ISSUE 14.1

STRONG RUNS

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"The movement to preserve the environment will be seen to be, as I think it has to be, not a digression from the civil rights and peace movements, but the logical culmination of those movements. For I believe that the separation of these three problems is artificial. They have the same cause, and that is the mentality of greed and exploitation." **—WENDELL BERRY**

COVER

A Pacific Northwest icon—the spring Chinook salmon.
Photo: Dave Herasimtschuk

ABOVE

Wild summer steelhead beat the heat in an essential coldwater refuge.
Photo: Loren Irving

RISE UP!

The Power of Collective Action

"Oooohhh, it was a really nice fish," Emily whispered, wading waist-deep back to the boat.

Somehow, our one-year-old son Enzo is still asleep in my arms. A few moments earlier, our dog tumbled out of the boat in a whining, giddy frenzy as Emily connected with the biggest wild steelhead of her life. Her old reel sang and the fish raced and tumbled and leapt across a shimmering glide of dark water. After the fish swam off, I watched Emily carefully reel up the line and amble over the cobbled bank. Her posture transformed: tall, positive, and proud. I could see that full-person uplift that happens after an encounter with a big fish. Hours later, as we wound through redwood trees on the drive home, she turned to me, "I can't stop thinking about that fish." I just smiled—uh oh!

It has been a long time since I've seen someone's perspective transformed by a fish. But most of us with a few years on the water have seen it at least a few times. A brief encounter with the wild power of an anadromous fish quickly reorders perspectives and priorities. A long, cold day on a winter river transforms into a place of a thousand opportunities for hope. The perilous, reckless power of that fish spoke to her in a way that is rightfully difficult to capture in language. However, the old saw, that actions speak louder than words, keeps surfacing in my mind as I put together notes for this article.

Since a relatively young age, I considered myself someone who was concerned with the wellbeing of my favorite places. I read the books about the environment: Carson. Thoreau. Emerson. Abbey. Lichatowich. Then, through first-hand encounters with the people, places, and species on the front lines of environmental degradation, my own perspective transformed. This precious and beautiful planet cannot wait for others to take action on our behalf. As British Columbia angler and activist Bruce Hill stated so perfectly, "activism is the rent you pay for living on the planet."

WORDS

Mark Sherwood,
Executive Director

ABOVE

A wild winter steelhead leaps a waterfall in the Willamette Basin.

Photo: Justin Stritzke

MESSAGE FROM THE EXECUTIVE DIRECTOR

Homewaters: Rise Up is our conservation initiative for 2020—a year when our collective action must outpace the rhetoric, apathy, and willful ignorance currently defining our public demeanor. Everyone has a role to play. All deep social change starts with you, the individual. Native Fish Society's work is about building a groundswell of public action. We work to inspire and invite you into the actions needed to heal our planet through the beauty and importance of wild fish. The vast, vast majority of wild fish in the Pacific Northwest are facing the most challenging conditions in recorded history. As the stewards of this place, we cannot wait for others to step up and act on our behalf. Join us as much as you can, we invite you to participate in this work.

BELOW

Mark and Enzo Sherwood share time on the water.

Photo: Courtesy of Mark Sherwood

For those wondering: no, calling you off the sidelines to make change isn't a vague sentiment. Research on social and political movements by Erica Chenoweth, a professor of political science at Harvard University, found that the sustained, non-violent engagement of 3.5% of a population creates a tipping point that no government or agency can deny for long. Of the more than 1,000 social and political movements she surveyed between 1900 and 2006, the non-violent ones were increasingly popular over time, more people participated in them, and they were twice as likely as violent action to be successful. In light of the overwhelming data, Chenoweth's initial skepticism turned 180 degrees. Non-violent collective action is the most effective way to create durable and sweeping change.

Through the challenge of a global pandemic, we've seen that people around the world can change their perspectives and their actions over the course of a few weeks. Just a month ago, the seriousness of the coronavirus was viewed by many with casual skepticism. At last, we witnessed the juxtaposition of political bluster and scientific fact. At the writing of this essay, 200 million people in 21 states are sheltering in place and avoiding all non-essential outings. We're acting collectively for those most vulnerable to this disease. It is a fundamental mistake to only plan for today.

Reading through these stories and updates, it's apparent that much of this work is being done by people like us—people who care about wild fish and the health of our environment. They let their passion lead them to speak up and take action.

In the Northwest, a gauge of our community's health and long term resilience can be summed up by the status of wild, native fish. These fish are as local as your craft beer and as global as our twenty-first-century economy. Our native fish are the solution to an immeasurably complex organic equation—an equation informed by a relationship with our entire terrestrial, freshwater, and marine landscapes. Experts can point to the need for big solutions, but it's the collective action of people that catalyze change. So join us—let's rise up for our homewaters, native fish, and communities.

Let's do this together! Remember to ask your employer if they will support the movement for wild fish, free-flowing rivers, and thriving communities by matching your donations to Native Fish Society. Learn more about employer-matched donations by visiting nativefishsociety.org/donate.

PASSION FOR THE WILD

Introducing the New NFS Southern Oregon Regional Coordinator

WORDS & PHOTO

Kirk Blaine, *NFS Southern Oregon Regional Coordinator*

Growing up in rural Wyoming, curiosity and a love for the wild flourished as I spent countless hours in the outdoors searching for grasshoppers and snakes. My family spent the weekends exploring the nearby Bighorn Mountains or the Black Hills. My pursuit of and passion for wild places continued to build while I attended college in Montana and spent summers working for the United States Forest Service in Colorado.

After graduating, I followed my desire for wild places and moved to Colorado, where I worked on a ranch implementing a forest-agriculture plan to promote a healthy forest. In my off time, I would raft the Eagle River, backcountry ski in the Eagles Nest Wilderness, or fly fish the upper Colorado River. Living and working in the central Rockies sparked a deeper understanding of the importance of everyday advocates in promoting the revival of thriving communities and healthy ecosystems.

During the winter of 2014, I met my wonderful wife Allie. We immediately fell in love and have been married for four years. She brings joy and happiness to my life, making me the person I am today. In the spring of 2016, we moved to southern Oregon intending to grow with and make a positive impact in our new community of Roseburg. Over the last two years, I worked on a community health and wellbeing initiative that focused on encouraging the community to make healthier choices. Through my role with the Blue Zones Project, I was able to cultivate meaningful relationships throughout the Umpqua Valley.

My passion and love for the outdoors and wild places has always been fulfilled in my personal life. Spending numerous hours swinging flies for wild fish, trail running the North Umpqua River, or backcountry skiing in the remote areas of the Cascade Mountains continues to fuel my wonder for the outdoors and my interest in stewarding these amazing resources. I am excited to continue fulfilling my passion for the wild through my work with the Native Fish Society.

As the newest member of the NFS Staff, I am thrilled to have the opportunity to work with the Southern Oregon's River Stewards and advance organizational conservation campaigns. My desire to promote wild places and involve all stakeholders will drive my work in advocating for healthy, free-flowing streams and wild fish. It is inspiring to be part of an experienced team undertaking meaningful work. I am excited to share with others my love for all things wild and to engage community members in advancing the revival of abundant, wild fish in southern Oregon's iconic homewaters.

Year in and year out, the work we do is funded by donations of all sizes from people who care about wild fish and the homewaters that sustain us all. Support our work in Southern Oregon and around the Pacific Northwest by making a donation at nativefishsociety.org/donate.

SALMON SYMPHONY

Reimagining the Language that Guides Endangered Species Act Policy

WORDS

Dana Sheedy,
Native Fish Fellow

ABOVE

On the Oregon Coast—where relatively strong runs of fall Chinook salmon overshadow struggling spring runs—the genetically distinct runs are lumped into a single Distinct Population Segment.

Photo: Duncan Berry, *Salmon River Steward*

In 1995, I was an impressionable young fisheries biologist fresh out of graduate school making my way through the Columbia River Basin. That year, a Congresswoman from Idaho said that she "cannot take the endangered species listing of sockeye salmon seriously when I can buy a can of salmon off the shelf in (the store)." Made the same year that only eight sockeye salmon returned to Redfish Lake, Idaho, this comment forever echoes in the engagement of the pro-fish and environmental communities nationwide. Regardless of the juicy quotes that would haunt Helen Chenoweth's political career, her comment reflects a widespread misunderstanding about the Endangered Species Act.

The ESA allows the federal government to list Distinct Population Segments. Although it has protected many species, this language comes with a bit of baggage. First, there is no agreed definition of a DPS, nor is this term used in population ecology. So we can only infer what was meant at the time the legislation was enacted. The definition of distinct is, simply: 'Not the same.' The definition of segment is: 'A part of.' So: parts of populations that are distinct in some recognizable way are eligible for protection under the ESA.

In order to define this DPS designation, the National Marine Fisheries Service utilized the concept of an Evolutionary Significant Unit and created geographic boundaries to protect and manage population status and trend. Conservation units, such as ESUs and DPSs, are a concept at the core of conservation biology, but the ESUs designated for salmon and steelhead are broad. For example, the entire Columbia Basin is divided into just five ESUs. Biologists often debate the "Goldilocks effect" (too big, too small, or just right) in the size of these units.

Fast forward 22 years. The ESA is the same, but the science related to the language that dictates policy decisions has changed substantially. Research conducted at the University of California, Davis turned the beliefs regarding the evolution of salmon upside down. This research identified a gene associated with two distinct runs in Chinook salmon and steelhead—an early premature (spring/summer run), and a later mature (fall/winter run), adult migrant. This research argues that these run types did not emerge independently

in all basins across the range as formerly believed, but occurred in a single mutation event that spread.1 This hypothesis suggests that if an expression like the premature run is lost, it is unlikely to re-evolve. This research put the spotlight on the current DPS designations.

In some places, NMFS has recognized spring and fall run-timing in Chinook as distinct attributes for listing. For example, the Snake River spring/summer run and the fall run are listed separately. These runs use distinctly different habitats for spawning and early rearing, outmigration behavior, and timing of adult return migration. Chinook in the Oregon Coast and Klamath River DPSs, however, are not listed. In those areas, strong fall runs overshadow spring-run populations, but there is a lack of data on the separateness and abundance of these runs.

In several basins, such as Washington's Walla Walla Basin and Idaho's Clearwater Basin, the spring run was extirpated early in the twentieth century. A hundred years later, these runs are maintained by hatchery intervention, showing that the expression of the life history was not able to independently re-evolve. NMFS's own expert estimates that, under the original hypothesis of numerous, within-basin evolutionary events, it would take a century to replace the lost premature migration life history.2 However, one hundred years without expression of a distinct population attribute is extirpation.

In the late 1990s and early 2000s, researchers from the University of Idaho, University of Washington, and the Columbia River Inter-Tribal Fish Commission published a competing hypothesis. This hypothesis argued that Chinook were a continuum of run-timing and habitat utilization, which had been truncated by the progression and effects of European settlement.3 Under this hypothesis, Chinook and steelhead runs were segregated by temperature regimes at natal habitats. Also in the '90s, fisheries scientists were discussing the value of meta-populations—the idea that subpopulations, or segments, within a larger population support one another demographically. In reality, the lines are blurred from run to run and from population to population. Yet the precise homing common in salmon and trout populations speeds the process of local adaptation, so each subpopulation rapidly becomes suited to a specific location in order to maximize survival.

Fitting policy into reality is like putting a round peg into a square hole, so interpreting lab and theoretical science into effective action can be tricky. How do we draw lines around what should be single notes and instruments that play the symphony of an entire orchestra? Today, agencies are focusing on measuring the one gene associated with maturation at run-timing to address listing designations. However, getting hung-up on one gene is like looking for the needle in the haystack, when successful conservation and recovery revolves around maintaining all of the phenotypic diversity.

Salmon need cold, clean water, spawning gravel, suitable prey to match their energetic demands, and natural cycles to find a mate and reproduce. The policies implemented for salmon and steelhead across the native range have been insufficient to restore our runs. Overlooking biological constraints—run timing, associated habitat, and temperature regimes—are the root of the failure.3 DPSs should be assembled according to first-order metapopulations, rather than ESUs.3 Revising salmon policy is critical to reversing declines and ensuring strong runs in the future.

GET INVOLVED

By passing this important bill, Washington state protected 11,000 miles of ESA Critical Habitat from motorized, in-stream mining. In the coming months, both the Washington Department of Fish and Wildlife and the Washington Department of Ecology will begin their respective rulemaking processes for the new law. Engagement from the wild fish community will be essential to ensuring that implementation aligns with legislative intent. Keep in the loop by signing up for NFS Action Alerts at nativefishsociety.org/get-involved.

ABOVE

A resident of the Columbia River Basin, Dana Sheedy is a Native Fish Fellow specializing in genetics, hatcheries, and fisheries management.

Photo: Courtesty of Dana Sheedy

REFERENCES

1 Prince et al. (2017) Science Advances 3:e1603198

2 Waples and Lindley (2018) Evolutionary Applications 11:1518-1526

3 Brannon et al. (2004) Reviews in Fisheries Science 12:99-232

TIPPING POINTS

Sensible Suction Dredge Reform Passes In Washington State

WORDS

Leah Hemberry,
Native Fish Fellow

ABOVE

Earlier this year, Washington took an important step toward saving the state's defining species by bringing mining regulations in step with similar legislation already enacted in Idaho, Oregon, and California.

Photo: Courtesy of Rogue Riverkeeper

I often wonder: does a river cease to be a river if it no longer has any fish? The waters of the Wenatchee River and Peshastin Creek shaped me and they also shape the native fish that inhabit them. I am a non-angler, I don't produce original science and I am not physically able to attend policy meetings due to physical disability. But because of my connection to the Wenatchee River and Peshastin Creek, I feel an obligation to help protect and restore my home watershed.

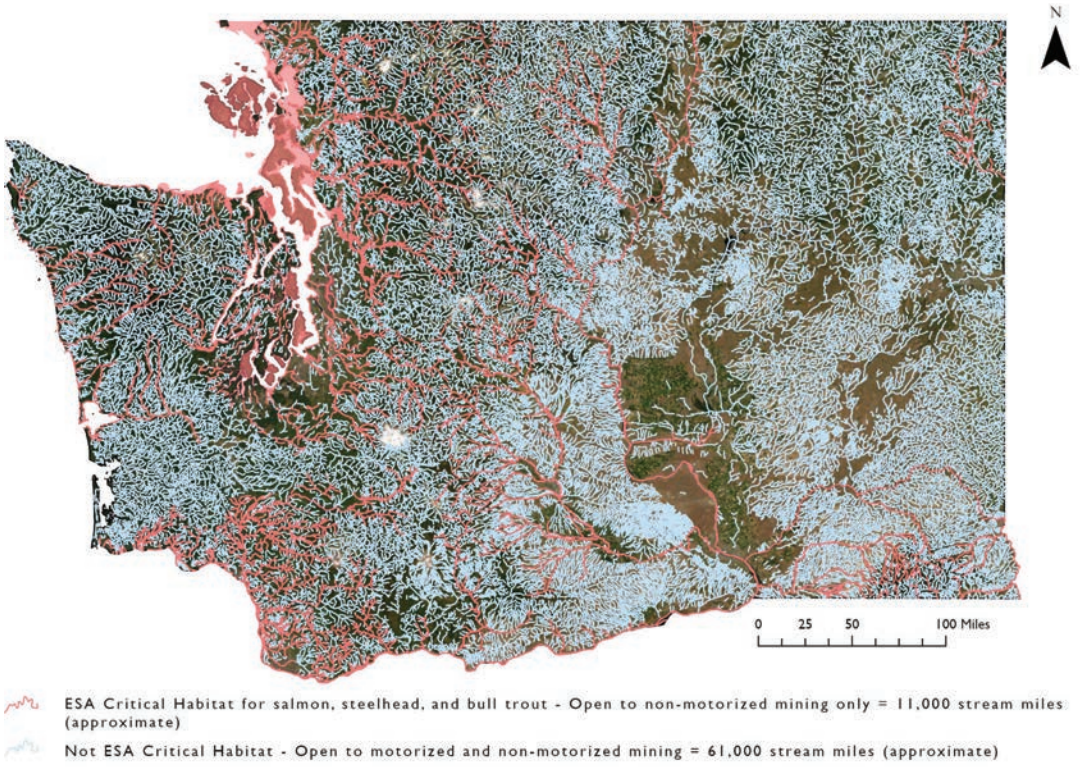
With the support of Conrad Gowell at Native Fish Society and others, I was able to realize that there is a place for me in advocacy. My contribution was to give a boost to the efforts of others who have worked towards reform for the past eight years, creating a multiplier effect by advocating for sensible suction dredge reform in Washington State. I realized that my story was one of origin and place and that by telling my story I was able to make an impact on a personal level.

I grew up at the confluence of the Wenatchee River and the Peshastin Creek on a pear and apple orchard. My childhood was filled with memories of heading to the creek to cool off and get some relief from the hot afternoon sun. I remember swimming in the Wenatchee River while my dad fished his favorite hole after he was done working for the day. I remember my dad bringing home steelhead for dinner.

When my dad was a child, Peshastin-Dryden kids thought nothing of dropping a line in after school and coming home with a few trout. Steelhead, our state fish, were woven into the fabric of life. That was about thirty years ago. On that same stretch of river, there has not been a catch-and-kill season for wild steelhead in over twenty years. The same thing is true for salmon.

Against all odds, Peshastin Creek remains the most productive steelhead drainage in the Wenatchee River basin for these ESA-listed fish. Over the decades, fewer and fewer salmon and steelhead are returning facing difficult odds downstream and at sea. But the creek provides critical habitat for spawning if they return in greater numbers in years to come.

My seven-year-old daughter will likely never experience catching a steelhead. She river snorkels with the hope of seeing fish, but the river is often devoid of them. It's a good day if she gets the opportunity to see one salmon, steelhead, or bull trout in a long stretch of empty river.



CAMPAIGN CONCLUSION

LEFT

Map: Courtesy of Trout Unlimited

BELOW

Part of a multi-generational connection to the Wenatchee River and its tributaries, Native Fish Fellow Leah Hemberry uses her understanding of media and accessibility on behalf of wild fish, free flowing rivers, and thriving communities.

Photo: Courtesy of Leah Hemberry

It's not too late to make the hard choices necessary to save these species that define us, but time is running out. Many of our streams, such as Nason Creek and Scotty Creek, have been closed to fishing because this habitat has been deemed critical to endangered salmon and steelhead. Earlier this year, Washington took an important step toward saving our state's defining species by bringing mining regulations in step with similar legislation already enacted in Idaho, Oregon, and California.

Peshastin Creek was the site of extensive mining operations generations ago, part of a negative legacy for salmon and steelhead. Until Washington lawmakers passed Senate Bill 6149/ HB1261, motorized suction dredge mining regularly kicked up the residual mercury from these mines and destroyed delicate riparian shoreline habitat and disturbed the stratification of gravel layers that are critical to successful spawning.

I respect those that provide for their family through the hard work of living off the land, but we are at a tipping point. The legislation does not ban the practice everywhere. Only in areas that are the most important to salmon and steelhead recovery.

I am grateful to have had an opportunity to be a part of a large team that brought this piece of legislation to pass. Together, we have halted the damage caused by suction dredging on an estimated 11,000 miles of Washington streams, brought mining practices in line with state water quality laws and the Clean Water Act, and took an important step toward a future with greater abundance of salmon and steelhead for all Washingtonians. Thank you for supporting the passage of this important legislation.

GET INVOLVED

By passing this important bill, Washington state protected 11,000 miles of ESA Critical Habitat from motorized, in-stream mining. In the coming months, both the Washington Department of Fish and Wildlife and the Washington Department of Ecology will begin their respective rulemaking processes for the new law. Engagement from the wild fish community will be essential to ensuring that implementation aligns with legislative intent. Keep in the loop by signing up for NFS Action Alerts at nativefishsociety.org/get-involved.

CAMPAIGN CONCLUSION

PRESERVATION OF LIFE HISTORY

New Science Sheds Light On Eel River Steelhead Ecology

WORDS

Samantha Kannry, *Native Fish Fellowv*

ABOVE

Eaton Falls does not represent a total barrier to upstream migration. Steelhead likely pass it with at least some regularity.

Photo: Courtesy of Samantha Kannry

OPPOSITE

The Eel River is home to the southernmost population of summer steelhead in the Pacific Northwest

Photo: Courtesy of Samantha Kannry

In northwestern California, there are two distinct runs of steelhead—winter-run and summer-run. Winter-run enter freshwater sexually mature in the late fall through early spring, swim to their spawning grounds, spawn, and quickly return to the ocean. Summer-runs enter freshwater sexually immature in the mid-spring through early summer, swim high up in the watershed and find cold (and often deep) pools to wait out the warm summer months. With the return of rain in the fall and winter, they move to their spawning grounds, spawn, and return to the ocean. Anthropogenic alterations to the landscape disproportionately impact summer-run steelhead. Consequently, summer-run populations have experienced more dramatic declines than their winter-run counterparts, similar to spring and fall Chinook.

The Eel River is currently home to the southernmost population of summer steelhead in the Pacific Northwest. We wanted to investigate life-history variation in the Eel River. To do this we collected caudal fin clip samples from 834 steelhead, spread across three of the major forks, the Van Duzen, Middle Fork, and upper mainstem. We also utilized 2089 samples collected for a separate study from the South Fork of the Eel, where summer-run steelhead have not been observed since the 1960s.

The Van Duzen and Middle Fork Eel Rivers are home to the two extant populations of summer-run steelhead in the Eel. The upper mainstem has been inaccessible to anadromous fish since the construction of Scott Dam in 1922, but there are historical reports of summer-run steelhead in the upper reach prior to the dam. The hydroelectric dam and diversion project is currently up for re-licensing, with decommissioning and removal as a potential outcome.

We focused our sampling and analyses to answer a few questions:

1. Are summer-run steelhead in the Van Duzen River strays from the Middle Fork Eel River or an independent population?

2. Is Eaton Falls on the Van Duzen (a thirty-foot bedrock wall in the middle of a jumble of house-sized boulders) a complete barrier to anadromy?

3. How do different types of barriers impact the distribution of summer and winter-run steelhead?

4. Has the resident trout population above Scott Dam maintained genetic diversity since being inaccessible to anadromous fish?

5. Is the summer-run variant (the genetic component necessary to be a summer-run steelhead) present in the South Fork Eel?

We used a sequencing method that allows us to look across the genome to examine the distribution of summer and winter-run individuals, anadromous and resident individuals and overall differentiation between populations. We then analyzed our sequencing data and arrived at the following conclusions:

1. Summer-run steelhead in the Van Duzen River represent an independent population, not a population maintained by dispersal from the Middle Fork Eel River. Having such a low census population size (an average of 145 over the past decade), they are facing a serious threat of extirpation.

2. Eaton Falls does not represent a total barrier to upstream migration. Steelhead likely pass it with at least some regularity. This is further supported by a separate otolith study and observation of an adult summer-run steelhead above the falls while conducting the sampling. Steelhead are capable of surprising feats.

3. Summer and winter-run steelhead use distinct spawning and rearing habitat in both the Van Duzen and Middle Fork Eel Rivers, with winter-run fish largely excluded from the habitat above flow-dependent barriers. The ability to consistently pass upstream of these barriers is necessary to maintain the evolutionary advantage garnered by being a summer-run steelhead.

4. Summer-run steelhead inhabited the upper Eel, prior to construction of Scott Dam and the summer-run alleles have up to now persisted in the resident population. Overall genetic variation and life-history variation (anadromous and resident type) has been maintained above the dam. The resident trout populations above the dam would likely be a suitable source population for recolonization of the upper basin by anadromous individuals if the dam were to be removed.

5. We did not detect the presence of the summer-run variant in the South Fork Eel. We concluded that the summer-run allele is not maintained as standing variation in winter-run steelhead populations. This further emphasizes the need to protect summer-run populations as we did not find evidence that winter-run populations maintain the potential to produce summer-run individuals.

The publication of Samantha's paper was an important step toward protecting and restoring the wild summer steelhead of the Eel River Basin. Native Fish Society exists to empower local advocates like Samantha Kannry in order to create the groundswell of public support necessary to revive abundant wild fish. Join the movement by visiting the NFS Members page at nativefishsociety.org.

REFERENCES

Titled "On the ecology and distribution of steelhead (Oncorhynchus mykiss) in California's Eel River," this study was posted March 20, 2020 on bioRxiv—an open-access, pre-print repository for the biological sciences. Visit **biorxiv.org** to read the complete study.

ABOVE

Through the NFS Fellowship Program, Fisheries Biologist Samantha Kannry uses her unique knowledge of Fisheries Ecology, Conservation Genetics, and Land Stewardship to bolster the wild fish movement.

Photo: Courtesy of Samantha Kannry

CAMPAIGN UPDATE

SOUTH COAST WILD STEELHEAD RELEASE

WORDS

Bryan Sohl,
Rogue and North Umpqua River Steward

ABOVE

Native Fish Society will continue to advocate for a management plan that errs on the side of caution and puts the wellbeing of South Coast wild fish first.

Photo: Jason Hartwick

The first of three rounds of stakeholder meetings to shape the new Rogue-South Coast Multi-Species Conservation and Management Plan were held on February 26 and 27 in Gold Beach and Central Point, Oregon. The meetings were well attended, with forty people in Gold Beach, thirty in Central Point, and at least 23 different stakeholder groups represented. Stakeholders represented a wide variety of interests, from government and business to recreation and the environment. Representing the interests of the wild fish community were NFS Executive Director Mark Sherwood in Gold Beach and NFS Rogue River Steward Charles Gehr in Central Point. I attended both meetings as an alternate.

At the meetings, the Oregon Department of Fish and Wildlife presented on what is known and not known about the fisheries in the Rogue and other South Coast basins. ODFW also shared its plan to manage the basins as two distinct "Stratum Zones." South Coast rivers, like the Winchuck, Hunter Creek, Chetco, Euchre Creek, Elk and Sixes rivers, would be managed as one Stratum Zone. The Rogue Basin, including the Rogue, Illinois, and Applegate rivers, would be managed as another. ODFW is encouraging stakeholders to consider a so-called portfolio approach, meaning the stratum zones—and even different watersheds within a stratum zone—could be managed differently.

For the wild fish community, there were two big takeaways at the end of round one. First, ODFW has little scientific data—in particular on returning numbers of adult wild fish dealt with in this plan: steelhead, coho, and sea-run cutthroat—that stakeholders need to make evidence-based decisions. Second, the impacts of climate change need to be accounted for. Warming stream temperatures, diminished summer flows, fire damage, and poor ocean conditions are already taking a toll on wild fish numbers and will continue to do so. As the stakeholder process proceeds, Native Fish Society's representatives will continue to advocate for a management plan that errs on the side of caution and puts the wellbeing of our wild fish first.

GET INVOLVED

The NFS Wild Steelhead Release Campaign started with a cadre of guides, anglers of all gear types, and business owners who recognized that healthy runs of winter steelhead are the lifeblood of southern Oregon's winter economy and rallied local support for precautionary management. Show your support for grassroots environmental campaigns around the Pacific Northwest by visiting nativefishsociety.org/donate.

CAMPAIGN UPDATE

DECISION POINTS

The Future Of The Willamette Basin

Thanks to ongoing Native Fish Society advocacy and litigation against the United States Army Corps of Engineers in Oregon's Willamette Basin, 2020 will be a year of decision points that will shape the future of the watershed and its rivers, people, and wild fish.

Last winter, the Corps finalized a three-decade project to study the redistribution of water stored behind the thirteen federal dams in the Willamette Basin. In its final report to Congress, the Corps declined to recommend the measures identified by conservationists and wildlife management agencies as necessary to prevent jeopardizing the continued existence of the Willamette's wild spring Chinook salmon and winter steelhead.

Congress will now consider whether to adopt this new water plan through the biennial Water Resources Development Act. NFS and our coalition allies are advocating for any redistribution to wait until after the wildlife agencies and the Corps have signed a new plan for dam operations in the basin to recover threatened fish. The new Biological Opinion will identify the flow needs of threatened fish. Reallocating the basin's stored water before the needs of fish have been identified risks shortchanging the species that need this resource the most.

This year, we will also have a decision in response to our ongoing litigation against the Corps for the failure to meaningfully implement the agreed-upon recovery actions from the 2008 Biological Opinion for the basin. Following a hearing this spring, we expect a decision from the U.S. District Court on whether the Corps will need to make immediate changes to the operations of the federally-owned dams in order to support wild fish recovery.

This year, the Corps is reconsidering its decision to implement a non-volitional downstream fish passage plan at Cougar Dam on the South Fork McKenzie River. This analysis includes a look at modifying or eliminating hydropower operations at the dam and providing volitional fish passage routes for out-migrating juvenile salmonids—an action that NFS and our coalition partners continue to advocate for with congressional lawmakers. Such a move would set a new precedent for the basin and provide a blueprint for further change in hydropower operations throughout the Willamette Basin and Pacific Northwest.

WORDS

Jennifer Fairbrother, *NFS Conservation Director*

ABOVE

Cougar Dam on the South Fork McKenzie River.

Photo: Conrad Gowell

CAMPAIGN UPDATE

PUGET SOUND UNDER SIEGE

WORDS & PHOTO

J. Michelle Swope
NFS Washington Regional Coordinator

ABOVE

Cooke faces an uphill battle to gain public trust and must convince regulators it can put its troubled past behind it.

Puget Sound was once home to some of the greatest Pacific salmon populations in the world. While our salmon are now only a fraction of their historic abundance, these majestic fish are still an ecological cornerstone for Puget Sound and all the salmon-bearing rivers that flow into it. They also fuel vibrant commercial, tribal, and recreational fisheries which generate tens of millions of dollars every year for Washingtonians.

As we already know, Atlantic salmon net pens are bad news for Pacific salmon and do not belong in Puget Sound. Research has demonstrated that these net pens are a breeding ground for parasites and viruses that can infect and kill wild salmon. Additionally, these net pens are major polluters, capable of creating environmental disasters like toxic algae blooms, which are disastrous for finfish and shellfish populations. Everywhere Atlantic salmon net pens operate—from Norway to British Columbia to Chile—wild fish suffer. With Puget Sound salmon on the brink of collapse, Cooke Aquaculture's actions have the potential to be another nail in their coffin.

Last year, Washington Governor Jay Inslee signed HB2957 into law, effectively banning open-water Atlantic salmon aquaculture in the state of Washington. But then, Cooke Aquaculture began seeking permission from Washington state to transition their Atlantic salmon net pens to a domesticated form of steelhead—fish not prohibited by the details of this hard-fought law. This new plan blatantly circumvents the will of the public who fought tirelessly to protect Puget Sound from Cooke Aquaculture and open water net pen aquaculture.

As Cooke pivots from net pen raised Atlantic Salmon to raise mostly sterile steelhead, the company still faces an uphill battle to gain public trust and must convince regulators it can put its troubled past behind it. Even though WDFW has approved the new permit, Cooke still needs to secure amended water-quality permits with the Department of Ecology, new aquatic lands leases from the Department of Natural Resources, and, even then, will need permits from WDFW every time it moves fish from hatcheries to net pens.

As with Atlantic salmon, Cooke plans to feed domesticated steelhead with pellets in open-air pens. The fish would take about 12 to 18 months to grow before they are harvested. Viruses, parasites, and diseases are amplified by densely concentrated fish—regardless of species—and could spread to free-swimming steelhead and salmon. We also worry that, like the catastrophic failure of Cooke's Cypress Island net pen, fish could escape en masse, interbreed with wild steelhead, and put thousands of years of genetic diversity at stake.

On February 11th, of this year, a group of conservation and environmental nonprofits filed suit against WDFW to hold the agency accountable for violating the State Environmental Protection Act when approving Cooke's recent proposal. The groups assert that the agency failed to evaluate the scientific evidence that Cooke's proposal would harm federally-listed steelhead, salmon, and Southern Resident killer whales, degrade water quality, and damage the overall health of Puget Sound. Furthermore, the mitigation measures proposed by the agency are insufficient to prevent well-documented environmental harm to Puget Sound, especially to threatened and endangered species.

The SEPA violations include, but are not limited to:

- Failure to properly designate the lead agency
- Failure to analyze direct and indirect impacts of the proposed actions
- Failure to analyze cumulative impacts of the action when added to other impacts to the Puget Sound ecosystem and environment
- Failure to base the threshold determinations on reasonably accurate information
- Failure to include sufficient mitigation measures
- Failure to prepare an Environmental Impact Statement
- Failure to conduct an alternatives analysis

GET INVOLVED

Native Fish Society is collaborating with Wild Fish Conservancy, Center for Biological Diversity, Center for Food Safety, and Friends of the Earth in the effort to end net-pen fish farming in Puget Sound. To stay apprised of this important issue, visit the Our Sound, Our Salmon campaign page at nativefishsociety.org, sign up for NFS Action Alerts, or follow us on Instagram **@nativefishsociety.**

CAMPAIGN UPDATE

WILD & FREE

A Free-Flowing Future on the Klamath River

WORDS

Kirk Blaine, *NFS Southern Oregon Regional Coordinator*

RIGHT TOP TO BOTTOM

Under the current plan, Fall Creek and Irongate hatcheries will remain operational for even after the four dams on the lower Klamath River are removed.

Photo: John Jackley

Over the past four decades, advocates, conservationists, and tribal nations have set forth to restore a free-flowing Klamath River. Winding its way from south-central Oregon through northern California, the Klamath River has been impeded by hydropower dams since 1903. These dams have had undeniable negative impacts on the entire Klamath ecosystem—including fish, habitats, and communities.

At present, the four lower dams on the Klamath are scheduled for removal. Klamath River Renewal Corporation, a private non-profit created to oversee and organize the removal of the dams, submitted their final budget to the Federal Energy Regulatory Commission on February 28. Budget approval and an overview of the plan from a private board of consultants marked the final steps necessary for dam surrender applications. The dam-removal project now lies in the hands of FERC to approve and move forward.

Without interruption, dam drawdown will start in 2022, with preliminary projects starting this summer. Native Fish Society strongly supports the immediate removal of the four lower dams and advocates for the project timeline to continue on track.

The current plan to restore the Klamath River includes rebuilding the hatchery infrastructure at Fall Creek Hatchery near Yreka, California, and upgrades to Irongate Hatchery downstream. Under this plan, hatchery operations will continue for eight years after dam removal. Native Fish Society and others are advocating to ensure other options are presented for the future of the Klamath. A no-hatchery alternative would benefit the ecosystem and write a completely new chapter in river and wild fish restoration history.

In collaboration with our partners, Native Fish Society is exploring options for an all-wild Klamath River after the dams are removed. Visit nativefishsociety.org/campaigns to find out more about the NFS Wild & Free Klamath River Campaign.

ENCOUNTER TO ETHICS

The Role Of Memory In Salmon Conservation

Jane Calderbank studies anthropology at Reed College, with a focus on epistemological discrepancies between environmentally-centered disciplines and environmental discourse. She seeks to illuminate the entanglements of the Fish Imaginary by examining the social and semiotic functions of salmon to underscore how fish are politically mobilized. In her most recent anthropological project, she is gathering stories of spring chinook salmon from people around the Pacfic Northwest.

For those who experience the everyday along the water, the connection between the plight of individual salmon and entire ecoregions is a given. Recreational anglers, streamside restoration volunteers, and ecologists alike know that closeness with the river fosters a sensitivity to the interconnectedness of people, fish, and every other creature in the web of life. The daily work of watershed managers forms an oft-forgot intimacy with the river; their observation and intervention (re)produces rivers as we know them. In turn, a deep sense of care calls us back to continue the work of restoration.

Indeed, when asked to ruminate on the importance of spring Chinook, many recall their earliest memories of streamside enchantment. Some tell me tales of catching their first springer; others testify to the fishes' endlessly loyal returns just as the sun emerges from the fog. These potent memories quickly eclipse citations of harvest forecasts or genetic studies that usually comprise our arguments for salmon restoration. Sensuous engagement with the river, whether by mindful harvest or a steward's labor, generates a keen ability to engage in a social relationship with fish and trees. It is this social relationship between fish and people that the conservation ethic—which I would define as the ethic to reproduce what anthropologist Anna Tsing calls a condition of "livability"—actually hinges on.

WORDS

Jane Calderbank,
Native Fish Fellow

ABOVE

A Pacific Northwest icon—the spring Chinook salmon.

Photo: Dave Herasimtschuk

RIGHT

The potent memories of those who have engaged in a social relationship with salmon quickly eclipse the harvest forecasts and genetic studies that so often comprise our arguments for conservation and restoration.

Photo: Mark Conlin

Memory is the medium by which an encounter becomes an ethic. As author and artist Jenny Odell writes of her own nature walks, "To behold is to become beholden to." From what I've gathered in my work thus far, the process looks something like this: A simple riparian encounter marks the beginning of a relationship with salmon. In fishing, restoring, or simply observing deep green holding pools that punctuate the river, we commune with fish in our shared ecosystem. As we settle into our reciprocal relationship, we sense that the fish themselves are an organic testimony to mutuality, loyalty, and connectedness—key elements of reproducing the conditions of livability on earth.

As an environmental anthropologist, I seek to understand the role of memory in salmon conservation. I elaborate on a history of reciprocity to elucidate the socio-ecological valence of salmon, or—put another way—how people come to understand themselves as entangled with the river. Currently, I am gathering stories about the scientific, political, and often spiritual engagement with spring Chinook in the context of ongoing debates about their management.

A paramount matter in my work is opening opportunities for multiple ways of remembering the river. I implore you to ask how you might open your activism by simply providing to your community the service of an opportunity for encounter. An initial encounter catalyzes an organic relationship between entities; it is not a list of biological facts or a manual for how we ought to live. It is at its core an earthly opportunity, a chance to make a sensorial connection with the landscape whence ethics might grow.

Native Fish Fellows are an integral part of our mission at Native Fish Society. The program has expanded the opportunities for people from all walks of life to join the wild fish movement and take action using their unique skills, talents, and expertise. Visit the Native Fish Fellowship Program page at nativefishsociety.org to learn more.

I BELONG TO THE WILD

I don't write. In fact, under most circumstances writing is a source of stress. But last summer, while I was up in Alaska visiting my daughter Kelly, we camped out on a remote beach under the stars and watched the Aurora Borealis. For the first time, a poem just came to me. As I sat on a rock by the ocean, overcome with awe and aware of my smallness, I texted the following to my husband Peter . . .

I belong to the wild,
Untethered from the constant strings that bind me to a smothering reality.

I belong to the sea,
Where the earth kisses the waves and the echoes of the tranquil tide soothe my depleted soul.

I belong to the mountains,
Whose majestic peaks full of unknown wonder draw me in;
the rough trails leading to quiet, hidden places.

I belong to the stones,
The strength of granite, the sparkle of quartz; smoothed by time and shaped by circumstance.

I belong to the wild.

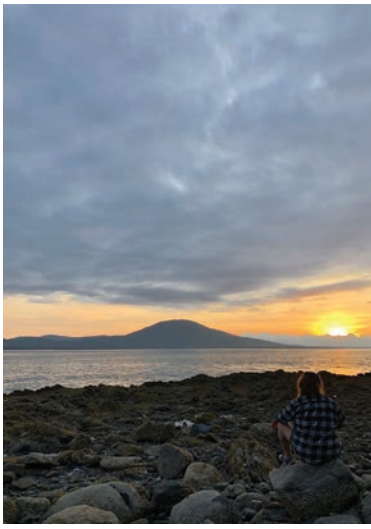
Douglas Island, Alaska
Summer 2019

WORDS & PHOTO

Tracy Buckner,
NFS Operations Manager + Women For Wild Fish

BELOW

Tracy co-founded the NFS Women For Wild Fish Initiative to encourage women to lead the way in science-based education, conservation, and advocacy for wild fish. Discover more about W4WF by visiting nativefishsociety.org.



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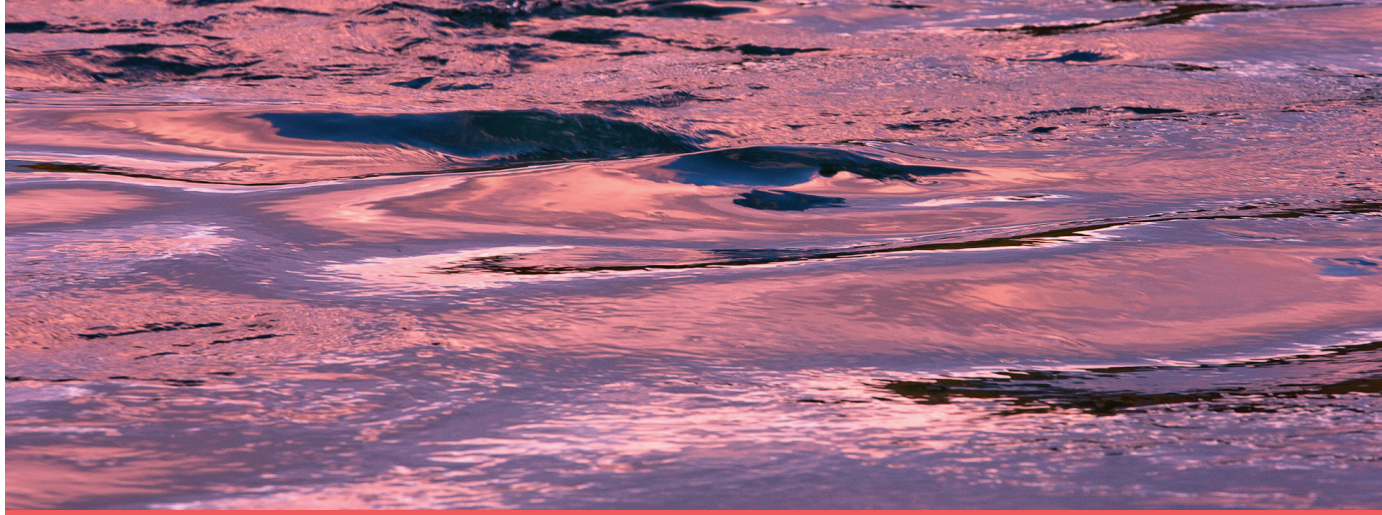

RIVER STEWARDS, FELLOWS & DISTRICT COORDINATOR

DISTRICT COORDINATOR

Samantha Kannry, Redwood Coast

WILD FISH FELLOWS

Rowan Baker
Chris Frissell
Philippe Gauthier
Ed Hepp
David Herasimtschuk
Ernie Nieme
Allison Oliver
Scott Schwarz
Todd Stevenson
Dana Weigel Sheedy
Octave Zangs
John Zemrose

RIVER STEWARDS

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Christie Adelsberger-Nichols, Sprague, Lost
Tyler Allen, Zigzag
Ryan Allred, Klamath
Barrett Ames, Clackamas
Jim & Rachel Andras, Bear Creek Tributaries
John Appleton, Grand Ronde
William Atlas, North Puget Sound
Rowan Baker, Tillamook, Forest & Marine Policy
Jesse Barr, North Fork Lewis
Scott Baumer, Fifteenmile Creek
Duncan Berry, Salmon
Bradley Bobbit, South Puget Sound
Sunny Bourdon, Smith, Chetco
Adam Bronstein, Metolius
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Dave Carpenter, North Santiam
Andrew Chione, Yamhill
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Derek Day, South Puget Sound
Tom Derry, Molalla
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Dane Downing, Middle Fork & North Fork Eel, Black Butte
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Ian Fergusson, Salmonberry
Paul Fortino, White Salmon
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Charles Gehr, Rogue
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Jeff Hickman, Nehalem
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Paul Huston, Nisqually
Mark Homeyer, Snohomish, Skykomish
Kellen Igou, Winchuck
Chris Johnson, Nooksack
Ken Johnson, Skagit
Jim and Lauren Kerr, Quillayute River
Jonathan Knapp, Stilliguamish
Alan L'Hommedieu, Sandy
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Jeremy Lees, Tualatin
Jena Lemke, Salmonberry
Steve Lent, Washougal
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Matt Lund, Siletz
Bob Margulis, Yakima
Michael Mathis, Snake River Lower Hell's Canyon
John McConnaughey, Washougal
Dave McCoy, Snoqualmie
Crystal McMahon, Sycan
Matt McQueen, Klickitat
Chris Menaul, Green/Duwamish
Matthew Mendes, Warm Springs
Mark Metzdorff, Lower Deschutes
Spencer Miles, Nestucca, Tillamook Bay Rivers
Bart Mills, Johnson Creek
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Marshal Moser, Williamson
Daniel Peirce, Hood
Andrew Perrault, Klickitat
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