

PACIFIC RIVERS FREE FLOW

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Foreward

Greg Haller - Executive Director

Like everyone else, we at Pacific Rivers are more than ready to move past this challenging year. But despite the worldwide pandemic, devastating fires, toxic political discourse, an economic meltdown, and more, the Pacific Rivers team has accomplished much in 2020.

In Washington, we continue efforts to promote non-dam alternative solutions for the Chehalis River and increase protections for spring Chinook. In the Snake River region, we continue to litigate for improvements in water quality and fish passage at the Hells Canyon Complex. We are also building support for the removal of the lower Snake River dams, which have driven sockeye, Chinook, and the famed B-run steelhead towards extinction. We are building bridges with tribal, farming, and urban communities to demonstrate broad-based support for a future where fish, farmers, and tribal communities thrive. At the same time, we are speaking truth to power about the overriding need to change the bureaucracy that is currently managing salmon populations to extinction. Our snorkel survey project in the North Umpqua basin continued in its 10th year, and is set to expand to support genetic research in 2021. Our Wild and Scenic Rivers campaigns in Oregon and Montana will soon bear fruit, protecting thousands of miles of important headwater streams.

The storytelling and communications team continues to produce visually rich and compelling content, with more on the way. This year we released the feature documentary, Chehalis: A Watershed Moment, which has been viewed by tens of thousands of people and accepted into multiple film festivals. The film has helped sow doubt about the efficacy of building a dam in a salmon stronghold, as expressed recently by Governor Inslee when he voiced support for non-dam alternatives. This summer, we started two new film projects: The Lost Salmon, which details the plight of spring Chinook and a new genetic discovery that could help save them from extinction; and another project for which we traveled to Northeast Oregon to shoot a profile of the Lostine River and the cooperative efforts of farmers, irrigators and the Nez Perce Tribe to restore spring Chinook.

We also started two new initiatives to protect water quality. The first is a risk assessment of recent fires on drinking water sources. The second will utilize provisions of the Clean Water Act and state law to designate additional protections to eligible surface streams, rivers and lakes.

I'm incredibly proud of what the Pacific Rivers team has accomplished during these trying times. Your support is critical to our success, which is why I'm asking you for your help to meet our \$50,000 year-end fundraising goal. Challenges remain, but we remain optimistic that our best work lies ahead.

For the Rivers,





Photo: Shane Anderson

Executive Director Greg Haller talks with Woody Wolfe of the Wolfe Ranch in Eastern Oregon during our Lostine River profile Shoot.



Photo: Shane Anderson

On location at the Nez Perce fish weir where for two decades the tribe has been working to save spring Chinook from extinction.

More Logging Won't Stop Wildfires

Oregon's massive wildfires burned over one million acres in just two weeks time. Propelled by strong east winds, small fires quickly engulfed everything in their path, bringing death, destruction, and despair. With the flames still burning, and millions of residents choking on hazardous smoke, the timber industry and its allies in government wasted little time in blaming public lands forest management as the culprit. The Oregon Forest and Industries Council (OFIC) and the American Forest Resources Council (AFRC), two lobbying groups for the timber industry, claim that increased logging, thinning, and prescribed burns of federal forests are climate and wildfire solutions. The research says otherwise. Forest management alone will not appreciably prevent or control climate-driven fires.

The industry argument also omits two other important issues: the true causes of worsening fires, and how to protect communities, drinking water and other important infrastructure long-term. It also conveniently shifts the focus away from the role private forest timberlands play in exacerbating climate change and the spread of wildfires. Over 80% of wildfires are started by people, either purposefully or by accident. Power lines running through forests have been the cause of some of the most destructive fires in recent memory, and appear to be the cause of the Archie Creek Fire in the North Umpqua, and the Beachie Creek Fire in the Santiam River corridor. A class action lawsuit filed against Pacific Power, which is owned by PacifiCorps, alleges the utility's failure to de-energize its power lines during the Labor Day windstorm caused wildfires that devastated Santiam Canyon and surrounding communities. Utility companies have an important obligation to manage their lines and the rights of way used to transmit electricity. Clearly, infrastructure upgrades are needed in this area, including consideration of burying lines in certain areas.

Tree plantations on private land are the most heavily managed "forests" in the West, yet the fires of 2020 ripped right through them, burning hotter and more quickly than in public forests on federal land. In fact, research shows that fires burn hottest in the most heavily managed forests. Greenhouse gas emissions from the forest industry are among the highest in Oregon, behind only the emissions of the energy and transportation sectors. OFIC and AFRC offer ideas that will only enrich their members, exacerbate climate change, degrade aquatic ecosystems and put communities at risk.



Photo: Jon Kurtz

The Archie Creek Fire devastated the riparian areas along the North Umpqua.



Photo: Jon Kurtz

PR board member Jon Kurtz snaps one last picture before evacuating his home and property.

The Lost Salmon

Shane Anderson - Director of Storytelling

Spring Chinook are the king of kings. No other salmon species travels as far, grows as big and has historically contributed as much to ecosystems and culture in the Pacific Northwest. They are the most revered amongst fishermen and support a vast food web. They are also key to the survival of imperiled Southern Resident orca whales, who depend on the spring salmon for sustenance following lean winter months.

For the past century, both fall and spring Chinook have been managed under the banner of one single species. However, spring salmon or “springers” have a distinct gene, recently identified by Dr. Mike Miller as GREB1L. This gene took millions of years to evolve and if lost or extirpated would mean the end of the line for this iconic fish. No hatchery will save it, no lab can create it, it will be gone forever or at least another 15 million years unless we act immediately.

The gene evolved in salmon as the landscapes of the west coast were forming. It sends a migration trigger for the Chinook to return to their natal rivers in the late winter, spring and early summer. It signals them to access habitats high in a watershed. These are often places with characteristics such as waterfalls or turbid canyons, which the fish need a certain amount of water to get through. Historically Springers would often spawn earlier than their counterparts, the fall Chinook. Fall Chinook often arrive in rivers after the first freshets of fall, and spawn immediately. In places such as the Eel River in Northern California, fall Chinook can be seen spawning as late as January.

Historically, springers were the dominant Chinook species along the west coast, from

the high Sierras in California up through the coast and interiors of Oregon to inland Idaho, the coast and Puget Sound of Washington, all the way to Alaska. Now wild populations that hold the GREB1L gene are in dire peril from anthropogenic and climate impacts.

The story of the springer is woven deep into the fabric of Northwest civilizations. Recently, one of the oldest human settlements in the Americas was discovered in Coopers Ferry, Idaho along the Salmon River, which is the homeland of the Nez Perce or Ni mii puu people. The settlement dates back 16,500 years. It was the Nez Perce that saved the Lewis and Clark expedition twice from starving by feeding them spring Chinook. When the Oregon Trail ended at Willamette Falls, it was the spring salmon that became the most prized natural resource where fishermen capitalized on bounty and shipped their catch worldwide.

Since springers are destined to the headwaters of western rivers, dams built without fish passage deliver an additional blow to the species. The impact of dams has already seriously affected these fish, from California’s Sacramento and San Joaquin rivers, to the Willamette and Columbia, Cowlitz and Lewis river further north. In the Puget Sound region, springers have already gone extinct from legendary rivers such as the Nisqually and Skokomish.

No other salmon species has faced so many challenges, yet given so much to humans and the surrounding ecosystems. Those very ecosystems have begun to collapse, as evident in the plight of the Southern Resident orca whales whose diet hinges on the spring salmon.

Hope resides in the fact that we know how to recover the species. If we can put politics aside and work toward more sustainable harvest practices, fisheries management, hatchery reform, habitat protection/restoration and dam removals, springers will have a future. We have seen the



Photo: Jason Hartwick

The wild spring Chinook of Oregon's North Umpqua are one of the healthiest populations left on the west coast.

positive results from dam removal on the Elwha, Sandy and Rogue rivers. A dam on the Middle Fork Nooksack has just been removed and all eyes are set on four dams slated to be removed in the Klamath Basin. However, the greatest hope for a return of spring chinook is the removal of the lower four snake river dams, which pose a bottleneck to recovery in the wilderness streams of Idaho and Northeast Oregon.

In addition to the need to recover lost habitat by way of dam removal, harvest in the open ocean is taking its toll on both spring and fall Chinook runs. Ocean fisheries target these species far from their breeding ground and habitats, so they are unable to manage and account for what fish stocks they are harvesting. Every season, thousands of these fish are being caught in mix-stock fisheries far out to sea, and sold to consumers as wild caught Alaskan or Canadian salmon. But many of these harvested fish likely originate from rivers such as the Queets on the Washington Coast, where less than 500 remain and tribal fisheries have been closed for decades due to their decline in numbers. In the Southeast Alaskan commercial fishery, only around 2% of the chinook that are caught are from Alaskan Rivers. The rest are travelers from the very populations we have spent billions to recover. Take this into consideration next time you are at the grocery store and see a "wild caught Chinook salmon" label.

The recent genetic discovery of the GREB1L gene has opened our eyes for the need to protect spring Chinook salmon before it's too late. The Endangered Species Act is one tool available to offer further protection, and currently petitions have been filed in California's Klamath Basin and Oregon's Coastal region. A new listing of springers would bump them from threatened to endangered, which in turn would require a much more comprehensive recovery plan and could lead to more dam removals, habitat protections and both hatchery and harvest reform. The species is declining faster than we are recovering them. If we don't act now, we could lose them forever.



Photo: Shane Anderson

Spring Chinook holding in cold water refuge. Protections of these sanctuaries are key to the survival of the species.



Photo: Jason Hartwick

Dr. Mike Miller discusses his genetic research and the GREB 1L gene.



Photo: Shane Anderson

Spring Chinook are a vital food source for the imperiled Southern Resident Killer Whales.

The North Umpqua and Fire: Vulnerability and Recovery in Southern Oregon

Katie Michel - Conservation Analyst

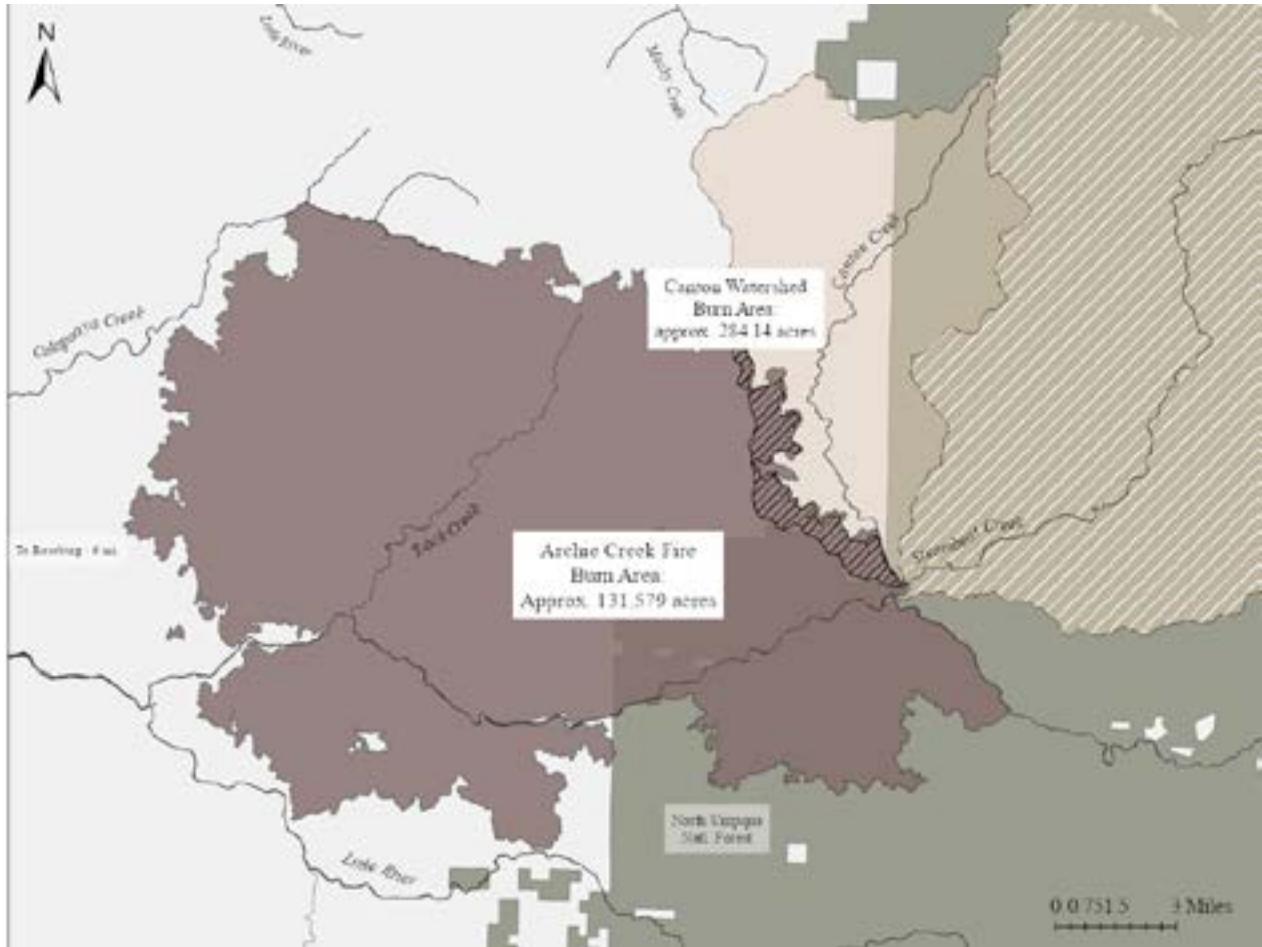
Pacific Rivers has worked in the Umpqua National Forest since 1987, bridging the gap between science and action, and culminating in the creation of the Frank and Jeannie Moore Wild Steelhead Sanctuary. Annual snorkel surveys in the Canton and Steamboat Creek watersheds have fostered restoration and connection, but shifts in climate variability threaten hard-earned conservation victories.

Roseburg, OR - Burning over 131,000 acres, the Archie Creek Fire weighs in as the fifth largest in a series of seventeen that burned simultaneously throughout the state. Many of our friends and supporters were directly impacted by this fire. As evacuation warnings are rescinded and air quality improves, attention is now placed on assessment and recovery. The value of the lost property and structures are determined with formulas that calculate replacement costs, influenced by inflation and market values. But the value and recovery status of the forests and watersheds surrounding the North Umpqua River are not as easily defined. Ecological hotspots are vulnerable to further degradation before they've had a chance to recover. With the coming La Nina, there is heightened risk of landslides and debris flows in the North Umpqua, creating risk to downstream communities, especially given the Winchester Dam is at risk of failure.

Rising temperatures, lengthening dry seasons, and decreasing rainfall are all expected to worsen in the next 100 years. But the 2020 fire season has shown that

these are not far-off realities. Within the next 60 years, water temperatures are expected to rise to unsafe levels in the North Umpqua, putting its keystone population of summer steelhead at risk of disease and death. Wildfires, although not unfamiliar to the Canton and Steamboat Creek watersheds, are increasing in frequency and severity, leaving little room for the adaptation and recovery of an already stressed ecosystem and a weakened steelhead population. A lifesaving source of cold water and spawning habitat, the Canton Creek watershed is estimated to have lost nearly 300 acres to the Archie Creek Fire, with the full extent of the damage unknown. The state of the watershed's rearing steelhead also remains unassessed; the probability of significant loss to intense water alkalization and ash-induced suffocation is high.

As global systems shift to new norms of heat and stress, conservation work is forced to adapt and seek climate shields for a future where wildfires may not be contained to a season at all. Pacific Rivers' Sanctuary campaign is searching for islands of thermal refuge for salmonid species, but even the best legislative protection cannot project a watershed against the realities of extreme climate events. Perhaps most critically, the world of conservation may need to evolve past its own goals in an attempt to be one step ahead of the ever-increasing, and devastating disasters we see emerging today.



Archie Creek Fire as of 10/07/2020 in relation to the Canton and Steamboat Creek Watersheds as well as the Frank and Jeannie Moore Wild Steelhead Sanctuary in the North Umpqua National Forest.



Photo: Jon Kurtz

Hwy 138 along the North Umpqua's legendary fly water.

Forests to Faucets: Renewed Analyses After the 2020 Fire Season

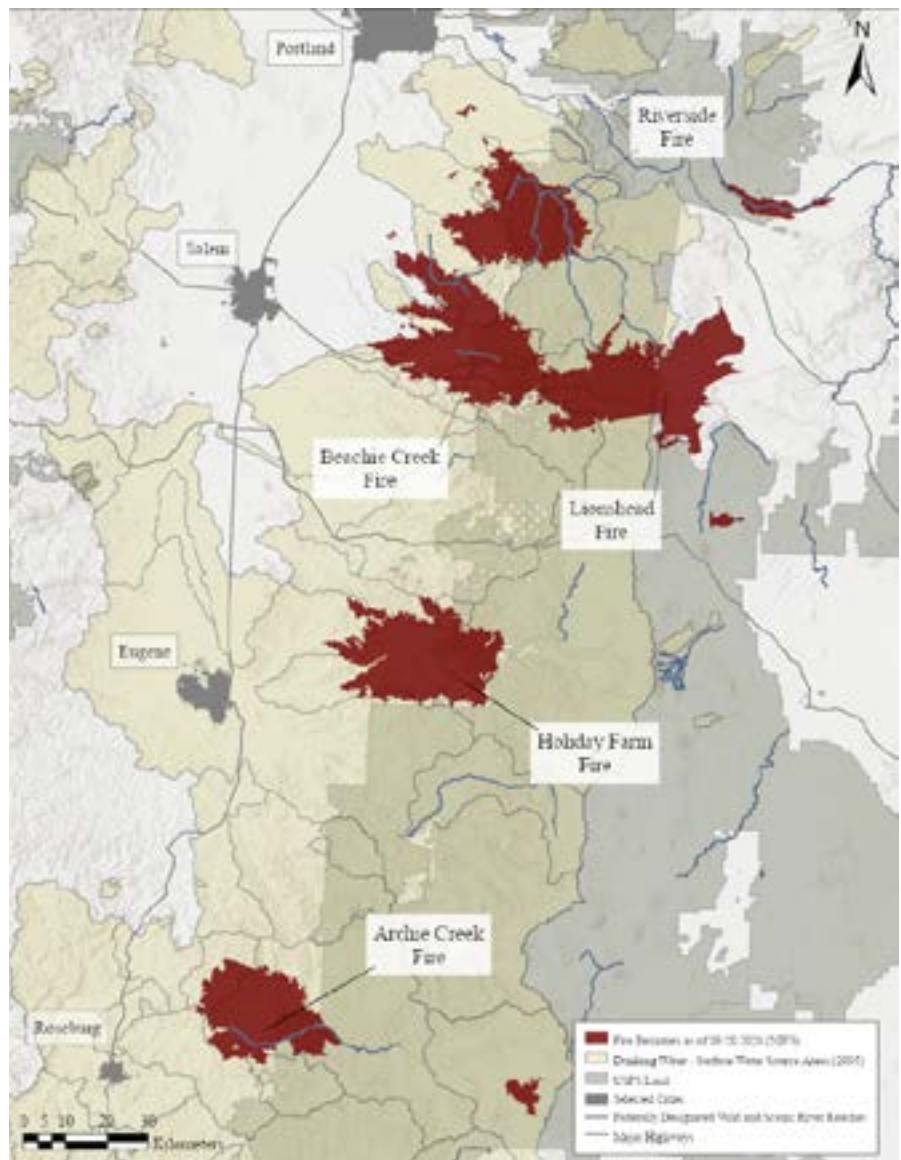
Katie Michel - Conservation Analyst

In 2018 Pacific Rivers published its “Forests to Faucets” report, which examined the importance of forests in protecting Oregon’s drinking water. It also looked at the intersection between various Surface Water Protection Areas (SWPAs, as determined by the Oregon Department of Environmental Quality). In light of the 2020 fires, Pacific Rivers has begun reexamining Oregon’s drinking water sources and their vulnerability to wildfire.

Of the approximately 1.2 million acres of Oregon that have burned in 2020, 89.49% occurred in 25 different SWPA watersheds, areas determined critical to the protection of Oregon’s drinking water quality and quantity. Over 30 distinct SWPAs have been affected, which equates to no less than 550,000 Oregonians’ drinking water facing degradation. Some of the most affected areas include Glide, Estacada, Gates, Lyon, and Sutherland. Notably, over 90% of the Holiday Farm Fire was within the city of Eugene’s watershed, posing serious risks to the drinking water of Oregon’s third-largest urban population.

Oregon’s forests play crucial roles in filtering, collecting, and protecting the water that runs through our National Forests, Parks, timberlands, and private land. With fires increasing in severity

and frequency, careful analysis and planning could be the key to protecting drinking water across Oregon and working to understand what these interrelated issues could mean for ecosystem and public health.

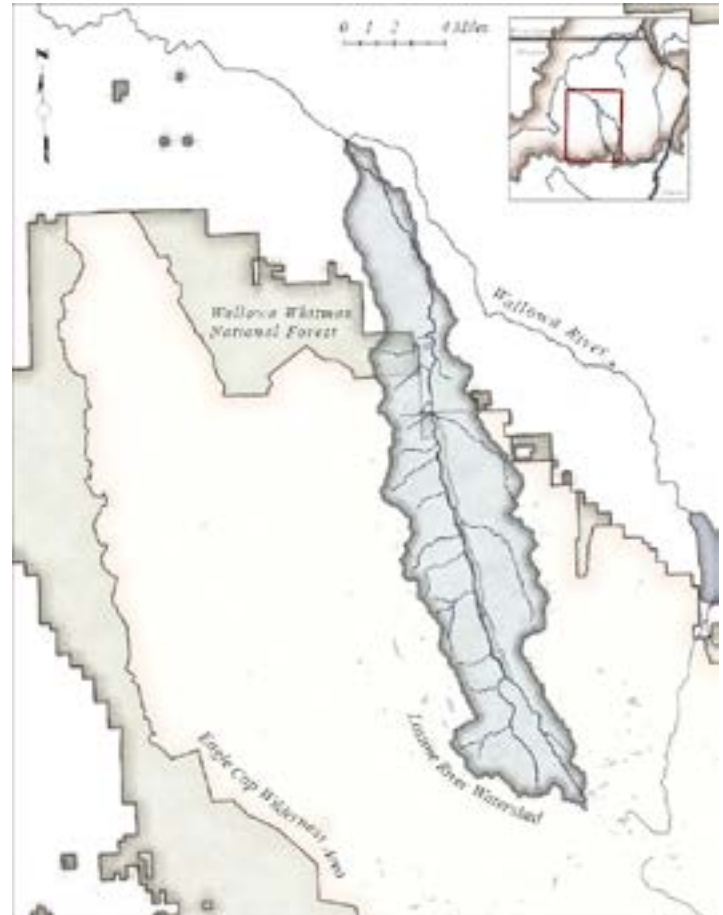


River Spotlight: The Lostine River

Katie Michel - Conservation Analyst

The Lostine River is a northeast Oregon gem. Originating in the Eagle Cap Wilderness, Oregon's largest federally designated wilderness area, it flows 31 miles north before entering the larger Willowa River. The Lostine once hosted thousands of spring Chinook, coho, and steelhead trout, but habitat degradation in the watershed and dams in the lower Snake River helped drive coho to extinction and spring Chinook to near extinction levels. In 1994, alarmed by the critically low number of adult spring Chinook returning to spawn, the Nez Perce Tribe began a captive broodstock program to save the run from extinction. Farmers in the Lostine region chipped in with major improvements to irrigation systems, which saved more water instream for salmon. Farmers also undertook habitat conservation projects and conservation easements to protect the riparian corridor. In the 26 years since, the project's efforts have fostered population growth significant enough to support tribal ceremonial and subsistence fisheries, and occasionally a non-Indian recreational fishery when fish returns are high enough. A similar conservation victory occurred in 2018 when coho salmon—a species that was considered extinct in the watershed since 1987—were reintroduced to the Lostine watershed.

Today, the Lostine and the cooperative efforts of the Nez Perce Tribe and local farmers, stands as a reminder of resilience in our changing world and climate, and the good that comes from working together towards common goals.



QUICK FACTS

The Lostine River runs from 31.4 miles, from south to north, out of the Wallowa Mountains.

16 miles of the headwaters were added to the National Wild and Scenic Rivers System in 1988 (a Pacific Rivers legacy).

Sections of the Lostine watershed are situated in designated wilderness, national forest, and private lands.

The Lostine hosts spring/summer Chinook, summer steelhead, and Bull Trout, all listed under the Endangered Species Act, as well as reintroduced Coho Salmon.



Photo: Shane Anderson

The Lostine River flowing through the Wolfe Ranch in Eastern Oregon.



Photo: Shane Anderson

The Lostine River flows out of the Eagle Cap Wilderness and Wallowa Mountains. This area provides cold water refuge and prime spawning grounds for spring chinook, coho and steelhead.

Storytelling Update

Shane Anderson - Director of Storytelling

Despite limitations and challenges in the era of COVID, our storytelling program has been charging ahead in full force and continues to grow. During quarantine we pushed forward on finishing and showing the feature documentary Chehalis: A Watershed Moment through virtual screenings and TV broadcast on KBTC, one of the PBS stations in Washington State. We had exceptional ratings during each broadcast and the film ranked higher than many other competing stations. On average, around 20,000 households tuned into each airing. In addition, we screened the film on Youtube for a week, gaining an additional 10,000 + viewers. With online screenings, we offered numerous virtual Q & A's with the filmmakers via Zoom. The film will be screening virtually at film festivals throughout the fall season, as well as video-on-demand platforms including Amazon Prime, Vimeo On Demand, The Green Channel and the newly-launched EVRGRN Channel (a Pacific Northwest focused streaming service backed by our friend and legendary actor Tom Skerritt).

We started development and production on our latest film endeavor about Chinook, the king of salmon. Our emphasis is on the most revered of salmon, the spring run, where many wild populations across the west have already been extirpated and many more facing extinction in the coming decades from a complete failure in fisheries and natural resource management. For the past century, Chinook have been managed as one genetic species. However, biologist Dr. Mike Miller's recent discovery of the GREB 1L gene showcases a genetic difference between fall and spring run Chinook. The loss of this ancient gene will inevitably mean the loss of a Northwest icon, and a keystone of our ecosystem.

Our filming journey has taken us to the San Juan Islands where we teamed up with renowned Orca Whale biologist Dr. Deborah Giles; a trip out to the Lostine River in Northeastern Oregon to meet up with Nez Perce elder; former chairman and fishery tech Silas Whitman; fishing on the Columbia with legendary sportsman Bill Herzog; and a few days on our flagship river the North Umpqua with Dr. Mike Miller and his partner Dr. Tasha Thompson.

In addition, we are producing a portrait of Northeast Oregon's Willowa country and the Lostine River where the Nez Perce have aligned with local farmers to recover salmon and a way of life that was nearly lost.

We are also producing content with the Forest

Waters Campaign in Oregon to highlight the need to reform the Oregon Forest Practices Act, which governs forestry operations on private and state lands.

While the era of COVID has been challenging for us all, thanks to your support we will continue to produce these important stories that help implement change.



Photo: Kevin Culmbach

Shane Anderson filming
resident Orca pod.



Photo: Shane Anderson

Filmmaker Maya Craig setting up our interview with Orca researcher, Dr. Debroah Giles on San Juan Island.



Photo: Maya Craig

Shane Anderson filming jumping Spring Chinook salmon.

Chehalis River Update

Shane Anderson - Director of Storytelling

The Chehalis River is home to vulnerable spring Chinook salmon and many other fish and wildlife species. For the past two years, Pacific Rivers has been working to prevent the construction of a proposed dam. In mid-September the U.S. Army Corp of Engineers released a Draft Environmental Impact Statement (DEIS) on the proposed Chehalis River Dam. Public comment will be open until Nov. 14. While the proponents of the dam are seeking funding for the dam through the State of Washington, they will need to be granted a permit to build the dam through the U.S. Army Corp of Engineers.

Here are a few key takeaways from the DEIS. There is no mention of climate change or future climate impacts. There are no proposed alternatives, other than a dam, to reduce flood levels. Impacts on water quality and wild salmon are grossly underestimated.

This past spring, the State of Washington released their Environmental Impact Statement. This analysis was much more science-based and in-depth than the Army Corps' version, and included important aspects like future climate predictions and non-dam alternatives. Following that public comment, the Quinault Indian Nation, Confederated Tribes of Chehalis and members of the Chehalis River Alliance (including Pacific Rivers) voiced opposition to the dam. Governor Jay Inslee directed the Department of Ecology to put a pause on the dam and look for alternatives that could reduce flood damage and recover salmon.

While the proponents of the dam are seeking funding through the State of Washington, they will need to be granted a permit to build the dam through the U.S. Army Corp of Engineers.



Photo: Shane Anderson

Fisk Falls on the upper Chehalis River above the proposed dam site and the upper extent of the proposed reservoir footprint.

Feds Reject Breaching Lower Snake Dams. NW Governors Announce Process to Develop a Salmon Recovery Framework.

Federal agencies have given up trying to hide the fact that removal of the four lower Snake dams is the best chance to recover near-extinct populations of salmon and steelhead originating in Idaho, Northeast Oregon and Southeast Washington. They readily admit that breaching is the best option to save these fish. Now they say we can't recommend breaching because breaching would eliminate the other authorized purposes of the dams - namely navigation and irrigation. The feds, while abdicating their responsibilities to tribes, rate-payers, tax-payers, and communities throughout the basin, clearly are desperate to maintain the status quo of a broken power generating and marketing model known as the Bonneville Power Administration, the New

Deal era behemoth that represents the worst of big business and big government combined. Meanwhile, the governors of Oregon, Washington, Idaho, and Montana announced an agreement to work to "define a future collaborative framework to analyze and discuss key issues related to salmon and steelhead with the purpose of increasing overall abundance." This process-lovers dream serves BPA well by shifting time and focus to the states, who have absolute zero authority to remove dams or make changes to the rest of the federal hydro-system. We at Pacific Rivers will intensify our efforts to support Congressman Simpson, who is the only federal politician openly supporting dam breaching.



Photo: Shane Anderson

The Southern Resident Killer Whales desperately waiting for action around the lower four Snake River dams.

Where Has All the Water Gone?

Karl Konecny / Jeff Dose

The low summer flow of steelhead streams can be a limiting factor in the run size and health of migratory fish species. There is only so much accessible habitat as streams shrink in late summer. As flow diminishes, water temperature tends to increase, which can limit quality habitat. This can greatly reduce the survival rates of rearing juveniles. It can also limit over-summering habitat for adult summer steelhead and spring Chinook, increasing pre-spawn mortality. North Umpqua steelhead typically spend their first two years in the watershed, which means they must endure the limits of low summer flows twice before migrating to the Pacific Ocean. In many streams currently, the late summer flow seems to be reduced compared to historic records. Where has all the water gone?

Recent research has shown that common forest management activities have long-term impacts on stream flows. In a 2016 paper, two researchers from Oregon State University, Timothy Perry and Julia Jones, analyzed a 60-year record of daily streamflow from eight paired-basin experiments in the Western Cascades. These were located in the Umpqua (Coyote Creek) and several Willamette (H.J Andrews) experimental watersheds.

These areas assessed in the study were previously old-growth (150 to 500+ years old) Douglas fir and western hemlock stands, prior to treatments that converted them to early-stage Douglas fir plantations through different practices, e.g. clearcutting and various thinning. Each treated area had an adjacent untreated control area. The researchers found that average daily streamflow in summer (July through September) in basins with 34 to 43-year-old plantations was 50% lower than the controls.

These findings were irrespective of the type of treatment and continue to this day. These treatments are comparable to those widely used in most managed forests in the region. The mechanism for these differences is that young Douglas fir trees have a higher rate of evapotranspiration than older trees, particularly during the typical dry summers in our region. Commercial clearcuts also tend to be replanted at an unnatural high density, which exacerbates the problem.



Photo: Karl Konecny

An example of a road intercepting groundwater flow from the uphill slope.

It is sometimes assumed that when these plantations mature into structurally complex forests (in another hundred years) the stream flows will return as the trees become more efficient at evapotranspiration. Unfortunately this is unlikely to happen on commercial timberlands as they are managed on a 40 to 60 year harvest rotation. The young trees are clearcut before they have a chance to mature.

As a consequence, reduced summer streamflow may limit aquatic habitat and exacerbate stream warming. Cumulatively, in most large river basins across the region, forest management of this type is likely having adverse impacts on streamflow and water quality. This negatively impacts all aquatic organisms, including native fish.

The road network constructed to harvest these forests has a major impact on streams as well. Increased runoff erosion, triggered landslides, and fish passage issues at road crossings are common problems caused by the road network in watersheds. Another less obvious problem is the interception of groundwater. Ground water provides the majority of summer streamflow in many basins, once the snow pack has melted and rain is absent. Groundwater is also cold (typically around 40 degrees F) which can help reduce high summer water temperatures. A road can interrupt the natural flow of groundwater when it cuts across a slope in watersheds with shallow soil and a bedrock base. This occurs either from soil compaction forcing the groundwater to the surface on the upslope side of the road, or when a road is cut so deep in the hillside that it reaches bedrock (very common on steeper slopes). Once the groundwater is on the surface, it either quickly runs off of that surface and reaches the stream earlier in the season, if at all; or it warms, stagnates, and evaporates. All of this diminishes already-low summer flows.

The signs of groundwater interception are

surprisingly common. The upslope ditch will be wet or moist where there is no stream nearby. The upslope side of the road will be particularly lush, even supporting wetland plants. In extreme cases, water will flow out of the ground onto the uphill road surface as the photograph shows.

Climate change is also predicted to reduce summer flows in Pacific Northwest streams as a result of lower snowpack and warmer summers. All of this sounds like doom and gloom for our wild steelhead but there may be a silver lining. Clearcut harvests have largely stopped on federal land in our area. The plantations from past harvests are 30 to 80 years old, right in the “sweet spot” to transpire excess water. With proper management — management with the goal of restoring the historic, natural hydrologic processes — low summer flows and water temperatures could begin to improve.

What does proper management look like? Primarily it is to leave the forest alone and allow it to develop old growth characteristics. Some thinning of over-stocked plantations and reintroduction of understory tree species in mono-culture plantations may help in the short term. The dense road network that facilitated harvest is no longer needed and problem roads in the mid-slope and valley bottom should be decommissioned, including deep sub-soiling to un-compact the base and contouring the road cuts to their natural slope. With time and proper management, the low summer flows should increase. All of us must insist the Forest Service and BLM manage their critical watersheds in this manner.

Karl Konecny is a small business owner, avid conservationist, and former board chairman of Pacific Rivers. He lives along the North Umpqua River.

Jeff Dose is a retired USFS fish biologist and also lives on the North Umpqua.

Steelhead Research Update

Nicholas Chambers

The North Umpqua holds a special place in my heart and as a native Southern Oregonian I have a long history with the river. Spending two months counting and observing my favorite fish on one of my favorite rivers was about the best way I could think to spend a summer during the pandemic.

Our crew observed more juvenile steelhead this year than in 2019, which appears to be a result of unusually high flows in the spring of 2019, which likely resulted in high mortality of steelhead fry. The spring of 2020 did not have the same high late season flows which presumably led to higher juvenile survival. The relatively warm waters of Steamboat and Canton Creeks are incredibly productive and juveniles appeared to grow and survive quite well during July and August. Fortunately we were able to complete our surveys before the devastating fires, but the 2020 fire season underscores the ongoing challenges our steelhead populations face.

With climate change we are predicted to experience increasingly variable weather patterns, greater frequency of fires and more. This means we will see increased variation around what had been “normal” stream conditions such as the timing of and intensity of high flows and water temperatures. In other words, there are probably some tough times ahead. Fortunately, steelhead have an incredible ability to adapt, but they do need a few things in order for them to persist through climate change. Chiefly, broad life history diversity and high quality habitat.

Maintaining the full breadth of life history diversity is the best way we can ensure steelhead are able to persist through variable

conditions and adapt to a new normal. A changing climate will likely cause shifts in spawn timing, the amount of time juveniles spend in freshwater, or even which part of



Photo: Nick Chambers

Diving the canyon reach of Steamboat Creek.

the watershed is most productive. While we cannot predict exactly what climate change will bring nor how steelhead will respond, there are steps we can take to give steelhead the best chance at survival. Protecting entire watersheds will ensure that the greatest level of diversity is protected, and in turn their ability to adapt. While Steamboat and most its tributaries are protected, Canton Creek remains vulnerable.

Increasing protections in Canton Creek for both riparian and upslope areas will help provide cool water, and more of it, for juvenile steelhead which can help buffer the effects of climate change.

One of the greatest challenges to effectively managing steelhead is that in most places we have very little data to base decisions on. This makes it very difficult to identify important population trends and answer questions such as what are the limiting factors to freshwater productivity? Which areas of the watershed are the most productive and why? It is difficult to design management plans or implement effective restoration strategies without understanding the factors limiting productivity or driving population trends. Monitoring is woefully underfunded in our agencies and the trend is not positive, especially with the increased demands on state budgets. Continuing this work is vital for helping understand the freshwater population dynamics of Umpqua steelhead and can help inform effective management and restoration strategies for decades to come.



Photo: Nick Chambers

Counting juvenile and adult steelhead in the Frank and Jeanne Moore Wild Steelhead Sanctuary.

Wild and Scenic update (OR & MT)

Exciting things are happening in our Wild and Scenic Rivers Program! After a 10-plus year campaign, Senator Tester is poised to introduce the Montana Headwaters Legacy Act, which will protect 336 miles of 17 different stream segments under the Wild and Scenic Rivers Act. Places like the Yellowstone River, the Gallatin, and the Smith will be forever protected. You can learn more about the rivers we've been working to protect here: <https://www.healthyriversmt.org/>

Meanwhile, Senator Wyden continues his efforts to go big on Wild and Scenic protections in Oregon, and we expect a bill this fall that will protect up to 5,000 miles of rivers! Stay tuned!



Photo: Scott Bosse

West Boulder River - a proposed wild and scenic river in Montana.

Klamath Dam removal project

Shane Anderson - Director of Storytelling

With the monumental Klamath River dam removal project slated for Jan. 2022, the Federal Energy Regulatory Commission (FERC) threw one final curveball in the bottom of the 9th. FERC ordered that dam removal could move forward only if the owners, PacifiCorp, would stay on the license through the decommissioning process. Citing liability concerns for their rate payers, PacifiCorp rejected this term. FERC's order could put the entire dam removal agreement in jeopardy. One solution is for the states of Oregon and California to step in to accept liability through the dam removal period.

In September, California Congressman Jared Huffman introduced a bill aiming to expedite dam removal and hold PacifiCorp accountable for ongoing damages to tribes. Huffman's news release states:

"The amendment is designed to safeguard Tribal communities against further harm to the Klamath River and its ecosystem and remediate

existing problems in the Klamath River basin and downstream communities caused by four aging dams owned by PacifiCorp."



Photo: Jason Hartwick

PacifiCorp's stalling has sparked an uprising in activism across the west and on October 25 people across the country joined members of The Karuk, Yurok, Hupa, and Klamath tribes are calling for PacifiCorp's owner, billionaire Warren Buffet, to uphold the agreement with tribes and undam the Klamath.

With toxic algae blooms contaminating the river and spring chinook on the brink of extinction, Pacific Rivers stands in solidarity with the indigenous communities of the Klamath Basin asking PacifiCorp's CEO Warren Buffet to uphold their agreement and take the dams down.

For a look into the largest river restoration plan in history, check out a great story map put together by the Klamath River Renewal Corporation. www.klamathrenewal.org



Photo: Shane Anderson

Toxic blue green algae is so thick in the reservoirs that it literally paints the shoreline, and imperils water quality of the Klamath River.

THANK YOU FOR SUPPORT!

GIVING TUESDAY IS DEC. 1ST!

On December 1, 2020, people all around the world are coming together to tap into the power of human connection and strengthen communities and change our world. Will you be one of them? Pacific Rivers will be participating in GivingTuesday and we need your help! At a time when we are all experiencing the pandemic, generosity is what brings people of all races, faiths, and political views together across the globe. Generosity gives everyone the power to make a positive change in the lives of others and is a fundamental value anyone can act on.

We all have gifts to give, whether it be sharing on social media, donating, or emailing a friend, there are limitless ways to use your generosity to support Pacific Rivers.



LIMITED EDITION TEE SHIRTS, HATS AND HOODIES!

Pacific Rivers is excited to present our very own line of merch! These t-shirt, hats, and hoodies, use a vintage Pacific Rivers logo from the year we were founded way back in 1987. Items are part of a limited edition series with sales kicking off on November 10th and ending Cyber Monday (Nov. 30th) at midnight. All of the proceeds will go towards supporting Pacific Rivers' work, including our campaigns working on the Columbia/Snake Rivers, the Chehalis Basin, and throughout out the Pacific Northwest.



Senator Wyden, shown here supporting the 1988 Oregon Wild and Scenic Rivers bill, has been a champion for rivers his entire career.



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