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Water is Life: An Exploration of Indigenous Perspectives on River Management

by

Laticia J. Herkshan

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DEDICATION

This dissertation is dedicated to my children, Lozen and Otter. One came and encouraged me to go back and get my education, and one came and encouraged me to finish.

Both are my future.

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Tsaan Aishe'

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LIST OF ABBREVIATIONS

AI/AN	American Indian/Alaska Native
EPA	Environmental Protection Agency
IDEQ	Idaho Department of Environmental Quality
IDWR	Idaho Department of Water Resources
IP	Indigenous Peoples
NPF	Narrative Policy Framework
SBT	Shoshone-Bannock Tribes
US	United States
USFW	United States Fish and Wildlife

Water is Life: An Exploration of Indigenous Perspectives on River Management
Dissertation Abstract – Idaho State University (2022)

Public opinion polling in the US is important for policymaking. Understanding the attitudes and beliefs of citizens aids policymakers in gaining policy support. However, public opinion polling is not very inclusive of American sub-populations, and especially lacks representation of Indigenous peoples. This project aims to better understand how Indigenous individuals understand and feel about environmental issues related to water/river management. Utilizing a 2016 survey of Indigenous respondents about their attitudes toward the Portneuf River in Southeast Idaho, I explore the influence of risk perceptions, trust in government, and narrative preference on policy preferences among Shoshone-Bannock Tribal citizens. Findings suggest that Tribal citizens have many strong opinions regarding water and environmental issues pertaining to the Portneuf River.

Key Words: Native American; Public Opinion; River Management;

Chapter 1: Introduction

As an Indigenous person situated in a predominately white, western institution, I feel a certain dichotomy between these two worldviews that strongly influence me. I recognize that I write from a highly privileged position, and therefore choose to use that privilege to address certain attributes of those dichotomous worldviews. I first want to acknowledge that the lands that I write from and on which this research was done, are my ancestral homelands and that of the Shoshone, Bannock, and Paiute peoples. Further, Idaho State University, the institution for which this dissertation is being submitted, benefits from occupying forcibly ceded Native lands and offers the following statement:

In an effort to show respect and recognize their intrinsic ties to the land, we acknowledge that Idaho State University (ISU) is located on the traditional territory of the Shoshone, Bannock, and Paiute peoples, collectively known as the Newe. As a public research university, it is our responsibility to disseminate accurate histories of the regional Indigenous people and of our institutional relationship with them. It is ISU's ongoing commitment to the Shoshone-Bannock Tribes and to our communities that we will collaborate on future educational discourse and activities.

Second, I would like to acknowledge my positionality. I am enrolled citizen of the Shoshone-Bannock Tribes, and a descendent of many other Indigenous groups including the Modoc and Tohono O'odham. Because of the social, cultural, and political contexts that influence my identity, I use "we," "us," "our," etc. when referring to the Shoshone-Bannock, Indigenous peoples, and Indigenous Nations. This is how I identify, and the subject matter is highly intertwined in my daily academic, professional, and personal life. While there may be some concern with bias due to my affiliations, I contend that in order for research done with and in Indigenous communities to be of the greatest value, projects such as this dissertation require leadership and participation from citizens of those communities.

Within the political realm, public opinion serves as a form of communication meant to encompass the collective attitudes and beliefs of citizens. Public opinion guides government action, influences public policy, and can be used to provide feedback to those in power. For various reasons, Indigenous peoples' perspectives on most policy issues are largely unknown or are poorly understood by scholars and the public. Both access to working with Indigenous populations, and/or willingness to participate in public opinion polling by Indigenous respondents may lend to this deficiency. Additionally, racial bias built into polling instruments may also skew what little information is available (Roper Center 2022). Public opinion is influenced by a variety of factors including basic demographics such as age, gender, race, religion, political ideology, etc. Indigenous peoples in the United States have a unique lived experience based largely on thousands of years old cultures, as well as a violent, complex history with the US government. These experiences combined with demographic factors shape the attitudes and beliefs of Indigenous peoples and influence their perceptions of risk, levels of trust in government, policy narrative acceptance, and ultimately policy preferences.

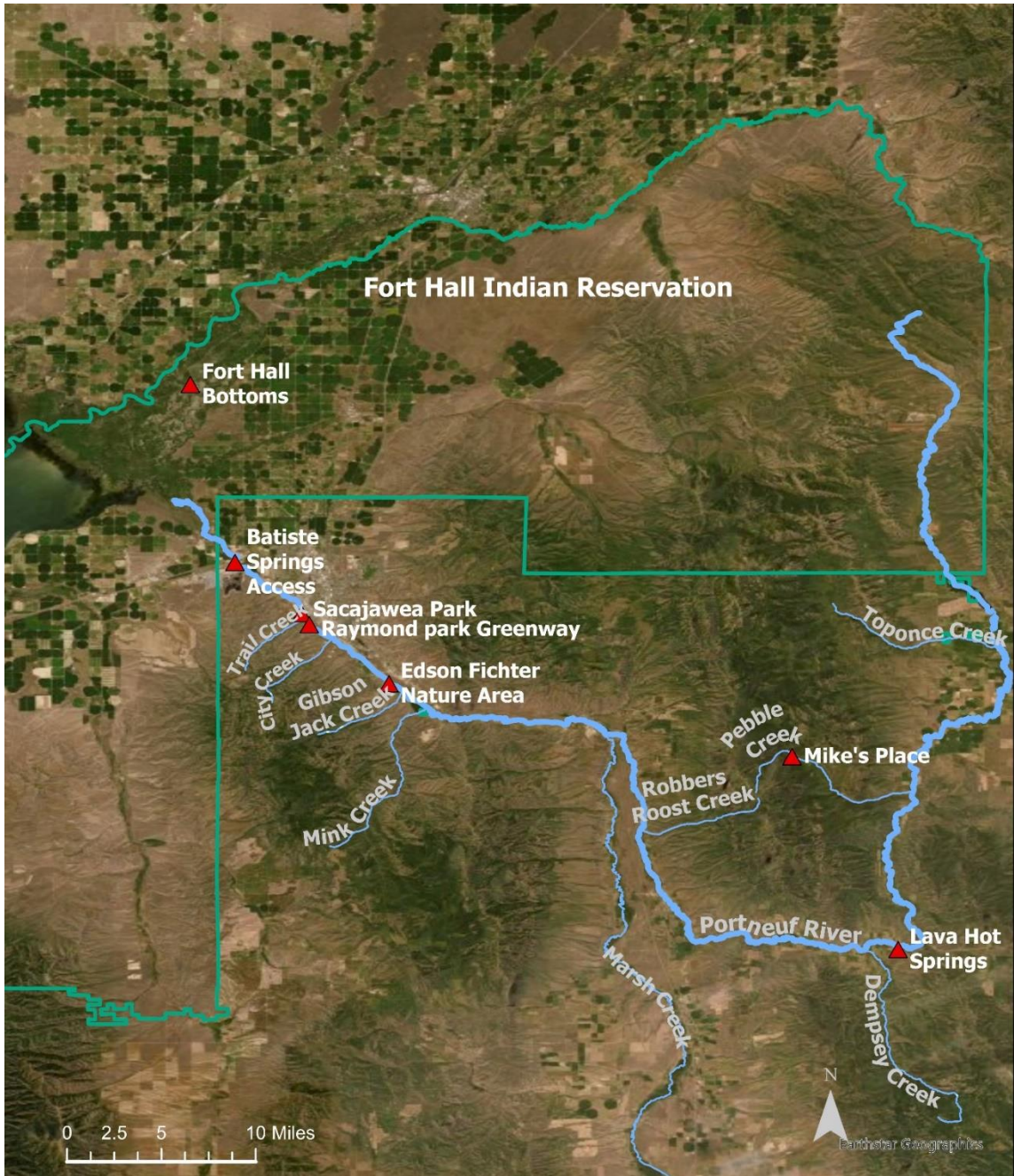
Climate, water, and environmental issues are currently at the forefront of global attention and politics. The connections between Indigenous peoples, environment, and land are at the center of Indigenous cultures, traditions, and beliefs across the world. Therefore, local environmental issues, both on and off Tribal lands, are often of utmost concern to Indigenous peoples, their communities, and their nations. Concern about water sources – access to them, their health, contamination concerns, etc. are among the most important environmental issues for Indigenous peoples. The slogan “water is life,” highlighted during the 2016, and ongoing, Dakota Access Pipeline protests, signifies the importance of water and water rights to not only Indigenous peoples but all peoples. To better understand how Indigenous individuals understand

and feel about environmental issues related to water/river management, this project utilizes a 2016 survey of Indigenous respondents about their attitudes toward the Portneuf River in Southeast Idaho. Specifically, I am interested in exploring the influence of risk perceptions, trust in government, and narrative preference on policy preference among Shoshone-Bannock Tribal citizens.

The Shoshone-Bannock Tribes of the Fort Hall Indian Reservation in Southeast Idaho are comprised of several different bands of Shoshone including Northern, Eastern and Western bands, as well as the Bannock, also known as the Northern Paiute (SB Tribes n.d.). The ancestral lands of these peoples ranged greatly from present-day Idaho, Oregon, Nevada, Utah, Wyoming, Montana, and into what is now Canada (SB Tribes n.d.). The Fort Hall Indian Reservation was established via an Executive Order under terms of the 1868 Fort Bridger Treaty (SB Tribes n.d.). Originally, the reservation spanned 1,800,000 acres of the Snake River Plain, however over 420,000 acres were forcibly ceded in order to establish the town of Pocatello, Idaho in the late 1800's and early 1900's (Ballotpedia n.d.; Gould & Loether 2002). Currently, the reservation is comprised of 544,00 acres with lands North and West of Pocatello (SB Tribes n.d.). While the Shoshone-Bannock Tribes' reservation lands were ceded, under terms of the Fort Bridger Treaty of 1868, Tribal citizens retain rights on those lands and other ancestral lands, securing their ceremonial and hunting rights, while also guaranteeing peace and ensuring a lasting relationship with the US government (SB Tribes n.d.; Gould & Loether 2002; Fort Bridger Treaty 1968). The Portneuf River begins and ends on Shoshone-Bannock Tribal Reservation lands and in its entirety, runs through the forcibly ceded lands that were a part of the original reservation boundaries.

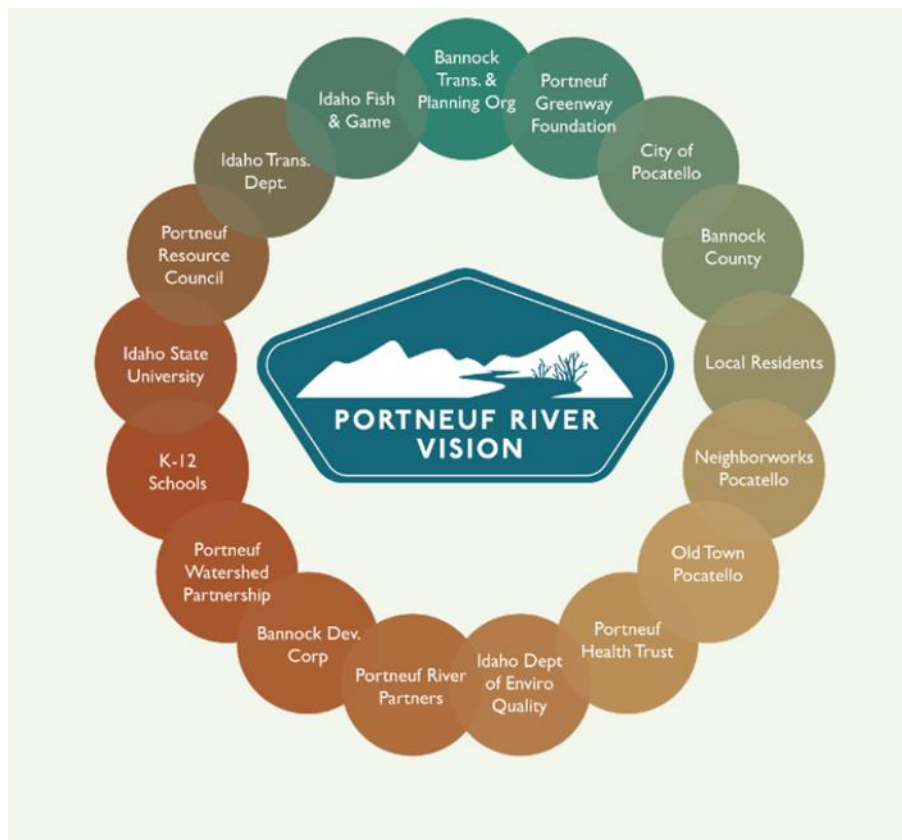
The Portneuf River, a tributary of the Snake River, flows 124 miles in Southeast Idaho. The river originates in the Portneuf Range of mountains above the Chesterfield Reservoir on the Fort Hall Indian Reservation (Portneuf River Vision, 2021). After running on Tribal lands, ceded lands, through four different counties, agricultural lands, and the city of Pocatello, the river also ends on the Fort Hall Indian Reservation draining into the American Falls Reservoir and the Snake River (Portneuf River Vision, 2021). The river serves as a source for agricultural needs and recreation in the area. Major flooding of the Portneuf led to the US Army Corps of Engineers reconstructing the natural flow in the mid 1960's. Parts of the river were channelized, while levees were also utilized to protect against future flooding. However, due to the changes made to the river's natural state, several issues have arisen including degradation of the river itself, and unsafe conditions of the levees (Idaho Department of Environmental Quality, 1999, 2010; Hopkins et al., 2011; US Army Corps of Engineers, 2013). Figure 1.1 is a map illustrating the entirety of the Portneuf River, the Fort Hall Indian Reservation boundary, and additionally, the locations of popular recreational areas along the Portneuf.

Figure 1.1: Map of the Portneuf River, Reservation Boundary, and Recreational Access Points



In 2016 a group from the City of Pocatello's Ad Hoc Portneuf River Visioning Working Group, created and implemented a survey aimed at seeking stakeholder and public opinion toward the river with a goal "to restore the Portneuf River and enhance the tourism, economic development, fish and wildlife habitat, recreation, and other quality of life benefits that the Portneuf River provides" (Portneuf River Vision, n.d.). The cities original survey instrument was not directly dispersed to citizens of the neighboring Indigenous Tribal Nation, the Shoshone-Bannock Tribes. As previously stated, discovering this omission led to identifying the need for surveying Tribal citizens regarding their opinions toward the river. Figure 1.2, which was created by The Portneuf River Vision group, illustrates the city of Pocatello's own identified "broad coalition of watershed and community partners." The illustration leaves out the Shoshone-Bannock Tribes (SBT) entirely. The SBT, whose reservation lands are less than ten miles away, are obviously also part of the broader community. Therefore, we can assume that the Tribes have a vested interest in the Portneuf.

Figure 1.2: The Portneuf River Vision's Broad coalition of Watershed and Community Partners



Source: Portneuf River Vision Study, 2021

To examine Tribal citizens' perceptions of environmental and water issues, I assess the influences of risk perceptions, narratives, trust in government, and policy preferences. I utilize a 2016 public opinion survey¹ concerning a water management controversy in Southeast Idaho. Water is a literal life source, important to all living things. Water is particularly significant and regarded as sacred to many Indigenous peoples and groups. Most Indigenous belief systems focus on the connection between human life and the environment. This importance has been highlighted by recent protests surrounding water rights, most significantly the Dakota Access

¹ See Appendix B

Pipeline protests. Acknowledging the salience of environmental and water issues around the world, and the cultural significance water holds for Indigenous peoples, the survey administered is an important test case. The survey was directly related to Shoshone-Bannock attitudes of the Portneuf River.

With the goal of better understanding how Indigenous peoples understand and feel about environmental issues, specifically pertaining to local management of the Portneuf River, this dissertation proceeds as follows, first, I provide a brief background on Indigenous peoples and US relations. Next, I offer theoretical perspectives in a review of the literature surrounding risk perception, trust in government, and narratives. I then offer a brief synopsis of my experience working with a sovereign nation and its citizens. Then, utilizing 2016 public opinion data of policy attitudes toward river management, I will explore the preferences of Indigenous respondents regarding river usage, risk perception, level of trust in governments, narrative preference, and policy support. I then discuss the potential implications of this research and the real-world effect it has on policymaking. Finally, I make the case for further research on the study of policy perception among sub-culture groups in the United States.

Chapter 2: A Brief History of Indigenous Peoples in the US

Indigenous histories in this country are poorly understood, incomprehensive, and are often inaccurate if they are taught at all. According to a 2015 study out of Pennsylvania State University, 87 percent of what is taught about Native peoples only includes pre-1900 context (Shear et al. 2015). Many US citizens seem to be under the impression that Native and Indigenous peoples (IP) are functionally extinct and do not exist in modern contexts. While this project is not explicitly based on individuals' understandings or perceptions of Indigenous histories, we can safely assume that those histories play a significant role in the opinions, beliefs, and ideologies of Indigenous peoples. Therefore, to give context as to why this project is important and to highlight how history may influence risk perception, trust in government, narrative preference, and policy preferences of Indigenous peoples this chapter serves as a brief history of Native/Indigenous peoples in what is now the United States of America.

In the US there are currently 573 federally recognized Indigenous nations comprising about two percent of the US population (US Census Bureau 2014). The US government's relationship with these Indigenous nations has been tumultuous, often violent and in violation of Article VI of the country's own Constitution. At its worst, federal policies have been used to severely limit Indigenous sovereignty. For instance, the US government enacted policy to kill and/or forcibly remove Indigenous people from their homelands (e.g. The Indian Removal Act 1830), to suppress the religious freedoms of Indigenous people (e.g. BIA's outlawing of "heathen religious practices"), and to forcibly remove Indigenous children from their families and Tribal nations in order to assimilate them into "American culture" (e.g. the boarding school era). At its best, the US government has restored some liberties back to Indigenous peoples through legal actions such as the Native American Graves Protection and Repatriation Act (Pub.

L. 101-601, 25 USC. 3001 et seq., 104 Stat. 3048, 1990), the Indian Self-Determination and Education Assistance Act (Pub. L. 93-638, 25 USC. 450 et seq., 88 Stat. 2203, 1975), and the Cobell Settlement Agreement (US DOI 2010) which led to a land buy-back program for Tribal nations, and a National Commission on Indian Trust reform. These, along with numerous other interactions have shaped Indigenous populations' viewpoints toward the federal government, which in turn has shaped their political views and beliefs.

From time immemorial through 1491, the Indigenous inhabitants of what is now known as North America, have lived freely, thrived off the land and its natural abundance, they have self-governed, and possessed true sovereignty. In 1492, a lost Christopher Columbus landed on a small island in the Caribbean, which was the home of the Indigenous Arawak peoples (Dunbar-Ortiz and Gilio-Whitaker 2016). Through cruelty and enslavement and by forcibly establishing the first permanent European settlement in what would later become the Americas, Columbus' colonization of a "new world" set the trend for 500 years of "discovery," mandated by "Manifest Destiny" and the "Doctrine of Discovery" (Dunbar-Ortiz and Gilio-Whitaker 2016). All of which led to the largest, most unrecognized Genocide of Indigenous peoples and ethnocide of their cultures throughout present day North America (Dunbar-Ortiz and Gilio-Whitaker 2016).

In dealing with European invasion, colonization, and eventually the US government, Indigenous peoples have survived through many intertwined eras. From the earliest instances of "extermination" or genocide to the Indian Citizenship Act of 1924, through to the current era of self-determination, Indigenous people have continuously been fighting for recognition and true liberty, especially as their relationship with the US is constantly evolving.

Between 1492 and the early 1800's, in what is noted as the "era of extermination," European colonizers made their way to what we now know as the US with curiosity, hope, fear,

prejudices, and a sense of entitlement to “discover” and settle a “new world,” regardless of the Indigenous peoples already inhabiting the land. As the non-Indigenous population grew, and as with any colonizing effort, conflict and struggle over power, control, and most importantly land, defined the relationship between colonizers and Indigenous peoples. The fact is that the easiest way to deal with conflicts was to get rid of the “uncivilized” people causing the problems. Though the exact number is unknown, it is generally acknowledged that millions of Indigenous peoples have been murdered over the last 500 years in the name of “religious freedom” (Wilkinson 2005).

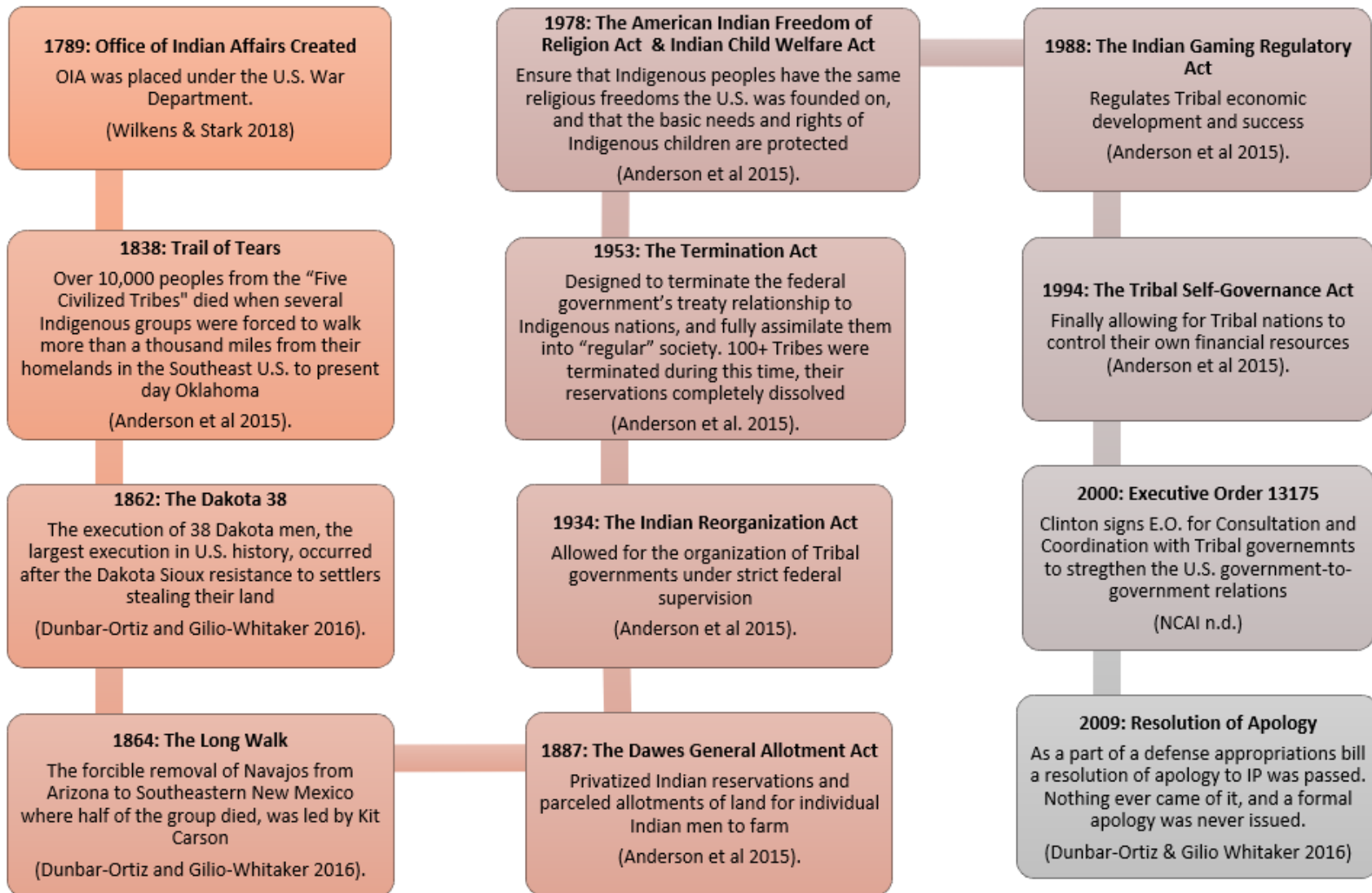
Supreme Court Chief Justice John Marshall is well known for overseeing a trilogy of court cases that are considered the foundation of Federal Indian law during this era, beginning with the affirming of the doctrine of discovery in 1823 (Anderson et al. 2015). During this “era of expulsion” the Office of Indian Affairs (OIA)¹⁰ was created within the US War Department in order to deal with the “Indian problem” and promote the country’s “manifest destiny” objectives (Anderson et al. 2015; Dunbar-Ortiz 2014). Later, in 1830, President Andrew Jackson signed into law the *Indian Removal Act* which authorized the parceling of Indigenous territories, the resettling of Native peoples from the Southeastern US, and the creation of “Indian Territory,” which later became the state of Oklahoma (Anderson et al. 2015). So began an era of forcible removal of Indigenous peoples from the homelands they had known for generations. Coupled with segregation and the creation of the reservation system, forcible removal led to a significantly smaller population of Indigenous peoples, and a significantly larger area of stolen land for colonizers to exploit.

The “era of assimilation” brought tactics, considered more “humane” for dealing with Indigenous populations. The killing of culture proved to be just as effective. In 1892 Captain

Richard H. Pratt was credited for giving the infamous “Kill the Indian, Save the Man” speech (Pratt 1892). Pratt’s ideas on “civilizing” and “Americanizing” Indigenous peoples were key to the development of the Indian boarding school system. Indigenous children were taken from their homelands and families, sometimes forcibly and other times with their family’s permission, often for fear of punishment of death, where they learned European-American ways (Dunbar-Ortiz 2014). The boarding school system severely damaged Indigenous nations, as their children- the future carriers of culture and traditions- often lost ties to their people, lands, and languages. The traumatic effects of which are still felt to this day. In 1924 the Indian Citizenship Act was passed (Anderson et al. 2015). After over 400 years of conflict, genocide, and resistance, Indigenous peoples in this country suddenly had US citizenship forced upon them by law. Meanwhile, the rights of Indigenous nations and individuals are continually challenged and denied to this day.

In 1975, bringing in an “era of self-determination,” President Richard Nixon signed into law, and Congress passed the Indian Self-Determination and Education Assistance Act which “gave” Tribal governments greater control over their own affairs (Anderson et al. 2015). The act was slowly followed by more progressive, yet still restrictive laws. In 2009, a resolution of apology to Indigenous peoples in the US was passed as a part of a defense appropriations bill (Dunbar-Ortiz and Gilio-Whitaker 2016). While nothing ever came of the resolution, the 573 federally recognized Indigenous nations within the US maintain a working relationship with the federal government with the goal of true sovereignty. Figure 2.1 illustrates a highly abbreviated timeline with important events in Indigenous history in this country.

Figure 2.1: Abbreviated Timeline of Indigenous History in the U.S.



While this short history does not do justice and is nowhere near exhaustive in explaining the relationship between Indigenous nations and the US, the above information highlights the fact that these past interactions are likely to strongly influence Indigenous peoples' preferences and opinions. Numerous other legal, political, and social interactions have specifically shaped Indigenous peoples' opinions and preferences in relation to water and environmental issues. Two notable interactions are the 'Fish wars' from the 1960's and 70's and the protests surrounding the Dakota Access Pipeline in North Dakota.

The "Fish Wars" were a series of protests carried out by Indigenous peoples and allies in response to treaty violations in the Pacific Northwest. Much like IP across what is now the US, European invasion led to Tribes in the Pacific Northwest being coerced into signing treaties with the US to secure rights to their lands and ways of life (Native Knowledge 360(a) n.d.). In most treaties, Tribes granted the US certain tracts of land - with the threat of not doing so and losing everything - in exchange for reserved rights to those lands and the ability to retain their traditional ways of life. Tribes specifically had secured their rights to hunt and fish as they had since time immemorial. In the states of Washington and Oregon, several laws were passed that violated the Treaty of Medicine Creek (Native Knowledge 360(a) n.d.). Per federal Indian law, the Marshall Trilogy (*Johnson v. M'Intosh*, 21 US 543 (1823); *Cherokee Nation v. Georgia*, 30 US 1 (1831); *Worcester v. Georgia*, 31 US 515 (1832)) established federal primacy in Indian affairs and excluded state law from Indian country. Despite this fact, state officials, including local police and the US Fish and Wildlife Service began harassing Indigenous peoples who were practicing and asserting their reserved treaty rights to fish on ancestral lands, which was secured in the Treaty of Medicine Creek (Native Knowledge 360(a) n.d.). This had been going on for years, but the protests came to a head in the 60's and 70's. In 1974 the 'Boldt decision' (*United*

States v. Washington 1974) stated that treaty right fishermen were allowed up to fifty percent of fishing harvests and further that they had equal say in fishery management in the area (*United States v. Washington* 1974; Native Knowledge 360 n.d.). The Supreme Court reaffirmed the decision in 1979.

In 2016 the Standing Rock Sioux Tribe (SRST) of North Dakota engaged in protest of Energy Transfer Partners, a Texas-based developer, and the building of the Dakota Access Pipeline (DAPL) through their reservation lands (Native Knowledge(b) 360 n.d.). The SRST asserted that the DAPL violated Article II of the Fort Laramie Treaty, stating via a Tribal resolution that the pipeline “poses serious risk to the very survival of our Tribe and ... would destroy valuable cultural resources” (Native Knowledge 360(b) n.d.). The protests garnered national attention after a significant Indigenous youth campaign, and when other Indigenous Nations, non-Indigenous allies, celebrities, and politicians joined the movement at the Sacred Stone Camp on the SRST Reservation. Further attention was gathered when clashes between protesters and North Dakota law enforcement and private Energy Transfer Partners became violent. Unfortunately, the pipeline was ultimately finished and is moving oil today. However, these protests highlighted the importance of water and cultural resources to Tribal Nations and the disregard of that importance by the state of North Dakota, the oil industry, and private developers (Native Knowledge 360(b) n.d.). The violent interactions in relation to the Dakota Access Pipeline led to a joint statement by the US departments of Justice, Army, and Interior stating, “This case has highlighted the need for a serious discussion on whether there should be nationwide reform with respect to considering tribes' views on these types of infrastructure projects” (US DOJ 2016). In 2021 with a new president in office, a memorandum was signed calling for more ‘robust’ consultation with Tribes.

The relationship between human life, land, and environment is a core tenet of many Indigenous cultures and belief systems. Due to the 1851 Indian Appropriations Act, and the creation of the reservation system in the US, Tribal nations and Indigenous peoples were assigned certain tracts of land to call home; lands often much smaller and/or displaced from their ancestral territories (NCAI n.d.). Despite this fact, Indigenous peoples' connection to and stewardship of lands, both on and off reservations, is well known and recognized around the world. According to Garnett et al. (2018) Indigenous peoples make up less than five percent of the total world population, but support about 80 percent of the global diversity (Garnett et al. 2018). The United Nations Declaration on the Rights of Indigenous Peoples (2007), thoroughly outlines Indigenous sovereignty, including rights to self-determination, well-being, traditional knowledge, and a healthy environment (UN General Assembly 2007). These facts lend to the reality of how environmental issues are often of utmost importance to Indigenous peoples, their culture, lands, and their sovereignty. And further, that their opinions and preferences should be sought and considered in environmental policymaking.

Chapter 3: Theoretical Perspectives

Public opinion and preference are central concerns of democracy and are often a driver of policy (Page & Shapiro 1983). Because understanding public opinion is significant for favorable policymaking, understanding public opinion toward environmental issues, especially given the current threats to our health, environment, and water quality increasingly requiring swift action, is also vitally important. Issues like pharmaceuticals in our ground and surface waters and pollution affecting the health of rivers and the plant, human, and wildlife that depend on them are of growing concern (McEachran et al. 2015). While the scientific research indicates that water contamination is a threat to humans and aquatic wildlife, current policies addressing water contamination are insufficient. Once again, this project seeks to understand how Indigenous peoples understand and feel about environmental issues related to water/river management. Though, as previously mentioned, what shapes the opinions and preferences of Indigenous peoples toward environmental issues and the policies concerning them, are not extensively studied or understood within scholarly literature. A better understanding of Indigenous peoples' opinions would not only potentially serve Tribes in increasing their autonomy, but it could increase and enhance government-to-government relations between Tribes and other governmental entities, while also addressing environmental and health issues for the good of the wider public.

Tribal sovereignty and autonomy are inherent and necessary for Tribal governments to operate. Chief Justice John Marshall, in his 1832 court decision stated, "Indian Nations had always been considered as distinct, independent political communities, retaining their original natural rights, as the undisputed possessors of the soil... The very term "nation" so generally applied to them means 'a people distinct from others'" (*Worcester v. Georgia* 1832). Through

public opinion polling, or with access to the data derived from public opinion polling of their citizens, Tribes can better assess the needs and concerns of their citizens. This could potentially lead to better policymaking within Tribes and on Tribal land, while also providing data for Tribal entities to take before the entities tasked with addressing issues at the national level. Further, since environmental and water issues often cannot physically be contained to only affect one area or group of people, having data from various populations would give a more complete picture of opinions and preferences. This could lead to better collaboration between Tribal, local, and state governments pertaining to environmental and water issues that are relied on by a variety of constituents.

Unfortunately, Indigenous peoples are largely left out of public opinion scholarship, meaning their preferences are not represented in the data. Contrarily, scholarly literature has an abundance of information on what shapes public opinion and policy preferences of the majority population in the US. Considering this information, in this project I examine the formation of opinions and preferences of Indigenous peoples. I utilize several different theoretical lenses that are well understood as influencing opinion. I make the argument that the following factors – risk perception, trust in government, and the use of stories/narratives– can have strong influences on Indigenous opinions and preferences. While none of these theoretical lenses encapsulates exactly what forms Indigenous preferences, when combined and coupled with the knowledge of historical and cultural influences, they may lead scholars to a better understanding of Indigenous opinion and preference.

Risk Perception

Within public policy literature, risk perceptions are understood as having a broad influence on public opinion in general and can be an important predictor for numerous opinions.

Risk perception is defined as “a measure of the probability of adverse effects and their severity” (Regens et al. 1983). Mumpower et al. (2013) identify four psychometric variables that make up risk perception: severity, magnitude of harm (number affected), level of understanding of the issue, and likelihood (Mumpower et al. 2013). Therefore, if a person perceives higher severity, a high number of people being affected, or that the event is highly likely to occur, they are likely to have higher risk perceptions. Scholars have found that risk perceptions may be some of the strongest indicators of policy support, and even when they are not the strongest, risk perceptions consistently influence policy support or opposition (e.g., Lubell 2002; Lubell et al. 2007; Mumpower et al. 2013; Stoutenborough 2015a; 2015b; Stoutenborough et al. 2014; Stoutenborough et al. 2013; Stoutenborough et al. 2015b). One way to utilize risk perception scholarship is to examine risk associated with various environmental issues that affect health and water quality and how it influences policy preferences.

To exemplify how risk perceptions can influence policy, consider the Clean Air Act of 1970 and Clean Water Act of 1972. In the 1970’s public awareness of pollution and water contamination prompted the US Congress to enact legislation to protect public health and welfare nationwide. Citizens had noticed dense smog in larger US cities and around industrial centers which led to concerns about individual health and the health of ecosystems, and eventually The Clean Air Act. A shocking catalyst for the Clean Water Act was when the Cuyahoga River caught on fire, again- as it had nine other times before, due to industrial pollution (RCAP 2021). The public reaction and outcry finally propelled Congress to act. Prior to these two Acts, controlling pollution was not a major priority for state and local governments and there was little to no regulation to prevent industrial pollution and waste that risked public and environmental health. Interestingly, these 1970’s era laws did not mention Tribal lands, leading

to them operating in a “regulatory vacuum” outside of state jurisdiction and poorly addressed by the federal government (Haider & Teodoro 2020).

More currently, as previously touched on, the issue of pipelines provides an example of how perception of risk can influence public opinion and ultimately policy preferences. The controversy surrounding the Keystone XL pipeline, which was proposed to run from Canada to the US, as well as the Dakota Access Pipeline, running from North Dakota to Illinois, are two good examples. Both pipelines were heavily opposed by Indigenous peoples and Tribal leaders citing the risks to human, water, and environmental health that oil pipelines pose when they leak. The opposition took many forms including protests, educational campaigns, and lengthy legal battles. The Keystone XL pipeline was officially deserted in June 2021, while the Dakota Access Pipeline was completed in 2017. While the pipelines experienced different fates, the attention they received did not go unnoticed. With the election of the 46th president of the United States, Joseph R. Biden, an executive order was signed early in his presidency focusing on strengthening the nation-to-nation relationships with Tribes. The presidential memorandum requires all federal agencies and executive departments to have a robust process in place for consulting with Tribes. The move represents the administration and governments commitment to meaningful relations with Tribal leaders and Tribal nations (Bennett-Begaye 2021; WhiteHouse.gov 2021). Previous presidents Barack Obama and Bill Clinton have signed similar orders, though this one is different in that it enforces a previous Tribal consultation executive order signed in November of 2000. This executive order requires the head of each agency to submit, within 90 days, a memorandum with a detailed plan of action on how they will implement policies and directives (Bennett-Begaye 2021; WhiteHouse.gov 2021). This means federal agencies must listen to what Tribes want and that they will have to keep the White House continuously updated. Requiring

this level of consultation at the federal level makes a strong case for state and local governments to also consider the risk to Tribes and Tribal lands when making infrastructure decisions that affect human, water, and environmental health.

Trust in Government

The level of trust in government can be a significant predictor of attitudes. Citrin & Muste (1999) define trust as “citizen confidence that authorities will observe the rules of the game and serve the general interest.” However, “the general interest” is usually referring to the interests of the majority, or majority in power, and their experiences – which has historically been that of white individuals. Indigenous experiences are unique and based on their cultures, and history in and with the United States. Based on that history, and the policies that have long since disenfranchised Indigenous peoples, we can assume there is significant distrust of US government by Indigenous peoples. When people trust government, they are more likely to support the policies of that government (Chanley 2002). Therefore, if they distrust government, they are less likely to support the policies of government. Further, trust in institutions is also related to risk perception. Institutions, like governmental entities, are what citizens must place their trust in and rely on to provide information and safety (Whitfield 2009; Stoutenborough et al. 2013). If citizens do not trust governmental institutions, they may be misinformed, may feel unsafe, and further, are unlikely to support the policy decisions of those institutions.

The relations between Indigenous nations and the US government have often been cataclysmic. These negative relations historically resulted in policies that diminished Tribal sovereignty, forcibly removed Indigenous peoples from their homelands and reduced or displaced them onto reservations, forcibly took their children to assimilate them into “American culture,” suppressed religious freedoms of Indigenous peoples, etc. Native nations also have a

unique relationship with the US government that is very different from other minority groups in the country (Deloria 1996). The Supreme Court case *Cherokee Nation v. Georgia* (1831) outlined the trust relationship between the US and Tribes based on numerous treaties, outdating the US Constitution (Pevar, 2002). The trust relationship is that of a trustee-beneficiary relationship, where the US government has legal and moral obligations to provide for the general wellbeing of Native Nations, ensuring that tribal governments are sovereign nations, in perpetuity (Canby 2004; Deloria 1996). Coupling their history with the complicated web of federalism, fiduciary/trust responsibility, and sovereignty, it can be assumed that Indigenous peoples' levels of trust in government likely effects their opinions and preferences on water and environmental issues.

Considering the literature on the impacts of trust in government on public opinion and policy preferences, Indigenous peoples may be likely to have low levels of trust in local and federal entities that are considered stakeholders in the Portneuf River. Further, it seems intuitive that IP will have a higher level of trust in their own Tribal governments.

Narrative

The stories we tell and internalize help us to make sense of our world and can heavily influence our opinions. Narratives hold significant power in the policy process, and recent scholarship on the topic has resulted in the development of the Narrative Policy Framework (NPF). The Narrative Policy Framework outlines how public acceptance of policy narratives leads to policy preference, which may eventually lead to policy adoption (McBeth, Jones, and Shanahan 2014). According to scholars, “narratives are a form of knowledge, and the study of narrative can tell us much about a given society and its cultural value, human behavior, and the construction of individual and collective identities” (Kirkpatrick 2017, 115; Patterson and

Monroe 1998; Kim 2016). Narratives are generally built on life experience which aides individuals in processing new information in narrative form more easily (Matilla 2000). When narratives align with an individual's understanding of the world and their life experiences, they have the greatest power to persuade (Schank & Abelson 1995).

The NPF utilizes stories to get policy information out and to influence policy acceptance. According to Clemons & McBeth (2013) narratives contain four important elements: setting, where the issue is taking place as it relates to the policymaking context; characters, a narrative must have at least one actor and that actor can be a hero or villain within the narrative; plot, where common narrative arcs like 'the hero's journey' are utilized; and a moral, which in the NPF describes the cause of a problem and the proposed policy solution. There are many important factors to consider when utilizing the NPF, including who's telling the story (the narrator), who their audience is, and what the context is. Narratives are especially impactful when the story fits the audience's beliefs, when they trust the narrator, and when the story is coming during an open window of opportunity. Narratives are successful because they breakdown information and tell it in an entertaining way that more effectively persuade people as they are not using scientific jargon or statistical analyses that can be misunderstood or even off-putting to regular citizens.

Storytelling is also a significant part of Indigenous cultures. Thomas King (2003) writes "the truth about stories is that that's all we are" (King 2003, p. 2). When we tell stories in our Native cultures, they are never told in the exact same way or with the same intent every time. The stories we tell offer different information and wisdom depending on who is telling the story, who is listening, and why the story is being told in the first place. It is generally the responsibility of the older generations to tell the younger ones these stories, but it is not

necessarily their responsibility to tell us what those stories mean. Those storytellers have made their own meanings of the stories and applied them as needed in their lives. It is our responsibility as younger generations to listen, again and again, until we make meaning of the story. Then, when are able to tell those stories to our children with the intent of teaching something (or not), we are also keeping those old stories and the memories of all the people who have told them alive. Many of the stories of our cultures and histories have been lost over years of genocide and assimilation. Many of them still survive and are told in different ways. Many new stories are shared every day. Within our cultures they are more than *just* stories. They are lessons, and histories, and entertainment; sometimes all at once. Storytelling within Indigenous cultures is powerful medicine.

To exemplify the power of Tribal origin stories and oral histories, that are often passed down through the generations, consider the following. Recently, several different Tribal stories have been affirmed by Western science. First, through new technology, DNA fragments extracted from the hair of Tatanka Iyotake (AKA: Sitting Bull), the famous leader at the Battle of the Little Bighorn (1876), have positively identified Ernie LaPointe, a Lakota Tribal citizen as Tatanka Iyotake's great-grandson. However, the 'new' finding only affirms, in a western, settler-colonial context, what the LaPointe family and their family's oral and Tribal history have always held to. In New Mexico, prehistoric 'ghost prints' have shown that Indigenous peoples were on this continent earlier than 23,000 years ago. The finding further debunks the 'Bering strait theory' that many Indigenous groups have always negated due to their Tribal histories and knowledges, often passed on orally through stories. Because of the importance of narrative within the policy process and the significance storytelling has for Indigenous peoples, we can

assume that narratives/stories may influence Indigenous peoples' opinion toward multiple issues, including environmental and water issues.

Every side of every issue has a narrative. It's the story that is told to gain support and power in policymaking. Some narratives may focus on the problem, capturing the audience's attention through explaining what is wrong, how it is harming us, what we are losing, etc. Other narratives may focus on solutions, connecting with people through hopeful messages encouraging networking, cooperation, community buy-in, etc. Thinking about the climate crisis and climate change discourse is one way to understand how narratives are being used, by all, to address the issue. Some climate change narratives talk about the problem: losing bio-diversity, loss of animal habitats leading to extinction, water shortage and drought, etc., all while trying to get the point across that these things are happening around the world right now (Randall 2009). Other climate change narratives address solutions, comforting us by not bringing up losses, but by reminding us that there is still time to act, and that we should start immediately (Randall 2009). Each of these offer an approach to gaining support among various audiences. Depending on a variety of factors including, a person's political ideology, level of education, who is narrating, who the heroes, victims, and villains are and how they're portrayed, etc. narratives may or may not resonate with an individual. Suffice to say, narratives are powerful and important tools in gaining policy support and policymaking.

Reflecting on the impacts of narrative on opinion and policy preferences, one may assume narratives that reflect tenets of Indigenous peoples' culture and sense of responsibility to their people, land, environment, animal life, etc. are more likely to resonate with Indigenous peoples and lead to policy support. While narratives built on concepts focused on furthering

economic development, tourism, capitalism, etc. may be more likely to be opposed by Indigenous peoples, given their values and history in this country.

Other factors that influence public opinion are basic demographics. Though Individuals have little control over demographic characteristics, they are proven to affect one's political values. Within the survey instrument, basic demographics that were asked of respondents include: sex, marital status, age, current neighborhood, political ideology, partisan affiliation, level of education, and annual household income. Once again it is important to note that there is scant literature on how Native/Indigenous peoples' opinions and perceptions might differ from that of the general population. We can assume that Native culture plays a role, and hope to illustrate that in this project. In general, political science literature finds that regarding gender, women tend to hold more liberal attitudes about social issues than men do, while men tend to have more positive views about military issues and war (O'Connor and Sabato 2019). Race and ethnicity are highly important factors in studying public opinion. The survey instrument associated with this project was specifically given to respondents who identify as Native American or Indigenous, therefore there is great homogeneity in the racial makeup of respondents. Political ideology and party identification are also important influences on opinions and attitudes. In general, those who identify as conservative tend to also identify as republican, while those who identify as liberal tend to also identify as democrats (O'Connor and Sabato 2019). Wilkins and Stark (2018) state that it is "impossible to arrive at anything more than general impressions of Indian political ideology or political behavior patterns" (p. 210). Though there is some evidence that there may be a more liberal leaning preference among Native peoples (Wilkins and Stark 2018). Demographics are important factors to consider in this study and will be elaborated on throughout.

Chapter three covers the theoretical approach to understanding the myriad of influences on Indigenous opinion and policy preferences. Through utilizing literature around risk perception, narrative, and trust in government I aim to explore how Indigenous peoples understand and feel about environmental and water issues. Through examining risk, I believe we can better understand the connection between Indigenous peoples and land/environment. Through examining trust in government we may see that Indigenous peoples also have high perceptions of risk due to a lack of trust and/or knowledge of different governmental entities. Finally, examining narrative may help us to understand what stories resonate with Indigenous peoples and/or if those stories even resonate with Indigenous peoples in the first place. Together these approaches will help us to better understand the opinion and policy preferences Indigenous peoples hold regarding environmental and water issues.

Chapter 4: Conducting Research with Indigenous Peoples, a Protected Population

According to the Idaho State University Human Subjects Committee (2015), “there are a variety of research populations that the federal regulations describe as vulnerable or as belonging to a “special” classification” (p. 3). When doing projects that involve these populations, researchers are required to “show greater care in designing and carrying out activities” (ISU HSC 2015, p. 3). While the ISU Human Subjects Committee does not specifically list Indigenous peoples or Native Americans as one of these “special” populations, they do list “minorities” under which IP would fall. While this designation means that projects involving Indigenous populations will be under greater scrutiny in review (ISU HSC 2015), at the time this project was done there were no further requirements. However, collecting data while respectfully working with a sovereign Nation made the process of surveying more complex than usual data collection processes. To show greater care, in this project, several additional, necessary steps were taken.

As previously mentioned, the public opinion survey concerning water management of the Portneuf River in Southeast Idaho was administered to citizens from Shoshone-Bannock Tribes on the Fort Hall Indian Reservation in spring of 2016. After identifying that there was a need to seek the opinions of Tribal citizens, a largely ignored group of rights-holders, and with the understanding that the Shoshone-Bannock Tribes are a sovereign nation, the first step to working with the Shoshone-Bannock was to seek an audience with the Tribes’ governing body, the Fort Hall Business Council. On top of getting Institutional Review Board approval to conduct this research, ethical protocols also included asking permission from the Tribal Council to conduct the survey with Tribal citizens and within their Tribal lands.

After proposing the project to the Tribal Business Council, addressing their questions, and upon approval and permission to conduct this research via Tribal resolution², it was suggested that the survey be administered during a series of candidate forums happening prior to that year's Tribal elections. At the time, candidates for the upcoming Tribal Council elections spoke to Tribal citizens in each of the five Tribal districts within the reservation: Fort Hall, Lincoln Creek, Ross Fork, Gibson, and Bannock Creek. Upon arrival at these events, I always checked in with a Tribal community member to let them know who I was, what I was doing, and to ask where the most convenient place would be for me to set up to administer the survey. At each event that I attended, I set up a table where I had iPads with Wi-Fi capabilities that had the survey available via SurveyMonkey, as well as paper surveys. Due to the nature of these forums, those who completed a survey represent a convenience sample. It is important to recognize that there is a slight bias that may occur when surveying individuals who choose to attend a political event, such as a candidate forum, as they are likely to be more interested in politics and policy in the first place. However, because the Tribal Council was pleased with the way these surveys were conducted, they allowed for an expansion in recruiting respondents through the utilization of the Tribe's social media accounts, and internal employee email system. The data analyzed in this study represents the data collected during the candidate forums and during online recruitment. The number of participants in this survey is 84 (n=84). To give context, there are about 6,000 enrolled Shoshone-Bannock Tribal citizens, and according to the US census, most of those citizens reside on the Fort Hall Indian Reservation (Census.gov 2019).

Working on this project was very enlightening. As this was my first time doing formal research and data collection within my own community, I found that interacting within my

² See Appendix C

community as a community member is significantly different than interacting as a researcher. People I know, who knew me or my family, were cautiously interested in my research. Many asked questions and gave me feedback. Most of the feedback was suggesting that the length of the survey was too long and that it was sometimes hard to understand. This could be a lesson to all researchers, exemplifying the need to better consider the communities we work with and how our instruments may be biased to one group or another. Though I have no hard proof, based on some of my interactions and with my understanding of my own community and culture, I feel that I can safely assume that there was a good deal of hesitancy for individuals to complete my survey. This could be due to a variety of factors including trust, time expectancy, overall interest, etc. Given the chance to do this survey again, I would rethink the instrument, making it more culturally relevant. I would also consider surveying more widely via email, and social media. Lastly, I would also consider taking a qualitative approach to better understanding Indigenous preferences toward the Portneuf River. I think that hearing more about people's experiences and opinions through conversation would have allowed respondents to represent those experiences and opinions in a way that made them feel more comfortable and open to say more than what was represented in the survey. However, given that this was the first time that the wider community had been asked about their preferences toward the river, I still feel that the data we collected is valuable and a step in the right direction toward being more inclusive with the intent of inspiring better policymaking.

Chapter 5: How Tribal Citizens use the Portneuf River

As discussed in chapter one, the Shoshone-Bannock Tribes and their citizens have largely been left out of decision-making as well as the process for regulating the Portneuf River. Given the strong connection between Tribal cultures and water, it is imperative that we understand how citizens of the SBT utilize the river. As this study lends to the argument that the SBT should be more involved in that decision-making, this chapter seeks to illustrate how Tribal citizens use the Portneuf, how important river issues are to them, and how satisfied they are with the attributes that the river currently provides. In this descriptive chapter, I first explore how and where Tribal citizens in Southeast Idaho utilize the Portneuf River.

Recreational Participation along the Portneuf River

Understanding where and what type of recreational activities Tribal citizens participate in along the Portneuf River is the first step to understanding their risk perceptions, trust in government, narrative preferences, and policy preferences. In this section, I demonstrate how many Tribal citizens use the Portneuf River, which locations they use most frequently, and what types of recreation they engage in. Table 5.1 outlines seventeen Portneuf River access points of interest and the types of recreation typical of those access points. For reference, in chapter one, Figure 1.1 (page 5) is a map illustrating the entirety of the Portneuf and these specific recreational access points. Recreational activities range from walking and running, to hunting and fishing, to sight-seeing, and canoeing and kayaking. Respondents were asked to select all recreational activities they engage in at each of the access points.

The survey instrument provided nine choices for recreational activities while also giving respondents the option to mark “do not recreate there” for each location, equaling a total of ten options. The recreational activities options from the original survey include the following: “do

not recreate there,” “bait/lure fish,” “fly fish,” “hunt,” “canoe/kayak,” “bike,” “run,” “walk,” “sight-see,” and “dog walk.” The seventeen areas asked about on the survey were “Toponce Creek,” “Pebble Creek,” “Dempsey Creek,” “Robbers Roost Creek,” “Marsh Creek,” “Mink Creek,” “Gibson Jack Creek,” “City Creek,” “Trail Creek,” “Portneuf River,” “Mike’s Place,” “Lava Hot Springs,” “Edson Fichter,” “Raymond Park Greenway,” “Sacajawea Park,” “Batiste Road Access,” and the “Fort Hall Bottoms.” A total of 84 respondents completed the survey.

Table 5.1: Portneuf River Access Points and Types of Recreation

	Type of Recreation									
	None	Bait/Lure Fish	Fly Fish	Hunt	Canoe/ Kayak	Bike	Run	Walk	Sight-See	Dog Walk
Toponce Creek	50 (59.52%)	7 (8.33%)	1 (1.19%)	15 (17.86%)	0 (0%)	2 (2.38%)	3 (3.57%)	13 (15.48%)	18 (21.43%)	4 (4.76%)
Pebble Creek	54 (64.29%)	2 (2.38%)	1 (1.19%)	8 (9.52%)	2 (2.38%)	2 (2.38%)	2 (2.38%)	10 (11.90%)	17 (20.24%)	4 (4.76%)
Dempsey Creek	63 (75%)	2 (2.38%)	0 (0%)	5 (5.95%)	1 (1.19%)	2 (2.38%)	0 (0%)	4 (4.76%)	11 (13.10%)	1 (1.19%)
Robbers Roost Creek	64 (76.19%)	2 (2.38%)	0 (0%)	5 (5.95%)	1 (1.19%)	1 (1.19%)	1 (1.19%)	5 (5.95%)	9 (10.71%)	2 (2.38%)
Marsh Creek	59 (70.24%)	1 (1.19%)	0 (0%)	6 (7.14%)	1 (1.19%)	0 (0%)	0 (0%)	6 (7.14%)	14 (16.67%)	0 (0%)
Mink Creek	51 (1.19%)	2 (2.38%)	1 (1.19%)	13 (15.48%)	1 (1.19%)	5 (5.95%)	3 (3.57%)	16 (19.05%)	21 (25%)	2 (2.38%)
Gibson Jack Creek	59 (70.24%)	1 (1.19%)	0 (0%)	7 (8.33%)	0 (0%)	2 (2.38%)	1 (1.19%)	12 (14.29%)	12 (14.29%)	1 (1.19%)
City Creek	53 (63.10%)	3 (3.57%)	0 (0%)	1 (1.19%)	0 (0%)	4 (4.76%)	3 (3.57%)	18 (21.43%)	15 (17.86%)	3 (3.57%)
Trail Creek	57 (67.86%)	2 (2.38%)	0 (0%)	4 (4.76%)	0 (0%)	4 (4.76%)	3 (3.57%)	16 (19.05%)	15 (17.86%)	5 (5.95%)
Portneuf River	45 (53.57%)	5 (5.95%)	3 (3.57%)	7 (8.33%)	3 (3.57%)	3 (3.57%)	2 (2.38%)	19 (22.62%)	21 (25%)	2 (2.38%)
Mike's Place	70 (83.33%)	2 (2.38%)	1 (1.19%)	2 (2.38%)	1 (1.19%)	3 (3.57%)	1 (1.19%)	2 (2.38%)	6 (7.14%)	1 (1.19%)
Lava Hot Springs	22 (26.19%)	5 (5.95%)	1 (1.19%)	9 (10.71%)	9 (10.71%)	6 (7.14%)	11 (13.10%)	32 (38.10%)	48 (57.14%)	5 (5.95%)
Edson Fichter	68 (80.95%)	1 (1.19%)	1 (1.19%)	0 (0%)	1 (1.19%)	3 (3.57%)	0 (0%)	3 (3.57%)	8 (9.52%)	1 (1.19%)
Raymond Park Greenway	60 (71.43%)	1 (1.19%)	0 (0%)	0 (0%)	0 (0%)	6 (7.14%)	3 (3.57%)	11 (13.10%)	11 (13.10%)	2 (2.38%)
Sacajawea Park	62 (73.81%)	1 (1.19%)	0 (0%)	0 (0%)	0 (0%)	5 (5.95%)	4 (4.76%)	7 (8.33%)	9 (10.71%)	1 (1.19%)
Baptiste Rd. Access	69 (82.14%)	2 (2.38%)	0 (0%)	2 (2.38%)	2 (2.38%)	3 (3.57%)	3 (3.57%)	4 (4.76%)	9 (10.71%)	2 (2.38%)
Fort Hall Bottoms	7 (8.33%)	51 (60.71%)	18 (21.43%)	45 (53.57%)	17 (20.24%)	11 (13.10%)	14 (16.67%)	40 (47.62%)	52 (61.90%)	17 (20.24%)
* n=84										
* The actual number of respondents are reported and percentage of total respondent pool.										

When looking at Table 5.1, there are several notable themes emerging from the data. First, results indicate that at most locations, fifteen of the seventeen total locations, respondents participate in recreational activities to a low degree. The three lowest being “Mike’s Place,” the “Baptiste Rd. Access,” and “Edson Fichter.” Approximately 83 percent (n=70) respondents indicated that they did not recreate at “Mike’s Place.” In fact, one respondent who took the paper copy of the survey wrote “where?” in the margin. About 82 percent (n=69) of respondents indicated that they did not recreate at the “Baptiste Road Access,” and nearly 81 percent (n=68) indicated that they did not recreate at “Edson Fichter.” However, at all three locations, sight-seeing was identified as the activity most participated in with more than seven percent (n=6) at “Mike’s Place,” about 11 percent (n=9) at the “Baptiste Road access,” and nearly ten percent (n=8) at “Edson Fichter.” At the other twelve locations, at least 53 percent (n=45) or more (up to 76 percent (n=64)) of respondents indicated that they did not recreate in those areas.

Contrarily notable, “Lava Hot Springs” and the “Fort Hall Bottoms,” were both indicated as being utilized the most by respondents. About 74 percent (n=62) of respondents indicated they recreated in the “Lava Hot Springs” area, with most respondents indicating they walked the area at approximately 38 percent (n=32) and 57 percent (n=48) indicating they utilized the area for sight-seeing. Interestingly, several respondents who were given the paper copy of the survey wrote in the margin “prayer” and “spiritual use” for the “Lava Hot Springs” location. This is an indication that the survey options did not account for uses explicitly important to Indigenous peoples. The “Fort Hall Bottoms,” being the only location asked about that is on Shoshone-Bannock Tribal Reservation lands, is where about 92 percent (n=77) of respondents indicated that they recreate. Approximately 62 percent (n=52) of respondents indicated that they use the area for sight-seeing. About 61 (n=51) percent of respondents indicated that bait/lure fishing was

a recreational activity they engaged in on the “Bottoms.” Hunting was the third highest activity participated in on the “Bottoms” at about 54 percent (n=45).

Also notable are the recreational activities most and least participated in by respondents. As seen in Table 5.1, canoeing and kayaking are not participated in at a significant level, except for in “Lava Hot Springs” and on the “Fort Hall Bottoms.” The same trend is seen for running, which isn’t highly participated in overall, but again, results indicate higher participation at the “Lava Hot Springs” location and on the “Fort Hall Bottoms.” Sight-seeing is the activity with the highest participation at most locations, save for at “City Creek” and “Trail Creek.” Hunting also has higher levels of participation overall. Noticeably, at “Edson Fichter,” “Raymond Park Greenway,” and “Sacajawea Park,” zero percent of respondents indicated that they participated in hunting at these locations. This is likely because these are nature areas within residential neighborhoods where hunting is illegal.

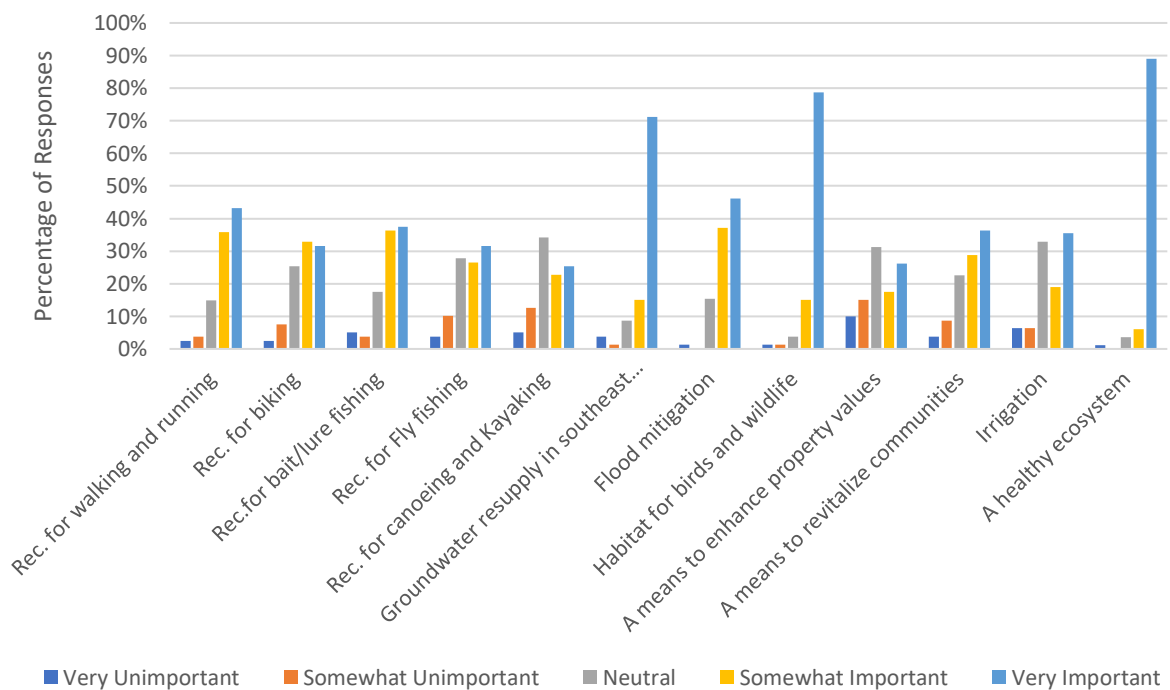
The data in Table 5.1 regarding the different locations of interest along the Portneuf and the types of recreation typically engaged in at these locations does illustrate that Tribal citizens are utilizing each area for most types of recreation. While there are locations that are less recreated at, there is also high levels of recreation at other locations. Overall, the data suggests that surveying Tribal citizens’ opinions toward the Portneuf is important due to the fact that Tribal citizens are utilizing the river in many different ways.

Importance for the Portneuf River to Provide

Understanding how important it is to Tribal citizens that the Portneuf River provides certain attributes is another step to understanding their risk perception, trust in government, narrative preferences, and policy preferences. In this section, I demonstrate how important it is to

Tribal citizens that the Portneuf River provides the following: “A healthy ecosystem,” “Irrigation,” “A means to revitalize communities,” “A means to enhance property values,” “Habitat for birds and wildlife,” “Flood mitigation,” “Groundwater resupply in southeast Idaho,” “Recreation for canoeing and Kayaking,” “Recreation for fly fishing,” “Recreation for bait/lure fishing,” “Recreation for biking,” and “Recreation for walking and running.” Figure 5.2 illustrates these twelve attributes of importance and asks Indigenous respondents to gauge the level of importance on a Likert scale from “Very Unimportant” (1) to “Very Important” (5). As the legend indicates, the darker blue color indicates the respondent answered, “Very Unimportant,” the orange color indicates “Somewhat Unimportant,” the grey color indicates “Neutral,” the yellow color indicates “Somewhat Important,” and the lighter blue color indicates “Very Important.”

Figure 5.1: Level of Importance of Portneuf River Attributes



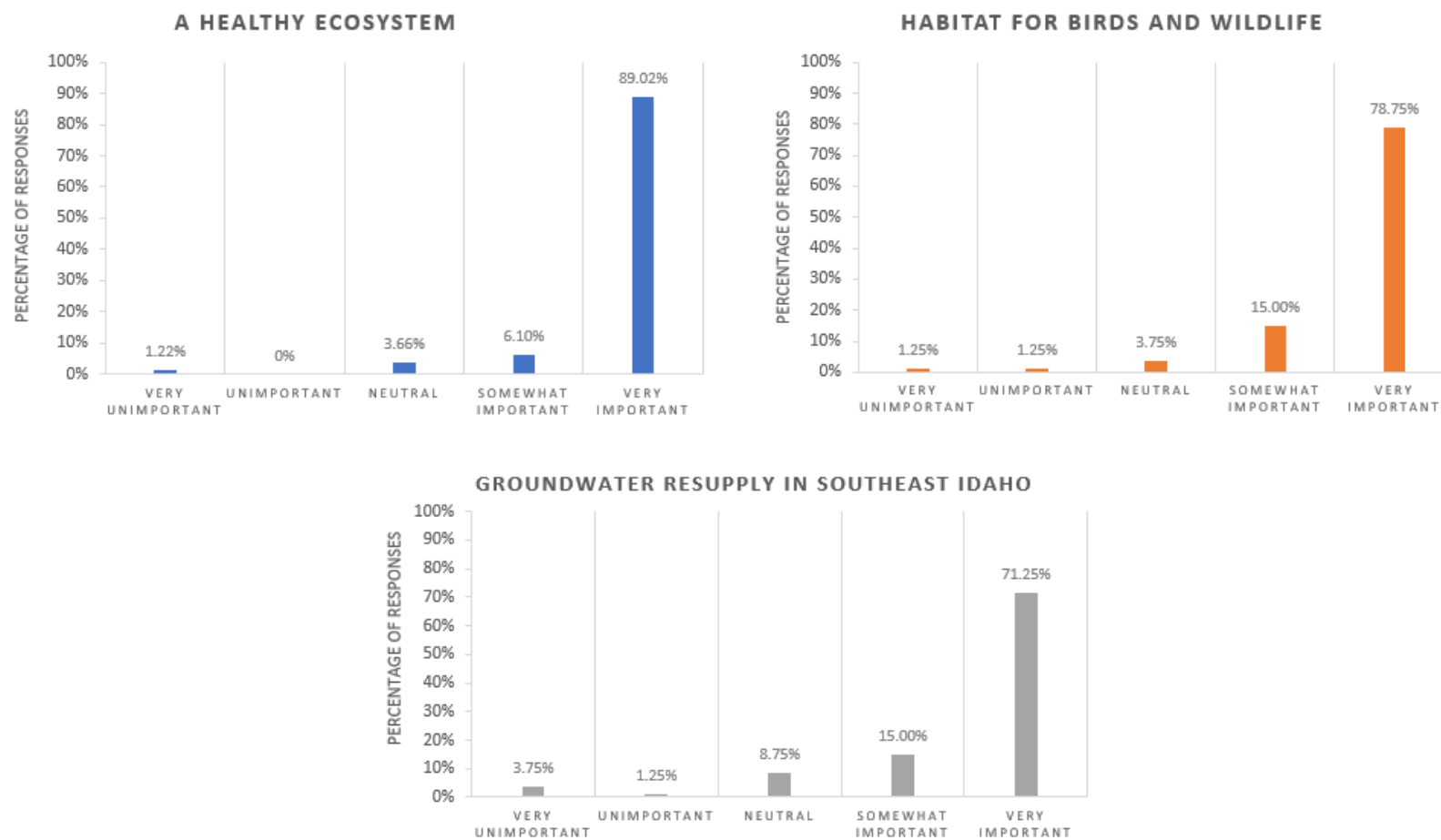
NOTE: n=84

Figure 5.1 allows for comparison between all twelve issues. The figure shows that many of the issues are of high importance, such as the issue regarding ground water, animal habitat, and the ecosystem. Other issues are less important, such as recreation for kayaking and canoeing. Others still, have more variation where respondents indicated varying levels of importance, such as on the issue of enhancing property values. While Figure 5.1 allows for comparison at a glance, it is not clear enough to see the nuanced differences for each issue. Because of this, I think it is important to look at issues based on a topical area to get a clearer picture of the variation in responses. Therefore, I have grouped like issues together and will provide figures for each topical area. There are three issues concerning recreation explicitly involving the river that are grouped together. These include: “Recreation for bait/lure fishing,” “Recreation for fly fishing,” and “Recreation for canoeing and kayaking.” There are three issues concerning environment including, “Groundwater resupply in southeast Idaho,” “Habitat for birds and wildlife,” and “A healthy ecosystem,” which are grouped together. Three issues concerning economic matters are grouped together and include, “A means to enhance property values,” “A means to revitalize communities,” and “Irrigation.” Lastly, there are three miscellaneous issues that do not fit in the other groupings. “Recreation for walking and running” and “Recreation for biking” are both recreational activities, but do not have to do with the river itself, but rather the land near the river. The last issue grouped in this miscellaneous group is “Flood mitigation” which also does not fit as well with the other issue areas as it is not entirely an environmental or economic issue but does concern both.

The top three issues of importance are all within the environmental grouping illustrated in Figure 5.2. “A healthy ecosystem,” “Habitat for birds and wildlife,” and “Groundwater resupply in southeast Idaho” saw most respondents indicate that these three issues were “Very Important”

for the Portneuf to provide. Approximately 89 percent (n=73) of respondents indicated that “A healthy ecosystem” was “Very Important” for the Portneuf River to provide. As the second highest, and related to a healthy river ecosystem, about 79 percent (n=63) indicated that “Habitat for birds and wildlife” was “Very Important.” The third highest was about 71 percent (n=57) of respondents indicating that “Groundwater resupply in southeast Idaho” was “Very Important.” The remaining responses for these three issues were mostly between “Somewhat Important,” and “Neutral,” with very few respondents indicating that these environmental issues were “Somewhat Unimportant,” or “Very Unimportant.”

Figure 5.2: Level of Importance -- Environment



NOTE: n=84

Levels of importance for economic issues, shown in Figure 5.3, which includes, “A means to enhance property values,” “A means to revitalize communities,” and “Irrigation” sees more variation overall than in Figure 3 regarding environmental issues. “A means to revitalize communities” had the highest percentage of respondents, at about 36 percent (n=29) indicate that the issue was “Very important.” Approximately 29 percent (n=23) indicated it was “Somewhat Important,” while about 22 percent (n=18) were neutral. The remaining twelve-and-a-half percent (n=10) thought that “A means to revitalize communities” was “Unimportant” or “Very unimportant.” The issue of “Irrigation” had about 35 percent (n=28) of respondents indicate that the issue was “Very important,” and about 19 percent (n=15) indicate that it was “Somewhat important.” Approximately 33 percent (n=26) of respondents indicated they felt “Neutral” toward the issue of “Irrigation.” The remaining respondents, about 13 percent (n=10), indicated that “Irrigation” was “Somewhat Unimportant” or “Very unimportant.” The last issue in this grouping, “A means to enhance property values,” saw the least number of respondents, about 26 percent (n=21), indicate that the issue was “Very important.” Seventeen-and-a-half percent (n=14) indicated the issue surrounding property values was “Somewhat important.” Most respondents, at about 31 percent (n=25) indicated they felt “Neutral” toward the issue. The remaining 25 percent (n=20) indicated that “A means to enhance property values” was “Somewhat Unimportant” or “Very unimportant.”

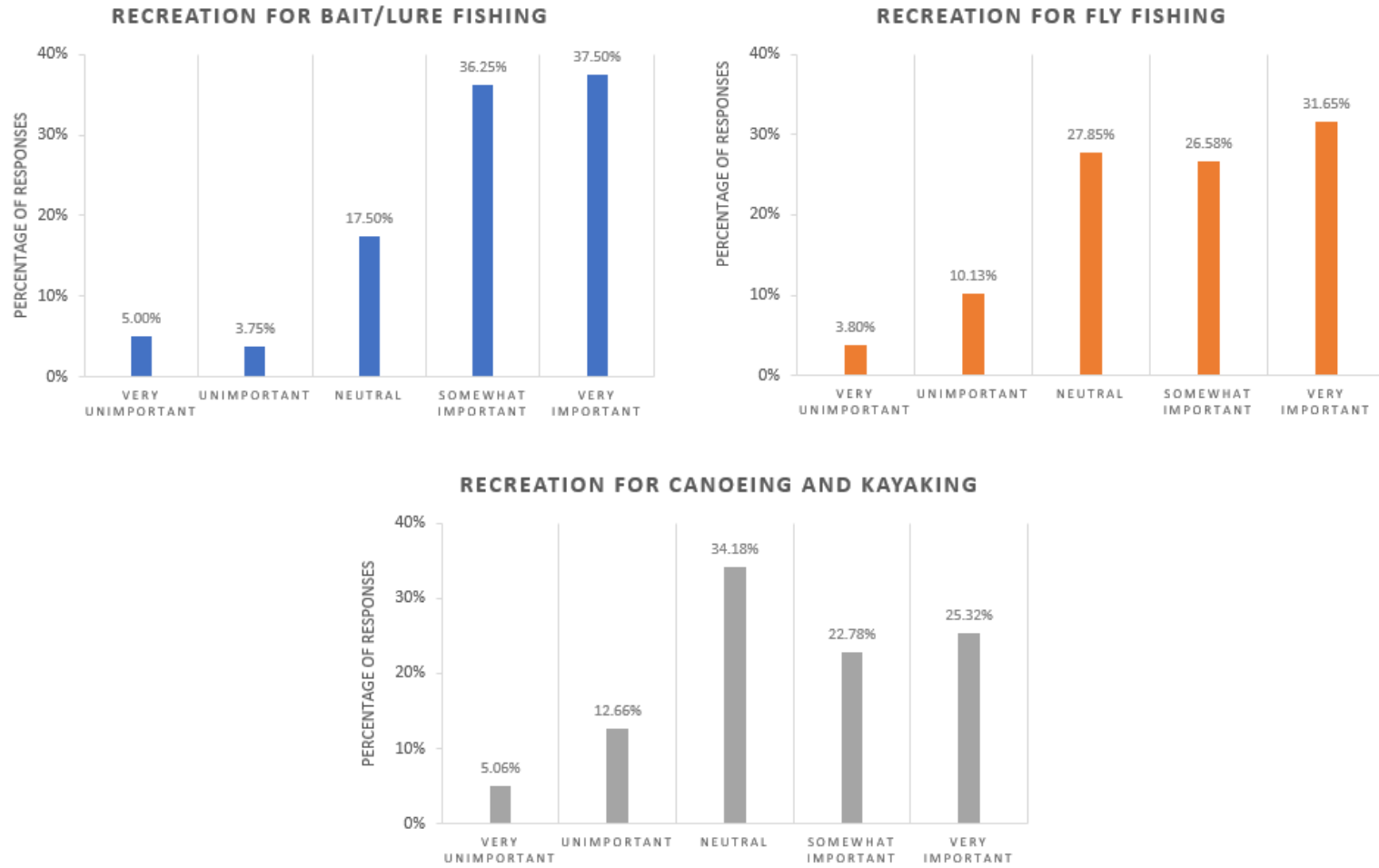
Figure 5.3: Level of Importance – Economic



NOTE: n=84

The issues in the recreation grouping include, “Recreation for bait/lure fishing,” “Recreation for fly fishing,” and “Recreation for canoeing and kayaking,” and are seen in Figure 5.4. “Recreation for bait/lure fishing” saw the highest number of respondents, at thirty-seven-and-a-half percent (n=30) indicate that this issue was “Very important,” and about 36 percent (n=29) indicated that it was “Somewhat important.” About 26 percent (n=21) of respondents indicated that they felt either “Neutral” toward the issue of “Recreation for bait/lure fishing,” or indicated it was “Somewhat Unimportant,” or “Very Unimportant.” About 32 percent (n=25) of respondents indicated “Recreation for fly fishing” was “Very important,” and approximately 27 percent (n=21) indicated the same issue was “Somewhat important.” The remaining respondents, about 42 percent (n=33), either felt “Neutral” to the issue, or found it “Somewhat Unimportant” or “Very unimportant.” The issues of “Recreation for canoeing and kayaking” saw the majority of respondents, about 34 percent (n=27), indicate that they felt “Neutral” toward the issue. Though combined, about 48 percent (n=38) of respondents indicated the issue was “Somewhat important” or “Very important.” The remaining respondents, approximately 18 percent (n=14), indicated the issue was “Somewhat unimportant” or “Very unimportant.”

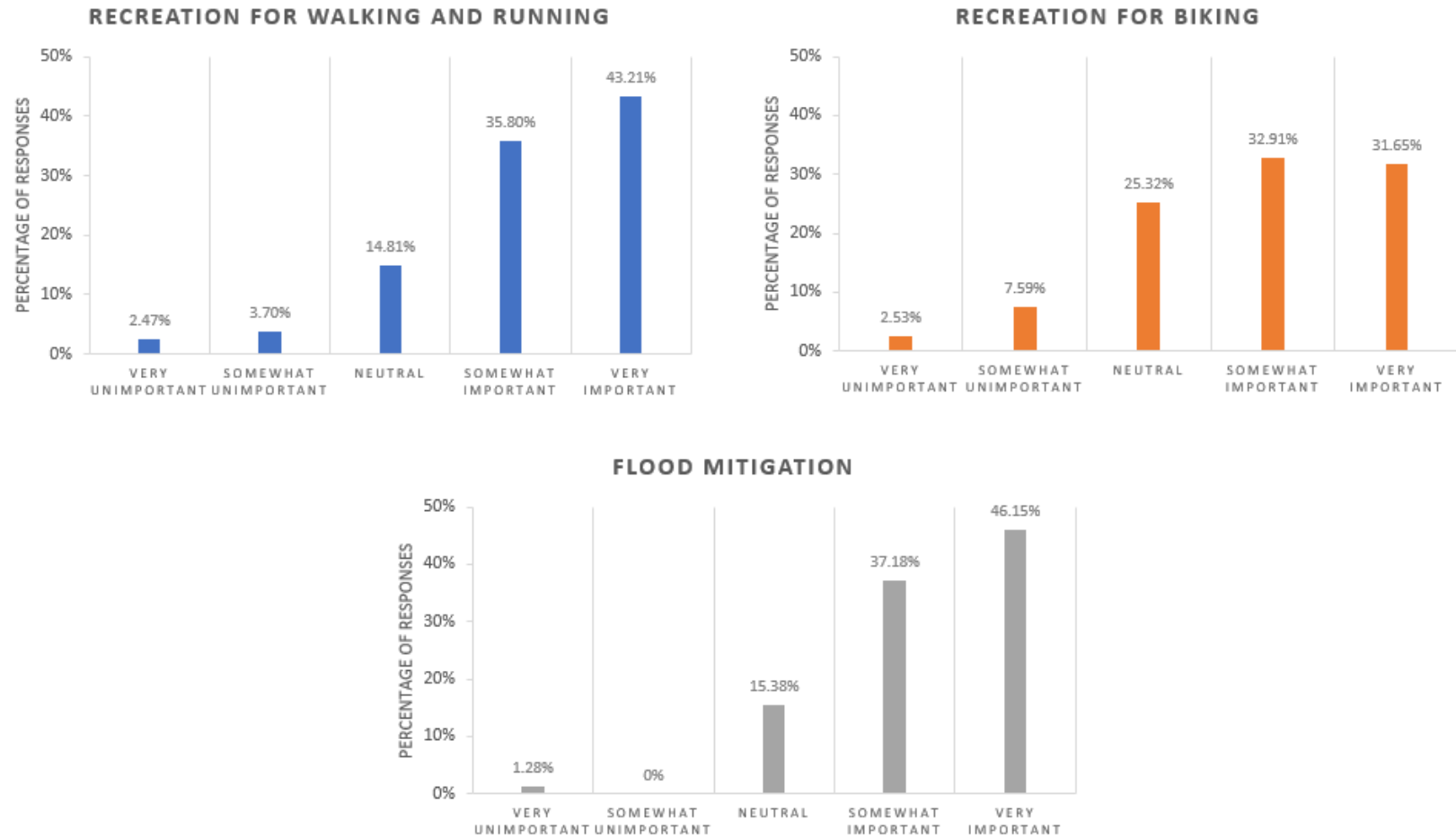
Figure 5.4: Level of Importance – Recreational



NOTE: n=84

The final figure in this section, Figure 5.5, combined the three remaining issues of “Recreation for walking and running,” “Recreation for biking,” and “Flood mitigation.” Though they topically do not explicitly fit together, they will be reported together. The issues of “Recreation for walking and running” and “Recreation for biking” do not necessarily fit with the other recreation issues as they do not have to do anything with the Portneuf itself, as they are activities that are done around or near the river. About 79 percent (n=64) of respondents indicated that the issue of “Recreation for walking and running” was either “Somewhat important” or “Very important.” About 15 percent (n=12) of respondents were “Neutral” to the issue, and the remaining six percent (n=5) indicated that “Recreation for walking and running was “Somewhat Unimportant” or “Very Unimportant.” The issue of “Recreation for biking” had about 64 percent (n=51) of respondents indicate that it was “Somewhat important” or “Very Important.” About 25 percent (n=20) were “Neutral” about biking, and the remaining respondents, about ten percent (n=8), indicated it was “Somewhat Unimportant” or “Very unimportant.” The issue of “Flood mitigation” had the most respondents, about 83 percent (n=65), indicate that the issue was either “Somewhat important” or “Very important.” Approximately 15 percent (n=12) were “Neutral” to the issue and just over one percent (n=1) respondent indicated the issue was “Very unimportant.”

Figure 5.5: Level of Importance – Miscellaneous



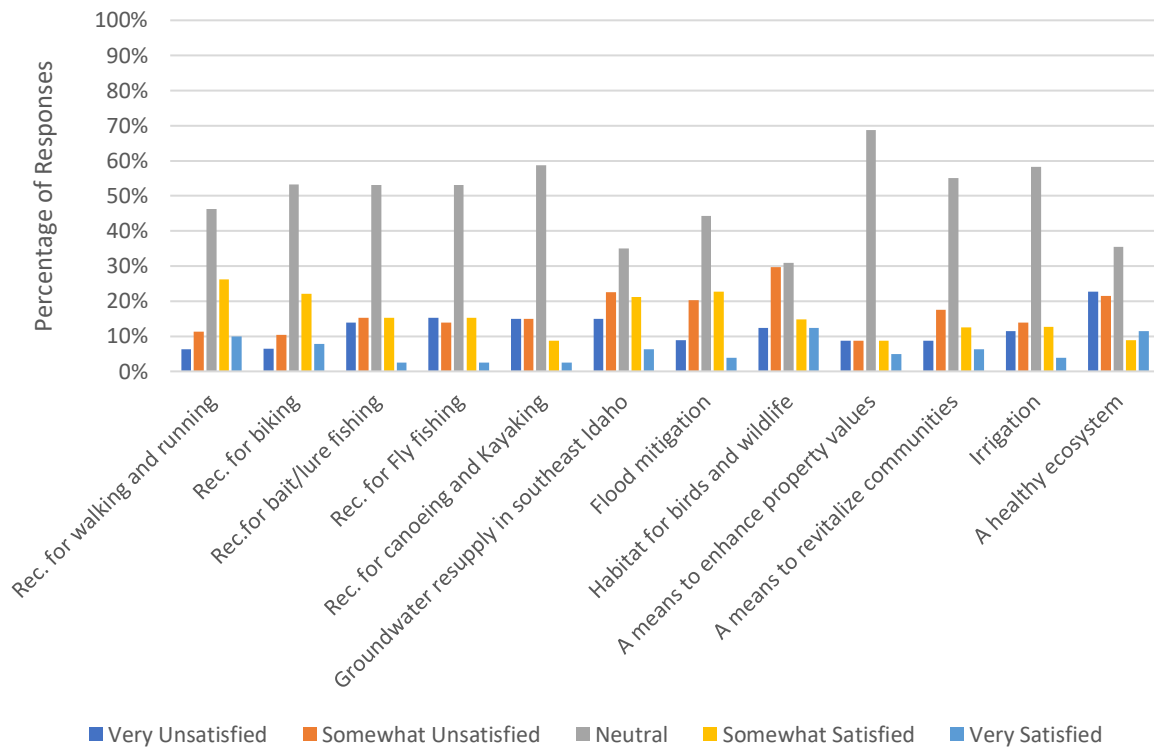
NOTE: n=84

The data clearly illustrates that Tribal citizen participants find importance in all the various attributes of the Portneuf River. Environmental attributes and issues appear to be of utmost importance to Tribal citizens, while issues pertaining to economic matters appear to have more variation in the indicated level of importance. Overall, the data does show that all of the topics concerning the Portneuf River are important to Tribal citizens, further indicating that their views and opinions are important to gather and understand.

Satisfaction with the Portneuf River Attributes

Understanding how satisfied Tribal citizens are with the Portneuf River providing certain attributes is yet another step to understanding their risk perception, trust in government, narrative preferences, and policy preferences. In this last section of the chapter, I demonstrate how satisfied Tribal citizens are with the following attributes of the Portneuf River: “A healthy ecosystem,” “Irrigation,” “A means to revitalize communities,” “A means to enhance property values,” “Habitat for birds and wildlife,” “Flood mitigation,” “Groundwater resupply in southeast Idaho,” “Recreation for canoeing and Kayaking,” “Recreation for fly fishing,” “Recreation for bait/lure fishing,” “Recreation for biking,” and “Recreation for walking and running.” Figure 7 illustrates these twelve attributes and asks Indigenous respondents to gauge their level of satisfaction on a Likert scale from “Very Unsatisfied” (1) to “Very Satisfied” (5). As the legend indicates, the darker blue color indicates the respondent answered, “Very Unsatisfied,” the orange color indicates “Somewhat Unsatisfied,” the grey color indicates “Neutral,” the yellow color indicates “Somewhat Satisfied,” and the lighter blue color indicates “Very Satisfied.”

Figure 5.6: Level of Satisfaction with Portneuf River Attributes



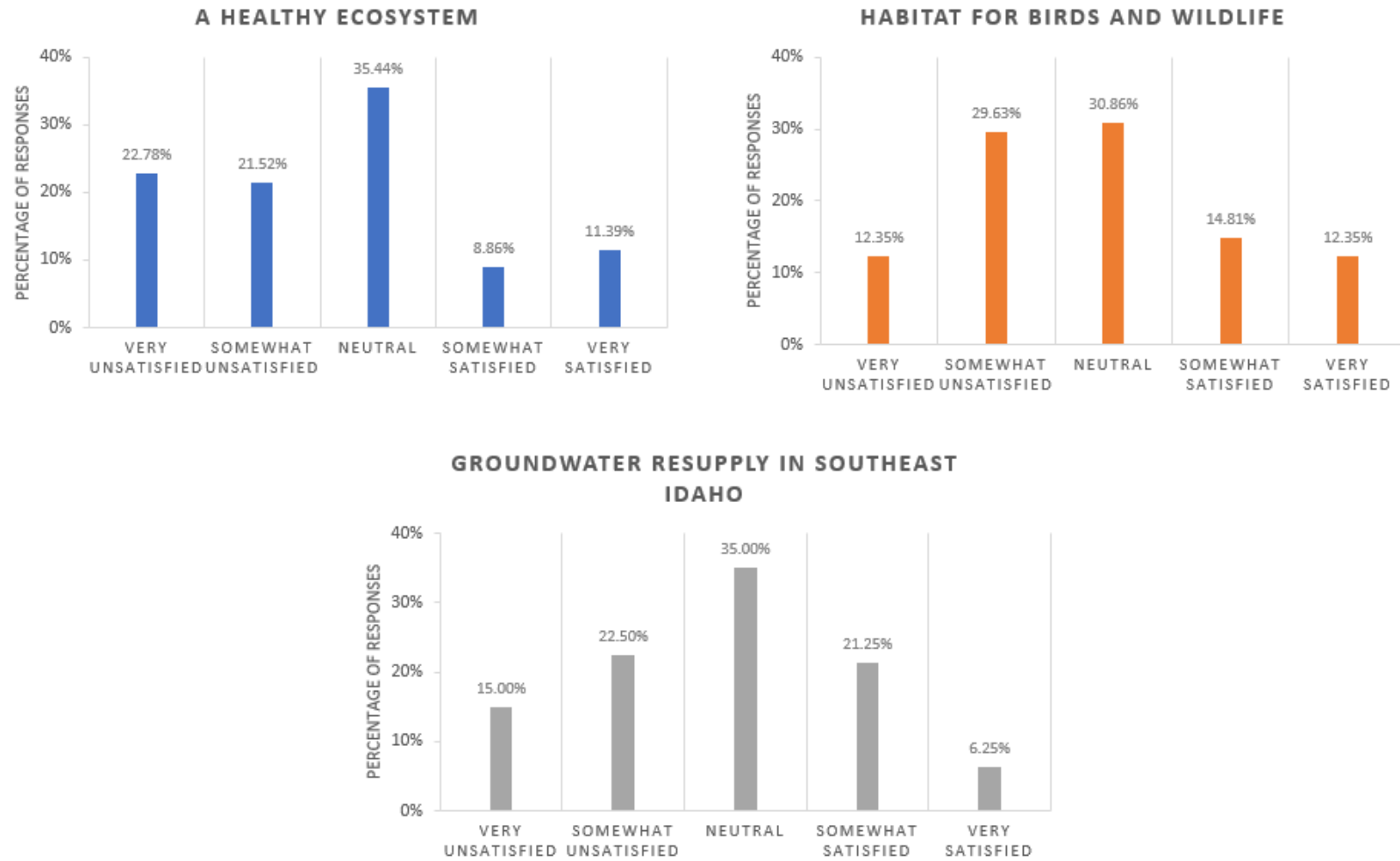
NOTE: n=84

Figure 5.6 allows for comparison between all twelve issues. The figure shows that most Tribal citizens indicate a “Neutral” level of satisfaction for every issue. In this broader glance, one can see that the issue of habitat has a bit more variation than the others. While Figure 5.6 allows for broad comparison, it is not clear enough to see the differences for each issue. As in the last section on importance, I think it is important to look at issues based on a topical area to get a clearer picture of the variation in responses regarding satisfaction. Therefore, I keep the same grouping of issues together and will provide figures for each topical area. Again, the three issues concerning recreation explicitly involving the river are: “Recreation for bait/lure fishing,” “Recreation for fly fishing,” and “Recreation for canoeing and kayaking.” The three issues

concerning environment are: “Groundwater resupply in southeast Idaho,” “Habitat for birds and wildlife,” and “A healthy ecosystem.”. The three issues concerning economic matters include, “A means to enhance property values,” “A means to revitalize communities,” and “Irrigation.” Lastly, the three miscellaneous issues that do not fit in the other groupings are “Recreation for walking and running,” “Recreation for biking,” and “Flood mitigation.”

Overall, respondents appear to be less satisfied with each of the three environmental issues of “A healthy ecosystem,” “Habitat for birds and wildlife,” and “Groundwater resupply in Southeast Idaho.” Though for each issue, the highest response was for “Neutral.” On the issue of the Portneuf River providing “A healthy ecosystem,” about 20 percent (n=16) of respondents indicated that they were either “Somewhat Satisfied” or “Very Satisfied.” Approximately 35 percent (n=28) were “Neutral” on the issue. The remaining responses, about 44 percent (n=35), combined were either “Somewhat Unsatisfied” or “Very Unsatisfied.” On the issue of “Habitat for birds and wildlife” responses were almost even between “Neutral,” at about 31 percent (n=25), and “Somewhat Unsatisfied,” at about 30 percent (n=24). Approximately 12 percent (n=10) of respondents indicated they were “Very Unsatisfied.” The remaining responses, about 27 percent (n=22) were either “Somewhat Satisfied” or “Very Satisfied.” The issue of “Groundwater resupply in southeast Idaho” had 35 percent (n=28) of respondents indicate the “Neutral” level of satisfaction. Twenty-seven-and-a-half percent (n=22) of respondents were either “Somewhat satisfied” or “Very satisfied.” However, thirty-seven-and-a-half percent (n=30) indicated that they were either “Somewhat Unsatisfied” or “Very Unsatisfied.” Again, while the “Neutral” option recorded the highest number of responses for each of the three environmental issues, responses for “Somewhat Unsatisfied” and “Very Unsatisfied” combined accounted for more than that of “Somewhat satisfied” and “Very Satisfied” combined.

Figure 5.7: Level of Satisfaction – Environment



NOTE: n=84

Figure 5.8 illustrates that regarding the economic group of issues, most respondents indicate a “Neutral” level of satisfaction. The three economic issues grouped together are “A means to enhance property values,” “A means to revitalize communities,” and “Irrigation.” Regarding property values, nearly 69 percent (n=55) of respondents indicated that they felt “Neutral” toward the issue. A combined sixteen-and-a-half percent (n=14) were either “Somewhat Unsatisfied” or “Very Unsatisfied,” while about 14 percent (n=11) were either “Somewhat satisfied” or “Very satisfied.” Property values, in this context, may be of less interest to Tribal citizens as many do not reside directly near the Portneuf River and therefore are not impacted by property values near the river. For the issue of “A means to revitalize communities,” 55 percent (n=44) of respondents indicated a “Neutral” level of satisfaction. About 19 percent (n=15) of respondents were either “Somewhat Satisfied” or “Very Satisfied,” while about 26 percent (n=21) were either “Somewhat Unsatisfied” or “Very Unsatisfied.” The last issue in the economic grouping, “Irrigation,” had about 58 percent (n=46) of respondents indicate a “Neutral” level of satisfaction. Approximately 16 percent (n=13) of respondents answered that they were either “Somewhat Satisfied” or “Very Satisfied.” The remaining respondents, about 25 percent (n=20), indicated they were “Somewhat Unsatisfied” or “Very Unsatisfied.”

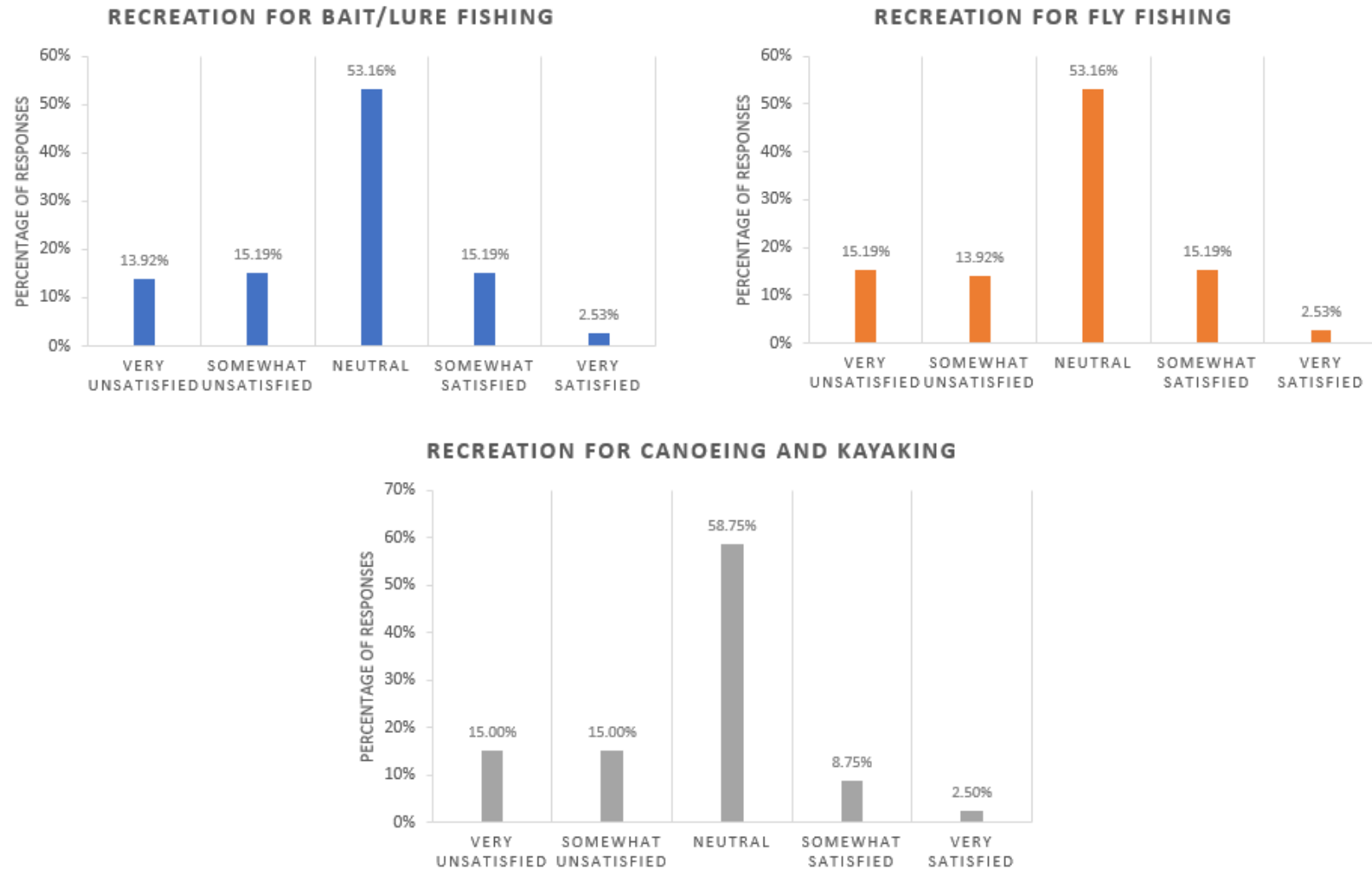
Figure 5.8: Level of Satisfaction – Economic



NOTE: n=84

In Figure 5.9, the recreational group of issues are illustrated. Much like the trend for the environmental and economic groupings, this group also sees most respondents indicate a “Neutral” level of satisfaction. The three recreational issues grouped together are “Recreation for bait/lure fishing,” “Recreation for fly fishing,” and “Recreation for canoeing and kayaking.” Regarding bait/lure fishing, about 53 percent (n=42) of respondents indicated that they felt “Neutral” toward the issue. A combined 29 percent (n=23) were either “Somewhat Unsatisfied” or “Very Unsatisfied,” while about 18 percent (n=14) were either “Somewhat satisfied” or “Very satisfied.” For the issue of “Recreation for fly fishing,” about 53 percent (n=42) of respondents indicated a “Neutral” level of satisfaction. About 18 percent (n=14) of respondents were either “Somewhat Satisfied” or “Very Satisfied,” while about 29 percent (n=23) were either “Somewhat Unsatisfied” or “Very Unsatisfied.” The last issue in the recreational grouping, “Recreation for canoeing and kayaking,” had about 59 percent (n=47) of respondents indicate a “Neutral” level of satisfaction. Approximately 11 percent (n=9) of respondents answered that they were either “Somewhat Satisfied” or “Very Satisfied.” The remaining 30 percent (n=24) of respondents indicated they were “Somewhat Unsatisfied” or “Very Unsatisfied.”

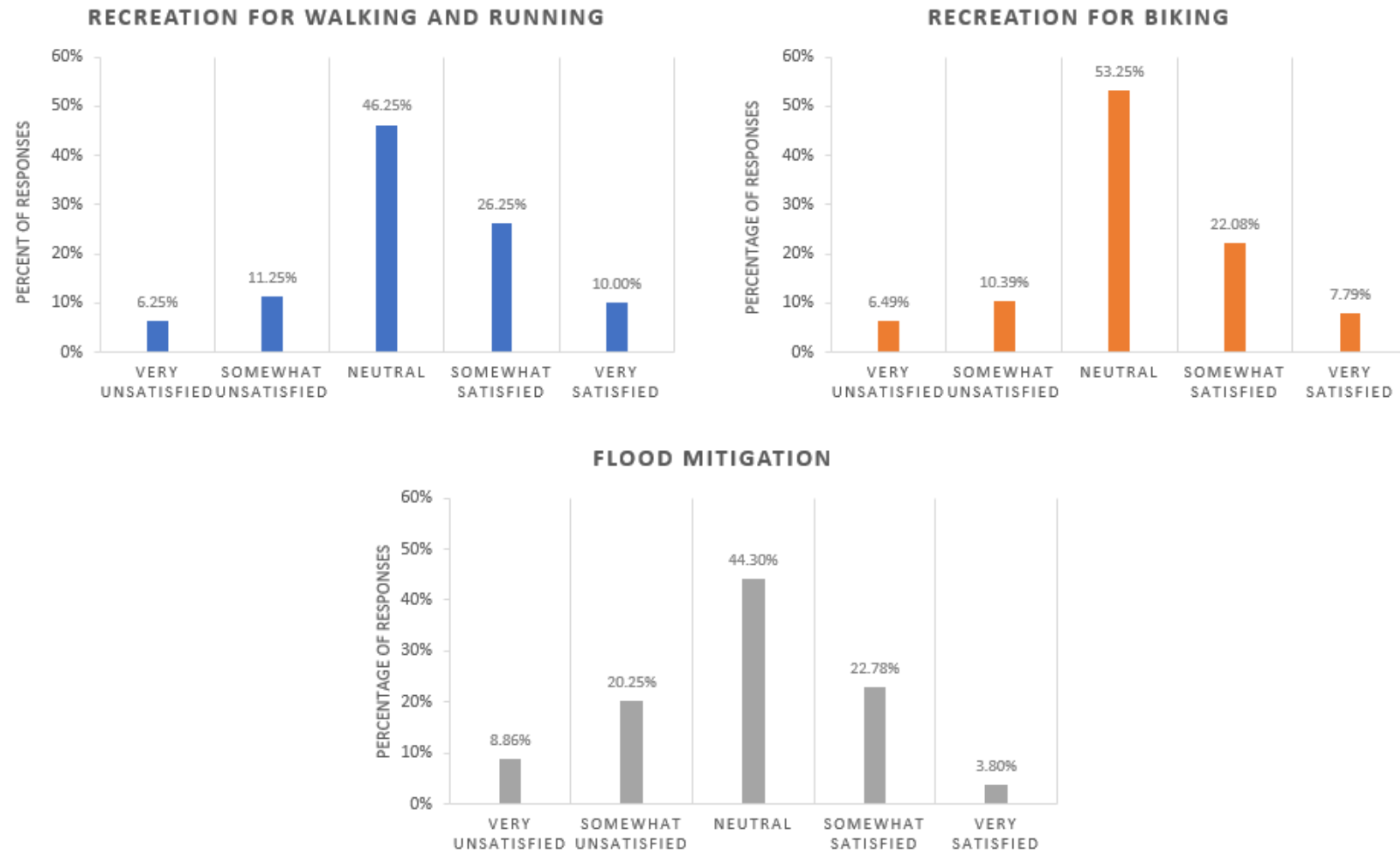
Figure 5.9: Level of Satisfaction – Recreational



NOTE: n=84

Figure 5.10 illustrates the data for the final grouping in this section. This grouping combined the three remaining issues of “Recreation for walking and running,” “Recreation for biking,” and “Flood mitigation.” Again, this grouping follows the trend of most respondents indicating a “Neutral” level of satisfaction. The three issues grouped together in this figure are “Recreation for walking and running,” “Recreation for biking,” and “Flood mitigation.” The issue concerning walking and running had about 46 percent (n=37) of respondents indicate that a “Neutral” level of satisfaction with the issue. A combined seventeen-and-a-half percent (n=14) were either “Somewhat Unsatisfied” or “Very Unsatisfied,” while about 36 percent (n=29) were either “Somewhat satisfied” or “Very satisfied.” For the issue of “Recreation for biking,” about 53 percent (n=42) of respondents indicated a “Neutral” level of satisfaction. About 30 percent (n=23) of respondents were either “Somewhat Satisfied” or “Very Satisfied,” while about 17 percent (n=13) were either “Somewhat Unsatisfied” or “Very Unsatisfied.” The last issue in the miscellaneous grouping, “Flood mitigation,” had about 44 percent (n=35) of respondents indicate a “Neutral” level of satisfaction. Approximately 27 percent (n=21) of respondents answered that they were either “Somewhat Satisfied” or “Very Satisfied.” The remaining respondents, about 29 percent (n=23) of respondents indicated they were “Somewhat Unsatisfied” or “Very Unsatisfied.”

Figure 5.10: Level of Satisfaction – Miscellaneous



NOTE: n=84

Overall, respondents indicated that their levels of satisfaction with what the Portneuf River provides was “Neutral.” While this may be purely the fact, there is another possibility. Some scholarly research finds that respondents might choose a “Neutral” option because they prefer not to exert the time and energy to form an opinion. Krosnick (1999) called this decision-making strategy “satisficing.” Essentially, a respondent chooses an answer to satisfy the requirement of answering it and does not take the time or energy to fully form an actual opinion on the question. Though we can speculate on why the majority of respondents chose the “Neutral” option, the fact is that there is at least enough information to indicate that there may be opportunities for improving the Portneuf to increase satisfaction overall.

How a person utilizes the river, their perspective on how important it is that the river provides certain attributes, and their level of satisfaction with the river providing those attributes all combine to illustrate context for this study regarding the Portneuf River. As illustrated, IP are utilizing all 17 recreational areas along the river that were asked about in the survey instrument. While some areas are utilized to a lesser degree like “Mike’s Place” and the “Baptiste Rd. Access,” others are used more, with the “Fort Hall Bottoms,” which is within reservation lands, used the most. This information illustrates, at the very least, that SBT citizens are utilizing the river and therefore, their attitudes and opinions should be considered in policymaking concerning the Portneuf River.

Also illustrated, is the fact that Tribal citizen respondents place an extremely high level of importance on the belief that the Portneuf River should provide a healthy ecosystem, should provide habitat for birds and wildlife, and is important for groundwater resupply in Southeast Idaho. Many of the other survey issues were highly important to respondents. While levels of satisfaction with what the Portneuf River provides was overall “Neutral,” many issues did show

significant levels of dissatisfaction. This indicates that there may be room to improve the river that would increase overall levels of satisfaction. The fact that Tribal citizens place so much importance on these issues and are dissatisfied with many of the issues further illustrates the need to include Tribal citizen respondents in policymaking regarding the Portneuf River.

Understanding the way in which Tribal citizens utilize the river, how important river issues are to them, and how satisfied they are with river functions will give insight into their other perceptions of the river including risk perceptions, narrative preference, and policy preference. The next chapter examines risk perceptions regarding the Portneuf River.

Chapter 6: The Influence of Risk Perception on Perceptions of Environmental Issues

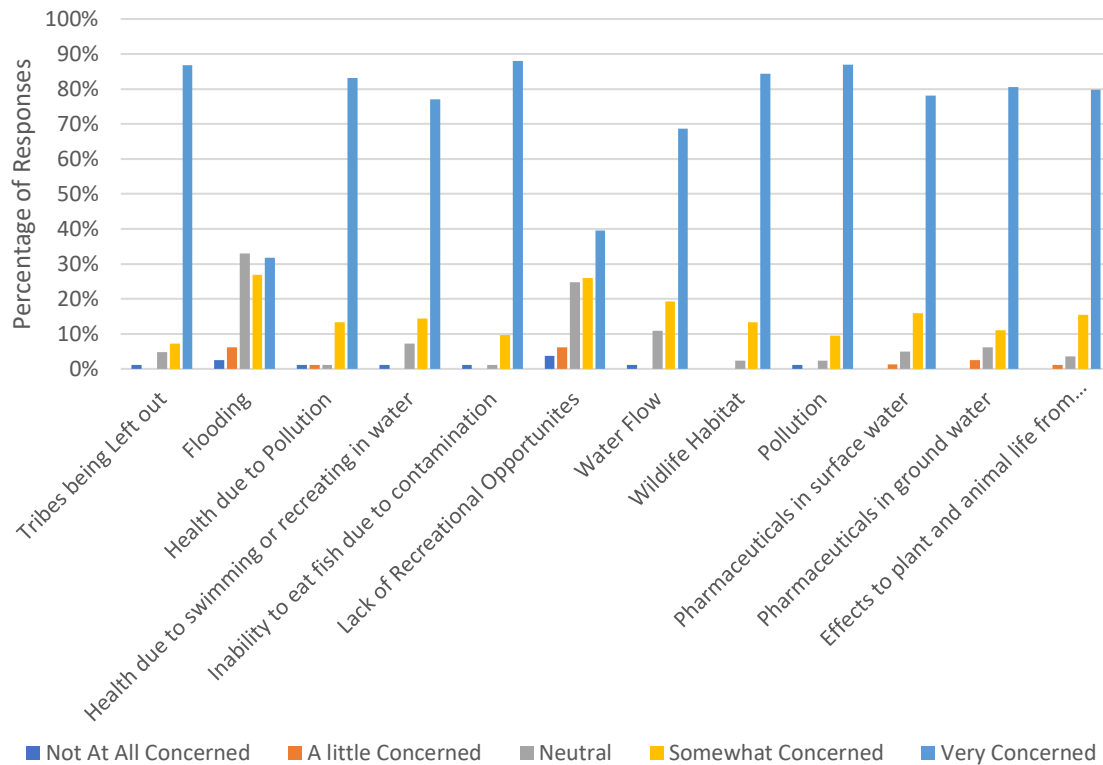
Risk perceptions have a broad impact on public opinion and can be an important predictor of opinion. This chapter focuses on understanding the levels of risk perceptions of Indigenous Peoples when it comes to river water, health, recreation, and environment. The dependent variable is risk perception, and is based on the following survey question, “Thinking about the Portneuf River and groundwater, on a scale of 1 to 5, with 1 being not at all concerned and 5 being very concerned, how concerned are you with each of the following issues.” Respondents specifically evaluated the following twelve issues: “Flooding,” “Health issues due to pollution,” “Health issues due to swimming or recreating in water,” “Inability to eat fish due to contamination,” “Lack of recreational opportunities,” “Water flow,” “Wildlife habitat,” “Pollution,” “Pharmaceuticals in surface water,” “Pharmaceuticals in groundwater,” “The effects to plant and animal life from pharmaceuticals in the water,” and “The Shoshone-Bannock Tribe not being included in discussions on how to manage the Portneuf River.” Due to the way these questions were asked, they were coded from 1 (“Not at all concerned”) to 5 (“Very concerned”).

Originally, I intended this chapter to focus the *factors* that influence risk perceptions of Indigenous Peoples when it comes to river water, health, recreation, and environment. I had identified independent and control variables and had conceptualized that the most appropriate statistical tool for analyzing the data for this variable would likely be an ordered logit. However, after inputting the variables into the statistical analysis tool, there was not enough variation in the dependent variable to reach convergence in the model. In statistical modeling, when convergence is not achieved, it is an indication that the data do not fit the model well. I anticipated that there would be several factors, including levels of trust, level of satisfaction with the river, level of importance that the river provided certain attributes, etc., that would influence the risk

perceptions of respondents. However, when these variables, along with demographics, were input into the statistical analysis tool, and configured multiple ways, convergence was not reached due to a lack of variation. The lack of variation stems from the fact that, regarding the twelve issues concerning the Portneuf River, with a sample size of eighty-four, most survey respondents indicated that they were either “Somewhat concerned” (“4” on the Likert scale) or “Very Concerned” (“5” on the Likert scale) for almost every issue. As this chapter will show, Tribal citizen respondents overwhelmingly indicated high levels of risk perceptions concerning the health of the environment and the Portneuf River. Given the cultural significance placed on protecting and honoring the environment, this is not surprising. Therefore, instead of utilizing statistical modeling, I will instead illustrate risk perception descriptively, utilizing simple graphs.

Illustrated in Figure 6.1 are the twelve issue areas asked about on the survey. This figure allows for comparison of all twelve issues together. As the legend indicates, the darker blue color indicates the respondent answered, “Not at All Concerned,” the orange color indicates “A little Concerned,” the grey color indicates “Neutral,” the yellow color indicates “Somewhat Concerned,” and the lighter blue color indicates “Very Concerned.”

Figure 6.1: Level of Concern with Portneuf River Issues



NOTE: n=84

From a brief glance, one can see that for every issue, except “Flooding,” respondents overwhelmingly indicated that they were “Very Concerned.” Similarly to the previous chapter, I think it is important to look at issues based on a topical area to get a clearer picture of the variation in responses. Therefore, like in chapter five, I have again created indices to group like issues together. However, because the survey question regarding levels of concern with Portneuf River offered slightly different options, though topically related, the groupings are somewhat different. “Health risks” includes the variables of: “Health Issues due to pollution,” “Health issues due to swimming or recreating in water,” “Inability to eat fish due to contamination,” “Pharmaceuticals in surface water,” and “Pharmaceuticals in groundwater.” The group called

“Ecosystem risks” includes the variables of: “Flooding,” “Water flow,” “Wildlife habitat,” “Pollution,” and “The effects to plant and animal life from pharmaceuticals in the water.” The variable “Lack of recreational opportunities” is illustrated alone as it is the only variable regarding recreation. Finally, the issue of “The Shoshone-Bannock Tribe[s] not being included in discussion on how to manage the Portneuf River” is also illustrated alone, as it directly addresses the governmental entity responsible for decision making affecting the Tribal citizen respondents that this survey was administered to.

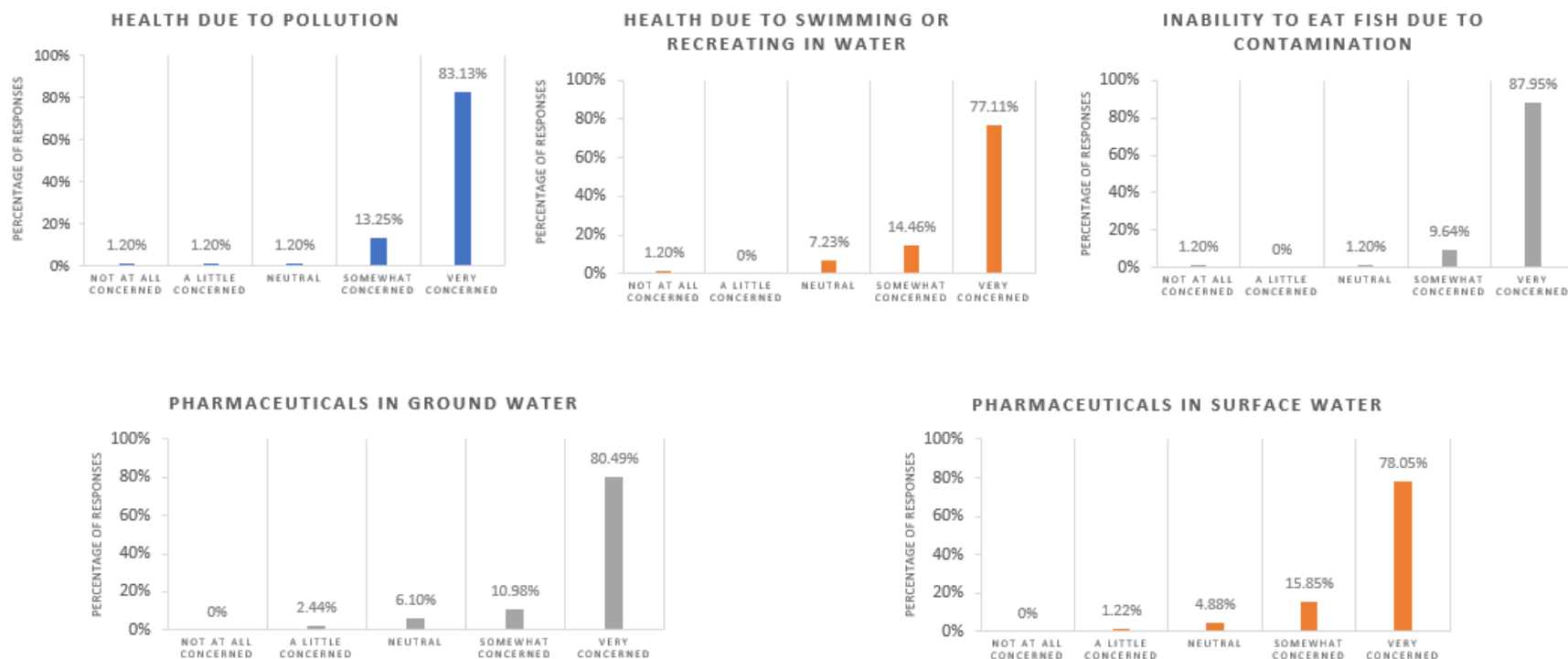
Figure 6.2 illustrates level of concern with issues concerning “Health Risks.” This group includes, “Health issues due to pollution,” “Health issues due to swimming or recreating in water,” “Inability to eat fish due to contamination,” “Pharmaceuticals in ground water,” and “Pharmaceuticals in surface water.” Approximately 83 percent (n=69) of respondents indicated that they were “Very Concerned” regarding “Health issues due to pollution,” while about 13 percent (n=11) were “Somewhat Concerned.” On the same issue, one respondent was “Neutral,” one indicated they were “A little concerned,” and one was “Not at all concerned.”

Concerning “Health issues due to swimming or recreating in water,” approximately 77 percent (n=64) of respondents indicated that they were “Very Concerned,” and about 14 percent (n=12) were “Somewhat Concerned.” About seven percent (n=6) indicated a “Neutral” level of concern, while one respondent was “Not at all concerned.” The issue of “Inability to eat fish due to contamination,” had about 88 percent (n=73) of respondents indicate that they were “Very Concerned,” and about ten percent (n=8) were somewhat concerned. One respondent was “Neutral” toward the issue, and one was “Not at all concerned.”

Respondents were asked about their level of concern with “Pharmaceuticals in surface water.” Approximately 78 percent (n=64) of respondents were “Very Concerned,” while about

16 percent (n=13) were “Somewhat Concerned.” About five percent (n=4) indicated a “Neutral” level of concern, and one respondent indicated that they were “A little concerned.” In this same group, and similar to the issue of “Pharmaceuticals in surface water,” respondents were also asked about their level of concern with “Pharmaceuticals in ground water.” About 80 percent (n=66) indicated they were “Very Concerned,” and about 11 percent (n=9) were “Somewhat Concerned.” Approximately six percent (n=5) of respondents were “Neutral” toward the issue, and the remaining two respondents were “A little concerned.”

Figure 6.2: Level of Concern with Health Risks



NOTE: n=84

Figure 6.3 illustrates respondents' level of concern with "Ecosystem Risks" which includes the variables of, "Flooding," "Water flow," "Wildlife habitat," "Pollution," and "Effects to plant and animal life from pharmaceuticals in the water." The issue of "Flooding," had lower levels of concern overall, with about 27 percent (n=22) indicating they were somewhat concerned, and nearly 32 percent (n=26) indicating they were "Very Concerned." The issue of "Flooding" also had most respondents, nearly 33 percent (n=27), marking "Neutral." Overall flooding did not seem to have a high level of concern. In speculation, this could be due to respondents not living within Pocatello city limits where the issue of flooding has historically been more impactful. Approximately 69 percent (n=57) of respondents indicated that they were "Very Concerned" about "Water flow." About 19 percent (n=16) were "Somewhat Concerned" about the issue, while about 11 percent (n=9) indicated they were "Neutral" toward "Water flow." One respondent was "Not at all concerned."

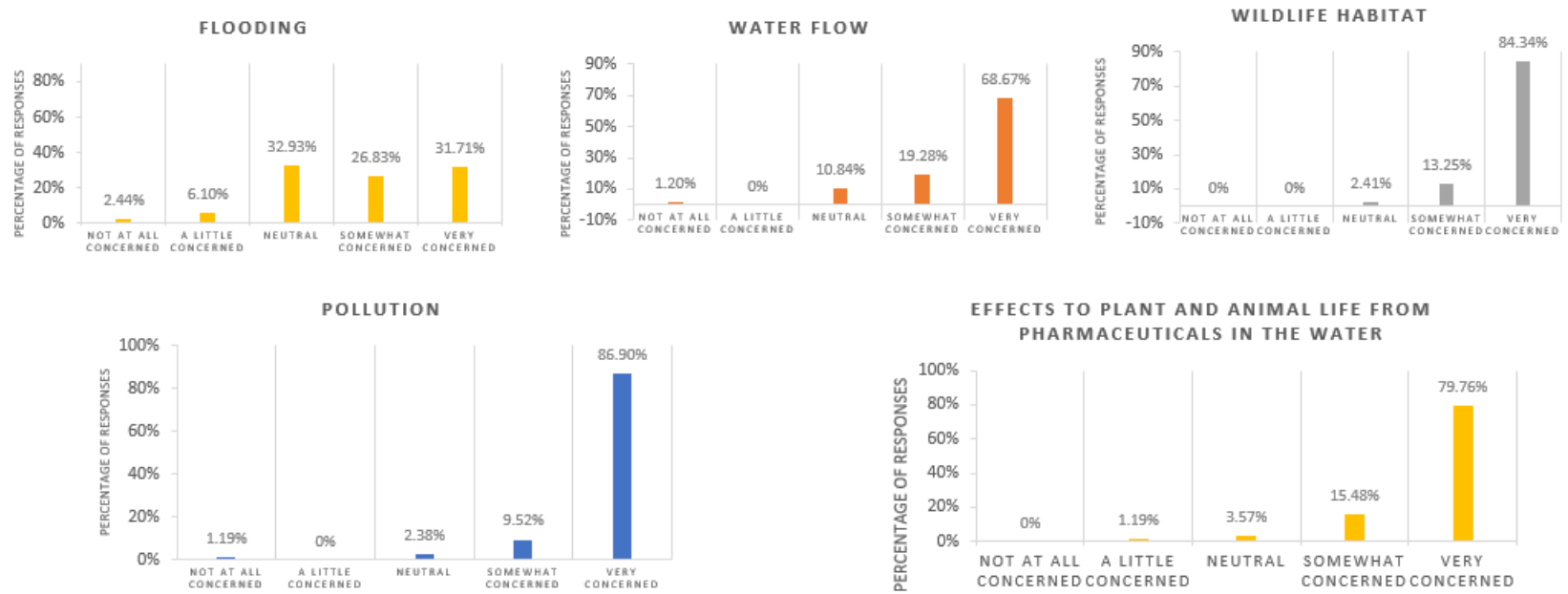
The issue of "Wildlife habitat" saw the most respondents indicate the highest level of concern. About 84 percent (n=70) of respondents were "Very Concerned" about "Wildlife habitat," while approximately 13 percent (n=11) were "Somewhat Concerned." Two respondents indicated that they felt "Neutral" toward the issue, and not a single respondent indicated that they were "A little concerned" or "Not at all concerned."

For the issue of "Pollution," about 87 percent (n=73) of respondents indicated that they were "Very Concerned." Approximately ten percent (n=8) indicated that they were "Somewhat Concerned" about "Pollution." For the same issue, two respondents (about two percent) felt "Neutral" toward the issue and one respondent was "Not at All Concerned." The issue of "Pollution" is noticeably broad compared to some of the other issues that were asked about.

Thus, we can speculate that when answering, respondents had different types of pollution in mind.

The final issue in Table 6.3 is where respondents were asked about their level of concern with the “Effects to plant and animal life from pharmaceuticals in the water.” Nearly 80 percent (n=67) of respondents indicated that they were “Very Concerned,” while about 15 percent (n=13) were “Somewhat Concerned.” Three respondents were “Neutral” toward the issue, and one was “A little concerned.” Important to note is that for each of the three issues concerning pharmaceuticals in water there was not a single respondent who indicated that they were “Not at all Concerned.”

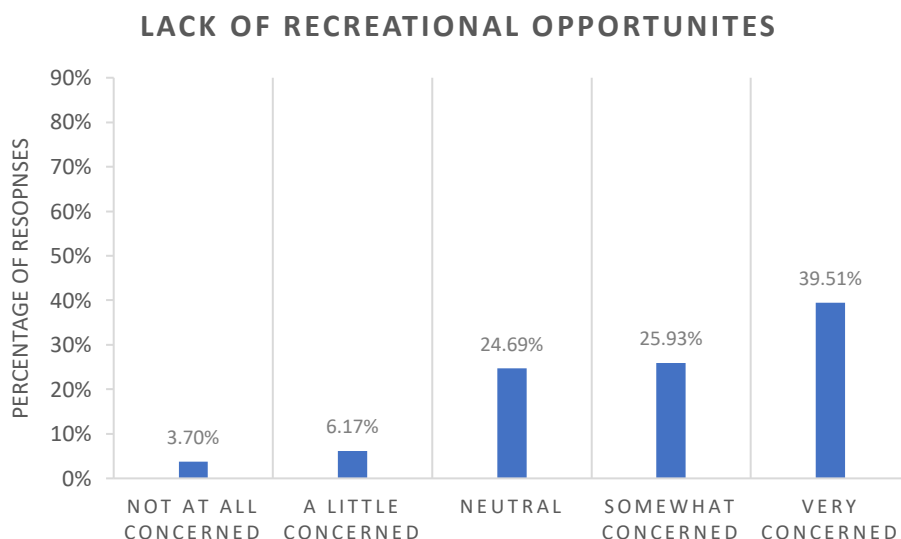
Figure 6.3: Level of Concern with Ecosystem Risks



NOTE: n=84

Figure 6.4 illustrates level of concern with lack of recreational opportunities. The issue of “Lack of recreational opportunities” had approximately 40 percent (n=32) of respondents indicate they were “Very Concerned,” and about 26 percent (n=21) indicate they were “Somewhat Concerned.” Nearly 25 percent (n=20) of respondents indicated “Neutral” for their level of concern. About six percent (n=5) were “A little concerned,” while about four percent (n=3) were not concerned at all. The issue of recreational opportunities had low levels of concern overall. Respondents were more concerned with “Health Risks” and “Ecosystem Risks.”

Figure 6.4: Level of Concern with Lack of Recreational Opportunities

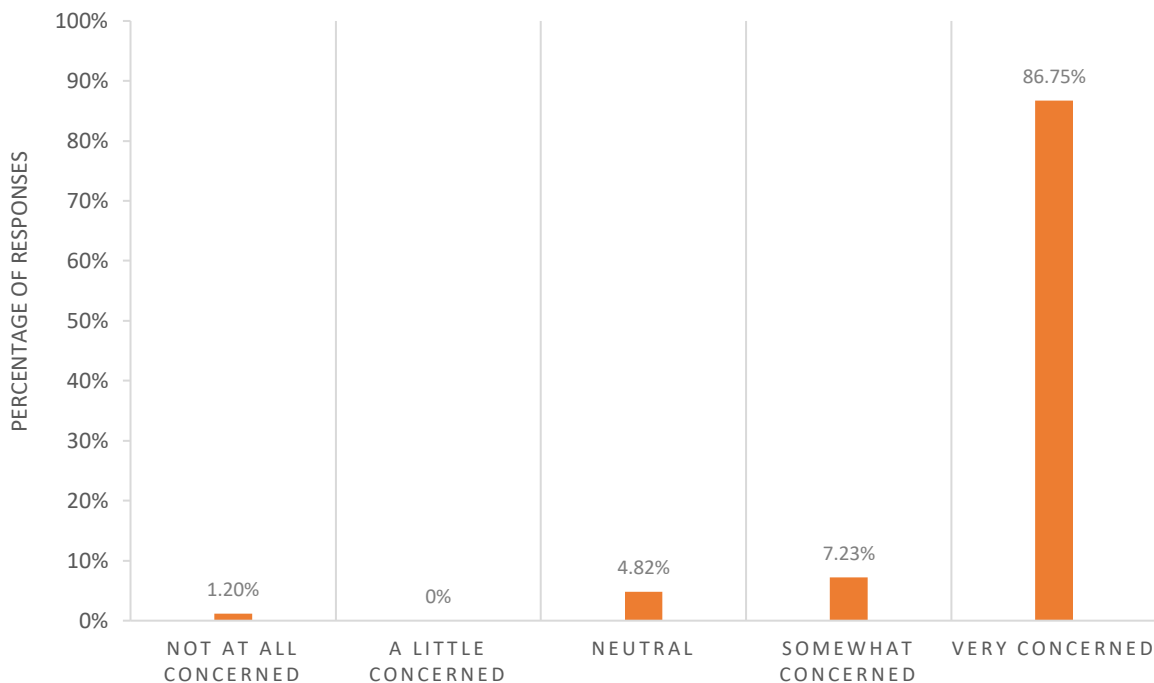


NOTE: n=84

Arguably the most significant question asked of Tribal citizen respondents was how concerned they are with “The Shoshone-Bannock Tribe[s] not being included in discussions on how to manage the Portneuf River.” As illustrated in Figure 6.5 most respondents, about 87 percent (n=72), indicated that they were “Very Concerned” with the SBT being left out of decision making regarding the Portneuf River. The remaining respondents, about 13 percent

(n=11), were “Somewhat Concerned” (n=6), “Neutral” (n=4), or “Not At All Concerned” (n=1). This question alone indicates that SBT respondents are highly concerned about being left out of decision-making surrounding the Portneuf. The basis for this entire study is on the fact that Tribal citizens were not a part of the sample population for the original survey administered by the city of Pocatello and the Portneuf River Vision group.

Figure 6.5: Level of Concern with the Shoshone-Bannock Tribes being left out of Decision Making



NOTE: n=84

The goal of this chapter was to understand the risk perceptions, or levels of concern, that Tribal citizen respondents have regarding the Portneuf River and its attributes. Overall, Tribal respondents had high levels of concern with nearly every issue in the survey. They showed concern about ecosystem risks, health risks, recreational risks, and the risk of not being a part of

the decision-making process. As previously stated, public opinion scholarship has found that risk perceptions may be some of the strongest indicators of policy support. Due to their high levels of concern, it stands to reason that Tribal citizens have strong policy opinions that policy makers need to be made aware of. This study is an initial step toward sharing that information and hopefully the creation of more representative policy.

Chapter 7: The Influence of Trust in Government on Perceptions of Environmental Issues

This chapter focuses on what factors influence the trust in government of Indigenous Peoples. The dependent variable is trust and is based on the following question, “Different levels of government claim responsibility for the Portneuf River from Toponce Creek, through Pocatello, to the boundary of the Shoshone-Bannock Reservation. Using the 1 to 5 scale (1 = no trust to 5 = complete trust), please indicate your level of trust in the following institutions.” Respondents specifically evaluated their level of trust in the following governmental entities: “US Government,” “US Army Corps of Engineers,” “US Environmental Protection Agency,” “Idaho Department of Environmental Quality,” “Idaho Department of Water Resources,” “Pocatello City Government,” “Local Irrigation Districts,” “Portneuf Soil and Water Conservation District,” and “Shoshone-Bannock Tribal Government.” I have organized the models into groups based on the level of government. Table 7.1 illustrates the influence of trust in US governmental agencies including, the “US Government,” the “US Army Corps of Engineers”, and the “US Environmental Protection Agency.” Table 7.2 illustrates the influence of trust in the State of Idaho’s governmental agencies including, the “Idaho Department of Environmental Quality,” “Idaho Department of Water Resources,” and the “Portneuf Soil and Water Conservation District.” In Table 7.3, the influence of trust in the Local government agencies is illustrated and includes the “Pocatello City Government” and “Local Irrigation Districts.” Finally, Table 7.4 illustrates the influence of trust in the Shoshone-Bannock Tribes. The statistical tool most appropriate to analyze the influence of trust data was an ordered logit.

Trust in US Agencies

As previously stated, the relationship between Tribes, Indigenous peoples, and the US Government has historically been violent and complex, leading to the assumption that that history and relationship likely heavily influences the opinions and preferences of IP. Table 7.1 illustrates the influence of trust in US governmental agencies on Indigenous perceptions of environmental issues. As previously stated, citizen trust in institutions is important for gaining policy support (Chanley 2002). When citizens are confident in and supportive of governments and institutions, those institutions are likely to gain policy support more easily and take action faster (Citrin & Muste 1999; Chanley 2002). In this context, citizen trust in US, State, Local, and Tribal institutions may correlate with support of different proposed policies. Trust in the US government is the first dependent variable in this set. The first key finding for this variable is that as feelings of concern with health risks concerning the Portneuf River decreased, trust in the “US Government” increased. In other words, those who were not as concerned about the health risks concerning the Portneuf, had greater trust in the “US Government.” A second finding indicated that as feelings of concern with ecosystem risks concerning the Portneuf increased, trust in the “US Government” also increased. Further, those who think that “Agriculture” is the main factor impacting water quality in the Portneuf River, also have increased trust in the “US Government.” Interestingly, those who are more likely to agree that any decision made regarding the Portneuf River directly impacts the Shoshone-Bannock Tribe, also have increased trust in the “US government.” This result was surprising as one might assume that given the history between Tribes and the US government, those who believed that decisions regarding the Portneuf directly impacted the SBT, might have less trust in the US government. However, in speculation, perhaps

considering the formal government-to-government relationship between Tribe and the US federal government, that led respondents to have greater trust.

The second agency in the Table 7.1 variable is the “US Army Corp of Engineers.” As a reminder, the US Army Corps of Engineers is the agency that implemented the changes to the Portneuf to mitigate flooding in the 1960s. The first key finding indicates that as feelings of concern with health risks concerning the Portneuf River decreased, trust in the US Army Corps of Engineers increased. An interesting result was as feelings of concern with the Shoshone-Bannock Tribes not being included in discussion on how to manage the Portneuf River increased, trust in the US Army Corps of Engineers also increased. Further exploration between Tribes and the Army Corps are required to understand the history and relationship. Finally, those who think that “Agriculture” is the main factor impacting water quality in the Portneuf River also have increased levels of trust in the US Army Corps.

The final agency in Table 7.1 is the “US Environmental Protection Agency.” The two key findings for the EPA both had to do with demographic variables. First, those who identified themselves as female had increased levels of trust in the “US Environmental Protection Agency.” Those who identified themselves as more conservative leaning in ideology also had increased levels of Trust in the US EPA.

Table 7.1: The Influence of Trust in US Governmental Agencies on Indigenous Perceptions of Environmental Issues

Independent Variables	<u>Trust in the US Government</u>		<u>Trust in the US Army Corps of Engineers</u>		<u>Trust in the US Environmental Protection Agency</u>	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
Risk Perceptions						
Health Risk	-2.372 (1.048)	.024	-3.421 (1.238)	.006	-.980 (1.072)	.361
Ecosystem Risk	1.867 (1.082)	.084	1.125 (.918)	.221	-.965 (1.015)	.342
Recreation Risk	.477 (.345)	.167	.359 (.384)	.350	.306 (.333)	.358
Sho-Ban Risk	-.270 (.591)	.648	1.414 (.513)	.006	-.369 (.821)	.653
Factors Impacting Water Quality						
Agriculture	1.666 (.827)	.044	2.068 (.996)	.038	1.464 (.918)	.111
Waste-water	.067 (.929)	.942	.878 (.936)	.348	-.920 (.931)	.323
Industrial Pollution	-.234 (1.269)	.853	.941 (1.105)	.394	-1.788 (1.114)	.109
SBT Participation in Decision-Making						
Decisions directly impact SBT	.931 (.366)	.011	-.019 (.407)	.967	.150 (.288)	.602
Tribes should have equal say	-1.090 (.684)	.111	.200 (.741)	.786	.823 (.679)	.226
SBT accurately represents	.813 (.487)	.096	-.032 (.375)	.932	.000 (.511)	.999
Demographics						
Gender (Female)	.763 (1.125)	.497	.110 (1.069)	.918	2.049 (.955)	.032
Age	-.021 (.050)	.676	-.017 (.049)	.719	.026 (.050)	.604
Political Ideology	.000 (.519)	.999	-.261 (.476)	.584	-.117 (.583)	.840
Education	-.071 (.364)	.845	-.212 (.334)	.525	-.541 (.307)	.078
Income	-.133 (.309)	.666	.126 (.309)	.683	.149 (.381)	.694
Number of Cases	55		55		56	
Wald Chi ²	34.34	0.003	26.37	0.034	32.90	0.004
Pseudo R ²	0.149		0.102		0.161	
Log Pseudo Likelihood	-60.244		-70.770		-68.223	

Notes: Robust standard errors are in parenthesis. Results for each model were estimated using an Ordered Logistic Regression.

Trust in State of Idaho Agencies

Court precedence in the US clearly establishes federal primacy in Indian Affairs and further, excludes state law from Indian Country (*Johnson v. M'Intosh*, 21 US 543 (1823); *Cherokee Nation v. Georgia*, 30 US 1 (1831); *Worcester v. Georgia*, 31 US 515 (1832)). However, because Tribal reservation lands are within states' boundaries, actions taken by the state and state agencies do affect Tribes, and vice versa. Table 7.2 illustrates the influence of trust in the state of Idaho governmental agencies on Indigenous perceptions of environmental issues and includes the dependent variables of trust in the "Idaho Department of Environmental Quality" (IDEQ) and the "Idaho Department of Water Resources" (IDWR). It is important to note that the model concerning the dependent variable, the "Idaho department of Environmental Quality," is statistically unhealthy due to the probability of the Wald Chi Squared test. Nevertheless, the model is suggestive of the following, first, as feelings of concern with health risks concerning the Portneuf River decreased, trust in the IDEQ increased. Also, those who identified themselves as female tend to have increased levels of trust in the IDEQ. As for the "Idaho Department of Water Resources," the first key finding is that those who indicated that they believed "Agriculture" was the main factor impacting water quality in the Portneuf had increased levels of trust. Those who identified themselves as female have increased levels of trust in the department. Further, as level of education decreased, levels of trust increased in the IDWR. Finally, for the dependent variable concerning trust in the "Portneuf Soil and Water Conservation District," those who are more likely to agree that any decision made regarding the Portneuf River directly impacts the Shoshone-Bannock Tribe have increased levels of trust in the "Portneuf Soil and Water Conservation District." Also, as level of income increased, levels of trust in the "Portneuf Soil and Water Conservation District" also increased.

Table 7.2: The Influence of Trust in the State of Idaho Governmental Agencies on Indigenous Perceptions of Environmental Issues

Independent Variables	<u>Trust in the Idaho Department of Environmental Quality</u>		<u>Trust in the Idaho Department of Water Resources</u>		<u>Trust in the Portneuf Soil and Water Conservation District</u>	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
Risk Perceptions						
Health Risk	-2.479 (.1189)	.037	-1.497 (.1407)	.287	.241 (1.00)	.811
Ecosystem Risk	1.473 (.1080)	.173	.437 (1.216)	.719	-.351 (.941)	.709
Recreation Risk	.095 (.367)	.794	.274 (.352)	.436	-.168 (.346)	.627
Sho-Ban Risk	.706 (.638)	.268	-.034 (.691)	.960	-.607 (.686)	.377
Factors Impacting Water Quality						
Agriculture	.829 (.791)	.294	2.526 (.835)	.002	.619 (.625)	.322
Waste-water	.084 (.870)	.922	.290 (.934)	.756	-.085 (.857)	.921
Industrial Pollution	-1.260 (1.034)	.223	-1.479 (1.323)	.264	-.572 (1.161)	.622
SBT Participation in Decision-Making						
Decisions directly impact SBT	.207 (.296)	.483	.237 (.343)	.489	.745 (.346)	.031
Tribes should have equal say	.071 (.535)	.893	.070 (.575)	.903	-.252 (.688)	.714
SBT accurately represents	-.122 (.366)	.738	-.144 (.327)	.660	-.074 (.333)	.823
Demographics						
Gender (Female)	1.510 (.841)	.073	1.905 (.803)	.018	1.408 (1.021)	.168
Age	-.028 (.041)	.498	-.031 (.046)	.499	-.052 (.049)	.285
Political Ideology	-.084	.874	.184 (.542)	.734	.409 (.507)	.420
Education	-.513 (.325)	.114	-.618 (.268)	.022	-.550 (.295)	.062
Income	.355 (.307)	.247	.140 (.287)	.625	.684 (.269)	.011
Number of Cases	56		55		55	
Wald Chi ²	20.05	0.170	35.21	0.002	23.07	0.082
Pseudo R ²	0.109		0.170		0.126	
Log Pseudo Likelihood	-69.323		-62.976		-66.471	

Notes: Robust standard errors are in parenthesis. Results for each model were estimated using an Ordered Logistic Regression.

Trust in Local Agencies

The city of Pocatello and the Shoshone-Bannock Tribes are neighbors. There is a long history between the two starting with the fact that the city exists within forcibly ceded lands and the original boundaries of the Fort Hall Reservation. Similarly to relations with the state, actions taken by the city and their agencies do affect the Shoshone-Bannock Tribes, and vice versa. Table 7.3 illustrates the influence of trust in the state of the city of Pocatello governmental agencies on Indigenous perceptions of environmental issues. The dependent variables are trust in the “Pocatello City Government,” “Local Irrigation Districts,” and in the “Portneuf Soil and Water Conservation District.” It is important to note that the model concerning the dependent variable, the “Pocatello City Government,” is statistically unhealthy due to the probability of the Wald Chi Squared test. However, the model is suggestive. The first key finding is that as feelings of concern with recreation risk concerning the Portneuf increased, trust in the “Pocatello City Government” also increased. Second, those who believe that “Agriculture” is the main factor impacting water quality of the Portneuf also have increased levels of trust in the “Pocatello City Government.” Interestingly, those who are more likely to agree that any decision made regarding the Portneuf River directly impacts the Shoshone-Bannock Tribe, also have increased trust in the “Pocatello City Government.” For the dependent variable of trust in “Local Irrigation Districts,” an interesting finding is that those who are more likely to agree that any decision made regarding the Portneuf River directly impacts the Shoshone-Bannock Tribe have increased levels of trust in “Local Irrigation Districts.” This may have to do with Tribal departments and citizens depending on irrigation for farming and agriculture. Another finding was that as an individual’s level of education decreased, level of trust in “Local Irrigation Districts” increased.

Table 7.3: The Influence of Trust in Local Governmental Agencies on Indigenous Perceptions of Environmental Issues

Independent Variables	Trust in the Pocatello City Government		Trust in Local Irrigation Districts	
	Coefficient	Prob.	Coefficient	Prob.
Risk Perceptions				
Health Risk	-1.318 (1.200)	.272	.192 (1.070)	.858
Ecosystem Risk	.421 (1.254)	.737	-.775 (1.158)	.503
Recreation Risk	.553 (.298)	.064	.072 (.321)	.822
Sho-Ban Risk	.529 (.759)	.485	.110 (.519)	.831
Factors Impacting Water Quality				
Agriculture	2.046 (.942)	.030	1.607 (.987)	.103
Waste-water	-.128 (.972)	.895	-.074 (.959)	.938
Industrial Pollution	-.596 (1.326)	.653	-.973 (1.370)	.478
SBT Participation in Decision-Making				
Decisions directly impact SBT	.747 (.414)	.072	1.587 (.604)	.009
Tribes should have equal say	-.455 (.652)	.485	-1.016 (.737)	.168
SBT accurately represents	-.113 (.413)	.783	-.174 (.351)	.619
Demographics				
Gender (Female)	1.153 (.979)	.239	1.246 (.810)	.124
Age	.008 (.038)	.824	-.057 (.051)	.263
Political Ideology	.423 (.534)	.428	-.126 (.458)	.784
Education	-.036 (.266)	.890	-.713 (.275)	.010
Income	-.471 (.287)	.101	.100 (.274)	.714
Number of Cases	55		55	
Wald Chi ²	21.11	.133	30.42	0.010
Pseudo R ²	0.121		0.179	
Log Pseudo Likelihood	-57.711		-59.445	

Notes: Robust standard errors are in parenthesis. Results for each model were estimated using an Ordered Logistic Regression.

Trust in the Shoshone-Bannock Tribal Government

The dependent variable for Table 7.4 is based on level of trust in the Shoshone-Bannock Tribal Government. The first key finding for this variable is that as feelings of concern with the Shoshone-Bannock Tribes not being included in discussion on how to manage the Portneuf River increased, trust in the Shoshone-Bannock Tribal Government also increased. This is consistent with expectations as citizens (respondents) are concerned about the Tribes being left out of decision-making discussions and as the SBT government speaks for their Tribal citizens there is likely a history of trust built up.

Concerning factors that impact water quality of the Portneuf, there are two findings. First, those who think that “Agriculture” is the main factor impacting water quality in the Portneuf River have increased levels of trust in the Shoshone-Bannock Tribal Government. Also, those who think that “Waste-water from the water treatment plant” is the main factor impacting water quality in the Portneuf River have increased levels of trust in the Shoshone-Bannock Tribal Government. The independent variables concerning the SBT’s participation in decision making also yielded two key findings. Those who are more likely to agree that any decision made regarding the Portneuf River directly impacts the Shoshone-Bannock Tribe have increased levels of trust in the SBT government. Interestingly, those who are more likely to disagree that the Shoshone-Bannock Tribes should have an equal say in the decision-making process regarding the Portneuf River also have increased levels of trust in the SBT government. Further study is required to understand why this outcome seems contradictory. Finally, the demographics of gender and age yielded significant findings. First, those who identified themselves as female have decreased levels of trust in the SBT government. Further study would need to be done to determine why level of trust is low for females. One factor that may play a role, though is

entirely speculative, is that the SBT formal government, the Business Council, has historically been occupied by mostly males. A second finding was that as age goes up, levels of trust in the Shoshone-Bannock Tribal government increase. This is consistent with expectations as the SBT Business Council is often comprised of elder citizens of the Tribe, and in speculation, older respondents may have close familial or friendly ties to those who represent the Tribal government.

Table 7.4: The Influence of Trust in Government on Indigenous Perceptions of Environmental Issues

Independent Variables	<u>Trust in the Shoshone-Bannock Tribal Government</u>	
	Coefficient	Prob.
Risk Perceptions		
Health Risk	-1.039 (1.480)	.483
Ecosystem Risk	-2.562 (1.674)	.126
Recreation Risk	.207 (.232)	.372
Sho-Ban Risk	3.884 (1.124)	.001
Factors Impacting Water Quality		
Agriculture	2.065 (.995)	.038
Waste-water	1.968 (1.016)	.053
Industrial Pollution	.344 (1.213)	.777
SBT Participation in Decision-Making		
Decisions directly impact SBT	1.272 (.436)	.004
Tribes should have equal say	-1.262 (.678)	.063
SBT accurately represents	-.067 (.525)	.898
Demographics		
Gender (Female)	-2.336 (.944)	.013
Age	.080 (.032)	.014
Political Ideology	.041 (.441)	.926
Education	.261 (.337)	.438
Income	-.321 (.302)	.288
Number of Cases	56	
Wald Chi ²	55.04	.000
Pseudo R ²	0.268	
Log Pseudo Likelihood	-59.407	

Notes: Robust standard errors are in parenthesis. Results for each model were estimated using an Ordered Logistic Regression.

Each of the nine represented agencies had at least one result indicating trust. The impact of “Agriculture” on water quality seems to be influential for trust. Level of trust in government can be a major predictor for preferences and attitudes. Recalling the trust literature, when people trust government, they are more likely to support the policies of that government (Chanley 2002). Therefore, if they distrust government, they are less likely to support the policies of government.

Chapter 8: Environmental Narrative Preference among Tribal Citizens

This chapter focuses on narrative preference of Tribal citizens. The dependent variable is narrative preference and is based on the following question, “Regardless of your personal preference, which of the following three accounts do you believe would be the most likely to result in a successful policy for river management?” The options that were presented to respondents were “Account 1” the duty-based citizen narrative, “Account 2” the science narrative, and “Account 3” the engaged citizen narrative. The independent variables are “Health risk,” “Ecosystem risk,” “Sho-ban risk,” “How often a person engages in recreation with the Portneuf River,” levels of trust in the “US Government,” and the “Pocatello City Government,” and the basic demographics of, “Gender,” “Age,” “Political Ideology,” “Education,” and “Income.” Respondents specifically evaluated the question based on the narrative accounts outlined in Table 8.1.

The narrative accounts in Table 8.1 are based on different understandings of how citizens support and engage in politics. In the United States, there are two dominant narratives of citizenship: duty-based citizenship and engaged citizenship. These are based on Russel J. Dalton’s (2007) book, *The Good Citizen: How a Younger Generation is Reshaping American Politics*. Duty-based citizens often hold a more traditional view of citizenship where they are content monitoring the government, while also generally believing government should have a limited role in public and private sectors. They see voting as a civic responsibility and believe in obeying government. (Dalton 2007). The “duty-based” narrative account attempts to appeal to those who believe it is their responsibility as Pocatello and Shoshone-Bannock citizens to restore the river, stating that the federal government should not be involved in improvement endeavors.

Further it identifies the river as an economic asset and states that improving the river could improve the local economy, improve recreational opportunities, and attract tourists.

Those who identify as engaged citizens often have a broader idea of what citizenship is. Engaged citizens tend to be more informed, more involved in politics, and generally more skeptical of government (Dalton 2007). Unlike their duty-based counterparts, engaged citizens are also more likely to believe that government has a significant role in social issues and programming (Dalton 2007). The “engaged” narrative account seeks to attract those who believe restoring the river plays a valuable role in the local ecosystem and community. It mentions “good global citizenship” and encourages community involvement. Finally, the “engaged” narrative places blame for the river’s condition on industrial and economic interests that have taken precedence over environmental and community interests.

The “science-based” narrative account is self-explanatory. This account is based on scientific facts and evidence and tries to appeal to a citizen’s logic. It speaks to the need for river restoration, and states that ongoing monitoring is important in order to evaluate applied efforts and calculate for change. The science narrative ends with a hypothesis that if restoration efforts are successful, river conditions would be expected to improve.

Finally, there is a “do nothing” narrative account. In public policy, it is understood that governments can choose to enact policy or do nothing; inaction is a policy choice. This narrative account seeks to appeal to those citizens who may believe that the Portneuf river is fine as it is, or those that believe that there are more important issues to consider, or perhaps those who are not informed enough to make a different decision about the issue.

Table 8.1: Narrative Accounts of how different groups talk about the Portneuf River

Accounts	Exact Wording
Duty-Based	Groups in southeast Idaho are currently working to improve water quality, water quantity, and recreational opportunities along the Portneuf River. For too long, the Portneuf River has been neglected and it is the individual responsibility of southeast Idaho citizens to assist in the economic restoration of the river. A polluted and channelized river harms local recreation users and businesses that depend on tourism. Groups that are working to restore the river to health are exercising good business sense and river restoration is an efficient way to better use our local resources. The federal government has had too much say in how the Portneuf River has been managed and this has harmed southeast Idaho communities.
Engaged	Groups in southeast Idaho are currently working to improve water quality and water quantity in the Portneuf River in order to benefit the larger ecosystem and community. For too long, the Portneuf River has been neglected. Groups working to restore the Portneuf River are demonstrating good global citizenship, providing an excellent way for individuals to get involved in their community, and fighting the adverse consequences of climate change. A polluted and channelized river harms living creatures such as fish, birds, and other organisms that are important for river biodiversity. For too long, industries and other economic interests have harmed the Portneuf River.
Science-Based	Scientific evidence suggests the Portneuf River, as it passes through Pocatello, is ecologically impaired and does not meet standards guaranteed under the Clean Water Act. This evidence, which has existed for decades, includes chronically high levels of fine sediment and periodically elevated levels of bacteria, both conditions that may be exacerbated by the channelized state of the river and the low flows that typically occur in late summer. Therefore, sound ecological science supports the efforts by some community groups to restore the Portneuf River. If restoration efforts are coupled with ongoing monitoring of the river ecosystem, scientists will be able to evaluate whether these activities are successful. If they are successful, then the ecological state of the river should improve.
Do Nothing	Some people in southeast Idaho believe that the Portneuf River is fine as is. There might be some problems, but nothing that is important enough to address.

As previously mentioned, respondents were given the option to choose “Account 1,” “Account 2,” or “Account 3,” and “Account 4.” The “Do Nothing” narrative was not an option for this question. Responses for the “Science-Based” narrative account and the “Engaged” narrative account were equal with 28 responses for each. The “Duty-Based” narrative account received 13 responses. In total there were 69 responses. Due to the way these questions were

asked, and the distribution of responses, the most appropriate statistical analysis model for the narrative data is a multinomial regression seen in Table 8.2. A multinomial regression is used to compare each answer to those who picked a base narrative. In this case, because accounts two and three and the same number of responses, the statistical tool chose “Account 2,” the “Science-Based” narrative to be the base outcome. Therefore, the multinomial regression is comparing those who chose “Account 1” the “Duty-Based” account and not “Account 2” the “Science-Based” account; it is also comparing those who chose “Account 3” the “Engaged” account and not “Account 2” the “Science-Based” account.

Table 8.2: Determinants of Indigenous Support for Narrative Accounts

Independent Variables	Account 1: Duty-Based		Account 3: Engaged	
	Coefficient	Prob.	Coefficient	Prob.
Risk Perceptions				
Health Risk	-6.516 (3.099)	.036	.902 (1.911)	.637
Ecosystem Risk	5.045 (2.006)	.012	-1.335 (1.236)	.280
Sho-Ban Risk	-.676 (1.154)	.558	.155 (1.123)	.890
Recreational Activity	-.039 (.526)	.940	-.817 (.418)	.051
Trust in Institutions				
US Government	-1.515 (1.158)	.191	1.337 (.778)	.086
Pocatello City Government	1.624 (1.082)	.133	-1.363 (.810)	.092
Demographics				
Gender (Female)	-1.148 (1.148)	.317	-1.628 (1.141)	.154
Age	.137 (.104)	.190	.033 (.040)	.413
Political Ideology	-2.700 (1.378)	.050	-1.808 (.782)	.021
Education	-.708 (1.024)	.489	-.648 (.384)	.092
Income	-.192 (.476)	.686	.257 (.385)	.504
Number of Cases	54			
Wald Chi ²	32.54	0.068		
Pseudo R ²	0.363			
Log Pseudo Likelihood	-35.602			

Notes: Robust standard errors are in parenthesis. Results for this model were estimated using a Multinomial Logistic Regression.

The first key finding in Table 8.2 is that those who perceive higher “Health Risk” regarding the Portneuf River are less likely to support the “Duty-Based” narrative compared to the “Science” Narrative. Also, those who perceive higher “Ecosystem Risk” regarding the Portneuf River are less likely to support the “Duty-Based” narrative compared to the “Science” Narrative. Both of these findings seem consistent with expectations, as one would expect that a respondent who is more concerned with the health risks and ecosystem risks would be more likely to choose the science narrative that specifically mentions some health and ecosystem risks of the river.

The next finding is based on those who partake in recreational activity on the Portneuf. Those who engage in recreational activity more frequently are less likely to support the “Engaged” narrative compared to the “Science” narrative. This finding seems counterintuitive as one might think that those who frequently engage in activities along the river would support the “Engaged” narrative.

Variables relating to trust in institutions also produced findings. Those who had increased levels of trust in the US government were more likely to support the “Engaged” narrative over the “Science” narrative. Also the who had increased levels of trust in the Pocatello City Government were less likely to support the “Engaged” narrative.

Two demographic variables produced significant findings. First, those with higher levels of education are less likely to support the “Engaged” narrative over the “Science” narrative. One explanation for this could be that those respondents with higher western education are more likely to support the science narrative. Interestingly, the last finding is that those who identified as more conservative are less likely to choose the “Duty-based” account and less likely to choose the “Engaged” account. Conservatives appear to be choosing the Science narrative at a much

higher rate, which is not necessarily what one would assume to be the case based on the literature. One explanation could be the cultural differences between Indigenous and non-Indigenous respondents and this finding may really point to the role of environment and support for taking care of it within Indigenous cultures.

Overall, the data shows that most respondents support the “Science” narrative over the “Duty-Based” or “Engaged” narrative. While the “Science” narrative in the survey instrument was written from a Western perspective, it still seems to resonate with Indigenous respondents who likely feel a great sense of responsibility to the environment (Jonas et al. 2010).

Chapter 9: Tribal Citizen Policy Preferences Regarding Management of the Portneuf River

In this chapter, I take the variables of risk perceptions, trust, narrative preference, and see how they influence policy preferences. Understanding what factors influence the policy preferences of Indigenous peoples concerning environmental issues, specifically management of the Portneuf River, is important for policy makers. The dependent variable is policy preference and is based on the following question, “A number of policy options have been proposed to manage water resources along the Portneuf River. Please indicate whether you strongly oppose, oppose, neither oppose nor support, support, or strongly support each of the following options” Respondents specifically evaluated the question based on the following thirteen policy options: “Restore the natural water course of the Portneuf River (put in meanders),” “Reconstruct the levees and channel to incorporate parts of these structures into green areas (parks or trails along the river, while maintaining safety protocols to protect the area from flooding,” “Reinforce and strengthen the existing levees to protect against future floods,” “Remove levees to restore the natural water flow,” “Construct a pipeline to increase water flow by bringing water to the Portneuf from other areas,” “Stock fish,” “Create more river access points and parking,” “Buy water rights from upriver to increase water quantity and flow,” “Plant more vegetation along the river,” “Remove sections of the concrete channel,” “Ban agriculture flood irrigation,” “Create a buffer zone between agriculture, the river, and the Portneuf River’s tributaries,” and “Create designated areas for canoeing and kayaking.”

Due to the number of policy options I have grouped like policy issues together into three categories. The first set reflects policy options concerning levees and the concrete channel, and includes the following policy options: “Reconstruct the levees and channel to incorporate parts of these structures into green areas (parks or trails) along the river, while maintaining safety

protocols to protect the area from flooding,” which has been shortened to “Reconstruct Levees” in the model; “Reinforce and strengthen the existing levees to protect against future floods” has been shortened to “Reinforce levees;” “Remove levees to restore the natural water flow” has been shortened to “Remove levees;” and “Remove sections of the concrete channel” has stayed the same in the model. The second set of policy preferences is regarding recreational options. This set includes: “Construct a pipeline to increase water flow by bringing water to the Portneuf from other areas,” which has been shortened into “Construct a pipeline; “Stock fish;” “Create more river access points and parking,” which has been shortened to “Create more river access;” and “Create designated areas for canoeing and kayaking,” which has been shortened to “Create areas for canoeing and kayaking. Finally, the last set of policy preferences is regarding agricultural options. This set includes: “Restore the natural water course of the Portneuf River (put in meanders),” “Buy water rights from upriver to increase water quantity and flow,” “Plant more vegetation along the river,” “Ban agriculture flood irrigation,” “Create a buffer zone between agriculture, the river, and the Portneuf River’s tributaries,”

For this specific project, due to the small number of respondents ($n \approx 50$), there seem to be issues of overspecification in creating the statistical models. Overspecification in regression modeling is when the regression equation contains too many or redundant predictive variables. After running the initial models, the demographic variables of “Political Ideology” and “Education” did not significantly predict anything. Political Ideology and Education are two very standard demographic variables that are nearly always included in public opinion polling. In the United States, a citizen’s political ideology is how they organize their political attitudes and beliefs, which aid them in making sense of social, economic, and political realities (Feldman, 2013). We hear nearly every day about the divide between Liberals and Conservatives and the

influence of those ideologies in politics and policy this country. Suffice to say, political ideology is strong driver of an individual's opinions. A person's level of education is also an important driver of opinion. Public opinion scholarship finds that those who indicate higher levels of education tend to associate with social and political liberalism (Weil, 1985). What is unknown is how and if political ideology and education are drivers of Indigenous opinion in the same way that they are of the wider population.

In the name of transparency, I have provided the full models for consideration, and you can see these full models illustrated in Tables 9.3A, 9.4A, and 9.5A. After in depth analysis, the models perform much better, as illustrated by the Wald chi squared test for each model, when the extraneous variables are removed which allows us to uncover more of what is really happening. The findings suggest that there is overwhelming agreement and support amongst respondents for most of the provided policy options. The most appropriate statistical analysis is an Ordered Probit Regression.

Policy Preferences Regarding Levees and the Concrete Channel

Table 9.1A illustrates the full model which includes the demographic variables of "Political Ideology" and "Education. Table 9.1B illustrates the reduced model, which I will be elaborating on. This model has policy options grouped together based on having to do with the levees and concrete channel of the Portneuf River. The first finding is that as feelings of concern with health risks concerning the Portneuf River increased, respondents were more likely to choose the policy option stating, "Reconstruct the levees and channel to incorporate parts of these structures into green areas (parks or trails) along the river, while maintaining safety protocols to protect the area from flooding." Respondents were less likely to choose this policy option when feelings of concern with ecosystem risks concerning the Portneuf River increased.

Those who think that “Waste-water from the water treatment plant” is the main factor impacting water quality in the Portneuf River are also more likely to choose the reconstruction policy option. Finally, those who identified themselves as younger, were also more likely to choose the reconstruction option.

As feelings of concern with health risks concerning the Portneuf River increased, respondents were more likely to choose the policy option stating, “Reinforce and strengthen the existing levees to protect against future floods.” Those who engaged in recreational activity less were also more likely to choose the reinforce and strengthen option. Those who identified themselves as younger were also more likely to choose this option.

As levels of trust in the Pocatello City Government decreased, respondents were more likely to choose the policy option stating, “Remove levees to restore the natural water flow.” Females were more likely to oppose the removal of levees, while those who identified as having lower income supported this policy option.

As levels of trust in the US government increased, support for the policy option that states, “Remove sections of the concrete channel” also increased. Both those who chose the “Engaged citizen” narrative account and the “Science” narrative account were more likely to support the removal of the concrete channel policy option. However, those who identified themselves as female were more likely to oppose the same option.

Table 9.1A: Indigenous Policy Preferences Regarding Management of the Portneuf River (FULL MODEL)

Independent Variables	<u>Reconstruct Levees</u>		<u>Reinforce Levees</u>		<u>Remove Levees</u>		<u>Remove Sections of Concrete Channel</u>	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
Risk Perceptions								
Health Risk	1.151 (.669)	.085	1.249 (.545)	.022	-.535 (.761)	.482	-.515 (.784)	.511
Ecosystem Risk	-.976 (.698)	.162	-.196 (.688)	.775	.972 (.688)	.157	1.203 (.827)	.146
Sho-Ban Risk	-.335 (.471)	.476	-.178 (.496)	.719	-.126 (.358)	.724	-1.029 (.642)	.109
Engaging the Portneuf River	-.189 (.181)	.296	-.337 (.187)	.071	.183 (.191)	.339	.185 (.200)	.353
Trust in Institutions								
US Government	.171 (.314)	.586	.168 (.317)	.595	.159 (.298)	.592	-1.029 (.642)	.128
Pocatello City Government	.165 (.290)	.570	.076 (.301)	.799	-.356 (.283)	.209	-.220 (.265)	.406
Narrative Preference								
Engaged Citizen Narrative	-.339 (.494)	.493	-.232 (.542)	.668	.098 (.719)	.891	2.724 (.634)	.000
Science Narrative	.783 (.597)	.190	.450 (.682)	.509	.489 (.700)	.485	2.707 (.744)	.000
Factors Impacting Water Quality								
Agriculture	-.459 (.573)	.423	.060 (.492)	.902	-.481 (.504)	.339	-.454 (.637)	.476
Waste-water	.703 (.427)	.100	.831 (.463)	.073	-.243 (.484)	.614	.236 (.455)	.604
Demographics								
Gender (Female)	-.229 (.439)	.601	.211 (.495)	.669	-.876 (.461)	.058	-1.276 (.547)	.020
Age	-.032 (.016)	.051	-.023 (.015)	.128	-.006 (.018)	.720	.014 (.018)	.423
Political Ideology	.050 (.259)	.845	.217 (.277)	.434	-.297 (.288)	.302	-.148 (.261)	.569
Education	-.187 (.169)	.267	-.082 (.181)	.648	.004 (.175)	.980	-.143 (.163)	.381
Income	.281 (.157)	.074	.103 (.135)	.444	-.151 (.133)	.259	-.099 (.153)	.516
Number of Cases	50	.	50		50		50	
Wald Chi ²	17.02	.317	36.87	.001	35.90	.001	57.73	.000
Pseudo R ²	0.1169		0.148		0.137		0.242	
Log Pseudo Likelihood	-60.043		-59.802		-58.636		-50.217	

Notes: Robust standard errors are in parenthesis. Results for each model were estimated using an Ordered Probit Regression.

Table 9.1B: Indigenous Policy Preferences Regarding Levees and the Concrete Channel (REDUCED MODEL)

Independent Variables	<u>Reconstruct Levees</u>		<u>Reinforce Levees</u>		<u>Remove Levees</u>		<u>Remove Sections of Concrete Channel</u>	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
Risk Perceptions								
Health Risk	1.439 (.675)	.033	1.159 (.519)	.026	-.379 (.723)	.600	-.261 (.774)	.735
Ecosystem Risk	-1.218 (.687)	.076	-.022 (.671)	.973	.749 (.660)	.256	.947 (.723)	.190
Sho-Ban Risk	-.415 (.471)	.379	-.208 (.536)	.697	-.095 (.364)	.794	-1.00 (.619)	.105
Engaging the Portneuf River	-.280 (.172)	.103	-.334 (.172)	.052	.145 (.167)	.384	.111 (.189)	.557
Trust in Institutions								
US Government	.084 (.304)	.780	.076 (.309)	.805	.216 (.265)	.415	.430 (.258)	.096
Pocatello City Government	.245 (.282)	.385	.186 (.280)	.508	-.457 (.232)	.050	-.240 (.231)	.299
Narrative Preference								
Engaged Citizen Narrative	-.258 (.516)	.617	-.189 (.496)	.702	.084 (.746)	.909	2.637 (.559)	.000
Science Narrative	.979 (.609)	.108	.454 (.603)	.451	.484 (.695)	.486	2.643 (.589)	.000
Factors Impacting Water Quality								
Agriculture	-.626 (.545)	.251	-.155 (.469)	.740	-.257 (.426)	.546	-.459 (.588)	.434
Waste-water	.823 (.411)	.045	.748 (.406)	.065	-.156 (.460)	.734	.296 (.409)	.470
Demographics								
Gender (Female)	-.481 (.394)	.222	.244 (.422)	.563	-.961 (.419)	.022	-1.439 (.478)	.003
Age (Older)	-.028 (.015)	.065	-.022 (.013)	.089	-.006 (.016)	.680	.014 (.017)	.417
Income	.198 (.133)	.137	.096 (.115)	.402	-.192 (.113)	.090	-.181 (.113)	.111
Number of Cases	51		51		51		51	
Wald Chi ²	18.33	0.145	35.44	.000	42.10	.000	74.31	.000
Pseudo R ²	0.124		0.134		0.131		0.242	
Log Pseudo Likelihood	-61.441		-61.816		-60.345		-51.207	

Notes: Robust standard errors are in parenthesis. Results for each model were estimated using an Ordered Probit Regression.

Policy Preferences Regarding Recreational Options

Table 9.2A illustrates the full model which includes the demographic variables of “Political Ideology” and “Education. Table 9.2B illustrates the reduced model, which I will be elaborating on. This model has policy options grouped together based on having to do with recreation. The first interesting finding is that those who have increased levels of trust in the Pocatello City Government are more likely to support the policy option to “construct a pipeline to increase water flow by bringing water to the Portneuf from other areas.” Based upon issues like KXL and the Dakota Access Pipeline, one might assume that any option with the word ‘pipeline’ might be unfavorable.

The model with the policy option to “stock fish” is unhealthy according to the Wald Chi Square test. However, the model suggests that those who identify as female are less likely to support this policy option.

The policy option stating “create more river access points and parking” garnered support from those who have increased levels of trust in the US government.

The final policy option in this group states “create designated areas for canoeing and kayaking.” Those who have increased levels of trust in the US government were more likely to support this policy option. Interestingly, those who had increased levels of trust in the Pocatello City government were less likely to support this option. Those who identified as female are less likely to support creating areas for canoeing and kayaking. Those with higher levels of income supported this option, which makes sense as those who are wealthier may be more likely to own canoes and kayaks.

Table 9.2A: Indigenous Policy Preferences Regarding Recreational Options (FULL MODEL)

Independent Variables	<u>Construct a Pipeline</u>		<u>Stock Fish</u>		<u>Create more river access</u>		<u>Create areas for Canoeing and Kayaking</u>	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
Risk Perceptions								
Health Risk	.508 (.577)	.379	-.724 (.705)	.305	-.057 (.649)	.929	.562 (.537)	.295
Ecosystem Risk	-.314 (.620)	.613	1.170 (.736)	.112	.912 (.610)	.135	.730 (.670)	.276
Sho-Ban Risk	-.190 (.474)	.688	.066 (.350)	.850	-.332 (.478)	.487	-.521 (.343)	.129
Recreational Activity	.016 (.172)	.925	-.095 (.195)	.623	.232 (.172)	.177	.284 (.221)	.200
Trust in Institutions								
US Government	-.118 (.283)	.676	-.211 (.251)	.400	.462 (.256)	.071	.741 (.275)	.007
Pocatello City Government	.530 (.278)	.057	.315 (.255)	.217	-.181 (.227)	.425	-.576 (.251)	.022
Narrative Preference								
Engaged Citizen Narrative	.551 (.656)	.401	-.727 (.541)	.180	-.507 (.455)	.265	.554 (.512)	.280
Science Narrative	-.206 (.698)	.768	-1.208 (.642)	.060	-.484 (.528)	.359	.982 (.495)	.047
Factors Impacting Water Quality								
Agriculture	-.176 (.465)	.704	.428 (.507)	.398	.109 (.658)	.868	.421 (.751)	.575
Waste-water	.275 (.410)	.502	.025 (.397)	.950	-.469 (.410)	.253	-.118 (.431)	.783
Demographics								
Gender (Female)	-.109 (.513)	.832	-.520 (.403)	.197	-.102 (.459)	.823	-1.053 (.519)	.042
Age	-.014 (.014)	.319	-.008 (.013)	.555	.008 (.015)	.577	-.014 (.021)	.481
Political Ideology	.097 (.242)	.686	.019 (.265)	.942	-.064 (.262)	.805	-.245 (.254)	.334
Education	-.150 (.147)	.307	.098 (.138)	.478	-.037 (.136)	.786	-.178 (.174)	.304
Income	.072 (.125)	.563	.032 (.144)	.820	.218 (.150)	.146	.375 (.166)	.024
Number of Cases	50		49		50		50	
Wald Chi ²	36.89	0.001	18.24	0.250	38.11	.000	19.21	.204
Pseudo R ²	0.120		0.120		0.097		0.160	
Log Pseudo Likelihood	-64.248		-58.838		-69.125		-58.878	

Notes: Robust standard errors are in parenthesis. Results for each model were estimated using an Ordered Probit Regression.

Table 9.2B: Indigenous Policy Preferences Regarding Recreational Options (REDUCED MODEL)

Independent Variables	<u>Construct a Pipeline</u>		<u>Stock Fish</u>		<u>Create more river access</u>		<u>Create areas for Canoeing and Kayaking</u>	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
Risk Perceptions								
Health Risk	.723 (.562)	.198	-.428 (.682)	.530	.307 (.640)	.631	.715 (.526)	.174
Ecosystem Risk	-.510 (.572)	.373	.667 (.707)	.346	.423 (.630)	.501	.574 (.598)	.337
Sho-Ban Risk	-.249 (.494)	.614	.038 (.332)	.908	-.357 (.440)	.417	-.480 (.334)	.150
Recreational Activity	-.050 (.166)	.762	-.159 (.196)	.417	.146 (.167)	.383	.210 (.196)	.285
Trust in Institutions								
US Government	-.205 (.266)	.440	-.167 (.234)	.474	.444 (.257)	.084	.716 (.282)	.011
Pocatello City Government	.619 (.244)	.011	.295 (.231)	.202	-.176 (.218)	.420	-.595 (.246)	.016
Narrative Preference								
Engaged Citizen Narrative	.621 (.613)	.311	-.561 (.491)	.254	-.412 (.428)	.337	.479 (.535)	.370
Science Narrative	-.036 (.582)	.950	-.779 (.577)	.178	-.186 (.462)	.687	.825 (.420)	.049
Factors Impacting Water Quality								
Agriculture	-.362 (.439)	.409	.452 (.461)	.326	.119 (.584)	.838	.414 (.720)	.565
Waste-water	.367 (.382)	.336	.338 (.419)	.420	-.211 (.388)	.586	-.128 (.368)	.728
Demographics								
Gender (Female)	-.304 (.435)	.485	-.723 (.408)	.077	-.368 (.482)	.445	-1.130 (.540)	.036
Age	-.011 (.012)	.378	.002 (.015)	.893	.013 (.014)	.375	-.017 (.018)	.350
Income	.013 (.105)	.897	.047 (.130)	.716	.170 (.124)	.173	.258 (.136)	.058
Number of Cases	51		50		51		51	
Wald Chi ²	32.93	0.001	14.31	.352	21.06	.071	19.90	.097
Pseudo R ²	0.111		0.100		0.081		0.149	
Log Pseudo Likelihood	-65.905		-61.819		-72.126		-60.720	

Notes: Robust standard errors are in parenthesis. Results for each model were estimated using an Ordered Probit Regression.

Policy Preferences Concerning Agricultural Options

Table 9.3A illustrates the full model which includes the demographic variables of “Political Ideology” and “Education. Table 9.3B illustrates the reduced model, which I will be elaborating on. This model has policy options grouped together based on having to do with agriculture. The policy option that states “buy water rights from upriver to increase water quantity and flow” was supported by those who indicated higher levels of income. Those who identified as female and those who engaged in recreational activity more often were less likely to support this option.

Both those who preferred the “Engaged” and “Science” narrative were more likely to support the policy option that stated, “plant more vegetation along the river.” Those who identified as female were less likely to support the same option.

Those who had increased levels of trust in the “US Government” were more likely to support the option stating, “ban agricultural flood irrigation.” However, those who had increased levels of trust in the “Pocatello City Government” were less likely to support the banning of agricultural flood irrigation. Additionally, those who preferred the “Science” narrative were more likely to support this option. Those who believe that “Agriculture” is the main factor impacting water quality in the Portneuf River also supported the banning of ag flood irrigation, unsurprisingly. Finally, those who indicated higher levels of income were less likely to support the banning of agricultural flood irrigation.

Those who believe that “Agriculture” is the main factor impacting water quality in the Portneuf River were more likely to support the policy option stating, “create a buffer zone

between agriculture, the river, and the Portneuf River's tributaries." Oddly, those who identified as female were less likely to support the creation of a buffer zone.

The final policy option in this group states, "restore the natural watercourse of the Portneuf River (put in meanders). Both those who preferred the "Engaged" and "Science" narrative were more likely to support this policy option. Also, those who believe that "Waste-water" is the main factor impacting the water quality of the Portneuf supported restoring the natural course of the river. Once again, those who identified as female were against restoring the natural course, as were those who indicated higher levels of income.

Overall, there was generally support for many of the policy options provided. Interestingly, those who identified as female were less likely to support any of the proposed policy options. Further research would need to be done in order to understand the lack of support and find out what options would be more appealing to females.

Table 9.3A: Indigenous Policy Preferences Regarding Agricultural Options (FULL MODEL)

Independent Variables	<u>Buy Water Rights</u>		<u>Plant More Vegetation</u>		<u>Ban Ag Flood Irrigation</u>		<u>Create Buffer Zone</u>		<u>Restore Natural Course</u>	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
Risk Perceptions										
Health Risk	.768 (.710)	.279	-.607 (.583)	.298	.116 (.638)	.856	.563 (.520)	.280	.041 (.751)	.956
Ecosystem Risk	-.683 (.708)	.335	.257 (.565)	.649	.049 (.727)	.946	.959 (.668)	.151	-.234 (.748)	.753
Sho-Ban Risk	-.340 (.412)	.408	.581 (.466)	.212	.144 (.380)	.704	-.290 (.419)	.488	-.286 (.376)	.447
Recreational Activity	-.281 (.203)	.167	.084 (.173)	.626	.060 (.212)	.775	.131 (.194)	.499	.124 (.210)	.554
Trust in Institutions										
US Government	.089 (.286)	.755	-.241 (.367)	.511	.442 (.334)	.186	.416 (.338)	.219	.428 (.297)	.150
Pocatello City Government	.135 (.288)	.638	.253 (.345)	.463	-.475 (.304)	.118	-.305 (.333)	.360	-.380 (.262)	.147
Narrative Preference										
Engaged Narrative	.747 (.624)	.232	1.209 (.556)	.030	.752 (.632)	.234	.378 (.730)	.604	.874 (.528)	.098
Science Narrative	1.013 (.749)	.177	1.517 (.689)	.028	1.712 (.783)	.029	.853 (.724)	.239	.973 (.608)	.109
Factors Impacting Water Quality										
Agriculture	.024 (.570)	.965	.766 (.680)	.260	.816 (.625)	.192	1.019 (.502)	.043	.438 (.571)	.443
Waste-water	.017 (.492)	.972	.253 (.413)	.539	.394 (.490)	.421	-.071 (.432)	.869	1.062 (.482)	.028
Demographics										
Gender (Female)	-1.719 (.439)	.000	-1.873 (.787)	.017	-.823 (.583)	.158	-1.673 (.573)	.004	-1.051 (.425)	.013
Age	-.024 (.015)	.117	-.015 (.018)	.383	.005 (.017)	.757	-.020 (.018)	.287	.006 (.017)	.692
Political Ideology	.038 (.305)	.901	.337 (.304)	.268	-.273 (.264)	.301	.066 (.285)	.817	.170 (.267)	.524
Education	-.137 (.157)	.380	.039 (.187)	.832	.040 (.158)	.799	.194 (.181)	.285	-.012 (.179)	.946
Income	-.137 (.158)	.059	.053 (.153)	.729	-.220 (.116)	.057	.048 (.140)	.733	-.258 (.163)	.114
Number of Cases	50		49		49		50		50	
Wald Chi ²	48.51	.000	22.66	.091	29.22	.015	31.73	.007	33.58	.0039
Pseudo R ²	0.195		0.210		0.142		0.195		0.173	
Log Pseudo Likelihood	-54.202		-43.863		-56.033		-46.643		-44.873	

Notes: Robust standard errors are in parenthesis. Results for each model were estimated using an Ordered Probit Regression.

Table 9.3B: Indigenous Policy Preferences Regarding Agricultural Options (REDUCED MODEL)

Independent Variables	<u>Buy Water Rights</u>		<u>Plant More Vegetation</u>		<u>Ban Ag Flood Irrigation</u>		<u>Create Buffer Zone</u>		<u>Restore Natural Course</u>	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
Risk Perceptions										
Health Risk	.991 (.668)	.138	-.574 (.492)	.244	.155 (.583)	.790	.523 (.493)	.289	.132 (.691)	.849
Ecosystem Risk	-.864 (.652)	.185	.123 (.500)	.805	-.009 (.658)	.988	.805 (.654)	.218	-.334 (.687)	.627
Sho-Ban Risk	-.410 (.410)	.317	.566 (.437)	.196	.163 (.375)	.663	-.242 (.356)	.497	-.330 (.360)	.361
Recreational Activity	-.339 (.184)	.065	.079 (.170)	.641	.064 (.201)	.749	.155 (.201)	.440	.107 (.190)	.571
Trust in Institutions										
US Government	.027 (.267)	.918	-.305 (.362)	.401	.519 (.302)	.086	.461 (.327)	.159	.384 (.281)	.171
Pocatello City Government	.192 (.263)	.464	.385 (.325)	.236	-.591 (.255)	.021	-.328 (.314)	.296	-.311 (.238)	.192
Narrative Preference										
Engaged Narrative	.797 (.614)	.194	1.319 (.584)	.024	.670 (.620)	.279	.453 (.722)	.530	.912 (.535)	.088
Science Narrative	1.133 (.705)	.108	1.821 (.710)	.010	1.576 (.659)	.017	1.049 (.677)	.122	1.121 (.561)	.046
Factors Impacting Water Quality										
Agriculture	-.095 (.524)	.855	.492 (.552)	.373	1.032 (.534)	.054	1.098 (.486)	.024	.310 (.522)	.552
Waste-water	.108 (.458)	.813	.340 (.373)	.361	.396 (.470)	.400	.059 (.412)	.886	1.134 (.450)	.012
Demographics										
Gender (Female)	-1.872 (.414)	.000	-1.968 (.708)	.005	-.823 (.509)	.106	-1.660 (.554)	.003	-1.121 (.386)	.004
Age	-.021 (.015)	.163	-.010 (.017)	.531	.003 (.016)	.834	-.015 (.018)	.385	.010 (.016)	.520
Income	.235 (.124)	.059	.118 (.149)	.431	-.235 (.120)	.050	.121 (.119)	.310	-.245 (.143)	.088
Number of Cases	51		50		50		51		51	
Wald Chi ²	41.82	.000	23.51	.036	25.70	.018	33.23	.001	32.53	.002
Pseudo R ²	0.202		0.212		0.148		0.189		0.187	
Log Pseudo Likelihood	-54.949		-44.606		-57.096		-48.073		-45.200	

Notes: Robust standard errors are in parenthesis. Results for each model were estimated using an Ordered Probit Regression.

Chapter 10: Discussion, Integration, & Conclusion

The results of this study illustrate that the topic of the Portneuf River elicited many strong opinions from Tribal citizens. Though this study was small in nature, it does suggest that water management issues are of great importance to Indigenous respondents and calls for further studies. Perhaps a larger study within the Shoshone-Bannock Nation, and/or a larger study across multiple Tribal nations.

Chapter five described how Tribal citizens utilize the Portneuf River, how important attributes of the river were, and how satisfied they were with those attributes. While Tribal citizens did not utilize many of the recreational areas to a high degree, with the exception of Lava Hot Springs and the Fort Hall Bottoms, in general, they stated that many of the attributes of the river were highly important. Despite those things being of high importance, levels of satisfaction seemed to be neutral overall. These results appear to indicate that even though Tribal citizens appear to utilize the recreational areas to lesser degree, they still place great importance on the condition and attributes of the Portneuf.

Chapter six described levels of concern, or risk perceptions, that Tribal citizens had with the Portneuf river. Overall, levels of concern were high on every issue. Tribal citizens indicated high levels of concern toward ecosystem risks, health risks, recreational risks, and the risk of not being a part of the decision-making process. Due to their high levels of concern, it stands to reason that Tribal citizens likely have strong policy opinions that policy makers need to be made aware of concerning management of the Portneuf.

The results of chapter seven illustrate the importance of citizen trust in institutions. The chapter explored Tribal citizen trust in the US Government, State government agencies, local

governmental agencies, and the Shoshone-Bannock Tribal Government. Trust in institutions relates to risk perceptions, and policy support. This chapter served in illustrating that most of the entities asked about garnered some trust, and also brought attention to the impact of “Agriculture” on water quality which seemed to be influential for trust. Deeper study into why agriculture was so influential is needed.

The results of chapter eight’s multinomial regression indicate that most respondents supported the “Science” narrative over the “Duty-Based” or “Engaged” narrative. While the “Science” narrative in the survey instrument was written from a Western perspective, it still seems to resonate with Indigenous respondents. I speculate that the scientific narrative appealed to respondents’ feelings of responsibility to the environment. Though, further study is required to better understand why the “Science” narrative was so relatable.

The results of chapter nine indicate that overall, respondents generally support many of the different proposed policy options. Future research should include discussions with Tribal government and citizens in order to understand what policy options they might support that were not illustrated on the original survey instrument. An interesting finding was that “Political Ideology” and “Education” seemed to have very little impact on the policy preferences of Tribal citizens. This may indicate that water and environmental issues, for Native peoples, seem to transcend ideology. Liberal and Conservative Tribal citizens, despite level of education, seem to agree upon policy options, which does not necessarily align with theory.

The results of this study overall give some interesting insight into Native perspectives toward river management. While some of the results were expected, there were many interesting results that require further study. While I cannot definitively say that Indigenous perspectives on

water and environmental issues differ greatly from that of the wider population, this small study does indicate that Native/Indigenous culture likely influences opinions, attitudes, and beliefs, much like other socializing agents. In the future, bigger sample sizes, and/or engaging more than one Tribal nation in surveying is recommended. Further, those Tribes and Tribal citizens should be engaged in the creation of the survey instrument. Also, future research should consider a qualitative approach like interviewing or focus groups in order to gain a more nuanced understanding. Such approaches would provide greater context about cultural connections to land, water, animals, environment, etc.

Integration

Previously, I stated that this project serves as an important test case in understanding the attitudes and opinions of Indigenous peoples toward water and environmental issues, specifically the management of the Portneuf River. While the sample size was small, the findings illustrate the need to address public opinion polling and how it is done with marginalized groups, specifically Indigenous peoples. Where this study may be best integrated into action, is by first showing the results to the Portneuf River Vision group and the individuals tasked with management of the Portneuf. While I am aware of a survey that was given to stakeholders, identified by the city and Portneuf River Vision group, and other community members, I am unaware of how those results may differ from the results of this survey. Given the fact that the city did not originally ask Tribal citizens to participate, I might speculate that they may have assumed Tribal responses would differ greatly from that of non-Native respondents. This may have affected their planning. However, that is pure speculation. This study may also serve as an initial step toward creating better, more culturally representative/responsive survey instruments.

One major takeaway that this research leads to, is that the way in which research is done currently is missing a key element. The demographic most likely to participate in research usually does not include a significant amount of sub-culture or minority groups, such as Black, Latinx, and Indigenous peoples. Therefore, only part of the whole picture is being captured. Linda Alcoff (1991), a feminist theorist, challenged scholars to consciously change the way they do research by avoiding speaking for others and instead advocated for them to speak with others. Rather than being content in studying one culture group, making it “the standard,” and arbitrarily adding the opinions of underrepresented sub-culture/minority groups to existing perspectives, researchers should focus on understanding issues by dismantling traditional normative understandings and embracing the differences of perspectives of all others. It is my sincere hope that this project leads to more research being done with other sub-culture groups, so that a truly representative picture of public opinion toward water and environmental issues can be painted within the United States.

Conclusion

In conclusion, this project was done too better understand Indigenous preferences concerning water management of the Portneuf River. Specifically, I wanted to examine policy preferences of Indigenous citizens concerning an issue that they had previously not been formally asked their opinions on. I believed that Indigenous peoples were likely to care a great deal about water and environmental issues given the importance these issues have within Indigenous cultures. Through administering a public opinion survey based on attitudes of the Portneuf River, I was able to illustrate the preferences of Tribal citizens about various topics including risk perceptions, trust in government, narrative preference, and policy preferences. Consequently, I was able to identify several interesting findings, including the fact that Tribal

citizens had high levels of risk perceptions overall, and were generally supportive of many of the different proposed policy options. After completing this project, I would encourage more research being done with Indigenous populations as well as other sub-culture groups, especially on the topic of water and environmental issues – as those are issues that disproportionately affect minorities. Developing a rapport and working relationship with these understudied populations is a first step, while recognizing the importance for these groups to conduct these types of projects within their own communities, would likely lead to a more representative picture of public opinion within the U.S and more culturally inclusive policy being passed.

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Appendix A: IRB Approval Letter



Office for Research Integrity
921 South 8th Avenue, Stop 8046 • Pocatello, Idaho 83209-8046

March 18, 2016

James Stoutenborough
Political Science
MS 8073

RE: regarding study number IRB-FY2016-293: Fort Hall Survey 2016

Dear Dr. Stoutenborough:

I agree that this study qualifies as exempt from review under the following guideline: Category 2: Anonymous educational tests, surveys, interviews, or observations. This letter is your approval, please, keep this document in a safe place.

Notify the HSC of any adverse events. Serious, unexpected adverse events must be reported in writing within 10 business days.

You are granted permission to conduct your study effective immediately. The study is not subject to renewal.

Please note that any changes to the study as approved must be promptly reported and approved. Some changes may be approved by expedited review; others require full board review. Contact Tom Bailey (208-282-2179; fax 208-282-4723; email: humsubj@isu.edu) if you have any questions or require further information.

Sincerely,

A handwritten signature in blue ink, appearing to read "R. Baergen".

Ralph Baergen, PhD, MPH, CIP
Human Subjects Chair

Appendix B: 2016 EPSCoR Native American Survey

You are being asked to participate in a survey of public attitudes about the Portneuf River and region. This survey is being conducted as part of the "Managing Idaho's Landscapes for Ecosystem Services" project, part of a National Science Foundation EPSCoR grant being administered by Idaho State University, Boise State University and the University of Idaho. The results from the survey will benefit researchers as they try to understand how individuals value watersheds. Your participation in the survey is voluntary. There is no penalty for not completing the survey. If you choose to complete the survey, it will take approximately 10 minutes. You may quit the survey at any time. Your answers will be completely anonymous. If you have any questions, concerns or complaints about the survey or research, please contact Dr. James Stoutenborough (208) 282-4833 or at stoujame@isu.edu.

1. Thinking about the Portneuf River and groundwater, on a scale of 1 to 5, with 1 being not at all concerned and 5 being very concerned, how concerned are you with each of the following issues:

	Not At All Concerned		Neutral		Very Concerned
	1	2	3	4	5
The Shoshone-Bannock Tribe not being included in discussions on how to manage the Portneuf River:	1	2	3	4	5
Flooding:	1	2	3	4	5
Health issues due to pollution:	1	2	3	4	5
Health issues due to swimming or recreating in water:	1	2	3	4	5
Inability to eat fish due to contamination:	1	2	3	4	5
Lack of recreational opportunities:	1	2	3	4	5
Water flow:	1	2	3	4	5
Wildlife habitat:	1	2	3	4	5
Pollution:	1	2	3	4	5
Pharmaceuticals in surface water:	1	2	3	4	5
Pharmaceuticals in groundwater:	1	2	3	4	5
The effects to plant and animal life from pharmaceuticals in the water:	1	2	3	4	5

2. Different levels of government claim responsibility for the Portneuf River from Toponce Creek, through Pocatello, to the boundary of the Shoshone-Bannock Reservation. Using the 1 to 5 scale (1 = no trust to 5 = complete trust), please indicate your level of trust in the following institutions:

	No Trust		Neutral		Complete Trust
	1	2	3	4	5
US Government	1	2	3	4	5
US Army Corps of Engineers:	1	2	3	4	5
US Environmental Protection Agency:	1	2	3	4	5
Idaho Department of Environmental Quality:	1	2	3	4	5
Idaho Department of Water Resources:	1	2	3	4	5
Pocatello City Government:	1	2	3	4	5
Local Irrigation Districts:	1	2	3	4	5
Portneuf Soil and Water Conservation District:	1	2	3	4	5
Shoshone-Bannock Tribal Government	1	2	3	4	5

3. Below are a few environmental issues facing some communities in southeastern Idaho. Please indicate how serious you consider each issue to be for southeast Idaho.

	Not At All Serious		Neutral		Very Serious
	1	2	3	4	5
Air Pollution:	1	2	3	4	5
Water Pollution:	1	2	3	4	5
Wildfire:	1	2	3	4	5
Drought:	1	2	3	4	5
Global warming/climate change:	1	2	3	4	5

4. What do you think is the main factor impacting water quality in the Portneuf River? (Check one)

- | | | |
|---|---|---|
| ☐ Diversion (water taken out of the river) | ☐ Agriculture | ☐ Concrete Channel |
| ☐ Waste-water from the water treatment plant | ☐ Industrial Pollution | ☐ Do not know |

5. Where do you recreate, and what type of recreational activities do you most commonly participate in along the Portneuf River? (Choose all that apply)

	Do not recreate there	Bait/Lure Fish	Fly Fish	Hunt	Canoe/Kayak	Bike	Run	Walk	Sight-See	Dog Walk
Toponce Creek	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Pebble Creek (not ski area)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Dempsey Creek	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Robbers Roost Creek	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Marsh Creek	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mink Creek	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Gibson Jack Creek	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
City Creek	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Trail Creek	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Portneuf River (main channel)	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mike's Place	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Lava Hot Springs	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Edson Fichter	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Greenway near Raymond Park	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Sacajawea Park	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Batiste Road Access	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Fort Hall Bottoms	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

6. On average, how often do you engage in recreational activity along the Portneuf River system (this includes the Portneuf River and above listed tributaries and creeks)?

- ☐ I have never spent time along the Portneuf River ☐ Almost never ☐ A few times a year
☐ Once a month ☐ Once a week ☐ Several times a week

7. Considering the Shoshone-Bannock Tribe's participation in the decisions being made about the Portneuf River, how much do you agree or disagree with the following statements:

	Strongly Disagree				Strongly Agree
Any decision made regarding the Portneuf River directly impacts the Shoshone-Bannock Tribe.	1	2	3	4	5
The Shoshone-Bannock Tribe should have an equal say in the decision making process regarding the Portneuf River.	1	2	3	4	5
I believe the Tribal Government will accurately represent the desires of Shoshone-Bannock Tribal Members when participating in decision making regarding the Portneuf River.	1	2	3	4	5
I would support the Shoshone-Bannock Tribe pursuing litigation to force the City of Pocatello to include the Tribe as an equal partner in Portneuf River decision making.	1	2	3	4	5
I would support the Shoshone-Bannock Tribe pursuing litigation to force the State of Idaho to include the Tribe as an equal partner in Portneuf River decision making.	1	2	3	4	5
I would support the Shoshone-Bannock Tribe pursuing litigation to force the United States Government to include the Tribe as an equal partner in Portneuf River decision making.	1	2	3	4	5

8. How important is it to you for the Portneuf River system to provide:

	Very Unimportant		Neutral		Very Important
Recreation for walking and running:	1	2	3	4	5
Recreation for biking:	1	2	3	4	5
Recreation for bait / lure fishing:	1	2	3	4	5
Recreation for fly fishing:	1	2	3	4	5
Recreation for canoeing and kayaking:	1	2	3	4	5
Groundwater resupply in southeast Idaho:	1	2	3	4	5
Flood mitigation:	1	2	3	4	5
Habitat for birds and wildlife:	1	2	3	4	5
A means to enhance property values:	1	2	3	4	5
A means to revitalize communities:	1	2	3	4	5
Irrigation:	1	2	3	4	5
A healthy ecosystem:	1	2	3	4	5

9. How satisfied are you that the Portneuf River system provides:

	Very Unsatisfied		Neutral		Very Satisfied
	1	2	3	4	5
Recreation for walking and running:					
Recreation for biking:	1	2	3	4	5
Recreation for bait / lure fishing:	1	2	3	4	5
Recreation for fly fishing:	1	2	3	4	5
Recreation for canoeing and kayaking:	1	2	3	4	5
Groundwater resupply in southeast Idaho:	1	2	3	4	5
Flood mitigation:	1	2	3	4	5
Habitat for birds and wildlife:	1	2	3	4	5
A means to enhance property values:	1	2	3	4	5
A means to revitalize communities:	1	2	3	4	5
Irrigation:	1	2	3	4	5
A healthy ecosystem:	1	2	3	4	5

Please read the following accounts of how different groups talk about the Portneuf River and how the river might be important to southeast Idaho.

Account #1

Groups in southeast Idaho are currently working to improve water quality, water quantity, and recreational opportunities along the Portneuf River. For too long, the Portneuf River has been neglected and it is the individual responsibility of southeast Idaho citizens to assist in the economic restoration of the river. A polluted and channelized river harms local recreation users and businesses that depend on tourism. Groups that are working to restore the river to health are exercising good business sense and river restoration is an efficient way to better use our local resources. The federal government has had too much say in how the Portneuf River has been managed and this has harmed southeast Idaho communities.

Account #2

Scientific evidence suggests the Portneuf River, as it passes through Pocatello, is ecologically impaired and does not meet standards guaranteed under the Clean Water Act. This evidence, which has existed for decades, includes chronically high levels of fine sediment and periodically elevated levels of bacteria, both conditions that may be exacerbated by the channelized state of the river and the low flows that typically occur in late summer. Therefore, sound ecological science supports the efforts by some community groups to restore the Portneuf River. If restoration efforts are coupled with ongoing monitoring of the river ecosystem, scientists will be able to evaluate whether these activities are successful. If they are successful, then the ecological state of the river should improve.

Account #3

Groups in southeast Idaho are currently working to improve water quality and water quantity in the Portneuf River in order to benefit the larger ecosystem and community. For too long, the Portneuf River has been neglected. Groups working to restore the Portneuf River are demonstrating good global citizenship, providing an excellent way for individuals to get involved in their community, and fighting the adverse consequences of climate change. A polluted and channelized river harms living creatures such as fish, birds, and other organisms that are important for river biodiversity. For too long, industries and other economic interests have harmed the Portneuf River.

Account #4

Some people in southeast Idaho believe that the Portneuf River is fine as is. There might be some problems, but nothing that is important enough to address.

10. Which of the four accounts of the Portneuf River best represents your point of view?

- ☐ Account 1 ☐ Account 2 ☐ Account 3 ☐ Account 4

11. Which of the four accounts of the Portneuf River do you think best represents how decision makers in southeast Idaho should discuss river management with the general public?

- ☐ Account 1 ☐ Account 2 ☐ Account 3 ☐ Account 4

12. Which of the four accounts of the Portneuf River least represents your point of view?

- ☐ Account 1 ☐ Account 2 ☐ Account 3 ☐ Account 4

13. With which of the following three accounts do you most disagree?

- ☐ Account 1 ☐ Account 2 ☐ Account 3

14. Regardless of your personal preference, which of the following three accounts do you believe would be the most likely to result in a successful policy for river management?

- ☐ Account 1 ☐ Account 2 ☐ Account 3

15. Although they may not match perfectly, did you feel as though your general view toward the river was represented in the above accounts?

- ☐ Yes ☐ No

16. A number of policy options have been proposed to manage water resources along the Portneuf River. Please indicate whether you strongly oppose, oppose, neither oppose nor support, support or strongly support each of the following options:

	Strongly Oppose				Strongly Support
	1	2	3	4	5
Restore the natural watercourse of the Portneuf River (put in meanders).					
Reconstruct the levees and channel to incorporate parts of these structures into green areas (parks or trails) along the river, while maintaining safety protocols to protect the area from flooding.	1	2	3	4	5
Reinforce and strengthen the existing levees to protect against future floods.	1	2	3	4	5
Remove levees to restore the natural water flow.	1	2	3	4	5
Construct a pipeline to increase water flow by bringing water to the Portneuf from other areas.	1	2	3	4	5
Stock fish.	1	2	3	4	5
Create more river access points and parking.	1	2	3	4	5
Buy water rights from upriver to increase water quantity and flow.	1	2	3	4	5
Plant more vegetation along the river.	1	2	3	4	5
Remove sections of the concrete channel.	1	2	3	4	5
Ban agricultural flood irrigation.	1	2	3	4	5
Create a buffer zone between agriculture, the river, and the Portneuf River's tributaries.	1	2	3	4	5
Create designated areas for canoeing and kayaking.	1	2	3	4	5

The following questions are designed to help us understand the demographic differences between attitudes, which will help the Tribal Government to understand your perspectives on the Portneuf River system. Again, your responses are completely anonymous.

17. What is your sex? ☐ Female ☐ Male
18. What is your marital status? ☐ Not Married ☐ Married
19. What is your age? _____
20. What best describes your current neighborhood or residence?
☐ Fort Hall District ☐ Ross Fork District ☐ Lincoln Creek District ☐ Gibson District
☐ Bannock Creek District ☐ Off Reservation
21. How would you describe your political ideology?
☐ Very Liberal ☐ Liberal ☐ Moderate ☐ Conservative ☐ Very Conservative
22. How would you describe your partisan affiliation?
☐ Strong Democrat ☐ Democrat ☐ Independent ☐ Republican ☐ Strong Republican
23. What is the highest education level you have completed?
☐ Some high school ☐ High school graduate or GED ☐ Some College ☐ Associate's degree or trade school
☐ Bachelor's degree ☐ Master's Degree ☐ Professional degree or doctorate (MD, JD, PhD, etc.)
24. What is your annual household income (before taxes)?
☐ Less than \$10,000 ☐ \$10,000 to \$29,999 ☐ \$30,000 to \$49,999 ☐ \$50,000 to \$69,999
☐ \$70,000 to \$89,999 ☐ \$90,000 to \$109,999 ☐ Over \$110,000

Thank you for completing the survey. This is a part of a 5-year, ongoing research project, so we hope we will be able to engage you again at a later date. If you have any additional comments about these questions, or thoughts regarding the Portneuf River system that were not included in this survey, please record them in the box below.

Appendix C: SBT Business Council Resolution: FHBC-2015-1321

RESOLUTION

WHEREAS, Tribal member student, Laticia J. Herkshan approached the Business Council seeking authorization for permission to invite the Tribal membership to participate in a survey of public attitudes about the Portneuf River and region. This survey is being conducted as part of the "Managing Idaho's Landscapes for Ecosystem Services" project, part of a National Science Foundation EPSCOR (Experimental Program to Stimulate Competitive Research) grant being administered by Idaho State University, Boise State University and the University of Idaho. The results from the survey will benefit researchers at the three (3) universities as they try to understand how individuals value watersheds. Participation in the survey is on a voluntary basis; and

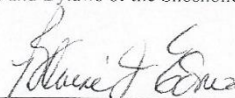
WHEREAS, Water Engineer Else Teton and Water Quality Specialist Candon Tanaka have reviewed the proposed survey and believes it is a good project that could provide more information for the Tribal Water Resources Department with more guidance and goals concerning water resources. Ms. Teton expressed concerns with publication and how the material will be utilized afterwards, since it is not the position of the Shoshone-Bannock Tribes but a survey of Tribal member individuals' interests and values. Ms. Teton recommends that the Tribal Water Resources Department review the material prior to publication, as well as a legal review for future purposes;

NOW, THEREFORE, BE IT RESOLVED BY THE BUSINESS COUNCIL OF THE SHOSHONE-BANNOCK TRIBES, that approval is hereby given for Laticia J. Herkshan to conduct the survey for the public attitudes about the Portneuf River and region, with the stipulation that the Tribal Water Resources Department and Office of Tribal Attorneys to review the said documentation prior to publication; and

BE IT FURTHER RESOLVED, that documents derived in whole or in part, based on the work conducted under this resolution, shall not be published without the expressed consent of the Business Council in the form of a resolution. Any information of documents derived from the survey shall be considered property of the Shoshone-Bannock Tribes.

Authority for the foregoing resolution is found in the Indian Reorganization Act of June 18, 1934 (48 Stat., 984) as amended, and under Article VI, Section 1 (r) of the Constitution and Bylaws of the Shoshone-Bannock Tribes of the Fort Hall Indian Reservation of Idaho.

Dated this 22nd day of September 2015

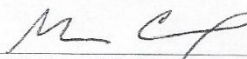


Blaine J. Edmo, Tribal Chairman
Fort Hall Business Council

S E A L

CERTIFICATION

I HEREBY CERTIFY, that the foregoing resolution was passed while a quorum of the Business Council was present by a vote of 6 in favor, and 1 not voting (BJE) on the date this bears.



Marcus Coby, Tribal Secretary
Fort Hall Business Council

FHBC-2015-1321

Appendix D: Code Book

Variables	Survey Question Wording	Coding
Risk Perceptions		
Health Risk (group) “Health Issues due to pollution” “Health issues due to swimming or recreating in water” “Inability to eat fish due to Contamination” “Pharmaceuticals in surface water” “Pharmaceuticals in groundwater”	“Thinking about the Portneuf River and groundwater, on a scale of 1 to 5, with 1 being not at all concerned and 5 being very concerned, how concerned are you with each of the following issues”	1 = Not at All Concerned 2 = A little Concerned 3 = Neutral 4 = Somewhat Concerned 5 = Very Concerned
Ecosystem Risk (group) “Flooding” “Water flow” “Wildlife habitat” “Pollution” “The effects to plant and animal life from pharmaceuticals in the water”	“Thinking about the Portneuf River and groundwater, on a scale of 1 to 5, with 1 being not at all concerned and 5 being very concerned, how concerned are you with each of the following issues”	1 = Not at All Concerned 2 = A little Concerned 3 = Neutral 4 = Somewhat Concerned 5 = Very Concerned
Recreation Risk “Lack of recreational opportunities”	“Thinking about the Portneuf River and groundwater, on a scale of 1 to 5, with 1 being not at all concerned and 5 being very concerned, how concerned are you with each of the following issues”	1 = Not at All Concerned 2 = A little Concerned 3 = Neutral 4 = Somewhat Concerned 5 = Very Concerned
Sho-Ban Risk “The Shoshone-Bannock Tribe[s] being included in discussions on how to manage the Portneuf River”	“Thinking about the Portneuf River and groundwater, on a scale of 1 to 5, with 1 being not at all concerned and 5 being very concerned, how concerned are you with each of the following issues”	1 = Not at All Concerned 2 = A little Concerned 3 = Neutral 4 = Somewhat Concerned 5 = Very Concerned
Recreational Activity	“On average, how often do you engage in recreational activity along the Portneuf River system (this includes the Portneuf River and above listed tributaries and creeks)?”	1 = I have never spent time along the Portneuf River 2 = Almost never 3 = A few times a year 4 = Once a Month 5 = Once a week 6 = Several times a week
Trust in Institutions		
US Government	“Different levels of government claim responsibility for the Portneuf River from Toponce Creek, through Pocatello, to the boundary of the Shoshone-Bannock Reservation. Using the 1 to 5 scale (1= no trust to 5 = complete trust), please indicate your level of trust in the following institutions”	1 = No Trust 2 3 = Neutral 4 5 = Complete Trust

Pocatello City Government	“Different levels of government claim responsibility for the Portneuf River from Toponce Creek, through Pocatello, to the boundary of the Shoshone-Bannock Reservation. Using the 1 to 5 scale (1= no trust to 5 = complete trust), please indicate your level of trust in the following institutions”	1 = No Trust 2 = A little trust 3 = Neutral 4 = Some trust 5 = Complete Trust
Factors Impacting Water Quality		
Agriculture	“What do you think is the main factor impacting water quality in the Portneuf River?”	1 = Diversion (water taken out of the river) 2 = Agriculture 3 = Concrete Channel 4 = Waste-water from the water treatment plant 5 = Industrial Pollution 6 = Do not know
Waste-Water	“What do you think is the main factor impacting water quality in the Portneuf River?”	1 = Diversion (water taken out of the river) 2 = Agriculture 3 = Concrete Channel 4 = Waste-water from the water treatment plant 5 = Industrial Pollution 6 = Do not know
Industrial Pollution	“What do you think is the main factor impacting water quality in the Portneuf River?”	1 = Diversion (water taken out of the river) 2 = Agriculture 3 = Concrete Channel 4 = Waste-water from the water treatment plant 5 = Industrial Pollution 6 = Do not know
Narrative Preference		
Engaged Citizen Narrative	“Which of the four accounts of the Portneuf River <i>best</i> represents your point of view?”	1 = Duty Based Narrative 2 = Science Narrative 3 = Engaged Citizen Narrative 4 = Do nothing
Science Narrative	“Which of the four accounts of the Portneuf River best represents your point of view?”	1 = Duty Based Narrative 2 = Science Narrative 3 = Engaged Citizen Narrative 4 = Do nothing

SBT Participation in Decision Making		
Decisions directly impact SBT Exact wording: “Any decision made regarding the Portneuf River directly impacts the Shoshone-Bannock Tribe[s]”	Considering the Shoshone-Bannock Tribes’ participation in the decisions being made about the Portneuf River, how much do you agree or disagree with the following statements”	1 = Strongly Disagree 2 3 4 5 = Strongly Agree
Tribes should have equal say Exact wording: “The Shoshone-Bannock Tribe[s] should have an equal say in the decision making process regarding the Portneuf River”	Considering the Shoshone-Bannock Tribes’ participation in the decisions being made about the Portneuf River, how much do you agree or disagree with the following statements”	1 = Strongly Disagree 2 3 4 5 = Strongly Agree
SBT accurately represents Exact wording: “I believe the Tribal Government will accurately represent the desires of Shoshone-Bannock Tribal Members when participating in decision making regarding the Portneuf River.”	Considering the Shoshone-Bannock Tribes’ participation in the decisions being made about the Portneuf River, how much do you agree or disagree with the following statements”	1 = Strongly Disagree 2 3 4 5 = Strongly Agree
Demographics		
Sex (Female)	“What is your sex?”	0 = Male 1 = Female
Age	“What is your age?”	Open ended.
Political Ideology	“How would you describe your political ideology?”	1 = Very Liberal 2 = Liberal 3 = Moderate 4 = Conservative 5 = Very Conservative
Level of education	“What is the highest education level you have completed?”	1 = Some high school 2 = High school graduate or GED 3 = Some College 4 = Associates degree or Trade School 5 = Bachelor’s Degree 6 = Master’s Degree 7 = Professional degree or doctorate
Income	“What is your annual household income (before taxes)?”	1 = Less than \$10,000 2 = \$10,000 to \$29,000 3 = \$30,000 to \$49,000 4 = \$50,000 to \$69,000 5 = \$70,000 to \$89,000 6 = \$90,000 to \$109,000 7 = Over \$110,000