

Newsletter of the Native Fish Society | Issue 9.2

STRONG RUNS

Summer 2015



STRONG RUNS

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Native Fish Society is a tax-exempt, non-profit charitable organization.

summer update

(ABOVE)
It's a wild ride.

PHOTO:
Ken Morrish

THERE'S NO DOUBT YOU'VE NOTICED - THIS SUMMER has been a warm one. A cascade of record temperatures have combined with historically low snowpack and less than average rainfall to produce the equivalent of a nuclear meltdown for fish. From northern California's Klamath to the Deschutes, warm water has prompted "hoot owl" closures that extend all the way to Washington's Sol Duc River. Anglers, fisheries managers, and conservationists who care about the fate of our fish frantically search for answers and solutions while they consider a plethora of doomsday scenarios and mounds of unanswered questions like – is this the new normal, and if so, what can be done?

As the leading voice for wild, native fish across the Pacific Northwest for over 20 years, the Native Fish Society's mission could not be more timely or important. And as one of the newest members of team NFS, I could not be more honored and humbled to join this growing grassroots army of dedicated and hardworking wild fish advocates.


In the coming months, Native Fish Society will be focused on evaluating the greatest challenges facing our fish, both now and into the future, and engaging communities through our River Steward program to ensure the survival of our fish and health of our homewaters.

But it's not all doom and gloom as you'll read in this latest issue of Strong Runs.

A few of our most notable campaigns are gaining momentum—specifically in Southwest Oregon, Northern California, and across Washington State. With the support of staff like Southern District Manager Mark Sherwood, River Stewards like Dave Lacey and James Smith have been hard at work organizing their communities to defeat mining proposals and generate support for the protection of Hunter Creek, Pistol River, the North Fork of the Smith, and the Illinois River – arguably the most robust and diverse network of wild rivers in the Country.

River Steward Program Director Jake Crawford continues to represent NFS along with our partners to identify and set aside "gene banks" that keep select Washington rivers free of hatchery steelhead, preserving their genetic integrity and diversity for generations to come. And Director of Science and Conservation Bill Bakke and Legislative Advocate Jim Myron polish off another successful session in Salem standing up for wild fish and making sure lawmakers and agencies throughout the Northwest incorporate the best available science and a healthy conservation ethic into policymaking, management decisions, and enforcement.

In addition, this summer Native Fish Society also welcomed Thomas Mitchell to our Board of Directors to fill the (very large) shoes of Peter Tronquet who retired from the Board after years of dedicated service, including a stint at the helm as interim Executive Director. A passionate wild fish advocate and CFO for the U.S. Programs Division of the Bill and Melinda Gates foundation, Thomas adds expertise and capacity to NFS in the area of results-based financial management and philanthropy in his new role as NFS Treasurer.

As we round out the final week of our summer field season, I look forward to hitting the road and meeting many of you - our biggest supporters and allies. Thank you again for your devotion to NFS and wild, native fish. We would not be celebrating our 20th anniversary or reporting on these successes without your ongoing generosity and dedication. 

For the Fish,



Erica Stock, Executive Director





PROTECT OUR RIVERS REJECT THEIR MINES



WORDS BY
Dave Lacey, Hunter
Creek River Steward

(ABOVE)
Fish not mining!

PHOTO:
Ken Anderson

(RIGHT)
Dave on his
homewaters.

PHOTO:
Ken Anderson

Gold Beach, OR | ON JUNE 29, 2015 A VERY SPECIAL THING happened. THE BLM published a notice in the Federal Register indicating a 2-year ban on new mining claims would begin immediately and the agency would initiate a public comment and environmental review process that could result in the suspension of new mining claims on 100,000 acres of federal land in SW Oregon for an additional 5 years. This 5-year mineral withdrawal includes the headwaters of Pistol River and Hunter Creek, the Illinois River, and the North Fork of the Smith River.

The very next day, Oregon’s Congressional delegation announced their introduction of a bill that, if passed into law, would permanently withdraw these same headwaters from the Mining Act of 1872, resulting in a permanent closure of these lands to new mining claims; require current mining claim holders to prove the financial viability of their projects before proceeding with mine development; and extend Wild and Scenic designation to additional reaches of the famed Chetco River.

This is very big news, but what does it all mean and what can you do?

First, it means that all of the work we have put in over the last couple of years is beginning to pay off. Our coalition of local advocates, supporting businesses and conservation organizations continues to grow as more people recognize the magnitude of the mining threat and the incredible public lands, wild rivers and native fish at stake.

Coalition partner American Rivers included Hunter Creek and Pistol River, along with the Smith, Illinois and Rogue rivers in their 2015 list of America’s Most Endangered Rivers, raising the profile of the mining threat at Red Flat to a national level. Then just last month fellow Hunter Creek River Steward, James Smith, and I were interviewed by PBS’s “This American Land” for their profile on the Kalmiopsis and its wild rivers. The recent momentum, is thanks in part to all the supporters of Native Fish Society who lent their voices to my relatively unknown homewaters, Hunter Creek and Pistol River, two years ago during our action alert on the proposed test drilling. Thank you!

Second, it means that I need you to stick with us! I know I’ve been talking to you about the threat of mining for years, but we’re just now beginning the process that could result in real protections for our homewaters and wild, native fish!

Most importantly, right now, the BLM is hosting a 90-day public comment period on their proposed 5-year mineral withdrawal, which closes September 28, 2015.

If the agency is overwhelmed with comments supporting protections for our place, it will set us up for success now and give senators Wyden and Merkley and Representative DeFazio the political encouragement they need to pass legislation that would protect this area for good.

If you have yet to do so, please head to the Native Fish Society’s action alert page to send in a supportive comment. Also, consider coming to the south coast to give comments at the very important public meeting in Gold Beach on September 9th and over in Grants Pass on the 10th. I’m buying pints after the Gold Beach meeting! 🐟






TO COMMEMORATE NATIVE FISH SOCIETY'S 20TH YEAR ANNIVERSARY serving as the leading voice for wild fish and to help raise \$20,000 toward our critical community-driven, conservation efforts, C.F. Burkheimer Fly Rods has donated a custom made 12'8" 5-6-7 Spey Rod for use in our summer raffle.

You can purchase \$20 raffle tickets for your chance to win this beautiful rod by visiting our website www.nativefishsociety.org or by calling Tracy Buckner at 503.344.4218. The drawing will be held Monday, August 31st.

Your donation of \$20 represents \$1 per year that Native Fish Society has served as the leading voice for wild, native fish. As an added bonus, everyone who purchases at least one raffle ticket will also receive a free subscription to Catch Magazine.

As part of our "20 for 20" campaign, Native Fish Society is also sharing a series of guest-authored short stories throughout the summer to honor our founders, celebrate the torchbearers who continue this important work, and inspire our friends and supporters to renew their commitment to Native Fish Society. These stories will be released biweekly through email. We hope you enjoy reading and reminiscing and are compelled to contribute to this important campaign!

To those of you who have already contributed, thank you for your support. We appreciate your ongoing dedication and look forward to another 20 years fighting for wild, native fish and our homewaters. 



(TOP)
Bakke & Petit, way back

(MIDDLE)
Up for raffle, C.F. Burkheimer's 12'8" 5-6-7 spey rod

(BELOW)
Thomas Mitchell

welcoming a new board member

NATIVE FISH SOCIETY, BOARD OF DIRECTORS

THOMAS MITCHELL: TREASURER

Thomas Mitchell is currently the Program Chief Financial Officer for the U.S. Programs division of the Bill and Melinda Gates Foundation where he manages the division's \$500M annual budget. Prior to joining the foundation, other significant professional experience includes financial roles at GE Healthcare and several years as a management consultant in the banking industry. He completed a BA in Economics from the University of Alabama-Birmingham and an MS in Finance from Seattle University. Growing up in the rural Southeast, Thomas has literally been fishing or taken on fishing trips since shortly after birth and fosters an enduring love of moving water. As such, he can often be found floating and fishing PNW rivers or surfing on the Washington coast.





CRISIS ON THE LOWER DESCHUTES

WORDS BY
Greg McMillan,
Conservation
& Science Dir.
Deschutes River
Alliance and
Bill Bakke, NFS
Founder &
Conservation &
Science Director

(ABOVE)
Deschutes River

PHOTO:
Brian O'Keefe

Maupin, OR | FOR FIFTY-FIVE YEARS THE PELTON-ROUND Butte Dam Complex, 100 miles upstream from the mouth of the Deschutes River, controlled the flow of three rivers (Deschutes, Crooked and Metolius). It also blocked access to many miles of spawning habitat for anadromous fish. The trade off was that, like with any dam, cold water accumulated at the bottom of the reservoir, hidden from the warming rays of the sun. That cold, clean water at the bottom of Lake Billy Chinook is predominately made up of Metolius River water.

That same cold, clean water supported a world-class trout, steelhead and salmon fishery in the lower Deschutes River. Anglers flock to the lower Deschutes from around the world, and in the process support the local economy of north Central Oregon, and the broader regional economy.

The Evolution of Change

In 2009, construction was completed on a water-mixing tower at Round Butte Dam (the upper most of the three dam complex). The purpose of the Selective Water Withdrawal (SWW) Tower was two-fold: create surface currents to guide juvenile fish migration by drawing surface water to Round Butte Dam; and achieve temperature control for water discharged from the dam complex.

The surface currents are necessary for juvenile fish that are being reintroduced into the tributaries above Lake Billy Chinook Reservoir to navigate their way to the SWW Tower where they are gathered into a collection facility to be transported around the three dams. The stocks being reintroduced include Deschutes hatchery stock steelhead and spring Chinook. It is hoped that resident kokanee in Lake Billy Chinook will develop anadromous traits and seed a sockeye salmon population.

The goal for temperature control is to eliminate the thermal presence of the dams and return the Deschutes to the conditions that would be present without the dams. This is accomplished using the two ports on the tower to

draw a mixture of warm surface water and cold bottom water into the turbines for power production.

Water quality in Lake Billy Chinook is very different at the surface than near the bottom. Water temperatures can be 20 degrees warmer at top compared to the bottom. pH is neutral at the bottom (7.0) and highly alkaline at the surface (pH of up to 9.9). The surface can be highly turbid due to algae blooms, while the bottom water is clear.

Consequences to the Lower River

Within a year of implementation of SWW Tower operation, anglers in the lower Deschutes noted changes. Some of the famed hatches began to change in timing or become diminished in density and duration. With that change came changes in fish location and feeding behavior. Bird and bat populations are observed to have changed too.

Concurrent with changes in aquatic insect populations, nuisance algae began to proliferate in the lower river. This golden-brown to brown colored plant life (two species of stalked diatoms) has now covered the substrate of many, if not most, riffles that are key habitat to aquatic insects. The stalked diatoms are not digestible to many aquatic insects dependent upon algae as a food source.

Much work is being done to understand this ecological change. Portland General Electric (PGE) has completed a biological study comparing conditions in the last two years with conditions in the 1999-2001 period. Final results have not been released. Interim results documented a number of changes in macroinvertebrate populations.

The Deschutes River Alliance (DRA) is engaged in a long-term survey of aquatic insect hatches. Both PGE and the DRA are conducting extensive water chemistry and algae monitoring. The DRA is establishing a year round site just below the Pelton Reregulation Dam that will have ongoing algae and aquatic insect monitoring, along with continuous 24/7 water quality monitoring.

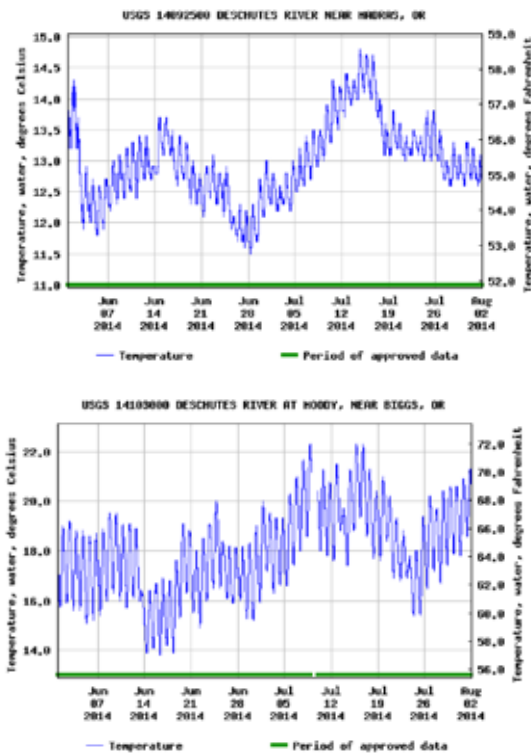
Effect of Dam Operations on Lower River Temperature

As noted previously, one of the goals of selective water withdrawal is to mimic water temperature conditions as if the three dams weren't present. To accomplish this, warmer water is released in the winter, spring, and summer and cooler water is released in the fall.

However, more warm water is released early in the year than cool water is released in the fall. This results in an increase in thermal loading on an annual basis in the lower river. It is worth noting that the Deschutes River had already been designated by the Oregon Department of Environmental Quality as "water quality limited" for temperature under Section 303(d) of the Clean Water Act prior to construction of the tower. In other words, a river already deemed too warm, is being warmed even more.

This is an unavoidable consequence of creating surface currents in Lake Billy Chinook. When warmer surface water is drawn from the reservoir to create currents for juvenile migration, that warmer water has to be discharged into the lower river.

This warm water discharge at times impacts the lower river all the way to the mouth at the Columbia River. On July 18, 2014, the dam operators decreased the discharge temperature from the dams. Here are the consequences:



Note that temperature changes at the Pelton Reregulation Dam (Deschutes River Near Madras gauge) appeared at the Moody gauge within about 36 hours. This matches the time it takes for water to travel the 100 miles from the dam to the mouth.

Although this is only one example of temperature effect from the dams extending far down river, there are other examples.

There are times when conditions in the canyon overwhelm the temperature effect of dam discharge at some variable distance downstream. But it is clear that there are times when dam discharge temperature impacts water temperature all the way to the mouth.

The consequences of the thermal changes in the river are likely many. Timing of anadromous fish entry into the river is affected. Aquatic insect hatch timing is affected too. Warmer temperatures might in part fuel algal growth. The lower Deschutes River has long been a cool water refuge for upriver migrating Columbia River fish, but is less so now.

In a time of climate warming and declining water storage as snow pack, the Pelton-Round Butte Complex has the capacity to offset warmer conditions in the lower river.

Fish Reintroduction

The intent of fish reintroduction is to plant Round Butte hatchery fish in the tributaries upstream of Lake Billy Chinook with the goal of developing self-sustaining populations of anadromous fish. Much work has already gone into habitat recovery above the reservoir to make this possible.


Unfortunately, the results of the effort have been disappointing to date. A few adult fish have returned, primarily to the Crooked River, to spawn. But juvenile fish have demonstrated that migration across the reservoir is difficult. In 2014, only 16% of steelhead juveniles PIT tagged in the upper Crooked River Arm made it to the fish collection facility at Round Butte Dam. From the upper Deschutes Arm that number was 12%. For naturally reared steelhead in Ochoco and McKay Creeks, that number was 3%.

Adult anadromous fish returns include 24 spring Chinook, 21 sockeye, and 93 steelhead in 2014, the fifth year of fish reintroduction.

Conclusion

Fish reintroduction is a worthy and laudable goal that should be sustained. Problems with fish passage need to be determined, and corrected. Selective Water Withdrawal needs a serious evaluation as to its consequences, intended and unintended.

The dam operating license calls for "adaptive management." Adaptation requires a willingness to change. It's time to engage in analysis and change.

The Native Fish Society and the Deschutes River Alliance are committed to continued monitoring of the lower Deschutes River and advocating for the appropriate measures to understand and mitigate the changes that have occurred in the past few years. 



WASHINGTON'S NEXT WILD STEELHEAD GENE BANK



WORDS BY
Jake Crawford,
River Steward
Program Director

(ABOVE)
WA's State Fish

(NEXT)
wait for it...

PHOTO:
Will Atlas,
North Puget
Sound River
Steward

Cathlamet, WA | OVER THE PAST SIX MONTHS I HAVE worked with a collection of anglers, state and federal fish biologists, and local landowners to help advise the Washington Department of Fish and Wildlife (WDFW) on selecting the next Wild Steelhead Gene Bank in the southwestern part of the state. The goal of our work group is to help designate an independent wild steelhead population from the Region 5 Coast Stratum as a Gene Bank, which includes the rivers that flow into the Columbia River near Cathlamet, WA: (1) Grays & Chinook rivers, (2) Skamokawa & Elochoman rivers, and (3) Mill, Abernathy & Germany creeks.

This effort is part of an ongoing process by WDFW to minimize the impacts of their steelhead hatchery programs on select wild steelhead populations across the state. Once a river is designated as a Gene Bank, all hatchery-origin steelhead releases are eliminated in that river(s), monitoring and evaluation programs are maintained or initiated, and input on sport fishing regulations is taken to meet the opportunity and conservation goals for all the rivers in the region.

Stakeholder work groups provide an important avenue for interested local parties to give feedback on which sufficiently abundant, self-sustaining population of wild steelhead should be designated as a Wild Steelhead Gene Bank. During monthly meetings, we learn about the administrative and biological rationale for minimizing the risks of hatchery steelhead (research shows that hatchery fish are less genetically diverse and can negatively impact wild populations through competition for food and habitat), cover the current status and trends of wild populations in each major population group (no steelhead in the Coast Stratum are ESA listed), and work

towards helping identify a wild steelhead population to designate as the next Gene Bank. The benefits of this work group process have been numerous.



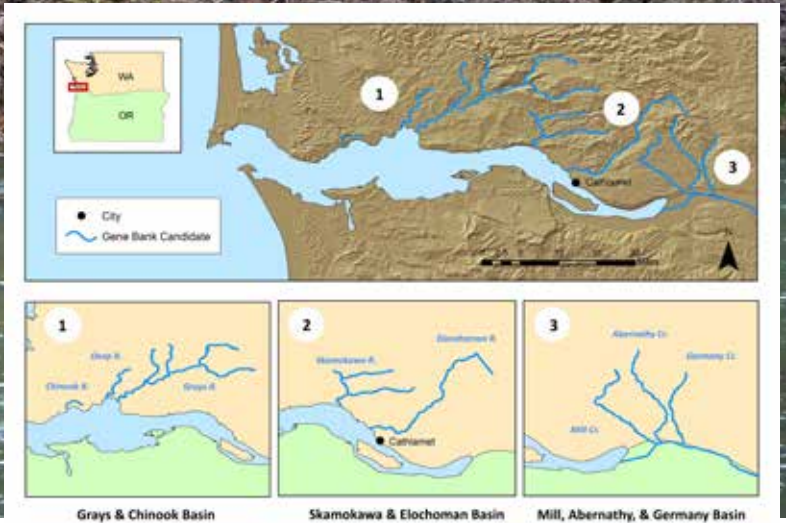
WILD STOCK GENE BANK

One area within each steelhead Distinct Population Segment where wild steelhead stocks are largely protected from the effects of hatchery programs. No releases of hatchery steelhead will occur in streams where spawning occurs or where rearing takes place. Fisheries can be conducted in these areas if wild steelhead management objectives and ESA regulations (if applicable) are met (SSMP, 2008).



First, participants are able to learn from the agency firsthand about the steps leading to the development of Gene Banks. In 2000, WDFW underwent a congressional review by the independent Hatchery Scientific Review Group to implement hatchery reform measures that would realign their conservation and recovery goals for salmon and steelhead across the state. As a result of this process, in 2008 WDFW adopted the Statewide Steelhead Management Plan (SSMP), which provided a framework for policies, strategies, and actions that would be undertaken in order to accelerate the recovery of wild steelhead while also supporting sustainable fisheries.

The SSMP established the concept of Wild Steelhead Gene Banks (or Wild Steelhead Management Zones) and these



stakeholder work groups are the vehicles by which they have been implemented throughout WDFW's Region 5. NFS's Washougal River Steward Steve Lent and Mid-Columbia Regional Coordinator Peter Donahower were integral during the last two work groups that designated the Wind, East Fork Lewis, and North Fork Toutle/Green Rivers as Gene Banks. These rivers joined the Sol Duc River, which became the state's first designation following the closure of the Snider Creek hatchery in 2013.


Second, these work groups facilitate cordial discussion on a contentious subject, which is often lacking in the hatchery reform discourse that currently exists in online forums and print publications. Our meetings consist of face-to-face interactions with individuals of different backgrounds and viewpoints, and presentations from WDFW and US Fish and Wildlife personnel, which bring all group members up to speed with the latest scientific research on hatchery reform. These meetings are open to the public, and local knowledge is at a premium to provide an on-the-ground perspective of how these changes might impact local communities.

Finally, these work groups set the stage for members of the public to actively participate in ongoing hatchery reform actions. The process adds local voices to agency decision-making and members have some ownership in helping inform management actions, which improves the overall transparency.

We will be making a final decision for the Coast Stratum in the coming months and our choice for the next Gene Bank is the Grays and Chinook rivers. The Grays and Chinook population is a strong candidate because it satisfies the abundance criteria, having met or exceeded its escapement

goals for the last 15 years; has a high population viability score that will likely maintain productivity into the future; and the Grays River hatchery on the West Fork needs substantial infrastructure improvements that would be an excessive financial burden for the agency. The Mill, Abernathy, and Germany Creeks population is another good candidate, but US Fish and Wildlife is currently conducting a multiyear research project to try and minimize the risks of integrated hatchery programs on wild steelhead populations. Long-term goals of the Abernathy Research Program are to understand the genetic causes of hatchery domestication and will hopefully provide important insights to help improve hatchery practices by minimizing risks to wild steelhead across the Northwest.

Finally, the Skamokawa and Elochoman rivers have not had much public support for Gene Bank designation, and will likely continue to provide harvest oriented steelhead hatchery programs for local anglers. Therefore, the Grays and Chinook population is our preferred selection and you can follow the progress of our work group on the WDFW website: <http://wdfw.wa.gov/about/advisory/crcsw/>.

Washington is home to one of the largest hatchery fish manufacturing systems in the world, and setting aside key populations as Gene Banks makes sound biological sense in order to preserve the genetic integrity of some of the state's most important wild steelhead populations. Native Fish Society is proud to be a partner in these efforts and we laud WDFW's Region 5 for taking this proactive, transparent process to help protect and recover wild steelhead. 



(ABOVE)
Wait for it...

PHOTO:
Will Atlas,
North Puget
Sound River
Steward

(MAP & DATA)
Jake Crawford
ESRI & USGS

(BELOW)
Jake on the water

PHOTO:
Ken Anderson



TO KNOW A RIVER

smith river monitoring a model for the coast

WORDS BY
Sunny Bourdon,
Smith & Chetco
River Steward

(ABOVE)
The Wild & Scenic
Smith River

PHOTO:
Nathaniel Wilson

(NEXT)
Reading and
recording
steelhead redds
on Rowdy Cr.

(PAGE 12)
Flagging and
waypoints for
redds on Rock Cr.

Smith River, CA | IN FAR NORTHERN CALIFORNIA, YOU FIND yourself in a different state. It's genuinely rugged, - not in the L.L. Bean sort of way - but in the back-woods, steep and deep, flannel-and-Xtra Tufts sort of way. And winding through this corner of the "State of Jefferson" runs the Smith, California's only major un-dammed river.

The Smith's federal Wild and Scenic designation extends 325 miles into all of its tributaries within the Six Rivers National Forest, making it one of the longest Wild and Scenic rivers in America. As a result, it is often given the moniker "California's Crown Jewel," and for good reason. The Klamath-Siskiyou ecoregion is one of the world's biodiversity hotspots. The temperate climate, drastic elevation changes, unique geology, and position as the bridge between the Sierras, the Cascades and Coast mountain ranges have created a mecca for a unique assemblage of plants and animals, hundreds of which are endemic.

The Smith's gin-clear to steely-green waters are known for their hefty Chinook salmon and steelhead trout. One can find both sea-run and resident coastal cutthroat trout, Klamath small-scale suckers, sculpins, Pacific lamprey, and several other native fish species. The Smith is also considered a "stronghold" for coho salmon in Northern California.

Coho from the Elk River in southern Oregon to the Mattole River in Northern California are grouped together to form

the Southern Oregon-Northern California Coho (SONCC) and are listed as Threatened under the Endangered Species Act. Coho salmon prefer a diversity of habitats including low-gradient streams and estuaries. People like this habitat too and as a result channelization, development, logging, and farming in the estuaries and lower portions of rivers has minimized suitable habitat for coho salmon. In the case of the Smith, spawning habitat is mostly limited to Mill Creek, which flows through second and old-growth redwood forests.

Monitoring anadromous fish in the Smith, like any free flowing coastal watershed, is inherently tricky. How many adults are entering the river? How many make it to their spawning grounds? What is their distribution in the watershed? What is the fitness and distribution of juveniles? And what are the habitat attributes determining their spatial structure? These questions are important in truly understanding a population, the challenges they face, and determining the conservation and management actions needed to protect and restore populations. To accomplish the important task of answering these questions across more than 500 kilometers of anadromous fish waters on the Smith River, collaboration is key.

Multiple entities work on the Smith to answer the questions that frame the context in which fisheries are managed and conservation is carried out. From state and federal agencies, to non-profits and private sector

contributions, compelling and comprehensive work is being done to give biologists the tools and resources they need to better understand the fisheries of the Smith, from headwaters to estuary.

In addition to being the Native Fish Society's Smith and Chetco River Steward, I work with a team of biologists employed by the Smith River Alliance and the California Department of Fish and Wildlife who were first assembled in 2011, to answer some of these questions and assess and monitor anadromous fish populations of the Smith. Funded by a grant from the Federal Fisheries Restoration Grant Program, SRA and CDFW are implementing a multi-project plan designed by Justin Garwood, of CDFW. The plan is designed for the assessment of coho salmon but it reaches across species, and data is recorded and analyzed for other salmonids.

The SRA/CDFW crew uses two different methods to monitor salmonids in the Smith. Spawning surveys measure adult escapement (portion of fish that return to spawning grounds) and distribution using a combination of live fish, carcass, and redd counts. The crew also developed and implemented a new protocol for determining juvenile salmonid and adult coastal cutthroat trout population spatial structure using snorkel surveys. Two different spatial sample frames were developed to determine stage-based coho habitat; those habitats suitable for coho spawning and rearing.

Throughout the fall and winter surveyors continuously revisit roughly 46% of the potential spawning habitat, and the spatial and demographic data collected is extrapolated to determine adult population size and distribution. Adult fish observations include species, sex, length, stage (live, dead and decomposition stage), whether the fish was on a redd, and if it was marked or clipped. Hatchery Chinook and steelhead from Rowdy Creek Fish Hatchery in the lower Smith are frequently observed and stray hatchery coho from Oregon and other California Rivers are the occasional visitor. These data are the first available to assess hatchery stray rates throughout the Smith River and will become a vital tool for fisheries managers.

Summer snorkel surveys are used to determine the probability of salmonid occupancy throughout the basin. For example, the proportion of total area occupied by coho salmon has ranged from 23%-29% during 2012-2014. Other species, such as juvenile trout, are more widely distributed, ranging from 82%-96% basin-level occupancy. Based on these findings, Smith River Coho have two small distinct inland subpopulations and a core coastal plain population. Depending on the year, 35% to 65% of those reaches occupied by coho salmon are non-natal rearing areas; habitat used by juveniles that are not spawning grounds. This emphasizes the diversity in the coho salmon life-cycle and how its density-dependent resource needs vary widely on an annual basis. Coho salmon likely have one of the most diverse portfolios of habitat requirements of any salmonid in the Smith River, which highlights the necessity to maintain all of the cogs in the ecosystem wheel.

The SRA-CDFW projects are coupled with state-funded projects, resulting in year-round studies of the Smith's salmonids. Humboldt State University graduate students Marisa Parish and John Deibner-Hanson both have projects looking into juvenile coho habitat use. Deibner-Hanson and Garwood are studying over-winter survival and growth rates of young coho in Mill Creek, with additional funding from a Save the Redwoods League research grant. Using PIT tagging technology and spatial and habitat assessments, the team can compare survival and growth of juvenile coho across the two main forks of Mill Creek, one of which has received large-scale habitat restoration. Parish and Garwood are looking at juvenile coho habitat use associated with areas characterized by beavers in the lower river and estuary. Young coho seem to prefer co-habitation with everyone's favorite contractor.



On the lower river, a "Dual-frequency Identification Sonar," better known as "DIDSON," is operated by Zach Larson and Associates, bringing in the private sector. Larson and his crew are able to count each adult fish as it passes the sonar, which can detect an adult fish, its length and its direction of movement up to 80 meters away! Two DIDSONs run from both sides of the river 24 hours a day, 7 days a week, October 1st through April 15th. This highly effective method for counting anadromous fish compliments ongoing fisheries research and helps CDFW recognize escapement and management goals. Speciation is temporally-based, making it impossible to distinguish coho individuals from similarly-sized and similarly-timed steelhead. However, this is proving to be an essential tool in managing the catchable Smith fisheries, and complimentary to goals in coho research.


CONTINUED ---->

TO KNOW A RIVER

smith river monitoring
a model for the coast



The Smith River is unique in its ecological, geographical and biological character, but also because the recent amount of monitoring and research that exists within the watershed. The Smith stands as a model for coastal monitoring endeavors because her fish populations are receiving the attention they deserve, and multiple agencies, non-profits and private entities have come together to get the job done.

When a diverse collection of groups focus their efforts on providing different pieces of the puzzle, we get a more complete picture of fish populations - not just an idea of numbers, based largely on catch data, - but a spatial picture of the population from the mouth to the upper tributaries, and a temporal picture throughout their life stages in the river. We find out where fish distribute themselves as adults and juveniles, how successful they are at reaching spawning grounds, and what their needs are. Conservation efforts and limited conservation funding can then be best focused on the most critical habitats or life stages, through an understanding of which cogs of the wheel are missing or damaged. 

LITTLE FISH, BIG VICTORY



WORDS BY
Paul Engelmeyer,
Mid-Coast
Regional
Coordinator

(ABOVE)
Salmon love
forage fish!

(ARTWORK)
Steve
Ravenscraft
& Pew Charitable
Trust

ON MARCH 10TH, AFTER SEVERAL YEARS OF WORK BY A FULL range of fishing and conservation organizations – from NFS, Trout Unlimited and NW Steelheaders to Audubon Society of Portland, Oceana, and Pew, the Pacific Fishery Management Council took final action on its Unmanaged Forage Fish Protection Initiative. The support for this effort was truly impressive.


Establishing basic, precautionary management for forage fish makes sense and is an important step in the transition to ecosystem-based fishery management. In so doing, the Council fulfilled the first initiative of its Fishery Ecosystem Plan, a visionary document that the Council approved unanimously in 2013. By protecting forage fish as a key link in the marine food web, the Council has taken a meaningful step toward maintaining a healthy ocean ecosystem, including the valuable and sustainable fisheries we rely upon.

At its meeting in Vancouver, WA, the Council voted unanimously to adopt a final preferred alternative that brings seven groups of unmanaged forage species into all four of the Council's Fishery Management Plans (FMPs) as Shared Ecosystem Component Species and prohibits new "directed commercial fishing" on these species absent a thorough scientific review.

The Council should be applauded for its work to protect currently unmanaged forage fish, including round and thread herrings, mesopelagic fishes, sand lance, saury, silversides, smelts, and pelagic squids.

In addition to approving FMP amendatory language, the Council also requested that staff at the National Marine Fisheries Service develop regulatory language that meets the Council's overall intent while providing reasonable certainty of being enforceable by defining "directed fishing" and considering a ratio of incidental catch to overall catch/landings. This regulatory language will be brought back to the full Council for deeming (or approval), scheduled to happen at the September 2015 meeting, prior to being published in the Federal Register.

While there has been progress in federal waters there is work still ahead in Oregon's home waters – we will still need to track and influence the Oregon Department of Fish and Wildlife's Forage Fish management efforts. Oregon needs to follow the leads of Washington and California and adopt a policy to conserve forage fish in state waters, which extend three miles from its coast. This effort could clearly lead to regional strategy within the California Current. We have a West Coast Governors Alliance and this could be one of their natural resource priority action items in developing a regional approach to conservation of the marine food web.

So, thank you to all our supporters who participated in this effort over the past couple of years signing action alerts and sending in letters, we've made historic progress toward protecting forage fish in federal waters and keep a look out for action alerts and sign-on letters to help finish this task in Oregon waters. 

SOMETHING'S FISHY IN THE WATER:

WHY HATCHERY SALMON & STEELHEAD SHOULD BE REGULATED UNDER THE CLEAN WATER ACT

THE COMMON PERCEPTION OF POLLUTION AFFECTING SALMON and steelhead normally brings to mind images of raw sewage or industrial solvents spilling into a river, rather than hatchery fish. However, the effects of hatchery salmon and steelhead on wild populations are, in many ways, more severe and irreversible than those of traditional water pollutants. For starters, unlike traditional pollutants, hatchery fish reproduce in the wild. Rather than dissipating or diluting after discharge, the negative effects of hatchery fish multiply exponentially and are impossible to contain or clean up after release. In addition, their natural tendency to “stray” makes it impossible to determine where their negative effects will spread in the wild.

The Clean Water Act (CWA) already requires most salmon and steelhead hatcheries to regularly monitor and report incidents of fish disease, and meet various numerical effluent limitations with respect to discharges of pollutants attendant to the release of hatchery fish, but the CWA does not currently regulate hatchery fish themselves. Given the strong scientific evidence of hatchery salmon and steelhead's negative genetic and ecological effects on their wild counterparts, this is akin to regulating the byproducts of cigarette factories, but not the cigarettes themselves. However, in order to regulate the negative ecological and genetic effects of hatchery salmon and steelhead under the CWA, the hatchery fish themselves must qualify as “biological material” within the CWA's definition of “pollutant.”

From a legal point of view, regulating hatchery fish as “biological material” under the CWA is consistent with the plain language and purpose of the statute, congressional intent revealed in the CWA's legislative history, and case law dealing with the breadth of the “biological material” category. From a policy perspective, doing so would support meaningful recovery of wild fish populations, and the species as a whole.

Because the definition of “pollutant” is so broad,¹ there are relatively few CWA decisions considering whether the “pollutant” element is met. While only a fraction of these “pollutant” cases involve “biological material,” a few cases consider the breadth of “biological material” in contexts relevant to hatchery salmon and steelhead. First, the Sixth Circuit's conclusion in *Consumers Power Co.* supports regulating live fish as “biological material” on plain meaning alone.² Second, the Ninth Circuit's holding in *Hammersley*, that “biological material” must be a waste product of a human process, is inconsistent with the plain language and purpose of the CWA and based on facts that sharply contrast with the hatchery context.³ Third, the California district court holding in *Bonham*, that trout stocked in alpine lakes were not “biological material,” simply defers to the binding interpretation in *Hammersley* without further analysis.⁴ Finally, a district court holding in Maine, that farmed Atlantic Salmon were “biological material” when they escaped from net pens, supports regulating intentionally-released hatchery fish as “biological material” because the negative effects of escaped farmed salmon are analogous to intentionally-released hatchery fish.⁵

Just as there is no short-term economic incentive for a paper mill to protect the integrity of its adjacent river, hatcheries lack the short-term economic incentive to protect the integrity of their watersheds as measured by wild fish populations. Regulation is one of the best tools available to deal with this incentive gap. Therefore, hatchery salmon and steelhead should be regulated as “pollutants” under the CWA because it is consistent with the plain language and purpose of the statute and relevant caselaw. Policy wise, it makes sense to refocus the CWA's regulatory pressure on hatcheries' most significant impact on water quality: the genetic and ecological effects of hatchery fish themselves.



WORDS BY
Doug DeRoy,
Gualala, Garcia
& Navarro River
Steward, Law
student at the
Northwestern
School of Law of
Lewis and Clark
College

(ABOVE)
Point source
pollution?

¹ 33 U.S.C. § 1362(6) (“Pollutant” means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water”) (emphasis added).

² *Nat'l Wildlife Fed'n v. Consumers Power Co.*, 657 F. Supp. 989, 1006-07 (W.D. Mich. 1987) (concluding that “fish ... constitute ‘biological materials,’ and therefore clearly fall within the definition [of pollutant]”) (emphasis added) reversed on other grounds, 862 F.2d 580 (6th Cir. 1988).

³ *Ass'n to Protect Hammersley, Eld, & Totten Inlets v. Taylor Res., Inc.*, 299 F.3d 1007, 1017-18 (9th Cir. 2002); see Jeffrey G. Miller, Plain Meaning, Precedent, and Metaphysics: Interpreting the “Pollutant” Element of the Federal Water Pollution Offense, 44 *Envtl. L. Rep. News & Analysis* 10960, 10966 (2014) (explaining that “the reasoning in *Hammersley* is flawed” in several ways: (1)

the use of both “material” and “waste” in the definition suggests Congress knew the difference between them and intended different results from their use; (2) not all of the substances listed in the definition are wastes from human activity; and (3) the presence of Taylor's mussels in large quantities was man-induced); see Sean M. Helle, *Aquaculture and Pollutants Under the Clean Water Act: A Case for Regulation*, 89 *Iowa L. Rev.* 1011, 1041 (2004) (explaining that even without consulting legislative history, “the erroneousness of the Ninth Circuit's conclusion is manifest”); see *Id.* at 1036 (explaining that the Court's reasoning is flawed because its interpretation of the CWA's purpose “borders on the absurd,” and the Court inadequately examines legislative history).

⁴ *Pace v. Bonham*, 5 F.Supp.3d 1127, 1130 (N.D. Cal. 2013).

⁵ *U.S. Pub. Interest Research Grp. v. Atl. Salmon of Maine, LLC.*, 215 F. Supp. 2d 239 (D. Me. 2002).



THE FISH HAVE SPOKEN

THE NEED FOR VOLITIONAL FISH PASSAGE AT OPAL SPRINGS DAM

WORDS
Yancy Lind,
Upper Deschutes
River Steward

(ABOVE)
Opal Springs
Dam on the
Crooked River

(BELOW)
Crooked River
canyon just
upstream from
Opal Springs
Dam

(PHOTOS)
Yancy Lind

Crooked River, OR | IN 1964 PORTLAND GENERAL ELECTRIC completed the Pelton Round Butte hydroelectric project near Culver, Oregon, damming flows from the Crooked, Deschutes, and Metolius rivers. PRB created Lake Billy Chinook and low cost electricity. It also decimated Chinook salmon and steelhead populations.

These anadromous fish were blocked from their primary spawning grounds in the Crooked River and its tributaries. A hatchery was installed below PRB in an attempt to mitigate critical habitat loss but populations have not recovered.

In June 2005, PGE was granted a new 50-year license to continue operations at PRB. That license required installation of a passage facility allowing salmon and steelhead access to the upper Deschutes basin. Every year since 2007 the Oregon Department of Fish and Wildlife has planted over one million steelhead and Chinook into the middle Deschutes, the Crooked, and their tributaries, in an attempt to re-establish wild, native populations.

The installation of the fish passage facility at PRB and associated habitat restoration efforts in the upper Deschutes basin have been extensively covered. What has not been widely reported are the results, which have been disappointing.

The reasons for this are numerous and complex and efforts to correct are ongoing. One of the primary problems is lack of volitional fish passage at the Opal Springs Hydro Facility on the Crooked River just upstream from Lake Billy Chinook. Returning fish can now make it around PRB only to be blocked by yet another dam.


The 2014/2015 steelhead return year ended May 31. In this return year, 93 upper basin origin adult steelhead were captured in the trap at the bottom of PRB, transported upriver,

and released into Lake Billy Chinook. 89 of these were healthy enough to be radio tagged and 85 of these were subsequently detected at radio tracking stations. 77 of the 85 were detected at Opal Springs. 40 were passed above Opal Springs into the Crooked River via the trap-and-haul system currently in place.

These returns mimic prior years. Fisheries biologists had hoped returning adults would go up the middle Deschutes and Whychus Creek, a major tributary, where there are no impediments and habitat restoration has occurred. The fish have spoken, however, and the Crooked River is where they want to spawn.

Unfortunately, there is no fish ladder in place at Opal Springs. Unlike PGE, Deschutes Valley Water District, the owner/operator of the Opal Springs facility, is under no legal obligation to provide passage. To their credit, DVWD has embraced the opportunity to provide passage if costs can be shared. They have commissioned design work for a fish ladder and estimate the cost to be approximately \$8 million. They are willing to pay approximately half of this cost. Another \$2 million has been committed by ODFW and the Oregon Water Enhancement Board, leaving a \$2 million deficit. Approximately \$200 million has been spent by PGE and others on reintroduction, but the entire effort is in jeopardy of failure for want of a comparatively small additional investment.

Some prefer the dams be removed altogether, but that will not happen any time soon. Opal Springs provides electricity and drinking water to local communities. Today, volitional fish passage is the best option we have to reintroduce wild, native fish into the upper Deschutes basin. We believe that funding for a fish ladder should be provided.

For this reason the Native Fish Society, the Association of NW Steelheaders, Central Oregon Flyfishers, WaterWatch, the Crooked River Watershed Council, the Wild Salmon Center, and the Wild Steelhead Coalition have banded together to create OpalSpringsPassage.Org. We encourage you to visit and learn more about this important issue. With just a little additional effort, salmon and steelhead reintroduction into the upper Deschutes basin can still be a success. Help us accomplish that goal. 






CAMPAIGN + PHOTO CONTEST RECAP

SEVEN MONTHS SINCE LAUNCHING OUR KEEP 'EM WET CAMPAIGN and photo contest, we're thrilled to see how the idea is catching on. We never anticipated the flood of photos, the great gathering of committed business supporters, the blog and magazine shout outs and the huge online community that would flock to this idea, integrate it into their fishing practices and make it their own. A huge thank you to everyone who submitted a photo, voted, and shared the idea with a friend. We also want to extend a special thank you to friend and photographer Brian Husky, who coined the #keepemwet way back and inspired so many people to think differently about their catch and release practices.

While keeping a fish's head underwater during catch and release may seem like small conservation potatoes, there is something important in our collective acknowledgement that for a moment our actions as anglers can mean the difference between an easy recovery and a tough one for each wild, native fish we're fortunate enough to encounter.

To wrap up our photo contest, here are the winners as voted in by a panel of their social media peers: In third place was Steve Turner's snap of Clackamas River Steward Jeff Hickman cradling a wild steelhead from "River X." Second place went to Marty Sheppard's photo of his lovely wife Mia with a blushing wild steelhead from the John Day River. First place went to Erik Brudvig's wild Oregon coast coho held steady in heavy current. Erik lobbied hard for the win, enlisting friends and family to spread the word and drive his like count high enough to garner him the glory of the winner's circle. As our winner, Erik received a 12' 7wt Gary Anderson spey rod, generously donated by River Steward Peter Tronquet. Our two runners up will get to spend a day on the water with Molalla River Steward Mark Schmidt! Thank you to the nearly 100 very talented photo-anglers who participated!

What's next? We'd like to hear what you'd like to see! Are you wishing that Oregon, Idaho and California codified Keep 'Em Wet for wild fish in their angling regulations like Washington state? Or do you want it to remain a strictly grassroots initiative? Let us know! In the meantime, we'll continue to host our Keep 'Em Wet webpage, the science on the subject and list additional supporting businesses as they join.

We've also got some ideas brewing for our next catch and release based campaign. Until then, stay thirsty my friends and if they're wild and native, Keep 'Em Wet! 





NATIVE FISH SOCIETY
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(COVER) Historic drought makes you dream about water. PHOTO: Nathaniel Wilson
(BELOW) Giving the wild back to its own. PHOTO: Marty Sheppard

GIVE BACK TO YOUR HOMEWATERS

- Make a special donation.** Your generosity ensures that a strong science-based voice exists for wild, native fish. nativefishsociety.org
- Become a River Steward.** Interested in making a lasting difference in your homewaters? Contact: **Jake Crawford** 503.344.4218
- Stay connected.** Sign up for Action Alerts and connect with NFS on Facebook, Twitter, & Instagram. nativefishsociety.org
- Become a member.** Join the over 700 members pledging annually to protect wild, native fish. nativefishsociety.org
- Contact your legislator.** Let them know you value clean cold water and wild, native fish! Take Action at nativefishsociety.org
- Read the science.** Free to the public, the NFS website offers hundreds of peer-reviewed science docs. nativefishsociety.org

REGIONAL COORDINATORS + RIVER STEWARDS

- REGIONAL COORDINATORS**
- Peter Donahower,** Mid-Columbia
 - Paul Engelmeyer,** Mid-Oregon Coast
 - Conrad Gowell,** North Oregon Coast
 - Jason Small,** Puget Sound
- RIVER STEWARDS**
- Christie Adelsberger,** Sprague, Lost
 - Ryan Alfred,** Klamath
 - John Appleton,** Grand Ronde
 - William Atlas,** North Puget Sound
 - Rowan Baker,** Tillamook Forest & Marine Policy
 - Bill Bakke,** Columbia
 - Ethan & Wendy Barrow,** Trask
 - Scott Baumer,** 15 Mile
 - Duncan Berry,** Salmon
 - Sunny Bourdon,** Smith Chetco
 - Bradley Bobbit,** South Puget Sound
 - Ed Call,** North Puget Sound
 - Dave Carpenter,** N. Santiam
 - Brice Crayne,** Touthle
 - Chris Daughters,** McKenzie
 - Derek Day,** South Puget Sound
 - Doug DeRoy,** Navarro, Gualala, & Garcia
 - Tom Derry,** Molalla
 - Dane Downing,** Middle Fork & North Fork Eel, Black Butte
 - Pat Dunham,** John Day
 - Scotty Evens,** Salmon
 - Ian Ferguson,** Salmonberry
 - David Gee,** Hood
 - Charles Gehr,** Rogue
 - Gena Goodman-Campbell,** Upper Deschutes
 - Jeff Hickman,** Clackamas
 - Ty Holloway,** Umpqua
 - Mark Homeyer,** Snohomish/Skykomish
 - Kellen Igonu,** Winchuck
 - Chris Johnson,** Nooksack
 - Ken Johnson,** Skagit
 - Samantha Kanny,** Upper Van Duzen
 - Jonathan Knapp,** Stilliguamish
 - Dave Lacey,** Hunter Creek
 - Jena Lemke,** Salmonberry
 - Steve Lent,** Washougal
 - Bryce Levin,** Snohomish
 - Alan L'Hommedieu,** Sandy
 - Steve Light,** Lower Deschutes
 - Yancy Lind,** Upper Deschutes
 - Matt Lund,** Siletz
 - Kent MacIntosh,** Nestucca
 - Michael Mathis,** Snake River
 - Lower Hell's Canyon**
 - John McConaghey,** Washougal
 - Dave McCoy,** Snoqualmie
 - Crystal McMahon,** Sycan
 - Matt McQueen,** Klickitat
 - Ed Megill,** Skagit
 - Chris Menaui,** Green/Duwamish
 - Spencer Milles,** Nestucca, Tillamook Bay Rivers
 - Bart Mills,** Johnson Creek
 - Ed Miranda,** Wood
 - Williamson,** 7 Mile
 - Marshall Mosher,** Williamson
 - Daniel Peirce,** Hood
 - Dane Petersen,** Lower Deschutes
 - Stanley Petrowski,** South Umpqua
 - Dustin Revel,** Lower Eel
 - Hamish Rickett,** Disease Issues
 - Jake Robinson,** Coos Bay
 - Brent Ross,** McKenzie
 - Mark Schmidt,** Molalla
 - Mia Sheppard,** John Day
 - Marty Sheppard,** Sandy
 - Joyce Sherran,** Salmonberry
 - Eric Shoemaker,** Necanicum
 - James Smith,** Hunter Creek
 - Mark Stangeland,** North Umpqua
 - Sai Steinberg,** Van Duzen
 - Keith Stonebraker,** Clearwater
 - James Thurber,** South Coast,
 - Lower Umpqua**
 - Peter Tronquet,** Rogue, Umpqua, Illinois
 - Walt Weber,** Lower Columbia Tributaries
 - Scott Willison,** Stilliguamish
 - Derek Young,** Yakima

