which allowed for the development of their agreements at the local level. The Grand Ronde-Forest Service agreement was a grassroots effort and so the Grand Ronde Tribes have not exercised their sovereignty rights at a regional or national level. The Grand Ronde

Tribes have worked at the forest and district level. Changes at the forest and district level have influenced the project's priority status because regional or federal staffs are not mandating the project's continuation.

Even though the Maidu and MCDG are not federally recognized as a sovereign government they have been able to utilize the Forest Service's power structure in this same manner, since the Maidu Stewardship Project was awarded from the national level of the Forest Service to the local level. Those at the forest level were working under the direction of the Washington D.C. and regional offices of the Forest Service to develop and implement the collaborative agreement. Support for this project at the national and regional levels of the Forest Service has allowed this project to move forward when local support has been inadequate. Furthermore, the MCDG has taken advantage of this support and turned to regional and national level staff to provide direction to the local office when they have encountered barriers towards its implementation and when it has been necessary to move the project forward.

The Nez Perce Tribe's collaborative arrangement with the State of Idaho is another example where the Tribe's sovereign relationship with top-level government staff is a significant component to initiating and implementing collaborative arrangements with Tribes. Signed by the Governor of Idaho and the Chair of the Nez Perce Tribe, the agreement outlines how the Idaho Department of Fish and Game will work with the Nez Perce Tribe to manage wolves throughout the state. The manager of the Idaho Department of Fish and Game, who expressed reservations about the agreement, still recognizes that the agreement has been signed and that it is the responsibility of the Idaho Department of Fish and Game to implement it. Even though this can hinder the collaborative process because staff within the Idaho Department of Fish and Game are reluctantly working with the Nez Perce Tribe, collaboration is occurring; the agreement is signed and is legally binding. This agreement

can provide a starting point for the relationship between the Idaho Department of Fish and Game and the Nez Perce Tribe to change.

Because the Grand Ronde Tribes have not exercisized their sovereignty with national or regional staff in the Grand Ronde-Forest Service agreement, the project has become a lower priority. This is because individuals within the District and Forest offices are not given direction from regional or federal leadership that the project is moving forward. This leadership direction is important for both the Forest Service and Tribes in order for them to maintain the project as a priority, given both of the entities' workload. Both the Grand Ronde Tribes and the Hebo Ranger Station are responsible for the management of lands outside of those areas that are included within the collaborative agreement. Therefore, without direction from regional and national leadership within the Forest Service, staff members at the Forest and District level have set the collaborative agreement aside while they address their additional responsibilities.

This research suggests that a tribe's exercise of sovereignty with agencies at regional and national levels, either through federal mandates or staff direction, can facilitate the implementation of collaborative agreements with tribes. Previous research has indicated that power inequalities may be a barrier to collaboration (Williams and Ellefson, 1997, Wondolleck and Yaffee, 2000; Selin and Chavez, 1995; and the Pinchot Institute, 2001), including the top-down, militaristic model of the Forest Service (Pinchot Institute, 2001). The Pinchot Institute (2001) also recognizes that agency personnel may be uncooperative at the local level. In these situations, the exercise of tribal sovereignty at regional and federal staff levels can assist collaborative arrangements between the tribes and the federal agencies by facilitating the agencies' involvement at the local level.

All three Tribes in this research continue to address race issues in their surrounding communities. Individuals interviewed identified challenges to tribal members that were associated with race, tribal sovereignty, and the

history of the Tribe within the area. Therefore, the power structure within the federal agencies has the ability to implement the agreements in communities that may not be supportive of tribes and tribal rights.

5.2.2 The organizational capacity of Tribes to implement collaborative agreements.

A second factor that has been an important component to the collaborative agreements is the capacity of the Tribes to implement the projects. This includes the resources, knowledge, and processes to implement the responsibilities and goals of the organization (Horton et al., 2003). Burns (2001) explains that each entity must possess or develop capacities to build relationships and participate in open learning and participatory planning. Furthermore, Wondolleck and Yaffee (2000) state that organizational capacity is more than expertise and includes individual's attitudes and perceptions. However, evidence from these case studies suggest that the important components of organizational capacity are the Tribes' abilities to implement the project and the agencies' influence on the Tribes' abilities.

5.2.2.1 Tribal abilities as natural resource managers.

For both the Nez Perce-USFWS and Grand Ronde-Forest Service agreements, the Tribes' knowledge, skill, and ability to implement the agreements is not an issue. In these two case studies, the staff members of the agencies respect and acknowledge that the Tribes are good natural resource managers. However, staff members associated with the Idaho Department of Fish and Game in the Nez Perce-State MOA question the Nez Perce Tribe's abilities. This difference can be attributed to the historical relationship that exists between the Tribe and the Idaho Department of Fish and Game. In previous years, the Idaho Department of Fish and Game and the Nez Perce Tribe have conflicted over fisheries management. Without

addressing these issues, the relationship between the Idaho Department of Fish and Game and the Tribe may remain troubled.

When addressing the MCDG's land management abilities, individuals within the Forest Service have different perceptions of the MCDG's capabilities. Staff members that are further removed from the implementation of the agreement have more questions regarding MCDG's abilities compared to those who directly work with the MCDG. Those who are closely involved with the project see the MCDG's abilities demonstrated on a regular basis and did not express doubt about the MCDG's capacity. Those who are involved on the periphery of the project have not seen the MCDG's abilities demonstrated and therefore question their capacity.

The agencies' recognition of the Grand Ronde and Nez Perce Tribes' abilities as natural resource managers can also be attributed to the Tribes' management practices on reservation lands. Both the Grand Ronde and Nez Perce Tribes' federal recognition and reservation lands have allowed the Tribes to demonstrate their abilities on their own lands. They have established natural resource offices and a governing body that functions independently of the agreement. Furthermore, they have been managing their own lands without the agreement. Unlike the Nez Perce and Grand Ronde Tribes, the Maidu and MCDG have no other land base upon which to demonstrate their abilities as natural resource managers independent of the agreement. This opportunity would allow individuals within the top-level of the agency an opportunity to see the MCDG's abilities. It appears that the Forest Service has more questions about their abilities because the MCDG does not have a history in natural resource management in the Western Science sense. An opportunity to demonstrate their land management abilities is a potential benefit of their agreement with the Forest Service.

Those tribes and tribal organizations that have an independent land base are less likely to be challenged on their abilities to implement collaborative agreements because the infrastructure is already in place to do

so. Those without federal recognition will constantly be working on developing their capabilities and agency staff associated with the project will question their abilities more. Therefore, the tribal entities without federal recognition will have to work harder to demonstrate their abilities.

5.2.2.2 *Validation of tribal organizations.*

For all three case studies, the Tribes' involvement in the collaborative agreement has been a way to validate tribal abilities, management practices, expertise, and knowledge. According to Kimmerer (2002), incorporating TEK into natural resource management practices is one way to validate and include tribal abilities. However, this research suggests that TEK does not have to be incorporated into management activities to validate the tribal entities; validation serves as a motivating factor for those entering into a collaborative agreement even if it does not utilize TEK or traditional management techniques.

Interviewees associated with all three Tribes indicated that entering into the agreements was one way that the Tribes could demonstrate that their management techniques, knowledge, and their capacity to handle the issues outlined in the agreement. For the Maidu, their agreement with the Forest Service was a way to validate their traditional knowledge and traditional management activities, and to rebuild Maidu culture. The MCDG wanted to provide the Maidu community with pride in their culture, rebuild the relationship between Maidu members and the natural environment, rebuild the Maidu community, and build the Maidu's sense of culture. Therefore, a collaborative agreement that specifically utilized Maidu TEK allowed the Maidu community to accomplish these goals.

For both the Nez Perce and Grand Ronde Tribes, their involvement in collaborative agreements was a way to provide validation to the Tribes natural resource management programs. The Nez Perce Tribe saw it as an opportunity to demonstrate their abilities as natural resource managers across

a large geographic scale, including their ancestral lands. The Grand Ronde Tribes saw their agreement with the Forest Service as an opportunity to demonstrate their abilities off of the Reservation and in turn validate the management activities that occur on the Reservation.

This validation of tribal abilities is a significant component to the collaborative agreement because it has been one of the main motivating factors for tribal involvement in collaborative agreements. In all three case studies, the Tribes involved felt that they need to demonstrate something to the surrounding communities; the MCDG needed to exhibit the value of being Maidu while the Nez Perce Tribe and Grand Ronde Tribes needed to demonstrate their abilities as natural resource managers. Since both the Nez Perce and Grand Ronde Tribes have an established sense of self and cultural identity, their focus has been on demonstrating their natural resource management abilities to non-tribal entities. Since the MCDG has focused on building cultural identity within the Maidu community, the demonstration of Maidu TEK in on-the-ground management activities has been an important component of achieving that goal. Furthermore, issues regarding native versus non-native tensions, tribal ownership of lands, and tribal authority have magnified these needs for the Tribes to validate themselves to the surrounding communities.

5.2.3 Federal Agencies Influence a Tribe's Abilities to Implement the Collaborative Agreement.

5.2.3.1 Availability of federal funding.

A tribe's capacity to implement a collaborative agreement can be influenced by the federal agencies involved with the projects. In all three case studies, the agencies involved with the collaborative agreement influenced the projects and the Tribes' capacity to implement the agreement in two ways: 1) through the allocation of federal funding to support the project and 2) through the federal land management authorities that apply to federal lands.

Both the Grand Ronde-Forest Service and Nez Perce-USFWS collaborative agreements rely on the allocation of federal funding to support the work outlined in the collaborative agreements with the Tribes. When funding is available, the projects can move forward but if funding is decreased or is not available, the Tribes are unable to fulfill their responsibilities on federal lands. Aaron, with the Nez Perce Tribe said:

> "we're kind of assuming that federal appropriations will always be there to bail us out for all the stuff that we're doing, but who's to say that Congress will say "Hey, you guys, you do it on your own" as just an unfunded mandate."

The allocation of federal funding to the Grand Ronde-Forest Service and Nez Perce-USFWS collaborative agreements is another example of agency control that is retained over the project and the Tribes. The allocation of federal funding into the collaborative agreement introduces a number of mandates on the project that may not be necessary in other circumstances. This can be a challenge to the implementation of TEK in on-the-ground resource management because it decreases the level of flexibility in the implementation process. However, if projects are going to succeed, federal funding needs to be consistent, but flexible enough, to support the Tribe's responsibilities as outlined in the agreement. This is supported by research from the Pinchot Institute (2001). They found that one of the issues surrounding collaboration with the Forest Service is the availability and allocation of funding, restrictions in the budgetary structure, the slow allocation of funds, and the inability to fund involvement (Pinchot Institute, 2001).

5.2.3.2 Federal management authorities

All three of the federal agencies involved with the collaborative arrangements have influenced the Tribes' ability to implement on-the-ground management practices through the overall management authorities they retain under the agreements. In the Nez Perce-USFWS agreement, the USFWS

retains the overall authority for the de-listing and recovery of wolves (USFWS, 2005) and in both the Grand Ronde-Forest Service and MCDG-Forest Service agreements, the Forest Service retains overall authority for the management of federal lands (Forest Service, 1999; Forest Service, 2004). Therefore, any management activity that occurs under these agreements is subject to final approval from the agencies involved. It is the agencies interpretation of these authorities that influence the implementation of TEK. Although the MCDG-Forest Service and Grand Ronde-Forest Service agreements function under the same federal mandates, the Forest Service's vague interpretation on this authority in the MCDG-Forest Service agreement has provided the MCDG with the flexibility to implement Maidu TEK and traditional management practices. An agencies' rigid interpretation of these authorities makes the implementation of TEK more difficult.

These authorities influence the Tribes' capacity to implement projects on federal lands because if projects proposed by the Tribes fail to meet agency guidelines, they may not be implemented. Several researchers (Carr et al, 1998, Pinchot Institute, 2001, Dalal-Clayton and Dent, 2001) have identified that an agency's inability to relinquish its authority on federal lands is a barrier to collaboration. Therefore, support from local agency officials to provide flexibility in the collaborative process is important to counteract this issue (Selin and Chavez, 1999).

5.2.4 The collaborative process influences the agreement through turnover, personal ownership, and the structure of the agreement.

5.2.4.1 Turnover in personnel

In the MCDG-Forest Service and Grand Ronde-Forest Service collaborative agreements, turnover in personnel has influenced the projects by introducing uncertainty into the projects through changes in support, priorities, goals, and institutional memory of the arrangement. Research by the Pinchot Institute (2001) and Mitsos and Ringgold (2001) indicates that turnover is a

factor that influences the success of the collaborative process with the Forest Service.

Anne, with the MCDG, stated it best when she said that turnover can bring both positive and negative changes in the project's support: "you either get people who are invested in it, or you don't. So I feel like I'm flipping a coin, we have to be prepared for both outcomes." Turnover in personnel introduces staff members that either support or resist the collaborative agreement. When the personnel involved in the collaborative effort are supportive of the agreement the project becomes a priority, has financial support, and is able to move forward. However, when those involved in the collaborative effort are unsupportive of the agreement the collaborative process begins to struggle: there is less flexibility in the implementation of the project and potential decreases in funding, and the collaborative agreement becomes a lower priority.

Whether or not the collaborative agreement is designed to implement TEK, turnover within the project introduces uncertainty into the collaborative process through the potential changes in support and by disrupting the institutional memory of the project. Collaborative agreements that are designed to implement TEK into on-the-ground resource management techniques require consistent interpretation of federal regulations and the agreements. Turnover in personnel introduces different individuals who may have different interpretations of the agreement, the legislative authorities governing the agreement, and the overall understanding of the collaborative relationship. This damages the collaborative effort and implementation of TEK by slowing the momentum of the ongoing effort and forcing both the tribe and the agency to renegotiate and relearn the goals of the project and how collaboration will occur.

This finding is consistent with research from the Pinchot Institute (2001) and Mitsos and Ringgold (2001), which found that turnover creates a lack of institutional memory in addition to different understandings and confusion over

legal authorities and land management responsibilities (Pinchot Institute, 2001; Mitsos and Ringgold, 2001).

5.2.4.2 Personal ownership

Whether or not the project is designed to implement TEK into on-the-ground resource management, an individuals' personal ownership in the collaborative agreement is an important factor in the success of the agreement. A large amount of the success in the early years of the Grand Ronde-Forest Service agreement can be attributed to the personal ownership of Tribal and Forest Service personnel who worked to develop the project. Personal ownership in the project contributed to the development of the agreement, influenced where the project was on the stakeholders' list of priorities, and impacted implementation. Those individuals who have ownership in the collaborative process are more likely to push the agreement forward, find the resources to keep the project going, and provide direction to other staff members to do the same. Research by Michaels et al. (1999) supports this finding that personal ownership is an important component to collaboration. They found that agency personnel who supported cooperation helped motivate the agency's participation.

Changes in personnel that have personal ownership in the collaborative agreement can be damaging to the collaborative process. These changes decrease the personal ownership in the project, which significantly alters the support for the collaborative agreement. Without personal ownership in the collaborative agreement, those involved are indifferent to the success of the collaborative agreement. When talking about his role in the Grand Ronde-Forest Service agreement, Don, the previous District Ranger made this point clear:

> "I put in a lot of time on it instead of getting others to get invested into it, and then when you have a change in leader, that may not be his priority. Or he may not let things go through those kinds of things, so it just kind of dies."

Changes in key personnel for both the Grand Ronde Tribes and Forest Service explain the current inactivity of the Grand Ronde-Forest Service collaborative agreement. This turnover created a loss of personal ownership, introduced uncertainty into the future of the project, caused confusion over the project's goals, and shifted the project from a high to a low priority for both the Tribes and the Forest Service.

In the Nez Perce Tribe-USFWS agreement, the stakeholders involved have gained shared, personal ownership in the collaborative agreement through defined roles and responsibilities. This definition allows all of the stakeholders to contribute independently to the overall project and creates pride when their responsibilities are accomplished successfully. The significance of shared ownership is supported by Bryan (2001), who claim that shared ownership is one of the goals of collaboration: it is a collective recognition that a larger problem or crisis exists and an acceptance of responsibility for correcting the problem (Bryan, 2001). Wondolleck and Yaffee (2000) believe that shared ownership of the problem and collaborative process can facilitate successful collaborative agreements. However, the Tribe's ownership in the collaborative process has been threatened with the shift in management authority from federal to state government. This has the potential to damage the success of collaborative agreements in the future because of resentment and challenges to the Tribe's organizational capacity.

5.2.4.3 Structure of the collaborative agreement.

An important component to the success of a collaborative agreement is structure. Both the Nez Perce Tribe-USFWS and the MCDG-Forest Service agreements incorporate a structure that outlines how the stakeholders will

collaborate. The structure provides a common goal for the project, determines an outcome for the agreement, details the responsibilities of the stakeholders, addresses how collaboration will occur, describes a desired end result, and states how that end result will be achieved.

The cooperative agreement between the Nez Perce Tribe and USFWS detailed the goals of the agreement, the individual roles and responsibilities of the parties, and the end goal (a recovered wolf population). It established a number of committees and processes to achieve the recovery goal.

The MCDG-Forest Service agreement has three different documents that provide the framework for the Maidu Stewardship Project: the contract, communication protocol, and Environmental Impact Statement (EIS). The contract describes the purpose of the contract, lists the activities that the MCDG are responsible for, and describes a desired end result. The EIS describes the work to be completed under the stewardship contract, and the communication protocol outlines how collaboration and communication is going to occur between the MCDG and the Forest Service. Although the agreement describes the end result and the work that will be completed, it establishes the framework for the collaborative agreement to implement TEK in on-the-ground management practices because it states that the work will be completed using Maidu TEK and traditional Maidu management practices. However, the agreement does not describe TEK or how it is going to be implemented. By incorporating a common understanding of TEK and traditional management activities into the collaborative agreement, there would be less controversy surrounding what TEK is and how it is going to be implemented. Furthermore, the agency should not need to be responsible for incorporating that understanding of TEK into the collaborative agreement. It is the responsibility of the Tribe to incorporate their understanding of TEK since they retain the knowledge.

The Grand Ronde-Forest Service agreement incorporates few of these structural elements into the collaborative agreement. It states a common goal

and generally describes the responsibilities of the Tribe and Forest Service but it does not address how collaboration is going to occur, what the end result will look like, or how the end result will be achieved. This lack of detail introduces vulnerability into the collaborative process by allowing the majority of the agreement to be defined based on interpretation. Therefore, the agreement is more likely to develop problems due to changes within the stakeholders.

Research on collaboration has addressed the collaborative process but rarely addresses the collaborative agreements themselves. Research states that the collaborative process needs to be flexible (Pinchot Institute, 2001; Williamson and Ellefson, 1997; Selin and Chavez, 1995; Waage, 2001). However, others have argued that a structured agreement that provides a common goal (Michaels et al., 1999; Selin and Chavez, 1995) and defines stakeholders' roles and responsibilities, contributing to successful collaborative agreements because the collaborative process becomes incorporated into the agreement. This latter argument is supported by Wondolleck and Yaffee (2000), who found that institutionalizing the collaborative process is one way for the collaboration to persist over time because it allows the collaboration to become self-sustaining.

Although the agreements themselves are often agency documents, the determination of what is included within the agreement is not the sole responsibility of the agency. Tribes need to play an active role in developing the agreement's structure, defining the goals of the agreement, developing the collaborative process, and outlining their roles and responsibilities. This provides shared ownership in the collaborative process and as a result, the agreement is less like a contract. This is especially important when TEK is to be implemented into on-the-ground management activities under the collaborative agreement. Since tribes need be responsible for implementing TEK, it is necessary for them to be a driving force in the structure of the collaborative agreement so they can be assured that the agreement will allow

them to implement TEK into on-the-ground management activities as they deem necessary.

With a structured agreement, changes that occur within the agency or tribe are less significant because the agreement outlines the relationship, holds stakeholders accountable for their responsibilities, and clarifies the relationship when those changes occur. An agreement that is weaker in structure introduces uncertainty regarding the collaborative process, less accountability since nothing is clearly defined, and is less binding because support for the agreement resides more with the personnel involved than if it was formalized within the agreement.

5.3 Limitations of this Research

The goal of this research was to understand the factors that influenced the use of TEK in collaborative agreements between American Indian tribes and federal agencies. The first limitation of this research is that although two case studies incorporated TEK into the collaborative effort, only one of the three case studies was actively working to incorporate TEK into on-the-ground natural resource management. Therefore, any comparison between the different types of collaborative agreements and their influence on the implementation of TEK into on-the-ground management activities was not completed. However, this research does show that co-management agreements, in the form of stewardship contracts, can allow for the implementation of TEK into natural resource management by giving a tribe the power and authority to implement TEK as they view it. Furthermore, the MCDG implementation of TEK provides insight into tribal and agency factors that influence the use of TEK in collaborative agreements and natural resource management. Detailed interviewing allowed me to understand the many components of TEK, the role of TEK within the tribe, and factors that have influenced the implementation of that knowledge. Even though informants may not have been asked to define TEK, they were asked about their

relationship with the environment. This allowed me to describe the components of TEK and provided a detailed picture of that knowledge base without introducing preconceived notions regarding TEK or past research regarding TEK.

The second limitation of this research is that the fourth research question remains largely unanswered. The fourth research question of this study asked: how do different collaborative arrangement types between tribes and federal agencies influence the use of TEK? Even though this research does argue that co-management agreements can implement TEK into on-the-ground natural resource management more effectively than contractual agreements, it does not address the role of tribes or TEK in the decision-making process, impacts of TEK on power sharing, mutual dependency, and trust, whether or not tribal or federal cultures change in response to the implementation of TEK, the incorporation of TEK into land management practices and philosophies.

This research is also limited in its application to other research in collaboration. It can not be applied to collaborative efforts with public or community organizations because of the unique political and legal status that surrounds American Indian tribes. Furthermore, this research may be limited in its application to native cultures in Alaska. The native corporations of Alaska introduces additional policies, such as the Alaska Native Claims Settlement Act, that are specific to Alaskan natives and do not include Native American tribes in the lower continental United States. These additional policies influence the federal government's relationship with Alaskan natives and therefore may influence the application of this research to collaborative efforts between Alaskan natives and the federal government.

5.4 Future Research

By conducting this research I have identified potential areas for future research. The understanding of tribal-federal collaborative agreements could

be enhanced by exploring the impacts of factors that are specific to tribal governments and the following research:

- Tribal politics. Tribal politics differ from federal politics in that family politics, feuds, and relationships influence the distribution of power within the tribal organization. They can determine who is elected into a place of power, who is hired in a given position, and who benefits from the tribe's activities. By exploring the internal factors of tribal politics we may further understand the distribution of power within tribal organizations; which ultimately impact the collaborative agreements.
- Race. The local communities surrounding tribal reservations still face issues of racism, prejudicial treatment of American Indians, and conflict between native and non native populations. These issues may ultimately influence who is willing to work with tribes and any collaborative arrangements that a tribe may enter into that impact local communities, public lands, or that involve local governments. By addressing the role of race within community politics and beliefs, we may identify potential barriers to collaborative agreements with tribes and propose ways of addressing the issues.
- Connection to place. All tribes have a different history; some have remained on their original reservation, others have been moved to reservations that are away from their ancestral lands, and others haven't been given a reservation of their own. For each of these circumstances, a tribes' connection to their ancestral lands is different. These differences in connection to ancestral homelands may influence tribal TEK because those that remain in their ancestral lands have continued to have a relationship with traditionally significant species. Those who were moved from their ancestral lands had to change and adapt to a life in a new place, with new resources. This can provide insight into why tribes have different definitions of TEK.

- Sovereignty. Tribes across the United States may be recognized as a sovereign entity, or not recognized as a tribe at all by the federal government. Tribes that are recognized are viewed as independent sovereigns and have a right to self govern while those without federal recognition are not viewed as a member of a tribe even though they can trace their tribal ancestry. Research on the differences in federal recognition can help researchers to understand the impacts of this recognition on the distribution of power within collaborative agreements.

This information would provide a more comprehensive understanding of tribal organizations, the influences on tribal organizations, and how those factors influence collaborative agreements with other governmental organizations.

6 LITERATURE CITED

Alaska Native Claims Settlement Act. 43 U.S.C. § 1639. 1971.

American Indian Policy Center. December 30, 2003. Brief History of U.S.-Tribal Relations. http://www.airpi.org/projects/history.html. Accessed July 15, 2004.

American Indian Religious Freedom Act. Pub. L. 95-341, 42 U.S.C. 1996 &1996a. Passed 1961.

Audubon Society. Champions of Conservation. Available online at: http://magazine.audubon.org/century/champion.html. Accessed December 28, 2005

Baker, M. and J. Kusel. 2003. Community Forestry in the United States. Learning from the Past, Crafting the future. Washington: Island Press. 247 pgs.

Bakken, L.J. 1973. Land of the North Umpquas. Grants Pass: Te-Cum-Tom Publications. 40 pgs.

Beckham, S.D. 2000. The Confederated Tribes of Grand Ronde Community of Oregon: Tribal and Band Identities, Aboriginal Areas, Treaties, Establishment of Reservation Governments, and Status of Claims. Report Submitted to the Confederated Tribes of Grand Ronde. November 20, 2000. 199 pgs.

Beckham, S.D. 2003. The Confederated Tribes of the Grand Ronde Community of Oregon: An examination of failures in agricultural programs, off reservation subsistence activities, areas of use, BIA facilitation of the pass system, and understandings of treaties. Report Submitted to Kanji & Katzen, March 31, 2003. 146 pgs.

Beckley, T.M. 1998. Moving toward consensus-based forest management: A comparison of industrial, co-managed, community and small private forests in Canada. The Forestry Chronicle 74(5): 736-744.

Berkes, F., J. Colding, and C. Folke. 2000. Rediscovery of Traditional Ecological Knowledge as Adaptive Management. Ecological Applications 10(5): 1251-1262.

Berkes, F., C. Folke, and M. Gadgil. 1994. Traditional Ecological Knowledge, Biodiversity, Resilience and Sustainability. IN: Biodiversity Conservation. C.A. Perrings et al. Kluwer Academic Publishers, Netherlands: 269-287.

Berkes, F.; M. Kislalioglu; C. Folke; M. Gadgil. 1998. Exploring the Basic Ecological Unit: Ecosystem-like concepts in Traditional societies. Ecosystems 1: 409-415

Berkes, F. 1995. Indigenous Knowledge and Resource Management Systems: A Native Canadian Case Study from James Bay. IN: Property Rights in a Social and Ecological Context: Case studies and design applications. Hanna, S. and M. Munasinghe eds. Washington D.C.: The World Bank. 99-109.

Berkes, F. 1999. Sacred Ecology: Traditional Ecological Knowledge and Resource Management. Taylor and Francis: Philadelphia PA. 209 pgs.

Bouwen, R. and T. Taillieu. 2004. Multi-party collaboration as social learning for interdependence: Developing relational knowing for sustainable natural resource management. Journal of Community and Applied Social Psychology 14: 137-153.

Bryan, T. 2004. Tragedy Averted: The promise of collaboration. Society and Natural Resources 17(10): 881-896.

Burns. S. 2001. A civic conversation about public lands: Developing community governance. IN: Understanding Community-based forest ecosystem management. G.J. Gray, M.J. Enzer, and J. Kuzel eds. Binghamton NY: Forest Products Press. 271-290.

Carr, D., S. Selin, and M. Schuett. 1998. Managing Public Forests: Understanding the Role of Collaborative Planning. Environmental Management 22(5): 767-776.

Clark, F. 1996. A Protocol for Acquiring, Using, and Disseminating Traditional Ecological Knowledge for Region 10, Alaska. 11 pgs.

Clinton, W.J. 2000. Executive Order 13175-Consultation and coordination with Indian tribal governments. Federal Register 65 (218). (November 9)

Confederated Tribes of Grand Ronde. "5 Tribes of the Confederated Tribes of the Grand Ronde Community of Oregon." Smoke Signals, Spring 2005. 12 pgs.

Convention on Biological Diversity. Article 8(j): Traditional Knowledge, Innovations and Practices Introduction. Available online at: http://www.biodiv.org/programmes/socio-eco/traditional/default.asp. Accessed March 21, 2006.

Cortner, H., M. Shannon, M. Wallace, S. Burke, and M. Moote. 1996. Institutional Barriers and Incentives for Ecosystem Management: A Problem Analysis. USDA Forest Service. Portland, OR. 35 pgs.

Craver, C.B. 2003. Negotiation Styles. Dispute Resolution Journal, February/April: 49-55.

Cruikshank, J. 1998. Yukon Arcadia: Oral Tradition, Indigenous Knowledge and the Fragmentation of Meaning. IN: The Social Life of Stories: Narrative and Knowledge in the Yukon Territory. University of Nebraska Press, Lincoln NE. 45-70.

Dalal-Clayton, B. and D. Dent. 2001. Knowledge of the Land: Land Resources Information and its use in Rural Development. New York, Oxford. 448 pgs.

Endangered Species Act. 16 U.S.C. 35. 1973.

Endangered and Threatened Wildlife and Plants; Regulation for non-essential experimental populations. 50 C.F.R. Part 17. Vol 70, No. 4. January 6, 2005.

Fienup-Riordan, A. 2001. A Guest at the Table: Ecology from the Yup'ik Eskimo Point of View. IN: J. Grim. Indigenous Traditions and Ecology: The Interbeing of Cosmology and Community. Harvard University Press: Cambridge MA. 541-558.

Fisher, F. The return of the particular: Scientific inquiry and local knowledge in postpositivist perspective. IN: Citizens, Experts, and the Environment. Durham: Duke University Press. 68-85.

Forest Reserve Act. 26 Stat. 1095. 1891.

Glaser, B.G. and A.L. Strauss. 1967. The Discovery of Grounded Theory: Strategies of Qualitative Research. New York, NY: Aldine Publishing Company. 271 pgs.

General Allotment Act. 24 Stat. 388-91, NADP Doc. A1887. 1887.

Grand Ronde Reservation Act. PL 100-425, 102 Stat. 1594, September 9, 1998.

Grand Ronde Restoration Act. 97 Stat 1064, 25 U.S.C. 14 § 713. November 22, 1983.

Grand Ronde Termination Act. 25 U.S.C. 691. August 13, 1956.

Grey, B. 1985. Conditions Facilitating Inter-organizational Collaboration. Human Relations 38 (10): 911-936.

Haines, F. 1964. The Nez Perce Tribe versus the United States. Idaho Yesterdays 8(1): 18-25.

Harvard University, John F. Kennedy School of Government. The Harvard Project. http://www.ksg.harvard.edu/hpaied/hn/hn_1999.html. Accessed December 28, 2005.

Henson, C.L. 1996. From War to Self-Determination. A History of the Bureau of Indian Affairs. American Studies Today. Available online at: http://www.americansc.org.uk/Online/indians.htm. Accessed 7/27/04.

Hickey, C. and M. Nelson. 2005. Partnerships between First Nations and the Forest Sector: A National Survey. Sustainable Forest Management Network, Edmonton, Alberta. 30 pgs.

Hornton, D.; A. Alexaki; S. Bennett-Lartey; K. N. Brice; D. Campilan; F. Carden; J. de Souza Silva; L. Thanh Doung; I. Khadar; A. M. Boaza; I. K. Muniruzzaman; J. Perez; M.S. Chang; R. Vernooy; J. Watts. 2003. The Basics of capacity, Organizational Capacity Development, and Evaluation. IN: Evaluating Capacity Development: Experiences from Research and Development Organizations around the World. The Netherlands: International Service for National Agricultural Research (ISNAR); Canada: International Development Research Centre (IDRC), the Netherlands: ACP-EU Technical Centre for Agricultural and Rural Cooperation (CTA).

Huntington, H.P. and M.E. Ferna'ndez-Gime'nez. 1999. Indigenous Knowledge in the Arctic: A review of research and applications. Indigenous Knowledge and Development Monitor 7(3):11-14.

Idaho Legislative Wolf Oversight Committee. 2002. Idaho Wolf Conservation and Management Plan. March 2002. 32 pgs.

Indian Citizenship Act. 43 Stat. 253 ante 420. 1924.

Indian Civil Rights Act. 25 U.S.C. §§1301-1303. 1961.

Indian Reorganization Act. 48 Stat. 984. 1934.

Josephy, A.M. 1970. The Native Peoples of California. IN: The Heritage of America. New York: Alfred A. Knoff, Inc. 138-146.

Kimmerer, R. 2000. Native Knowledge for Native Ecosystems. Journal of Forestry 98 (8): 4-9.

Kroeber. A.L. 1925. The Maidu: Land and Society. IN: Handbook of the Indians of California. Washington: Government Printing Office. 391-404.

Leavelle, T.N. 1999. 'We will make this our own place.' Agriculture and adaptation at the Grand Ronde Reservation 1856-1887. American Indian Quarterly 22 (4) 433-457.

Lesko, L.M. and R.G. Thakali. 2001. Traditional Knowledge and Tribal Partnership on the Kaibab National Forest with and Emphasis on the Hopi Interagency Management. IN: R.L. Clow and I. Sutton eds. Trusteeship in Change. Toward tribal Autonomy in Resource Management. Boulder: University Press of Colorado. 281-301.

Lewicki, R.J., D.M. Saunders and J.W. Minton. 1999. Negotiation, Third Edition. McGraw-Hill Publishing, Boston. 528 pgs.

London, J.K. 2002. American Indian Management of Federal Lands: The Maidu Cultural and Development Group. IN: E.T. Jones, .J. McLain and J. Weigand eds. Nontimber Forest Products in the United States. Lawrence: University of Kansas Press. 327-344.

Mack, C.M.; J. Holyan, and I. Babcock. 2005. Idaho Wolf Recovery Program: Restoration and management of gray wolves in central Idaho. Progress Report 2004. Nez Perce Tribe, Department of Wildlife Management, Lapwai ID. 50 pgs.

Maidu Cultural and Development Group. 2000. Definition of the Ownership of the MCDG Stewardship Project Knowledge Base. 8 pgs.

Mauro, F. and P.D. Hardison. 2000. Traditional knowledge of Indigenous and local communities: International debate and policy initiatives. Ecological Applications 10(5): 1263-1269.

McWhorter, L.V. 2000. Yellow Wolf: His own story. Caldwell ID: Caxton Press. 327 pgs.

Messerschmidt, D. 1993. Linking Indigenous Knowledge to Creative Co-management in Community Forest Development Policy. K. Warner and H. Wood. Regional Community Forestry Training Center, Bangkok: 35-47.

Michaels, S., R. Mason, and W. Solecki. 1999. Motivations for Ecostewardship Partnerships: Examples from the Adirondack Park. Land Use Policy 16:1-9.

Mintzberg, H. 1983. Power. IN: Power In and Around Organizations. Englewood Cliffs NJ: Prentice Hall, INC. 1-7.

Mitchell, J. 1997. Forest Service National Resource Guide to American Indian and Alaskan Native Relations. USDA Forest Service, Washington D.C. 136 pgs.

Mitsos, M. and P.C. Ringgold. 2001. Testing Stewardship Concepts on Federal Land. IN: G.J. Gray, M.J. Enzer, J. Kusel. Understanding Community-based Forest Ecosystem Management. Binghamton NY: Food Products Press. 305-320.

Nadasdy, P. 1999. The politics of TEK: Power and the Integration of Knowledge. Arctic Anthropology 36(1-2): 1-18.

National Environmental Policy Act. Pub Law 91-190, 42 U.S.C. 4321-4347. 1970.

National Forest Foundation, USDA Forest Service. 2005. Partnership Guide. Available online at: http://www.partnershipresourcecenter.org/resources/partnership-guide/.

National Historic Preservation Act 16 U.S.C. 470. 1966.

National Indian Forest Management Act. 104 Stat. 4532. 1990.

Native American Graves Protection and Repatriation Act. 104 Stat. 3048. November 16, 1990.

Nez Perce Tribe. 2003. Treaties: Nez Perce Perspectives. Environmental Restoration & Waste Management Program, The United States Department of Energy. Confluence Press. 148 pgs.

Nez Perce Tribe and the State of Idaho. 2005. Memorandum of Agreement Between the State of Idaho and the Nez Perce Tribe Concerning the Coordination of Wolf Conservation and Related Activities in Idaho. Signed April 2005.

Nie, M.A. 2003. Beyond Wolves: The Politics of Wolf Recovery and Management. Minneapolis: University of Minnesota Press. 253 pgs.

Pierotti, R. and D. Wildcat. (2000). Traditional Ecological Knowledge: The Third Alternative (Commentary). Ecological Applications 10(5): 1333-1340.

Pinchot Institute for Conservation. 2001. Partnership with the USDA Forest Service Improving Opportunities and Enhancing Relationships. Washington D.C. 28 pgs.

Pinkerton, E.W. 1989. Attaining Better Fisheries Management through co-management-prospects, problems, and propositions. IN: Co-operative management of local fisheries: New direction for improved management and community. Vancouver: University of British Columbia Press. 3-36.

Pinkerton, E.W. 1992. Translating Legal Rights into Management Practice: Overcoming barriers to the exercise of co-management. Human Organization 51(4):330-341.

Powers, S. 1976. The Mai'-du or Mai'-deh. IN: Tribes of California. Los Angeles: University of California Press. 282-312.

Public Law 280. 28 U.S.C. 1360. 1953.

Robbins, S.P. and N. Barnwell. 1994. Organizational Theory in Australia 2nd Edition. Sydney: Prentice Hall.

Robson, C. 2003. Real World Research. United Kingdom: Blackwell Publishing. 599 pgs.

Schuett, M., S. Selin, and D. Carr. 2001. Making it Work: Keys to Successful Collaboration in Natural Resource Management. Environmental Management 27(4): 587-593.

Self Determination and Education Act. 88 Stat. 2203, 25 U.S.C. 450. 1974

Selin, S. and D. Chavez. 1995. Developing a Collaborative Model for Environmental Planning and Management. Environmental Management 19(2): 189-195.

Sherry, E. and H. Myers. 2002. Traditional Environmental Knowledge in Practice. Society and Natural Resources 15: 345-358.

Sillitoe, P. 1998. The Development of Indigenous Knowledge. Current Anthropology 39(2): 223-235.

State of Idaho and the Nez Perce Tribe. 2005. Memorandum of Agreement between the State of Idaho and the Nez Perce Tribe concerning coordination of wolf conservation and related activities in Idaho. Signed April, 2005.

Strauss, A.L. 1987. Qualitative analysis for social scientists. Cambrigde: Cambridge University Press. 319 pgs.

Transfer Act. 33 Stat. 628. February 2, 1905.

Thompson, S. and E. Donoghue. 2005. Summary of Preliminary Findings: Profiles of Collaborative Resource Management Agreements between American Indian Tribes and Federal Resource Management Agencies in the United States. On file with authors at USDA Forest Service, Pacific Northwest Research Station. Portland, OR. 37 pgs.

Tribal Forest Protection Act. Pub Law 108-278, 118 Stat. 868-871, 25 U.S.C. 3101-3115a. 2005.

University of Montana. Rural Institute. A brief history of U.S. laws applied to American Indians. http://rtc.ruralinstitute.umt.edu/Indian/Factsheets/AIDLHistory.htm. Accessed 7/15/2004.

Usher, P.J. 2000. Traditional Ecological Knowledge in Environmental Assessment and Management. Arctic 53(2) 183-193.

US Fish and Wildlife Service. 2000. Rocky Mountain Wolf Recovery 2000 Annual Report. The Mountain-Prairie Region. Available online at: http://www.r6.fws.gov/wolf/annualrpt2000/html/annualrpt2000.htm. Accessed 6/28/ 05.

US Fish and Wildlife Service, Nez Perce Tribe, National Park Service, Montana Fish, Wildlife and Parks, Idaho Fish and Game, and USDA Wildlife Services. 2005. Rocky Mountain Wolf Recovery 2004 Annual Report. D. Boyd, ed. USFWS, Ecological Services, 100 N. Park, Suite 320, Helena MT. 72 pgs.

US Fish and Wildlife Service. 2005. Cooperative Agreement between the US Fish and Wildlife Service and the Nez Perce Tribe. FWS Agreement No: 144205J040. Snake River Fish and Wildlife Office.

US Forest Service, Plumas National Forest. 2004. Maidu Stewardship Contract. Contract No. 53-9SCP-04-1K-28. Pacific Southwest Region.

US Forest Service: Mount Hough Ranger District and Eagle Lake Ranger District. 2004. Maidu Stewardship Landscape Analysis. Pacific Southwest Region.

US Forest Service: Mount Hough Ranger District, Plumas National Forest. 2003. Maidu Stewardship Environmental Assessment. Pacific Southwest Region. 30 pgs.

US Forest Service, Siuslaw National Forest. 1999. Participative Agreement # PA-99-06-12-038 between the Confederated Tribes of the Grand Ronde Community of Oregon and the Siuslaw National Forest Service, U.S. Department of Agriculture. Pacific Northwest Region.

U.S. v. Washington. Case no. C70-9213. February 12, 1974.

Waage, S.A. 2001. Reclaiming space and place through collaborative planning in rural Oregon. Political Geography 22: 839-857.

Williams, E.M. and P.V. Ellefson. 1997. Going into partnership to manage a landscape. Journal of Forestry 95(5): 29-33.

Wilson, P.I. 1999. Wolves, Politics, and the Nez Perce: Wolf Recovery in Central Idaho and the Role of Native Tribes. Natural Resources Journal 39: 543-564.

Wise, C.; J.J. Yeo; D. Goble; J.M. Peek; J. O'Laughlin. 1991. Wolf Recovery in Central Idaho: Alternative Strategies and Impacts. Idaho Forest, Wildlife and Range Policy Analysis Group: Report No. 4, University of Idaho. 36 ps.

Wondolleck J.M. and S.L. Yaffee. 2000. Making Collaboration Work: Lessons from Innovation in Natural Resource Management. Washington D.C.: Island Press. 277 pgs.

Yin, R. K. 1994. Case Study Research: Design and Methods. 2 ed. Vol. 5, Applied Social Research Methods Series. London: Sage Publications, Inc. 179 pgs.