RESTORING RELATIONSHIPS: HUMAN DIMENSIONS AND CLIMATE RESILIENCE CONSIDERATIONS FOR MANAGING PACIFIC LAMPREY IN THE COLUMBIA RIVER

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ABSTRACT

Restoring Relationships:

Human Dimensions and Climate Resilience Considerations for Managing Pacific Lamprey in the Columbia River

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Across the United States, including the Pacific Northwest, Native American communities are demonstrating extraordinary ways of transforming environmental racism and cultural genocide into environmental justice and cultural revitalization. The Columbia River Plateau people choose to live in accordance with *Nami Tamanwit* or Creators Law. Water, Wild native fishes, Wild game, Wild roots that are dug from the ground, and Wild berries, are gathered seasonally and cared for as medicine to the body, heart and spirit since time immemorial. The traditional food system of the Yakama Nation symbolizes complementary environmental and social health. Columbia River Indigenous Traditional Ecological Knowledge (ITEK) is interdisciplinary with

equally great respect and care for each of these cultural keystones. “Sustainability” of wild anadromous fishes today is an inadequate objective, restorative thinking via an Indigenous Knowledge framework can bring together culturally significant Yakama stories with actionable science. This thesis considers human dimensions of Pacific Lamprey (*Asum* in Sahaptin language) management in the Columbia River Basin based on generations of social-ecological reciprocity with this species. *Asum* is a traditional dietary staple that is harvested, cured, prepared and shared in traditional ceremonies of the Yakama, Warm Springs, Umatilla and Nez Perce tribes. Biocultural sovereignty is significant in restoration of an ancient social relationship with *Asum*. Drawing on eighteen interviews with respected tribal Elders raised along the Columbia River in the time of Celilo Falls, this collaborative project is designed to share ITEK with future generations. Testimony from Elder interviews begins at the intersection of the Pacific Ocean with the Columbia river, and extends to Bonneville Dam and up through the confluence of the Yakima and Snake River tributaries.

Keywords: Human Dimensions, Pacific Lamprey, Climate, Columbia River, Yakama

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Introduction

"I think about silk cloth and ribbons"

~Dr. Virginia Beavert~

Atwai (deceased) Dr. Virginia Beavert was 102 years old at the time I had a conversation with her for this thesis research. She has now passed on, but is forever a respected Elder, teacher, and lead author of the Yakama Nation's Sahaptin Dictionary, among countless other publications[1]. Dr. Beavert's contributions to the Yakama Nation language, culture and history are immeasurable. It was a privilege to sit with her in her home to converse about the cultural significance of *Asum*[2] in the Columbia River Basin. When we spoke, Dr. Beavert shared the story of a maiden who would show herself within the Columbia River waters near where the ancient fishery known as Celilo Falls once echoed. The maiden's defining feature was her hair. The "maiden's hair", as witnessed by few of our living Elders today, describes thousands of Pacific Lamprey swimming together, moving in unison in the water at Spearfish, WA. Elders recall looking down into the mainstem Columbia to see black "silk cloth and ribbons" woven across a great portion across the water. Is it possible to ever see this sight again, or is it only alive in story and memory? How might this Indigenous Traditional Ecological Knowledge (ITEK) be useful in Pacific Lamprey management on the present day Columbia River?

My full name is Michael Aaron Buck and my traditional name in Sahaptin from the Columbia River Plateau is *Ka-Kin-As.* My father's name was Kenneth *Puck-Hyah-Toot* (Eagles

[1] The Yakama tradition is to not view or speak the name of the Elders who have passed, for a whole year. I was reluctant to include her interview data at first, but prayed about it over and over and decided it to be so. It is my belief that she participated knowing that I would learn and teach with great integrity and respect, otherwise she would not have consented. Many of the Elders who participated in this research project are also passed on. I am forever grateful to have been a part of their lives and only wish to share their valuable perspectives, teachings and words in a real good way.

[2] *Asum* (n) eel, Pacific Lamprey. The terminology for lamprey used in this academic writing is *Asum*, the Yakama/Yakima Nation' Indigenous reference for this traditional dietary staple.

Circling) Buck from the *Wanapum* (River-People) Band of The Confederated Tribes and Bands of the Yakama Nation (herein abbreviated to the Yakama Nation). My mother's name is Carmen Rose Buck from the Nooksack River in Bellingham, WA. Both my parents were raised in small villages along the Columbia and Nooksack rivers, respectively. White Swan, WA, is where I was raised and is located on the western edge of the Toppenish Valley, just before the reservation land begins to climb up towards sacred Mt. Adams aka "*Pah-to*".

I attended Heritage University on the Yakama Nation Reservation, starting as a biomedical major, aspiring to learn and practice prevention and cultural healing, especially concerning the effects of diabetes in tribal members on the reservation. I was passionate about helping our tribal community through traditional gathering and sharing. As I made friends and began choosing classes that matched my interests and capacity for success, I soon gravitated towards the environmental justice folks on campus. Environmental justice for me at that time, meant protecting and improving access to the traditional foods that I wished to feed to our diabetes-prone relatives in the community.

My mother is a retired Registered Nurse. My mother talked to me about the various sacred connections to traditional foods and medicines of the Columbia River Plateau that she had witnessed stemming from the Elder Yakama men and women at various nursing homes. The Elders would long for traditional foods and would lighten up in the presence of these foods, especially the Pacific Lamprey. Gathering traditional foods all throughout the Columbia River Plateau people’s life, including childhood, helps build a meaningful social and physical relationship to the land and waters. Acknowledging a seasonal round each year is vital to the holistic health of Native people in the Pacific Northwest, including those who lead natural resource management programs. Gathering a traditional food like Pacific Lamprey brings family

members closer to each other with every annual run and harvest. Over time, however, the diminished water quality, quantity, and corresponding annual fish runs can diminish relationship building with water, land, family, and traditional foods. Nevertheless, ancient relationships are strongly rooted and not easily broken or forgotten.

A mutually beneficial relationship between the Plateau people and the Pacific Lamprey has been in existence for thousands of years, if not longer. Without being particularly fond of the eel as a delicacy and traditional dietary staple as an adolescent, I once had a dream that changed the direction and purpose of my life. It happened around present-day Dalles Dam (river km [rkm] 308.2 along the Columbia River; The Dalles, OR). I remember it clearly, and I have told this story many times over the past few years. I do not recall the year or month when this dream occurred, but I do know that I can continue to see it in my mind very clearly.

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I am on the side of a cliff, overlooking the Columbia River. It is night time and across the way I can see the discernable lights of The Dalles Dam. There is very little space to do anything but look around. I am comfortable where I am, although I probably should be worried about how I am going to get off the ledge of this cliff side. The water is close enough for me to reach with a bit of a struggle. There is no way to climb up and so the only option would be to eventually swim along the cliff edges until I could find a way to climb up and out. (I began this vision or dream on the ledge and so I cannot recall nor do I worry about how I got there.) The lights of the dam are comforting and I feel at peace in my mind, body and life. This is perhaps because of being raised at Priest Rapids (river mile 397) and the lights of the dam at night are like a signature of home. I am looking around and I am looking at the dam from this platform.

I see an eel, or a few eels, swimming toward my feet; they are not swimming directly towards me but swimming “freely” as if they know I am there but feel safe in my presence. My mind tells me that it is a neat site to watch and observe, and my mind also tells me that I would love to catch one. I have seen them and caught them in the water before, but I also know it is going to be tricky. There is not much else to think about or even do. I kneel down and lunge forward. I prepare to grab as fast and focused as I can, holding my hand still above the surface of the water. I am kind of thinking, “I’m gonna miss, but at least I am going to try. I am curious about the water in front of me and I recall Elder’s teaching me to jump in the water first to clear and cleanse your mind.

I put my hands in the water first to feel how cool the water is even though the temperature rarely, if ever, stopped me from entering. I am washing my hands slowly and looking at my hands through the water - maybe I can just hold my hands in the water? What happens though is remarkable. I see an eel and more eels swimming my way, from the depths of visible water. I see them, there are quite a few, and they are swimming so that my hands and fingers can touch them. In only a few moments eels are wrapping themselves around both my arms, lots of them. The eels are nice and even sucking on my skin very gently, as we know they do. I lift my arms out of the water, while dripping profusely, and I notice I have two armloads of eels!

The eels are heavy and light simultaneously. It’s difficult to explain the comfort I feel with their bodies wrapped around my bones and skin. It feels natural and makes me feel whole. I lower my arms back into the river after looking into their eyes, their blue eyes. I wonder if I could do it again? I lower them into the water, letting them know I am going to pull my arms out of the water. The eels swim off and I wait a minute and then lower my arms in again. The same

thing happens and the eels wrap up again. I do this repeatedly but am just as amazed as the first time. I never really enter the water or swim off that ledge but it doesn't bother me. I am at peace and the eels are my friends and I know that. I wake up and remember it vividly.

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Across the United States, including the Pacific Northwest, Native American communities are taking extraordinary leaps to revitalize relationships with cultural keystone species in the wake of colonial violence. This thesis provides windows for understanding the human dimensions of Pacific Lamprey management in the Columbia River Basin based on generations of social-ecological responsibilities and understandings. The Columbia River — known to the Indian people of its middle course as *Nchi-Wana* "The Big River" – cuts a deep gash through the Miocene basalts of the Columbia Plateau (Hunn, 1990). The research methods create awareness of the ancient social relationship with *Asum*, re-sharing this gift of knowledge for future generations of the Yakama people and future generations of natural science research. Drawing on 18 interviews with respected Elders raised along the Columbia River, including Celilo Falls (upstream of present day The Dalles Dam), this has always been a collaborative project designed for educational purposes at Yakama Nation Fisheries. Testimony from Elder interviews begins at the intersection of the Pacific Ocean with the *Nchi-Wana*, and extends to Bonneville Dam (rkm 146.1; Oregon City, OR) and up through the confluence of the Yakima and Snake river tributaries. The primary study areas begin from the lowermost dam on the Columbia River, Bonneville Dam,)and extend to *Top-tut*[3] (Dupris,2006) – the traditional Yakama fishery at Prosser Falls (which later became Prosser Dam) as well as the overall town/village in Prosser,

[3] *Top-tut* "speaks of the beauty of the falls where a legendary bad girl littered the scene with boulders in the shape of ponderous pestles or food-pulverizers. (Coyote disposed of this girl, so the people could fish in peace. He left her standing as a large stone in the river above the falls.)

WA. *Top-tut* (also spelled alternatively as *Top tut*, *Taptat, Tap-tat, Tup tat*) is located 46.3 miles up the Yakima River (tributary to the Columbia River at rkm 533.3; near Kennewick, WA). The *Top-tut* that the Meninick family fought to protect means "Rattlesnake Creek" (Dupris, 2006). Taptat is also understood as 'long hair in front, short hair on the sides', Lewis and Clark refer to the "Tapteel River" referring to today's Yakima River (Hunn, 2015)

Wanawish is a traditional fishery also on the Yakima River, where I specifically caught salmon as a teenager. *Wanawish* [Sahaptin], meaning 'flow down'(Hunn, 2015), is near present day West Richland, WA, cared for by countless generations of the *Wanapum* people of Priest Rapids. My brothers and I would set up a spring fishing camp to swim and feast the first spring Chinook Salmon just as our fathers, grandfathers and great grandfathers did when the fish were running in early April each year. Brothers, aunts, uncles, women and children create and share memories all along *Nchi-Wana* in camps like *Top-tut* and *Wanawish*. *Wanapum* spring fish camp was a beloved temporary home, as fishermen like myself and my cousins waited patiently for those first Chinooks to bless our hand-woven dipping poles and nets. We built traditional fishing platforms we call scaffolds all across the Yakima River there. I recall the four o'clock morning hours, my brothers would begin hollering and catching salmon. The hollering indicates extreme joyfulness and gratitude to the salmon that find their way into the net of one of the cousins. There is however, no longer a holler from my brothers and I in the springtime at *Wanawish* or *Top-tut*, as harvestable fishing has declined to nearly zero in recent years. In those good years we could catch 15-25 spring salmon, from daylight to about 10 AM every day or every other day for a few weeks. Those days now live only in my memory, much like the maiden's hair. Today we no longer set up our wooden scaffolds across the Yakima; we dip and dip our poles into an empty river, fishing for hours to no avail. My hands, bones, arms, back and fists would grow noticeably

strong from constructing scaffolds, to moving rocks underwater, to lifting and moving the traditional fishing hoop-and-net steadily through the river water hundreds and hundreds of times repeatedly until a fish was caught. Traditional poles at *Wanawish* were anywhere from maybe 12-30 feet long, and the act of holding, lifting, pushing and pulling the net through the water are muscle memories that I no longer exercise. My hands have now become softer with each passing spring with less to no fish at our traditional spring camp that also ceases to exist. Our *Wanapum* camp is lucky to catch maybe five whole fish per spring fishing season and our campsite is largely abandoned. My uncle and my cousin went back this year, perhaps to just camp, sit and listen to the water with high prayers for the salmon to come back someday. What will our children see in the Columbia River and its many tributaries with so much depletion and erasure? This thesis advocates for physical acts like fishing for salmon and *Asum* and drying them both for traditional giveaways and winter ceremonies. Biological and cultural forms of sovereignty for Indigenous Columbia River descendents is the human right to health and education that derives from your own knowledge system developed over centuries.

Figure 1. Roger Jim as a young boy, holding alongside him two *Asum*, one in each hand while standing on a rock. This picture has become one of the most popular pictures among Columbia River tribes with historical significance to *Asum* (Meanus, 2023).

Background

Yakama Nation and Columbia River Ecology

In the Yakama worldview, any natural or cultural resource, including human beings, is not more important than another. Yakama people gather seasonally from the lowlands of the Yakama Nation reservation as we know it today, to the upper tributaries of the snow-capped Cascade Mountains. Davis Washines is a respected Elder of the Yakama Nation, he reminds the children from tribal communities that "*Treaties don't make Nations, Nations make Treaties.*" When the leaders of the 14 Confederated tribes and bands of the Yakama Nation reluctantly acknowledged the 1855 Stevens Treaty document with an "X," the Nation formally secured access to "usual and accustomed places" to gather traditional foods and medicines (Scott, 1996).

Yet this was not the beginning of Yakama "fisheries management," rather the end of fisheries abundance and sustainability. The 14 Confederated Tribes and Bands of the Yakama Nation had historically co-managed the Columbia River in accordance with Creators Law. Co-management refers to *Nami-Tamanwit* (Creator's Law) being the ultimate law, allowing natural migration and life cycles to occur without progressive interruptions that degrade social-ecological health of a working natural system as it relates to biology and ecology.

In the Yakama worldview, food is medicine and the foundation of three vital areas of health that are acknowledged daily. *Wawnukshash, Timna ku Wakiishwit*; The body, heart and spirit, are equally important and thrive in seasonal gathering and ceremony. This trinity is common knowledge amongst tribal Elders and those who learned carefully to balance the three via traditional gathering and ceremony. Today there are three to four diverse ways of practicing ceremonies for Columbia River Plateau people. The Longhouse is called the "*Washat"* and this Seven Drum ceremony acknowledges traditionally gathered foods in a seasonal lineup that is carefully honored and placed on the sacred table of the Longhouse. A lead brass bell ringer facilitates the seven drum ceremony on Sunday's across Central Washington, parts of Oregon and Idaho. The shorthouse brings together the oldest known practice of reciprocal relationship building with all living and nonliving spiritual entities. This three to five night ceremony is also known as the Winter Medicine Dance. The sweathouse ceremony is common across all North American tribes. For the Yakama people, the sweat lodge cleanses the medicine singer and traditional food gatherers prior to gathering and honoring the foods. The Shaker Church religion is fairly new and utilizes brass bells, candles and altars to conduct various ceremonies as a protection from human caused illnesses brought on by colonialism. A traditional way of life can be practiced and perpetuated through the assertion of the right to biological and cultural

sovereignty as Indigenous plateau people, such as gathering seasonal medicines for the sacred tables found at each of the churches and ceremonial spaces on the reservation. Although the traditional food lineup has decreased in diversity and abundance, the core of cultural keystones can still be found and consumed at special services, Sunday services, and the annual “First Foods" ceremony in the spring of each year.

Figure 2. The Yakama reservation is purple and the land they ceded to the United States is light purple. The Columbia Basin is in dark tan.Yakama Nation lands ceded to the Federal Government during the 1855 Treaty signing includes 12 million acres of land. Tribal Elders have shared that the Yakama people's travels took them as far north as Canada, as far south as California, as far northeast as Eastern Montana, as far southeast as Salt Lake to gather.

Figure 3. The Yakama reservation is purple and the land they ceded to the United States is light purple. The Columbia Basin is in dark tan.Yakama Nation lands ceded to the Federal Government during the 1855 Treaty signing includes 12 million acres of land. Tribal Elders have shared that the Yakama people's travels took them as far north as Canada, as far south as California, as far northeast as Eastern Montana, as far southeast as Salt Lake to gather.

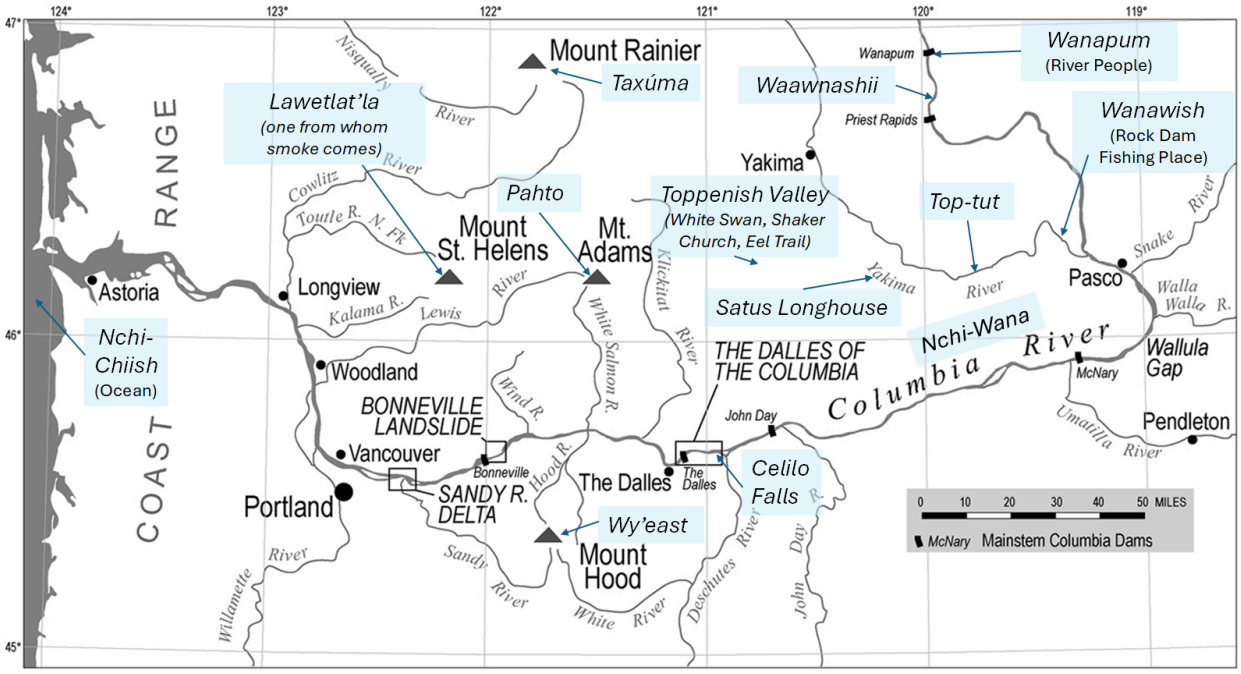


Figure 4. Columbia River Basin base map courtesy of U.S. Geological Survey. Key locations that are discussed in the thesis are identified and depicted with blue word boxes and arrows.

Historical Relation to Abundant Asum and Intellectual Traditions at Nchi-Wana

According to the living Elders of today that consented to participating and sharing in this research collaborative, *Asum* and the salmon are the original chiefs of the Columbia River mainstem ("they swim together") according to *atwai* [Sahaptin for deceased] Mr. Johnson Meninick. Meninick spent decades working as the director of Cultural Resources for Yakama Nation in Toppenish, WA, where the Agency headquarters, museum, library and tribal archive is located. The Meninick name is known commonly throughout the reservation and ceded lands of the reservation today. Meninick's voice echoes across present-day tribal networks like Columbia River Intertribal Fish Commission (CRITFC) and Affiliated Tribes of Northwest Indians (ATNI).

The term "eels" derives from the survivors of an attempted cultural genocide and lingering effects of forced acculturation through Indian boarding schools. As children, Elders

were conditioned to use the name “eels" in place of *Asum*. Elder generations were threatened, forbidden and punished for speaking the Sahaptin language and/or carrying out cultural activities like gathering traditional foods. Bio-cultural sovereignty re-engages Elders that were punished and traumatized for speaking their own inherited Sahaptin language, with the seasonal round of gathering traditional medicines (foods). Consequently advocating for biocultural sovereignty is thus a healing concept that brings forward old ways of thinking and interacting with the environment. Cutcha Risling Baldy distinguished this area of sovereignty and shared “Their practices (cultural, spiritual, political) incorporate their relationship with the land in a way that acknowledges and respects the rights of the land itself.”(Baldy, 2013). The human dimensions of restoration can increase the capacity for success in future co-management on and along the Columbia River and its tributaries. Co-management in this context abides to Creator’s Law or congruently, environmental justice. Co-management also implies increasing the capacity of *Asum* populations to complete their life cycle with minimal interruptions. The ancient fish *Asum*, is the Elder of the River, according to fossil records and in direct accordance to oral traditions that span across thousands of years, if not longer. Pacific Lamprey are extremely adaptive to radical land-use changes over the course of global history. It is a wonder how populations still persist despite the introduction of hundreds of dams in the Pacific Northwest and on the West Coast of the United States. The recorded interviews show a very somber dialogue, very dignified, when Dr. Virginia Beavert and Dr. Russell Jim speak of the *Asum* Trail (also known as the Eel Trail) and the giant woman that laid down for the last time on that trail. As mentioned, testimony is still significant today and in places or spaces. Testimony from Dr. Jim and Dr. Beavert both speak about the time of the giants and cultural significance of the *Asum* Trail as absolute truths.

"The young people should know their history, even though some say it's a legend,' but yet it happened. The legend of when the people were giants, the time of the giant people…and an Asum (Eeel) was looking for a new place to dwell and he came all the way around and tried Toppenish Creek"

~Dr. Russell Jim~

There is a story of the eel being the chief of "The Big River," *Nchi-Wana* in Sahaptin. The eel was a gorgeous god-like deity who was to the like of the beautiful Chinook Salmon. The eel-man or giant eel has great cultural significance that includes the *Asum* Trail[4], an ancient trail that began on or around Mt. Adams (*Pahto*) and goes down toward present-day Toppenish Creek and all the way down to the Columbia River near the Dalles, Oregon.[5] There is an oral history of the great race between the giant eel and the rattlesnake, in the "Time of the Giants."

The oral tradition of the Meninick family that includes Johnson Meninick, who recently passed on, tells a story that includes how the prince or king eel-man lost his bones in a legendary wager to the sucker fish. The game is referred to as the "Bone" game and many families of Columbia River descent, reference that to the Eels bone loss in that epic wagering of his own flesh and bones. This gambling game is also called the stick game and carries other interpretations across tribes. The sucker fish, when opened up, will show many bones and a story

[4] There was once great water in this reservation. Coyote thought of all the new people who were to come, who must have food. He must make food for them. So, Coyote came to Schee-ash (1) and said: "I am going to fix places for the salmon, places where the people can get fish. And there will be plenty of eels, also." Coyote piled rocks for the salmon, made trails for them. Then, starting from where he fixed the salmon places, he brought the eels up this way. He made trails for them. He made a trail for them to go up the mountain, made the Ah-soom [Eel] trail. (2) But the eels never reached the top. They turned to stone. They are up there now. You can se*e them when you go over the trail. I could show them to you"* (McWhorter, 1937).

[5] The Eel Trail is of mixed understandings from oral traditions to historical significance. In the book Anaku Iwacha authored by Dr. Virginia Beavert, the trail is a result of the race between eel and rattlesnake that began at Mill Creek above present Day White Swan, WA.

was told annually when the sucker was feasted in a ceremony. The story is a story of arrogance, gambling, power, grief and loss. As told by Johnson Meninick, "*There's a Law that follows the eels, a reminder – you'll always find seven holes on a side of an eel, that's his reminder - Live Straight and Be Good."*

In the majority of oral traditions from Yakama, the coyote is at the center of each story. *Spilyay* is the most influential deity and is described by Elders as a coyote who walks like a man, and from my understanding his era of existence was also in the time of the giants. The animal and plant people lived together in this time and amongst the Plateau peoples, and these stories were described as events that really took place. In the legends, Spilyay goes about his business changing the shape of the land and creating morals and ethics that are laid upon the land. To share the true oral tradition is to speak the language of the land in which you care for. Language is from the land and to share legends in *Ichiishkiin* (Sahaptin) is to recite the Creator's Law, also referred to as *Nami-Tamanwit.*

Extirpation and Federal Lamprey Management

A disheartening era of social and environmental injustice was complete with the silencing of Celilo Falls on March 10, 1957 (Meanus, 2023). The Dalles Dam (rkm 308.2, The Dalles, OR), along with Bonneville (rkm 146.1; near North Bonneville, WA) and John Day (rkm 347.0; near Rufus, OR) dams, choked the health and prosperity of the salmon and the eel people, who are all the same. Youth and adults, including myself have long been conditioned to believe that the river was just filled with salmon and lots and lots of salmon. This is true, however the abundance of a variety of fish was how the Elders witnessed traditional fisheries like Celilo. In essence, what is it that we are restoring? What are we working towards as scientific researchers and managers, even tribal leadership? Perhaps the Elders who consented to share information off

video record or in testimony on the, believed I might remember the environmental racism and erasure that took place on Columbia? To this day, thoughts and stories of Celilo Falls are common at community and social events. It is a privilege to know someone who has heard or witnessed the falls, of native or of non-native descent. Survivors, who were children back then, are forever traumatized by the drowning of the fishery when this historical harvest site was inundated. To my understanding, Elders of that time were flushed with tears and heartbreak on the banks of the Columbia.

Historically, federal management of people, land and fisheries on the mainstem Columbia River has been uninformed and misinformed about critical social-ecological responsibilities as understood by the people of the Plateau as the Creator's Law. In short, there was no protection of cultural well-being, traditional foods (other than the salmon) up until perhaps the late 1900s or early 2000s and TEK was not formally acknowledged or credited. It is quite the predicament to initiate a conversation about intergenerational trauma amongst tribal members, as people in general will first refuse to accept themselves as a product of history or policy. Some tribal members might believe that intergenerational trauma is for the weak, subjective or belonging only to those who acknowledge it. All Indigenous tribal people are affected by historical United States laws, policy and environmental racism. This fact is congruent in Indigenous oral history as well as state, tribal and national archived documents that reach far beyond the scope of this thesis. The fact that tribal people, including tribal council, speak English as a first language is ample evidence for this assertion. Tribal leaders and Yakama Nation Fisheries are re-introducing traditional foods back into the community via publicly organized events that provide resources and encouragement to children, families, and communities to relearn, practice and perpetuate traditional food gathering protocols.

The general public and fisheries management had not taken into full account the significance of the Pacific Lamprey ecosystem services and disregarded extensive tribal use. Dr. Russell Jim from the Yakama has witnessed and escaped the boarding school system. He also saw unfair policies implemented for the commercialized Columbia River salmon and corresponding protocols of *Asum* being treated as non-game "rough fish" or "trash fish" (Wicks-Arshack, 2018), which was followed by a strategic and deliberate killing and extermination of *Asum*. Dr. David Close *"Himko-kaps-kap"*[6] wrote, "In the Snake River, the largest Columbia River tributary, adult counts have dropped from hundreds of thousands in the 1960s (Close, 2002) to several hundreds in recent years" (U.S. Army Corp of Engineers, 2007).

The history of active disregard of Indigenous land and water use protocols has created a plight in terms of lamprey passage, flow and dam conversion rates. Conversion rates refer to how many lamprey get through Bonneville Dam and then how many of those fish then pass the Dalles Dam, John Day Dam and so on, up the Columbia River as well as through the Yakima and Snake River dams and tributaries. "Lost fish" are found below Bonneville Dam each year, specifically the lamprey that approach the dam but cease to pursue passage when challenged by Bonneville and upper river dams alike that lack effective passage structures for these eel-like anadromous fish. Numerous bottlenecks and passage obstacles are observed by technicians and subsistence fishermen who witnessed both pre- and post-Bonneville Dam fisheries abundance. Keefer et al. (2012) identified four fishway segments at Bonneville Dam that contributed to 65% of all turnaround events across the years studied. Turnaround events in the upper ladder results in lamprey that were less likely to attempt to pass the dam again, suggesting a high energetic cost to passage (Keefer et al. 2012 and 2013).

[6] Dr. David Close along with my friend and acquaintance Gabe Sheoships have made important contributions to the Indigenous scholarship of Pacific Lamprey. Both Close and Sheoships are from the Confederated Tribes and Bands of the Umatilla Indian Reservation.

Dr. Jim makes a clear point of how *Asum* behaves, swims and travels; he says that there was always a lead eel and that the leader had followers that formed an inverse "V." If one lead eel was disturbed, threatened or experienced a lack of motivation to continue forward, the followers also followed suit and moved to turn around. The oral history of Meninick also makes a statement about which side of the Columbia belonged to the eel and which side of the river belonged to the salmon. In the time of creation and prior to multiple dam constructions, the river was completely free flowing in accordance with Creators Law, i.e., flowing uninterrupted. Numerous testimonies about Celilo Falls say that *Asum* was just as abundant as the salmon and critical to the vitality needed for arduous salmon fishing hours. Considering all the ecological services and connections, there needs to be a dialogue on how to best implement salmon restoration that includes *Asum* in the overall picture.

Eels, Yakama Health, and Healing from Colonialism

In "Death Stalks the Yakama", Trafzer (1997) presents work based on clinical explanations of death, and a theme of that study is that the Yakama reservation was a dangerous place to live during most of the twentieth century. According to Eugene Hunn, a trusted anthropologist who worked closely with the Yakama people for many years, and who also co-authored *Nchi-Wana* (The Big River), with the Elder James Selam, stated "the reservations were more dangerous places to live for Indian People, than off reservation communities" (Hunn, 2015). The loss of *Asum* fisheries above Bonneville directly affected the health and life of Elders who fished Celilo Falls and witnessed its drowning. It is the intention of this writing to consistently state the equal importance of salmon and *Asum* to the health of Yakama people.

This project began with *atwai* Patrick Luke, who believed, as I do, that not only was the *Asum* just as abundant as salmon but also equally important to the ecological health of the river and the communities that surround them. Conversations I shared with Luke were very few and far in between. I did, however, ask for his blessing to continue the Elder interviewing project that he started with help from Ralph Lampman. The last time I shook hands with Luke, he said he was heading to the Big River and to catch up to him at Washougal, WA, in the days following. He also made it clear that aside from the research focus on "traditional use of Pacific Lamprey," he also agreed that I take leadership and continue this pursuit in a "good way." His other wish was that I carry out more interviews and complete a "full qualitative data analysis" of the interviews.

Specific to my research process, the majority of TEK and testimony from Elders occurred through personal communication. I attended the 100th birthday party for Dr. Virginia Beavert at Heritage University. I call it fate that I happened to be studying late in the evening in the room next door. Dr. Beavert's nephew Brian Saluskin saw me typing and as customary to the Yakama, he invited me over to eat dinner. As I walked into the large room with many community members, I noticed an open seat next to Virginia. It is because I was conditioned to shake hands with Elders and tell them my traditional name, I followed through and even proceeded to sit down next to her to eat. A few words would be gifted to me in that hour, words and a memory that I will carry forever. The only question that remains for me is, why me? Why did Dr. Beavert turn to me and look me in the eyes asking very gently, "Why are these young men on the reservation killing themselves?" This question was very surprising and unexpected. I still wonder why she brought this to my attention at a celebratory event. It is my thought that she was sharing a hurt, sharing an unanswerable question and sharing a responsibility of helping the Yakama

people to heal from cultural and identity loss as a direct result of colonialism in the Yakima Valley. I interpreted that she was passing on a work that must be continued.

Prior to attending University of Washington, I was working for the Yakama Nation Library, during which I had access to the Yakama Nation tribal archive, the Kamiakin Institute files. I came across not only the archived Nipo Strongheart Special Collection, but also had access to Yakama Nation history from inside the Cultural Center library. I came across government reports, minutes and handwritten letters about reservation conditions in the late 1800s and early 1900s from which this library was created. The loss of identity, loss of access to traditional gathering areas, loss of land, loss of language, and alcoholism ripped apart families and the tribal members from the inside out. Barbara Ratcliff was an archive digger and also developed a collection of Yakama Nation history, but sadly she passed on before she could write the book that she planned for. Ratcliff spent decades gathering documented data and newspaper clippings of reservation life in the upper and lower Yakima River valley. This collection was delivered to me at the Yakama Nation Library's Special Collections. I was the only digital archivist and technician at that time. I physically unloaded and digitally uploaded the 40 to 50 boxes of her collection. Roughly four to five boxes contained military and or government reports citing alcoholism as a progressive and growing concern on and off the reservation. In the future I would like to write a grant to complete Ratcliff's intention of sharing this documented history through academic writing, research or through an environmental history narrative. Through this, a path of healing might be set in place for future generations in the Yakama Reservation.

I have taken the important responsibility of sharing the environmental knowledge of salmon and *Asum* fishermen and women from the Plateau people. What is at stake is communicating their voices with complete transparency and integrity. An overarching question is

how Native American and tribal communities and tribes across the country can consistently transform environmental racism into cultural revitalization and environmental restoration. Trafzer wrote (1997), “Members of the Yakama Nation survived in large part, because of the strength of their spiritual beliefs.” The *Asum* has a spirit that may only be understood by Indigenous peoples that have experienced a spiritual realm, where plants and animals communicate with human beings as part of a big law found in the language and creation stories placed upon the land and in the waters of the Columbia River Basin.

Tribally-Led Lamprey Restoration

The Columbia River tribes that include The Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation CTUIR, The Nez Perce Tribe and the Confederated Tribes of Warm Springs have shared decision making processes for the management of Columbia River traditional fisheries via the Columbia River Intertribal Fish Commission (CRITFC). Both the Yakama Nation Fisheries Program and CRITFC protect and regulate reserved rights of the Treaty of 1855 in traditional fisheries along the mainstem Columbia River affecting the harvesting of fishes in Oregon and Washington State. Tribes began and continue to lead the way in management and protection of Pacific Lamprey fisheries. The cultural keystone is not only iconic in creation stories and oral environmental history but is a Treaty Reserved Tribal Trust Resource. Yakama Nation Fisheries Prosser Hatchery is located at *Top-tut*, an ancient traditional fishery of the Yakama Nation (formed via *Spilyay* based on oral history). The fish hatchery as well as Prosser Dam are located at *Toptut.*

It was the observations of Elders that *Asum* servings at local ceremonies began to dwindle and in some cases disappear from the sacred meals served in the local longhouses and churches

on the reservation. For the Yakama people, the traditional foods table is set and cared for with a gentle and holy mannerism. The table is set in accordance with the seasonal round of gathering. The lineup is the same with each setting, beginning with water, then traditional fishes, traditionally hunted game, traditionally gathered roots, and traditionally gathered wild berries. Traditional knowledge is progressive and forever growing in the heart, body (e.g., muscle memories), and spirit of people via testimony and oral traditions, if the individual continues to observe, monitor and gather annually. Testimonial knowledge is practiced from a very young age in the *Washat* or Seven Drum religion. Each longhouse has an open ground in its center, it is a rectangle of open earth (dirt). Young boys are taught to sweep, clean, level and water the *Wash* (sacred ground in the longhouse) each and every Sunday morning at Sunrise. Young boys also pour water for the sacred table, these two simple protocols of taking care of the earth and taking care of water are stored forever in the body, heart and spirit of the boys. When standing on the *Wash*, individuals are to speak only of Creator's Law, in *Ichiishkiin Sinwit* (translated as "In this manner, In this way"), or *Timna-Knik* ("from the heart"). When pronouncing your testimony you are speaking inwardly and outwardly; a lie is only a lie to yourself as well as to the Creator of earth on which you stand. In the Yakama worldview, it is pointless to lie or justify on the *Wash,* for the individual providing testimony is only prolonging confusion, embarrassment or grief upon one's self. One collector of famous Indian speeches reminds us that each testimony was delivered, "without a prompter, without a speech writer, without a public address system – with only the speaker's training, memory, and natural ability to aid him" (Dupris et al., 2006, p. 223). The "structure and form" of these speeches are "sound," and the messages "clear and poignant" (Dupris et al., 2006, p. 223). Testimony occurs in ceremony and is encouraged as a sign of respect to creation, yourself and others.

Intellectual Traditions at the Yakama Nation takes into account the sun, moon, stars and all the invisible forces of nature that connect all the elements found on earth. Bringing forward oral testimony of these seasonal practices requires holistic understandings that might only be found in the general worldview and religious nature of the people. This religious nature includes testimony and the significance of witness accounts. As Hunn et al. (2015, p. 3) wrote:

> Testimony has served and still serves a purpose in Tribal Life. Following the oral tradition, it is a way to pass down information in a public forum to those bearing witness to an event. This testimony teaches life lessons, morality, and consequences of actions. In this tradition, what is spoken is the truth of the world, a proclamation. Testimony is a deliberate, thoughtful form of speech that carries gravity in the fewest words possible.

Ecological and cultural knowledge gathering and devotion begins at a very young age. Children are taught to listen with their eyes, learn through the physical labors of gathering traditional foods and to provide testimony that speaks from the heart. Patrick Luke's traditional knowledge came from the heart and was perpetuated in seasonal fishing and distribution of salmon and *Asum* to his extended family and the sacred longhouses and churches of the Yakama people. This type of knowledge was not separate from his work as the former project lead for the Yakama Nation Fisheries Pacific Lamprey Project. For this thesis, I drew upon eighteen interviews with Elders. Patrick Luke and I each facilitated nine interviews. Ralph Lampman is the current project lead at Yakama Nation Fisheries Pacific Lamprey Project and has participated in nearly all of these eighteen interviews.

Dam passage challenges for *Asum* at Bonneville Dam can directly limit access and capacity for cultural practice, Indigenous education, and sovereignty for each of the CRITFC tribes. Across the Columbia River Basin there have been profound acts of "bio-cultural sovereignty" that have revealed a basic understanding of the human dimensions of restoration. *Atwai* Elmer Crow was Nez Perce, and the pioneer of translocation of *Asum*, from below

Bonneville Dam to the Snake River traditional and historical fishery locations. Also known as “Eel-mer,” he coined the term "No eels, no deals" and his role in the film “The Lost Fish” (Freshwaters Illustrated, 2024), inspired this research project to continue on with his legacy of Indigenous restorative thinking and action.

The chosen Elders who participated in this study understand and help sustain an array of human dimensions that distinguish cultural resources management from natural resources management. Testimonial knowledge from Columbia River respected Elders stems from a lifetime of biocultural knowledge gathering and wisdom. Knowledge in this context is stored in the body, heart and life of the knowledge holder. Moving forward in fisheries management, we must recognize the body, heart and life also of *Asum* , when these fish are traditionally harvested, consumed, and used as outlined in ITEK of Elders. *Asum* as a traditional food was historically cooked over a fire immediately after fished, or dried and stored for the winter. Thousands of *Asum* were consumed while fishing and thousands more were hung to dry along the banks of *Nchi-Wana* in the time of my great grandfather Puck-Hyah-Toot and in the time of Celilo Falls.

Figure 5. The pictures above (from left to right), Elmer Crow, James Selam, and Patrick Luke, who are deceased Elders of the Columbia River Plateau people. I had the privilege of meeting Mr. Elmer Crow at an Archaeology Day event perhaps in 2001 or 2002 at the Wanapum Heritage Center at Priest Rapids dam. Mr. James Selam holds an Asum perhaps at Rainbow Falls State park in which he met and shared a story with Dr. Eugene Hunn. Far right is Patrick Luke who initiated the ITEK study at Yakama Nation Fisheries Pacific Lamprey Project. Mr. Luke had the privilege of interviewing Johnson Meninick and Dr. Russell Jim.

Dam Passage and Climate Change

In my life I have gathered *Asum* in the traditional way since I was a child. Typically these eel-like fish are gathered by hand beneath Willamette Falls (Oregon City, OR). A team of about twenty young men will take a boat during the hottest days of July to swim and crawl under the falls in search of *Asum* to grab and stuff into a burlap sack. Teenage boys are most fit for doing this ceremonial gathering/harvest. The rocks are as slippery as the eel themselves.

As in historical times, climate stressors will occur and multiply through energy production (i.e. hydroelectric dams), river water allocation as well as diversion choices. *Asum* will be forced to adapt and shift through these anthropogenic changes. Recent breakthroughs in research and science is helping managers understand how the Pacific Lamprey populations move and behave, but so much is still unknown. Awareness and monitoring of dam passage and water diversions are at the forefront of decision making challenges for future generations. It is vital to understand the social-ecological dimensions of fish passage and habitat restoration, including the species communities that both lamprey and salmon are a part of. As Dr. Megan Jones wrote, “It is a common experience in human dimensions to hear people say, 'wildlife management is people management.' Good people management requires the full integration of the human dimensions into natural resources work. This means going beyond conducting human dimensions research to understanding and applying lessons learned from social science” (Jones, 2024).
Tribal-community Elders know the human-health effects of radical and abrupt changes to the environment, forced acculturation and identity loss. Climate change is presenting similar types of social and human health effects and stressors to coming generations.

Indigenous communities, despite forced acculturation, are willing to share a type of belief system that can benefit not only future generations of the tribal-academic partnerships but all

people in general. The continuous practice of seasonal gathering and annual gratitude ceremony for salmon, deer, roots and berries, as well as the inherent responsibility of protecting water and water quality, is the epitome of the plateau people's body, heart and life. Community resilience through abrupt environmental change (e.g., climate change) will require much more knowledge of human dimensions and use of natural resources. Future management might benefit from questioning why the salmon and *Asum* have an equal place in Indigenous ceremony? These ceremonies acknowledge the life and death of natural resources. This dried *Asum* carcass is only one example of extending the life cycle of a natural resource. Coastal Indigenous Tribes of Washington State have benefitted in multiple ways from the life and death of a cedar tree for example.

Conceptual Frameworks

"The land or river does not belong to us, we only borrow it from our grandchildren." ~Davis Washines~

This section considers the relationship between traditional ecological knowledge, bio-cultural sovereignty, and collective continuance as concepts to reframe Pacific Lamprey management priorities and/or considerations within the Columbia River Basin.

Traditional Ecological Knowledge as Kincentric Ecology

The term traditional ecological knowledge, or "TEK" was first introduced in 1989 by the International Conservation Union and a working group by that name (Johannes 1989). Subsequently, Berkes et al. (2000) have defined TEK as "a cumulative body of knowledge,

practice, and belief, evolving by adaptive processes handed down through the generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment" (Finn, 2018). This framework, according to my own understanding, is interdisciplinary.

The anthropologist Enriqué Salmon (2000) described Indigenous reciprocity with the natural elements of an ecosystem as a "kincentric ecology." Elmer Crow of the Nez Perce Tribe demonstrated this concept when he began transporting his friends, the Asum, from Bonneville Dam to traditional fisheries of his childhood in the upper Snake River. Julian "Chief Pinkham" was interviewed and consistently referenced throughout the recorded interview, the *Asum*, as him or he. A kincentric way of understanding the natural world can also be found in traditional names amongst the Plateau people. My sister Crystal Buck's traditional name is *Tmas-Tmas,* meaning little chokecherries. Because of this name, I can never forget to treat the chokecherry bushes with great care and gentleness, the same way I would treat my older sister Crystal. This is how I remember the language as well.

TEK is progressively becoming more significant in relation to climate resilience preparations and restorative thinking. I once asked Johnson Meninick in his office at the Yakama Nation Cultural Center, "How can we enhance traditional fisheries?" Johnson replied pretty sternly and with emphasis, *"There is no enhancement."* It is now my thought that there is only salvage, and Mr. Meninick wanted that to be clear to me as a future resource protector. My picture of the Columbia River today is vastly different from the ninety-year-old Elder who witnessed the biodiversity and abundance at the Falls in Celilo. The widespread buzzword "sustainability," to the Elders and now myself, is a byproduct of systematic erasure of environmental history. To sustain the Yakima or Columbia rivers today is to think backwards to

Elders like Meninick or Dr. Beavert. I was just as surprised as the next person, as I continued to listen to Meninick. To enhance is to think of a problem as linear and that progress moves in a straight line to answer one question. To sustain what Elders view as salvaging is also to think backwards. Relationship restoration must first take place, that means understanding what a healthy running Columbia River looked like from those who witnessed its demise and can share stories of its creation and generosity. Restorative acts of sovereignty include the right and credibility of testimony from living Elders. Exercising this right is also interpreted backwards, for the Sahaptin language interpretation to English writing and testimony is inaccurate. In essence, we are working to salvage what remains of a progressive extinction of anadromous fishes. Accepting Meninick's assertion might be a beginners step toward successfully uniting intellectual traditions and science.

Dr. Blake Slonecker, a history professor at Heritage University, stopped me in the hallway one ordinary afternoon with a polite, “Michael Buck?” I stopped and turned to say, “Yes.” Slonecker turned to me and asked if I had a few moments to chat in his office nearby. The professor pulled a book from his office shelf and handed it to me. The title of the book was “They Are Not Forgotten” *Caw Pawa Laaknii* (*Ichiishkiin Sinwit/Sahaptin*). (Hunn,2015). This place-names atlas is co-authored by Thomas Morning Owl (one of the interviewees for this thesis) and Dr. Eugene Hunn. Dr. Slonecker had witnessed my own personal testimony on the Heritage University campus about Indigenous Knowledge system of the Yakama and wished to share this book with me as a gift. Slonecker stated, "I think the world might benefit a great deal more with this book on your shelf, rather than mine." My new colleague also asked me if I had ever noticed that large dam constructions on the Columbia River seemed to be directly and/or strategically overlaid on the largest fishing camps or village sites of Umatilla, Yakama, Warm

Springs and Nez Perce. I answered his question rather quickly, “Yes, I have made that connection.”

Bio-cultural Sovereignty and Collective Continuance

Through her concept of “bio-cultural sovereignty,” Cutcha Risling Baldy (2013) also draws our attention to the holistic health value of traditional gathering and how natural laws work within social-ecological relationship building. For me, bio-cultural sovereignty means exercising the right to be a healthy human being. This type of sovereignty was forcefully taken away from the Living Elders with which I consistently dialogue. It is closely related to food sovereignty, which according to another friendly acquaintance and colleague, Valerie Segrest from the Muckleshoot Tribe, is "the inherent right to define our own diet collectively, and therefore by collectively defining our diet, we shape our food system" (Mapes, 2022). The sovereign right to maintain or reclaim our health standards is something I have vowed to strengthen and restore.“People have to understand why we reserved the rights we did, why our people did that,” said Shannon Wheeler, vice chairman of the Nez Perce Tribe.
“It is because of the unwritten laws we have, our obligation to the land and its inhabitants, and our obligation to the First Foods and how we live with the land and interact with the land and treat the land. It is our oldest law. Before the treaty. It is what the treaty was meant to capture.” (Mapes, 2022)

The stories that my mother told of the Yakama Elders throughout nursing homes in the region of Yakima and Toppenish, WA, gave me an inquisitive mind at a very young age. Nurses across the region and state can surely relate how the traditional foods of tribal people are medicine. These medicines are arguably more effective in restoring the social-ecological health

for future generations than political views and prescription pills, gratitude goes along with gathering and preparing foods.

Collective continuance is a concept from a Potawatomi philosopher Kyle Whyte and refers to the ways in which reciprocal eco-social relationships support the wellbeing and future flourishing of Indigenous peoples (Whyte, 2018). Through our responsibilities, our systems of knowledge, and our adaptive response to changes, Native people keep on surviving and thriving. Whyte points out that "relationships of interdependence and systems of responsibility are not grounded on stable or static relationships with the environment; rather these relationships arise from contexts of constant change and transformation (Whyte, 2018). Collective continuance therefore might include how Indigenous people all over the country in the United States have "re-indigenized" themselves upon forced removal from their homelands. Collective continuance is concerned with the strengthening or recovery of bio-cultural sovereignty well into the future. In the context of this thesis, collective continuance can also mean actually listening to the Elders through these interviews, perhaps something will make sense over time?

This small collection of bio-cultural knowledge shared here was gathered over centuries and generations across this land and region, particularly the Yakima River Basin. Bio-Cultural sovereignty is a conceptual understanding that helps to communicate Indigenous Knowledge, as I personally have come to understand it. In the context of fisheries justice, how can management fail to acknowledge dimensions of religious nature, language, worldview, future generations, purpose of ceremony, environmental history, traditional food system and the power of story in places like *Top-Tut* and *Wanawish*.

My own relationships built with the Elders and professionals that study and think critically about what resilience can mean shed bright lights on humor, identity, role and

responsibilities for protection of natural life cycles, and the ability to teach in a gentle manner. Collective continuance also recognizes children as our greatest resource. Human health is always a key concern, and for climate resilience and the climate grief that permeates the minds and bodies of our younger generations, bio-cultural sovereignty must be understood, practiced and included in decisions that might harm social-ecological health in communities along the river.

Methods

Project History

I graduated from Heritage University with a B.A in Environmental Studies with a focus on Natural-Cultural Resources Management. I first learned about the scientific method and mixed methods research as an undergraduate, through putting together a scientific poster in collaboration with Ralph Lampman. The poster I presented bridged not only my cultural knowledge from a life of seasonal gathering but also aligned my cultural values with the value of the scientific method and research principles. What I took away from that poster is immeasurable in the context of my life, academic career and role in my community.

An academic-year CRITFC scholarship that I was awarded in the fall of 2017 stipulated that I design a research project and complete an Institutional Review Board application for undergraduate research at Heritage University. I completed that task with assistance from Dr. Winona Wynn, my lifelong friend and mentor. I would then spend six weeks at the University of California, Berkeley, in summer 2019, brainstorming, workshopping and refining research questions, methods and all the while honing and refining the various research objectives in the context of social science research on traditional fisheries of the Columbia River.

In early summer 2021, I was fortunate to connect with Laurie Porter, who is the Pacific Lamprey program lead for Columbia River Intertribal Fish Commission (CRITFC) (Portland, OR). Laurie offered me a position as a fisheries technician for CRITFC. The technicians are responsible for safe collection, transport, and holding of adult Pacific Lamprey returning to Bonneville, The Dalles, and John Day dams. I also had the specialized responsibility of scanning harvested “eels" at Willamette Falls in Oregon City, OR. Willamette Falls is one of the few remaining primary lamprey fishery sites for all Columbia River tribes today. I saw the passage structures for lamprey at each and every one of those dams and got a clear understanding of Pacific Lamprey translocation at that point in time. Remembering Mr. Elmer Crow as I transported hundreds and hundreds of *Asum* above the first three dams, to the care of each of the CRITFC tribal fisheries program translocation crews. It was during and throughout the global pandemic that I applied for the School of Marine and Environmental Affairs at University of Washington, as I found a great interest in furthering my exploration into the human dimensions of natural resource management and restoration.

Research Frameworks and Practices

Vine Deloria Jr., in the co-authored publication *Power and Place*, speaks of a gentleness that once existed amongst and within our tribal communities and villages, writing, “The outstanding characteristic of Indian students today is the emergence of politeness as a personality trait” (Deloria and Wildcat, 2001). Just as important, the best description of Indian metaphysics was “the realization that the world, and all its possible experiences, contributed to a social reality, a fabric of life in which everything had the possibility of intimate knowing relationships because, ultimately, everything was related” (Deloria and Wildcat, 2001, p. 2). Furthermore, Shawn

Wilson, who brought light to how Indigenous scholars approach not only writing, reading and education, but life itself, referred to knowledge as "living" (Wilson,2008). This living knowledge can only be accessed when the individual (learner), is healthy in the trinity of body, heart and spirit or life, life being equal to spirit in context of the holy trinity as plateau people believe. I concur with the many voices referenced in Research is Ceremony, including Stan Wilson' statement that "Identity for Indigenous peoples is grounded in their relationships with the land, with their ancestors who have returned to the land and with future generations who will come into being on the land." (Wilson, 2008). The strengthening and advocacy for bio-cultural sovereignty is a pathway to a sound body, heart and life.. When this balance is reached through years of seasonal gathering and consumption of earth's gifts (traditional foods and medicines), one person can become fluent in reciprocal relationship building, understandings and the language of nature. The capacity and confidence for sharing the gift of knowledge is then sound and credible through testimony. The next listener who has endured the land, river, natural and cultural resources of this social fabric can then advance his or her understanding of *Nami-Tamanwit.* Relationships that are formed through the oral traditions are nearing extinction and therefore it is my thought that building relationships can still be founded and built through an Indigenous research framework i.e., research as ceremony. Wilson (2018), also shares this missing component from written text and does encourage personal relationship building throughout the research process. "If research doesn't change you as a person, then you haven't done it right." (Wilson,2018). It's clear to me that Elders that I approached in person over the years, knew exactly what needed to be said to change me as a person for the benefit of not only my self identity, but as a contributing member of the family at Yakama Nation.

This project combines elements of Indigenous research frameworks and community-centered methodology. This approach resonates with environmental social science approaches to TEK that use “dialogic networks” (Davidson-Hunt and O’ Flaherty, 2007; Berkes, 2009) to facilitate Indigenous Knowledge exchange (Gearheard et al., 2006; Gearheard, 2013) between knowledge holders (Elders) and academic researchers. Second, through continued collaboration with the Yakama Nation Fisheries, this project seeks to address community-identified priorities for self-determination in Pacific Lamprey Management. Tribal members with experiential knowledge in a context of traditional fisheries, traditional fishing and cultural and/or ceremonial practice expertise were interviewed and video recorded with written and/or verbal consent to use for the education of future generations.

Using Traditional Knowledge

In colonial contexts, Indigenous knowledge has historically been downplayed and devalued. In summer 2019, at Berkeley Center for Ethnographic Research, I shared a history of the “Trash Fish Case Study,” which was my own research proposal at that time. A PhD candidate asked me in front of the class after my presentation on TEK of Lamprey, "Okay Michael, but what if I were to say 'I don’t care?' Why should I care about this so-called ‘trash fish’?” The future professor of ethnography was nudging me to think more about social-ecological relationship building, as not everyone in fisheries management has ties to the tribal cultural use of fisheries. The take home message closed with a circle exercise: Answer why the eel is important to me, then why it is important to my family, my faith, my school, my hometown, my community, the Yakima Valley, Washington State, , the Columbia Basin, the Pacific Northwest,

the Nation, the World, the Universe and so on, each group of people or category owning and holding its own circle of significance.

Sharing precautions of what is now commonly known as traditional knowledge is not of my highest concern. It is my true belief that the Elders before me protected sacred knowledge within their *Wawnakshus, Timna ku Wakiishwit.* (Body, Heart and Life). This knowledge can never be accessed without being perpetuated by the individual who has earned this knowledge by way of traditional gathering in the seasonal round. It is also my true belief that knowledge is living and that the individual who is ready for that knowledge can also then become a protector of it. True oral testimony cannot be faked. Shawn Wilson has described the concept of living knowledge and I personally accept it as truth. I have listened and watched two separate interviews of the eighteen Elders, Dr. Russell Jim and Johnson Meninick, a considerable number of times. Various references are made in those interviews and the transcription has undoubtedly never been changed. I, however, have changed, and my capacity for understanding circular communication, testimonial knowledge, history and unwritten laws (Creator's Law), of the Plateau people has allowed me to grasp what the interviewees have been saying all along. The key takeaway is that true Indigenous Knowledge cannot be stolen. There is a contemporary teaching in the *Washut* religion that states that the non-native people are not the ones stealing Indigenous Knowledge. Yes, misappropriation is detrimental and disrespectful to the children of our tribes. Equally problematic is Native people, who have learned language, oral traditions, the understandings and origins of sacred songs and purposes of ceremony that find reasoning to hoard that knowledge without sharing it with the children and future generations.

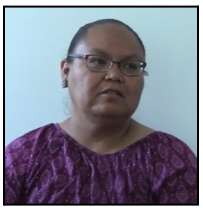
As mentioned, the energy put towards community engagement and trust building goes far beyond this written academic thesis and corresponding video recordings. Personally, I was raised

to practice annual ceremonies and seasonal gathering of traditional foods and medicines in the Columbia Basin and within the tributaries discussed herein. At least twelve of the eighteen interviewees are now deceased and at least two are not well. At least twelve were alive to witness and/or hear the falls at Celilo. At least twelve were/are fluent in the language of the Columbia River Plateau *Ichiishkiin Sinwit.* Dr. Beavert, Dr. Russell Jim, Thomas MorningOwl and Lindsey Howtopat, along with Johnson Meninick are all endowed/ordained, or have earned the title of *Sapsikwathla*, "Teacher" in Sahaptin. This kind of respect allows them to share amongst the people and future generations. It is of the highest honor in the tribal community at Yakama. Trust and family history serves me well in this regard. My father and grandfathers have shared this responsibility and have demonstrated an unwavering commitment to the health and wellness of future generations.

Contributing Elders:


Dr. Virginia Beavert


Don Tahkeal


Elaine Harvey


Galen Yallup


Davis Washines


Simon Sampson


Chief Julian Pinkham


Lindsey Selam


Tony Washines


Elmer Schuster

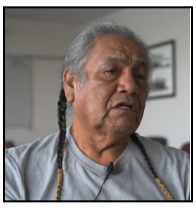

V. Wallulatum, P. Miller, L. Miller

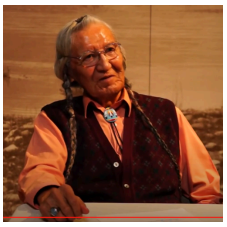

W. Slockish, J. Jackson


L. Umtuch, Buck, J. Buck


J. Meninick, P. Luke


Thomas Morning Owl


Lindsey Howtopat


Dr. Russell Jim


Melvin Sampson

Results and Discussion

It is very important to see that there are actually two conversations in nearly every interview. One is the actual interview, i.e., questions and responses, and the second is the conversation that takes place after the interviewer and interviewee believe that the interview is over. In speaking with the Yakama people, this happens in real life. A conversation takes place, you say, "Okay, talk to you later, good to see you," and then the secondary conversation usually gets initiated. In the second conversation it usually is more revealing and in-depth. I am not sure why this tends to happen in speaking with Natives, or is it common with all people? Sometimes the secondary conversation is longer than the interview. Respectfully, there is even an equally or more important third conversation that inevitably takes place off camera. I think that this is very interesting and should never be overlooked in speaking with Native people in interviews or in general conversation. It is also customary to end each conversation with laughter before parting.

Circular communication is recognized in speaking with many of the participants for this research study. Circular dialogue happens naturally when Elders like Dr. Russell Jim and Johnson Meninick interpret oral histories in English. If not interpreted, it will not be understood by many non-native people who are not knowledgeable of the patterns in which Indigenous Elders tend to speak, myself included. I felt the need to watch, rewind and revisit concepts that Dr. Jim and Meninick were communicating. This underlies my decision to share primarily quotes from Dr. Jim and Meninick for this writing. Concepts of Yakama ways of understanding the world are distinctly separate from an individual's experiential knowledge. Human beings like Dr. Jim, Meninick as well as Dr. Virginia Beavert are the very last of an ancient local culture, human beings that lived in the old way of the Plateau people. These Elders survived, adapted and

thriveculture as we live today, and are for the most part this culture and survivors are now gone from this land forever.

The true intention of this research project has always been "Educational purposes for future generations;" this is how we worded the consent process, asking interviewees for their participation. The ultimate result was me becoming a better member of my family, community, and region. The bringing together of scientific knowledge and local TEK from community engagement and ceremony has made me a bridge between historically colliding cultures. Participating in the ceremony of my grandfathers and practicing community engaged research writing via Heritage University and University of Washington, literally moved me to learn more of two languages, i.e., the Yakama's *Ichiishkiin Sinwit* and the language of academic English. It is self-evident how my brain works differently when speaking each language, particularly the emotional and social connection to water, fishes, animals, plants and the elements. Speaking the language of the Yakama for me is speaking inwardly towards the center of life in my heart and outwardly toward the entire universe as I understand it. Ceremony is a place to line up and align ourselves with the natural laws of the lands and waters in which you live, reside, interact and care for. Perhaps we are forgetting that we are a part of the ecosystems that we walk in each and every day?

Numerous goals and objectives were pursued and accomplished throughout the past two years in accordance with the research timeline and objectives. First, I facilitated the intergenerational interview with Dr. Beavert, her nephew Brian Saluskin, and my niece Teynasia Williams who was 11-years-old at the time. Second, I came to the understanding that many of the Elder interviewees were aligning their conversations with the same concepts but in different words and dialogue. I concluded that some interviewees were critical thinkers and thus respected

teachers, and others (like myself) are practitioners or students. Communicating and/or interpreting oral traditions and Sahaptin language into English is done most efficiently by Johnson Meninick, Dr. Russell Jim and Thomas Morning Owl. In the results section, I have provided one thought-provoking quote each from Meninick and Morning Owl, with a few stimulating quotes from Dr. Jim. Third, Ralph Lampman and I, along with members of the Pacific Lamprey project team members, planned and prepared a traditional style *Asum* ceremony for the traditional fishery and hatchery at Prosser "*Top-tut*" (Prosser, WA). The silencing of an ancient waterfall and fishery at Celilo (as well as at *Top-tut* at a local scale) interrupted and disregarded the natural life-cycle of schools of *Asum*. This also muted an array of *Asum* fishing stories as well as the corresponding connections to culture, language and history; hence, one could say the silencing traversed both physical and cultural realms. However, I firmly believe that art and symbolism can be useful in revitalizing the diminished communication of oral traditions.

Throughout this extended research, and in some sense this lifelong commitment, I have become known as the "eel man." The eel has become my identity in the Yakama Nation reservation and community. One of the most sacred numbers of the Yakama and *Spilyay* stories is the number five. Therefore I have chosen five quotes to illuminate the themes from the Tribal Elder interviews. While acknowledging the depth and breadth of each interview, these quotes are representative of the collective voice of all the participants. The themes that I feel are most significant in the context of future generations and unification of all the Elders' mutual messages are presented here. Each Elder came forward to share in the interview process and each is acknowledged with a picture beside or under each theme. *Sapsikwathla* in the Yakama language means "Appointed or Respected Teacher." With that in mind I have chosen these five quotes and

I explain my thinking behind these quotes with a short discussion. *Sapsikwathla* “Teachers" are clearly Dr. Russell Jim, Dr. Virginia Beavert, Johnson Meninick and Thomas MorningOwl. This recognition as a teacher is not only appointed via experiential learning over time, but is also an inherent (i.e., part of your family lineage, usually father to son or grandmother to granddaughter) accumulation of knowledge and the ability to communicate in ceremony or publicly. Spiritual connection, such as a reciprocal relationship to an animal (e.g., *Asum*), is also considered a factor in teaching capability or capacity.

1. Thomas Morning Owl's *Asum* as the Original Keeper of Time
2. Johnson Meninick’s Gifts and Promise of Creators Law
3. Dr. Russell Jim’s “Logic of the Uninformed”
4. Dr. Russell Jim’s Traditional Foods Connection to the Body, Heart and Life
5. Meninick & Dr. Jim’s Sahaptin as Language of the Land

Indigenous ceremony for the Plateau people is non-exclusionary, meaning that everything and everyone has a place or role in the universe. Nature existed prior to human beings and perhaps will after. Human dimensions are interesting to me because humans will almost always see the elements of the universe and in nature, only in relation to themself. Across tribes I have read and heard very similar stories about the language of the land, as well as the power of songs found in nature.

Indigenous tribal people have recognized patterns, numbers and behaviors of plants and animals over centuries of observation and survival. It was not so long ago, relative to colonization along the Big River, that my people lived in the traditional tule mat lodges at present-day Priest Rapids. Two hundred years of colonization at Nchi-Wana is a very small fraction of time in comparison to the songs and stories that lived and thrived here for thousands

of years. The numbers found in nature are consistent and have never changed over time, the seasons, the sun, the moon and the stars are consistent to *Nami-Tamanwit* or the big law that governs natural patterns that include how humans move across the land, behave and speak.

I took an art class in high school and the only thing I was good at was scratch art. This different way of creating art makes me think of what Indigenous people mean when they say that we sprung from the land through creation. In creating an image via scratch art, you begin with a blank and black sheet, and you scratch in the light, or white area, and in doing so, an image emerges. I like to think that when and however the earth was created, in that time and with that light that was brought forward, life emerged in direct relation to earth's creation. It is these difficult types of concepts that Elders have pondered and practiced translating in the English language, while maintaining the integrity of *Ichiishkin Sinwit* and Creators Law.

Revisiting environmental racism as a topic of discussion was necessary in this writing, many children and families lost their lives as a result of colonialism, boarding schools and diseases that wiped out entire tribes along *Nchi-Wana.* I thumbed through the Bureau of Ethnology collection of Nipo Strongheart in my time at Yakama Nation Cultural Center as well as moved and observed artifacts stolen and are presently being repatriated to Pacific Northwest Tribes, artifacts that were stolen from burial grounds. I've also heard recordings of the old language and songs from the *Nchi-Wana* in Washington D.C. It was my job to try and recognize symbols, colors and patterns that might match up to where items were to be repatriated.

I also had the privilege, as an archivist for Yakama Nation Library, to see the actual Stevens Treaty of 1855 of the Yakama Nation. I felt the need to honor the people of all the tribes and First Nations by singing an old song that was taught to me in the Seven Drum ceremonies, consistent with Nami-Tamanwit. This song along with many others that I hold dear in my body,

heart and spirit honor creation and Indigenous peoples beautiful story, culture and demise at the hands of colonialism and energy production at *Nchi-Wana.* The bureau of ethnology and the historical documents that came into my life were heartbreaking and came across as nefarious. That ethnology study was founded on the goal of documenting the culture and language of Native Americans as an extinct race of people. I also wrote for Indian Country today in an editorial about how my grandfather's were forcefully removed from our villages at the Hanford Reach to *P'na or Waawnashii* (the Priests Rapids), due to the Manhattan Project and the operation of nuclear reactors for the bombing race that took place in the time of World War II. Priest Rapids Dam was constructed on top of *Waawnashii* our village, my grandfather Johnny Buck - *Puck-Hyah-Toot* was a fisherman and leader of the Seven Drum ceremonies that we relied on to maintain our healthy relationship to Creators Law. The leadership of the *Wanapum* from Priest Rapids were asked to move yet again, and an agreement was made between Grant County Public Utility District and my grandfathers and grandmothers. We could stay and houses were built in place of the Tule Mat lodges and longhouses as early as the 1960s. My father was raised in the traditional way of the sweathouse, cleansing and seven drum ceremonies which honor traditional gathering and food as medicine. My father passed away early in his life at the age of 37 when I was nine years old. Alcoholism was the cause of death for my father. I am making a case for environmental justice, equity and the right to education for my children and future generations via advocating for bio-cultural sovereignty and awareness of human dimensions of restoration i.e., restoring relationships.

Human Dimensions for consideration in Natural Resources Management

Thomas Morning Owl's Asum as the Original Keeper of Time

"One word answered to a big law that can never be changed, that is the Law of Creation that will always be. A lot of the different things in our life have a teaching and were given a work to do in this world. One of the ones that was given a work, to be a part of who we are, was the Eel."

~Thomas Morning Owl~

One of the teachings that I have been told about the eel is that it is a "keeper of time." In the beginning of time, in the teachings and in a song well-known in the Longhouses of the Plateau, there was one word that was spoken, and the power of creation went forward, and as far as that word went, the earth spread itself out and was created. When the time came, before the man and woman were first made, it is said that time counted itself. The day and the night, the night and the day, were all put into a certain count that can never be changed. It will always go forward, and it can never go backward; that's time, - the power of Creation. This is the ultimate-ultimate law. The eel was given the task of counting the days and counting the cycles. The eel - when you look at it, there are seven holes on its side which correspond to each day of the week; They got them on both sides. When the moon comes up, each one of those marks are counted, each one of those days are counted on an eel. When it goes down, then it comes to the female eel to count, who will count another fourteen days. Then there are four days when it's dark, and they are not counted. Together they are the ones, they are the original ones to count the

days that follow that time of twenty-eight days. Twenty eight days as male and female, the male and female of the eel have a seven day count on both sides and two weeks on each one of them.

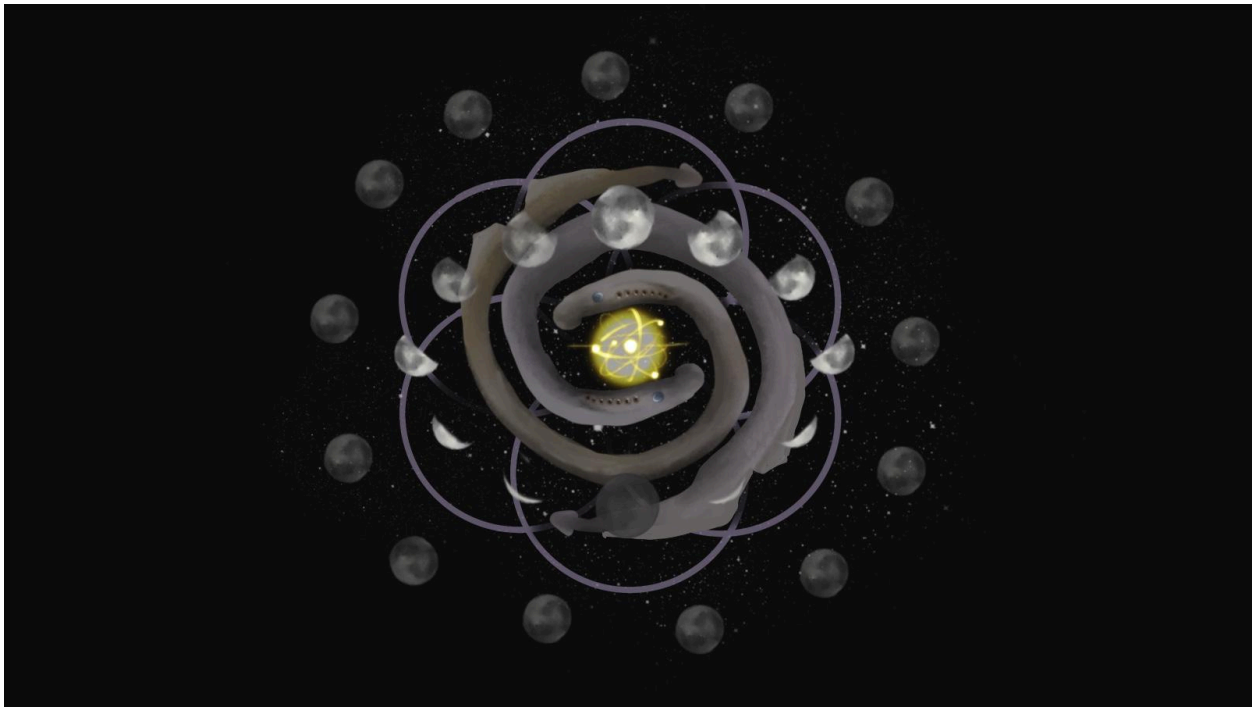


Figure 6. Shared with permission from the artist Mari Shibuya - Ocean Nexus

The co-created “Asum as the Original Keeper of Time - Cosmology Art” depicts the oral tradition of the ancient male and female *Asum* as original keepers of time. The first atom and universe co-existing in the center and the flower of life symmetry has *Asum* swimming amongst life, time and space. Also recognition is given to corresponding twelve and thirteen moon counts. The male and female also are swimming in the counterclockwise direction, in accordance with the Yakama tradition *Nawiitkun,* which speaks of nature moving in the direction “to the right.” Yakamas customarily walk and turn in circles counterclockwise, with their right hand in the air acknowledging the Creator’s Law. Ms. Mari Shibuya (Ocean Nexus) is the artist who produced this beautiful artwork, which was co-created and inspired by myself and Ralph Lampman.

Johnson Meninick's Gifts and Promise of Creators Law

"We have to follow the Chief resources: First is Water and the Land, the Air, Natural and Cultural Resources, and Human Resources. When you say 'I' at the Longhouse, you're saying 'Thank You Creator for all I got that is my Life'." ~Johnson Meninick~

Johnson Meninick says in an interview with Pat Luke, the significance of raising your right hand and saying "I" during or after a traditional food song or ceremony, is part of our responsibility to a big law that can never be changed, nature's law. There is a way to line up with Nature and according to Elders like Meninick it is through numerous acts of devotion, congruent to *Nami-Tamanwit*.

I was glad to be a witness to the unveiling of the "Creators Law" artwork, a sculpture that memorializes Meninick's interpretation of *Nami-Tamanwit*, which was equivalent to many lifetimes of education in both biological and cultural knowledge of the Yakama, passed down through generations of the Meninick family. The art and unveiling took place in Roslyn, WA. Meninick comes from a distinguished line of Yakama Nation food gatherers and leaders. Yakama Nation Fisheries Pacific Lamprey Project is forever grateful for his contributions to the TEK Elder interviewing project. As Johnson noted to myself and in the recorded interview, we raise our right hand to acknowledge the Creator and to be counted for remembering the Creator's Law. Our responsibility is reciprocal to the Land, Air, Water, Cultural and Natural Resources, and

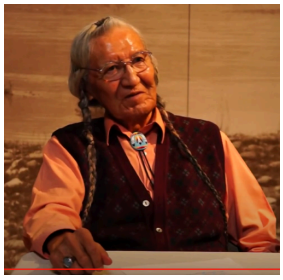
Human resources, the life of the ancestors and the life of future generations. One of the most important laws of Creation for Yakama people is what I have been referring to as the gratitude or appreciation feast. At Satus Longhouse where I am a fisherman and hunter, there is a wild celery feast in the early spring. There is another ceremony feast for Salmon and Bitterroot nine weeks after the celery harvest, and then the huckleberry feast is nine weeks after that. The traditional gatherers for each Longhouse are "ordained" or like inducted, there are protocols that each digger of roots, picker of huckleberries, salmon and eel fishermen, also deer and elk hunters must follow. There are many rules and customs that women diggers and men hunters must follow prior to digging, gathering, hunting or fishing. One or two examples might be always cleansing your body, heart and spirit in the sweat lodge. Another example would be to keep your hands and your mind clean and focused. The handling of sacred foods is not taken lightly amongst the longhouse people, because energy transfer is just as real in the longhouse as it is in thermodynamics, laws of chemistry. In this case, feelings can be transferred through the sacred foods, good and/or not good. This is why the eldest diggers and most experienced hunters choose wisely amongst the young people. This food-gatherer role is a life-long commitment and in the days of Elders like Dr. Virginia Beavert, required religious etiquette, mannerism, work ethic and unique traditional regalia and garments. The hunters and gatherers were to promise to put the traditional foods first, above all other priorities throughout their entire life.

"We can't eat these things without having a feast first! If you believe in this Creators Law - you'll always have these resources"

~Johnson Meninick~

Figure 7 - The artwork of Monica Blanchard from the Columbia River Fish and Wildlife Conservation Office, USFWS United States Fish and Wildlife Service. Art is shared with permission and shows the life cycle of the Pacific Lamprey, that includes the concept of the dried eel as an additional life stage that completes the life-cycle as Plateau people from the Columbia River believe.

Dr. Russell Jim's Logic of the Uninformed



"The Logic of the Uninformed"– that means not only non-Indian, but it means, our Indian people – don't know these legends I told you, don't know the value of what these animals are contributing to your DNA." ~Dr. Russell Jim~

Patrick Luke asked Dr. Russell Jim about "Human Impacts" as listed on the questionnaire, Out of the following nine factors, which factor(s) do you think played the largest

role in lamprey/eel decline in your area (of fishing)? 1. Passage (Adult / Juvenile), 2. Irrigations/Canals, 3. Habitat Loss, 4. Water Quantity, 5. Water Quality (Temperature, Toxicants, etc.), 6. Predation, 7. Disease, 8. Ocean Conditions, 9. Others.

Unlike all other interviewees, Dr. Jim chose not to pick an answer from the list that was provided and instead replied: In other words, he described a lack of awareness about *Asum* cultural and ecological significance from the general public (including our own tribal members) and how historically, *Asum* connected people to places, legends, history, health, morals & ethics and vitality for salmon fishing. Aside from generalized assets like health and history, different anatomical features of the *Asum* were utilized from infants to the women, to the men who ripped out hundreds of large salmon from Celilo Falls to the Elders sitting in the camps sharing stories of the *Asum* Trail, The Bone Game or the legendary race with rattlesnake. The *Asum* tail was significant in two very interesting ways. First, Dr. Virginia Beavert's favorite times in her life were riding horses in her youth. Dr. Beavert recalls the Elders of her time informing her to remember: *"They used to tell me that if I ate all the eel. I mean the tail, that I would be a good horse rider" - "You never get thrown off the horse…because the eel it travels real fast"*

Second, the *Asum* tail was very important to infants that are moving from into a toddler stage. *Asum* was first dried in the summer wind and if somebody had a teething child or an infant in a baby board, the tail was very valuable. The dried tail was a pacifier for the crying infant as well as helpful for the pain and support for teething children. Interestingly enough, the dried eel when boiled and simmered could be served to Elders with memory loss or dementia. I have first-hand direct experience of its potency and power, and (though difficult to explain in simple terms) I have felt the sensation that it can sort of rewire your brain. I am assuming this is primarily the case with many Elders as well who grew up along Nchi-Wana and ate *Asum* as a

primary dietary staple as children. I witnessed this and know it to be true, just as my mother witnessed and treated Elder Yakama in the nursing homes with traditionally prepared meals.

This portion of the thesis is critical to understanding the significance of bio-cultural sovereignty, the right to learn and thrive the way Plateau people have always understood, through place-based species interactions in gathering traditional medicines (foods), in the seasonal round. Dr. Russell Jim emphasized throughout his whole life that environmental injustice is not a Native American problem but a human problem. The "logic of the uninformed" to me is an example of problems with people management and is the foundation for my first inquiry into the human dimensions of restoration. Dr. Jim always seemed to be speaking as a member of the human race, or a participant in nature, he was never so much a “Yakama” or a “Indian” or a “Tribal Leader” etc… He spoke softly and moved very gently in conversation. It is true that Dr. Jim did encourage me to keep following and standing up for the *Asum*, as well as all other traditional foods mentioned here, the natural patterns found in nature, complete life cycles, full migrations, natural habitat, water quality, ceremonies and equity across all human races.

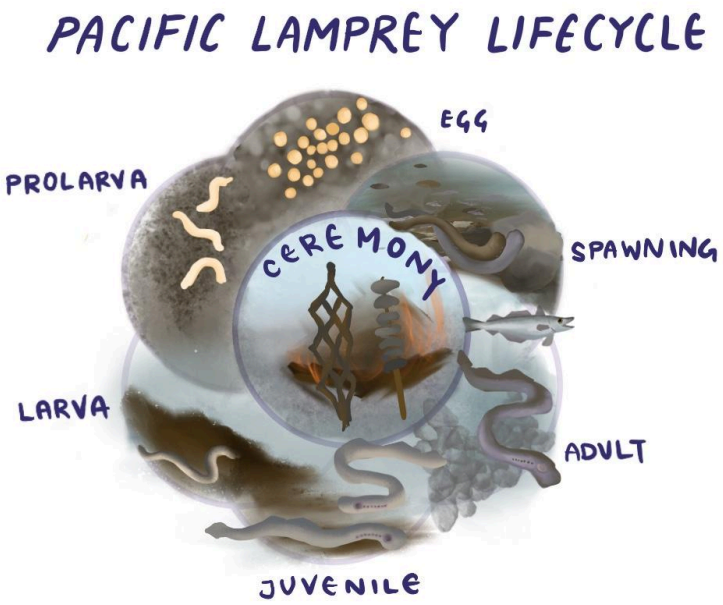
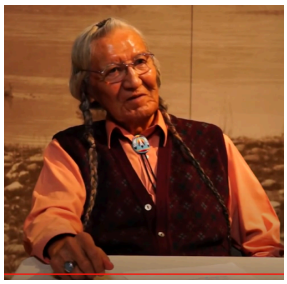


Figure 8 - The artwork here is part of the process of bringing greater awareness to how Indigenous Plateau people think, a generalized worldview in the context of Pacific Lamprey life cycle. Co-creation was an iterative process between Blanchard, R. Lampman, Myself and Mari Shibuya. Shibuya co-created two visuals for this collaborative and this image shows the flower of life and the life cycle of the Lamprey moving counterclockwise wit the final life stage at the center. Shared with permission.

Dr. Russell Jim's Traditional Foods Connection to the Body, Heart and Life



"*You have to speak through the resources – through the foods and medicines (Emphasis Added i.e. pats the table two or three times with his hand) – that includes when you take a fish, take an eel – and realize the value that that animal has to your body, your heart and your life, it contributes to your tilewal (your blood), and it makes you strong when they are strong.*"

~Dr. Russell Jim~

Dr. Jim mentions the Big Water *"Nchi-Chiish"* - the Ocean. He mentions "younger generations" and "language importance" with special aim directed to future generations at least three times throughout his recorded interview. Dr. Jim in his last years would put on his own first foods feast at White Swan Community Center. In the interview he shares just some very brief insight as to why he would carry out a feast each and every year. Dr. Jim mentions the difficulty in understanding the *"Laws that surround our Foods."* He testified to Congress and the Nation on many separate accounts, particularly with special attention to the pollution ever-present at Hanford Site (a decommissioned nuclear production complex operated by the United States federal government on the Columbia River) and the Hanford Reach National Monument in Benton County, WA. Dr. Jim had a special connection to the land, sacred burials, and sites found in this area along the Big River. His contributions to the Yakama people and future generations of all people is also immeasurable. His seat and office space, along with his personal writing and testimonies, are treasures to the personnel at Yakama Nation Environmental Restoration and Waste Management Program. It is Dr. Jim's conceptual thinking in both English and *Ichiishkiin* that emits brilliance. It is the most prized honor and privilege to call him a mentor and friend, throughout the last few years of his life. I sweated with him in his home and he always insisted that I and other visiting friends of his sweat lodge share deer meat stew and biscuits with him after the sweat cleansing.

"As we were made here; the natural foods and medicines from here – coordinated with our genome, our DNA – and we lived in harmony – after the Creator determined this is how it must

be, and the first people finally agreed we'll take care of these human beings you're going to make, with the thought that they'll take care of us also… and the Creator said 'that's the way it must work.'"

~Dr. Russell Jim~

The drying of the Eel carcass after ceremonial harvesting at places like *Top-tut* on the Yakima River, is a symbol of restoring the ancient relationship to the *Asum.* To honor the carcass of *Asum*, is to honor the Creator. Annihilation of the species and near-extinction of the corresponding people, culture and language deserves a response and resolution. An extraordinary way for me to yet again transform racist energy into justice, and genocide into revitalization is to provide analogous windows into the human dimensions, through the eyes of *Asum*. This deity shows us a depth of complementary social-ecological dimensions also known as the culture of the Salmon and Eel people. Environmental racism, colonialism and loss of language has conditioned our tribal communities to identify only as Salmon people. The Big River was a completely different river in the time of Celilo Falls. To witness children embracing or gathering *Asum* from Willamette River Falls or lesser-known traditional fisheries like *Top-tut* is to reawaken concepts of appreciation to Creation itself and biodiversity. I testify to the health benefits that I have seen in my own life.

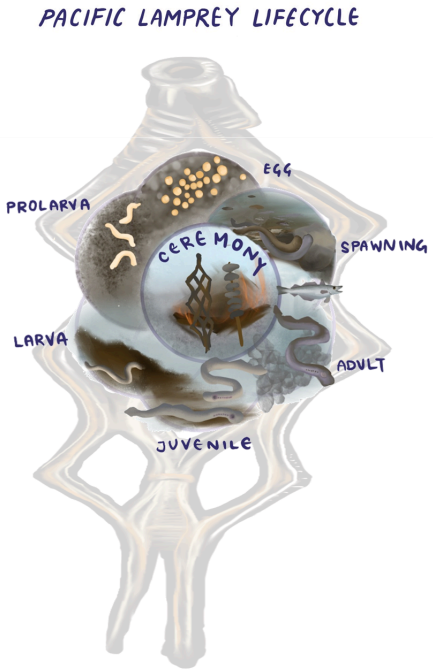
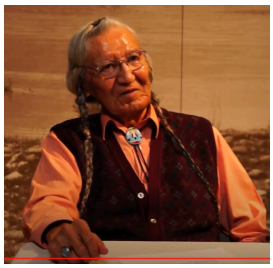


Figure 9 - The combination of art evolved and produced this image that was and is being utilized by Yakama Nation Fisheries Pacific Lamprey project with permission from Ralph Lampman. The butterflied filet for drying is an act of biocultural sovereignty at *Toptut* and along *Nchi-Wana.* This art and cultural practice is a symbol of cultural revitalization.

Johnson Meninick & Dr. Russell Jim's Sahaptin as Language of the Land



"...English is very tricky and you can't say anything correctly if you say it in English, but if you use the Native language, you can understand nature."

~Johnson Meninick~

Meninick is one of the most well-respected Elders to ever pass through Yakama Nation in the past two centuries. This is a fact based on numerous testimonies from leadership and tribal council members today. I spent some time with him in his office at the Yakama Nation headquarters (Cultural Resources Department). There is not yet any Yakama man or woman who feels worthy to sit in a chair in the office he occupied for decades. The combined knowledge of identity, language interpretation, Yakama history, laws of nature and tribal-federal laws he perpetuated, seems to be unmatched with anyone, perhaps forever. Johnson was also fluent in song and ceremonial interpretations. If Johnson said it, it is good as gold for the Yakama today.

"I can explain this alot better in the Native Language because I would be reciting the Creators words…In English, on paper, It doesn't come through"

~Johnson Meninick~

Survival in nature requires an understanding of places. For the Yakama people, written documents served no purpose, just as cash money is of no value in a forest. Value and knowledge must be inherent or accessible within yourself. Everything, therefore, that I am writing on this document, I should be able to recite on the floor of the ceremony for those present to be able to witness and accept. With respect to the Sahaptin Language of my own ancestry, I should then also be able to recite the truths of this document in *Ichiishkiin Sinwit.* The traditional values I speak herein also will forever be practiced for the remainder of my life. This is a testimony in honor of respected Elders like Johnson who gifted me their time and attention.

"There must be a realization by the younger generation of what this food genuinely means to the body - the heart and the life, it is no easy task to understand this, especially if you only speak English - I'm hoping with these words, there will be some inspiration for the younger generation, to learn our language – Once our language is gone…we're done – then the earth can't hear you if you only speak to it in English"

~Dr. Russell Jim~

Recommendations for Lamprey Management

To think differently or to extend this research and fisheries management into new directions, I incorporated the artwork co-created by Mari Shibuya, Monica Blanchard, and Ralph Lampman into this thesis. The idea stemmed from not only my interactions with many Elders across the Columbia River plateau, but also from the picture that was growing in my mind about how the Columbia River flowed prior to settlement and dam constructions. The art represents the *Asum* as an original keeper of time, the butterflied *Asum* filet for drying has become a symbol of cultural revitalization and is a signature of biodiversity in a healthy Columbia River system. The additional life-stage of *Asum* occurs while adult fish are returning to spawn and eventually die. In the Indigenous Yakama way, a new dimension of life happens in harvesting, ceremony, drying and consumption. The lifeway or process of preparation, gratitude and reflection was forbidden for today's Elder population; these Elders were murdered and threatened for practicing the ceremony, just as the Asum. The stories these Elders are remembering and sharing aren't focused on feeling sorry for themselves however, the Elders share for all current and future generations

never allowed to experience a beautiful way of seeing the Columbia River through intellectual traditions perpetuated herein.

"Return of the Asum" celebration was a community event held at the traditional fishery *"Top-tut"* near Prosser Dam (Prosser, WA) on May 11, 2024. Ralph Lampman and the team at Yakama Nation Fisheries took the initiative to bring together data from the past (including Lower Columbia River dams and Prosser Dam). Based on past elder interviews, it was estimated that approximately 2400 adult lamprey were returning to Prosser Dam in the 1970s and early 1980s, after which the population decline prevented any meaningful harvest for at least 4-5 decades. In 2018, it was estimated that over 2400 adult lamprey passed the dam. The data was summarized and presented in collaboration with the Yakama Nation Fisheries

Elders like Dr. Virginia Beavert and Johnson Meninick witnessed thousands of drying eels each and every summer along the Big River. This is a symbol of that life stage that happens after the eel is harvested and in its beautiful drying stage, which would then be stored for winter use.

Development of the Concept of Adding an Additional Life Stage to the Lamprey Life-Cycle

To summarize the process of transformation that species undergo through cultural practices is to see the difference that language has on worldview and corresponding behaviors and culture. The reader needs to know that it is a challenge to incorporate real objectives or goals into fisheries management plans that are based on relationship building standards of Indigenous descent, such as place-based, reciprocal relationship building, traditional gathering, significance of ceremony and unwritten laws of the land. However, human dimensions of restoration can certainly be included into natural resource management and annual planning. Sovereignty can be

extended through that dimension and measurements of human relationship building can be documented (e.g., the Pacific Lamprey public release events and social gatherings to celebrate the return of the eel to Willamette Falls).

The community of the Yakama people has always had this unique way of learning. Maybe this is true for all Indigenous tribal people or perhaps all people. The Yakama people fulfill inherent responsibilities by gathering a natural resource and changing it into something culturally useful. Cultural and language revitalization is progressively getting stronger within the Plateau culture today, due specifically to this kind of bio-cultural knowledge gathering, ceremony and extended life of natural resources.

Adding a life stage to the way we are conditioned to view a natural resource, like Pacific Lamprey for example, supports, welcomes, and challenges the non-Yakama scientific community to Indigenous worldview of this particular region. It is important to know that this final stage of life completes its life. This final stage of life has always existed amongst the Yakama and is continued to be found in the various ceremonies. Ceremony helps bridge our natural resources to the human dimensions as well as our own responsibilities to those natural resources.

These intellectual traditions found in seasonal gathering and feasting bring the species back to life for one final stage with acknowledgement in creation, prayer, consumption, medicinal use and storytelling; it is a critical and essential human-environmental interaction. It provides a medium for a holistic way of understanding. This seasonal and annual learning experience (i.e., ceremony) primarily helps bring together the next generation of teachers, managers, students, technicians and leaders of future generations.

Conclusion

"This Land and River is my Body"

Inmi Wawnak-shash iwa Ichin Tiicham-yaw ku Ichin Wana-yaw

"We were happy with our own foods and our own way of life because we lived so close to nature, which was the beginning of the way of our people. Everything that Mother Earth gave to us, the people did something in return to take good care of the earth."

~Verbena Greene~ (Johnson, 1994)

This research work is cultural and language revitalization. This thesis writing is an act of bio-cultural sovereignty. "*Wykanushpum*" is the spirit of the salmon people. It is no easy task to understand that biodiversity is a concept that is shared by both science and oral traditions of the Plateau people. In standing up for uncommonly known species such as the *Asum*, we acknowledge the critical importance of biodiversity.When I see the sunrise I am grateful for another day in my life. The core theme across all interviews will show that the *Asum* exists in many different dimensions throughout all history of the Salmon people from the Big River. Cultural Resources do not die; they live beyond the known physical and natural science boundaries. To hunt and gather Water, Fish, Game, Roots and Berries involves taking a life. Elders and children are equally important in passing on the teachings of the Yakama people. When we teach our children to gather foods and medicines for a first foods ceremony each spring, we also show them how to honor that life that we take. For the Plateau people, traditional food serves dual purpose as both a food and medicine. Our children engaged in this teaching naturally become better human beings in caring for the Pacific Lamprey. The body of the *Asum* improves our social-emotional and physical well being in so many ways that go beyond the

limitations of this written thesis. Gathering foods improves the quality of our life and improves social-ecological dimensions of management.

"*They always told us to hurry, because when you learn how to do something fast, your hands will be fast. And when you learn to use your hands really fast, then you will also learn fast.*"

~Verbena "Beans" Greene~ (Johnson, 1994)

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