

Alaska Traditional Knowledge Successful Salmon Restoration Worldwide

This paper calls upon the State of Alaska to publicly acknowledge and accept the Alaska Native Based Traditional Knowledge (aka Moist Air In-Stream Incubation System)(aka Fog Woman Totem) as a scientifically proven valid, sustaining, and successful method and means of supporting, supplementing, creating, and restoring wild salmon runs within Alaska lakes, streams, and rivers; as it has been publicly acknowledged and accepted in Washington, Oregon, Idaho, California, Minnesota, Wisconsin, Michigan, Ohio, New York, Ontario, Chili, Argentina, and New Zealand, for more than 25 years.

Restoring Alaska's In-Stream Salmon with Traditional Knowledge.

A basic tenet of food security is the concept that if you care for your food resource, it will flourish. The opposite is also true: if you ignore, disrespect, or abuse your food resource, it will decline and wither. This is true for all hunter/gatherer and all agricultural societies worldwide. Alaska's current fish hatcheries system has been an attempt to utilize only "best available science" to improve fish stocks through artificial means. It has had only limited and diminishing success in parts of Alaska. Worldwide, greater success has been achieved by making use of traditional knowledge and practices that originated in North Pacific America. These practices not only cost orders of magnitude less to implement but have proven to be significantly more self-sustaining and effective at supporting, supplementing, creating, and restoring wild salmon runs within lakes, streams, and rivers worldwide, than all other methods combined.

Moist Air Incubation as a Traditional practice -The Fog Woman Totem located in Ketchikan, AK, is an ancient tribal legend that taught the Tongass Tribe how the Fog Woman of Dene' ancestry used tribal knowledge to save and restore salmon streams, as well as teach a moral lesson to young men of how the Raven mistreated his Dene' wife and, to his shame, lost her forever. The Raven, in his pride and arrogance, rejected her gift of traditional knowledge and struck down Fog Woman. In an instant she was gone.

This tribal knowledge has been acknowledged by the developer of one of the most effective moist air salmon incubation systems in use today as the core source data in its design. The primary difference between hatcheries and in-stream incubation is that tribes worked to restore fertilized salmon egg to hatch back in the streams, rather than in holding tanks. By in-stream structured reseeded, through various release times and temperatures, the laddered schedule of salmon returns would ensure that the various salmon species would thrive for many generations. Without the use of multimillion-dollar commercial hatcheries, they created self-perpetuating systems that provided ten months of salmon returns that lasted for many millennia prior to Alaska statehood. The last known remaining laddered system still functions on the Situk River in Yakutat, which continues to enjoy five runs of salmon spanning ten months. This ancient Traditional Knowledge gift only exists today because Yak-Tat Kwaan tribe went to war against the Russians to protect this sacred river.

These abundant Alaskan salmon streams along the nation's longest shoreline created a self-renewing food chain of billions of metric tons of cycling biomass. This recycling food source was critical to the habitat of the entire North Pacific Ocean. Out of this abundant habitat came the incredible giant halibut, crab, shrimp and other seafood harvests, abundant marine mammals, as well as the sky darkening waterfowl migrations of days gone by. Sadly, since statehood, and with the State's official rejection of Traditional Knowledge (TK) in favor of Best Available Science (BAS), 90% of that self-renewing biomass is gone from what are now ever depleting and increasingly sterile Alaskan habitats, lakes, rivers, streams, shorelines, and ocean.

Without healthy and abundant spawning salmon, Alaska lands are now also becoming more and more depleted. Billions of metric tons of ocean borne nutrients that used to be fed to the lands through spawning salmon are gone from Alaska's lakes, rivers, and streams. This has had a direct impact on terrestrial predators and prey of every kind. Without spawning salmon, Alaskan bears and wolves are forced to replace that lost protein by hunting down all other prey species, depleting moose, deer, and all fur bearing wildlife, especially the newborn. This wildlife crash has happened in Alaska incrementally over the last 50 years. By 2004, Alaska became documented as the least productive wildlife state in the nation. As an example, Texas state annually harvests more hooved wildlife from its lands than

all the hoofed wildlife that even exists in Alaska. More hoofed wildlife was harvested within 50 miles of Washington DC, than was harvested in all of Alaska. At 1/6th the size of Alaska, even England's wildlife harvest rate is 70 times larger than Alaska's.

Without healthy salmon rivers, Alaska's people are also diminished and depleted. This depletion of Alaska wildlife has become a primary contributor to the increase in Alaska Native populations in homeless shelters (50%+) and prisons (40%+) of Alaska. The error of BAS is that all too often, it ignores all other mitigating factors and interests as irrelevant and unrelated, in a hopeless attempt to manage primarily for the **independent competing** interests of commercial, sports and historically last and least, subsistence fisheries.

TK emphasizes the importance of taking into consideration all of the **interdependent completing** interests in the management of holistic habitats of Alaska's lands, lakes, rivers, streams, shorelines, and the oceans that salmon rely on. For these habitats, Alaska's wildlife and its people are also in kind relying on the spawning salmon return. Beyond unsustainable short-term gains, there appear to be no long term logical, scientific, moral, economic, political, or ethical paths to success for BAS in managing only for **independent competing interests**. True long-term, sustainable success only exists on managing for **interdependent completing interests of all** who rely on Alaska's healthy lands, lakes, rivers, streams, shorelines, and ocean.

Without taking into consideration **interdependent completing interests**, hatcheries, by themselves, do not restore rivers. At best, hatcheries can only artificially and temporarily enhance a single salmon return. Alaska TK in-stream salmon incubation systems have documented more than 20 years of restored, abundant natural multiple generation salmon runs from New York State to New Zealand. Traditionally, whenever salmon spawning returns were low, for whatever reason, then TK moist air in-stream incubation practices were used by Alaska Native men and women steeped in TK taught throughout more than 14,000 years of tribal history. The citizens of New Zealand, Patagonia, Chili, the Pacific and Great Lake States, are today reseeded rivers, based on TK. Alaska's wildlife leadership has a choice to make. They can continue their path of rejecting TK in favor of BAS and continue to watch and wonder why Alaska's once legendary

wildlife resources continue to decline. Alternatively, they can choose to accept the TK lessons that millions of people worldwide already know and are benefitting from. They know that TK is the Mother of All Science. Everything short of TK is BAS.

It's time to add new chapters to the BAS book and listen to the interdependent rest of the story that the Elders have been patiently waiting to share. It does not take millions of dollars in hatcheries. It takes but a few minutes to understand what interdependent completing interests truly are. If we are not reseeded our rivers, we are not harvesting salmon, we are mining.

Alaska's BAS practices, as they exist today, truly represent a striking down of TK and truly a mistreatment of these precious Alaskan resources that sustain all our lives. Alaskans must come to understand wisdom in the gift of TK. It is a gift already accepted by so many nations and states in so many parts of the world who respect the gifts of TK to reseed, protect, nurture, and enjoy spawning salmon. It is a gift Alaska's leadership must accept or like the Raven, risk losing Fog Woman's blessings forever.

Traditional Knowledge Instream Incubation outside of Alaska:

The first video in the enclosed link introduces the Fog Woman legend. The follow-on videos show many hours of the TK inspired, mentored, and facilitated in-stream incubation of chinook and other salmon carried on in Washington, Oregon, California, Idaho, Minnesota, Wisconsin, Michigan, Ohio, New York, Argentina, Chili and in New Zealand. Some of these systems have been successfully operating for more than 25 years. All of these methods are TK descendant technologies of the Fog Woman, who through her totem is forever admonishing us to reseed and restore her rivers. Yet this ancient Traditional Knowledge (TK) practice is currently struck down, rejected, and prohibited in Alaska by Best Available Science (BAS) advocates. Why?

<https://youtube.com/playlist?list=PLGVcUPYTY7I-9S-b3G1C78VO24c1qlTNI>

This TK in-stream process for restoring natural runs of salmon was recently reintroduced in Alaska by the Dene' Chickaloon Native Village: **“Moose Creek**

Salmon Population Rehabilitation - This project is restoring the Moose Creek Chinook salmon population which has declined in the last century. In mid-summer, small numbers of adult Chinook salmon on Moose Creek are captured; the salmon eggs are fertilized and then incubated in a moist air incubation system located in our Environmental Stewardship Department Office.”.

<http://www.cooperativeconservationamerica.org/viewproject.aspx?id=712>

These programs have been so successful in Oregon that they teach it in the school system: “Caring daily for the fish as they develop from egg to fry fosters a sense of stewardship for wild things — and where wild things live. And best of all, it's easy, it's fun, and help is available. This manual provides all the information you need—contact sources, incubator designs, how to monitor egg development, how to release the fry, ideas that connect the project to state education standards, and more! Read on to discover how easy hatching fish in a classroom incubator can be! (Copyright © 2000 by the Oregon Department of Fish and Wildlife)

https://www.dfw.state.or.us/fish/STEP/docs/eggs_to_fry.pdf

*“Alaska Village Initiatives, on behalf of its members (Alaska Tribes and Native Corporations), requests that all Federal and State agencies acknowledge this **Traditional Knowledge** practice in the reintroduction of Instream Incubation as a sustainable solution to depleted salmon runs in any village that requests assistance.”*

Tom Harris, P.O. Box 110057, Anchorage, Alaska 99511-0057 (907)227-2744
February 12, 2021