

Our Strength is From the Fish!



ver my seven years as CRITFC's Executive Director, I have had the opportunity to travel throughout the Columbia River Basin and see firsthand the many successes that our member tribes have accomplished in putting fish back in the rivers and restoring the watersheds where the fish live. I am inspired to see the their dedication and hard work. I am also proud of the work that CRITFC has done to support our member tribes in these efforts. The intertribal cooperation and collaboration that the leaders of the four Columbia River treaty fishing tribes envisioned when they created CRITFC is a reminder that we are stronger together and that great things can from partnership.

In all of CRITFC's endeavors, two priorities have and always will guide us: the good of the salmon and the protection of the treaty-reserved right to harvest these fish, one our sacred First Foods.

Protecting the salmon on behalf of the tribes is a great responsibility and a task that we were specifically organized to fulfill. We have many means to bring about what is expected of us—means granted to us by wisdom, foresight, and direction from the Yakama, Umatilla, Warm Springs, and Nez Perce tribal leaders who have shaped and lead this organization.

During 2014 and 2015, the region saw record returns of summer and chinook salmon, something that was only a hope forty years ago when entire runs of salmon were driven to extinction or at risk of it. These incredible runs didn't come about by accident; they are the result of decades of hard work and dedication by the tribes and their partners. In 2014, more than two million Columbia River salmon (chinook, coho, and sockeye) passed Bonneville Dam. This is three times as many that passed in 1987, the year I began working at CRITFC as an intern. The tribes have a

goal of returning 4 million each year. We still have significant hurdles to overcome in order to reach that number, but seeing so many fall chinook swimming past the Bonneville Dam fish counting window again gives us a lot of encouragement to keep up the work.

One such hurdle that remains to overcome to reach our goal is to restore fish passage past a number of Columbia River Basin dams that lack fish ladders. In 2014, CRITFC organized the largest conference on restoring Columbia Basin fish passage ever convened. Nearly 300 attendees, representing tribes, federal and state agencies, university researchers, and private businesses, gathered to discuss the feasibility of restoring fish passage to allow salmon and other anadromous fish to return to their entire historical range.

The steady increases in salmon returns have also increased the number

of tribal fishers who can subsist on salmon and make a living participating in the commercial harvest. It is heartening to see so many tribal members able to once again take part in the salmon economy. This increase, however, has impacted the in-lieu and treaty fishing access sites, which have borne the burden of use by many more people than they were designed for. Much progress has been made to complete a backlog of maintenance projects and the sites are in much better shape than they have been in years. There is still work to be done, not only in terms of maintenance, but to address the underlying cause of overcrowding at the sites. CRITFC and the tribes are dedicated to continuing this work, to ensure that fishers can effectively, safely, and reliably exercise their treaty fishing rights.

Even at the low point in salmon returns, the tribes never gave in to

despair or hopelessness about the situation. Our strength is from the fish and this ancient connection provided the dedication, determination, and hope to accomplish what so many said was impossible. We answered this challenge with a solid foundation of cultural wisdom. We answered it with a desire to honor the sacred fish. We answered it by joining forces and creating CRITFC. We answered it by finding the highest quality people to work toward our goal. Because of our unified efforts, the tribes will continue to be successful in this great work.

Paul Lumley

CRITFC Executive Director



Putting Fish Back in the Rivers

CRITFC provides the tribes and the region with invaluable biological and other scientific research, fisheries management, and habitat restoration coordination to support the protection and rebuilding of Columbia River salmon, lamprey, and sturgeon populations to all the rivers and streams were they were historically found.

RECORD SALMON RUNS

2014 and 2015 saw the largest Columbia River salmon runs in more than three quarters of a century. In 2014, the total Columbia River salmon run (chinook, coho, and sockeye) passing Bonneville was 2,046,554 fish. In 2015, 1,885,207 passed.

On September 7, 2014, a new Bonneville Dam daily record was set when 67,024 fall chinook passed the fish ladders. The very next day, 67,521 passed, breaking the one-day-old record. More fall chinook passed Bonneville Dam on those two days than did over the entire run in 1992 (116,200) and 1993 (126,472). A substantial proportion of the fall run was natural-origin fish destined for the Hanford Reach, the Snake River, and other upriver locations. These records weren't limited to fall chinook; 2014 also saw the largest returns of both sockeye and coho since the construction of Bonneville Dam.



On several days during both years, salmon were passing Bonneville Dam at such a high rate that the gates diverting fish

▲ Salmon milling in the fish ladder pool prior to passing the counting window at Bonneville Dam. Photo taken on Sept 6, the day before the daily record was broken.



▲ CRITFC fish technician Crystal Chulick with a 3-foot-long chinook taken from the trap at Bonneville Dam. Technicians sample and tag fish for a variety of research projects being conducted by CRITFC fish biologists.

into the collection trap couldn't be closed as it would back up salmon entering the ladder.

Back in the 1970s and 80s, some salmon runs such as the Snake River coho went extinct and others were declining so quickly that there was a real worry extinctions would become widespread. In 1980, only 470,000 salmon passed Bonneville Dam—and that's adding up chinook, sockeye, and coho. Beginning in the early 1980s, the tribes began intensive restoration and rebuilding efforts to reverse this decline. In 1995, they released the groundbreaking salmon restoration plan Wy-Kan-Ush-Mi Wa-Kish-Wit, which addressed salmon restoration solutions throughout the entire

lifecycle—from gravel to gravel.

The 2014 and 2015 salmon runs are the latest sign that the tribes' efforts are having a big impact on the health of salmon throughout the Columbia River Basin.

The past few year's returns are in large part due to the wise guidance of tribal leadership and the dedication of the hundreds of tribal fisheries employees who have poured their hearts and souls into the effort of restoring salmon. The recent years' coho returns in particular is directly attributable to tribal efforts to re-introduce and restore populations to upriver areas. Thanks to these efforts, we hope returns like 2014 and 2015 will become the norm.

The 2014 and 2015 runs are certainly cause for celebration, but we still have work to do. Fish consumption advisories are a reminder that the Columbia River isn't the source of pure water that our ancestors enjoyed. The effects of climate change are already impacting fish runs, and not all the tributaries are seeing increased salmon returns. Spring and summer chinook, steelhead, coho, and especially lamprey are still in need of all the efforts and resources we can give them.

Wy-Kan-Ush-Mi Wa-Kish-Wit has a goal of returning 4 million each year. We still have significant hurdles to overcome in order to reach that number, but seeing so many fall chinook swimming past the Bonneville Dam fish counting window again gives us a lot of encouragement to keep up the work.



AVIAN PREDATION

A continuing challenge migrating juvenile salmon and steelhead face is the devastating impact of predatory bird populations in the Columbia River Basin, particularly Caspian terns and double-crested cormorants in the estuary.

East Sand Island was historically a small sand bar near the mouth of the Columbia River. It wasn't a suitable bird breeding location as high tides and flooding events during the breeding season would wash away nesting sites.

In the late 1970s, the U.S. Corps of Engineers began dumping dredge spoils onto the island as part of its efforts to keep river shipping lanes open for barge traffic. Dumping so much dredged material onto the island greatly expanded its size, raised its elevation above flood risks, and inadvertently created perfect habitat conditions for waterbirds and shorebirds.

Double-crested cormorants were first documented on East Sand Island in 1989, with fewer than 100 breeding pairs. By 2013, the colony had grown to 14,900 pairs. In addition, there are also 7,400 pairs of Caspian terns and small colonies of ringbilled gulls, western gulls, and Brandt's cormorants. The modified island is now home to the world's largest breeding colonies of both double-crested cormorants and Caspian terns and is the largest known California brown pelican post-breeding roost site in the region.

With over 45,000 adult birds on East Sand Island foraging for both themselves and their young, the impacts to juvenile

- ▲ A Caspian tern with a salmon smolt caught in the Columbia River estuary.
- ▼ Nearly 15,000 pairs of double crested cormorants occupy a single island near the mouth of the Columbia River.

salmon and steelhead are significant. The birds on this island consume an estimated 20 percent of the juvenile salmon and steelhead that pass through the Columbia River estuary each year. In 2013, the East Sand Island cormorants consumed an estimated 16 million juvenile salmonids and the terns consumed another 4.9 million.



Difficult and sometimes controversial measures are being taken to address the effects of human activities in the estuary, but to fix the underlying problem, it will take long-term actions including bird removals and returning East Sand Island to its former size and conditions.

▼ The Caspian tern colony on East Sand Island.



SEA LION PREDATION

In 2010, NOAA Fisheries initiated research to investigate the nature and scope of adult salmon losses between the mouth of the Columbia River and Bonneville Dam. The research discovered the fish loss in that 146-mile stretch increased each year over the course study. Adjusted for harvest, the 2014 average upriver spring chinook salmon

survival was just 55 percent, down from 69 percent in 2013 and 82 percent in 2012. The 2014 data indicated nearly half of the spring chinook that entered the Columbia River did not cross Bonneville Dam.

The research couldn't tell how much of this fish loss was due to predation by pinnipeds (marine mammals such as seals and sea lions). Dr. Michelle Wargo-Rub of the Seattle-based Northwest Fisheries Science Center reported that fish mortality and the number of sea lions in the estuary have increased dramatically in recent years. This coincides with reports from tribal fishers of pinniped predation on damaged fish in their nets.

Due to the apparent increase in pinniped weight predation, CRITFC and other agencies are trying to fill in data gaps. They hope to

river downstream from Bonneville Dam.

Predation research focuses on spring chinook because that is the time of year when the sea lion population is largest in the river. The sea lions follow the spring chinook run coming up the river between March and May. Most of the sea lions then go to breeding grounds off southern California in the summer.

Survival varies over the course of the run, Dr. Wargo-Rub said. It appears that a higher percentage of fish in the early part of the run die before reaching Bonneville Dam than fish migrating later in the spring. Early

▼ Sea lion C265, weighing over 1,000 lbs. in May 2007 after a two-month feeding spree. When he was initially caught in March 2007, he weighed only 557 lbs.





- ▲ Sea lions crowd a walkway at a mooring basin in Astoria. Photo courtesy Northwest Power and Conservation Council.
- ▶ Representative Earl Blumenauer (OR) gave the opening address of the 2014 Future of Our Salmon Conference.

returning fish also take longer to reach the dam, which exposes them to sea lions and seals for a longer time, she said.

CRITFC works with the States of
Oregon and Washington, the Army Corps
of Engineers, and the U.S. Department of
Agriculture to haze California and Steller
sea lions below Bonneville dam to hopefully
change their behavior. The CRITFC hazing
crew uses cracker shells, seal bombs, and
boat chases to attempt to change the sea
lions' feeding location and cut down on
the number of salmon they eat. This keeps
them away from the fish ladders but doesn't

keep the sea lions and seals from coming up the river in the first place.

"The tribes and state and federal agencies are pouring enormous resources and millions of dollars into salmon restoration. We can't afford having all our hard-earned gains to be eaten by this growing sea lion predation problem," said then-CRITFC Chairman Carlos Smith. "Our hazing effort is really a stopgap measure until this underlying problem is dealt with."

The tribes continue to advocate for federal agencies to address the growing

problem. The issue is made particularly thorny as it pits two major conservation laws (Endangered Species Act and the Marine Mammal Protection Act) and the tribal treaties against each other.

FUTURE OF OUR SALMON CONFERENCE 2014

The goal of the Future of Our Salmon Conferences is to facilitate dialogue between fisheries co-managers and other interested parties in an quest for



a unified vision of salmon restoration in the Columbia River Basin. These conferences are for tribal, First Nation, federal, state, provincial, and local government representatives; Indian, sport, and commercial fishers; environmental organizations; and anyone else interested in restoring healthy, sustainable populations of anadromous and resident fish throughout the Columbia River Basin.

The 2014 Future of Our Salmon conference theme focused on restoring fish passage to historical locations throughout the Columbia River Basin, particularly for salmon, lamprey, sturgeon, and bull trout. The conference helped start the work to develop a unified strategy to accomplish this major undertaking.

Topics discussed at the 2014 conference and a preliminary technical workshop included policy, technical, cultural, social, institutional, and economic issues associated with restoring adult and juvenile fish passage to historical locations.

One of the workshop highlights for attendees was the cultural session. Topics ranged from the role of salmon in tribal cultures to the importance of restoring the land that supports us all. One speaker noted, "several Columbia River dams in Canada have legally binding agreements to add fish passage if Grand Coulee and Chief Joseph passage is ever added."

Many of the presentations dealt with the lack of fish passage at Chief Joseph and Grand Coulee dams, which blocks fish from returning to the Upper Columbia River. A Canadian First Nations leader told the attendees how, each year, they conduct a ceremony that includes knocking rocks together in the river to call the salmon home and to let them know that his tribe will be waiting to greet them when they can one day return.

The main outcome of the conference was the determination that fish passage is possible at any dam. The question is no longer "if" salmon passage can be restored. It is really a question of "when" salmon passage can be restored.

We hope to see salmon return to the upper Columbia River in our lifetime, not only to restore fish runs throughout the basin, but so our brothers and sisters to the north can once again fish for salmon in their own waters. There is no doubt that the tribes and First Nations will be the primary leaders in making this happen.



■ Tribal and First Nation representatives from the United States and Canada kicked-off a regional conversation about restoring fish passage to historical locations throughout the Columbia River Basin with a tour of Grand Coulee Dam. This 550-feet high dam was completed in 1942 and was constructed without fish passage. Because it lacked fish passage, all the dams later built upstream from it had no reason to include fish passage, either. The tribes are advocating for fish passage at Columbia River basin dams to allow the return of salmon to their entire historical range.



FOSSIL FUEL TRANSPORT

For thousands of years, people have lived, worked and prayed along the Columbia River. The great river of the Northwest shapes the cultures of those who rely on its bounty. The river has experienced many changes in the past 200 years: overfishing, hydropower development, population pressures, and pollutants. Today, the river is threatened by a wave of proposals to turn the railroads lining the river, as well as the river itself, into a major transportation corridor for fossil fuels. These proposals, should they be put into practice, would risk the health, safety, and economic security of those living along the river. Tribal members fishing in the Columbia face even larger risks and potential impacts since they spend significant time outside exposed to

the air and water in and along the river and eating a diet heavy in fish caught there.

The tribes' opposition stems not only to the climate effects of continued fossil fuel use, but also the present danger of transportation risks. Continued reliance on fossil fuels would have long-lasting, harmful impacts to the environment and the natural resources upon which tribal cultures



▲ A 2014 derailment near Wallula in Oregon.

With tracks built this close to the river, any accident will likely impact the water. Fortunately this train consisted of empty cattle cars.

are based. This alone is reason enough for opposition to expanding fossil fuel transport through the region, but adding in the risk of catastrophic environmental damage from spills and derailments, the correct course of action is obvious.

Concerns with Coal Transport

On both sides of the Columbia River Gorge, rail lines follow the river, with some stretches running on causeways mere feet from the river on both sides of the track. Traffic this close to the river almost guarantees that accidents and spillage issues will either enter the water or affect it.

For the rail transport of coal, the major risk is the amount of dust and debris that comes off the cargo during transit.

Coal is transported in open rail cars that are exposed to the elements. The loaded

cars are sprayed with a substance in an attempt to control dust, but settling and jostling of the coal during transit reduces its effectiveness. Coal dust and debris pollutes the air, water, and land all along the Columbia River. Some trains can have more than one hundred coal

cars, each adding coal dust and debris to the environment. Tribal fishers have reported witnessing black clouds of coal dust coming off these cars and blowing into the environment or the river during windy conditions. Airborne coal dust can be especially harmful to humans when inhaled. Tribal fishers and others who work along the river are at particular risk to breathing in unsafe amounts of coal dust particulates. This scattering of coal into the environment happens in the course of normal transport, not just during a derailment or other accident.

Concerns with Oil Transport

For the rail transport of oil, the primary risk is from derailment and oil spillage into or along the Columbia River. Oil spills in

■ On a 2014 CRITFC tour of the Columbia River, the group stopped at Columbia Hills State Park where they discovered a large amount of coal and coal dust from trains that travel along the river there. The contamination was widespread and much more than would be expected from the few trains that pass daily. They found coal debris along the tracks that in some places was four to six inches deep.

this sensitive corridor could devastate the Columbia River ecosystem and

the treaty fishery. Even with a multi-million dollar, full-scale emergency response using the latest containment methods, a major spill could potentially pollute the area for years.

Tribal and local communities are further vulnerable with evidence that companies shipping coal and oil have a track record of being vastly under-insured, leaving local populations with the responsibility of cleaning up spills.

This transport will impact the sensitive Columbia River ecosystem even if every train runs without any problems. The increases in rail transport will require expansion of rail lines, which means more fill in the river, shorelines, wetlands, and streams, along with further displacement of tribal fishers and impact to the ecosystem and natural resources.

Increased rail traffic also equates to more risk of train-strike. Tribal fishers are particularly at risk, as they regularly cross railroad tracks when accessing their fishing sites. Most of the access roads to the Columbia River are rural crossings without lights or crossing bars. This combination of tribal members regularly using uncontrolled crossings and a sharp increase in railroad traffic greatly increases the likelihood of deadly train-strikes.

▼ An oil train derailment into the James River in Lynchburg, Virginia. Photo: Waterkeeper Alliance.





Tribal Energy Vision

The tribes' opposition to fossil fuel transport through the region doesn't mean they are opposed to or ignorant of the region's energy needs. In 2003, the tribes authored their Tribal Energy Vision, a plan that proposes sustainable energy development goals that would not burden

natural resources. A fundamental goal of the Tribal Energy Vision is to reduce the pressure of energy demand on Columbia Basin fish and wildlife resources. In other words, the tribal goal is to take energy policy off the backs of salmon and the environment that supports them. Our entire region is defined by the Columbia River, and its protection should be on the forefront of our thoughts and actions. Opposing large-scale fossil fuel transport along the Columbia River corridor is a significant and important piece of that goal.



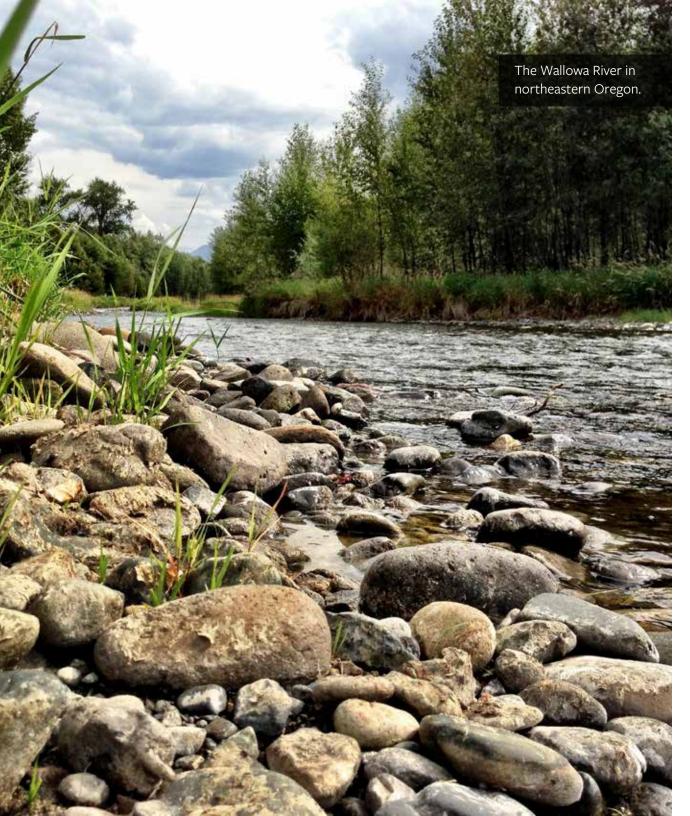
▲ C. McKinley with catch on Big Island. Circa 1956. Photo courtesy the Matheny Collection.

OUR OBLIGATION TO WATER

Elders who fished at Celilo Falls talk about having small metal cups on a string that they would lower into the river to get a drink. Just 60 years ago, the Columbia River was clean enough for people to drink directly from it without worrying about getting sick. Today, we spend millions of dollars on water treatment facilities to clean the very water that we have polluted. In a 2015 meeting with Gina McCarthy, Administrator for the U.S. Environmental Protection Agency, CRITFC Chairman Carlos Smith shared a story about being on a boat team that raced in Portland's Willamette River. He told how all the team members were encouraged to wear gloves and to avoid getting any river water splashed into their eyes because too much contact with the polluted water could make them sick. Unfortunately, all the other plants and animals that depend on rivers and streams don't have the luxury of water treatment facilities or ability to wear protective gear. The salmon have no choice but to swim in the polluted waters; the lamprey have no choice but to grow and develop in gravel and sediment contaminated by toxic substances.

Our elders taught us time and again that water brings life. We honor *choosh* at all our ceremonies, opening and closing every feast with it as a sign of thanksgiving and gratitude to the Creator for this precious gift. This tribal teaching isn't just for tribal people—every single living thing on the earth depends on all humans learning what our ancient tribal wisdom has taught since time immemorial: water is sacred and requires our protection.

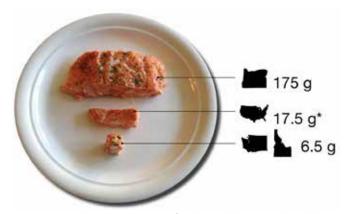
Protecting the environment that the Creator blessed us with is one of our central values and lies at the heart of who we are as a people. We have been taught to speak for the resources that have no voice, and our tribal leaders regularly speak for the water in their meetings with government officials. Water is essential and is worth all the sacrifice and effort it takes to make it pure. Unless others learn this essential tribal teaching, our waters will remain sick, which in turn will make everything sick. Clean rivers and streams aren't just a tribal treaty right, they are a human right; protecting and restoring polluted rivers and streams isn't just a government obligation, it's our obligation as humans. This is how we take care of our First Foods, and in return, these foods take care of us.



WATER QUALITY PROTECTION

Water quality standards are based on several factors designed to protect human health from the effects of pollution. These factors include a fish consumption rate that represents how much fish residents eat and a cancer risk level (the additional lifetime risk for developing cancer from being exposed to a pollutant). These standards are used to determine the "safe" level of pollution that industry and municipal wastewater treatment plants can discharge into streams and rivers.

The fish consumption rate is an important factor because the more toxicladen fish that people consume, the more they're at risk for developing cancer and other diseases. What is considered safe for people who only eat a single serving of fish per month might be very harmful to someone who eats one or more servings of fish every day. This in an important issue to the tribes, as tribal members typically eat much more fish than the general public, potentially exposing them to dangerous levels of toxics and putting them at a much greater risk of negative health effects. In 2011, the State of Oregon increased the stringency of its water quality standards



▲ These portions of salmon illustrate the daily fish consumption rate each state uses for its residents. The current daily amount for Washington and Idaho is about enough to put on a cracker.

to be protective of people who consume higher rates of fish than the general public. Years of work by the tribes that showed tribal fish consumption rates could be as high as ten times the state average.

Because the Clean Water Act requires states to revise standards on a regular basis, both Washington and Idaho began work on updating their surface water quality standards, as well. Because of Washington State's continued delay in adopting updated standards, in September 2015 EPA proposed a water quality rule for the state. EPA's proposed rule met the tribal minimum goals for a fish consumption rate of 175 g/day and a cancer risk rate of 1 in 1,000,000 and uses EPA's 2015 updated toxicity and bioaccumulation

factors. The state will need to propose an alternative rule sometime before EPA's rule takes effect to retain state control of water quality standards in Washington. The tribes have urged EPA to move forward and adopt federal water quality standards for Washington because the federal rule provides more protective standards than previous state proposals and is based on recently updated scientific recommendations.

Idaho also worked to update its water quality standards using data from the latest EPA survey of fish consumption in Idaho by tribal members. Idaho's draft rule would increase the state's fish consumption rate from 6.5 g/day to 66 g/day, which is based on the mean consumption rate of Nez Perce tribal members of "near coastal, estuarine, freshwater, and anadromous" fish from the 2015 EPA survey of Idaho tribes. Along with increasing the fish consumption rate tenfold, the new rule would increase the allowable cancer risk rate from 1 in a million to 10 in a million (which is 1 in 100,000). This cancer risk tolerance would be ten times that allowed by the Oregon or

► A First Salmon feast on the Umatilla Indian Reservation.

proposed Washington standards, essentially erasing the benefits of increasing the fish consumption rate. The Idaho rule uses EPA's 2015 updated recommendations for Relative Source Contribution, Bioaccumulation Factors, and Toxicity Factors but overall is weaker because of the inadequate fish consumption rate and cancer risk level. CRITFC and its member tribes submitted comments to Idaho in November 2015 that opposed this proposed rule because the standards were calculated using substantially reduced levels of protection for tribal people as compared to the general population.





CLIMATE CHANGE

For years, tribal members have been on the front lines of seeing the effects of climate change in the harvest of the First Foods. From earlier ripening times to odd animals behavior, they've seen the ancient patterns disrupted more and more. Salmon and other fish are affected by these changes, as well. As the region warms, winter precipitation falls as rain instead of snow and the snow that does fall melts earlier. This results in the water traveling through the system during the winter, leaving much less during the hot summer months. The increased winter flows scour the riverbeds, disturb nests, and cause physical damage to both salmon eggs and juveniles, while the lower summer flows increase water

temperatures and reduces the overall habitat available to salmon.

In 2015, the Columbia River basin experienced a winter of extremely low snowfall levels and a summer of high air temperatures, which warmed up the rivers. The snowmelt came off earlier than normal resulting in extreme low flows in the mainstem and tributaries. While the 2015 Columbia River runoff volume was not historically low, the problem for fish was the combination of low flows and high water temperatures. The water temperature at Bonneville Dam, for example, set the all-time daily record for 47 of the 49 days between May 29 and July 16. In 2015, the April monthly average was 1.2°F warmer than the 75-year average. In May, it was

3.1°F warmer; in June, it was 6.9°F warmer, and in July, it was 6.2°F warmer.

Effects of warm water on salmon

While early high flows help fish migrating in the spring, the summer combination of low flows and high water temperatures create a stressful environment for migrating adults and juveniles. Adult salmon tend to swim around warm water areas or hold in cooler water refuges such as tributaries or springfed lake areas waiting for the temperature in the mainstem to cool down. This can delay or even prevent spawning. Higher water temperature can also affect juvenile salmon development, causing them to reach maturity stages at smaller sizes.

Warmer, lower rivers also increase

the risk of bacterial or fungal infections and parasite infestations in salmon, both of which increase pre-spawn mortality. Parasites such as ichthyophthirius multifiliis (causes ich in fish) and bacteria such as Flavobacterium columnare (causes columnaris in fish) occur naturally in the Columbia River, but are normally kept in check by cold temperatures and the immune system of healthy fish. Warmer water stresses the fish, weakening their immune systems, and increases the proliferation of parasites and bacterial infections. Lower river levels push these stressed fish into closer proximity to one another, creating the perfect conditions for bacteria and parasites to spread.



▲ During the 2015 sockeye run, fishers reported spotting many fish with bacterial and fungal infections that occurred in the warmer water. This one was found in Drano Lake, where a large number of sockeye sought refuge in the cooler water. Photo: USGS

A system out of balance

The salmon region of the North Pacific Ocean has never been so warm for so long in recorded history. In 2015, an expanse of warm water off the coast of North America had sea surface temperatures as much as 5.4°F higher than average. It lasted for months and was hundreds of miles across. The situation affected marine food webs throughout the North Pacific.

The recent extreme conditions are in alignment with those predicted by climate models. The Columbia River tribes have been working on planning for a changing climate, including climate change research, advocating for river operations modifications, calling for fish passage above Grand Coulee and Chief Joseph Dams, and completing habitat projects designed to

help cool down tributaries. These efforts, however, won't stop a warmer climate. To even begin to do that will require dedicated international cooperation. Knowing this, the tribes have been advocating for the United States to address this issue on a national and international scale.

One of the most precious traditional teachings the tribes hold is the concept that "everything is connected." For thousands of years, the tribes used this teaching to live in an appropriate and sustainable way on the earth. To properly address this threat, the world must be willing to listen and incorporate this traditional Native wisdom into their activities and actions, not only for themselves and future generations, but for the very planet itself.



WY-KAN-USH-MI WA-KISH-WIT 2014 SUPPLEMENTAL UPDATE

The Columbia River ecosystem is a complex and dynamic landscape that is constantly changing. As time passes and the Columbia River landscape changes, the issues that we face in salmon recovery also change. That is why it was important for CRITFC and the tribes to revisit *Wy-Kan-Ush-Mi Wa-Kish-Wit*, the 1995 Columbia River anadromous fish restoration plan of the Nez Perce, Warm Springs, Umatilla, and Yakama tribes, completing a supplemental update of the plan in 2014.

The update accomplishes a few things. It describes the progress of the original plan, outlines needed modifications to the original institutional and technical recommendations, and identifies and addresses new challenges currently facing fish populations and their recovery.

The original *Wy-Kan-Ush-Mi Wa-Kish-Wit* provided a framework for restoring fish populations to the entire Columbia River Basin. While the original plan set in to motion a number of technical and institutional recommendations, it became clear that the tribal restoration plan needed to be updated to deal with new challenges

that weren't anticipated 18 years ago.

The updated *Wy-Kan-Ush-Mi Wa-Kish-Wit* expands upon its original recommendations to address climate change impacts on fish populations and tribal lands, places water quality issues as a priority for the tribes, and challenges the region to address predation concerns associated with sea lions at Bonneville Dam and the large number of birds currently residing along the Columbia River and in its estuary.

The management and restoration of fish populations throughout the Columbia River Basin requires us to be adaptable to the changing landscape of the Columbia River. That is why it became necessary to revisit Wy-Kan-Ush-Mi Wa-Kish-Wit. The tribes continue to be leaders in salmon recovery efforts for the entire Columbia River Basin and Wy-Kan-Ush-Mi Wa-Kish-Wit is the latest example of that leadership.

The complete plan, including the update is online at *plan.critfc.org*.



The homepage for the new Wy-Kan-Ush-Mi Wa-Kish-Wit website features explanations of what the plan is, how it is a reflection of tribal cultural values and scientific expertise, and examples of successes the tribes have had in implementing it.





Protecting Treaty Fishing Rights

CRITFC has lawyers, policy analysts, and an enforcement team working to ensure that tribal treaty rights are protected. All of these activities are done in careful coordination with and under the direction of our member tribes.

MEETING WITH EPA ADMINISTRATOR

Tribal leaders met with Environmental Protection Agency Administrator Gina McCarthy in the CRITFC commission chambers in Portland in April 2015.

Administrator McCarthy is President Obama's chief environmental advocate. At the meeting, tribal leaders stressed their concerns over the transport of fossil fuels through the Columbia River Gorge and the importance of rail safety, climate change policies, and strong regional water quality standards.

CRITFC Chairman Carlos Smith (2014-2015) shared his concerns for the state of Columbia Basin waterways. "Fish advisories,

high rates of cancer, and polluted waters are plaguing our communities and our foods," said Smith. "Addressing water quality issues must be a priority."

"The fact that water is polluted is disturbing," Administrator McCarthy responded. "That's what got us into this business. The challenges are getting more complex. What isn't complex is our commitment to clean water, air, and land."

Commissioner Kathryn Brigham spoke of the importance of working together to address challenges facing the region. "We have been fighting very hard to get our resources protected and it's not just for us, ▼ CRITFC Chairman Carlos Smith (2014-2015) welcomes EPA Administrator Gina McCarthy to the tribal meeting.



it is for our future generations," Brigham explained. "But we can't do it alone. We need to work together through partnership and collaboration in order to make that happen."

In her closing remarks, McCarthy shared her appreciation for and duty to the tribes. "EPA's priority is to institutionalize what we have learned about working with the tribes," McCarthy said. "I work for a President who really believes that we have a tremendous amount of work to do and that our obligations with the tribes haven't been met. We want to make sure the door he opened with you never gets shut."

EQUITABLE HARVEST

The current system to share the Indian and non-Indian harvests is the work of nearly fifty years of trial and error, tribal advocacy and litigation, alterations to how fisheries are set, and improvements to prediction models.

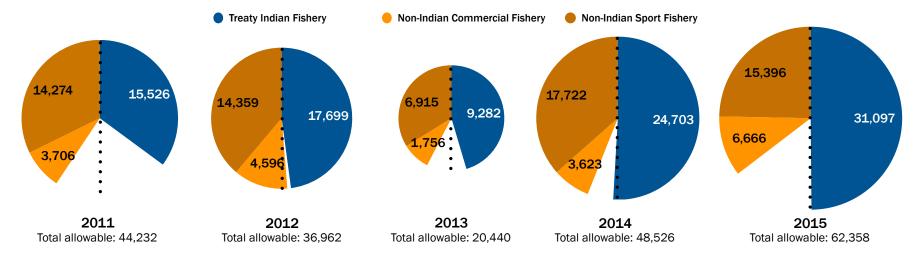
Columbia River fisheries have been managed under the terms of a series of management agreements under the *U.S. v. Oregon* court case. In each of these management agreements going back to 1977, the tribes have been able to negotiate gradual improvements in sharing between treaty and non-treaty fisheries as well as improvements to hatchery production and

re-building commitments. These, along with the incorporation of abundance-based management, have made improvements in tribal fisheries even in the face of

▼ In 2010, catch balancing was implemented on the spring season that prohibited the non-Indian fishery from catching more than the Indian fishery. In 2011, the non-Indian fishery exceeded the Indian fishery by 2,454 fish and in 2012, by 1,256 fish. Since 2013, the spring chinook fishery has not gone over the allowed harvest rate, the sharing has been equitable between the Indian and non-Indian fisheries, and the non-Indian take has never exceeded the Indian take. In fact, the 2015 Indian spring chinook harvest was almost exactly half of the total allowed on that run, missing the limit by only 30 fish.

Mainstem Spring Chinook Harvest

Size of graph reflects size of that year's total harvestable fish allocation. Blank area in each graph represents allowed fish that weren't caught.



Endangered Species Act listings. Improvements to fisheries have gone hand-in-hand with our efforts to rebuild salmon and steelhead runs.

The sharing method isn't a perfect system and there is always room for improvement. However recent years have been quite successful in ensuring that the harvest was shared fairly between the tribes and the states, and at a level that protects the sustainability of the fish.

The recent years of equitable harvest has been a long, hard struggle to achieve. It's built on work and effort that stretches back 160 years all the way to the tribal leaders who insisted that the right to fish at all usual and accustomed areas was reserved and protected in the treaties.

HARVEST

Both 2014 and 2015 had commercial fisheries in the spring, summer, and fall management periods along with sturgeon fisheries in the winter season. Subsistence fishing in the mainstem was open year-round.

While precise estimates of total tribal harvest only go back a few decades and there are no reliable estimates of total harvest pre-European contact, 2014 and 2015 set records for the periods where data on tribal catch is available. 2014 had the largest total catch with over 415,000 total salmon and steelhead caught just in the mainstem. The 2015 harvest came in a fairly close second with a total catch of over 374,000 salmon and steelhead caught. Both years set records for largest fall and summer chinook harvests in the modern era. There were also substantial catches in the tribes' tributary fisheries.

Prices in commercial fisheries have steadily increased in recent years, so both of these years provided large economic benefits to tribal members, their families, and the communities where they live both on and off the reservations.



Sharing Salmon Culture

CRITFC seeks to share the unique salmon cultures of its member tribes to help increase awareness and instill a respect for and desire to protect salmon. Sharing this information along with other issues such as the nature of treaty fishing rights, tribal restoration activities, and lamprey and sturgeon protection helps to ensure that future generations will enjoy the rights and resources that have been central to tribal cultures in this region since time immemorial.

SALMON CAMP

The Tribal Salmon Camp is a critical component of CRITFC's Tribal Workforce Development Program. It seeks to inspire and encourage Native American youth to explore careers in science, technology, engineering, and math (STEM) subjects. Fewer than half of Native American youth in the Pacific and Northwestern regions of the United States graduate from high school. Although Native Americans make up 1.5% of the U.S. population, they account for only 0.7% of students graduating with bachelor's degrees in science.

Salmon Camp is a pre-college program that supports learning

opportunities for 20 middle school youth from the four CRITFC member tribes. The program focuses on providing culturally relevant STEM experiences to improve student achievement and close the achievement gap for Native American youth. Hosting of the camp rotates among the CRITFC member tribes on a four-year schedule, providing an opportunity for each community to share unique experiences with tribal youth.

Salmon Camp activities are designed to highlight the ways tribal programs and scientists combine Western science with traditional ecological knowledge. With the assistance of tribal elders and leaders,

students also participate in traditions and customs related to First Foods harvesting and preparation. They get hands-on experience learning about the salmon life cycle, water cycles within a watershed, and food webs. Through this process, tribal youth increase their understanding of math and science. Students and their families are provided with resources to increase awareness of course selection, financial aid, and college preparation.

The 2014 CRITFC Tribal Salmon Camp was hosted by the Yakama Nation at Camp Chaparral, which is located in the closed area of their reservation. The 2015 camp was conducted in partnership with







the Nez Perce Tribe on Craig Mountain at Camp Wittman, near the southern border of the Nez Perce Reservation.

- ▶ Learning about root digging at Musselshell Meadows—an important Nez Perce camas gathering site. At the meadow and surrounding forest, the students also learned about the impact of invasive species on native plant ecosystems from Nez Perce Fisheries staff.
- 【left】 Campers learning about the salmon life cycle from tribal fisheries biologists. While visiting with students, tribal biologists and scientists talked about why they decided to study science and what their college experience was like. At the camp's conclusion, students were asked about their future goals; 85 percent reported an interest in attending college and pursuing a STEM degree.

[center] Salmon Camp is designed to be both educational and fun. A jet boat ride on the Snake River through Hells Canyon gave students plenty of opportunities for both. Nez Perce elders accompanied the tour, teaching the students about culturally significant locations along the route including petroglyph sites and the crossing location used by Chief Joseph and his band during the Nez Perce War. Being on the river during a hot July day, the tour also included lots of swimming.

[right] An elder showing how to identify camas plants and the best way to dig the bulb with minimal soil disturbance. Camas, along with other First Foods, was enjoyed at a feast on the final night of Salmon Camp.



LAMPREY FILM HONORED

The film "The Lost Fish" about tribal Pacific lamprey restoration that was produced by CRITFC and Freshwaters Illustrated was selected for inclusion in the 2014 Portland Ecofilm Festival. The annual festival features screenings of new films covering topics of nature conservation, environmental activism, agriculture, and community wellness.

"The Lost Fish" was selected for telling the story of "the people working to raise public awareness of the ecological importance, conservation needs, and cultural significance of Pacific Lamprey to Pacific Northwest Tribes."

In addition to screening the film, the festival posthumously awarded Nez Perce

tribal elder and former CRITFC commissioner Elmer Crow, who was featured in the film, with an EcoHero Award. Elmer was selected for his lifetime of conservation work





benefiting Pacific Lamprey.

"The Lost Fish" has been shown at locations throughout the Columbia Basin. It was premiered on the reservations of the four CRITFC member tribes first. Since then, it has been screened at cities and events in Oregon, Idaho, and Washington. The film was presented at the Oregon Museum of Science and Industry (OMSI) as part of the museum's Roots of Wisdom exhibit. This exhibit featured examples of how Native Americans and native Hawaiians are developing innovative solutions to tackle current environmental challenges. The exhibit also presented how

native people are combining traditional knowledge with modern science to restore ecosystems. The Umatilla Tribe's lamprey restoration efforts were featured in the exhibit, which included an activity where visitors took a lamprey model and scanned it in a reader to see where in the Columbia Basin each one came from and how far it had migrated.

- ▲ A scene from "The Lost Fish" of Elmer showing lamprey collected for the Nez Perce Tribe's translocation efforts. Photo courtesy Freshwaters Illustrated
- ◀ Elmer's grandson Henry FiveCrows holding lamprey models to scan at the OMSI exhibit Roots of Wisdom





COLUMBIA RIVER FISHERS MEMORIAL

In April 2014, around 250 people gathered at Columbia Hills State Park outside Dallesport, Oregon for a blessing of the river and dedication of the proposed Fishers Memorial that the tribes hope to have built there. The event included drummers singing three sets of seven songs each, an opportunity for those gathered to talk about the memorial and remember their lost loved ones, and concluded with a salmon dinner. The CRITFC Enforcement



team was given a beaded staff to honor their dedication and support in search, rescue, and recovery efforts. The final blessing on the food was sung by a group of children. In his remarks, the event organizer River Chief Wilbur Slockish, Jr, spoke of honoring the river that gives us life and respecting that same river, because it can take life, too.

During the ceremony, people shared memories of the lost fishers' dedication and traditions, words of gratitude for those who assisted the families in their time of need, and words of comfort for those who still grieve at their loss.

The location for the ceremony was the proposed location for the Columbia River Fishers Memorial. For over 30 years, the four Columbia River treaty tribes have spoken of building a memorial to honor lost fishers. Under tribal leadership, a group of Warm Springs, Yakama, Umatilla, and Nez Perce artists designed a culturally significant monument to memorialize

lost fishers, provide a place for families to express their grief, and to encourage safety for all who use the river.

Over the millennia, untold numbers of fishers have lost their lives to N'Chi Wana. The loved ones who they left behind look to with renewed respect, for while the river offers many gifts, its awesome power makes it dangerous as well. By remembering those lost, the tribes hope the memorial also serves as a reminder for fishers to always be safe and take the proper precautions when they are out on the river.

The site for the memorial is a short walk from Tsagaglalal, the sacred "She Who Watches" petroglyph. Together, these two stone creations will overlook the Columbia. One reminds us that the river is the source of our identity and strength. The other will remind us of those who returned to the Creator in the river's watery depths.

Providing Fisher Services

CRITFC provides a variety of services directly to Yakama, Umatilla, Warm Springs, and Nez Perce fishers. These services help fishers exercise their treaty-protected rights to fish and carry on the tradition of making a living from fishing.

FISHING ACCESS SITE IMPROVEMENTS

Fishers from all four CRITFC member tribes rely on the 30 fishing access sites along the Columbia River Zone 6. The Fishing Site Maintenance Department works to keep the access roads, parking areas, boat ramps and docks, fish cleaning tables, net racks, drying sheds, restrooms, mechanical buildings, and shelters in good repair.

In 2014, the EPA reviewed the water

systems at ten of the sites for Safe Drinking Water Act compliance. The Indian Health Service works with the EPA to establish and monitor SDWA standards throughout Indian Country.

At that review, the IHS reported that eight of the twelve In-lieu and Treaty Fishing Access Sites with wells may be Public Water Systems. The sites are Cooks, North Bonneville, Stanley Rock, Dallesport, Celilo, Maryhill, Preacher's Eddy, Pasture Point and Roosevelt. The surveys, completed earlier this year, identified

possible deficiencies that had to be corrected before these sites could receive a Public Water System designation.

None of the fishing access sites constructed prior to 2001 were designed with SDWA standards in mind. The

sites built after 2001 were designed to meet some of the standards, but not all.

In an effort to protect the tribal members who use and rely on these sites, CRITFC and its member tribes worked with IHS and the EPA to meet full SDWA compliance. The sites underwent retrofit construction and repairs, some of them major.

The EPA goal is to ensure safe, clean water is available to those who use these water systems. CRITFC's goal is to provide tribal fishers with safe water for drinking and processing their fish harvest. Potable water is the cornerstone to any sanitary plan and is required for compliance with HACCP standards and the upcoming Food Safety Modernization Act Regulations. CRITFC's Fishing Site Maintenance Department has worked hard to provide potable water to tribal fishers and their families who use the fishing access sites and will continue to do so.



◄ Cooks In-lieu Fishing Site.

COLUMBIA RIVER HOUSING

The loss of villages and homes has long been a contentious issue for the tribes and the United States. Countless meetings and discussions have occurred over the decades with little resolution. The tribes have always insisted that as long as the Columbia River dams exist, the United States has a continuing obligation to mitigate for the dams' impacts. For the tribes, these impacts include not only effects on anadromous fish and water quality, but also the loss of villages, homes, and fishing access along the river.

In response to resolutions from the four CRITFC member tribes to study tribal housing and infrastructure needs along the Columbia River, the US Army Corps of Engineers conducted a fact finding review that was completed in 2014. The review sought to determine the extent of unresolved housing claims related to construction of Bonneville and The Dalles dams. This project collected and reviewed applicable federal statutes, reports, and design documents along with Indian Claims Commission records and records provided by tribal governments. It also reviewed administrative and physical considerations

- ▶ Many fishing access sites are overcrowded like the North Bonneville Ft. Rains access site. Often this results in overwhelmed water and sewer systems and public safety problems.
- ▲ A resident at Lone Pine shared the reality and hardship of living at the site, which lacks proper services for long-term stays.

that affect tribal housing development, identified potential solutions to provide onriver housing, and resulted in a final report for consideration by the Corps.

The project involved the input of tribal government officials, housing staff, and members of the tribal communities along the river. A series of monthly meetings took place during the year-long project to inform the tribes of findings and progress on the review as well as to gather input to further the project.

In 2015, CRITFC hosted a visit at the Lone Pine in-lieu site for U.S. Congressman Earl Blumenauer. The visit provided an opportunity to share tribal concerns about housing needs and public safety issues at the tribal fishing sites. The tour highlighted how tribal members contend with substandard living conditions as a consequence of displacement by the construction and operation of the federal Columbia River dams.







► CRITFC Commissioner Wilbur Slockish (Yakama), speaking with U.S. Representative Blumenauer at the Lone Pine In-lieu Site.



Confederated Tribes and Bands of the Yakama Nation Fish, Wildlife, and Law & Order Committee



Confederated Tribes of the Umatilla Indian Reservation Fish & Wildlife Committee





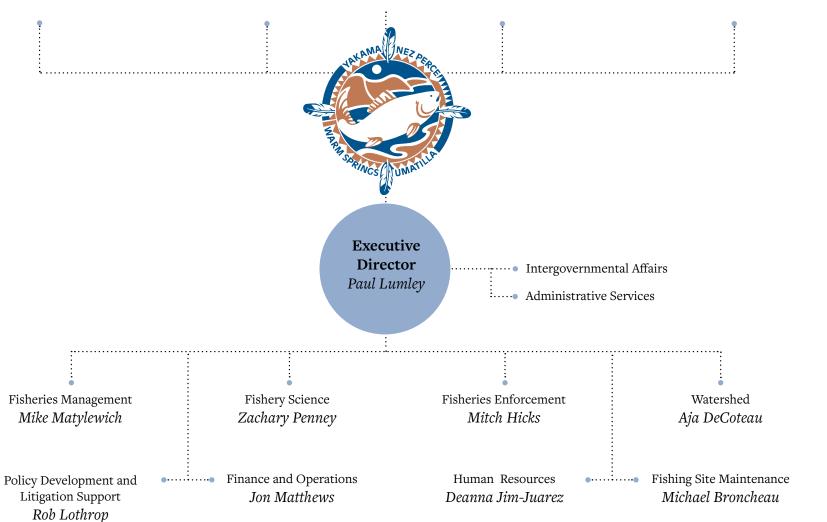
Confederated Tribes of the Warm

Fish & Wildlife Commission

Springs Reservation of Oregon



Nez Perce Tribe Natural Resources Subcommittee Fish & Wildlife Commission



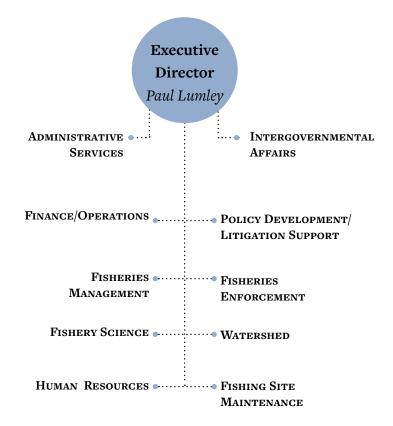
Department Overviews

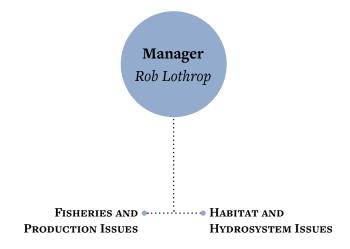
Office of the Executive Director

The Office of the Executive Director provides leadership and management for all organizational endeavors and guides the implementation of tribal policy under the guidance of the Board of Commissioners who represent the Warm Springs, Yakama, Umatilla, and Nez Perce tribes. CRITFC's intergovernmental affairs efforts are also part of this department's responsibilities.

Policy Development and Litigation Support

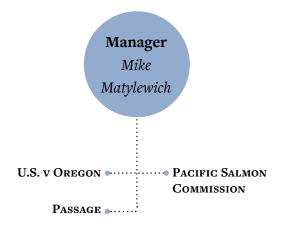
The Policy Development and Litigation Support Department assists the Commission and its member tribes in their leadership roles in the development and implementation of regional, national, and international policies and laws affecting Columbia River treaty-secured fisheries. This involves litigation support, policy analysis, and communication of these efforts with the member tribes.





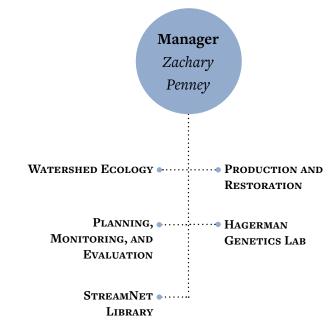
Fisheries Management

The Fisheries Management Department provides the four member tribes with technical assistance on harvest, hatchery, water management, and fish passage issues. The department tracks the catch of Columbia River fish from southeast Alaska to the Columbia River tributaries, reviews hatchery management plans, and devises plans that aim to increase juvenile and adult salmon survival. This technical information is used by the tribes to formulate management positions that reflect the goal of returning naturally spawning fish to all usual and accustomed fishing places.



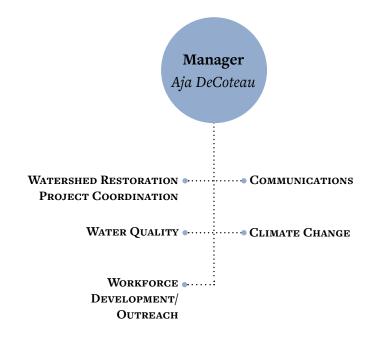
Fishery Science

One of the primary reasons for CRITFC's founding in 1977 was to provide technical information to the four member tribes. Prior to this, the tribes were beholden to state and federal agencies for research and evaluations. A large part of the technical information that CRITFC provides today is the biological research produced by the Fishery Science Department.



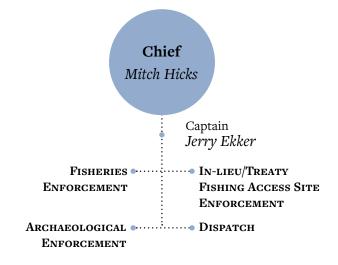
Watershed Department

The Watershed Department focuses on Columbia Basin salmon and habitat issues and activities. It is guided by *Wy-Kan-Ush-Mi Wa-Kish-Wit* (Spirit of the Salmon), the tribal salmon restoration plan. Technical assistance, support, coordination, and project management of tribal watershed protection and restoration efforts and issues in the Columbia River basin are the primary tasks. It is also responsible for communications, water quality, climate change, and tribal workforce development projects coordinated through or conducted by CRITFC.



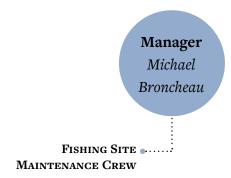
Fisheries Enforcement

The tribes established the Columbia River Inter-Tribal Fish Commission's enforcement division in the early 1980s; by the 1990s, it was the dominant law enforcement presence in Zone 6 of the Columbia River. CRITFC Enforcement is based in Hood River and employs patrol officers, dispatchers, and administrative staff. The force is responsible for patrolling the 147 miles of the Columbia River that comprise the Zone 6 fishery between Bonneville and McNary dams and, beginning in 2010, the area directly below Bonneville Dam.



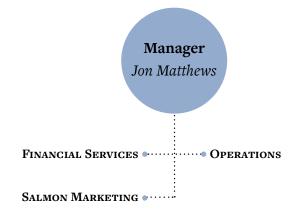
Fishing Site Maintenance

CRITFC operates and maintains 31 fishing sites along Zone 6 of the Columbia River for the exclusive use of Indian fishers from the four CRITFC member tribes. These sites were set aside by Congress to provide fishing locations to Indian fishers whose traditional fishing grounds were inundated behind dams. The department keeps the sites clean, maintains the landscaping, and keeps the boat docks and ramps in good repair. These activities are done in coordination with the tribes and other entities tasked with addressing social issues affecting the sites.



Finance and Operations

The Finance and Operations Department provides financial, accounting, and operational support services that CRITFC requires to meet its goals. The department is also responsible for the Salmon Marketing program.



Human Resources

The Human Resources Department is charged with improving human resources planning, systems, and processes to help CRITFC management and staff meet organizational goals. Its essential functions include recruitment, selection, hiring, and new employee orientation; compensation and benefits; and performance management support.



2014/2015 Financial Highlights

Funding Sources	2014	2015
FEDERAL FUNDS		
Dept. of Interior (Bureau of Indian Affairs)	6,958,928	7,210,014
— (US Fish & Wildlife Service)	4,484	13,362
Dept. of Energy (Bonneville Power Admin.)	9,227,621 2,313,162	9,353,999 1,541,414
Dept. of Commerce (NOAA Fisheries)		
Environmental Protection Agency	164,811	137,184
subtotal	18,669,006	18,255,973
NON-FEDERAL FUNDS		
US Army Corps of Engineers/LEDS	148,367	175,285
First Nations Development Institute	34,479	8,236
Idaho Department of Fish & Game	624,199	498,697
Oregon Department of Fish & Wildlife	-	20,613
Oregon Health Sciences University	-	28,668
PGE Foundation	-	14,292
Potlatch Fund	1,667	833
Northern Wasco PUD	19,966	-
University of Idaho	-	37,604
Wildhorse Foundation	3,947	-
subtotal =	832,625	784,228
Total	19,501,631	19,040,201

Expenditures By Activity ¹	2014	2015
General government	3,733,639	3,794,819
Executive relations	744,908	364,698
Fisheries management	1,953,666	2,111,447
Scientific research and evaluation	6,626,378	6,372,114
Policy development and government relations	791,162	1,068,290
Law enforcement	1,739,981	1,829,482
Watershed restoration coord. and public info.	2,980,076	2,487,693
Salmon marketing	156,098	187,676
Treaty fishing site operation & maintenance	775,723	823,982
Total	19,501,631	19,040,201

¹ Expenditures by Activity may vary due to expenditures relating to capital outlays, debt service, investment income, and miscellaneous expenses.

PASS-THROUGH AND SUB-AWARDS TO MEMBER TRIBES (INCLUDED ABOVE)

	2014	2015
Yakama	801,581	743,114
Warm Springs	873,057	263,609
Umatilla	463,192	497,333
Nez Perce	997,147	1,178,860



Columbia River Inter-Tribal Fish Commission

YAKAMA · UMATILLA · WARM SPRINGS · NEZ PERCE

700 NE Multnomah Street, Suite 1200 Portland, Oregon 97232

"To ensure a unified voice in the overall management of the fishery resources, and as managers, to protect reserved treaty rights through the exercise of the inherent sovereign powers of the tribes."