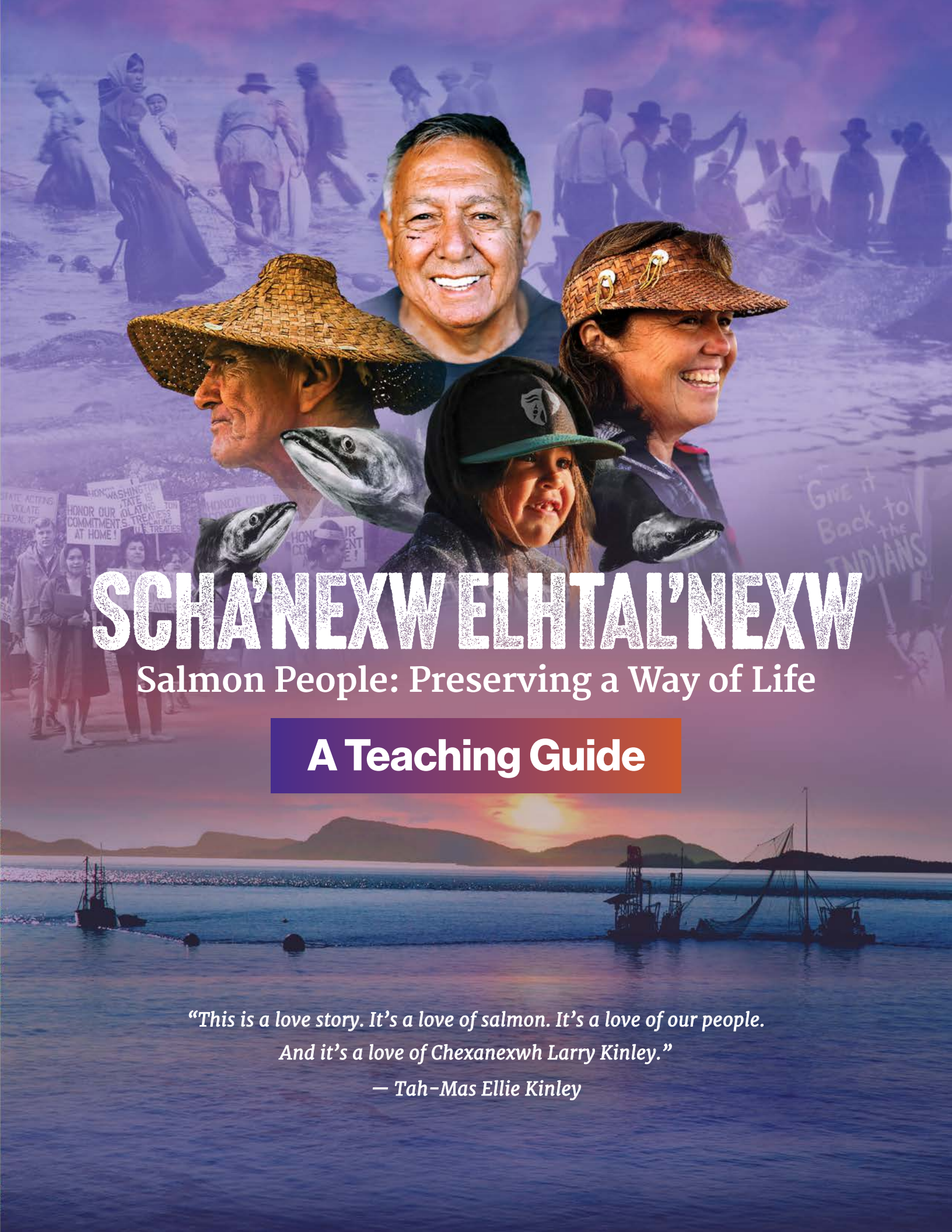

SCHA'NEXW ELHTAL'NEXW

Salmon People: Preserving a Way of Life

A Teaching Guide

"This is a love story. It's a love of salmon. It's a love of our people. And it's a love of Chexanexwh Larry Kinley."

— Tah-Mas Ellie Kinley

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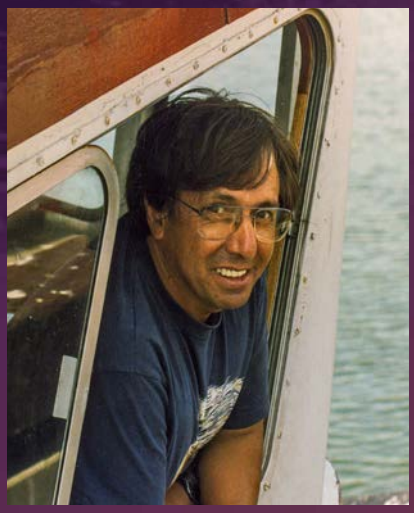
Introduction

The Lhaq'temish—the Lummi people (pronounced "LUH-mee")—are the original inhabitants of Washington's northernmost coast and southern British Columbia. *Scha'nexw Elhtal'nexw Salmon People: Preserving a Way of Life* follows two Lummi families as they fish a depleting wild fishery, non-native fish farming, and complicated legislation.



Larry Kinley in the window of a fishing boat.

The film is inspired by the legacy of *Chexanexwh* Larry Kinley, a prolific fisher and tribal leader who led several nations to sovereignty and self-governance including Lummi Nation, and the Sycuan Band of the Kumeyaay Nation and the Viejas Band of Kumeyaay Indians near San Diego, California. The name *"Chexanexwh"* carries the qualities of great leadership and success as a fisher. It goes back thousands of years and shows up in *Fort Langley Journals, 1827-30* over eleven times.

In these critical times, Larry asks,

"Who are we without salmon?"

Scha'nexw Elhtal'nexw Salmon People follows two Lummi families—the Kinleys and the Solomons—during the sockeye fishing season. *Tah-Mas* Ellie Kinley, wife of the late *Chexanexwh* Larry, Lummi fisher, and co-founder of the non-profit organization Sacred Sea, is one of the main characters of the film. She and their two sons are doing everything they can to keep the family fishing business afloat. While *Tah-Mas* Ellie married into the Kinleys, she was born into the Solomon family and is related to *Tla'kalin Ces'xen* Steve Solomon. Felix and Dora Solomon are *Tla'kalin Ces'xen* Steve Solomon's grandparents and *Tah-Mas* Ellie Kinley's great-grandparents.

A collage of Native fishers with salmon harvest (archival photos).

"As long as we want to be Indian people and we want to honor our customs and traditions and our sche'lang'en [way of life], it'll be a running battle all the time because we have a different view of the world. That's the challenge. We're trying to preserve a way of life and fishing is vital to that." — Chexanexwh Larry Kinley (01:34)

Native fishers harvesting salmon on shoreline (archival photo).

From the Production Team

The inspiration for *Scha'nexw Elhtal'nexw Salmon People: Preserving a Way of Life* comes from *Chexanexwh* Larry Kinley, an incredible leader and a life-long fisher. The climate is changing so fast and with the warming water temperatures and loss of habitat it's not a formula for the return of the salmon it's really a formula for the continued diminishment despite the efforts of the Tribes. We have success with the hatcheries, but it's really a drop in the big wide ocean of what's happening to the earth. It's a result of the failing ecosystem that we're seeing our fishermen suffer. Yet through all of this there is optimism.

It's important to share a way to be in this world right now—the love for fishing and the love for salmon, connecting our audience to the meaning of respect. The Salmon People live a life of respect and we can learn from how they protect salmon, how they live that life of being "one with"; that's what I get from Steve and Ellie—it runs deep as they both talk about their ancestors, they know it's in their blood.

Scha'nexw Elhtal'nexw Salmon People: Preserving a Way of Life is an excellent film to share with the next generation. There's a recognition of our Treaty rights, there's a recognition of our way of life, there's a recognition of strength of family and all the values you learn from being family, being a fisher and being a warrior for the people, it's all there and I hope it gets into the schools so the next generation can pick up this responsibility.

• ***Tse-sum-ten*** **Darrell Hillaire, Co-Director/Producer**

Solomon family fishing.

Our film is an invitation to spend some time on the water with the Kinleys and the Solomons, to meet the moment we're at; with the climate, with the fish and with the people. It helps to answer the questions: "What happened to our salmon?" and "Who are we without salmon?" We immerse our audience on the water and in the boats with our families by focusing on the sounds of Sk'elotses, the Lummi homeland. Antone George and the Westshore Singers have centered the music on the Coast Salish sound and there are gems from other Indigenous musicians included in the score.

Scha'nexw Elhtal'nexw Salmon People: Preserving a Way of Life illustrates some of the history that's been missing in our school books and celebrates this lifeway of respect with salmon at its center. *Chexanexwh* calls the salmon "the miner's canary" and many voices in the film echo this: "we are all connected." Our film is a tool to open hearts and minds, to encourage values of respect, love and fierce protection. Our hope is that viewers will make conscientious choices when it comes to the health of our climate.

We made this film with the Kinleys and the Solomons who opened their homes, hearts, and the decks of their boats to us. They are family and are forever written in my own heart. Our hands go up to them and all the Salmon People who touched *Scha'nexw Elhtal'nexw Salmon People: Preserving A Way of Life*.

• Beth Pielert, Co-Director/Producer

Tla'kalin Ces'xen Steve Solomon (left) with director Beth Pielert (right) at the beach.

I was freshly 21 when I joined Darrell Hillaire in this effort and while I didn't expect it to fill the majority of my 20's, *Scha'nexw Elhtal'nexw* has been so rewarding to work on as I grew into adulthood. Spending time with the fishing families taught me what hard work truly looks like and how to laugh and play throughout it, so I make sure to have fun while I work and lift up my teammates whenever I can. The cooks taught me that the feelings you have while you're in the kitchen get transferred into the food, so I make sure to take care of myself and show up ready to take care of others. And working with close knit families reminded me to make sure I spend time with my own family and cherish the moments I get with them.

There is a sense of purpose that returns to the Lummi People when the salmon return back to the islands and into the rivers. There is work to be done and people to feed. There is a grand sense of gratitude in the air as relatives mend last year's nets for their nephews and nieces to go out fishing. Each fisher delivers their first catch to an elder and salmon gets canned in preparation for gifting at weddings and funerals. When the salmon return the children hear all the old family stories. They learn how to fix an engine and pull a fish out of a net. These are the things I witnessed while working on this project and I hope that the people who watch get a sense of why salmon are so important to fishing communities.

There is so much we can do to strengthen our salmon runs and therefore strengthen our forests, our families, and ourselves. I hope this work contributes to the larger efforts that so many are involved in. I hope it encourages more people to get engaged and be a part of solutions. Most of all, I hope it allows people to gain understanding for each other and perspective on how our communities and our environments are intertwined.

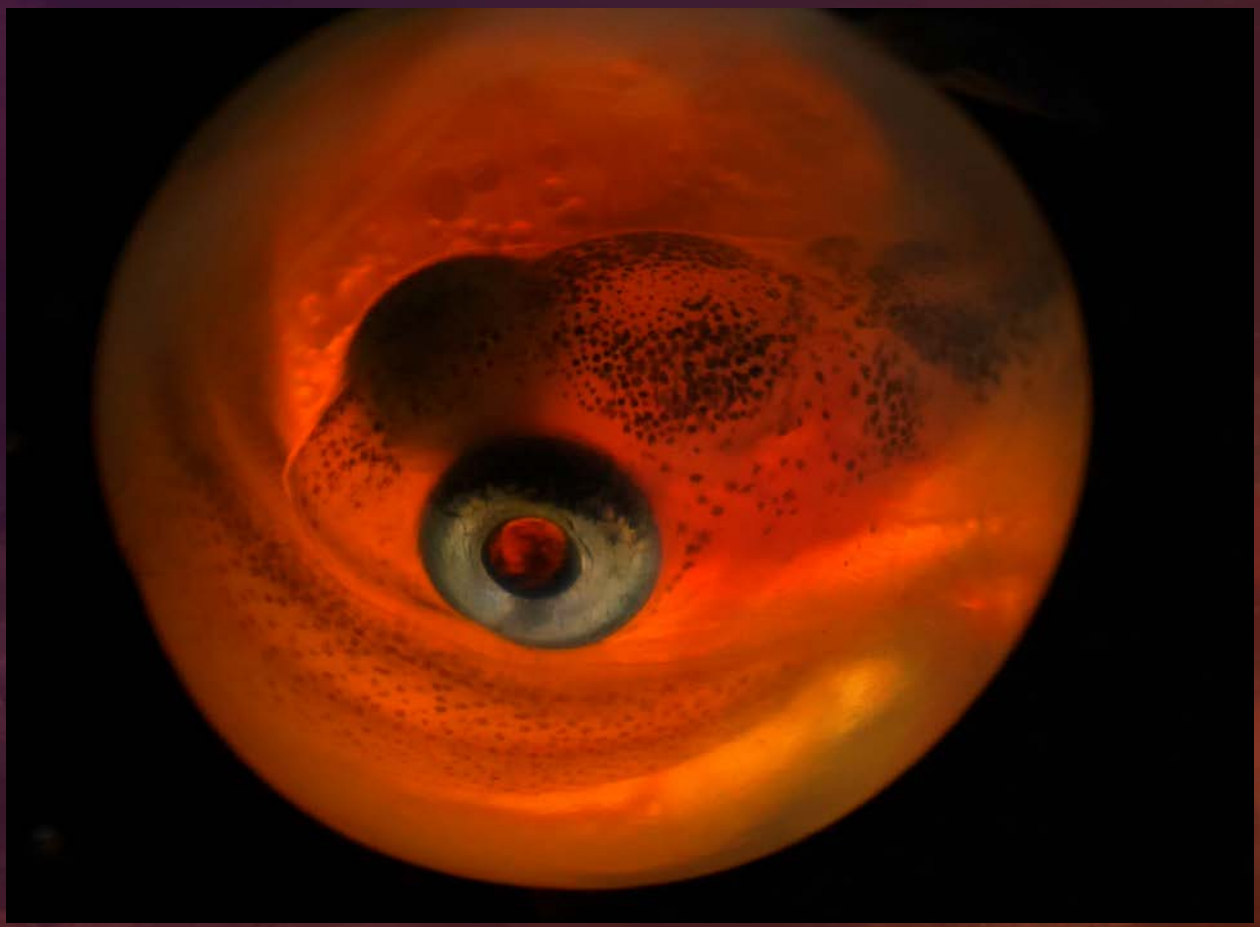
• Jon Carroll, Director of Photography/Producer

Director of Photography Jon Carroll on the water operating a camera.

Before We Begin

The *Scha'nexw Elhtal'nexw Salmon People* teaching guide is an instructional resource that provides middle and high school teachers with the necessary information to understand and teach the film. Information is drawn from:

- Main ideas from the film
- Indigenous knowledge and values
- Washington Office of Superintendent Public Instruction (OSPI) curriculum and learning standards
- Current events
- Government documents



Fraser River sockeye salmon egg.

Time Immemorial Curriculum

The OSPI curriculum that was foundational to this guide was the John McCoy *(lulilaš) Since Time Immemorial* tribal sovereignty curriculum, specifically the five essential questions included in the inquiry-based approach[1]:

1. **How does physical geography affect the distribution, culture, and economic life of local tribes?**
2. **What is the legal status of tribes who "negotiated" or who did not "negotiate" settlement for compensation for the loss of their sovereign homelands?**
3. **What were the political, economic, and cultural forces consequential to the treaties that led to the movement of tribes from long-established homelands to reservations?**
4. **What are ways in which Tribes respond to the threats and outside pressure to extinguish their cultures and independence?**
5. **What do local Tribes do to meet the challenges of reservation life; and as sovereign nations, what do local Tribes do to meet the economic and cultural needs of their Tribal communities?**

The *Scha'nexw Elhtal'nexw Salmon People* teaching guide was created with these questions in consideration, and implicitly answers them all.

NOTE: These questions are not the same as the discussion questions provided at the end of the guide that are specifically for student engagement.

1 "John McCoy (lulilaš) Since Time Immemorial: Tribal Sovereignty in Washington State," Washington Office of Superintendent Public Instruction, accessed October 14, 2024, https://ospi.k12.wa.us/student-success/resources-subject-area/john-mccoy-lulilas-time-immemorial-tribal-sovereignty-washington-state.

Teaching Guide Overview

Each section provides extensive context on the major ideas in the film. The core content of each section can be adapted into new or existing lesson materials. Educators should modify the material as needed to suit their individual classrooms.

First, **"The Salmon Lineage: A Cultural Ecology"** distinguishes the five species of Pacific salmon, and details how Lummi and other Coast Salish peoples' fishing methods have changed over time. Additionally, an in-depth explanation of *sxwo'le*, or reef nets, is provided.

Next, **"Shared Perspectives: Where Science Meets Spirit"** highlights how Coast Salish knowledge of salmon, salmon runs, and the environment correlate with Next Generation Science Standards, the K-12 science learning standards adopted by the OSPI. This section also discusses human-environment interactions from a scientific perspective.

Then, **"Fight to Fish: Protecting Treaty Rights"** explains the impact of the Treaty of Medicine Creek, the Treaty of Point Elliot, and the Boldt Decision to confederated tribal sovereignty and the inherent rights of tribal citizens. Impacts on the Lummi Nation are explained in-depth.

After, **"Coastal Clash: Farming Atlantic Salmon in the Salish Sea"** highlights how Atlantic salmon fish farms harm local wild Pacific salmon and affect Lummi and Coast Salish fishers. It also discusses developments in non-Native commercial aquaculture, exercises of tribal sovereignty, and human-environment interactions from a geographic and economic standpoint based on the OSPI Social Studies Learning Standards.

Finally, there are **discussion questions** at the end of the guide based on relevant middle and high school OSPI Social Studies Learning Standards. Though they are intended to lead verbal in-class discussions, the questions can also be adapted for online discussions or written responses.

Additionally, because fish farming and the Cypress Island salmon spill are such expansive topics, articles for **further reading** are provided to give more insight on their impact.

Teaching Tip

"Shared Perspectives" and **"Coastal Clash"** are well suited to be small lectures. The former section will likely be unrelated to the social studies or history class that *Scha'nexw Elhtal'nexw Salmon People* is expected to be viewed in. The latter is expected to be beyond a secondary student's awareness.

However, **"The Salmon Lineage"** and **"Fight to Fish"** should align with the expected learning outcomes for middle and high school students respectively and present digestible topics that may not be covered in the classroom altogether.

How to Use This Guide

Teachers of *Scha'nexw Elhtal'nexw Salmon People* are highly encouraged to take the following steps to ensure that both they and their students thoroughly understand the film.

1. Watch *Scha'nexw Elhtal' nexw Salmon People* individually **before** screening to students.

2. Read this teaching guide to learn about and contextualize the main ideas of the film.

3. Inform students of the research in this guide **before** screening the film.

   NOTE: The subsections from "Coastal Clash" **except** "Atlantic Salmon Fish Farms" should be shown **after** the film because they introduce related but unmentioned real-world events.

4. Engage students with the remaining subsections of "Coastal Clash" and the discussion questions **after** they have watched the film.

Following all four steps in order and steps two through four in class is most ideal, but various circumstances can affect how well each step can be followed.

Regardless, the most important step is the second: teachers are strongly encouraged to read this guide before screening the film to students to better answer any questions or concerns that will likely arise when engaging with such a complex piece of media.

Furthermore, steps three and four can be adapted into assignments to account for constrained in-class time.

- For step three, summarize the guide for students to read **before** the screening of *Scha'nexw Elhtal'nexw Salmon People.*
- For step four, choose the discussion questions that students can provide adequate, confident, and knowledgeable written responses to, and provide the questions **after** viewing the film.

Expected Student Outcomes

After watching *Scha'nexw Elhtal'nexw Salmon People* and learning the relevant information provided in this guide, students are expected to:

- Gain an increased awareness and understanding of cultural and political issues faced by the Lummi and other Coast Salish peoples.
- Identify the key factors that pressure Lummi and other Coast Salish peoples' fishing practices, and what actions are being taken to alleviate them.
- Recognize how they are affected by tribal, state, and global interests, and how these three interests affect each other.
- Relate what they learn in the classroom to Lummi and Coast Salish knowledge that has been kept since time immemorial.
- Understand how paramount family, ancestral ties, and the bestowment of the Lummi way of life to future generations are to the Lummi people.

Classroom Facilitation

The message of *Scha'nexw Elhtal'nexw Salmon People* and the material of this guide are culturally and politically sensitive. Students should be respectful of the people in the film and of their classmates when sharing ideas and learning new material. This looks like:

- Speaking to ideas, not people ("I agree with Bella's idea" vs. "I agree with Bella").
- Referring to evidence (quotes, facts, etc.) to avoid projecting personal biases and unintentionally misinforming others.
- Understanding how another's life and daily experiences factor into their perspectives, ideas and opinions.

It is the responsibility of the educator to facilitate the classroom to create a welcoming learning environment for all students, and to ensure that students are safe and encouraged to contribute their voice and mind.

Referring to Ethnolinguistic Groups and Confederated Tribes

The word "Salish" refers to a large indigenous North American language group that relates major ethnolinguistic groups who speak or historically spoke Salishan languages.[2] *Scha'nexw Elhtal'nexw Salmon People* centers the Lummi, a Coast Salish ethnolinguistic group. Coast Salish peoples are the original inhabitants of the coast of Washington and British Columbia that surround the Salish Sea.[3] Other Coast Salish groups are mentioned throughout the film and in this guide, including: the Samish; the S'Klallam; the Swinomish; the Duwamish; the Puyallup; the Suquamish; and the Nisqually.

It is important to distinguish ethnolinguistic groups from confederated tribes because **not every member of a confederated tribe belongs to the ethnolinguistic group that the tribe represents.** For example, not every member of the Lummi Nation is ethno-linguistically Lummi. Some confederated tribes, like the Yakama Nation and the Muckleshoot Tribe, have members from various but related ethnolinguistic groups. Additionally, Indigenous people who are from or have ancestry in present-day Canada and who **are not** Inuit or Métis are referred to as "First Nations." This includes First Nations people with **and** without "status," or official recognition by the Canadian federal government.

Ethnolinguistic belonging is intrinsic and cannot be changed. Confederated tribes are extrinsic and a way of politically organizing people. When discussing aspects of culture, like ways of life, values, and traditions, refer to the ethnolinguistic group. (Sometimes, it is okay to refer to the larger ethnolinguistic group, i.e. Salish or Coast Salish, when expressing some general cultural commonalities. However, it should only be done with certainty to avoid homogenizing all Salish or Coast Salish peoples.) When discussing politics like treaties and rights and the exercise thereof, refer to the confederated tribe. This is incredibly important because confederated tribes do not share nor make unanimous political views and decisions

Lummi Children of the Setting Sun song and dance group (archival photo).

2 Oxford Bibliographies, "Salish Languages," accessed September 18, 2024, https://www.oxfordbibliographies.com/display/document/obo-9780199772810/obo-9780199772810-0090.xml.

3 The Editors of Encyclopædia Britannica, "Coast Salish," *Encyclopædia Britannica*, March 28, 2024, https://www.britannica.com/topic/Coast-Salish.

Key Terms

Apex predator: an organism that feeds on tertiary consumers, and has no natural predators; the top of the food chain

Aquaculture: the process of farming aquatic organisms, like fish, shellfish, or plants, in controlled water environments for commercial, recreational, or public purposes

Chinook: also known as "King salmon"; largest Pacific salmon species; found in Columbia and Snake Rivers, Puget Sound, and various lakes in western Washington

Chum: also known as "dog salmon"; second largest Pacific salmon species; populated in Hood Canal and Columbia River; do not rear in freshwater

Coho [salmon]: popular sport fish in Puget Sound; may be seen in urban areas near the Puget Sound, but are usually found in various lakes in western Washington

Commissioner of Public Lands: the elected official who manages public lands in Washington state, including waters, forests, farms, recreation areas, and commercial developments

Consumer: an organism that must consume other organisms as a food source

Cooke Aquaculture Pacific: a company under Cooke Aquaculture (which is a division of the corporation Cooke Inc., a Canadian multinational seafood company) that focuses on aquacultural developments in the Pacific Northwest

Cultural ecology: the study of how [human] cultures adapt to their environments

Decomposer: an organism that feeds on dead and dying organisms

[Washington] Department of Natural Resources (DNR): a state department that manages the land and waters in Washington to meet current and future needs of state residents

Epizootic: (noun) a widespread outbreak of animal diseases; similar to "epidemic," the word used to describe widespread outbreaks of human diseases

Fish farm: (noun) (also called "pisciculture") a form of aquaculture dedicated to farming fish; (noun) a facility or site dedicated to farming fish; (verb) (as in "fish farming") to farm fish

Fish traps: a fishing technology lowered underwater to entrap fish so they wouldn't escape; the technology isn't new, but the traps discussed in the guide were owned by non-Natives, industrialized, and designed to capture tens of thousands of fish at once

Fish Wars: a series of protests in the 1960's and 1970's led by Native American tribes in the Pacific Northwest to protect treaty fishing rights, though some argue it began as early as 1905

Fish-ins: a form of protest whereby Native Americans fished in their usual and accustomed waters knowing they would be arrested by state law enforcement

Fisheries and Oceans Canada (DFO Canada): a Canadian federal institution that protects waters and aquatic ecosystems, and manages fisheries

Fishing wheel: a fishing technology similar to a Ferris wheel whereby baskets on a wheel were rotated in water to catch large amounts of fish at once; outlawed by U.S. v. Winans

Fraser River Panel: a panel within the Pacific Salmon Commission that regulates the Fraser River salmon fisheries

Inherent right: a right one is entitled to simply because they exist that cannot be denied nor revoked; the right to fish on usual and accustomed grounds is an inherent right of tribes like the Lummi Nation because the practice existed long before contact with settlers and is integral to their way of life and now, the preservation of their culture

Keystone species: an organism whose impact on the ecosystem is significantly greater than what is expected based on their size

Land tanks: large fish tanks used to mass-harvest fish on land

Net pens: netted cages submerged underwater to farm fish in natural bodies of water

Pacific Salmon Commission: a regulatory body formed by the American and Canadian federal governments to preserve Pacific salmon

Pesticide: a substance used to control organisms that are harmful to animals and farmed plants

Pink [salmon]: also known as "humpback salmon" or "humpy"; found in Nooksack River and on Olympic Peninsula

Primary consumer: an organism that feeds on producers

Producer: an organism that produces their own food; the bottom of the food chain

Salish Fish: a partnership between the Jamestown S'Klallam Tribe and Cooke Aquaculture Pacific to use modern aquaculture methods to farm native salmon and fish.

Secondary consumer: an organism that feeds on primary consumers

Sockeye [salmon]: a species of salmon that historically ran in large rivers, but are now most populated in various lakes in western Washington

Spawn: (verb) (of a fish) to lay eggs

Sustainable Blue: a Canadian aquaculture company that uses land tanks to mass-harvest fish to reduce environmental impact on wild fish

***Sxwo'le* (pronounced "shwa-luhm") (translates to "reef nets" in English):** an artificial reef that is created with weighted fish nets; salmon are hauled up when they pass through and rest in the artificial reef

Tertiary consumer: an organism that feeds on secondary consumers

Treaty of 1855: a treaty made between the Yakama people and other confederated Indian tribes in southern and eastern Washington whereby the tribes ceded their homelands to the federal government to relocate to reservations, but reserved their right to fish, hunt and gather at their usual and accustomed grounds

Treaty of Medicine Creek: a treaty signed in 1854 between the Puyallup, Nisqually, and other confederated Coast Salish tribes near Puget Sound whereby the tribes ceded their homelands to the federal government to relocate to reservations, but reserved their right to fish, hunt and gather at their usual and accustomed grounds

Treaty of Point Elliott: a treaty signed in 1855 between the Lummi, Samish, and other confederated Coast Salish tribes near Lummi Bay whereby the tribes their homelands to the federal government to relocate to reservations, but reserved their right to fish, hunt and gather on their usual and accustomed grounds

Tribal sovereignty: the inherent right of Native American tribes to determine their forms of government; a protected right in the U.S. Constitution

***United States v. Washington* (Boldt Decision):** a court case decided in 1974 that upheld the right of tribal signatories of the Treaty of Medicine Creek and the Treaty of Point Elliott to fish on their usual and accustomed grounds

United States v. Winans: a court case decided in 1905 that upheld the rights of tribal signatories of the Treaty of 1855 to fish on their usual and accustomed grounds

Usual and accustomed: describes aspects of Native American cultures that existed since time immemorial, before contact with settlers and the signing of treaties, such as fishing practices

The Salmon Lineage: A Cultural Ecology

Salmon has been central to the way of life of the Coast Salish — a Salmon People — since time immemorial. Generation after generation, Pacific salmon return to spawn and give their life to birth a new lineage. Similarly, Lummi fishing families have inherited lifeways revolving around salmon and fishing locations from generation to generation since time immemorial. The People uphold a duty to care for and protect the salmon.

This relationship is a cultural ecology, meaning Lummi and other Coast Salish societies and cultures have developed around salmon. As salmon change, so do Salmon People.

"The Salmon Lineage" details the characteristics and locations of the five Pacific salmon species that span the Salish Sea, the usual and accustomed fishing ground of the Coast Salish. The section also explains:

- The *sxwo'le,* a traditional Coast Salish fishing technology.
- How the fishing methods used by Lummi fishers has evolved.
- How the Lummi Nation is returning to the *sxwo'le.*

Tah-Mas Ellie Kinley participating in the First Salmon Ceremony.

"We don't play with our fish.
We respect that fish.
We pray for it and we take it home.
We take care of it.
It's going to nourish us."

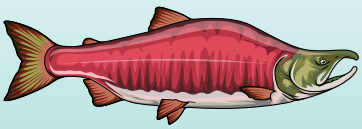
— Tla'kalin Ces'xen
Steve Solomon (27:54)

Solomon family practicing a traditional fishing method.

Pacific Salmon Species

Sockeye

"Sockeye is a fun thing to chase around," says *Chexanexwh* Lucas Kinley (12:38). This species is found in many rivers, including the Adams River in British Columbia, a tributary of the Fraser River, and Baker Lake, which are extremely close to the Lummi homeland. Sockeye are also found in lakes such as Lake Washington, Lake Sammamish, Lake Wenatchee, Baker Lake, Lake Umatilla, and others in Benton, Douglas, Kittitas, and Okanogan Counties.[1] Historically, large rivers supported up to millions of sockeye. Such a salmon run exists today in the Adams River.[2]

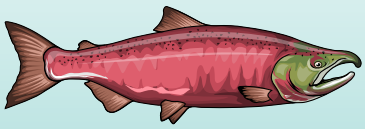


Visit https://wildsalmoncenter.org/salmon-species/sockeye/ for a map of sockeye migration routes across the North Pacific Ocean.

Fisher and hatchery advocate *Tla'kalin Ces'xen* Steve Solomon has fished the Adams River run for decades, and has noticed a decrease in sockeye amount: *"This stock twelve years ago, there were sixty million fish coming through here... You would see them, just backs out of the water going with the tide. Thousands and thousands of them. Something happened; something really happened to the Adams River stock"* (22:38). Nevertheless, *Chexanexwh* Lucas remains hopeful for the future of sockeye: *"Something I've picked up from my dad. You've always gotta be optimistic about it"* (12:38).

Coho

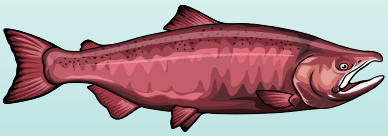
Coho salmon are popular sports fish in Puget Sound and can be seen in urban areas if the conditions are adequate.[3] Coho usually spawn and rear in small coastal streams and tributaries of large rivers.[4] Some coho stocks travel hundreds of miles into the ocean, while others remain in marine waters close to the stream they spawned in.[5] They are found in Lake Washington, Lake Sammamish, Vancouver Lake, Lake Wallula, and other lakes in Cowlitz, Douglas, Grays Harbor, Kitsap, Kittitas, Klickitat, Lewis, Mason, Skagit, Skamania, and Snohomish Counties.[6]



Visit https://wildsalmoncenter.org/salmon-species/coho-salmon/ for a map of coho migration routes across the North Pacific Ocean.

Chinook ("King")

Nicknamed "king salmon," Chinook salmon are the largest Pacific salmon species. Chinook spawn in every river that empties into the Salish Sea, including large rivers like the Nooksack, Skagit, Columbia, and Snake. Some Chinook spawn on both sides of the Cascade Range. Some travel hundreds of miles to spawn and/or reach the ocean. Along with populating these rivers and Puget Sound, Chinook can be found in Lake Roosevelt, Lake Chelan, Lake Wenatchee, and other lakes in Clark, Cowlitz, Douglas, King, Kittitas, Klickitat, Lewis, and Okanogan Counties.[7]



Visit https://wildsalmoncenter.org/salmon-species/chinook-salmon/ for a map of Chinook migration routes across the North Pacific Ocean.

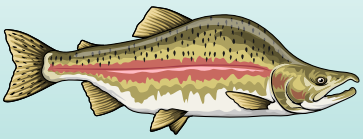
Chum ("Dog")

Chum salmon spawn in coastal streams and lower estuaries.[8] Nicknamed "dog salmon," male chum develop large teeth resembling canines while spawning.[9] Unlike sockeye, coho, and Chinook salmon, chum do not rear in freshwater; instead, they migrate to and rear in saltwater shortly after birth. Chum are populated in the Nooksack, Skagit, and Columbia Rivers, and most rivers and streams that empty into Puget Sound.

Visit https://wildsalmoncenter.org/salmon-species/chum-salmon/ for a map of chum migration routes across the North Pacific Ocean.

Pink ("Humpback" or "Humpy")

Pink salmon are the smallest species of Pacific salmon. Nicknamed "humpback salmon" or "humpy," males develop large humps on their backs while spawning. Similar to the chum, pinks rear very close to saltwater. They usually spawn very close to saltwater in large and tributary rivers; sometimes, pinks spawn directly in saltwater.[10]

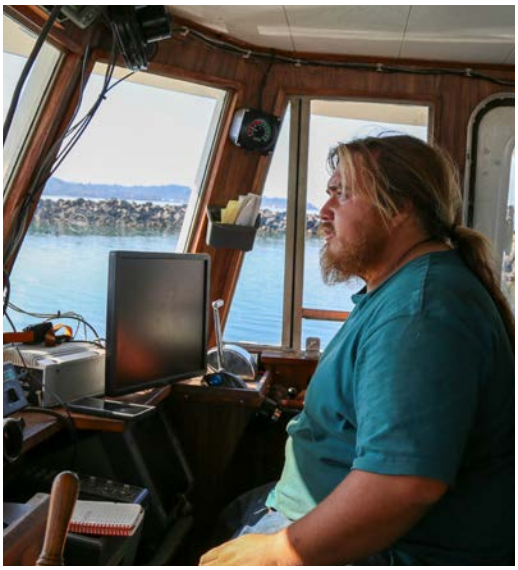


Visit https://wildsalmoncenter.org/salmon-species/pink-salmon/ for a map of pink salmigration routes across the North Pacific Ocean.

Evolving Fishing Methods

In *Chexanexwh* Larry Kinley's family, both women and men fished. *"My mother fished on a river, and my aunts, and lots of women from Lummi fished on the Nooksack River, while our fathers fished out in the ocean, clear up into Alaska"* (09:22). *Tah-Mas* Ellie Kinley began fishing for her father at age 23. *"I've had three skippers. My dad was my first skipper, and Larry was my second skipper, and currently my son Lucas is running our boat"* (13:14). Her birth family, the Solomon's, fished in spring, summer, and fall.

Over time, industrialization and aggressive trap fishing have drastically changed how Lummi people practice fishing and the amount of salmon available to fish. Since the Treaty of Point Elliott, Lummi fishers have moved from using *sxwo'le* to commercial seine fishing.



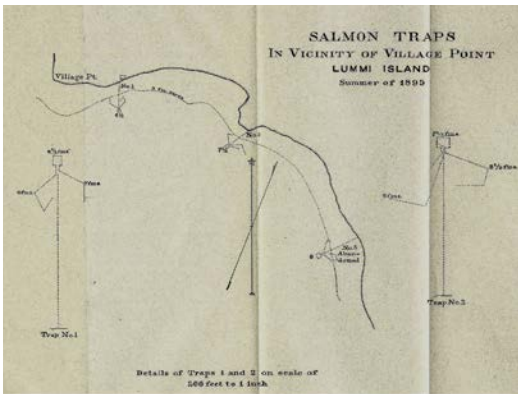
CLOCKWISE FROM UPPER LEFT: *X̲éyteleq* Frank Hillaire demonstrating a reef net (archival photo). Native fishers hauling a typical salmon catch (archival photo). The Lane family beach seining together. *Chexanexwh* Lucas Kinley in the captain's seat.

Sxwo'le is a traditional Coast Salish fishing technology that is called a "reef net" in English. *"It was a great way to do fishing that was started here at Lummi [Nation],"* Chexanexwh Larry said (17:47).

Traditionally, reef nets were approximately 40 by 40 feet and made of willow bark twine before the 1880s. Afterwards, commercial materials were commonplace. They were anchored for an entire fishing season with stones of a few hundred pounds, stretched between two canoes, and set with the current. *Sxwo'le* were also dyed dark colors and sometimes incorporated aquatic foliage to be nearly undetectable to the salmon.[11]

Reef nets and the sites at which they were anchored were typically inherited generationally: *"They were passed down from father to son and son to son and they're still here"* (*Tah-Mas* Ellie Kinley, 18:38). Though, as *Chexanexwh* Larry recalls, it can be more nuanced in practice, as they were also inherited and shared through marriage: *"The reef net was really tied to families and heads of families"* (17:47).

Regardless, *sxwo'le* were anchored to the same sites season after season.[12] *"Reef net sites never go away,"* said *Tah-Mas* Ellie (18:38). When non-Native commercial fishing began, sites were overtaken or destroyed altogether.[13]



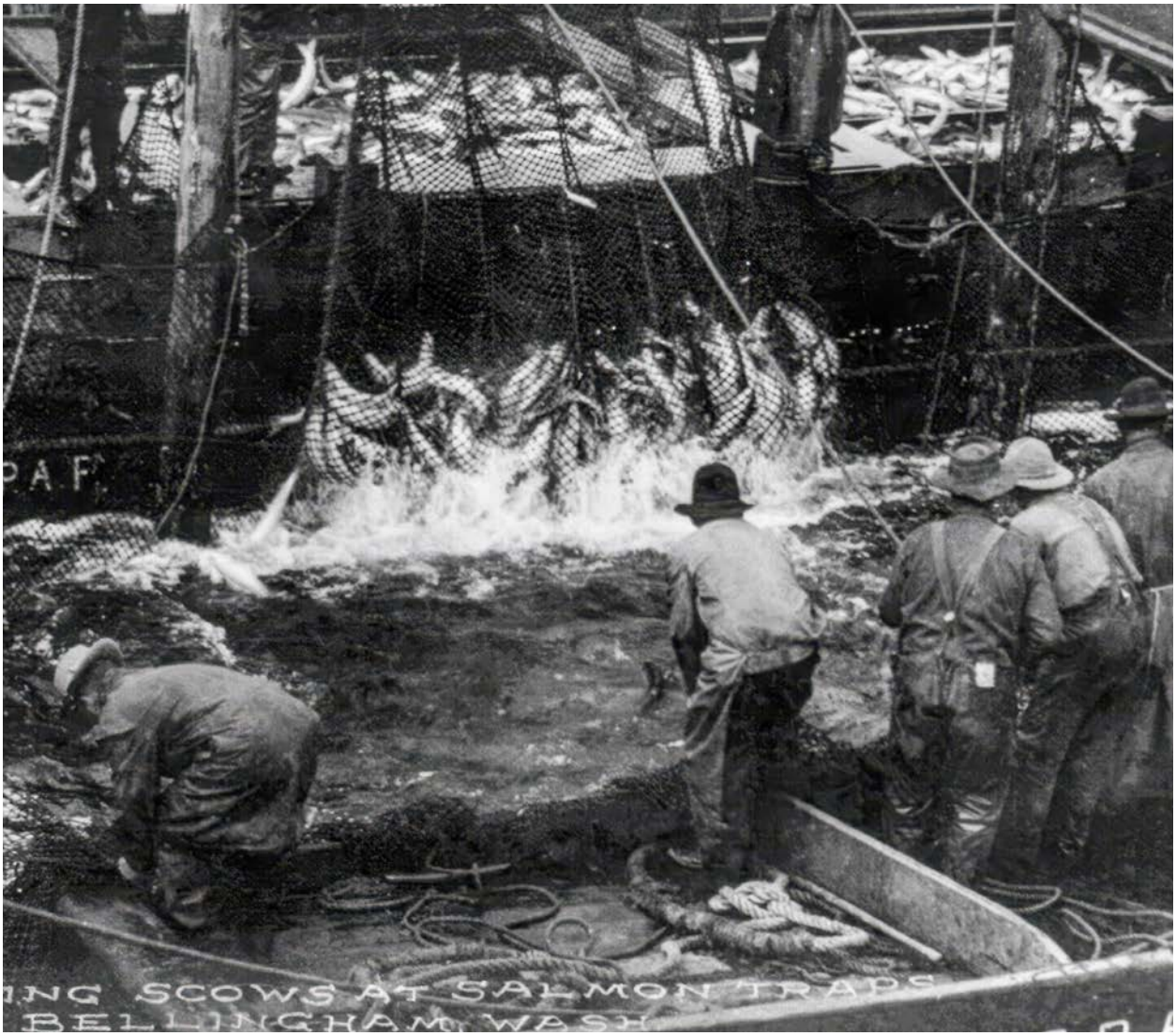
Archival map of salmon trap locations.


Native fishers reef netting (archival photo).

The inherited and bountiful reef net sites of *Tla'kalin Ces'xen* Steve's grandfather were in the San Juan Islands, Lummi Island, Cherry Point, and Point Roberts. However, when his grandfather traveled between his usual and accustomed sites in 1905, he found fish traps owned by non-Native commercial fishers situated in front of the reef nets.

Although the concept of a fish trap isn't novel, its industrialization was. The fish traps once abundant in the Salish Sea over a hundred years ago consisted of permanent barricades that captured ten times more salmon than reef nets could. Effectively, the fish traps captured substantial amounts of salmon that would have been secured by the *sxwo'le*.[14]

The owner of the fish trap at Point Roberts offered *Tla'kalin Ces'xen* Steve's grandfather a job. Because fish traps (and trappers) abruptly displaced the Solomon family's usual and accustomed reef net sites, his grandfather was forced to take the job with the trappers to feed his family. This was the early beginning of the transition Lummi fishers made from *sxwo'le* to commercial seining.



Commercial salmon trap catch being hauled (archival photo).

To reconnect his people to their fishing lifeway, *Chexanexwh* Larry invested in a communal *sxwo'le* for the Lummi Nation. *"My expectation is that overtime we're going to see the reef net families going back to reclaim some of their sites which is a great thing. That means they're learning who they are and where they come from,"* he says (18:25).

The impact of *sxwo'le* that *Chexanexwh* Larry sought to cultivate was felt immediately at home, when his youngest son *Sqw'Qualt'ten* Kyle Kinley was coming of age and exploring the world. He discovered that he felt most comfortable being on the water, and most guided when using a reef net. *"That's why I like the reef net. There's some sort of feeling I get that's important, like I have direction that I could follow. My dad saw it before I did. He got us into the reef nets before I even knew what reef nets were. He knew what they were to us"* (17:57).

Modern reef net gear on the water.

"Returning to the reef nets is coming full circle. It's returning to who we are and where we came from and that is important because the children nowadays don't know where we came from. We came from all those [reef net] sites and from those sites, there were villages. And then, we became the Lummi Nation."

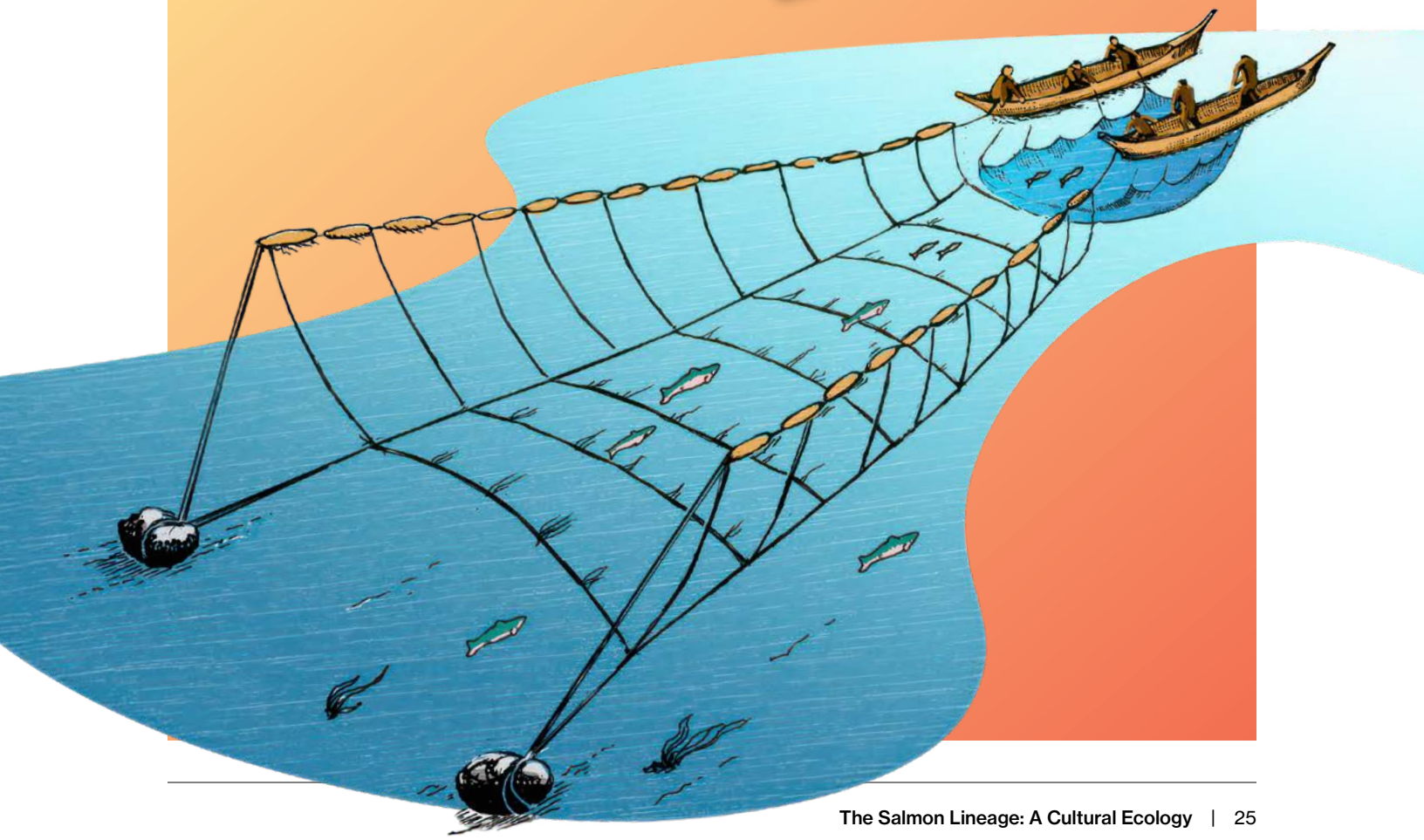
— Tah-Mas Ellie Kinley (19:15)

Reef Net Wellness Model

The Reef Net Wellness Model utilizes the reef net as a framework for substance abuse prevention to represent four "sources of strength" (family, community, individual, and spiritual life). Developed by Northwest Indian College, these sources reconnect Coast Salish people to their values and ways of life in the face of hardship. For more information on the Reef Net Wellness Model, visit the sources below.

Native Transformations in the Pacific Northwest: Stories of Strength in a Public Health Crisis

- **Film**
  http://161.35.240.79/digital-heritage/native-transformations-pacific-northwest
- **Documentary Discussion Guide**
  http://161.35.240.79/digital-heritage/native-transformations-documentary-discussion-guide
- **eBook**
  http://161.35.240.79/digital-heritage/native-transformations-pacific-northwest-0



Endnotes

1 "Sockeye salmon," Washington Department of Fish & Wildlife," accessed July 13, 2024. https://wdfw.wa.gov/species-habitats/species/oncorhynchus-nerka#desc-range.

2 Department of Fish & Wildlife, "Sockeye salmon."

3 "Coho salmon," Washington Department of Fish & Wildlife, accessed July 13, 2024. https://wdfw.wa.gov/species-habitats/species/oncorhynchus-kisutch#desc-range.

4 Department of Fish & Wildlife, "Coho salmon."

5 "Coho Salmon," NOAA Fisheries, last modified December 22, 2023. https://www.fisheries.noaa.gov/species/coho-salmon.

6 Department of Fish & Wildlife, "Coho salmon."

7 "Chinook salmon," Washington Department of Fish & Wildlife, accessed July 13, 2024, https://wdfw.wa.gov/species-habitats/species/oncorhynchus-tshawytscha#desc-range.

8 "Chum salmon," Washington Department of Fish & Wildlife, accessed July 13, 2024, https://wdfw.wa.gov/species-habitats/species/oncorhynchus-keta#desc-range.

9 Department of Fish & Wildlife, "Chum salmon."

10 "Pink salmon," Washington Department of Fish & Wildlife, accessed July 13, 2024, https://wdfw.wa.gov/species-habitats/species/oncorhynchus-gorbusch#desc-range

11 Russel Barsh, "Coast Salish Reef-net Fishery, Part 1," *HistoryLink.org*, May 23, 2021, https://www.historylink.org/file/21237.

12 Barsh, "Reef-net Fishery, Part 1."

13 Russel Barsh, "Coast Salish Reef-net Fishery, Part 2," *HistoryLink.org*, May 23, 2021, https://www.historylink.org/File/21238.

14 Barsh, "Reef-net Fishery, Part 1."

Shared Perspectives: Where Science Meets Spirit

"All people are benefiting from the salmon," says *Wenecwstin* Wayne Christian, formal Tribal Chief of the Secwépemc Nation in present-day Shuswap, British Columbia (05:13). Across the globe, from the United States and Norway to China and Chile, salmon are a vital part of the world's diet and economy.[1] But in the Pacific Northwest, salmon (and fishing) are inseparable from Coast Salish ways of life. *"We have to have that relationship with the salmon. We can't ignore the fact that they've helped us survive for thousands of years,"* says *Wenecwstin* Wayne (04:56). The Pacific salmon balance various ecosystems in Washington and have been diligently honored and cared for by the Coast Salish since time immemorial.

Educational Standards

"Shared Perspectives" highlights the most relevant Disciplinary Core Ideas at the middle and high school levels from the Next Generation Science Standards and connects them to the Coast Salish teachings and way of life that are reiterated throughout the film. This includes the role Pacific salmon play in balancing local and larger ecosystems, and how drastic changes to the ecosystem can and do harm wild Pacific salmon.

Ideally, middle and high school students will:

- Link the Coast Salish teachings from *Scha'nexw Elhtal'nexw Salmon People* to their prior science knowledge.
- Foster respect for non-institutionalized knowledge and knowledge systems.
- Gain a new mode of immersion into environmental issues on all scales.

Ecosystem Interactions

In the beginning of the film, *Wenecwstin* Wayne Christian explains the life cycle of the salmon and its predators. When salmon are ready to journey from spawn to the ocean, they evade natural predators like birds, otters, and bears. Once in the ocean, salmon also dodge sharks, lampreys, seals, sea lions, whales, and more. At every point, they must bypass human factors like fish farms and dams as well.

Lummi fishers stress the importance of fishing only what you need and using all parts of the fish. This ensures that the relationship between the fish and its people is respectful, purposeful, and sustainable. Contrastingly, in 1905, fisher and hatchery advocate *Tla'kalin Ces'xen* Steve Solomon's grandfather took a job with a non-Native commercial fishing company to support his family. *"The job entailed throwing over all the fish they couldn't use in the cover of darkness,"* says *Tla'kalin Ces'xen* Steve (25:40). *"All of those scow loads, and scow loads of fish that he had to throw into the Georgia Strait... all they took was the belly part of the salmon*" (25:49).

Pacific salmon are a keystone species, meaning their impact on the ecosystem is significantly greater than expected of their size. In other words, Pacific salmon are relatively small but play a huge role in sustaining land mammals, marine mammals, birds, and forests. It is reasonable to predict that the continued decrease in salmon size and population would also mean the continued decrease in the size and population of orcas and resident and migratory birds. The enrichment that salmon carcasses provide streams and forests would also decrease.[2]

Next Generation Science Standards:
- Middle School Life Science 2-2

Next Generation Science Standards
- Middle School Life Science 2-2
- High School Life Science 2

Fraser River sockeye at spawning grounds.

Flow of Matter

In an ecosystem, the flow of matter is cyclical from producers to consumers to decomposers and back to producers. Pacific salmon are consumers and sustain themselves with energy from producers. When they die, decomposers break down salmon carcasses into sediment. That sediment is where living salmon bury their eggs. In the film, *Wenecwstin* Wayne says, *"As they leave this human world, they then, as carcasses, become food for the animals, for the land, for the birds, for the four-legged, for the plants"* (04:41).

Next Generation Science Standards
- Middle School Life Science 2-3

To be more precise, Pacific salmon are secondary consumers; they feed on producers such as plants, primary consumers such as smaller fish, and decomposers such as crustaceans. Tertiary consumers such as larger fish and marine mammals and apex predators such as orcas and sharks also feed on Pacific salmon. Decomposers feed on salmon carcasses to nourish themselves and create sediment. This sediment adds nutrients that producers need to self-sustain.

Next Generation Science Standards
- High School Life Science 2-6

Fraser River sockeye carcasses after spawning.

Human-Environment Interactions

Non-Native commercial fishing companies have severely reduced wild salmon populations. In 1879, these companies began to use fishing wheels and fish traps, the latter displacing and destroying Lummi fishers' reef net sites. (See "The Salmon Lineage" for more on fish traps and reef nets, and "Fight to Fish" for more on the Treaty of Point Elliott.)

Next Generation Science Standards:
- Middle School Life Science 2-4

One day when *Tla'kalin Ces'xen* Steve's grandfather traveled to his reef net sites, he saw fish traps placed by non-Native commercial fishers that took the harvest from the *sxwo'le*. He took a job with this company to ensure that his family and community were fed. His grandfather noticed the unnecessary amounts of salmon being harvested and parts of the fish being wasted; *"You're going to kill it in time,"* said *Tla'kalin* Ces'xen Steve recalling his grandfather's words (26:11).

Due to the continued flow of pollution into the waters that connect to the North Atlantic Ocean, the wild Atlantic salmon population is nearly nonexistent. Most of the Atlantic salmon in the United States is raised in fish farms in the Salish Sea. The livelihood and way of life of Lummi and other Coast Salish fishers and the health of wild Pacific salmon are threatened by these Atlantic salmon fish farms. (See "Coastal Clash" for more on Atlantic salmon fish farms.)

Next Generation Science Standards
- Middle School Life Science 2-4
- High School Earth & Space Science 3-1

Non-Native fish trap harvest (archival photo).

The Lummi Nation and other confederated Coast Salish tribes tirelessly advocated for the ban on fish farms in the Salish Sea. (See “Coastal Clash” for more on Atlantic salmon fish farms and the ban on fish farms in Washington state.) Protecting wild Pacific salmon from industrial pollution is also an important goal for the Lummi Nation:

> *“We use the salmon as a miner’s canary and say: What do we need here for air quality? What do we need here to deal with water quality? How do we solve that problem here? I never thought I’d see that in my lifetime where we’d have a water crisis within our little portion of the world here. We don’t want to be like the East Coast where the salmon are the past. […] And how close are we to that tipping point?”* (52:43).

Next Generation Science Standards:
- High School Life Science 4-7

Salmon Summit attendees advocating for the removal of Atlantic salmon net pens.

Protest against fish farms in Discovery Bay.

Minimizing Human Impact

Tah-Mas Ellie Kinley names the Pacific Salmon Commission, the Fraser Rivel Panel, and Fisheries and Oceans Canada (also known as DFO Canada) as responsible for maintaining certain amounts of fish in the waters. She says, *"Their job, of course, is to make sure [that] every year we have escapement 'cause you've got to be able to have a run again"* (14:11). These regulatory governmental entities attempt to minimize exploitative human activities in the waters that Coast Salish people have fished in since time immemorial. (See "Coastal Clash" for more on human-environment interactions.)

Adult salmon leaping in Lummi Bay.

Endnotes

1 Asak Berge, "These are the 20 biggest salmon farmers in the world," Salmon Business, July 27, 2020.

2 "Salmon: A Foundational Species," Pacific Wild, accessed August 26, 2024, https://pacificwild.org/salmon-a-keystone-species/.

Fight to Fish: Protecting Treaty Rights

Although the Fish Wars is covered briefly in *Scha'nexw Elhtal'nexw Salmon People,* the movement and its surrounding legislation have greatly impacted Coast Salish people and tribes, the State of Washington, and commercial and sports fishers. "Fight to Fish" details the Fish Wars and two of the treaties that sparked protest: the Treaty of Medicine Creek and the Treaty of Point Elliott. This section also expands on the Boldt Decision, the paramount court case that ended the Fish Wars, and its effect on confederated tribes and the Lummi Nation specifically.

Tah-Mas Ellie Kinley and family protesting for the protection of treaty rights (archival photo).

The Treaties of Medicine Creek and Point Elliott

Says *Tla'kalin Ces'xen* Steve Solomon, *"Real history begins with Native history"* (24:39). Coast Salish peoples have fished on their usual and accustomed grounds since time immemorial. This fishing practice was drastically changed after contact with settlers through federal legislation and it has not been the same since.

In 1854 and 1855 respectively, the United States and various Coast Salish tribes, including the Lummi Nation, signed the Treaties of Medicine Creek and Point Elliott. In these treaties, Coast Salish homelands were negotiated to be shared between the settlers and the tribes. Most importantly, the treaties stated that Coast Salish tribes reserved the right to fish at their usual and accustomed grounds along with non-Natives. But after ratification, the State of Washington continuously violated the tribes' fishing rights for decades.

Protecting and advocating for treaty rights is a major priority of the Lummi Nation. *Chexanexh* Larry Kinley recalls Lummi leadership and elders ensuring the rights and entitlements outlined in the Treaty of Point Elliott were upheld and enforced:

> *"When I was a young guy, I'd listen to leadership and our elders talk about (our) treaty rights. They are the law of the land. Within the Treaty, we reserved certain things that we want to protect if we're [going to] sign over all this land. We have agreements on education and healthcare, and that's what our ancestors negotiated for the allowance of settlement out here" (26:25).*

Chexanexwh Larry Kinley when he was Chairman of Lummi Nation.

Native singers and dancers outside of a traditional smokehouse (archival photo).

"When I was a young guy, I'd listen to leadership and our elders talk about (our) treaty rights. They are the law of the land."

— Chexanexwh Larry Kinley (26:25)

The Fish Wars

In 1905, *United States v. Winans* upheld the Treaty of 1855 that was made between the Yakama Nation and the U.S. This treaty, which is very similar to those of Medicine Creek and Point Elliott, stated that the Yakama Nation reserved the right to fish on their usual and accustomed grounds. This federal case also restricted the use of fishing wheels that overharvested salmon and limited the Nation's access to fish.[1]

Despite the ruling, the State of Washington sought to reverse it while Native tribes continued fishing on their usual and accustomed grounds. This was the early start of the Fish Wars. Over the decades, tensions grew between the State and the tribes and surmounted in 1964. Using the momentum from the Civil Rights Movement, fish-ins and other protests were organized on Nisqually, Muckleshoot, and Puyallup territories.

In 1970, a demonstration on the Puyallup River turned violent and saw attacks from protestors, police, and state officials. A few days later, Stan Pitkin, U.S. Attorney for Western Washington, sent a complaint to the U.S. District Court for the Western District of Washington.[2]

Law enforcement officials bear arms while patrolling fishing grounds (archival photo).

The Boldt Decision

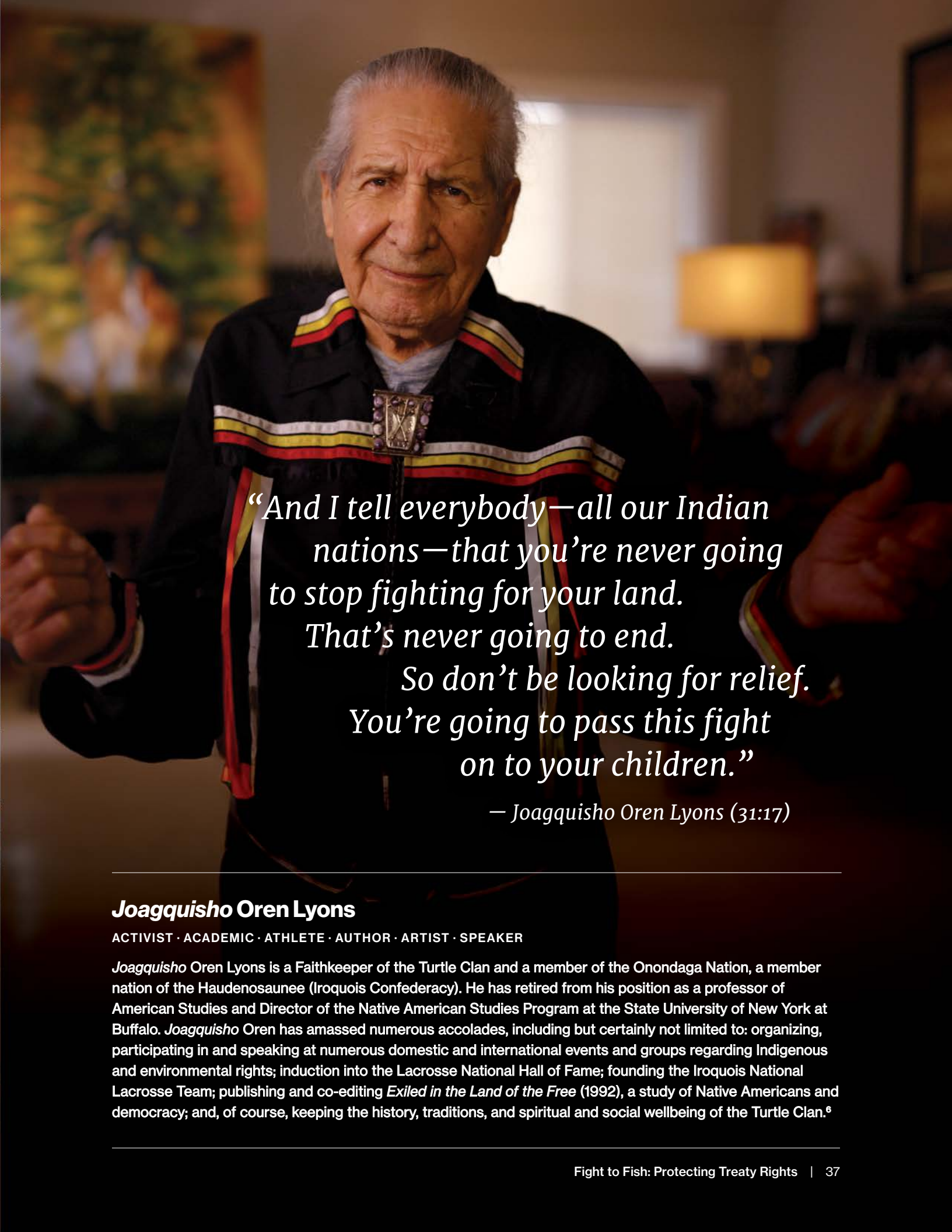
Stan Pitkin's complaint from 1970, entitled *United States v. State of Washington,* became a court case in August 1973 presided by Judge George Boldt. Although the State argued that the tribes had "an equal right to fish, subject to reasonable state regulation—not an equal right to 50 percent of the catch," Boldt ruled in favor of the tribes. He upheld that the tribes who signed the Treaties of Medicine Creek and Point Elliott did not relinquish their fishing rights and specified that the settlers' fishing rights were always limited.[3]

Tribal fishing rights are recognized as inherent rights.[4] An inherent right, also called a "natural" or "inalienable" right, is a right granted to individuals simply because they—the individuals—exist. Tribal members, such as those of the Lummi Nation, the Puyallup Tribe, the Duwamish Tribe, etc., cannot relinquish these rights simply because they—the tribal members—exist.

Boldt also addressed the claiming of hatchery-bred fish that did not exist in the 1850s. He ruled that Native people "could fish for hatchery-bred fish so long as they played a role in the breeding process." Subsequently, Boldt appointed tribes as co-managers of state-owned fisheries and "ordered the state to limit fishing by non-Natives." The State of Washington attempted to weaken Boldt's ruling, but it was later reaffirmed by the U.S. Supreme Court in 1979.[5]

"A treaty right without fishing is not a treaty right at all."
— Tla'kalin Ces'xen Steve Solomon (37:28)

Lawyer Mason Morisett (left) relays the Boldt Decision to *Tla'Kalin Ces'xen* Steve Solomon and other Lummi fishers (archival photo).



"And I tell everybody—all our Indian nations—that you're never going to stop fighting for your land. That's never going to end. So don't be looking for relief. You're going to pass this fight on to your children."

— Joagquisho Oren Lyons (31:17)

Joagquisho Oren Lyons

ACTIVIST · ACADEMIC · ATHLETE · AUTHOR · ARTIST · SPEAKER

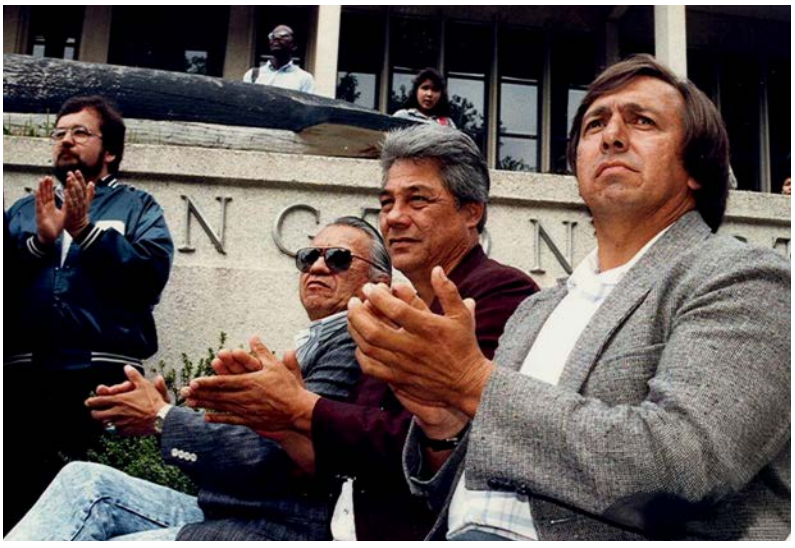
Joagquisho Oren Lyons is a Faithkeeper of the Turtle Clan and a member of the Onondaga Nation, a member nation of the Haudenosaunee (Iroquois Confederacy). He has retired from his position as a professor of American Studies and Director of the Native American Studies Program at the State University of New York at Buffalo. *Joagquisho* Oren has amassed numerous accolades, including but certainly not limited to: organizing, participating in and speaking at numerous domestic and international events and groups regarding Indigenous and environmental rights; induction into the Lacrosse National Hall of Fame; founding the Iroquois National Lacrosse Team; publishing and co-editing *Exiled in the Land of the Free* (1992), a study of Native Americans and democracy; and, of course, keeping the history, traditions, and spiritual and social wellbeing of the Turtle Clan.[6]

Since the Decision

The Boldt Decision giving equal managerial power to tribes and the State over state-owned fisheries was so powerful because it forced these two entities to work together when they were—and are—often at odds. Two hatcheries—the Lummi Bay Hatchery and the Skookum Creek Hatchery—were constructed in Lummi Nation in 1970. Initially, the hatcheries' goal was to produce market-ready salmon, but they pivoted to enhancing nearby salmon populations after the Decision.[7] At 37:33, a news clip from 1982 featuring *Chexanexwh* Larry Kinley provides context on how such hatcheries were progressing following the Boldt Decision.

The first reporter mentions that tribes like the Lummi Nation and the Muckleshoot Tribe have their own salmon enhancement programs. A second reporter takes over the rest of the clip and states that the Lummi Nation have *"struggled with the courts, the federal government, and the non-Indian fishing fleet"* regarding the fishery. At the time of recording, *"federal enhancement money [had also been] cut."*

To this, *Chexanexwh* Larry Kinley responded: *"We've already felt the squeeze, especially in the enhancement and we're going to expect a lot more of it, but the real key here is we're just going to have to get some more fish out into the waters, and that should help everybody."* The reporter closes with remarks echoing *Chexanexwh* Larry: *"The tribal chairman says the strength of salmon returns depends on non-Indians and Indians working together."*



Chexanexwh Larry Kinley (right) with Billy Frank Jr. (center) and other tribal leaders (archival photo).

Three-month-old salmon being marked as hatchery-origin.

The Importance of Hatcheries

Hatcheries in the Salish Sea and along the North American West Coast are paramount to the conservation of wild Pacific salmon and steelhead trout. For endangered species like coho, Chinook, and sockeye, hatcheries play a significant role in restoring wild populations and preventing extinction. In the case of Chinook salmon, restoring this population also aids nearby orcas (another endangered species) whose salmon consumption is almost exclusively Chinook. Hatchery fish also supplement recreational fishing areas which enables sport fishers to continue their practice.

"Hatchery fish derive from wild fish. In 2010 we had 13 adults spawn in captivity. 2022: those 13 fish grew into 26,000 fish." — *Tla'kalin Ces'xen Steve Solomon (38:35)*

Presently, the Lummi Bay Hatchery works with other hatcheries owned by the Washington Department of Fish and Wildlife and Bellingham Technical College to release one million juvenile coho and one million fall Chinook yearly.[8] The Skookum Creek Hatchery raises 1.5 million coho yearlings within eighteen months, and releases them into the South Fork Nooksack River every spring.[9] *Tla'kalin Ces'xen* Steve works with and advocates for hatcheries. He shares the success hatcheries have yielded since 2010: *"Hatchery fish derive from wild fish. In 2010 we had 13 adults spawn in captivity. 2022: those 13 fish grew into 26,000 fish"* (38:35).

Additionally, hatchery ownership by the Lummi Nation is an important exercise of tribal sovereignty. According to the U.S. Constitution, tribes are sovereign nations.[10] The right to determine their forms and exercises of government, like environmental protections, is an inherent right. When tribes own hatcheries, it ensures that they are managed such that they prioritize the interests of the tribe and needs of its citizens. *"In all that we do, we have our people at heart,"* says *Tla'kalin Ces'xen* Steve (39:24).

Early salmon restoration efforts (archival photo).

Enforcing inherent rights and tribal sovereignty in federal court upholds the integrity of the initial treaties that protect the interests and ways of life of the signatory tribes. *"The treaties are important,"* said *Joagquisho* Oren Lyons, Faithkeeper of the Turtle Clan (35:22). *"You have treaties up and down the West Coast. Get back to those treaties. They're agreements."*

Nevertheless, the fight to fish continues into the present. As is explored in the next section, the Lummi Nation and many other Coast Salish tribes are fighting against Atlantic salmon fish farms in the Salish Sea. These fish farms threaten the survival and health of wild Pacific salmon, which were stressed by overharvesting and now by climate change. Despite substantial steps taken to protect wild Pacific salmon from the dangers of fish farms, there is still a way to go.

Endnotes

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3 Dougherty, "Boldt Decision."

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5 Dougherty, "Boldt Decision."

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"Chief Oren Lyons," Harvard Kennedy School, accessed November 8, 2024, https://indigenousgov.hks.harvard.edu/people/oren-lyons.

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7 "Salmon Enhancement," Lummi Nation, accessed July 23, 2024, https://www.lummi-nsn.gov/Website.php?PageID=43.

8 "Lummi Bay Hatchery," Lummi Nation, accessed June 23, 2024, https://www.lummi-nsn.gov/Website.php?PageID=44.

9 "Skookum Creek Fish Hatchery," Lummi Nation, accessed August 24, 2024, https://www.lummi-nsn.gov/Website.php?PageID=45.

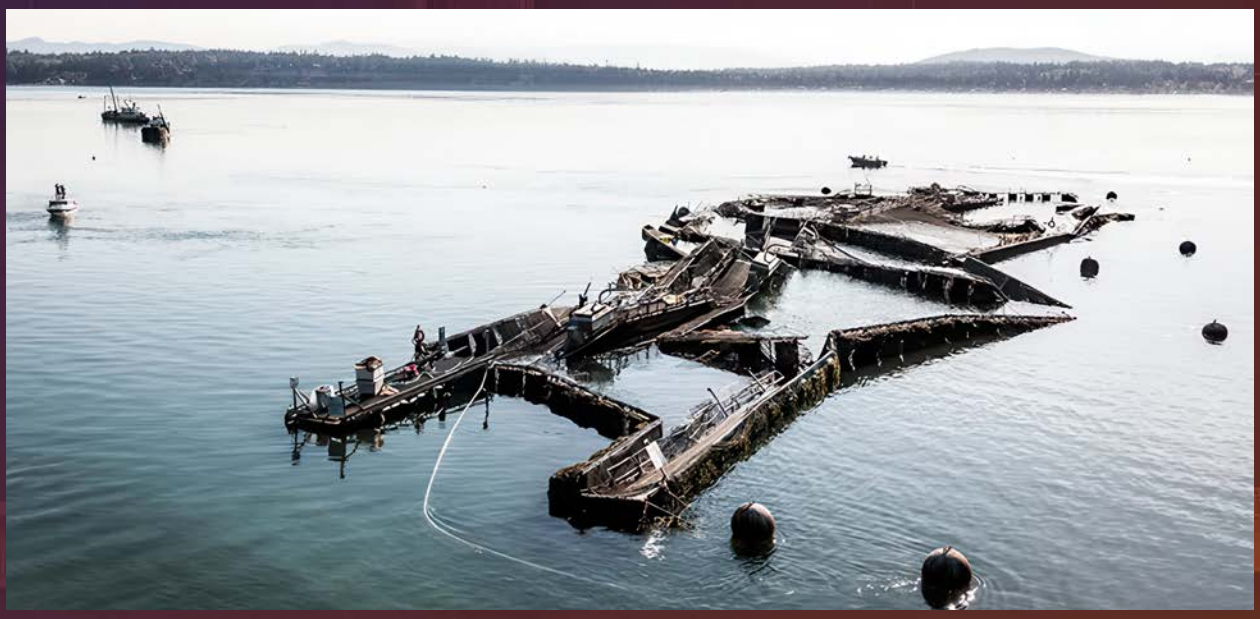
10 U.S. Const., art. 1, § 8, cl. 3.9.1.

Tribal members and allies protesting for treaty rights (archival photo).

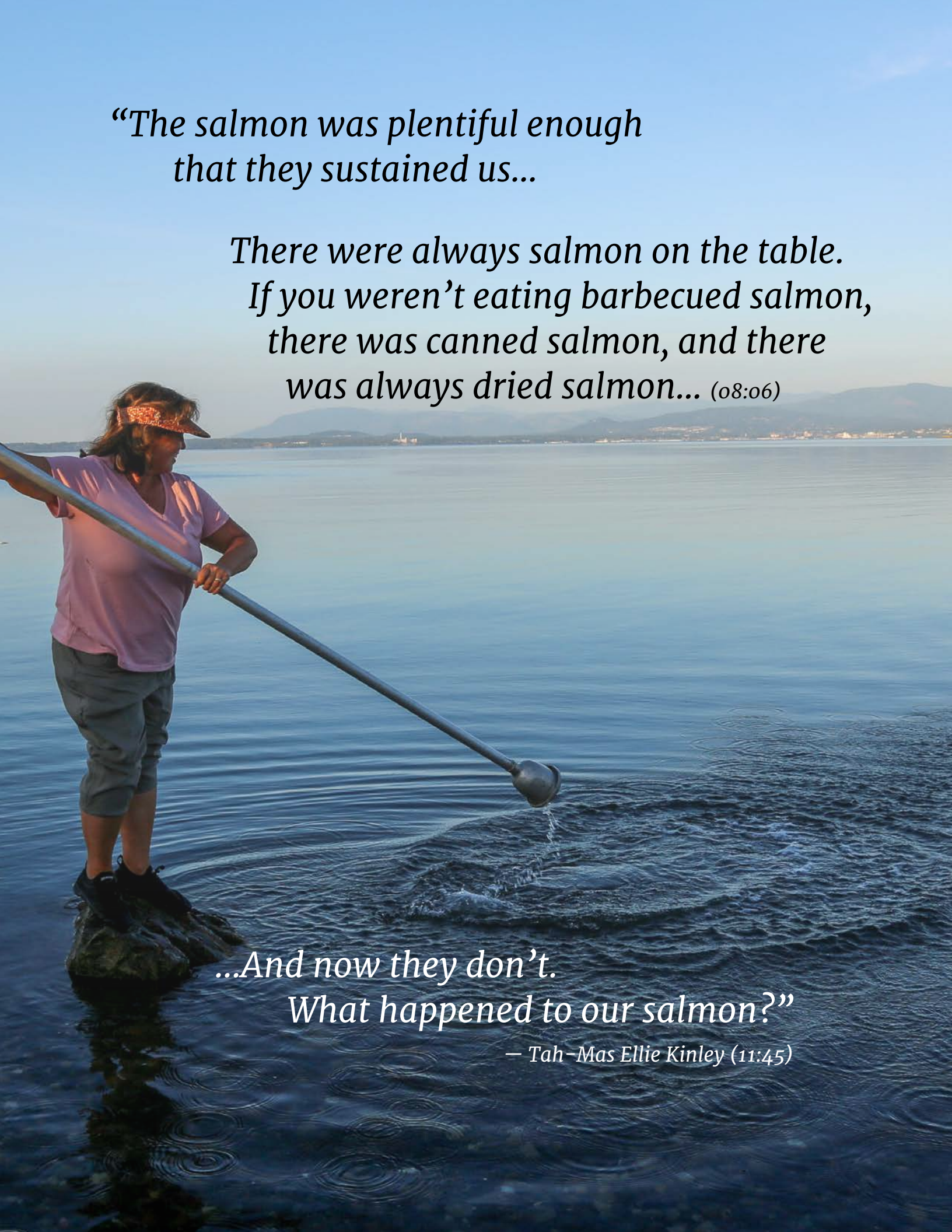
Coastal Clash: Farming Atlantic Salmon in the Salish Sea

The global demand for fish is surging with no signs of slowing down. Current revenue from the global fish market is $676 billion USD and is expected to grow by 6.49% annually through 2029.[1] To meet this demand, many companies worldwide turn to fish farming to harvest massive quantities of fish. However, as *Tah-Mas* Ellie Kinley explained throughout the film, such fish farms in the Salish Sea endanger wild salmon, disrupt their migration routes, and are eaten by the farmed fish.

"Coastal Clash" opens with a 2017 fish farm facility failure in Washington state waters and its consequences. Because this incident is recent and local, students will understand how issues as global as the fish demand impacts tribes in Washington state and themselves. Next, this section details how Atlantic salmon fish farms in British Columbia are negatively affecting wild Pacific salmon in the Salish Sea. Lastly, the topics of geography, economics, and tribal sovereignty, which are based on the Washington OSPI Social Studies Learning Standards, will be summarized.



Collapse of Atlantic salmon net pens owned by Cooke Aquaculture Pacific. (Photo by Beau Garreau / DAKO.5TUDIOS)



"The salmon was plentiful enough that they sustained us...

There were always salmon on the table. If you weren't eating barbecued salmon, there was canned salmon, and there was always dried salmon... (08:06)

...And now they don't. What happened to our salmon?"

— *Tah-Mas Ellie Kinley* (11:45)

Cypress Island Salmon Spill

In August 2017, a net pen fish farm owned by the Canadian company Cooke Aquaculture Pacific collapsed near Cypress Island. An estimated 160,000 Atlantic salmon—just over half of the total enclosed amount—escaped into Pacific waters.[2] The Swinomish Tribe, the Samish Indian Nation and the Lummi Nation were alerted and licensed fishers were asked to capture the escaped salmon.

Tla'kalin Ces'xen Steve Solomon (left) and *W'tot Ihem* Jay Julius (right) hauling escaped Atantlic salmon (Photo by Annie Crawley)

The most effective tribe was the Lummi Nation whose fishers captured a little over one-fourth of the escaped fish, exceeding amounts caught by the state. Cooke attempted to provide monetary incentives to prevent the Lummi Nation from advocating against net pen fish farms. Naturally, they disagreed.[3]

In November 2022, the Washington State Department of Natural Resources (DNR) banned net pen fish farms, echoing the 1905 *U.S. v. Winans* ruling that outlawed fishing wheels. A statement from the Commissioner of Public Lands Hilary Franz identified Cooke's "history of contract violations," neglected facilities, and environmental concerns as reasons for the ban. Elected officials from the Suquamish and Swinomish Tribes also voiced that the net pens infringe upon the fishing rights outlined in the Medicine Creek and Point Elliott Treaties, which the statement reiterated.[4]

On the other hand, the Jamestown S'Klallam Tribe, another Coast Salish tribe, was negatively affected by the ban. In 2019, the Tribe and Cooke launched the company Salish Fish. Unlike Cooke's former commercial fish farms, the farms at Salish Fish will house two native species. According to the Tribe's chairman and CEO, such aquaculture practices are within their treaty rights and is an important exercise of tribal sovereignty. The DNR's ban places Salish Fish operations and Jamestown S'Klallam treaty rights in limbo.[5]

After the ban, the DNR began exploring other aquacultural options with Sustainable Blue, a company focused on the sustainable farming of Atlantic salmon. What sets Sustainable Blue apart from companies like Cooke Aquaculture Pacific is the use of land tanks. Sustainable Blue also doesn't release fish waste or use antibiotics and intends for the fish to be sold locally.[6]

Native and non-Native fishers pitch in to recover escaped Atlantic salmon. (Photo by Annie Crawley)

Atlantic Salmon Fish Farms in British Columbia

In *Scha'nexw Elhtal'nexw Salmon People*, *Tah-Mas* Ellie Kinley voiced concerns about how Atlantic salmon net pens in British Columbia impact wild Pacific salmon:

> *"I believe one of the biggest threats to our wild salmon are the* ***fish farms*** *up in British Columbia. When our baby salmon come out of the river, they have to pass by or under hundreds of fish farms. These fish farms give our wild salmon lice, viruses, diseases, if our wild salmon aren't eaten as they pass through these farms" (43:41).*

Dangers of Net Pen Fish Farms

Net pen fish farms are fertile sites for illnesses and parasites due to the close-quarter environments that rapidly spread infection between fish and the lack of natural predators that would equilibrate the prevalence of infections by consuming affected fish.[7] Although net pen aquaculture has been banned in multiple jurisdictions along North America's Pacific coast, British Columbia is the last and only place to sanction them.

Juvenile salmon hosting sea lice.

Such farms harvesting Atlantic salmon in British Columbia exist on the migration routes of wild Pacific salmon. They expose wild salmon to diseases and parasites that reduce their survival rate, increase their mortality rate, and significantly contribute to their population decline.[8]

One such disease—salmon leukemia virus (SLV)—led to an epizootic and increased mortality rates in sockeye. Another disease—piscine reovirus (PRV)—not only reduces wild salmon survival rates, but also leads to heart and skeletal muscle inflammation, or HSMI. HSMI severely weakens the heart, skeletal muscles, and other vital organs of salmon.[9] Sea lice are parasites that transfer infectious disease to salmon and were shown to reduce sockeyes' ability to consume food.[10]

Farmed Atlantic salmon are treated for such diseases with vaccines and for sea lice with pesticides. However, increasingly stronger pesticides must be used as sea lice grow resistant to the chemicals. Wild Pacific salmon, however, do not have the same access to these treatments.[11]

The Precautionary Principle

However, a lack of absolute scientific certainty is not a reason to treat the conservation and protection of wild Pacific salmon as a nonurgent issue. This principle, known as the precautionary principle, was upheld in *Morton v. Canada* (2015). Researcher Alexandra Morton argued that a license issued by DFO Canada to the commercial aquaculture company Marine Harvest merely prohibited the transfer of fish that were showing signs of disease. This meant that fish could be transferred between locations if they were diseased but not symptomatic.

The presiding Mr. Justice Rennie ruled the case in Morton's favor and cited the precautionary principle, which states that:

> *"[e]nvironmental measures must anticipate, prevent and attack the causes of environmental degradation. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation."*[12]

More simply put, a lack of definitive scientific conclusions about the causes and effects of environmental threats is **not** a substantial reason to deprioritize environmental protection.

Four years later, in 2019, Prime Minister Justin Trudeau pledged to phase out net pen fish farms by 2025 in effort to conserve wild Pacific salmon. However, in June 2024, it was announced that net pen operations would be banned by 2029, and stricter limitations would be enforced in the meantime.[13]

First Nations & Indigenous Response

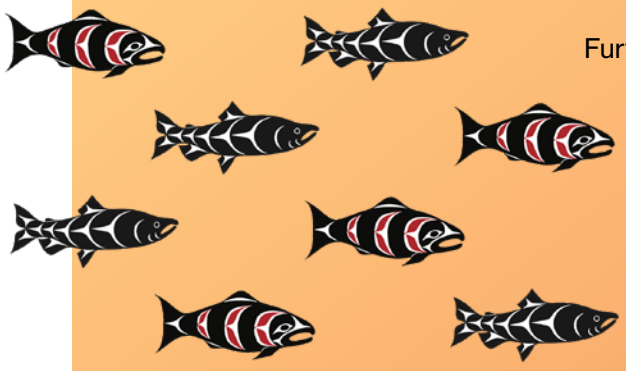
The response to the delayed phase out of net pen fish farms from First Nations and Indigenous groups is varied. Most First Nations are firmly against the use of net pens, and note that wild Pacific salmon cannot wait any longer for these steps to be taken. Dallas Smith, a spokesperson for First Nations for Finfish Stewardship and member of the Tlowitsis Nation, holds that First Nations should be trusted to protect wild salmon. Some First Nations believe the net pen fish farms help create economic equality for Indigenous people, but this comes with a cost—the destruction of wild Pacific salmon species.[14]

Similar to what the DNR is exploring in Washington state, multiple organizations advocate for commercial aquaculture companies using net pens to transition to land tanks.[15] Pacific salmon and their stewards battle larger factors (climate change and pollution) contributing to the wild population decline. Transitioning to a more sustainable aquaculture method is a viable and realistic solution that can be implemented in British Columbia, as it has been in other jurisdictions in North America, to protect wild Pacific salmon populations.

Differentiating Hatchery and Farmed Salmon

It is common to confuse hatchery salmon with farmed salmon, likely because they are both raised in highly controlled environments. Below is a table that distinguishes hatchery salmon from farmed salmon.

Hatchery Salmon	Farmed Salmon
Hatchery salmon are raised to be released into the wild. Hatchery salmon are derived from wild salmon.	Farmed salmon are farmed to be sold at market. Farmed salmon are not intentionally released into the wild.
The goal of raising salmon in hatcheries is to increase both wild salmon populations and the amount of fishable salmon.	The goal of farming salmon is to yield as many sellable salmon as possible to meet market demand and generate profit.
Replicating open water conditions ensures the salmon are strong and healthy to transition from a controlled environment to a wild one.	Replicating open water conditions ensures the salmon are strong and healthy to be sold and eaten.



Furthermore, the overwhelming majority of farmed salmon are **Atlantic salmon**. Some are farmed in Atlantic waters (i.e. eastern Canada and Norway), but a considerable amount are farmed in Pacific waters (i.e. the Salish Sea, Chile, Australia, Japan, etc.). Atlantic salmon farmed in the Salish Sea are done so in the path of wild Pacific salmon.

Commercial Fish Farming in the Salish Sea

Coast Salish peoples have harvested seafood on and near present-day Washington state coastlines since time immemorial. As the global demand for fish and seafood increases, companies look to the Salish Sea to harvest fish and meet this demand. Non-Native commercial harvesting since the Treaties of Medicine Creek and Point Elliott has decimated wild Pacific salmon levels. Farming Atlantic salmon in state waters furthers the strain on the fauna.

Commercial fish farms are a profitable form of aquaculture that harvest massive amounts of fish at once, but they are not a sustainable long-term solution for meeting the global demand for fish. Net pens, like those used by Cooke Aquaculture Pacific, submerge thousands of fish underwater where infections spread rapidly. The fish are vaccinated against disease and cleansed of parasites with pesticides. However, these pesticides disperse into the Salish Sea and harm the surrounding native ecosystem.

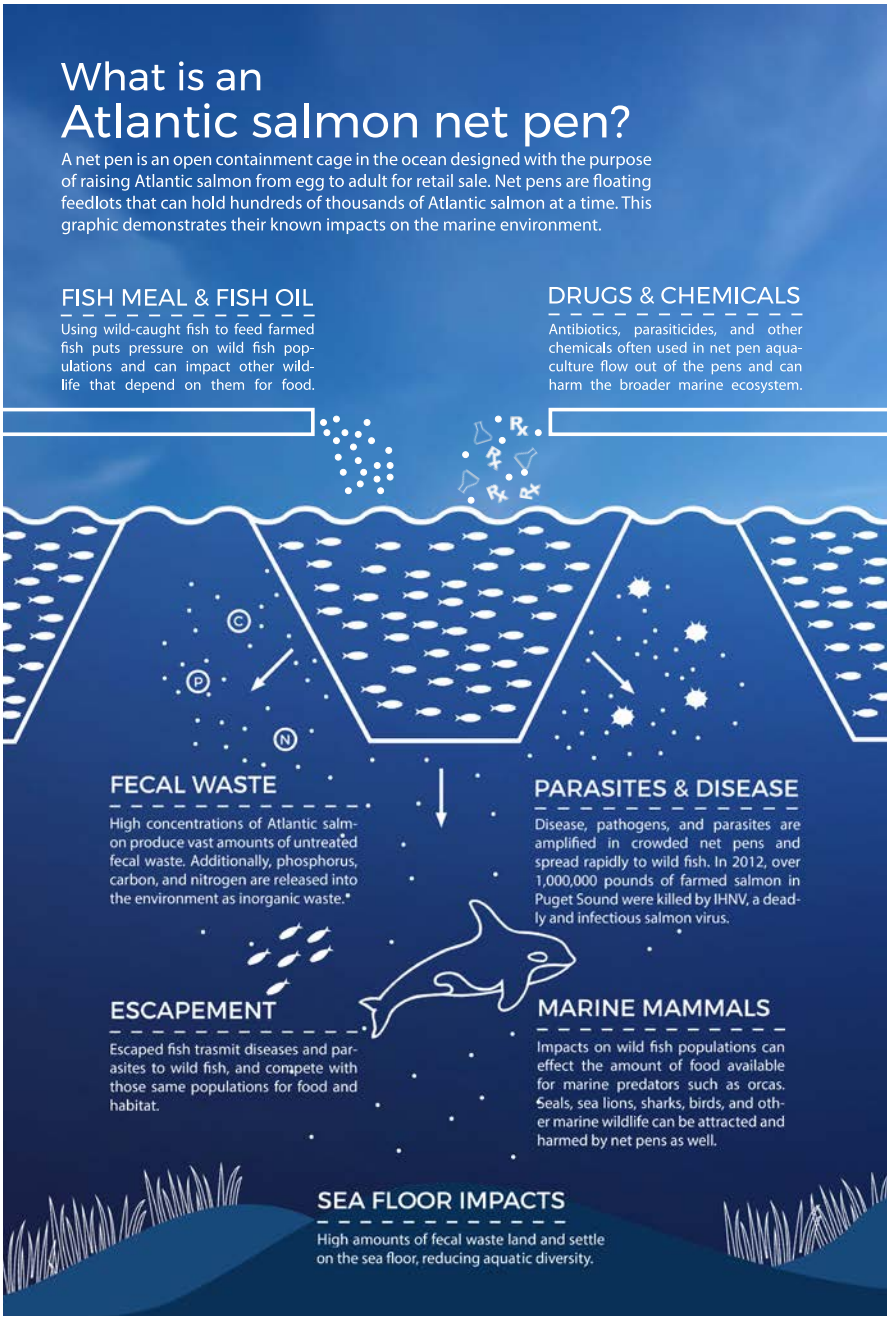
This section is well-suited for both middle and high school students. They can understand how the following factors are related when discussing commercial fish farming in Washington state:

- **The role of state geography in the economy** (OSPI SSLS / G2.6-8, G3.6-8, G1.11-12, G2.9-10, G2.11-12, G3.11-12)
- **The role of the state government in the economy** (OSPI SSLS / H2.6-8, H3.6-8, G2.9-10, G2.11-12, H2.11-12)
- **Resource sustainability of fish farming different methods** (OSPI SSLS / G2.11-12, G3.6-8; G3.11-12, H2.9-10, H2.11-12)
- **The various human-environment interactions involved in fish farming** (OSPI SSLS / G2.6-8, H2.6-8, H3.6-8, H4.6-8, G2.9-10, G2.11-12, G3.11-12, H2.9-10, H2.11-12)

Aerial view of net pen fish farm operation.

As *Tah-Mas* Ellie points out, this hinders not only wild salmon survival, but the survival of fishers like herself and *Tla'kalin Ces'xen* Steve Solomon who use less environmentally draining methods, like reef nets. Additionally, reef netting ensures that many Coast Salish fishers connect to and continue their ways of life, but this cannot be done if there are no fish.

Salish Fish is a unique venture with the Jamestown S'Klallam Tribe and Cooke Aquaculture Pacific that uses net pens to house native fish species. Although net pens will always pose environmental risks, the Jamestown S'Klallam Tribe maintain that net pen aquaculture can protect the environment, aid its tribal citizens, and continue traditions.[16] Salish Fish reports to various state departments including the DNR to ensure their practice meets environmental standards.[17]



Infographic of the effects of net pen fish farming.
(Source: Our Sound Our Salmon www.oursound-oursalmon.org)

The Complexities of Commercial Fish Farming

This section is well suited for upper high school students (grades 11 and 12) who can understand:

- The nuances of the costs and benefits of commercial fish farming, and how environmental protections and economic development are balanced (OSPI SSLS / G2.11-12)
- How the government and tribes can advance technology (OSPI SSLS / H2.11-12)
- Tribal sovereignty

Commercial fish farming has various advantages and disadvantages to numerous groups. It is economically advantageous both for the state to lease land to aquaculture companies and for the aquaculture companies to operate in an ideal ecosystem. The net pen method is advantageous to aquaculture companies because it is cost-efficient and to consumers because farm-raised salmon are sold at an affordable price on the market.

However, commercial fish farming is disadvantageous for the environment and to Native fishers. Net pen fish farms degrade the surrounding environment with disease, infection, and pesticides. Additionally, Native fishers like the Kinley's and the Solomon's struggle to make a dependable living from wild-caught salmon because it is sold at a premium rate. The premium rate reflects the efforts of the fishers, the food quality, and the food scarcity in both the market and nature. Although purchasing wild-caught salmon secures the livelihood of small-scale Native fishers, the premium rate is unaffordable to most consumers.

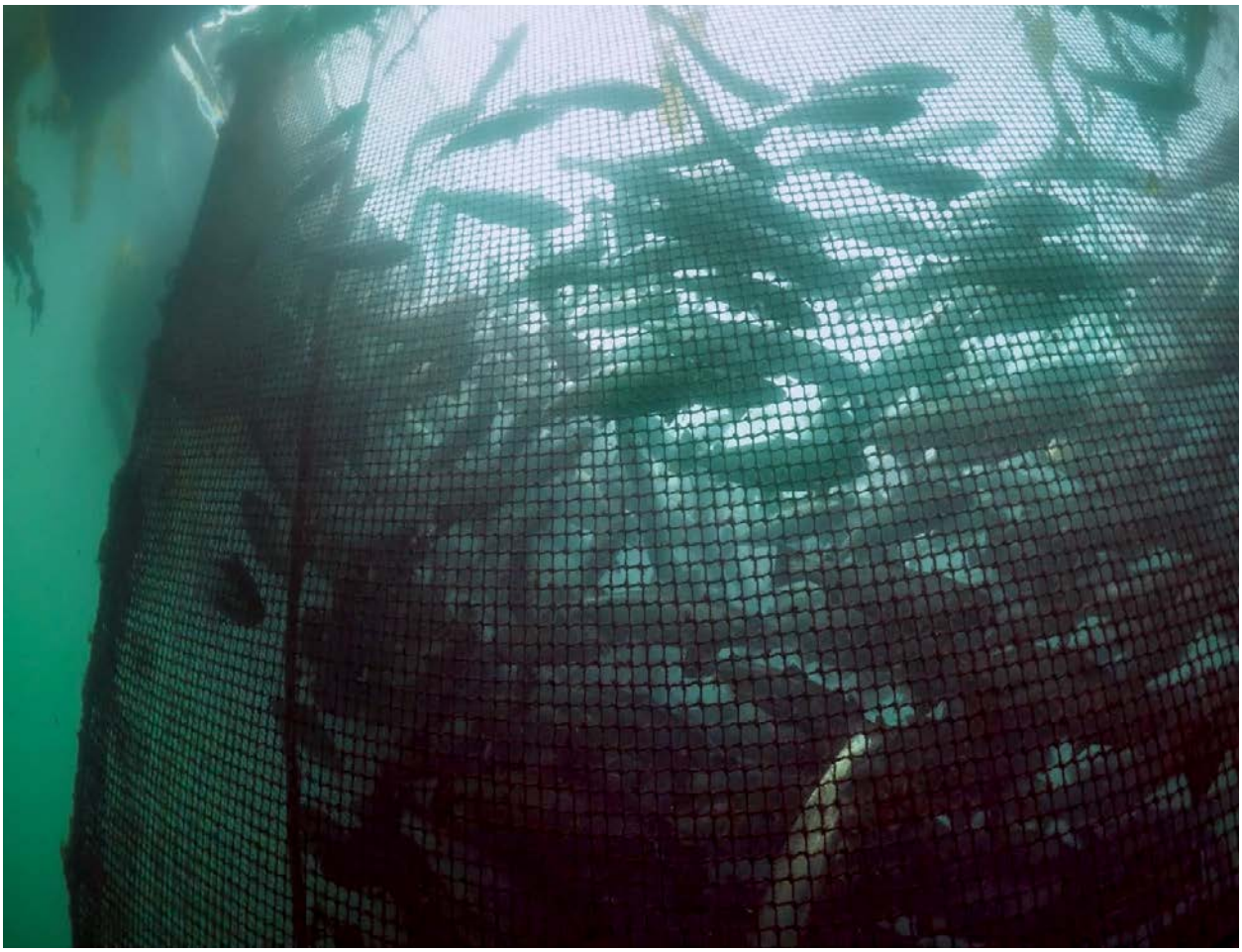
Sustainable Blue uses land tanks to farm fish. The benefit of this method is that it still mass-harvests fish to meet market demand without causing the environmental damage of net pens. State departments like the DNR are an important deciding factor in whether new technologies like land tanks can develop. They evaluate the feasibility of such operations and ensure they are compliant with state laws.

Land tank operation at Sustainable Blue.

On the other hand, Salish Fish meets the global fish demand by using net pens to farm native fish species. Before the ban, most net pen fish farms raised non-native fish species, like Atlantic salmon. To limit the toll net pens take on the environment, Salish Fish uses computer technologies to monitor and care for the fish. The company also routinely reports to state departments, including the DNR, to ensure environmental standards are met.

The Jamestown S'Klallam Tribe, who ventured into Salish Fish with Cooke Aquaculture Pacific, also believes the company is an exercise of their tribal sovereignty. According to the Tribal Chair and CEO, using modern aquaculture to farm native fish species ensures the Tribe can incorporate native fish species into their diet and ceremonies without depleting wild stocks. It is important to note that tribes representing the same ethnic group (in this case, the Coast Salish) do not exercise their tribal sovereignty unanimously.

However, the economic and cultural costs of large-scale commercial fish farming to small-scale Native fishers like the Kinley's and the Solomon's remain the same. Fishing from decreasing wild salmon stocks and using more traditional fishing methods is economically outpaced by mass-harvested non-native fish. Further, these traditional methods connect Coast Salish fishers to their way of life, which is becoming harder and harder to practice.



Underwater view of a net pen operation.

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7 Alexandra Morton and Richard Routledge, "Risk and precaution: Salmon farming," *Marine Policy* 74, (2016): 205-12, https://doi.org/10.1016/j.marpol.2016.09.022.

8 Morton and Routledge, "Risk and precaution," 205-12.

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10 Clayoquot Action, "Going Viral: Norwegian Salmon Farm Virus Threatens Clayoquot Chinook," accessed September 18, 2024, https://clayoquotaction.org/wp-content/uploads/2020/11/GoingViral-Report.pdf.

11 Morton and Routledge, "Risk and precaution," 205-12.

12 "Morton v. Canada (Fisheries and Oceans), 2015 FC 575 (CanLII)," CanLII, accessed September 18, 2024, https://www.canlii.org/en/ca/fct/doc/2015/2015fc575/2015fc575.html#document.

13 Nia Williams, "Canada to ban open-net salmon farms in British Columbia waters by 2029," *Reuters*, June 19, 2024, https://www.reuters.com/world/americas/canada-ban-open-net-salmon-farms-british-columbia-waters-by-2029-2024-06-19/.

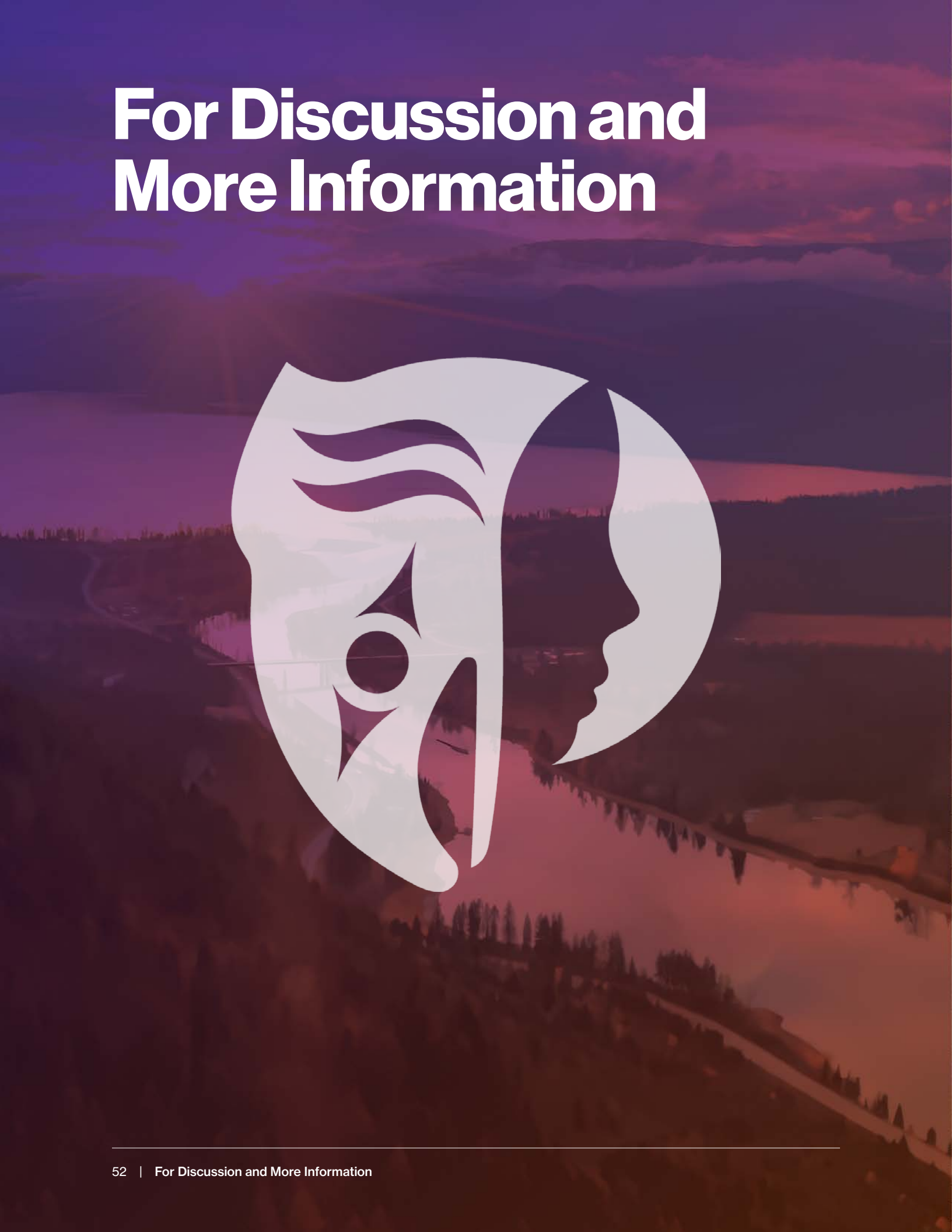
14 Shalu Mehta. "Salmon farms transition deadline looms in B.C.," *The Narwhal*, June 7, 2024, https://thenarwhal.ca/bc-salmon-farms-promise-2024/.

15 Cox, Sarah, "Fish out of water: How B.C.'s salmon farmers fell behind the curve of sustainable, land-based aquaculture," The Narwhal, December 28, 2020, https://thenarwhal.ca/bc-salmon-farming-transition/; Sarah Cox, "Trudeau government backpedals on election promise to phase out B.C. open net salmon farms by 2025," The Narwhal, February 13, 2020, https://thenarwhal.ca/trudeau-government-backpedals-on-election-promise-to-phase-out-b-c-open-net-salmon-farms-by-2025/; Morton and Routledge, "Risk and precaution," 205-12.

16 "Washington state Supreme Court Oks steelhead farming for Cooke Aquaculture," Salish Fish, accessed August 14, 2024, https://salishfish.net/washington-state-supreme-court-oks-steelhead-farming-for-cooke-aquaculture/.

17 "Safety & Technology," Salish Fish, accessed August 14, 2024, https://salishfish.net/safety-technology/.

For Discussion and More Information



Discussion Questions

The following discussion questions are based on the most relevant middle and high school OSPI Social Studies Learning Standards. These questions are intended to gauge students' comprehension of the film's main ideas and deepen their understanding of the film's nuances.

Human Activity and Culture

- How has human activity impacted Lummi homeland? How has Lummi homeland influenced human activity? Think about settlers, legal and political issues, and the global seafood demand. (OSPI SSLS / G2.6-8.3)
- How did the Treaties of Medicine Creek and Point Elliott reflect the contributions Native Americans made to state and national history? (OSPI SSLS / H2.11-12.3)
- How do *sxwo'le* contribute to and reflect Lummi history? (OSPI SSLS / H2.11-12.5, H4.11-12.3)

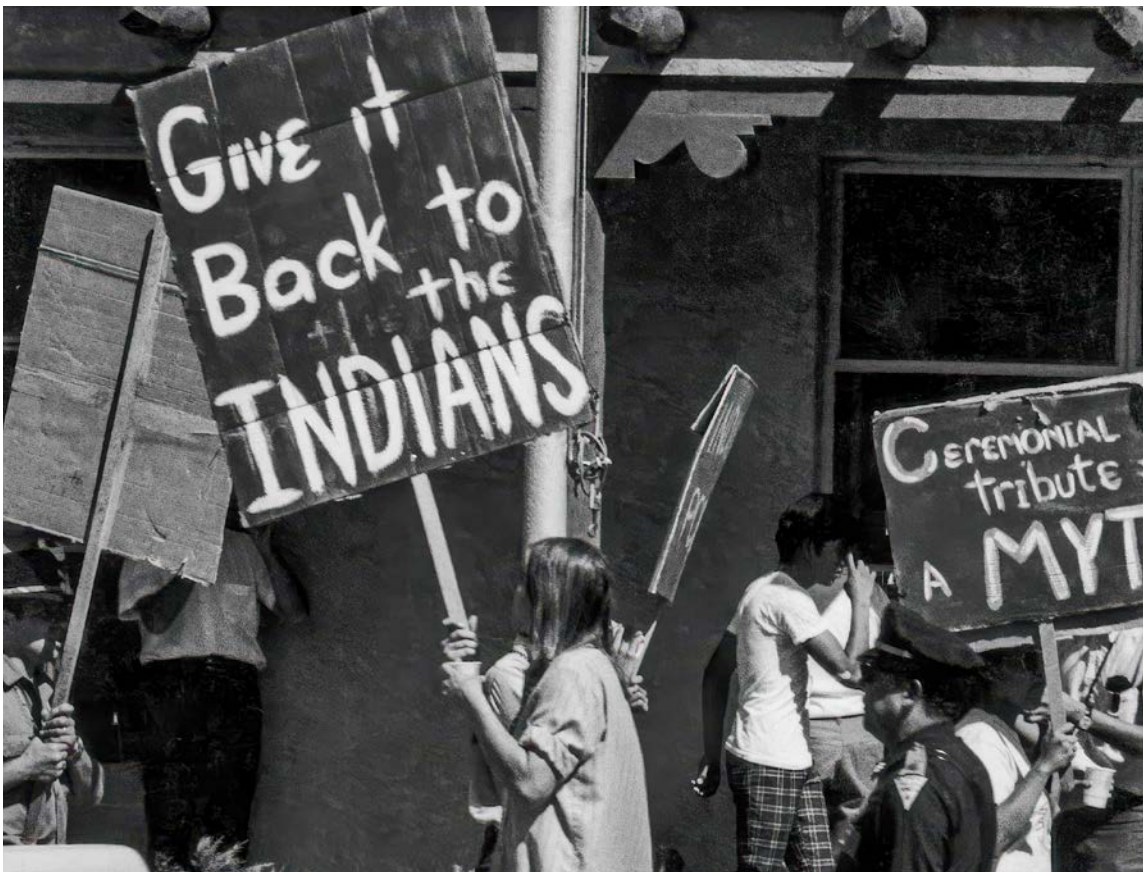
Technology and the Environment

- How has fishing technology affected sustainability on Lummi homeland? Consider traditional and industrial technologies. (OSPI SSLS / G2.11-12.4)
- How have fishing technologies created environmental problems and solutions for the Lummi? Consider traditional and industrial technologies. (OSPI SSLS / G2.11-12.5)
- In what ways are hatcheries a response to the settlers' fishing practices in the late 1800's and non-Native fishing practices from 1905-1970? (OSPI SSLS / H4.6-8, H4.11-12.3)

Native men and women beach seining (archival photo).

Politics, Legislation, and Law

- Are the Medicine Creek Treaty, the Point Elliott Treaty and others like them reflective of U.S. ideals? How or how not? (OSPI SSLS / C1.6-8.2)
- How did Judge Boldt's hatchery ruling in 1974 align with the treaties made in the 1850s? Explain the importance of this. (OSPI SSLS / H3.9-10.3, H3.11-12.3)
- During the film, Maiselle Bridges can be seen physically defending her fishing rights and usual and accustomed fishing grounds against game wardens. Why were protests held on usual and accustomed fishing grounds and tribal territories? What are the political implications of this? Think about tribal sovereignty. (OSPI SSLS / C2.9-10.1, C2.11-12.1, C4.9-10.4)
- During the film, *Tla'kalin Ces'xen* Steve said, *"I could recall countless members being ticketed for harvesting a steelhead in the late sixties. [...] Our nation just said, 'Keep fishing, keep fishing'"* (28:07). Were the fish-ins lawful? Is civil disobedience reasonable? (OSPI SSLS / C2.9-10.1, C2.11-12.1, C4.9-10.4, C4.11-12.2)



Protestors advocating for tribal land rights circa the Boldt Decision era.

Further Reading

Fish Farming

Fish farming, or pisciculture, is a complex topic to explain and discuss, even when the focus is narrowed to the Salish Sea. The articles below provide a more comprehensive introduction to fish farming as a method, and how it is practiced worldwide.

- **The Pros and Cons of Fish Farming**
  https://www.britannica.com/explore/savingearth/the-pros-and-cons-of-fish-farming
- **What Fish Farming Really Means for the Environment, Animals and People**
  https://sentientmedia.org/fish-farming/
- **Aquaculture (How to Farm a Better Fish)**
  https://www.nationalgeographic.com/foodfeatures/aquaculture/

Cypress Island Salmon Spill

The *Seattle Times* articles below provide more information on how Coast Salish tribes in Washington and First Nations in British Columbia were affected by the Cypress Island salmon spill, and how they allied to fight against net pens fish farms. It is important to remember that Coast Salish ethnolinguistic groups, group belonging, and confederated tribes expand beyond county, state, and national borders.

- **Please go fishing, Washington state says after farmed Atlantic salmon escape broken net**
  https://www.seattletimes.com/seattle-news/environment/oops-after-accidental-release-of-atlantic-salmon-fisherman-being-told-catch-as-many-as-you-want/
- **Fish-farming company offered money for Lummi Nation's silence about net pens, letters show**
  https://www.seattletimes.com/seattle-news/environment/fish-farming-company-offered-money-for-lummi-nations-silence-about-net-pens-letters-show/
- **Washington tribes, First Nations unite to end Atlantic salmon net-pen fish farms across West Coast**
  https://www.seattletimes.com/seattle-news/environment/wash-tribes-first-nations-unite-to-end-atlantic-salmon-net-pen-fish-farms-across-west-coast/

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Complete an optional survey to provide feedback on this teaching guide.

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Watch *Scha'nexw Elhtal'nexw Salmon People: Preserving A Way of Life* online.

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Find more information about the film on the Children of the Setting Sun website.

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Children of the Setting Sun Productions

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