

COOPERATIVE MANAGEMENT OF TOPPENISH CREEK WETLANDS IN CENTRAL WASHINGTON: A QUESTION OF HISTORY, CULTURE, AND SOVEREIGNTY

by

JAMES J. SIEGEL

(Under the direction of Ted Gragson)

ABSTRACT

This dissertation is a study of the influence of history, culture, and sovereign rights on the negotiation of a cooperative agreement for managing neighboring federal and tribal wetlands. The U.S. Fish and Wildlife Service (FWS) and the Yakama Nation (YN) have entered into an agreement to coordinate management activities for Toppenish National Wildlife Refuge (TNWR) and surrounding wetlands on Toppenish Creek, a Yakima River tributary on the Yakama Reservation. Using an analysis of political history, an analysis of interview discourse, institutional ethnography, and participant observation, I examined the wetland management approaches employed by the two entities. The FWS and YN continue to disagree on how best to manage TNWR. The FWS has applied a waterfowl impoundment approach to the TNWR for 40 years. In contrast, the YN is applying a restoration approach on its Toppenish Creek wetlands, reconnecting blocked historic creek channels and re-establishing native vegetation to benefit wildlife and fish. One area of disagreement is how to accommodate steelhead, a threatened anadromous trout valued as a traditional food by the YN, in the management of TNWR impoundments.

The alternative management approaches chosen by the two agencies cannot be simply attributed to their differing resource objectives. I show that their differing management approaches are grounded in the specific historical and cultural trajectories of their agencies, including the worldviews and cultural values of their employees and leadership, and the scientific

paradigms and land management ideals they embrace. My historical analysis of the management of Toppenish wetlands by the YN and FWS indicates the importance of key formative periods, the institutional direction provided by key actors, and their application of particular land management paradigms in setting the course of wetland planning for their agencies. My analysis also reveals a clear zone of tension between the exercise of Yakama tribal sovereignty over reservation resources and the prerogatives of the FWS exercising control over national migratory bird refuges located on the reservation. This study also shows that the FWS-YN cooperative agreement is not a subtle new form of U.S. state formation in the region, but a manifestation of growing Yakama sovereignty and nation power.

INDEX WORDS: Ecological anthropology, comanagement, federal lands, tribal natural resource management, wetlands, wetland management, land management, natural resource management, waterfowl management, impoundments, moist soil, stream restoration, U.S. Fish and Wildlife Service, Yakama Nation, Yakama Reservation, national wildlife refuges, Toppenish National Wildlife Refuge, Toppenish Creek, Yakima River, Pacific Northwest, tribal sovereignty, institutional ethnography, anadromous fish

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DEDICATION

To the people who do much of the work of conservation: the Biological Technicians and Wage Grade Employees.

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I want to dedicate this dissertation to all the people who do the conservation work on the ground, who keep the refuges, fish hatcheries and restoration projects running, who replant the

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CHAPTER 1

INTRODUCTION

The Research Problem

Collaborative management agreements between local communities and central governments show promise as a way of addressing natural resource and land management conflicts in a participatory and equitable manner (Castro and Nielson 2001). Various studies have shown that people from different cultural backgrounds and with different personal and professional experiences value and think about natural resources in different ways (Richardson et al. 1996, Strang 1997, Schelhas 2002, Taipei et al. 1997). One of the key contributions of comanagement is that it allows various cultural and technical perspectives and experiential and traditional ecological knowledge to enter the management process addressing a variety of conservation problems (Agrawal 1995, Ebbin 2002). Collaborative management of land and natural resources by federal governments and indigenous communities is a growing movement in a number of industrialized countries, most notably in Australia, Canada and New Zealand.

In the United States, the Indian Self Determination Act of 1975 and Tribal Self Governance Act of 1994 provide a mechanism for transferring authority over federal programs, including management of federal lands, to tribes. Tribal governments can contract with the Department of Interior (DOI) to manage programs that are of “special geographic, historical and cultural significance” to tribes. The law permits tribes to enter into cooperative agreements and annual funding agreements to manage National Wildlife Refuges, national parks and monuments, federally controlled rivers and reservoirs, and trust fish and wildlife species, among other Interior Department activities.

Since the passage of this enabling legislation, the FWS and other DOI agencies and Native American tribal governments have been slow in expanding their level of cooperation on wildlife

and protected area issues. Between 1994 and 1995, the U.S. Fish and Wildlife Service (FWS) entered into the first endangered species cooperative management agreements with tribes: comanagement of gray wolves in the Northern Rockies with the Nez Perce of Idaho (Wilson 1999) and of Mexican wolves with the White Mountain Apache in Arizona. In 2004 and 2005, again setting precedent, the FWS entered into annual funding agreements with the Council of Athabascan Tribal Governments to collaborate in the management of the Yukon Flats National Wildlife Refuge (NWR), Alaska and with the Confederated Salish and Kootenai Tribes to collaborate in the management the National Bison Range, Montana. Many tribal communities saw the Bison Range agreement as an important ‘foot in the door,’ possibly unleashing a flood of tribal–FWS management cooperation in Indian Country.

The reality has been a disappointment to the tribal communities; the tribal-FWS comanagement process has been stalled since 2005. The precedent setting Bison Range agreement ended after 18 months with bitter recriminations of a hostile work environment and poor job performance. While the Yukon Flats NWR funding agreement continues today, no new land management agreements between the FWS and other Native American have been negotiated since 2005. In examining the potential for comanagement in this country, a huge professional and perhaps cultural gap between the FWS and Native American natural resource management programs has been revealed.

A worldview describes a person’s understanding of the world and their place in it, their cognitive model or vision of their existence, what Robert Redfield (1952) called their “idea of the universe.” As this view is constructed by a person’s membership in a society, shared with his social group by being shaped by his language and common training and experience as a member of a community, it is a cultural endowment to the individual from his society. Although an individual’s worldview is largely rooted in the traditions of his community, it also may be influenced by more immediate historical, political and societal conditions. Alfonso Ortiz (1973) believed worldviews help people interpret their experience, providing direction and a set of community values, much the way that D’Andrade, Strauss and Quinn described cognitive model

schemas as motivating and directing behavior (D'Andrade and Strauss 1992, Strauss and Quinn 1999). In serving as a cognitive model of a person's place in the natural world, worldviews will impact the valuation, management and use of natural resources and of landscapes. Smith (1995) argues that the various stakeholders in resource comanagement agreements have different views of the nature of nature, including different cognitive models of their understanding of the world. Divergent worldviews, environmental philosophies and cognitive models may act as obstacles to finding common ground in comanagement negotiations. Are divergent worldviews and cognitive models proving a barrier to comanagement agreements between the FWS and tribal governments?

This dissertation presents a study of the land management approaches employed by wetland managers of the Yakama Nation (YN) and FWS who are navigating an agreement initiated in 2005 to cooperatively administer floodplain wetlands within and bordering Toppenish National Wildlife Refuge (TNWR), a FWS protected area embedded within the Yakama Reservation on Toppenish Creek, a tributary of the Yakima River in Washington State. Despite the cooperative agreement, the YN and FWS continue to disagree on how best to manage floodplain habitats on the 2,000 acre TNWR. One area of disagreement is whether or not refuge impoundments, developed by the FWS for wintering waterfowl, trap migrating summer steelhead (*Oncorhynchus mykiss*), a sea-run rainbow trout of cultural importance to the Yakama community and federally listed as threatened. The FWS has applied a wetland impoundment approach to the TNWR for 40 years. In contrast, the YN Wildlife Resource Management Program (YNWRP) has applied a restoration approach to the majority of its Toppenish Creek wetlands, since 1992 reconnecting historic stream channels damaged by past agricultural development and re-establishing native marsh vegetation to benefit wildlife and fish.

These alternative approaches may be attributed, in part, to the two agencies having different resource management goals and values, grounded in their specific histories and cultural trajectories. There are also disagreements over the limits of Yakama treaty rights to hunt, fish and gather on TNWR and of YN sovereignty to manage natural resources within the

Yakama Reservation free of federal control. The cooperative agreement links Yakama tribal self-determination and FWS land management authority, revealing either a subtle new form of federal control of natural resources in Indian Country in the Pacific Northwest or an expansion of Yakama sovereignty, an assertion of the Yakama's manifest nation power in relation to the federal government.

This study sought to answer three questions:

1. How do the wetland approaches of the FWS and YNWRP in Toppenish Creek wetlands reflect the different histories of the two agencies, the dominant worldviews of their employees and constituencies, their agency conservation goals and values, and the scientific paradigms they ascribe to?
2. Is the agreement between the FWS and YN a subtle exercise of federal control of natural resources on the Yakama Reservation or a demonstration of the growth of Yakama Nation power?
3. What generalizable conclusions about federal-tribal comanagement can be deduced by examining the YN-FWS process?

Review of Literature and Significance

The concept of comanagement was originally devised as a means of reconciling the competing imperatives of species and ecosystem protection, and indigenous rights and cultural heritage (Lane 2001). The concept is closely related to the process of community-based conservation where local communities, often indigenous, are enlisted as focal actors in the conservation of land and resources, alongside state and other mainstream conservation interests (Agrawal and Gibson 1999, Brosius et al. 2005, Igoe 2004, Natcher and Hickey 2002). The comanagement movement appears to be associated with a trend towards more anthropocentric approaches to conservation, where conservation strategies are integrated into the social, cultural and economic fabric of the region. It is also part of a global movement toward greater pluralism and decentralization in governance, resource planning and management where different

rationalities and knowledge are incorporated and management problem definitions and solutions are the shared responsibility of all relevant stakeholders (Ebbin 2002).

From a political ecology perspective, comanagement can also be viewed as one strategy used by indigenous communities to contest state alienation of land and natural resources (Igoe 2004, Notzke 1995) and actively engage in exercising their rights of self-determination and rights to own, control and manage their traditional lands and natural resources as sovereign peoples (Kuptana 1996, MacKay and Caruso 2004). In an opposing view, comanagement is viewed as a subtle manifestation of the evolving process of state formation in natural resource management on indigenous lands (Castro and Nielsen 2001, Nadasdy 2003, Stevenson 2004).

The comanagement literature has focused primarily on common property or collectively owned natural resources, often fish stocks and forests, typically discussing the merits of comanagement and examples of its successes and failures. The definition of comanagement by Berkes, George and Preston (1991) as “sharing of power and responsibility between government and local resource users” has been widely cited in the literature.

In the United States, there has been close attention to the relatively successful comanagement mechanism for threatened Pacific salmon stocks that engages American Indian, and Washington and Oregon State governments in a federal court mediated agreement (Pinkerton 1989, Ebbin 2002). Literature on the comanagement of protected areas, as described in this dissertation, is far less common and usually has focused on the process in developing countries where indigenous communities and the state share management responsibilities over park lands (Borrini-Feyerabend 1996, Lane 2001, Stevens 1997). In a widely cited work, West and Brechin (1991) defined protected area comanagement as “the substantial sharing of protected area management responsibilities and authority among government officials and local people.”

There is a slowly gathering movement in a number of industrialized countries of indigenous people gaining comanagement rights to former community lands and natural resources that had been alienated by government entities (Abbott 2001, Borrini-Feyerabend 1996, Lane 2001, De Lacy and Lawson 1997, Notzke 1995, Pinkerton 1992, Stevens 1997, Taiepa et al.

1997). In the United States, Native American–federal cooperative agreements, by creating new decision-making landscapes and participatory management frameworks, may affect the future management of public lands and fish and wildlife populations currently under sole federal jurisdiction, such as migratory and endangered species.

Pinkerton's (1989, 1992) research on Pacific salmon and Prystupa's (1997) on the New Zealand conservation estate discusses obstacles and barriers to the development of comanagement agreements. Pinkerton looked at factors such as power relationships between the negotiating parties, the legal and political climate, alliances between stakeholders and public interest in the issue. Prystupa (1997) found that favorable power relationships and legal and political climate were key factors in the Maori achieving an agreement to comanage a protected coastal lagoon with the New Zealand Department of Conservation. Pomeroy et al. (1998) discussed 28 key conditions that facilitate successful implementation of fisheries comanagement in various Asian countries; although not universally applicable the absence of any of the key conditions might prove a barrier to success.

However, the research cited above does not address the fundamental role of cultural and historical factors as potential obstacles to finding common ground in comanagement negotiations, an important part of this research. Cultural obstacles to comanagement might include divergent worldviews, environmental philosophies, attitudes and beliefs, natural resource values, and differing knowledge systems of indigenous and European communities. Such factors are not only fundamental to the cultural norms and bases of a community but include a longer range historical perspective that appears to be relatively absent from simple analyses of power relationships, political climate, and stakeholder positioning. Some examples of cultural factors that may be of key importance in comanagement are described below.

Grim (1993) and Jostad et al. (1996) conceptualized a generalized ethical and spiritual Native American environmental worldview in contrast to scientific and utilitarian Euro-American views. Yakama traditional religion and that of many other Native American hunter-gatherers has been labeled as having aspects of both animism and shamanism (Grim 1993, Hunn 1990).

In Yakama traditions and that of many indigenous North American foragers, all living things and forces of nature share aspects of personhood with human beings and must be afforded moral and ethical consideration (Feit 1970, Grim 1993, Hunn 1990, Nelson 1983). In the mid-nineteenth century, some Yakama religious and political leaders strongly rejected Euro-American worldviews of the appropriate relationship of human beings to their landscape, considering the agricultural developments of White settlers as destructive of the Earth Mother (Priest Rapids prophet Smoholla cited by Mooney 1896).

Freeman et al. (1998) described the deeply spiritual relationship between Inuit people and the fish and wildlife they caught for subsistence. Their position differed from that of Alaskan commercial fishermen of Euro-American ancestry. Greenland Inuit rights activist Ingmar Egede (1995) identifies the very concepts of “wildlife,” “fisheries,” “managing stocks,” and “harvesting” as foreign to Arctic hunting cultures, those ideas originating in European farming cultures. The above and related concepts originate in a natural resource management paradigm that dominates the discourse between state managers and indigenous peoples (Stevenson 2004). Taiepa et al. (1997) lists the Maoris’ ‘conservation for future use’ ethos as conflicting with a more Eurocentric philosophy of ‘conservation for intrinsic value’ thus inhibiting comanagement opportunities in New Zealand’s protected areas. The Maori do not see human use of park ecosystems as damaging or unethical, which contrasts with an overall preservationist model of many New Zealand protected areas and those of other industrialized countries. Smith (1995) described that how various stakeholders in fisheries comanagement agreements have different understandings of what they think about the world, of what constitutes critical data, how to interpret it and the appropriate approach to crisis. This research describes the different worldviews, and views of nature that FWS and YN employees apply in their wetland management activities, asking whether or not they are posing barriers to cooperation.

Nadasdy (2003) found that the conflict between Western scientific and Athabascan traditional ecological knowledge was a major obstacle to comanagement of Dall sheep populations in the Canadian Yukon involving government agencies, private hunting outfitters and

the Kluane First Nation community, who value sheep as a key subsistence and cultural resource. Critiques of comanagement often assert that indigenous traditional ecological knowledge (TEK) has often been appropriated by state managers and biologists (Stevenson 2004), with the knowledge “taken out of context, misinterpreted and misused” (Kuptana 1996).

In opposition to critiques of misappropriation of traditional and local knowledge in comanagement, there is an extensive literature testifying to the value of comanagement in incorporating all forms of knowledge: Western science, experiential, traditional and local ecological knowledge, in addressing conservation problems (Berkes 1998, Ebbin 2002, Ross and Pickering 2002). Comanagement allows new technical perspectives and new types of knowledge to enter the process (Ebbin 2002). Unfortunately, contemporary natural resource and land management regimes tend to privilege scientific knowledge above all others (Ebbin 2002). In the brief discussion of Yakama wetland management presented here, the literature on the use of Native American traditional ecological knowledge as being a key component of successful natural community restoration is significant. There is a growing list of publications describing the cultural foundations of contemporary ecological restoration and land management activities carried out by various Native American communities in a wide variety of ecosystems (Davis 2000–Menominee, Goin undated–Hawaii, Hames 2000 and McCorquodale et al. 1997–Yakama, Long et al. 2003–White Mountain Apache, Norton et al. 1998–Zuni). The Yakama are at the forefront of the movement toward Native American culturally lead ecosystem restoration (personal communication–Scott Aikin, FWS Region 1 tribal liaison). Yakama natural resource management programs that successfully integrate cultural values, ceremonial and subsistence use, and commodity production have served as models to other tribes in the United States and Canada (McCorquodale et al. 1997, personal observation). Yakama ethnoecology and ethnohistory are well described in the seminal ethnographic works by Eugene Hunn (1990) and Helen Schuster (1975).

Organizational behavior approaches (Knoke 2001) such as ecological and institutional theories are also applicable to this study. According to organizational ecology theory, the

YNWRP and FWS might behave as two organisms competing for the same space, similar to the concept of ecological niche, in comanagement negotiations (Carroll 1984, Hannan and Freeman 1989). This situation can encourage the weaker of the two groups to create structures or positions that help differentiate them in the organizational space (Hannan and Freeman 1989). The larger organization may have greater built in inertia, with the smaller being more flexible and responsive to challenges (Hannan and Freeman 1984).

According to institutional theory (DiMaggio and Powell 1983), organizations tend to develop shared meaning systems to create a sense of legitimacy, including desired goals, values and behaviors. Organizations develop normative fields, requiring employees to conform to prevailing cognitions, regulations, beliefs and behaviors (Scott 1995). Organizations develop cognitive models in which schemas and scripts lead decision makers to resist new evidence, Weber's iron cage (DiMaggio and Powell 1983). To achieve legitimacy, organizations may try to demonstrate technological competence to produce tangible results (Knoke 2001). This might include adopting bureaucratic designs much like facades, such as certification of employees, codified regulations and command structures (Meyer and Rowan 1977). There is a tendency of external pressures forcing organizations like the YNWRP to conform to the FWS and other federal land management agency structures, beliefs and actions, producing greater isomorphism's or homogeneity—the "MacDonaldization" of wildlife management (Knoke 2001). This would agree with Nadasdy's (2003) ideas of wildlife management and comanagement of indigenous lands and resources as subtle new manifestations of state power forcing indigenous communities to adopt scientific ideas of wildlife, fisheries and forest management, and state management structures, including the expert role of government agency biologists, managers and bureaucracy in conservation.

There is a tendency of the federal land management agencies, like the FWS, to become captured by particular conservation paradigms, with these paradigms becoming diffused throughout the federal organizational field by activities of professional organizations and federal technical training programs taught by agency biologists, university professors, and

NGO consultants (see DiMaggio and Powell 1983). Ultimately why an individual riverine wetland wildlife refuge in New Mexico is managed using a riparian restoration approach or an impoundment approach may simply come down to key actors (e.g. a charismatic refuge biologist), working at a particular moment in history (e.g. 1990s) embracing a particular conservation or management paradigm (e.g. riparian restoration) and encouraging its spread throughout the FWS's 500 refuges and beyond. This appears similar to the historical contingency factor of Stinchcombe (1965, quoted in Allaire and Firsirotu 1984). This research makes an important addition to the literature by identifying key historical factors and the development of new land management paradigms in explaining differences in wetland approaches of the two government agencies, one federal and one tribal.

My study of the FWS-Yakama cooperative wetland management includes an institutional ethnography of their agreement. Ethnographic methods have been used to analyze organizational “cultures” of businesses, government agencies, NGO's and environmental partnerships (Crismon 2006, Hamada 1994, Heyman 1995, 2001, Mulhare 1999, Poncelet 2004). Poncelet's approach combines an analysis of the “cognitive and interpretive dimensions of environmental conflict and cooperation,” what he calls “sociohistoric factors,” such as the “diverse values, attitudes, ethics, worldviews and belief systems” that inform an agent's understanding of environmental issues, with an analysis of the social and material constraints on the agents, to understand actual partnership practices—what people “actually say and do in collaborative settings” (Poncelet 2004:8–9). This study contributes to this literature by analyzing some of the historical and cultural antecedents of the YN-FWS cooperative agreement, including differing cultural values and worldviews, and by describing the behavior of the two agencies in the meetings themselves, what issues were addressed, how they were discussed, and the key issues that were left unsaid.

However fraught with difficulty, the growing trend toward more pluralism and participation has the potential of fundamentally changing the public land and wildlife conservation process in the United States to one more responsive to the needs and desires of a culturally diverse population (Schelhas 2002). Comanagement may further both the goals of community

commitment and participation, and environmental justice. Anthropologists can make a contribution to the comanagement process by staying “alert to matters of culture, power and history” leading to more effective and just conservation practices (Brosius 2002:9).

Any growth toward federal-tribal cooperation will have a significant impact on the management of public lands and their resources, affecting their use by millions of American citizens and foreign visitors (King 2007). Comanagement of migratory and endangered species, federally controlled rivers and reservoirs, forest and rangeland, and of key ecotourism sites can influence local and regional economies in both rural and urban communities throughout the United States. That process may also lead to changes in how tribal people understand and value their own conservation estate, including questions on how they should relate to both sport hunting/fishing and nonconsumptive outdoor recreation and tourism for nontribal visitors to their reservations (Cornell and Kalt 1998). This research examines the intersection of tribal and Euro-American landscape values and alternative approaches to achieve conservation.

The relationship of tribal sovereignty and the federal government’s trust responsibilities toward tribes is an important backdrop and focus of this study, and was informed by the work of legal scholars (Suagee 1999, Wood 1994, 1995, 2006). Tribes once possessed full sovereignty as independent nations prior to European expansion and still retain a part of it today (Wildenthal 2003). Even as limited sovereigns, tribes are still considered to have national character and the right of self-government (Wood 1994, 1995). Tribal sovereignty, rights to self-determination, and federal trust protections have been legally recognized since the days of *Worcester vs. Georgia* (1832) which ruled that tribes were “domestic dependent nations” under federal guardianship. The precedence of this ruling for the protection of treaty rights and reservation resources was only clearly recognized later. The federal government as a sovereign–trustee has the legal duty to protect tribes from any interference and harm by nontribal society and government actions, including threats of rapid development, pollution, and the loss of natural resources in and around Indian reservations (Wilkins and Lomawaima 2001). The ruling of *Worcester v. Georgia* (1832) declares tribes are largely independent of state law.

Unfortunately most often U.S. federal agencies themselves are the primary threat to Native American interests: Army Corps of Engineers—dams on the Columbia River killing 60–95% of the migrating salmon; Bureau of Reclamation—water diversions from salmon spawning streams; Forest Service and Bureau of Land Management—forest clear cutting and riparian grazing; National Oceanic and Atmospheric Administration Fisheries—poor protection of listed Pacific salmon and steelhead; and the Environmental Protection Agency—allowing water pollution discharges into streams and rivers (Wood 1994).

While the Tribal Self-Governance Act recognizes that federal programs such as national parks and wildlife refuges implicate tribal sovereignty (King 2007), there is concern that comanagement and other forms of federal involvement in Indian Country during this supposedly enlightened era of Self-Determination is only a new, more subversive and subtle threat (Wood 1995, Nadasdy 2003). This study contributes to the discussion of the relationship of tribal–federal comanagement to growing Native American sovereignty, presenting data to show tribal–federal comanagement agreements as a manifestation of expanding tribal nationhood (Cornell and Kalt 1998), not of federal power.

Research Methodology

I conducted ethnographic fieldwork in the Mid-Columbia region for 23 months, between July 2005 and July 2007. My initial research approach consisted of discourse analysis of formal interview transcripts of Yakama Nation government and FWS refuge employees to generate both worldviews and idealized management models of wetlands. I also conducted more focused informational interviews of a broad sample of other informants knowledgeable of wetland conservation issues in the area including Yakama government and religious leaders, and biologists with the FWS, local nongovernmental organizations, bird conservation groups and private duck clubs.

I also conducted an institutional ethnography of the FWS-YN Toppenish cooperative agreement. I attended all of the first four YNWRP and FWS Toppenish NWR memorandum

of agreement (MOA) meetings as an observer, as well as a larger meeting of the FWS with the Yakama Tribal Council. From these meetings, interviews and official documents, I gained some knowledge of the organizational and institutional behavior of these two agencies. Further details of my research methods will be described in Chapters 4, 5, and 7.

Whenever possible, I was an active participant in the management of Toppenish and Satus Creek wetlands and related wildlife conservation activities including: working a duck check station to monitor hunter success; observing duck hunting from a blind; duck and quail livetrapping and banding; aerial bird surveys; duck brood surveys; pelican surveys; Christmas Bird Count; salmon tag surveys in heron colonies; clearing water control structures; prescribed burning; reviewing the management approach of a private duck club; Indian hemp and chokecherry replanting; tule and huckleberry gathering; and taking part in a huckleberry feast (first fruit ceremony) at the Satus Longhouse. I took aerial photographs of various YN and FWS wetlands and ground level photographs while participating in bird counts, prescribed burns, restoration plantings, stream restoration and various waterfowl related activities.

Participant observation helped me understand how people valued and behaved in wetlands in the Yakima Basin, both as land managers and users of wetland resources. I was told a number of personal stories about people's experience in wetlands, how they feel living and working in them, and what some of these places mean to them (Appendix D). Participant observation also challenged me to examine my own attitudes, beliefs and biases about wetland habitats, their value and use, and the best ways to manage them.

I conducted archival work at the FWS Regional 1 Offices of Refuge Realty and Planning in Portland, OR, the Mid-Columbia National Wildlife Refuge Complex Office in Richland, WA, and the Yakama Nation Wildlife Resource Management Program Office in Toppenish, WA. I was given access to many FWS and YN government reports and memoranda (1935–2007), particularly focusing on Toppenish Refuge, and Yakama Nation's efforts to have the refuge restored to their control.

I also collected a sample of the materials that the FWS and YNWRP utilize for public information and education which were useful in describing and framing their current management philosophies and goals. The archival research gave me insight to how wetland management ideas and political positions of the two agencies have changed over time.

In addition to my ethnographic research, I was employed as a biologist by the Yakima Klickitat Fisheries Project, part of the Yakama Nation Fisheries Program, for the entire two year period, monitoring the impacts of bird predation on juvenile salmon in the Yakima River. This position put me in contact with YN government fishery staff and tribal fishermen on a daily basis.

I learned a new idiom of tribal salmon fisheries, hatcheries, and endangered salmon species recovery and of the conservation efforts of a people recovering from an act of cultural genocide, the near destruction of their tribal fishery due to the taming of the Columbia River and its tributaries for hydroelectric power and irrigation (Barber 2005). I learned from both tribal and nontribal fisheries biologists and managers how the Yakama and other Columbia River tribes have fought for their treaty fishing rights for over 150 years, both along the river, in the federal courts and in the conference rooms. I was able to glimpse an Indian nation patiently developing its scientific, technical and organizational capacity to take control of its land and natural resources and to contribute as a key regional player in fish, wildlife, water and landscape conservation.

“Peer” Review

Whether or not it was because I was an easy target of harassment as a newcomer or trying to be culturally sensitive, my ethnographic research was given almost constant critique and review by both the YN tribal government and to a lesser extent the FWS. The problems of access I encountered were very similar to those voiced in the institutional ethnography literature (see Crismon 2006 for a review). Both the YN and FWS are sensitive to the management and control of information about their programs, often using gatekeepers and sometimes official spokespeople experienced at representing their organization to the outside world, a barrier to

access reported by Thomas (1995). I felt my research access was under constant review and negotiation (Ostrander 1995). The YN, and to a lesser extent the FWS, had to be convinced that my research had something tangible to offer them. Access would be denied if it did not.

From the beginning on my fieldwork, my status as a paid biologist employee in the YN Fisheries Program provided an entrée to the Yakama tribal natural resource bureaucracy, giving me considerable access to the YNWRP program. My position within the YN bureaucracy opened many doors, while the Yakama tribal government retained some degree of leverage over my research. My study revealed some of the challenges of working for an organization while studying them, blurring the lines between participant and observer, raising questions about the independence of the research, issues also raised by Forsythe (2001) and Rosen (2000).

I was required to seek formal permission to conduct my research from the Yakama Wildlife Program Manager, Yakama Nation Cultural Program Manager, Yakama Tribal Council Wildlife Committee, Yakama Tribal Council Cultural Committee, and the full Yakama Tribal Council. The YN government is very suspicious of anthropological investigations that they do not directly and fully control, feeling that it reveals Yakama tribal secrets with no benefit to the community and with no control over the message that the outside world receives about them. They are unhappy about past ethnographic work that was conducted by academic researchers in their community and are colitigants with other Columbia River tribes in the Kennewick Man case.

The YN granted me considerable access to study their natural resource management program only on condition that they retain the right to veto what I can publish about the YN. For example, every single presentation of my Yakama research findings at professional anthropological meetings requires some level of Yakama tribal government review and a formal ruling of permission, in writing, by either tribal council committees or the full tribal council body.

I was granted permission to study the FWS TNWR program and interview its staff by the FWS Project Leader for the Mid-Columbia National Wildlife Refuge Complex in Richland, WA, who supervised all six refuges in the region. My former status as an ex-wildlife biologist employee of the FWS (1992–99) gave me a limited entrée to the world of Mid-Columbia FWS

refuges. The FWS is rarely the subject of anthropological research. The only anthropologists National Wildlife Refuges usually see and work with are FWS archaeologists from their own regional office, state historic preservation officers, or private archaeologist contractors—either cultural resource management firms or university professors, hired by FWS regional archeologists.

Two of my FWS refuge manager informants questioned the assumptions of my comanagement research. One of them wondered if the conflicts between YNWRP and themselves were simply due to the tribe playing politics in order to bring TNWR back under their control. For some employees of the FWS, my employment by the YN Fisheries Program brought my objectivity into question, making them wonder if I was a Trojan horse sent by the YN to wreak havoc on the TNWR program. I had to assure the FWS refuge staff of my objectivity in terms of the FWS-YN cooperative agreement, and of the YN's interest in eventually achieving the full repatriation of TNWR. I was warned by a FWS refuge manager that if I showed any bias toward the YN's position on TNWR, my study was doomed. I sincerely tried to stay above the fray.

Outline of the Dissertation

Chapter 2 provides a description of the geographic and sociopolitical setting. Chapter 3 presents a political and intellectual history of Toppenish Creek wetland management from the 1930s to the late 1990s, providing a context to understand the current relationship between the YN and FWS. Chapter 4 presents a general review of the worldviews among the YN and Euro-American community and a specific qualitative analysis of worldview and land ethics among tribal and nontribal biologists/managers of the YN and FWS. The worldview chapter provides an appropriate context for a qualitative analysis of wetland management ideals held by tribal and nontribal biologist/managers of the YN and FWS in Chapter 5. Chapter 6 completes a historical analysis of the shifting political terrain of federal-tribal partnerships including cooperative and annual funding agreements from 1993 to 2005, while Chapter 7 is an institutional ethnography of the first two years (2005–7) of the YN and FWS cooperative agreement for Toppenish Creek,

which was the time period of this study. Chapter 8 contains concluding remarks with a discussion of the theoretical and applied significance of this research.

CHAPTER 2

RESEARCH SETTING: THE PHYSICAL, HISTORICAL, AND SOCIOPOLITICAL LANDSCAPE

The Geography of Toppenish Creek

Toppenish Creek is a tributary of the Yakima River, which in turn is a major tributary of the Columbia River (Figures 1 and 2). The Yakima Basin is part of the Columbia Plateau, on the eastside of the Cascade Range, about 150 miles east of Portland, Oregon. The Cascades cause a rain shadow effect, resulting in a vast region with a dry interior continental climate of hot, dry summers (average 85–95 °F) and cold winters (average 25–40 °F). Precipitation ranges from less than 8 inches in the valley to over 50 inches in the mountains, mostly arriving as snowfall. The entire Toppenish watershed of 625 square miles is all located within the boundaries of the 1.3 million acre Yakama Reservation.

Formerly the valley was dominated by a shrub steppe vegetation community of tall bunchgrasses, rye grasses, and sagebrush, with willow and cottonwood groves and sumac brush lining the streams, and marshes filled with tules and cattails (Figures 3 and 4). Much of the valley shrub steppe has been cleared, its creeks channelized, and marshes drained for agriculture over the last 120 years. In doing so, farmers, with the help of the federal government, transformed the Yakama Valley into a globally significant commercial agricultural region, famous for tree fruits, hops, wine grapes and timothy hay, all grown under irrigation (Figure 5). In the following few paragraphs, I will take you on a bird's-eye view journey to try to create a visual image of Toppenish Creek from its origins in the eastern Cascade foothills at 5,200 feet to its confluence on the Yakima River, 75 miles downstream near the town of Granger, elevation about 750 feet. The watershed can be broadly divided into 3 regions: upland plateau, transitional alluvial fan

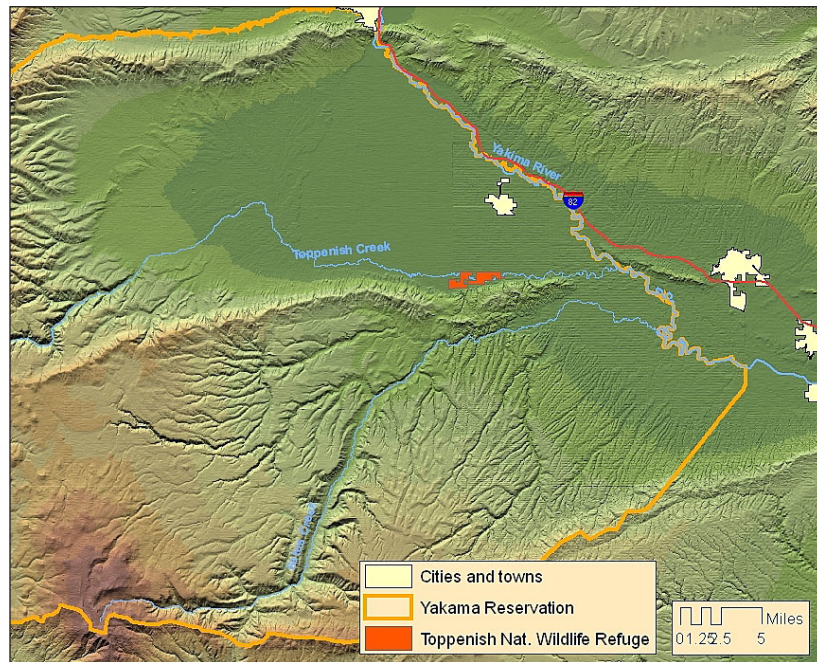


Figure 1. Toppenish and Satus Creek Basins, north and south of Toppenish Ridge.

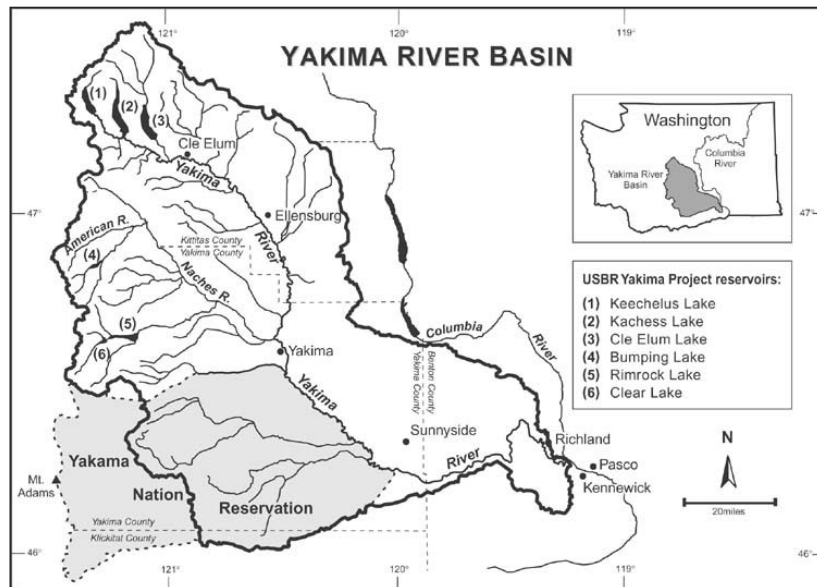


Figure 2. The Yakima River Basin. Toppenish and Satus Creeks are the last major tributaries of the Yakima River before it joins the Columbia River near Richland, WA.



Figure 3. Shrub-steppe in the foothills of the Yakama Reservation. Formerly this sage brush community also dominated the Yakima Valley.



Figure 4. Tule marsh.



Figure 5. Fruit orchard in the Yakima River Valley.

and lowland valley floor (Toppenish Creek Corridor Enhancement Plan Draft 1997). Most of the research for this project took place in the valley region, the site of TNWR, and of most of the YNWRP wetland and riparian restoration work.

Toppenish Creek and its tributaries begin on a wooded plateau between 3,500–5,200 foot elevation. The relatively dry plateau is mottled with dense stands of dark green pine and fir. Its soil consists of weathered dark basaltic flows. The creek forms a canyon in the plateau about one quarter mile wide, heavily wooded with a lighter green growth of cottonwood, willow, and alder along the active channel and sumac and wood rose bushes out on the floodplain. Here the creek is braided, with some logjams and beaver ponds. Coming out of the canyon, the creek forms an alluvial fan of coarse cobbles about 8 miles long extending to the growing Yakama town of White Swan. Near the end of the canyon, a large man-made dike can be seen, with much of the floodplain covered with pasture, with a few houses near the mouth of the canyon. The dike bisects the floodplain, isolating the stream from its floodplain, confining it for 0.8 miles tight against the toe of Toppenish Ridge to the south, gouging a channel about 60 feet wide and incised to 12 feet deep, until it reaches the head-works and diversion dam of a canal, which largely dewateres the creek from June to October for nearly 7 miles. Much of the upper part of

the alluvial fan is grazing land and hayfield. The lower half to the tributary Simcoe Creek which comes in from the north is deeply incised, with either a riparian cottonwood–willow community or sagebrush and grassy terrace. There are a few scattered homes and ranches in this reach.

Below the Simcoe Creek confluence, Toppenish Creek moves 4 miles from the bench of its alluvial fan to the alluvium of the Yakima River. The bench consists of gray muddy looking sediments called Touchet beds which are the deposits of the ancient Missoula Floods. This stretch of creek is severely incised up to 15 feet deep. As the creek travels east, evidence of human use increases, with irrigated agriculture interspersed with ranches right up to the creek edge. The remnant vegetation is shrubby with little grass remaining. In a significant portion of this reach, the creek is a dredged irrigation canal, the spoils piled on the banks to form berms. A series of spring fed drainages descending northeast from Toppenish Ridge enter the creek from the south supporting an extensive wetland complex on the south side of the floodplain.

The following reach has little gradient, forming extensive meanders, with some multiple channels. The hydrology of this portion has been severely altered by development of irrigation, drainage and channel manipulation. The upper end is devoid of riparian vegetation, with heavy infestation of exotic weeds. As the creek meanders further downstream, incisement declines from 8 feet to none. The North Branch of Toppenish Creek is disconnected by down-cutting from its main channel, with its channel essentially blocked in two areas. There are numerous floodplain obstructions including multiple agricultural drains, dikes and diversion canals.

The next reach is an extremely low-gradient system of well-developed anastomosed channels, unique in central Washington. Here the channel is fairly wide, less incised and loses some of its sinuosity. There is little riparian vegetation with ranches and leveled fields of irrigated agriculture bordering the creek. There are straightened stretches which are entirely engineered, with check dams, dikes and evidence of creek dredging. There are also a few large duck clubs evidenced by large shallow open water ponds and abundant riparian vegetation bordering the main-stem of the creek, sometimes supporting large groves of tall mature willows. The duck clubs attract a lot of birds, including rafts of ducks and geese, and a large heron colony.

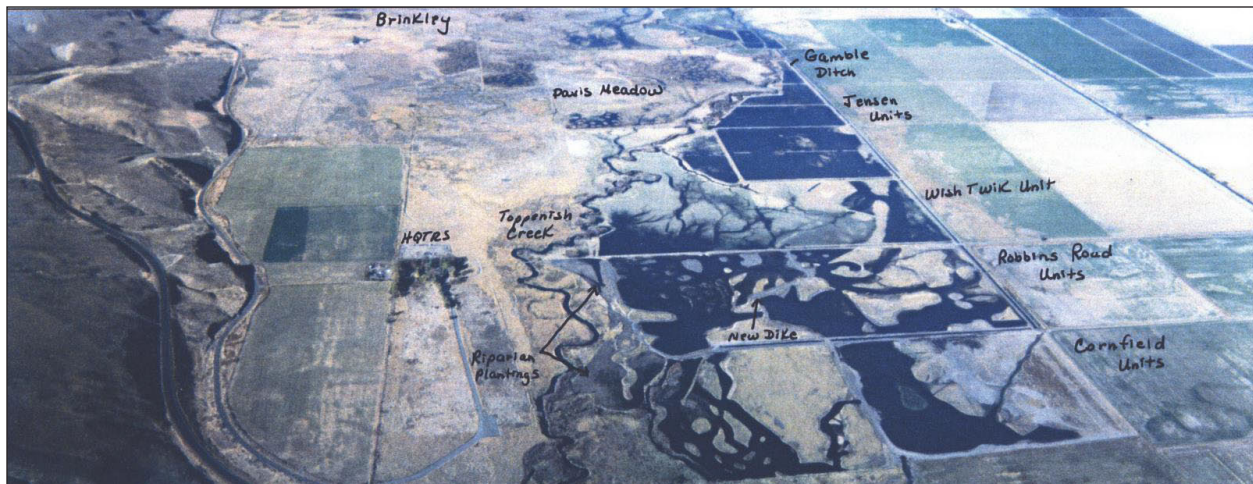


Figure 6. Diked wetland impoundments of the Toppenish National Wildlife Refuge, west and north of Highway 97, 1995. Note the refuge headquarters south of Toppenish Creek. Photo by David Linehan.

About 10 miles downstream, the TNWR complex of shallow man-made impoundments borders both sides of Toppenish Creek and its south channel Snake Creek for about 2 miles, crossing Highway 97 (Figure 6).

Beginning in this reach and roughly paralleling Toppenish Creek to the north is a large deeply incised broad drainage ditch, the Marion Drain. The drain effectively severs the hydrologic connections between the Yakima River and Toppenish Creek. Because of its berm on the south side, the drain delineates the northern extent of the Toppenish Creek floodplain. Marion Drain blocks channel flows from the Yakima River that radiate out from a prominent break in the ridge to the north, called Union Gap, causing abrupt straight edges on impounded channels, such as in the largest, Wanity Slough, a former path of the Yakima River.

Upstream from the main road parallel to the Yakima River, State Route 22, both Marion Drain and Toppenish Creek are impounded and connected by a canal, with drainage waters mixing with creek flows. The creek here is diverted to the Satus area with gates, fitted with fish screens and ladders. Sometimes the creek is largely dewatered by diversions for much of the summer and early fall. In the lowest section of the creek, it is free of all confinement to the south by Toppenish Ridge. This creek portion is heavily developed for agriculture, including leveling,

draining, channelization and diking. In most of the reach, the land is farmed right up to the stream bank. The river forms a small riparian delta, a tiny fraction of its former extent, flowing into the higher gradient Yakima River, itself a significant tributary of the Columbia River.

Significant Fish and Wildlife Populations

The Toppenish Creek drainage, as part of the massive Columbia River watershed, is important spawning and rearing habitat for anadromous fish, particularly for steelhead and formerly for several species of Pacific salmon (Figure 7). The Columbia drainage once supported one of the greatest salmon fisheries in the world, estimated at 16 million adult spawning fish, supplying a staple food source for tens of thousands of Native Americans of numerous tribes, and later millions of nontribal people across the country. Although still regionally significant as a commercial, recreational and subsistence fishery, the greatest of the salmon runs have been severely depleted with some runs pushed to extinction by major hydro electrical developments on the Columbia River starting in the 1930s and still operating today.

Toppenish Creek and its wetlands have been well known as prime waterfowl wintering and nesting habitat for over 100 years (Figure 8). In fact, one Yakama name for wetland, *kákyama wisháwtuckt*, describes an area ‘where birds camp.’ At times during fall migration in past decades, the Toppenish Creek area supported an estimated 300,000 birds, primarily mallards (*Anas platyrhynchos*), but also other species of dabbling ducks and Canada geese (*Branta canadensis*). Today fall waterfowl numbers are estimated at less than ten to twenty thousand birds.

The Yakama Nation

The Yakama Reservation, home to about 10,000 enrolled members of the 14 Confederated Tribes and Bands of the Yakama Nation (YN), is the largest Indian reservation in the Pacific Northwest, encompassing 1.3 million acres (Figures 9 and 10). It ranges east from the top of snowy Mount Adams to the Yakima River, between Ahtanum Creek to the north and the Simcoe



Figure 7. Mid-Columbia steelhead. A reconditioned wild kelt (a post-spawn fish fed to be able to more successfully breed a second time) at the Chandler Fish Hatchery ready for release.



Figure 8. Mallards and Tundra Swans on South Lateral A Tract on the Yakama Reservation.

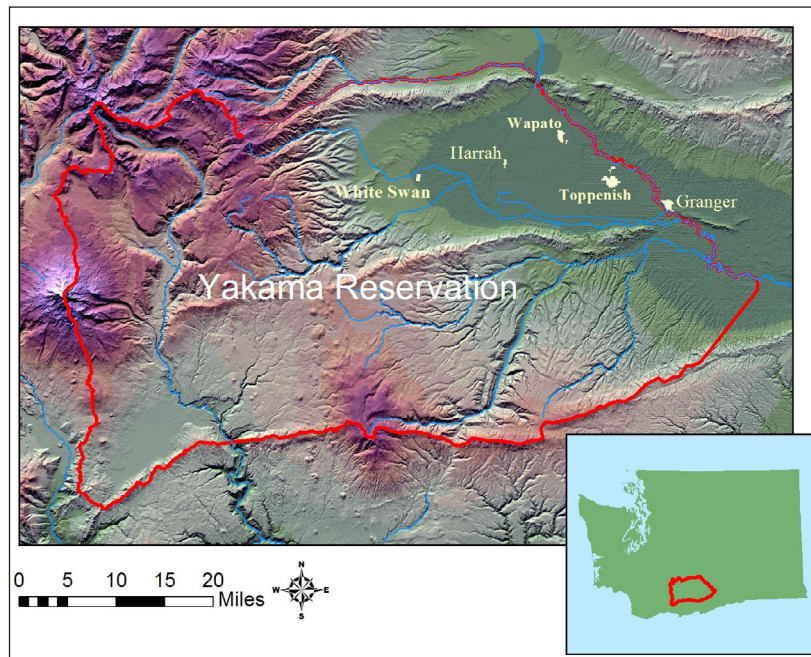


Figure 9. The Yakama Reservation, with its three major drainages: Toppenish and Satus Creeks, and the Klickitat River at the eastern base of Mt. Adams.

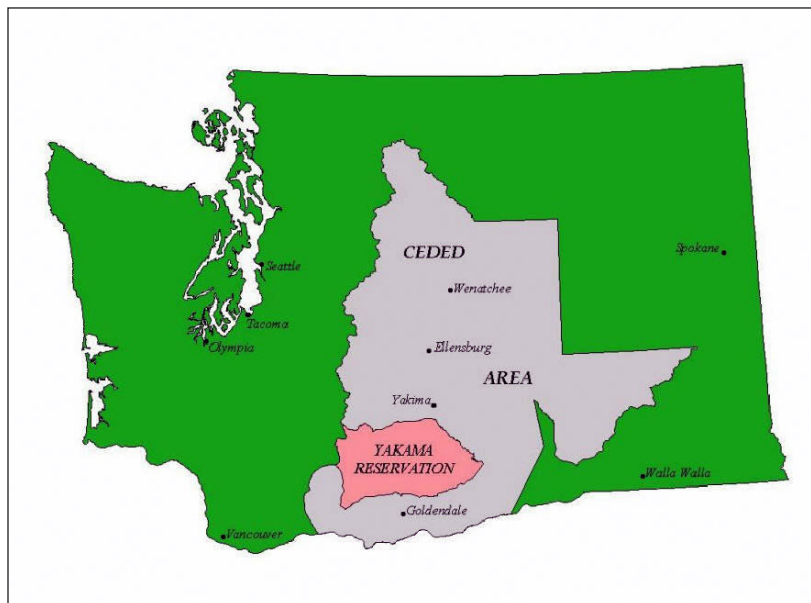


Figure 10. The Yakama Ceded Area surrounding the Yakama Reservation.

Mountains to the south. The Yakama Reservation was created under the Walla Walla Council Treaties of 1855 with the Yakama tribes ceding 11 million acres (today called the Ceded Area) to the federal government while retaining supposedly exclusive use of the reservation and inviolate access to fish, hunt and gather plant foods at numerous “usual and accustomed places” off reservation on the Columbia River and throughout the Ceded Area. Almost immediately after the treaty was signed, the Yakama Reservation and Yakama treaty rights came under siege from White miners and farmers. The Yakama and other Columbia River tribes fought a war against the Oregon Territorial militia and later the U.S. Army from 1855–1858 (Schuster 1990). The 1855 Treaty was finally ratified by Congress in 1859.

Yakama Language, Kinship, and Political Organization

Linguists call the Yakama language Northwest Sahaptin, linking the Yakama with other Sahaptian speakers, the Warm Springs, Wanapum, Umatilla and Nez Perce communities found along the Columbia River, although most Yakama call their language Yakama or among some tribal linguists, the traditional name “*Ichishkiin Sínwit*.” Unfortunately, today most of the remaining fluent speakers of Sahaptian languages are elderly. The U.S. American Indian boarding school system (1870s–1960s), which removed many Indian children, often forcibly, off-reservation for education in intertribal English-only schools limited the acquisition of Yakama and many other Native American languages in the U.S for over 80 years. Today in response to the threat of language loss, the Yakama, Nez Perce and other speakers of Sahaptian dialects are seeking to revitalize their languages through classes offered by reservation public and tribal schools and local colleges. A Yakama dictionary written by native Yakama linguist Virginia Beavert and University of Washington professor Sharon Hargus, is in press.

Prior to the 1855 Treaty, the largest “Yakama” political units were autonomous bands and villages of groups of extended families who occupied contiguous territories in south central Washington (Schuster 1975). The Yakama historically reckoned dissent bilaterally and continue to do so today. Extended family kinship is very important. Many of the Yakama share

kinship ties with members of the Warm Springs, Nez Perce, Wanapums, and other Sahaptian communities as well as Salish speakers found west of the Cascades such as the Muckleshoots. When unacquainted Yakama and other Mid-Columbian Indians first meet they quickly try to establish kinship to determine if they are related by blood or marriage in some way, which they almost invariably are (personal observation). Children have very close relationships with both their parents and grandparents. Grandparents are often the primary teachers of cultural values and traditions, and of rural living skills—fishing, hunting, plant foraging, camping, farming and ranching (personal observation). Ideal Yakama cultural traits include cooperation, sharing, reciprocity and taking responsibility for the welfare of others (Schuster 1975). According to an informant of Schuster's (1975:412), "It's an honor to give and to receive."

Traditionally, leadership positions were usually held by men noted for their wisdom and character, advised by informal councils of men and women. Obviously those personal traits are still valued in Yakama leaders today. In the past, leaders settled disputes and provided informal control over village activities. There were also special leadership positions for spiritual and religious specialists of various kinds, fishing (salmon chief), warfare, root digging, and other activities (Schuster 1998). Today the Yakama Nation is lead by an elected tribal council of 14 members, representing the 14 tribes and bands, headed by a tribal chairperson. Under contemporary Yakama laws, women have equal opportunities as the men to achieve the highest elected tribal leadership positions, and have occupied those posts in the last few years (Ackerman 2003, this study).

The View from Highway 97

The Yakama tribal headquarters is in the small integrated town of Toppenish (population 9,000) about 20 miles south of sprawling Yakima, WA (population 80,000, with a metropolitan area population of 229,000 people), a regional economic and social hub. The eastern boundary of the reservation is marked by two major highways along the Yakima River interspersed with the reservation border towns. The view from Highway 97 is a jumble of commercial fruit warehouses, orchards, fruit stands, small suburban homes, mobile home parks, motels, truck stops, billboards,

small industrial parks, and irrigation canals. Toppenish has an older western theme storefront downtown (“Where the West Still Lives!”) with major streets leading to town lined with fast food restaurants, gas stations, and small commercial strips. The town is noted for having 70 hand painted murals on buildings depicting various important events in the town’s history. A few tribal enterprises are notable from the Highway 97: the distinctively shaped Yakama Cultural Center and Museum (patterned after a traditional Yakama longhouse), neighboring popular Yakama RV park (with large white tepees for rent), and the Yakamart, a bustling gas station, convenience store and office building. Occasionally the viewer sees a glimpse of Mt. Adams and its foothills 70 miles away.

Away from this commercial strip to the west is a very different view: a flat rural landscape of commercial cropland, cattle pasture, and hayfield, with an occasional small residence. There are a few small hamlet-like towns, including White Swan and Harrah. There are a number of natural streams with their floodplain wetlands, and numerous man-made drainage ditches and canals. The smooth topped foothill ridges are covered with fairly short grass and occasional patches of sagebrush, with some wooded draws. To the west the land climbs to a plateau of pine and fir forests that eventually meets the base of volcanic Mt. Adams (*Páhto*) which at its top at 12,300 ft. is covered in permanent snow (Figure 11).



Figure 11. Mt. Adams (*Páhto*).

Subsistence and Identity

Historically the Yakama were salmon fishing people and continue to strongly identify themselves as such today. They continue to gill net (*awxit*) and scaffold dip net (*twanú*) for salmon (*núsux*) and steelhead (*shusháynsh*), both for subsistence and commercially, on the Columbia River (*Nch'i-Wána*), and its tributaries, as they have done every spring and fall for thousands of years. Celilo Falls (*Wayám*) on the Columbia was the foremost scaffold net salmon fishing site for the Yakama and numerous other Plateau groups, although there were other important fishing sites at The Dalles, Cascade Falls and Priest Rapids on the Middle Columbia River, along the Yakima River (*Tapteal*) and its tributaries, and at Lake Keechelus in the Yakima River headwaters (Figure 12). These salmon fishing sites were all locations where fish were forced to leap through narrow channels or had to struggle up formidable rapids making them easier to capture (Hunn 1990).

Unfortunately, all of these prominent fishing sites were lost to hydropower and irrigation development on the Columbia, Yakima and other rivers between 1938 and the 1973, drowned



Figure 12. Celilo Falls (*Wayám*).

under deep reservoir pools (Barber 2005). The Columbia River tribes were each paid cash settlements in return for the loss of their traditional fishery (Barber 2005). As mitigation for the loss of their “usual and accustomed places” to fish, the Army Corps of Engineers developed five small “in-lieu” fishing sites on the Columbia River, totaling 40 acres, for Indian use. Such sites, while located well off the reservation, retain tribal reservation status, and are not subject to state jurisdiction. A notable intact historical Yakama scaffold fishing site still in use is located on the gorge of the Klickitat River, a small tributary of the Columbia south of the Yakama Reservation (Figure 13).

The Yakama today also continue their historic traditional annual round of gathering a wide variety of root foods (*xnít*), berries (*ts'its'umsli*), medicinal (*tawtanúk*) and fiber plants, fishing, and hunting for deer (*yáamash*) and elk (*wawúkya*) (Hunn 1990, Schuster 1975, 1998). Formerly they camped for weeks or months in various resource rich locations. Contemporary subsistence foraging for Yakama involves setting up temporary camps in various Mid-Columbia locations for far briefer periods (Schuster 1975). However, some families live permanently on



Figure 13. Scaffold fishing for salmon using dip-nets and hoop set-nets at Castile Falls in the Klickitat River Gorge.

the Columbia River at Celilo and other landings, fishing for salmon and steelhead in season for both subsistence and commercial sale (personal observation). Those following the subsistence round first harvest greens (Indian celeries—*hahán*) and root foods (15 species or more according to Schuster 1975 and Hunn 1990) dug with a digging stick (*kápin*) in the foothills in the spring, fishing in the lowlands in the spring and summer, moving higher as the summer heat progresses to pick berries (primarily huckleberries [*wíwnu*] and chokecherries [*tmíshi*]) in the late summer, deer hunting in the fall, and returning to the river lowlands to fish again for fall salmon. It is estimated that historically, fishing provided about 30% of their diet with the rest provided by plant foods and meat (deer, elk, bear [*yáka*], bighorn sheep [*tnúun*], and mountain goat [*wáaw*]) (Anastasio 1955, Hunn 1990, Schuster 1975).

Today the Yakama continue to value salmon as a staple food, prepared fresh baked in an oven or grilled on a fire, smoked, canned, and dried and pounded into meal (*ch'láy*). Historically the Yakama transported and stored most foods in expertly woven baskets (*xláam*, *wápa*), many beautifully decorated, often called Klickitat baskets, made by women from a variety of plant materials including cedar roots (*nank*; *Thuja plicata*) and beargrass (*yaya*; *Xerophyllum tenax*). Today a number of Yakama women continue that tradition, with the baskets used to gather berries and roots, displayed as decorative Yakama home objects and in museums, or sold on the open market as high value craft and art pieces (personal observation).

Traditionally there was a clear division of labor for Yakama subsistence activities between adult men and women, although some of those divisions are breaking down today. Generally men fish for salmon and hunt for deer and elk and women gather plant foods and prepare most food, take care of children, make traditional baskets and mats, and do decorative beadwork such as on moccasins and clothing. However, I have met Yakama men who are well known as expert cooks and craft workers and women who are expert salmon fishers.

European Contact

The Dalles and Celilo Falls on the Columbia River and Kittitas Valley in the middle Yakima River Basin were also noted for their Indian trade emporiums, where interior Plateau tribes and coastal Salish met to exchange goods, dance, race horses, gamble, and socialize (Ross 1956, Schuster 1975, 1998). Some of the gatherings contained thousands of people. Dentalium shell (*áxshaxsh*—tusk shell money) from Vancouver Island was the primary medium of exchange, although dried pounded salmon meal, hides, and coastal eulachon oil and dried clams were also exchanged (Walker and Sprague 1998). Other trade items included furs, baskets, canoes, and occasionally Shasta Indian slaves from California. European trade goods such as cloth and clothing, wool Hudson Bay blankets, glass beads, and metal goods (coins, knives, axes, arrowheads, pots—later muskets) started to make an appearance at these trade fairs starting in the late seventeenth century as Spanish colonies expanded in California and as Spanish, Russia, English and finally American ships began to ply the Pacific Coast to exploit sea otter and fur seal resources and to trade (Walker and Sprague 1998).

After 1811, European trade goods would also come to the region from both the east and west via American and Canadian fur trade companies who established trading post forts on the Columbia River and Puget Sound (Ross 1956). The traders sold cattle to prominent Yakama leaders starting around 1840 and some Yakama began to raise cattle as well as crops such as potatoes, melons, squash, barley, maize and wheat, grown under irrigation (Schuster 1975).

When horses (*k'úsi*) first appeared around 1730, traded northward from the Spanish Southwest by Great Basin Shoshonean people, the animals became the major medium of exchange and the Yakama, Cayuse, Walla Walla, Umatilla and Nez Perce became famous as expert equestrians and horse breeders (Ewers 1955, Haines 1938, Vibret 1997). The lush grass covered valleys and foothills on the Plateau sustained huge herds of Indian horses. The Plateau people developed their own unique saddle type (*washat'áwas*). Horse breeds and color variations called Cayuse, Appaloosa (*máamin*), roan (*kashkáash*), dark bay (*takawáakush*) and pinto (*támtl'aki*) were favored and developed by various Plateau peoples. The horse improved their

ability to conduct their traditional foraging round and to trade. It appeared to increase political consolidation at the village and band level. Horse ownership constituted wealth, status and prestige (Vibret 1997). The trade in horses became an important economic activity. However it also increased the ability to wage warfare, and the horses themselves were the target of intertribal theft, increasing the overall threat of warfare. The increased threat led to the consolidation of some of the autonomous bands for protection against raiding while carrying out various subsistence tasks such as root digging or trading (Anastasio 1955, Ray 1933, Walker 1998, Walker and Sprague 1998). The introduction of European muskets exacerbated the threat of warfare.

However, horses and guns enabled the Plateau groups to more easily travel eastward crossing the Rockies in multiple-tribe parties to hunt buffalo on the Great Plains, where they procured meat and hides and traded with Plains Indian groups like the Crow and Sioux, developing affinities for Plains material culture, including buckskin clothing, the portable hide covered tepee, parfleche bags, buffalo robes, war bonnets, and dance styles from various tribes (Schuster 1975). With horses and firearms the Plateau groups could more easily defend themselves and counter raid their traditional enemies, the Snake and Bannock Indians to the southeast and Blackfoot who controlled access to trade and the buffalo resource on the Northern Plains.

Waves of epidemic diseases of European origin (i.e. smallpox, malaria, and measles) diffused from the Pacific Coast and the Great Plains, often despite the absence of direct contact with the Europeans, to kill huge numbers of Plateau Indian people (Anastasio 1955, Campbell 1990). The Yakama population estimated at about 7,000 before 1805, had fallen to about 2,000 in 1853 because of European disease outbreaks (Anastasio 1955).

The first Europeans most Plateau groups directly encountered was the Lewis and Clark Expedition in 1804–6 (first contact with the Nez Perce and Walla Walla), although American and Canadian company fur traders followed soon after, establishing trading post forts in a number of places on the Columbia River and Puget Sound, which became important sites for acculturation

(Ross 1956). The traders were soon followed by missionaries, first Catholic and then later Methodists and Presbyterians. Over the next century, many Columbia River Indian people converted to Christianity or to various syncretic churches that combined traditional Indian and Christian beliefs (Schuster 1975). The opening up of the Oregon Trail to Oregon Territory for White settlement and the discovery of gold in the northeast Plateau lead to increasing conflicts between Indian communities and White settlers after 1835. The killing of 14 Presbyterian Whitman missionaries by Cayuse warriors, after they blamed Whitman for a measles epidemic on the Oregon Trail that killed hundreds of Indians, lead to the Cayuse War in 1848 (Walker and Sprague 1998).

The 1855 Treaty and the Formation of the Yakama Nation

The historic Yakama Nation was formed in the crucible of the Walla Walla Council Treaty negotiation of June 9, 1855, where a number of chiefs or headmen of 14 neighboring bands occupying about 13 million acres in south central Washington were cajoled and coerced by the U.S. government into agreeing to settle together on a reduced tract of land forming the eastern slope of Mt. Adams to the Yakima River. Supposedly the Washington Territorial Governor and Superintendent of Indian Affairs, Isaac Stevens, threatened Kamiakin, an influential chief, and other Indian leaders that “if they don’t sign this treaty, they will walk in blood knee deep.” (Northwest Power and Conservation Council website).

Thus a new political entity was created, called the Yakama Nation, supposedly under the overall leadership of Kamiakin, a status assigned by Governor Stevens although Kamiakin did not consider himself the paramount leader of all those confederated bands. Some of the 14 communities were not native Northwest or Northeast Sahaptin language speakers, but instead spoke Chinookan and Interior Salish languages, with Sahaptin and Chinook Jargon used as principal trade languages at The Dalles, Celilo Falls, and other important Indian gathering locations in the area.

All the Walla Walla Council Treaties of 1855 (with the Yakama, Nez Perce, Walla Walla, Umatilla and Cayuse tribes) were challenged by white settlers, eventually leading to warfare (Yakima War of 1855–58, Spokane–Coeur d’Alene–Palouse War of 1858), that only ended completely when Chief Joseph’s Nez Perce band surrendered to end the Nez Perce War of 1877–78. Many of the family descendents of the original 1855 Yakama Treaty signers occupy leadership positions within the Yakama tribal government today.

The Wáshat Religion, Traditional Housing and Tule Mats

Many of those descendents of the original Yakama leadership are also followers of a traditional Columbia Basin indigenous religion called Wáshat (sometimes called the Longhouse or Seven Drums religion), brought into particular prominence by Priest Rapids prophet Smohalla and other Dreamer prophets in the 1850s, but having earlier origins in the Plateau Prophet Dance movement of the eighteenth and early nineteenth centuries (Cebula 2003, Miller 1985, Relander 1986, Ruby and Brown 1989, Schuster 1975). All the sacred foods (salmon, roots, berries, deer venison) are subjects of first-food ceremonies and feasts during the beginning of their respective harvesting season each year (Schuster 1975, Hunn 1990, personal observation). Other Yakama are adherents to various Indian Shaker, Feather Cult and Christian churches. I will examine some of the spiritual foundations of the Yakama worldview in Chapter 4.

Historically, the Yakama settlement pattern and housing type changed with the season, varying from concentrated villages in the protected river valleys in the winter to more dispersed camps during other seasons. The winter village housing consisted of multi-family longhouses (*káatnam*) (40–60 ft long and 12–15 ft wide) and smaller single family lodges built of A-framed timbers covered with overlapping mats (*k’xli*) made of stalks of tule (bulrush—*tk’ú*), stitched together with Indian hemp (*taxús*). The portable seasonal structures were conical mat covered structures of pine poles (*ts’xwili*), later replaced by simple three-pole, Plains style tepees covered by bison skins and finally, in modern canvas. Tule mat longhouses were used by many Yakama

and other Plateau Indian families until the 1920s. Some tule mat covered Wáshat longhouses were in use until the late 1950s.

Today, although tule mat longhouses are occasionally built for historical commemorations, cultural celebrations and museum displays (Figure 14), the art and craft of tule mat making continues as an important component of all traditional Wáshat services and many other reservation cultural activities with the mats used as the primary floor surface on which food is placed during festive meals and as a funerary material. Tule mats are usually made by kin and close friends for families to use for the various life cycle celebrations, such as naming ceremonies (Figure 15). Occasionally moderately sized tule mats are also sold in the Yakama Cultural Center gift shop priced at about \$200, with very small sample pieces of mat sold for about \$10. Today all Yakamas live, work and worship in contemporary American types of buildings made of wood, steel and other modern materials. Most people live in rural and suburban homes typical of much of America. However, all the current Wáshat longhouses in the Mid Columbia region are built to evoke the shape of the original tule mat longhouses. The Yakama Cultural Center in Toppenish is also built in the shape of an enormous longhouse and the museum has a large facsimile longhouse on display inside.

Clothing and Styles

A number of Yakama men and women wear their hair long, sometimes in a ponytail or in braids. On special occasions men and women may wrap their braids in strips of otter fur. Many other Yakama people sport hairstyles that are typical of most of contemporary America. Yakama people today wear the typical, relatively casual style of clothing seen all over the country. Traditional, historical and contemporary Yakama and other American Indian clothing and styles are usually worn only for special occasions such as religious rituals and powwows. There is an entire art form of making decorative powwow wear for both youth and adults, both in Plateau and Plains styles. Women often wear highly decorative traditional woven conical hats, shawls, beaded dresses and deerskin moccasins at these cultural gatherings.



Figure 14. Tule mat longhouse built by the Wanapum community of Priest Rapids on the Columbia River to educate the general public about their traditional housing.



Figure 15. Bundled tule stalks. They will be dried and then woven into mats.

There is also a significant, albeit declining tradition of Western style ranching of cattle and horses on the Yakama Reservation with its concomitant distinctive mandatory clothing style: cowboy hat and boots, Wrangler jeans and big belt buckle. The Yakama ranching community is not considered a highly “traditional” segment of the YN however, although they wielded significant political influence in the recent past. Cowboy work and wild horse chasing continue to be honored and storied skills on the Yakama Reservation, although fewer and fewer people participate in the livestock business. However, intertribal rodeos continue as important gatherings on the Yakama Reservation, filling some of the roles that Celilo and Kittitas gatherings once held, and are a major source of local pride (Currrens undated). A traditionally important form of Plateau Indian gambling, the stick game (*palyówit*), continues as a major event at intertribal powwows and other seasonal gatherings (Brunton 1998, Currrens undated, personal observation).

The Yakama Reservation possesses one of the largest wild horse herds in the United States, estimated at over 5,000 animals and growing. The Yakama stories say that the Plateau Indian people always have had horses (DuBois 1938). It appears that at least some of the animals are the direct descendents of the huge herds (variously estimated as 12 to 16 thousand in the nineteenth century) possessed by their ancestors, used for subsistence travel and as war horses. There is a fair degree of controversy about the current Yakama wild horse herd and its impact on the health of mountain meadow and foothill root digging grounds and stream corridors. The YNWRP manages the herd with yearly roundups and sales to the general public.

The Yakama Reservation Checker Board

Today the valley portion and a few other areas of the Yakama Reservation are a checker board of Yakama and nontribal ownership, a consequence of a coercive allotment process begun in the 1880s. The fact that the U.S. Fish and Wildlife Service owns 8,500 acres in fee patent within the Yakama Reservation is a legacy of that particular process of land alienation which began in the 1880s. In the following section I will present a brief history of allotment on the

Yakama Reservation drawing heavily on articles by Wester (1999) and Schuster's dissertation (Schuster 1975).

The first permanent White settlers arrived in the Klickitat country in 1853 and in the Yakima Valley in 1860–61, homesteading adjacent to the reservation. The Yakama population in 1865 was about 3,400 people. By the late 1870s the Yakama had about 3,000 reservation acres under cultivation and owned some 16,000 horses and 3,500 cattle (Yakima Tribal Council 1955), although the majority of the Yakama people continued to fish, gather and hunt as their principal subsistence base both on and off reservation.

In the early 1880s there developed a national movement to assign Indians to allotted tracts within their reservations and open the unallotted portions of the reservations to White settlement and resource exploitation. In a related development in 1884, the Homestead Act was extended to Indians whereby some Indians chose to settle off reservation on lands opened to White settlement. The Northern Pacific Railroad began operating in the Yakima Basin in 1883, starting a flood of White settlement.

In 1887, Congress passed the General Allotment Act (Dawes Severalty Act), which canceled many of the guarantees the government made to the Yakama and other treaty tribes. Reservation lands were no longer to be held in common for the Indian communities, but were to be divided up into allotments. Each head of an Indian family was to receive 160 acres (1/4 section) and each single person over 18 was allotted 80 acres, other classes of people received smaller allotments (Cohen 1982). A family could receive a maximum of 80 acres of farmland and 160 acres of grazing or timber land. The Indian allotments could not be sold for 25 years; thereafter a fee patent would be issued to Indians deemed "competent." The patent meant the new Indian owner received all rights and burdens of U.S. land ownership, including the right to use, lease or sell the land, and the responsibility to pay property taxes (Wester 1999).

Under the Dawes Act and subsequent federal laws enacted for its implementation, reservation lands were classified into various landuse categories: irrigable cropland, nonirrigable cropland, grazing, timber, mineral development and "surplus" (Wester 1999). Of lands unallotted

to Indians, the federal government would either hold the land in common in trust for the tribe, lease it to produce revenue for the tribe, or sell it in fee patent to White agricultural, ranching and timber interests.

Dawes Act supporters thought allotment would help assimilate Indians into American culture as self-sufficient yeomen farmers and ranchers motivated by the economic prospects of private land ownership and the market economy, living alongside their White farmer neighbors who would help exert a civilizing influence (Wester 1999). Commercial interests wanted to gain access to exploit Indian reservation resources: arable land, water, salmon, timber and minerals, still relatively undeveloped (by Euro-American standards) by the tribal communities, for economic gain. In the final analysis, the primary practical effect of the Dawes Act was the transfer of reservation land and resources from Indian to White control.

At the time, the Yakama community was split on allotment. Those Yakama who had already developed farm homesteads over the last 50 years or who were able to settle on Yakima River lands customarily used by their families for generations were generally in favor of the process, while those who grazed large herds of horses and cattle, or cult wild hay on extensive acreages were not in favor of privatizing and closing the range (Wester 1999).

Allotment was adamantly opposed by the most traditional members of the Yakama community (labeled “Wild Yakamas” by Office of Indian Affairs agents) who continued the precontact foraging subsistence round (Schuster 1975). The traditionalists including Wáshat longhouse religious leaders such as Smohalla, who did not believe any of the Yakama homeland should be held in private ownership or cultivated (Hunn 1990). Section lines, plowing fields and digging irrigation ditches were seen as scaring the bosom of the Earth Mother (OIA Annual Report 1859). Furthermore, the Yakama realized that by taking up farming on allotted land meant being under a degree of control of the OIA reservation agent. Farming also involved considerable start up costs and long delays before it would be profitable (Wester 1999). Many Yakama preferred to continue their foraging way of life without settling on allotted farming or range lands. Under provisions of the Homestead Act, about 100 Klickitat families assigned by the 1855

Treaty to the Yakama Reservation north of their homelands chose to settle off reservation on their former Columbia River and Klickitat Basin lands, obtaining titles to acreage in 40, 80 and 160 blocks for irrigated or nonirrigated farming and grazing land (Schuster 1975).

The process of allotting the arable land of the Yakama Reservation began in 1892, with the plan of assigning 112,000 acres, about half of the arable reservation acreage. Within two years about 1,800 allotments had been assigned to about 2,000 Yakama in 425 families living on the reservation. About 200 Yakama refused allotments, some living just off reservation to the north under the leadership of a Wáshat longhouse leader named Kotiahkan (Schuster 1990). A boundary dispute on the reservation western boundary were decided in the tribe's favor adding nearly 360,000 acres to the reservation, but not before hundreds of White settlers had already homesteaded there and were subsequently allowed to stay by the courts.

In the end, most of the Yakama who had initially refused to choose an allotment were forced to take an assigned allotment, under threat of losing all the reservation lands to White settlers. Others initially choosing to live independently off reservation felt the pressure of White settlement and eventually chose to live on allotted lands on the reservation. By 1890, the salmon fishery on the Columbia River was being decimated by White fishermen for the cannery industry. Against the treaty rights stipulated in the 1855 Treaty, many of the customary Yakama fishing and gathering sites were closed off by White commercial and farming interests, making a foraging way of life increasingly untenable. The Office of Indian Affairs did little to legally defend Yakama treaty rights seeing a continuation of traditional subsistence foraging as retarding the development of the Yakama as settled farmers (Wester 1999). Subsequently, many Yakama were forced to turn to farming, ranching and wage labor to survive.

Unfortunately, as quickly as Yakama were issued fee patents to farm and grazing land, White settlers managed to alienate those lands from Yakama ownership. A few of my Yakama informants related to me stories about how White farmers and ranchers managed to defraud their grandparents of their farm allotments. Springs, wells and creeks customarily used by the Yakama for drinking and watering their livestock were placed off-limits by White farmers or

their waters were diverted (Schuster 1975, Wester 1999). Many Yakama who attempted to farm their allotment found that it required considerable capital investment to clear, level, fence, and irrigate unimproved shrub steppe land. Many found it economically impossible to successfully farm their tract, forcing them to leave them idle, to lease them to White farmers, or sell them for needed cash. However, some Yakama who had selected easily irrigated allotments along the Yakima River and major reservation creeks became successful farmers of corn, wheat, potatoes and onions, but these were the minority.

Large scale reservation reclamation projects starting in the late 19th century together with allotment process had negative impacts on the Yakama community in two ways. First, the irrigation diversions and dams prevented salmon and other anadromous fish from reaching their spawning beds, and trapped and killed millions of out-migrating smolts in irrigation canals (Schuster 1975). Second, few Yakama had access to these irrigation schemes. The irrigation projects diverted much of the Yakima River and reservation creek water to White-owned farms both off and on reservation, making it unavailable for those owned by Yakama. The 1855 Treaty had not mentioned an explicit Yakama water right. Under a 1905 agreement, the Yakama Nation was limited to 147 cubic feet of water per sec (cfs), whereas non-Indian water users off reservation received 2,065 cfs (Wester 1999). Despite the Winters Decision of the U.S. Supreme Court in 1908 affirming Indian rights to appropriate water, the Yakama were not protected against encroachment of their water rights by irrigation projects developed to benefit White farmers. The Wapato Irrigation Project, started in 1897 was the first major scheme. By 1913, 42,000 acres were under irrigation, paid for by the Yakama tribe and government appropriation. However, in the final analysis irrigation mostly benefited White farmers who leased or purchased many Yakama allotments. Today almost 143,000 acres are watered by the Wapato Irrigation Project.

Some Yakama fee patents were also purchased by groups of investors and urban developers. The reservation towns of Wapato, Toppenish and Parker were established on lands alienated from tribal ownership during the period of 1905–11 (Schuster 1975). By 1909, the checkerboard

pattern in the valley portion of the reservation had began to take shape, as about 90,000 acres of valley lands had been allotted to Yakama individuals and about 1/3rd of it, 27,000 acres, had been transferred to White ownership (Relander 1962, Yakima Tribal Council 1955). By 1913, practically all of the most productive agricultural land was occupied by Whites, either through lease or sale of Yakama allotments (McWhorter 1913, Hunn 1990).

While the allotment process in the valley proceeded, a small but determined faction of the Yakama tribal leadership fought to keep large upland portions of the reservation (classified by the OIA as “surplus” timber and grazing land) closed to allotment; to be held in trust by the tribe for land-based subsistence (Schuster 1975). They were ultimately successful and the Yakama tribal leadership refused to sell 800,000 upland acres to the U.S. government. Kotiahkan fought against the loss of Yakama land on a 1902 trip to Washington, DC, getting the U.S. government to agree that large areas of timber and grazing land on the reservation could remain unallotted to be held in trust for the tribe (Schuster 1990). As a result of those efforts, today the Yakama have 807,000 acres that are largely undeveloped, called the Closed Area, held in trust by the tribe and open for use only to Yakama tribal members. When the Yakama tribal rolls closed in 1914, about 440,000 acres in about 4,500 allotments had been issued.

The Yakama and other Native Americans were granted full citizenship in 1924. The Indian Reorganization Act of 1934 under Franklin Roosevelt was a rejection of the assimilationist policies of the Dawes Act (Schuster 1998). The IRA attempted to revitalize tribal government and check the alienation of tribal land. Further allotment was prohibited. Since 1954, the Yakama Nation has actively sought to buy back fee patent land held by both the Yakama and White owners to hold it in trust for the community (Schuster 1975). The effort to repatriate TNWR and CLNWR are part of this effort to restore the trust territory of the Yakama people and regain full control over their reservation land base.

Today about 1 million acres of the 1.3 million acre reservation are held in trust for the YN. Much of the trust land is found in the foothill and mountainous regions of the reservation consisting of 408,000 acres of rangeland and 635,642 acres of pine and fir forest. Of the valley

portion of the reservation, totaling about 153,000 irrigated acres, about 55% is Yakama owned. However, most of the Yakama owned land is leased to non-Indian farmers. The remaining 45%, generally the most agriculturally productive land on the reservation, is owned by non-Indian farmers.

Reservation Demographics and Economy

As another legacy of allotment, the demographics of the Yakama Reservation are unusual; the Yakama are a minority group on their own reservation. Of a total population of about 32,000 people living on the Reservation in the 2000 census, about 50% are Latino, 26% Yakama, 23% White, and 1% Filipino. The Yakama make up the majority ethnic group only in the reservation towns of White Swan, making up about 60% of the population, and Satus, making up about 37%. They are a minority in the reservation communities of Parker, Toppenish, Wapato, and Harrah, making up 20%, 8%, 9%, and 19% of the population, respectively. A significant number of Yakama families live on farm allotments away from town. Some Yakama families live off reservation in urban and suburban Yakima, and in the contiguous town of Union Gap, just to the north of the reservation, and in rural Goldendale in Klickitat County, to the south. Other Yakama live in some of the major metropolitan areas of the Pacific Northwest such as Seattle and Portland both for their employment and educational opportunities.

Due to the foresight in protecting their timber lands from allotment, today the tribe's primary economic engine is their forest products industry, using ponderosa pine, Douglas fir and grand fir harvested from 309,000 acres of their own 635,642 acre reservation forest and cut at the tribally owned mill, Yakama Forest Products Inc. The tribe also owns a casino, power company, professional men's basketball team, fruit orchard, juice company and industrial park. The Yakama tribal government is the largest employer on the reservation, providing jobs for approximately 900 people.

Asserting Treaty Fishing Rights and Native Sovereignty

Since agreeing to the 1855 Treaty, the Yakama have been resolute in defending their treaty rights to fish, hunt and harvest plants in their “usual and accustomed places,” as an important measure of their independence, the persistence of their way of life and of their culture. The Yakama Nation has played a key role in defending all Indian fishing rights in the Pacific Northwest, using the local, state and federal courts, the court of public opinion, state and federal legislatures, non-violent resistance and fisheries science.

Tribal nations possess and exercise a level of inherent sovereignty, originating in their possession of their lands predating the birth of the United States (Wilkins 1997, Wilkins and Lomawaima 2001). Tribal sovereignty was recognized in hundreds of treaties between the tribes and the U.S. government, many still in force today, including the Yakama Treaty of 1855. Under the federal trust protections arising from their treaty, the Yakama retain key aspects of an independent nation. However, to be a fully functional independent native nation, Yakama sovereignty must include a secure land base, a functioning economy, self-government, and cultural vitality (Wood 1994). One could argue that if a tribal nation loses its land, it loses its very sovereignty and cultural identity (Wilkins 1997:288).

The Yakama treaty rights to fish, hunt, and gather off-reservation implicate essential aspects of all four of these attributes of sovereignty. The “usual and accustomed places” off reservation are recognized by the Yakama Nation as part of their land base under the 1855 Treaty, and the resources harvested there are a key part of their subsistence and commercial economy, and were so even prior to their inclusion in the Euro-American economy. Their right to manage their fishery under a system devised by the Yakama tribal leadership epitomizes the privileges of self-governance. Their foraging way of life, requiring access to resources both on and off reservation, is one of the foundations of their cultural vitality as a distinct people.

However, the first White settlers assumed that Euro-American concepts of property ownership trumped whatever claims the Yakama might have to their “usual and accustomed places” under the 1855 Treaty, impinging on tribal sovereignty. Often individual White citizens

or corporations tried to block Yakama access to the river with fences and or pushed Yakama fishermen aside to set up fish wheels, enormous water wheels that caught thousands of salmon per day in wire-mesh baskets involving little human effort (Fisher 2004, Woods 2005).

The Yakama Nation's efforts to combat such threats to their fishing rights have produced a number of the most famous state and federal Supreme Court decisions upholding their treaty rights. An analysis of case law based on cases involving Yakama tribal members and Yakama government could be a book in itself. I rely heavily on the book by Cohen (1986), a legal history review article by Woods (2005) and the last chapter of Hunn's book and his historical timeline (Hunn 1990:52–57, 284–294) in laying out the history of the Yakama's extensive experience in the judicial system in response to any efforts to limit their reserved treaty rights.

In 1887, a White settler named Taylor was ordered to remove a fence blocking access to a Yakama fishing site on the Columbia River by the Washington Territorial Supreme Court (Cohen 1986). Three U.S. Supreme Court decisions upheld Yakama treaty fishing rights: *U.S. v. Winans* (1905), *U.S. v. State of Washington* (1913), and *U.S. v. Seufert Brothers* (1919) (Cohen 1986). The Winans brothers had blocked access to a Yakama fishing site where they had placed a state-licensed fish wheel claiming exclusive rights to fish at that location. The court rejected that argument and ruled in favor of the Yakama. The Winans ruling set a number of legal precedents. First, it found that coming of statehood did not nullify Indian treaties that had long preceded statehood. Second, that the treaties must be interpreted in the way that the Indian signers understood them, and that any ambiguities should be resolved in favor of the Indians, the weaker party politically (Cohen 1986). Third, under the Indian reserved treaty rights doctrine, all rights not specifically ceded by the tribes to the U.S were reserved, that is, still retained by them (Wilkins and Lomawaima 2001). In the State of Washington case, Yakama Chief George Meninock testified to defend his peoples' treaty rights and their eternal logic:

God created this Indian country and it was like He spread out a big blanket. He put the Indians on it. . . . Then God created the fish in this river and put deer in these mountains and made laws through which has come the increase of fish and game. . . .

For the women, God made roots and berries to gather, and the Indians grew and multiplied as a people. When we were created we were given our ground to live on, and from that time these were our rights. This is all true. We had the fish before the missionaries came. . . . This was the food on which we lived. . . . My strength is from the fish; my blood is from the fish, from the roots and the berries. The fish and the game are the essence of my life. . . .

We never thought we would be troubled about these things, and I tell my people, and I believe it, it is not wrong for us to get this food. Whenever the seasons open, I raise my heart in thanks to the Creator for his bounty that this food has come (Lower Snake River 1999).

In the Seufert Brothers case, involving an excessive number of commercial fish wheels on the Columbia between Celilo and The Dalles (36 wheels and 4 seines!), the court ruled that the Yakama had rights to fish both the north (Washington) and south (Oregon) sides of the Columbia River (Hunn 1990). However, the *Winans* ruling left open the possibility of state regulation of Yakama fishing off reservation at their customary fishing sites on the Columbia and its tributaries.

Oregon and Washington stepped through this huge opening, passing conservation laws that limited when, where, and how people could fish, particularly targeting Indians (Woods 2005). Many regulations appeared to single out Indian traditional methods and burdened subsistence fishermen, regulating the fishery “on the backs of the Indian fishermen” without untowardly limiting White fishermen. In 1915, Washington implemented its first fisheries codes forbidding certain traditional Indian techniques such as spearing and snaring. The following year, the Washington State Supreme Court ruled against a Yakama utilizing a gaff (*State v. Towessnute*) and a Lummi using a reef net (*State v. Alexis*), both without state licenses. In the *Towessnute* case, the Washington Supreme Court utterly rejected the entire “premise of tribal sovereignty” (Cohen 1986:57).

However, the U.S. Department of Interior declined to challenge state authority, pointedly rejecting any defense of tribal sovereignty against state infringement (Woods 2005). The rulings set in motion a 60 year struggle between the tribes and the states of Washington and Oregon

over Indian treaty fishing rights, with the Yakama often taking the lead in that fight (Hunn 1990). In 1920, Chief George Meninock and four other Yakama were back in court again, this time convicted for fishing without a license at a venerable Yakama fishing site of rapids on the Yakima River east of the reservation in Prosser, WA, called Toptut (Relander 1986). Sympathetic Washington state legislators eventually passed a focused bill in 1921 allowing the Yakama to fish for subsistence at Prosser using any type of gear and during any season (Woods 2005).

In 1939, in possibly the first example of nonviolent resistance in defense of Indian treaty fishing rights in the United States (Hunn 1990:286), a Yakama named Sampson Tulee challenged state law by inviting arrest for using a traditional Indian dip net at Celilo Falls, the most venerated traditional dip net site on the entire Columbia River, to catch salmon for commercial sale without a state license (Woods 2005). He was convicted by the Klickitat County court and the case went to the Washington Supreme Court which stood by the *Towessnute* decision that Indian treaty fishing rights are subject to state law. Tulee appealed to the U.S. Supreme Court and it overturned the lower court in 1942, deeming that the state license constituted an illegal charge for the exercise of a legal right to fish under the 1855 Treaty (*Tulee v. Washington* 1942) (Hunn 1990). The *Tulee* ruling did allow the state to control the season and manner of fishing, however. This meant that with the exception of the state license, the Yakama and other treaty tribes were subject to state fishing regulations both on and off reservation, an idea repugnant to the tribes, and apparently in total disregard of federal trust responsibilities to defend tribal sovereignty that goes back to *Worcester v. Georgia* in 1832 (Woods 2005, Wood 1994).

In 1944, the YN established a Tribal Council of 14 elected leaders representing the 14 bands and tribes and also established a General Council of all Yakama adults over 18 who elect the Tribal Council and also vote on various tribal referendums. This political structure strengthened Yakama sovereignty because it signaled to the federal and state governments that the Yakama community was committed to a transparent democratic form of government organized on the Euro-American model. This likely helped build confidence that the Yakama tribal government could be addressed on a true government to government basis by federal agencies. The BIA

deemed it could now legally transfer certain programs it had carried out on behalf of the tribe to the tribe itself, an obvious expansion of Yakama self-governance.

The drowning of Celilo Falls under the reservoir pool rising up behind The Dalles Dam in 1957 was a blatant act of cultural genocide inflicted on the Yakama and other Columbia River Indian communities who had fished for salmon and other kinds of fish at the falls for millennia (Barber 2005). The loss of this key subsistence and commercial resource had catastrophic impacts on Yakama employment, health and well being (Schuster 1975). The destruction of the Celilo fishery was a direct attack on the land-based economy, way of life and patrimony of thousands of Indian people. It was nothing less than a war crime. Much of the anger in the Yakama community behind the federal mismanagement of the Columbia Basin hydro system over the last 50 years has as a focal referent the destruction of Celilo.

In 1958, Umatilla fishermen were arrested while subsistence fishing for salmon in the Blue Mountains of Oregon during a closure ordered by the state game commission to protect spawning spring chinook (Woods 2005). The tribe successfully sued Oregon in federal district court (*Maison v. The Confederated Tribes of the Umatilla*) and also won the appeal in circuit court. The ruling was significant in declaring that Indian fishing in the Pacific Northwest could be restricted only after other restrictions on non-Indian fishermen had been exhausted to conserve the fishery; in effect the states could not regulate the salmon fishery on the backs of Indian fishermen (Hunn 1990).

Ten years later, Yakama tribesmen Richard Sohappy and his uncle David Sohappy, residents of the in-lieu fishing site Cooks Landing in the Columbia River Gorge, invited arrest by gill-netting salmon in defiance of Oregon fishing regulations (*Sohappy v. Smith* 1969) (Hunn 1990:286–287). The Sohappys sued the state of Oregon and Washington. The U.S. government entered the case against Oregon on behalf of the Yakama, Umatilla, Nez Perce and Warm Springs tribes in a consolidated case called *U.S. v. Oregon*. The United States argued that the treaties require Oregon to allow a “fair and equitable share” of the salmon run to pass upstream to the tribal fisheries (Woods 2005). Judge Belloni’s 1969 ruling required Oregon to manage all

Columbia River fisheries so that a “fair and equitable share” of all fish was available for harvest by Columbia River treaty tribal fishermen at their usual and accustomed places.

In 1970 the U.S. government sued the State of Washington on behalf of the Yakama and 21 Puget Sound treaty tribes (*U.S. v. Washington* 1970), contending that the state could regulate treaty fishing only to protect the resource, that the tribes were entitled to a fair and equitable share of the fish (Woods 2005). The tribes contended that the state could only regulate tribal fisheries as a last resort and that the treaties entitle them to as many fish as needed for subsistence. The Yakama argued that their treaty fishing rights predate the creation of the state of Washington; the state had no right to regulate their tribal fishery at all.

U.S. v. Washington broadened the scope of the issue to include the entire Puget Sound, much of the Washington coast and adjacent ocean, the Columbia River and all other rivers that flow to the Pacific Ocean. This includes the fisheries of the four treaty tribes of the Columbia River, but also those of the many Western Washington treaty tribes. In 1974 Judge Boldt ruled that Washington could regulate tribal fishing only if it was needed for conservation and only if the regulations did not discriminate against tribal fisheries on the basis of gear and other factors unique to tribal fisheries (Woods 2005).

Judge Boldt also ruled that treaty tribes had sovereignty to regulate their own fisheries, directly limiting state control. Boldt ruled that a fair and equitable share of fish was half of the salmon and steelhead not needed for spawning (Hunn 1990, Woods 2005). This was a possible ten-fold increase in the amount of fish the tribes were harvesting, and would require drastic cuts in fishing by nontribal fishermen (Woods 2005). The state could only regulate tribal fisheries with their consent or with court approval. The Yakama and Quinault tribes were ruled to be self-regulating entities and their fisheries could not be regulated by the state of Washington at all.

The Boldt decision was affirmed in 1975. With little progress in the fair appropriation of the fish stocks by the states and tribes, Judge Belloni adopted the Boldt decision and ruled that

the Columbia River spring and fall Chinook fisheries would be managed as a 50–50 allocation between tribal and nontribal fishermen (Hunn 1990). The U.S. Supreme Court upheld the Boldt decision in 1976. Because of Washington intransigence, Boldt assumed direct control over the fisheries from 1977–79.

The treaty tribes and states were ruled to be cosovereigns of Columbia River salmon fisheries with an equal right to take a fair share of the available fish, with Belloni ordering them to develop a 5-year Joint Management Plan (Woods 2005). The Belloni and Boldt decisions encouraged the Yakama and other Columbia River tribes to improve their scientific, technical, legal and political skills as fisheries managers, including creating the Columbia River Intertribal Fish Commission (CRITFC) in 1977 (CRITFC website). The West Coast Washington tribes did the same, creating the Northwest Indian Fisheries Commission (NWIFC).

CRITFC has been successful in protecting treaty rights and asserting tribal jurisdiction over off-reservation tribal fisheries against attempts of the states to assert control (Schuster 1998). From 1979–82 Columbia River, Puget Sound, and Washington coastal tribes sued NOAA Fisheries (Department of Commerce) over ocean salmon fishing regulations (*Confederated Tribes, et al. v. Kreps*; *Yakima, et al. v. Klutznik*; *Hoh v. Baldrige*; and *Yakima, et al. v. Baldrige*) (CRITFC website). The Yakama took the lead on many of these suits. As a result, the federal government was held to have a legal obligation to regulate the Pacific Ocean fishery to insure that a reasonable number of salmon reached tribal fishing places on the Columbia River. CRITFC lobbied Congress to legislate programs to restore salmon runs by limiting ocean harvests and placing restrictions on hydroelectric dams during peak spawning periods (Schuster 1998).

CRITFC and NWIFC have both been very effective in articulating the inestimable value that the Yakama and other Pacific Northwest tribes attach to their relationship with salmon, to fishing for and consuming salmon as a staple food, and that defending their treaty rights to fish is a cultural imperative for their communities. Billy Frank Jr., a Nisqually and Chairmen of the Northwest Indian Fisheries Commission said:

Fishing defines the tribes as a people. It was the one thing above all else that the tribes wished to retain during treaty negotiations with the federal government 150 years ago. Nothing was more vital to the tribal way of life then, and nothing is more important now . . . , The tribes have fought too hard for too long to let the salmon and their treaty rights to harvest salmon go extinct. This summer and fall you will see tribal fishermen doing what they always done—fish.” (quoted in O’Neill 2003)

In 1980, the Federal District Court issued a decision in *U.S. v. Washington (Boldt II)* that ruled the Indian treaty right fishery allocation should include hatchery-bred fish and that the treaty requires the protection of the salmon’s habitat to guarantee the future of the Indian fishery (Hunn 1990). The second part of this ruling is significant, in that it expanded Yakama and other treaty tribe interest and legal standing in land management decisions far off reservation and away from the Columbia River itself to include timber harvesting (which impacts spawning beds), the operation of the hydro system, agricultural pesticides, floodplain development, and the cleanup of the Hanford nuclear facility (Hunn 1990).

The Yakama Nation Fisheries Program and that of other Columbia River tribes have been particularly effective in deploying fisheries science in defense of salmon populations and ultimately the sustainability of their fishery. The Yakama and the other Columbia River tribes successfully challenged NOAA Fisheries biological opinions of no significant impacts in the operation of the Columbia River hydro system three times in court between 1993 and 1998, forcefully arguing that the BPA dams operated by the ACOE are directly killing tens of millions of salmon each year.

Cooperation between the Yakama and other tribes and states has improved over time as they have worked together on fisheries management issues. There has been a significant expansion of tribal representation in fisheries management, with the Yakama and other tribes working in a government to government capacity with the state, federal agencies and as part of the U.S. delegation in salmon harvest negotiations, with Canada. Using funding from the Bonneville Power Administration to mitigate fisheries losses due to the Columbia River dams, the Yakama

Fisheries Program and Washington Department of Fish and Wildlife launched the Yakima–Klickitat Fisheries Project in 1990 to rebuild runs of Chinook, Coho, sockeye, and steelhead in the Yakima and Klickitat River basins. Formerly an estimated 800,000 salmon and steelhead returned annually to the Yakima River (YKFP website). However since the late 1980s generally less than 10,000 to 20,000 fish return each year.

Today the Yakama Nation Fisheries and Wildlife Programs are arguably the largest tribal natural resource management department in the United States with about 200 employees. The Yakama Wildlife Program manages 21,000 acres in the lowlands of the reservation for linked ecological and cultural values (Figure 16). The Yakama Fisheries Program manages three hatcheries in the Yakima and Klickitat Rivers, producing 9.5 million smolts of three Pacific salmon species each year: fall and spring Chinook (*Oncorhynchus tshawytscha*), and Coho (*O.*

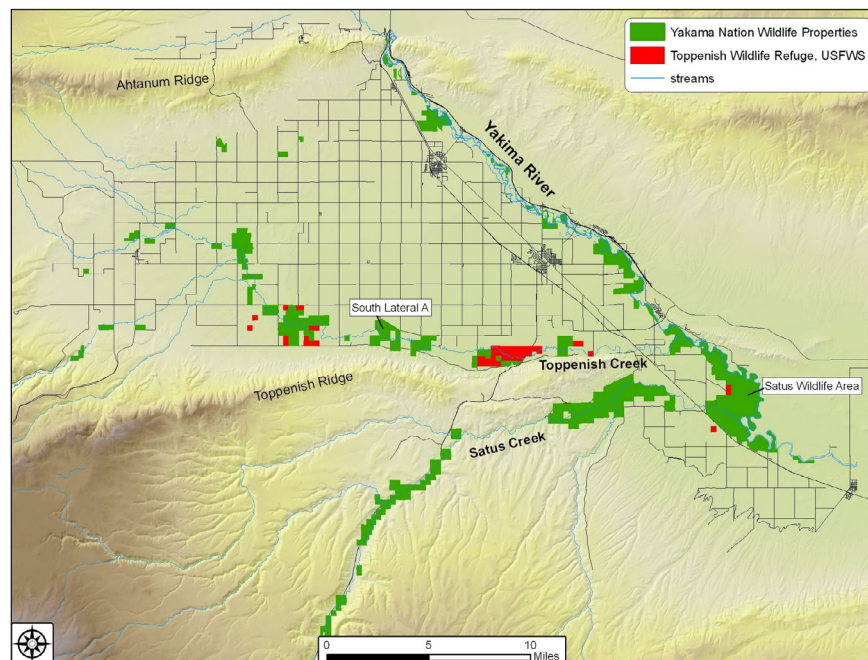


Figure 16. Protected wetlands administered by the Yakama Nation Wildlife Resources Management Program and Toppenish Refuge, U.S. Fish and Wildlife Service on the Yakama Reservation. Note the grid which was imposed during the Allotment Era. Map by Thomas Elliott.



Figure 17. Spawning spring chinook salmon at the Cle Elum Hatchery, Yakama Nation Fisheries Program.

kisutch) (Figure 17). The Chandler hatchery on the Lower Yakima is also involved in helping wild steelhead (*O. mykiss*) spawn multiple times. Restoring the sockeye (*O. nerka*) in the Upper Yakima River is currently being planned. Both the Wildlife and Fisheries Programs have extensive restoration and enhancement projects to support the diversity of native species of cultural value to the Yakama community and their habitats, ranging from sage grouse (*payúms*; *Centrocercus urophasianus*) and pronghorn antelope (*wáwataw*; *Antilocapra americana*) to huckleberries, both on and off reservation.

The Yakama's lengthy residence as foragers in the diverse ecosystems in the Mid-Columbia region (estimated at least 5,000 years old by Aikens 1983) gives the community particular insight to the natural abundance, yet patchiness of its subsistence and commercial resources, the mutability of the landscape due to flood and fire, and long time horizons involved in the use and management of that landscape. The 1.3 million acre Yakama Reservation, draining from Mt. Adams in the Cascades to the Yakima River, motivates YN wetland managers and other natural resource managers to think holistically about the entire Yakima Basin as a single integrated landscape unit essential for the tribe's material welfare and cultural survival.



Figure 18. The Toppenish National Wildlife Refuge Entrance. The official emblem of the U.S. Fish and Wildlife Service depicts a mallard on the wing and a leaping salmon, against a landscape of a lake, river and mountains lighted by a rising sun.

The U.S. Fish and Wildlife Service

The FWS is an agency within the U.S. Department of Interior, and is the primary federal entity responsible for the conservation of wildlife and fish, including migratory birds, interjurisdictional fish, marine mammals, endangered species of all kinds, and wetland communities. The FWS is best known to the American public for managing the largest protected area system in the world dedicated to wildlife conservation, the National Wildlife Refuge System, administering 545 refuges totaling over 97 million acres in all 50 states (Figure 18). The FWS has about 9,000 employees nationwide. The FWS main office is in Arlington, VA just across the river from Washington, D.C.

Waterfowl (ducks and geese) are “trust” species of the FWS, protected by international treaties and identified by the FWS as a key component of the natural heritage of the United States, valued as a recreational and subsistence food resource for nearly 2 million hunters and for tens of millions of bird watchers. The primary management approach on approximately 80% of the 545 National Wildlife Refuges in the United States includes intensive control of water levels and of vegetation in shallow impoundments and surrounding upland areas to provide food,

resting and breeding habitat for migratory waterfowl and other birds. Waterfowl refuges are managed with the seasonality of the bird's migration in mind. Most wetland vegetative growth is aimed to produce a "crop" of waterfowl food available in the fall and winter which attracts and sustains the waterfowl on their migration south from their primary nesting habitat in northern North America.

Toppenish National Wildlife Refuge (TNWR), comprising approximately 2,000 acres along Toppenish Creek (Figure 16), is one of two FWS refuges embedded within the Yakama Reservation, the other being Conboy Lake National Wildlife Refuge (CLNWR), about 6,500 acres. Both refuges are administered by staff from the FWS Mid-Columbia Refuge Complex office in Richland, WA, a town of about 80 miles from Toppenish, near where the Yakima River, Columbia River and Snake River meet. The Complex manages six FWS refuges in the Mid-Columbia region totaling over 57,000 acres, providing habitat for migratory waterfowl and other wildlife (Toppenish, Conboy Lake, McNary, Cold Spring, Umatilla, and McKay Refuges).

The Mid-Columbia Refuge Complex office in Richland is co-located with another protected area managed by the FWS, the Hanford Reach National Monument (actually administered by the Department of Energy), totaling 195,000 acres, including the Columbia River Corridor (51 miles of the last free-flowing stretch of the Columbia River), Saddle Mountain National Wildlife Refuge (32,000 ac), the Fitzner/Eberhardt Arid Lands Ecology Reserve (77,000 ac), the Wahluke Unit (57,000 ac), and the McGee Ranch/Riverlands Unit (9,000 ac). Rattlesnake Mountain, today located within the Arid Lands Reserve, has spiritual significance to the Yakama people, and historically was a noted traditional use area for root gathering and hunting. The mountain, as one of the warmest areas in Yakama Country, was famous as the earliest spring greens and root gathering spot. Coyote Rapids on the Columbia River was the site in the 1850s where Smohalla, a dreamer prophet from Priest Rapids, first envisioned the Wáshat or Seven Drums Religion and established a prayer longhouse (Relander 1986).

Currently, TNWR is daily staffed by a single on-site maintenance employee, with a Refuge Complex project leader, deputy project leader, refuge manager, refuge biologist,

outdoor recreation planner, biological technician and law enforcement officer working out of the Richland office or from Umatilla NWR. All FWS activities in Washington, Oregon, Idaho, Hawaii and the Pacific Islands receive administrative and management support from the FWS Region 1 Office in Portland, Oregon.

The Yakama Nation has ongoing relationships regarding land and river management with many other federal agencies in the region include: the Bonneville Power Administration (Department of Energy); Army Corps of Engineers (Department of Defense); Bureau of Reclamation (DOI); NOAA Fisheries (Department of Commerce); Gifford Pinchot National Forest (the western half of Mt. Adams) and Wenatchee National Forest (USDA); and the Bureau of Land Management (Yakima Canyon) (DOI). The nexus of the Yakama Nation, other Indian tribes, the many federal agencies, state fish and wildlife agencies, and county and city governments reveals the immense social, cultural, political and economic complexities of the land management terrain in the Mid Columbia region, requiring ongoing interagency and intercommunity consultation, cooperation and partnerships. In the following chapter I present an analysis of the political and intellectual history of Toppenish Creek.

CHAPTER 3

A POLITICAL AND INTELLECTUAL HISTORY OF TOPPENISH CREEK: WETLANDS MANAGEMENT MODELS, 1930S–1990S

The development of protected areas for waterfowl and other migratory birds in a national landscape matrix almost entirely transformed by agriculture and urbanization has been important theme in the history of wildlife management in the United States. All migratory birds are protected under international treaties with Canada, Mexico, Japan, and Russia (1918, 1936, 1974, and 1978, respectively). The evolution of the science and art of waterfowl management includes an ongoing debate about how to best manage these small protected wetland areas to support highly concentrated populations of waterfowl valued by the hunting and bird watching public. Wetlands are also widely recognized as key habitats for many valued nongame bird species, for vulnerable amphibians and reptiles, for rare plants, and for culturally and economically important fisheries.

In this chapter, I will analyze how trends in wetland management science and federal environmental law and policy have influenced management models of Toppenish Creek wetlands by both the FWS and YN from the 1930s to the late 1990s. An important theme is the key contributions of specific YN and FWS decision makers in the Toppenish watershed over time. Some of these individuals have been involved in setting the wetland management agenda in the Yakima Basin for 40 years. Another important theme in this discussion is the YN asserting greater sovereignty over their reservation lands and resources, continuously expanding their capabilities and rights to manage wildlife and fish populations in the Yakima River Basin. While YN sovereignty expanded, the FWS was attempting to develop TNWR and maintain the overall integrity of the National Wildlife Refuge System. This last theme will be further examined in Chapter 6.

Archived FWS and YNWRP documents indicate how waterfowl management paradigms of the two agencies have developed over a 60 year period. I will show how the FWS and YNWRP embraced an identical wetland enhancement model from the 1950s to the mid-1990s, attempting to provide waterfowl habitat as a by-product of agricultural activity including livestock ranching and grain cropping. However, over the last 20 years the FWS management approach has evolved to a wetland enhancement model, called moist soil management, using seasonally flooded impoundments to provision wild foods for waterfowl, while that of the YNWRP has focused on restoration of floodplain hydrology and native vegetation.

Toppenish NWR, although a small waterfowl refuge by almost any standard, has been involved in four important developmental periods in the National Wildlife Refuge System over the last 75 years: the initial organization of the system in the 1930s; rapid growth of the system in the 1960s; the biodiversity and ecosystem approach discussions of the 1990s; and the sputtering government to government relationship between the FWS and Native American tribes we see today. In the next section, I will discuss the major drivers that help establish the FWS refuge system and how the concept of a waterfowl refuge in Toppenish Creek on the Yakama Reservation began to develop.

The growth of the National Wildlife Refuge System and its influence on the management of Toppenish Creek wetlands (1930s–40s)

Influencing the initial development of the National Wildlife Refuge System in the early twentieth century was the recognition that waterfowl populations in the United States required intensive habitat protection because market hunting had taken its toll and extensive areas of wetland were quickly being converted to agriculture. The International Migratory Bird Treaty (1918), between the United States and Great Britain (signatory for Canada) was designed to provide protection of birds migrating between the two countries, with many U.S. waterfowl species breeding in Canada. In 1929, the Migratory Bird Conservation Act provided the authority for the growth of the National Wildlife Refuge System, without providing funding. Finally, the

passage of Migratory Bird Hunting and Conservation Stamp Act of 1934 (Duck Stamp Act) provided a national source of revenue for federal land acquisition of migratory bird habitat. Duck Stamp monies would eventually pay for acquisition of Toppenish Creek lands to create the TNWR in 1964. President Franklin Roosevelt's establishment of blue ribbon committee composed of Ding Darling, Thomas Beck and Aldo Leopold to advise him on the habitat needs of waterfowl alerted the nation to the precipitous decline of waterfowl as a result of the Dust Bowl, overhunting and wetland habitat destruction.

Leopold would later become known as the father of wildlife management and his philosophy and land ethic continue to inspire applied biologists throughout the United States. Leopold published the first wildlife textbook, titled *Game Management* (Leopold 1933), that introduced the concept of habitat "factors and influences" that control wildlife populations. Leopold recognized the artificiality of nature in the United States, understanding the pervasive extent of human influence on the environment. Today, this understanding pervades the wildlife and fisheries management professions. Because there is no pristine nature, human beings have an important role to play in directly influencing wildlife populations through wild land protection, habitat management, and controlled hunting.

Leopold advocated injecting wildlife values into all land and water development decisions beyond regulation of hunting and the establishment of wildlife refuges. Leopold's ideas of integrated resource planning can be discerned in the 1934 passage of the Fish and Wildlife Coordination Act which authorized federal water resource agencies (Bureau of Reclamation and Army Corps of Engineers) to acquire lands associated with water projects as mitigation for wildlife losses and for enhancement of fish and wildlife populations to be managed by the FWS or state wildlife agencies. Coordination Act monies paid for a purchase of lands for a number of waterfowl refuges on the Columbia River in the intervening years, including McNary and Umatilla NWR's.

Leopold's ideas about incorporating ecological dimensions into public administration would reverberate decades later in the development of the National Environmental Policy Act (1969)

and the Endangered Species Act (1973), both laws significant in later disputes between the FWS and YN about TNWR in the 1990s. Leopold's concept of a land ethic (Leopold 1949) would come to influence a number of the wildlife biologists working for TNWR and the YNWRP.

In 1936, the United States signed the Migratory Bird and Mammal Treaty with Mexico which gave the United States further impetus to protect migratory waterfowl that bred in the northern reaches of the United States and Canada, migrating through the country in the fall, and wintering in wetlands in Mexico. The act called for the creation of "refuge zones" to protect migratory birds. Between 1939 and 1940, the Biological Service moved from the Department of Agriculture and the Bureau of Fisheries moved from the Department of Commerce, to be merged as the Fish and Wildlife Service under the Department of Interior. Commercial Fisheries was eventually moved from Interior to the Department of Commerce to create the National Marine Fisheries Service in 1970, today known as NOAA Fisheries or NMFS. The Yakama Nation would come to have an adversarial relationship with both the FWS and NOAA Fisheries in the years to come.

There were also key developments in wetland science nationally during this period. Beginning in the late 1930s, Frank Bellrose, a waterfowl biologist with the Illinois Natural History Survey initiated the first studies of an ecological succession management technique to enhance waterfowl productivity on a diminished wetland land base that came to be known as 'moist-soil management' (Fredrickson 1996). In the 1880s, observers had noted that irrigation of huge livestock ranches in the San Joaquin Valley of California had the added benefit of enhancing the productivity of natural foods for migratory ducks and geese. The moist soil technique was subsequently applied by a number of wetland managers in Illinois, Louisiana and Missouri starting in the immediate post-WW II period (Ducks Unlimited website).

The first mention of creating a wildlife refuge in the Toppenish Creek watershed can be found in a series of letters between the Office of Indian Affairs (OIA), which eventually became the Bureau of Indian Affairs and BS, between 1933 and 1937 (Holt 1933 memo, Collier 1934 memo, Rutherford 1935 memo, Clotts 1935 memo, Dieffenbach 1936 memo, Collier

1936 memo). According to these letters, starting in 1908, there was interest in constructing an agricultural drain in the Toppenish Creek area to enable development of its creek bottomlands. The main Marion Drain, built in the 1920s by the Bureau of Reclamation (BOR), flowed 23 miles through the Toppenish floodplain to the Yakima River. Eventually 42 miles of drain were constructed, opening up about 30,000 acres to irrigated agriculture, leaving about 18,000 floodplain acres undrained and undeveloped. In the 1933 letters the OIA outlines its proposal for an additional Toppenish Creek Drain, also recognizing a counter proposal of the BS to protect certain areas of Toppenish Creek for a migratory waterfowl refuge, establishing what one letter author called a “duck port” (Tracy Hames, personal communication).

An interesting statement from an OIA irrigation engineer claimed that the extent of wetlands in 1933 was actually a result of irrigation runoff pooling in certain areas, and that prior to 1910 none of the Toppenish wetland habitat existed (Holt 1933 memo). This statement challenges the dominant theory held by most current Yakima Basin biologists that prior to BOR development the entire Toppenish area was a floodplain complex of anastomosed stream channels, emergent marshes and wet meadows. Recent historical ecology research conducted by fluvial geomorphologist Donald Reichmuth suggests that up until the nineteenth century the Toppenish Creek watershed was dominated by an extensive complex of beaver impoundments. The statement from the OIA engineer suggests that Toppenish Creek at the turn of the twentieth century may have already undergone a process of creek incisement due to elimination of beaver impoundments after 100 years of heavy trapping. Thus the area may already have been drained of some surface waters, a fact which would obviously be furthered by the construction of major agricultural drains designed to complete the task.

In 1936, the BS proposed acquiring 9,000 acres on Toppenish Creek to create a waterfowl refuge (Collier 1936 memo). The BS sought to establish a “waterfowl breeding and resting ground to complete the Inter-Mountain and Pacific Coast migratory fowl flyways.” (Collier 1936 memo). The purchase would include some water rights, although enough water to produce a large semi-permanent wetland impoundment was not guaranteed. Thus the earliest FWS model

for a protected area in the Toppenish area was born: “a large wetland impoundment providing nesting habitat and safety for migratory waterfowl” (Collier 1936 memo)

In 1937, the Yakama tribal community rejected the BS proposal, officially opposing the sale of reservation land to recreate the refuge (Spokane Spokesman 1937). Yakama Tribal Council’s opposition to the TNWR has remained steadfast up to the present day. Yakama allottees owned about 2/3rds of the 9,000 acres, the remainder being owned primarily by Euro-American stockmen. The OIA did not attempt to compel the Yakama community to sell their land and recommended the BS increase their offer to make the sales more attractive (Collier 1937 memo). The BS declined and the proposal for a Toppenish National Wildlife Refuge to serve as a “waterfowl breeding and resting ground” lay dormant for the next 18 years.

National and Local Wetland Developments in the 1950s–60s

Following WW II, there was extensive drainage of wetlands in the American farm belt. The agricultural industry became highly mechanized. These changes had conflicting impacts on waterfowl. Drainage and mechanization resulted in major losses in the quantity and quality of wetland habitats, while at the same time it increased the amount of waste grain left in agricultural fields available for consumption by migratory waterfowl, sometimes largely replacing wild foods in their diet (Fredrickson 1996). Wetland losses were particularly acute in the duck breeding “factory” in the prairie pothole country of the Midwestern United States and Canada. In acknowledgement of these significant habitat losses, the Fish and Wildlife Act of 1956 established a comprehensive national fish and wildlife policy and broadened the authority for acquisition and development of National Wildlife Refuges (FWS refuge history website). The funds necessary to implement this authority, however, were not immediately forthcoming. Without increased funding, land acquisition for protection during the 1950s could not keep pace with the high rate of wetland drainage. During this period, waterfowl research in Louisiana, Arkansas, Illinois and Texas pointed to the increased importance of agricultural grains and moist soil seeds as foods for birds facing extensive habitat losses (Fredrickson 1996).

These national environmental developments were clearly mirrored in the Yakima Basin. In 1955, a new proposal for a 8,000 acre Game Management Unit on Toppenish Creek was resuscitated by the FWS in response to renewed threats by the BIA (with assistance from the Soil Conservation Service, USDA) to drain the Toppenish Creek floodplain and dam Satus Creek for agricultural development (Regional Supervisor 1955 memo). By this time much of the Toppenish floodplain included a mix of crop fields, irrigated pasture and wetlands. The FWS Region 1 supervisor in Portland, OR described Toppenish Creek as a fine waterfowl area, with the potential under management to become one of the better nesting, migration and wintering waterfowl refuges on the Pacific Flyway. A later 1955 letter from the FWS Region 1 refuge supervisor recommended a slightly larger Toppenish refuge of 10,000 acres to be purchased with Duck Stamp funds (Regional Refuge Supervisor 1955 memo). The refuge envisioned included diked wetland impoundments, controlled livestock grazing and grain plots to provide nesting and resting habitat, and high energy food for migratory waterfowl. This is essentially the same management model as the 1937 proposal.

A similar proposal in 1957 and another in 1959 assessed 12,255 acres along Toppenish Creek for a waterfowl refuge (Land Acquisition Report 1957, 1959). The memos described the areas as including rich emergent marshes, willow lined stream channels, and fields of irrigated corn, hay and pasture. A report suggested the refuge should be a top priority on the Pacific Flyway with birds migrating through or wintering in the Mid-Columbia River region. From the mid-1950s to the 1970s the entire Yakima Basin held upward of 300,000 ducks and geese each year, fall and winter (Bich and Hames 1991)

The growing interest in developing protected wetlands and public opportunities for sport hunting for waterfowl by the FWS, Washington Department of Fish and Wildlife, and YN in the Yakima Basin during this period reflect trends in wildlife refuge policy nationally. The Refuge Recreation Act of 1962 recognized the growing public demand for wildlife-oriented recreation (FWS Refuge history website). The Act authorized appropriate public recreational use of refuges, encouraging efforts to provide hunting, fishing, environmental interpretation and education

activities, requiring that such uses be compatible with the purposes for which the lands were acquired.

The most significant legislative act during this period, the National Wildlife Refuge System Administration Act of 1966, led to the full development of the National Wildlife Refuge System. It provided guidelines and directives for administration and management of all areas in the system including “wildlife refuges, areas for the protection and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, game ranges, wildlife management areas, and waterfowl production areas.” (NWRSA Act 1966) The law also established the standard of “compatibility,” requiring that uses of refuge lands must be compatible with the purposes for which individual refuges were established. This standard was later strengthened in the National Wildlife Refuge System Improvement Act of 1997. Compatibility issues would later become important in evaluating the utility of the TNWR farming program in the 1990s.

The growth of the National Wildlife Refuge System in the 1960s did not appear to be directly related to the rise of the Ecology Movement in the United States during the same period, although they can not be simply coincidences. Two books appear significant in launching the movement and greater conservation awareness and environmental activism: Rachel Carson’s *Silent Spring* (1962) and Stewart Udall’s *The Quiet Crisis* (1963). These books emphasized both the unintended and negative impact that certain human behaviors have on ecological relationships and the philosophy that humans are part of, not apart from, the rest of nature. Carson herself was a former FWS employee and is today claimed by the agency as one of its philosophical pillars, along with Theodore Roosevelt and Aldo Leopold.

A flurry of FWS reports in 1961 proposed a refuge for both dabbling ducks and Canada geese consisting of approximately 12,800 acres in 3 discontinuous core protected areas: Upper and Lower Toppenish Creek and Satus Creek (Ascertainment Reports 1961). The reports envisioned a refuge where:

- Migrating and wintering birds would feed from protected grain fields.

- Nesting habitat would be improved by creating a series of diked ponds and marsh impoundments, 3–5 ft deep, using water control structures.
- Pasture would be shallowly flooded in winter to augment existing marsh habitat.
- Controlled livestock grazing would be used to control weedy growth, reduce fire hazards and provide some rental income to the refuge.

The refuge proposal appears to be a response to renewed fears that the BOR and BIA had plans to transform Toppenish Creek into an agricultural drain by deepening and widening its main channel. By 1961, the Wapato Irrigation Project (BIA-BOR) had 139,000 acres under irrigation and drainage in the Yakima Valley (Condensed History of Yakama Reservation Irrigation 1961). The FWS was concerned that these agricultural developments would completely destroy waterfowl populations on the Toppenish and Satus Creek drainages, the most important waterfowl areas in the entire Yakima Basin.

The FWS finally approved the development plan for Toppenish National Wildlife Refuge in 1961; the first lands for the refuge were only acquired in 1964, toward the eventual goal of purchasing 12,810 acres (1966 Refuge Narrative Report). The first tracts purchased were heavily grazed irrigated reed canarygrass (*Phalaris arundinacea*) pastures, with some fields of corn, barley and other crops. The change in ownership from private land to the FWS meant little change in the overall land use on the tracts. They continued to be managed as a complex of man-made impoundments, with marsh and wet meadow vegetation maintained by livestock grazing with waterfowl foods provided by domestic grain crops (1966 Refuge Narrative). Under a share cropping arrangement, grain farmers grew commercial crops on the refuge, generally leaving 20% of the crop standing in the field to serve as food for wintering waterfowl. This pattern of creating refuge waterfowl habitat through cooperative farming and cattle ranching activities would continue largely unchanged for the next 22 years.

The FWS management approach on Toppenish Creek reveals the bias of Mid-Columbia wetland managers toward feeding waterfowl with domestic grains during this early refuge period. Wetland research in the American Midwest and South in the mid-1960s created two

distinct management strategies for provisioning waterfowl, either with agricultural grains or wild moist soil plant seeds (Fredrickson 1996). Because agricultural grains, including corn and rice, were often common in gizzards of migrant waterfowl harvested by hunters, many observers thought that these “hot” foods were the preferred and best waterfowl food (Dillon 1957, 1959). That view is still prevalent in a number of private and public waterfowl areas to the present day (personal observation). However by the end of the 1960s a few professional wetland managers began to recognize that native moist soil plant seeds provided more of the nutritional and energetic needs of migratory waterfowl than domestic grains (Davis et al. 1961).

Much like they had done thirty years previously, the YN officially opposed the final establishment of TNWR. In 1965, the Yakama Tribal Council apparently believing the refuge was only in the proposal stage twice voted unanimously to oppose the refuge on the grounds that purchase of reservation lands undermined the Yakama tribal land base, agricultural productivity, revenue from hunt leases, water rights, and the right of the tribe to regulate hunting within their reservation (Yakama Tribal Council resolution 1965). The 1965 Yakama Tribal Council resolution clearly establishes their position that the development of TNWR by the FWS was a gross infringement of Yakama tribal sovereignty over reservation lands, including the use and management of reservation wildlife and water resources by the Yakama community. This remains the position of the Yakama tribal government until the present day, 43 years later. The issue of tribal sovereignty and federal land management control would come to dominate the discussions of TNWR in the mid-1990s.

The first Toppenish Refuge yearly report (henceforth referred to as refuge narratives) written in 1966, reports the purchase of nearly 1,000 acres for the refuge (1966 Refuge Narrative). The narrative acknowledged the strong opposition of the Yakama Tribal Council. Some tribal councilmen had apparently thought they had effectively blocked the establishment of the refuge by their council resolution. While the FWS recognized the opposition of the Yakama tribe, they felt the BIA strongly supported the establishment of the refuge. The nontribal hunting community also reportedly supported the refuge as providing a new public hunting area.

The year 1967 was a momentous one for TNWR for a number of reasons, including land management, law enforcement and personnel (1967 Refuge Narrative). Another 500 acres were purchased and four new water control structures were installed on impoundments, greatly improving flood irrigation of refuge tracts. The Yakama tribal government opposed further FWS land purchases within the reservation. The Tribal Council wanted the FWS to acknowledge that within the Yakama Reservation only Yakama tribal game laws should be in effect, with the Washington Department of Fish and Wildlife (WDFW) and FWS having no legal jurisdiction to require nontribal hunters to purchase their respective hunt licenses under the 1855 Treaty and federal law.

George Fenn, a heavy equipment operator, was hired to work and live with his family on the refuge. George continued to work at the TNWR for the next 27 years, serving as the site manager, refuge law enforcement officer, and supervisor of the refuge maintenance program. Fenn was the first FWS employee to leave a substantial individual mark in Toppenish wetlands, including creating numerous small islands in refuge impoundments between the late 1980s to the early 1990s, designed to encourage nesting waterfowl.

In 1968, the refuge reported improved water control and diking of impoundments (1968 Refuge Narrative). Under the agreement of the purchase of refuge lands with Duck Stamp monies, 40% of the refuge was opened to hunting. Gary Hagedorn, a wildlife management student trainee from Washington State University, began working at TNWR that summer. Mr. Hagedorn completed his undergraduate degree in wildlife management and began working for the FWS as a manager at prominent refuges in Montana and Oregon. He came back to the Mid-Columbia region in 1994, taking over the Umatilla NWR project leader position in Pasco, WA, overseeing TNWR and five other refuges (later administered as the Mid-Columbia Refuge Complex) until his retirement in 2007, after 40 years with the FWS. He would bring extensive professional expertise and leadership to the TNWR including knowledge of the management of seasonally flooded impoundments and moist soil units for waterfowl, and would hire assistant refuge biologist/managers with similar management skills and interests.

In the late 1960s, the Yakama tribe began to develop plans to create a waterfowl hunt program in the Satus area of the reservation, directed toward attracting nontribal sport hunters. The FWS abandoned their plans to develop a portion of the TNWR in the Satus drainage in the face of tribal opposition. Instead, the FWS assisted the Yakama Tribal Council and BIA by developing a Satus waterfowl management plan for them in 1969, authored by FWS biologist Philip Lebenbauer (Lebenbauer 1969). The plan envisioned the area being managed under a multiple use approach, generating revenue for the tribe from waterfowl hunting, livestock grazing, upland bird hunting, fishing and harvesting of furbearers. The plan anticipated Yakama employment opportunities and revenue generated by providing sportsmen with provisions, lodging, and guide services (Lebenbauer 1969). The model of wetland management for the Satus area was similar to that of TNWR, however the duck ponds on the Satus were natural oxbow sloughs fitted with water control structures while those on the TNWR were entirely man-made diked impoundments (Figure 19).



Figure 19. An oxbow slough on the Satus Wildlife Management Area in the Yakima River floodplain.

Along Toppenish Creek, the refuge grew by about 200 acres in 1969, totaling 1,761 acres, with the goal of eventually consolidating 6,000 acres of farmland in the drainage into a core refuge unit (1969 Refuge Narrative). However, the FWS were discouraged by continued opposition of the tribe effectively blocking FWS land acquisition to increase the size of the refuge. The FWS clearly recognized it would be difficult to continue to manage the refuge if it only consisted of isolated wetland tracts scattered over miles of agricultural landscape. The FWS reported that the Yakama tribe blocked the formation of a weed control district in Yakima County (1969 Refuge Narrative). The Yakama tribal government saw this process as further undermining their sovereignty over reservation lands and they viewed exotic weeds as largely caused by the actions of nontribal farmers and thus their responsibility to affect control.

Personnel and Legislative Developments in the 1970s

The Yakama tribe announced the opening of about 1,700 acres to public hunting and fishing in the Satus Creek area late in 1971, apparently utilizing some of the planning work done for them by the FWS in 1969 (Toppenish Review 1971). The goal was to create a 3,100 acre hunting area, with about 600 acres of grain food plots and grasses and 200 acres in protected shallow ponds closed to hunting. The area already supported good wood duck (*Aix sponsa*) hunting and was home to about 170 Canada Geese.

During this time the FWS finally acknowledged Yakama tribal treaty rights to manage hunting and fishing on the reservation, and as a gesture of comity began enforcing tribal hunting permits on the TNWR (1971 Refuge Narrative). In 1972 the FWS proposed that the tribe turnover management of the 4,000 acre Satus Tract to the FWS because of the difficulties the tribe encountered managing the area in 1971 (1972 Refuge Narrative). The Yakama tribe instead introduced the newly named Satus Wildlife Area, announcing plans to stock oxbow lakes with game fish and planting grain plots and upland grasses to feed wintering waterfowl.

Along Toppenish Creek the FWS reported planting about 300 acres of dense nesting cover for waterfowl and attempted to control invasive cocklebur (*Xanthium spinosum*) (1972



Figure 20. Cocklebur dominating an impoundment.



Figure 21. Seeding cocklebur.

Refuge Narrative) (Figures 20 and 21). Cocklebur would become a huge problem in refuge impoundments in 2005–7. The FWS burned about 100 acres of tule marsh each year to try to set back succession, decrease the extent of tules and create more open water habitat. Many of these mature tule stands would later become increasingly valued by Yakama tule gatherers who often had to travel widely in the Yakima Basin to collect quality mat making material.

In the late 1970s, Johnson Meninick, at that time a Yakama tribal councilman, but today manager of the Yakama Nation Cultural Resources Program, helped author the first Yakama Nation Land Restoration Plan (Tracy Hames, personal communication). The plan map outlined floodplain areas on the Yakama Reservation important for restoration. An important goal was to develop corridors along the anadromous fish-bearing creeks in the agricultural portion of the reservation for cultural, wildlife and fish benefits (Hames 2001). The original map as well as the written report that accompanied the corridor restoration plan has been lost, but according to one nontribal YNWRP biologist, Johnson's restoration plan served as a guide for all subsequent, more ecosystem-based plans developed over the next 20 years (Tracy Hames, personal communication). The Meninick plan would influence the Yakama Nation Waterfowl Management Plan (Meuth 1989), written by the FWS in cooperation with the YNWRP which was the precursor of later YNWRP wetland protection and restoration activities (1992–2007),

today totaling 21,000 acres. Johnson's leadership, through his restoration plan, his management of the Cultural Resource Program, and his training of nontribal YNWRP archaeologists, has been the major factor in orienting the YNWRP to the value of combining the management of ecological and cultural resources in Yakama Reservation wetlands, in effect seeing the two as aspects of the same process, equating ecological restoration with Yakama cultural restoration and vitality (Tracy Hames, William White and Arlen Washines, personal communication).

The Yakama tribe hired its first wildlife and fisheries biologists in the late 1970s to run their fledgling natural resource programs. Bill Bradley, head of the Wildlife Program and Bob Tuck, head of the Fisheries Program were taken under the wing of Tribal Council and other elders, who taught them about Yakama culture and the importance of all living resources to the community (Phillip Olney, Yakama General Council Chairman, personal communication). They were given a very clear mandate: to protect the resources, "Go do good things for the fish and wildlife." was reportedly all the direction they were given (Bob Tuck, former YN Fisheries Biologist, personal communication). The tribal leaders in effect said "You're the biologists, you know what to do." The new hires became involved in all aspects of wildlife and fisheries science, management, policy and litigation, both in the Mid-Columbia region and in Washington, D.C. (Bob Tuck, personal communication). In some ways this was easier than it seemed. In whatever direction they looked there was work to be done and they were surrounded by real enemies and resource problems. "We could shoot in any direction and hit something." (Bob Tuck, personal communication). According to those groundbreaking biologists, the tribe always maintained that they wanted to restore all fish and wildlife species that were historically present in the area. They refused to give up on any of the traditional wild resources that sustained their community for thousands of years: roots, medicines, huckleberries (*Vaccinium* spp.), salmon, eels (lamprey *Lampetra* spp.), deer (*Odocoileus hemionus*), bighorn sheep (*Ovis canadensis californiana*), mountain goats (*Oreamnos americanus*), and sage grouse (*Centrocercus urophasianus*), (Bob Tuck, personal communication). Diverse, functional ecosystems, both on and off the Yakama reservation, would be needed to protect all the species of their tribal homeland.

At this juncture, the FWS and YNWRP were both applying the same wetland management paradigm on Toppenish and Satus Creeks with a focus on enhancing migratory waterfowl habitat, both for wintering and breeding birds. Artificial impoundments (Toppenish) and natural oxbow slough lakes (Satus) fitted with water control structures attracted wintering migratory waterfowl. Domesticated grains were planted to feed them. Livestock grazing was used to control ecological succession and weedy vegetation such as canarygrass.

Significant acreage was open for public hunting, primarily attracting nontribal sport hunters who, according to debatable legal precedent, were required by the FWS to possess a state hunting license and federal duck stamp to hunt on the TNWR, but only a Yakama tribal hunting license to hunt on the Satus WRA. However, according to treaty and federal law as interpreted by Yakama tribal government, only a Yakama tribal hunting license should have been required if hunting on the Satus WRA or any other Yakama Reservation lands, whatever their ownership status (tribally or nontribally owned fee patent land, tribal trust [common] land, or FWS owned fee title land). This dispute continues to this day, with the Yakama government consistently prevailing in state court at each challenge of their jurisdiction on the Yakama Reservation.

During this period there was both growing cooperation between TNWR and Yakama tribal government, as well as developments that foreshadowed difficulties the two entities would have in the future (1973 Refuge Narrative). An important national legislative development in 1973 was the passage of the Endangered Species Act (ESA) which would redirect management emphasis on some refuges, including TNWR. The ESA is the nation's foremost law protecting species faced with extinction, providing an extensive framework for the protection of endangered species, including a strict listing protocol, penalties for harming listed species, and review and compliance obligations for various Federal agency programs.

Since its inception the ESA has been worrisome to the YN and other tribes, placing a disproportionate burden for species protection on tribal communities (Wilkinson 1997). It is widely acknowledged that species declines are largely due to nontribal economic activities and tribal reservations are often the least developed areas of the country, often serving as de facto

wilderness areas harboring a higher number of rare and endangered species than public and private lands surrounding them.

ESA limitations on TNWR management would emerge in the mid 1990s with the proposed and eventual listing of the Mid-Columbia steelhead that spawn in Toppenish and Satus Creeks. Steelhead is esteemed as a traditional Yakama food fish and is also highly valued by nontribal sport fishermen. By this time TNWR had about 250 acres of impounded marshland on Toppenish Refuge. However, the manner that Toppenish Creek water was diverted to fill these marshes hampered steelhead movement. Various channels of Toppenish Creek had been largely diverted with deflector dikes, culverts with flashboard risers (Figure 22), and by completely plugging culverts sometimes blocking all fish egress (1973 Refuge Narrative). Fish passage would become a major source of conflict between the FWS and YN in the mid-1990s when it was found that the Toppenish Creek steelhead population had declined precipitously from a high of about 1,000 adults spawning each year to under 100.



Figure 22. Culverts with flashboard risers. Boards can be stacked or removed to raise or lower the water level in the impoundment.



Figure 23. Millet, a moist soil annual that is a favored waterfowl food.

In 1973, the FWS proposed to swap lands in the Upper Toppenish Creek and Satus Area with the Yakama tribal government to consolidate refuge lands on the Lower Toppenish Creek area. However no deal could be reached, although the FWS held out hope for a land swap for the next 20 years. The refuge was engulfed by a huge Toppenish Creek flood in 1974. There was a proposal to put the refuge on standby status in 1975 due to continued tribal opposition to its full development, the severe flood damage, and manpower and budgetary restraints. The refuge's lack of viability in its current fragmented state was clearly recognized.

For the first time in 1976, the term 'moist soil units' were mentioned in the TNWR refuge narrative (1976 Refuge Narrative). By this time moist soil management has been utilized at a few federal and state waterfowl refuges in the Midwest and Lower Mississippi Valley since the late 1940s (Fredrickson 1996). Research in the Midwest and South during the late 1960s to the mid-1970s showed the value of moist soil impoundments for many species of migratory waterfowl, with far fewer species utilizing adjacent crop fields (Fredrickson 1996). Waterfowl were particularly attracted to shallow flooded moist soil impoundments during the fall, especially when some open water was present. Birds fed on both the seeds of the annuals and their tubers (Figure 23), as well as on invertebrates, such as *Dipteran* (midge) larvae, which favor shallow

pond habitat. Despite growing acceptance of the moist soil approach, most professional wetland managers in the United States remained skeptical of its general utility and continued to grow domestic grain crops to feed wintering waterfowl (Fredrickson 1996).

By the year 1977, about 600 acres of wetland impoundments had been created at Toppenish Refuge, some of which were suitable for moist soil management. However the refuge was continuing to provision food plots of barley, wheat and corn through share cropping. By this time wintering waterfowl numbers in the Yakima Valley had dropped considerably from the highs of about 250,000–300,000 birds in the 1960s, to about 50,000–70,000 birds in 1977 (1977 Refuge Narrative). Most migratory waterfowl were attracted to large areas of commercial grain fields in Eastern Washington and south of the Columbia River in Oregon, rarely continuing on their former migration route to the Yakima Valley to feed (1977 Refuge Narrative, Tracy Hames personal communication). The impounded Columbia River and a number of national waterfowl refuges on the Columbia were holding hundreds of thousands of ducks and geese. Also less corn was being grown in the Yakima Valley and little of the grain was being left to dry in the fields over the winter, decreasing the waterfowl carrying capacity of the agricultural matrix. The major shift in waterfowl numbers in the Yakima Basin recognized in the 1970s appears to be permanent with waterfowl populations dropping further in the 1980s to the 2000s to below 20,000 wintering animals each year.

Development of the Yakama Wildlife Program and Changes in American Land Management Thought in the 1980s

The YN Wildlife and Fisheries Programs were started in 1981 (YNWRP website). The initial focuses of the wildlife program were big game and waterfowl management, and nuisance animal control. During this period the YN continued to promote their public hunting program focusing particularly on the Satus WRA, which was the largest block of land devoted to conservation managed by the Yakama wildlife program (Bradley 1984). The YNWRP secured an Administration for Native Americans (ANA) grant to develop the public hunt program and

to help protect and restore wetland and riparian habitat in the valley agricultural zone (Hames 2001). The YNWRP hired an upland bird biologist, Joel Bich, to oversee these activities.

One of the prime reasons to fully develop the YN public hunt program was to exercise complete tribal sovereignty and jurisdiction over the Yakama Reservation, managing the considerable fish and wildlife resources within its boundaries and showcasing the tribe's growing biological and managerial expertise (Bradley 1984, Sampsel 1989). In the mid-1980s the hunt program provided at least four jobs for Yakama tribal members. The program enhanced the tribe's legal position as resource managers both on the reservation and on lands that had been ceded to the federal and state government (Bradley 1984, Sampsel 1989).

The hunt program projected a positive image of the tribe as a credible resource manager to the general public and in the federal courts (Bradley 1984, Sampsel 1989). The tribal hunt program as one of the most visible means by which the Yakama community interacted with nontribal neighbors and visitors, served an important public relations function for the entire tribe. The well run hunting and fishing program created a positive image in the minds of the public, enhancing the tribe's status as full comanagers of regional wildlife and fisheries resources along with state and federal land managers. The YN's strong political and legal position as regional land managers would become increasingly important during the Columbia River salmon wars of the 1990s.

By the mid-1980s, there was growing national recognition of the endangered status of waterfowl and their wetland habitats (NAWMP website). Waterfowl populations, the most prominent and economically important group of migratory birds in terms of sport hunting and bird watching, had declined to record lows. Over 50% of the wetlands in the lower 48 states had been drained, primarily for agriculture. The same was true in Canada, where the majority of North American waterfowl bred. Recognizing the importance of both waterfowl and wetlands, the United States and Canada negotiated the North American Waterfowl Management Plan in 1988. This plan would be later updated in 1994 when Mexico became a signatory. The North American Wetlands Conservation Act (NAWCA 1989) supported the waterfowl plan by

providing funds for the acquisition and management of wetlands, under federal, state and local partnerships called ‘joint ventures’ with 11 regional projects in the United States and three in Canada. In the early 1990s the YNWRP helped develop the Inter-Mountain West Joint Venture, which would eventually invest millions of dollars protecting and managing tens of thousands of wetland acres. NAWCA would contribute \$600,000 to the Yakama wetland program during 1998–99.

Mirroring these continental wide efforts, in late 1980s in partnership with the YN, the FWS developed a Yakama Nation Waterfowl Management Plan written by FWS biologist Judy Meuth (Meuth 1989), setting goals and objectives to conserve and enhance the wetland resources and waterfowl populations on the Yakama Reservation. The plan is said to have been influenced by the restoration plan developed by tribal councilmen Johnson Meninick in the late 1970s (Tracy Hames, personal communication). The Meuth plan and developing Satus WRA gave momentum for the Yakama Nation to greatly expand their wetland protection and management efforts elsewhere.

To help implement the Yakama waterfowl plan, the FWS hired a waterfowl biologist Tracy Hames in 1989 to work with the YNWRP. Tracy would soon switch to the Yakama Nation payroll and has been a key player in wetland protection and restoration on the Yakama Reservation ever since, providing wetland management leadership and hiring upland bird biologists, restoration ecologists, archaeologists and other expertise that has been instrumental in the growth and development of the YNWRP. Armed with funding from the ANA grant, a new waterfowl plan and biologist, the YNWRP carried out a number of important management activities over the next few years including population surveys and initiating a management plan for the Satus WRA and other reservation tracts (Bich 1990, 1991).

A decade previously, the Pacific Northwest Electric Power Planning and Conservation Act (1980) had authorized the Pacific Northwestern states to set up the Northwest Power Planning Council (NPPC) to prepare plans to protect, mitigate and enhance fish and wildlife populations affected by the development of the massive Columbia River hydro system. The act arose, in part,

out of declines in Snake River salmon runs. Once the NPPC identified needs for fish and wildlife mitigation, they could authorize the Bonneville Power Administration (BPA) to administer funds to state and tribal governments to carry out their mitigation proposals. The growth of the YNWRP under the ANA grant and the NPPC mitigation process would gave the YNWRP an entry point to a complex bureaucratic process that that would eventually provide millions of dollars of BPA funding for the expansion of the program.

To access mitigation funding the YN, in collaboration with other Columbia River tribes and the WDFW, participated in a NPPC mitigation process in 1987 to determine the wildlife impacts of the development of the Columbia River hydropower system. Unlike the anadromous fisheries impacts which were readily apparent, it was more challenging to prove harm to wildlife populations. A series of assessments showing considerable wildlife impacts for all the Lower Columbia River dams (Bonneville, John Day, The Dalles and McNary) were completed by the FWS in 1990 (Rasmussen and Wright 1990a, b, c, d).

The NPPC determined that off-site wildlife impacts would be considered, as the fluctuating pool levels on the Columbia River precluded the re-creation of riparian and wetland habitats along the river (YNWMP 1991). The YNWRP, under the leadership of Bill Bradley, Joel Bich and Tracy Hames, believed that the Yakama Reservation could provide excellent opportunities for wildlife mitigation of the Columbia hydro system, including providing large blocks of restorable riparian, wetland and upland vegetation, all habitats for species most impacted by the dams including waterfowl, riparian birds, native upland game birds and riparian dependent big game (YNWMP 1991). The major innovation of the YNWRP proposal was that the Columbia River mitigations would all be located well off-site on the Yakama Reservation.

However the final decision to apply for NPPC-BPA funding was contentious. Bill Bradley, Bob Tuck and Tracy Hames supported doing so, while other prominent YNWRP biologists initially did not, arguing that BPA funding would come with too many strings attached (Bob Tuck, personal communication). The supporters within the YNWRP and YN Fisheries Programs won out. The acceptance of the YNWRP proposal would be momentous for the development of

the YNWRP and the eventual restoration of YN wildlife and fisheries resources, both on and off reservation.

Development of the YNWRP provided the means to interact with the NPPC-BPA and their various wildlife technical committees, structures and processes (Bich 1990, 1991). The YNWRP submitted a comprehensive Wildlife Mitigation Plan to the NPPC in 1991, the first tribe to do so (YNWMP 1991). The other tribes and the WDFW were concerned that the Yakama proposal might consume the entire BPA mitigation funding allocation. They negotiated with the YNWRP to collaborate on a broad regional funding agreement with the BPA called the Washington Wildlife Mitigation Agreement (1993). The agreement identified \$4.3 million dollars for the Yakama proposal. That project, titled the Yakama Nation Lower Yakima Valley Wetland and Riparian Restoration Project, would begin the process of securing and enhancing up to 27,000 acres of riparian areas and wetlands on the Yakama Reservation as mitigation for wildlife and fisheries losses caused by the inundation from the Columbia River dams (YNWRP 1994). The goal of this mitigation plan was to secure “large blocks of contiguous habitat” to provide “the biological stability and diversity critical to proper ecosystem function.” (YNWRP 1994) The concept of *wetland restoration* as the dominant approach of the YNWRP land management program was launched.

In 1994, federal legislation was developed called the Yakima River Basin Water Enhancement Plan to complement the BPA mitigation program. Part of this legislation was a proposed Toppenish Creek Corridor Enhancement Plan, a draft that was completed in 1997. It was hoped that these plans would lead to the development of management strategies that would stabilize water supplies for irrigation both on and off reservation and improve in-stream flow below the reservation for salmon and possibly to generate hydropower.

In the early 1980s, FWS objectives on TNWR expanded beyond wintering and breeding waterfowl to include greater wildlife diversity, such as nongame wildlife, and increased public visitation (1981 Refuge Narrative). Cattle grazing the TNWR had severely affected riparian areas along Toppenish Creek, prompting the erection of 4 ½ miles of fencing (1981 Refuge Narrative).



Figure 24. Push up islands created in a Toppenish Refuge impoundment to encourage nesting by ducks and geese. Photo by David Linehan.

In 1986, 17 acres of pond habitat were created by impoundment including numerous small push-up islands for waterfowl nesting (1986 Refuge Narrative) (Figure 24). Creation of nesting islands in impoundments managed for waterfowl became commonplace nationwide during this time, primarily motivated by a single 1983 publication in the *Journal of Wildlife Management* which showed how mallards and gadwalls (*Anas strepera*) concentrated their nests on small islands in Miller Lake, North Dakota (Duebbert et al. 1983).

In 1987–88, refuge staff completed a master plan (TNWR Refuge Management Plan 1988). Refuge objectives included providing habitat for wintering mallards and a diversity of wildlife species, as well as public waterfowl hunting opportunities (Refuge Management Plan 1988). By this time some 650 acres of shallow seasonally flooded impoundments had been created by diking (1988 Refuge Narrative). However the potential of managing these impoundments as moist soil units had not been fully explored. A key problem was the lack of sufficient summer water rights to irrigate impounded marsh and moist soil vegetation. Some impoundments had become silted-in over time, and were filling with dense stands of cattails and tules with little or no open water remaining (1988 Refuge Narrative). This vegetation was cleared with bulldozers to create open water and numerous small nesting islands were formed from the debris.

Unfortunately this dug the impoundments deeper, creating wetland basins that may never had existed historically in this area.

TNWR received a program review by FWS refuge managers from outside the Mid-Columbia region in 1987. The evaluator's major concerns were the lack of management for waterfowl nesting and brood habitat, including nesting habitat heavily impacted by livestock grazing and hay cutting, and the lack of late season water and the dearth of open water in impoundments dominated by tules.

The 1988 refuge master plan (finally approved in 1990) recommended the rehabilitation of seasonally flooded impoundments, including major tule removal. The 1988 refuge narrative acknowledged the difficulty of controlling canarygrass, cattails and tules using livestock grazing, despite it being the dominant vegetation management approach on the refuge for the past 24 years (1988 Refuge Narrative). The master plan (TNWR Refuge Management Plan 1988) appeared to be the first TNWR refuge document to acknowledge the importance of steelhead escapement on Toppenish Creek, an issue of deep concern to the YN which would become increasingly important in the next few years. The steelhead passage issue would be further magnified by the final federal threatened listing of the species in 1999.

At the national level in the 1980s, innovative approaches to wetland management for waterfowl and other wildlife increased in prominence. Leigh Fredrickson and T. S. Taylor published a moist-soil management handbook (Fredrickson and Taylor 1982). Related publications were included in the FWS Waterfowl Management Handbook; a series of leaflets published during the 1980s and '90s available to all FWS refuges and other programs (Fredrickson 1996). These publications and professional wetland management workshops developed by Dr. Fredrickson, the director of the Gaylord Memorial Laboratory at the University of Missouri, and other wetland scientists associated with key wildlife research facilities in the United States, lead to the moist soil approach becoming widely promulgated on waterfowl refuges throughout the Midwestern, Southern and Pacific regions of the FWS (Fredrickson 1996). Moist-soil management artificial intelligence software was subsequently developed by

FWS biologists at the National Ecology Research Center in Fort Collins, CO and is still available from the U.S. Geological Survey today (Moist Soil Advisor website).

Moist soil management of impoundments was particularly attractive because the technique emulated conditions such as those found in natural seasonally flooded wetlands, floodplains, and prairie potholes (Mickey Heitmeyer, Director of Gaylord Laboratory, personal communication). The approach is highly productive of annual plant seeds valuable as waterfowl food. Because so much wetland habitat has been lost, an approach that supplied large amounts of food per unit area was attractive to wetland managers. It also provided foods for a diversity of waterfowl species, not only mallards and Canada geese which will readily thrive on domesticated grain crops alone.

Regardless of the effectiveness of the approach, it appears the FWS and various state programs became intellectually captured by the moist soil management paradigm, with the technique seen as a “magic bullet” to efficiently feed waterfowl on a declining wetland habitat base. The rapid spread of the moist soil approach appears to support institutional theories of how organizations develop normative fields, requiring conformity, and cognitive models (schemas or scripts) that spread throughout their program (Scott 1995, DiMaggio and Powell 1983).

Although it is unknown if Fredrickson and his colleagues were reading E. P. Odum (1956), Hollings (1973), Connell and Sousa (1983) or other scholars of ecological succession, resilience and stability, their wetland studies led them to a deeper understanding of the dynamics of these ecosystems and the various ecological services they provide including biodiversity, nutrient cycling and water treatment. Possibly the most important contribution of the wetland research was a better understanding of the importance of change in healthy wetland communities. The collective body of research showed that in fact a static marsh (constant water levels, no disturbance) will only support a depauperate community of plants and animals. Wetlands, both natural areas and man-made impoundments, are dynamic ecosystems, undergoing and requiring change to maintain high productivity and biodiversity.

In the 1980s the value of livestock grazing as one of the multiple use objectives and as the primary management tool for federal rangelands was brought into question by both conservationists and land managers. The low rental costs of livestock grazing on federal rangelands and forests began to be viewed as a federal subsidy for the livestock industry that in fact damaged publicly owned wildlife and fishery resources with little return to the American people (Donahue 1999, Moscovitz and Romaniello 2002). Livestock grazing was shown to have many undesirable affects on native wildlife habitat, particularly in riparian areas, mountain meadows, and various sensitive shrub and grass-dominated communities (Dwire et al. 1999).

Livestock grazing sets the stage for the invasion of exotic weeds and often leads to severe erosion in both uplands and in streams where cattle often linger for water, green forage and shade. Heavy grazing often damages riparian vegetation that stabilizes and shades streams, sometimes making them unsuitable for trout, salmon and other cool water fishes. Domestic livestock compete with native ungulates and small mammals for forage. Ground nesting and shrub nesting birds are particularly affected by loss of habitat by grazing. Heavy livestock grazing eliminates ground nesting habitat completely or leaves ground and shrub nests exposed to predation and the elements. Livestock also attracts brown-headed cowbirds (*Molothrus ater*), a nest parasite of many species of songbird, sometimes threatening the persistence of some populations of sensitive species. FWS refuge managers took heed of these findings and the use of livestock as a management tool to control weedy vegetation began to decline in the 1980s and 1990s (Fleischner 1994).

Another important scientific development was the growth of the field of restoration ecology in the 1980s, building on work by applied scientists in forestry, range and wildlife management, as well as in landscape architecture and horticulture (Young 2000). Restoration ecology is rooted in community, ecosystem and population ecology, with an emphasis on botany, aquatic and terrestrial community dynamics, structure and function (Young 2000). Over the next few decades, the concept of restoration would come to have its most powerful resonance in the Pacific Northwest, the site of the most costly restoration project in U.S. history, that of the

Pacific salmon. Other Pacific Northwest scientists and forest managers worked on approaches to maintain and restore characteristics of old-growth Douglas fir (*Pseudotsuga menziesii*) forests that had been largely eliminated by clear-cut logging, primarily prompted by the endangered species listing of the Northern spotted owl (*Strix occidentalis caurina*). Using federal funds to mitigate fish and wildlife losses on the Columbia River, the YN Fisheries and Wildlife Programs would grow to be at the forefront of efforts to restore endangered salmon runs, the structure and function of the Yakima Basin watershed, and finally the recovery of upland game species that had declined because of habitat destruction and over hunting, including bighorn sheep, mountain goat, sage grouse, and mostly recently, pronghorn antelope.

Development of restoration and moist soil management models on Toppenish Creek in the 1990s

The YNWP Lower Yakima Valley Wetlands and Riparian Restoration Project first received BPA funding in 1992. The goals of the project were: habitat protection; restoring degraded areas and natural ecosystem functions; restoring wildlife and fish populations to sustainable (and harvestable) levels; and increasing information needed to restore and manage fish and wildlife and their habitats (LYVWP 1994). The plan identified 15 priority areas based on their restorability and the YNWRP began purchasing restorable wetland tracts on Toppenish and Satus Creeks and in the Yakima River floodplain (LYVWP 1994). The main management goals on the tracts were to restore floodplain connectivity, normative ecological conditions, and watershed functions; riparian communities including sloughs, ponds, and creek side channels; and native fish and wildlife populations (LYVWP 1994). Under the restoration project, over the next 13 years about 21,000 acres on the Yakama Reservation were protected and restored primarily by restoring creek hydrology and native vegetation.

The YNWRP applied for North American Wetland Conservation Act (NAWCA) funds along with the FWS and other state and NGO cooperators in 1995. BPA monies helped leverage NAWCA and other federal funding for YNWRP projects. The NAWCA grant, involving a

partnership between the YNWRP, FWS, WDFW, and sportsmen's groups, Ducks Unlimited and Pheasants Forever, contributed about \$1 million toward restoring about 4,500 acres of wetlands and riparian area, including about 3,600 acres of YNWRP land and 900 acres of the TNWR. Under the NAWCA grant, the YNWRP developed goals for the 3,276 ac Satus Wildlife Recreation Area along the Yakima River (Satus Plan 1995). They included re-establishing flows through Yakima River side channels, thus reconnecting the Yakima River to its floodplain. The YNWRP wanted to re-establish the natural contours, hydrology and vegetation assemblages that existed before the area was developed for agriculture. One of the most important goals was to control invasive plants, either by grazing with domestic livestock or by using herbicides or mechanical approaches.

The wetlands would serve as a site for the harvesting of plants for traditional Yakama use and to protect archaeological sites, and would be managed for wetland and riparian associated wildlife, particularly water birds, upland game birds, deer and furbearers. The riparian area was to be managed to provide benefits to anadromous fish, including spawning Coho salmon and steelhead in the creeks and Fall Chinook salmon in the main stem of the Yakima River. The area was open to tribal members to harvest deer and game birds and nontribal hunters to hunt for game birds and rabbits. The project goals were achieved during the 1995–2001 period, and along with projects on neighboring tracts protected 5,500 contiguous acres along the Yakima River. Between 1995 and 1999, the YNWRP restored creek channels, emergent marshes and grasslands, removed levees and creek blockages on 2,730 acres of Toppenish Creek, including tracts bordering TNWR. The management models for the Satus Area and Toppenish Creek combined the goals of ecological restoration with the restoration of Yakama cultural practices including tule harvest, gathering of traditional plant foods and medicines, and subsistence hunting.

At TNWR, the FWS master plan recommended the enhancement of nesting waterfowl habitat by providing small islands in impoundments. Between 1989 and 1992, numerous small islands designed to attract nesting waterfowl were created in various deep water impoundments.

In keeping with a national trend toward decreasing the use of livestock grazing as a management tool, refuge grazing and haying of canary grass–dominated wet meadows was greatly reduced.

By the mid-1990s, moist soil management was being applied throughout the United States, on both publicly and privately owned wetlands (Fredrickson 1996). When the FWS National Refuge System began to emphasize management for biological diversity in the early 1990s, the moist soil approach for managing impoundments had particular traction because the technique appeared to accommodate the habitat requirements of other water bird groups besides ducks and geese, including wading birds (herons and egrets), shorebirds (sandpipers among others) and rails, as well as some amphibians and fish species (Fredrickson 1996, personal observation). Moist soil management was recommended by avian biologists concerned with declining shorebird populations and federal and state biologists were taught the technique in shorebird management workshops sponsored by the FWS and the leading shorebird conservation laboratory, the Manomet Bird Observatory (personal observation). By the mid-2000s moist soil management had spread throughout the continental United States to the Caribbean. One of the main selling points of moist soil management is its successful track record over a wide geographic area.

In 1994, the TNWR came under management of the Umatilla NWR Complex (later named the Mid-Columbia Refuge Complex), supervised by senior refuge manager Gary Hagedorn, who had began his FWS career as a student trainee at TNWR in 1968. The following year there was an important changing of the guard at TNWR as George Fenn retired. TNWR management was now lead by Mr. Hagedorn and his assistant managers Charlie Stenvall and David Linehan, all biologist/managers with extensive experience in wetland management on prominent Western and Midwestern waterfowl refuges, including the famous Klamath NWR in Oregon. Klamath is a huge natural marsh complex that had been largely altered for agriculture and then portions were restored to impounded marsh to support hundreds of thousands of aquatic birds. Today Klamath epitomizes a managed wetland strategy where water is stair-stepped down through a series

of impoundments, creating a highly productive mosaic of marsh conditions (Gary Hagedorn, personal communication).

The new TNWR management team instituted a more scientific approach to wetland management, often challenging the assumptions of previous TNWR management approaches, including the application of extensive livestock grazing and haying to control vegetation, grain farming to provision waterfowl foods, and creating small nesting islands. There was more of an emphasis on mimicking natural hydrological regimes to encourage wild waterfowl food plants, such as the moist soil approach (1995 Refuge Narrative). To replace the ecological disturbance formerly affected by grazing and haying, water management, disking, mowing and prescribed burning were used.

A compatibility determination outlined the refuge goals for the TNWR: maintaining high quality habitat and sanctuary for migrating and wintering waterfowl; providing suitable habitat and safe nesting areas for waterfowl production; conserving and promoting biological diversity on the refuge; providing opportunities for both consumptive and nonconsumptive wildlife oriented recreation for refuge visitors; and cooperating with other agencies, institutions, organizations and individuals to improve wildlife resources on the refuge and surrounding lands (TNWR Compatibility Review 1995).

The YNWRP biologists critiqued the moist soil approach being applied at TNWR as not mimicking the natural hydrologic regime as it requires draw-downs in May, a period of normative peak floods on Toppenish Creek. As a result of moist soil draw-downs, ducks attracted to nest in early spring by high wetland water levels in marsh basins would find those wetlands nearly dry as their broods would be hatching. This strands and concentrates broods into a few small puddle areas, leaving them vulnerable to predation. The moist soil approach and waterfowl production may be incompatible at this scale of duck management.

However, the new list of TNWR goals is significant in two ways. First, it mentions the term biological diversity, possibly the first time the term was used referring to TNWR management. Second, the emphasis on cooperation with partners recognizes, somewhat obliquely, that TNWR

was a small, isolated duck refuge embedded in the Yakama Reservation and required a mutually beneficial relationship with the tribe and other regional partners in the Mid-Columbia region to remain a viable protected area. Concerns about the global loss of biodiversity and the importance of landscape-scale ecosystem management were becoming prominent in both the U.S. land management agencies and internationally at this time.

The FWS directorate in Washington, D.C. highlighted the importance of the refuge system in protecting biodiversity nationally and for conservation of migratory birds in the entire Western Hemisphere (personal observation). FWS refuges were urged to move away from “single species management” for waterfowl to manage habitats for a diversity of native species, including nongame, rare and endangered species (FWS Fulfilling the Promise 1999). The FWS leadership was also advocating that refuges and other FWS programs cooperate with local and regional partners to effect watershed-based ecosystem conservation throughout the country, a process they labeled the *ecosystem approach to land management*, but often called simply *ecosystem management* by sister federal agencies such as the Forest Service and Bureau of Land Management (personal observation). Unfortunately the relations between the TNWR biologist/managers and the YNWRP were poor during this period. The YN felt that the FWS was not cooperating with them in the management of TNWR, despite the lofty rhetoric.

The TNWR compatibility review found that livestock grazing and haying reduced waterfowl nesting habitat and provided little in the way of waterfowl foods. Grazing appeared to damage riparian areas and the shrub–steppe uplands (TNWR Compatibility Review 1995). Although not recommending eliminating all livestock grazing, the review did recommend higher intensity, shorter rotation grazing. In another far-reaching determination, the report recommended converting canarygrass wet meadows (Figure 25), which provided little food for wintering waterfowl, to moist soil units which provide small seeded annual seeds favored by dabbling ducks (Figure 26). The report appears to be one of the first times that the production of more natural wild foods such as those provided by moist soil impoundments was deemed preferable to providing domestic grains such as corn or barley.



Figure 25. A Toppenish Refuge impoundment dominated by reed canarygrass.



Figure 26. A moist soil impoundment on Toppenish Refuge. Note the structural diversity of vegetation and open water that is attractive to waterfowl.

The compatibility review represents a new model of management for TNWR, away from the ‘wetland enhancement model through agricultural approaches’ of the past 28 years to an ‘enhancement model using a moist soil management approach’ that emphasizes shallow man-made impoundments to produce a variety of wetland habitat conditions and native foods for wintering waterfowl. Sometimes this approach is called the ‘management of a wetland mosaic.’ Wild foods are considered to provide better waterfowl nutrition and their natural production is more sustainable and cost effective than domestic grains. Wetland patches at different stages of ecological succession in close proximity provide migratory birds and other wetland wildlife a diversity of ecological niches and habitat structures suitable for nesting, rearing young, and wintering (Fredrickson and Taylor 1982).

There was also a de-emphasis at TNWR on providing nesting habitat for waterfowl, focusing largely on providing habitat for their wintering requirements for both food and resting. Summer water rights were limited and it was difficult to keep refuge impoundments flooded in summer to support waterfowl reproduction. With this change in approach, grazing, haying and cropping declined significantly in extent. This change in emphasis was obvious between 1994 and 1999 when the refuge created and rehabilitated some 775 acres of wetland impoundments, including 650 acres of moist soil unit, removing artificial nesting islands created 5–15 years previously (Refuge Narratives 1995–99). This enhancement model of wetland mosaic and moist soil management first applied at TNWR in 1994 has continued to be employed up until the present time, with mixed results. Sometimes it is impossible to draw-down in early spring due to flood conditions. Other times the impoundments are too dry later in the season. The results are often abundant cocklebur, cattails and canarygrass in wetlands instead of the small seeded annuals that would provide good food for wintering waterfowl.

TNWR refuge management plans during this period appear in line with the paradigmatic changes in wetland management philosophy that were advocated by the FWS refuge program nationwide in the late 1990s and early 2000s. This excerpt from the 1999 FWS Refuge System

planning and envisioning document “Fulfilling the Promise” (1999) could have been lifted in its entirety from the TNWR refuge management plan:

Rather than hold water high in impoundments year-round just for waterfowl, levels could be timed to provide habitat for migrant shorebirds or to accommodate fish passage and spawning. Rather than plant tame grasses and forbs just for ducks, a full array of native grasses and forbs started to become available to help rebuild prairie diversity. Rather than fighting seasonal flood waters on river refuges, dikes could be designed so the floodplain could benefit from the life-giving pulse of the river. Rather than mow and hay lands to set back succession, natural processes like fire could do the work. Rather than farming intensively to provide food for migratory birds, moist soil units could provide abundant natural foods. Rather than fight wildfires, prescribed fire could be used to reduce hazardous fuel loads and restore wildland fire as an ecological process.

The goal for the rehabilitated impoundments was a significant reduction of what had been described as “a sea of reed canarygrass” in 1994 and an increase in moist soil plants such as smartweed (*Polygonum* spp.), swamp timothy (*Heleochoa schoenoides*), wapato, water plantain (*Alisma gramineum*), watergrass millet (*Echinochloa crus-galli*) and burweed (*Sparganium* spp.) (1999 Refuge narrative). Native riparian woody species and shrub–steppe grasses were planted, in some cases for the first time. Grain cropping, livestock grazing and haying were sharply reduced with plans to eventually eliminate them. There was a greater emphasis on native species, historical conditions, and the more naturalistic impoundments, ideas which brought TNWR closer in line with the YNWRP wetland management goals and objectives:

Creating and enhancement of a diversity of habitats to reflect the native diversity associated with the original hydrological regime of the floodplain, aiming for natural looking channels, dikes, naturalistic riparian and grassland plantings using native, local species.

However, the YNWRP felt that TNWR was not carrying out the mandates as outlined in their envisioning and planning documents. They argued that TNWR impoundments were not managed with the normative Toppenish Creek floodplain hydrology in mind; the moist

soil approach required changing the normative basin flooding period. Invasive weeds such as canarygrass continued to dominate many of the refuge tracts.

The TNWR refuge goals were rewritten in the 1996 Habitat Management Plan (TNWR Habitat Management Plan 1996), reflecting a more contemporary and sophisticated approach to management of the 2,000 acre creek floodplain refuge than any previous plans:

- To protect, maintain and restore the ecological structure, species composition, and processes of the native shrub–steppe, wetland and riparian communities of Eastern Washington for the benefit of migratory birds, resident wildlife and regional biodiversity.
- To protect, restore and enhance habitats for and otherwise support recovery of threatened and endangered species and species of special concern.
- To provide opportunities for quality wildlife/wildlife-dependent recreation, environmental education, and interpretation on refuge lands.

The 1996 plan recognized anthropogenic changes in Toppenish watershed and discussed management as mimicking or enhancing natural processes and managing plant succession to maintaining biodiversity and providing a broad spectrum of habitats and species (TNWR Habitat Management Plan 1996). While there was some reduction in canarygrass in impoundments, the invasion of cocklebur became more acute. Over the next few years, TNWR emphasized adaptive management to combat these problems, but inadequate water and high maintenance costs hampered wetland enhancement efforts (Refuge narratives 1996–98).

Summary

At this juncture the two agencies were employing different wetland management approaches, the ‘numeric biotic management approach of wetland enhancement of the FWS’ and the ‘parametric approach of wetland restoration of the YNWRP.’ The different choice in approaches might be explained by the agencies differing resource management objectives and values, although there is a great deal of overlap in their management actions at the ground level.

However it also possible that various historical factors, decisions by key actors, and the rise of particular land management paradigms, may all play important roles in why different management approaches came to the fore in these two agencies. For example, why the TNWR is managed today using a wetland impoundment approach may be attributed to the establishment of the refuge for waterfowl habitat and public hunting from reclaimed diked farmland using Duck Stamp funding during the historic 1960s growth period of the entire National Wildlife Refuge System. However also important in the final development of TNWR was the arrival of a key actors who were knowledgeable about waterfowl impoundment management; refuge manager Gary Hagedorn and staff; during a particular time period, amidst the FWS biodiversity and ecosystem management debates of the 1990s, and employing a particular management paradigm, moist soil, that became widely adopted by wetland managers throughout the United States between the mid-1980s and mid-1990s.

Likewise, the development of the YNWRP Lower Yakima Valley Wetland and Riparian Restoration Project can be attributed to opportunities afforded by the Administration for Native Americans grant for development of the YNWRP public hunting program in the late 1980s, and subsequent massive project funding available through the BPA wildlife mitigation process beginning in the early 1990s and continuing to the present period. However equally important was the influence of key actors in Yakama Tribal Government setting an ecological and cultural restoration trajectory for the entire YNWRP program, including cultural leaders, Johnson Meninick and fellow Tribal Council leaders in the 1970s and wildlife biologists, Bill Bradley and Tracy Hames in the 1990s.

In the mid-1990s many of the newly rehabilitated TNWR impoundments continued to be filled by unscreened diversions of Toppenish Creek, such as the Kinter–Gasseling structure which blocked an entire creek channel every October till December, obviously limiting steelhead movement (1996 Refuge narrative). However, concerns about TNWR diversions trapping anadromous fish were soon eclipsed by larger national issues about tribal autonomy, federal government control and trust responsibilities toward tribes that still reverberate in the relationship

between the two parties today. TNWR developments ignited strident debates in the mid-1990s over tribal sovereignty on the Yakama Reservation and the right of the Yakama tribal government to manage the Toppenish and Conboy Lake National Wildlife Refuges located within their reservation. We will examine the shifting federal–tribal comanagement terrain from the mid-1990s to 2005 in Chapter 6.

CHAPTER 4

WORLDVIEWS AND LAND ETHICS

Often hidden and embedded in the discussions between the Yakama Nation and the FWS and other federal agencies about wetlands or other environmental issues is a tension surrounding the appropriate moral and ethical stance toward the landscape, part of a larger discussion of the relationship of people to nature and the environment, and how that relationship might be constituted as a unified worldview. The literature suggests that Native Americans and Euro-Americans have widely different worldviews guiding their behavior toward the environment (Feit 1986, Grim 1993, Hunn 1990, Jostad et al. 1996, Nadasdy 2003, Nelson 1983) and these differences manifest themselves in negotiations between Native communities and the state for the use and management of natural resources and landscapes (Nadasdy 2003, Stevenson 2004). With regard to this study, I was hoping to understand how an informant's worldview and ethical stance toward the environment might influence their behavior in managing wetlands, and whether differences between the worldviews of FWS and YNWRP employees might pose a barrier to full cross-agency communication in cooperative management of Toppenish Creek wetlands.

Toward that end, I conducted individual semi-structured interviews with 21 FWS and YN government employees (see Appendix B for informant profiles). The eleven YN tribal informants ranged in age from their mid-20s to early 70s, with a high degree of diversity in their life experience, formal education, socio-political and economic status. Five nontribal YNWRP employees were interviewed: three males and two females, four who were biologists with one archaeologist. All ranged in age from their late 30s to late 40s. Four FWS biologist/managers were interviewed along with one refuge maintenance worker with over 15 years experience at TNWR, today serving as the refuge site manager. All FWS employees ranged in age to from their 30s to

late 50s. All interviewees were asked two questions related to their worldviews and environmental ethics:

- Do you consider people as part of nature?
- Describe any philosophy that guides you in your work.

In addition, I interviewed two male Yakama tribal members who were active as religious leaders in Wáshat observances and were also employed by Yakama Nation natural resource programs, one in his late 50s and the other in his late 30s. I asked both men questions about the religious nature of gathering and using tules and other culturally valued plants from wetlands. The majority of these 23 interviews were tape recorded. For those unrecorded, I tried to transcribe dialogue verbatim. The interview texts were analyzed qualitatively, primarily by identifying major worldview and ethical themes by coding the text in Nvivo.

In the following two sections, I summarize some of the philosophical, religious studies and anthropological literature that relates to Western and Yakama worldviews and environmental ethics. Scholars often contrast the ethical and spiritual environmental worldviews of Native Americans with the more utilitarian and scientific environmental worldviews of the West (DeLoria 1999, Jostad et al. 1997, Tucker and Grim 1993). An essay by Callicott (1993) is particularly useful in presenting a discussion of cross-cultural comparisons of traditional and contemporary concepts of the nature of nature and the relationship between people and nature. Callicott and other scholars often ground opposing worldviews in various religious-spiritual traditions, modern environmental ethics, and sometimes in the absence thereof.

Western Worldviews

The anthropocentrism found in the ideas of utilitarianism, human progress, the humanization of nature, and individualism in Western Enlightenment thought is said to ultimately originate in the interpretation of the Judeo-Christian Bible of mankind having dominion over the earth, and in the development of the Protestant work ethic (Callicott 1993, DeLoria 1999, Tu 1993, White 1968). According to historian H. Paul Santmire, Christian theology is said to have

two dominant motifs, reflecting the profound ambiguity of Christian attitudes toward nature: a spiritual motif where the end of human existence is said to lie in the transcendence of nature or in its humanization, and an ecological motif, where the end is thought to lie in community with nature (Santmire 2000). Santmire (2000) argues that the anthropocentrism of the spiritual motif, that nature is not valued for its own sake but only for its value to human beings, is at the heart of the concept of the dualism of mankind and nature and that it is God's will that man exploit nature for God's higher purpose (White 1968).

Alternatively, philosopher John Passmore discerns the development of three dominant human-nature worldviews in the West: the "man as despot" view from the Old Testament, "man as steward" from the Platonic Greeks, and "man perfecting nature" from the Stoics and later Hegel and other German idealists which became incorporated into the thinking of Karl Marx and contemporary Marxists of today, theologian Pierre Teilhard de Chardin and landscape architect Ian McHarg, among others (Passmore 1980). According to Passmore, despotic man seeks to tame wild nature, while man the steward seeks to humanize and alter the earth from its wild state, much like a farmer breaking virgin ground, creating human landscapes from wildlife habitat (Passmore 1980). In the "perfecting nature" worldview, man helps nature by taking part in its creation, both humanizing and spiritualizing it, making it more useful, more intelligible, and more beautiful for man (Passmore 1980). Sessions (1993) noted that an important American natural resource conservation ethic typified by the multiple use model of the Forest Service founded by Gifford Pinchot is similar to a combination of Passmore's "stewardship" and "perfecting nature" models of human-nature relations.

An anthropocentric worldview is also tied up in theme of the fall from divine grace in Adam and Eve's expulsion from the Garden of Eden (original sin) that many scholars associate with the development of plow agriculture (Callicott 1994, DeLoria 1999, McDaniel 1993, Sessions 1993). With agriculture, human beings became lords of the planet; human dominion over nature became domination. According to Callicott, the fall of humankind and the loss of innocence came with its own consciousness of good and evil which ultimately derives from human self awareness that we

are separate from other creatures, with the ability of exercising power over them and the entire earth, either for good or evil human purposes. Organisms and natural processes that are useful to us become labeled as ‘good’ while those that are not are ‘bad’ (Callicott 1994).

Ralph Metzner (1993) described how emerging from the European Enlightenment and the Industrial Revolution came the mechanistic-technological-industrial worldview of a deterministic and atomistic universe governed by the rules of linear causality. In this worldview the earth is profane, dark, and inert, and all life is random. The world outside of direct human control is a frightening place that must be conquered and dominated, and its value exploited through hard work (Metzner 1993). Under this worldview, capitalist economic work although it might appear as simply arrogant use of nature’s gifts for material gain, can be construed as actually cared out for the glory of God, a concept developed by Max Weber.

Nature may be viewed as an almost unlimited source of diverse resources, to be exploited for immediate benefits, or under a conservation ethic, saved or managed for future use (i.e. U.S. federal agency multiple use doctrine). An industrial – technological worldview is based in the notion of private property and ownership, where land and water resources exist to be developed for human subsistence and productivity (Metzner 1993).

A post–World War II turn away from anthropocentric worldviews, toward a more ecological consciousness and ecocentric worldview was first articulated by wildlife biologist Aldo Leopold (1949) who articulated a “land ethic” rooted in the duties and obligations of human beings to the various communities to which they belong. The field of ecology showed that each person is a member of a local biotic community as well as their human community. The land ethic transforms human beings “from conqueror of the land community to plain member and citizen of it.” Leopold told Americans “to think like a mountain,” to re-inhabit the land, to come to know it by dwelling in it and restoring it to a more natural state (Leopold 1949). The essence of Leopold’s land stewardship model is often described by his quote on “intelligent tinkering,” carefully working in and with nature but always being sure to save every “cog and wheel” (Leopold 1949). Leopold’s stewardship model appears to combine aspects of the Christian

steward model of harmony between man and nature with a strong appreciation of a wilderness not dominated by human beings. Leopold's model has come to have a huge following in the wildlife and fisheries professions in the United States.

Later, Rachel Carson's warning of looming environmental disaster and her ecological worldview helped launch the environmental movement (Carson 1962). In the following decades, Arne Naess (1985) and others developed the "deep ecology" worldview which was a statement of normative ecocentrism with a call for environmental activism. Deep ecology seeks to transform the relationship of humans to nonhuman nature, to broaden our knowledge, respect and empathy for all life, and to protect the biological integrity and evolutionary potential of the earth (Naess 1985, Sessions 1993). Like these emerging ecological-based Western worldviews and particularly, Leopold's land ethic, the worldview of Native Americans and most indigenous and traditional peoples are also essentially ecocentric, intimately connected tribal communities to the ecological communities of specific bioregions (Grim 1993).

Yakama Worldviews

Each bounded community may hold a distinct worldview that orients every person of that group through specific emotions, symbols, myths, and ethics to relate to the earth and some form of sacred realm (Grim 1993). Nonetheless, philosophers (Gill 2003), religious scholars (DeLoria 1987, Grim 1993) and anthropologists (Hunn 1990, Nelson 1983, Nadasdy 2003) argue that there are a number of distinctive differences between traditional Native American worldviews taken as a whole and those of Europeans, most of who hail from Judeo-Christian and modernist, Western scientific traditions.

A discussion about some monolithic Yakama worldview shared by the entire Yakama community is complicated by the fact that many Yakama have connections with a traditional Plateau Indian spiritual worldview of Wáshat, as well as those of nativistic, syncretic religions including the Indian Shaker Church and Feather Cult, with various common Christian beliefs, and worldviews derived from concepts of modernist science, technology and mass media. In

terms of religious practices, it is not uncommon for a Yakama tribal member to participate with family and friends in variety of religious observances: Wáshat, Shaker Church, Feather Cult, or that of various Christian denominations over the course of a single year or during the course of their lifetime. Many Yakama tribal members, particularly those Yakama informants interviewed in this study have their feet firmly planted in two worlds, one in an ancient Plateau Indian tradition with its distinct cultural and spiritual beliefs and practices, as well as that of contemporary Americans, working as an employee of a natural resource management program (albeit a tribal one) requiring training, experience and belief in a view of nature dominated by Western science and technology (personal communications, this study).

That said, a traditional Yakama life way is a lived experience of a cosmology, a set of ethics and rituals, all interrelated to sustain a human-earth connection (Grim 1993). For a traditional Yakama, the sun is the father, the earth is the mother, with water the first sacred food (Hunn 1990, this study). However, Schuster (1975) believes these concepts are historic borrowings from Christianity and other European ideas. Wáshat followers often refer to a Creator, who must be asked for help in subsistence pursuits and all other activities of life.

The Yakama have a sense of rootedness in their home landscape of the Mid-Columbia region, a sacred relationship which derives from its ancient and continuing ability to provide a good life way for the Yakama people (Hunn 1990, Schuster 1975, 1998). That life comes with many duties and responsibilities for the traditional Yakama community, decreed by the Creator at the time of the formation of the world (DeLoria 1987, Hunn 1998, Stern 1998).

Time in the traditional Yakama worldview is cyclic, anchored in the yearly subsistence round (Schuster 1975, 1998, Uebelacker 1984, this study). The goal of first food thanksgiving rites, the winter dances and the other yearly ceremonies are to renew the balance and harmony of the entire world and the sacred bonds between the people, the earth, animals and plants, year after year.

The Yakama mythic hero is the trickster, Coyote (*Spilyáy*) who broke the dam trapping all the salmon that the swallow sisters had built at Celilo Falls, allowing the fish to migrate upriver to become a staple food for the first people (Hunn 1990). Today the early spring arrival

of swallows signals the salmon will soon return. Through his mischievous behavior, Coyote made the land livable for the Yakama, bringing order out of chaos (Schuster 1975). In the Yakama worldview, like that of other Plateau Indian communities, all parts of the world are interdependent (this study, Appendix C) and it is essentially good. The Yakama and other Plateau Indian worldviews are naturalistic in that there is no strong distinction made between the natural and supernatural realms (French 1961, Gill 2003, Hunn 1990, Jacobs 1955, Palmer 1998, Wyatt 1998). This puts the Yakama and their American Indian neighbors at odds with Western religious worldviews which maintain a dichotomy between this world and a higher, transcendent world of the spirit and of a Western concept of monotheistic god (French 1961, Gill 2003).

The Yakama religious and spiritual rituals, in fact a complete Yakama way of life, like that of most Native American religious observances, can not be simply carried out just anywhere. In agreement with the Western Apache, who say that “wisdom sits in places” of their Eastern Arizona homeland (Basso 1997), the Yakama believe that particular Cascade mountain and Columbia River landscape locations impart spiritual power and knowledge (Schuster 1975, 1998). Specific guardian spirit shrines exist scattered throughout the mountains, and natural objects may speak to people and give spiritual advice and instructions (Schuster 1975).

In the traditional Yakama worldview, spirit power, life and consciousness exists in things that Western culture considers as either insentient beings such as plants and animals, or inert and inanimate, including mountains, rivers and rocks (Jacobs 1955, Hunn 1990, 1998, Schuster 1975, 1998, personal observation). In fact, the whole of the universe is understood as alive, with all organisms and natural forces having intelligence, will and consciousness, including having moral standing with all the rights and obligations that go with personhood (Feit 1970, Hunn 1990). This serves as the basis for respect for all living things and a relationship of generalized reciprocity between the Yakama community and nature (Hunn 1990, Hunn and French 1998).

Killing and utilizing all the plant and animal brothers and sisters of mankind for subsistence must be carried out in a respectful manner (Hunn 1990, 1998, Stern 1998, personal observation). Because plants and animals sacrifice themselves as food so that human beings may eat, people

must give thanks to the spirits and the Creator when gathering plants, fishing and hunting by presenting prayers and material offerings (i.e. beads, coins, tobacco and other traditional Yakama medicines), and at the first food feasts held in the Wáshat longhouses. The older Yakama guardian spirit complex traditions of the vision quest, sweat lodge and winter dances, sacrificing comfort and safety by rituals of fasting, endurance and purification, also serve as a testimony to the bonds between the Yakama people and varied sources of spiritual power in nature (Grim 1993, Schuster 1975, 1998). In the Yakama worldview, traditional subsistence skills are but one key form of knowledge, the others being the traditional stories and beliefs of the community, and its spiritual traditions, generally taught to the young by grandparents and other elders (Gill 2003, Schuster 1975, 1998).

With this brief background in Western and Yakama worldviews, in the remainder of the chapter I will present results of my own Yakama and FWS worldview research, including an analysis of the interviews.

Yakama Religion and Conflicts over Sacred Reality

Through hundreds of generations of their ancestors, the Yakama people laid claim to the Mid-Columbia region as their homeland with the Mt. Adams (*Pah'to*) and the Yakima Basin at the core of their identity (Hunn 1990, this study). The entire Mid-Columbia landscape of plateau, Cascade mountains, and river valleys has both a natural and sacred reality to the Yakama (Berry 1988, Schuster 1975, 1998). However, under the dominant Euro-American worldview, everything that is part of the Yakama natural and sacred reality is often reduced simply to resources – fish, wildlife, vegetation, minerals, soil and water. The Yakama explain this materialistic vision of their nontribal neighbors as due to the estrangement of most Americans from their own real homelands.

The FWS system, in fact all federal or state land management agencies, “can’t do” sacred reality, although they have staff social scientists, predominately archaeologists, and sometimes Native American regional tribal liaisons hired to help the agencies incorporate cultural values into the process. In fact, many recreational values (i.e. sport fishing, trophy hunting, and hiking)

are in direct opposition to the very idea of sacred reality, of protecting places and species from spiritual desecration by the profane.

A good example is the conflict over access to Devil's Tower National Monument in Wyoming, a sacred site to the Lakota and Cheyenne (known to them as the Bear Lodge), and other Plains tribes and today an internationally recognized rock-climbing site managed by the National Park Service (NPS), Department of the Interior. The Plains tribes argue that the mountain has rights as a living place animated by spirit and should not be desecrated by recreational climbers scaling its rock faces. One of my FWS informants, a member from a Mid-Western Native American community, said that the Bear Lodge site and thousands of other sacred Indian sites possesses "there-ness," having spiritual power as healing landscapes, their existence having inherent, intrinsic value to human health and well being.

Conflicting attitudes toward various species of Pacific lamprey in the Northwest can further illustrate this point. The lampreys (*asúm* or *k'súyas*), called eels in English by the Yakama, are as a group reviled by most nontribal sport and commercial fishermen as a parasite of salmon, trout and other desirable game fish, despite their apparently peaceful co-existence in the Columbia River ecosystem (Close 2002). However to the Yakama, the Nez Perce and many other Northwestern fishing tribes, lamprey are esteemed as a particular delicacy, noted for their firm, oily flesh. Thus they have a reality and value largely unfathomable to Euro-American sensibilities. Lamprey runs have been decimated by many of the same forces that endangered the Pacific salmon. Pacific lampreys are increasingly becoming the focus of protection under the Endangered Species Act. However, it is unlikely that conservation efforts to protect lampreys will garner sufficient federal political support and funding toward the full recovery of lampreys, requiring sophisticated captive rearing and hatchery technology to support their unique reproductive cycle. All for a fish that most Euro-Americans find repulsive and wrongly assume are destructive to valued Western fisheries.

The NPS or FWS is more than willing to protect a threatened site or a species, but not on the basis of some alleged sacred reality. Science as a technical approach to knowledge and valuation

can not address such issues. Perhaps that can only truly be done by invoking a concept of the sacred.

In their ongoing dialogue with Euro-Americans, the Pacific Northwestern tribes have been most effective in establishing the sacred reality of Pacific salmon to them in terms that most nontribal people can understand (CRITFC 1995). The Northwestern tribes have been eloquent in representing the relationship between their cultures, the Northwest landscape, salmon and the legacy of tribal fishing, as can be seen in the statement below:

We come from the land. We are the earth, we are the land. . . . When you destroy the salmon, you destroy me. The salmon made a commitment to return and to give life. He's following his law by coming. We are violating our own law by not doing everything we can to get him back. (Louie Dick Jr., Confederated Tribes of the Umatilla 1992) (NW Power Council website)

Even the most secular Euro-Americans cannot fail to recognize the iconic nature of the salmon in the Pacific Northwest for both Indians and non-Indians alike, symbolizing the beauty and vitality of the entire region, and the intimate relationship between nature and human beings, however strained (Lang and Carriker 1999).

However, in many negotiations with the FWS and other federal and state agencies, nontribal YNWRP biologists, archaeologists, and attorneys are often given the difficult task of attempting to articulate Yakama cultural values and sacred realities. The protection of ancient and historical cultural sites, the most concrete and discrete of cultural resources, is the easiest to defend during interagency consultations and during litigation. The protection of cultural and historical sites is clearly codified in federal and state law.

Proving more intractable is the protection of culturally vital living resources such as huckleberry fields and root digging areas, many of which are off-reservation in the Yakama Ceded Area including sites on the Gifford Pinchot National Forest, Yakima Proving Grounds (Department of Defense) and the Hanford Reservation (Department of Energy). Having nontribal representatives consistently present the YN viewpoint may appear inauthentic to federal and state representatives, suggesting Yakama cultural values are not to be taken seriously. At the present time, only a few

Yakama tribal representatives appear comfortable in articulating a viewpoint that incorporates both Yakama cultural and scientific perspectives and realities (personal observation).

Water and Tules: Sacred Wetland Components

In Yakama tradition, water (*chíuush*) is considered a sacrament and is used to cleanse the human body during Wáshat ceremonies, such as first food feasts (Hunn 1990, Uebelacker 1984, personal observation). Many medicinal plants are said to gain some of their healing power by growing in close proximity to mountain snow pack and springs. Valley wetlands are not generally considered sacred sites by most Yakama informants, thus worthy of particular protection from any disturbance, although they hold and filter water and support tules and medicinal plants that are considered sacred cultural resources. The gathering of tules is notable as an example of how Yakama spirituality is fundamental to the Yakama way of life, including subsistence foraging, and in the celebration of human life and the return to the earth in death (Figure 27). Below a



Figure 27. Cutting tules on South Lateral A Tract.

Yakama religious leader in his late 50s discussed the primacy of water in Yakama belief, the importance of foraging with a pure heart including making appropriate offerings, and the role of tule mats in Wáshat ceremonies:

First of all is the water that is growing the tules, that's brings them all up. We hold the water in the highest esteem. Without it they wouldn't grow, the tules, other plants, the fish, the animals, all the birds, ducks, all living things, all are dependent on water. All animals that walk the earth, indeed ourselves, human beings, everything starts from there. That's the very beginning, beside the earth, Mother Earth. We have three things: 1) water, 2) the earth and 3) the sun, which supports every living thing. . . .

When people go to gather foods, go fishing, go hunting, the elders have told us in order to do this, you must have a clear mind and heart. You've got to pray, sing songs, to talk to the Creator, free your mind of guilt and worry. You must free your mind to gather the tules. . . .

You leave a gift when you gather or fish and hunt. You talk to the Creator. You don't take and take and take, you've got to replace whatever it is you are gathering, tules, roots, or food for the people's consumption. Especially fish, the fishermen stand in a sunny place and say a prayer to thank the Creator, you ask the Creator to bless whatever it is you're about to do. Many people make offerings: tobacco, medicines, some people throw change in the river, for the elders such as those at Celilo. . . .

Tules when they are put together, they are strung together to make mats which serve as the table for our sacred feasts, they are used in the longhouse as tables. They are also used to place bodies upon. Some people place the casket on top of tule mats. Especially for older persons, there is no casket; the body is wrapped in tule mats.

The only plants that appear to be held in higher esteem than tules were plant foods and medicinal plants, including staple root crops (*lúksh*, *nunas*, *sít'xws*; *sát'uxs*, *yuktyúkt*), Indian celeries (*shkulkul*—*Lomatium* spp.), bitterroot (*pyaxí*—*Lewisia rediviva*) and huckleberries (*Vaccinium* spp.). In the remainder of this chapter, I analyze the interview results from the two discussion questions about whether people are part of nature, and descriptions of people's guiding philosophies.

Not Man Apart?

All my informants apparently recognized that wetlands in the Yakima Basin have been profoundly altered from some so-called ‘natural state’ primarily due to drainage for agriculture over the last 100 years. But that implied that there was a prior state of naturalness and balance that existed before agriculture, but concurrent with a long period of Native American occupation. One 40-year-old Yakama biologist described that precontact period: “Traditionally we didn’t decimate an area. We went to this area, we took what we needed, we could come back without change. It was an important human link.”

Yakama informants were apt to describe humans as part of the natural system, and that the cultural development of the Yakama as a distinct people was founded on their relationship with the natural abundance of their root foods, berries, fish and animals in the Mid-Columbia region. One 70-year-old Yakama program manager explicitly expressed his disbelief in Darwinian evolution and the theory of the origins of the human species outside of North America, claiming Indian people came into being right here on this continent.

Common phrases that the three Yakama program managers, ages 50–70, used was that human conduct toward nature are governed under the unwritten “natural laws given by the Creator,” “the Creator’s Law” or the “Principles of Law.” This appeared to be largely synonymous with their references to the unwritten “First Treaty” between humans and the Creator, in contrast with the “Second Treaty” of 1855 between the Yakama and the U.S. government establishing the Yakama Reservation and foraging rights in the ceded area. Thus the retort by a 70-year-old program manager, “We are asked “*Do you have that in writing?*” Yes, our laws are written in the mountains and the rivers. It is written on the land.” A Yakama biotechnician, tule gatherer, and program manager articulated how they viewed the Yakama people as part of nature, particularly referring to the reciprocal relationship between humans and the species used as traditional subsistence foods:

We are part of it, completely. From our cultural teachings, in the afterlife and our cultural beliefs give us ties to the land, animals and plants and all our cultural

resources. Sometimes people say “Those are our ancestors up there” referring to everything, Mount Adams, everything else. (Yakama biotechnician, female, 30s)

We don’t see a division between humans and Nature, that relationship is one of cooperation (Yakama tule gatherer, female, 30s)

There are certain expressions, “we are part of the environment.” I just heard one of my elders explain to the Columbia River Gorge Planning Team, “*Salmon cannot speak, so it is up to the Yakama to speak on their behalf.*” The existence of our current population comes from our belief system. If you take care of the Earth Mother and its resources, they will take care of you. In English, it is the concept of sustainability. . . . I feel very much part of the environment. Some people behave as if they are just not part of it. It is just how we are brought up. It is part of the reciprocal relationship, a relationship of stewardship. We believe if things are exploited, they will be taken out of our environment. (Yakama program manager, male, 60s)

In Yakama legend and that of the other Columbia River tribes, it was the salmon which was the first animal who volunteered to feed the first human beings. The Herculean upriver struggle that the salmon undergo to return to their natal rivers and streams, and to subsequently feed all Columbia River Indian people, despite the enormous obstacles placed in their path by modern hydroelectric development, physically embodies the enduring reciprocal relations and the spiritual contract between the Creator, the salmon, and the Yakama people. The concepts of natural laws and spiritual contracts governing the relationship between the Yakama and their Mid-Columbia homeland environment as discussed by my informants are plainly congruent with past analyses of Yakama worldviews conducted by Helen Schuster (1975) and Eugene Hunn (1990).

Other Yakama biotechnicians and biologists see the answer to the question about people’s place in nature in their own childhood experiences feeling at home fishing, hunting and playing in local creeks and wetlands and later in their own professional efforts working to conserve nature, such as replanting native trees, removing invasive exotic weeds, or monitoring creeks for spawning steelhead (see Appendix D stories). To one 40-year-old Yakama biotechnician, the proof of his place in nature is revealed when eagles and deer are unafraid in his presence.

The four nontribal YNWRP biologists appeared to be the most intellectually conflicted about their positions on man's, and their own personal relationship, to nature. I wrongly assumed that they would find it easy to articulate their point of view. One female nontribal biologist answered the question obliquely, describing the role of humans as agents of disturbance in an ecological restoration process, "We're the fire that needed to come through every 5–10 years. Only now people are doing it."

A 40-year-old nontribal biologist said he had not really thought about it before. In his response he challenged notions that the Yakima Basin was a Pre-Columbian Garden of Eden. He considers the entire area as a co-evolved landscape, with Native Americans actively manipulating vegetation and animal populations for their benefit, in some kind of ecological balance. He asked how other people answered the question and we went on to discuss the origins of Western notions of people's relationship to nature, first from the Bible, where Adam and Eve were cast out from Eden, and then in the European Enlightenment.

The third nontribal biologist, a male in his 30s, called the relationship of people to nature one of the fundamental questions of our time, involving important issues such as overpopulation and threats to the environment. He sometimes feels that certain people in the Yakama Nation view dominant White American culture acting as it were an invasive exotic species damaging the environment in the Columbia Basin. The position of the alien character of man in nature was echoed by the fifth nontribal biologist a woman in her 30s, who thought that people could be part of nature, but not as we live today. For her the shift in naturalness came with the development of agriculture and gaining control over river flows for irrigation. Note the similarity of her idea to the concept of agriculture as linked to the Fall from grace in discussions of a Christian worldview by McDaniel (1993), Callicott (1994), and DeLoria (1999).

FWS informants appeared to have been better prepared to discuss the relationship of people to nature. Their work on refuges often involves directly manipulating natural processes (moving dirt and water) to benefit certain species, particularly migratory birds. They are concerned that most of the country is increasingly urban, losing touch with nature, as wild lands are converted

to housing developments and strip malls. The Tri-Cities Washington area (Richland, Pasco and Kennewick) where they live and work is one of the fastest growing areas in the country, spreading out into the rural, shrub–steppe covered terrain of Eastern Washington. Two of the refuge managers, one in his late 50s and the other in his 30s both come from rural backgrounds in Western Washington. Their answers to the human-nature question appear to be particularly illustrative in context, revealing both their continuing struggle to conserve wildlife in a human-dominated landscape as well as coming to terms with the position of humans as the dominant species in these Mid-Columbia ecosystems and globally.

The elder manager, a self-proclaimed realist, does not appear to spend too much time mourning the loss of natural areas and of wilderness. He appeared resigned to conserving wildlife in an agricultural matrix, finding the positive in the perpetuation of natural processes and the survival of wildlife in the transformed environment. For example, he described huge flocks of migratory waterfowl wintering in the agricultural fields and managed marshlands of the Klamath Basin or Caspian terns (*Hydroprogne caspia*) and American white pelicans (*Pelecanus erythrorhynchos*) flourishing in the reservoir pools of the Columbia River:

...Can you call it unnatural? They are wild animals that exist in an unnatural way. When you look at wilderness in a realistic way, everything is not wilderness. We still have natural life in populated areas. We have to strike a balance between reality and what is natural.

The younger refuge manager proudly describes himself as the great grandson of a pioneering Oregon Territory family of land managers: farmers, ranchers and loggers. He knows the satisfactions and challenges of hands-on land management, both on the family farm and on the TNWR and other Mid-Columbia refuges. But his professional career in the FWS has also taken him to pristine river deltas of Western Alaska and to remote coral atolls of Western Hawaii. His answer was telling:

I do see humans as part of the natural ecosystem. But there is a *but* in there. A big *but*. It is real easy for me to say clearly that humans are part of the natural ecosystem

in more hunting and gathering, more ancient ways of living. To me they clearly were part of it. They are fully integrated as part of it. We're not some alien thing on earth. We were fully part of it. I think the difference is that because of modern technology, and agriculture being part of that, industry, agriculture, those kinds of developments, maybe from a really big picture, maybe all of that fits into that we really are part of the ecosystem. But I have a hard time seeing that as a natural ecosystem. I tend to have that as being almost fully separated and working against a natural ecosystem.

"We're not some alien thing on earth. We were fully part of it." Again, this is a theme of modern man having fallen from natural state of grace, of contemporary Adams and Eves expelled from the Garden (McDaniel 1993). The question of whether or not human beings are behaving like an alien species in a new environment (with no natural predators, to complete the metaphor) is provocative and may be worth testing out. I mentioned this position to one of the Yakama biologists and he said, "Maybe our behavior is alien." This agrees with one of the female nontribal YNWRP biologists seeing human naturalness ending with the development of agriculture.

The FWS biologist, in his 50s, questions whether anything has fundamentally changed in our society in terms of our relationship to nature and its valuation economically, socially and spiritually:

I could go back and forth on that. I think in many respects most people are out of touch with nature. However a hundred years ago when we . . . were living closer to the land, did we really understand it? Nature was something to be tamed. Our attitudes these days, even though we may not have that direct knowledge, there seems to be a bit more reverence. However, we eat up acres and acres and acres of habitat each day for strip malls and housing developments. . . . It's our day to day living and wildlife is not part of that, that general thought.

He does believe we are more aware of wildlife and wild places today because of television (the Steve Irwin show, and Nature on PBS) and this awareness may encourage people to donate money for land protection and wildlife conservation. The viewers may never get out into wild lands themselves, but may develop a strong mindset that some areas need to be preserved. He

is concerned that wildlife television programming may ultimately be a far better vehicle for entertainment, than for wildlife conservation. People may enjoy watching Animal Planet, but yet not support taxes going to wildlife conservation in their own communities.

The FWS manager in his 50s describes the relationship of humans to nature as one of stewardship, a la Aldo Leopold, one of the primary philosophical pillars of the FWS. This is the FWS National Wildlife Refuge System creed, and must, at least at some level, become internalized by each refuge employee. Here is a Leopoldian theme of conservation through intelligent tinkering: “we do things to the land”—a very conscious, adaptive management approach to wildlife conservation.

While overall the Yakama informants appear to differ from nontribal informants from either the YNWRP or FWS on their understandings of the relationship between human beings and nature, as a whole the very conscious, and unapologetic, manipulation of the environment by FWS biologist/managers to benefit particular wildlife guilds such as waterfowl appears to link most of the FWS informants closer, at some basic level, with Yakama informants than with most nontribal YNWRP employees, who viewed human beings either as a spiritually fallen or alien species, or as a source of catastrophic ecological disturbance. The active land stewardship model, typified by the management activities of the National Wildlife Refuge System espoused by a few FWS informants and their national leadership, and often referencing Leopold’s land ethic, actively seeks to mend the rift between humankind and the natural community through management.

However, also in apparent agreement with Leopold, there appeared some sense among all nontribal informants of both the FWS and YNWRP that active wildlife and fisheries management is a necessary evil, a sentiment that Yakama informants did not share, typified by the statement “we speak for the salmon, because they cannot speak for themselves” and references to the spiritual contracts between the Creator and the nature she/he provides to sustain the Yakama people. While management is often seen as an act of last resort in the wildlife science worldview of nontribal informants with a wilderness model of a nature untouched by modern human

development as their ideal (discussed in detail in Chapter 5), in the Yakama worldview their homeland landscape was never a wilderness devoid of them, there is no separation between the Yakama people and natural world.

Conservation Philosophies, Land Ethics and Values

Worldviews provide people with a distinct set of values (Ortiz 1973) that motivate behavior, acting much like a cultural model shared among members of a community (D'Andrade and Strauss 1992, Quinn and Holland 1987). I was interested in trying to encapsulate the various conservation philosophies, land ethics and value systems that guided and motivated the actions of YNWRP and FWS staff.

As mentioned earlier by one of the Yakama program managers in discussing the relationship between the Yakama people and nature, the most widely mentioned Yakama philosophy was that “if you respect Mother Nature and take care of the land, they will take care of you.” This phrase is short hand for the position of extending moral benefits to nature, creating a relationship of reciprocity between human beings and all other living things, as previously reported among the Yakama (Hunn 1990) and among various Sub Arctic and Arctic foragers (Feit 1970, Nadasdy 2003, Nelson 1983). Echoing the statements of my Yakama religious leader informants, the three Yakama program managers said people must follow the unwritten laws of conduct towards nature including respectful behavior, gratitude and a pure heart in harvesting fish, game and plants. There is also a sense that in maintaining and restoring nature, Yakama culture and traditions will also be maintained and restored. There was also a common statement by a number of Yakama informants that “everything is connected” (Aldo Leopold and Barry Commoner would approve).

One 50-year-old Yakama program manager contrasted his view on how his traditional values about nature are fundamentally different than the values of nontribal people. He contrasts the motivations of his Yakama employees to nontribal biologists with urban backgrounds like

some of his YNWRP employees as mere lifestyle choices, gained through learning about nature from text books and watching conservation programs on the Nature Channel:

[Our] values come from a higher power, the Creator. And it is something that is instilled as a value when we're born. It is not learned on paper or through the educational system. It's not because you went to college, and learned about ecosystems. In our culture it is not that way. The values are something you're born into, it's instilled. . . . I look at wildlife differently from nontribal biologists.

In contrast to the Yakama informants, three nontribal YNWRP employees mentioned similar secular individualistic motivations as their guiding philosophies: "leaving things better than I found them" (female 30s); "that the world was a better place because I was here" (male 40s); and "making a difference" (female 30s) in contributing to restoring native ecosystems. A fourth nontribal biologist in his 30s declared himself a zealot of Leopold's land ethic, whose maxim served as this man's guiding professional philosophy as a wildlife biologist: "to preserve the integrity, stability, and beauty of the biotic community." One nontribal informant took the Yakama Nation's government mission statement: "to preserve, protect and perpetuate the history, culture and language of the Yakama people," as his professional credo.

One 50-year-old FWS informant's philosophy sounded exactly like the motivations of three of the nontribal YNWRP informants, mentioning a personal interest in making a difference, of having an impact regionally, nationally and globally. From these interviews I gained that he was highly motivated about conserving biodiversity and also supported the FWS mission of maintaining public access to wild lands for recreation and science education. One of his concerns was that if the Yakama took over the TNWR that it would leave the public domain.

Two of the oldest FWS refuge managers pointed with pride to the FWS refuge mission statement as guiding their professional conduct: "to administer a system of lands and waters for the conservation, management and restoration of fish, wildlife and plant resources for the benefit of the American people." They have, like the YNWRP archaeologist described earlier, consciously internalized the mission statements of their employing agency as their professional creed. In the 1990s using a corporate model adopted from private industry, most U.S.

government agencies, including the FWS, were instructed to develop mission statements for their programs both to set agency goals and build employee solidarity and establish buy-in. Agency mission statements are posted in policy manuals, program websites and in district offices.

I suspect that FWS and other DOI program mission statements became a normative model, setting agency goals and building group cohesion, thereby coming to influence many long term employees of these agencies. Both the YNWRP and FWS currently have mission statements on their websites as part of their public information and outreach efforts, but their greatest influence may be internal to the agency itself. According to institutional theory (DiMaggio and Powell 1983), organizations tend to develop shared meaning systems to create a sense of legitimacy, included desired goals, values and behaviors. The use of mission statements in this case appears to support this theory.

The two oldest FWS managers, both in their 50s, expressed a strong sense of personal pride in making wildlife management in the FWS refuge system their life's work, restoring areas and seeing wildlife populations coming back and flourishing. The senior manager described himself as learning new things throughout his long career: management of seasonal wetlands through water control, restoring native grasses, limiting avian disease outbreaks, and controlling invasive exotic plants.

The 30-year-old FWS manager would appear to agree with his supervisor, describing that his views are always changing and evolving throughout his life and professional career. He has enjoyed the opportunities that the FWS has provided him to learn about new ecosystems and experience new land management challenges. He claimed to have no strict or canned philosophy that guided him.

The second most senior FWS manager, in his 50s, felt his sense of stewardship toward the earth has expanded as he has grown in his Christian faith. Christianity has given him the *why*, answering the question of why wildlife conservation is important work for him to do:

The system is like that because God is the creator, we are the created; we are not the Creator. So even that thing about intelligent tinkering. . . . And once again then we'll

create a process; that in fact, we are the image of God, therefore we are allowed to tinker, but we are responsible for our tinkering.

“Intelligent tinkering” is referring to Leopold, suggesting he is incorporating an older Christian stewardship model with a more contemporary one which incorporates ideas from the field of ecology.

Although some Yakama informants also discussed a concept of stewardship, the philosophies of most Yakama informants appeared to embrace a philosophical cultural model and worldview of respect toward nature and acknowledgement of a reciprocal relationship between mankind and the wildlife they need for sustenance that appeared to have much in common with other traditional Plateau foraging communities such as the Nez Perce (Walker 1998), Flathead–Pend d’Oreille (Malouf 1998) and Spokane (Ross 1998) as well as foraging people of the Arctic, Subarctic and Plains including Inuit (Freeman et al. 1998), Yukon Athabaskan (Nadasdy 2003, Nelson 1983), and the Crow (Grim 1993). In contrast, most of the nontribal YNWRP employees were motivated by a more individualistic sense of satisfaction in making a contribution to the protection of the natural world and to society in their professional work, a position also mentioned by one FWS informant and probably shared by other FWS informants as well. The concept of making an individual contribution to your society, in this case through conservation, appears to me to be a thoroughly Western notion of a person living a dignified, socially worthy and productive life through meaningful work.

However, the 40-year-old nontribal YNWRP biologist also expressed strong satisfaction in helping the Yakama community maintain cultural use of wildlife, fish and plant resources. He was adamant that the added dimension of conserving wildlife resources to sustain an indigenous traditional culture would make it difficult for him to conceive of simply managing wildlife for its own sake alone, or working for a state wildlife or federal land management program. Nontribal employees of Native American environmental programs must be empathetic to a Native American worldview, expanding their sense of reality, including changing their perspective to embrace nonscientific, nonmarket driven cultural and social goals. Sometimes nontribal employees of tribes appear to be overly zealous in their advocacy for Native American interests

in conflicts with the White society and government agencies, possibly using the situational arena to prove their loyalty and to seek a toehold in the tribal social structure (personal observation).

One important aspect of employment with Yakama tribal environmental programs is the power of the social in the workplace, with employment in the tribal programs bringing together family and friends to work together on projects that both benefit the family and the entire tribe. The Yakama tribal programs must work to achieve both social and cultural aims while they meet their environmental benchmarks. In the case of the Yakama Nation Wildlife and Fisheries Programs, they must try to simultaneously achieve a number of environmental and socio-cultural goals, including natural resource restoration, maximizing tribal self-sufficiency and employment. Yakama environmental programs employ hundreds of tribal members, possibly 4% of the total tribal population of about 9,000, an amazingly high percentage of the community working in natural resource management.

Summary

Yakama informants were more apt to describe people as part of the natural system, and that the cultural development of the Yakama as a distinct people was founded on their relationship with the landscape and the natural abundance of their Mid-Columbia homeland. Nontribal informants of both the YNWRP and FWS were more conflicted about the position of man in nature, burdened by a feeling that contemporary human beings are undermining the health of the natural world. There was an underlying tone from a few nontribal YNWRP and FWS biologists that industrialized mankind is no longer part of nature, having been expelled from the Garden of Eden, because of the original sin of developing agriculture. In their experience of living in the heavily industrialized agricultural region of Eastern Washington, it is hard to argue with them. Of the nontribal informants, the FWS was more comfortable in the active land stewardship role in conserving the nature in a human-dominated world. At a certain basic level, this forges a link with the contemporary stewardship model the Yakama and other Columbia River tribes are applying in their extensive salmon fisheries restoration efforts.

The chief difference between Yakama informants and all other nontribal informants both in the YNWRP and FWS was the embrace by the Yakama members of a common ethical position of respect for nature and the reciprocal relations between the Yakama people and wildlife, fish and plants. Some Yakama would contrast their value system based on traditional cultural ties with nature with that of nontribal people, often from more urban backgrounds whose values about nature and wildlife were acquired through formal education and the media and perhaps recreational hunting, fishing and camping experiences. Nontribal informants were more apt to report they have individualized personal motivations to work in conservation such as goals of making a difference as a biologist and land manager.

Yakama natural resource programs are as much social entities as government land management bureaucracies, employing a large interrelated workforce to carry out important conservation activities to benefit the Yakama community, including both restoring natural resources while striving for full tribal employment and economic self-sufficiency.

Implicitly, the Yakama informants brought to the discussion an idea of sacred reality (Berry 1988, Schuster 1998), a notion that is difficult for the FWS to reconcile with the management of wildlife refuges that are open to recreational public use. Tule harvest, which the FWS often groups with other consumptive uses of wild lands including sport hunting and fishing, is easier to understand as a Yakama sacred reality in light of value of tule mats in various Yakama religious practices, ranging from first food and child naming ceremonies, to funerals.

The same could be said of the primacy of salmon and steelhead in the Yakama worldview, and how obstacles to steelhead movement on TNWR might be construed as a breach of a sacred compact between the Yakama people and the fish. Although rarely discussed in negotiations between the YN and FWS, the existence of a Yakama sacred reality may prove to be one of the most intractable issues between the two agencies in sharing management of TNWR. In the following chapter, I take a closer look at the wetland management goals and objectives of the two programs.

CHAPTER 5

WETLAND MANAGEMENT IDEALS

I had anticipated that YN and FWS employees would differ in their views regarding preferred approaches to wetland management and the perception of temporal bounds of their wetland management activities. A preliminary cognitive domain analysis conducted at the start of this study based on interviews with 24 YN and FWS employees, Yakama and nontribal wetland users, and a single Washington state wetland manager (including fourteen YN tribal program and four FWS employees) found there was broad agreement of the value of wetlands as *wildlife habitat*, as *hunting and fishing* areas, and as sites used by the Yakama community to *gather traditional plant foods and medicines*, and *tules* (Appendix A). In these preliminary discussions, the most common wetland management themes were: *protection*, *restoration*, *controlling invasive plants* and *water control*. Both in common YNWRP and FWS usage, the term *protection* describes the purchase of lands for conservation, protecting them from further development, or sometimes closing them to hunting, fishing or the gathering of plants. The concept of protecting wetlands can be conceived as the first level of management.

During these preliminary interviews with the YN and FWS employees, I found they used the term *restoration* to describe a broad range of management approaches at various scales, including re-establishing native grasses and riparian trees, re-introducing endangered animal populations, restoring natural hydrology, and broader landscape-scale ecological restoration. Restoration is widely viewed by the various Yakama natural resource management programs as central to their mission including the re-establishment of normative hydrology and vegetation, and the reintroduction of locally extirpated and diminished populations of salmon, mammals and birds. Ecological restoration as a concept was directly linked by the YNWRP with the restoration

of Yakama cultural resources and the opportunity to utilize the Yakama landscape in the exercise of traditional Yakama spiritual, subsistence and commercial practices.

Bonneville Power Administration mitigation funds secure the wetland tracts from development threats and provide funds for their long-term management, while tract restoration activities are predominately funded by the Natural Resource Conservation Service, BOR, NAWCA grants and smaller grants from sportsmen's groups such as Pheasants Forever.

The FWS biologists/managers generally used the term restoration in referring to re-establishing native riparian and upland vegetation. However they also used the term restoration to refer to rehabilitating man-made impoundments on TNWR to enhance habitats for waterfowl and shorebirds.

Based on these preliminary discussions with the YNWRP and FWS wetland managers, it was apparent that *water control* stands at the heart of wetland management for waterfowl habitat. YNWRP and FWS managers are clearly concerned with how water will be delivered to and withdrawn from impoundments and oxbow sloughs in preparation for the habitat requirements of migratory waterfowl. The ability to control water to stimulate or control vegetation in artificial impoundments is the essence of the art and science of contemporary waterfowl management. The predominant wetland approach of the FWS is '*moist soil management*,' encouraging the growth of early successional annuals on bare mudflats to provide food for wintering waterfowl by carefully controlling water levels, so it was not surprising that FWS employees all named moist soil in their discussion of favored management approaches in our preliminary discussions.

With the exception of YNWRP biotechnicians, no Yakama described water control as a preferred management approach during these preliminary interviews. One possibility is that the Yakama community is generally uncomfortable with the process of diverting water from natural creek flow based on religious and ethical grounds, benefiting waterfowl to the detriment of traditional food fish, such as steelhead and salmon.

The biggest obstacle to successful wetland management and restoration is the pervasive problem of *invasive weeds*, most of which are exotics. The control of weeds has become a

major objective of the FWS in all of their Mid-Columbia wildlife refuges and elsewhere, as the invasion of exotic weeds has been deemed to be a major threat to biodiversity, nationally. The Yakima Basin has enormous weed problems because of the high degree of disturbance by agricultural development. The YNWRP has found that lands taken out of farming for eventual restoration will not generally succeed naturally into native vegetation. Without intensive management they quickly revert to exotic weeds. For most YNWRP biotechnicians, controlling weeds has become a major component of their work.

Management Ideals

Based on the findings from my preliminary interviews and using a similar approach to my analysis of worldviews, I conducted semi-structured interview sessions with the same twenty one FWS and YN program informants as described in the previous chapter (see Appendix B for informant profiles). All informants were asked two basic questions about wetland management ideals:

- Some local wetlands are intensively managed using approaches common to agriculture including planting/seeding of vegetation, disking/mowing, herbicide, water control, burning and livestock grazing. Other wetlands are being restored as natural areas, which in the future may require little or no management inputs. Given these extremes, what is your own wetland management ideal and your ultimate goals?
- How long should management and restoration work continue in these wetlands? What kind of timeframes do you place on your work?

I had predicted that the employees of the FWS and YN would differ overall in their ideals of wetland management in Toppenish Creek and in the management models they would apply discursively in positioning their work. Based on my past experience as a former FWS refuge biologist working with various refuge programs, I predicted that FWS employees who work on TNWR would stress an active approach to wetland management grounded in highly engineered water control and a variety of techniques adopted from agriculture to enhance vegetation to

support migratory waterfowl. This is the dominant FWS waterfowl refuge management model: moving water and dirt for ducks, a “farming-for-wildlife” approach that has some functional similarities to diked rice paddy agriculture in Asia. In contrast, I assumed from my preliminary work that the YN employees would stress the restoration of wetlands tracts in support of revitalizing salmon fisheries, of riparian wildlife populations and culturally significant plants.

In fact, I found that all FWS and most YN informants positioned themselves as seeking to balance the need to actively managed wetlands and the goal of restoring them so as to require little or no further management input. Both the FWS and YN wetland management programs remained well grounded in the reality of the Yakima River Basin with its hundreds of thousands of acres of irrigated farmland, a significant portion of which consists of drained former floodplain wetlands. Any far-reaching goal of total ecological restoration of the Toppenish Creek marshes must be tempered by the fact that the floodplain is dominated by commercial agriculture. Creek hydrology has been fundamentally altered, the water table has dropped considerably, and canals, levees, roads and culverts direct flood water flow quickly downstream without it being able to spread out across the floodplain. Both the FWS and YN have to work within the agricultural landscape matrix and try to achieve the most practical, sustainable and naturalistic wetland management approaches possible.

FWS Ideals

All of the FWS biologist/managers interviewed come from educational backgrounds and professional experiences rooted in a very active form of wetland management focused on waterfowl habitat enhancement. The four FWS biologist/managers learned the science and craft of wetland ecology and management both in university programs and while working at prominent waterfowl refuge complexes and wetland programs conservation programs in Oregon, North Dakota, Alaska and elsewhere. They argue that the great majority of the wetland environments in the lower 48 states have been either eliminated outright or “. . . impacted by history . . . undone by dams, reservoirs, irrigation diversions . . .” (Refuge manager, late 50s).

This national drainage project created the need to ostensibly engineer artificial wetlands from former agricultural lands themselves ‘reclaimed’ from wetlands to provide the wildlife resources valued by the American people, and mandated by the U.S. Congress and the International Migratory Bird Treaties.

Much of the wetland work of FWS refuge managers is grounded in a pragmatism honed by professional experience doing wildlife conservation in severely altered landscapes. Those natural appearing wetlands in most waterfowl refuges are often a complex of managed artificial impoundments created from the very same farmland that stands just outside the refuge boundary. The refuge managers I interviewed sounded almost exasperated in the naiveté of any question about whether their ideal is a natural wetland system. In effect they are saying, “of course it is, but that is not an option anywhere in the U.S. except Alaska.” Below I present two examples from the discursive data that illustrate how the FWS managers wrestle with the contradictions of managing wildlife habitat in artificial environments:

The system is so artificial; it requires artificial means to provide habitat and resources. The system is so way out of whack with the natural system. . . . I think we’re at the point of no return, there is no way back. (Refuge manager 30s)

You have to look what was there initially or what has been altered in the environment that you can’t get a natural system back in there that works. So you create a somewhat natural system, a natural/artificial system where you actually do some water management to hold water a little longer in the fall . . . later in the spring, kind of scenario which is somewhat artificial. . . . You are not going to undo the millions of dollars of agriculture that has developed in this valley. But what you’re going to do is to restore and work with what you have left. . . . Once these features are in (referring to major agricultural drains and dikes), you try to put back what you can, but you can’t manage a system that doesn’t exist anymore. (Refuge manager, late 50s)

The ideal systems they are referring to are undeveloped estuaries, riverine floodplains and deltas, and prairie pothole environments such as those still found in much of northwestern and north central regions of North America. These are the Plains, Subarctic, and Arctic grassland, shrub-steppe, taiga and tundra areas that have the greatest degree of wetland “intactness.”

The degree of wholeness will ultimately govern the type of management that a wetland area will require, ranging from strict protection from any kind of alteration in a largely intact ‘pristine’ wetland community to the whole-scale wetland engineering that is often required in landscapes profoundly altered by extreme types of development such as by industrial agriculture, urbanization, hydroelectric dams and mining.

There is an inherent tension created between the need to balance the restoration of complex natural creek floodplain systems with the extensive water and vegetation management infrastructure and processes required for creating and maintaining waterfowl impoundments. Part of the tension is inherent to the way TNWR lands were purchased with Duck Stamp monies, which are funds generated by the sale of federal duck hunting licenses. Refuges purchased with duck stamp funding are created to benefit migratory waterfowl and are required to support a public hunt program, providing access for hunters to wetland habitat that will consistently support waterfowl.

There was a strong sense among refuge staff that since the TNWR was purchased with Duck Stamp funds that it is mandated to support waterfowl populations. Although open to bird-watching and environmental education year round, the primary user group targeted by TNWR is the nontribal duck hunter, with hunting the featured seasonal use of about 40% of the refuge acreage. The TNWR distributes an attractive TNWR brochure and hunt area map with detailed information about waterfowl hunting opportunities on the refuge (Refuge Brochure 2002).

Sometimes waterfowl impoundment management is critiqued as ‘single species management,’ enhancing one wildlife guild, in this case waterfowl, to the exclusion of all others. This is one of the major criticisms that the YNWRP directs toward the management of the TNWR: that its management is not holistic—focusing on whole natural systems—with potential detrimental effects on anadromous fish, such as listed steelhead. Tribal governments have also critiqued the FWS for their approach to endangered species as single species management conserving organisms in isolation from the community of which they are but one part (Wilkinson 1997).

The FWS as an agency has been vulnerable to that charge since the biodiversity movement began in the United States during the 1980s. However, all five FWS employees interviewed argue that their wetland management provides enhanced habitat values for a wide range of animal and plant species, including shorebirds, upland game birds, Neotropical migratory songbirds and many other wildlife and fish species. They do not see themselves as single species managers.

TNWR informational and interpretive materials and displays located at the refuge articulate a wetland enhancement model for refuge management of man-made wetland impoundments, intensively managed for migratory waterfowl and other kinds of wildlife, forced to replace the extensive areas of natural wetland habitats that were eliminated by over a century of agricultural development. The informational materials describe how management creates the habitats that ducks and other migratory and resident species can utilize to feed, rest and breed. An attractive full-color brochure describes the primary management approach at TNWR:

To provide more for wildlife, Refuge staff uses a variety of carefully chosen habitat management techniques to maintain, recover, or enhance habitat. Wildlife Management practices are used to mimic and/or enhance natural processes such as flooding and fire. Techniques such as water level manipulation, mowing, and burning are used on the Refuge.

Water level manipulation, a primary habitat management tool, is used to promote the diverse wetland plant growth that provides a variety of food and shelter choices for wildlife. Selected Toppenish Refuge marshes are flooded from September–October through May–June. Water from Toppenish Creek and delivered irrigation water, held on the Refuge by a system of dikes and water control structures, are used to carefully flood the natural wetland basin. Deeper water areas offer a safe resting haven for many birds.

In late spring (May–June) water levels are gradually lowered by drawdown and/or evaporation. This develops a productive wetland habitat that best benefits migratory and wintering waterfowl and other wildlife by allowing germination of seed-bearing plants for food and cover (Refuge Brochure 2002).

The FWS is sensitive to the charge that Toppenish Creek impoundments could be trapping listed steelhead. Certainly no FWS refuge wants to be accused of affecting any threatened or endangered species or decreasing the overall native biodiversity of their refuge. It would go against all that they stand for as FWS refuge program professionals. The senior refuge manager insisted that the FWS has no interest in impacting steelhead runs. The FWS thinks they can find a balance to maximize benefits for both anadromous fish and migratory waterfowl. There are trade-offs in managing impoundments for both fish and waterfowl. Creek in-stream flow requirements to protect steelhead will sometimes reduce waterfowl habitat availability and thereby decrease hunting opportunities.

The FWS contends that constructed wetlands in which water is continuously flowing through a defined thalweg mimics historic conditions of a braided multiple channeled stream (USGS 2003 Status Report). TNWR staffers actively participated in a study begun by USGS in 2001 to ascertain if TNWR impoundments were trapping steelhead (USGS 2003 Status Report). That study found a greater number of juvenile steelhead in the impoundments than anticipated. However, most fish appeared to be able to traverse the impoundments fairly quickly. The YNWRP has critiqued the USGS steelhead study as failing to monitor the fish early enough in the later winter and early spring, thereby missing some of the migration periods. The USGS monitored fish only during the highest peak flow and smolt movement periods in the spring.

Within the framework of artificial wetlands at TNWR, the FWS argues that it is trying to recreate or mimic natural historical processes of flooding and recession that formed the natural complexity of ponds on the Toppenish Creek floodplain. This would benefit both waterfowl and steelhead. This interview excerpt below from a FWS refuge manager illustrates this position:

In the sense that I think we are trying to mimic what was happening in the valley, years and years ago. Natural historic conditions are what we use for biological integrity, restoring things back to their functioning natural historic conditions. . . . But if we had the entire valley then I think the only way to go would be try to restore those to the conditions of many branches of wetlands, mimicking what was happening with the beaver, and the logjams. A combination of small wetlands, old oxbows, and of

course the meadows that just up in the spring, maybe up with the winter freshets, May flooding. (Refuge manager, early 50s)

One limitation for the FWS program is the logistical challenge of fully restoring the historical conditions and functional processes on the Service's entire 2,000 discontinuous acres surrounded by agricultural tracts, thus forcing them to try to prioritize what they can accomplish. They have concluded that highest value of TNWR is providing abundant waterfowl food plants in the fall and winter, requiring timely water and vegetation management for much of the growing season. In effect this moist soil type of wetland impoundment management to produce a crop of wild small-seeded annual plants to feed wintering waterfowl has some similarity to flood irrigated agriculture producing domestic grains or pasture. However, it means that they cannot provide good brood habitat as their draw-downs leave the ponds dry. One TNWR staffer described the juggling of approaches that is the hallmark of adaptive management on a waterfowl refuge:

We do some farming (referring to some actual provisioning of waterfowl food using domestic grain crops), but it depends on the goals of the project. . . . We also do some restoration, that's our goal in the uplands to plant native vegetation. It depends on the area. We try to manage the area as natural as we can.

The FWS approach is grounded in the collective experience of wetland managers developing impoundments for waterfowl in the Mid-Atlantic, Midwest, Pacific Northwest, the Central Valley of California and the Mississippi Valley for over 70 years. The art and science of waterfowl food production and creating nesting habitat was first developed by FWS and state game biologists searching for key habitat components to restore declining waterfowl populations suffering from habitat loss and overhunting. Ultimately all FWS managers interviewed agree that their professional wildlife objectives are best satisfied by maintaining a balance between the intensive management of waterfowl impoundments and the ideal of protecting natural functioning, self-regulating marsh complexes supporting a diversity of native plant, wildlife and fish species.

YNWRP Ideals

YN managers, biologists and biological technicians, also describe trying to maintain that balance between management and naturalness in their wetland landscapes. As one 40-year-old nontribal YNWRP biologist said, “We are not restoring wilderness, we are not completely doing 100% natural restoration.” The restoring of or mimicking natural historic condition is a key theme of the YNWRP wetland program. Like the FWS, the YNWRP is pragmatic about the challenge of restoring the entire Toppenish Creek and Satus Creek watersheds, although because much of the area is under Yakama tribal ownership, the possibilities of success through integrated planning are far greater than for the FWS. The key motivation for the YN program is restoring the historical functionality of the wetlands for anadromous fish and wildlife values, for culturally important plant resources such as tules, food and medicinal plants, and for flood control, surface water storage and groundwater recharge important for the health of the entire Yakima Basin landscape and the human and biological community. The idea of linking ecological and Yakama cultural restoration was expressed by both a Yakama program manager and one of his nontribal biologists:

To [the biologists], they think the physical release of these locally extirpated species is restoration. It’s only the beginning. They haven’t been fully restored until the Yakama can partake of them again as food (Yakama program manager, 50s).

A lot of what we’re doing is restoration because we’re trying to bring back native conditions and what existed historically, . . . what we’re doing is trying to bring back the cultural and traditional values of the Yakama people (nontribal YNWRP biologist, 40s).

This is restoration of a useful cultural landscape, not “bringing back a museum piece which we’re not going to use” as described by a 40-year-old nontribal biologist, but instead seeking to encourage a suite of species that are valuable to the Yakama people. The YNWRP have described their management approach on their website and in various public forums as “providing scientifically based but culturally informed methods and strategies for wildlife management within the reservation and ceded lands of the Yakama people.” (YNWRP website).

The concept of the restoration of Toppenish and Satus Creek wetlands, as opposed to the wetland enhancement for waterfowl populations as practiced by the FWS in the Toppenish Refuge, has strong consensus within the YNWRP and other YN natural resource programs, and is clearly supported by tribal leadership. Restoration of wetlands and other habitats and wildlife and fisheries populations has an internal logic that resonates within the Yakama community at many levels, including traditional and religious beliefs, and subsistence and commercial activities.

The Yakama oral tradition includes stories that tell about the many animals and plants that inhabit the area and in doing so also tell about who the Yakama are as a people. Whenever individual species featured in the Yakama traditions and stories such as huckleberries or sage grouse have come under threat, the tribal leadership has ruled that the tribe must take decisive action and directs the various Yakama natural resource departments to employ a range of conservation activities on various fronts, involving political and legal action, land management, species re-introductions and public outreach (Siegel et al. 2007).

The Yakama leadership has been resolute in asserting tribal interests in protecting anadromous fisheries in the Columbia River since signing the Treaty of 1855. The various YN restoration programs for the Yakima River and its tributaries including Toppenish and Satus Creeks flow directly from that interest. I have heard tribal leaders articulate the connections between restoring creeks and riparian vegetation, tules, medicinal plants and salmon, relating that if these species can be restored the ducks and geese will come back as well. A fully restored Yakama Reservation can serve its ultimate purpose of sustaining the Yakama people, “the subsistence of an ancient culture and way of life and the maintenance of the natural conditions that correspond to that way of life.” (Yakama Program Manager, early 60s).

Yakama traditionalists see restoration as a “cleaning up process...bringing the land back” to a healthier condition (Yakama Program Manager, 70s). Restoration, in this case, taking down dikes, reconnecting stream channels, and re-introducing locally extirpated species, takes

advantage of the inherent ability of nature to heal itself and find its own equilibrium, “to take its course.”

There is also a countervailing argument among some of the Yakama community that considers intensive land management and assuming human beings are somehow in control of nature as hubris. This philosophy says nature is the best land manager. Traditionally with the exception of harvesting plants and animals on a regular seasonal basis, grazing their horses, and prescribed burning, wetlands and other natural features in Yakama territory were “left alone.” A tule gatherer (Appendix A) articulated the position about the hubris of management very clearly:

There is no such thing as management. There is not total control or management. If Mother Nature wants to be managed, it will allow it. By fire, by floods that clean out the debris. Nature manages itself, Mother Nature. We don't see a division between humans and Nature, that relationship is one of cooperation. There is too much interference; we need to help her get back to where she was. Once we get back to the way it was, we need to then let it be. (Tule gatherer, female, 30s).

In agreement with the tule gatherer quoted above, a Yakama program manager in discussing natural stream flow, made the analogy of a Yakama community policy toward wild fire, saying that “water is like a forest fire, they [land managers] should let it burn” (Program manager, 50s). His policy of ‘let it flow’ includes restoring creek hydrology to its native state, including its ability to flood, and then leaving it alone.

Concerns about land management voiced by the most traditional Yakama informants appear to stem from their traditional religious beliefs and ethical stance toward nature based on kinship and reciprocity. The three oldest Yakama program managers described rules of conduct that govern the Yakama's behavior toward game, fish and plants that are said to have been given to the people by the Creator. The 50-year-old Yakama manager briefly mentioned a rule to not dig up the ground. The philosophy about proper conduct toward the Earth has a definite basis in the historical and current Wáshat religion of Mid-Columbia Indian people. Smohalla, a mid-nineteenth century prophet from Priest Rapids on the Columbia River, plainly rejected the Euro-American worldview and relationship to land:

You asked me to plow the ground! Shall I take a knife and tear by mother's bosom?
You ask me to dig for stone. Shall I dig under her skin for her bones? Then when I die I
cannot enter her body to be born again. You ask me to cut grass and make hay and sell
it, and be rich like white men. But how dare I cut off my mother's hair?

. . . it is not right to tear up and mutilate the earth as white men do . . . the white man
tears up large tracts of land, runs deep ditches, cuts down forests, and changes the
whole face of the earth . . . Every honest man knows in his heart that this is all wrong
(Smohalla quoted from Mooney 1896).

In addition to their rejection of land development on spiritual and ethical grounds, Yakama traditionalists may also oppose adopting a Euro-American cultural approach to wetland management grounded in agriculture, as a rejection of the Yakama cultural identity as a salmon fishing people. The key cultural factors of Yakama spirituality and identity may explain why, although exposed to agriculture and ranching for over 170 years, most Yakama do not embrace the dominant commercial agricultural model as practiced in the valley portion of their reservation, famous for its extensive fruit, hops and other row crops (most Yakama-owned farmland is leased to nontribal growers).

In terms of wetland management, the 50-year-old Yakama program manager felt his FWS counterparts were trapped in a cultural model of wetlands managed like farmland, "Their models are tree farms, ranching, and various forms of agriculture." As described above, his preferred approach to managing wetlands was to restore them and then leave them alone. One sentiment expressed by two elder Yakama informants is that if the Creator wanted a pond in an area, he would have created it with subsurface soil and rock that held water.

Tribal leaders often speak about the threat of unforeseen, unintended consequences of land development and management. This position is seconded by at least one of the nontribal YNWRP biologists who fear that impounding water for waterfowl or other purposes can compound the problem further, damaging the wetland resource, "instituting one artificial fix for an artificially created problem." (YNWRP biologist, 40s).

The nontribal biologists of the YNWRP and FWS consider some forms of active wetland management as appropriate to use in the human-dominated Yakima Basin landscape. One form



Figure 28. Prescribed burning of tule marshes on the Satus Wildlife Management Area.

of management that warrants discussion here is use of prescribed fire in wetlands. The FWS sometimes uses fire on TNWR to control a few invasive plant species. Over the last number of years, the YNWRP has regularly used fire on their Toppenish Creek wetlands and on the Satus Wildlife Area (Figure 28). After tules are harvested on reservation wetlands, the remaining stems are burned in early fall, and then the ponds are reflooded in the fall for wintering waterfowl. Burning appears to stimulate the growth of new tules the following spring.

Although there is widespread historic and contemporary uses of prescribed fire by the Yakama community in the mountains and foothills to rejuvenate huckleberry and root meadow areas, there is little evidence that marshes were regularly burned (Eugene Hunn, personal communication). It is possible that since the Yakima Valley has become dominated by agriculture, that some of the local knowledge of marsh management, including the use of fire, has been lost. Some people in the Yakama community are supportive of the present use of fire to manage the tule marshes, while others are unsure whether burning the tules is appropriate.

Nontribal and tribal biologists employed by the YNWRP and other Yakama natural resource programs have to negotiate a nuanced position on scientific and technical land and wildlife

management approaches that are acceptable to Yakama cultural leaders grown leery of them based on the community's disastrous experiences with the federal hydro system engineered on the Columbia and Yakima Rivers that destroyed their traditional fishery.

In balancing technical approaches and Yakama cultural sensitivities in management of wetlands, the YNWRP does not forbid the use of moving dirt in wetlands, including heavy equipment. However the heavy equipment work I observed in YNWRP wetlands was focused on restoring the historic grade of Toppenish Creek, reconnecting dewatered segments of old stream channels, allowing for stream flow through former agricultural impoundments being converted to emergent marsh, and permitting creek floodwaters to flow past agricultural drains and roadways restoring marshland connectivity. Bulldozers and other heavy equipment were used to cut heavy wetland vegetation in preparation for prescribed burning and fall re-flood up, and to maintain dikes and road networks just as they are on all FWS refuges.

In comparing the two agencies, the primary differences between the water control approach of the FWS and YNWRP appears to be the Service's greater reliance on more permanent engineered water control structures, pumps, dikes and fish screens than the YNWRP. However, the YNWRP approach itself has changed over time as the program learned through trial and error, with the earliest water infrastructure built at South Lateral A in the 1990s being more like the FWS highly engineered structures than later work on the tract and at the Satus.

The YNWRP low tech water control infrastructure typically consists of small flashboard culverts and simple rock spillways that can be replaced if the structure is damaged by flooding or the creek moves laterally. When the river floods the simple structures are designed to survive being overtopped with water without washing out. The spillways allow the water to flow out more evenly over the floodplain, reducing the energy of the water by spreading it out more vertically into the wetland system. The YN has the luxury of owning and managing a considerably greater portion of the floodplain than the FWS and are able to allow floodwaters to spread out well beyond the immediate riparian acreage.

While part of the motivation for the less engineered water structure is its simplicity in construction and operation, another motivation is the recognition that Toppenish Creek and other anastomosed streams frequently move laterally across their broad floodplains. Yakama program managers and biologists are conscious about leaving behind substantial concrete and steel monuments to their stupidity. In drawing a contrast between his approach to that of the FWS, one senior nontribal YNWRP biologist has thought of patenting his own unique brand of water management, calling it the “stupid, lazy, and cheap” approach to restoration. Stupid and lazy because it should be easy to engineer, construct and operate, and cheap, because the YNWRP favors less expensive alternatives to highly engineered structures used by the FWS, often costing tens of thousands of dollars, which are easily damaged by frequent flooding. Many expensive and highly engineered water structures in the Pacific Northwest and elsewhere in the arid West have been left high and dry when flooding streams changed their course.

Wetland management by the YNWRP has been greatly influenced by the dramatic success of their restoration activities at a former Toppenish Creek farm tract of 600 acres known as the South Lateral A Tract. Under the direction of the YN interdisciplinary team and utilizing survey and engineering services of the sportsmen’s group, Ducks Unlimited, and a fluvial geomorphologist contractor, restorative engineering was instituted reconnecting the historic normative flow of dewatered blocked stream channels and former emergent marshlands, which had not received consistent stream flow for over 50 years. Numerous grade control structures were employed on Toppenish Creek to lift the water level in the incised channels, in an attempt to restore the historical stream grade. They were designed for easy fish passage, both for smolts and adults (Figure 29).

YNWRP biologists found that once they ‘fixed’ the normative hydrology in this portion of Toppenish Creek a rich wetland plant community dominated by tules, wapato and burreed (*Sparganium* spp.) spontaneously emerged, having remained dormant in the seed bed for at least 50 years. An important aspect of ecological restoration is trying to re-create a self-regulating system, so “that it runs on its own.” The YNWRP is convinced that bringing back native



Figure 29. Grade control structure on Toppenish Creek. This lifts the water level, flooding dewatered historic channels and decreasing erosion, while allowing anadromous fish passage.

historical conditions encourages the development of a natural community which will be more effectively self-sustaining and productive of plants and animals significant to the Yakama people.

The decline of various traditional subsistence foods, including game, fish and plants, over the last 50–100 years is often equated with the loss of Yakama culture. The 50-year-old Yakama program manager briefly discussed the historical relationship of the Yakama with their living resources, their subsequent loss and recent restoration:

The Indians didn't live off the land; it took management and hard work. . . . Why have some animals disappeared today? . . . We weren't following the laws [Laws of the Creator, governing the harvest of game, fish and plants]. It is why they are coming back. It has to do with following the laws, showing proper respect. . . . Losing bighorn sheep, sage grouse and pronghorn . . . is like losing our language, losing our culture.

The restoration of the bison (tsoo-thlum), sage grouse, bighorn sheep, chokecherries and other Yakama traditional food resources are seen as part of the healing process assisting in the revival of a community vulnerable to diabetes and other dietary disease (YNWRP website). An overarching theme of the YNWRP states that ecological restoration in the Yakima Basin closely

equates with Yakama cultural restoration. A 40-year-old nontribal YNWRP biologist described the principle that guides his program:

It turns out the management that you want to benefit the natural resources is the same management you would use to manage the areas for cultural resources, for the traditional use of the Yakama people. We are finding out here that it is the same thing: restoring native conditions, restoring native wildlife and fish habitat, and whatever else vegetation communities, and cultural restoration is pretty much the same thing. That's a real important perspective according to the Yakama Nation. It will work anywhere that I can think of. You got to restore the historical system.

When Arlen Washines, a former tribal councilman became YNWRP manager in 2003, he brought a new cultural and political perspective that allowed the program to more fully incorporate YN traditional values with contemporary scientific approaches to ecological and cultural restoration.

Comparing Ideals of the FWS and YNWRP

In the final analysis, perhaps the main differences between the FWS and YNWRP are not so much in their wetland management ideals, but in privileging different consumptive or nonconsumptive uses in wetlands, which in part depend on their different approaches to management. The FWS privileges duck hunters and bird watchers depending on season, both users seeking birds attracted to TNWR's impoundments with their low stature vegetation. The YNWRP privileges Yakama tribal members collecting useful and edible plants or hunting birds and small game, but also nontribal bird hunters during open season. There is far less tendency to remove tall vegetation and monotypic stands of tules or cattails in Yakama managed wetlands. This may have the added benefit of attracting more breeding ducks attracted to potential brood cover, but that is impossible to prove.

The end result of these differences in cultural and biological values is subtly apparent in comparing wetlands managed by the FWS and YNWRP. Managed under different water management regimes, sometimes with different levels of access to water, neighboring wetlands in the Toppenish Creek floodplains appear to be developing different plant community

trajectories over time. For example, TNWR has few mature willows lining Toppenish Creek while South Lateral A's Toppenish Creek frontage supports a thick mature riparian strip. Also, TNWR impoundments were plagued by cocklebur in 2005–7, ironically a problem of 'drier' moist soil conditions, while YN South Lateral A Tract located just upstream was not. The YNWRP biologists attribute the problem of cocklebur at TNWR and of knotgrass on the Barker Ranch, a private gun club near Horn Rapids Dam on the Lower Columbia, to applying moist soil management for too many years in a row. The FWS biologist/managers described to me how moist soil management requires periodic resetting of the successional trajectory of the vegetation or undesirable weedy and woody species take over (see Appendix C). The lack of summer water on TNWR may also create dry conditions that favor cocklebur.

Temporal Aspects of Wetland Management

I had anticipated that the FWS and YNWRP would have a different sense of time, grounded in their contrasting land management goals and their differing organizational histories in the Yakima Basin. For the FWS, I thought they would envision their wetland management activities as having relatively short time horizons, counted in periods of years or perhaps decades. This is in part the nature of wetland vegetation resources which are often relatively short-lived and may naturally renew themselves yearly, but is also due to the planning process of the federal land management agencies, like the FWS with yearly funding cycles and comprehensive conservation plans for refuges having 15-year time horizons. Part of this is also a factor of the youth of the entire refuge system. The oldest federal wildlife refuges in the United States are only 100 years old. The first was established to protect nesting water birds in the Florida Keys in 1904, with many established in the 1960s as was Toppenish NWR.

The YNWRP and other Yakama tribal land management programs are grounded in a vision of the Yakama people inhabiting this core area for millennia, with special reverence for their tribal reservation lands, as well as the usual and accustomed fishing and foraging sites off reservation stipulated in the Treaty of 1855. The Yakama community's lengthy residence

as foragers in the diverse ecosystems of the Pacific Northwest gives the community particular insight into the long term use and management of their landscape. YN traditionalists sometimes say the Yakama should plan for seven generations in the future, an idea common to many Indian nations but is often attributed to the Iroquois. Subsequently I had anticipated that the YNWRP would be motivated to plan wetland management activities with long time horizons of 50–100 years or more.

The FWS managers and biologists were actively involved in a comprehensive conservation planning process (CCP) for some of the complex of four refuges located on the Mid-Columbia River during the time of these interviews. The CCP process, which slated for a 15 year planning horizon, clearly influenced their discussion of the timeframes for wetland management in the TNWR. Based on the interviews it appears all the FWS biologist/managers were looking at managing refuge wetlands and related habitats in a time horizon of 1–50 years.

A 50-year-old FWS manager discussed wetland impoundments being managed on a 5–25 year cycle, with restoration of riparian areas taking 50 years or more. This manager described how wetland planning periods are in part set based on the working life of water control structures, how long before wetlands become silted in or begin to experience ecological succession and undesirable functional changes.

Another consideration was the paradigmatic changes in the science of wetland management itself over time, sometimes encouraging a major reworking of how wetlands are managed. For example, small pushup islands for waterfowl nesting were established in TNWR impoundments in the 1980s based on waterfowl research conducted in the Midwestern United States. They were eventually found to be ineffective as waterfowl breeding habitat at TNWR and other refuges throughout the country. Removing them served as a major justification for re-engineering impoundments in 1995. Thus a breeding bird management model was discredited within 10–15 years due to further developments in wetland science. The science and art of wetland management continues to evolve, both through a formal adaptive management process and local experience.

A 30-year-old FWS manager mentioned that his ideas about time horizons would be influenced by the 15 year CCP planning period as well as by anticipating how long he planned on staying in the position and looking at the contribution he could make in the 5–7 years he was going to be there and incorporating that into the CCP. He described how it takes vision to plan riparian work, knowing that he probably would never see it completed. One has to be satisfied being “one cog or one spoke in a bigger wheel, that’s trying to be put together. Maybe that’s your role for those numbers of years you’re there, you try to get that one thing accomplished.”

The issue of FWS employment tenure at TNWR is troubling to the YN. Yakama program managers question the dedication of refuge managers and other federal program officials who typically stay at a duty station for a number of years before moving on to other positions elsewhere in the country. The lands that they manage are not their permanent homes.

With regards to TNWR or the management of the National Bison Range, the Yakama are incredulous that anyone could question whether they could better manage TNWR than the FWS or whether the Salish-Kootenai who honor and revere bison, would not take better care of the NBR than FWS employees who are only there for a few years before they move on. That is one of the pervasive themes of any discussion of the TNWR cooperative agreement, that the Yakama people aren’t going anywhere; they have been living in the region for thousands of years. The Yakama Reservation and much of the Columbia Plateau is their home and they and other Columbia River treaty tribes should be given the opportunity to take more of a lead in managing it.

The 50-year-old FWS manager described how most wetland impoundment work shows very rapid vegetative response, with the best habitat functioning occurring within the first 5 years during the earliest stages of ecological succession. Beyond 5 years, more persistent weeds and perennial vegetation becomes established. Starting at about 10 years, perennial vegetation dominates, not unlike the condition of many TNWR impoundments today. The whole process is resetting plant succession through drying out the impoundment, disking, haying, and herbicide spraying, and prescribed burning (see Appendix C).

A FWS biologist and FWS equipment operator discussed the dichotomy of wetlands having an annual or semi-annual action plan, while the planning for and implementation of restoration of uplands or riparian areas would require decades. Long term plans can be undermined by multiple-year droughts or major floods, reverting management back to yearly action plans.

The FWS biologist made an interesting observation discussing how refuge managers may never get to see the full wildlife response to their habitat restoration. For example, it may be logistically possible to restore hundreds of acres of shrub-steppe, planted in native grasses, forbs and sage brush. But in 20–40 years, will it begin to support sage thrashers (*Oreoscoptes montanus*), sage sparrows (*Amphispiza belli*), and Brewer’s sparrows (*Spizella breweri*) as native steppe would do? At this early point in the multiple year process, he doesn’t know. While the FWS operates on annual budgets, refuge planning obviously does not. There appears to be a strong disconnect between annual operating budgets for refuges and the planning for ecological restoration and management, decades into the future. The FWS biologist stated it well, “You try to think into the future, but reality gets in the way of the future.”

In looking at the YN employees as a whole, both tribal and nontribal staffers, there appears to be some differences in their concepts of time in relation to their wetlands oriented work. Older Yakama informants appeared more likely to discuss longer time horizons than younger Yakama biologists and technicians. Nontribal YNWRP staff discussed wetland time horizons much like the FWS staff, comparing the rapid success observed in restoration of emergent marshes with the decades long development of riparian woodlands and upland creek terraces.

The three Yakama program managers who ranged in age from their 50s to 70s discussed reservation management, not only wetland management, in terms of a quarter century or more. One program manager in his 60s said he tries to look 250 years back, encompassing the early period of European contact, diplomatic relations and the setting aside of their reservation, and then 250 years into the future in his program.

The two 70-year-old Yakama program managers (Appendices A and B) are able to look back to working on reservation environmental issues over 40 years ago. These older informants

often reflect on the loss of Celilo Falls, possibly the premier Indian fishing and trading site in the Pacific Northwest, which disappeared under the waters of the Dalles Dam in 1957. The drowning of Celilo is a major touchstone for contemporary environmental awareness and activism for all the Columbia River tribes. There appears to be the sentiment that never again will the YN allow such an act of cultural genocide to happen to their people. The oldest Yakama program managers remember a time before most of the creeks had yet been fully channelized and wetlands drained, when wide riparian galleries still lined the creeks and many old-growth conifers still grew in the Cascade foothills. These oldest informants seemed to combine both a sense of patience with the restoration process but also keen frustration with the ecological and cultural losses that the reservation has incurred.

The Yakama program manager in his 50s questioned the very concept of long term planning for wetlands, seeing it as one of the negative consequences of the Yakama community's embrace of modernism, science and technology. He stated, there is "little future planning...except restoring them, putting them back, maintaining them." He thinks it's a lifetime plan but is hesitant of putting a time frame on it:

. . . getting caught up in our modern technological world of science. . . . We get our funding for performance. We get caught up; it forces us to put timeframes on things. . . . Funding mechanisms force us to get caught up in attitudes about achievement and failure, budgets and contracts.

Among the Yakama biotechnicians and biologists who are in their 20s to 40s, the dominant theme was "its going to take time, it doesn't happen overnight." Another theme was that "we are doing this for our children and future generations," they will be the ultimate beneficiaries of their efforts today. Restoring wetlands and riparian areas, controlling invasive weeds, and re-introducing extirpated species are ongoing long-term projects to benefit the Yakama community well into the future.

Nontribal YNWRP staff temporalized their projects at different scales depending on the habitat: floodplain marsh, riparian gallery, and creek terraces. A 40-year-old nontribal biologist

described how obviously he couldn't look 100 years in the future, but wanted a system of land management that was cost effective and sustainable today. He felt that protecting and managing wetlands on a 10-year horizon was too short of a time period to conserve the natural and cultural wetland resources of the Yakama people. Two other nontribal biologists, both in their 30s, mentioned 50–70 year time scales to restore the functionality of floodplain wetlands and other habitats, including restoring incised channels and lifting the stream to a natural grade after a long period of incisement.

Restoration of emergent marshes was particularly gratifying to both YNWRP and FWS biologists and managers because once the hydrology was reconnected the vegetation in the seed bank responds quickly (see Appendix C). Marshland also responds quickly to eliminating cattle grazing. Everyone recognized that restoring emergent marsh was relatively easy compared to that of other habitat types such as riparian forest and shrub steppe. Restoring later successional, woody vegetation takes time and great patience. One 30-year-old female YNWRP biologist made an interesting observation that “We live in a culture that wants to see instant results in putting in landscaping.”

Like the 30-year-old FWS manager above, the nontribal YNWRP biologist also thought about what she might be able to accomplish over the period of her employment such as 20–30 years or over the life of a specific project, such as beaver restoration operating on a 5 year plan. Part of her timeframe is based on the personal goals she has set for herself and part is based on her project's funding process. Four YNWRP staff mentioned funding driving temporal considerations, including two nontribal biologists (both 30 years old), a 50-year-old Yakama program manager and a 30-year-old female Yakama biotechnician.

In terms of temporal aspects of cultural models of wetland management, the main divisions appear to exist between the older tribal members and all other informants, both tribal and nontribal, YNWRP and FWS. Only the oldest tribal members have the full sense of what had been lost in the creeks and wetlands in the Toppenish watershed. Thus they also may be the only informants with a complete vision of what a restored basin might look like, how it might

function, and how it might be utilized by the community. All others have to take their vision of the future as an article of faith.

Summary

In analyzing the overall results of these questions on views of management, the differences between the YNWRP and FWS seemed to center on only a few areas. The FWS appeared to be more comfortable with technical fixes to wetland management problems on Toppenish Creek than the YNWRP. The Yakama community questions the value of water diversions and other major infrastructural development along waterways. In part this may be due to their extensive experience with hydro system development on the Columbia, Snake, and Yakima Rivers and its devastating impacts on their subsistence and commercial salmon fishery. There also may be a spiritual, ethical basis to the Yakama bias against intensive wetland management such as carried out by the FWS. Nontribal biologist/managers of both the FWS and YNWRP appear to be applying a nonspiritual environmental ethic to wetland issues in contrast to Yakama program managers, biotechnicians and biologists.

Project approaches that constitute aspects of ecological and species restoration appear to resonate better with Yakama community than enhancement approaches and may receive stronger political support from Tribal Council and Yakama program managers. YN restoration activities on the Yakima River and its tributaries such as Toppenish Creek are directly linked to the protection of Yakama tribal fisheries, a keystone of Yakama cultural identity and vitality. Restoration of tules, root crops and medicinal plants are cultural values that benefit from efforts to mitigate and restore lost fisheries.

In contrast, FWS concerns are firmly anchored in the management of migratory waterfowl which potentially puts them at odds with the needs of anadromous fish spawning in Toppenish Creek. Both agencies idealize a natural free flowing wetland system, and hope their wetland basin and creek management approaches can restore or at least mimic the historic dynamism and interconnectivity of a creek floodplain system.

In terms of temporal dimensions of wetland management, it appeared that younger Yakama informants might have more in common with nontribal biologists of both the YNWRP and FWS than their Yakama elders. Only the oldest Yakama program managers might possess the long term perspectives about conditions in the Yakima Basin prior to full agricultural development in order to make informed decisions about restoration activities of the YN programs. One elder Yakama program manager insists that current conditions have created shrinking expectations of what their tribal fishery and Yakima Basin ecosystems could be.

CHAPTER 6

THE SHIFTING FEDERAL-TRIBAL PARTNERSHIP TERRAIN: MEMORANDA OF AGREEMENT AND ANNUAL FUNDING AGREEMENTS

Much of the recent conflict between the FWS and YNWRP over the management of TNWR appears to focus on their perceived differences in managing wetlands as discussed in the previous chapter. However in actuality these differences in approach are dwarfed by a larger national issue of tribal sovereignty and the developing capacities of tribes to manage public lands, wildlife and fish resources formerly held in sole trust by the federal government, while federal land management agencies try to retain authority over their holdings. Developments in the Toppenish Valley mirrored this national debate. While the YN increasingly asserted great sovereignty over their reservation lands and resources, expanding their capabilities and rights to manage wildlife and fish populations in the Yakima Basin, the FWS was attempting to fully develop TNWR and maintain the overall integrity of the National Wildlife Refuge System.

The FWS Mid-Columbia Refuge Complex and Region 1 Offices and YNWRP have been deeply involved in the national debate over these issues with TNWR and Conboy Lake NWR serving as a focal backdrop. In this chapter I will demonstrate that the YN and FWS debate since the mid-1990s over the limits of tribal reservation sovereignty and whether National Wildlife Refuge management is an “inherently federal function” largely eclipsed debate over conflicting wetland management approaches of the two agencies, such as whether or not FWS impoundments threaten steelhead runs on Toppenish Creek, what one nontribal YNWRP biologist calls the “technical issues.”

I will show how the on-again/off-again negotiations over a Memorandum of Agreement between the FWS and the YNWRP, ultimately spanning 10 years, can be seen as part of a larger

national federal-tribal dialogue that began with changes in federal policy toward tribes including new federal legislation promoting tribal self-governance and sovereignty.

Changes in Department of Interior Policies toward Tribes in the 1990s

A number of executive orders and federal-tribal cooperative agreements announced in 1993–94 set the tone for expanded Native American autonomy and greater transparency and cooperation in DOI relations with tribal governments during the rest of the decade. Executive Order 3175 ordered all DOI agencies to insure trust resources of tribes are identified and protected in carrying out all DOI activities (Executive Order 1993). That might include reservation lands, reserved water rights and tribal subsistence resources such as fish and wildlife populations. The agencies were ordered to operate within a government to government relationship with tribes.

In November 1993, Secretary of the Interior Bruce Babbitt told the National Congress of American Indians that the federal government wanted to expand tribal autonomy and tribal responsibilities for public lands. This signaled to Native America that they had new partner in Washington, D.C., that might provide them opportunities to comanage federal lands (national parks, refuges, BLM lands and national forests) that had been excised from their reservations in the past 120 years.

An April 1994 presidential memorandum ordered all executive agencies to respect tribal sovereignty and reiterated the government to government relationship (Presidential Memorandum 1994). It ordered consultation with tribal governments prior to taking actions that affected tribes and tribal trust resources. Tribal rights and concerns were to be considered in planning and development of agency projects and programs. In June 1994, Ada Deer, the assistant secretary for Indian Affairs in DOI, sent a memo to the Assistant Secretary for Fish, Wildlife and Parks, DOI, citing the earlier executive orders, setting policy principles to define the relations of the federal government with tribes, including tribal sovereignty, self determination and self governance, trust and rights protections, the unique character of Indian natural

resources, and comanagement of natural resources by tribes and state or federal government (Deer Memorandum 1994). In October 1994, the Indian Self Determination Act of 1975 was amended as the Tribal Self Governance Act (TSGA), declaring that Indian tribal governments may contract with the DOI to carry out various activities on Department of Interior lands (FWS, NPS, BLM, and BOR) where tribes have geographic, historical and cultural ties (Tribal Self Governance Act 1994).

During this period the FWS was developing its own Native American Policy (Native American Policy 1994). At the national level, tribes were seeking to educate all federal agencies and nontribal American citizens about tribal sovereignty and trust resources including tribal reserve water rights, and the special reserved rights of some Native Americans to harvest fish and wildlife resources for subsistence and in the exercise of their traditional religion. The FWS released its Native American Policy in June 1994, citing improved communication with tribes, long range planning for listed species and tribal sovereignty issues (Native American Policy 1994).

The White Mountain Apache of Arizona signed a Memorandum of Understanding (MOU) with the FWS in December 1994, which discussed ecosystem management, endangered species and the trust responsibilities of the federal government toward the Apache (Apache MOU 1994). The Apache–FWS MOU was influential in the later development of Executive Order 3206 announced in 1997 which attempted to harmonize federal law and Indian law pertaining to the Endangered Species Act which had disproportionately burdened many Western tribes (Wilkinson 1997).

In the early 1990s, the Confederated Salish and Kootenai Tribes of Montana (CSKT) sought to have the management of the National Bison Range (NBR), a 27,000 acre FWS refuge complex embedded in their Flathead Indian Reservation, turned over to them (FWS refuge gossip—personal communication). The NBR discussion generated a lot of interest in Indian Country and in the environmental community, because of the iconic status of the buffalo and the national prominence of the refuge, one of the nation’s oldest, established by President Theodore

Roosevelt in 1908 and visited by up to 250,000 tourists a year. The CSKT seeking control of the NBR buffalo herd could be understood as an effective site of resistance, countering a vestige of the federal government's genocidal Indian policies of the nineteenth century and subsequent federal occupation of Indian lands. The NBR negotiation began a tortuous process, still ongoing as of June 2008, which led to short term but significant annual funding agreement between the CSKT and FWS during 2005–6 for various management activities on the NBR.

The fact that comanagement agreements were successfully negotiated during a period of favorable political and legal climate should come as no surprise. However, this development was in agreement with theoretical propositions of Pinkerton (1992) and Pyrstupa (1997) that an appropriate political and legal climate is an important prerequisite for the development of comanagement agreements.

Back in Toppenish, in keeping with new FWS policy to promote ecosystem management through better coordination with partners within watersheds and regionally, the TNWR management plan was revised in 1994 with greater emphasis on consultation with the Yakama Nation and Washington Department of Fish and Wildlife (TNWR Plan 1994). The FWS policy would soon be tested as the YNWRP purchased 1,360 acres of land in the Lower Toppenish Creek area bordering isolated TNWR tracts upstream from the main refuge area (1995 Refuge Narrative).

The Yakama Nation had passed a Water Code Law to regulate water use on the reservation in 1991 (Yakama Water Code 1991). Accordingly, the Yakama Nation fully expected TNWR to apply for hydraulic permits before undertaking any new impoundment projects that might affect water resources on the reservation (Hames 1993 memo). One of the YN concerns was the almost complete blockage of the main channel of Toppenish Creek by TNWR and nontribal duck clubs to divert water to fill their respective waterfowl impoundments. Some of these diversions had existed since at least until the early 1970s. Most TNWR and duck club diversions were not screened for fish, allowing them to be entrained into the TNWR ditch and impoundment system where they might be unable to escape (TNWR Biological Assessment 2006).

The biggest concern was for the Mid-Columbia River steelhead, a species that was showing precipitous declines, with a remnant population estimated at less than 100 adult fish spawners in Toppenish Creek by the mid-1990s, down from about a thousand a decade earlier. In December 1994, the YN Department of Natural Resources director wrote to the FWS Region 1 director in Portland about refuge water diversions affecting steelhead at TNWR (Yakama DNR 1994 memo). He asked the FWS to submit its water diversions to a full review and to begin the hydraulic permitting process with the Yakama Water Code Administrator and Yakama Nation Fisheries Program.

In late December 1994, TNWR notified the YNWRP of their plans to reconfigure impoundments in TNWR (TNWR 1994 memo). The YNWRP recommended that TNWR hold off on the work until water diversions and flow blockage issues were resolved. The result was a series of meetings between the TNWR and YN about Toppenish Creek diversions and their impacts on fisheries. In March 1995, the FWS Region 1 office responded to YN concerns by supporting a proposal for fish screening of refuge diversions using NPPC-BPA funds (Shake 1995 memo). They asked the YNWRP to coordinate with TNWR staff on fisheries issues.

The Yakama Nation government perceived negotiating with local FWS staff as falling far short of a true government to government relationship as stated in Department of Interior and FWS Native American policy. This request from the FWS appears to not recognize the sensitivity of the anadromous fish issue to the YN. The YN was in the midst of a huge battle with the BPA and NOAA Fisheries over treaty salmon fishing rights and the wholesale listing of endangered steelhead and Pacific salmon runs in the Columbia River during this period. The issue of steelhead passage through TNWR would eventually require a higher level of federal involvement than the local FWS refuge office, including input of the FWS Region 1 director in Portland, the office of the Director of the FWS in Washington D.C., and finally the Secretary of the Interior.

The TNWR Management Controversy

The Tribal Self-Governance Act, the White Mountain Apache MOU, the Salish and Kootenai negotiations over the Bison Range, and the lack of resolution over the issue of TNWR water diversions impacting steelhead passage, motivated the YN government to begin internal discussions to develop strategies to have TNWR and Conboy Lake NWR (CLNWR) returned to their control in 1994. The YN thought they had a very small window of opportunity to accomplish that goal (Selam 1995a memo). In February 1995, the YN sent a letter to the FWS Region 1 director to discuss cooperative management opportunities in the TNWR, CLNWR and Yakama Ceded Area (Selam 1995b memo). However within Yakama tribal government, the YN Tribal Council described this meeting with the FWS as the first policy meeting about fully transferring TNWR and CLNWR to the YN (Selam 1995c memo). The YNWRP construed some of the impoundment work in TNWR over the past year as a retaliatory response to the interest of the YN to repatriate refuge lands. TNWR was described by the YNWRP as poorly managed, blatantly employing unscreened water diversions, with new diversions planned in violation of the YN Water Code (Selam 1995c memo).

The FWS met with the YN in March 1995 and it was agreed that the YN would draft a preliminary Memorandum of Agreement (MOA) for a phased transfer of the refuges to the YN. Apparently the Region 1 Director thought he had the authority to turn over TNWR to the YN. Ultimately he was overruled by his superiors in Washington, DC (Scott Aikin, personal communication). The MOA was drafted by the YNWRP and was sent to the FWS and BIA for consideration. The MOA was a very detailed document which removed the FWS from most day to day management activities of the refuge, yet maintaining that the FWS continued to pay most of the refuge operating expenses including salaries, building maintenance and vehicles (Draft MOA 1995). Portions of the draft YN-FWS MOA appear to have used the White Mountain Apache-FWS MOU as a template. The draft MOA was fairly critical of the FWS and tried to encourage FWS cooperation by employing terminology commonly used by the FWS, including reference to the new FWS Native American Policy (Draft MOA 1995).

The FWS criticized the draft MOA as too specific, that it had a negative tone, and that it removed the FWS from management authority which they maintained violated the Refuge Administration Act (Bradley-Dwyer 1995 meeting). The YNWRP reported that the FWS was nervous about any land transfer and the adverse public opinion it would generate nationally. However, the FWS was supposedly not adverse to the YN contracting on-site management activities for the refuge, or a phased approach to that over several years.

FWS impoundment planning at TNWR proceeded despite the YN-FWS negotiations over TNWR and CLNWR. The TNWR managers gave the proposed impoundment work on TNWR a categorical exclusion under National Environmental Policy Act (NEPA) guidelines, ruling that the proposed wetland engineering work was excluded from requiring an environmental assessment because they considered the work as routine maintenance in keeping with prior management activities (NEPA Assessment 1995). This move was notable because it indicated that the TNWR was planning significant impoundment work with little oversight from other federal agencies or the YN, while at the same time their supervisory Region 1 office was discussing greater FWS-YN cooperation. It appeared that the local FWS refuge office was working at cross purposes to their regional supervisors in Portland, a point not lost on the Regional Director. From this juncture on, TNWR employees were no longer involved in the MOA negotiations, only employees from the FWS Region 1 director's office participated.

After consulting with superiors in Washington DC and legal council, the FWS ruled that transfer of refuge lands to the YN directly or to the BIA to be held in trust for the tribe, was prohibited by the Refuge System Administration Act (Dwyer 1995 memo). The FWS wanted to return the discussion to cooperative management at TNWR, including the major wetland enhancement project at TNWR, and resolving fish passage issues (Dwyer 1995 memo). The YN was invited to join these efforts including applying for a tribal self-governance 638 contract to manage aspects of the TNWR program. CLNWR administration was taken off the table because of "unique local management issues." at Conboy. The Glenwood area surrounding Conboy Lake

TNWR, located within the southwest part of the Yakama Reservation, is well known for its anti-Yakama sentiment among the White majority community.

The YNWRP felt that the FWS was not negotiating the MOA in good faith. The FWS was seen as withholding land capriciously, with the Regional Director reneging on what was thought to be a “done deal.” (Hames 1995 memo). According to the YN, the FWS was simply unwilling to transfer land to the YN or BIA, narrowly interpreting the Refuge System Administration Act to justify that decision (Hames 1995 memo). With regards to cooperation on wetland enhancement projects at TNWR, the YNWRP had not been consulted about the TNWR plans. To the YN, the FWS seemed to be violating both federal policy and their own departmental Native American policy for government to government relations to protect tribal resources and to include tribes in refuge planning.

The YNWRP wanted the TNWR managers to consult with the YN/BIA Interdisciplinary Team and Water Code administrator and also wanted an environmental assessment for the overall TNWR wetland enhancement project. YN legal council recommended that the TNWR staff cease making changes in TNWR impoundments pending the finalization of the MOA (Ogan 1995 memo). The TNWR staff felt that their refuge planning was sound and consistent with past planning efforts to achieve valley-wide wildlife goals.

The TNWR had taken a number of actions to address the water diversion issues including submitting a screening proposal to the NPPC – BPA for funding. The TNWR managers insisted on continuing their habitat management planning for the 230 acre project. It was described as “repairing existing levels and water control structures.” (TNWR Assessment 1995) The FWS insisted they would continue to communicate and coordinate with the YNWRP, insisting that they might not always agree with the YNWRP but that “our basic goals...are similar” (Hagedorn 1995 memo).

Based on their discussions with TNWR managers, the YNWRP thought they would be notified by the TNWR staff as soon as site-specific planning would begin. TNWR asked Washington Department of Fish and Wildlife (WDFW) and ACOE to review the project, but not

the YN. They both signed off, with the state requesting screening of water diversions. It appears that the FWS consulted with WDFW and ACOE without directly consulting with the YN Water Program, YN Fisheries or Wildlife Programs because they felt they would not receive a fair hearing. The YN made a strong effort to keep the TNWR wetlands work issue separate from the MOA negotiations. Those two issues implicate different levels of the FWS bureaucracy, with some overlap in the YN bureaucracy participating in both.

MOA negotiations between the FWS Region 1 director's office and YN continued. A new draft of the MOA written by the YN toned down some of the negative language in the first draft, but was largely similar to the first (June Draft MOA 1995). The YN clearly stated their goal of taking over TNWR in a multi-phased process, but would accept increasing levels of cooperation and management over time, until final resolution. The YN legal council attempted to convince the FWS solicitor that transfer of refuge lands was not precluded by the Refuge System Administration Act (Ogan-Peterson 1995 memo).

The FWS Region 1 office rewrote the draft MOA, producing a very simple document agreeing to cooperate with the YN in land acquisition, habitat management, monitoring and public use (July Draft MOA 1995). In later meetings of the YNWRP and the FWS Region 1 office, the YN asked that the discussion of the MOA and legality of refuge land transfer be elevated to the Regional Director himself (Bradley-Shake 1995 memo). The FWS Region 1 director asked the YN Tribal Council for a government to government meeting in early August 1995 (Spear 1995 memo).

The YN legal council briefed the tribal chairmen on the FWS position on land transfer and the MOA (Ogan-Selam 1995 memo). He suggested that the tribe enter into a self-governance (638) contract to manage TNWR as a significant first step in achieving their long-term goals of taking over the refuge. Tribal Council was also briefed by the YNWRP on the FWS lack of cooperation with the YN including developing the refuge against tribal council's wishes 30 years ago and planning the wetland enhancement project without YN input. TNWR was called a failed refuge by the YNWRP, a charge that has been repeated up to the present day.

Before the August meeting between the FWS Region 1 director and Tribal Council took place, the TNWR staff told the YNWRP that planning for the wetland enhancement project was completed and that the FWS would be moving dirt on the site in just two weeks (Hames-Stenvall 1995 meeting). The YNWRP recommended that TNWR staff adhere to YN regulations before proceeding with the project, including an YN hydraulic permit and getting reviews from the BIA, YN Department of Natural Resources and others.

The FWS Region 1 director proceeded to meet with Tribal Council, proposing a land exchange and a self-governance contract for TNWR. He was unwilling to discuss CLNWR at that time. The YN DNR insisted it wanted all reservation lands under YN jurisdiction. Some tribal leaders supported transfer of some parcels with the FWS to consolidate TNWR holdings into a contiguous block, while others argued for a self-governance contract for refuge management. One Yakama leader argued that fisheries, animal and plant resources were more important than the refuge land base itself.

A number of people who attended the meeting, both from the FWS and YN, told me that Yakama Tribal Council spoke bluntly with the FWS Region 1 director, possibly closing the door to greater FWS-YN cooperation for the time being (that door would remain closed for a decade). The Tribal Council on their part felt that they were being slighted by the FWS Region 1 director, arguing that the YN should petition the Secretary of Interior directly about a self-governance contract for TNWR. The YN wanted to get their Congressional delegation involved to help get TNWR transferred out of the NWR system. Later the FWS solicitor contacted the YN legal council to describe the requirements for refuge transfer to the BIA on behalf of the YN. The transfer would require the consent of the Secretary of the Interior after conferring with the Migratory Bird Conservation Commission and full repayment of the refuge acquisition costs to the Duck Stamp program fund.

In August 1995, the FWS main office in Washington, DC provided guidance to their regional offices about contracting with tribes. The FWS contended they could not give up complete authority over refuges to tribes, but wanted to cooperate with them whenever possible

in contracting various wildlife refuge, fish hatchery and listed species activities, consulting with the tribes on a government to government basis. The FWS set up a tribal liaison officer in each region and in Washington DC to help facilitate future consultations with tribes.

TNWR managers meet with the YN/BIA Interdisciplinary Team but refused to go through an environmental assessment (EA) process, declaring a categorical exclusion for the wetland work under NEPA. They also refuse to apply for a YN hydraulic permit. The meeting was quickly ended, recorded as the “shortest meeting on record,” leaving bad feelings on both sides (FWS-IDT meeting 1995).

While the YN considered that they had not been consulted in the planning of the project, the TNWR project leader counted 16 meetings and an equal number of phone calls about the issue. He felt he was consulting with YNWRP staff that lacked the authority to make decisions. The FWS contended it did not require a YN hydraulic permit or other clearances from the YN about TNWR and requested a meeting with their superiors in the YN DNR. The YNWRP thought that by blocking their consultation on the project and avoiding the requirements under YN water code the TNWR staffers were retaliating against the YN for wanting to repatriate TNWR.

The TNWR staff thought these assessments and permit requirements were simply the YNWRP playing politics, using YN regulations to harass them and show them in a poor light with their superiors so that land transfer might become more likely. After further discussions between the TNWR manager and YN DNR director the YN Water Code administrator still insisted on a thorough environmental assessment and hydraulic permit application from the FWS to allow the TNWR project to go forward.

TNWR notified the YN DNR mid September 1995 that they were moving dirt at TNWR starting immediately. A few days later the YN water department served a cease and desist order to halt the wetlands work. After a short delay the TNWR work resumed and was completed by the end of the week. The TNWR notified the BIA office and not the YN when they completed their work. The entire project covered 230 acres, and included re-engineering wetland



Figure 30. Wetland enhancement project at Robbin's Road on Toppenish Refuge, 1995. Photo by David Linehan.

impoundments, removal of nesting islands, and transforming former crop fields into diked impoundments (Figure 30).

Later the YN Water Code administer suggested a lawsuit against TNWR for breaking YN regulations. He called for a meeting of the Tribal Council. Council was briefed on the TNWR wetland work. The TNWR was accused of contravening YN law, federal laws and policies; of not complying with NEPA guidelines, and of contravening its own Native American policy by refusing to consult with Yakama tribe or BIA, while agreeing to consult with the state and ACOE, the last of which was construed as an act of racism. To the YN it certainly was not a government to government relationship. They felt TNWR staffers were flouting YN treaty rights to manage their own reservation and natural resources.

In the Yakama Tribal Council chambers, the TNWR MOA and the TNWR refuge impoundment proposal issue became fully joined for the first time. Tribal Council sent a letter to FWS Region 1 director expressing their displeasure at what they saw as his snubbing of them over sovereignty rights within their reservation by his rejection of the draft MOA (Selam-Spear 1995 memo).

To the Council, the implementation of the TNWR wetland enhancement project without tribal consultation was indicative of FWS rejection of YN sovereignty. FWS actions at TNWR were described as defensive and retaliatory. The YN was angry that TNWR did not go through

the YN water code permitting process, instead being told by the FWS solicitor to ignore YN regulations. The YN argued that the FWS disregarded its own Native American policy, policies of the DOI, and two executive orders. The TNWR was chided that by consulting with the WDFW and not the YNWRP, it showed their distaste of working with the YN.

Tribal Council suggested negotiating a 638 contract to begin to repair the damaged relationship and to help the TNWR reach its full potential, as its natural resources “know no boundaries” (Selam-Spear 1995 memo). The Tribal Council letter suggests that more holistic approaches toward the management of the Toppenish Creek corridor would be more cost effective in achieving both the FWS and YN goals for the area. The YN requested a true government to government negotiation. The letter was also sent to the Director of the FWS in Washington, D.C.

During this period, the YN received briefings on the progress of the National Bison Range negotiation from their legal council. The FWS Directorate in Washington D.C. regarded the overall administration of any NWR as an “inherently federal activity” or function. However, the FWS was willing to enter into 638 contracts with tribes to carry out various refuge programs, for example, managing a refuge visitor center, conducting wildlife surveys, or carrying out general maintenance activities. The ruling on the NBR would rest on the interpretation of ‘inherently federal activity’ by the Secretary of Interior.

Later the Yakima Agency BIA office wrote the FWS Region 1 director to bring the FWS to task for neglecting trust responsibilities to the YN and not conducting a good faith NEPA review for TNWR work (BIA 1995 memo). The BIA scolded the FWS for not affording the BIA, their sister DOI agency, the chance to review their work. The BIA thought the categorical exclusion for the TNWR work under NEPA was premature in the absence of any public input. The BIA as the federal trustee for the tribes requires any federal projects on reservation to address all tribal permits and clearances. The BIA contended that the FWS needed to apply for a YN hydraulic permit despite their solicitor’s opinion that by doing so they would be setting precedent. In fact, the precedent had already been set as the BIA and BOR had already applied for YN hydraulic

permits prior to the FWS project. The BIA asked the FWS to review its policies and expected that in the future the FWS would approach the BIA and YN during the initial stages of project development and show a willingness to work with the YN and BIA in good faith.

The YN sent a letter to the Director of the FWS in Washington D.C. about the stumbling TNWR negotiations. The YN wanted to begin the process of negotiating a 638 contract for the management of both TNWR and CLNWR. If the FWS director refused the tribe would seek assistance of their Congressional delegation to have the two refuges removed from the NWR system. Copies of the letter were sent to the Secretary of the Interior, the assistant director for Indian Affairs, DOI and the FWS Region 1 director. The FWS Region 1 director responded for the FWS director in Washington DC. He discussed both Self Determination Act 638 contracts and Self Governance Act 458 contracts. Because the YN was not a self-governance tribe under federal law (a party to the Indian Self Organization Act of 1934), they were only eligible for a 638 contract.

In the 1995 TNWR narrative the TNWR staff claim they were blindsided by plans of the YN to repatriate TNWR or apply for a 638 contract to manage it (1995 Refuge Narrative). The TNWR staff viewed any 638 contract as discretionary, not a tribal entitlement. Where the YN read ‘repatriation’ and ‘sovereignty’ the FWS read ‘cooperative arrangements’ and a ‘management role for the YNWRP’. As per a government to government basis TNWR MOA negotiations took place at the FWS regional level, with TNWR staff shut out of the process at the request of the YN who saw local refuge personnel as uncooperative. The MOA process was certainly influenced by the Bison Range discussion. However the FWS Region 1 director declared the FWS could not divest from TNWR or give up the inherently federal function of overall refuge management as stipulated in the Refuge System Administration Act. The FWS thought the YN had no jurisdiction over lands held in fee title within the Yakama Reservation. Lands held in fee title in the heavily allotted agricultural zone, despite being located within the Yakama Reservation boundary, are technically outside Yakama tribal government jurisdiction, a

controversial U.S. Supreme Court ruling from *Brendale v. Yakima Indian Nation* (1989) that is still being debated to this day.

Conserving Steelhead, the Mid-Columbia “Spotted Owl”

The TNWR MOA was put on the backburner for the next 5 years and there appeared to be little significant discussion between the FWS and YNWRP about TNWR. National FWS policy and the refuge planning process underwent major changes in 1997, following Congressional passage of the National Wildlife Refuge System Improvement Act (1997). This legislation amended the 1966 National Wildlife Refuge System Administration Act and provided new guidance for the management of the system. It provided a new statutory mission statement and directed that all wildlife refuges are to be managed as a part of a national system of lands and waters devoted to conserving wildlife, and maintaining the biological integrity of ecosystems. Two years later the FWS refuge system visioning and planning framework called “Fulfilling the Promise” highlighted the importance of refuges as “anchors of biodiversity and ecosystem-led conservation.” (FWS Fulfilling the Promise 1999).

The FWS began submitting site plans for TNWR wetland work to the YN and all county, state and federal agencies, including projects for restoring and enhancing 1413 acres between 1996–98, including 712 acres of wetland and riparian area. TNWR also conducted more outreach during the period, informing the public about their wetland restoration activities and the success of moist soil unit draw downs attracting more ducks and shorebirds. The FWS held a dedication ceremony at TNWR to showcase their wetland restoration work and new visitor facilities. The YNWRP did not participate. Hunting blinds were reconfigured and improved, with 48 blinds reduced to 16. The refuge would eventually be named an important bird area by the Audubon Society in 2003.

All these activities appeared to be designed to establish a stronger base of political support for the continuation of sole FWS control of the refuge, weakening any support for turning it over to the YNWRP. During this period, the TNWR granted Yakama tribal members special use

permits to harvest tules for ceremonial use. However, tules continued to be viewed as undesirable species in refuge impoundments and some large tule stands were removed with heavy equipment or prescribed burning to create more open water for waterfowl.

During this period the Pacific salmon wars on the Columbia River were at their height, pitting the four treaty fishing tribes (Yakama, Warm Springs, Umatilla and Nez Perce), various nontribal commercial and sport fishing interests, and environmental organizations together against the BPA-DOE, ACOE, and NOAA Fisheries, who manage and provide operating permits for the Columbia River hydro system. The YN became one of the most vocal champions for the survival of Pacific salmon in a shifting political environment.

Their ongoing political, legal and ecological struggle to support salmon recovery has its basis in the inestimable value that the Yakama and other Northwest tribes attach to their continuing relationship with salmon, to fishing for, and consuming salmon as a traditional staple food. The Yakama chiefs insisted on retaining the rights to fish for salmon as the most important stipulation of the Yakama Treaty of 1855. Recall that in Yakama legend, it was the salmon which was the first animal who volunteered to feed the first human beings. The reciprocal relationship between the Yakama and salmon is one of the unwritten laws that govern Yakama behavior in the world given them by the Creator.

Despite Indian treaties and federal laws designed to conserve one of the most important subsistence and commercial fisheries in the world, the Columbia River salmon runs were decimated in less than 100 years, with many populations becoming extinct. During the late 1990s NOAA Fisheries listed 13 anadromous salmonid species from the Columbia River along with their designated critical habitat including various runs of steelhead and chinook, sockeye, chum, and coho salmon (Knight 2000). The Mid-Columbia steelhead was listed as a threatened species along with its critical habitat in 1999. Nontribal interests were concerned that the steelhead listing might cause a train wreck in the Yakima Basin similar to the debacle over the endangered northern spotted owl. The Yakima Basin communities took note of a similar conflict in the Methow River Valley in 1999, where summer water diversions for irrigation were shutdown

to protect endangered spring chinook and steelhead, with agricultural losses running into the millions of dollars.

The YN made considerable sacrifices to protect the steelhead, including decreasing and sometimes ceasing their Columbia River commercial harvest of unlisted fall Chinook salmon and closing all Yakama Reservation creeks to fishing to protect listed steelhead, thus limiting the incidental take of fish. They felt that BPA and NOAA Fisheries were trying to protect salmon “on the backs of the tribal fishermen ” limiting tribal harvest while doing little to protect salmon in the management of Columbia River hydro system or from nontribal commercial and sport fisheries.

The YN and other tribes contended that U.S. trust responsibility to them extends far beyond the species protections of the ESA to include an affirmative duty to restore tribal and federal lands and waters, so that tribes will be able to utilize fish, game and plant resources as promised in their treaties with the U.S. government. Under the tribal trust doctrine, the United States has the duty to protect tribal sovereignty, including protection of a tribal land base, a viable economy, self-government and cultural vitality (Wood 1994).

While the ESA protected breeding populations at a threshold of existence, it should be apparent that under the trust doctrine, U.S. responsibilities must require the restoration of species so that they can support sustainable tribal harvests (O’Neill 2003, Wood 2006). Conflicts over the Columbia River salmon fishery provided a continuous backdrop to the debate over TNWR, steelhead passage, and reservation control, bringing into question the trust responsibilities of the federal government toward the Yakama people, protecting their rights to a viable fishing economy, to govern themselves and manage their own natural resources within their reservation homeland.

At the listing of the steelhead, representatives of the YN Wildlife and Fisheries Programs met with all landowners on Toppenish Creek, including farmers, gun clubs and the FWS to discuss ways to eliminate steelhead passage issues while equitably distributing water under existing water rights. The goal was to informally address the steelhead issue and avoid federal

involvement which could lead to more restrictive regulations under the ESA. One goal was to make sure that water diverted from Toppenish Creek had a clear path back to the main channel so steelhead would not become trapped in dead end impoundments.

As a direct result of the steelhead listing, TNWR proposed to adapt their wetland management to accommodate both waterfowl and anadromous fish. This was a major paradigm shift in the management model of a ‘duck refuge’. In effect the TNWR needed to become less of a complex of closed duck ponds filled with diverted Toppenish Creek water and more of a flow-through complex of wetlands with water stair-stepped from impoundment to impoundment then back to the creek, with suitable fish passage between ponds. The YN, TNWR and the NPPC-BPA appeared at odds about how to address fish passage issues on one channel of Toppenish Creek for adult steelhead and for entrapment of steelhead smolts in refuge impoundments.

The YN advocated for a return to more natural hydrologic conditions in the refuge area, removing some of the refuge levees, which would eliminate the worst of the dead end impoundments. The TNWR instead wanted to modify their current impoundment management scheme to accommodate fish. The fisheries biologists of the NPPC-BPA appeared to prefer technical fixes for the problem, including fish screens, pumps, culvert modifications, and fish barriers. Some YNWRP biologists were concerned that fish screens would be installed without enough attention to maintaining sufficient instream flow for fish passage and survival.

TNWR presented a refuge management plan to address steelhead concerns, including a number of modifications for “fish friendly wetland management.” These wetland management modifications included:

No physical barriers on the main channel of Toppenish Creek; no false attraction flows from wetland outlets/culverts on side channels; only screened water for any wetlands without flow-through system; all unscreened water will have a thalweg and perceptible flow during smolt migration periods; all wetland receiving unscreened water will be dewatered in the spring in a manner to promote the safe return of fish to Toppenish Creek; and the refuge will monitor fish entrainment in wetlands. (Refuge Management Plan 2000)

TNWR went one step further by securing funding for monitoring wetlands for the presence of steelhead to prepare a biological assessment to consult with NOAA Fisheries under Section 7 of the Endangered Species Act. USGS conducted the steelhead study on TNWR from 2001–4, with fish nets deployed on two Toppenish Creek channels (Biological Assessment 2006). Both the YNWRP and FWS biologists and biological technicians assisted USGS on the study. More steelhead smolts were encountered in one channel, called Snake Creek, than anticipated, with the majority of fish recaptured moving through impoundments in 1–2 days, although some stayed in impoundments for weeks.

The YNWRP have criticized the study as not sampling early enough in the spring to capture the peak of steelhead smolt movements or that the trapping array was not efficient. Many of the tagged fish were not recaptured, yet were found downstream, suggesting that there were more routes in and out of the TNWR impoundments than first realized (Biological Assessment 2006). Some fish disappeared and were likely predated. Despite the study, the YNWRP has continued to critique the TNWR about possible blockage of steelhead passage in refuge impoundments and the unnatural hydrologic regime in the moist soil units, which are typically drawn down in late spring when snowmelt from the mountains would naturally be at its level of peak flood, filling wetland depressions. This study, even with its imperfections, did help relieve some of the YN's concerns about entrainment of steelhead on TNWR. The study suggests that fish screens as proposed by TNWR may not be needed as long as a more “natural” hydrologic regime is imposed.

Annual Funding Agreements between the FWS and Tribes

Little would be accomplished for another 4 years. However, in 2002 the DOI under the new Bush Administration dropped a bomb shell in the federal register, publishing a list of all federal programs eligible for annual funding agreements (AFA) with self-governance tribes, including the FWS, BLM, BOR, Minerals Management Service, National Park Service, Office of Surface Mining, and U.S. Geological Survey.

This announcement signaled a major shift in federal land management agency relations with tribes. Over the next year, at the request of self-governance tribes, each DOI bureau would negotiate annual funding agreements under tribal self-governance compacts. The memo listed all the protected areas eligible for self-governance contracts, including many of the most prominent refuges, national parks and national monuments in the nation, ranging from Arctic National Wildlife Refuge to Everglades National Park. TNWR or CLNWR were not listed, apparently because the YN was not listed as a self-governance tribe. However, the YN would be eligible for a self-determination act contract to run various refuge programs. Between 1996 and 2007, DOI agencies have entered into a number of AFA's with tribes, with the BOR and NPS leading the list with the BOR currently having seven AFA's with tribes with the NPS having five (King 2007).

In 2003 the deputy assistant secretary for Fish, Wildlife and Parks in the DOI had a series of meetings with the CSKT over an agreement to manage the NBR. Public Employees for Environmental Responsibility (PEER) and other national conservation and environmental organizations became alarmed that the AFA process left federal lands vulnerable to tribal actions that might harm wildlife populations or were incompatible with refuge or park management. Specifically, PEER was alarmed that the CSKT would build a new visitor center at NBR near an important birding area wetland that was also a popular big game viewing spot. The CSKT had also indicated that many FWS biologists and managers would be replaced by CSKT contractors. PEER saw this move by the DOI as a way to undermine the refuge system without any public input. These tribal negotiations appeared to be in line with the administration's political goals of privatizing some federal land activities, putting them under greater local control, and making federal lands generate more economic activity.

Prompted by these developments, in August 2003 the new YNWRP manager, Arlen Washines, was asked by YN DNR director to revisit the process of transferring TNWR to YN control (Palmer 2003 memo). In Jan 2004, the YNWRP manager wrote to the new FWS Region 1 director requesting a meeting about the transfer of the TNWR to the YNWRP (Washines 2004 memo). He wrote that the YNWRP already managed 16,000 ac of wetlands surrounding

the TNWR and “our differences in management style and technique” are creating “numerous problems in protecting wildlife resources” (Washines 2004 memo). He wanted to be able to include TNWR in YNWRP planning efforts. The YNWRP manager highlighted his program’s land management expertise and the holistic focus of their floodplain restoration program. The YNWRP had recently hired a restoration ecologist and upland bird biologist to support the YNWRP wildlife restoration efforts. The YNWRP was working with Ducks Unlimited and prominent fluvial geomorphologist Donald Reichmuth to help restore the hydrology of Toppenish and Satus Creeks to recreate or mimic the historic normative creek flow conditions before the area had been drained and replumbed for agricultural development (Tracy Hames, personal communication).

In response to the YNWRP overture, the FWS Region 1 director asked his regional chief of refuges, and Mid-Columbia Refuge Complex project leader, Gary Hagedorn, to arrange a meeting with the YNWRP (Allen-Washines 2004 memo). The refuge chief pointed out to the YNWRP that TNWR had been purchased with Duck Stamp funds, was an integral part of the refuge system and was being managed to fill its waterfowl conservation mission. He recognized the YN as a key partner needed for the success of TNWR. FWS-YN negotiations continued with a new draft MOA agreement written in February 2005 and signed soon after. I will present details on the MOA in Chapter 7.

While the YN and FWS were negotiating an agreement for TNWR, another tribe was finalizing an annual funding agreement for refuge management activities in Alaska. Although the NBR negotiation was more prominent, the first annual FWS–tribal funding agreement (AFA) was signed with the Council of Athabascan Tribal Governments for Yukon Flats NWR in 2004, after two years of negotiation. The \$59,000 a year contract covered various refuge activities including, locating easements, environmental education, wildlife harvest data, moose surveys and logistics. The Yukon Flats refuge manager retained overall responsibility and authority to manage the refuge. The AFA recognized the cultural and historic relationship of the Yukon Flats

Refuge to its indigenous Athabascan inhabitants and their traditional knowledge of protecting fish and wildlife populations.

In 2005, the NBR AFA between the FWS and CSKT was finally signed covering a wide range of refuge activities including the refuge biological program, fire management, visitor services, and maintenance program. About \$300,000 was paid directly to the tribe, but the AFA was worth millions of dollars in FWS operating expenses. The FWS, anticipating public concerns that they were transferring the NBR to tribal control without sufficient public input, developed a website designed to answer questions of the public (FWS NBR website).

Twenty-three FWS refuge managers including the Yukon Flats NWR manager signed a petition criticizing the NBR AFA, questioning if the FWS was contracting out “inherently federal functions” (Refuge Managers 2004 memo). A number of U.S. conservation groups rejected the NBR agreement as undermining the integrity of the refuge system. The Yakima Office of the BIA noted articles about the AFA in the media and told the YNWRP that they would support them in getting a similar AFA for TNWR (BIA 2004 memo). The newspaper articles appear to pit the CSKT versus PEER and current NBR employees who were afraid of losing jobs and ceding refuge control to tribal government. The CSKT saw some opposition to the agreement as simply racism, an opinion shared by some YN people as well. The deputy secretary of the DOI said the AFA took two years to negotiate (it actually took over 10 years of discussion and negotiation).

These news and advocacy articles are notable as it is plain that while the national FWS refuge manager cadre strongly opposed the NBR AFA, it was clearly supported by the office of the Secretary of Interior. PEER and other opponents of the NBR AFA thought the AFA process was designed to weaken the refuge system under the guise of improving refuge management in collaboration with tribes. That position was lent support by continued DOI efforts to open up Arctic NWR for oil drilling. To AFA opponents there were a number of apparent linkages of drilling in ANWR and refuge AFA's: opening refuges up for energy development and other income generating activities, privatizing the refuge system, and returning refuges to local control absent of national agency and public oversight.

Eventually two dozen conservation organizations attacked the NBR AFA agreement, claiming it hampered the ability of the FWS to fulfill its land management duties and public trust responsibilities. Over 120 refuge managers nationwide had added their names to the earlier NWR refuge manager petition against the NBR AFA. Conrad Burns, the Republican Senator from Montana, claimed he was looking into the NBR agreement. Despite attacks on the NBR AFA, its existence signaled to the YN and other tribes that a window of opportunity had opened allowing them to exercise some control over public lands that had been removed from their reservations over the past 100 years.

The NBR AFA was viewed by both general public and the tribes as precedent setting and that many public lands throughout the United States, including notable national parks and national forests, would be either be returned to tribal sovereignty outright or administered under some sort of comanagement agreement. Conservation and sportsmen's groups appeared particularly alarmed that public lands were being quietly removed from federal protection and simply given away to tribes.

The AFA developments were eagerly anticipated by certain financially strapped tribes who realized their potential as a funding source for their still developing natural resource and environmental programs, which often have no consistent money stream available to them (Ira Newbreast, President of the Native American Fish and Wildlife Society, personal communication). Yearly operating budgets for units of the public land system can run into the millions of dollars. Jobs administering and managing federal lands are among the most stable and well-paying positions in many rural communities where employment opportunities are often at a premium. Visitor services related to the major national parks, monuments, forests and refuges are a multi-million dollar industry, generating considerable profit and employment opportunities. Even if tribes could only realize a fraction of those park operating funds, employment and visitor service opportunities, the AFA's seem like a very good deal with very little downside.

The YNWRP was confident that TNWR and CLNWR would soon come under greater YN control and finally be returned. The NBR agreement created excitement in Indian Country

about repatriation. The FWS-YN MOA appeared to fly under the radar with little knowledge of it among the general public. However, the NBR agreement generated considerable backlash. The tribes did not appear to anticipate the strong political support that federal lands enjoy among the general public and in the U.S. Congress and that threats to the integrity of national system of protected areas would be strongly opposed by the agencies themselves, conservation organizations, sportsmen and other user groups. Some of the NBR opposition was clearly racist in tone.

In December 2006, the FWS abruptly terminated the National Bison Range AFA with the CSKT amid accusations of racial harassment, intimidation and poor job performance. The CSKT contend that the AFA was designed by the FWS to ultimately fail, that the FWS never intended to give up any real control over the NBR to the tribe. The issue became national news including feature articles in the New York Times and various major Western state newspapers. However, the Secretary of Interior clearly wanted an AFA for NBR to be reinstituted, despite FWS opposition. A major stumbling block was FWS employee grievances of a hostile work environment, poor care of the bison, and other violations, prompting a GAO investigation. The CTSK adamantly denied these accusations.

Between 2007 and 2008, the National Bison Range experienced major cutbacks in funding and in personnel, for reasons that are unclear. In November 2007, the Assistant Secretary in the DOI instructed the FWS Director to complete a new AFA for the NBR by March 28, 2008. Initial negotiations began in January 2008, and were reported to be near completion by April 2008. As of this writing in early June 2008 the only tribal AFA with the FWS still in force is at Yukon Flats NWR.

Summary

In the final analysis, despite high hopes for an opening for greater tribal control of federal lands, implementation of DOI AFA's and MOA's under the Tribal Self-Governance Act (TSGA) has been glacial. Some tribal leaders see the lack of greater involvement of tribes in federal

land management as simply due to racism. Federal agencies fear loss of federal jobs and relinquishment of control over programs, and may lack confidence in tribes' ability to manage federal functions (King 2007). Conservationists fear that tribes will prioritize tribal needs over federal land priorities.

The Yakama and other tribes see MOA's and AFA's under the Tribal Self-Governance Act (TSGA) as a logical extension of tribal self-determination policy and of their growing capacity for self-governance, while the FWS, other federal agencies, and conservation groups have reacted to the TSGA as a profound change in public land law and policy (King 2007). The collapse of the NBR agreement turns one of Pinkerton (1989, 1992) and Prystupa's (1997) comanagement theoretical propositions on its head: alliances of stakeholders, NGO's and agencies can both erect barriers to comanagement as well as overcome them.

Since the nineteenth century, the growth of federal bureaucracy and land holdings has been directly related to the loss of tribal sovereignty over land and a decline in tribal self-governance (Wood 2006, King 2007). While state and federal land grabs explicitly replaced tribal control, the growth of tribal natural resource management bureaucracy and imposition of nontribal forms of land management regimes on tribes can also be seen as a subtle form of state formation (Nadasdy 2003). From the perspective of the Yakama Tribal Government however, a TNWR-MOA with the explicit eventual goal of transferring FWS lands to their control strengthens Yakama self-determination and sovereignty. In the following chapter, I present an ethnography of the TNWR MOA.

CHAPTER 7

AN ETHNOGRAPHY OF THE TOPPENISH COOPERATIVE AGREEMENT

The YN and FWS agreed to establish a cooperative partnership for the management of natural and cultural resources within the Yakama Reservation in and bordering TNWR in the spring 2005, with the Memoranda of Agreement (MOA) signed by Arlen Washines, the YNWRP program manager and Carolyn Bohan, Regional Chief of Refuges for Pacific Northwest FWS regional office in Portland, OR. The MOA holds very different meanings to the parties, which arise from their differing interests in the partnership. The YNWRP sees it as the first phase of repatriation process. The FWS wants to protect the integrity of the refuge system. It wants to improve the political and emotional climate around TNWR, and forestall a situation that would precipitate a loss of control. The YNWRP recognizes the explicit power politics involved in the process, while the FWS is hoping the politics can, at least at the ground level, be forgotten. In this chapter, I discuss the MOA, particularly some aspects of its political ecology. Some might argue that the MOA can be construed as a subtle new manifestation of the power of the federal government in the face of growing tribal influence. However I will argue that the MOA is a demonstration of the growing sovereignty and national power of the Yakama community.

The MOA established a cooperative partnership to coordinate the management of TNWR and adjacent YNWRP Toppenish Creek lands (Appendix E). The document's background statement plainly states that the YN's ultimate goal is achieving complete repatriation of TNWR (Appendix E). The YN envisions a three step repatriation process: to cooperatively work on a number of projects with the FWS over the next few years, to develop a successful contract for the YNWRP to manage TNWR, and eventually to have the TNWR removed from the refuge system and returned to YN control entirely. The MOA states:

The primary benefits to both parties include the protection and enhancement of wildlife and fishery resource habitats of the YN Reservation and TNWR in a manner that ensures the protection of the Yakama Nation cultural values and resources while achieving Refuge System goals for the benefit of all Americans.

The parties agreed to meet two times a year, fall and spring, to discuss issues of mutual concern, to partner on projects (i.e. North American Wetland Conservation Act grants), and coordinate management on both the Toppenish Creek and Satus Creek drainages, including sharing equipment and personnel. They also agreed to cooperate in monitoring wildlife and habitat conditions and to coordinate research and share data. A plan to address YN hunting activity and law enforcement issues were to be developed by 2006. The FWS responsibilities include administering a Yakama youth summer employment program and to allow Yakama tribal members to collect plant materials for traditional uses. The YN agreed to advise the FWS on cultural and fisheries/wildlife issues important to their community, conduct archaeological surveys, and provide cultural awareness training for FWS personnel. They also agreed to submit requests to FWS before seeking to harvest vegetation for cultural purposes. The YN passed a council resolution supporting the MOA and it was signed by both the FWS and YN in September 2005.

I interviewed a few staffers of the Mid-Columbia Refuge Complex and YNWRP about one year prior to the signing of the MOA and during the first two years of it being in force. From the beginning, the MOA appeared to represent very different things to the two agencies. To the YNWRP this was only the start of a long repatriation process for TNWR, moving in small incremental steps toward the eventual goal of the YN fully taking over the refuge. The YNWRP had positioned itself to incorporate TNWR into their wetland restoration planning, bordering TNWR upstream and downstream with protected floodplain tracts. The core TNWR area of 1,200 acres was a missing jewel in the YNWRP's Toppenish Creek wetland restoration crown.

Both prior to the signing of the MOA and afterwards, some YNWRP staff painted the FWS as inflexible, single species (duck) refuge managers, applying a Midwestern wetland management technique, moist soil, inappropriate for Mid-Columbia climatic and hydrologic

conditions, trapping listed steelhead in their duck ponds. The FWS was labeled as unwilling to acknowledge the sovereign rights of Yakama tribal government to freely manage wildlife and fish resources on their reservation, unencumbered by a federal agency that was unwilling to adhere to federal and tribal regulations and policies. As far as the YNWRP was concerned TNWR was a failed refuge, its full development blocked by the tribe for over 40 years. The FWS was often portrayed as a bumbling federal bureaucracy combining varying degrees of incompetence and unlawfulness.

The FWS Mid-Columbia Refuge staffers who manage TNWR were clearly uncomfortable with the politically charged atmosphere existing between them and the YNWRP prior to the MOA. The FWS biologist/managers are self-motivated wildlife professionals and public servants who have dedicated their lives to wildlife conservation on behalf of the American people. They feel they have the scientific acumen and objectivity to manage this refuge as part of the largest system of federal lands dedicated to wildlife conservation in the world. The FWS sees one of the strengths of the FWS refuge system to be its hundred year history and institutional continuity despite changes in federal administrations and budgets. They pride themselves in applying the most up to date scientific approaches to land management. The YNWRP position puts them on the defensive, having to respond to allegations that amount to professional malfeasance.

The FWS staffers claimed they were not trapped in some narrow Midwestern regional mind set of wetlands management; in fact two of the refuge managers were native Washingtonians with considerable expertise managing wetlands in the region. Although the FWS staffers are certainly sensitive to Yakama and other local concerns, as all refuge managers need to be, they see their ability to integrate federal and regional guidelines with more local concerns as a strength of their federally administered approach, particularly for migratory birds and other wildlife that cross state and international boundaries and cannot be conserved with purely local initiatives.

The FWS thought the YNWRP had created a false, ‘ducks versus steelhead’ argument to pillory them. The FWS did not regard TNWR as a static wetland impoundment complex

as depicted by the YNWRP, trapping wayward steelhead. They felt they had accommodated fish passage by altering their water management system over the last few years to make the TNWR more of a fish-friendly, flow through refuge. The FWS did not think their approach to land management or their conservation goals were fundamentally at odds with those of the YNWRP. The FWS wanted to protect listed steelhead inhabiting Toppenish Creek and to be a good neighbor to the Yakama community. They saw their duty as running a 40-year-old National Wildlife Refuge impoundment complex designated as waterfowl habitat (bought in fee title from willing sellers and paid for with Duck Stamp funds) without damaging anadromous fish runs. The FWS felt the YNWRP were presenting them in a negative light in an act of political posturing. They were convinced they were being demonized by the YNWRP to create political leverage that might be used to force them to relinquish control over TNWR.

The TNWR managers flatly refused “to sell the farm”—to give up the refuge outright to YN control. This appears to reflect both their local position and national public land law and policy. The FWS has maintained that National Wildlife Refuge management is an “inherently federal function,” as stipulated under the Refuge Administration Act. In addition the FWS has federal trust responsibilities toward migratory birds. To the TNWR refuge managers, the FWS agreed in the MOA to coordinate management with the YNWRP along Toppenish Creek, no more, no less. In my interview with the TNWR managers I prematurely referred to the signed MOA as a ‘comanagement agreement.’ They disagreed with that assessment and label, denying that the MOA represented any agreement to share management of TNWR. The YNWRP waterfowl biologist also denied the MOA was a comanagement agreement, saying that term only refers to the specific arrangement that the Columbia River Treaty tribes have with the states of Washington and Oregon to manage fish and wildlife resources off reservation.

Under the current MOA the TNWR continues on as a unit of the NWR system with the FWS as its sole manager. That position can be construed as having a legal basis under the Refuge Administration Act. A tribal self-determination or self-governance contract would not end the FWS legal responsibility to manage the refuge. While to the YNWRP the MOA may

be construed as the first step toward repatriation, to the FWS the MOA may be the final step in their relationship with the YNWRP. However, the mere signing of the MOA has improved the relationship between the two agencies considerably, with both the YNWRP and FWS agreeing that the agreement reduced tensions and helped clear the air. The senior FWS refuge manager was confident that a lot could be accomplished on Toppenish Creek if the two sides “would be willing to look past the politics.”

As stipulated in the MOA, the YNWRP and FWS met four times in 2005–7 to discuss possible cooperative projects on Toppenish Creek. There was also another higher level YN-FWS Region 1 Director meeting in 2006 involving Yakama Tribal Council in which all mutual issues of concern in the Mid-Columbia region were discussed ranging from the Hanford Site cleanup to local wildlife law enforcement issues. I attended all five meetings as an observer. The YNWRP and FWS also had many frequent contacts in the field, working together on refuge fencing projects, haying of refuge pastures and other activities.

The four MOA meetings revealed a few obvious patterns. One involved who attended them. Few Yakama tribal members were involved. Two of the meetings had no Yakama tribal members attending. Generally nontribal YN employees represented the YN interests in all MOA discussions. The Yakama manager of the YNWRP clearly did not want to attend these meetings, perhaps thinking they would focus on staff level technical and biological issues and not more socio-cultural issues where I think he could have made an important contribution. The FWS usually were represented by the Mid-Columbia NWR complex project leader or his deputy, the TNWR refuge manager, the refuge complex biologist and the heavy equipment operator who was the primary TNWR on-site manager. During one occasion the refuge complex outdoor recreation planner and a law enforcement officer also attended and on another occasion a refuge manager trainee. During the third MOA meeting in the fall 2006, the meeting was also attended by the Region 1 tribal liaison for the FWS, a Native American from the Midwest, who had a strong working and personal relationship with YNWRP staff.

In contrast to the FWS, the YN packed these meetings with a broad range of scientific and technical expertise including a waterfowl biologist who often chaired the meetings and drew up the agenda, an upland bird biologist, a restoration ecologist, an archaeologist, and sometimes a range or riparian restoration biologist, fishery biologist, hydrologist, civil engineer or an attorney. It appeared to me as if the YN wanted to leave no doubt of their competency and considerable operational capacity to eventually assume full responsibility to manage TNWR. This finding is congruent with one theory of organizational behavior that groups may try to achieve legitimacy by demonstrating technological competency (Knoke 2001).

The meetings usually lacked an obvious Yakama Nation cultural connection, with no one present except an YNWRP archaeologist to directly address various Yakama socio-cultural concerns in the management of Toppenish Creek wetlands. If the only people representing the YN were nontribal biologists and other professionals, this may have created some degree of confusion in the minds of the FWS staffers about the seriousness of the Yakama community with regard to cultural concerns, deferring to ecological issues alone. However, by trying to match or out match the FWS, biologist to biologist, the YNWRP was, in fact, conforming closely to FWS organizational structures and beliefs, producing greater isomorphisms or homogeneity of their wildlife management approaches than would likely be otherwise (see Knoke 2001).

One of the critiques of comanagement best articulated by Nadasdy (2003) views the entire land and wildlife management process as a subtle manifestation of state power, forcing Native American communities to adopt scientific ideas of wildlife, fisheries and forest management, and the state structures that go along with them that privilege the expert role of biologists, land managers and bureaucracy in conservation. The voices of local cultural experts and ethnoscientists are rarely heard in this bureaucratic context and when received their ideas are often misappropriated.

In the one case when Johnson Meninick, the Yakama Nation Cultural Program Director, attended the second half of the second MOA meeting, he asked questions that no biologists in the room could address, expressing concerns about Indian hemp (*taxus*; *Apocynum cannabinum*),

red and gray willow (*taxsh*; *Salix lasiandra*, *S. glauca*), beaver (*yíxa* or *wishpush*; *Castor canadensis*), mink (*ptyáw*; *Neovison vison*), muskrat (*ptís*; *Ondatra zibethicus*), river otter (*nuksháy*; *Lutra canadensis*) and eels (lamprey). He hoped transplanted riparian vegetation was creating a canopy over the creek, moderating the microclimate. He described Yakama ethnoecological understandings of how beaver coordinate their dam building to help fish, and how the competition between beaver, otter and mink creates and maintains a healthy aquatic environment. He was concerned that beavers were being wantonly killed as a nuisance animal without being shown the proper respect that they deserve as an important animal in Yakama stories, beliefs and subsistence. This was the closest utterance to revealing the existence of any form of Yakama sacred reality in these MOA discussions.

Most nontribal wetland biologists are accustomed to discussing management of marsh vegetation, water, waterfowl and waterfowl hunting. They are not generally experienced subsistence fishermen, or knowledgeable about furbearers and wild useful and edible plants, including traditional medicinal plants that might be of interest to Native Americans. When Mr. Meninick discussed his concerns about species of cultural significance to the Yakama people, he was operating on a different plane than the nontribal biologist/managers sitting around the table, both of the YN and FWS. They did not appear to know what to make of his concerns. Perhaps only the YNWRP archaeologist could appreciate them with any depth. Mr. Meninick, representing the worldview of Yakama traditionalists, was reading from a different script, one that was rarely part of the MOA deliberations.

In agreement with the YNWRP program, Mr. Meninick favored restoration of the creeks and their floodplains and not a wetland enhancement approach such as the used by the FWS. He saw wetland enhancement as an act of the last resort, suitable only for “stopping the land from crying.”

The MOA meetings were not dramatic affairs with people taking passionate positions, one way or another. There was no overt conflict. The meetings were always cordial. People treated each other respectfully. Everyone had the freedom to speak, although a few people dominated the

meetings with the others remaining relatively silent. The more active participants acted with a degree of humility, even those with healthy egos. It made sense not to showoff at these meetings, almost everyone in the room was an expert in some aspect of wetland ecology or management. People made jokes, typically about people from Minnesota, a key participant's home state.

There were no polemical arguments about competing wetland management approaches, steelhead versus ducks, or the FWS upholding "inherently federal functions" over Yakama sovereignty and the Indian trust doctrine. These points would only be made in private, not at the MOA meetings. Because these more serious political issues never came up there was no need to actively defuse conflict or effect reconciliation (Poncelet 2004). People may have been motivated to try to nurture the agreement as much as possible, as the past tensions were not in anyone's interest. The two parties would have to work together to secure major funding such as NAWCA grants and on various TNWR projects such as fencing and water control.

The MOA discussions addressed five issues of socio-cultural importance to the tribe:

- Yakama treaty hunting and gathering rights on the TNWR (primarily duck hunting and tule gathering).
- Steelhead passage.
- Tribal authority over nontribal hunters on the reservation.
- Protection of Yakama archaeological and historical sites (and other issues of cultural awareness).
- Summer employment opportunities for Yakama youth on TNWR.

The first, Yakama hunting on the refuge, is possibly the most intractable and potentially volatile. Although few Yakama hunters seek to harvest ducks or other game birds, by treaty rights a Yakama member should be able to hunt, fish and gather plants at "usual and accustomed places" on "open and unclaimed" government lands, presumably including the TNWR without requiring any state license or federal duck stamp. There is no obvious reason why federal lands, such as TNWR or CLNWR located within the boundaries of the Yakama Reservation should be

exempt from the 1855 treaty stipulations. The right of the YN to be able to hunt, fish and gather plants on the TNWR is a very important issue to the YN leadership.

The MOA required the parties to develop a plan that addresses YN hunting on TNWR by the end of the 2006 fiscal year. Taking it one step further, the YN asked the FWS to open up special areas within the TNWR where Yakama duck hunters can harvest birds separate from nontribal sport hunters. Yakama foragers see themselves as standing practically and spiritually apart from nontribal hunters and fishermen taking animals for sport. The Yakama consider their taking of game and fish as an act of provisioning food through an exchange with sentient creatures who are giving their lives so that the Yakama people may eat. Most Yakama foragers follow traditional laws and practices for harvesting living resources. Yakama hunters are concerned about becoming the target of ridicule or racial harassment while exercising their treaty rights of subsistence requiring no state or federal license in close proximity of nontribal licensed sport hunters. It is important to note that Yakama fishermen frequently encounter racial harassment, property damage and even physical violence exercising treaty fishing rights on the Columbia River.

The FWS is uncomfortable granting special hunting rights to Yakama tribal members which may be challenged in court as discriminating against nontribal hunters, including dedicating certain areas or certain hunting periods to tribal hunters. The FWS is also concerned about making a decision about tribal hunting while all NWR hunting nationwide is currently being challenged in litigation brought by animal rights groups as an activity incompatible with the wildlife conservation goals of the National Wildlife Refuge System. Therefore any decision to grant the Yakama exclusive use of certain areas of TNWR or CLNWR may have to come from the FWS director's office in Washington D.C. and only after protracted legal wrangling that could take years. The issue of YN hunting is still unresolved after 3 years.

The YN is also interested in gaining access to TNWR lands for harvesting tules, root crops and medicinal plants but does not want to have to ask permission of FWS staff to do so. Gathering plants is a private family matter involving some spiritual and religious practices and

beliefs. Instead the Yakama people would prefer some sort of blanket permit from the FWS. The YN has reported to be considering acts of civil disobedience to assert their treaty rights to hunt on TNWR if the matter can not be resolved expeditiously.

The second issue of whether TNWR creek diversions or the presence of refuge impoundments negatively impact steelhead and other anadromous fish appeared to be largely unresolved after 13 years of debate and a 2001–4 steelhead study conducted by the USGS to try to address these concerns. Some refuge water diversions continue without fish screens and some culverts appear to make small fish vulnerable to predation by birds (Biological Assessment 2006). The USGS study indicated significant steelhead smolt use of Toppenish Creek side channels and man-made impoundments within TNWR (Figure 31). The question is whether the fish are actively seeking these habitats because they are more protected from predation, and the habitat is more productive and warmer than the main channel habitats of the creek, or whether the fish are becoming entrained by refuge diversions and are unable to follow weak impoundment channel flow back to the creek main stem and down the Yakima River. Unfortunately the study was only conducted during the spring smolt passage period that coincides with high flows out of the valley. The study was insufficient to determine habitat selection.

There is some evidence that smolts inhabiting side channels and impoundments gain considerable weight during their stays, which suggests there is behavioral selection for these habitats. The YNWRP contractor, hydrologist Donald Reichmuth presented trench sediment evidence that until at least the early nineteenth century the Lower Toppenish Creek floodplain was a complex of beaver dam impoundments of creek flows. Anadromous fish such as steelhead and Pacific salmon must have evolved to successfully negotiate this beaver pond system.

The question then becomes whether the TNWR impoundment complex is behaving similarly to a series of stair-stepped beaver ponds (Figure 32) or as a jumbled array of dead end impoundments posing a barrier to safe fish passage. The YNWRP wants the entire hydrology of Toppenish Creek, including the hydrology within TNWR, to behave as normatively as possible



Figure 31. A Mid-Columbia steelhead smolt.



Figure 32. Beaver dam on a channel of Toppenish Creek.

or to mimic the historic pattern benefiting all the native species of fish and wildlife that are culturally important to the Yakama people. TNWR managers also said they want to mimic historic hydrology as much as possible in managing their impoundments for all native wildlife and fish species. The disagreement lies with the timing of dewatering impoundments, in the spring when natural floodplain areas would be at peak flood, as the FWS prefers for moist soil management, or in the summer when they would be naturally drying out, as the YNWRP prefers.

Currently the TNWR impoundment water management regime diverges from the seasonal normative flood pattern, with draw-downs of moist soil units in late spring at a time when wetland flooding should be peaking due to mountain snowmelt. Therefore the YNWRP assumes that some fish may succumb in drying dead end pools due to predation, high water temperatures and insufficient water for survival. The FWS advocates for fish screens to prevent entrainment into any dead end moist soil units. However the YNWRP consider fish screens as no panacea because they give a false sense of security when water diversions may decrease in-stream flow below tolerable limits for fish.

The YNWRP doubts the efficacy of moist soil management as a tool in the Mid-Columbia region, and prefers managing their man-made impoundments at South Lateral A Tract and oxbow sloughs at Satus WRA for high yearly tule productivity. This involves holding water in spring and summer, drawing pools down slowly in late summer for tule harvest, and then burning them in the summer in anticipation of fall reflooding timed to the arrival of fall migratory waterfowl and the duck hunting season. The YNWRP claims the Satus Lakes and South Lateral A impoundments have sufficient flow with distinct channels to avoid trapping fish.

The YNWRP consider the seasonal maturation of tules in perfect synch with the breeding and rearing habitat needs of waterfowl. They point to the overwhelming invasion of cocklebur on TNWR moist soil units as evidence of the misapplication of the technique at the TNWR. One large private duck club in West Richland locally renowned for its moist soil approach also has had major problems with weeds, in their case a native knotgrass (*Paspalum distichum*), dominating impoundments. The YNWRP biologists and I toured the club to learn more about

their moist soil approach and their weed problems. The FWS counters that with sufficient water and control capacity, moist soil management can produce abundant native waterfowl foods in the Mid-Columbia region. Cocklebur and other weeds can be controlled by overtopping with water, particularly during warm weather thereby “cooking” them. Removing and thinning rank tules and cattails releases other more productive waterfowl food plant seeds to germinate and flourish. Only once during fourth MOA meeting did this disagreement about moist soil management surface, but the discussion was very low key and the YNWRP waterfowl biologist ended that conversation saying he was hoping to learn more about moist soil management from his FWS counterparts. This appeared to be an act of argument minimization on his part to avoid conflict (Poncelet 2004).

In a major development affecting both YNWRP owned tracts and the TNWR, the YNWRP executed a hydrologic restoration project on tracts upstream of TNWR in 2006–7, under the direction of YN interdisciplinary team, using an engineer from Ducks Unlimited and contractor Donald Reichmuth. In November 2006, the YNWRP reconnected Toppenish Creek to its old (main) channel for the first time in over 50 years. Decades ago, the creek had jumped out of its primary channel, became captured by a lower man-made drainage channel which proceeded to deeply incise, head-cutting and drying up wetlands and riparian areas in its wake.

During 2006–7, with funding from Natural Resource Conservation Service (USDA) Wetland Reserve Program, the YNWRP installed 28 rock grade control structures within the main stem of Toppenish Creek to lift the creek, allowing water to flow into historic channels and wetland basins that had been dry for decades (Figure 33). Miles upstream of Mid-Toppenish project, the YN road engineers also created a large spillway that allowed floodwaters to go past the leveed barrier of Marion Drain, thus allowing former wetlands starved of water in the past, to seasonally reflood.

These developments meant that Snake Creek influenced tracts on TNWR experienced more stable flows, with earlier flows in the spring and fall. Refuge flows during flood periods may also be stabilized in the future. Thus TNWR was the beneficiary of hydrologic restoration work upstream of the refuge without having any input into the decision. Prior to the MOA, TNWR was in a poor position to influence any conservation work done upstream of TNWR, able only to

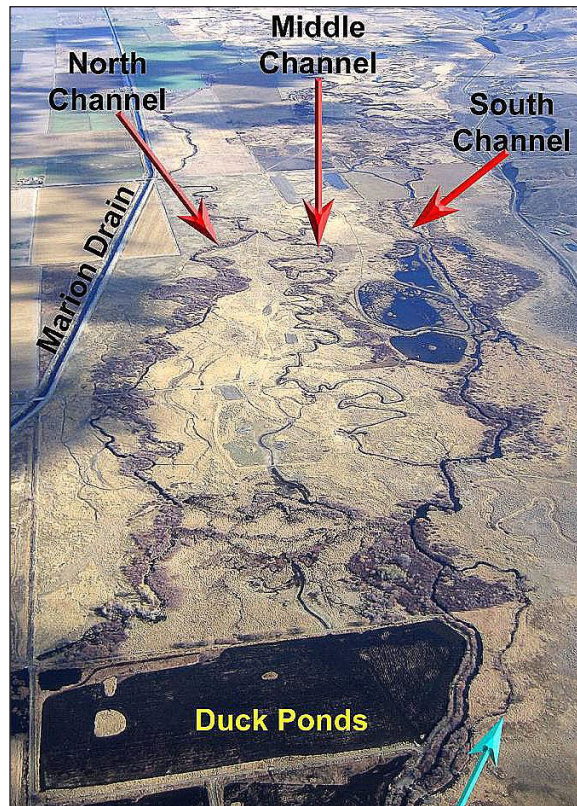


Figure 33. Restoration of the hydrology of Toppenish Creek. The south channel was raised with grade control structures, and water now flows into the historic main middle channel. Duck ponds are on the South Lateral A tract. Photo by Donald Reichmuth.

react to YNWRP management activities. Under the MOA, the FWS and YNWRP has a greater opportunity to comment on each others management on various tracts. Hydrologic restoration projects on Toppenish Creek would stand to benefit from closer cooperation between the two agencies and their partners, including NRCS and Ducks Unlimited which often work with both agencies in project planning and execution.

In 2008, a new project on the Old Goldendale Road funded under a NAWCA grant stands to benefit both YN and TNWR wetland tracts. Both parties have been involved in project development planning and plan implementation. This sort of project is a good example of the cross-agency cooperation the MOA was intended to foster.

I came away from these four MOA meetings feeling that YNWRP employees were freer to embrace new ecological concepts and management approaches (fluvial geomorphology, beaver

pond histories, restoration science) than FWS manager/biologists who were more conservative in their approach. While the YNWRP were enthusiastically advocating for the restoration of historical hydrologic and ecological conditions on Toppenish Creek, the FWS appeared content with making a few modifications of their waterfowl impoundment strategy and keeping the weeds down.

This may have been due to the FWS facing budget shortfalls and cutbacks to personnel the last few years, forcing them into survival mode. Without sufficient manpower and focused water management and biological expertise, the FWS managers would be unable to manage TNWR wetlands effectively, and it would be difficult for them to balance managing waterfowl and anadromous fish. With a small local staff and a mandate to manage for waterfowl, the tried and true approach, management of seasonally flooded impoundments, might appear to be the only option available for TNWR at this time. It might also be explained by the FWS having developed more tightly normative cognitive models of wetland management resistant to new ideas and evidence (see DiMaggio and Powell 1983).

In contrast, the YNWRP may have greater freedom than the FWS to try new management techniques, to take risks, and to apply adaptive management, leading to innovative approaches to creek restoration. The YNWRP appears to have far less oversight than the FWS from sister programs in their government infrastructure, far less paper work, and less government regulation over their activities. Yakama government is far less formal and more social in its organization than the FWS. My observations appear to agree with theories of organizational behavior that would predict that the larger organization, in this case the FWS refuge program, may have greater built in inertia, with the YNWRP being more flexible and responsive to challenges that arise, including less resistance to incorporating new evidence (Hannan and Freeman 1984, DiMaggio and Powell 1983).

Certainly the FWS is heavily invested, both culturally and politically, in the conception and infrastructure of waterfowl impoundment management, making it difficult for them to respond to anadromous fish concerns and other management challenges quickly. The YNWRP mandate

is broader, providing their community with harvestable resources ranging from tules, roots, fruit, and medicinal plants to fish, furbearers, large ungulates and game birds, in totality representing a significant portion of the entire native biological community in the Yakima Basin. This wide mandate lends itself to a parametric approach of attempting to restore the entire ecosystem, without having to concentrate on the habitat requirements of any one species population. While holistic ecosystem restoration may be a complex task, in some ways there are fewer conceptual trade-offs required in the approach. You restore the system and all native species benefit, including the native species of greatest cultural importance historically.

The issue of wildlife law enforcement authority and jurisdiction is another long-standing problem. FWS game wardens continue to try to enforce state hunting regulations on nontribal hunters on TNWR, despite the fact that the state has no jurisdiction on the Yakama Reservation. A nontribal duck hunter on TNWR should only require a federal Duck Stamp and a Yakama license; no state hunting license should be required. If a federal warden finds a nontribal hunter on TNWR has no Yakama license, he should forward this information to the Yakama court for possible prosecution. Nontribal hunters on Yakama hunting lands such as the Satus Wildlife Area or South Lateral A should only require a Yakama hunting license, nothing more.

Yet federal wardens continue to issue citations to nontribal hunters without state licenses hunting on the reservation. Sometimes federal and state wardens work together in checking permits on the reservation; only federal wardens should be working on TNWR. There is no reason the state wardens should be there at all. The state cases always get thrown out in court, but they are financially costly for cited hunters and the YNWRP to mount legal defenses.

The MOA indicates the YN will advise the FWS on cultural and archaeological issues and will conduct all cultural and archaeological surveys needed by TNWR. The YN agreed to provide Yakama cultural sensitivity training to the FWS to help them work more effectively with the Yakama community. The YNWRP is concerned about the protection of Yakama archaeological and historic sites on the TNWR, an issue also of some importance to the FWS, not only because they want to be good neighbors, but as a federal land management agency they

are mandated under the National Environmental Policy Act, National Historic Preservation Act, and Archaeological Resource Protection Act to protect these sites. The YN wants to be sure that any TNWR work that requires excavation or other earthwork does not impact Yakama sites. Sometimes the FWS contracts with the YN to have YN employed archaeologists conduct refuge assessments. Other times the FWS hires its own regional archaeologists to do assessments. As of June 2008, no FWS employees had received cultural sensitivity training, although it had been discussed during all four MOA meetings and in the larger Yakama Tribal Council–FWS meeting.

The issue of TNWR employment opportunities for Yakama youth relates to the issue of how the existence of a NWR located inside the Yakama Reservation can provide benefits to the Yakama community (Figure 34). Employment of Yakama youth on the TNWR has a long history. Between 1973 and 1994, George Fenn, the heavy equipment operator and on-site manager of TNWR employed Yakama teenagers to carry out general maintenance work during the summer months. As a mentor of Yakama young men, introducing them to the rewards of working in conservation, George became well regarded as a friend of the Yakama people (Tracy Hames,



Figure 34. Yakama youth working for the summer on Toppenish Refuge.

personal communication). For a number of Yakama teenagers these positions were their first paid employment and started a number of them on a path toward future careers in Yakama tribal programs in forestry, wildlife and fisheries. Subsequently as part of the MOA, there were some members within the YN leadership that wanted those refuge job training opportunities to be reinstituted. A small maintenance crew of Yakama teenagers and an older crew leader were hired by the FWS during the summers of 2006 and 2007, an arrangement that satisfied the Yakama Tribal Council and others in the Yakama leadership.

In the opinion of the YNWRP, with the exception of youth employment and collaboration on grants, the MOA has largely been a failure after 3 years. The major issues of Yakama hunting on the refuge, wildlife law enforcement and protection of Yakama cultural resources are still unresolved. As of March 2008, the YN Tribal Council has instructed the YNWRP to re-instate negotiations on YNWRP management and/or repatriation of both TNWR and CLNWR. The new FWS Native American liaison for Region 1 in Portland has met with the YN to discuss this issue. The FWS is reported to be seeking an on-site refuge manager to administer both TNWR and CLNWR, a development which should improve FWS-YN coordination.

Tribal Sovereignty, Federal Trust Responsibilities and Threats to the NWR System

Underlying all these FWS-YN discussions of Yakama hunting on TNWR, fish passage and duck ponds, tribal authority over nontribal hunters on the reservation, protection of archaeological sites, and youth employment are the more fundamental unresolved issues from the 1994–95 MOA controversy: questions of Yakama Nation sovereignty – their right to manage their own reservation lands and its considerable natural resources independently; and the trust responsibilities of the federal government toward the Yakama Nation. The listing of the steelhead adds another layer to the responsibilities and obligations of the federal government in this case. Tribal sovereignty and federal trust responsibility to defend that sovereignty and Indian interests were the ignored 800 lb. gorillas in the room. The current MOA left sovereignty and the trust protections issue unsettled and at least for the time being, closed off from discussion.

Tribal sovereignty predates the founding of the United States. However, the federal government holds most Indian land in trust through the Bureau of Indian Affairs, DOI, and has fiduciary obligations like those of a trustee. Under the trust doctrine, the federal government has the responsibility to protect the Indian land base, manage Indian resources responsibly, and protect tribal sovereignty. However, the FWS, as the primary federal agency managing wildlife, also has trust responsibilities for the conservation of migratory birds, species of interjurisdictional fish and some wildlife groups, such as endangered species. It also has the mandate of managing the National Wildlife Refuge System.

The FWS is having difficulty balancing the inherent tribal sovereignty of the Yakama people, the federal trust doctrine toward tribes, their own agency's trust responsibilities toward waterfowl, federal laws establishing the National Wildlife Refuge System, and the protection of threatened steelhead, another trust responsibility. In this case, the various responsibilities of the FWS as an agent of the federal government obviously arise from different federal laws and operate at widely different scales, making them difficult for the FWS to reconcile.

Nationally, migratory birds must be conserved under the International Migratory Bird Treaties. Under the Refuge Administration and Refuge Improvement Acts and Congressional appropriation, the FWS is mandated to manage a nationwide system of wildlife refuges to conserve waterfowl and other native species for the continuing benefit of the American people. The steelhead is protected under the Endangered Species Act with NOAA Fisheries having the primary responsibility for all anadromous fish, but the FWS is the lead agency for listing and restoration activities. Predating all those federal laws, the federal government signed a treaty with the Yakama Nation explicitly establishing their sovereignty on their defined 1.3 million acre reservation and at certain off-reservation fishing sites. Under treaty the YN also retained rights to forage on unclaimed lands in the Ceded Area. The trust doctrine toward tribes began with the cession of land under the treaty process. Under the Indian Self-Determination and Self-Governance Acts, the DOI mandates the FWS to partner with any federally recognized sovereign tribe that have a cultural and historical relationship to refuge lands and specific refuge programs.

To the FWS their mandate to run a refuge for migratory waterfowl appears to trump the federal trust doctrine toward tribes and tribal sovereignty, and federal laws that give tribes the right to exercise their capacities for self-governance on federal lands. To the FWS, Yakama Nation sovereignty over lands that became TNWR apparently ended when the lands were sold to the FWS in fee title, thereby removing them from Yakama tribal control. Any reassertion of Yakama Nation ownership threatens not only the management of TNWR but the integrity of the entire National Wildlife Refuge System, which is under increasing threats of localization, privatization, resource development and neglect through federal nonsupport.

The YNWRP has a mandate with a different focus:

. . . to protect, restore, and enhance the ecosystem integrity and traditional use of wildlife and other natural resources while supporting a culturally and economically strong, self-governing sovereign nation.

To the YNWRP, asserting and exercising their full rights of land management on their reservation both strengthens tribal sovereignty and nation power and is perhaps one of its most significant expressions, particularly important for their identity as a traditional foraging community who continue to rely on wild resources for subsistence and commerce.

Some aspects of Yakama power can be perceived as arising from a process that Cornell and Kalt (1998) call nation-building. According to their model, nation-building occurs when tribes exercise defacto sovereignty, making decisions for their community with the authority of government. Tribal institutions must carry out their decisions capably and must be supported by their members for legitimacy. I might add to this model that it also should include situations where tribes are seen as acting as sovereign nations by outside entities, such as state or federal government agencies, or in the case of Pacific salmon, the government of Canada. When tribes are seen as acting with true authority and knowledge, as having capable tribal government programs and as speaking in one voice by outside government agencies this legitimizes the tribal government as having true national character and power.

The Yakama and other Northwest fishing tribes have successfully challenged NOAA Fisheries biological opinions on the operation of the Columbia River hydro system (managed by the ACOE, BPA and BOR) both in federal court and in the court of scientific opinion, indicating they possess a high level of legal and scientific authority in the salmon recovery process. The listing of Pacific salmon and steelhead under the Endangered Species Act gave the Yakama leverage to bring the action agencies to the table and begin to collaborate on salmon conservation, including the process of recovery planning along with county governments. Although the Yakama tribal government sees themselves as a sovereignty nation, at a higher political level than county or state government, their involvement in salmon recovery planning alongside counties allows them to make decisions about land management activities and land use far off reservation.

The Yakama Nation Fisheries Program is another example of the exercise of Yakama's considerable national power. The program currently manages three hatcheries for at risk populations of spring chinook, fall chinook and coho salmon, producing 9.5 million smolts each year which are released in the Yakima and Klickitat Rivers (YN Fisheries website). The chinook runs support both tribal and nontribal subsistence, commercial and recreational fisheries on the Lower and Mid Columbia. The Yakima Klickitat Fisheries Project within Yakama Nation Fisheries has developed innovative hatchery supplementation techniques to augment wild spawning stocks of salmon and re-establishing extirpated stocks on the Yakima and Klickitat Rivers while maintaining overall genetic fitness (Figure 35). They have also have developed an innovative approach to rehabilitating spawned out wild steelhead, by feeding them in the hatchery to bring them into condition to be able to spawn in the wild a second time. The YKFP is a partnership of the YN (lead program), WDFW, BPA and NPCC. They are hoping to apply the knowledge gained to help recover salmon and steelhead populations throughout the Columbia Basin. The YN recently signed a 10 year funding agreement with BPA for \$330 million dollars to support both new and existing fisheries recovery projects, agreeing that the federal government's

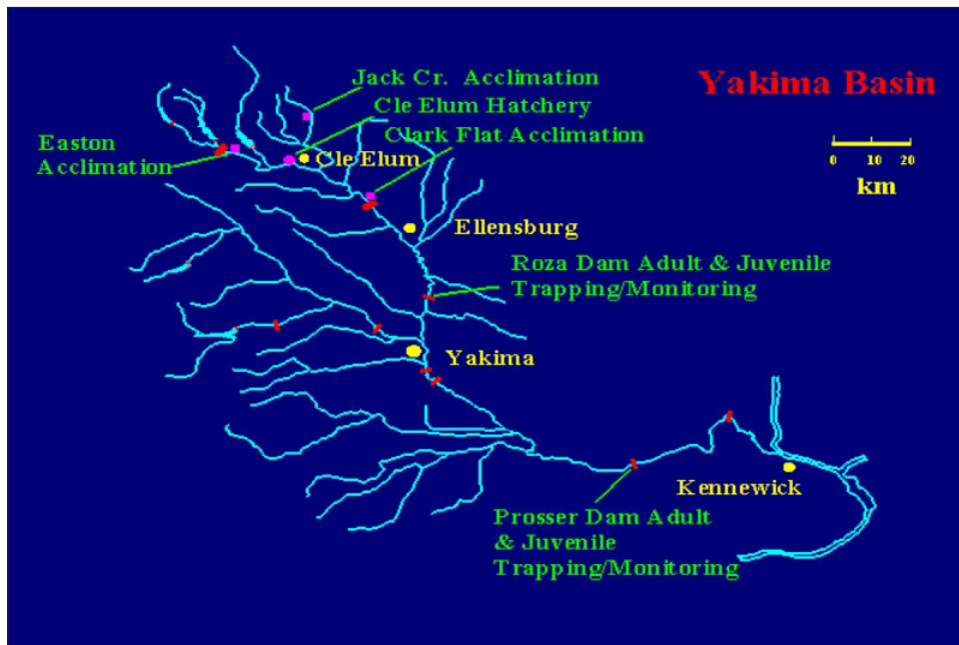


Figure 35. Yakima Klickitat Fisheries Project facilities in the Yakima Basin. They include a state of the art salmon hatchery in Cle Elum, acclimation ponds, and adult and juvenile trapping and monitoring facilities.

requirements under the Endangered Species Act, Clean Water Act, and Northwest Power Act are currently sufficient for salmon recovery.

International treaty negotiations are another way the Yakama and other Northwest tribes have expanded the scope of their sovereignty in a process of nation-building. The Yakama and other tribes have representation on the U.S. delegation to the Pacific Salmon Commission which was established under the Pacific Salmon Treaty with Canada, on equal footing with the states of Washington, Oregon and Alaska (Horner 1998), with tribes holding veto power over the allocation of chinook stocks (Knight 2000).

By exercising their fishery comanagement authority on the Columbia River, their legal standing in ESA salmon court cases and in Columbia Basin hydro system negotiations, and their capability in restoring fisheries, the Yakama indicate to the FWS, NOAA Fisheries, ACOE and BOR and other federal agencies their legitimacy and ability as regional land managers and partners. The ability of the Yakama to negotiate as co-equals with the federal agencies and other

stakeholders and to deliver as partners in subsequent implementation of comanagement plans with the federal agencies, states and counties reflect their growing power as a sovereign nation and their ability to resolve issues with the U.S. resource management agencies, one government negotiating with another.

How the Yakama Nation has chosen to assert their sovereignty and treaty rights over the past 150 years (fighting for fishing rights, managing the reservation hunt program, restoring historic hydrology and native vegetation on reservation streams, restoring salmon runs using hatchery technology, TNWR cooperation) may ultimately be less important than fully exercising tribal self-governance in the first place. Any rights that they fail to exercise may be usurped by the state or the federal government. If the FWS continues to feel threatened by any attempts for the YNWRP to share management authority of TNWR, and the YNWRP insists on full Yakama tribal sovereignty over the area, there appears to be little room for compromise at the present time. The two parties can agree to various projects of mutual benefit: coordinating wetland management across their ownership boundary, sharing creek water diversions to fill impoundments and natural wetland channels, and coordinating wildlife law enforcement, cultural resource management and Yakama youth employment.

Some Final Thoughts about the TNWR MOA issue

However it's understood by the FWS, the continuing presence of TNWR, CLNWR, and federal wildlife law enforcement agents operating on the Yakama Reservation during hunting season, are challenges to YN sovereign authority and control. The YN has invested millions of dollars developing their own scientific, technical and law enforcement capacity to manage fish, wildlife and water resources both on and off their reservation. They have dedicated a huge amount of their human resource capital in protecting their natural resource base both on and off-reservation. The YN is a recognized national leader in tribal wildlife and fisheries management, with programs rivaling some state departments of fish and wildlife. The continuing presence of the TNWR and CLNWR symbolize to the YN that the federal government does not recognize

their sovereignty and deems them incapable of independently managing their reservation wildlife resources.

The FWS does not appear to fully appreciate the cultural importance the YN attaches to certain natural resources and their use, such as salmon fisheries, root foods or medicinal plants and the treaty rights to utilize them without having to be granted permission to gain access or be under state or federal supervision in doing so. Federal regulations and laws operating in TNWR appear to leave little room for the YN to exercise their treaty rights or recognize those rights so narrowly that there is little resemblance to true tribal sovereignty. It makes the YN feel that their treaty rights and right to freely exercise their religion are hollow, invalidated by the FWS. FWS development and management of TNWR against decades of YN opposition indicate the federal government is unwilling to uphold the tribal trust doctrine to protect the YN homeland and its natural resources, and is in fact actively interfering with the Yakama Nation's ability to do so.

These affronts to tribal sovereignty only add to the Yakama community's deep feelings of frustration over the continued decimation of the Pacific salmon due to Columbia River dams, irrigation diversions and nontribal fisheries, the widespread development of reservation and ceded lands by nontribal agricultural and residential interests with concomitant loss of cultural and heritage resources important to the Yakama community, and contamination of their lands, waters and fish by Hanford radiation and other deadly pollutants. Allowing these environmental and community threats to continue unabated indicates to the YN that the United States is unwilling to defend Yakama treaty rights and unwilling to assume their responsibilities as trustees of Yakama sovereignty—including the rights to a secure land base, a sustainable economy, cultural vitality, and self-governance.

On the surface the 'steelhead versus duck pond' representation on TNWR might appear to be a highly salient issue to the YN wildlife and fisheries programs and to the Yakama tribal leadership. I earlier described how in 1994, this very issue prompted a key letter from the Yakama tribal leadership to the FWS Region 1 Refuge Office which started a cooperative management conversation about Toppenish Creek that is ongoing, 14 years later. A total blockage

of Toppenish Creek during periods of low water flows to fill TNWR impoundments could potentially decimate the entire run of Toppenish steelhead overnight, the population already under siege from a variety of other threats both from within and outside the watershed.

Major and minor water diversions on Toppenish Creek (Figure 36) can be viewed as a microcosm of the diversions and fish blockages (and kills) on the Yakima River and on a far larger scale, those same problems caused by the major hydroelectric dams on the Columbia River (Figure 37). In effect, a Toppenish Creek steelhead has to run a gauntlet of blockages at every watershed scale: on the main-stem Columbia, on the Yakima River middle passage, and up to its Toppenish Creek spawning beds in the Cascade foothills. The entire Yakima Basin is run as a irrigation mechanism, with all its natural headwater lakes transformed into storage reservoirs and Yakima tributary rivers managed as irrigation canals to serve the enormous water requirements of Yakima Valley agriculture, much like the Columbia River hydro system, the ultimate “Organic Machine,” serves the Pacific Northwest electrical grid (White 1995) (Figure 38). However, no YNWRP, Yakama Nation Fisheries or other YN informant voiced that ‘microcosm’ analogy or any of the conceptual linkages I make here. Instead today steelhead passage might be best construed as largely a “technical issue” of Toppenish Creek water management for Yakama natural resource programs, eclipsed by the all encompassing issue of Yakama sovereignty on the reservation and affronts to tribal prerogatives to make managerial decisions regarding all reservation natural resources.

The continued presence of the TNWR and CLNWR operating within the reservation after decades of official YN opposition never fails to frustrate the YN leadership and natural resource programs anew and motivates them to continue work toward repatriation of the refuges. The two National Wildlife Refuges are a major irritant that the YN has sought to remove for over 40 years. To the YN the development of a cooperative partnership on Toppenish Creek between the YNWRP and TNWR is only the first step in achieving that end.

To the FWS, tribal interest in comanaging or finally repatriating refuges are but another threat to the integrity of the refuge system, along with severe budget and personnel cutbacks

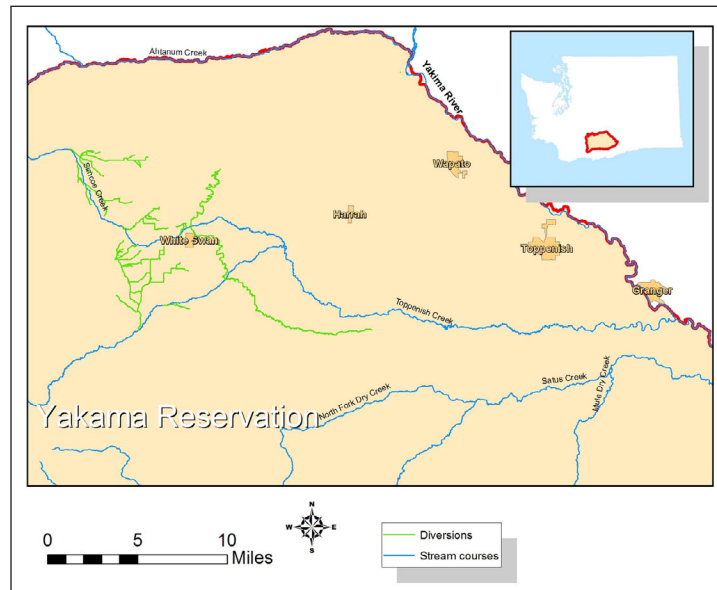


Figure 36. Major irrigation diversions on Toppenish Creek and its main tributary Simcoe Creek. Smaller diversions are not depicted.

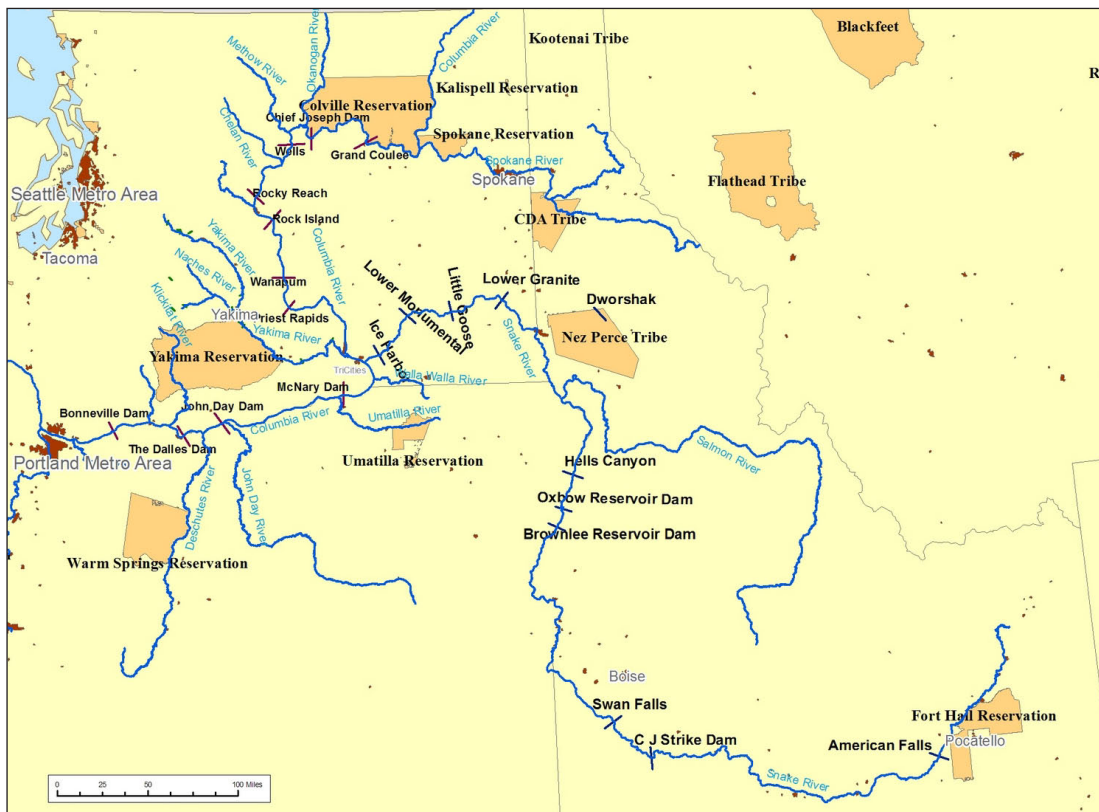


Figure 37. The Columbia River hydro system and Indian Reservations. Bars indicate major hydroelectric dams on the Columbia and Snake Rivers. Map by Paul Huffman.

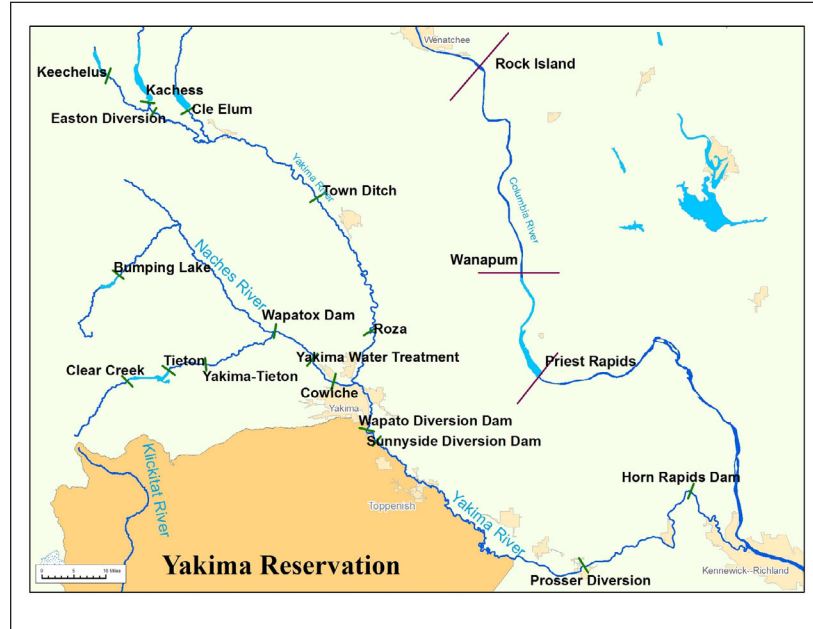


Figure 38. Yakima River Basin irrigation water storage and diversion dams. Bars indicate dam locations. Map by Paul Huffman.

and a variety of political and ecological threats, such as the privatization movement, antihunting groups, oil industry, rapid development of the rural landscapes bordering refuges, and invasive exotic species. While the YNWRP is currently asserting and expanding tribal sovereignty, the FWS refuge program is trying to maintain as much system integrity as possible despite a weakened position in the current national political and economic climate.

CHAPTER 8

CONCLUSION

Using the example of the negotiation process between the YN and FWS for a cooperative agreement for Toppenish National Wildlife Refuge, this study revealed the fundamental role that historical and cultural factors play in a developing comanagement process. Previous research by Pinkerton (1989, 1992) on the Pacific salmon fishery and Prystupa (1997) on the New Zealand conservation estate discussed obstacles to cooperative agreements, including power differentials, unfavorable legal and political climates, and oppositional alliances of stakeholders, NGO's and government agencies. This study contributes to this literature by incorporating a longer term perspective which addresses how historical and cultural trajectories of cooperating agencies may present barriers to their comanagement agreement. This study produced a number of generalizable conclusions that may be applicable to other comanagement opportunities including national parks, endangered species recovery programs, and ecosystem restoration projects.

This research showed how the differing land conservation approaches of the two agencies reflected critical periods in the development of their programs, the influence of key actors, the rise of particular land management concepts and scientific paradigms, and the impact of their organizational dynamics. The research identified a number of possible barriers existing between the agencies that might limit opportunities for successful comanagement, including differences in their ability to incorporate new information and adapt to change, opposing worldviews and land ethics, and conflicts between federal mandates for management of public lands and tribal sovereignty.

While Smith (1995) argued that stakeholders in negotiating resource comanagement agreements have different views of the nature of nature, including different cognitive models of how the world behaves, this study found that although Yakama tribal members appeared to hold

different world views than their nontribal YN program colleagues and FWS managers, ultimately there was a surprising degree of agreement in the land management ideals of YN and FWS managers overall. More imposing barriers include differing goals of the cooperative process and issues of federal control and tribal sovereignty.

Historical Factors: Critical Periods, Key Actors, Paradigm Shifts

This research presents one explanation of why the FWS and YNWRP are currently applying different wetland management approaches, addressing their differing agency goals and values while reflecting their particular historical and cultural trajectories. My analysis showed how both FWS and YN wetland management approaches changed over an approximately 50–70 year period, with the 1980s and 1990s particularly important in their development, to arrive at the differing approaches they employ today on Toppenish Creek: the management of seasonally flooded impoundments for waterfowl of the FWS and the restoration of historical floodplain wetland hydrology and vegetation of the YNWRP.

Some of the major paradigm shifts I identify include changes in wetland management approaches away from farming grain foods for waterfowl to encouraging the growth of wild moist soil foods, the conservation of biodiversity and ecosystem-based approaches, and ecological restoration, primarily due to the arrival of key actors who were able to apply these new scientific ideas to their programs leading to significant results that today can be seen on the ground.

For TNWR, their wetland approach of managing seasonally flooded impoundments for waterfowl began to be fully developed starting in the mid-1990s, during a period when the FWS was expanding beyond single species management for waterfowl to incorporate biodiversity and ecosystem-based approaches. The arrival of Mid-Columbia Refuge Complex Project Leader Gary Hagedorn and his seasoned staff of wetland manager/biologists with decades of experience in wetland management in the Western United States lead to the development and rehabilitation

of nearly 850 acres of moist soil impoundments for wintering waterfowl habitat at TNWR, infrastructure that continues to form the basis of wetland management there today.

For the YNWRP, the development of their wetland and riparian restoration approach can be traced to the leadership of Johnson Meninick, other tribal councilmen and elders during the 1970s, of YNWRP director Bill Bradley and waterfowl biologist Tracy Hames in the late 1980s to early 1990s. These key actors advocated restoring the connectivity and functioning of creek channels and floodplains in the Yakama Reservation agricultural zone to benefit tribal fisheries, wildlife and other natural resources, linking ecological restoration and Yakama cultural restoration.

Instrumental to this process was funding provided by an Administration for Native Americans grant that launched the YNWRP public hunt program, which in turn was then able to leverage millions of dollars in BPA mitigation funds available to the YN due to wildlife and fisheries losses from the Columbia River hydroelectric dams. The BPA funds have subsequently lead to the restoration of over 21,000 acres along Satus and Toppenish Creeks and along the Yakima River, primarily by restoring historic floodplain hydrology and native vegetation, benefiting tribal fisheries, waterfowl and culturally valued plants, including tules and various food, medicinal and fiber plants.

Possibly presenting a barrier to comanagement, the two agencies and their constituencies hold differing resource management objectives and values. Ecological restoration resonates within the Yakama community and receives strong political support from Yakama leadership because restoration of the Yakima River and Toppenish Creek can be linked directly to the protection of Yakama tribal fisheries, a touchstone for Yakama cultural identity and meaning. Restoration of tules, food and medicinal plants, and the rest of the native plant community, is another core cultural value that goes hand in hand with efforts to restore fisheries and overall stream connectivity and functioning. The current YNWRP leadership of Arlen Washines and his staff has successfully linked ecological restoration with the maintenance and restoration of

Yakama culture, incorporating the community's current political realities and traditional values into a contemporary scientific approach to land management.

The FWS has its own powerful agency "cultural" identity with a century-long history, deeply rooted in conserving migratory waterfowl, managing wetland habitats, and providing public hunting opportunities, primarily through the National Wildlife Refuge System. On paper, TNWR is a classical migratory waterfowl refuge in miniature, developed with Duck Stamp funds and providing habitat for wintering birds and hunting opportunities for the public as a compatible use.

Unfortunately, at the time of TNWR's establishment in the mid-1960s, the FWS appeared largely oblivious to the potential problems of establishing a 12,000-acre federally managed wildlife area within an Indian reservation without the cooperation of the tribal government. As a result the FWS has been repeatedly confronted with threats to their program's integrity and sustainability, including the tribe's blockage of land sales to the FWS to complete the refuge, the lack of summer water rights, increased demands of the Yakama community for access to natural resources guaranteed under treaty, and the endangered species listing of the steelhead.

One obvious conflict over values concerns tules which are one of the *raison d'être* of wetland restoration on the YNWRP, but are viewed as an undesirable invasive in moist soil impoundments on the TNWR as it out-competes small seeded annual plants that provide most of the food for wintering waterfowl. However, both sides are in agreement on the value of a natural free flowing wetland system, and hope their wetland approaches can restore or at least mimic the historical floodplain community. From that point of agreement, their different approaches to achieving that end can be viewed as logically coherent decisions made by two groups of conservation scientists simply supporting different management alternatives.

As a former wildlife biologist with the FWS, I was not particularly surprised by the finding of the importance of historical and cultural factors in the development of land management approaches for protected areas. Conservation agencies cannot help but reflect their histories and the cultural environment: the prevailing socio-ecological, political, and intellectual climates

during the periods of their development and growth, the cultural values of their staff and constituents, the people who lead the agency during critical periods, and the socio-political and scientific ideas they favored and that become suffused throughout the system and its programs.

Sometimes we take for granted that the goals and objectives, and the land management approaches of federal, tribal or state natural resource agencies are not “natural,” they are choices made by groups of people in leadership with the power to motivate others in their organization and its partners, to leverage funds and to move dirt, water, plants and subsequently, wild animals. Usually the groups in power have a resource or land management ideology or agenda that tends to suffuse the agency and its program, both for better or worse. Sometimes public agencies get captured by a dominant ideology or a powerful constituency. However, whatever objectives or land management approach comes to dominate, some approaches leave a more permanent mark on the land: impoundments engineered or stream channels restored. Others, such as prescribed burning, artificial waterfowl nesting structures or interpretive programs for the general public are more transitory.

Worldviews and Land Ethics

The Yakama Nation, like other Native American tribal communities, predicates their continued existence as a distinct people on a spiritual and kinship relationship with the natural community of their tribal homeland (Schuster 1975, 1998, Hunn 1990). By telling the traditional stories of the many animals and plants that inhabit their area, they also tell about who they are as a people and the things they value and hold true. Their home landscape and native foods are part of their sense of place (O’Neill 2003). The Creator obviously put the Yakama in the right location. Everything good is to be found on the Columbia Plateau: abundant salmon, roots, berries, and big game; obliging the Yakama people to always remain and protect their land. Wetlands and other traditional natural resources of the Yakima and Columbia Basins are understood as a priceless gift from the Creator.

The relationship of the Yakama community to nature is one of a reciprocal relationship between humans and the species used as traditional subsistence foods, medicines, and fibers. The nontribal YNWRP employees interviewed here were less sure of the relationship of human beings and nature, sometimes linking humans to either invasive species or as a source of disturbance. There was some sense among nontribal biologists of the YNWRP and FWS of human beings as having fallen from grace, expelled out of the Garden of Eden because of their embrace of agriculture and industry.

The FWS informants were considerably less conflicted with their role in nature because their refuge work involves consciously manipulating natural processes to benefit certain species, resulting in focal wildlife populations thriving in the human-dominated environments. In feeling part of nature, I felt that at some level, the Yakama informants and the nontribal FWS biologist/managers were more closely aligned with each other, than the Yakama informants are with their nontribal YNWRP colleagues, many who have been working for the tribe for decades.

However, as a core proposition, many Yakama question the dedication of FWS managers to manage any part of their homeland, simply because the federal lands they manage can only be their temporary duty stations, and will not be managed with the proper concern and reverence. Because the Yakama have lived in the Columbia Plateau “from time immemorial” and plan on staying there forever, they argue that they should be given complete autonomy, along with other Columbia River tribes, to manage it as they did for thousands of years. This places an immediate hurdle that no FWS official hoping to manage TNWR in cooperation with the YN can ever truly clear. Beyond the immediate tribal–federal conflict, this is an argument for local control over land and its resources as more effective and responsive than federal top-down control.

This affective and practical management issue is a key point made by the Salish–Kootenai and their supporters in the NBR fiasco, as well as the Nez Perce in their comanagement program with the FWS for the recovery of the gray wolf. Who better to take care of the buffalo at NBR than a local Indian community who revere buffalo? Who better to restore wolves to the Northern Rockies, than Indian people of the region who have clan ties with the wolf?

Euro-American biologist/land managers like those in the FWS, even within the YNWRP itself, can never fully understand the depth of the Yakama community's commitment to the living resources of the region, and concerns about how they are managed both on a physical and spiritual plane. The entire region of mountains and rivers has both a natural and sacred reality to Yakama people, a worldview that has no place in any federal land management bureaucracy. One Native American FWS informant said Indian tribes are trying to bring the concept of sacred reality "into a system that can't do sacred reality."

The FWS worldview unconsciously puts everything that is part of the Yakama sacred world into a pile labeled simply "natural resources." For some Native American people, the act of simply calling food animals and plants, natural resources is a foreign concept adopted from an entire European civilization estranged from nature.

However, the Yakama and other Northwestern tribes have had some success in conveying their sacred value of salmon to the general public, so that even the most hardened secularist Euro-American in the region recognizes, at least some level, the powerful iconic nature of salmon for Columbia River Indian people, and for all tribal and nontribal communities in the entire Pacific Northwest. The problem of reconciling the two realities, the profane and the sacred (picture a person jet skiing in the Columbia River Gorge beneath the sacred Indian petroglyphs), is one of the most intractable conflicts in the management of federal lands in Indian Country today, involving everything from huckleberry picking and rock climbing, to religious worship.

The simple act of conducting typical FWS refuge maintenance activities such as re-engineering an impoundment or disking it in preparation for moist soil management, may pose a problem for some Yakama traditionalists who don't believe people should disturb the earth, presenting an obvious barrier to cooperative management at TNWR where they consistently advocate moving dirt and water for wildlife habitat management. Subsequent to their worldview, YN tribal members appear less comfortable with overt technical fixes to wetland management problems, including moving dirt and water. For the FWS staff working on duck refuges, these actions are almost second nature.

The sheer hubris of FWS in attempting to manage nature in TNWR is problematic to many traditional Yakama people. They believe nature should be left alone, allowed to take its course and heal itself. This position is also problematic within Yakama government because it would also limit some of the YNWRP's own activities to restore wetlands, riparian areas and uplands on Toppenish and Satus Creeks. The management of the wild horse herd on the Yakama Reservation has a similar tension, pitting people who support active herd management against others who would let them run free undisturbed as a symbol of the equestrian heritage of the Yakama people.

Interpreting and articulating Yakama cultural values and sacred realities is often left to nontribal archaeologists employed by the YN with the danger of their explanations appearing inauthentic and not worthy of being taken seriously by the FWS. The lack of Yakama tribal representatives comfortable in articulating a viewpoint to the FWS that incorporates both Yakama traditional cultural and scientific perspectives poses a barrier to the protection of Yakama cultural sites and values on the TNWR. This situation is likely to be repeated throughout the U.S. federal land management bureaucracy in their relationship with Native American communities, particularly in comanagement projects that require considerable cross-cultural translation and dialogue.

Wetland Management Ideals

There was broad agreement overall on views of wetland management between the FWS and YN wetland managers, valuing undisturbed or restored natural systems, with intensive management seen as a last resort in wetlands totally transformed by agriculture. This did not support my prediction that the FWS would stress "a farming-for-wildlife approach" to wetland management in direct opposition to the YN "wetland restoration" approach.

However, the FWS appeared more comfortable with technical fixes for solving wetland problems than the YN. The Yakama community remains wary of water diversions and other major infrastructural developments along waterways, presumably because of the devastating impacts of Columbia River hydro system and irrigation diversions on salmon and steelhead runs

on both the Columbia and Yakima Rivers in the past and in the present. There may also be a religious basis to the Yakama bias against extensive wetland management such as that carried out by the FWS.

A main difference in the management regimes of the FWS and YNWRP were in privileging different wetland users. The FWS privileges nontribal duck hunters and bird watchers, while the YNWRP privileges Yakama tribal members—mostly plant gatherers, but also nontribal duck hunters, and a slowly growing number of Yakama hunters. YNWRP tracts are generally not open to casual bird watchers.

Differences in the management regimes in FWS and YNWRP tracts appeared to favor different wetland vegetation communities. The FWS approach favors early successional vegetation, mostly annual plants of short stature, while the YNWRP approach favors a more historical community complement including, seasonally mature tules and other emergent plants in deep water marshes, and spike rush and camas in ephemeral wetlands. I would anticipate more waterfowl breeding in the dense vegetation of the YNWRP tracts, with the FWS possible providing better waterfowl feeding habitat, but only if invasive weeds can be better controlled.

Regarding the temporal dimensions of wetland management, I had predicted that YN employees would all take a long range view of decades for their work, with the FWS taking a shorter term perspective of years. However, only the Yakama program managers, all over 50 years old, consistently held a long term perspective. Younger Yakama informants generally shared a short term perspective with nontribal YNWRP biologist employee colleagues and FWS biologist/managers. Only the oldest Yakama informants remembered the lush reservation riparian and wetland conditions of decades past, often using the date of the tragic inundation of the classic fishing site Celilo Falls by The Dalles Dam in 1957 as a touchstone event. However even by that time, much of the lowland wetland areas of the reservation had been severely affected by agricultural drainage. This may have diminished expectations of what full restoration of creek functioning would truly look like.

Organizational and Institutional Behavior

Organizations have various sources of inertia that makes it difficult for them to respond to challenges. The greater the inertia of the land management approach chosen, such as the permanence of its physical infrastructure, the need for on site technical decision making, and large inputs of labor, the more likely it may create a barrier to change, despite the need to accommodate new scientific/technical information or alternative management models as might be required under a comanagement regime. Of the two agencies examined here, the YNWRP appeared more flexible, able to incorporate new ecological concepts and management alternatives than the FWS.

The FWS refuge program may have greater built in inertia than the YNWRP due to the larger size of its bureaucracy (Hannan and Freeman 1984). Its inertia may also be due to the poor financial and political position of the FWS during this period, without sufficient funding, personnel with appropriate expertise, and energy to accommodate to new TNWR wetland management challenges and the shifting relationship with the YNWRP. However, FWS inertia may also be explained by the large FWS bureaucracy requiring, and then developing, a more tightly normative cognitive model of wetland management than the YNWRP, resistant to new ideas and evidence (see DiMaggio and Powell 1983).

The FWS is heavily invested, both culturally and physically in the concept and infrastructure of waterfowl impoundment management, making it difficult to respond to new challenges such as biodiversity concerns, an endangered species that needs to be accommodated, or community demands for access to its open space. The broader YNWRP mandate of providing the Yakama community the opportunity to forage for a wide range of wildlife, fish and plant resources, while sounding difficult to accomplish because of its breadth, may actually be more resilient to new challenges, as there are fewer trade-offs required in the restoration approach they have chosen. In restoring the form and function of the historical ecosystem, theoretically all of the original native species benefit, including those of greatest cultural importance to the Yakama community. The patterns of organizational and institutional behavior I describe above are fairly

predictable and could be anticipated in most relationships between federal land management agencies and tribal governments.

An ethnographic analysis of the MOA meetings revealed a general lack of overt Yakama cultural focus, primarily because few Yakama attended them. A traditional Yakama worldview found little expression in the FWS-YN MOA meetings. The YNWRP appeared to be making a conscious choice of asserting its Western scientific and technical capacity at those meetings as opposed to its Yakama cultural human resource capacity and ethnoscience. Thus the process by default only examines ecological and land management issues as artificially devoid of cultural content, even though many of the MOA issues that arise in the meetings are entirely socio-cultural in nature.

One of the weaknesses of that approach is a silencing of local Yakama ethnoscientific and spiritual perspectives. It might be more effective for the YNWRP to argue for inclusion of Yakama cultural interests at TNWR by having Yakama representing those interests to the FWS directly. While a Yakama cultural and spiritual perspective would certainly pose a challenge to the FWS, doing so might lead to real cross-cultural understanding and consideration of the Yakama in TNWR management.

The MOA meetings lacked any explicit conflict despite the presence of major issues with the potential of undermining the entire agreement, including refuge hunting by Yakama tribal members and law enforcement jurisdiction issues. However, underlying these meetings was a silent, but real, political conflict about the boundary between Yakama sovereignty over reservation natural resources and the “inherently federal functions” of FWS refuge management of 8,500 acres on the reservation, a fundamental dispute which unfortunately continues to be left unresolved. This is despite the YNWRP success in protecting and restoring 21,000 acres of wetlands in the basin over past decade, indicating a proven capacity to carry out the functions of protected area management benefiting waterfowl and wetland user groups including nontribal duck hunters. On the basis of this fundamental dispute and the other issues that have been discussed, the MOA has been deemed a failure by the YN, with its only real accomplishment a

dissipation of the tension that had grown between the FWS and YN over a long period enabling them to work together on projects of common interests including NAWCA grants and youth employment. For the FWS the fact that the MOA has reduced tensions and set up better lines of communication and cooperation between themselves and the YN is a very positive outcome of the agreement.

The FWS-YN agreement continues in the hope that the more fundamental issues will be resolved to both parties satisfaction. In terms of this research, a deeper examination of organizational behavior during comanagement negotiations may be fruitful, particularly examining both the spoken and unspoken agendas and concerns of the parties. Which brings us to the final point of this dissertation: that of federal control versus tribal sovereignty, and whether comanagement is a subtle new form of continuing federal power or a manifestation of growing tribal strength and national sovereignty?

Inherently Federal Functions vs. Yakama Tribal Sovereignty

The dearth of annual funding agreements and other comanagement agreements between the FWS and tribes since the passage of the Self-Determination and Self-Governance Acts indicates the FWS lacks confidence in the ability of tribes to manage a variety of Service functions or activities that they view as inherently federal prerogatives, most notably the management of entire units of the NWR system, federal fish hatcheries and other prominent FWS programs. Environmental groups who support the FWS articulate a common fear that tribes will favor their own community needs over FWS priorities, and hence actively lobby against tribal AFA's in the halls of the U.S. Congress.

The FWS clearly views AFA's as a relinquishment of control, not as Nadasdy and others claim as a subtle new form of their statist power being injected into the realm of land and resource management in Indian Country. Possible the greatest barrier to comanagement of federal lands is unwillingness of federal agencies to significantly relinquish control and to recognize tribal rights of sovereignty and self-governance, and federal trust responsibilities to protect that sovereignty,

articulated in the Tribal Self-Governance Act of 1997. In this study, using the example of the TNWR agreement, I demonstrated that developing comanagement is not a sign of the continued subtle strength of federal control but a manifestation of growing tribal sovereignty and true nation power.

I presented a few lines of evidence that directly challenge Nadasdy's argument and support my own final conclusions. The first is rhetorical. If the FWS truly believed AFA's were a subtle new approach to manage NWR's without giving up real control, why are senior FWS refuge managers and their allies among environmental and sportsmen's groups nationwide so solidly united in opposition to comanagement agreements? Why did the Department of Interior have to strong arm the FWS directorate to negotiate a new NBR AFA by the spring 2008? The FWS and its allies obviously see AFA's as a threat to the integrity of the NWR system and the entire federal lands system, not simply a softer new approach to federal control of National Wildlife Refuges, parks, forests, and rangelands.

The second line of evidence implicates the long history of the Yakama tribal government, and that of other Northwest tribes, in fighting for fishing rights and other reserved rights guaranteed under federal treaties signed in the 1850s. The Yakama and other Northwestern tribes have proven their skill in using any avenue available to them over 200 years of Euro-American contact to protect the rights of their community and assert complete tribal sovereignty over their reservation and their natural/cultural resources both on and off reservation as guaranteed under treaty and under federal law. Their approach has included direct government to government dialogue, legal challenges, civil disobedience, scientific and technical management, research, and monitoring, and social and political alignments. The Yakama and other Northwestern tribes negotiate agreements with the federal agencies with their eyes fully wide open.

The Yakama are currently comanagers of the Columbia River salmon fishery along with the other Columbia River fishing tribes and the states of Washington and Oregon. They are well represented on the Columbia River Intertribal Fishery Commission, the Pacific Salmon Commission and other boards governing salmon fisheries and other natural resources. The

Yakama have successfully challenged federal management of the Columbia River hydro system, using their considerable political clout and legal, technical and scientific expertise to reserve a place at the negotiating tables, both at the federal, regional and county level. Their skill at salmon and ecosystem restoration on the Columbia and Yakima Rivers, their steady approach to managing their own tribal fishery, and their successful public hunting program are further proof of their legitimacy and growing nationhood. They are asserting their sovereign control and strength, not being manipulated by insidious forces to do the bidding of the federal government.

To the Yakama, the MOA for Toppenish Refuge cooperation is a living document, only a first step in a measured repatriation process for TNWR and CLNWR. Perhaps the FWS is hoping the agreement will placate the Yakama tribal government and will be the final step in cooperative management of TNWR, but I doubt it. The YN has sought to negotiate some form of agreement about TNWR, on and off, for 14 years, and look forward to the day that they can add its lands to their reservation wetland conservation program, now over 21,000 acres in size, toward an eventual goal of 27,000 acres.

I have heard Yakama natural resource department managers explain that the YN is here for the duration, “We are not going anywhere.” The ties of the YN to the NWR lands on their reservation are ancient and enduring. They ask, who better to manage these lands than they, the most “senior” landowners, the only true “natives”? To the YN there is no question that they are more motivated and prepared to steward these lands than any team of FWS staffers. The YNWRP floodplain restoration projects on Toppenish and Satus Creeks flow directly from the interests of the YN in asserting fishing rights on the Columbia River, a struggle with over a 150 year history. A fully restored Yakama Reservation under complete Yakama control can serve an ultimate purpose of providing a sustainable land base for the Yakama people, including providing a healthy economy and opportunities to harvest traditional foods and other wild resources. The YN is determined to someday prevail in regaining control over the NWR lands, but are willing to participate in a graduated process that gives them increasing levels of refuge management authority over time, until achieving complete repatriation sometime in the future. However,

the NWR System itself has a proud 100 year history, and it appears, for the time being at least, that the FWS is determined to continue to assert the “inherently federal function” of NWR management, despite the location of TNWR and CLNWR within the boundaries of Yakama Reservation. However, the moist soil impoundment approach utilized at TNWR would appear vulnerable to challenges to the Service’s rights to summer water, particularly if anticipated predictions of declines in Cascade snowmelt due to global warming are accurate.

To the FWS, tribal interest’s in managing refuges are but another threat to the integrity of the refuge system nationwide, along with severe budget and personnel cutbacks and a variety of political and ecological threats, such as the privatization movement, antihunting groups, the oil industry, and rapid development of the rural landscapes bordering refuges. While the YNWRP is currently asserting and expanding tribal sovereignty, the FWS refuge program is trying to maintain as much system integrity as possible despite a weakened position in the current national political and economic climate.

The developing relationship between the YNWRP and FWS in the management of Toppenish Creek wetlands typified by the MOA is a manifestation of the growing sovereignty and nation power of the Yakama community. By entering into a cooperative agreement for management of Toppenish Creek wetlands and by demonstrating ability in restoring wetlands, wildlife and fisheries, the Yakama Nation indicates to the FWS, other federal agencies, state and county governments, and to the general public their legitimacy and ability as regional land managers and as partners in the management of valued living resources, such as the Pacific salmon and waterfowl.

The YN-FWS MOA demonstrates both the development of greater Yakama nationhood and an exercise of its power. In drawing a final conclusion from this analysis, the ultimate challenge ahead for federal and tribal leaders is to take a full accounting of what such comanagement agreements truly represent: a negotiation over land between the natural resource bureaucracies of sovereign nations, each holding different worldviews and cultural values forged in their unique histories.

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APPENDIX A

WETLAND DOMAIN ANALYSIS

Cultural Modeling Approach

To establish the cognitive boundaries of the wetland domain and to help identify any professional or cultural models of wetland valuing and management held by wetland managers and users in Toppenish Creek and surrounding areas, I conducted semi-structured interviews with a sample of people involved in activities in local wetlands. My sampling pool consisted of a focused group of tribal and non-tribal YN Tribal Government natural resource and environmental management employees, FWS staff of the Mid-Columbia NWR Complex which includes TNWR, a Washington State Department of Fish and Wildlife wetland reserve manager, and local tribal and nontribal wetland users.

My initial contact in the YN tribal government was a nontribal YNWRP biologist, who referred me to almost all of his program colleagues, fellow natural resource or environmental management program managers, and individuals who represented different wetland user groups including tule gatherers, duck hunters, birdwatchers, and fur trappers. My initial contact with the FWS was a refuge manager at the Mid-Columbia NWR Complex, who referred me to most of his colleagues responsible for different aspects of TNWR management.

I conducted semi-structured interviews with twenty four individuals (for informant profiles go to the end of this appendix), focusing on their basic understanding of the value and use of wetlands, and the management of wetlands. Fifteen of these informants also participated in subsequent semi-structured interviews described in chapters 4 and 5.

Informant Demographics

Thirteen YN Tribal Government employees involved with wetland management issues were interviewed, nine tribal and four nontribal. The tribal employees were all males ranging in ages from their early thirties to early seventies. All tribal government informants had at least a high school diploma, with four having some college education or degrees, including one with a master's degree. Five of the tribal male informants held YN natural resource or environmental program manager positions and four of them also had held past leadership positions in the Yakama Tribal Council.

Three of the four nontribal YNWRP employees were male, ranging in age from their late 30s to late 40s. The lone female was in her mid-30s. All of the nontribal employees held college degrees, with three holding masters' degrees and one was completing his doctorate. Three of the four were biologists, with one archaeologist/cultural anthropologist who advised the YNWRP wetland restoration program.

The four FWS employees interviewed were all males ranging in age from their mid-30s to late 50s, all with degrees in the biological sciences/wildlife management, including two holding master's degrees. Three of four worked as refuge managers and one as a refuge biologist. The Washington State wetland reserve manager was a degreed wildlife biologist in his late 50s.

Six Toppenish Creek wetland users were interviewed: three Yakama tribal members, two females and one male, and three nontribal males. The two female Yakama wetland users were tule gatherers, one in her late 30s and the other in her early 50s. The male Yakama wetland user was a fur trapper and rancher in his early 50s. The nontribal users interviewed were two duck hunters, and a bird filmmaker. The duck hunters were a teacher in his 50s and a retiree in his early 70s. Both hunters also assisted the YNWRP in banding ducks and in waterfowl surveys. The filmmaker was a retired university professor in his early 70s who has volunteered with the FWS, YNWRP and WAFW on various wildlife video projects.

Interview Protocol

Each interview lasted between 1 and 2 ½ hours. All informants were interviewed alone, with the exception of one YNWRP biotechnician work team pair that was interviewed in tandem. Although informants were asked to free list their responses during the interview, the interview questions did not in the final analysis lend themselves to be verbally answered as a simple list of words or phrases alone. Instead, the majority of informants simply answered the questions in full sentence format. Four FWS and two YN employees prepared written responses on the initial question form that had been given to them which they sometimes referred to and augmented during their verbal interviews. The majority of the interviews were tape recorded. Some informants did not consent to recording. For those interviews which were not audio-taped, detailed written notes were taken in an attempt to record their responses verbatim.

Below are the questions asked of each informant during the wetland domain interviews:

- 1) Why are wetlands important or valuable? What is their function in nature? What is their function in our society?
- 2) How should wetlands be used?
- 3) How should wetlands be managed?

The interview question responses were theme coded using NVIVO software. The answers to the questions served as a measure of the most salient wetland values and management concepts among informants. I used the interviews to search for explanations of how wetlands were valued as natural and cultural systems, and looked for keywords and metaphors used in natural discourse (Blount 2002, Paolisso 2002). The explanations and keywords were used to help identify underlying cultural models (D'Andrade and Strauss 1992). The interviews provide a glimpse of what concepts are shared by most informants—those that could be truly indicative of primary cultural knowledge or core beliefs, those that are only shared by sub-groups among them, and those that are more individualistic in nature.

Model Predictions

Based on scoping work I carried out a year previous to this study, I believed that FWS and YN wetland managers held different understandings of wetland value and the best approaches for management. I was confident I could demonstrate that the two groups were applying different culturally and professional models of wetlands, reflecting the differing cultural values and historical trajectories of their two agencies. I believed that in effect they represented two different wetland management “cultures” operating under different logics and values. The differing models would help explain why the two agencies were applying divergent management approaches on Toppenish Creek. Furthermore I thought the differing models were posing an obstacle to integrating the management of TNWR with the YN wetlands.

The null hypothesis would be proven if there was no difference between the wetland models of FWS and YN wetland managers, that is, they represent one wetland management “culture”. I conceded that more than one cognitive model might be present among both the FWS and YN wetland managers (i.e. YN wetland employees include both Yakama and Euro-American staff); however I anticipated that most employees from the FWS and YN would fall into two broad clusters, with some overlap. I anticipated the overlap would be least for YN tribal employees and FWS employees. I also anticipated some intra-agency variation of models within the YN and FWS based on the actor’s experience and niche in life (socio-economic class, gender and age group) (Nazarea 1995). That would include formal and informal training, education and lived experience in various domains ranging from wildlife and fisheries science and agriculture, religion, and subsistence and recreational hunting, fishing and plant gathering. The greater the degree of consensus in the individual cognized models of the actors (Rappaport 1979), the more likely the group shares a single shared cultural model. A lack of consensus would identify the cognitive models of the actors as more idiosyncratic and ad hoc.

Wetland Values Results

The informant texts generated from the questions about value and use showed a lot of redundancy so I analyzed them as single data set of text for each person. There appeared to be broad agreement across informants that the value of wetlands in nature and for human society was linked with how they functioned as *habitat* for wildlife and as places to go *hunting* and *fishing*, the three related concepts being viewed as part of the same wetland value. For example, a majority of informants (87.5%) valued wetlands as hunting areas, with similar majority (83%), predominately the same informants, valuing wetlands as wildlife habitat, and a smaller majority (71%), dominated by Yakama tribal members, naming them as fishing habitat.

Hunting in wetlands typically refers to regulated shooting of birds such as ducks, geese, pheasant (*Phasianus colchicus*), quail (*Callipepla californica*), dove (*Zenaida macroura*) and snipe (*Gallinago gallinago*), aided by hunting dogs. Bird hunting by the nontribal Yakima Valley community has more than a 100 year history, including exclusive duck clubs with hunters traveling from major cities in Washington, Oregon and beyond. The management of waterfowl areas and the sale of Yakama Reservation hunting licenses to nontribal hunters has been an important avenue for the YNWRP to assert wildlife management authority over reservation wetlands, particularly prior to the 1990s when the YNWRP was still a small program (Figure 39). Prior to the growth of the YNWRP, there was concern that any wildlife management authority not asserted by the tribe on lands within the Reservation might be usurped by the State of Washington. Tribal licensing provided funds for the operation of the YNWRP program and raised the profile of the Yakama Nation within the white sportsmen's community as responsible land stewards and good neighbors who have maintained nontribal hunter access to extensive reservation lands.

Generally Yakama hunters do not target birds for subsistence although duck hunting is slowly gaining some popularity in the community with many Yakama bird hunters having professional and personal ties to the YNWRP. Traditionally duck hunting was not an important subsistence pursuit for the Yakama community, with only two species, the mallard (*Anas*



Figure 39. Fall opening day at the Satus Wildlife Management Area in 2006 on the Yakama Reservation. The limit was 7 ducks per day per person.

platyrhynchos) and common merganser (*Mergus merganser*) given an individual Yakama name, with the Yakama term for mallard serving as the prototypical name for all ducks (Hunn 1990).

Fishing, particularly for salmon, steelhead and lamprey (*Lampetra tridentata* or *L. ayresi*) is a dominant Yakama traditional cultural subsistence and commercial practice. Today, however, usually the primary fish sought by wetland pond fishermen are smallmouth bass (*Micropterus dolomieu*), a non-native sport fish. Today the primary wetland fishermen are nontribal members, although some Yakama fishermen seek salmon and rainbow trout from the banks of the Yakima River, using dip nets from scaffolds as well as by hook and line. Some Yakama people have life-long associations with wetlands and riparian areas in Yakima Basin, often associated with family allotments and hereditary fishing sites. A few Yakama informants recalled fishing as young children in Toppenish Creek wetlands, often catching carp and chubs (*Gila* spp.). It is important to note that today Yakama Reservation creeks are usually closed to both tribal and nontribal fishermen to protect the federally threatened Mid-Columbia steelhead. The only rainbow trout fishing allowed on the reservation is in high mountain lakes in an area closed to nontribal use.

Some Yakama informants describe their subsistence fishing and hunting activities as separate from fishing and hunting activities of nontribal people. Tribal informants do not generally consider recreational sport fishing or hunting, so pervasive in the dominant Euro-American culture in Washington, as an appropriate use of animals that can be consumed as food. A common Yakama saying is “We don’t play with our food.” expressing the idea that wildlife or fish that are eaten should not be treated casually or disrespectfully. To do so would break Yakama rules of behavior (The First Treaty with the Creator) that governs the reciprocal relationship between humans and other sentient beings that are the staples of the Yakama traditional diet, ranging from salmon to huckleberries.

However the value of wetlands as areas for recreational sport hunting and bird watching was clearly recognized by both tribal and nontribal YNWRP employees as well as FWS biologist/managers and the nontribal wetland users. These activities are the major defined compatible uses of publicly-owned wetland refuges as defined under federal and state refuge laws and are activities supported by tax dollars. The YNWRP has developed a few reservation areas for public hunting such as the Satus Wildlife Area and the South Lateral A Tract, and as mentioned earlier the YNWRP public bird hunting program has been important in raising the profile of the Yakama Nation as good land stewards. However with the exception of TNWR, reservation lands are not generally opened for public bird watching, much to the disappointment of many active birders in Washington and Oregon.

Related to hunting and fishing is the Yakama practice of *gathering traditional food and medicinal plants*, named by 62.5% of the informants, including about equal numbers of both tribal and nontribal respondents from YN government, FWS and wetland user groups. The term ‘Yakama foods and medicines’ is used by many tribal members as a gloss for a wide range of wild root foods and medicinal plants that are gathered as part of the traditional Yakama seasonal subsistence round. Formerly the wetland root food called *wapato* (*Sagittaria latifolia*) was widely used. Today because of the widespread drainage of wetlands, local knowledge of the formerly common wetland plant has declined and few gather it. Some Yakama are reported to



Figure 40. Yakama youth cutting tules for their elders, Satus Wildlife Area.

gather cattail roots and young shoots as food. Formerly more abundant in both valley and upland meadows were large stands of *camas* (*Camassia quamash*), which served as a staple food for many Native Americans of the Columbia Plateau for millennia.

Wetlands as a source of *tules*, traditionally woven into mats used in Yakama religious and cultural festivals, and historically, housing, was listed by 50% of the informants, including Yakama tribal members, nontribal YNWRP employees, one FWS biologist and the state reserve manager. Management of Yakama Reservation wetlands on Toppenish Creek and Satus for tule production and other useful and edible plants is a major *raison d'être* of YNWRP's management approach (Figure 40). Only one FWS employee named tule gathering as a wetland value. Tule harvest may lack saliency to FWS biologist/managers because all National Wildlife Refuges are closed to the harvest of vegetation except under a special use permit, although a few Yakama tribal members have standing permits to harvest tules at TNWR and also at McNary National

Wildlife Refuge on the Columbia River. Some Yakama may also harvest tules at Washington State managed wetland areas in the greater Mid-Columbia region.

Among Yakama who follow the traditional Wáshat religion, foraging for traditional animal and plant foods, medicinal plants, and fiber plants such as tules is part of the exercise of traditional spiritual practice. Some nontribal YNWRP employees may be unaware that traditional wetland gathering activities are related to the exercise of Yakama religion, beyond tule gathering for religious feasts and funerals. All traditionally harvested products are utilized in community religious and cultural ceremonies and feasts as well as in the home. Typically Yakama foragers offer prayers to the Creator and to the spirits of the animals and to the food, medicinal or fiber plants when harvesting them, with tobacco, traditional medicines, and trade goods such as coins, beads or other offerings often left in exchange.

All 12 Yakama informants described the value of wetlands as sites to carry out some form of traditional foraging either for food, medicinal plants or tules. Eight of 12 nontribal informants, including all YNWRP employees and 50% of all others explicitly recognized the value of wetlands as the site for some form of Yakama traditional foraging activities. The use of tules for mat making is the traditional cultural value of wetlands best known to nontribal informants. Nontribal informants usually emphasized the societal values of wildlife habitat and wildlife oriented recreation, with some acknowledging the economic ramifications of these values to their community.

Overall the analysis indicates there was considerable agreement of the biological and socio-cultural importance of wetlands as wildlife and fish habitat, with its concomitant value as sites for hunting, fishing and providing the Yakama community with various culturally important plant resources. A Yakama program manager, a nontribal YNWRP biologist, and a FWS refuge manager summed up the socio-cultural values of wetlands that derive from their role as wildlife habitat and as natural areas:

They are created by nature and the Creator. They are habitat for things people need to live: fish, weeds, ducks. It's part of the whole cycle, the frogs and different species.

Wetlands are a crucial part. They hold water . . . act like a sponge. In terms of development of land, we protect all wetlands (Yakama program manager, 50s).

There are a hundred different uses of wetlands. I think they are an important component to an agricultural landscape. Wetlands are important for the health of the area. They're important for the wildlife, they're important for the water quality, they're important to salmon, for flood retention, human uses, recreation. They are extremely important areas. Just in a wildlife perspective, they say that 80-90% of all wildlife species out here use floodplain riparian wetland areas in some part of their life. Extremely valuable, in terms of acreage, maybe a small component of the landscape, but in terms of importance of it, how animals and people are using it, very important, very important (nontribal YNWRP biologist 40s).

We all depend of wetland habitats. Water brings life. If we put water on a piece of ground, naturally or artificially, it brings life. And that brings humans, whether they enjoy it recreationally through hunting and fishing programs, or wildlife viewing opportunities. Food, that is, wildlife comes to wetlands. Its not just birdlife or fisheries, its ungulates as well, that's a food resource to people, as well. . . . So that is important. And there is the aesthetic values of managing wetland, when we see the life that water brings and that we need to maintain quality wetland environments. . . . They might not see that or appreciate it on a regular basis, but its part of the natural cycle that we need, that we have kind of torn apart. (FWS refuge manager, late 50s).

In terms of a locally shared cognitive model, wetlands are synonymous with wildlife habitat in the Yakima Basin and a range of animal and plant resources that can be harvested there.

Wetland Management Results

A number of themes were common in informant discussions of approaches to manage wetlands including, *protection, restoration, controlling invasive plant species* and *water control*. A Yakama program manager, a nontribal YNWRP biologist, and the videographer described how ideally wetlands should be left alone. Both in common YNWRP and FWS usage, the term *protection* describes the purchase of lands for conservation, protecting them from further development, or sometimes closing them to hunting, fishing or the gathering of plants. The concept of protecting wetlands can be conceived as the “first level of management” (quoting a

FWS refuge biologist). The concept of wetland protection was named by a majority (83%) of the informants, crossing the entire range of informant groups. However a duck hunter and trapper did not name protection, possibly because it implied closing areas off from hunting or trapping.

The theme of *restoring* wetlands was named by 58% of the informants, including YNWRP, FWS, and wetland users, sometimes in conjunction with the theme of *protection* such as in this quote from a 50-year-old FWS manager, “In the Lower Valley, we have lost wetlands and damaged the riparian area. Basically we need to restore, enhance and protect wetlands.”

The term *restoration* was used to describe a broad range of management approaches at various scales, including re-establishing native grasses and riparian trees, re-introducing endangered animal populations, restoring natural hydrology, and broader landscape-scale ecological restoration. Restoration is widely viewed by the various Yakama natural resource management programs as central to their mission including the re-establishment of normative hydrology and vegetation, and the reintroduction of locally extirpated and diminished populations of salmon, mammals and birds. Ecological restoration as a concept has been directly linked by the YNWRP with the restoration of Yakama cultural resources and the opportunity to utilize the Yakama landscape in the exercise of traditional Yakama spiritual, subsistence and commercial practices. The idea of linking ecological and Yakama cultural restoration was expressed by both a Yakama program manager and one of his nontribal biologists:

To [the biologists], they think the physical release of these locally extirpated species is restoration. It’s only the beginning. They haven’t been fully restored until the Yakama can partake of them again as food (Yakama program manager, 50s).

A lot of what we’re doing is restoration because we’re trying to bring back native conditions and what existed historically, but it is also enhancement because what we’re doing is trying to bring back the cultural and traditional values of the Yakama people (nontribal YNWRP biologist, 40s).

The FWS biologist/managers used the term restoration in referring to re-establishing native riparian and upland vegetation damaged by livestock grazing, in the same way that the YNWRP

spoke about reseeding and replanting native vegetation on newly protected tracts. However the FWS informants also sometimes used the term restoration in referring to the rehabilitation of man-made wetland impoundments on TNWR to enhance habitats for waterfowl and other migratory birds. FWS refuge managers would describe their strong feelings of satisfaction in seeing the rapid avian response to rehabilitated refuge impoundments, as in this quote from a manager in his late 50s below:

Seeing successes in wildlife management and you take pride in, once you restored an area, seeing life that it brings, the cranes and the swans that are sitting on an area that you have helped bring back, and it's not all canary grass that has invaded the area because of the change that has occurred. It's actually producing something.

Tied for the third most salient management concept, *water control* stands at the heart of wetland management for waterfowl habitat. Water control was named by 54% of the informants, dominated by nontribal informants, including all FWS biologist/managers, three of four YNWRP staff, some wetland users, and the state reserve manager. Only two tribal informants both working for the YNWRP as biotechnicians, conducting water control in managed wetlands as part of their job duties, mentioned water control as a key management approach in wetlands.

This basic division between Yakama tribal members and nontribal biologist/managers and users about the importance of water control in managing wetlands is intriguing. One possibility is that the Yakama community is generally uncomfortable with the process of diverting water from natural creek flow on religious and ethical grounds, a position that most of the nontribal community do not share. Related to that point, the Yakama community may regard diverting water to benefit waterfowl as negatively impacting steelhead and other highly valued anadromous creek fish, a trade-off of lesser concern to the nontribal community. The issue of water diversions, the ethics of doing so, and of the fish—waterfowl tradeoffs are discussed in chapters 4 and 5.

However, YNWRP and FWS wetland managers and duck hunters are clearly concerned with how water will be delivered to and withdrawn from impoundments and oxbow sloughs in

preparation for the habitat requirements of migratory waterfowl. The ability to control water to stimulate or control vegetation in artificial impoundments is the essence of the art and science of contemporary waterfowl management. The predominant wetland approach of the FWS and the State of Washington Department of Fish and Wildlife is ‘moist soil management’, encouraging the growth of early successional annuals on bare mudflats to provide food for wintering waterfowl by carefully controlling water levels, so it was not surprising that they all named moist soil in their discussion of favored management approaches.

The biggest obstacle to successful wetland management and restoration is the pervasive problem of *invasive weeds*, which was tied with water control in being named by 54% of informants, including FWS biologist/managers, YNWRP biotechnicians, and half the wetland users. The control of weeds has become a major objective of the FWS in all Mid-Columbia National Wildlife Refuges and elsewhere in the nation, as both wetlands and uplands have the potential of becoming completely dominated by monocultures of exotic vegetation, with dangers of wildlife population declines and even local extinctions. The Yakima Basin reportedly suffers from infestations of many of the worst exotic weeds in the country because the valley has been so disturbed by agriculture. Lands taken out of farming by the YNWRP will not generally succeed naturally into native vegetation. Without intensive management they quickly revert to exotic weeds. For YNWRP biotechnicians, controlling exotic weeds in areas being restored with native vegetation has become a major component of their work, involving herbicide sprayers, chainsaws, tractors and prescribed burning.

A shared cognitive model of wetland management appears consistent with this analysis, including the concepts of protecting wetlands from development, restoring their community ecology at varying scales, managing water levels to encourage native vegetation for waterfowl and other resource values, and controlling the growth of exotic weeds.

Wetland Domain Analysis Summary

The analysis of the cultural domain of wetland management in the Toppenish Creek watershed showed a surprising degree of agreement over a wide range of tribal and nontribal informants representing the YNWRP, other Yakama Nation natural resource programs, the FWS, the Washington state reserve program and various wetland user groups including Yakama tule gatherers, nontribal duck hunters and bird watchers. The 24 informants varied greatly in cultural affiliation, in age and gender (although females were under-represented), in social status, in their life experience in wetlands (including the resources and other values they derive from wetlands), in formal and informal education in Western science and Yakama ethnosience, and in professional experience. Yet even with this high level of informant diversity, I found a considerable level of cultural consensus in their consideration of the biological and socio-cultural value of wetlands, and in their knowledge of wetland management.

There was considerable agreement of the value of wetlands as wildlife habitat and in providing opportunities to engage in a range of wildlife-oriented subsistence and recreational activities, and Yakama cultural practices, including the gathering of traditional foods, medicines and fibers. There was also widespread agreement of how wetlands should be managed, including protecting them from development, restoring their structure, function and biodiversity, and maintaining wetlands for waterfowl and other living resources by controlling water levels and eradicating invasive exotic plants.

The dominant themes describing wetland values elicited from nontribal YNWRP biologists suggest that Yakama resource and environmental program managers and YN archaeologists have successfully inculcated their fellow YNWRP colleagues of the value of wetlands to the Yakama community. However, the value themes elicited from the FWS informants suggest that the YN as a whole has been less successful in educating the FWS about Yakama cultural values attached to wetlands on Toppenish Creek. For example, TNWR tule stands continue to lack saliency to FWS staff, or are grouped with invasive vegetation to be controlled. Their logic is apparent. The dense growth habit of the plant, little open water and relatively low food

productivity of mature monotypic tule stands causes many waterfowl biologists to consider tule marshes as under-performing wetland habitat. They typically prefer an earlier stage of wetland plant succession such as one dominated by annuals. It is ironic that while the FWS attempts to clear tule-dominated impoundments in TNWR, the YNWRP manages neighboring tracts for tule production and accessibility for harvesters. This difference in vegetation management has ramifications for the development of differing vegetation successional trajectories in FWS and YNWRP managed impoundments which I discuss in depth in Chapters 5 and 7.

While overall the FWS describes managing TNWR wetlands not so unlike the way YNWRP manages its impoundments and oxbow slough wetlands on Toppenish Creek and in the Satus, their emphasis is more on enhancing wetland productivity for wintering waterfowl than the YNWRP. The emphasis of the YNWRP is less on waterfowl in isolation from other resource values and more on the maintenance of the ecosystem and cultural values important to the Yakama community as a whole including anadromous fish passage, restoring useful marsh and riparian vegetation such as tules, chokecherries (*Prunus virginiana*), Indian hemp (spreading dogbane, *Apocynum androsaemifolium*), wetland root foods such as wapato, and medicinal plants.

INFORMANT PROFILES FOR DOMAIN ANALYSIS

YN Tribal Environmental Program Employees

- 1) A1—Male, Yakama tribal member, manager of a Yakama natural resource management program, 50s, Graduate degree, Tribal leadership experience
- 2) A2—Male, Yakama tribal member, manager of a Yakama natural resource management program, 60s, Undergraduate degree, Tribal leadership experience
- 3) A3—Male, Yakama tribal member, manager of a Yakama natural resource management program, 70s, Broad educational background, Tribal leadership experience
- 4) A4—Male, Yakama tribal member, manager of a Yakama cultural program, 70s, Broad educational background, Tribal leadership experience
- 5) A5—Male, Yakama tribal member, natural resource program administrator, 50s, Technical education
- 6) A6—Male, Yakama tribal member, biotechnician for wildlife program, 30s, HS education

- 7) A7—Male, Yakama tribal member, biotechnician for wildlife program, 40s, HS education
- 8) A8—Male, Yakama tribal member, biotechnician for wildlife program, 30s, HS education
- 9) A9—Male, Yakama tribal member, biologist for wildlife program, 40s, Undergraduate degree

Nontribal YNWRP Employees

- 1) B1—Male, wildlife biologist, 40s, Graduate degree
- 2) B2—Male, wildlife biologist, 30s, Graduate degree
- 3) B3—Male, archaeologist, 40s, Graduate degree
- 4) B4—Female, biologist, 30s, Graduate degree

FWS Employees

- 1) C1—Male, refuge manager, 60s, Undergraduate degree
- 2) C2—Male, refuge manager, 30s, Undergraduate degree
- 3) C3—Male, refuge manager, 50s, Graduate degree
- 4) C4—Male, refuge biologist, 50s, Graduate degree

Washington State Reserve Manager

- 1) D1—Male, wetland manager, 50s, Undergraduate degree

Wetland Users

- 1) E1—Male, bird videographer, retired professor, 70s, Graduate degree
- 2) F1—Male, duck hunter, youth educator, 50s, Graduate degree
- 3) F2—Male, duck hunter, retired, 70s, HS education
- 4) G1—Female, Yakama tribal member, tule gatherer, technician with tribal land management program, 30s, Some college education
- 5) G2—Female, Yakama tribal member, tule gatherer at Toppenish NWR and McNary NWR, Tribal program manager, 50s, Undergraduate degree
- 6) H1—Male, Yakama tribal member, fur trapper, fisherman, stockman, former biotechnician for a Yakama natural resource program, 50s, HS education

APPENDIX B
WORLDVIEW AND WETLAND MANAGEMENT IDEALS
INTERVIEW INFORMANT PROFILES

YN Tribal Environmental Program Employees

- 1) A1—Male, Yakama tribal member, manager of a Yakama natural resource management program, 50s. Graduate degree. Tribal leadership experience
- 2) A2—Male, Yakama tribal member, manager of a Yakama natural resource management program, 60s. Undergraduate degree. Tribal leadership experience
- 3) A3—Male, Yakama tribal member, manager of a Yakama natural resource management program, 70s. Broad educational background. Tribal leadership experience
- 4) A6—Male, Yakama tribal member, biotechnician for wildlife program, 30s, HS education
- 5) A7—Male, Yakama tribal member, biotechnician for wildlife program, 40s, HS education
- 6) A8—Male, Yakama tribal member, biotechnician for wildlife program 30s, HS education
- 7) A9—Male, Yakama tribal member, biologist for wildlife program, 40s. Undergraduate degree
- 8) A10—Male, Yakama tribal member, biotechnician for a restoration program, 20s
- 9) A11—Male, Yakama tribal descendent, biologist for a plant management program, 30s
- 10) A12—Male, Yakama tribal member, biotechnician for a plant management program, 40s
- 11) A13—Female, Yakama tribal member, biologist for land management program, 30s

Nontribal YNWRP employees

- 1) B1—Male, wildlife biologist, 40s, Graduate degree
- 2) B2—Male, wildlife biologist, 30s, Graduate degree
- 3) B3—Male, archaeologist, 40s, Graduate degree
- 4) B4—Female, biologist, 30s, Graduate degree
- 5) B5—Female, wildlife biologist, 30s, Graduate degree

FWS Employees

- 1) C1—Male, refuge manager, late 50s, Undergraduate degree
- 2) C2—Male, refuge manager, 30s, Undergraduate degree
- 3) C3—Male, refuge manager, 50s, Graduate degree
- 4) C4—Male, refuge biologist, 50s, Graduate degree
- 5) C5—Male, refuge equipment operator, on-site manager, 40s, HS education

APPENDIX C
WETLAND SYSTEM DYNAMISM AND CONNECTIVITY
IN SPACE AND TIME

How wetland systems are perceived as either dynamic or immutable in space and time, either connected or isolated from surrounding habitats, should have a strong influence on how they are valued and managed. In semi-structured interviews with 21 YN and FWS employees (Appendix B), I examined how the two agencies cognized the stability and dynamism of wetland systems, and the degree that they were perceived as interconnected or discrete from other habitats in their watershed.

Prior to conducting the interviews, I anticipated that since the FWS had to manage discrete refuge tracts that this might force them to cognize and manage wetlands as stable in time and space. Alternatively I predicted that the YN with its long time horizon in the Mid-Columbia region probably had developed a strong sense of the historical dynamism of the creek and river floodplain landscape, and would cognize and manage them accordingly.

Related to the stability and dynamism of wetlands is the degree to which they are cognized as isolated water-dominated features bounded by drier upland habitats or as a downstream feature of a larger watershed basin. Wetlands are well known as essential wildlife habitats, with a significant number of both aquatic and terrestrial species requiring wetland habitats for at least a portion of the yearly life cycle and home range. The concept of a continuum from wetland isolation to watershed connectivity is important in influencing how wetlands might be evaluated and managed within a larger matrix of habitats, including presenting opportunities to manage watersheds across multiple ownership boundaries.

I had also expected that the two organizations might differ in their outlook based on their respective positions as land managers within the basin. The Yakama Nation controls a 1.3 million

acre swath of land ranging from the top of Mt. Adams to the Yakima River, including the entire drainage of Toppenish and Satus Creeks. Within the reservation, floodplain wetlands might be viewed as a terminus feature of an entire watershed basin ecosystem. The FWS, which owns only about 2,000 acres of creek floodplain wetlands embedded in this basin, can only directly assert influence over their own holdings, which are often dependent on water diversions that must originate far off the refuge. Some refuge tracts are disjunct from the reserve core of about 1,200 acres. This discrete quality might encourage the FWS to attempt to manage refuge tracts in isolation from their surrounding valley matrix or alternatively it might encourage them to seek the cooperation of outside landowners, thus increasing the effective size of their refuge acreage beyond its actual borders.

Wetland Dynamism

I found that all informants saw wetlands as generally dynamic communities with only subtle differences between their statements. There was some variability in whether informants saw the wetland basin itself as stable, with its vegetation changing with the boom and bust cycles of precipitation, flooding, climatic trends and plant community succession, or whether because anastomosed streams sometimes change channels in this region whether the wetland basins themselves were dynamic. A few others saw the stability or dynamism of wetlands as a question of location, and of scale, over human lifetimes, historical timeframes or geologic time scales. Another factor that came out of these discussions was questioning whether changes in natural wetlands, including valley and mountain wetlands were due to anthropogenic change or were part of a natural climatic cycle or trend.

Managed wetlands along Toppenish Creek combine both immediate and long-term anthropogenic factors and larger scale climatic cycles and trends. Wetlands are both dynamic and stable at different scales. Their dynamism itself may have aspects of stability, such as a consistent wet and dry periodicity. FWS refuge managers described wetlands as dynamic in time and space:

Wetlands change rapidly. They go through succession, floods, dikes are changed or break. The river shifts. They go through cycles of wet and dry periods. (Refuge manager 50s)

Wetlands are both, both dynamic and stable. They are always changing, they go through dry and wet periods, they flood, they go through processes. The vegetation goes through seral stages. For example, you might go through moist soil, then it grows up to cattails and tules, and you set it back. They are static too, in that they are always there. They are made to be wetlands, yet always changing. We actually do things to make them change. We may dry them out and disk the tules to set them back, to set back the vegetation. (Refuge manager late 50s)

The concept of setting back the vegetation is at the heart of waterfowl habitat management in artificial impoundments. How these man-made impoundments operate as a wetland system, in a large part, depends on the actions of wetland managers, who control the amount, the depth and duration of water, the condition of the wetland seedbed, and subsequently control the development of the vegetative community. Waterfowl management is a process of going against succession, actively preventing vegetation from reaching ecological climax. A 50-year-old FWS refuge manager described managing impoundments as a process of controlling the decline of habitat quality over time, requiring periodic resetting of the successional trajectory of the vegetation:

In the degraded systems we operate here, wetlands tend to go downhill, they fill and go to shrubs and trees. We are managing wetlands around reservoirs and impoundments controlled by culverts. We try to manage wetlands at their most productive vegetation stages. So we burn and disk them at an earlier successional stage which is the most prolific for insects and other invertebrates, and aquatic birds. When it grows into cattails we push it back to an earlier successional stage. It is an active management model.

One difficulty inherent in the FWS wetland impoundment model described above is its dependence on human inputs to effect changes at critical times, with the result that the impoundment system tends toward stability if managers do not apply appropriate techniques in a timely fashion. A refuge manager is fighting against the inertia in the human system to do

nothing, in this case to not set back succession through disturbance. One can understand the science of the dynamic mosaic of plants and their successional progression, but without the input of time, money and people, the disturbance won't be applied at the appropriate time. The 50-year-old manager described how difficult it was to plan and coordinate vegetation management on large impoundment acreages, to disk, herbicide spray or flood at the right place and time with limited staff and time. The result was a tendency toward stability in a system that requires disturbance and ecological change.

Most nontribal and tribal YNWRP biologists, Yakama program managers and biotechnicians, appeared to have a different concern, that of separating out anthropogenic and natural changes in valley and mountain wetlands. If the changes are judged to be anthropogenic, more effort will be exerted to try to prevent it from occurring than if it is seen as part of a natural process. In many of my discussions with tribal informants often stability was equated with natural conditions and human disturbance with dynamism. Informants whose work involved conserving higher elevation wetlands attributed some of these changes to a combination of human disturbance, natural climatic variability, and global warming. The statement below from a 30-year-old Yakama biotechnician is illustrative:

Wetlands are both stable and dynamic. Landuse activities, agriculture and logging are the main changes taking place. There have been dynamic changes in valley and forest. Due to land-use and Mother Nature, changes do occur. . . . I have seen a lot of changes in the forest. Wetlands are drying; high elevation wetlands are drying out.

Some of the anthropogenic changes that have taken place along Toppenish Creek were described as personal tragedies by a few Yakama informants who had grown up there. Their home farms, ranches and fishing sites, where their families have lived for generations have been fundamentally altered by stream diversions and flood control levees. The North Fork of Toppenish Creek, formerly a perennial stream, is intermittent today because of channelization for agricultural drainage. One 30-year-old Yakama biotechnician lamented the changes to his parent's farm:

You know Toppenish Creek isn't Toppenish Creek—the North Fork anymore, because it don't run anymore, and it has run there ever since I was a little kid, but now since I was 21 its just quite running. . . . The channels changed. You know they just diverted the water into a man-made channel now and that's was the biggest thing I thought, well that's cool, at least there will be now more floods, but then I have noticed part of my childhood is gone.

The sites of his most glorious childhood fishing memories, of huge carp leaping out of the water and steelhead making there way up to the foothills to spawn, had disappeared, leaving him disappointed and angry. A 40-year-old Yakama biologist who grew up on Agency Creek, a tributary of Toppenish Creek, remembers backyard beaver ponds with frogs, turtles and fish. Today he notes the beavers are long gone and the streambed has severely incised with vegetation encroaching on the stream itself. He attributes these changes to farm diversions.

Another factor in wetland dynamism is the overwhelming invasion of exotic weeds, with some species becoming established during flood periods and others during droughts. A Yakama biotechnician in his 30s described the process favoring the establishment of different herbaceous and woody invasives:

It goes in cycles, 10–15 year floods. High and low water flows maintain it, sometimes it changes for the better, sometimes it changes for the worse. Floods bring in loosestrife. There are wet seasons and dry seasons. With dry seasons it become more suitable for Russian olive and it takes over. Everything changes, that's Mother Nature.

A few YN informants equated wetland stability with human disturbance, while dynamism was associated with natural conditions. One 50-year-old Yakama program manager described how development limited the ability of streams to meander in their floodplain. He also described how damaged streams and wetlands only supported bottom-feeding fish such as suckers, chubs, exotic carp and bass rather than the more desirable salmon and trout which were more common prior to full agricultural channelization.

Wetlands Connectivity

I found that no informant, from either the FWS or the YN, perceived wetlands as truly discrete habitats disconnected from a larger system. They could not be successfully managed in isolation from their larger watershed. Typically Yakama informants ranging from project managers to biotechnicians and biologists said that wetlands were connected to the upland landscape linking snowmelt flowing from the mountains, down the creeks to the Yakima River. A number of Yakama informants simply stated, “*Everything is connected.*”

A 60-year-old Yakama project manager described how wetlands are linked to the greater basin ecosystem and beyond all the way to the Pacific Ocean. The presence of anadromous fish such as Pacific salmon, are living proof of that connectivity. An YNWRP archaeologist saw the boundaries set around wetlands as artificial, considering them as part of more dynamic, integrated environment. A FWS manager in his late 50s described wetlands as linked to other habitats, with upland values and wetland values strongly connected. He described how farming right up to the edge of a wetland damages their ecological values.

However, both the FWS and YNWRP at times appear to manage wetlands as discrete landscape units. Part of the reason for this is the differing, and often controversial, legal authority of the two land management agencies. The FWS only has authority, through federal law, to manage the 2,000-acre TNWR and the 6,500-acre Conboy Lake NWR within the Yakama Reservation. However, in the TNWR only in the middle unit of 1,200 acres has the FWS been in the position to meet their waterfowl management goals. The Yakama Nation government has opposed the establishment of a National Wildlife Refuge within their reservation since it was first envisioned in the 1930s, and have effectively blocked its full expansion for over 40 years.

The majority of the Yakama Reservation is owned by the Yakama Nation and its members—both held in trust by the BIA on behalf of the tribe, or owned in fee title by individual Yakama allottees. The YNWRP manages some 21,000 acres of floodplain wetlands collectively owned by the tribe as part of the conservation estate of the YN. The floodplain tracts were purchased using

Bonneville Power Administration funding as mitigation for fish and wildlife habitat losses to the Yakama Nation due to the development of the Columbia River hydroelectric system.

Under their national refuge management authority, FWS staffers are assigned to manage a specific area of land for wildlife conservation and this focuses their attention narrowly to that individual unit. One 30-year-old FWS manager described this focus on individual refuge units as a form of “blindness.” The same might be said for YNWRP managers and biologists but the acreage they are responsible for is over 10 times greater in extent giving them a better platform to employ an ecosystem approach to manage the watershed. An important motivator for restoring the entire Toppenish and Satus Creek corridors is to maintain stream habitat for anadromous fishes such as steelhead, a threatened species, and other salmonids which are culturally significant subsistence foods for the Yakama community.

Two nontribal YNWRP biologists pointed out a second reason for perceiving and then managing wetlands as discrete units: because of the procedural process that defines how wetlands are legally delineated by the ACOE under the Clean Water Act (CWA). Most professional wetland biologists and managers in the United States have been formally trained in a system of wetland delineation that is designed to help minimize and mitigate the loss of wetlands from development as defined by the CWA. This has had a huge impact on how wetlands are visualized, cognized and managed by biologists and land managers in this country. It legally defines what a wetland is, and what is not, for example defining an *emergent marsh* or a *seasonally flooded wetland* under U.S. law.

The 40-year-old nontribal YNWRP biologist explained the legal and procedural process of wetland delineation and how it encourages a view of wetlands as entities physically discrete and isolated from neighboring upland environments:

All the delineation was motivated by mitigation. You’re putting in a building over here and filling in a wetland, so the Clean Water Act is saying that you have to mitigate for that, so how much do I have to mitigate for? I want to know exactly how much acreage it is, not one ounce more. The whole delineation manual, the publication in the late 1970s—Cowardin et al., the whole delineation beast is kind of built upon that. Here’s

how you identify if a piece of land is a wetland or not. Very minute areas: water, soils, vegetation. It has to stand up in a court of law.

Besides the legal mandates to conserve wetlands under the CWA and other federal legislation, the FWS as the lead wildlife management agency in the country has internalized the management of wetlands as a key component of their professional duties to conserve migratory waterfowl. Under international treaty waterfowl are trust species managed by the FWS on behalf of the U.S. government. About three-fourths of the over 545 National Wildlife Refuges in the United States are waterfowl refuges, featuring the full variety of natural and man-made wetlands attractive to ducks, geese and other aquatic birds. Waterfowl refuges are often managed as system of protected wetlands strung out along specific migratory flyways, serving as places for waterfowl to rest, feed and breed. Wetlands, perhaps as no other habitat, are the land management focus of the FWS Refuge System. The FWS manager in his late 50s described that sense of FWS responsibility for wetland conservation both in the Mid-Columbia region and nationally:

And certainly wetlands are our business that is what we do, that's what we want. That's just our job to conserve wetlands. And so we do have to consider our purposes and goals. Wetlands as habitats are a key to that; there are the flyway goals, which is a benefit to society, so they should be managed with that consideration as well.

Summary

Overall there is strong consensus between FWS and YN informants that wetlands are dynamic communities at various scales of space and time. Also there is agreement that wetlands along Toppenish Creek and in the entire Yakima Basin are experiencing profound changes, apparently due to a combination of anthropogenic and climatic factors, including an overall regional warming and drying trend possibly caused by global climate change. The question becomes, what can be done to either slow or reverse the most profound negative affects, such as

stream incisement, drying of mountain meadows, and the invasion of wetland basins by exotic weeds?

There is also consensus of the interconnectivity of wetlands to their neighboring uplands and the entire basin ecosystem, even beyond to the Pacific Ocean. However, as a result of opposing cognitive tendencies encouraged by various factors of legal authority, funding, and land ownership, wetlands are often managed by both the FWS and YNWRP as discrete habitat units seemingly isolated from other habitats and the lands surrounding them. Despite these tendencies to manage wetlands as discrete protected areas, the values attached to the conservation of migratory birds and anadromous fish strongly encourage the FWS and YNWRP to look beyond the boundaries of their wetland tracts to the larger watershed in which it is embedded.

APPENDIX D

WETLAND STORIES

I found collecting stories about wetlands one of the most personally rewarding aspects of these interviews. Excerpts of the stories themselves can be found at the end of this summary. Here I group and analyze the stories, revealing a few basic patterns. Nineteen informants related some kind of story, widely variable in detail and length (see Appendices A and B for informant profiles). Eleven informants were Yakama tribal members. There were four nontribal YNWRP informants and four FWS informants. I was able to group the stories into six categories: fishing in childhood; experiences of transcendence; first job experiences; passing of the seasons; historical accounts; and tule gathering.

All seven people who told stories about childhood fishing experiences were Yakama tribal members: three biotechnicians, two biologists and two program managers ranging in age from their mid 30s to early 70s. People spoke about their joy and excitement as kids fishing for carp, chub, steelhead, lamprey, minnows, turtles, frogs and crayfish, and generally sense of adventure messing around in the rivers, creeks and swamps of the Yakima Basin. It's important to state that some Yakima carp and steelhead can reach great size, carp sometimes reaching 20–30 lbs and steelhead 15 lbs. One person told of digging for clams and crabbing at Hood Canal as a child with his family and his father cooking up great feasts. Some people camped near the Yakima River with their families in tents and lean-tos and hunted for ducks.

The eldest storyteller remembers crawling into thick riparian strips along Dry Creek on the Reservation as a kid, vegetation that is largely gone today, to find deep shaded pools filled with large chubs and suckers, and fishing for them. One of the childhood fishermen who grew up along the North Fork of Toppenish Creek described a proud day when he was 7–8 years old, dragging a carp almost as big as he was down the road to show his friends and to sell it to his

neighbor for some candy money. Today, much of that North Fork has been damaged by water diversions. Much of the river and creek riparian areas in the Yakima Basin have been impacted by water diversions, erosion, wild fire, channelization, and overgrazing. Three people spoke of the areas lost with fond regret. The preponderance of wetland stories relating to fishing for male Yakama informants should not be surprising given the importance of fishing to Yakama cultural identity and the traditional male role as fishers.

Four informants, a FWS manager, two nontribal YNWRP biologists and a Yakama biotechnician described experiences that I would describe as feelings of transcendence in wetlands: viewing the explosion of plant and birdlife in a high valley in the Eastern Sierra of California; the joy of duck hunting in a marsh at first light with Mt. Adams as a backdrop; canoeing a flooded refuge in the evening with nothing but swans as company; or close encounters with deer and bald eagles, unafraid because “they knew I wasn’t going to hurt them.” The FWS manager who experienced transcendence also recalls the horrible experience of almost dying in the same marsh, falling through a rotting culvert, barely managing to escape, and sloggng miles through the steaming boot-sucking marsh to safety, “. . . and now I have hated wetlands ever since.” An YNWRP employee related that he has now been baptized in all three of the main Yakama Reservation creeks: Satus, Toppenish and Dry Creek, having “got myself thrown into” each one.

The beauty of marshes and the riot of vegetation and animals they support often invoke feelings of sublimity. The vivid sights, sounds, smells and textures in the wetlands can be awe inspiring and evoke memories. Two informants, a Yakama program manager and a nontribal YNWRP biologist described how they marked the changing seasons based on the comings of wetland animals: swallows, red-wing blackbirds, spring peppers and gnats. The songs of birds, the rising of the insects on the water, and the trill of chorus frogs tell people that spring has finally arrived and its time to work the fields, to get ready for the spring chinook run or to go to the mountains to gather wild celery.

Three informants, two Yakama biotechnicians and a FWS biologist told about their first job experiences working in wetlands: learning to drive a tractor; constructing impoundments and fencing; and inventorying wetlands. For some conservation employees, wetlands are associated with fond memories of learning new job skills and growing into full maturity as working adults. A tule gatherer related to me the fun times collecting bulrushes with family and friends: getting stuck in the mud and stabbing herself in the butt with the knife, but in the end saving the bundles. Lastly she remembers reading the Bible as a child and seeing a picture of the baby Moses being hidden in the bulrushes, and thinking “it’s the same plant all these thousands of years.” She learned to gather and work tules as an adult and enjoys gathering a number of traditional useful plants as her contribution to the cultural life of the Yakama community.

An YNWRP employee retold a Yakama legend or historical account of how a wetland got its Yakama name, relating to its abundant biting insects. A FWS manager recounted how as a child all his elderly relatives repeatedly told him historical accounts of teeming marshes that had disappeared in Western Washington having been drained for agriculture, a tired litany of “what once was.” Those stories of lost wetlands helped inspire him to go on to become a refuge manager.

Wetland Stories Excerpts

YNWRP ARCHAEOLOGIST, MALE, 50s (B3)

In terms of stories. The only story that kind of sticks in my head, it has a personal significance to me, it didn’t really happen to me. It’s a story that they talk about down at Satus. One of the Indian names for the particular location, is Wawa, is mosquito. And apparently this is 100–200 hundred years ago, there was a Yakama Indian who had stopped at this location, where it is located is down at Mose Bar, down toward Mabton. And he had basically left his horse, which was dark, what is referred to as a roan horse, and he left it down there to graze. And then he went off and went back the following day, and the following day he couldn’t find the horse. And the reason he couldn’t find the horse was the mosquitoes were so bad they had basically turned this horse from roan to white. The only thing he could find was a white horse.

(They had drained it.)

They had drained this horse of pigment. That is something, a story that Johnson told me down toward Mabton. That's a personal story.

But it is an interesting story how a name like wawa came to be.

(How many people know that name?)

I don't know. It actually came about, when it happened, we had uncovered a burial. They had been using the gravel for the road. They thought everything was cool because there was no human bones. Somehow a flood or something had exposed the burial and we had Johnson go down there and he told that story while we were down there. He told us this place was basically called Wawa. We were actually able to date the remains to the mid-1800s because of the trade glass beads; we were able to date them to about the 1850s. The earliest they could have been there was the 1850s. They'll come up with those little tid-bits.

FWS BIOLOGIST/MANAGER, MALE, 30s (C2)

Well I could tell you the first thing that came to my mind, and it even goes beyond wetlands. When I grew up all I heard in my family is 'what was.' And everything was going the direction of development. And then as I've grown older and where my personal interest is it's turning that time back the other way. And that's one of the biggest things that I remember growing up is the feeling that I got from hearing what was and that we didn't have it anymore.

(Was that one of your big influences of going into the conservation profession?)

Yeah. And that was pretty strong in my family because we haven't been, western culture hasn't been in this area that long on the West Coast, and I come from a pioneer family. So I had a real strong sense of with my great aunts and uncles and in my family of that feeling and stories of what was.

(Sounds like an incredible responsibility).

Yeah.

YNWRP BIOTECHNICIAN, MALE, 20s (A10)

There was one when I very first started, Darwin had just started too, I was just sitting there, Vic was telling me to go off keep busy, cut some, keep the roads clear back on Zimmerman's. I was just sitting there and taking a break watching Darwin going to town out on the tractor, and I was sitting there watching. And he goes I can feel this feeling of being watched. And I was sitting there watching him, just waving at him. He came over and he took a break, and I gave him some water and some food, and he says, well have you ever driven a tractor? And I said yeah a long, long time ago when I was just a little guy and he says well you're going to learn today! So he says I will meet you back at the sheds. That day Darwin taught me how to be out on a tractor and I have never got off since. He said I am going to throw you on this tractor and you're going to help me. By god he threw me on that tractor.

(Did you get it stuck or fall into a canal?)

No, he threw me on that tractor, and by God, me and him have been some cutting fools out there lately.

(Tearing up the environment!)

Pretty much, we got stuck not to long ago down at Satus, we got stuck like a son of a gun. We had to keep pulling each other out. We had fun. Sometimes he got stuck all the way to the bottom. Yeah since then, we've been some cutting fools. It was for the fires.

(How do those fire areas look now?)

They look great! They look nice. They'll really going to green up. We've burned the passed 3 years. That was the funniest one, watching Darwin on a tractor, and then he tells me you're going to learn to drive a tractor today. So he threw me on, greenhorn and everything.

(You're going to have to get a ranch now.)

No kidding.

(Did you grow up out in the country?)

Yeah I grew up on Ahtanum Ridge. That's were I grew up from, from 3rd grade then my grandpa moved out to White Swan.

(Did your parents have livestock?)

My grandpa did, he had cattle. Every summer I used to go out and help with the cattle. Winter time I would go up there on the weekends.

(Do you have your own herd now?)

No, that's too much work. That's too much work.

(I mean if Darwin taught you how to drive a tractor, it seems like he would teach you the rest of it.)

I used to ride horses, Darwin is always trying to get me on horses, but I say nope. No horses for me.

(How are you going to round up the buffalo? With a pickup truck?)

Yeah Toyota, that's my horse.

YNWRP BIOTECHNICIAN, MALE, 30s (A6)

Hell yeah when I was just a very young kid, just chasing carp, you know when they were (inaudible—running?) . Those were the funniest things, and the beaver, when it floods they'd be all lost, they'd be on flat ground. That was one of the funniest things in the world, just chasing carp and harassing beavers.

(You had a funny story about catching a big carp.)

I was just a little kid about 7 or 8, somewhere in that area, and I was dragging it down the road. It was a big carp, it was probably big to me then, but one of the renters come driving by to help me with my carp that I caught because I wanted to take it home and show the guys, show mom and dad. There was a colored guy who I always sold carp to and I know he would buy it.

FWS BIOLOGIST/MANAGER, MALE, 50s (C3)

I have a couple. One a Toppenish one where I almost died. I fell into a culvert head first, which is odd because it was up there near Pumphouse on Halvorson Tract, I was by myself and had just walked through a heavy jungle of a place. Maybe that's why I am a wetland clearing man; I would have killed those plants.

(Like Moby Dick.)

I would have loved to kill those plants. I was hot and sweaty and had left the car and I don't know why, but I crossed Halvorson and I remember the yellow iris, I hated

yellow iris after that. I remember coming up on the dike, I finally found the dike, and I was looking for the culvert, an old culvert rusting out.

(You had been wading through all this crap.)

And it was like 90 and I was sweaty and I was almost losing balance and I am looking for the culvert and bam, I fell through the back of the culvert and it had rusted out, it was a hole covered in grass and stuff and I fell through and as I fell through I got my hands out in front of me and there was water in there. I was upside down in the culvert, it was close, and it was like how do I get out? I was a little younger, a little sprier then, I was able to get around and climb back out and I was like I am not going through there again, so I headed north through that other guy he's got horses. I am going to hit some grass. I was going to have to pass some wetlands near Willow Gun Club

(Maybe Eddie Gunnier's).

I remember wading through his, they were deeper then I thought I felt like in African Queen.

(With the leeches?)

Yeah so I get through it and get upon Eddie's land and finally I will be able to cut through all this vegetation and get up to that road and walk along. And then a hoard of mosquitoes came and I was just getting bit. And I hit the road and I remember I came back and this is probably 3 hours later and this is a long story. I don't know why I am telling you this one. The day I almost died.

(This is your nightmare.)

Yeah, but I finally hit Pumphouse Road. and literally I was suffering from dehydration, I was almost stumbling. And nobody came. Nobody drove along. The story ends when I made the truck and now I have hated wetlands ever since.

(Don't you have a positive story?)

I think I told you. It was during the flood, going up there in the evening, the road was closed and I got a canoe and it was flooded all on the northside, so I came in the area... it was evening and I will never forget, I was in this canoe and the swans were there it was April, everything was flooded. It was totally quiet, swans were calling, ducks everywhere and Mt. Adams it is big. I just remember feeling this is Toppenish, this is what Toppenish looked like, the whole valley was flooded. It was totally quiet and I remember just saying it was almost 5 I need to get home, but I didn't want go home. The cell phone rang, I remember the cell phone rang. It was my wife, what are you

doing? You won't believe where I am. To me it was just that feeling, I did not want to leave. It was really nice, no mosquitoes, not a lot of vegetation, birds all over. I wonder if that will ever happen again, cause they put the culvert in. It was 1996 flood. It was perfect weather. It was near Robbins Road, so you can see Mt. Adams. Oh my goodness, this is what it was like.

There was a little bit of guilt, I mean people were being flooded out, it was a horrible flood. What's the problem? But if I had a home up on the hill, and I had a family and I was a primitive hunter, I was thinking we'd be slaughtering ducks or geese. Probably you'd be getting salmon, maybe stranded in the shallows.

It is more than kind of joy; to me it is kind of an eternal thing. In other words when that moment happened, I can remember that as clear as day. And I don't think those moments happen by chance; I don't think that is something natural, to me that is a very religious thing. And the reason is I think that God gives us these viewpoints into a kind of real world. And that is what it is, this is the real world, part of it is peace, joy and peace. It is just the idea that this is a special time I am giving you, it's in the moment. Certainly you're in the moment and you just recognize, part of it is just recognizing modern day culture of busyness and stuff is probably not the way it is supposed to be, that the real life.

(Of being really alive in that moment.)

Some of that's joy and some of that is physical and spiritual, it's not something intellectual. Cause if I try to repeat it it won't happen.

(You can't stage it again).

I have had those all along my whole life, my whole life there are certain moments where you think back on it. Why do you remember that one particular moment? They are just moments in your life where there is a spiritual connection, you might say and to me it's with God. And part of it is that God gave that and part of it is in your brain says that this is something special, something is going on here and you have a moment here, and enjoy it and so it is joy. You cannot duplicate it. I have had experiences like that all over, it started as a kid, I remember my first red-headed woodpecker. And usually they are alone, that is why hunting is not a thing for me, you do it with other people. My connections with nature and now with God is by myself in a setting like that. If I try to repeat it, I want to go home, paddle. Get me out of this stinking water.

I have them both, a feeling that wow this is great, just keep me here and I would love to live here, hunt fish and live off the land. But I have had times that I am going to die if I don't get off this water.

(Sometimes it is so steamy hot in Texas, so many bugs and you feel like Jesus I could die. I could actually die in here. What if you had to walk 20 miles, it could drain you of blood and the heat of it, could make you croak, and no one would know.)

I have had that feeling many times, not many but a few. I just hate it, get me out of here. It is a hard walk; you've been walking too long in your rubber boots.

(It is chaffing your legs, your pants are sopping wet, you feel like you're wrapped up in cellophane.)

I am sure our ancestors worked more, longer, maybe they had more of a following types of experiences, probably a lot of them died in it.

YAKAMA TULE GATHERER, FEMALE, 50s (G2)

At The Dalles, you'd think there is no areas to cut tules, but no, behind the stockyards, over the fence, over rocks, there is a path down to a marshy area. Years ago, I went with Larry and his sister. We were cutting, we each had an area, an opened up area, there was stubs, there was actual water there. You wear your oldest clothes, Levis, tennis shoes. I'd cut a bunch, more bunches, pick them up, take them to the edge and lay it down, making big piles. I held them in front of me and turn around. But I took one step and got my foot stuck in the mud, sucking mud. It was sucking off my shoes. It sucked off one of my shoes. I finally got my self-loose, I was screaming for help and all Larry said was "Don't drop the tules, don't drop the tules". I was stabbing myself in the butt, but managed to regain my balance and put the tules down. Larry got the shoe out. But I saved the tules!

We once went way up past Naches. My brother used to work for the Naches Ranger District. I went with my two sisters and my brother to a huge meadow, way up there. We walked over seeing a large tule area. My sister and I got ready going towards an area, two short women walking along a straight trail. And I saw big green leaves, I didn't recognize they were lily pads, not seeing I had walked into the water, and I realized I was stuck in quicksand. I yelled "Somebody get me out of here." I was stuck out there 30 feet. My big knives were in a bag, I was trying to save the bag, my sister

was over there knee-deep in the mud. My brother had to grab both of us, he saved my bag and yanked me out. My other sister was laughing. It was a really good day. We got a lot of tules, it was a big area and we got a good cut. It was a nice day, it wasn't cold.

At the place near The Dalles, near where we cut near the river. Larry and I and others were down there cutting, we had cut large bundles; we were coming back to the trucks. But someone at the stockyard had let loose some bulls. They were charging, we had to leave those bundles there.

Here's an interesting item. When I was growing up, my grandmother used to go to the Mission Church, and she wanted us to get a little Bible education. My great grandmother used to go to Wáshat services. They wanted to give us a choice between the white man's Bible religion or the traditional religion. We chose traditional, but we had a humungous Bible, a whole bunch of us were looking at the Bible pictures, where some king was killing all the babies and the woman was hiding them in the bulrushes, it was Jesus. They were slipping the baby into the bulrushes, the baby Jesus—into the bulrushes. And it came to me that this is what I cut at the Wildlife Refuge, it's the same plant all these thousands of years.

(I told her that I was Jewish and that I knew the story of the baby hidden in the bulrushes—that it was Moses who had been hidden in the bulrushes in his tiny cradle boat by his mother to save him from slaughter by the Pharaoh, and how he was found and raised in the Pharaoh's court as a musician and advisor and eventually freed the Hebrews from bondage and received the Ten Commandments. She had told me some bulrushes stories and I ironically I had one for her.)

FWS BIOLOGIST/MANAGER, MALE, 50s (C4)

You mean when the lightbulb went off?

(Not necessarily when the lightbulb went off.)

I don't really know if I have that kind of story. I mean my first wildlife job out of college was a wetland job. It was a statewide, not really inventory but sampling of wetlands all across the state of Oklahoma being done by a graduate student. It was a real field exposure to wetlands; you know what are wetlands all about.

(Were you going out with like a Daubenmire plot?)

He had randomly selected quarter mile plots all across the state and points along the quarter mile plot were visited 4 times a year, for a view of the vegetation, take some water samples, we did Secchi disc readings, you'd count any waterfowl that you saw, or any wading birds or shorebirds, and I traveled all over the whole state, the state I grew up in, that I hadn't really seen all that much of, visiting all these wetlands in the Panhandle of Oklahoma near the Colorado border, all the way to the cypress swamps. And just really got a good feel for what's going on in Oklahoma.

That was a good experience, and my first real look inside wetlands, not just learning about them inside a classroom. And being able, having gone through ornithology class now, and being able to actually look at a bird and say, yeah that's really what it is. Especially waterfowl, which was kind of a neat thing. In our class they'd show slides of the individual waterfowl, but then I actually got out into the field and saw that's really what they look like. Hey that was pretty cool. So that would be my story. My first job.

YNWRP BIOLOGIST, MALE, 30s (A11)

I think of when my family would go to Hood Canal, going to the canal to snorkel to collect cockles, rock crab, Dungeness crab, we had shrimp pots. We'd catch ghost shrimp. Eventually the whole canal would be flooded with the cat food bait. We'd collect steamer clams. I love sea food—geoducks, sometimes we'd collect a mess of shrimp and cockles. My grandfather made a seafood chowder that would knock your socks off. We'd stay at a campground, and at the seaside we'd fish and dig longneck clams, razor neck clams. We'd fish for surf perch using a clam neck on a crappie rig, and sometimes catch 1 lb fish or Dungeness crabs also. They were almost always the right size; you can only keep the males.

We'd dig for clams with a clam gun; you break less shells than with a shovel. We followed the rules, there has to be management: only keeping silver salmon with adipose clip, only taking 15 clams a person a day. If you were over you could get a huge fine and lose your equipment. My grandfather would make a tartar sauce from clam necks and we'd dip the crab and fish in that and it was fantastic.

YNWRP ECOLOGIST, FEMALE, 30s (B4)

My quintessential wetland experience is in the Sierra Valley.

(You told me how beautiful and pristine it was.)

It's huge. First of all it's huge. It quite large, I don't know how many thousands of acres it is. It had to be tens of thousands of acres in size. It's a valley it's owned some by the federal government, some of it is state owned, a lot of it is private. I actually don't know what creek or river is flowing into it. But it's a basin wetland that's surrounded by basically a valley in the Eastern Sierra (Plumas or Sierra County), fairly low elevation, about 4,000 ft. So the water is flowing from the east out of the mountains and then ponds in this huge valley. It's an enormous, incredible nature explosion of bulrush, and tule, there's yellow-headed blackbirds. It's incredible, there's deer everywhere, red-wing and yellow-headed blackbirds, and black ibis, bitterns and swallows.

It was so full of wetland wildlife; I had never seen anything like that. I know there are some places in the northern Central Valley that are undeveloped that are like that, that are huge gathering places for migratory waterfowl or wetland birds. I had never anything that had so much wildlife and a lot of different kinds, muskrats. It's either in the Southern Tahoe NF or the northern Plumas NF. It's just, it's just spectacular. June and July in particular were marvelous. I have never seen any place like that, any time you when out there, there was tons of wildlife.

I hear some of the old cattle ranches were starting to sell off, we'll see whether or not we'll have mountain resort homes in the middle of Sierra Valley or not. Which is hard to imagine. Some areas were in the upland and weren't completely saturated or some with surface water. Tule and cattail areas where it was just pasture.

Another place I worked up in the Sierra, which to me it embodies the attitude of restoration. This probably the most hammered meadow I have ever worked in my life. It was called Red Clover Meadow. And I was working in it as a contractor in Plumas National Forest. It was at a fairly low elevation - it couldn't been higher than 4,000–4,500 ft on the eastside of the Sierra. It was a very typical of areas that we have here in the ponderosa pine fringe. Right as you're coming out of the forest.

I was working as a contractor, so I was setting up this preliminary monitoring for them of invertebrates and vegetation in this meadow and it was just crazy. It had a meandering stream channel, no joke 20 feet deep, it was really, really, really deep runny soil that you would find in a meadow, it was just so incised. I had never seen

anything like that. A network of 20 ft deep stream channels, incredible. And it was being so overgrazed, vegetation was like this (inches high). There was probably 300 head of cattle. The meadow was huge; I think the part that we were working on was over 500 acres. It was a pretty big meadow. But it was so hammered.

I remembered walking around as a restoration ecologist to see stuff like that, it's completely hammered by cows, the cows are still there, there's cowshit everywhere, degraded side stream channels. I felt so saddened. You almost hurt for areas like that, that have been so destroyed. On the other hand I am working on this project it was a restoration project so, its really weird to be in a place like that where you continue to envision, ok when they put a lot of check dams in, and the thing fills up and you got sedimentation.

Every time I would see *Juncus balticus*, one of the wetland species that were still able to hang on there, *Potentilla*. A bunch of little meadow species that were here and there. I would see them and I would start to imagine, you're going to live in water and you're going to have this lush *Juncus balticus* carpet again. It was baking hot, like here. It was probably 100 degrees, dusty, cows everywhere, bulls running after me with my butterfly net and yet what was keeping me going was this vision of what this place used to be and what it really could be, and hopefully I would love to go see it now after they put the check dams in.

It was a private inholding and the FS had convinced him to buy off on it, to increase his herd faster. It would be interesting to go back and see that. It stuck in my head. I worked there a couple of weeks, a series of weekends.

YN PROGRAM DIRECTOR, MALE, 60s (A2)

(Did you catch lamprey growing up at Prosser?)

Yeah, my father would say to me and my brothers, you guys go get some lunch. We'd go out with gunny sacks.

I have been engaging with the watershed system including the wetlands my entire life. When we were young, we had shotguns and fishing poles. My father taught us how to trap. He learned during the Depression. We could hunt, trap and fish. We've been pretty much engaged with the river, the wetland system our whole lives.

I remember camping in the winter in tents of waterproof canvass, sleeping under homemade quilts. We'd camp overnight, sometimes in lean-tos. We'd hunt for ducks and go exploring. We were very far removed from the world. It was 3–5 of us; we'd fool with the birds all along the river. We'd hunt and fish near Parker Dam, near Sunnyside Dam. We had an allotment north of Toppenish, where we kept horses. A member of my family had land, riparian land on the Yakima River. We'd say, let's go hunting.

(You told me you were writing a book.)

The book will be about the long-term interests of the tribe, the value of human resources. Whether our Yakama society will continue to get confused, will see the larger part of how far behind we are. We have it easy today. Our forefathers couldn't afford many mistakes. If they made too many of them everyone would perish.

If they made mistakes fishing or hunting, the people could starve. I am a ceremonial, subsistence and commercial fisherman but I am not as tough as those people were. They were strong people.

The treaty negotiators were remarkable men. I am eternally grateful to them. That was a critical point in time. The treaty has carried us to be able to survive as a distinct people today. Many of my counterparts know how I feel about that. I have tried to pass this on to my kids.

(I mentioned how remarkable the Treaty is, as it had to be translated into so many Indian languages, into Chinook Jargon and English. How much must have been lost in translation.)

I know some of the language and I am studying with my uncle. Now, our language is at an all time low. We must preserve what's left and restore it. It is the basis for our continued existence. Our language is critical for our identity, culture and way of life.

YNWRP BIOLOGIST, MALE, 30s (B2)

As a kid growing up, there are certain signs of spring and they related to two wetland species at least on the East Coast, here in the West one is the same species. It's always related to red-winged blackbirds and spring peppers. And you know here it's red-winged blackbirds and Pacific tree frogs, croaking right now. That's how you always remember; spring always comes when you hear the red-winged blackbirds and the

spring peppers, shortly after the red-wings arrive the spring peppers start singing. You know so a symbol of the passing of time alone is related to wetlands, from a human standpoint. Some people say robins but you don't hear that as much as people saying red-winged blackbirds. I think that's kind of a, although some places, up in New England, New Hampshire or Vermont, it's the woodcock.

(When you started I thought you'd say woodcock. I was sure you were going to say woodcock.)

I was too far south. I never really heard woodcock until I was in college in Northern PA. They're more in that Northern conifer forest, than in the southern deciduous forest which I was in. When they'd go through in the fall we'd shoot them when we're hunting. Shoot at them, I never hit one.

Yeah our lives have been so ingrained into wetlands, even the passing of spring, fall, are the times of year really associated with wetlands. So I don't know if that's a pretty common thing, you don't think about it too much, it's a red-wing blackbird, spring's here, but where the red-wing black bird is, it's found a wetland where it's singing at.

(On little city ponds in Ellensburg the red-wings are singing on the old cattail stalks)

They're at my house all winter long, but not singing like they are now. And the Pacific tree frogs have been singing, have started singing too, so you know spring is coming. They're singing and the yellow-headed blackbirds showed up last week.

(You have a lot of yellow-headed here?)

Oh yeah, I get him by the hundreds in the lower Valley, in the upper Valley there are a few places. My theory is that the Bobolinks arrive and breed so late and breed so quickly is that they're out-competed so completely for nest sites by blackbirds. They wait for the peak of the yellow-headed. By the time the bobolinks are breeding the blackbirds are already creching, the first hatches are done with, they are working on they're second. The bobolinks have 5–6 weeks to get in and get out of there before the wetlands are drying up.

FWS REFUGE STAFF, MALE, 40s (C5)

I guess I think about George Fenn, working with the tools he had, in his time. I think he did really good. He fought all this wetland management that came from the new managers like Gary and his deputy. I wish he could see it now. He fought it till the

end. The new blood, native vegetation, they were using Ducks Unlimited, all the professionals helped out at this refuge. They changed what the goal was.

George had no scraper, so he made the ponds deeper, by pushing up the dirt to make little islands. He thought he was increasing biodiversity. But one guy who worked with me said “Those are just a bunch of weeds.”

In 1989, Tracy came out here. We did duck nest drags and started to change things. And I said to myself, “this is wildlife.” I just wish George Fenn could see it now.

(Would he like it?)

I think he would be impressed.

I have worked for the FWS for 15 years, first with YCC and OIC. In those days we had 18 people building fence. Gary was the refuge manager, but George was only the equipment operator. He was a blue collar worker. He had the title of manager from the project leader.

YN PROGRAM MANAGER, MALE, 70s (A3)

(Below from my notes in italics. He grew up in a ranching, horseman’s world, but is in charge of a program of radiation mitigation. He says he has pushed the powers that be, white and Yakama, and has been pushed away. So he sees himself as deposed from the political process, a cry in the wilderness for greater cultural expression and tradition.

I told him about my project, which stimulated a long looping series of stories. Not unlike what (A4) has done, but (A3’s) stories are more grounded and the stories are more sophisticated, maybe more on point.

He told me he would tell me stories, and did. He started describing how in the old days - the 1940-50s, that water began to be diverted to Marion Drain. He was a BIA surveyor back then. The BIA and USFS forgot about culture. They wanted properties surveyed and water flow engineered. The so called Eel Trail wound from the foothills. Another road was called the Tule Road because it was long and straight. In 1940–50s he worked with cattle on the Wexler Ranch. They also had a wood log business—firewood. They did not worry about the “bog,” the wetlands—the value of the animals and birds, etc.

“There was a lot of riparian brush in 1949. The vegetation afforded “cover for incredible diversity.” He spoke about finding pools hidden in the wide riparian strip

with huge chubs and suckers. (Riparian area was once much greater in extent and supported a diversity of fish and wildlife)

“Arlen Washines blames wild horses for over-grazing the high pastures. Elk are higher and deer in the lowlands.” He thinks cows desiccated the land, 30,000 horses caused little change. “The Yakama horses are a special breed. They are assumed to be inbred; there is a logic in that.” He was a horse chaser and there are still a lot of people who earn money by catching and selling horses from the Reservation lands. Most are sold for food, pet or human. Some people use the elk traps to catch horses. “Few live up to the title of ‘true horse chaser.’”

Fish and other traditional foods saved A3’s life when he got cancer. Dried salmon.

“I’ve done a lot in my life. I’ve logged in Idaho, I was a gypo logger, worked on the forest. I chased horses and caught horses. I wrote farm plans. I used to drive cats, for Forestry, D-4s, D-8s, big trucks for fire control. When I was a councilman, the BIA was very strong. I made them change their timber management. When I was not re-elected, they celebrated. I heard the BIA manager said “They got the son-of-a-bitch”.

YNWRP BIOLOGIST, MALE, 40s (B1)

I guess I find joy every time I go out in a wetland. I love the plants, I love everything about them. I guess I don’t necessarily have a story.

(What aspects of the wetlands give you that pleasure?)

Everything from the little bugs, all the way to the plants, the animals. Obviously duck hunting is extremely enjoyable. I love hunting in the wetlands. I don’t think I have any particular story. My memory is so bad anymore.

(One person told me they love the smell of it. The senses of it give them a happy feeling).

I do too. You know at South Lateral A, the duck blind, it’s the morning and the sun’s rising in the southeast and kind of puts this light on the area and you’ve got Mt. Adams off on the west and its just an incredible place to be. Same as Satus Wildlife Area. And back in the Mid-West, you know the wetlands I know from there. I was always excited about finding different plants.

YNWRP BIOTECHNICIAN, MALE, 40s (A7)

The first thing that comes to my mind, I think I told you about a big deer, a big buck that I was within 70 feet of him and he didn't run away. That told me right there that I am a part of this . . . world. A wild animal didn't show any fear. Like I belonged. Last year, I was working out on the Satus area, there was a bald eagle, it didn't get up and fly away and he just stayed there and watched me the whole time. That's why I say I became more traditional in my way of thinking, more traditional. Kind of like looking out for nature. That's one thing that has stayed with me the whole time now. It's kind of like my grandparents were, endeavor (?- audible) to do this for wildlife because they can't speak for themselves, you need to do it for them. That's how my thinking has evolved to the present day.

YNWRP BIOTECHNICIAN, MALE, 30s (A8)

They all pertain to the water. I think water is the essence of life. Without water, life wouldn't exist. Every place I went was working around water. I used to like doing the streams I was raised on, looking for redds.

(Which streams were you raised on?)

I was raised on Toppenish, but I liked hiking Dry Creek, Satus Creek, Logy Creek. That was a nice peaceful journey, serene, just hiking down the creek. Not that many people ever did it before. There was always something to see around the next bend of the creek. That's what I remember feeling. Seeing all the different animals use it.

APPENDIX E

MEMORANDUM OF AGREEMENT BETWEEN THE CONFEDERATED TRIBES AND BANDS OF THE YAKAMA NATION AND THE U.S. FISH AND WILDLIFE SERVICE

FOR THE PURPOSE OF ESTABLISHING A COOPERATIVE PARTNERSHIP
FOR THE COORDINATED MANAGEMENT OF FISH, WILDLIFE AND CULTURAL RESOURCES,
AND ASSOCIATED HABITATS WITHIN THE EXTERNAL BOUNDARIES OF THE YAKAMA
RESERVATION AND ON THE TOPPENISH NATIONAL WILDLIFE REFUGE

1. BACKGROUND AND STATEMENT OF PURPOSE

WHEREAS, The Treaty of 1855 between the Confederated Tribes and Bands of the Yakama Nation (Yakama Nation) and the United States Government defined the lands known as the Yakama Reservation as set apart for the exclusive use and benefit of the Yakama People;

WHEREAS, Since time immemorial, the Yakama People have had unique cultural, geographical and historic ties to the lands currently identified as Toppenish National Wildlife Refuge (TNWR);

WHEREAS, TNWR, which lies within the exterior boundaries of the Yakama Reservation as described in the Treaty of 1855, was purchased in the mid 1960's with Migratory Bird Conservation Act funds for the purpose of "...an inviolate sanctuary, or for any other management purpose, for migratory birds" and is managed as a unit of the National Wildlife Refuge System;

WHEREAS, The Yakama Nation Tribal Council formerly opposed the development of TNWR with two Tribal Council Resolutions in 1963 and in 1965 (T-87-63 and T-72-65) and it is therefore the desire of the Yakama Nation that the lands included in the TNWR be repatriated to the Yakama Nation. This MOA seeks to promote a cooperative, coordinated management scenario addressing the areas of mutual interest between the Yakama Nation and the TNWR;

WHEREAS, The Yakama Nation and the Service each recognize that fish and wildlife resources, and the habitats on which they depend, have ecological, cultural, educational, historical, aesthetic, scientific, recreational, economic and social values;

WHEREAS, The Yakama Nation and the Service have a common interest in maintaining and enhancing the values of fish, wildlife, and their habitats, and share a common belief that this is best accomplished by promoting healthy ecosystems;

WHEREAS, A common goal of the Yakama Nation and the Service is to optimize the values of fish and wildlife, for present and future generations, through effective habitat management. This goal can be facilitated through a cooperative partnership;

WHEREAS, the Yakama Nation and the Service have expressed desire for greater cooperative and coordinated efforts and work toward achieving common goals;

WHEREAS, the sharing of resources to address common goals would benefit both the Service and Yakama Nation;

NOW THEREFORE, the Yakama Nation and Service agree to communicate, coordinate and cooperate on issues of mutual concern for the benefit of the fish and wildlife resources which utilize TNWR and Yakama Nation lands.

II. AUTHORITY

This Memorandum of Agreement (MOA) is consistent with, and is entered into under the guidance of the U.S. Fish and Wildlife Service Native American Policy, Executive Order titled "Government to Government Relations with Native American Tribal Governments", and the Treaty of 1855.

III. STATEMENT OF MUTUAL BENEFIT

The primary benefits to both parties include the protection and enhancement of wildlife and fishery resource habitats of the Yakama Nation Reservation and TNWR in a manner that ensures protection of the Yakama Nation cultural values and resources while achieving Refuge System goals for the benefit of all Americans. Communication, Coordination, and Cooperation are instrumental attributes necessary to accomplishing common goals in a partnering environment.

IV. RESPONSIBILITIES

A. The U.S. Fish and Wildlife Service will:

1. Provide a summer Youth Conservation Corps program for the Yakama Nation youth at the Toppenish Refuge subject to program funding.
2. Allow the Yakama Nation to collect vegetation for cultural resource gathering purposes.

B. The Yakama Nation will:

1. Provide technical personnel as available to advise the Service on cultural, archaeological, and fishery/wildlife issues as they relate to the Yakama Nation's goals.
2. Conduct all cultural and archaeological surveys necessary for TNWR operation.
3. Provide cultural awareness training courses for TNWR personnel.
4. Submit request when Yakama Nation wishes to collect vegetation for cultural resource purposes.

C. Both Parties will:

1. Meet a minimum of two times annually (approximately September 1st and March 1st) to discuss mutual resource management goals including refuge operations, work plans, projects, coordination requirements, public use, and other pertinent issues relating to areas of mutual concern and impact.
2. Coordinate habitat restoration plans for the Toppenish/Satus drainages.
3. Cooperate in the monitoring of wildlife and habitat resources.
4. Coordinate research projects.
5. Share use of equipment and personnel for projects that benefit wildlife and habitat resources as funding, scheduling, and practicality allows. Coordination will be through appropriate Program Managers.

6. Make fire personnel and resources available for projects (prescribed and wildfire).
7. Share biological data as appropriate.
8. Cooperatively develop a plan addressing Yakama Nation hunting activity on TNWR by the end of FY 2006.
9. Cooperatively develop a plan addressing enforcement coordination, cooperation and training by the end of FY 2006.

V. AGREEMENT TERM

This MOA will remain in force for a period of five (5) years from the date of execution.

VI. SPECIAL PROVISIONS

- A. This MOA is neither a fiscal nor a fund obligation document. Any endeavor involving reimbursement or contribution of funds between the parties of this MOA will be handled in accordance with applicable laws, regulations, and procedures.
- B. This MOA may be modified or amended as necessary upon written consent of both parties or may be terminated by either party with a thirty (30) day written notice to all other parties.
- C. The principle contacts for this MOA are:

U.S. Fish and Wildlife Service
 Carolyn Bohan, Regional Chief, NWRS
 911 NE 11th Avenue
 Portland, OR 97232

Yakama Nation
 Arlen Washines, Program Manager
 Yakama Indian Nation - Wildlife Resource Management
 P.O. Box 151
 Toppenish, WA 98948

In Witness Whereof, the parties have caused this Memorandum of Agreement to be executed as of the date of last signature below:

APPROVED:

Regional Director
 U.S. Fish and Wildlife Service, Region 1

Chairman
 Yakama Nation Tribal Council

BY: _____

BY: _____

Date: _____

Date: _____