Tribal Fishery Restoration on the Wind River Indian Reservation: Forging a Co-Management Agreement

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The Wind River Indian Reservation in Wyoming is a place where irrigation is essential for the agricultural success of both tribal and non-tribal residents. The tribes emphasize not only the economic importance, but also the cultural importance of healthy ecosystems on the reservation. Currently, sections of the Wind River and related water bodies are managed only for agriculture on primarily non-tribal areas, leaving fisheries populations on the reservation in an unhealthy state. The tribes tried to restore fisheries in this section of the Wind River by using part of their federal reserved right for instream flow, but they did not succeed. To get beyond this limitation, co-management of the area is the ideal option for future tribal fisheries restoration. The co-management framework should consist of two agreements, modeled after other agreements but tailored to the situation on the Wind River. The goal of the agreements is to create a grassroots shared-power system based on cooperation and mutual understanding between tribal and non-tribal users. Ultimately, co-managing this area should result in trust-building, open dialogue, and equal representation and resource benefits to all parties involved, including the restoration of the tribal fishery.
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I. INTRODUCTION

By the year 1900, Native American tribes teetered on the brink of extinction.\textsuperscript{1} Scholars describe the principal causes of the decimation of the Native population, which include the destruction of tribal habitats, ecosystems, and subsistence resource bases, and the forced assimilation and intentional destruction of tribal cultures, languages, and religions by the government.\textsuperscript{2} Obtaining tribal land for non-Indian settlement, while encouraging tribes to abandon their culture, was national policy.\textsuperscript{3} Given these causes of the near extermination of the American Indian people, we as a society generally see now that maintaining tribal culture and restoring tribal ecosystems is critical to American Indian tribes’ well-being and prosperity.

On the Wind River Indian Reservation, the Eastern Shoshone and Northern Arapaho tribes are struggling to manage healthy fish populations, something with high cultural importance.\textsuperscript{4} This paper focuses on the water body system on the reservation that is subjected annually to irrigation withdrawals and sediment sluicing through a large diversion structure, which also acts as a barrier to fish movement. The specific area is referred to throughout as the “target area,” and consists of Bull Lake Reservoir, Bull Lake Creek, and the Wind River from the Bull Lake Creek confluence downstream to the City of Riverton. Figure 1 shows the general target area.

\textsuperscript{1} WALTER R. ECHO-HAWK, IN THE LIGHT OF JUSTICE: THE RISE OF HUMAN RIGHTS IN NATIVE AMERICA AND THE UN DECLARATION ON THE RIGHTS OF INDIGENOUS PEOPLES 100 (2013).
\textsuperscript{2} Id. at 101-102.
\textsuperscript{3} American Indian Law Deskbook § 8.1 (May 2015).
\textsuperscript{4} Though they are separate tribal sovereigns, they will be referenced frequently throughout as the “tribes.”
Figure 1. Target area:\(^5\)

Water use in the target area historically has been a contentious issue, with growing tensions between water users. The tribes battled the state and the irrigation districts in court during an attempt to transfer part of their reserved water right to instream flow in the target area during the thirty-seven-year-long Big Horn General Stream Adjudication.\(^6\) This would have left water in the Wind River stretch through the target area year-round. Though they were ultimately unsuccessful, the tribes still demonstrate a desire to manage for the fisheries resources in the target area.

\(^5\) Map modified from Zachary E. Underwood, et al., *Population Connectivity and Genetic Structure of Burbot (Lota lota) Populations in the Wind River Basin, Wyoming, 759 HYDROBIOLOGIA Fig. 1* (July 2015).

\(^6\) See *In re General Adjudication of All Rights to Use Water in the Big Horn River System, 835 P.2d 273 (Wyo. 1992) (Big Horn III).*
Given the complicated jurisdictional pattern, the contentious history, and the cultural importance and need for fisheries restoration, the target area should be co-managed by the tribes and other stakeholders under a series of two cooperative agreements. Part II of this paper will describe the relevant background that highlights the need for co-management: the history of the Wind River Indian Reservation and its irrigation development, the cultural importance of maintaining healthy fisheries resources, and related legal and political barriers. Part III, in turn, describes fisheries resource studies in each of the main geographical areas of the target area. Finally, Part IV suggests a framework aimed at effective co-management of the target area, with tribal interests as a priority.

II. WIND RIVER INDIAN RESERVATION BACKGROUND

The Wind River Indian Reservation lies in west-central Wyoming. Its history of settlement is intertwined with its water development. The reservation is a place where water development is vital for agricultural success. As described fully below, the reservation boundaries were diminished through a series of agreements with the federal government during the late nineteenth and early twentieth centuries, and non-Indian settlers moved in. As time went on, the tribes sought to determine their legal water right, which they did in the Big Horn General Stream Adjudication. They also tried to reserve instream flow, to protect fisheries resources. This act is indicative of the cultural importance of healthy wildlife to the tribes. The reservation history, especially regarding the tribal water rights, has created divisions between the people living on the reservation, something that may be overcome with small steps which can be implemented through co-management.

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7 For a useful map of the Wind River Indian Reservation in relation to the Wind-Big Horn Basin, see WYOMING WATER DEVELOPMENT OFFICE, WIND/BIGHORN RIVER BASIN 2010 GROUNDWATER REPORT Fig. 3-2, http://waterplan.state.wy.us/plan/bighorn/2010/gw-finalrept/gw-finalrept.html (last visited March 31, 2016).
A. Wind River Settlement and Irrigation

The Wind River Indian Reservation, one of the largest Native American reservations in the United States, is uniquely older than the state where it resides. The reservation, along with the Fort Hall Reservation in Idaho, were created for the Shoshone and Bannock tribes in 1868 via the Second Treaty of Fort Bridger.8 During the treaty negotiations, Chief Washakie declared he wanted the Wind River country for his people.9 While Chief Tahgee, Bannock tribal leader, told negotiators the Bannock and Shoshone tribes were friendly, he opted for a separate homeland instead of a shared reservation.10 As a result, the Northern Shoshone and Bannock tribes eventually occupied the Fort Hall reservation, while the Eastern Shoshone settled on the Wind River reservation.11 But before the Shoshone people resigned themselves to settlement, they were a nomadic people, located in bands widely dispersed, with a majority of the people residing in Snake River Valley.12 Prior to western expansion, the Shoshone travelled seasonally to hunt, fish, and gather food resources for the winter.13 Archaeological evidence indicates early Shoshone ancestors travelled for hunting and foraging purposes to the Wind River Mountains, where their reservation later would be established.14 On their newly created reservation, the Eastern Shoshone increased farming and ranching efforts in the 1870s after the decline of the buffalo.15

8 Treaty with the Eastern Band Shoshoni and Bannock, 15 Stat. 673 (1868).
10 Id.
11 Id.
12 Id. at 18.
15 In re General Adjudication of All Rights to Use Water in the Big Horn River System, 753 P.2d 76, 83 (Wyo 1988) (Big Horn I).
The Northern Arapaho moved onto the reservation in 1878. Like other Plains groups, the Arapaho people were spread out in small bands, originally reaching from the Arkansas River to the Bighorn Mountains, and from the Black Hills to the Rocky Mountains. Conflicts in Colorado, culminating in the Sand Creek Massacre by U.S. troops, enticed Northern Arapaho bands to move into Wyoming, where fewer white settlers resided and buffalo still survived. However, their attempt to distance themselves from white settlers proved unsuccessful, and bloody conflicts continued through the 1860s and 1870s. In 1878, the impoverished Northern Arapaho were escorted to the Wind River Indian Reservation by the U.S. Army under General George Crook. Although the relocation was intended to provide only temporary residence, the general’s death and the shift to an unfavorable national policy against creating more reservations resulted in the Wind River reservation becoming the Northern Arapaho Tribe’s permanent home. In 1891, the Commissioner of Indian Affairs confirmed the Northern Arapaho as having “equal rights to the land of the said reservation ….”

The reservation’s physical area today is a fraction of what it once was. Shortly after the Northern Arapaho settled on the reservation, agricultural efforts began failing, and the two tribes became dependent on the federal government for their survival. In order to gain the revenue needed for survival, the tribes made a series of land transfers to the federal government. The Lander Purchase transferred 700,642 acres south of the Popo Agie River from the reservation to

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17 Id. at v-vii.
18 Id. at viii.
19 Id. at viii-ix.
20 Id. at ix.
21 Id.
the federal government in exchange for money.\textsuperscript{24} The next transfer, called the Thermopolis Purchase, exchanged 55,040 acres of land around Thermopolis, Wyoming.\textsuperscript{25} In 1905, Congress ratified the Second McLaughlin Agreement, an agreement whereby the tribes agreed to transfer 1,480,000 acres of reservation land to the United States to open up for non-Indian settlement.\textsuperscript{26} In this exchange, the United States was either to reimburse the tribes directly, or to spend the revenue on the tribes’ behalf for irrigation and other improvements.\textsuperscript{27} When these reservation areas were opened, non-Indian settlers paid $1.50 per acre for the lands.\textsuperscript{28} Contrary to the government’s hopes, however, only about 9\% of the lands were settled by 1914.\textsuperscript{29} In 1939, some lands not sold by the federal government pursuant to the 1905 agreement were restored to tribal ownership.\textsuperscript{30} Since the mid-1950s, the size of the reservation has remained the same.\textsuperscript{31}

As non-Indian settlers began purchasing 1905 agreement lands from the federal government, their settlements gradually expanded into the dry basin interiors, which required development of irrigation projects.\textsuperscript{32} Bull Lake Reservoir is the major source feeding the Riverton Unit, a predominantly federally-funded project on the reservation.\textsuperscript{33} Funding for the Riverton Unit came from the Riverton Reclamation Project Act in 1918, which authorized the construction of the Wind River Diversion Dam, Wyoming Canal, Pilot Butte Reservoir, Pilot

\textsuperscript{24} An act to confirm an agreement made with the Shoshone Indians (eastern band) for the purchase of the south part of their reservation in Wyoming Territory, 18 Stat. 291, Arts. I-II (1874).
\textsuperscript{25} Agreement with the Shohone and Arapahoe Tribes of Indians in Wyoming, 30 Stat. 93 (1897).
\textsuperscript{26} An act to ratify and amend an agreement with the Indians residing on the Shoshone or Wind River Indian Reservation in the State of Wyoming and to make appropriations for carrying the same into effect, 33 Stat. 1016, Arts. I-II (1905).
\textsuperscript{27} Id. at Arts. III-IV.
\textsuperscript{29} Northern Arapaho Final Brief on the Merits (Deferred Appendix Appeal) at 9, Wyoming v. U.S. Environmental Protection Agency, 2015 WL 4776048, (10th Cir. 2015) (Nos. 14-9512, 14-9514).
\textsuperscript{31} Id.
\textsuperscript{32} Id.
\textsuperscript{33} Riverton Unit, BUREAU OF RECLAMATION http://www.usbr.gov/projects/Project.jsp?proj_Name=Riverton%20Unit (last updated April 5, 2013).
Butte Canal, and other small canals.\textsuperscript{34} As of 1984, total federal expenditures reached over $70 million for the Riverton Reclamation Project.\textsuperscript{35}

Since Bull Lake Reservoir is on reservation land, the U.S. Bureau of Reclamation obtained a flowage easement from the tribes to construct Bull Lake Dam and to create the reservoir in connection with the Riverton Reclamation Project.\textsuperscript{36} The easement legislation also provided that tribal members would be able to continue using the waters of Bull Lake Creek and Reservoir “insofar as the use by the Indians shall not be inconsistent with the use of said lands for reservoir purposes.”\textsuperscript{37} Releases from Bull Lake Reservoir travel down Bull Creek where they meet the Wind River.\textsuperscript{38} Just downstream of the confluence, Diversion Dam diverts water from the Wind River to the Wyoming Canal, which delivers the water to the land of the Midvale Irrigation District or Pilot Butte. Subsequent downstream diversions take water from the Big Wind River to the LeClair and Riverton Valley Irrigation Districts. Figure 2 shows current major irrigation projects on the Wind River Indian Reservation.

\begin{footnotes}
\footnote{Wayne A. Hubert, et al., \textit{Burbot in the Wind River Drainage of Wyoming: Knowledge of Stocks and Management Issues}, 59 \textit{AM. FISHERIES SOC’Y SYMP.} 187, 190 (2008).}
\footnote{BUREAU OF RECLAMATION, U.S. DEPT OF INTERIOR, 1984 \textit{SUMMARY STATISTICS} VOL. III, PROJECT DATA 309 (1982), \url{http://babel.hathitrust.org/cgi/pt?id=mdp.39015023803672;view=1up;seq=333}.}
\footnote{Easements for Bull Lake Dam and Reservoir, 43 U.S.C.A. § 597a (1940).}
\footnote{Id. at § 597c.}
\end{footnotes}
Figure 2. Major irrigation projects on the reservation.  

B. The Cultural Importance of Water and Wildlife

The purpose of this section is to outline the cultural significance of natural resources to Native American tribes, including the tribes of the Wind River Indian Reservation. No attempt is made, however, to describe the full richness and traditional practices of either tribe. Rather, 

emphasis on the cultural significance of wildlife and water resources is described as applicable to American Indian tribes in general, and also specifically through the history and demonstrated management practices of the Eastern Shoshone and Northern Arapaho tribes. A broad understanding of Native American culture reveals a perspective on life and nature very different than that of non-Indian American cultures. Once that point is understood, we can more easily see why the tribes of the Wind River Indian Reservation care about water use and creating healthier fish populations on the reservation, something they have demonstrated time and time again.

“The way societies view the land tells much about them--revealing the character, values, history, and aspirations of a people.”40 The Native American land-based culture teaches that some places are holy, that people have an important relationship to plants and animals, and that humans must cooperate with the natural world to survive.41 This view is in clear opposition to the prevailing attitudes of Euro American settlers, who preferred to “conquer” nature and the land to make room for an agriculture-based lifestyle.42 The purpose of this paper is not to argue for or against either point of view per se. Both have value and have shaped American culture. However, one of these points of view historically has been overlooked more than the other. Fisheries resources and water quality of the target area, as demonstrated later, are currently degraded as a result of favoring agriculture above all other uses.

Although generalizations can be dangerous, it is probably safe to say that most Native American tribes have a very strong connection to land and the animals inhabiting it. “It’s not sugar coating anything to say the Indian worldview includes a different relationship to the natural

40 ECHO-HAWK, supra note 1, at 139.
41 Id. at 134-35.
42 Id. at 134.
world than does the Anglo-American worldview... These are place-based peoples." Native American cultures are founded in the land, and the people were traditionally hunters, fishermen, gatherers, and planters. Documented stories usually involve interactions between humans and other living beings and natural elements. Animals in Arapaho myths take pity on human beings by conferring blessings such as food, tools, and sacred knowledge. In the Arapaho stories, “the theme is that all culture and life itself are sustained by proper relations ... that humans have with animals ...” Both tribes on the Wind River Indian Reservation are known to have a strong kinship to nature. The Eastern Shoshone Business Council ended their 2016 State of the Nation greeting by impressing all they, as a tribe, have to be thankful for, including “our families, beautiful mountains, good water, wildlife and berries to feed us, our traditional ways to help guide us ...” Walter Echo-Hawk notes, with great elegance, that tribal traditional wisdoms are “nothing short of national treasures that offer an environmental framework for creating an American land ethic.”

Tribes manage their natural resources with this strong, inherent connection to the source. One way tribes demonstrate the cultural importance of nature is through allocation of funding. Charles Wilkinson, distinguished Indian law professor and author, has noted that generally, tribal budgets show a large allocation of funds to children, elders, and natural resources. This is a

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43 DVD: Charles Wilkinson lecture at the University of Wyoming College of Law (University of Wyoming 2011) (on file with the George Hopper Law Library).
44 ECHO-HAWK, supra note 1, at 152.
45 See Dorsey, supra note 16 for one of the most extensive collections of oral literature by a North American tribe, the Arapaho.
46 Anderson, supra note 16, at xxii.
47 Id.
50 ECHO-HAWK, supra note 1, at 152.
51 Wilkinson, supra note 43.
tangible demonstration of Native American values. Certainly, the programs where governments allocate resources reveal priority areas. On the Wind River Indian Reservation, the tribes have their own tangible expressions of their priorities, as manifested in governmental entities and regulations. The Tribal Game Code, for example, helped increase pronghorn populations, which were dismal prior to the code’s adoption in the 1980s.\textsuperscript{52} Although initially resisted by some members, the tribal regulation resulted in pronghorn increases, with the evidence easily observed by taking a drive through the reservation. The Tribal Game Code also regulates non-Indian fishing, as described in Part III.

The tribes have also given significant attention to their water resources. Adopted by both tribes in the early 1990s, the Tribal Water Code’s beneficial uses include instream flow “for fisheries, wildlife, and pollution control, aesthetic, and cultural purposes.”\textsuperscript{53} The Tribal Water Code states in the Findings section, that “all Reservation natural resources are interconnected, and that the water resource has cultural, spiritual and economic values that guide the appropriate use . . .”\textsuperscript{54} The tribes defended their water code throughout the Big Horn General Stream Adjudication (Big Horn Adjudication), which is discussed below. Unfortunately, the tribes are unable to use the water code’s full purposes all of the time, such as for improving fisheries and vegetation revitalization.\textsuperscript{55}

\textsuperscript{52} Interview with Richard Baldes, Biologist, U.S. Fish and Wildlife Service (retired), Tribal Water Board member, Wind River Indian Reservation (Sept. 21, 2015). Mr. Baldes helped make enormous improvements for fish and wildlife on the reservation over the course of his career, including the initial support for regulating hunting. He held a unique position as a tribal member overseeing the United States’ work on the reservation. See Mark Wexler, \textit{Sacred Rights: In Wyoming, the Wind River Reservation tribes stir up controversy as they take steps to protect their resources}, NATIONAL WILDLIFE FEDERATION, (June 1, 1992), https://www.nwf.org/News-and-Magazines/National-Wildlife/News-and-Views/Archives/1992/Sacred-Rights.aspx.


\textsuperscript{54} Id.

\textsuperscript{55} See University of Wyoming, \textit{Prospective Intrastate Panel}, YOUTUBE (Sept. 12, 2014), https://www.youtube.com/watch?v=FgsSVT7bD1M&feature=youtu.be for a discussion by Eastern Shoshone member panelist Sarah Robinson, who spoke about tribal perspectives on water uses, and how the tribes are not always able to manage their water uses for all of the purposes incorporated in the water code.
Not only can we see demonstrations of the cultural importance of healthy fish and wildlife through the Tribal Game and Water codes, we also can see these values through the activities and work of individual tribal members. For example, Darren Calhoun and his father started Wind River Canyon Whitewater and Fly Fishing Company, a Native American-owned outfitting company based in Thermopolis. The company operates on an exclusive permit obtained from the Eastern Shoshone and Northern Arapaho Business Council that allows the company to lead fishing and rafting trips in the Wind River Canyon and elsewhere on the reservation. As noted on their website, their mission is “to provide a professional guide service in an environmentally conscientious manner.” It later notes: “We are on the side of the fish…” Because their company operates on this policy, they limit the number of fishing trips to two per day, practice catch-and-release angling, and require the use of artificial tackle with barb-free hooks. As can be seen on their video, “A Fish Story on the Wind,” people who go on their trips can catch big, healthy brown trout in an incredible setting. Darren Calhoun narrates as follows:

The Canyon is also a place of great cultural significance and spiritual importance to the Eastern Shoshone and Northern Arapaho tribes of the Wind River Reservation. So we focus a lot on conservation since we were blessed enough to get this permit that we needed to return the favor to the resource, to the river, and to the fish that inhabit this river and not put too much pressure on it. So without proper management consideration for the fish that inhabit these waters, I honestly believe in my heart and soul that it could easily be harmed, and harmed deeply. I would share a quote from a tribal leader, he said to me, ‘The fish, they are our relatives. If they start to go, we’re gone too.’

Calhoun’s beliefs on management of the resource and the cultural importance of maintaining healthy fish populations illustrate the tribal point of view. Conservation and culture

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56 A Fish Story on the Wind, YouTube (Feb. 18, 2014), https://www.youtube.com/watch?v=5O5leWZU-. 0.
58 Id.
59 A Fish Story on the Wind, supra note 56.
60 Id.
are inherently interconnected. Combined with the governmental entities, funding priorities, and regulations previously discussed, we see tangible expressions of the tribes’ desire to properly manage fisheries resources on the reservation. One expression, which was ultimately unsuccessful, was the tribes’ attempt to dedicate part of their water right to instream flow through the target area, precipitating a huge legal battle, as described below.

C. Water Rights: Legal Issues on the Reservation

The Eastern Shoshone and Northern Arapaho tribes have a legal right under federal law to use water in the Wind River and its tributaries. This “federal reserved right” affirms the existence of water rights that can be reserved by tribes through language in the original treaties establishing Indian reservations. The Wyoming Supreme Court quantified the tribes’ federal reserved water right in Big Horn I, holding the scope of the reserved right would be determined by the purposes for which the reservation had been created. Even though the special master appointed in this case had concluded the purpose of the reservation was to provide a permanent homeland for the tribes, the Wyoming Supreme Court declared the purpose of the reservation was purely agricultural. The court deleted an award approved by the special master for instream flows for the tribes, finding “neither a dependency upon fishing for a livelihood nor a traditional lifestyle involving fishing.” As adverse as this sounds to the tribes, the court ultimately approved a large award of nearly 500,000 acre-feet annually for historical and future reservation projects, with an 1868 priority date.

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62 In re General Adjudication of All Rights to Use Water in the Big Horn River System, 753 P.2d 76, 94 (Wyo 1988) (Big Horn I).
63 Id. at 96.
64 Id. at 98.
65 Id.
After Big Horn I, the Tribal Water Board issued a permit for instream flow in the Big Wind River.\textsuperscript{66} The state engineer refused to enforce the permit, which would have required not diverting a significant portion of water to the irrigation districts.\textsuperscript{67} Enforcing this permit would have left 252 cubic feet per second (cfs) in the main stem of the river and through the target area for fisheries purposes, rather than diverting into the Wyoming Canal the full amount requested by the Midvale Irrigation District. Later that year, the tribes filed a motion in district court requesting, among other things, that the state engineer be held in contempt and relieved of his duties and authority to administer the tribes’ reserved right, and that a special master should be appointed with this authority.\textsuperscript{68} The district court granted the motion, and held that the tribes could change the use of their reserved right as they deemed advisable, and that the tribal water agency was the proper administrator of both the reserved right and state water rights within the reservation.\textsuperscript{69} This victory was short-lived.

On appeal, the Wyoming Supreme Court further restricted the tribes’ use of their reserved right in Big Horn III. Authored by Justice Macy, what passed for a majority of this five-part plurality opinion held (1) Indian tribes were not authorized to change a portion of their right to divert future project water for agricultural purposes to a right to maintain instream flow for fishery purposes without regard to state water law, and (2) the district court’s substitution of the tribal water agency for the state engineer as administrator of all water rights within the

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{66} In re: The General Adjudication of All Rights to Use Water in the Big Horn River System and All other Sources, State of Wyoming, In the District Court Fifth Judicial District, State of Wyoming, County of Washakie, Civil No. 4993, 123 (1991).
\item \textsuperscript{67} Id.
\item \textsuperscript{68} Id. at 124.
\item \textsuperscript{69} See In re General Adjudication of All Rights to Use Water in the Big Horn River System, 835 P.2d 273 (Wyo. 1992) (Big Horn III).
\end{itemize}
\end{footnotesize}
reservation violated the separation of powers doctrine and the state engineer’s constitutional charge of general supervision of waters of the state.\textsuperscript{70}

\textit{Big Horn III} is a highly criticized opinion with dubious precedential value.\textsuperscript{71} But for the tribes of the Wind River Indian Reservation, the case brought to light the extent of the state’s opposition to the tribes’ use of water for anything but agriculture.\textsuperscript{72} It also placed the tribes in a subordinate position to the state by essentially voiding the Tribal Water Code in favor of state uses. Instream flows, the splintered \textit{Big Horn III} opinion held, could only be held by the state, according to state law. The lack of respect for tribal sovereignty in this opinion is stark. In his dissent, Justice Golden expressed, “I cannot be a party to deliberate and transparent efforts to eliminate the political and economic base of the Indian peoples under the distorted guise of state water law superiority.”\textsuperscript{73} Irrational as it seems, \textit{Big Horn III} remains good law in Wyoming. The tribes decided not to appeal the case to the U.S. Supreme Court, likely because they would have risked setting bad precedent under an unfavorable Court.\textsuperscript{74}

In the time that has passed since \textit{Big Horn I} and \textit{Big Horn III}, the tribes have struggled to develop their futures awards for agriculture.\textsuperscript{75} Putting Indian lands, whether previously used for agriculture or not, into production would be costly, and most individual members do not have the means to develop without assistance.\textsuperscript{76} Help may not come from the federal government, because history shows little federal funding goes to tribal projects on the reservation, in comparison to

\textsuperscript{70} Id. at 273.
\textsuperscript{71} See, e.g., Berrie Martinis, \textit{From Quantification to Qualification: A State Court’s Distortion of the Law in In Re General Adjudication of all Rights to use Water in the Big Horn River System}, 68 WASH. L. REV. 435 (1993) (discussing why \textit{Big Horn III} contradicts Indian law and undermines tribes).
\textsuperscript{73} \textit{Big Horn III}, 835 P.2d at 304.
\textsuperscript{75} See MacKinnon, supra note 72, at 517-518 (describing the difference between “paper rights and wet water”).
\textsuperscript{76} Interview with Richard Baldes, supra note 52.
what goes to non-Indian projects.\textsuperscript{77} If the tribes could develop the full use of their reserved right, their economic well-being would likely improve drastically.\textsuperscript{78} Additionally, if the tribes were able to give more input into how the target area is managed, they could hopefully make up for the lack of instream flow in the stretch, to an extent which is addressed in the discussion below.

III. \textbf{Fisheries Resource Concerns in the Target Area}

Given the tribes’ demonstrated desire to properly manage their fish populations through tribal natural resource agencies, we must now look to the resource to determine how the existing management mechanisms affect fish populations in the target area. Recall that the Bull Lake Dam and Diversion Dam structures are managed by Midvale solely for irrigation purposes, which means severe drawdowns occur during irrigation season.\textsuperscript{79} Water storage releases from Bull Lake flow through Bull Creek to the Wind River, where they are diverted at Diversion Dam for storage in a smaller off-stream reservoir, Pilot Butte.\textsuperscript{80}

This Part initially will provide an overall ecological description of the region and the involved fish species, along with management jurisdiction. Next, the fisheries resources and management concerns will be examined throughout three main portions of the target area: Bull Lake Reservoir, Bull Lake Creek, and the Wind River. Lastly, a synthesis of management concerns and other contextual considerations will be given.

\textbf{A. Target Area Ecology and Management Jurisdiction}

\begin{flushleft}
\textsuperscript{77} Brief for Tribal Respondents, \textit{supra} note 23, at 6. The tribes estimated 4.4 million was provided by the United States for irrigation projects on the reservation compared to $70 million for non-Indian users spent on the Riverton Reclamation Project alone.

\textsuperscript{78} See Reid Peyton Chambers \& John E. Ecohawk, \textit{Implementing the Winters Doctrine of Indian Reserved Water Rights: Producing Indian Water and Economic Development without Injuring non-Indian Water Users?}, 27 GONZ. L. REV. 447 (1992) (arguing Indian water rights, having early priority dates, preservation despite non-use, and quantified to include future use, are the most valuable property of Indian tribes).

\textsuperscript{79} Hubert, \textit{supra} note 34, at 197.

\textsuperscript{80} History, MIDVALE IRRIGATION DISTRICT \url{http://midvaleirrigation.net/History.aspx} (last visited Jan. 1, 2016).
\end{flushleft}
As noted by Justice Macy in *Big Horn III*, water is an incredibly important resource in Wyoming. The climate of the Wind River Basin highlights this importance. The climate of the reservation itself is variable due to the presence of surrounding mountain ranges, which block the flow of moisture from reaching the central portions of the basin. Annual precipitation is generally low in the reservation interior, but mountain precipitation is higher. The dry interior consists of sagebrush-covered rolling plains, broad river valleys, narrow terraces, and badlands. The vegetation varies depending on elevation, soil, precipitation, and land use practices. Generally the lowland areas are dominated by grassland and sagebrush steppe, but many of these areas have been converted to cropland.

The Wind River, which is called the Bighorn after it leaves the reservation at the “Wedding of the Waters” at the outlet of the Wind River Canyon, is the second largest river in Wyoming. Its headwaters are primarily the Wind River Range. It flows southeast from the headwaters regions through the reservation to the city of Riverton, where it takes a sharp turn north to Boysen Reservoir, then through the Owl Creek Mountains towards Thermopolis via the Wind River Canyon. Along its path to Riverton, the waters of the Wind River undergo several diversions for irrigation, mostly for non-Indian users on ceded portions of the reservation.

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81 *See In re General Adjudication of All Rights to Use Water in the Big Horn River System, 835 P.2d 279 (Wyo. 1992) (Big Horn III).*
83 Id.
85 WIND/BIGHORN RIVER BASIN 2010 GROUNDWATER REPORT, supra note 7, at 3-21.
86 Id.
88 WIND/BIGHORN RIVER BASIN 2010 GROUNDWATER REPORT, supra note 7, at 3-21.
89 Id.
Native fishes in the Wind River drainage include burbot, sauger, and channel catfish among others. Native cutthroat trout are also found in the Wind River and are a species tribal water managers have expressed interest in restoring. Introduced species, including brown trout, walleye, largemouth bass, sand shiner, emerald shiner, and common carp are also found throughout the river system. Pressures from introduced shiners are likely contributing to native species declines in certain reaches of the river. Many of the studies completed by management agencies, researchers, and the tribes in the target area focus on burbot, possibly because burbot are a popular native sport fish in the area and have experienced recent population declines. Burbot are also noted as a traditional food source for the tribes.

The regulatory agencies involved in the target area often encounter jurisdictional overlap. Although Bull Lake Dam releases are managed by Midvale Irrigation District under contract with the Bureau of Reclamation, the water bodies lie on the reservation, so the fisheries within the water bodies are managed jointly by the Tribal Fish & Game Department. The U.S. Fish and Wildlife Service (USFWS) provides technical assistance to tribal agencies through its Lander Fish and Wildlife Conservation Office. The Wyoming Game & Fish Department (Game & Fish) manages fisheries in the Wind River Basin outside the reservation, including in

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92 E-mail Tribal Water Board Member (Aug. 18, 2015) (on file with author, name withheld); Email from Tribal Water Board Member (Aug. 21, 2015) (on file with author, name withheld).
93 Lionberger & Hubert, supra note 90, at 290.
94 Id. at 293.
95 See Hubert, supra note 34 (reviewing burbot stocks and management issues in the Wind River drainage).
96 Id. at 187.
Pilot Butte and Boysen Reservoirs.\textsuperscript{99} The Game & Fish also assert jurisdiction over some privately owned non-tribal properties along Bull Lake Creek, so some anglers with state licenses access these areas and fish from the private parcels.\textsuperscript{100} Figure 3 shows some of the jurisdictional overlap in the target area.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{target_area_surface_ownership.png}
\caption{Target area surface ownership.\textsuperscript{101}}
\end{figure}

Since fisheries in Bull Lake Reservoir are managed by the tribes, the angling regulations are set according to the Tribal Fish and Game Code. The code regulates the season, creel limits,

\textsuperscript{99} Hubert, \textit{supra} note 34, at 191.
\textsuperscript{100} E-mail from Michael Mazur, Fish Biologist, Lander Fish and Wildlife Conservation Office, U.S. Fish and Wildlife Service (Nov. 4, 2015) (on file with author).
\textsuperscript{101} Map credit: Kirk Scheffler.
and line requirements for ice fishing on reservation lakes, including Bull Lake. All regulations apply to non-tribal members, while registered tribal members are not regulated. Because tribal members are not regulated, it is difficult to estimate tribal angling rates. Currently, the USFWS is conducting creel surveys to get a better idea of how much angling is occurring in Bull Lake.

B. Fisheries Health and Management Issues

1. Bull Lake Reservoir

Bull Lake Reservoir is a long, thin modified natural lake. Bull Lake Dam, constructed in the 1930s, increased the water level from about thirty meters in depth to forty-five meters. The reservoir now holds up to 152,000 acre-feet of stored water. Fish species here are isolated, as the dam created a complete barrier to upstream movement from Bull Lake Creek into the reservoir. Trout species in the reservoir include lake trout, brown trout, rainbow trout, and cutthroat trout. Currently, the USFWS stocks 20,000 eight-inch rainbow trout annually, but cutthroat trout are no longer stocked. Although a natural population of cutthroat trout exists above Bull Lake Reservoir, they likely do not migrate to the lake. Lake trout are very abundant and recruit naturally in the lake, but brown trout are less abundant. Lake trout have also been known to grow to trophy size. Burbot found in the reservoir are of particular interest

103 E-mail from Michael Mazur, Fish Biologist, Lander Fish and Wildlife Conservation Office, U.S. Fish and Wildlife Service (Jan. 28, 2016) (on file with author).
104 See Figure 3 for a graphic representation of Bull Lake and Bull Lake Creek.
105 Hubert, supra note 34, at 189.
106 Bureau of Reclamation, supra note 33.
107 Hubert, supra note 34, at 189.
108 Id.
110 Id.
111 Id.
112 ERIC P. BERGERSEN & MARK F. COOK, IMPACTS OF WATER LEVEL MANIPULATIONS ON BURBOT AND LAKE TROUT IN BULL LAKE, WIND RIVER INDIAN RESERVATION, WYOMING 1 (1987).
as a known native trophy species.\textsuperscript{113} That knowledge, combined with the fact that the reservoir is located close to human communities, leads to high amounts of angling in the winter.\textsuperscript{114}

Because of the high interest in trophy species in Bull Lake Reservoir and concerns about extreme drawdown in the fall due to irrigation withdrawal, studies have been conducted to explore these issues. Burbot in particular are a species of concern in Bull Lake. One specific concern is that water fluctuations may be causing problems with spawning, which occurs mid-winter for burbot. During a record low water level year in the mid-1980s, the USFWS and Colorado State University researchers analyzed burbot movement and spawning and nursery habitat.\textsuperscript{115} The extreme drawdown from high irrigation use that year exposed twenty-two percent of the reservoir’s basin that was normally under water.\textsuperscript{116} The exposed areas, mostly sandy substrate, consisted of “virtually all of the high quality burbot spawning and nursery habitat.”\textsuperscript{117} Not only did the study find the drawdown forced burbot into areas unsuitable for spawning, no larval burbot were found by trawling in shallow areas.\textsuperscript{118} The drawdown has also been found to have negative effects for lake trout spawning habitat.\textsuperscript{119} Although some suitable spawning substrate was found in the deeper areas of Bull Lake, the drawdown resulted in an increase of silt in those areas, making them less favorable.\textsuperscript{120} Additionally, the “best and most abundant” spawning substrate was found at the more shallow contours most at risk of exposure from drawdown.\textsuperscript{121}

\begin{footnotes}
\item[113] \textit{Id.}; see also Hubert, \textit{supra} note 34, at 189.
\item[114] Hubert, \textit{supra} note 34, at 189.
\item[116] \textit{Id.} at 141.
\item[117] \textit{Id.} at 143.
\item[118] \textit{Id.} at 144-145.
\item[119] BERGERSEN & COOK, \textit{supra} note 112, at 11-14.
\item[120] \textit{Id.} at 11, 14.
\item[121] \textit{Id.} at 14.
\end{footnotes}
Based on suspicion that overfishing may be causing burbot population declines in the Wind River drainage, a recent study explored the effects of fishing exploitation on burbot in Bull Lake. Researchers measured exploitation levels for three years, and found Bull Lake burbot populations seemed to be resilient to fishing pressure. However, estimated natural mortality rates appeared higher than reported rates in the literature. These results indicate that factors other than exploitation, such as entrainment in irrigation canals, habitat fragmentation, and loss of spawning habitat, are the likely culprits of burbot population decline in Bull Lake.

2. Bull Lake Creek

Bull Lake Creek consists of the reach downstream of the Bull Lake Dam outlet to the Wind River mainstem confluence. The stream bed characteristics vary throughout the reach. The stretch closer to the dam has deep pool habitat and riffles. The section closer to the Wind River confluence has a relatively steep gradient with mostly riffle and shallower pools. Though Bull Lake Creek covers a rather short distance, it provides important spawning habitat for trout. One concern about this reach is that spawning habitat is compromised by high releases out of Bull Lake Dam in the fall.

These concerns are credible and documented. In the late 1980s, the Game & Fish, at the request of the USFWS, used standardized methods to measure trout habitat values at different

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122 See, e.g., Kirk L. Krueger & Wayne A. Hubert, Assessment of Lentic Burbot Populations in the Big Horn/Wind River Drainage, Wyoming, 12 J. OF FRESHWATER ECOLOGY 453, 457 (2011); Hubert, supra note 34, at 195.
124 Id. at 24.
125 Id. at 16.
126 Id. at 29.
128 Id.
129 Interview with Richard Baldes, supra note 52.
130 Id.
discharge levels at two study stations in Bull Lake Creek.\textsuperscript{131} Trout habitat values peaked at eighty-four cfs at the lower station, close to the Wind River confluence,\textsuperscript{132} and at 300 cfs at the upper station, closer to the dam.\textsuperscript{133} This difference was probably due to the different habitat characteristics, such as substrate size, at each station. The study concluded the best trout habitat occurred if discharge was higher in the winter and lower in the summer, in other words, when fluctuation extremes were reduced.\textsuperscript{134} The results of this study can be useful for managers to determine which areas will have the maximum trout production at various discharges.

3. Wind River

Diversion Dam’s creation, management, and purposes were described earlier. Here, a more in-depth measure of the major ecological impacts and characteristics of the Wind River mainstem around Diversion Dam is provided. The construction of Diversion Dam in the 1930s and the related channel modifications lead to frequent sediment buildup right behind the dam.\textsuperscript{135} The sediment deposit can block flows into the Wyoming Canal. Midvale prevents this by flushing the sediment through Diversion Dam and sluicing it down the Wind River.\textsuperscript{136} These sluicing events occur several times every fall, and result in dramatic increases of suspended solids in the Wind River.\textsuperscript{137} To illustrate, samples measured over two years in the early 1990s showed total dissolved solid concentrations below Diversion Dam were nearly 300 times the concentrations found during clear conditions.\textsuperscript{138}

\textsuperscript{131} PISTONO \& BINNS, supra note 127 at 1.  
\textsuperscript{132} Id. at 2.  
\textsuperscript{133} Id. at 5.  
\textsuperscript{134} Id. at 7.  
\textsuperscript{135} BERGSTEDT ET AL., supra note 91, at 3.  
\textsuperscript{136} Id.  
\textsuperscript{137} Interview with Richard Baldes, supra note 52.  
\textsuperscript{138} BERGSTEDT ET AL., supra note 91, at 21.
Increased suspended solids have various physical, ecological, and chemical effects on aquatic communities. Effects on fish include increased mortality, lower growth rates, reduction in disease resistance, compromised egg and larval development, alteration of movement, and decreased food availability. Studies in the early 1980s assessed fish health below Diversion Dam and found adverse effects when compared to fish above Diversion Dam. The researchers observed external direct effects of suspended solids of fish species, including a high hematocrit and abnormal gills and gill structures, both indicators of high stress. They also noticed significantly higher fin erosion on fish below Diversion Dam, which they attributed to scouring. Necropsy evidence also showed indicators of high stress in mountain whitefish below diversion dam. The researchers assumed trout, which are in the same family as mountain whitefish, were most likely similarly affected. Not only were fish downstream of Diversion Dam found to be in much poorer condition than those above, but the macroinvertebrate community was altered as well, reflecting “the altered environment.”

Movement issues are documented as well. Diversion Dam has a fish ladder structure, likely a major innovation at its time, but it is largely ineffective. It was built in 1923 and is located on the southwest side of the dam. Burbot are unlikely able to access the ladder due to its steepness, and recent sediment shifts make it inaccessible to all species. In the early 1990s, Bergstedt and Bergersen observed Diversion Dam acting as a barrier for fish migrating upstream.

139 Paul Kemp, et al., The Impacts of Fine Sediment on Riverine Fish, 25 HYDROLOGICAL PROCESSES 1800 (fig. 1) (2011).
140 BERGSTEDT ET AL., supra note 91 at 21, citing J.S. ALABASTER AND R. LLOYD, WATER QUALITY CRITERIA FOR FRESHWATER FISH 1-20 (J.S. Alabaster and R. Lloyd, eds., 2nd ed. 1982).
141 Id. at 66.
142 Id. at 66-67.
143 Id. at 67-68.
144 Id. at 68.
145 Id.
146 Id.
147 Underwood, et al., supra note 5.
148 Id.
to spawn. Due to the aforementioned sedimentation issues, downstream areas are likely inadequate spawning sites for some downstream species, such as trout, which require gravel to spawn. The same study sampled fish species via electrofishing and noticed species composition changed from predominantly cold water trout species upstream of Diversion Dam to more warm water species downstream. This kind of community change occurs naturally, but anecdotal evidence suggests trout used to be more numerous downstream of Diversion Dam, especially near Riverton. Therefore, Diversion Dam is likely a barrier preventing trout from moving upstream to spawn while creating an unfavorable environment downstream. Recent research also offers strong evidence of Diversion Dam being a physical barrier to fish movement. Burbot populations from lower basin tributaries are genetically different from those in upper basin tributaries, with Diversion Dam separating the upper and lower basins. It is possible burbot populations had genetic differences before construction of Diversion Dam, but regardless the dam acts as a barrier to burbot now.

Another related problem is entrainment in irrigation canals. Currently, no screen structures exist to prevent fish from moving from upstream of Diversion Dam into the Wyoming Canal. Burbot and other fish have been observed throughout the Diversion Dam canal system, and given there is no outlet will become stuck in pools and die after the irrigation season ends.

Dewatering occurs in the mainstem of the Big Wind River between Diversion Dam and Riverton. This is a well-documented occurrence that is observable by anyone driving through

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149 BERGSTEDT ET AL., supra note 91, at 69.
150 Id.
151 Id. at 43.
152 Id. at 45; Interview with Richard Baldes, supra note 52; E-mail from Darren Calhoun, owner of Wind River Canyon Whitewater and Fly Fishing (Feb. 16, 2016) (on file with author).
153 Underwood et al., supra note 5.
154 Id.
155 Hubert, supra note 34, at 191, 197.
Riverton’s main street during the late fall. For example, one researcher noted, “severe dewatering is a relatively frequent occurrence in the Wind River between the Wind River Diversion Dam and the mouth of the Little Wind River ….”156 Dewatering not only creates a physical barrier for trout in the Wind River, it also creates a thermal barrier.157 Members of the salmonidae (trout) family generally require cooler temperatures. In 1992, researchers observed low flows resulting in high water temperatures, loss of habitat, and a halt of fish movement beyond the Riverton Valley Canal.158 Trout in this area almost entirely disappeared, carp and suckers increased but were limited to pool habitat, and the Wind River became little more than a small stream.159 This was in contrast to the same measurements taken in 1991, when the tribes’ dedication of 252 cfs left sufficient water in the reach.160 During that year, the researchers noticed fish populations were higher and the river supported warm and some cool water species.161 The fisheries seemed to begin to recover in 1991, but with the drastic flow reduction in 1992, “any recovery was halted.”162 The study concludes by stating the only solution to fishery problems caused by dewatering is to leave water in the river in the stretch from Diversion Dam to Riverton.163 The tribes tried to implement this solution by the dedication of instream flow, as described in Part II. Unfortunately, this seemingly simple ecological solution came under attack in the courts, and as of now, the reach continues to be dewatered annually.

156 Id. at 197.
157 BERGSTEDT ET AL., supra note 91, at 20.
158 Id. at 49.
159 Id.
160 Id. at 71.
161 Id. at 49.
162 Id.
163 Id. at 71.
C. **Synthesis of Concerns and Contextual Considerations**

To summarize, important fisheries concerns in the target area include dewatering, high flow rates, increased sediment, movement, overfishing, and entrainment. Figure 4 synthesizes these concerns.

<table>
<thead>
<tr>
<th></th>
<th>Dewatering</th>
<th>High Flow Releases</th>
<th>Sediment</th>
<th>Movement</th>
<th>Overfishing</th>
<th>Entrainment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bull Lake Reservoir</strong></td>
<td>Reduces available burbot spawning habitat</td>
<td>Dam blocks upstream movement</td>
<td>Suspected concern of overharvest, but other factors are the likely cause of burbot declines</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Bull Lake Creek</strong></td>
<td>Disturbs trout spawning habitat</td>
<td>Upstream movement blocked by Bull Lake Dam</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Wind River (Diversion Dam)</strong></td>
<td>Dewatering is a frequent occurrence</td>
<td>Combined with sediment, causes physical damage to fish</td>
<td>Sluicing increases suspended sediment downstream</td>
<td>No effective fish ladder; creates a thermal barrier</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wyoming Canal and other irrigation ditches</strong></td>
<td>Entrainment and mortality</td>
<td>No fish screen; evidence of burbot in canals</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Figure 4. Synthesis of concerns in the main parts of the target area developed from the cited scientific literature.

Exacerbating dewatering concerns further, climate change and drought should be given contextual consideration due to their negative effects on both fisheries resources and irrigation. Most of the above concerns are linked to irrigation withdrawals that are influenced by climate
variability. Drought is already a huge concern for non-Indian irrigators in the target area.\textsuperscript{164} Similar concerns on the reservation have already altered irrigation operations.\textsuperscript{165} Climate change will likely amplify these agricultural and ecological concerns by increasing drought severity and frequency in Wyoming through snowpack alteration.\textsuperscript{166} Researchers have found evidence that climatic processes, including variability in temperatures, have driven changes in water availability in Wyoming.\textsuperscript{167} Coupled with high irrigation withdrawals, drought and climate change are likely to continue to cause increased concerns for fisheries resources in the target area.

IV. TOWARD RESTORATION OF THE TRIBAL FISHERY

The Northern Arapaho and Eastern Shoshone tribes are unable to properly manage fish populations in the target area, mostly due to the outcome of \textit{Big Horn III}. As mentioned in the introduction, restoration of tribal habitats, ecosystems, and subsistence resource bases, along with maintaining tribal culture, are critical to tribal well-being. Generally, Native American tribes possess strong traditional connections to the land and wildlife. The Wind River tribes established natural resource agencies and drafted tribal game and water codes, all of which demonstrate their desire to properly manage their resources. The target area’s ecology is altered by highly dynamic water release regimes and sediment flushes resulting in poor water quality and periods of little to no flow. Unfortunately for the tribes, a major roadblock called \textit{Big Horn III} restricts their ability to dedicate part of their reserved water right to non-agricultural purposes.

\textsuperscript{164} Telephone interview with Lee Arrington, former Midvale Irrigation District Manager (March 16, 2016).
\textsuperscript{165} Ron Feemster, \textit{Drought, controversy may spur changes in Wind River irrigation management}, WyoFile, (Sept. 18, 2013), \url{http://www.wyofile.com/specialreport/wind-river-irrigation/}.
\textsuperscript{166} S. Gray & C. Anderson, \textsc{University of Wyoming Ruckelshaus Institute, Assessing the Future of Wyoming’s Water Resources: Adding Climate Change to the Equation 3 (2009)}.
\textsuperscript{167} Bryan Shuman, et al., \textsc{Multi-century Droughts in Wyoming’s Headwaters: Evidence from Lake Sediments, Final Report 1 (2013).}
as they see fit, such as for instream flow, which would have positive ecological benefits. Against this backdrop, the fisheries resources in the target area suffer.

What can the tribes do to improve their fisheries resource in the target area within this restrictive legal and political setting? Given the historical and legal background, the cultural importance of healthy fish populations, and the documented science, a co-management system offers the best way for the tribes to gain more influence over how the target area is managed. A potential co-management agreement would set up the process for tribal involvement in managing the resources of the target area. This Part will first address what co-management is, why it is the best solution, and some examples of co-management success. Next, the discussion will consider how to get the parties on board with a co-management agreement. Finally, the Part will explore more specific details of an ideal co-management agreement framework in this situation, which involves the creation of an Interim Collaborative Agreement, and later, an Operational Agreement.

A. **Co-management General Principles and Examples**

Co-management of natural resources is a favorable option for many American Indian tribes, possibly because it calls for sharing “turf,” rather than defending it.\(^{168}\) Generally, the term “co-management” refers to the sharing of responsibility for management functions between tribes and state and federal governments.\(^{169}\) As for the governance principles, these agreements involve a jurisdictional agency partnering with other stakeholders, and specifying and guaranteeing their “respective functions, rights and responsibilities with regard to the area.”\(^{170}\)

Co-management agreements are distinguished by their cooperative characteristics, which

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\(^{168}\) MacKinnon, *supra* note 72, at 521.


commonly include diverse participants, communication and negotiation, decision-making based on multiple inputs and knowledge systems, mutual learning about each other’s values, and a shared action or commitment.\textsuperscript{171} Overall, co-management is as much about managing relationships as it is about managing resources.\textsuperscript{172}

Given the contentious history on the Wind River, a management regime with a relational element is sorely needed in the target area, and co-management provides a favorable framework. At the Big Horn Symposium, Wyoming State Water Engineer Patrick Tyrrell spoke about the difficulty of managing such a big river system given the different management perspectives, and suggested a solution would involve getting all the users together to discuss increasing flexibility without injury.\textsuperscript{173} The potential implementation of a co-management agreement covering the target area will give all the participants a venue to negotiate, but more importantly, to communicate.

Other options besides co-management exist, but they are less favorable because they do not involve inter-party communication and negotiation. One option for the tribes is to maintain the status quo and work for a change in circumstance allowing development of futures lands downstream of the target area. Co-management would likely facilitate the actions needed to make this development a reality, so it is a superior option. Litigation of some form is another option. However, after thirty-seven years of litigating water rights, the tribes and non-tribal water users may be tired of court battles with win-lose results. The tribes especially, after failing to secure instream flow rights in \textit{Big Horn III}, may wish to seek creative, less exhaustive ways to


\textsuperscript{172} Fikret Berkes, \textit{Evolution of Co-Management: Role of Knowledge Generation, Bridging Organizations and Social Learning}, 90 J. OF ENVTL. MGMT. 1692, 1692 (2009).

\textsuperscript{173} University of Wyoming, \textit{supra} note 55.
restore fisheries in the target area. Another related option the tribes may entertain is the possibility of seeking Clean Water Act regulatory authority, though push-back and litigation is a likely result.\textsuperscript{174}

Another reason to favor a cooperative, negotiation-based option over litigation lies in the success of similar agreements employed by other tribes. One example parallel to the situation on the Wind River is the Umatilla Basin Project, a collaborative use agreement involving the Umatilla River, a tributary to the Columbia River in northeastern Oregon.\textsuperscript{175} The Umatilla River runs through the Umatilla Indian Reservation and provides water to thousands of acres of non-Indian irrigated agricultural land.\textsuperscript{176} By the 1980s, tensions around the river’s use ran at an all-time high because it was running nearly dry each summer and unable to support fish populations.\textsuperscript{177} The river had been strained by over-allocation for decades, and the Confederated Tribes of the Umatilla Indian Reservation came to a realization that they could not restore the fish populations without taking water from irrigators.\textsuperscript{178}

\textsuperscript{174} See City of Albuquerque v. Browner, 97 F.3d 415 (10th Cir. 1996). In City of Albuquerque, the Tenth Circuit Court of Appeals decided a dispute between the city of Albuquerque and the Environmental Protection Agency (EPA), which had granted the Pueblo of Isleta tribe treatment as a state (TAS) status and adopted the tribe’s water quality standards. Id. at 419. The city challenged the EPA’s decision to adopt the water quality standards, which were more restrictive than the state’s. Id. In order to comply with the new standards, the city would have to modify its waste treatment facility, which was upstream of the reservation, at high costs. Id. The court upheld the EPA’s decision, holding that tribes may establish water quality standards more stringent than those imposed by the federal government in accordance with tribal sovereignty, and the EPA has the authority to require upstream National Pollutant Discharge Elimination System dischargers, such as Albuquerque, to comply with downstream tribal standards. Id. at 423-24. If the Eastern Shoshone and Northern Arapaho tribes sought and received similar TAS status from the EPA, they might be able to regulate the sediment sluicing practices at Diversion Dam. If the Bureau of Reclamation or the State of Wyoming challenged the decision in court, Albuquerque would benefit the tribes as favorable precedent.


\textsuperscript{177} Id.

\textsuperscript{178} Neuman, supra note 175, at 271.
Finally, in 1988, after decades of increasing tension, the irrigators and tribes, with support from the Bureau of Reclamation and Oregon lawmakers, reached an agreement. This mediated agreement helped the Umatilla tribes receive a federally funded water project to serve their legal rights to water and fish. The mediation was necessary because the funding was only to be distributed to the Umatilla tribes if the Oregon Water Resources Department approved, which involved considering objections to the project by interested private parties. The mediated agreement created a plan that kept water in the Umatilla River for fisheries restoration, while at the same time providing irrigators with water by pumping it out of the Columbia. The diversion point for the irrigators essentially was changed. Though the Umatilla example is not exactly a co-management agreement, it is very similar. It is a use agreement created by a cooperative process involving multiple parties with equal status and bargaining power, and it is something the Northern Arapaho and Eastern Shoshone tribes could look to as an example.

Another example the tribes may wish to emulate comes from the Klamath River Basin Restoration Agreement. The Klamath Basin tribes, the Hupa Valley, the Karuk, and the Yurok, all co-manage the Klamath River fisheries and natural resources along with state and federal agencies. Similar to the Wind River, the Klamath River supplies both tribal and non-tribal Bureau of Reclamation irrigation needs, and it also supplies water to commercial salmon fishing communities. Also similar to the Wind River situation, the Klamath Basin has a

179 Id.
180 Rebecca Tsosie, Tribal Sovereignty and Intergovernmental Cooperation, in TRIBAL WATER RIGHTS 13, 30 (John E. Thorson, Sarah Britton, and Bonnie G. Colby, eds., 2006).
181 Id.
185 Id. at 167.
contentious and complicated history, full of dispute over water-use and fisheries issues.\textsuperscript{186} The Klamath Agreement, signed by multiple parties in February 2010 after five years of negotiation, provides for reduced irrigation withdrawals and plans for ecosystem restoration, along with a process for decommissioning and removal of four Klamath River dams.\textsuperscript{187} Although the Klamath Agreement’s provisions requiring Congressional approval have so far failed, federal agencies are still able to pursue some of the provisions under existing federal authority.\textsuperscript{188} The Klamath Agreement represents a large-scale grassroots effort that is meant to benefit both tribal fisheries restoration and irrigated agricultural interests, making it an appealing example for the parties involved in the Wind River’s issues. Some parts of the Klamath Agreement that could apply to the proposed framework are discussed periodically throughout sub-section C.

Although not labeled as co-management, other cooperative water settlements with similar characteristics have occurred in Wyoming.\textsuperscript{189} Many other co-management programs in other areas have achieved conservation success in the past in similarly polarized conditions,\textsuperscript{190} bolstering the potential value of this approach on the Wind River. Recognition of similar successful cooperative, multi-stakeholder agreements is the starting point. Once the idea is realized, the parties involved need to be motivated and willing to work on such an agreement.

\begin{footnotesize}
\textsuperscript{187} Chaffin et al., \textit{supra} note 184, at 184.
\textsuperscript{189} See University of Wyoming, \textit{supra} note 55 for a discussion by panelist and Wyoming State Engineer Patrick Tyrrell about the Platte River settlement.
\end{footnotesize}
B. Shared Benefits: What Can Bring the Parties to the Table?

Co-management is the most desirable option for tribal fishery restoration in the target area. Before it can become a reality, however, all of the essential parties need to agree to come to the table. This is a significant barrier, especially when it comes to the irrigation districts. The biggest motivating factor that will entice them into a cooperative discussion is the potential for tangible benefits that they could gain by working with the tribes and other entities. These benefits might include increased storage capacity or other system improvements.

So far, some tribal members and those involved with the research have demonstrated their willingness and desire to deal with fisheries issues in the target area. For example, Sarah Robinson, Eastern Shoshone member and Fremont deputy county attorney noted at the 2014 Big Horn Symposium:

The distrust, where does it ever end? ... That relationship has to be built again, because Tribal people ... as we do become more educated ... are being compliant, being patted on the head and patronized. Those days are over. Because we're tired of giving up, and so that is something that has to be overcome ... with the water.191

Robinson’s sentiment shows a willingness others likely share. A common theme at the Big Horn Symposium was a desire to continue the dialogue between the local water users. A co-management agreement should provide a place for this to happen. However, although co-management may be an ideal scenario for the target area, significant implementation barriers exist, some of which may even interfere with tribal involvement from the outset. The two tribes are not always united. For example, the Shoshone and Arapaho joint business council dissolved after the Northern Arapaho withdrew from participation in 2014.192 Recently, the Northern

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191 University of Wyoming, supra note 55.
Arapaho sued the Eastern Shoshone in federal court over decisions made by Eastern Shoshone leaders and the Bureau of Indian Affairs without consultation with the Northern Arapaho.\footnote{Mathew Brown, Northern Arapaho, Eastern Shoshone face off in lawsuit, Native Times (Feb. 24, 2016), http://www.nativetimes.com/index.php/news/tribal/12757-northern-arapaho-eastern-shoshone-face-off-in-lawsuit.} Furthering these tensions are general problems on the reservation, including unemployment, lack of healthcare, and violence.\footnote{See MacKinnon, supra note 72, at 518-519 (discussing community problems and social factors in Fremont County and on the reservation).} Though these other problems may require more immediate actions, natural resource issues are still seemingly a priority. The Tribal Water Board is solid, and consists of active members from both tribes who work together and who might be willing to initiate a co-management discussion.\footnote{See THE OFFICE OF THE TRIBAL WATER ENGINEER, EASTERN SHOSHONE & NORTHERN ARAPAHO TRIBES, http://www.tribalwaterengineers.org/ (last visited March 25, 2016) (noting both tribes’ participation in notices and projects).}

The process created by the co-management agreement will have to include a multitude of stakeholders, including the tribes. Assuming both tribes are united in moving forward with initiating a co-management agreement, the irrigation districts, Fremont County, the Wyoming State Engineer’s Office, the USFWS, and the Bureau of Reclamation will need to be brought in, because they are the parties with some amount of jurisdiction over the resources in the target area. But the process itself will involve more participants, including other locals and interested NGOs. A big barrier is getting the irrigation districts to the table, given how the agreement likely will involve changes to their irrigation systems.

The irrigation districts should be concerned about what could happen if the tribes develop futures agricultural lands downstream of the major irrigation diversions on the Wind River. If the tribes do this, the state engineer will have to let water pass down the river to those early priority projects, and the irrigation districts, as junior users, may not get their full allocation. Another immediate concern, which water users in the area are all too familiar with, is drought. When
there is plenty of water for everyone, flow issues are virtually non-existent; but in drought, the opposite is true. If the tribes develop the futures lands, the early priority date for those lands will mean much less water is available for the irrigation districts. They will face the equivalent of a drought of record every year.\(^{196}\) If the irrigation districts join a co-management agreement, they can get the support they will likely need from the tribes to get funding to help deal with situations where they will be forced to divert less water, whether it is from drought or from downstream tribal development.

To motivate the irrigation district’s involvement, the tribes need to stress the potential for tangible benefits to the irrigation district members’ livelihood, irrigated agriculture.\(^{197}\) The irrigators depend on getting the water they need to their fields each year, and that need is greatly stressed in dry years. But if the parties have a forum to negotiate for each other’s support for certain projects, dual benefits may become a reality. The creation of the co-management agreement as a venue for supporting beneficial changes for all participants will hopefully entice the irrigation districts to become involved, and the Bureau of Reclamation as well.

Perhaps a specific action will have to be envisioned in order for the irrigation districts to agree to form a co-management agreement. If some sort of mutually beneficial system change that benefits fisheries and also helps improve the irrigation systems can be seen, tribal support for such a project potentially could entice the irrigation districts to agree to join a co-management agreement. According to a former manager for the Midvale Irrigation District, the possibility of funding for higher efficiency in their system in exchange for diverting less water might be something the irrigators would agree to, but it will be difficult to convince the users to

\(^{196}\) Personal interview with Lee Arrington, *supra* note 164.
\(^{197}\) This tactic of encouraging the irrigation districts to join the tribes in the co-management process is preferable to other means of enticement, such as the threat of litigation.
support such an exchange, especially if their diversion rates are decreased. The Wyoming Water Development Commission already initiated an assessment for Midvale to create a conservation program, so some of the possibilities have already been analyzed. Another possibility of a mutually beneficial project is the expansion of Bull Lake, Pilot Butte, or another location for increased storage. Storage expansion possibilities are currently under consideration by the Wyoming Water Development Office.

Once the mutual benefits of co-management are seen by the parties and by the irrigation districts in particular, the final enticement to bring them together is the increased probability of federal funding for those projects becoming a reality. Congressional efforts to secure the necessary funding for infrastructure change are more likely to be successful if such programs are locally supported. For example, U.S. Senator John Barrasso of Wyoming, who recently introduced a current deferred irrigation maintenance bill, is generally supported by local landowners and stakeholders. Natural resource legislation can be drafted much more easily if a proposal is developed as the result of a collaborative grassroots effort, supported by multiple stakeholders. If the parties come to understand they are stronger together than apart, the support they give each other will likely result in increased funding for their projects.

C. A Recommended Co-Management Framework

The recommended co-management framework consists of two main parts: (1) the Interim Collaborative Agreement, and (2) the Operational Agreement. The two instruments are

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198 Personal interview with Lee Arrington, supra note 164.
201 Telephone interview with Travis McNiven, State Natural Resource Advisor to U.S. Senator John Barrasso (March 21, 2016).
202 Id.
The Interim Collaborative Agreement is an agreement to start the process of co-managing, sharing management power and responsibilities, in the target area. Co-management is defined this way because co-management is a governance process through negotiation and deliberation, the result of which is shared power. For the sake of clarity, Figure 5 synthesizes the process detailed in the two sections below.

<table>
<thead>
<tr>
<th>Timeline</th>
<th>Action</th>
<th>Goal/Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation</td>
<td>Initiate co-management-realize guiding principles and develop goals.</td>
<td>Interim Collaboration Agreement signed by all parties.</td>
</tr>
<tr>
<td>1-2 months later</td>
<td>Public engagement meetings.</td>
<td>Gain public involvement; creation of small discussion groups.</td>
</tr>
<tr>
<td>Year 1</td>
<td>Small groups meet.</td>
<td>Get to know each other; learn about each other’s livelihoods, cultures, etc.</td>
</tr>
<tr>
<td>Year 2</td>
<td>Small groups continue to meet, begin issue narrowing and problem solving.</td>
<td>Development of major issues in the target area plus potential solutions.</td>
</tr>
<tr>
<td>Years 3-4</td>
<td>Discuss and draft Operational Agreement.</td>
<td>Operational Agreement drafted and signed by all parties.</td>
</tr>
<tr>
<td>After</td>
<td>Implement Operational Agreement (Co-manage the target area).</td>
<td>Tribal fisheries restoration in the target area; continued reasonable irrigation supply.</td>
</tr>
</tbody>
</table>

Figure 5. Synthesis of the recommended co-management framework in chronological order.

1. Starting Point: Interim Collaborative Agreement

The Interim Collaborative Agreement (Interim Agreement) is the starting point of the co-management process. All parties, by signing, agree to start the cooperative process leading to potential co-management of the target area. The realization of some bedrock principles needs to occur before the drafting and signing of the Interim Agreement. These preliminary general

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203 Carlsson & Berkes, supra note 170, at 173.
principles will provide the foundation and stability necessary to make the agreement successful and effective. In the case of the target area, these relational foundations and understandings are critical and should be established before any negotiation or power sharing discussions occur.

First, all parties and groups involved must be viewed equally and with respect. This principal is the most important general guideline in the Wind River situation and should be integrated into every step of the co-management process. Each tribe should be considered a sovereign entity, equal in status to the state. Treating the tribes in this manner in a co-management context helps ensure protection of tribal resources. Further, when a tribe is involved as a co-manager, respecting its sovereign status dispels the “formerly paternalistic treatment of indigenous peoples ….” The Big Horn III decision put the tribes in a position subordinate to the state by charging the state engineer with water administration on the reservation. Respecting the tribes as equal sovereign nations, working to care for their citizens just like the state, is a way to encourage cooperation and build trust between the parties.

After the tribes are acknowledged as equal-status parties, past contentions need to be forgiven as a second principle. This change-of-heart guideline is deeply personal and difficult to measure objectively, but it is essential. All members involved in the agreement need to try to move forward without dragging the baggage of the past. This is not to say that past events should not be recognized. Throughout the process, the parties should learn about each other’s past, but hopefully it will in fact be a learning process rather than a venue for accusation and resentment. Discovering the possibility of cooperation with potential benefits for a wide range of stakeholders will hopefully help dissolve some of the past contentions and strife. That discovery

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204 Id. at 215.
is likely to take time. Coming to the table with the least amount of baggage possible is ideal. As Sarah Robinson noted in the quote above, the relationship between water users has to be rebuilt. Distrust seems to pervade this situation, and in many cases of co-management trust is determinative of the agreement’s success. If the parties do their best to keep this in mind, and have open minds and hearts to learn about each other’s cultures and livelihoods, trust will be developed and the governance systems forged by a co-management agreement are more likely to succeed.

Next, tribal expertise should be given a high degree of deference. Part of the reason the tribes should be equals in decision-making, aside from respecting their sovereignty over their fisheries resources, is their technical and cultural expertise. If all parties are viewed equally in the agreement’s formation, tribal expertise should be incorporated naturally from the beginning. This is a good start. Throughout the management processes created by the agreement, however, the parties should agree and consider the technical expertise accumulated by the tribes and the USFWS from years of monitoring and managing fisheries resources in the target area, as well as the work of the office of the Tribal Water Engineer in monitoring irrigation on the reservation. This hopefully would address the potential problem of failing to adequately integrate science into decision-making processes, which seems to have occurred in Big Horn III. The data should be used as a starting point to recognize management issues and potential solutions for the target area, which will be described below.

After the parties agree to engage in the collaborative process and share a general understanding of the preceding principles, the Interim Agreement can be drafted. This agreement should contain the general principles discussed above, the parties’ goals, and a commitment to

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206 Berkes, supra note 172, at 1694.
207 Id.
meet regularly for at least two years, with a plan to reconvene after one year. After two years, the entire group can come together again to discuss the potential creation of an Operational Agreement. The Interim Agreement will up the processes, which are likely evolve over time, and it should refer to the initial written principles and goals. The parties should draft the goals together.  

First, the parties need to create a single, common, unifying goal for the group. This is one goal that applies to each party. It can be something as simple as committing to work together to solve current and future natural resource problems in the target area. It could be an even simpler commitment to agree to meet and talk about each other’s cultures and livelihoods, or to get to know each other. Whatever it is, it should include a time commitment to meet regularly for at least two years. Ideally, this agreement will create a relational governance system that will last indefinitely to manage the resources. To start out, a measureable, simple time commitment might seem most reasonable to the parties. This time commitment facet of the common goal should be taken seriously by each party because a similar attempt to start meeting regularly took place several years ago, but the group dissolved before very long.  

After the common goal is agreed on, each party should include their own goal in the co-management agreement, which is essentially their reason for participating. For each tribe, their goal might be to develop a cooperative program which enables them to properly manage the fisheries resource in the target area. The irrigation district’s goals will likely be the reason they agreed to participate: they want to see changes in their system and hope to receive support. Requiring each party to bring their own, potentially conflicting goals to the forefront seems like a

208 See id. (Discussing co-management as a process rather than an end point. Berkes notes the length of time needed may be around a decade, as demonstrated by various co-management examples throughout the Pacific Northwest and the Canadian North).

209 Interview with Lee Arrington, supra note 164.
dangerous recipe, but it has worked before. For example, the Grand River fisheries management plan brought together managers concerned with fisheries, anglers seeking access opportunities, business owners concerned with economic development, and the Six Nations People concerned with the resource.\textsuperscript{210} Even with such diverse goals, this co-management process provided the opportunity for individuals to share their goals and learn, discuss, and reflect on each other’s goals.\textsuperscript{211} Through time, the Grand River group met and overcame a number of challenges because of the respect afforded to the participants’ respective goals and objectives.\textsuperscript{212}

After the parties’ goals are solidified, at least one or two public meetings should be held to generate interest in the community. From these meetings, interested individuals can join the parties in dialogue. Those interested from the community, along with party members, should divide into small groups to begin the discussion process. Each group should contain diverse members. For example, there should not be one small group of all Midvale users, etc. These small group meetings should take place monthly or bimonthly for the two-year period. At first, the small group’s focus should be primarily social. Discussions should center around getting to know each other, and learning each other’s perspectives. Once the group members feel comfortable with each other, the discussion can narrow its focus to the major concerns and problems encountered in the target area. This is essentially the process for identification of the major problems to be addressed by the whole group later. Hopefully, this sort of informal discussion process will evolve in a non-confrontational way. The goal is to get these groups with diverse goals to learn about each other’s cultures, families, and livelihoods. Discussion of natural resource problems in the target area will likely evolve naturally. One option to ensure things are

\textsuperscript{210} Derek Armitage et al., *Adaptive co-management and the paradox of learning*, 18 GLOBAL ENVTL. CHANGE 86, 90 (2008).
\textsuperscript{211} Id.
\textsuperscript{212} Id.
running smoothly is to request the parties to appoint a small group coordinator. The coordinator can jump from group to group to see where discussions are heading and can address and/or mediate any problems.

After at least one year has passed, the small groups should gather as a whole to discuss how their conversations have developed. Each group could even present some of the major natural resource issues identified. From there, each group should continue meeting for the second year. The second year discussions should center around developing creative solutions for the identified issues. The groups do not have to solve the problems, and they will not be making any decisions at this point. Rather, the goal of the second year should be to develop multiple potential solutions or resolutions.

In order to address some of the fisheries issues, such as those identified in the studies described earlier, each issue should be considered by the small groups. The tribes and those interested in improving fisheries resources should consider bringing up the main problems highlighted earlier. First, to provide optimal trout habitat and to avoid dewatering of Bull Lake Creek, variations in water release rates from Bull Lake Dam should be less extreme. Since this area is easily accessible and close to Riverton, it would be an ideal place to develop a good trout fishery. Diversion Dam also creates an array of issues the small groups may wish to address. The sedimentation problems in this section of the Wind River are incredible. Creative alternatives to sluicing should be explored. The entrainment and barrier problems created by Diversion Dam may be solved by a fish screen and adequate ladder structures. The Ray Canal, a major tribal irrigation canal on the reservation, has state-of-the-art structures that prevent entrainment in canals and allow for fish passage on the Little Wind River. Similar structures could be installed on Diversion Dam and the Wyoming Canal. All of these things gleaned from the studies and
literature could be addressed in a small group setting, and creative solutions could be developed in this scenario, and eventually adopted as a program in the Operational Agreement.

2. Next Steps: Operational Agreement

After the second year, or whatever time frame agreed on in the Interim Agreement has elapsed, the groups should gather again as one big group (1) to present the results or issues of the discussions up to that point, and (2) to discuss the possibility of creating a co-management agreement, referred to as the Operational Agreement, and what its framework should look like. Although the Operational Agreement will allow for reasonable irrigation needs, it is important to remember the main reason for creating this co-management agreement: fisheries restoration in the target area. The operational agreement should be longer in duration than the Interim agreement, modify the parties’ goals, and lay out a new unifying goal. It might take several months, or even over a year to write the entire Operational Agreement, because it is meant to be binding on the parties, and it will likely involve negotiation to develop the agreed upon definitions, responsibilities, and cooperation framework.

The parties may decide to incorporate some commonly used questions to develop the Operational Agreement’s framework. This will begin laying the foundation for the shared power process. In mapping out the co-management agreement, the parties should consider five general questions: (1) who has management authority, jurisdiction, and enforcement powers; (2) what species are covered and what interest the tribes have in protection and management of the species; (3) what time period the agreement should cover; (4) what is the geographic scope of the agreement; and (5) how should the management regime work, including what mechanisms
should be put in place, what regulations should be adopted, and who should draft the regulations.\textsuperscript{213} A dispute resolution process should also be incorporated.

The first question, who has jurisdiction, authority, and enforcement power, is very important. Some divisions are clearer than others. The parties will need to define the extent of each of their powers, since the main concept of co-management is power sharing. As mentioned before, power sharing should be the end result of the compact, not the starting point. However, it is still important to define the legal framework the parties will need to follow. The Klamath Agreement contains a section in the general provisions that reviews legal responsibilities, reservation of rights, and precedents.\textsuperscript{214} The section outlines the laws all parties must comply with, and it confirms the basic legal rights of the parties.\textsuperscript{215} The Operational Agreement should similarly include what powers are delegated to each party by law, and the geographical boundaries where those rights apply.

The next three questions, species covered, duration, and geographical scope, should be fairly straightforward. The species covered should be the fish the tribes have shown an interest in protecting, as well as others important to the ecological integrity of the Wind River system. The tribes and the USFWS biologists can play a large role in this decision. The geographic area is the target area, and coincides with areas of overlapping jurisdiction by the different parties. Generally, co-management agreements can have a specific expiration date, or the parties may decide to continue the agreement until one of them wishes to discontinue it.\textsuperscript{216} Once the substantive negotiations are solid, the parties should agree on a time frame. They should commit

\textsuperscript{213} Hon. Eric Smith, \textit{supra} note 169, at 4-9.
\textsuperscript{214} Klamath Agreement, \textit{supra} note 183, at I, 2.
\textsuperscript{215} Id.
\textsuperscript{216} Hon. Eric Smith, \textit{supra} note 169, at 7.
to making the Operational Agreement permanent, with five-year intervals for evaluation. That way, the processes can be reviewed periodically.

The management mechanisms and regulations should be given careful thought by the parties when drafting the Operational Agreement. This is where the creative solutions from two years of meetings will come in, and where a majority of the negotiation will likely take place. Before specific plans or mechanisms can be incorporated, a coordination structure, including a decision-making authority, should be decided on. All parties to the agreement should have an equal part of the decision-making process.\(^1\) A coordination board or council system should be implemented into the Operational Agreement. This board should be similar to the Klamath Basin Coordinating Council (KBCC), which is made up of the parties to the Klamath Agreement.\(^2\) The KBCC’s duties are general oversight and administration, including problem solving, establishing protocols and procedures, information sharing, and promotion of collaboration and coordination among groups.\(^3\) The KBCC also has general decision-making power, and designates representatives of the parties who participate in the voting process.\(^4\) The Operational Agreement should consider a similar coordination system, and it should carefully detail the cooperative characteristics and duties of the decision-making authority.

As for any rules adopted by the parties in the Operational Agreement, they will include procedures all parties must follow. The small group system from the Interim Agreement, for example, could be continued. It could even be altered into a sub-committee type system, based on the major issues developed during the Interim Agreement. The sub-committees should


\(^{2}\) Klamath Agreement, supra note 183, at Appendix D-1.

\(^{3}\) Id.

\(^{4}\) Id.
continue meeting on a regular basis, but more defined issues and solutions could be explored. Once a solution or project proposal is fully developed, the subcommittee can present it to the board, who can vote on how to move forward with the project.

Other management mechanisms or rules adopted may include specific program outlines. For example, the Klamath Agreement includes a detailed fisheries restoration, reintroduction, and monitoring program. The program sets forth the major problems and the general approach of the plan, and the specific aspects of the plan. The Klamath Agreement also includes a water resources program, which among other things, sets out assurances between the tribes and water users concerning water rights and uses. These programs directly relate to the “general recitals” of the Klamath Agreement, which resemble general goals.

A dispute resolution program should also be created and adopted, and one similar to the Klamath Agreement’s might be a good option. The procedures require (1) the party claiming a dispute to give notice to the other party or parties, (2) the disputing parties to hold at least two timely informal meetings, (3) if the meetings fail to result in a resolution, the dispute is referred to the KBCC, and (4) if the dispute is still not resolved, the disputing parties can decide to use a neutral mediator.

One thing the parties should consider implementing under a rule or regulation in the Operational Agreement is an adaptive management approach to monitoring the target area’s ecology. This way the science could be incorporated into the discussion directly. If monitoring

221 Id. at III.
222 Id.
223 Id. at IV. 15.3.
224 Id. at I. 2. Parts of the General Recitals include, “The resolution achieved here is intended to protect the sustainability of the agricultural uses and communities along with public and trust resources … This Agreement seeks to … provide the Tribes with both sustainable natural resources and sustainable communities.” Id.
225 Id. at I. 6.5.
226 Id. at I. 5.4.1.
takes place and shows, for example, an altered release regime from Bull Lake Reservoir is improving spawning quality in Bull Lake Creek, but the populations are still struggling, the group can discuss further alterations. The changes in water releases could happen gradually over a few years until Midvale and the tribes find a regime that works better for fisheries yet still provides adequate supply for the irrigators. This approach would require yearly monitoring, maybe something the USFWS or Game & Fish technical experts could help with. Or perhaps funded fisheries researchers or a non-profit, such as Trout Unlimited, would be interested in conducting the monitoring and analyzing the effectiveness of the changes. Trout Unlimited would be a likely party to the Interim Agreement and the Operational Agreement, given their policy of encouraging collaboration and partnership, and they would also have valuable input on drought management.\footnote{Chris Hunt, \textit{Partnerships, Collaboration Keys to Western Water Management}, \textit{TROUT UNLIMITED}, (March 22, 2016), \url{http://www.tu.org/blog-posts/partnerships-collaboration-keys-to-western-water-management}.} Also, Trout Unlimited is a party to the Klamath Agreement.\footnote{Klamath Agreement, \textit{supra} note 183, at I. 1.1.1.}

After all of the management mechanisms, including the coordination framework, any rules and regulations, and any specific plans are detailed, the Operational Agreement can be signed by the parties. As mentioned, this process may take some time. It will certainly take a willingness to negotiate by the parties. If it can be done, it will be worth the struggle. It will create a binding agreement between the parties to co-manage the target area for the benefit of all interests. In theory, it is a win-win situation. Though it is likely all parties will not get absolutely everything they want, this way they will all get at least something they want. And more importantly, this framework ensures each party is equally represented.
IV. CONCLUSION

The target area, as observed in Parts II and III, has overlapping jurisdictional issues that have led to fisheries damage and contentious court cases. According to Darren Calhoun, someone intimately familiar with the target area, the dewatered section of the Wind River could be an “exceptional” fishery if managed properly.229 However, there does not seem to be enough water to go around, and the target area is being managed solely for irrigation. The management authorities struggle to keep enough water for their own purposes. As the most precious resource humans are charged with managing, water often means war. But it does not have to end in a fight every time. The parties involved should agree to come to the table and enter into the two-part process outlined in this paper. The Interim Agreement will provide a venue to begin to rebuild trust between the parties. With this successfully completed, a co-management Operational Agreement could be negotiated. With cooperation and willingness, the tribal fishery’s future is bright.

229 Email from Darren Calhoun, supra note 152.