

April 2021

The Association of NW Steelheaders Anglers dedicated to enhancing and protecting fisheries and their habitats for today and the future.

<u>Cancelled</u> - Sandy River Chapter April and May, 2021 meetings.

With Oregon Covid-19 State and Local restrictions on social activities, and other unknowns it is not practical for us to hold a highly social activity like one of our meetings, in the near future.

We hope to be able to recommence later in 2021. We will keep you informed here and on our Facebook page.

August 21, 2021, Saturday – Annual Sandy River Chapter picnic - <u>Location:</u> Sam Cox Building & Glenn Otto Community Park area B, Troutdale, OR. Time to be announced in upcoming newsletter.

October 8–10, 2021 – Tillamook Crab/Fish along – Arrive on Friday and depart early on Sunday.



As required by the by-laws, the Sandy River Chapter needs to notify its membership of the upcoming election of officers. Election of Chapter Board Officers would typically take place at our April Chapter Meeting. We have had no one else express an interest in running for any of the offices for this year. The current board members are willing to stay in office until Spring of 2022 to help bring us back to some sense of our past normalcy of monthly meetings and activities post Covid.

Position	Name	Phone
Co-President	Jeff Stoeger	503-704-7920
Co-President	Greg Reed	503-869-1795
Vice President	Jeff Boughton	
Secretary	Terri Boughton	503-307-2546
Treasurer	Vacant	503-869-1795

Currently, the following are running for offices.

However, if you would like to run for any of these positions all you need to do is contact any current officer. To run for an office you must be a current member in good standing.

So, if you have some great ideas let us know prior to the end of April 2021. If you have any suggestion of someone who would make a great President, Vice President, Secretary, or Treasurer ask them if you can nominate them for the positions. You cannot nominate someone without their permission.



The rebirth of a historic river

By Alexander Matthews10th November 2020



The largest dam set to come down on the Klamath is the Iron Gate Dam, standing at 173ft (53m) high (Credit: Dave Meurer)

For over a century, one of the most important salmon runs in the United States has had to contend with historic dams – and now four of them are set to be taken down.

"My great uncle and my grandma and my great grandparents and, I'm sure, their great grandparents: they were all fishermen. That's just what they did – they fished and it was out of necessity to support their families. And it's because that's what we've always done and we've never known another life," says Amy Cordalis, the general counsel of the Yurok, and a member of California's largest indigenous tribe.

It's hard to overstate how important this livelihood has been to the Yurok people who have lived for millennia in rural Northern California. And yet this livelihood has been diminishing for decades after the Klamath River – which flows through the tribe's territory – was dammed for hydroelectricity. But now, after years of painstaking negotiations, the fortunes of the Yurok could be set to change, with the largest dam removal project in US history given the green light.

Although she grew up in Ashland, Oregon, Cordalis would often visit Requa, a tiny village near the mouth of the Klamath River in northern California, to see family, attend tribal ceremonies – and to fish. Her father – "the ultimate Yurok fisherman" – had four daughters and a son, and he taught all of them to fish.

It's like the crumbling of the way that we live. It's the crumbling of how we interact with that natural environment, because there's no fish – Amy Cordalis

"When I was growing up, there were still decent salmon runs," she recalls. "On good nights, you could catch 100, 200 fish. We loved it. That's when you felt like you were like being your best Yurok self: you were doing what the creator made you for. You were going to be able to fill up your smokehouse and your freezer and not only just yours, but your grandma's, your aunties', your cousins' – all the people you cared about, you could give them fish so that they had food."

The money from selling the fish they didn't need would provide money for the children's school clothes, a fridge or a second-hand car, Cordalis says. In short, fishing was a valuable income on a reservation where the median income is only \$11,000 (£8,400) a year.

Today the fishing experience is very different, she says. Drawing upon all the techniques and skills passed down over generations is of little use, because when she goes down to the river with her own three boys, "there are no fish to be caught".

"It's like the crumbling of the way that we live. It's the crumbling of the way that we teach our kids," says Cordalis. "It's the crumbling of how we interact with that natural environment, because there's no fish."

Anytime you put a dam on a river, it always has profound effects: it chops the river into two pieces—Michael Belchik



Amy Cordalis, the Yurok Tribe's general counsel, was taught to fish sustainably by her father, a skill passed down in families for generations (Credit: Matt Mais)

Research bears this out. The Klamath River, <u>once home to the third-largest salmon runs</u> (the migration of adult salmon upstream to <u>spawn</u>) in the continental United States, now has runs at a fraction of their original numbers. One of five Pacific salmon species, the spring-run Chinook salmon, which <u>historically numbered in</u> <u>the hundreds of thousands</u>, has almost entirely been wiped out: the run consisted of fewer than 700 fish last year. Another species, the <u>Coho</u> <u>salmon, which grows typically to between 60cm</u> and 76cm (24 to 30 inches) and can weigh over <u>5kg (11lb) in adulthood</u>, has been designated "threatened" under the US's Endangered Species Act.

The dams built on the Klamath River <u>have</u> been identified as one cause of the drop in salmon <u>numbers</u>. Eight dams were built on the river between the early 1900s and 1962 to produce hydroelectric power. The <u>presence of dams has</u> been linked to marked changes in salmon populations on the Klamath and elsewhere.

"Anytime you put a dam on a river, it always has profound effects: it chops the river into two pieces," explains the Yurok tribe's senior fisheries biologist, Michael Belchik, a tribal member who has decades of experience in fish restoration. "Rivers carry a lot more than just water. The water goes down river, fish move upriver, but not only that: there's nutrients, sediment and other organisms."



Cordalis, who fishes with her father and sister on the Klamath River, has seen numbers of salmon in the river tumble since her childhood (Credit: Matt Mais)

Without flowing sediment, the river below the dams then becomes starved of it, leaving only larger rocks on the river bottom. These rocks are ideal for bristle worms, also known as polychaete worms, to cling onto. "Normally, the mobile bed of the river prevents colonies of these filter-feeding worms from taking over every square inch of the bottom of the river," says Belchik. But now, "these worms have taken over everything".

Anytime you have fish that have limited genetic diversity and limited geographic area, you invite catastrophe to take out your fish, whether it's a fish disease or a flood – Michael Belchik

Although not harmful in and of themselves, the worms are the secondary host for *C. Shasta*, a parasite to which juvenile chinook salmon have proven particularly vulnerable. Belchik says that the Klamath's lowest dam, Iron Gate, has created overcrowded conditions that are ripe for the spread of *C. Shasta*. The salmon that don't go into the hatchery – a man-made spawning facility – spawn just below the dam. The many juvenile salmon that then gather closely here are prone to picking up the parasite.

"[These] are all the ingredients necessary to put together a runaway out of control disease problem that is now wiping out of 80 or 90% of our fish," says Belchik. "Anytime you have fish that have limited genetic diversity and limited geographic area, you invite catastrophe to take out your fish, whether it's a fish disease or a flood."

The reservoirs behind the dams are also responsible for a significant build-up of toxic algae – which thrives in warm, nutrient-rich stagnant water. In sufficient quantities it becomes harmful to human health. In the autumn, water containing toxic algae is released and sent downstream towards the Klamath's mouth where the Yurok reservation is.

"We have just received our almost yearly announcement that the toxic levels of microcystin in the river and blue-green algae are now at unhealthy levels," says Frankie Myers, vice-chairman of the Yurok tribe. This doesn't just make fishing hazardous. "There are pieces of our culture and our spiritual practices that we cannot do now without risking the health and safety of our people," he explains. "The place we go to pray, the place we go to heal, the place we go to do our medicine will make you sick. That has a psychological impact on our communities."

Towards renewal

The solution that Yurok and a coalition of other tribes and environmental organisations have long advocated for is the removal of the lower four of the eight dams on the Klamath. After painstaking negotiations, this led to the signing of an agreement between PacifiCorp (which operates these dams) and 40 other signatories, including tribes and state governments in 2010.

The simultaneous removal of the four dams, with a combined height of 411ft (125m), makes it the largest dam removal project in America's history, according to the Klamath River Renewal Corporation, the nonprofit tasked with overseeing the dam removals. It is also set to be the most expensive, at a cost of almost \$450m (£340m).

The result will be <u>400 stream-miles of restored habitat</u> for salmon and other migratory species like steelhead trout and Pacific lamprey. Opening up previously inaccessible spawning grounds will allow for greater genetic diversity and less crowding, says Belchik, which reduces the risk of disease transmission.

"I've spent my career helping design fish restoration projects of varying types," says Belchik. In terms of impact, "restoration of passage [projects] are always the most successful and most immediate".

By reconnecting springs and cold-water tributaries to the main Klamath River, Belchik says the water temperatures of the river as a whole would drop. This not only improves water quality (lower temperatures reduce the risk of algae blooms, which in turn increases dissolved oxygen and improves pH levels); it would also benefit the salmon whose spawning and migratory behaviour benefit from cooler water – and who are more vulnerable to disease when it's warmer. The return of cooler water, fed by snowmelt, will help make the fish more resilient in the face of climate change. And the return of naturally flowing sediment and a newly mobile riverbed would drastically reduce the habitat of the polychaete worms which release the salmon-killing *C*. *Shasta*.

<u>With over 1,700 dams removed in the US</u> – including 90 last year, according to American Rivers' database – there is a growing list of examples illustrating the benefits to ecosystems, especially for imperilled fish populations. The removal of two smaller dams and fish passage improvements on the Penobscot River in Maine, which were completed in 2016, <u>have restored 2,000 miles of habitat for Atlantic salmon and other species</u>, compensating for lost power by improving output from other dams. The project <u>led to a rebound in numbers returning to spawn</u>: this year 1,426 salmon returned, compared to only 248 in 2014. Other migratory fish have benefitted too: alewife and blueback herring returns have surged to 1.9 million compared to just 2,000 in 2011.

It's really a model of how you might approach sustainable river restoration across the world – Amy Cordalis



On the Elwha River, numbers of salmon have recovered significantly since the removal of two large dams (Credit: Getty Images)

In the Olympic National Park in Washington State, <u>removals of two large dams on</u> <u>the Elwha River were completed in 2014</u>, restoring 75% of previously inaccessible spawning habitat. Just over 1,600 chinook salmon redds (spawning nests) were spotted upriver of where the second dam used to be in 2018 – encouraging signs that the chinook are recolonising this habitat. In the same area, coho salmon smolts (young fish) have increased from 9,000 in 2014 to 17,000 in 2017. But it is perhaps the steelhead running in summer whose revival has been most dramatic. "Prior to dam removal snorkel surveys of the lower Elwha (2009-11) never revealed more than one or two summer steelhead," <u>writes NOAA fish biologist Sarah Morley and colleagues in a May 2019 paper</u>. "Sonar [research] estimated the 2018 summer run population to be at least 300 fish. Like the phoenix, summer runs have arisen from the ashes."

World precedent

To remove dams as large as those on the Klamath River will be a complex operation. In the Klamath River Renewal Corporation's <u>plan for the removals</u>, it will start with drawing down the water levels behind each dam wall. Demolition comes next – largely through drilling and blasting, with trucks removing the rubble. The newly exposed reservoir bed is then covered in mulch and indigenous seeds. Not only does this help restore this habitat to its natural state: both will be critical to reduce the amount of sediment washed down to the sea. In <u>experiments conducted by Ellen Mussman and others ahead of the Elwha dam removals</u>, plants reduced erosion by 33%, while mulch reduced it by 99%. Together, these could be a highly effective means to stop erosion, the researchers conclude.

And while it might seem counterintuitive that a power company would be in favour of dam removals, it actually makes good business sense for PacifiCorp. This is because to renew the operating licence for these dams, its ratepayers would have to foot an approximately \$400m (\pounds 308m) bill for upgrades to ensure compliance with legislation (including the installation of costly <u>fish ladders</u> at each dam that would enable migration).

Removing the dams is a cheaper option: under the Klamath Hydroelectric Settlement Agreement (KHSA), customers will only have to pay \$200m (£154m), with an additional \$250m (£193m) coming from the State of California. The removals have been endorsed by the Public Utility Commissions of both Oregon and California as being in the interests of ratepayers. Bob Gravely, regional business manager of Pacific Power (the PacifiCorp subsidiary which runs the dams) says that the dam removals "became a better outcome for customers".

Overall, little will be lost in terms of renewable energy generation: <u>the dams represent less than 8%</u> of PacfiCorp's 2,208 MW current renewable generation capacity, and as of July 2020 a further 1,190 MW of renewable capacity was under construction. The utility anticipates <u>an additional 3,743MW of renewables</u> <u>coming on stream by the end of 2023</u>.

"I think one of the coolest parts about this whole project is we're setting a precedent for the world to follow," says Cordalis. "I think the approach of working together with the company, with states, with tribes, with environmentalists, to reach an agreement that allows these dams to be removed for the tribes and for American citizens to benefit from the restoration of this river in a way that costs less money than it would be to relicense [the dams] – that's really a model of how you might approach sustainable river restoration across the world."

The dam removals were slated for 2022, though with negotiations still <u>ongoing between the company</u>, <u>the tribes and other stakeholders</u>, that date is still unconfirmed. But Cordalis says she still remains hopeful. "We're getting very close," she says.

"I think we all understand that there is an indigenous tribe [and] a culture at stake," says Myers. "I think it has held fast in these negotiations that these dam removal efforts are as much to remove the dams for the ecology and benefits of salmon restoration as they are to the wrongs that took place in this country for the last 150, 200 years against Native Americans."

For the Yurok, Myers says the dams are seen as "monuments to colonialism" and compares them to statues of Confederate generals. "These dams are statues of the war that we fought here on the Klamath River. And these statues destroy our river, the landscape, our culture. We have to deal with them every single day." In response to this, Pacific Power's Gravely says: "We are very pleased to be part of a settlement agreement that allows the desire of Klamath Basin Tribes and others for dam removal to move forward" while also ensuring protections for electricity customers in six states.

Myer says the treaty negotiated between Yurok and the federal government in the 1850s limited the tribe to their reservation in return for a good standard of living in perpetuity. Although, he says, the federal government failed to live up to its end of the bargain, dam removals would bring that goal closer.

Anticipating the return of healthy fish runs, the tribe has already built a salmon harvesting plant – both for commercial and subsistence fishing – done sustainably, just as Yurok have done for millennia.

"We have been surviving off the river's resources and living symbiotically with it since time immemorial," says Cordalis. "Our creation story talks about how the creator made the river, the land, the animals, the plants, and then made the people and said to the people, 'This will all be here for you and you won't want for anything as long as you live in a sustainable way with the natural environment, and as long as you don't take more than you need to support your family.' That initial religious principle informs how we interact with the river, how we interact with all of its resources and the natural world."

While the dams have increasingly threatened this symbiosis, their removal will once more enable the ancient connection between the Yurok people and the Klamath River to flourish.

https://www.bbc.com/future/article/20201110-the-largest-dam-removal-project-in-american-history



<u>New Sandy River Chapter Facebook Group</u>

We invite you to visit the new Sandy River Chapter Facebook Group at "Sandy River Chapter NW Steelheaders" - <u>https://www.facebook.com/groups/451895135882897</u>. Our previous Facebook page did not permit posting by anyone but the Administrator. The move to a "Group" is for public viewing, meaning anyone can visit, like, and follow. As set up, being a "joined" member only adds the ability to post. Even those who are not "joined" members can and we encourage all to visit our Group at any time. Our previous Facebook page will be taken down on April 15, 2021.

Even as a non-joined visitor you can suggest postings through "Messenger" (Construction of home page) at any time and we will review your input for publishing.

We are trying to initially keep those with "joined" membership to this Facebook group to current Sandy River Chapter of the ANWS members. This is due to the difficulty in managing large numbers of participants, and our need to ensure joiners follow the rules and regulations of the Sandy River Chapter and the ANWS related to fishing conservation.

If you are not already a member of the ANWS consider joining for as little as \$30.00 per year. We would be happy to have you as a member and you can join the Association of NW Steelheaders at : https://nwsteelheaders.org/get-involved/membership/ . Any further questions, please ask.

Sandy Chapter Board Members OFFICERS

Position	Name	Phone	
Co-President	Jeff Stoeger 503-704-7920		
Co-President	Greg Reed 503-869-1795		
Vice President	Jeff Boughton		
Secretary	Terri Boughton	503-307-2546	
Treasurer	Vacant 503-869-1795		

DIRECTORS

Position	Name	Phone	
Eggs to Frye	Mike Myrick	503-281-6438	
Newsletter	Vacant	503-869-1795	
River Cleanups	Vacant	-	
Sales	Rob Bitney	503-320-9821	
Angler Education	Jim Cathcart 503-287-9616		

COMMITTEE HEADS

Position	Name	Phone
Special Events	Steven Rothenbucher	503-257-0039
Website, Content	John Hydorn	503-255-0600



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