



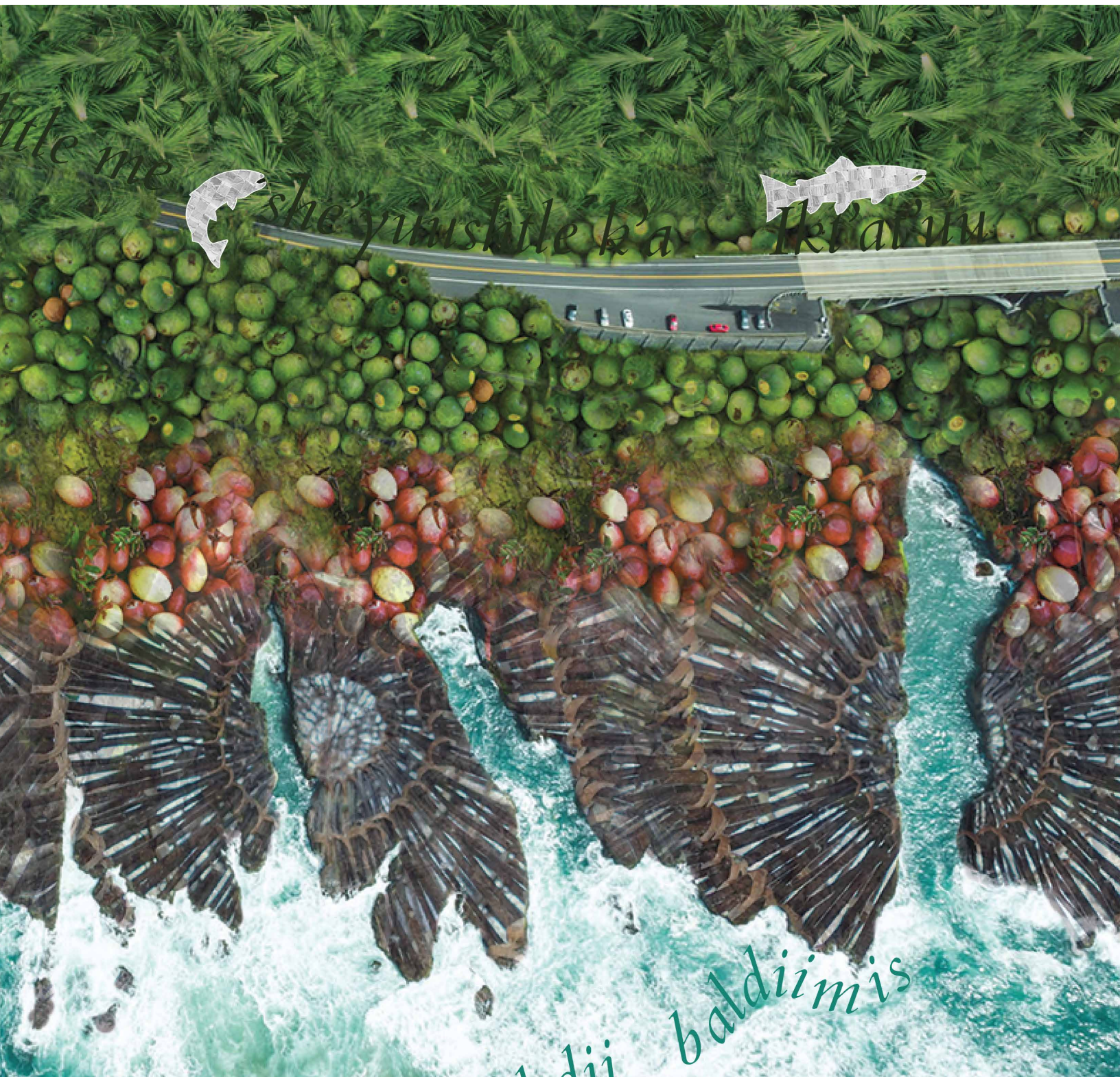
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BEYOND SALMON

Biocultural Restoration on the Central Oregon Coast

AMANDA CRAIG



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she'yuuuskile k'a



Ikt'auuu

baldiiimis

Approval

Project Chair: Chris Enright

Committee Member: Kory Russell

Submitted in partial fulfillment for the
Masters of Landscape Architecture

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This project is dedicated to my Papa,

John Walker Williford

*Thank you for your never ending support & encouragement in
continuing my education, and always being a pillar of support in
my life.*

“Coming to terms with an uncertain future and confronted by climate events that cannot be predicted, species extinctions that cannot be arrested, and ecosystem failures that cannot be spotted, humanity is tasked with developing solutions to protect the wilderness that remains, and transforming the civilizations we construct. While we are drowning in this Age of Information, we are starving for wisdom.”

(Watson, 2019)

Abstract

In a time of environmental uncertainties, restoration efforts are charged with the complicated task of creating environmental resilience in the wake of issues like climate change, sea-level rise, and the loss of species and habitat. This project looks to Biocultural Restoration and the Traditional Ecological Knowledge of the Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians, and their experiences within environmental restoration and management practices today. Using a literature review and semi-structured interviews, four categories for changes, and a set of practice principles were developed that could inform future restoration efforts on the Central Oregon Coast or elsewhere. This research was conducted with the understanding that indigenous peoples are experts of their own culture and realities. Drawing insight and inspiration from the experiences and cultural practices of the Hanis and Miluk Coos, Quiich [Lower Umpqua], and Sha'yuushtl'a [Siuslaw] peoples and their centuries of place-based knowledge, this research is intended to provide a lens through which to view the environmental world, illuminating a unique perspective on human-environmental relationships and reciprocity. Through this research, I intend to show the importance Biocultural Restoration and Traditional Ecological Knowledge can have in modern restoration and the critical role indigenous peoples play in the management of their ancestral lands. Furthermore, this research may offer insight into the potential for collaborative work between Tribes and other environmental management entities.

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This project would not be possible without the many people in my life who gave me their support, knowledge, and time.

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Special thanks to Liz, for all of her endless help with grammar, edits and moral support. Truly there wouldn't be a paper without you.

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And finally, to Chris Enright, thank you for being my rock throughout this project and going above and beyond as my chair. I am so grateful for your help, knowledge and kindness throughout this last year.

Land Acknowledgment

The University of Oregon is located on Kalapuya Ilihi, the traditional indigenous homeland of the Kalapuya people. Following treaties between 1851 and 1855, Kalapuya people were dispossessed of their indigenous homeland by the United States government and forcibly removed to the Coast Reservation in Western Oregon. Today, Kalapuya descendants are primarily citizens of the Confederated Tribes of Grand Ronde and the Confederated Tribes of Siletz Indians, and they continue to make important contributions to their communities, to the UO, to Oregon, and to the world.

In following the Indigenous protocol of acknowledging the original people of the land we occupy, we also extend our respect to the nine federally recognized Indigenous Nations of Oregon: the Burns Paiute Tribe, the Confederated Tribes of the Coos, Lower Umpqua and Siuslaw Indians, the Confederated Tribes of the Grand Ronde, the Confederated Tribes of Siletz Indians, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of Warm Springs, the Coquille Indian Tribe, the Cow Creek Band of Umpqua Tribe of Indians, and the Klamath Tribes. We express our respect to the many more tribes who have ancestral connections to this territory, as well as to all other displaced Indigenous peoples who call Oregon home. Hayu masi

*“That’s the only way they’ve been talking.
They didn’t come from any place.
That was their only place.
They didn’t know where they came from.
Every stream has people on it.
That’s how they all had a stream.
That’s the way they know themselves.
All other Tribes had their stream as their land.”*

-Jim Buchanan, Hanis Coos

Preface

As a woman of Native and European heritage (Hanis Coos, Alsea, Irish, Scottish, and English), I wish to be transparent about my connection to this research and its participants. Being a Native person and having worked for my Tribe, The Confederated Tribes of the Coos, Lower Umpqua & Siuslaw Indians, for the last 20 years I am in a unique position to do this research about my own culture and community as an “insider”. I am a part of this community, and with that comes bias, experience, and knowledge, which cannot be extracted from this project. My relationship with my community and culture has helped me grow as a person, as a woman, and as a Native in these modern times. This work and this project are a way of giving back to my community which has given me so much, and a way of honoring my ancestors and all that they have endured to make sure my generation and future exist as Native peoples.

Hiis haiyach

With a good heart

Table of Contents

List of Figures	2
List of Images	3
INTRODUCTION	8
PROJECT CONTEXT	
The Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians	10
The State of the Oregon Coast	16
Salmon	18
Western Restoration	22
Western Restoration and Tribes	24
First Foods	26
Traditional Ecological Knowledge	28
Biocultural Restoration	32
METHODOLOGY	34
NARRATIVES	35
Interviews	60
Project Narrative	64
Principles	68
Application	70
Conclusion	72
References	74
APPENDIX A: Interview Questions	78

List of Figures

<i>Figure 1.</i>	Ancestral Territories of CTCLUSI Map, Source: CTCLUSI	11
<i>Figure 2.</i>	Salmon Species State and Federal Status, Source data: ODFW, 2020	19
<i>Figure 3.</i>	2016 Oregon Conservation Strategy's Main Principles, Source: ODFW, 2016	22
<i>Figure 4.</i>	Western Restoration Funding & Selection Process	23
<i>Figure 5.</i>	Traditional Ecological Knowledge Diagram	29
<i>Figure 6.</i>	Comparison between Western Science and Ecology & TEK, Source: Berkes, 2010	29
<i>Figure 7.</i>	Seasonal Rounds of CTCLUSI, Source: CTCLUSI	30
<i>Figure 8.</i>	Process Diagram	63
<i>Figure 9.</i>	Western Restoration Missing Components	67
<i>Figure 10.</i>	TEK Components Missing from Western Restoration	67
<i>Figure 11.</i>	Biocultural Restoration Criteria	71

List of Images

<i>Image 1.</i>	Siuslaw River, Florence, OR. Photographer: Amanda Craig	6
<i>Image 2.</i>	Crabbing at Fossil Point, Empire, OR. Photographer: Amanda Craig.	9
<i>Image 3.</i>	Annual Tall Ships Event, Coos Bay, OR. Photographer: Morgan Gaines. Source: CTCLUSI	13
<i>Image 4.</i>	Canoe Journey 2016, Puget Sound, WA. Photographer: Amanda Craig	15
<i>Image 5.</i>	Siuslaw Upland Forest. Photographer: S. Gomer. Source: Flixr	17
<i>Image 6.</i>	Umpqua River. Photographer: Bruce Swenson. Source: Flixr	17
<i>Image 7.</i>	Shore Acres, Charleston, OR. Photographer: Melike Erkan. Source: Flixr	17
<i>Image 8.</i>	Salmon. Photographer: Morgan Gaines. Source: CTCLUSI	19
<i>Image 9.</i>	Cranberries. Photographer: John Schaefer. Source: CTCLUSI	27
<i>Image 10.</i>	Myrtle Nuts. Photographer: John Schaefer. Source: CTCLUSI	27
<i>Image 11.</i>	Camas Roots. Photographer: Amanda Craig	27
<i>Image 12.</i>	Elderberries. Photographer: John Schaefer. Source: CTCLUSI	27
<i>Image 13.</i>	Umpqua River, Reedsport, OR. Photographer: Amanda Craig	32
<i>Image 14.</i>	Seeds–Ashley Russell. Photographer: Morgan Gaines. Source: CTCLUSI	38
<i>Image 15.</i>	Huckleberries–John Schaefer. Photographer: Morgan Gaines. Source: CTCLUSI	42
<i>Image 16.</i>	Cedar Bark–Amanda Craig. Photographer: Morgan Gaines. Source: CTCLUSI	46

<i>Image 17.</i>	Knife–Mark Petrie. Photographer: Morgan Gaines. Source: CTCLUSI	51
<i>Image 18.</i>	Medicine–Margaret Corvi. Photographer: Morgan Gaines. Source: CTCLUSI	56
<i>Image 19.</i>	Coos River, Coos Bay, OR. Photographer: Amanda Craig	60
<i>Image 20.</i>	Fish Trap, Weaver Ashley Russell. Photographer: Ashley Russell	53

Sha'yuushtl'a

Siuslaw Person

Ikt'at'uu

Siuslaw River





Image 1. Siuslaw River, Florence-OR.

Introduction

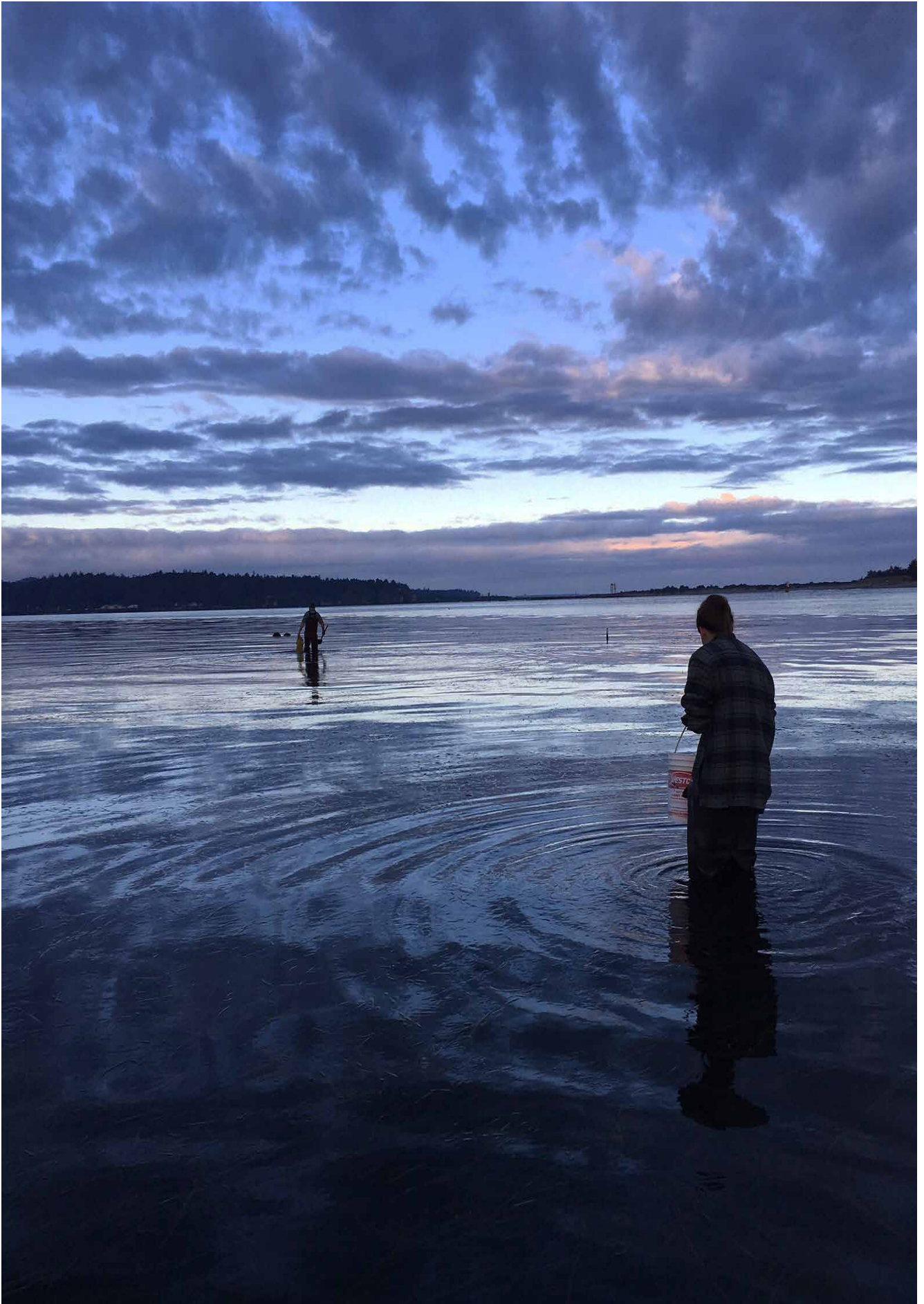
In a time of environmental uncertainties, restoration efforts are charged with the complicated task of creating environmental resilience in the wake of issues like climate change, sea-level rise, and the loss of species and habitat. When looking into a future of great environmental issues, perhaps we can look to the culture and knowledge of indigenous communities who stewarded this planet for centuries without environmental crises of today's catastrophic scales. This project began with a simple question:

How can Indigenous Knowledge inform western restoration practices?

To narrow the scope of this project and its research, the cultural focus was on the Traditional Ecological Knowledge of the of the Hanis and Miluk Coos, Quiich [Lower Umpqua], and Sha'yuushtl'a [Siuslaw] peoples, within their ancestral territories and ecosystems, which is now referred to as the Central Oregon Coast Range. The ecological focus centered on the western restoration processes and practices for environmental restoration, protection and conservation here in Oregon, and the greater Pacific

Northwest. Through a series of literature reviews, semi-structured interviews and reflection and analysis of their outcomes, new questions were revealed in regards to the logistical and ethical use of Indigenous knowledges within western restoration practices and processes. What changes would need to take place within modern restoration to include the use of Indigenous peoples and their culture, knowledge and practices? Four categories for change and a set of practice principles were developed to reflect the ideological and cultural shifts necessary to be inclusive of Indigenous peoples and perspectives. These categories and principles could serve as a starting point to inform future restoration efforts on the Oregon Coast or elsewhere.

*Image 2. Crabbing at Fossil Point,
Coos Bay, OR.*



The Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians

IN THE BEGINNING

The Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians (CTCLUSI) are a united group of three Tribes, four bands, of the aboriginal communities on the South-Central Oregon Coast. Like their given namesakes, the Hanis and Miluk Coos, Quiich [Lower Umpqua], and Sha'yuushtl'a [Siuslaw] peoples have inhabited the extensive estuaries of the what are now called, the Siuslaw, Umpqua, and Coos Rivers since time immemorial. Though all distinctly unique to their ancestral areas (*See Figure 1.*), the lifeways of all of the communities are similar in that they are all coastal peoples and inhabitants of similar ecosystems and environments. The Tribes' "historic homelands extended from the richly forested slopes of the Coastal Range in the East to the rocky shoreline of the Pacific Ocean in the West, a vast region of some 1.6 million acres. They lived peacefully in an area characterized by moderate temperatures and abundant natural resources, including fish, shellfish and wildlife, and a rich variety of edible plants" (CTCLUSI,

2021a). These communities were created and defined by their relationship with their environments and natural resources that nourished them for centuries. Social, cultural, and economic practices were directly related to the health of the environment and its natural processes. Seasonal variations in weather, tides, and food availability informed all aspects of their lifeways (CTCLUSI, 2021c). Residing predominantly in the principal villages along the estuary where the ocean provided year-round resources, the Tribes would move upriver to seasonal camps to hunt for large game, fish for salmon and lamprey, and harvest a wide variety of plants for medicine, food, and materials (Whereat-Phillips, 2016). Seasonal ceremonies were held to pay tribute and give thanks to the resources that nature had provided them that year. Some, like the annual Salmon Ceremony, marking the catch of that year's first salmon, were timed to allow the year's first salmon runs to be able to make it upstream to spawn. These ideologies were foundationally about reciprocity, equal exchange,

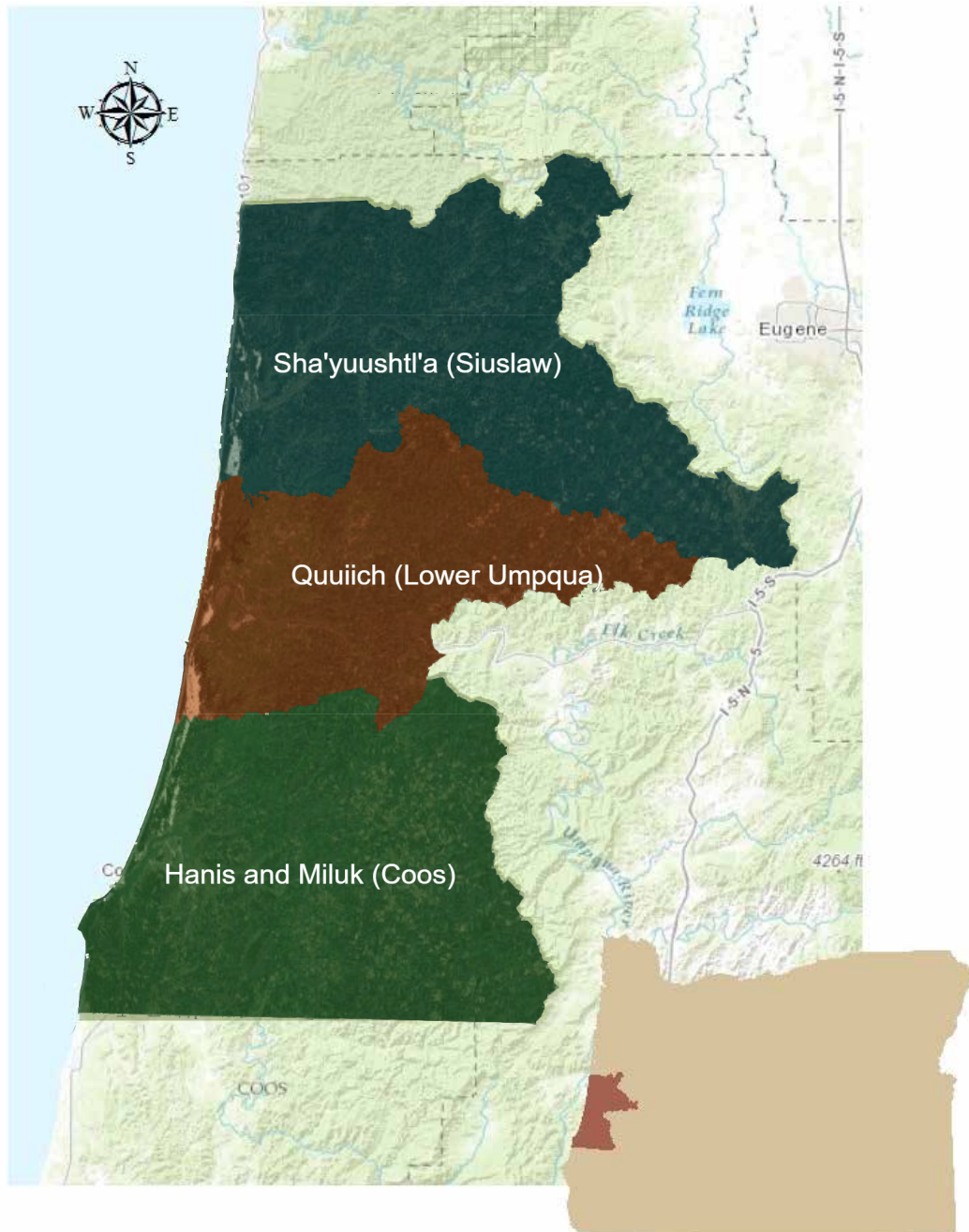


Figure 1. Ancestral Territories Map for Hanis and Miluk Coos, Quiich [Lower Umpqua], and Sha'yuushtl'a [Siuslaw] peoples.

and mutual benefit of resources between people and the environment. Without the salmon being able to spawn upriver, there wouldn't be any fry for the following year. Every choice was made with the thought of the future needs of the people and the environment in mind, and for centuries the Tribes and the coastal ecosystems flourished.

CONTACT

Upon European arrival and settlement in the Oregon Territory in the late eighteenth century, the Tribes, like all native communities in North America, were devastated by disease, war, relocation, reservations, and broken treaties (Beckham, 1977). In 1860 the Hanis and Miluk [Coos] and Quiich [Lower Umpqua] peoples were marched 60 miles up the Oregon Coast to the Alsea Sub Agency Reservation in Yachats. Many died on the journey of hunger, exposure, abuse, and exhaustion. Upon arrival in Yachats the Tribes were forced to abandon their cultural practices, and for 17 years remained imprisoned in the reservation, where 50 percent of the population died due to starvation, mistreatment, and disease (CTCLUSI, 2021b). In 1876 pioneer settlement was opened in Yachats, the reservation was closed, and the surviving Tribal prisoners were released. Unable to return to their ancestral lands and their way of life, the survivors found refuge wherever they could. Some relocated to the Siuslaw River area, where the Siuslaw Tribe was still established, having been allowed to maintain residency during the reservation period. Some returned to their now

pioneer-inhabited homelands and found work and security where they could; marrying white settlers, working in canneries, the timber industry, and the local fishers and docks. Some traveled North to the Siletz Reservation.

“Through all this, the Tribes continued to hold on to their culture and identity by arranging monthly meetings and continuing to participate in ceremonies and events. By 1916, the Confederated Tribes of the Coos, Lower Umpqua & Siuslaw Indians were formed (CTCLUSI, 2021b). Due to the devastating loss of populations of all three Tribes and the US government’s refusal to recognize a Tribe of so few people, they bound together in a united front and established a formalized government to represent the surviving Tribal peoples. In 1941, the Bureau of Indian Affairs (BIA) donated, in trust, 6.12 acres of land in Coos Bay, OR to the Confederated Tribes, which acted as the beginning of the CTCLUSI reservation. Sadly, CTCLUSI’s fight for recognition was not over. In 1954, the US government put into law the Western Oregon Termination Act, stripping the CTCLUSI and other Oregon Tribes, of



Image 3. Annual Tall Ships Event, Coos Bay, OR.

their federal recognition and all federal resources. Even though they were terminated by the US government, the Confederated Tribes maintained their Tribal government and reservation, providing their community with what resources and representation they could. Continuing their fight with the US government for restoration and recognition as a sovereign Tribal nation, “on October 17, 1984, as a result of a long moral, legal and legislative battle, President Ronald Reagan restored the Tribes to federal recognition by signing Public Law 98-481. The Tribes’ sovereignty was once again recognized and funding was restored for education, housing, and health programs. In 1987, the Tribe approved a constitution and began to lay the groundwork for a self-sufficiency plan” (CTCLUSI, 2021a).

"WE'RE STILL HERE"

Today, the Confederated Tribes now represent 1,268 Tribal members, and manage and maintain just under 16,000 acres of reservation and trust lands. The Tribes continue to strive for cultural and economic sustainability through their Tribal Government, administration, and business ventures. CTCLUSI employs hundreds of people in their communities and provides cultural, social, and economic services to Tribal members and families. To continue to provide for their community and maintain their culture the Tribes have created a Department of Natural Resources and Culture to further the influence on the management of their ancestral lands and educate their communities culturally. Still almost completely under the control of Federal, State, and Local Governments, the CTCLUSI collaborate with local environmental agencies within their ancestral lands to share their Traditional Ecological Knowledge (TEK) and culture for the betterment of the environment and their communities' futures (CTCLUSI, 2021c).

"Today we strive to perpetuate our unique identity as Indians and as members of the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians, and to promote and protect that identity. It is our goal to preserve and promote our cultural, religious, and historical beliefs while continuing to learn and grow as a part of the community we live in (CTCLUSI, 2021a)".

aluudaq

Highprow canoe

Hanis & Miluk

siixai

Highprow canoe

Sha'yuushtl'a uhl

Quuiich

*Image 4. 2016 Canoe Journey,
Puget Sound, WA.*



State of the Oregon Coast

Oregon's Coast Range is extremely diverse. Habitats range from tidepools to headwaters and from open sandy dunes to lush forests (*see images 5-7*). The Coast Range's ecoregions are equally as diverse, including the entire length of Oregon's coastline and extending east through coastal forests to the border of the Willamette Valley and the Klamath Mountain ecoregions (ODFW, 2016). CTCLUSI's ancestral territories comprise a large portion of the south-central Oregon Coast Range. "The Coast Range's climate is influenced by cool, moist air from the ocean, and is the wettest and mildest in the state. The ecoregion's mild, moist climate creates conditions for highly productive temperate rainforests, which are important ecologically and for local economies. Most of the ecoregion is dominated by coniferous forests. Large forest fires are very infrequent but are severe when they occur. The Coast Range includes the highest density of streams found in the state, and deciduous riparian vegetation is distinct from surrounding coniferous forests. Along the coastal strip, habitats are influenced by the marine environment and include beaches, estuaries, and headlands" (ODFW, 2016). It is this diversity of ecosystems that has provided resources

and habitat for a myriad of flora and fauna, including marine life. It is also this diversity that fueled western-economic settlement and the extraction industries that have dominated this landscape since European contact. Important modern industries noted by the Oregon Conservation Strategy (OCS) include timber, agriculture (livestock forage, beef, and dairy cattle), commercial fishing, fish processing, tourism, and recreation. Key Conservation Issues of particular concern in the Coast Range noted by the OCS include land-use changes, invasive species, pollution, loss of estuarine habitat, and recreational use (ODFW, 2016). It is estimated that Oregon has lost 38 percent of its original wetlands (Morlan, 2000). According to the Oregon Division of State Lands (Morlan, 2000), "Principal threats to wetland ecosystem health today include continued pressure to convert wetlands to other economic uses, and the cumulative impacts from human activities—such as pollution, sedimentation, and invasion of nuisance species—on wetland condition (Morlan, 2000).

*Image 5. (Top) Siuslaw Upland Forest;
Image 6. (Middle) Umpqua River;
Image 7. (Bottom) Shore Acres, Charleston, OR*



huunkuus *Forest, Sha'yuushtl'a*



tsomstii *River, Quuiich*



baldiimis *Ocean, Hanis & Miluk*

Salmon

Salmon are an iconic species for the Pacific Northwest as a region, as well as the State of Oregon. From traditional Tribal art to modern iconography such as the Oregon Chinook license plates, salmon represent Oregonians throughout history. This is not surprising considering the once vast populations and species of salmon that inhabited the waters of the PNW, and their cultural and nutritional importance to Tribal communities, as well as their economic use in western settlement of the western coastal territories post-contact. Today salmon are revered for their economic value in the fishing industry as well as their value within recreational fishing, both of which build a framework for their value within restoration efforts today.

The leading regulatory agency in Oregon participating in Salmon conservation and restoration efforts is Oregon's Department of Fish & Wildlife (ODFW, 2020). ODFW works in tandem with the myriad of other environmental management entities, public and private, throughout the state. Their service areas vary and are parceled out through various geographic boundaries, such as watershed, county, city, and/or ecoregion. All environmental agencies and their

efforts are limited greatly by two main components: funding and access to lands, public and private. Public or state/federal funding is based on a specific species, ecosystem, and/or geographic feature (river, lake, etc.). Environmental health is calculated in conjunction with its socio-economic value (ODFW, 2020). There are five species of salmon found in the Pacific Northwest, all of which are listed as endangered/threatened and/or strategy species by the Federal ESA or the Oregon Conservation Strategy (*see Figure 2*): the chinook or king salmon (*Oncorhynchus tshawytscha*), the coho or silver (*Oncorhynchus kisutch*), the chum or dog salmon (*Oncorhynchus keta*), the sockeye salmon (*Oncorhynchus nerka*), and the pink or humpback salmon (*Oncorhynchus gorbuscha*) (ODFW 2021.). However, ODFW considers the pink salmon and sockeye to no longer have populations great enough within Oregon's waters to be considered species of concern in regards to primary conservation efforts. (ODFW, 2020). All of these species are also identified as culturally significant species to Tribes within Oregon and the rest of the Pacific Northwest Coast, including the Hanis and Miluk [Coos], Quuiich [Lower Umpqua], and Sha'yuushtl'a [Siuslaw] peoples.

qalyaq
Salmon, Hanis

qalyeq
Salmon, Hanis

wi'ii
Salmon, Sha'yuushtl'a

hlyii'ai
Salmon, Quuiich



Image 8. Salmon

Oregon State and Federal Salmon Species Status				
T = Threatened Status, E = Endangered Status, SOC = ODFW Species of Concern				
COMMON NAME	LATIN	STATE	FEDERAL	SOC
Chinook or King	<i>Oncorhynchus tshawytscha</i>	T	E	X
Coho or Silver	<i>Oncorhynchus kisutch</i>	E	T	X
Chum or Dog	<i>Oncorhynchus keta</i>		T	X
Sockeye	<i>Oncorhynchus nerka</i>		E	
Pink or Humpback	<i>Oncorhynchus gorbuscha</i>			

Figure 2. Salmon Species State and Federal Status Table

Current efforts on salmon restoration, protection and conservation are varied throughout the state. According to the Coalition of Oregon Land Trusts, in 2019 the state of Oregon secured 15 million dollars of federal money for salmon habitat restoration projects. The funds come from the Pacific Coast Salmon Recovery Fund (PCSRF) and are distributed by the Oregon Watershed Enhancement Board (OWEB). Since 2000, PCSRF has invested nearly \$237 million into Oregon's salmon recovery projects (Swart, 2021). This fund was established in 2000 by congress "to reverse the decline of Pacific salmon and steelhead, supporting conservation efforts in California, Oregon, Washington, Idaho, and Alaska...essential to preventing the extinction of the 28 listed salmon and steelhead species on the West Coast" (PCSRF, 2021).

Western Restoration

Modern-day western restoration practices within the United States are based on federal and state environmental needs assessments. The Environmental Protection Agency (EPA) is the federal agency in charge of determining the bulk of distribution of federal dollars for restoration work, and where it will take place. The 1973 Endangered and Threatened Species Act (ESA), is one of the state and federal designations of a specific species that are deemed at risk. “The purpose of the ESA is to protect and recover imperiled species and the ecosystems upon which they depend” (USFW, 2017). Two main Departments of the Interior administer the ESA; the U.S. Fish and Wildlife Service (FWS) is in charge of primarily terrestrial and freshwater organisms, and the Commerce Department’s National Marine Fisheries Service (NMFS) is in charge of marine wildlife, which includes anadromous fish- Salmon (USFW, 2017).

Under the ESA, species are listed as either threatened or endangered. This listing is known as a species “status”. This status is predominantly determined due to its population size or lack thereof

within the environment. “Endangered’ means a species is in danger of extinction throughout all or a significant portion of its range. ‘Threatened’ means a species is likely to become endangered within the foreseeable future” (USFW, 2017). Species listed as endangered or threatened are identified as such based on their biological status and threats to their existence. There are five main factors that the FWS takes into account when determining a species status under the ESA (USFW, 2017):

- 1.) Damage to, or destruction of, a species’ habitat;
- 2.) Over-utilization of the species for commercial, recreational, scientific, or educational purposes;
- 3.) Disease or predation;
- 4.) Inadequacy of existing protection;
- 5.) Other natural or man-made factors that affect the continued existence of the species.

When one or more of these factors are identified concerning a species' status the FWS takes action to protect it. These

factors, as determined by the FWS are based on the best scientific information available (USFW, 2017).

“Critical Habitat” is another potential component of an ESA species listing, which includes the designation of physical or biological features within a geographic area that are essential for the conservation and survival of the species. This designation may need to include site- and species-specific management and protection practices. Federal agencies and federally funded or permitted activities are required to avoid destruction or modification of ESA designated critical habitat.

Federal protection of ESA listed species and their habitats is done by prohibiting the “take” of listed species, which is defined by the ESA as “to harass, harm, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct” (USFW, 2017), and to prohibit federal actions that would inhibit a listed species existence. The ultimate goal of the ESA is to “recover” species so they no longer need protection. Recovery plans are prescribed by FWS biologists to restore a species and its habitat(s) to ecological health. Partnerships and collaborations with state agencies are commonplace in federal efforts to protect ESA-listed species and habitats. In regards to the State

of Oregon, The Oregon Department of Environmental Quality (ODEQ) is the agency in charge of determining the distribution of state dollars for restoration work, and the primary contact for state-federal relations and federal funding is allocated to states annually for their restoration efforts (USFW, 2017).

The state of Oregon filters federal and state funding for restoration through several of its regulatory agencies, the primary being Oregon’s Department of Fish & Wildlife. Federal regulations or designations apply state-wide, as well as any state governance related to species and habitat protection, restoration, and/or conservation. Originally established to support the voluntary action of all Oregonians to address the needs of Oregon fish and wildlife, ODFW implements the Oregon Conservation Strategy (OCS) as a “blueprint” for the state of Oregon. Though not regulatory, the OCS establishes “a basis for a common understanding of the challenges facing Oregon’s fish and wildlife”, and provides “a shared set of priorities for addressing the state's conservation needs” for the conservation of fish and wildlife, using “the best available science to create a broad vision and conceptual framework for long-term conservation of Oregon’s native fish and wildlife, as well as various

invertebrates, plants and algae” (ODFW, 2016).

The three main goals of Oregon Conservation Strategy are to:

- 1.) Maintain healthy fish and wildlife populations by maintaining and restoring functional habitats;
- 2.) Prevent declines of at-risk species, and;
- 3.) Reverse declines in these resources

The Oregon Conservation Strategy identifies four main priorities for the state in regards to environmental issues to address, conserve, restore and/or protect: Strategy Species, Strategy Habitats, Key Conservation Issues and Conservation Opportunity Areas (*see Figure 3*).

Through the identification of these aforementioned priorities specific species, habitats (ecoregions), issues, and areas of opportunity are prioritized for conservation, protection and restoration efforts and funding in Oregon. The OCS also prescribes post-environmental treatment or action, including monitoring, reviews and updates, collaboration (state, federal, Tribal, non-governmental, interest groups, and private landowners),

and a stakeholder advisory committee (ODFW, 2016). Western Restoration funding and selection processes are based in a politico-economic system. Which determines funding, and thus need, through political and economic criteria, before ecological criteria. Additionally, all ecological criteria for selection, is based in western science and knowledge (*See Figure 4*.)

2016 Oregon Conservation Strategy Priorities

Strategy Species- those of greatest conservation need, having small or declining populations, are at-risk, and/or are of management concern.

Strategy Habitats- habitats of conservation concern within Oregon that provide benefits to strategy species.

Key Conservation Issues- large scale conservation issues or threats that affect or might affect many species and habitats over large landscapes.

Conservation Opportunity Areas- where conservation would benefit the largest number of strategy species and strategy habitats.

Figure 3. 2016 Oregon Conservation Strategy's Main Priorities

Western Restoration Funding & Selection Process
Politico-economic based system

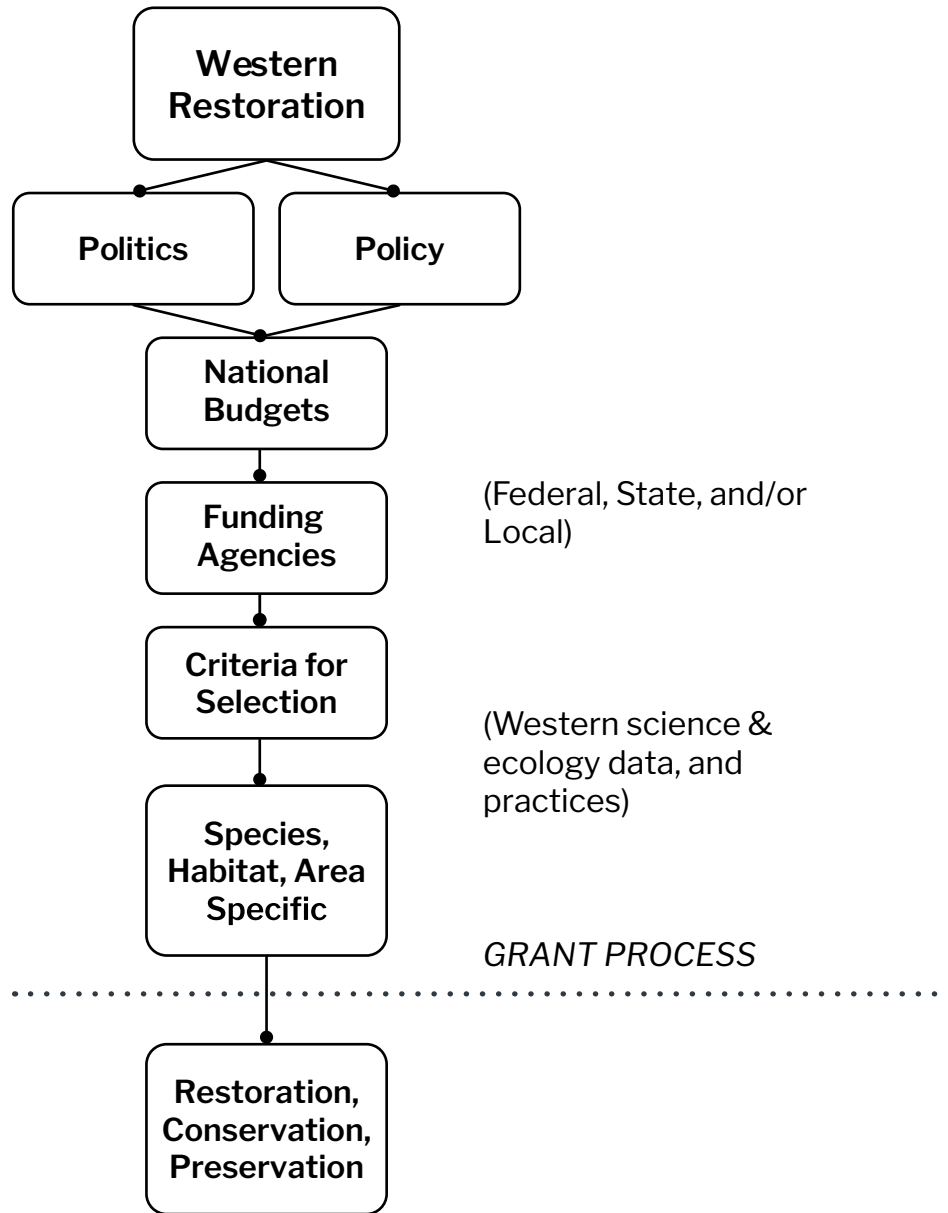


Figure 4. Western Restoration Funding & Selection Process

Western Restoration and Tribes

To fully discuss Tribal and federal/state collaboration, whether it be within the realm of environmental work or other fields, the U.S. legalities of being a Tribe or a sovereign nation must be reviewed. From 1778-1871 the U.S. government “relations” with native nations indigenous to what is now called the United States of America were defined and conducted largely through treaty processes. Treaties were sold as contracts between nations (Tribes and the U.S. government) and were to be recognized and established as a set of rights, benefits, and conditions. For the treaty Tribes, those who “agreed” to cede millions of acres of their homelands to the United States, these treaties were thought to be legally binding and protected. Federally recognized Tribes are “American Indian or Alaska Native Tribal entities that are recognized as having a government-to-government relationship with the United States, with the responsibilities, powers, limitations, and obligations attached to that designation, and are eligible for funding and services from the Bureau of Indian Affairs. Furthermore, federally recognized Tribes are recognized as possessing certain inherent rights to self-

government (i.e., Tribal sovereignty) and are entitled to receive certain federal benefits, services, and protections because of their special relationship with the United States” (Indian Affairs, 2021). According to the US Department of the Interior Indian Affairs, federally recognized Tribes have the right to regulate their lands independently from state or federal governmental control. “They can enact and enforce stricter or more lenient laws and regulations than those of the surrounding or neighboring state(s) wherein they are located”. This designation includes environmental agencies and regulations, but only on Tribal (reservation or trust) lands. It should be noted that this “right” to govern their lands is limited to federally recognized Tribes, which are determined by a set of standards set by the federal government and do not represent the existence and beliefs of the many un-recognized indigenous communities throughout the United States and North America.

The EPA works in conjunction with federally recognized Tribes to help “protect human health and the environment by supporting

the implementation of federal environmental laws, with a special emphasis on helping Tribes administer their environmental programs. These efforts are consistent with federal trust responsibilities, the government-to-government relationship, and EPA's 1984 Indian Policy" (EPA, 2019). The EPA created a formal policy that illustrates how to interact with Tribal governments, as well as how to consider Tribal interests in their programs nationwide. Through this policy, the EPA works throughout its ten regional offices to collaborate with all federally recognized Tribal governments. (Ruckelshaus, 1984) Through these policies and others like it, the EPA provides funding for education, outreach, consultations, and programming for environmental work on Tribal lands.

In 1996 Oregon Department of Environmental Quality (ODEQ) developed a Tribal Government-to-Government Relations Program, signed in by then-Governor Kitzhaber; Executive Order 96-30. In 2001, the Oregon Legislature approved Senate Bill 770 which put the executive order into law. The executive order states; "There are nine federally recognized Indian Tribal governments located in the State of Oregon. These Indian Tribes were in

existence prior to the formation of the United States of America, and thus retain a unique legal status. The importance of recognizing the relationship that exists between the Tribes and state government cannot be underestimated. The purpose of formalizing the government-to-government relationship that exists between Oregon's Indian Tribes and the State is to establish a process which can assist in resolving potential conflicts, maximizing key inter-governmental relations and enhance an exchange of ideas and resources for the greater good of all of Oregon's citizens, whether Tribal members or not" (Brown, 2001). This Executive Order and the efforts of both the state and Tribes started the process of Tribal-State collaborations, which still today includes environmental conservation, restoration, and protection. In this case, the state considers Tribes stakeholders in lands beyond the federal borders of reservations, consulting Tribes on issues that take place within their self-identified ancestral areas.

First Foods

First Foods are the regional foods which have nourished Native peoples for generations and are the foundation within their cultural, spiritual, and socio-economic systems. “First foods serve the people by providing cultural and physical health, and the indigenous communities reciprocate by maintaining the health of first foods. In this way, both people and food providers and are provided for” (NAU, 2011). On the Oregon Coast, as well as the Coastal Pacific Northwest (PNW), the Tribes are known as Salmon People. “Native Nations of the Pacific Northwest define themselves as Salmon People. They consider salmon to be an extremely important gift of food from the Creator, and each year they honor the salmon’s sacrifice in special ceremonies. Due to this deep historic cultural relationship salmon are and continue to be an important First Food for the Tribes. Many geographic regions distinguish Native Nations or language groups from one another in the Pacific Northwest; three major geographic regions are presented here: The Pacific Coast, Puget Sound, and the Columbia River/Plateau. Despite the physical distance and cultural diversity, salmon is a unifying factor for Native People and Nations across the Pacific Northwest” (Smithsonian,

2018). With reciprocity in mind, being Salmon People means that the Tribes not only care for the health of the salmon but the ecosystems and co-species that support their existence. The First Foods knowledge and practices of the Hanis and Miluk [Coos], Quuiich [Lower Umpqua], and Sha'yuushtl'a [Siuslaw] peoples reflected the diversity of landscapes they inhabited. Generally, the Tribes had an abundance of First Foods including but not limited to: roots, berries, nuts, game, eggs, birds, plants, fish and shellfish. Many of which, were available year round.

qwnax

Nuts, Quuiich

hlqwatom

Roots, Sha'yuushtl'a

yukwsil

Berries, Hanis

yuqwsil

Berries, Miluk

Image 9. (Top Left) Cranberries

Image 10. (Top Right) Myrtle Nuts

Image 11. (Bottom Left) Camas Roots

Image 12. (Bottom Right) Elderberries



Traditional Ecological Knowledge

“Ecosystems sustain themselves in a dynamic balance based on cycles and fluctuations, which are non-linear processes... Ecological awareness, then, will arise only when we combine our rational knowledge with an intuition for the non-linear nature of our environment. Such intuitive wisdom is characteristic of traditional, non-literate cultures, especially of American Indian cultures, in which life was organized around highly refined awareness of the environment”

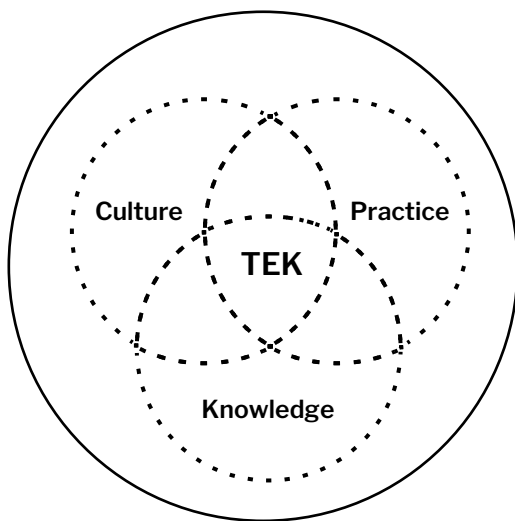
(Capra, 1982).

Traditional Ecological Knowledge or TEK, a term that came into popular use in the 1980s, now represents this intuitive traditional ecological wisdom of indigenous communities, gathered through direct human contact with the environment and its changes over centuries. TEK can generally be described as a form of indigenous ecological science, specific to that aboriginal communities' territories and ecosystems. With this specificity of location and environments being the determining factor, TEK itself is an ambiguous term, which in its nature

represents a vast diversity of not only environmental but economic, social and cultural “attitudes, beliefs, principles, and conventions of behavior and practice derived from historical experience” (Berkes, 2018). TEK is a socio-ecological based system or science utilizing culture, practice and knowledge as the three main categories for analysis within land stewardship and practices (*see Figure 5*). Traditional Ecological Knowledge as a science or practice, has some similarities to the accepted and widely used theories of western science and ecology, mainly

the overarching concept and process of creating order out of “disorder” or the nonlinear processes of nature (Berkes, 2018). However, there are far more differences between the two than similarities. Fikret Berkes lays out these major differences in *Traditional Ecological Knowledge, Concepts & Cases*, published in 2018 (see Figure 6). As Berkes notes, there are exceptions to all of these differences, but at their core these generalizations represent the differences in the foundations of Traditional Ecological Knowledge and western science and ecology.

Socio-ecological based system



Culture: values, morals, ethics
Practice: management systems, techniques
Knowledge: ecosystems, biota, place

Figure 5. Traditional Ecological Knowledge System Diagram

Comparison between Western Science /Ecology & Traditional Ecological Knowledge (TEK)

TEK is mainly qualitative (as opposed to quantitative).

TEK has an intuitive component (as opposed to being purely rational).

TEK is holistic (as opposed to reductionist).

In TEK, mind, and matter are considered together (as opposed to a separation of mind and matter).

TEK is moral (as opposed to supposedly value-free).

TEK is spiritual (as opposed to mechanistic)

TEK is based on empirical observations and accumulations of facts based on trial-and-error (as opposed to experimentation and systematic, deliberate accumulation of fact).

TEK is based on data generated by resource users themselves (as opposed to that by a specialized cadre of researchers)

TEK is based on diachronic data, i.e., long time-series of information on one locality (as opposed to synchronic data, i.e., long-time series over a large area).

Figure 6. Comparison between Western Science and Ecology & TEK (Berkes, 2018).

Biocultural Restoration

“Biocultural restoration is the science and practice of restoring not only ecosystems but human and cultural relationships to place, so that cultures are strengthened and revitalized along with the lands to which they are inextricably linked.” –

Center for Native Peoples and the Environment (SUNY, 2020)

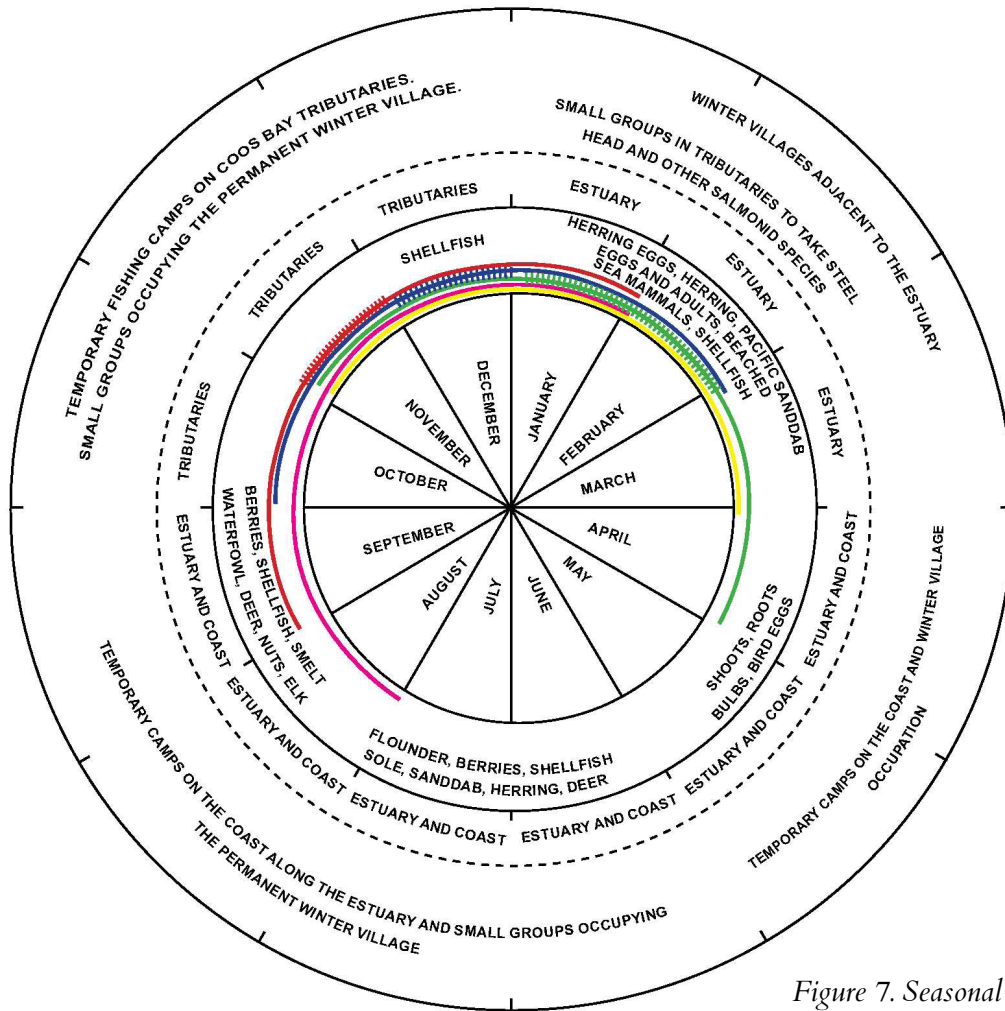


Figure 7. Seasonal Rounds Chart, CTCLUSI

Biocultural Restoration and/or Biocultural Ecology is a multifaceted approach to restoring environmental resources and ecological health using strategies that come from an inherent understanding that biological and social-ecological systems are the same (Morishige, 2018). Biocultural Restoration takes place at the intersection of biological and cultural diversity and is the knowledge that indigenous communities have obtained and passed on through centuries of place-based knowledge (Morishige, 2018). CTCLUSI continues to collect multi-generational ecological data across their ancestral lands in the form of seasonal rounds (*see Figure 7.*). Seasonal rounds represent the seasonal gathering cycles of their First Foods. This data is updated annually and tracks changes over time. Another strategy inherent in Biocultural Restoration is known as Reciprocal Restoration, which is “the mutually reinforcing restoration of land and culture such that repair of ecosystem services contributes to the cultural revitalization, and renewal of culture promotes restoration of ecological integrity. Based on the indigenous stewardship principle that “what we do to the land, we do to ourselves.” Restoration of the land and culture are inseparable” (Kimmerer, 2011). This approach is rooted in TEK, first foods practices, and restoration science, and “recognizes that it is not just the land that is broken, but our relationship to

it...Reciprocal restoration is grounded in the positive feedback relationship between cultural revitalization and land restoration. (Kimmerer, 2011). Protection and preservation of language and culture ensure that TEK continues to be passed on through generations and continues the reciprocal relationships indigenous peoples have with the land. In *Restoration and Reciprocity: The Contributions of Traditional Ecological Knowledge*, Robin Kimmerer provides a series of restoration goals which center on the importance of indigenous perspective and practices in restoration efforts.

- 1.) Restoration of subsistence-use activities focus on cultural keystone species.
- 2.) Restoration of traditional indigenous diets or first foods.
- 3.) Revitalization of TEK, language, and culture.
- 4.) Exercise of spiritual responsibility.
- 5.) Development of place-based, sustainable economies
- 6.) Restoration of traditional land management for the benefit of nonhuman relatives (i.e., biodiversity).

These goals represent restoration that centers on the importance of reciprocal bio-cultural relationships on land.

Quuich

Lower Umpqua Person

Iktatuu

Umpqua River





Image 13. Umpqua River. Reedsport, OR.

Methodology

This research was conducted under a methodology that acknowledges the historical use of Western science and research methods as a tool for colonization and appropriation of Indigenous people's autonomy, lands, and knowledge in the pursuit of Western expansion (Smith, 1999). Therefore, the predominant methodologies and paradigms will not be representative of western research and methodologies. The methodology will reflect the ontology, epistemology, and axiology of the community it represents (Wilson, 2008), and will employ Collin's Critical Indigenous Research Methodologies (CIRM) research paradigm that "relies heavily upon collaboration with participating communities and/or individuals (Running Horse Collin, 2017). Additionally, this paradigm is "grounded in the Indigenous values of responsibility, respect, relevance, reciprocity, relationships and resiliency" (Galla, Kawai'ae'a, and Nicholas, 2014) and the understanding that Indigenous Peoples are experts of their knowledge, experience, and history.

Source materials were obtained through academic journals, articles, and books.

Additionally, all of the Tribal, state, federal, and local agencies' research was obtained from the associated agency's websites.

LITERATURE REVIEW

The first methodological approach to this project was a literature review covering the following topics:

- 1.) Written history of the Confederated Tribes of the Coos, Lower Umpqua & Siuslaw Indians;
- 2.) The current environmental state/status of the Oregon Coast Range;
- 3.) Salmon as an icon and species in the Pacific Northwest and Oregon;
- 4.) Western Restoration efforts and practices;
- 5.) Western Restoration and collaboration with Tribes;
- 6.) Biocultural Restoration;
- 7.) Traditional ecological knowledge;
- 8.) First Foods.

INTERVIEWS

The second methodological approach to the project was a series of semi-structured interviews with Tribal members, environmental and cultural representatives from the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians (CTCLUSI), and a representative of a local environmental management entity that works with CTCLUSI on restoration efforts within their ancestral territory. The seven interviewees were intentionally selected for their specific knowledge and experience. The Tribal participants (six of the seven) are not only Native but also all employed within the Department of Natural Resources and Culture at the CTCLUSI, have been working on environmental and cultural sovereignty for decades, and represent three generations. These semi-structured interviews were designed to prompt conversations about their knowledge and experience in regards to First Foods, Salmon, Restoration, and Tribal relationships with non-Tribal agencies and organizations. As the interviews progressed, topics and or ideas that continuously were brought up were deemed important and were addressed in future interviews. See Appendix A for the full list of interview questions.

The seventh interviewee was a representative of the Siuslaw Watershed Council (SWC) based out of Mapleton, Oregon, and within CLUSI's ancestral territory. SWC was selected due to its long-standing relationship with CTCLUSI and its continued efforts in developing a meaningful environmental partnership. The SWC interviewee has worked with CTCLUSI for the past 10 years on collaboration in the Siuslaw watershed, is a resident within the Siuslaw Watershed, and is an active member of her community and environment. The interviews, due to the COVID-19 crisis, were conducted and recorded via Zoom and then transcribed by a third party. No one has access to the original recorded interviews other than the interviewer and the transcriber. The transcripts were then checked by the interviewer and the interviewees and edited for errors, corrections, or clarification in Tribal languages (Hanis, Miluk, Siuslaw, and Lower Umpqua) and redactions for confidentiality due to culturally sensitive information. All interviewees agreed to be named within the project and directly quoted. Finally, the final draft of this project was submitted to the Tribal Council of CTCLUSI for approval per their request.

Narratives

This section is a series of selected quotes and identified themes that were brought up during the interviews. The quotes were extracted from over fifty pages of transcriptions from the interview sessions. For organization and the analysis process, this section is broken into three distinct topic sections with subsections pertaining to themes addressed. The topic sections are in relation to the categories of questions asked, as well as the responses. The sections and subsections are as follows:

1.) *FIRST FOODS*

a. First Foods as knowledge

b. First Foods as culture

c. First Foods as practice

2.) *RESTORATION*

a. Tribal and non-Tribal government relationships

b. Goals

c. Expertise

d. Consultations

3.) *SALMON*

Interviews

All of the interviewees, as noted previously, have agreed to be identified for their participation in this research. To provide a little more context in relation to their identities, careers, experiences and knowledge, I have provided an informative title for each interviewee. Additionally, each of the interviewees throughout this section will be identified from here on by their initials, which are shown with their names.

Representatives from Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians and their Department of Natural Resources and Culture

- JS - John Schaefer, Hanis Coos, Water Protection Specialist, Biologist, and Teacher.
- PWP - Patti Whereat-Phillips, Miluk Coos, Linguist, Ethnobotanist, Author, Teacher, and Storyteller.
- MC - Margaret Corvi, Hanis Coos, Former Director of the Department of Natural Resources and Culture, Siuslaw Watershed Council Board
- JB - Jesse Beers, Sha'yuushtl'a uhl Quuiich[Siuslaw & Lower Umpqua], Cultural Stewardship Manager, Native Artisan Traditional Storyteller
- AR - Ashley Russell, Miluk Coos, Water Protection Specialist, Cultural Assistant, Native Weaver, and Singer.
- CK - Courtney Krossman, Miluk Coos - Archaeology/Ntlaxam Technician, Native Weaver, and Singer.

Representative of the Siuslaw Watershed Council

- MB - Mizu Burress, acting Director of the Siuslaw Watershed Council and Siuslaw Watershed Resident.



lishwat

Blue Elderberry, Hanis

sicils

Myrtle Nuts, Hanis & Miluk

chiyuusan

Tobacco, Sha'yuushtl'a uhl Quuiich

Image 14. Seeds, Ashley Russell.

FIRST FOODS

First Foods as knowledge

All of the interviews started with questions about the interviewee's knowledge and experience with First Foods. The use of the term First Foods is somewhat new within the realm of academia, and as previously mentioned, is somewhat of a fashionable term in the realm of indigenous-based knowledge in regards to traditional food systems. Many of the interviewees expressed their understanding of the use of the term First Foods being a modern classification for the knowledge they were simply raised with, unknowing of this terminology.

In response to the question: What is your knowledge and or experience of First Foods in your community?

"...looking back, I was lucky to grow up in an area that was very rural and had an abundance of all kinds of First Foods. And little did I realize that I grew up eating First Foods almost every day, whether that be elk, trout, salmon. And we also grew a lot of our own food... Today that kind of interest grew and after I had kids, whenever we camp or basically, or

whenever the weather's decent, we try to supplement our diet with some sort of First Foods, whether that be our main dish, such as elk, salmon, trout, or sorrel or wild ginger or licorice root- you know there's a lot of things out there where we live that we can utilize and we like to do that." – JB

"My earliest memories are going to cultural events and I learned a lot through attending those, like solstice and different ceremonies... all of my memories growing up- going clam digging, fishing, crabbing. My dad was a commercial fisherman. I think a lot of the time, I mean you don't think of it as being "First Foods", it's just your way of life." – CK

In response to the question: What is your knowledge of First Foods within Tribal communities in the Siuslaw Area? And where did that knowledge come from? This question was specific to the representative of the Siuslaw Watershed Council.

"...being a partner with the Tribes, that is something we are and do and have experience with so I'll try and only speak

from my knowledge there. I've tried to learn a lot about First Foods. I did grow up in the Siuslaw, so from my own perspective, just knowing the flora and fauna of the Siuslaw, I was very familiar with it and without knowing it absorbed some information about the different plants and animals used either for First Foods or materials or things like that. Without knowing that and without really knowing that they were First Foods, but because there are still characteristics of those plants and animals that made them useful and important for thousands of years and they still are." – MB

Not surprisingly, all of the interviewees both Native and non-Native obtained a large portion of their First Foods knowledge from living and gathering foods from the lands and waters they were raised on. This knowledge was typically passed down generationally by their families and communities (within the Tribal community as well as outside).

In response to the question: Where did you get your First Foods knowledge and experience?

"My knowledge came from family, first and foremost. Like, "Here's where the mudflats are, here's where we used to go and gather these clams, where we used to take the boat out," – our family used to have a boat and take our boat out and go

salmon fishing in the ocean..." –MC

"Growing up it was mainly through family, and not necessarily just the Tribal side of my family, though I guess there's a Seminole on my dad's side as well...But yeah, mostly from family growing up and then growing up around my Great-Grandmother who was Siuslaw quuiich.: –JB

"My dad was a commercial fisherman. I think a lot of it at the time...even for him it wasn't in the context of First Foods. He grew up here in Coos Bay and his mom grew up in Coos Bay and her mom and so forth and so those traditions were always passed down. Maybe not always in that context but it's just something that we've always practiced." –CK

Additionally, many of the Native interviewees continue to build their ancestral knowledge through research. For the communities of CTCLUSI this is due to the horrific loss of life and subsequently their cultures and practices after the Tribes were forcibly removed from their lands and were displaced or died due to war, disease, reservations, Indian schools, slavery, and the terminations acts during the European colonization of what is now called the Western United States and Oregon. Due to this, many members of the Tribes use research, experimental,

and observational sciences to rediscover and recreate their ancestral knowledge.

In response to the question: Where did you get your First Foods knowledge and experience?

“I’m always learning, I’m always reading and doing research, we’re always discovering new First Foods out on the landscape that may have not been recorded by any of the ethnographers, but I mean if it’s a native plant and it’s out on the landscape, we used it. That’s how I feel about it.” -AR

“A lot of it is from research, going through the old ethnographic notes from interviews with people who were born in the mid to late nineteenth century. Their experiences. Which is interesting because of course what they experienced in their lifetimes is different than what we see now. Part of it too is just growing up on Coos Bay. I grew up on the east side of the bay, up a little draw above Kentuck slough and we would go out sometimes, go fishing. We got some crab rings and we’d go crabbing.” - PWP

“for my career path I chose to focus on archaeology as well as Native American Studies and through those studies I learned a lot more about the context of what we’ve always done my whole life. You know, going through shell middens and

identifying different species and realizing, oh we’ve always gone clamming for gapers and cockles and things like that.”

- CK

In regards to current research being done on traditional First Foods practices.

“More so recently, it’s been researching neighboring Tribes’ ethnography and going about it that way and being like “oh, we had that plant here and we used it like this”, “well we probably used it in a similar way!” Because we were always trading and sharing knowledge, and anything that could help another person just to live a better quality of life, and make it easier...I mean so much was lost, we know that. But other people forget that.” - AR

“keeping an open mind when it comes to other ways of using particularly plants. I mean, that’s how we gain that knowledge back and reinstitute it and reinvigorate our culture.” - AR

In regards to learning from his Great-Grandmother and begging to research the traditional knowledge and practices of his ancestors.

“ after becoming kind of a nerd, going down into that rabbit hole and getting a job with the Tribe, and even before like



q'axas

Huckleberries, Hanis

q'as

Huckleberries, Miluk

taxxai

Huckleberries, Sha'yuushtl'a

uhl Quuiich

Image 15. Huckleberries John Schaefer.

in high school, at college I did a lot of reports on my Tribe and getting access through the Tribal government to like Jacob's notes and finding out that there's a lot of information on First Foods and so I guess taking what I learned growing up, taking what I learned from my Elders, and also taking what was transcribed into English or taken by ethnobotanists or ethnographers and putting it together into kind of like a cultural experimentation where you're figuring out what works best for you." -JB

First Foods as culture

Going beyond standard western terminology, the Native interviewees were asked to describe First Foods as a cultural practice. For indigenous people the foods themselves are physically important, but also the ceremony and practices around the protection and cultivation of these foods, and the ecosystems they reside in are equally valued.

In response to the question: How would you describe First Foods as a cultural practice?

"It's just our way of life. It's how we have always done things. ...as a cultural practice, it's something that we do every year around the same time. We watch the tides. There's some ceremony involved, thanking the fish or clam or whatever it is for its sacrifice for

us and thanking the earth for providing that to us." -CK

"It's really important and fun because a lot of it really does center around going out with family or community. Especially the fishing and the crabbing. It's just fun getting together with people and being in the great outdoors and then coming back and making something tasty out of it. Clam chowder or fried clams or fresh crab." -PWP

"Well, they're healthy, first of all. They're local. Implementing them into your diet daily is really good. If you're not able to do that, implementing them in ceremony is good, implementing them in any way possible is good as long as you are doing it in a responsible, sustainable way. And that becomes difficult, living in today's dominant society because there are many fewer communities of First Foods today, including not just plant First Foods but also animal-based First Foods." -JB

Culturally, First Foods are a representation of a Tribe's connection to their lands and waters, their families, and their communities. These connections cannot be separated from one another and are the bedrock of indigenous cultures. The interviewees expressed concerns about the future of First Foods due to environmental degradation and pollution. Without healthy environments, these foods will

continue to disappear. Without First Foods and access to them, the ability to be an indigenous person culturally, spiritually, and communally becomes a continuation of the cultural genocide that began during European settlement.

“First Foods was survival and now it’s not. It’s more cultural or recreational. Margaret brought up a good point on the sacred aspect of First Foods. She was saying that certain foods were sacred, but they’re probably more sacred now. She brought up lamprey as an example. It’s totally ceremonial now. In the past it was a food that you would eat and it would be cultural and it would be ceremonial, but not it’s entirely ceremonial because you don’t get them except on very special occasions or not at all. So, the ceremonial aspect has increased and the survival aspect has decreased because you’re not reliant on that anymore. So that’s the shift.” – JS

“I said my family used to own a fishing boat, and they were into harvest for selling so they harvested all the matsutake and salmon that they would sell and then obviously they would eat it, too. And so, I think about just surviving and needing those foods basically to survive here on the coast. If we want to live here, we need those foods...And the subsistence is further away for a lot of the Tribes and especially our Tribe, because we just don’t

have enough of it for it to be a subsistence thing and so we’re holding onto this part of our culture through ceremonial practices and cultural gatherings and things like that.” -MC

First Foods as practice

Expanding on First Foods as a cultural practice, the interviewees noted that First Foods is a form of TEK, specifically an indicator of environmental health. Through the protection and celebration of their First Foods, the Tribes were able to flourish for thousands of years. Today, in the face of the environmental crisis of the Oregon Coast, the state of First Foods like Salmon is an indicator of poor environmental health and management.

In response to the question: How would you describe First Foods as a cultural practice?

“...for instance, the salmon and other animals that are much lower in numbers than they used to be, stuff like lamprey for instance in our area, it’s difficult because you want to utilize those First Foods but you know at a certain point that it’s irresponsible to utilize those First Foods. And so, it becomes a struggle within yourself, whether you want to harvest or not, knowing there’s tons of other people harvesting them. That’s frustrating from a spiritual viewpoint also, when you feel

you know what should be happening because of your traditions that have been taught for thousands of years in this area, and they aren't being followed by so many and you watch the populations go down and it hinders your ability to actually harvest in the First Foods system, but everyone else is doing it without seemingly any thought or guilt.”-JB

In response to the question: How do you think First Foods apply to environmental issues currently on the Oregon Coast?

“a lot of our First Foods were found in wetlands, and a lot of our wetlands were lost. I think statistically speaking it ranges from like 65 to 80 percent of the wetlands that were lost and salmon also need those wetlands for their life histories. So just thinking about how all those intertwine together. I mean when you think about First Foods, when you're doing those restoration projects, you're not only thinking about the salmon but you're thinking about the native plants that were out there. Because everything is a web, everything affects everything. So, trying to restore those native plant species will also bring back the native animal species that were here first and have a well-established relationship with those plants. It just makes a healthier ecosystem when you think in terms of that aspect in trying to restore the

First Foods or native plants. But then as far as Tribes are concerned, thinking about the ecosystem and enriching the ecosystem and making it healthier, it also reestablishes our connection with the land and our relationship, and it helps our culture.” -AR

“It's huge. “When the tide is low, the table is set”. Traditionally we were very permanent village sites because we have the tide, we have this surplus of food every time the tide went down. You have the clams, all the types of shellfish and urchin and different types of ocean weeds that you can eat, all these mussels and everything, and now we have to check toxin levels and fecal matter and all this stuff that wasn't really an issue as much in the past... Seals are a great example, I mean we should be able to utilize seals but if you look at the numbers that come out, they're diseased and not really something you probably want to eat anymore, and it's very sad to me that we have this huge industrial system of bringing food to Fred Meyers or Walmart or whatever, and that huge system bringing food from faraway lands to our area is poisoning the food that we have in abundance right here. And it's not just the local-local, it's the ocean, it's destroying the ocean. If we don't change it's going to be permanent.”-JB



tlahaimihl

Red Cedar, Hanis & Miluk

qachtii

Red Cedar, Sha'yuushtl'a uhl Quuiich

Image 16. Cedar, Amanda Craig

RESTORATION

The interviewees were asked to describe their relationship to First Foods within the context of their jobs, careers, or personal experience with environmental restoration. All of the interviewees have positions in which their knowledge and experience of First Foods is utilized in some form of restoration effort or practice. For the context of this research, these questions were framed around environmental restoration. To provide some context to the interviews upfront, the scope of what “restoration” includes, particularly to the Tribal interviewees, is much broader than that of western science. When the Tribal interviewees respond to questions in regards to “restoration”, this is more a representation of Biocultural Restoration, which includes much more than the restoration of environmental and/or ecosystem services and health. Some of the other subjects or efforts related to restoration include but are not limited to: the protection and preservation of archaeological sites, culturally significant places, and objects; the revitalization of cultural practices and technologies; and the preservation and revitalization of traditional languages and education. The responses to some of the interview

questions will reflect this broad-holistic scope of “restoration” and “restoration efforts”.

In response to the question: Have you worked on First Foods in any restoration applications?

“ John and I have been trying to gather all of the traditional First Foods out on the landscape. It ranges from private landowner lands to the BLM [Bureau of Land Management], Siuslaw National Forests. So, we developed a plant list of every traditional First Food that we could think of and we’ve given it to various agencies. We’ve given it to watershed councils, just to keep in mind, you know, hey these are the native plants that are important to the Tribe. Let’s see how we can incorporate these into the work that we’re doing. And a lot of these agencies have been very receptive.” -AR

“I do a lot of education, and whatever I do, education in the schools or the public or whatever, I do try to emphasize resources and culture connection and the fact that our culture stems from thousands of years of observing this natural world around it, and really, I would argue our culture is a type of science, and now there’s terms for

that, “Traditional Ecological Knowledge” and all that. Because most scientific studies are, if you’re lucky, a 25-year basis for information or a 5-year basis for information, and “from that we can tell this!” We have tens of thousands of years of observation of the natural world around us.” – JB

“First Foods, natural resources with gathering and planting, and also formal restoration projects we as a Tribe are working with different watershed groups up and down the coast, forest service, BLM, to wherever there’s a restoration project to assist in either gathering or planting native plants. And many of those plants are First Foods, or if not First Foods, useful for other things such as weaving and medicinals and different things.” JB

In response to the question: Have you worked with Tribes on restoration or conservation efforts?

“I have worked on collaborations in partnership with the Tribes for restoration stuff. Overall, I think we have just lately, over the last few years, really started actually collaborating on projects so it feels fairly new still. In this work it takes years to develop one project even, and to lay the groundwork for a good partnership and a relationship takes a lot of years and it takes constant work and maintenance.

So, I do feel like it’s still pretty new. But we’ve collaborated on several projects, and I would say those collaborations were often started tangentially or just opportunistically, you know, and I think a lot on the Tribe’s side... I’m thinking just different participation or group ownerships or something, and that’s where the Tribe’s devoted like a person to interface and to support that partnership.” –MB

“The benefit I think is not just for us; the benefits are all around. I’m thinking pre-restoration when we weren’t included in decisions that were made, thinking of thousand-dollar projects like the dunes projects where European beachgrass was used by the forest service to “stabilize” the dunes during a time when local Tribes weren’t given a voice. And I’m sure if we were a federally recognized government that was getting our voices heard in partnerships like we are today, our natural resource department would have spoken out pretty strongly about, “well the consequences of this are you could possibly stabilize the dunes so well that you create ecosystems that don’t exist naturally and then you get flooding and all these issues” that are coming up now. That’s a benefit to all of us, that Tribes have knowledge and think in the long term, thousands of years ahead of time.

Not to be cliché, but how is this going to affect seven generations from now?” - JB

Tribal and non-Tribal Governmental Relationships

One of the focuses of this research is the relationships between Tribes as governments and other non-Tribal agencies particularly concerning environmental restoration and land management efforts and practices. All of the interviewees are involved in these inter-governmental relationships, on one side or the other. The interviewees were asked what value they saw in collaborations with Tribes.

In response to the question: What value do you see in collaborating with Tribes? Should be noted that this response is from the Siuslaw Watershed Council representative.

“As I understand it, I believe we have many common interests. We want a healthy watershed, a healthy habitat that can support the things that we value, at least as far as the environment goes. There’s a lot of overlap in the watershed council’s mission and the Tribe’s interests as well. In lots of ways, the Tribe is much broader, much bigger than that aspect of the work but for us that’s really all we do. I think there’s been an interesting

focus in restoration work on restoring from environmental impacts primarily related to resource extraction and infrastructure building. For a long time, it was focused on restoring to a natural state or something like that, and I feel like has changed with our involvement with the Tribes more to sort of thinking about what does restoration mean? I don’t even really like the word restoration very much myself, at all. In my mind it’s just working towards a healthful, functioning environment, both for what we do in terms of the habitat and ecologically but also hopefully that also supports a really functioning and vibrant culture for the area and community.” -MB

To further define these relationships, interviewees were asked to discuss positive and negative aspects of their experience in these relationships. Interviewees were also prompted to suggest changes that might improve the negative aspects and/or bolster the positive. Throughout the responses, positive and negative observations are centered around three general themes; goals, expertise and consultation.

Goals

When the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians (CTCLUSI) and environmental agencies share similar goals, their relationships were predominately positive in regards to resource sharing. Resources in this context can be funding, knowledge, and or accesses. Conversely, when agencies' goals are different from Tribes, access to resources for Tribes is unlikely, removing their ability to have any say in the management of their ancestral lands and/or practice their cultures.

“The negatives, obviously, the land was stolen. And so, you can't just go where you want or do what you want in a responsible way. You're limited in where you can go and restore or do whatever as well as they have their own policies and procedures and they have their own goals, and some of them aren't in line with our goals.”-JB

In response to the positive and negative aspects or values in collaborating with other governments or agencies.

“I mean a part of it is, our treaty in 1855, you know to get our land the government had to have a ratified treaty and that never

happened. We had a treaty, it wasn't ratified, our lands were taken anyway. So, we believe that we are still “owners” of our lands, whatever that means. We are still stewards of our lands and waters so we can utilize different agencies such as McKenzie River Trust or Siuslaw Water Council and South Slough, all these different agencies, Forest Service, Bureau of Land Management [BLM], Department of State Lands [DSL], to help implement our vision of what stewardship should be for our lands, our waters, our resources, our First Foods. So that's a positive, that we're able to implement that through others, and with a lot of those groups, especially here in Siuslaw, the Siuslaw Watershed Council, we have a lot of like-mindedness of how it should be, at least as far as the watershed goes. And that's a positive.” -JB

Another component brought up by one of the interviewees, was a difference in representation and understanding of the bureaucratic processes of Tribes and other agencies. This was particularly noted in regards to having Tribal employees attend board meetings, councils, and work groups associated with the Watershed Council.

“it's kind of been more one-sided because the watershed council doesn't have somebody who goes to any Tribal



Image 17. Knife, Mark Petrie.

wal'wal
Knife, Hanis & Miluk

qalch
Knife, Sha'yuushtl'a uhl Quuiich

government meetings or anything like that at all. So, I don't know what to think about that other than maybe that's not the best thing, to be one-sided like that...I mean, for one thing, like, if it's always the Tribe who's required- or not required, but circumstantially sends- has a person devoted to come and be a part of these efforts that are happening in this group or with this other organization or something, those are resources, you know? Which is something the Tribe is pointing out and it feels like those should at least be matched by partner groups."

- MB

Expertise

Expertise, particularly what the Federal, State and Local governments consider expertise, was another theme mentioned by the interviewees throughout. Knowledge of First Foods and similar TEK, though academically fashionable or popular, are not always defined as defensible science in western societies. In a system where western science fuels funding availability and resources concerning restoration efforts, interviewees express their concerns and the consequences of not seeing indigenous knowledge as valid and scientific.

In response to the question: Have you worked with environmental management agencies in a First Foods capacity?

"Yes, and if we're talking about environmental management agencies, we're going to broaden that to those permitting agencies, and then we're going to talk about some of the land management agencies that are doing some of that traditional restoration. What I think are some of the positive or negative aspects of collaboration or what I think are the bottlenecks, I would just say that I think that there is a recognition, at least with some local groups, that we might be missing some native planting efforts, and they're really focused on replanting these species that their agency has identified. And they didn't include the Tribes in those conversations when they were first developing those plants lists. They say, here's these restoration plant lists. They're based on our information from our scientists and their knowledge and understanding of the ecology of the area. But because they're experts, they don't think that they need to talk to anybody else. And so they don't invite the Tribes." – MC

"Are our Tribes really taken seriously? And our understanding and knowledge of the landscape and the ecology here? I would say at times they are and at times

it seems like they're not. The science community is pretty strongly attached to the idea that they have a method and they understand the natural world and anything that a Tribe might add to that is either insignificant or not going to add to their already-established knowledge of First Foods or resources or any of that. We talk to them, but if we talk to them it's just a "check the box" type of thing."
– MC

Consultations

Another major theme addressed by the interviewees in regards to positive and negative aspects of these relationships is the process of meaningful consultation. Legally, as discussed previously, government agencies and entities, by law, must consult with Tribes. However, the interviewees expressed concern about how seriously these laws are taken; the lack of understanding of what meaningful consultation entails; and the lack of enforcement when consultation doesn't happen. Of course, some agencies and entities are better than others, but generally, the consensus is that meaningful consultation is almost non-existent.

In regards to meaningful consultation and intergovernmental relationships with the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians.

"I will say consultation is happening a lot more these days...you know states and federal level, because they are very familiar with laws, they are usually very good at consulting staff, Tribal Council, they usually are pretty good about reaching out whenever something happens, depending upon the administration. The local jurisdictions aren't so knowledgeable about what Tribal nations are, whether they're sovereign governments within a government that there's a required level of consultation for them." -JB

In regards to consultation in design/construction projects and cultural resource protection.

"Not every construction worker is trained on cultural resources; in fact, almost none of them are! I've had many cases where they'll be like, "oh yeah, on this project there was a bunch of shell that we found but it was just dredge material." It's like well are you trained to identify the difference between dredge material and a midden? And so, no, they're not! And so I think that consultation, making sure you're following through

with your monitoring obligations, and even training your staff on cultural resources because sometimes there's projects that we feel are fine and don't require any monitoring and still have an inadvertent discovery. Just doing cultural resource training on your staff I think is really important." - CK

Suggestion in regards to archaeological and cultural protection consultation.

"I would say one of the biggest things is collaboration early and often. Throughout the project this is very important. It is important for us to be there early so we can review, if there is a site there, it's potential, and then throughout the process to know, okay, so we're moving this tide gate or fixing it, is that going to change the velocity in this area of the water and potentially impact the fish weirs that are just down the stream? Or is it going to cause erosion to this bankside that we know there's a midden. And you know sometimes we can do testing but sometimes it's finding a needle in a haystack when it comes to cultural resources. You don't always find something. So, making sure that you're consulting and keeping in contact with us throughout the project. We request monitoring to follow through with those obligations. Because that's one of those negative things, you know we send

letters and we request monitoring and sometimes - a lot of times- they just don't call us when they're doing the work. We don't know." - CK

In regards to lack of follow-through in consultation, particularly in regards to cultural resource protection.

"For certain projects consultation is required and there's laws but there's loopholes too, that people find. You know we can request monitoring, and they're supposed to follow through with that, but on our end, we don't have a lot of teeth to force them to. Especially on a county level. When it's a federal project there's a lot more laws that are affecting that and requiring them to consult not just with us but with the state's cultural resource office as well, especially if it's within a site, there are a lot more laws that they have to follow. But when it's outside a site or if it's on private land, there's a lot more loopholes. Really, right now it's up to the county to decide if they're going to revoke the permit or give them a fine, but some people just don't care. They take the fine over not being able to build their project." - CK

In regards to meaningful consultation and intergovernmental relationships with the Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians.

“There are things that are missing are federal and state and local. There are no real meaningful relationships with Tribes, I don’t think, in any of those agencies. And if you look at the state-wide land-use planning goals, there’s not even a goal. I don’t think that there’s a structure for it and I don’t think people know who the Tribes are for the future I just want to see people not just talking the talk. It gets really exhausting when you hear people saying the same thing at the same meetings. It’s like if you’re saying that then who else should be at this meeting, then, to make a change? Because if you hear me say it at every meeting, the same thing that I think is important, and you say you can’t do anything, then why isn’t somebody else here hearing this, or why aren’t you relating this important thing to somebody else? I don’t know what the root cause of that is; whether it’s the structure of the government itself or whether people are afraid to stand up with Tribes or if they can’t identify with what is being said, or if they don’t even think it’s valid. I don’t know what exactly the barrier is, but it feels like there’s just a lot of barriers that exist. There’s so many things that the

Tribe is working on, the state is working on, the federal government is working on, that it would make so much sense for us to work together to accomplish, and that’s not happening.” - MC



hlehlox

Medicine, Hanis

hlehl

Ceremony, Miluk

tlkwaiyimit

Ceremony, Sha'yuushtl'a uhl Quuich

Image 18. Medicine, Margaret Corvi.

SALMON

Common grounds, whether that be environmental health, land management, or species preservation and conservation, are meeting points between Tribes, environmental entities, and governmental agencies. Here in Oregon and the Pacific Northwest, one iconic species seems to dominate the conversation when environmental restoration is concerned; salmon. The Tribes of the CLUSI, like many other PNW and Salish Tribes, are considered Salmon People. This is a connection point, an obvious junction between the people of CLUSI and the modern restoration efforts and practices of US environmental agencies and entities. However, the relationship Tribal people have to salmon comes from a different place than simply protecting a resource in decline. The interviewees were asked to describe their cultural ideology within the context of salmon, and how that shapes their relationship with the environment, to better illustrate this relationship and what it means to be Salmon People.

In response to the question: How do you see First Foods as a cultural practice?

“Everybody thinks of salmon as a

subsistence food, right? Everybody’s like, “Subsistence, that’s our culture, that’s our identity!” But it’s also super ceremonial. You have a Salmon Ceremony, and it is something we eat at every ceremony. There’s no Tribal gathering without salmon. Every gathering and ceremony include salmon. And so, when I think about any First Food that’s going to be there, salmon is a big one.” -MC

In response to the question: What does being Salmon People mean to you?

“I think a lot of northwest Tribal folks, native folks, refer to themselves as Salmon People not because they are literally a salmon person but because we speak for salmon. When the salmon come in and the first fish is caught, all the fishing stops and there’s a celebration, traditionally that salmon is divied up amongst the people, the best parts are taken by the chiefs and the heart and the collars and all the good parts are given to people in the community who have done good things for people, and everybody gets a bite of that first salmon that comes in. There’s dances, there’s songs, there’s the honors to the salmon. And then the remains, the

bones, that's taken down to the water where they come from. We come from the ground and the Salmon people come from the water, so they're given back to the water and they're celebrated and we tell the Salmon People that we have honored you, thank you for coming, we are giving your remains back to your people and we hope you'll tell your people that we've treated them well, we've honored them, and please know that we honor and bless you and ask you to come back next time. And then, and only after that ceremony takes place, that's when salmon fishing can start back up. That's a spiritual ceremony, that's a celebration, but the way I look at it, it's also a sustainability and stewardship model, the practicing of when the first salmon come up, it's a break to the fishing where salmon can go up." -JB

"All water beings demand great respect, whether that be lamprey or salmon or shellfish or anything. Traditionally that was our main source of food here on the coast, and to do anything to disrespect any of them could bring huge consequences. There was the story of the "Salmon did ill to boy". Where these kids, this one boy wasn't being very respectful to a salmon and brought in a tsunami that destroyed most of his people. You know there's the practice of utilizing the freshwater mussels only as a knife to cut lamprey, when you

clean lamprey, if you use anything else it is disrespectful, it would bring huge rains and storms that would destroy the fishing for a whole season. There's komatlat, the story of a man who was lazy and disrespectful towards his fish-trap basket and his salmon, and is responsible for the reason we only have salmon runs seasonally today and not salmon in rivers year-round. So, there's all these stories that are based around that; disrespect or not being respectful of water people. And salmon, according to story, a thunderbird was the father of all the ocean food, and salmon are his most beloved children. So, they demand a different level of respect. So, all water people demand respect and should be given respect."-JB

"Having a relationship with the salmon. It means that we are Salmon People and that we eat salmon and are sustained by salmon, but I think also the salmon people are people that we have a relationship with and it's really important to have those relationships with all of the animals and all of the plants." - MC

"It plays in a definite ecosystem. Nothing feels quite like home like the mossy foggy coast with the rivers and its particular ecology. Traveling around in the deserts or the plains, it's pretty but you definitely know you're somewhere else. A part of me is just that unique Pacific Northwest

culture and food culture, and salmon are just so important. Part of the traditional diet but also part of the whole life of the whole area. Back when salmon were so plentiful, they not only supported humans but lots of other species, too. And the forest itself. Researchers have figured this out in recent years, that the salmon work as fertilizer for the forest. So, when they die or when other animals like bears drag the fish carcasses away and then end up abandoning them in the woods, as they decompose, they become part of new plant growth, and it actually had a very significant impact on forest life and the growth cycle of the forests. It really makes me wonder now that cycle has been disrupted- it's been disrupted for a long time- obviously the forests have not been getting the kind of nutrients that they had gotten for who knows how many millions of years that salmon were coming up and spawning and dying. That's got to be a pretty significant impact on the whole riparian forest and ecosystems, the composition of the forest itself..." - PWP

"Being salmon people makes you really look at the bigger picture of what that means, what it means to protect the salmon. It adds a level of respect that other people don't have, which kind of coincides with the last question of why

it's important to us, because, again this has been our land for thousands of years and our ancestors and our children are going to continue to feel that connection to the land, whereas people who just move here for a job don't feel that connection, they don't look that far in the future or the past for their decisions. Your eyes are just opened wider to these impacts seven generations in the future. More care for the environment and the salmon, and just what it all encompasses." - CK

"It means I feel a really big responsibility as far as being a Tribal member and stewarding the land. As a mom, I'm always taking my family out on the land and teaching them, hey we're a part of this ecosystem, this is our food web and we need to help take care of our salmon brothers and sisters, and everything in general." - AR

Hanis and Miluk

Coos Person(s)

Kuukwis

Coos River





Image 19. Coos River, Coos Bay, OR.

Project Narrative

Before conducting the interviews, this project's intent was to develop a framework for First Food-based restoration efforts on the central Oregon Coast. It's become clear, after going through the literature review (Project Narrative), the interview process, reflection and analysis (*see Figure 8.*), that before any action-based framework can be developed there is still much work that needs to be done concerning Tribal, non-Tribal relationships when it comes to environmental restoration planning, implementation, and management. Before indigenous knowledge can inform modern restoration practices; western processes, design and ideologies need to evolve. The over arching theme revealed through the interviews was that meaningful consultations and, most importantly, collaborations do not yet exist between Tribes and environmental agencies. At best, they are shallowly consulted due to legal influence and not accepted as experts of a legitimate science. Ideologically and culturally western science and the overarching systems of restoration do not allow space for Indigenous knowledges like TEK to be considered valid, let alone to be practiced

or utilized. This realization shifted the latter part of this project to focus on the changes that would need to take place foundationally and ideologically to inform meaningful change within modern restoration. This changed the projects overarching question from:

How can Indigenous knowledges inform western restoration practices?

To: *How do we create meaningful relationships between Tribes and western environmental management and restoration entities?*

The Siuslaw Watershed Council (SWC) is an exception to the privous statement concerning meaningful relationships with Tribes. The SWC is and has been working to create and nurture meaningful relationships with Tribes for over a decade. Part of their success is the understanding that this process of creating relationships its not simple or stagnant. This process evolves over time, and needs constant work and effort to benefit both entities needs and goals. An integral part of this process or evolution is creating space and respect for the perspectives and practices of Indigenous peoples and their cultures.

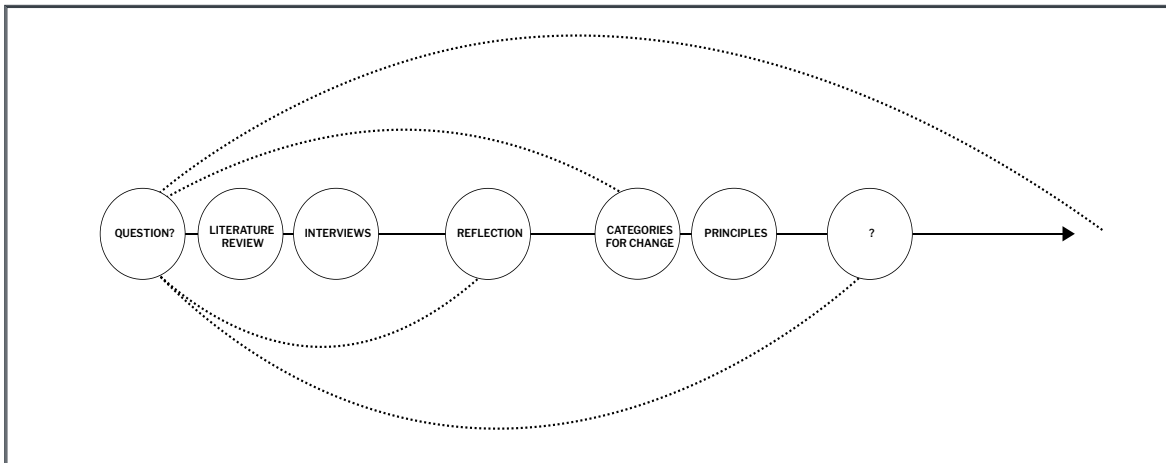


Figure 8. Process Diagram

CATEGORIES

From analysis of the interviews and literature reviews, four secondary categories were identified that all (non-Tribal and Tribal) interviewees addressed in regards to developing culturally inclusive, reciprocal and sustainable restoration efforts in the future. I have taken these themes and divided them into four categories: 1.) Beyond Salmon; 2.) Beyond Western Science; 3.) Reciprocal Collaborations; and 4.) Biocultural Restoration. After analyzing and reflecting on these categories identified through the interviews, a series of practice principles were developed for each of the four categories. These principles address the challenges or “barriers” identified in the interviews concerning the current state of restoration-based collaborations between the CTCLUSI and environmental agencies, and illuminate the potential

for future meaningful collaborations between the two. It should be noted that these principles concern a specific set of interviews of one confederation of Tribes (CTCLUSI), and do not reflect any other communities. However, these principles may be used by environmental management agencies and designers as a foundational ideology or starting place for the development of meaningful consultation with other Tribal and indigenous communities. Additionally, I want to note that this research and principles are not intended to provide a substitution for decolonization efforts and/or Land Back Movements. On the contrary, this research is intended to be one very small effort in the larger struggle for the decolonization of the environmental industrial complex that now manages the lands that are now called the United States of America.

CATEGORIES FOR CHANGE

1. *Beyond Salmon*

As previously mentioned, there is a historic and tangible reason salmon are considered the icon of the PNW and Oregon, by both Tribal and non-Tribal peoples. It is no surprise that salmon receive a lot of attention and funding for restoration. Though most interview questions were predominately about or concerning salmon, the interviewees mentioned many other plants and animals whose environmental and cultural importance was equal to that of the salmon. The reason the Tribes of the PNW were called the Salmon People was because of their relationship with the salmon. For indigenous communities, the salmon or the Salmon People were entities of their own, deserving of respect and honoring for their sacrifices which allowed for the Tribes' survival. But they were not the only *people*. CTCLUSI, like others, built complex relationships with all of the entities of their landscapes/ecosystems, not just the salmon. First Foods are the other fish, plants, and animals that Tribes had equal respect for and relationships with. Foods First culture goes beyond the food itself and relates to the communities of plants, animals, and marine life. These communities aid in the health of First

Foods, as well as the materials used for the collection, processing, and preservation of them. First Foods culture goes beyond one species or food and supports the complexities of the ecosystem as a whole. An ecosystem is not made up of one species or organism.

2. *Beyond Western Science*

Terms like *Traditional Ecological Knowledge*, *First Foods*, and *Biocultural Restoration* are currently very popular and trendy within environmental agencies, groups, and academia, but without action that supports the use of this indigenous-based knowledge, as well as the support of indigenous peoples and communities, these terms will continue to form tokenism. Throughout the interviews, there was an intense sense of exhaustion and sadness concerning the ongoing fight with federal, state, and local agencies in getting them to use TEK or First Foods knowledge. TEK is built upon centuries of place-based observational science by indigenous communities. These communities thrived on the land through the use of culture and communities built upon the ideology that human and environmental relationships are reciprocal. This type of science is not focused on finding a solution but on finding balance. The validation and acceptance of TEK within western science, education, and environmental communities needs to be normalized.

Furthermore, this knowledge needs to be disseminated by indigenous peoples, not appropriated. These traditional methods of research and data need be considered valid and valuable.

3. Reciprocal Collaborations

Though consultation with federally recognized Tribes throughout the United States is legally required during environmental management and development within designated ancestral boundaries, the interpretation of “consultation” leaves much to be desired. It should be noted that state and local agencies each have their own legislation on Tribal consultations, which differs state by state and county by county. Throughout the interviews, when asked about ways to improve consultation or better collaboration efforts between Tribes and environmental management agencies, the Tribal interviewees spoke of the lack of depth current efforts seem to show and, in some cases, that consultation becomes simply an action of last-minute “notice” versus an invitation for conversation and/or collaboration. This one-sided and shallow approach to collaboration is indicative of an extractive culture which drains resources and energy from Tribes and doesn’t respect their sovereignty or knowledge of their lands. Meaningful collaborations, instead of consultation(s) allows for Tribes to respond to and reflect

on a project/topic with the expectation of an actual “conversation” or exchange of knowledge and/or opinions. Additionally, meaningful or reciprocal consultation is not one-sided or extractive; it is about an exchange of needs or knowledge. It is also an understanding of the disproportion of access Tribes have to resources such as time, money, and staff.

4. Biocultural Restoration

The definition of restoration is a topic that has been addressed throughout the Tribal interviews, and may differ from common definitions of environmental restoration. One interview question posited concerned what the interviewees considered First Foods and/or restoration efforts, and their answers went well beyond the scope of western restoration frameworks. Biocultural Restoration, as mentioned in the introduction, includes the revitalization and protection of the culture, language, and history of indigenous peoples. Meaningful restoration efforts to the Tribes also include, but are not limited to; protection of archaeological sites and artifacts; historical and modern education about indigenous realities and perspectives; conservation and protection of culturally significant places; and the creation of meaningful and respectful inter-governmental relationships between Tribes and the entities of the state/federal/local governments.

Principles

After synthesizing and analyzing the categories identified from the literature review, interviews, and reflection and analysis a set of practice principles were developed. These principles address the challenges identified in the interviews concerning the current state of restoration-based collaborations between Tribes and environmental agencies, and illuminate the potential for meaningful collaborations between the two. The practice principles reflect the four categories for changed mentioned previously: Biocultural Restoration, Reciprocal Collaborations, Beyond Western Science, and Beyond Salmon. Additionally, the practice principles were designed from the socio-ecological based system that incorporates sciences like: Traditional Ecological Knowledge (TEK) and Biocultural Restoration. Using Kimmerer's series of Biocultural restoration goals, which center on the importance of indigenous perspectives and practices in restoration efforts (Kimmerer, 2011), the practice principles empower TEK as an valid scientific and cultural practice. Using the importance of TEK at the foundation of these principles, they also reflect what is lost in western

restoration processes, when TEK is not viable part of the process (*see Figure 9*). The western restoration process is foundationally a politico-economic framework that is fueled by money (funding) and the determining success factors are calculated by criteria, data, and practices rooted in western science and academia. Without the inclusion, and scrutiny of human components within these processes, integral components to the western restoration framework are limited or missing: culture and knowledge (*See figure 10*). Culturally, this includes the ideological, ethical or philosophical issues within society that negatively effect environmental health and resiliency. Without this analysis of a cultural component, the cultural influences the system has upon forms of practice and knowledge are not evaluated either. This leaves a lot of oversight when it comes to self-regulation and responsibility.

Additionally, the nature of the western restoration framework is extremely linear, which implies that once a former part of the process is complete, it's too late for reflection and analysis. A TEK or socio-ecological based system is of a cyclical and

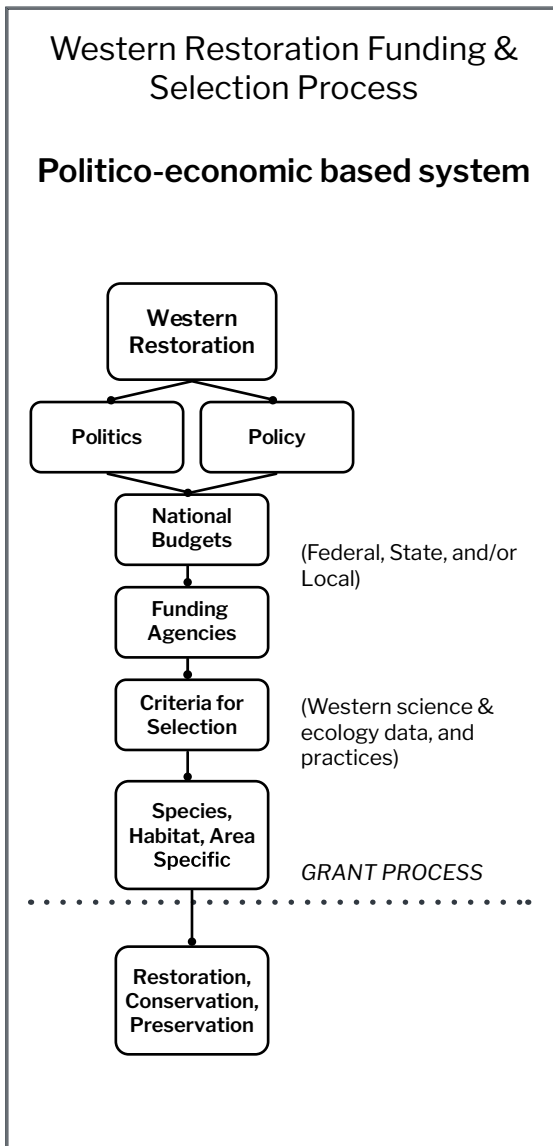


Figure 9. Western Restoration Funding & Selection Process

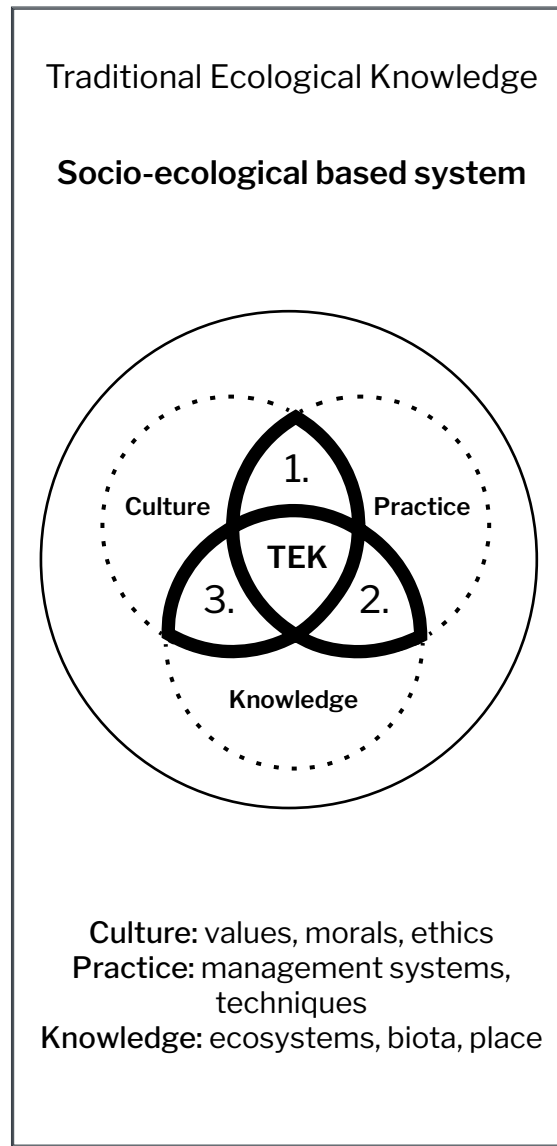


Figure 10. Traditional Ecological Knowledge Secondary System Components

holistic nature, where secondary components of analysis are constantly being analyzed and reflected upon in relation to their effect on the overall outcome, goal and ethics. Other components of a TEK based system excluded from the western politico-economic based system are the potential for 1. Ceremony; 2. Reciprocal-ecological practices and; 3. Decolonized forms of sharing knowledge (See Figure 10). The practice principles were designed to incorporate all of these missing components.

PRACTICE PRINCIPLES

These principles are intended as “food for thought” which environmental restorers, designers, planners, land managers, and academics can use to begin to develop meaningful and reciprocal relationships with Tribes concerning land management and restoration.

Biocultural Restoration Principles

- Prioritize the support and empowerment of Native and indigenous peoples.
- Promote restoring native/indigenous peoples' access to their lands.
- Promote the ability for Native and indigenous peoples to practice their culture on their ancestral lands.

- Efforts could include Memorandum of Agreements (MOAs) for Tribes to have access and land for spiritual practices and gathering.

Reciprocal Collaboration Principles

- Plan and budget Tribal/Native/Indigenous collaborations early and often in the planning process.
 - Pay Tribes for their time and knowledge if possible, budget for it.*
- Allow ample time for the community to respond to your questions, project, etc.
- Research the community you are collaborating with.
 - Know who you're going to talk to and the history of the landscape concerning that community.*
- Go into consultations with an open mind and the understanding that indigenous communities might not have the same priorities as you or your project.
 - Be prepared and okay with the possibility they will not agree with you.*
 - Go into meetings willing to make compromises or changes.*
 - Find out what the Tribes' needs and priorities are.*
 - Incorporate those needs and priorities into your work if possible.*

Beyond Western Science Principles

- Learn and reflect on decolonized forms of research, data, and ways of knowing.
- Recognize the implicit bias of western histories and sciences being rooted in colonialism and thus predominately from colonial point of view.
- Support and promote indigenous peoples as experts of their histories and knowledge;
 - *Storytelling, oral histories, songs, language, etc.*
 - *Traditional Ecological Knowledge*
 - *First Foods*
- Include human components into research and data gathering
 - *Physical, cultural, ideological and philosophical*

Beyond Salmon Principles

- Advocate for more than single species-based restoration and management practices.
 - *First Food systems or practices*
- Advocate for funding to be applied to species beyond those that are popular or “fashionable”.
- Look to multi species as an icon or “keystone” for an ecosystem(s).
 - *Holistic ecological and cultural approach*
- Look through a lens of reciprocity for species or habitat value, versus a lens of resource, extraction, and or economic values.

Application of Principles

These practice principles, like Traditional Ecologic Knowledge (TEK) itself, are not the antithesis of western science, but rather a holistic version of it. As Berkes (2018) describes, there are many differences between western science and TEK, however the overarching difference is the inclusion of human and non-human relationships and experience as an integral component with TEK. For Tribal and Indigenous communities and TEK there is no separation between humans and nature. Humans play an integral part in the ecological systems that rule this planet, equal to the part that salmon plays, or camas, or ell grass, etc.. There is no entity in nature that is greater or more important than another. The application of these principles were designed to reflect the human components of nature that need to be address as well as the environmental (non-human) ones, with the over arching goal of creating a healthy or resilient ecosystem for all.

When adding human variables to scientific approaches, the results tend to be those that reflect needs and strategies that take time for cultural and social changes to evolve and change. This is not

conducive to the predominate approaches of western science, particularly in relation to environmental science and management. So often the goal in western restoration efforts is a site- and species-specific solution that must occur within a predetermined timeline and budget. The success of outcomes is determined by how many factors one can control in the attempt to restore a habitat or a system to an ecological state that was never stationary. TEK is a science rooted in a balancing of needs across a spectrum of species and ecosystems that never ends. This balance is obtained through observational and experimental sciences that do not weigh the existence of one species over another, but through the ideological truth that one species cannot exist without the other. As an example, I've redefined the Oregon Conservation Strategy's four main variables to reflect the science of TEK (*see Figure 11.*). Again, these variables are used to inform what species, habitat or issues needs to be address in relation to environmental health and restoration, and thus reflect where restoration funding and attention are directed.

OREGON CONSERVATION STRATEGY CRITERIA

Strategy Species- those of greatest conservation need, having small or declining populations, are at-risk, and/or are of management concern.

Strategy Habitats- habitats of conservation concern within Oregon that provide benefits to strategy species.

Key Conservation Issues- large scale conservation issues or threats that affect or might affect many species and habitats over large landscapes.

Conservation Opportunity Areas- where conservation would benefit the largest number of strategy species and strategy habitats.

BIOCULTURAL RESTORATION CRITERIA

Species Relationships- identifying human, plant, and animal relationships that are in need of balancing, through the lens of reciprocity.

Cultural Habitats- culturally significant habitats, spaces and places that provide benefits to species relationships, and thus species themselves.

Key Ideological or Cultural Issues- ideological or cultural issues that affect or might affect many species and habitats over large landscapes.

Collaborative Opportunities – opportunities where collaboration between agencies would benefit any and all species relationships and cultural habitats.

Figure 11. Biocultural Restoration Criteria

Conclusion

For truly actionable Biocultural Restoration to take place, the incorporation of First Foods and Traditional Ecological Knowledge (TEK) into modern restoration science or practices is not enough. Biocultural restoration involves supporting and creating spaces for Tribes and indigenous peoples and allowing them the power to practice their culture(s) and knowledge on their stolen ancestral lands. The coastal Tribes of the Pacific Northwest (PNW), and in this case the Hanis & Miluk Coos, Quiich [Lower Umpqua], and Sha'yuushtl'a [Siuslaw], were called Salmon People because of their reciprocal relationship with the salmon. Salmon are seen through indigenous eyes not as resources to be gathered, but as non-human peoples deserving of respect and kinship. This cultural ideology goes beyond salmon and encompasses all members of an ecosystem and their needs. Tribes and indigenous communities for centuries have built their cultural and social-economic structures off of balancing these relationships for the betterment of all entities. As designers, planners, educators, policymakers, and/or environmental management agencies there is a lot of work to be done in the

wake of the environmental issues we face today. It is time to look to Tribes and other Indigenous communities to lead us toward a more sustainable and resilient future concerning restoration and land management.

For Tribes to have an active and equitable space in restoration and land management they need allies within the western world of environmental science, academia, policy, planning, and management. Allies that support the protection and revitalization of Indigenous knowledge, culture, and practices. Without action or support, the principles laid out in this research are just words. For meaningful change and restoration to happen, for the salmon, for us as people living in the PNW and Oregon, for our lands and waters, Biocultural Restoration has to be a priority. As academics, as students, as employers, as designers, as planners, and as individuals we all have a choice in regards to what we choose to prioritize and advocate for. Just like advocating for native species or storm-water in a design. Advocating for and with Tribes is just the same. Allyship beings when you choose to care, Action begins when you choose to speak.

Image 20. Fish Trap-Ashley Russell



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APPENDIX A

Semi-Structured Interview Questions

Tribal Interviews

1. Name, Preferred Pronouns, Tribal Affiliations?
2. What is your knowledge and/or experience of First Foods within your Tribal Community?
 - a. Where did you get your knowledge?
3. How would you describe First Foods as a cultural Practice?
 - a. How do you think First Foods apply to environmental issues currently on the Oregon Coast?
4. What work have you been a part of within CTCLUSI that works with First Foods?
 - a. Any restoration applications?
5. Do you or have you worked with any environmental management agency in a First Foods Culture Capacity?
 - a. If yes: What are some of the positive and negative aspects of that collaboration?
 - i. How could it be improved?
 - b. If no: Is this something you think is valuable or important?
 - i. How should these collaborations begin?
6. What does being “Salmon People” mean to you?
 - a. How does your connection to Salmon relate to your relationship with the environment and environmental stewardship?
7. Are there any Tribal Stories that really embody your connection to First Foods Culture, and/or its application within the environment?
8. Is there anything else you would like to share on this subject matter in general?

Watershed Council Representative Interview

1. Name, Preferred Pronouns, Tribal Affiliations?
2. What is your knowledge and/or experience of First Foods within your Tribal Community?
 - a. Where did you get your knowledge?
3. Have you worked with Tribes on restoration or conservation efforts?
 - a. How were these collaborations started?
 - b. Would you call these collaborations successful?
 - i. Why?
 - ii. Why not?
4. Have you worked directly with Tribes in a First Foods capacity within your work?
 - a. What did that look like?
5. What current work are you doing that pertains to salmonids and or salmonid habitats?
6. Do you see value in collaborations with Tribal peoples?
 - a. Why?
7. Is there anything else you would like to share on this subject matter in general?
- 8.

Questions that were deemed important as the interviews were conducted:

What does *Restoration* mean?