

Forest & River News

GRASSROOTS CONSERVATION & RESTORATION IN THE REDWOOD REGION

TREES FOUNDATION

SPRING 2021

Bringing Down the Dams

**Fight of the River People: The Generational Push
that Brought Berkshire Hathaway to the Table
and Put Dam Removal Back on Track**

**From Roy's Dam to Roy's Riffles: Removing the Top-
Priority Barrier for Central California Coho Salmon**

The Best Use of Biomass Isn't Burning

Remembering Jene McCovey





Editor's Note

Dear Reader,

A year ago, the world was frantically responding to the biggest global pandemic in generations. The toll has been grave, and COVID-19 continues its impact. Yet as spring flowers bloom, we see signs that quarantine restrictions will also slowly open in the near future. When we gather again, may we do so more consciously, having had time to reflect upon and break free from traditions and mindsets formed from a colonial culture predicated on exploitation and violence.

In the following pages, we are excited to share seeds of hope and stories of triumph from the grassroots. Find cause for celebration in the amazing story on page 9 about how, this November, a multi-generational Indigenous-led coalition won the strongest agreement to date for what will be the biggest dam demolition in U.S. history. It will reopen hundreds of miles of salmon habitat that are critical food and cultural resources for the Yurok, Klamath, and Karuk Tribes.

You'll find another victory on page 3—the endangered coho salmon of central California now have a much greater chance at recovery because a creek vital to their migration finally flows free after being dammed for nearly 100 years.

On page 38, we remember Jene McCovey, a Yurok elder who passed away in February after working tirelessly for decades in service to the Earth, despite the physical limitations of being paraplegic since she was 28. Her life reminds us that there is so much that we can do when we focus on our vision rather than on our limitations.

We hope this issue not only informs you, but inspires you to engage in supporting the activists still on the frontlines. One of the many ways to help is by sharing this magazine with friends, and if you don't already, subscribe online at treesfoundation.org and never miss an issue—it's free!

Thank you,

Jeri Fergus, Mona Provisor, Kerry Reynolds
Trees Foundation Staff

Cover photo: A floating blockade stretches across the Klamath River (see page 9) PHOTO BY MAHLIJA FLORENDO

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The views, thoughts, and opinions expressed in this publication are those of the authors and do not necessarily reflect the position of Trees Foundation.

From Roy's Dam to Roy's Riffles:

Removing the Top-Priority Barrier for Central California Coho Salmon

By Rebekah Staub and Todd Steiner,
Salmon Protection And Watershed Network

A free-flowing creek replaced a nearly 100-year-old dam in Central California this past year, thanks to a decades-long restoration effort that is intimately tied to the genesis of the Marin County-based Salmon Protection And Watershed Network, or SPAWN.

In December 1996, Todd Steiner stopped to look at an old fish ladder on the San Geronimo Valley Golf Course in West Marin County. The concrete fish ladder was constructed in the 1960s to allow salmon passage around the old dam that had been erected pre-golf, when the land was Roy's Ranch. The dam was presumably built to hold water for cattle.

To Steiner's surprise the dam's apron had collapsed, causing migrating salmon to forgo the fish ladder and shimmy onto the concrete platform where they slammed into the dam—only to fall back and try again and again.

Steiner produced a media advisory and faxed it to local TV stations. Before noon, all four stations and CNN were filming the salmon becoming stuck on the dam's broken apron. The footage was splashed across living rooms throughout the San Francisco Bay Area and around the world that evening. Concerned for the plight of the salmon, Steiner also contacted the National Marine Fisheries Service (NMFS) requesting an emergency permit to net the fish and move them above the dam so they could continue swimming upstream on their spawning migration.

After seeing the TV coverage, hundreds of people started showing up to view the spectacle. They signed a petition that Steiner posted at the site, demanding action from NMFS. As the petition pages filled, Steiner faxed them off to NMFS.



SPAWN crew and volunteers celebrate the installation of a new pedestrian bridge over the more stable, complex creek. ALL PHOTOS THIS ARTICLE BY SPAWN, UNLESS NOTED

"Lo and behold, I got a call back from NMFS and was informed it would take too long to provide the necessary permit, but they would send NMFS personnel to net the fish and move them past the dam," Steiner recalled. "I immediately issued another media advisory stating that the government was responding positively to the community's demand for action."

The next day the media were back to film NMFS personnel standing on the apron, netting the fish and moving them above the dam. But a permanent solution was needed to solve this problem.

Due to all the media attention, many experts as well as hundreds of local community members stepped up to help resolve the situation. A majority wanted to remove the dam to allow unobstructed fish passage, but to do so would be very expensive due to removing all the sediment and/or harmful by sending thousands of tons of fine silt downstream—burying salmon nests below and causing permanent damage to creek habitat.

Months of public meetings at the San Geronimo Community Center, combined with field trips to the site, resulted in a

plan—Roy's Pools—to help the fish get past Roy's Dam. The plan was devised by NMFS engineer John Mann, several private engineers including Woody Trehey and Ed Nute, and input from scores of local community members.

Out of these meetings the idea for a permanent organization to protect and restore the local salmon population germinated, and SPAWN was born. Todd Steiner became executive director.

Roy's Pools was constructed by slightly lowering the top of the dam and driving a series of metal sheet pilings downstream of the dam to create several deep pools, allowing adult migration over a large elevation in a short distance. Large boulder weir structures—which would normally be a more common and preferred alternative to sheet metal—were not possible due to the large-elevation to short-distance between the dam and the roadway less than 50 feet downstream. In addition, there were limited width constraints of the creek and the golf fairway.

Once complete, Roy's Pools looked more like an art installation than a natural streambed, but the sheet-pile pools



The broken apron of Roy's Dam in 1996. PHOTO BY ELENA BELSKY

allowed acrobatic adult coho salmon and steelhead to make the 2- to 3-foot leaps. Unfortunately, due to site constraints, the jump heights proved too big for the juvenile salmonids that were washed downstream as they tried to return to their favored upstream habitat. Even worse, the pools never completely sealed as hoped. This left juveniles and smolts trapped during low spring and summer flow conditions, resulting in the need for annual fish rescue operations by SPAWN and the California Department of Fish and Wildlife.

It would take another two decades to amass the \$2 million needed to engineer, permit, and construct better habitat by ultimately removing the dam and re-creating a natural channel in its place. This restoration project, known as Roy's Riffles, finally allows salmon and steelhead to swim both upstream and downstream unobstructed by the dam and sheet pile structures.

Completing Roy's Riffles has been a rough and contentious process. The future of the 157-acre property—recently transitioned from golf course to public open space—has resulted in at least two lawsuits, a county-wide ballot measure, and a new California state law to clarify the need for when environmental review should occur when a government agency contemplates

land purchases. Thankfully, the results of these situations landed on the side of better environmental protection.

The first week of the Roy's Riffles project in August 2020 involved mobilizing giant earth-moving equipment and stockpiling tons of rocks ranging from marble-size gravel to six-ton boulders. Next, the earthmovers began clearing a path and creating a temporary roadway down to the creek. Finally, we were ready to re-route the creek flow around the construction site and to rescue fish in the way of the project. SPAWN could begin taking out the historical dam that

symbolized the poor land-use planning of the past century.

In normal times this would have been a celebration with much fanfare to mark the historic event of removing a dam recognized in the *Central California Coast Coho Salmon Recovery Plan* as the single most important barrier to Central California coho salmon migration. Instead, due to the pandemic, it was a more laid-back affair with a handful of masked friends.

SPAWN's Watershed Conservation Director Preston Brown (who had shepherded the current project through planning, funding, and permitting and would serve as the day-to-day project manager), SPAWN's Watershed Biologist Ayano Hayes, and Steiner climbed down into the muddy creek bottom with sledgehammers. They symbolically chipped off the first few pieces of the dam, just as Secretary of the Interior Bruce Babbitt had done nearly 20 years ago when the site was modified with the sheet piles to improve upstream fish migration without actually removing the bulk of the dam.

Bulldozers would roll for the next three months, removing 7,000 tons of fine silt and 85 tons of concrete, installing



The Roy's Pools structure was a temporary fix installed in 1999 to help fish get over Roy's Dam. While it allowed adult fish passage, it was a trap for juvenile salmonids who became stranded in the spring when water levels fell.

850 tons of rocks, and re-creating a meandering creek bed that would need to survive the rushing waters of a 100-year storm at 2,000 cubic feet per second (cfs) and also perform at low summertime drought flows of less than one cfs. Weekly meetings and regular inspections with the contractors, consultants, CDFW, California Water Board, Marin Department of Public Works, and others were daily routines for SPAWN staff.

Volunteers, students, and community members (masked and socially distanced) have helped plant native trees, grasses, shrubs, and other native plants grown in SPAWN's nursery to revegetate and stabilize the site. In total, 850 trees and stakes; 2,250 shrubs, perennials, and vines; and 3,400 grasses, sedges, and rushes will be planted. In addition, 205 pounds of native grass seed will be broadcast.

Additional work this summer (2021) includes widening the creek and riparian creekside habitat upstream and creating a low-flow side channel to protect juvenile salmonids during large storm events, which will ultimately help create a larger riparian forest. The new

Water flows through the newly restored Roy's Riffles site, bringing in coarse gravel and allowing vegetation to establish itself on the banks.



habitat will sequester carbon dioxide to mitigate climate change and will improve habitat for land and bird species, as well as support hundreds of species of fish, mammals, reptiles, and amphibians dependent on healthy waterways.

Future work is being contemplated by the new landowners, Trust for Public Land. SPAWN is lobbying for further daylighting the valley floor's past braided network of ephemeral channels—currently culverted and/or buried under the former fairways—and further laying back creek banks to

allow natural flooding during storms into the now buried floodplains, as once occurred before humans altered the landscape for ranches and a golf course. This will give endangered coho salmon a fighting chance at survival and recovery by creating more refuge habitat for juvenile salmon to shelter during high-flow storm events. It will also help store fine sediments and filter toxic road runoff, improving creek habitat miles downstream that runs through nearby Samuel P. Taylor State Park and National Parklands.

SPAWN would like to thank all the organizations and individuals who are working on, funding, and supporting this long-awaited project, including the California Department of Fish and Wildlife Fisheries Restoration Grant Program, NOAA National Marine Fisheries Service Restoration Center, and the members and volunteers of Turtle Island Restoration Network, SPAWN's parent organization. Partner organizations and contractors include Environmental Science Associates, Hanford ARC, Federated Indians of Graton Rancheria, and Humboldt State University.

For more information: <https://seaturtles.org/our-work/our-programs/salmon/>



Ayano Hayes, SPAWN's Watershed Biologist, chips off the first few pieces of the dam.

Tipping the Scale:

With Large Dams Coming Down, Small Ones are Going Up to Restore Balance in Impacted Watersheds

By Ash Brookens,
Sanctuary Forest

When I moved to the Mattole watershed nearly a decade ago, my new neighbor gave me my first lesson in wood loading. Which is to say, he gently schooled me for foraging firewood from the river bar. He explained how woody debris remaining in the river is critical for creating fish habitat, and offered a truncated history of channel-clearing by well-intentioned (and it must be said well-informed at the time) restorationists dedicated to reviving salmon populations in the Mattole and Eel watersheds by ensuring their successful

upstream passage. This, unfortunately, delivered some unintended consequences. As large quantities of wood were removed from streams, channel incision increased, flood plains disconnected, and habitat diversity—particularly salmonid rearing habitat—was lost.

I respected my neighbor's knowledge and direction, even if I didn't fully comprehend the complexity of our local ecology or restoration work (or my place in either), and I foraged wood with a saw from the forest instead. But even there, a trepidation shadowed my movement.

An important lesson had been revealed: Whose habitat am I disturbing? A conflict over when or how to alter or intervene, and when to “let Nature do her thing” played out on a scale the size of my own footprint. I've since realized that I'm not alone in that fraught space between doing nothing and do-everything. Certainly structures as large as the Klamath dams, and even smaller man-made impediments (improperly sized culverts, for example) are restricting fish passage to their historic reaches. So why wouldn't fallen redwoods be impediments, too?



Sugar Creek (Callahan, CA), Youth Environmental Summer Studies (YESS) crew and Scott River Watershed Council staff work on annual maintenance of BDAs. PHOTO COURTESY CHARNNA GILMORE, JULY 17, 2018



Wood obstruction in Anderson Creek (Upper Mattole); wood stores sediment upstream, elevating the stream bed and increasing water storage in the streambed and adjacent banks and/or floodplains, as well as creating a lower gradient reach and formation of a downstream scour pool, which provides habitat for salmon. PHOTO COURTESY TASHA MCKEE

There is a consensus rising that not all obstructions are detrimental to anadromous fish. As the massive dams on the Klamath are back on track to be removed (see page 9), hundreds of smaller in-stream structures are being installed throughout Northern California's watersheds, restoring the complexity of stream channels, improving and diversifying habitat for fish and other wildlife. I reached out to Charnna Gilmore, Executive Director of Scott River Watershed Council, to better understand the nuances of these planned restorative obstructions. She explains, "coho salmon evolved in slow water, floodplain habitats (e.g. beaver ponds, inset floodplains). Creation of slow-water habitats is essentially missing within the Scott due to past anthropogenic impacts, so the BDAs (beaver dam analogues) basically are mimicking the effects beaver had on the system prior to the watershed's significant changes."

Whether or not beaver historically populated every reach where salmon run (and there is some debate about this), Charnna points out that, "Using wood within the stream system does several

things. It slows the water, increasing its residence time, sinking it into the adjacent groundwater aquifer, allowing water to be released later in the season. It also forces water to access floodplains in higher flows (if not too incised), which is important for juvenile coho salmon to overwinter in systems like the Scott. Additionally,

complexity within the stream channel helps create micro habitats that support different life stages such as pools and spawning gravel sorting."

Tasha McKee, Water Program Director at Sanctuary Forest, has been working for several years with Charnna and Sam Flanagan, a geologist with U.S. Bureau of Land Management's Arcata Field Office, on implementing a beaver dam analogue (BDA) pilot project in Lost River, a high-priority tributary to the Mattole. When Tasha was first exploring BDAs as a habitat and flow enhancement strategy, Chris Maser, a Corvallis research scientist and prolific author, gave her some simple, yet sage, advice: Build it to beaver-scale. We know how that scale works in nature.

Sam Flanagan concurs, "A project should replicate the natural function of wood in rivers. Wood behaves very differently depending on the size of the river. Scale is super important."

Fortunately for our rivers, storms will come, and maybe fire. Trees will fall. Why not let natural processes lead?



BDA in Lost River (Upper Mattole) showing inundation of adjacent floodplain and overflow channel. PHOTO COURTESY TASHA MCKEE



Sugar Creek (Callahan, CA) Beaver Dam Analogue, California's first BDAs installed in 2014.
PHOTO COURTESY CHARNNA GILMORE, MAY 26, 2020

In the case of restoring what Sam calls the “ping pong” effect of meandering streams, in which there is sufficient complexity and slow-moving water to shelter juvenile salmon, intervention is sometimes necessary. “I think the engineering approach has its place, the low-tech approach (felling trees somewhat randomly into the streambed) has its place, and ‘let it do its thing’ has its place. In a lot of areas we’ve lost so much historic habitat, and fish populations have plummeted, so we really needed to get in there and do something. In the upper Mattole, we’ve lost much of the natural process elements—we’ve lost the really large, really old trees that would fall into the streams. We might have to help that along.”

That urgency reverberates. “When working in systems like the Scott (a tributary to the Klamath) that have undergone such massive changes (e.g. removal of beaver, channelization, levee construction, invasive plants such as Himalaya blackberries, etc.), adaptive management has to become part of our design, planning, permitting, and

funding,” Charnna points out. “Basically, we need to recognize that a relationship is established when working in stream systems, and like any good relationship it requires time, attention, understanding, and adaptability. Building something and walking away is just not an option. We live in a managed watershed and therefore management is essential. We need to work with our systems and restoration activities in ways that harmoniously move towards natural processes.”

When I asked Charnna what blind spots she foresees in the restoration of a post-dam Klamath watershed, her response struck a clear tone. “Climate change. I don’t mean to sound like the dams remaining in place would be a better option because it would absolutely not be the case. Like everything, climate change is about ready to really start kicking our ass, and so the timing of the dam removal and potential benefits may get diluted by the rapidly changing and drying climate.”

The infeasibility of a hands-off approach has also become alarmingly clear to Tasha as she monitors Sanctuary Forest’s streamflow enhancement projects: “Last

year (2020) was extreme. It was the longest, driest, hottest summer we’ve had [since flow enhancement projects began]. Still, things looked good until August. Our projects are helping summer flows.” A recent *Basis of Design* report completed by Stillwater Sciences for the Lost River Flow Enhancement Project states, “The greatest benefit we observe in extreme drought years from these projects is an increase in pool volume and pools persisting later into the season when there is only a trickle of flow at the upstream end of the project.” (Joel Monschke, September 2020)

“But below 10gpm,” Tasha notes, “the pools start shrinking. They can’t persist without inflow. We need sufficient late-season rain, upslope ponds equipped to provide metered flow during late summer and fall, or upslope groundwater projects in addition to the instream structures.” With climate change exacerbating the effects of our past land-use practices while speeding up the clock, the salmon don’t have time to wait for a natural recalibration.

With so much riding on human intervention, I couldn’t help but wonder if we’re headed for a familiar point on a circular path. How can we avoid the same unintentional impacts of simply not knowing everything about how an ecosystem functions? “I think that we do need to acknowledge that [engineered obstructions] can be a problem for fish and are a problem in some places,” says Sam Flanagan, “we need to be very cognizant of that and monitor what we do, watch what we do, and learn from what we do to make sure we’re not leaving a trail of barriers. We need to follow up and learn from what we’ve done... staying connected to the project matters.”

Stay connected to what we do. Another important lesson, revealed.

🌲 For more information:
sanctuaryforest.org

Fight of the River People

The Generational Push that Brought Berkshire Hathaway to the Table and Put Dam Removal Back on Track

By Thadeus Greenson
North Coast Journal

This story was originally published in the North Coast Journal on March 4, 2021 with support from the Community Voices Coalition, a project funded by Humboldt Area Foundation and Wild Rivers Community Foundation to support local journalism in generating truthful, courageous, and equitable stories covering vulnerable and traditionally underrepresented communities affected by the coronavirus in Humboldt, Trinity, Del Norte, and Curry counties. Project stories are produced by the North Coast Journal newsroom with full editorial independence and control.

Trees Foundation is republishing this excellent journalism to join in recognizing and celebrating the incredible resilience and perseverance of Indigenous-led grassroots activism on behalf of the Klamath River in 2020, despite the COVID-19 pandemic. We thank our partner group Save California Salmon for their dedication and continued involvement in this campaign.

The following pages provide a glimpse of the resolve, creativity, and teamwork deployed by this grassroots movement in response to a ruling by the Federal Energy Regulatory Commission (FERC) in July 2020 that placed the 2016 Klamath dam removal agreement in jeopardy. Their multifaceted efforts paid off in November 2020 with the strongest agreement to date for dam removal to finally begin in 2023.

So how is this new agreement any better than the failed agreements in the past? One major breakthrough is that, unlike prior agreements that have

failed to name a clear source of funding for cost overruns (and the longer dam removal is delayed, the more prices rise), this new agreement clearly splits the cost of overruns three ways between PacifiCorp, California, and Oregon. Craig Tucker summed it up nicely at the (virtual) Klamath Dam Removal Community Celebration hosted by Save California Salmon on Nov. 23, 2020: “We’ve gone from it being in Warren Buffet’s economic interest to delay [dam removal], to it being in Warren Buffet’s economic interest to get it done. Now if there are cost overruns, [or] if there are delays and prices go up, Warren Buffet has to write at least a third of the check to get it paid for. That’s just a giant change in the dynamic.”

It was a Friday in late August when four jet boats made their way up the Klamath River under a cloudless blue sky. The boats carried three tribal chairs. From the Karuk Tribe, there was Russell “Buster” Attebery, who’d found pride as a boy catching salmon from the river and bringing them home to his family, and later came to believe some tribal youth’s troubles—from suicides to substance use—could be traced back to their never having had that opportunity, growing up alongside a river now choked with algae and diminishing fish populations. There was Joseph James from the Yurok Tribe, who’d come to see the river’s declining health as a “slow strangulation” of his



A floating blockade stretches across the Klamath River waiting to stop boats carrying Yurok and Karuk tribal officials and Berkshire Hathaway executives upriver on Aug. 28, 2020.

PHOTO BY MAHLIJA FLORENDO



Berkshire Hathaway Energy CEO William Fehrman smells a bottle of toxic algae pulled from above one of the four hydroelectric dams on the Klamath River while speaking to protesters at a blockade on Aug. 28, 2020. PHOTO BY SAMMY GENSAW

people—“river people”—who have lived along its banks and relied on its salmon as the bedrock of their diet since time immemorial. And there was Don Gentry, recently elected to a third term as the upriver Klamath Tribes’ chair, whose people hadn’t seen salmon and steelhead swimming in their ancestral territory in a generation.

There were others on the boats, too. People like Craig Tucker, an environmentalist who promised himself in school he’d never waste his career fighting for quixotic causes, yet had now come to spend two decades working on Klamath dam removal. There was Frankie Joe Myers, who’d come of age amid the fight to undam the river and was now in the thick of it as the Yurok Tribe’s vice chair.

But the trip up the Klamath that day in August wasn’t really about any of the people who’d made undamming the river a central part of their life’s work, it was

about making a case to two men who’d never set eyes on the river before but held its future in their hands.

Weeks earlier, after a Federal Energy Regulatory Commission ruling had derailed a hard-fought 2016 agreement to remove the four hydroelectric dams choking the lower Klamath River, Myers and James had issued a plea. While PacifiCorp, the electric company that owns and operates the dams, was publicly musing about walking away from the agreements, Myers and James decided to appeal directly to Berkshire Hathaway, the holding company run by Warren Buffett, perhaps the world’s most successful and famous investor, which had acquired PacifiCorp for more than \$5 billion back in 2005.

In a meticulously worded email to Berkshire Hathaway Energy Vice Chair Greg Abel, who’s believed by many to be the 89-year-old Buffett’s successor,

Myers said he and James invited one of the world’s most powerful men to simply come see the river, sit and talk. Abel accepted and soon he and Berkshire Hathaway Energy CEO William Fehrman were sitting on a jet boat headed upriver.

It’s hard to overstate the stakes that day on the river. Activists and officials alike had long believed the best chance to fundamentally change the dam-removal conversation was to get Berkshire engaged, a step the company seemed entirely unwilling to take, a core tenet of its company ethos being not to interfere in the operations of its subsidiaries. Yet here sat Abel and Fehrman, the Klamath wind in their hair.

Tribal officials had worked hard to keep word of the visit close, concerned an ill-timed protest or demonstration could jeopardize this show of good faith. They’d mapped out the day carefully to showcase the Klamath’s beauty and potential, planning to give the executives a meandering tour of family fishing holes and camps on the river until eventually landing where Blue Creek enters the Klamath—a scenic spot filled with biological diversity and spiritual significance for the Yurok Tribe—where they’d lunch on traditional salmon cooked on sticks over an open flame. But as the boats rounded a sweeping bend in the river, it became instantly clear some had other plans. A floating blockade—a few boats and dugout canoes, with large nets stretched across the river—came into view, dotted with signs calling for the river’s undamming, some punctuated by red fists.

Myers, who said he’d personally assured Berkshire representatives they would be safe coming to Klamath, said his heart quickened a bit when he saw the blockade, unsure what was to follow.

“It was risky,” Myers said. “There were a few moments when I was like, ‘I have a couple

of the richest men in the country on a jet boat and I don't know what [the protesters are] going to do.' ... Everyone in the boats felt very vulnerable."

The blockade, which comprised a couple dozen of the Klamath River's most ardent activists, ordered the jet boats to stop. Then, the activists took turns addressing the representatives of one of the world's most powerful companies.

One of them presented the men with a plastic jug of water pulled from behind one of the dams, where the water is choked with bright green algae and pressed them to open the jug and smell the toxic brew. Another noted that an entire generation of water protectors had been raised in this fight under the oppressive weight of a sick river. Jon Luke Gensaw pulled off his COVID-19 facial covering, telling the men to take a good look at his face.

"If this doesn't end, you're going to see more of us," he said. "I want you to remember my face because you'll see me again."

Chook-Chook Hillman, who joined the effort to remove the dams when he was a teenager and whose dad would take him to the meetings with upriver irrigators and ranchers that led to the 2010 dam removal agreement that died in Congress, started by asking his son to present the executives with a gift.

"Thank you—very kind," one of them can be heard to stammer in a recording of the exchange.

The gift, Hillman later told the men, was a small white flag affixed to a wooden stick. Hillman said he and his fellow water protectors would be waiting when the executives and tribal officials returned downriver. If they waved the flag, it would be a sign that an agreement had been restored. But if not, Hillman warned, Berkshire Hathaway should brace for protests like it had never seen.

"If you guys ain't waiving that flag when you're coming down the river—it's on," he said.

Annelia Hillman told the executives that the health of the river is their responsibility—their problem—and one that's going to effect their children and grandchildren, their futures.

"It's affecting you, too," she said. "Don't think this is an Indian problem. It's your fucking problem, too."

After a tense 15 or so minutes, the blockade moved to the side and the boats headed on. When they came back down again some hours later, Hillman said no one aboard would make eye contact with him or the other water protectors.

The flag was nowhere to be seen.

About six weeks before that day on the river, the Federal Energy Regulatory Commission had issued a ruling that put

the groundbreaking dam removal deal—itsself a resuscitation of a more ambitious deal reached in 2010 that was dependent on Congressional approval that withered on the vine—in serious jeopardy.

Under the terms of the 2016 deal, the Klamath River Renewal Corporation had asked FERC to transfer the licenses of the four dams to a newly created nonprofit, which would then oversee and assume liability for the removal process, allowing PacifiCorp to step away cleanly. The dams would then be removed using \$450 million already raised for the purpose—\$200 million from PacifiCorp ratepayers and \$250 million in water bonds authorized by California's Proposition 1.

But FERC ruled the company couldn't simply walk away from the dams it built and the situation it had created, and would need to remain attached to the dams as their co-licensee until their removal.



A jar full of *Microcystis cyanobacteria* in the Copco Reservoir on the Klamath River. The algae produces a carcinogenic liver toxin called microcystin, which is harmful to humans and animals, including salmon. PHOTO BY Stormy Staats



Algae builds up behind Copco 1 dam on the Klamath River. PHOTO FROM THE KARUK TRIBE

Regina Chichizola, the policy director at Save California Salmon who has been involved in Klamath dam removal and other watershed restoration efforts for more than a decade, said she had mixed emotions watching the FERC hearing. On the one hand, she said, she personally understood the ruling and why a private company shouldn't be allowed to permanently alter a river for profit and then simply walk away. She also knew it would mean trouble.

"I know how PacifiCorp is and I knew they would demand more because they always demand more," Chichizola said.

Within days of the ruling, PacifiCorp began publicly hedging, saying it had undercut some of the main "customer protections" that had brought the company to the table for the deal. This was a foundational shift, it held, and the deal would need to be re-negotiated.

But any sizeable delay would cut sharply against the chances of reaching a new accord and seeing the dams removed, as the pot of money for the project was unlikely to grow and cost projections would escalate with every month or year that passed.

In the days that followed FERC's ruling, pockets of dam removal stakeholders met quietly, plotting paths forward. Chook-Chook Hillman said he and a handful of longtime river advocates got together on the banks of the Klamath with a whiteboard and started brainstorming. Chichizola held conference calls with environmental groups and other stakeholders. Tucker and tribal leaders pondered their next move. And North Coast Rep. Jared Huffman readied to throw all his weight as a member of Congress at the problem.

They all settled on a single target for what would be a months-long, multi-pronged campaign the likes of which the Klamath had never seen: Berkshire Hathaway and Warren Buffett.

Since Berkshire purchased PacifiCorp back in 2005, many dam removal advocates had felt Buffett was the key to getting the company on board. He wasn't simply one of the world's richest man, but the Oracle of Omaha, an almost mythical business figure famed for down-home sensibilities and philanthropy.

Advocates had long sought to turn his attention to the Klamath. For consecutive

years, Tucker had bought up as many tickets as possible to Buffett's annual shareholders' meetings—known by some as the "Woodstock of capitalism"—schmoozy affairs more focused on symposiums and cocktail parties than balance sheets. They'd successfully bombarded question and answer periods with Buffett with inquiries on the Klamath, staged die-ins in front of black tie events and even had Native women flood a cocktail party at a diamond store wearing traditional regalia to talk to revelers about the Klamath and what it means to them.

"I have no idea how somebody like Warren Buffett thinks," Tucker said of the rationale for the approach. "It's hard for me to put myself in the shoes [of someone] who has more money than God. But I do know he's 90 and I do know he has Native grandchildren. These shareholder meetings of Berkshire Hathaway are big parties. There's not that much business but a lot of cocktail parties. And I don't think he wants them to be dominated by talk of the plight of Native people."

But publicly anyway, none of these efforts seemed to get through to the man who'd built an empire at least on the image that he purchased good companies and let them operate as they saw fit.

This time had to be different. And the effort also had to break through amid the COVID-19 pandemic, which made mass demonstrations—and even traditional organizing strategies—dangerous and impractical.

On the banks of the river, Hillman and other Klamath Justice Coalition members decided they would use personal connections to write heartfelt letters appealing to people close to Buffett.

Chichizola and others, meanwhile, plotted a massive social media push. They found Gates scholars willing to post messages in support of dam removal,

“We had protests popping up all over the place that we didn’t really organize and that’s what you want—that’s a grassroots movement right there.” Craig Tucker

hoping to catch the ear of Bill Gates, a longtime friend of Buffett’s. And they’d work toward a large scale day of action that would feature an online event as well as on-the-ground protests (see page 16).

Meanwhile, Myers and James got to work on their letter to Abel, the man many expect to succeed Buffett at the helm of Berkshire Hathaway and its quarter of a trillion dollars in annual revenue, imploring him to come see the Klamath River and its people for himself.

Ten days prior to the blockade on the river, Huffman convened a special virtual hearing of his Water, Oceans and Wildlife Subcommittee on dam removal and Klamath River conditions. The hearing featured tribal leaders who spoke of the river’s importance to their people; environmental scientists who detailed its dire condition and the dams’ impacts on water quality and fish populations; and North Coast State Sen. Mike McGuire and State Water Resources Control Board Chair Joaquin Esquivel, both of whom indicated the state had taken a light hand with permitting PacifiCorp’s Klamath dams—a practice that would end should the company walk away from the deals.

Berkshire Hathaway sent to the forum PacifiCorp Vice President Scott Bolton, whom Huffman, an environmental lawyer prior to entering politics, seemed to relish questioning.

“Mr. Bolton, I think it’s pretty clear that you and PacifiCorp are at a crossroads,” he said. “You have a choice. The river is dying. The fishery is dying. Your dam is causing a toxic concentration of algae that’s the worst in the world. ... But you’re not powerless to protect your ratepayers.

We can work shoulder to shoulder, get this done on time and on budget, or you can blow this thing up.”

The comment struck back to something Huffman said in his opening statement, laying the Klamath River’s future squarely at Buffett’s feet.

“Warren Buffett has the chance to be a hero in Indian country,” he said. “Or he has the potential to be remembered as someone who perpetuated a grave injustice just to make a little more money.”

The ensuing weeks would see a bevy of action. Huffman introduced legislation that would have essentially given downriver tribes a voice in FERC’s relicensing processes, ensuring they would be unpleasant affairs for PacifiCorp moving forward.

Meanwhile, as Chichizola and others pushed toward the day of action in October, protests began to pop up—in San Diego, where PacifiCorp was pursuing a power deal, at the company’s headquarters in Oregon and elsewhere—and Klamath hashtags began to trend.

“One of the things I like to stress when talking about the story is how every single part was in play,” said Chichizola, adding that scientists argued the scientific case for dam removal, politicians played politics, tribal leaders negotiated and coordinated, and a community of activists—many who’d grown up in this effort—organized and rallied.

When the day of action arrived, it was massive, with COVID-19 adapted protests in 11 cities—and in front of Buffett’s home—7,000 people attending a live online forum and 10,000 signing petitions

calling for dam removal. Multiple national Native rights groups joined the social media push and #undamtheklamath began trending on multiple social media platforms. Meanwhile, a coalition took out a full-page advertisement in *USA Today* calling for dam removal and casting it as a social justice issue.

Tucker said he’s simply never seen anything like it.

“We had protests popping up all over the place that we didn’t really organize and that’s what you want—that’s a grassroots movement right there,” he said.

It’s hard to pinpoint the moment it happened—whether it was on the river that day, Huffman’s grilling of Bolton, the scores of heartfelt testimonials on the day of action—but something moved and Berkshire came to the table. (Berkshire Hathaway, through a spokesperson, “declined the opportunity” to be interviewed for this story.)

But when the company did decide to take PacifiCorp’s position at the negotiating table, stakeholders say everything changed. Myers, the Yurok Tribe’s vice chair, said Fehrman, Berkshire Hathaway Energy’s CEO, stepped in as the company’s lead negotiator and took a granular approach to understanding the agreement, the dam removal process and potential liabilities involved.

Over the course of about a week, a core negotiating team formed, with Fehrman representing Berkshire, Myers representing the Yurok Tribe and Tucker there for the Karuk Tribe, as well as Oregon Department of Environmental Quality Director Richard Whitman

“People say we’ve been here before but I’m saying, ‘Not here.’ We haven’t been here, where the states and the company and Fish and Wildlife are talking about restorative justice. Those statements are hard to walk back.” Chook-Chook Hillman, who once fasted for 10 days in preparation for a meeting with Warren Buffett

and California Department of Fish and Wildlife Director Charlton Bonham. Because everyone’s schedules were packed, the only time they could find to meet were early mornings and weekends, but Myers said no one flinched and the group began meeting three or four times a week, with participants often joining the video conferences from their homes.

“It did bring a certain amount of closeness to these meetings,” Myers said. “The first hour of everyone’s day, people are pretty straightforward with who they are. You get to see people in their homes getting their first cups of coffee. There’s some real humility there.”

Tucker said Berkshire wanted to be walked through every aspect of the plan in fine detail, how construction would work and a detailed breakdown of the budget, the insurance plan and liability concerns.

“We’re talking about removing four large dams—this is on the scale of demolishing skyscrapers or decommissioning giant power plants,” Tucker said. “But they committed to being open-minded and said, ‘OK, you keep telling us this is buttoned up, so let’s go through it again.’ Once we went through it, they were like, ‘Wow, the Klamath River Renewal Corporation has it together.’ ... We kind of watched the realization of the company that this wasn’t just some pipe dream. This was well-thought-out and well-managed.”

It was another shift. “And,” Tucker continued, “once they decided they were going to go for it, everything changed. Every interaction with the company was

all of a sudden, they are clearly 100 percent committed to dam removal.”

Ultimately, the parties agreed PacifiCorp, California and Oregon would pledge another \$45 million in contingency funds to account for cost overruns or liabilities and that Berkshire would agree to a three-way split of any liabilities or overruns beyond that moving forward. But a significant hurdle still remained: Berkshire wanted another entity to take over PacifiCorp’s status as co-licensee on the dams through the removal process. Oregon agreed to sign into the role. But the deal needed California to do so, too.

Myers said Bonham had done a “phenomenal job” throughout the negotiations but indicated this kind of decision was beyond him. The tribes would need to talk directly with Gov. Gavin Newsom.

When tribal representatives met with Newsom in Sacramento, Myers said he knew the stakes couldn’t be higher. His approach, he said, was not to vouch for the science or the economics of the project—others had done that for years. Instead, he said, the goal of the day was to really show Newsom what this agreement would mean to tribal people.

“It was our role to really say, ‘This is worth it,’ and to speak to the 150-plus years of pretty horrific negotiations with California,” Myers said. “When you look at the gold rush in California, when you look at the timber barons in California, the commercial fleets of California, the mission system in California, there is an

atrocious built on an atrocity built on the graves of our people. This is the world’s fifth largest economy because it’s built on the resources of the Indigenous people of California. ... This is our land and we’re still here.”

After the group finished making its case to the governor and the meeting was wrapping up, Myers said he offered a last push: “California has a huge debt to Indian people and dam removal does not repay that debt by a long shot. But it’s a good down payment.”

Newsom, Myers said, responded: “California is all in and we’re never going to stop until the dams come out.”

In late October and early November, word crept into activist circles that negotiations with Berkshire were going well, that there was progress. But it was hard to believe.

“I was still tepid,” said Hillman. “I’d heard there was another agreement in principle. Well, I remembered the other agreements in principle. We were hearing that there’s an agreement, that the states are involved. That sounds good. But other agreements have sounded good as well.”

It was mid-November when word began circulating that a press conference was in the works when Newsom, Oregon Gov. Kate Brown, Berkshire Hathaway and the Yurok and Karuk tribes would announce a new deal had been reached.

But most interviewed for this story recall a singular moment when this agreement felt not just real but substantively different

than its predecessors—a draft press release began to circulate and in it was a quote from Buffett himself. And the quote didn't talk about ratepayers. It talked about the good of Native people.

"I recognize the importance of Klamath dam removal and river restoration for tribal people in the Klamath Basin," Buffett said. "We appreciate and respect our tribal partners for their collaboration in forging an agreement that delivers an exceptional outcome for the river, as well as future generations. Working together from this historic moment, we can complete the project and remove these dams."

For Hillman, who once fasted for 10 days in preparation for a meeting with Buffett only to be turned away, the moment was profound.

"It hit me a lot harder than I thought it was going to, for his words not to be about ratepayers but about restorative justice," he said. "That day did feel a lot different than it ever has. People say we've been here before but I'm saying, 'Not here.' We haven't been here, where the states and the company and Fish and Wildlife are talking about restorative justice. Those statements are hard to walk back. It sure does feel different."

Last month, the KRRC filed the new agreement with FERC for approval and, this time, the consensus is it will be approved without issue, having checked all the boxes the regulatory agency laid out with its prior ruling, laying the path for dam removal to begin in 2023. Hillman said he's heard Berkshire Hathaway representatives have been meeting with FERC staff to make sure everything is in order, noting that he and other advocates were repeatedly denied such meetings.

"That makes me happy on the one hand but just angry on the other," he said. "We've always known that if the big wigs decide they want to do something as a



Berkshire Hathaway executives talk to Klamath Justice Coalition activists who stopped them on a trip to the river. PHOTO BY MAHLIJA FLORENDO

corporation in America, they do it. They could have done this the whole time."

But they didn't. Repeatedly. So what, after years of pushing and angling, finally brought Buffett to the Klamath table? Everyone interviewed for this story said it's impossible to pinpoint any one thing, as changing economics and political sentiments coupled with stalwart generational activism all created a perfect storm. But if there was a tipping point, Myers and Tucker said it was likely that moment on the Klamath when a group of Native people seeking justice for their river refused to let Berkshire Hathaway executives pass.

"At the end of the day," Tucker recalled, "I was like, 'I'm not sure that went the way we wanted it to.' The tribal activists became a little confrontational and I thought in the moment, 'Oh, no.' But what I thought was things going off the rails and all our best laid plans starting to go awry I think was serendipitous. It

created opportunities for interactions that wouldn't have happened otherwise.

"No one sells the Klamath better than the people who live there," Tucker continued. "People's entire adult lives have been spent fighting these dams. My child is 16 years old and that's all he's ever known that I do. And I think there's a lot of Native kids who have grown up, and that's all they know their parents do. ... We are committed. And it's generational. If something happens to me, something happens to Frankie (Myers), something happens to whoever, there's a generation of young people who will step in to fill our shoes. I think Berkshire finally understood that."

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A Day of Action to Undam the Klamath

Fishermen and Environmental Activists Join Tribes in Asking Warren Buffett to Take Down Klamath River Dams

By Regina Chichizola,
Save California Salmon

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On October 23, tens of thousands of people joined members of the Karuk, Yurok, Klamath, and Hoopa Valley Tribes in a virtual day of action and in-person, COVID-safe rallies demanding that Warren Buffet and shareholders of his companies Pacific Power and Berkshire Hathaway keep their promise to remove Pacific Power's dams on the Klamath River.

Save California Salmon and the Klamath Justice Coalition called for the Klamath River Day of Action using the hashtag #UnDamtheKlamath as response to



"Undam the Klamath Now!" banner held across the Orleans Bridge in Humboldt County during the Day of Action. PHOTO BY KLAMATH JUSTICE COALITION

a statement Pacific Power made this summer that they might pull out of the agreement with several tribes from the

Klamath River and the states of California and Oregon to take down the Klamath River dams.

"It's clear to us that PacifiCorp is intentionally stalling the dam removal process in order to hold on to these monuments of colonialism and tools of genocide," said Yurok tribal member Annelia Hillman from the Klamath Justice Coalition.

On August 28, Hillman and other members of the Yurok, Hoopa Valley, and Karuk tribes also blockaded Pacific Power and Berkshire executives as they took a boat up the Klamath River with tribal representatives. The goal of the action was to show the executives that while tribal members support the tribes' efforts for resolution, they were also prepared to resume actions against the companies after an almost decade-long truce.

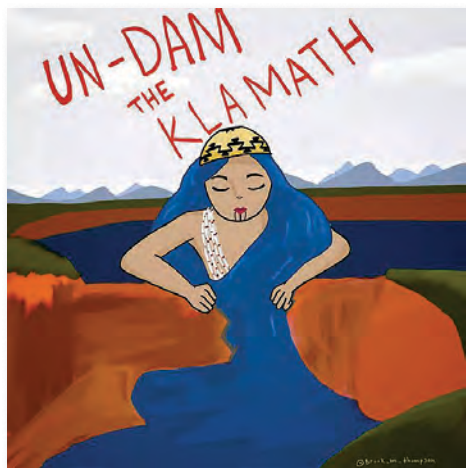


Demonstrators outside a Berkshire Hathaway office in Sparks, Nevada
PHOTO BY CALIFORNIA KITCHEN

On August 31, a group of Indigenous-led activists demonstrated at Pacific Power's office in Portland. On October 23, a large group took to the streets for the Klamath River. Between these dates Pacific Power was accused of starting many of the wildfires that devastated Oregon and California, including one that burnt Karuk tribal members' homes on the Klamath River.

"Why Portland? Because Pacific Power's headquarters are located here," explained Yurok tribal member Brook Thompson. "As someone who saw the 2002 fish kill the day after brush dance, I cannot allow unnecessary harm to come to our river over a debate on liability. At the end of the day the people and animals of the river are the ones who will be affected most greatly, not these multi-million dollar corporations."

The offices in Portland were not the only target. Just days before, Thomas Joseph, a Hoopa Valley tribal member, drove to Omaha, Nebraska, to join up with Omaha tribal members and rally at Warren Buffett's Berkshire Hathaway office and home on the day of action. "Tribal members are not going to allow corporate America to break agreements and contracts with our people in the same manner as the United States has with treaties," Joseph said. "Warren Buffet



ARTWORK BY BROOK THOMPSON, BROOKMTHOMPSON.COM



Demonstrator holds sign reading "Save our Rivers, Save our Future", while on route to Omaha, Nebraska to protest at Warren Buffet's home. PHOTO BY CALIFORNIA KITCHEN

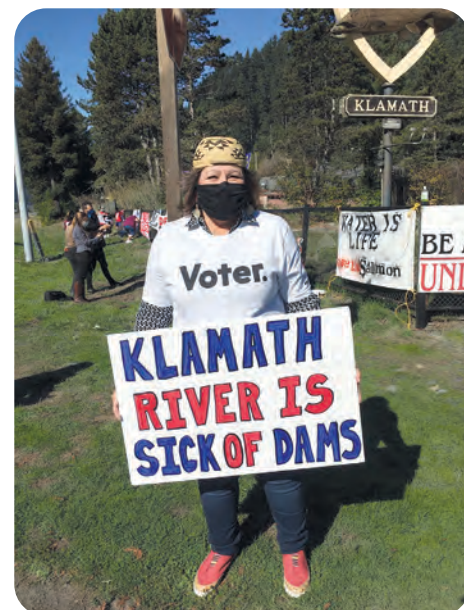
and Berkshire Hathaway have agreed to these dam removals and they must keep their word."

Joseph also held vigils with lawmakers, tribal members, and activists in Salt Lake City and at Buffett's subsidiary, Mid-American Energy, in Des Moines, Iowa. Other supporters hung banners off the Gates Foundation building in Seattle to draw attention to the fact that the Gates Foundation is one of the largest shareholders of Berkshire Hathaway, while Indigenous activists from San Diego protested a bid by Berkshire to take over the local grid.

"The City of San Diego should understand that Berkshire Hathaway is not a reliable partner," the activists said in a statement "In addition to constantly moving the ball in negotiations over Klamath dam removal, BHE's PacifiCorp was sued for starting one, or more, of Oregon and California's recent wildfires."

Tens of thousands also participated in online rallies and actions, including a

virtual rally hosted by Save California Salmon that included stories, songs, and calls to action from Klamath River tribal members who have been organizing for Klamath dam removal for almost twenty years.



Susan Masten, former tribal chairperson for the Yurok Tribe, demonstrates in Klamath California, during the Day of Action.

PHOTO BY SAVE CALIFORNIA SALMON



Tribal community members gather to demonstrate at the Berkshire Hathaway HomeServices office in Seattle during the Day of Action. PHOTO BY STOP CORPORATE SALMON

Virginia Hedrick, Yurok tribal member and executive director for the California Consortium for Urban Indian Health, called in to the virtual event from a rally at California's capitol and explained why her family had been fighting for the Klamath River for generations. "The river is who we are, without it we no longer exist. We will never stop fighting for the river," Hedrick said.

The fight for Klamath River dam removal started with the Klamath River fish kill of 2002. Over the eighteen years since the

fish kill, salmon numbers have plummeted and the entire river has turned green yearly due to record-setting toxic algal blooms that have been linked to the dams. These issues, along with the fact the dams would cost more to relicense than remove, led to an agreement to remove the dams in 2016.

The loss of the Klamath salmon has widespread health, economic, and cultural impacts. The Yurok Tribe has reported suicide rates that are twelve times the national average during bad salmon years, and studies have shown that the diabetes and heart disease rates in the Karuk Tribe, which are over three times the national average, are due to changes in diets from lack of salmon.

The plan to remove four lower Klamath River dams appeared to be on track to start by 2022—until July 16, 2020, when the Federal Energy Regulatory Commission (FERC) made the decision to partially transfer the Klamath dams to a dam removal entity on the condition that PacifiCorp remained a co-licensee. It was at this time that PacifiCorp threatened to pull out of the deal.

"PacifiCorp committed to taking down the Klamath River dams by 2020. They collected the money to remove the dams and received state permits for dam removal, but now claim the deal is not



Joelene McCovey (Yurok) demonstrates in Sacramento for dam removal on the Klamath River. PHOTO BY VIRGINIA HENDRICK

good enough," said Regina Chichizola from Save California Salmon. "Buffett is the fourth richest man in the world. Bill Gates, one of the top shareholders through his foundation, is the second richest man in the world. We will not allow them to act like upstanding members of their own communities while they destroy ours."

Save California Salmon's virtual action effort was part of their Mobilizing Water Justice Week of Action with Humboldt State University's Native American Studies Department, which took on issues such as environmental racism in California water decisions, the Delta Tunnels' impacts on Native people, climate and fire, safe drinking water, and saving salmon. All of these webinars, including the online rally, are available on Save California Salmon's YouTube channel.

For more information: visit californiasalmon.org or follow @CaliSalmon on Twitter, @californiarivers on Instagram, and @SaveCaliforniaSalmon on Facebook.



Demonstrators in San Diego, CA during October's Day of Action. PHOTO BY OLYMPIA TEMIQUIANI

Federal Agencies Need More Funding to Help Respond to Mega-Fires' Aftermath

By Pat Higgins,
Eel River Recovery Project

While less than 15% of the Eel River watershed is in federal ownership, public lands are of extraordinary importance with regard to production of clean water and native fishes and maintenance of biodiversity. In the wake of the record-setting one-million-acre August Fire and other recent mega-fires, there is an urgent need for federal agencies such as the U.S. Forest Service and U.S. Bureau of Land Management to be funded at a level where they can be active partners with communities in coping with catastrophic fires and restoring forest health.

The Eel River Recovery Project (ERRP) has taken special interest in the North Fork Eel River watershed because there is no other organized constituency tracking its health or working on its restoration. At 286 square miles, the North Fork is



Looking into the Yolla Bolla Wilderness and the footprint of the August Fire on Mendocino National Forest. PHOTO BY PHIL HOSKING, 1/16/21

the smallest of Eel River sub-basins, but it is extremely important as refugia for summer and winter steelhead trout.

The basin rises from an elevation of 600 feet at its convergence with the mainstem Eel River to 5,900 feet at its eastern crest, and it historically has had significant snowfall that augmented flows in spring and early summer. Federal lands cover 50% of the watershed, with 9% managed by BLM and 41% within Six Rivers National Forest (SRNF). Four percent falls within the Round Valley Indian Tribes Reservation. While 46% of the basin is in private land ownership, there are only an estimated 200 residents in the watershed, and land use is currently low impact. Most of the river is designated as Wild and Scenic, and the 8,158-acre North Fork Eel Wilderness Area forms part of the headwaters within the SRNF.

A major historical impact was early grazing, as 60,000 sheep were turned loose in the watershed after 1860. Cattle grazing continues today, but at very low levels. Timber harvest on both SRNF and BLM lands was very light, with no



School of native two-year-old steelhead trout in the North Fork, 6/6/16.



North Fork Eel River watershed during a field trip led by Thomas Keter, 6/21/18.

harvest before the 1964 flood, and only about 1,200 acres clear-cut during the 1970s. The key problem with watershed management, however, is the cessation of Native American controlled burns that had been used to maintain the landscape in its most productive condition prior to European settlement.

Douglas-firs invaded oak groves, meadows, and springs throughout the watershed. SRNF archaeologist Thomas Keter found that white oak decreased from 36% to 9% as Douglas-fir increased by 80%. Since Douglas-fir use more water in summer than oaks, this has led to decreased summer base flows of the North Fork, including loss of surface flow in dry years. Invasion of grasslands and spring areas by Douglas-fir compounded

the problem of decreased base flows. Keter continued to study the North Fork Eel River watershed in retirement, and he documented further deterioration of forest and grassland health at Indian sacred sites at Yellowjacket and Raglin Ridge, including incursion of brush species into meadows between 1980 and 2016. This further reduces surface and groundwater availability and creates additional fuel for fires.

The major source of fuel loading in the watershed, however, results from Douglas-fir over-topping oak groves, causing oak mortality due to shade and competition for moisture. John and Tracy Elgin are of Wailaki and Wintu Indian descent and have an intimate knowledge of the North Fork Eel River watershed, including

Native American traditional use of fire and ways that forest and grassland health can be restored. At an October 2017 forest health workshop in Covelo, they warned of a potential conflagration if removal of Douglas-fir and restoration of oaks was not implemented expeditiously. In early September 2020, the North Fork watershed went up like a bomb, fueling the blow-up of the August Fire that then raged into the upper Mad River watershed that supplies water for much of the population of Humboldt County.

This scenario could have been avoided, if SRNF had been given a sufficient budget to implement activities called for in the North Fork Eel River Watershed Analysis (WA), which was conducted in 1995 as required under the Northwest Forest Plan. The WA identified roads as a potential source of sediment and recommended that they be decommissioned or upgraded to stop erosion. It also called for the reintroduction of controlled burns and recognized the benefit of vegetation management in restoring flows. While SRNF improved its road systems and carried out limited forest-thinning projects, the North Fork Eel River watershed did not get the attention and the resources needed to restore forest and grassland health.

The August Fire burned about 70% of the North Fork Eel watershed, including setting back Douglas-fir and reducing areas of overgrown chaparral. Consequently, stream baseflows have increased. In addition, without a forest



Tracy Elgin (r) listens to John (c) as he talks to Ron Lincoln Sr. at a forest health workshop, 10/21/17. ALL PHOTOS THIS ARTICLE BY PAT HIGGINS, UNLESS NOTED

canopy, snow builds up on the ground instead of being ablated back into the atmosphere when snow is suspended from trees. This can increase infiltration and improve stream base flow.

Unfortunately, gains in flow will not be sustained if forest health is not restored, as the watershed becomes over-grown in the next 40–50 years. This in turn will elevate risk of recurring catastrophic fires that have the potential to alter soil fertility and profoundly decrease forest productivity.

SRNF is responding to the increased erosion risk related to fuel breaks in the North Fork watershed with emergency relief funds this year. These features are limited since the August Fire moved so rapidly through the watershed that CalFire crews could not establish multiple fuel breaks. Ironically, restoration of North Fork Eel River forest and grassland health will receive little attention, since fuel levels are so low and there is little short-term risk of fire recurrence. Also, SRNF has competition for resources in other watersheds like the upper Mad River, and multiple watersheds in the Lower Trinity and Orleans Ranger Districts impacted by the Red Salmon Fire.

To help fill this management void, ERRP began to lay out a plan in late 2020 to bring technical assistance and planning resources funded by grants to assist in crafting forest health and grassland health in the North Fork Eel watershed. The plan envisions contracting with BBW Associates, one of the foremost forest health consulting firms in the region, and also native grass restoration specialists. These contractors would work closely with SRNF staff and the Elgin brothers in order to create a long-term forest and grassland health restoration plan that is science-based and integrates traditional ecological knowledge. Benefits would include reduced catastrophic fire risk, improved ecosystem resilience, increased biodiversity, and restoration of



The North Fork Eel River at the None of the Above Ranch, 6/6/16.

watershed hydrology. Long-term plans include empowerment of the Round Valley Indian Tribes (RVIT) to become active co-managers in the North Fork Eel River watershed, supplying a work force to steward the land going forward for seven generations. ERRP is currently engaged in education programs to recruit Native American youth to become forest health scientists and practitioners, so that they can provide the RVIT with co-management capacity.

ERRP has worked extensively with SRNF staff, including at the Mad River Ranger District, which supervises the North Fork Eel River watershed. We approached Ranger Kristen Lark about forging a partnership and bringing in large-scale grant funds for forest and grassland restoration planning. Sources of funds include CalFire and Wildlife Conservation Board Climate Change Initiative (CCI) grants and the National Fish and Wildlife Foundation. In early January 2021, we requested that SRNF consider entering into a Participating Agreement with ERRP to create a North Fork Eel basin forest and grassland health restoration plan. If it was approved in the next few months, CCI grant

applications could be filed in 2021, and assessment and planning could start in 2022. Unfortunately, SRNF declined the partnership request because their staff resources are so limited that they couldn't even administer grants if we won them.

The staff at the Supervisor's Office in Eureka and at the Mad River Ranger District level is equivalent to a skeleton crew and can't keep up with the demand and need following up on the 2020 fire season. The framework is in place, SRNF policies and plans are consistent with ERRP objectives, but they need more staff. There is a similar desperate need at the Mendocino National Forest, where the extent of the August Fire was even greater. Arcata BLM also needs full funding to carry out its mission of supporting restoration and recreation.

Citizens of the North Coast need to organize and urge Congressman Jared Huffman to lead a campaign to restore full funding for the USFS and BLM. What is at stake is not only our forests, but also our water supply and biodiversity reserves.

🌲 For More Information:
www.eelriverrecovery.org

Mattole Restoration Community Continues Habitat Support Efforts in the Vital Mattole Estuary

By Richard Sykes, Mattole Salmon Group; Hugh McGee, Mattole Restoration Council; and Zane Ruddy, U.S. Bureau of Land Management

The Mattole Salmon Group (MSG) and the Mattole Restoration Council (MRC) are completing another round of habitat support projects in the vitally important Mattole River Estuary. In summer 2020 these non-profit organizations began work on a second phase of efforts to re-connect historic sloughs to the Estuary and continued work to increase riparian habitat on floodplains through installation of willow baffles and wood structures. This project, to be completed in summer 2021, builds upon efforts initiated by these groups in the early 1990s. These efforts are guided by three planning documents—MRC's *Dynamics of Recovery* (1995), MRC's *Lower Mattole River Riparian Restoration Plan* (2014), and the U.S. Bureau of Land Management's (BLM) *Lower Mattole River Restoration Projects Environmental*

Assessments (2013, 2018), which provide direction and environmental review over a 10-year planning period.

The Mattole River Estuary is located about 4 miles west of the town of Petrolia in Southern Humboldt County. The Estuary zone, generally considered the last three miles of the Mattole River before it enters the Pacific Ocean, lies at the bottom of the 304-square-mile Mattole River watershed and feels the effects of flood and drought, farming and logging, and essentially any other impact or disturbance natural and man-made in the river and watershed above it. The Estuary is nearly all within the BLM's King Range National Conservation Area.

Mattole Estuary: Restorationists Proceed with Caution

Concerns over the health of the Mattole River Estuary have been well documented and were described in the MRC's 1995 plan *Dynamics of Recovery*: "The water is much shallower than it once was,

temperatures in summer are elevated beyond what is beneficial for salmonids, and cover and shade are lacking. There are fewer deep pools and less large woody debris providing complex habitat. This degradation makes it impossible for juvenile Chinook to overwinter in the Estuary/lagoon. Yet if they could, they would have a much better chance of returning to their natal streams than [younger] fish which enter the ocean in the spring. Consequently, habitat improvements in the lower river can significantly aid the recovery of now-diminished stocks of Mattole Chinook, in addition to improving conditions for the ecosystem as a whole." The Estuary is also a rearing location and migratory path for the Mattole River's other two salmonids: coho salmon and steelhead. All three of these fish species are listed as threatened under the federal Endangered Species Act.

The Estuary is an incredibly dynamic area with massive changes in river location and channel configuration over the past 50 years. The channel can move from one end of the valley floor to the other in a large flood. Flows can range from as low as 30 cubic feet per second (cfs) in the summer and early fall to as high as 30,000 cfs or more in a large winter storm. *Dynamics of Recovery* describes this area: "Lower reaches of river systems are subject to many powerful forces from upstream, making them inherently variable and dynamic. The river meanders across the valley floor, episodically eroding edges of floodplains, removing the vegetation they once bore and converting them into gravel bars. Elsewhere, cobbles, gravel, sand, and silt are deposited, in time creating new floodplains. The river giveth, and the river taketh away. These forces are daunting in their magnitude and unpredictability."



Edwards Excavation and Restoration places wood in a willow baffle.

The unpredictable and dynamic nature of the Estuary means the longevity of habitat improvements in this area is uncertain. Recent floods have demonstrated that more massive structures and willow and wood structures strategically placed on floodplain sites have a better chance of surviving high water, and that small un-anchored instream wood structures and container plantings on terrace margins are at risk of being swept away when the channel shifts. These observations lead us to humility and discrimination in our planning and implementation of habitat work in the Estuary. Thus, we proceed with caution knowing that whatever we modify or place in this area is subject to the power and unpredictability of the river.

The BLM's planning documents outlined two primary biological objectives for habitat improvement in the Estuary. The first was to improve juvenile salmonid survival during summer low-flow periods, and the second was to increase availability of suitable winter habitat, with emphasis on juvenile coho salmon winter refuge habitat. To achieve these biological



The Mattole River Estuary ALL PHOTOS THIS ARTICLE BY HUGH MCGEE, UNLESS NOTED

objectives, they identified a suite of physical objectives including:

- ◆ Increase channel stability
- ◆ Promote riparian vegetation colonization and growth
- ◆ Create a mosaic of varying streambed sediment sizes
- ◆ Promote topographic diversity
- ◆ Increase connectivity to existing sloughs, alcoves, and other off-channel habitat
- ◆ Increase food resources available to native species.

The prescription for achieving these physical objectives focuses on habitat modifications within four physical features of the Estuary: intermediate-elevation islands, bar apices, terrace margins, and the “middle slough” channel.

Intermediate-Elevation Islands

Intermediate-elevation islands exist in locations throughout the project reach at an elevation of roughly four to eight feet above the summer low-flow water surface level but below the elevation of the river at flood stage when the bank is full. Many of these islands are transitory features, accreting or eroding as flows fluctuate and the river channel migrates across the valley floor. Thus, the exact locations of islands will likely vary over time. The objective is to increase the stability and durability of these features, promote increased riparian vegetation colonization and growth, and contribute to habitat complexity in the Estuary. Historically, these islands were quasi-stable features in the lower river with



The Apex wood structure protecting an existing mid-channel island. PHOTO BY ZANE RUDDY

thick vegetation. However, the floods of 1955 and 1964 eroded the islands into oblivion and resulted in short-lived islands that are continually reshaped or obliterated during high winter flows. The current islands are partially vegetated with broad patches of fine sediment suitable for plant colonization.

Over the past decade a combination of large wood structures and plantings has been installed on these islands. The large wood structures have been located at the upstream end of the island and along the margins to increase stability and durability of the feature, promote deposition of finer-grained sediment for vegetation colonization, and contribute to instream habitat complexity. Over 20,000 feet of willow baffles interlaced with large sections of wood have been installed on intermediate-elevation islands in the past 10 years, mostly with substantial success.

Bar Apices

River bars change with rapid frequency in the Estuary. These features slope gradually from near bankfull elevations to the channel thalweg. They may be in contact with water one year and hundreds of feet away the next. Our experience has shown that creating durable features (wood or wood/rock structures) at the upstream end of the river bars promotes bar stability

and increases habitat complexity at low flows. Specific treatments have included bar apex wood jams and vegetated baffles similar to that described above for islands. These apex wood jams have helped to create areas of accretion and island development. In other instances, the new feature has washed away in high winter flows. Another objective of the structure may be to create instream habitat features such as scour and cover around an individual log. In other cases, a combination of larger logs and vegetated baffle installations has been used to create a more persistent topographic feature in the channel.

Terrace Margins

Alluvial terraces above bankfull stage are a persistent feature in the Estuary, particularly the large terrace along the lower south bank. Vegetation can be lush on these terraces, and gradual river migration can erode margins and allow for beneficial debris to recruit to the wetted channel. However, where channel migration rates are high, margin vegetation does not have time to reach favorable sizes. Also, high-flow channels on terrace surfaces provide access to slower water habitat on the interior of the terrace. Terrace margin treatments have included installation of wood structures in selected locations and large arrays of

willow baffles. The MRC has installed more than 1,200 feet of willow baffles at terrace margins in the Estuary. After the first few deposits of fine gravels behind the baffles, we return and plant container stock of black cottonwood, red alder, and Pacific willow.

Slough Channels

The Estuary once had an extensive system of slough channels that provided cool, complex habitat connected to the lower river and Estuary. These historic channels suffered a series of setbacks including overwhelming sedimentation as a result of large-scale industrial logging and the 1955 and 1964 floods. On top of this, an earthquake in 1994 increased the surface elevation of the slough and Estuary area by several feet, which left some slough channels too high to serve as summer salmonid rearing habitat.

In 2014, a preliminary slough restoration project excavated and reconnected 250 feet of historic slough. Regular monitoring conducted since that time shows that this is well used by salmon and steelhead, with the slough providing both a physical and thermal refuge. In 2017 an extensive study of the slough networks was finished and resulted in the completion of design documents for an additional 1,200 feet of slough restoration. This design followed the historic slough channel and included plans for littoral shelves to improve aquatic and riparian plant survival, and installation of wood features for refuge areas. In 2018 construction of the first 500 feet from that designed plan was completed. In 2020 the slough was extended another 700 feet, and large off-channel alcoves were installed along the entire 1,500-foot length of the restored slough channel. In 2020 we were also able to secure over 300 whole trees from MRC grasslands restoration work a short drive away on King Range National Conservation Area lands along Prosper Ridge.



Floodplain and terrace margin treatment in the lower Mattole river

What's Next in the Estuary and Lower River

BLM, MSG, and MRC continue to gather both physical and biological data in the Estuary and lower river. Observations over the past 10 years include the creation and persistence of pools, the growth and maturity of island and bank vegetation, use of slough habitat by juvenile fish, satisfactory summer water temperatures, and other encouraging developments. Bank erosion still persists in many areas, some of the historic slough channels remain inaccessible in summer, and the area lacks the volume of large woody debris needed to create habitat complexity and fish refuge areas. Thus, our work will continue. We are currently initiating a comprehensive review and assessment of the restoration actions completed to date to guide our next efforts in this area. One new aspect of our planning includes reconnecting the small creeks in this zone to the slough and estuary system. Lower Bear Creek, which once flowed into the system of sloughs on the south side of the Lower River, was diverted upstream approximately 50 years ago. This reduced the freshwater and food supply entering the slough. A planning project currently



Veronica Yates plants native wetland plugs on the Middle Slough Channel.

underway would eventually result in re-routing Lower Bear Creek into its previous channel and provide a new cool water supply to the recently restored slough.

A recent field trip to the Estuary by the authors and others who plan and implement these restoration actions reinforced how our efforts appear

fragile in the face of the power and unpredictability of the River. Some of the apex wood structures are high and dry, others are no longer visible, either buried in sediment or washed to the sea. The river eats away at the south bank, and gravel bars come and go. Nonetheless, we will continue our efforts with persistence, humility, and hope.

The authors would like to acknowledge and thank the funders and supporters of the restoration work in the Mattole River Estuary including the California Department of Fish and Wildlife, the California Coastal Conservancy, the California Wildlife Conservation Board, the California Department of Water Resources, the North Coast Resource Partnership, NOAA Fisheries, the National Fish and Wildlife Foundation, the US Fish and Wildlife Service, and the Bella Vista Foundation.

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Areal photo of the Slough Alcoves



The Mendocino Trail Stewards' Plan to Transform Jackson



By Chad Swimmer,
Mendocino Trail Stewards

Jackson Demonstration State Forest—the name is a mouthful. JDSF is quicker, but rather clunky and inelegant. Those of us who love this place mostly say “Jackson,” unaware of the history of Jacob Green Jackson, the Vermont transplant who bought a mill at the mouth of Caspar Creek in 1864 with some adjacent timberland thrown into the deal for good measure. He bought more, and kept on buying, then incorporated his expanding holdings as the “Caspar Lumber Company” in 1880, initiating a sixty-year period of wholesale industrial logging. An eons-old ecosystem—along with the homeland of the Northern Pomo people who had been lovingly stewarding and coexisting with these groves—was nearly destroyed; only massive stumps and a few relic groves remained. In the process, Jacob Green became a very rich man and one of the largest lumber dealers in the state.



Caspar Lumber Company steam locomotive Trojan, around the turn of the 20th century.
PHOTO COURTESY KELLEY HOUSE MUSEUM, HARRY J. WAKERLEY COLLECTION

By 1947 though, Jacob Green had passed away, the vast majority of the old growth was gone, and Caspar Lumber couldn't (or wouldn't) pay its

tax bills. It sold the cut-over 48,652 acres to the State of California with the stipulation that they continue as timber lands in perpetuity. Logging continued, but not nearly at the same pace. For one, there weren't so many valuable trees left. But more importantly, Jackson was now a demonstration forest being managed by professional foresters for silviculture research and what was then considered sustainable logging practices.

Now, 73 years later, areas of the forest are recovering. True old growth status, with all its elusive biological diversity and cathedral-like grandeur—its carpet of topsoil in the canopy, its bat-flanges and its many species that never descend to the ground—is many hundreds of years off.



Sixty to one hundred-year-old Douglas-fir, culled and left to rot as part of the 2018 Porter THP. DRONE PHOTO BY CHET JAMGOCHIAN

However, areas that have had no harvest entry since the 1920s are achieving second growth characteristics, showing the little studied but astounding potential *Sequoia sempervirens* (coast redwood) has for bouncing back. The wonderfully named Fritz Wonder Plot, on State Park land near Big River, has some of the tallest second growth in the world and is accumulating biomass at a rate few ever expected. Data gathered in Humboldt has shown that this phenomenal rate of growth translates to the most carbon sequestered by any species in the world, and that the bigger and older a redwood is, the more it sequesters—at least for the first 1,500 years of its life.

Unfortunately, CalFire continues to treat this gem of a forest as commercial timberland, with ten square miles of the oldest remaining groves slated for cut in the next 7 years. Language contained in the timber harvest plan process, coupled



Snipe cutting at Caspar Woods. Woods Superintendent Ed Freathy on the left using a wooden gunning stick to gouge the tree, around the turn of the 20th century.
PHOTO COURTESY KELLEY HOUSE MUSEUM, HARRY J. WAKERLEY COLLECTION

with the managers' own arrogance, has led them to believe that they are the landowners, not the caretakers

of a precious and unique ecosystem 'owned' by the people of California.

This must change, and we hope you will join us in taking action. You can help us raise funds and have fun by joining the Trail-A-Thon challenge happening for the whole month of May, where participants can win prizes by biking, swimming, running, and walking socially distanced anywhere on the Mendocino Coast, or wherever you call home. Visit bigrivertrailathon.square.site for Trail-A-Thon details.

Please check out our website, mendocinotrailstewards.org, and sign our petition in support of the creation of a Redwood Forest Reserve out of the Western third of Jackson Demonstration State Forest. The more names we have in support, the more our legislators will listen.

For more information:
www.mendocinotrailstewards.org



Flammable fields of slash leftover from the 2018 Sequoia THP, one half mile from residences along Caspar Road 409. PHOTO BY MARK BOWERY

Trees Foundation Welcomes Willits Environmental Center!

In 2020, Trees Foundation was thrilled to welcome Willits Environmental Center (WEC) as a Trees Foundation partner group. Kerry Reynolds, the Director of Organizational Development and Outreach for Trees Foundation, recently spoke with WEC founders David and Ellen Drell about their organization's history.

Kerry Reynolds

When did Willits Environmental Center get its start?

David Drell

The Willits Environmental Center started in the 1990s in the wake of a community effort to get the Willits City Council to reject a proposal for a wood-fired power plant in the community. The concerns had to do with over-cutting of trees to fuel this plant, and air pollution because Willits is a valley, and the smoke would collect in the valley and cause air quality [issues]. That effort [of resistance] was ultimately successful. But those of us who worked on that effort thought, "We want to be ready for the next bad thing that shows up in Willits. We want to have

some kind of organization in place so that we don't have to start from ground zero to fight a bad project." We also wanted to do good projects, of course. We wanted to have a physical presence in the town so that if developers came through, they could see there was an environmental center in the town....

Ellen Drell

And then they would just drive on through. (laughter)

David Drell

Yes, this was before the bypass [when traffic passed through the center of town].

Ellen Drell

I also want to say that David and I, when we came to Mendocino County back in the seventies (well, for David, it was the early seventies; for me, the mid-seventies), we pretty quickly, by separate means, became involved in an effort to protect potential wilderness areas on the Mendocino National Forest.

Back in the seventies, the Forest Service and the Bureau of Land Management were doing an inventory of all their roadless lands to determine which ones would be reasonable candidates for wilderness protection under the Federal Wilderness Act and which ones were basically available for logging. David's neighbor (who ended up being my neighbor as well) was about 30 years older than we were. He knew these areas of Mendocino National Forest quite well, and he helped gather people together and formed an organization called the Citizen's Committee to Save Our Public Lands.

So by the mid-seventies, David and I were active members of that group, and

we worked for 10 years to inventory and advocate for wilderness protection for areas on the Mendocino National Forest. We also, in the course of it, joined forces with people from Humboldt County and Trinity County, and in 1984 we were successful in helping to pass the California Wilderness Act, signed into law by Ronald Reagan.

So that 10 years was [our] proving grounds for environmental work, and we learned all kinds of stuff. We took forestry classes, we met people from Humboldt County and Trinity County, and formed these bonds with people all over the region and then had this successful outcome 10 years later. So that was quite a motivating experience for us to stay involved in environmental issues. That's where we learned the politics of it and the science of it. It was quite an important period for David and me.

Kerry Reynolds

I know the Willits Bypass was a very long and difficult struggle that Willits Environmental Center was involved in.

David Drell

Yes, it was. We assembled a team of people, and we went head to head with Caltrans. We ended up having a meeting with the head of Caltrans in Sacramento at the time. Ultimately, though the bypass was built, Caltrans had wanted to build a four-lane bypass. And as a result of our work and education of Caltrans—especially the head of Caltrans at that time—we did help ensure that Caltrans only got enough money to build the two lanes that, if you drive through, you drive on. [Two lanes] was obviously plenty of highway capacity to do the job—actually, more than what was needed.



Willits Environmental Center founders
David and Ellen Drell

PHOTO BY TRACI PELLAR



WEC Board Members, left to right, back row: Dave Beebe, Thayer Craig, David Drell, Ellen Drell. Left to right front row: Kirk Lumpkin, Rosamond Crowder, Traci Pellar. Not pictured: Greg Byers PHOTO BY TRACI PELLAR

But in addition to that, [a result] which we are increasingly becoming proud of, was that Little Lake Valley—through which the bypass goes—is a seasonal wetland, and wetlands at least during that period of time had a lot of protections; they still have a lot of protections. Caltrans had to mitigate for the destruction of wetlands that the highway caused. We worked tirelessly with all of these agencies—the state and federal environmental regulatory agencies, the Army Corps of Engineers, the U.S. Fish and Wildlife Service, State Fish and Wildlife, the EPA, the regional Water Board. We worked with all of them and convinced them that the size of the project Caltrans wanted to do was excessively destructive.

What ended up happening was Caltrans was forced to purchase 2,000 acres of land in the Willits Valley and the nearby surrounding hillsides to mitigate for all the damage they were doing. And we take some credit for that because it turned out to be the largest mitigation that Caltrans ever had to do in its history.

At this point, that 2,000 acres is being managed by the Mendocino County Resource Conservation District, and there's a lot of work being done to improve the seasonal wetlands, and those results are very positive. Lots of animals are coming into the valley that weren't there before. The elk are coming in there, and there's beaver that are entering the valley that probably haven't been there for more than 100 years. So it's starting to transform itself into the amazingly rich ecosystem that a wetland can be.

Ellen Drell

The [Willits Bypass] project started almost simultaneously with the founding of the Willits Environmental Center. Our first Caltrans meeting on the project was actually in 1989/90. So it basically spanned the whole of our existence up until about 2014 or something, when it was completed.

Kerry Reynolds

What has Willits Environmental Center worked on more recently?

David Drell

When cannabis became legalized, we collaborated with lots of other groups, including some of the more progressive cannabis growers, and with the county to deal with the new legal landscape. We worked with the county to help put together an ordinance where there were some protections in place for the fragile landscape...For reasons that are not exactly clear to us, as the years have gone by since legalization kicked off, Mendocino County's regulatory process has fallen into chaos.

Ellen Drell

We have a planning and building department that never embraced our ordinance, which was protective of the small grower and kept new grows from expanding into rangelands—which in Mendocino County are bone-dry and fragile. So we have an ordinance that had some pretty darn good environmental protections in it. But the enforcement wing of our planning department never embraced the ordinance, and willfully ignored it. All kinds of crazy things happened and continue to happen, and now the whole thing is in disarray. So we've been attempting to expose what happened and attempting to save the environmental protections of the ordinance. It's been one of the most frustrating and difficult tasks that we've encountered. It's gone on for three years now, and we're still in the midst of it.

As we go to press, the Mendocino County Board of Supervisors just received a final recommendation from the County's Planning Commission to pass the controversial Phase 3 Cannabis Cultivation ordinance with some amendments. The ordinance is now on the April 20 Board of Supervisor's agenda, and WEC, along with numerous other community organizations, continues to oppose it.

🌲 For more information: 707/459-4110



Guest Column

The Best Use of Biomass Isn't Burning

By Wendy Ring

While the COVID pandemic and the accompanying drop in greenhouse gas emissions had us temporarily focused on other problems, recent bouts of extreme weather are reminders that climate change has not gone away. Global carbon emissions are rebounding, with December 2020 levels exceeding those from December 2019, while decreased tax revenues from the economic crisis have state and local governments scaling back ambitions for climate action. Climate impacts that increase emissions, like permafrost melting and boreal forest fires, are more extensive than predicted; and scientists agree it is extremely likely that global warming will exceed 1.5C by 2030. We can either go fatalistic and abandon ourselves to hedonism and me-first survivalism, or mobilize and pull ourselves back from the precipice.

For California to reach its goal of carbon neutrality by 2045, experts agree that in addition to steeply dropping carbon emissions, we must remove carbon from the atmosphere. Whereas direct air capture of carbon dioxide costs \$200 per ton, and gasification or pyrolysis of biomass with carbon capture and storage costs \$50–100 per ton, applying compost to crop and range land accomplishes the same thing for a mere \$10 per ton. This is not to imply that compost alone can save the world, but the faster we reduce emissions, the less carbon we'll need to remove, and in the case of biomass, compost does both.

Let's look at what this could mean for Humboldt County. Humboldt's largest source of greenhouse gas emissions is transportation, but in a large rural county

with 1 in 5 residents below poverty level, we don't have great prospects to rapidly electrify our vehicles or get people out of their cars. We have a biomass plant that emits twice as much carbon per kilowatt hour as coal. Shutting it down would cut greenhouse gas emissions as much as eliminating half the cars in the county. If we compost our mill waste instead of burning it and apply the compost to our 700,000 acres of agricultural land, we're not just getting rid of unwanted material. Compost stimulates plant growth and photosynthesis that removes carbon dioxide from the air. In the near term, it's probably the biggest and cheapest thing Humboldt County can do for the planet.

Composting mill waste instead of burning it has a number of local benefits. Agricultural land treated with compost is more productive and resistant to drought and erosion. State incentives for compost application mean more income for farmers and ranchers. Biomass plants are a major source of fine particulates, which the EPA allows them to emit in large amounts because the technology is inherently dirty. These tiny particles are a well-established cause of heart and lung disease, cancer, diabetes, increased hospitalizations, and premature death. Ending biomass combustion means cleaner air and healthier communities.

Just as there are cleaner and less climate-damaging alternatives for mill waste, in Humboldt we have cleaner and less climate-damaging sources of electricity than biomass. While we need to get off fossil fuel, the natural gas plant that supplies most of our electricity could temporarily take up the slack. Substituting natural gas for biomass

would cut carbon emissions per kilowatt hour by 70%, and the lower cost would free up funds to speed the development of local clean energy.

The biggest barriers to climate action are the belief that if we do nothing, things will remain the same, and the tendency of our elected officials to kick the climate can down the road rather than upset powerful interests. Despite substantial local opposition to biomass, Humboldt's Redwood Coast Energy Authority is currently negotiating a new 10-year contract that would cost our county its biggest opportunity to lower greenhouse gas emissions. Ten more years of biomass is something we'll deeply regret in years to come.

On a brighter note, SB 1383 is giving California a big push toward composting. Next year all but the very smallest California jurisdictions must begin collecting organic waste separately from garbage. Zero Waste Humboldt is working on a baby step—a pilot project composting a combination of food and mill waste on a local farm. Small farms do this in other states, but California doesn't allow it unless the farm maintains an expensive permit as an industrial compost facility. We hope our research pilot will prove the safety of on-farm composting and lead to a change in the rules, while raising local awareness of compost as a negative-carbon solution.

Dr Wendy Ring, MD, MPH is a retired physician and public health specialist actively involved at the intersection of climate, health, and air quality. She produces a podcast and nationally syndicated radio show called Cool Solutions, about climate action from the bottom up.



PLANT NOTES

Manzanita

One of California's most beautiful native shrubs, manzanita, blooms in winter. If you happen to be near a blooming manzanita, you are likely to see and hear Anna's Hummingbirds, who stay for the winter and feed on the flower nectar rather than flying south. Some manzanitas here in northwestern California start to bloom as early as the new year, some bloom as late as April, but most bloom in February and March. Manzanita flowers are usually pink, but some plants have white flowers. Blooming at a time of year when food is scarce, manzanita flowers are an important source of pollen for butterflies, bees, and other insects.

Once flowers are pollinated, fruit forms. The fruit, or berry, resembles a little apple, which is what manzanita means in Spanish. Berries are a good source of food for birds and bears. If you come across bear scat it is likely to be full of manzanita berries.



A grand old common manzanita
(*Arctostaphylos manzanita*)

Humans have uses for manzanita as well. The fresh berries can be eaten or made into cider. Dried berries make a nutritious meal or porridge. A tea or decoction made from the leaves is said to help reduce poison oak rash. In the garden, manzanitas make strikingly beautiful specimens and are drought-tolerant. All have distinctive smooth red-brown bark that peels in mid-summer to reveal green bark underneath, which quickly darkens to red-brown.



Hairy manzanita (*Arctostaphylos columbiana*) in bloom.

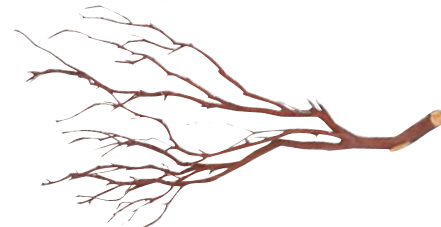
ALL PHOTOS THIS ARTICLE BY CHERYL LISIN

Usually found in chaparral, grassland, or forest margins, manzanitas are sun lovers. Like their close relative, the madrones, they will reach toward sunlight if they become shaded out by other plants. Many forested ridges have old dead manzanita branches lying about, indicating that the ridge was once grassland. Due to lack of fire, the grassland was overtaken by manzanitas, which were subsequently shaded out and overtaken by the Douglas-fir and tan oak forest that moved in later.



Berries on Hairy manzanita
(*Arctostaphylos columbiana*)

The genus name for manzanita is *Arctostaphylos*, which means "bear berry" in Greek. There are 65 species of *Arctostaphylos* native to California, and many more subspecies. A good way to find out which species grows near you is to use *The Field Guide to Manzanitas*, by Kaufmann, Parker, and Vasey. The range of *Arctostaphylos* is mostly Southern Oregon to Northern Baja California, but a few species range farther. Manzanitas are in the heath family, Ericaceae, and are related to madrone, huckleberries, salal, rhododendron, azalea, heath, and heather.



Cheryl Lisin is a native plant enthusiast, landscape designer, and President of Friends of the Lost Coast (formerly Lost Coast Interpretive Association), whose mission is to inspire passion for nature in the Lost Coast region. She is currently working on a native plant garden at the King Range BLM office for the education and enjoyment of all. You can contact her at Cheryl@lostcoast.org.



Diggin' In

The Richard Gienger Report

Sort of getting claustrophobic, whether it's North Coast, West Coast, Western Hemisphere, or the World.

I just reread "Diggin' In #65" (*F&R News*, Winter 2020/21). Hecka lot of information there. Don't know how I managed that, and now there's even more to consider and navigate. I should start with younger times when I was engaged and enthused with the world within a 15-mile radius. OK, more than that, but that perspective was direct and close and meaningfully shared with friends and family, and that time of my life started in 1971.

Concurrent with getting a grip on homesteading, raising a family, and keeping a succession of building gigs together was exploration/contemplation. The Mattole (mainly from Eubanks Creek to Four Corners), the coast (mainly from Whale Gulch to Usal), and the South Fork Eel (mainly the Indian Creek tributary) were the "stomping grounds."

What was seen and contemplated, and then augmented/confirmed by reading and personal contacts, was a landscape that had been almost entirely stripped of its forests, with massive hydrological disruption and erosion—and where were the people that carried out the main damage, and the people there prior? What could people do now to rectify that situation? I'll try to recount some of the things that were done, and are being done—with most of what needs to be discussed deferred to multiple future columns.

By the 1970s, it was broadly obvious in California, the Pacific Northwest, and other places that volunteer efforts could not cope with correcting the damage, and we were enabled by legislative and bond

funding to create what became known in some quarters as a restoration industry/economy. It has been an interesting effort with many ups and downs, with constant stress and disconnects, although very positive outcomes emerge now and then to keep dedication and involvement alive.

Out of the thousands of examples that could be used, I'll give a handful. 'Back-in-the-day,' on a local scale, the Center for Manpower Resources out of Ukiah, in conjunction with Coastal Headwaters Association from Whale Gulch, conducted stream and watershed surveys to examine a large area of the "stomping grounds" for barriers to salmon and steelhead spawning migrations. In 1979–80 a logging- and flood-induced, 100-yard-long, 15-foot-high log jam blockage was removed by hand for about \$12/hour, and easy passage was restored in Anderson Creek, allowing the most productive tributary of Indian Creek to thrive. In 1983 Coastal Headwaters took on stabilizing 12 critical bank-erosion sites in the salmonid refugia headwaters of the Mattole, mainly with hand placement of rock. All sites are still in place, a \$50,000 project funded with vision by the California State Coastal Conservancy.

Starting in 2007, a project with six phases completed in 2017 was done in Standley Creek Watershed by a partnership of Campbell Global, then Redwood Forest Foundation Inc. (RFFI), and Usal Redwood Forest, along with Pacific Watershed Associates, Trout Unlimited, the California Conservation Corps, Eel River Watershed Improvement Group (ERWIG), and others. This mostly focused on "bad" road and landing removal with important upgrades on the roads that were retained. Costs were between 2 and 3



Disappeared, mass-wasted haul road in Standley Creek 1978.

PHOTO BY R. BALLARD

million dollars, mostly from the California Department of Fish & Wildlife, with some significant costshare by the landowners. Standley Creek is a key salmonid stream tributary to the South Fork Eel, across the river and west of Piercy.

This same area is the focus of a new proposal this year. A comprehensive planning project with action deliverables was submitted in February 2021 to the Fisheries Restoration Grants Program for the Standley Creek Watershed by Trout Unlimited. Most of the partners above will be involved pending funding. It addresses hydrology, habitat, silviculture, geology, and fire that fits into RFFI's emphasis on water, climate, carbon, habitat, and community. It is an approach with prescriptive outcomes that can be broadly applicable to forested planning watersheds. The proposal is for close to \$800,000.

What I really wanted to get to, past a timeline of restoration examples, is the tenuousness of long-term connections of human communities to land that includes respect and care within and extending to neighboring human communities and the land, water, and life that support all. Pretty naïve, eh?—given the “territorial imperatives” modernized with feudal industrial manifest monetization competition destruction. John Trudell’s repeated references to predator-man always struck a chord. And we’ve just been through four years of predator-man instigation as if professional wrestling-style winners are real.

Now I guess I’ll try and throw a whole bunch of real things at you at once:

Klamath Dams Removal. Grassroots activists showed up in strength on the October day of action responding to the Federal Energy Regulation Commission’s (FERC’s) August ruling jeopardizing removal of the dams (see page 16). The order that Pacific Corp had to remain co-owner of the dams through their removal threw



Rugged boulder channel of lower Standley Creek near the South Fork Eel River. Note the Redwood seedling rising between two mossy rocks in the right foreground.

ALL PHOTOS THIS ARTICLE BY RICHARD GIENGER, UNLESS NOTED

the hard-won agreement into doubt. The drama leading to a deal that had Oregon and California taking Pacific Corp’s place with Berkshire Hathaway Energy/Warren Buffet’s full support for the removal of the dams is magical. You should find the YouTube recording of the press conference announcing the deal AND read the beautiful article by

Thadeus Greenson (see page 9). Synergy: activists blocking the jetboat tour of principal parties for 15 minutes giving stern lectures, a sample of the toxic algae above the dams, and demonstrating full commitment to dam removal presented a threshold moment. Removal is slated to begin in 2023.

A Billion Dollars for 2021–22 Climate Change Wildfire and Forest Resilience Action Plan. See Richard A. Wilson and “Why Forests Matter,” February 9, 2021, “Initial Comments on Governor’s Budget Summary ...” at www.whyforestsmatter.org/thought-leadership/climatechangebudget. Lots of money for certain things, but still no long-term standards and incentives for recovery of California’s forests.

Search “Mendocino Trail Stewards” and find their top-grade website with their new video, photos, articles, interactive maps, THPs, guidance, and inspiration. The Stewards have been avidly using the trail systems in Jackson Demonstration State Forest (JDSF) for years and became greatly alarmed when multiple Timber Harvest Plans were submitted and some approved in



Excavating a huge landing/crossing from the Clark Fork of Standley Creek 2008.

PHOTO BY TOM LEROY



Bill Eastwood standing on log falls in spawning-rearing reach of the headwaters of Standley Creek 2008 or 2009. EDITORS NOTE: BILL IS A TREES FOUNDATION BOARD MEMBER

or adjacent to the west side of Jackson, close and parallel to Highway 1 (see page 26). They are driving hard to have 20,000 westside acres of Jackson's 50,000 be set aside as a park. What's ironic is their motivation in large part is that the THPs seem to be targeting the larger Redwoods that are almost completely missing in most of the commercial timberland in Mendocino County. It's a cultural fight of many dimensions. A number of perspectives pertain.


Two of several venues in which policies have been proposed and/or implemented regarding forests are the Board of Forestry (BoF since 1973) and the Forest Management Task Force (FMTF since 2018). Books have and could be written that apply. A major policy context is the last several years of high-impact catastrophic fires. Another is the reduction of forests by cutting as soon as they are commercially viable: 6 to 16 inches in diameter now, and lucky to reach 50 years of age. The JDSF is the exception that proves the rule—deferred gratification starting in the later 1940s has enabled JDSF to have quality forests with 2 to 3 times the volume of current commercial holdings. It has been held


up as a model for California, not only for larger older trees, but also for fisheries, wildlife, science, education, and variety of public use. It looks like CalFire is pushing to knock that notion down.


A highly placed CalFire official has referred to Jackson's atypical large trees as an "interesting luxury" and also, given CalFire's essential and massive role in fighting fires and responding to emergencies, has indicated that he feels that CalFire has social license to do anything that they want, and don't have to waste time arguing with the public over forest management.

The Mendocino Trail Stewards' proposal brings to bear not only examination of the stewardship of JDSF, but the stewardship of all of California's forests. Some folks in Oregon have pointed out, on the heels of last summer's fires, that "timber wars" now are not just over old growth, but over the whole forest. The Stewards are seeking a moratorium on cutting in the forest in contention until there is a full understanding of crucial facts and adequate responses—given the whole range of current circumstances, including actions for climate, carbon sequestration, water, drought, and habitat. Support from


many groups such as EPIC and Forests Forever is growing every day, and includes the Coyote Valley Pomo Tribe.

 This spawning season's Chinook runs have been dismal, not only for the Mattole, Eel, Klamath, and Sacramento but the whole West Coast. There were some bright spots for returning coho in parts of the South Fork Eel system in mid-January. A number of live and coho carcasses were spotted in the Mattole, in contrast to some recent years when no live coho or carcasses were seen, although low numbers of juveniles were present during Spring and Summer surveys. Adverse ocean conditions are thought to be a huge factor for low returns, as well as one of the poorest Dungeness crab seasons in memory.


 The controversial plans for large pond water storage for release during the summer months in Briceland's Redwood Creek remain in contention. Some possibly viable alternatives with smaller, dispersed, and gravity-fed pond locations are being evaluated. Go to SRF's website for information.

 Distress over huge and/or out-of-control large marijuana farms, existing or proposed, is raging in Humboldt and

Mendocino counties. For information pay attention to the exhaustive coverage in almost all media outlets, social or otherwise, all the time.

 I recently read a chapter from an informative forest-issues book (Chapter 3, authored by Jeff Romm, in *Justice and Natural Resources* 2002, edited by Kathryn Mutz). With a large number of citations and references, the chapter examines dominant forest/conservation and control practices and the general exclusion of non-white participants on multiple levels. An example that struck me is that there are three admitted varieties of participants, falling under the following informal categories: the John Muir preservation adherents (I was somewhat shocked several years ago to hear Muir characterized as a racist), the Timber Baron faction (still true today), and the Gifford Pinchot fans with government-defined “conservation” measures. Actual adherents of community-based equity and multi-generational land connections and quality sustainability

aren’t taken seriously and/or are not present where the three dominant factions do the kabuki. (Dictionary says the word originally was a Japanese verb meaning “act dissolutely” and now, as a noun, it refers to a form of traditional Japanese drama with “highly stylized song, mime, and dance, now performed only by male actors, using exaggerated gestures and body movements to express emotions, and including historical plays, domestic dramas, and dance pieces.” Couldn’t resist getting that in.)

 The Lost Coast League continues to be engaged in Rainbow Ridge/Forest Stewardship Certification/Grievance/Appeal Kabuki. Seems that the related certification entities are dedicated to being a firewall between their clients (the certified) and the public trying to ensure that the spirit and requirements of certified stewardship are honored. Horrors, a THP looks more transparent and a communication bridge process at this moment. Rainbow Ridge is one of the most inspiring and important



One of 12 Mattole River headwaters bank stabilization sites done by Coastal Headwaters in 1983 with wood added later by the Mattole Salmon Group—stable banks, pool, and cover for salmon and steelhead.

To Get Involved

 Richard Gienger
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707/223-6474

 Save California Salmon
www.californiasalmon.org

 EPIC
wildcalifornia.org

 Forests Forever
www.forestsforever.org

 Institute for Sustainable Forestry
www.instituteforsustainableforestry.org

 Lost Coast League
www.lostcoastleague.org


 Redwood Forest Foundation, Inc.
www.rffi.org


 Salmonid Restoration Federation,
calsalmon.org

 Sanctuary Forest
sanctuaryforest.org

 Why Forests Matter
whyforestsmatter.org

remnant coastal forests in California and the Pacific Northwest.

 We have recently lost two amazing human beings, Jene McCovey and Paul Encimer. See page 38 for remembrances of Jene. Joshua Golden wrote a great tribute to Paul Encimer, read that at kymkemp.com/2021/01/26/getting-to-know-paul-encimer/. As Joshua wrote “. . . Paul will be missed by many and the greatest tribute to him will be to continue his daily commitment and advocacy for peace, justice, and cooperation into the next generation.”

 Please help out where and when you can. Check out the work and other information from Salmonid Restoration Federation (SRF), Sanctuary Forest, the Institute for Sustainable Forestry (ISF), EPIC, WFM, Forests Forever, and others—rg

Since arriving in the Mattole Valley of Humboldt County in 1971, Richard Gienger has immersed himself in homesteading, forest activism, and watershed restoration. Richard’s column covers a range of issues including fisheries and watershed restoration and forestry, plus describes opportunities for the public to make positive contributions in the administrative and legislative arenas as well as in their own backyards.



ACTIVIST CORNER

Living on Borrowed Time: Decommissioning Dirty Industry Facilities

Guest Column by Gary Graham Hughes,
California Policy Monitor, *Biofuelwatch*

The decommissioning of the dirty dams on the Klamath River is indicative of a pattern of extractive industrial economies. Time and again we witness the construction and operation of polluting industrial facilities that, though celebrated when constructed, are found after the passage of time to be unsustainable.

The pattern has become so established that there is increasing public interest in requiring that decommissioning be considered in the permitting for new industrial development. For instance, local and Indigenous community members in Humboldt County were correct to challenge the value of the anticipated short lifespan of the utility-scale TerraGen wind project.

Regardless of the rhetoric justifying construction, the eventual decommissioning of industrial facilities can be an ecologically and socially painful process when they reach the end of their useful life.

A timeline placing the Klamath dams in the context of other industrial development in California exposes patterns of construction, controversy, and limited lifespans. The outcome in numerous important cases, but not all, is eventual decommissioning.

Historical Context

The first dams in the Klamath River, COPCO 1 and 2, were finished in 1922. Boyle dam was completed in 1958, and then the Iron Gate dam was completed in 1964. The Trinity dam was completed in 1963.

Parallel to but distinct from the industrial intervention in the Klamath and Trinity rivers was the planning for Ruth dam, on the Mad River, during the 1950s. The objective of the Ruth dam was to bring pulp mills to Humboldt County. The Ruth dam was finished in 1962, and the Georgia Pacific and Simpson pulp mills opened at the same time.

The pulp mills polluted the Humboldt Bay Area for nearly three decades with little impediment, while the public health, water, and air quality impacts accumulated. That changed in 1992 with the iconic Surfrider lawsuit that forced changes in the pulp mills' operations.

Simpson (now known as Green Diamond Resource Company) anticipated the eventual decommissioning of the pulp mills in Humboldt Bay. One of their corporate strategies was helping establish the pulp industry in Chile to offshore the pollution of the sector.

The departure of the pulp mills from Humboldt Bay is indicative of how the pulp and paper sector successfully shifted operations from locations in North America to the global south. By 2008 the pulp mills on Humboldt Bay were closed.

Though the Ruth dam remains in place and has a critical water infrastructure role for Humboldt Bay communities, the temporary but devastating presence of the pulp mills on Humboldt Bay is a dramatic example of the limited lifespans of dirty industries.

Dirty Energy Scrambles to Reinvent Itself as Green

Another example of industry confronting an inevitable demise, and a study in what the owners and operators of those facilities do to avoid liability, is the refinery sector in the San Francisco Bay Area.

Economic instability and the irrefutable climate impacts of the fossil fuel industry underscore the imperative of decommissioning petroleum refineries. But the economic interests holding on to these industrial assets with limited remaining life are scrambling to find new schemes to protect their investments and avoid the liabilities of decommissioning.

For instance, Marathon Martinez is now the second Bay Area refinery, after Phillips 66, to engage with environmental review processes for establishing a biofuels refinery at its facility. Built in 1913 by the Associated Oil Company on the shores of the tide water at the western edge of the Sacramento Delta, this refinery began operations nearly a decade before the COPCO dams on the Klamath were completed. Known over the decades as the Tesoro Refinery, Ultramar Golden Eagle Refinery, Tosco Avon Refinery, and Phillips Avon Refinery, the refinery has changed ownership many times. The most recent change in ownership was the acquisition by Marathon Petroleum Company of the refinery in October 2018.

After more than a century of operations the refinery was suddenly closed in April last year, with Marathon blaming flaring incidents on a "significant decrease in market demand" and thus requiring a shutdown of crude processing at the plant.



After framing the shutdown as largely due to the pandemic crashing global commodity markets, in July 2020 Marathon announced that the closure of its Martinez refinery would be permanent.

Then came a sudden pivot. A month later, in August, Marathon informed county and regional authorities that they were evaluating the possibility of building a soy-based biodiesel refining facility at the same site.

Soy is widely recognized as a high-deforestation-risk commodity. Because refinery conversion proponents concede the climate futility of shifting liquid fuels processing to commodities that significantly contribute to global deforestation, they promote the new biofuel refineries as a temporary 'bridge' to

a post-refinery future. Thus the inevitable future decommissioning of the refineries is embedded directly in the proposal to convert from petroleum to biofuels.

Local frontline organizers confronting the environmental and health impacts of the refineries rightly understand the biofuel ploy as an effort to delay the inevitable decommissioning of these dirty energy facilities—with the added threat of the owners escaping responsibility for the toxic mess of a century of industrial operations.

What Happens Next

The decommissioning of the Klamath dams is an important lesson for understanding the finite limits of industrial development. From dams to pulp mills to refineries, the clock

is ticking resolutely towards their eventual decommissioning.

Building destructive industry only to have to decommission it later is a pattern that needs to be broken. It is crucial that the removal of the Klamath dams serves as a wake-up call to the dangers of relying on extractive industry to engineer technological solutions to our contemporary political and environmental crises.

Gary Hughes has worked on forest and energy-sector campaigns throughout the Western United States and in Latin America, including many years of campaigning to protect rivers in the Chilean Patagonia from mega-hydroelectric development. He currently works as the California Policy Monitor with the international organization Biofuelwatch (biofuelwatch.org.uk).

Remembering Jene McCovey

August 11, 1951—February 8, 2021

Yurok elder Jene McCovey (August 11, 1951—February 8, 2021) will be greatly missed on the North Coast as a dedicated and inspiring environmental leader. In 2014, Jene was presented with the Circle of Courage award by the Women's Intercultural Network, and in 2018 she was chosen for the Sempervirens Lifetime Achievement Award by the Environmental Protection and Information Center. Our Partners share these memories of her.

Karen Pickett, Bay Area Coalition for Headwaters and Earth First!

Thank you, Jene, for being with us all this time.

Jene McCovey was a force of nature who brought her wise strategy, focused participation, prayers, and songs to so many events across the landscape of ecological activism—public hearings, agency meetings, demonstrations, rallies, strategy sessions, skill-sharing workshops, organizational gatherings—Jene was up for all of it. She was always there.

She even showed up at demonstrations out in the forest, treating her motorized



Jene McCovey delivers a powerful, emotional speech about the threats the Earth faces at a September 2019 student-led Climate Action rally.

PHOTO BY COLLIN SLAVEY

wheelchair like a high-end off-road vehicle. She was fearless. A couple years ago, Jene showed up at the national Earth First! Round River Rendezvous that was taking place in Northern California. I walked with her as she navigated her wheelchair over extremely bumpy, rocky, sloped

ground to an area under the oak trees to give one of several workshops she came to offer. She didn't slow down for a minute.

She gave rise to many grassroots groups to organize on campaigns, including "Native American Coalition for Headwaters" during the height of the Headwaters Forest campaign, in an instant bringing valuable diversity to that decades-long forest campaign.

Jene was a key player; she was a constant presence; she was a giver. She was a friend and an ally. Much gratitude, Jene.

Darryl Cherney, Environmentally Sound Promotions

Jene McCovey was more than an activist, she was a friend. She would be there for those, including myself, who needed her, even though she herself had great needs. She bridged the Indigenous peoples with the rest of us with blessings, songs, and humor. She was a protector of Mother Earth and all her inhabitants who will now sing her songs for her.

Amber Jamieson, Environmental Protection and Information Center

Jene McCovey was an unwavering activist for Indigenous rights, environmental protection, and social justice issues. Despite her physical confinement to a wheelchair, she always made it to rallies, protests, and community events to advocate for important causes. Her activism began in her early twenties, and it never stopped. She helped secure protections for native communities that were being sprayed by logging companies with toxic herbicides, she participated in the Save the Redwoods campaign, advocated for protection of Dillon Creek where sacred sites were at risk of logging, fought for Klamath Dam removal, protested radioactive contamination



Jene speaking at a rally in 2002. PHOTO FROM TREES FOUNDATION'S ARCHIVES

from nuclear waste, spoke out against Navy sonar testing, and showed up to speak at public meetings for countless other issues that would impact the places we live and love.

Wherever there was a threat, Jene was right there in the forefront, supporting, speaking, and representing people, places, and wildlife to make our community and the world a better, more conscientious place. We are grateful for the time we shared with Jene and know her legacy will live on through the inspiration that she gave to all of us she touched with her words, compassion, and tenacity.

Richard Gienger,
Restoration Leadership Project
Jene McCovey was our connection to consciousness.

Susan Nolan, *Institute for Sustainable Forestry*

During the campaign to support the Thompson Wilderness bill (passed Congress in 2006), the California Wilderness Coalition built public support by sponsoring public hikes into the proposed new protected areas. One of them went to Cahto, near Laytonville. Jene heard about it and wanted to go. Of course she loved the outdoors, and the place being named for the local tribe must have been an added pull.



Jene at the 2017 EF! Round River Rendezvous. PHOTO BY KAREN PICKETT

The main access into the area is an old road, wide and fairly level. Jene arrived in a van, lowered her chair to the ground, and off we went. Four-wheeling down the old dirt road, Jene kept up with the group, taking it all in, and seemed to really enjoy herself.

Jerry Martien, *Friends of Elk River*

I last saw Jene at a small prayer ceremony beside Elk River where it empties into the Bay. About a dozen people had gathered to honor a dream. Down in Mendocino

a woman had dreamt that the forest was all cut down. And then she saw a group of people carrying a small redwood log, almost like a coffin. It had to be carried all the way to the northern end of Cascadia—only that could save the forest. Then some of her Pomo friends said the dream should be acted on.

It sounded like a crazy idea, but hey: nothing else has slowed the extinction logging of Elk River's forests. Maybe a blessing would help. I had to admit it was a visionary act. The log was carried over the coast range, up the Eel, over to the Mattole, to Ferndale by the Wildcat Road, stopping for prayer and ceremony along the way. Jene had traveled part of the way in her wheelchair. As always, she had the right words to say when we gathered beside the river.

Last I heard, the log was still making its way north.

Of those wheels she made wings.
Of her words
blessings we still live with.



Jene McCovey speaking at a rally for the Mattole forests at HRC headquarters in Scotia in 2018
PHOTO BY KAREN PICKETT



Living with Wildlife

To Rescue or Not to Rescue

Uh-OH. You see wildlife stressed and in pain. What do you do?

First, you must assess the situation. Are you going to attempt a rescue or let nature do Her thing?

Are you prepared to do a rescue?

Say you want to rescue a fox with a broken leg. She's on the side of the road, and you want to take her to a wildlife rescue facility. The first thing to do is to call the nearest one and make sure it's okay. Always keep an eye on your patient—rescue specialists on the phone will ask if you have eyes on it.

What I'm about to share with you will work for a multitude of rescues if that's the path you choose to take.

Now, the first option—to rescue—can be hard, especially if you're alone. If you decide to do a rescue, NEVER attempt to rescue the following: a full-grown raccoon,

a baby bear, a full-grown (even if small) deer (no spots), coyote, bobcat, or a river otter. All these guys can be really intense, and you should call for backup or advice. If you can, get in touch with your local game warden for help, or if the animal is on the actual highway, you can call for CHP backup.

Okay, let's continue with this scenario where you've decided to commit to a rescue. First thing, take a deep breath and calm those nerves as best you can. Now, before you do this rescue, it's important to have a game plan. Where is the road? Will the animal run? Are you safe? Where is the injury and where is my target to grab? You know this rescue is all on you. No one else will be responsible if you get hurt.

You will need a cardboard box, a blanket or towel, and ideally a friend to help. Use the blanket or towel to toss it over the

injured wildlife. That makes it stop and think "What just happened?!" You take that freeze opportunity to get a good grasp, and because you've stopped to evaluate the situation, you know just where to grab. Your box or kennel is ready and open and it's sitting right next to the injured wildlife. It's handy to have a partner nearby to hold that door or flap open and shut it once you have deposited the wildlife.

If you are rescuing a bird, a cardboard box is best. Close it up and make it dark. Immediately they will feel better. When dealing with birds it is also important to not put towels in the box because they can get their talons or claws caught.

Okay, so now you have your wildlife in a box safely. Try to speak in a low voice and drive carefully to the nearest rehab facility. Typically, you will get a call from the rehab facility if your patient recovers. They will offer you the opportunity to pick up and release your little survivor, and if you can't, they will find someone who will. The recovered patient will be released where it was found, within a 1- to 3-mile radius.

So, what happens when we just leave it alone? (Remember, wildlife eats wildlife.) If the injured animal is in a huge amount of pain and suffering, call the sheriff or CHP, and they will help you get in touch with a local warden.

These can be hard choices. We out here in the woods see enough wildlife to know that it's a harsh world out there for them. They love it, though! They wouldn't have it any other way. Well, maybe more fish in the creeks and more luscious habitat, but it's still the open wild they call home. Eating and being eaten is a daily occurrence. It's a web thing.



Sometimes, wild animals should be left alone. This fawn could be waiting for its mom.

PHOTO FROM WWW.THEITEM.COM

Let's talk about one more scenario, abandoned wildlife. If you see a fawn (has spots), leave it; you see a baby jackrabbit (fur), leave it. Other babies you may "find," such as squirrels at the foot of trees or birds, give the mamas a chance to find them themselves. It is important to not meddle too much in the ways of things. If you do find a baby bird, listen for its mama when it cries. Usually there is a nest nearby. If you see that nest, put that baby back. It's a myth that you can't touch babies. If you see a squirrel at the foot of a tree, let it scream and mama will come get it. If it's at night, bring it in, keep it warm, and try again the next day. If the baby is injured or sick, the mama squirrel will not retrieve it. Now, if your cat is going to eat the infant, then we may have a rescue situation on our hands. Speaking of domestic terrors, please do your best to make sure your pets aren't killing the wildlife. I mean, even my chicken likes to eat lizards and frogs! I tell ya, it's hard to have nirvana these days—we can try, though. All we can do is our best.

We Can Help By Doing The Following:

DRIVE CAUTIOUSLY! Ya feel me here? There's so much beautiful wildlife on the road.

DO NOT FEED WILDLIFE! We have a saying: "A fed bear is a dead bear." By feeding wildlife, it could possibly spread disease and/or create a nuisance situation.

One of the saddest things, however, is distemper (a contagious and incurable viral disease). That's a whole article in and of itself. Here we can say there is nothing, unfortunately, to be done for that (except prevention). Distemper shows itself in dogs, foxes, skunks, racoons, coyotes, minks, fishers, and others. It is a viral infection that wildlife gets mainly from unvaccinated pets. Signs of distemper are jerky motions, walking in circles, coming close to you without fear, or the



Injured Bird: Place a towel or sheet over the bird and gently place it in a secure container (e.g. cardboard box with a lid). Use caution as raptors have very sharp talons and a powerful grip. If you are not comfortable handling the bird, contact your local animal control and ask them to provide assistance and deliver to local wildlife hospital. PHOTO FROM URBANBIRD.ORG

sick animal may just be lying down and suffering; it depends on what stage it's in. Things we can do to help prevent distemper are:

1. Vaccinate your puppies for it.
2. Do not put out water for wildlife in a standing vessel (big vector for disease).
3. Help spread the word.

Another super sad one is poison. Those darn rats and mice. I just have to share a Living with Wildlife story with you guys.

My friend is an exclusionist in NY. He gets a call for some mice to exclude. He goes over and the owner says, I have a weasel now! A wild weasel moved into his house and took out all the mice!! Crazy, right? I have another cool story about a rattlesnake, but I'll tell you later. Back to poisons. Poisons.... I get it, what do we do? When we poison rodents, we poison the wildlife pantry. Look up ways online to rid yourself of these issues without poisons first. Honestly, kill traps are much better than poisons. Throw the carcass out for snacks for a wild opportunist.

If there is someone from the wildlife

community distressed or dying, it's hard to watch, especially when we can't do anything about it. Assessing the situation is important because if a creature is dying, it would rather die at home, in the wild, than get transported and euthanized. This is life. Wild life. We can hope the subject has died of natural causes and will be good nourishment for someone else. The wheel of life must turn.

Living with awesome-sauce wildlife such as foxes and hawks is such a privilege. I hope you all are enjoying the company of your wild community. Next time we will talk about exclusion. Meanwhile, here's some homework: Look up wildlife exclusion and see what you learn. Until then, **STAY WILD, BABY!!**

🌲 Check out our blog at
mendowildblog.com

Traci Pellar has been an advocate for wildlife education and habitat conservation for more than 30 years. She currently serves on the Willits Environmental Center Board of Directors and is the co-founder of the Mendocino Wildlife Association. Stay wild baby!!

Northern Spotted Owl Critical Habitat in Legal Limbo

Environmental Protection
Information Center

By Tom Wheeler

The last three months have been extremely busy for the northern spotted owl.

In December, EPIC filed a lawsuit against the U.S. Fish and Wildlife Service to compel the agency to complete a decision whether the northern spotted owl warrants listing as “endangered” (rather than as “threatened,” which is its currently listed status). Just a week after our lawsuit was initiated, the agency replied that the owl warrants listing as endangered but that a final rule to the effect will be delayed by at least a year, as “reclassification of the northern spotted owl from a threatened species to an endangered species is warranted but precluded by higher priority actions.”

Meanwhile, behind closed doors, the U.S. Fish and Wildlife Service (USFWS) was working with the timber industry to gut protections for the owl. On January 15, the Trump Administration cut over 3.4 million acres of Critical Habitat for the northern spotted owl—some 42% of the amount designated in 2012 to ensure the owl’s survival—including hundreds of thousands of acres in California. The vast majority of this reduction is directed at Critical Habitat in “matrix” lands, where timber harvest is permissible (but not required) under the Northwest Forest Plan.

EPIC is now sharpening our pencils for new litigation. On January 19, we sent the USFWS a “Notice of Intent to Sue” letter, a required step prior to filing



The northern spotted owl BY FRANK D. LOSPALLUTO

any lawsuit alleging violations of the Endangered Species Act. Consistent with its last-minute publication, the new Critical Habitat rule is sloppy, relies on the wrong legal standards, and contradicts decades of previous USFWS guidance. Additionally, EPIC has submitted a Freedom of Information Act request for all documents concerning this decision. We hope that we do not need to slug it out in court. Based on the clear legal violations inherent in the rule, we believe that there are sufficient grounds to allow the Biden Administration to invalidate the rule through a settlement.

The Biden Administration has indicated it is performing a comprehensive review of regulations passed by the Trump Administration. As part of this review, the Biden Administration has stated that it would delay the rule

taking effect until it can complete this review. The Biden Administration can undo the damage of the new Critical Habitat rule through beginning a new rulemaking to reverse the rule. We trust that Interior Secretary Deb Haaland will give this rule, and others passed during the Trump era, a critical review.

Of course, the timber industry is back in court to challenge even this temporary delay, filing a lawsuit in early March in the D.C. District Court. EPIC and our allies are examining whether intervention is warranted.

Cuts to owl Critical Habitat have also drawn the attention of Congress. Congressman Jared Huffman, who represents the North Coast of California, together with Senate and House colleagues from the

Pacific Northwest and beyond, have requested a formal investigation into the January 15th cut decision.

Ultimately, the large bite at the Critical Habitat designation by the Trump Administration is likely to be its undoing. With multiple investigations and complaints forthcoming, the shoddy legal work will crumble. Had the agency attempted a more nuanced and narrow cutback of the owl's habitat, it may have succeeded in crafting a more legally defensible decision. But, of course, hubris was Trump's modus operandi. Meanwhile the owl perches in legal limbo. The federal government has recognized that the species is on the verge of extinction but refuses to complete a rulemaking to make that determination have legal meaning; meanwhile, the same agency has committed to removing protections for habitat.

 For more information:
wildcalifornia.org

Volunteer Stewardship Continues on the Lost Coast

Friends of the Lost Coast

Friends of the Lost Coast is committed to inspiring a passion for nature and connecting our local communities with meaningful experiences in the amazing public lands of the Lost Coast. We offer volunteer stewardship opportunities that connect local people to hands-on experiences working in our public lands.

Last December, Friends of the Lost Coast and our partners at Sanctuary Forest and California State Parks organized a volunteer stewardship work party to remove invasive French broom. We

worked at the Jones Beach headland in the Sinkyone Wilderness State Park. Fifteen volunteers participated. We spent three hours wielding weed wrenches to pull French broom at a safe social distance, with everyone wearing a protective facemask. The wind-swept headland and waves of the Pacific Ocean formed a fabulously scenic backdrop for our work.

We will be back pulling broom at Jones Beach again on Saturday, April 10. RSVP is required for anyone who wants to come out and participate. Please contact: michelle.forys@parks.ca.gov if you would like to attend.

In February, Friends of the Lost Coast and our partners at the Bureau of Land Management's King Range National Conservation Area office held a volunteer stewardship workday at two sites in Shelter Cove: Black Sands Beach and the Cape Mendocino Lighthouse at Mal Coombs Park. At Black Sands Beach, volunteers came to help maintain the native plant garden at the parking area overlook. At

Mal Coombs Park, volunteers and BLM staff worked to pull and remove invasive, non-native iceplant. It was a beautiful albeit at times windy day to work in Shelter Cove. A tremendous amount of work got done and a great time was had by all!

We will be hosting additional Shelter Cove volunteer stewardship workdays on the fourth Sunday of every month. Due to COVID-19 safety measures, RSVP for these events is required. To RSVP, or for more information, email: rob@lostcoast.org.

Our Lost Coast Education Center Native Plant Garden Volunteer Work Parties will continue throughout 2021, occurring on the first Thursday and the third Sunday of every month. To RSVP for a work party, or for more information on the garden and our native plant nursery, email: cheryl@lostcoast.org.

Want to get involved? You can, it's easy! Friends of the Lost Coast now has an online events calendar on our website with all the dates, times, and



Volunteers loading removed invasive iceplant at the Cape Mendocino Lighthouse Beach at Mal Coombs Park. PHOTO BY ROB DiPERNA

Conservation Partner Organizations at Work

information you will need to join us in experiencing and stewarding our Lost Coast public lands. Our calendar is continually updated with new events and programs for 2021. All you need to do to get involved is to check out our online events calendar at: lostcoast.org/events/.

Come out and join us in 2021 and experience the feeling of satisfaction that comes from discovery and learning about the natural wonders of this place we call home. Public lands are all of our lands. There is no better way to capture the feeling of making these lands your lands than by getting involved in their maintenance and stewardship!

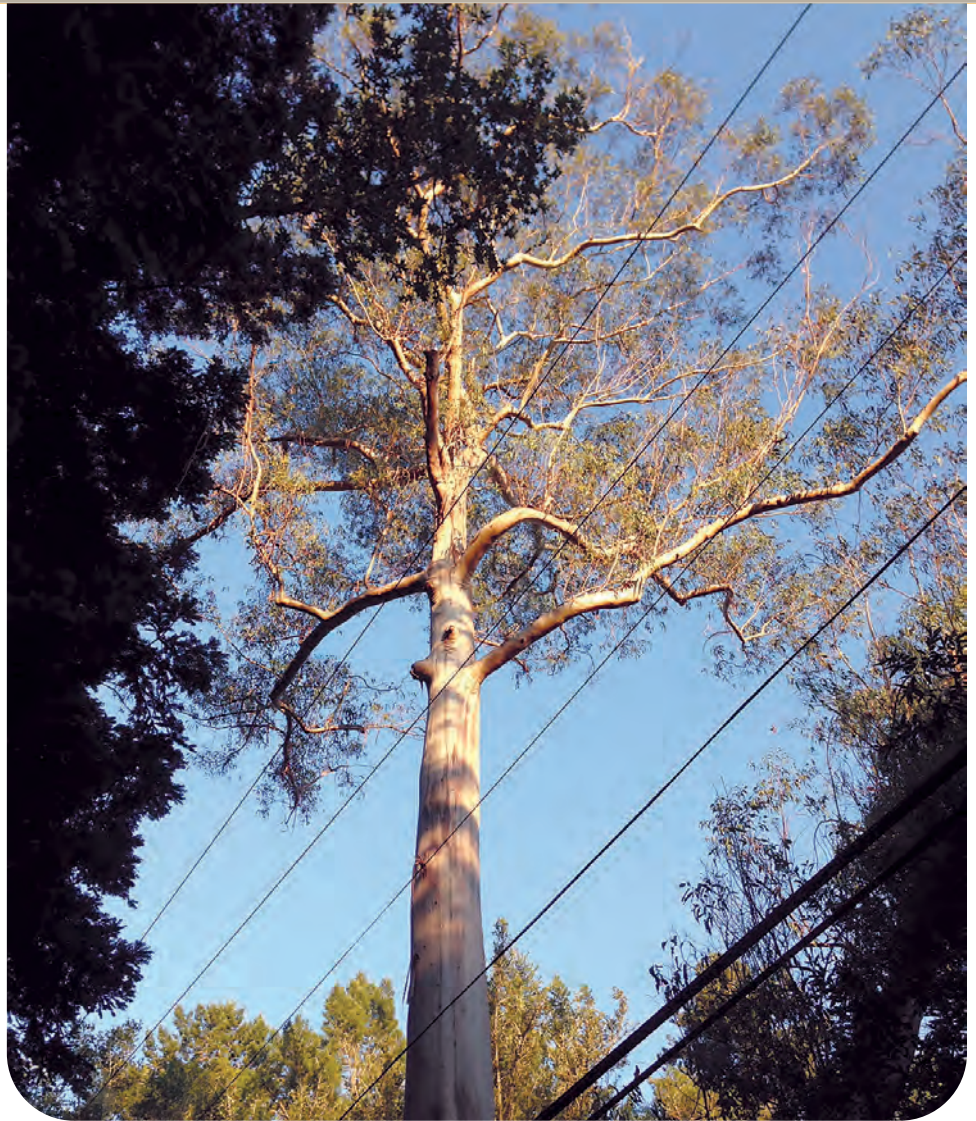
🌲 For more information: lostcoast.org

Eucalyptus Trees in the Urban Forest of Mill Valley, California

Mill Valley StreamKeepers

By Betsy Wanner Bikle

Mill Valley, just north of San Francisco in Marin County, stretches from beside Richardson Bay, an arm of San Francisco Bay, up through former oak grasslands, into a redwood forest on the eastern flanks of Mount Tamalpais. The famed Muir Woods is in the next watershed south. Jurisdictions of the Richardson Bay Watershed include the city of Mill Valley, unincorporated county land, and in the upper reaches: Marin Municipal Water District, County Open Space, and Golden Gate National Recreation Area. Settlers and more recent residents have planted many nonnative trees; eucalyptus trees by the hundreds were planted as wind breaks in the county subwatersheds of Tamalpais Valley



Eucalyptus in Mill Valley's urban setting PHOTO FROM MVSK

and Homestead Valley. Within the city boundaries, second-growth redwoods are the dominant tree in the original forested area. Eucalyptuses are found here and there, not planted en masse within the city.

This article looks at blue gum eucalyptus on public land within the Mill Valley city boundary. Although the Maintenance Report from which information is drawn is aimed at public safety from the aspect of the risk of falling trees or limbs, other recent concerns have included fire danger in the city and a loss of the original habitat of threatened and endangered

species such as the northern spotted owl, steelhead trout, and coho salmon, the latter now extirpated in the watershed.

In a 2017 city survey, 90 eucalyptus trees are identified and mapped in 16 map areas. Two of the map areas are right by the bay; three map areas are in former or current oak/bay/buckeye grasslands; and the remaining 11 are in redwood forest areas that remain predominantly redwood with houses built on winding streets. Thirty-plus years ago in 1988, when the first inventory was made on public land, 374 eucalyptus trees were

found, of which 107 were recommended for removal. Between 1994 and 2017, 111 trees not on the removal list of the consultant were removed to make way for new construction or to repair damage to property. The remaining trees are large and probably have roots that go down into fissures in the bedrock to access water. The trees are well adapted to the current climate regime: local rainfall pattern of no rain from about mid April until mid October and then about 36 inches of rain during about 52 days of the winter. Fog rolls in over the hills from the Pacific year-round.

Arborists and perhaps the general public consider healthy eucalyptus trees scattered around the town as “massive, providing significant aesthetic values to the neighborhoods, as well as wildlife habitat, carbon sequestration and erosion control.” This quote is from the Mill Valley report “Maintenance Plan, Publicly Owned Eucalyptus Trees,” written by arborist Denise Britton in 2018. But fire fighters have a different view; they know that eucalyptus trees can be dangerous in a fire landscape due to both their high oil content and the litter found around the trees. Redwood canyons, on the other hand, were once part of a plan to act as a sink to slow the spread of fire. Many redwoods in Mill Valley show black scars from fires decades ago.

The dropped leaves and bark from eucalyptuses could easily catch fire and be swept up in wind to carry burning embers to ignite new fires. The substantial debris also can deter native shrubs and ground cover from sprouting under the trees, thus diminishing the native habitat. Needless to say, the eucalyptus species (native to Australia) did not develop in balance with the microbes, insects, birds, and other biota of the northern California area.

Carbon sequestration and erosion control are laudable characteristics of the trees, although their burning releases huge amounts of carbon into the air. The invasive spread of eucalyptus is thankfully not as aggressive as certain other non-natives such as brooms, English and Algerian ivy, pampas grass, hanging sedge (*Carex pendula*), certain grasses, as well as acacia trees, and possibly pines, which are not native to Marin County except on the land of Point Reyes National Seashore. Unfortunately, removal of the eucalyptus trees is a very expensive proposition and arouses citizen outcry. Removal of a single tree can cost between \$10,000 and \$30,000.

To conclude, eucalyptus trees belong in their native lands on the other side of the globe or in arboretums. To get rid of all these trees in Mill Valley will require continued effort by the Department of Public Works as well as responsible action by private property owners. An effort will be needed to replace the wind protection the tall trees provide. And their fire danger can be decreased by keeping the ground and shrubs below the trees cleaned up.

Eucalyptus mitigation is one part of the Mill Valley StreamKeepers’ effort to protect and restore the watershed of Mill Valley.

 For more information:
millvalleystreamkeepers.org

Update on the Proposed Humboldt Bay Aquaculture Project

Salmonid Restoration Federation

In 2020, Salmonid Restoration Federation was awarded a grant from the Rose Foundation to research and conduct outreach regarding the potential for

aquaculture in Humboldt Bay. The bay is already home to an oyster-farming industry, and it was recently announced that Humboldt State University will be starting a seaweed farm in the bay. Humboldt Bay is amenable to aquaculture because there are existing areas permitted for aquaculture operations, and the bay is clean and relatively undeveloped, compared to other coastal areas of California. Even if the particular aquafarming project discussed below is not approved, this site has been identified as a high-potential location and will likely be re-developed some time in the near future.

The current focus of our research and outreach efforts regarding aquaculture in Humboldt is the proposed Nordic Aquafarms facility. Nordic Aquafarms (NAF) plans to build a land-based fish farm on the Samoa Peninsula at an old pulp mill site, which has an existing discharge pipe reaching 1.5 miles into the ocean to eliminate waste from the facility. In the NAF recirculating aquaculture system, adult fish are held in large tanks where they are able to swim, in order to mimic conditions similar to those of wild fish. The system takes in fresh water, recirculates it for 36 hours, and then releases it into the ocean via the existing outfall pipe. This fresh water would likely come from the Mad River, the main source of water for the Humboldt Bay Municipal Water District.

In several respects, SRF supports this concept because it is an improvement on the problematic net pen version of salmon farming that until recently was extremely popular throughout the Pacific Northwest. We commend NAF for its technological solution to a very real problem—people want to eat more salmon even as the wild stocks continue to decline. NAF will

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Current conditions of project site on the Samoa Peninsula (left), and an artist's rendition (right) of the proposed Nordic Aquafarms aquaculture project on the site. PHOTOS COURTESY NORDIC AQUAFARMS

do a great service to the Humboldt Bay Area by cleaning up the old pulp mill site and providing industrial jobs in a place that has faced economic hardship. Additionally, by locating their facility centrally on the West Coast, NAF hopes to reduce the carbon emissions caused by the global transportation of seafood.

However, we also see many potential negative issues with the proposed facility. The existing outfall pipe extends only 1.5 miles into the ocean, which seems far but still has the potential to impact water quality for plants and animals in the ocean and for humans who use the peninsula's beaches. An ongoing criticism of fish farming generally is that it is energy-intensive and has a significant environmental footprint, largely due to the carbon emissions from the plant itself and the amount of food required to grow farmed fish, especially salmon. Although the facility is referred to as a "recirculating system," it will require a constant intake of fresh water and will output salt-laden solid waste that needs to be somehow taken offsite.

There are also several ways this facility could negatively impact wild salmonids locally. coho salmon, listed as a threatened

species in this area, use the estuaries and streams surrounding Humboldt Bay as rearing habitat, and pollution or viruses that enter the water on the ocean side of the peninsula could be swept into the bay. Adult salmon will have to pass the outfall pipe during their migration between the ocean and freshwater streams. The effluent from the facility contains nitrogen and carbon, nutrient pollution that could cause harmful algae blooms. There is the potential for chemicals from treating things like fish disease as well as viruses themselves to spread from the facility to wild fish, even if it is not possible for the farmed fish to escape. In an area susceptible to earthquakes and tsunamis, it will be important to ensure that live fish cannot ever leave the facility, especially during a large seismic event. Nordic has recently indicated that the farmed fish will likely be a non-native species, a cause for concern if any of those fish escape.

Finally, Humboldt Bay contains California's second largest estuary, home to the largest remaining eelgrass beds in the state. Kelp beds offshore also represent an "at-risk" habitat that could be negatively impacted by pollutants and chemicals. It will be important for the community to keep all the potential pros and cons

of this facility in mind as Nordic's permitting process enters the public comment period, starting in April 2021.

If you are interested in learning more about this project, NAF is holding weekly open meetings for the general public via Zoom on Mondays. They are presenting information on specific topics once a week on Wednesdays. For the most up-to-date schedule of online events and links to these meetings, you can visit their Facebook page at www.facebook.com/Nordichumboldt

🌲 If you're interested in reviewing information on the Humboldt Bay Nordic Aquafarming project, you can visit SRF's webpage: www.calsalmon.org/programs/humboldt-bay-aquaculture

Virtual Salmonid Restoration Conference

Adaptation in Motion
April 21–23, 2021

Salmonid Restoration Federation

Salmonid Restoration Federation (SRF) is offering our first (and perhaps last) virtual Salmonid Restoration Conference, April 21–23, 2021. When SRF had to cancel the 2020 Conference

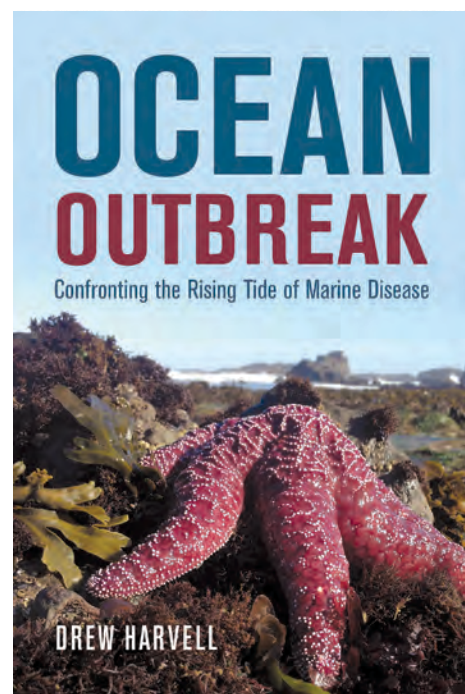
last year due to COVID-19, it was hard to fathom that a year later, we would still be trying to navigate new ways to provide technical education to the salmon restoration community. So much of the experience of attending the SRF Conference is the in-person convening of restoration practitioners from engineers to consultants, policy makers to planners, academics to students, and on-the-ground practitioners. Producing a virtual conference is truly a process of adaptation and learning new and inventive ways to communicate and engage.

The virtual conference will highlight ocean conditions, food webs, dam removal, reintroduction strategies, anadromous salmonid habitat suitability criteria, and strategies to accelerate steelhead and coho salmon recovery efforts.

Conference technical workshops will include a full day on Assessing Ecological Risks from Streamflow Diversions

in Coastal California Streams. Two half-day workshops, *Accelerating Coho and Steelhead Recovery* and *Speaking of Science*, will allow participants to explore methods for prioritizing specific restoration projects and improving their abilities as science communicators.

The SRF Plenary session will feature Rene Henery, California Science Director of Trout Unlimited, who will present thoughts on how preserving salmon diversity requires a diverse set of approaches that foster social and scientific interactions, in a talk called *Deep Restoration (Without and Within): Tending Old Wounds, Healing Systems, and Recovering Belonging*. Chuck Bonham, Director of the California Department of Fish and Wildlife, will discuss *The Difference A Year Makes*. Nate Mantua of NOAA/NMFS Southwest Fisheries Science Center will give a talk on *Ocean Conditions and the Emergence of Thiamine Deficiency in Central*



Ocean Outbreak author Drew Harvell will provide a keynote address at the Virtual SRF Conference.

Valley Chinook Salmon. Dr. Drew Harvell will speak on *Ocean Outbreaks Heating Up with Climate Change*.

Other conference events will include the SRF annual membership meeting, access to a screening and panel discussion of the film *Gather*, a free professional development session, and a virtual poster session.

🌲 To see the full agenda, please visit: www.calsalmon.org/conferences/salmonid-restoration-virtual-conference



Sammy Gensaw (above) is a Yurok tribal member and the director of the Ancestral Guard—an Indigenous organizing network. Sammy will be joining us in the *Gather* film screening panel.



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The full collection of Trees Foundation's grassroots publication is now a part of the Special Collections of Stanford University Library. Our publication was titled *Branching Out* from 1998-2007, and changed to *Forest & River News* in 2008.
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