Supporting Professionals
Who Study, Protect, and Manage
North America's Rivers

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RMS Journal

Ceremonial Circle: *Paddle Tribal Waters youth, family, and tribal members and supporters form a ceremonial circle on the sand spit at the mouth of the Klamath River. Photo: Erik Boomer/River Roots*

Indigenous Youth Make First Decent of the Undammed Klamath

by Ren Brownell

Several dozen Indigenous youth completed a 310-mile, month-long source-to-sea "first descent" of the undammed Klamath River in July 2025, realizing a dream of Klamath basin tribes that was years in the making.

As the youths, ages 13 to 20, approached the sand spit adjacent to the Klamath's mouth in their bright-colored kayaks, tribal elders, family members, friends and supporters waved and cheered them on.

"I feel so proud to have completed this trip, and am feeling grateful for the support of my family and the fact that I got to honor my grandma's legacy in her fight for dam removal," said Ke-Get Omar Dean V, 18, a member of the Yurok Tribe. "We got to complete this journey because of the people that came before us and ensured a free-flowing river."

The young paddlers trained—some for three years—to run whitewater with kayak instructors from the Paddle Tribal Waters program operated by the nonprofit group Rios to Rivers. The

(continued, page 6)

River Management Society

Editorial Policy

All contributions submitted for publication should be original, or reprinted with approval. Authorship implies responsibilities that can only be attributed to and performed by humans, rather than generative AI.

Articles are not edited for content and may not reflect the position, endorsement, or mission of RMS. The purpose of this policy is to encourage the free exchange of ideas concerning river management issues in an open forum of communication among the RMS membership.

Executive Director's Eddy

Whew.

As a breathtaking 2025 moves into our rearview mirror, it is not possible to have imagined surviving events that took place during a ridiculously short period last spring: a formidable financial scam, the abrupt loss of federal partnership for our Symposium (whose anticipated participation was critical), and game-changing flooding on the river whose story was central to the week's events.

We turned to members, partners, and sponsors, and made it through. With our new, smaller staff, many of you showed your interest in our programs. Several people offered extra doses of time and expertise, and illustrated a willingness to pursue workarounds. This helped us deliver the program we promised even if it was led by new faces or an alternate combination of staff and volunteers. Instead of facing a possible pausing of all operations, we were able to continue to pursue our mission and begin to build programs for 2026. Participation in our year-end campaign ended up doubly-matched, resulting in a level of individual financial support much higher than we have experienced in the past. Checks are still arriving!

Risa Shimoda, RMS Executive Director

What's New

Our tapestry of program and administrative delivery is pretty cool. We have grown our capacity flexibly, drawing on in-house expertise and familiar professionals. First, James Major is now a full-time employee! In addition to continuing to shepherd and increase the river data that supports the National Rivers Project, he will lead the Water Trails Working Group. We look forward to supporting and growing our colleagues who manage water trails as a unique and powerful cadre of professionals who learn from each other and contribute to a coherent, national system.

We are excited to be returning to the role of offering multiple day Wild and Scenic Rivers workshops! Nancy Taylor (she goes by "Taylor"), our colleague as the core team leader for the National Wilderness Skills Institute and former Wilderness and Wild and Scenic Rivers manager with the U.S. Forest Service (USFS), has begun to work with RMS as the instructor for two in-person Wild and Scenic Rivers workshops in April: one in Ft. Collins, Colorado for the Arapaho & Roosevelt National Forest leaders and Shoshone Forest Service, and one in Cody, Wyoming. We are working closely with her and the Arapahoe & Roosevelt and Shoshone Forest Service leads, advised by Steve Chesterton, Acting Director for the Wilderness and Wild and Scenic Rivers Program for the USFS. We welcome Taylor's experience and enthusiasm!

One more addition to our program team is Judy Culver, past RMS president and recent federal service retiree. Judy has offered to support both the River Studies and Leadership Certificate program and the Wild and Scenic Rivers workshop program. We may see her assisting Taylor or another instructor, and perhaps leading a workshop herself, down the road.

Finally, as we will always rely on our chapter programs for organizational health and growth, we are reaching out to both chapter volunteers and general members to redefine how to contribute to the continuing story of RMS serving the river management community.

So, we are looking different, armed with a new profile of experience and smarts, to drive forward with electing and supporting chapter officers as leaders of their respective chapters, developing and delivering instruction and training programs, and offering opportunities to simply listen to you and understand your needs as a professional as we continue downstream in support of your success.

Don't be a stranger: email, text, or call to tell me how we can support you, and how you'll help us grow! ❖

Risa Shimoda
Executive Director

Errata:

The "Ode to Kenneth Malone Vines" article in the Fall 2025 issue of the RMS Journal (Vol. 38, Issue 3, p. 30) incorrectly affiliated Denny Huffman as retired Bureau of Land Management. He is actually retired from the National Park Service.

President's Corner

What a year it has been!

Having served a bunch of years as the Pacific Chapter president and then stepping into the role of national RMS president, I personally have experienced an incredible season of learning in 2025. First and foremost, I've learned that RMS supports river professionals in many more ways than bolstering technical knowledge and providing avenues for networking.

Kristina Rylands, RMS President

No doubt 2025 was a tough year for rivers and river managers. But what became even more clear—at a symposium without our federal partners, in several Zoom member check-ins, and in a December 2025 series of Chapter Chats—is that RMS has been a lifeline during uncertain times. Yes, we're first and foremost a professional organization. But it's made up of humans who are passionate about rivers and the work of protecting them. What could be more central to supporting river professionals than being a place that sees its members and the challenges they face—not just on the job, but even hanging ONTO their jobs, or even in navigating separation from their work?

One member who lost their position told me, "One day I was at work, and the next I was cut off. I don't even know if folks know what happened to me or how to stay in touch." During the chapter chats we heard, "Don't give up on those of us feds. RMS should tap into the pool of recent retirees and those who were let go…but, give folks a time to heal, even grieve." We're hearing that more regional opportunities made through our RMS chapters are important local avenues to support healing through meaningful connections.

The best feedback that came out of the Chapter Chats was that in spite of a challenging year, folks are excited to be engaged. They appreciate the learning and collaboration opportunities RMS provides. Chapters are buzzing with ideas for educational trips in their regions as spaces to come together to learn from and support one another. Chapters in need of officers are thinking about how best to fill the openings.

We have much to learn from one another, and I believe 2026 could be an amazing season of change. We want to keep listening and creating a welcoming place for members to eddy out, process, grow, high five our teammates, and scout the next move. If you have ideas for how best to accomplish this—either on the chapter level or nationally—please reach out. RMS sees you and is here to support you. ❖

Kristina Rylands
RMS President

Pacific by Kristina Rylands

Introduction to the Issue: Bringing Salmon Home

You will notice a running theme in this Pacific-focused edition of the *RMS Journal* highlighting the tremendous stories of salmon returning to California rivers. My river-related Google search has been pinging nonstop: Salmon are returning to their historic waters of the upper Klamath River. Winter-run Chinook are showing up on the McCloud River for the first time in 100 years. Fall-run salmon are even returning to upper creeks feeding the San Francisco Bay.

This past November, I did my annual paddle on both the lower Merced and Tuolumne Rivers in Central California to catch a glimpse of the fall-run Chinook. Typically we would be thrilled to see just a handful. This year the fall-run Chinook were so plentiful they were bumping into our boats as post-spawn carcasses lined the river bottom. We were blown away. Last June, river managers on the lower Tuolumne were taken by surprise when over a thousand spring-run Chinook were trapped in a pool below the Don Pedro Dam—a place where it was believed spring-run were effectively extirpated. This launched an innovative and successful rescue event to return the fish to the main downstream river channel.

These are hopeful stories that underscore the importance of not only ensuring suitable habitat for these fish, but the important collaborations that are helping to bring California salmonids back from the brink.

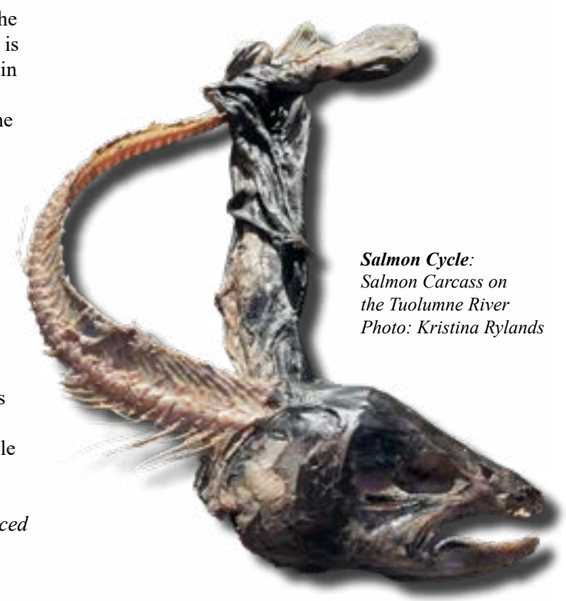
***Where the Rivers Flow**: Rivers of the Pacific Chapter mentioned in this issue.*
Map: James Major

***Floating Classroom:** Highlighting Chinook Salmon Lifecycle and Feather River Research. Story page 10-11*
Photo: California Department of Water Resources

One example is the Merced-Tuolumne Salmon Alliance (MTSA), a collaboration of 18 federal and state agencies, tribes, and nonprofit organizations seeking to recover Central Valley spring-run salmon and Central Valley steelhead in these two vital tributaries of the San Joaquin River, which connects to the Pacific ocean. Through a Memo of Understanding, this group is on the ground floor of building cooperation and coordination in the hopes of connecting these two rivers—both originating in Yosemite National Park and separated by several dams—to the San Joaquin River. Included in this vision is the imagination-busting goal of returning some of these species to the upper portions of the watershed, above the dams that have effectively separated fish species like the steelhead from their uppermost migration areas. The MTSA is harnessing the expertise and lessons learned from successful efforts in the northern parts of California to inform recovery and restoration strategies.

Hopefully you are inspired by the stories presented here in the *RMS Journal.* There are hundreds more playing out across California. Clearly, the salmon want to come home. What are river managers doing to study and facilitate this recovery while restoring hope? ❖

Kristina Rylands is the watershed director for the Upper Merced River Watershed Council, which is a member of the Merced Tuolumne Salmon Alliance.



***Salmon Cycle**:*
Salmon Carcass on the Tuolumne River
Photo: Kristina Rylands

***Indigenous Youth Make First Decent of the Undammed Klamath**, continued from page 1)*

program includes youth from the Klamath, Yurok, Karuk, Quartz Valley, Hoopa Valley, Warm Springs and Tohono O'odham tribes.

Four hydroelectric dams blocked the river for more than a century, impeding once-abundant salmon runs. The last of those dams was demolished last year, completing the biggest dam removal in history. The young kayakers set out June 12, 2025 to run the river, free-flowing for the first time in more than 100 years.

During the final few days of the journey the paddlers were joined by other Indigenous youth and representatives from the Snake River and other river basins in the U.S., and members of kayak clubs and Indigenous communities in Chile and Bolivia and as far away as New Zealand.

"Dam removal has shown us that we can accomplish anything, even if it is hard. This trip was long but has shown me how strong I can be. I feel grateful for my ancestors and everyone who has been helpful. I am proud to be part of this experience," said Melia McNair, 15, of the Klamath and Modoc tribes.

"Since it has ended it has been mixed emotions, joy to have completed the journey, and sad that this moment is coming to an end," said Autumn Goodwin, 18, of the Karuk Tribe. "But in a way, it is just the beginning. It is a bittersweet moment." ❖

For more information on Rios to Rivers: https://www.riostorivers.org/media-center.

***Toward the Mouth of the Klamath:** Paddle Tribal Waters youth approach the mouth of the Klamath River, followed by dozens of family and tribal members, supporters and friends. Photo: Erik Boomer/River Roots*

***Tribal Flag Raised:** Paddle Tribal Waters youth carry a tribal flag at the mouth of the Klamath River. Photo: Erik Boomer/River Roots*

At the 2025 RMS Symposium Opening Plenary, Amy Bowers Cordalis from Ridges to Riffles Indigenous Conservation Group shared a message of hope and determination—that we can do what seems impossible on our rivers because we have seen this historic transformation on the Klamath River. Photo: Bekah Price

RMS' Connection with Paddle Tribal Waters

Prior to their historic first descent of the newly restored Klamath River, the youth from Paddle Tribal Waters shared their stories with us at the 2025 RMS Symposium in Ashland (RMS Journal, Vol. 38, Issue 2, p. 21). Listen to the full interview on the June 17 River Radius Podcast: "Live on Stage with Paddle Tribal Waters & their Source to Sea."

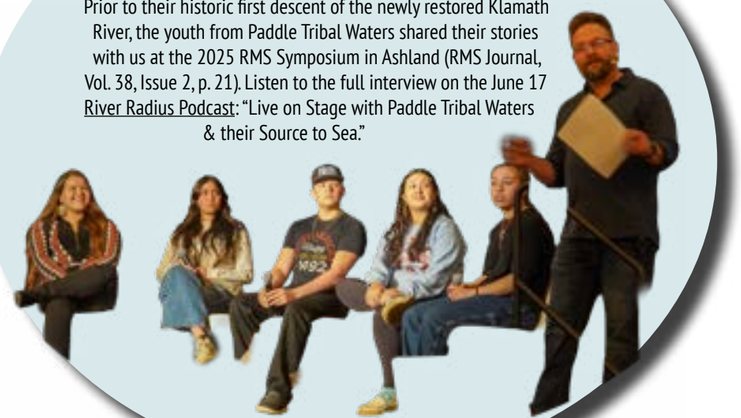


Photo: James Vonesh

Experimental Hatchery Strays from the San Joaquin River Restoration Program: Finding Suitable Habitat and Cold Water on the Tuolumne

Reprinted with permission from the author and the publisher. Originally published in a Modesto Irrigation District press release July 21, 2025.

In an exciting and unexpected conservation success, 1,200 adult spring-run Chinook salmon—originally released as part of the San Joaquin River Restoration Program—made their way to the Tuolumne River, where they've found abundant habitat and cold, clean water in which to spend the summer prior to spawning in the fall.

This remarkable development represents an important milestone for the San Joaquin River Restoration Program and highlights the positive impact of the Tuolumne River Partners (Turlock and Modesto Irrigation Districts and the San Francisco Public Utilities Commission) longstanding stewardship and science-based management of the Tuolumne River.

***Fish Slide on the Tuolumne River**: Slide from various angles, as well as Chinook salmon being lowered by hand into slide, from the rescue and relocation at the base of La Grange Dam. Photos: California Department of Fish and Wildlife*

These spring-run Chinook salmon, part of a long-term experimental reintroduction effort on the San Joaquin River, were drawn to the Tuolumne due to its robust spring pulse flows, favorable temperature conditions, and higher water volumes—conditions created under the Tuolumne River Partners' annual operations to support fall-run Chinook.

Drone surveys of nine pools in the Tuolumne River on July 16 counted 1,154 fish; fisheries biologists conservatively estimate that the total number of spring-run may be over 1,500. "In addition to the pulse flow, numerous other factors, including large hatchery releases, extremely wet conditions during migration to sea, and closure of commercial fishing, all contributed to the unprecedented spring-run numbers seen on the Tuolumne in 2025," said FISHBIO Vice President and Senior Biologist Andrea Fuller.

Emergency Relocation Efforts to Prevent Stranding

As spring pulse flows receded and the La Grange Diversion Dam—a historic overpour dam built in 1893—ceased overtopping, the plunge pool at the base of the dam became disconnected from the lower river, trapping a significant number of fish in the pool. In close coordination with the U.S. Fish & Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), NOAA Fisheries, and fisheries consulting firm FISHBIO, the Districts supported five relocation operations, successfully moving spring-run salmon to deeper, cooler pools downstream to support their survival over the summer. While CDFW representatives led the effort of physically handling the fish, District staff provided logistical and technical support that aided the relocation efforts.

"We were pleasantly surprised by the number of spring-run salmon identified in the Tuolumne River, and it was impressive to see the way District staff and state and federal fishery agencies worked together—from CDFW designing the relocation plan to TID's Construction and Maintenance team developing a device to safely relocate the fish from the pool at the base of La Grange dam to a more suitable part of the river," said Brad Koehn, TID General Manager.

Science-Driven Monitoring and Conservation Commitment

To better understand and support this unique salmon population throughout their entire lifecycle, the Tuolumne River Partners have voluntarily implemented an extensive scientific monitoring program. This includes real-time monitoring of water quality (including water temperature and dissolved oxygen) at key points along the river, detailed mapping of river habitats, and expansion of on-the-ground surveys to track fish behavior and spawning success. Weekly drone surveys continue to monitor the health and numbers of spring-run Chinook.

"Our commitment to science-based, data-driven measures is making a real difference on the Tuolumne River," said MID General Manager Jimi Netniss. "We're excited to keep this momentum going and work alongside other agencies and partners who share our vision for a healthy river and fish populations."

To protect the genetic integrity of both spring-run and fall-run Chinook salmon during the late summer and fall spawning season, the Tuolumne River Partners have proposed the installation of a segregation weir near Old La Grange Bridge that will provide separate spawning areas for spring-run and fall-run Chinook. This would help support the resilience of the overall salmon population.

Together, these efforts will support the significant public investments made in the San Joaquin River Restoration Program.

A Sustainable Path Forward for Spring-Run Salmon

Preliminary data—including submersible video from the CDFW and visual observations during relocation efforts—indicate that the vast majority of the returning fish are hatchery-origin (evidenced by the absence of adipose fins). These findings, coupled with scientific studies specifically conducted on the Tuolumne River, suggest that habitat conditions in the river, enhanced by proactive management, are not only suitable for fall-run Chinook but can also sustain spring-run populations.

An **adipose fin** is a small, fleshy fin located on the back of certain fish, typically between the dorsal and tail fins.

Based on the amount of available spawning habitat on the lower Tuolumne River, including newly constructed spawning habitat upstream of Old La Grange Bridge, there is sufficient habitat to support successful spawning and rearing by both spring-running and fall-running Chinook salmon if the available habitat is actively managed to the benefit of both runs. Planned future habitat restoration efforts on the lower Tuolumne River will provide additional habitat to sustainably support spring-run Chinook salmon into the future.

"We're committed to being good environmental stewards, and it's great to see our collective efforts pay off with so many fish on the Lower Tuolumne," said SFPUC General Manager Dennis Herrera. "Together with our partners, we're doing the work to protect and restore native fish populations on the lower river. The Old La Grange Bridge project is a preview of the future. It's an example of the many projects to come as part of our longer-term commitment to significantly invest in improving habitat on the Lower Tuolumne through the Healthy Rivers and Landscapes Program." ❖

Background on the San Joaquin Restoration Program can be found here SJRRP: https://restoresjr.net/

Floating Classroom Program
Highlights Chinook Salmon Lifecycle and Feather River Research

Reprinted with permission from the author and the publisher. Originally published in a California Department of Water Resources press release January 7, 2025.

During the autumn months, the Feather River in Oroville is home to adult Chinook salmon that have returned to their natural spawning grounds to complete their lifecycle and start the next generation. This infusion of thousands of salmon offers a prime opportunity for public education, with classes held on the river instead of within the four walls of a school. Through the Department of Water Resources' (DWR) Feather River Floating Classroom Program, people of all ages are learning about the salmon lifecycle and critical ongoing conservation efforts and research in the Feather River.

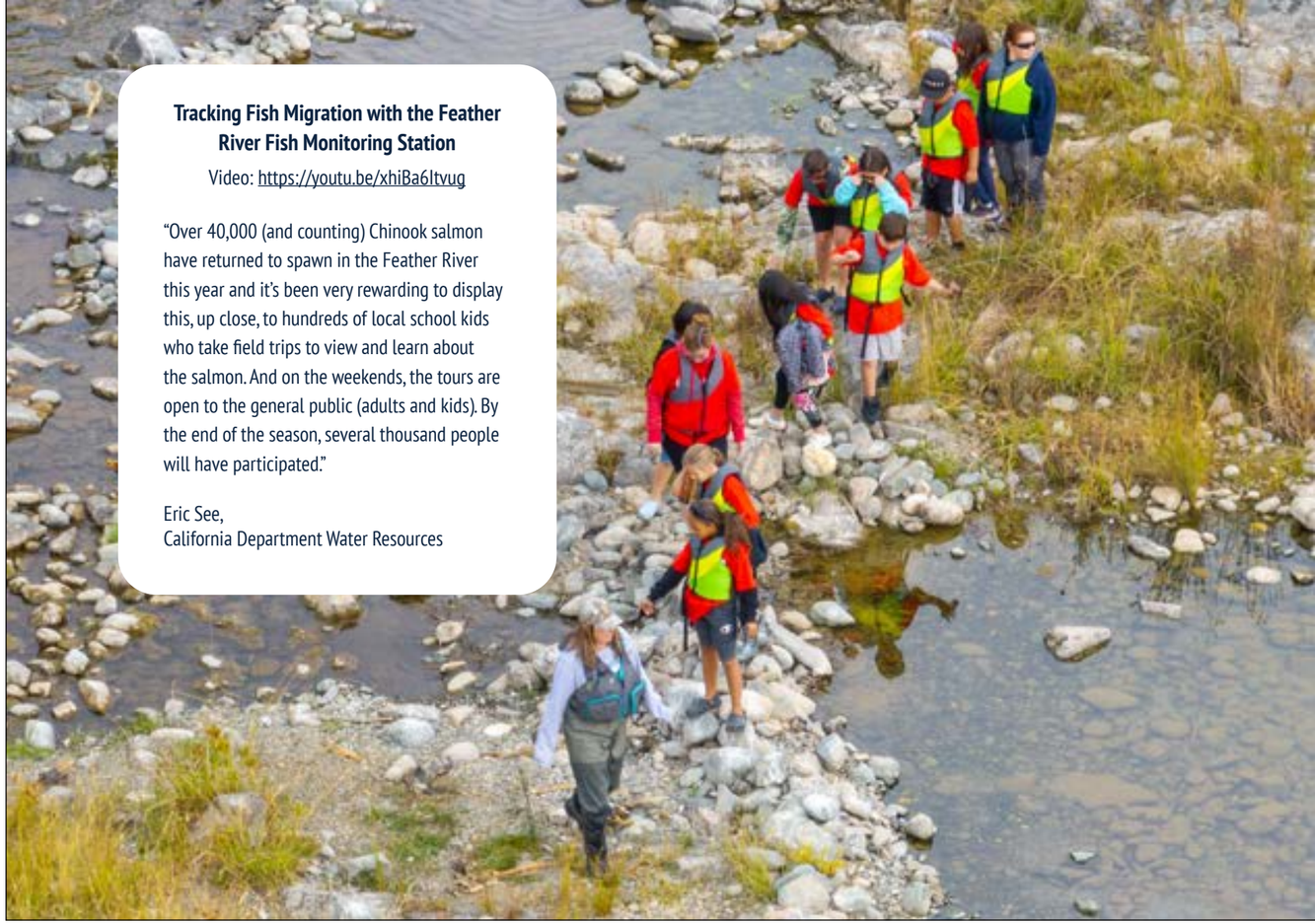
Developed by environmental scientists within DWR's Division of Integrated Science and Engineering (DISE), the Feather River Floating Classroom Program has held various forms over the last decade. For many years public tours were offered solely during the City of Oroville's Salmon Festival, celebrating the return of Chinook salmon. With the program's growing popularity, DWR is now supporting dozens of free tours for local schools and public members during the fall spawning season.

"The floating classroom program is so important because it gives people an opportunity to have a connection to their local environment," said Michelle Pepping, environmental scientist with DISE. "We're building that bridge from the environment directly to the community and sharing information about the salmon's life history and the work DWR does on the river to benefit salmon."

Floating classroom tours on the Feather River give students and public members an up-close and personal view of Chinook salmon, as rafts guided by scientists drift through their natural spawning habitat. Guides highlight redds, the nests of bright red fertilized eggs female Chinook salmon build in gravel beds, which then hatch into alevin, the first lifecycle stage of a new salmon.

"I touched two salmon twice," noted Plumas Avenue Elementary School fourth grader Jeremy Gendreau. "It was slimy but pretty cool."

"The Floating Classroom offered experiences that we can't give in the classroom," said Angela McLean, fourth grade teacher at Plumas Avenue Elementary School in Oroville. "The students were right on the river and they got to see, touch, and smell. They had a scientist explaining everything that was happening around them and it's all right here in their backyard."



Tracking Fish Migration with the Feather River Fish Monitoring Station

Video: https://youtu.be/xhiBa6ltvug

"Over 40,000 (and counting) Chinook salmon have returned to spawn in the Feather River this year and it's been very rewarding to display this, up close, to hundreds of local school kids who take field trips to view and learn about the salmon. And on the weekends, the tours are open to the general public (adults and kids). By the end of the season, several thousand people will have participated."

Eric See,
California Department Water Resources

Photos: California Department of Water Resources

Throughout the floating classroom tour, scientists also provide education about how DWR's State Water Project system operates, and the work occurring in the Feather River to support and monitor Chinook salmon populations. This includes discussions about gravel improvement projects to enhance spawning habitat and the many scientific monitoring and data collection projects underway that track Chinook salmon throughout their lifecycle.

"We're collecting data through snorkel surveys, screw trapping, beach seining, water quality monitoring, environmental DNA analysis, drone surveys, and more," Pepping said. "All that information is relayed to the public during floating classroom tours."

For local students participating in the floating classroom program, it also opens their eyes to potential career paths available in their hometown.

"I really want to have a job like this when I grow up," Gendreau added.

This unique experience educates students and community members of all ages who are eager to learn about salmon and the Feather River.

"This year DWR has reached over 800 students and more than 600 community members with our floating classrooms tours, which we're really excited about," Pepping said. "Being able to provide this experience to students and the public is an amazing thing that we can do to continue to build these connections to people, their environment, and their water."

The 2024 fall-run spawning season marked the first year in which DWR sponsored dozens of free tours to local schools and members of the public, with support from the Pacific States Marine Fisheries Commission and the Thermalito Union Elementary School District. While the Feather River Floating Classroom program has concluded for the season, DWR's efforts continue year-round to study salmon and enhance the Feather River habitat and help Chinook Salmon populations thrive. The Feather River Floating Classroom program will resume in the fall with the return of fall-run Chinook salmon. The Feather River Floating Classroom program will resume next fall with the return of fall-run Chinook salmon. ❖

Visit DWR's Protecting California's Salmon StoryMap to see more of the work being done to help salmon in California.

Soil core sample from Freeman Meadow

Leveraging Citizen Science to Measure Ecosystem Benefits of Meadow Restoration in the Yuba River Watershed

by Alecia Weisman

Originating as a network of headwater streams in the Northern Sierra Nevada that culminates into a large flowing river in the Sacramento Valley, the Yuba River Watershed is diverse and vital to the State of California. Supported by granite and driven by snowpack, this 1,345 square mile watershed makes significant contributions to California's water supply. This watershed has a rich history—flourishing for time immemorial with local Tribes such as the Nisenan, Washoe, Mountain Maidu and Konkow people, and—laying claim to an area that produced one of the biggest gold booms in California. The Yuba once supported one of the most abundant runs of Chinook salmon in the Sierra Nevada. Today those salmon are heavily impacted by habitat destruction caused by the Yuba's devastating mining history and the current presence of dams.

Retreating glaciers helped shape the headwaters of the Yuba, creating the foundation of meadow ecosystems. Meadow ecosystems in the Yuba and across the Sierra Nevada were also impacted by European emigrants, and it is estimated that 60-70% of meadows in the Sierra Nevada are in a degraded state. Healthy meadows provide outsized ecosystem benefits such as groundwater storage, flow attenuation, carbon sequestration, and wetted firebreaks, contributing to climate resilient pollinator and wildlife habitat. In degraded meadows, floodplain connectivity has been disrupted by anthropogenic impacts such as ditching, damming, roads, mining, and overgrazing, ultimately breaking down key ecological functions that prevent these systems from providing the ecosystem benefits that healthy meadows provide. Meadow restoration focuses on restoring floodplain connectivity and hydrologic processes within degraded meadows to support their transition back to healthy functioning meadows which can provide outsized ecosystem benefits.

The South Yuba River Citizens League (SYRCL) was founded in 1983 by grassroots activists determined to protect the South Yuba River from dams. Ultimately, SYRCL won permanent protections for 39 miles of the South Yuba River under California's Wild and Scenic Rivers Act. Today, SYRCL is the central hub of community activism to protect, restore, and celebrate the Yuba River watershed.

Meadow restoration is a focal piece of SYRCL's restoration work, with 1,200 acres of meadow actively being restored in the Yuba River Watershed. As part of meadow restoration efforts, SYRCL collects baseline and post-restoration data to determine the effectiveness of various meadow restoration techniques. SYRCL leverages citizen scientists through local volunteer support and via Youth Field Science Programs to support long-term data collection at various meadows in the Yuba Headwaters. SYRCL's Field Science Program provides unique opportunities for high school-aged students to participate in data collection in mountain meadows. The first is through our Youth Outdoor Leadership Opportunity (YOLO), which engages local high school students from within the watershed. The second is through a partnership with Earthwatch Institute, which hosts students from Los Angeles, Portland, and the Bay Area via the Girls in Science Program. Through this program, students learn to measure and collect groundwater, streamflow, plant, and soil carbon data, weaving together an understanding of meadow ecology and learning about careers in STEAM along the way.

As decentralized water storage basins at the headwaters of the Yuba, meadows play a crucial role in water management. Leveraging our community to collect long-term data as part of restoration efforts, contributes to datasets that inform land and water management decisions. ❖

Alecia Weisman is the Watershed Science Director for the South Yuba River Citizens League (SYRCL) in Nevada City, California. For more information about SYRCL visit: https://yubariver.org/.

***Measuring the Flow:** Collecting cross-sectional stream channel data in Van Norden Meadow. Photo: South Yuba River Citizens League*

***Data Collection in Mountain Meadows:** Students collecting groundwater data at Freeman Meadow in the North Yuba. Photos: South Yuba River Citizens League*

***Girls in Science:** Student group learning about the meadow restoration technique known as beaver dam analogs, human-made structures that mimic beaver dams.*

***Breaking from Groundwater Monitoring**: Girls in Science students taking a well-earned break during groundwater monitoring in Freeman Meadow.*

Protection Needs for the American River Parkway

By Brenda Gustin and Mark Berry

Save the American River Association (SARA), founded in 1961, was instrumental in establishing the American River Parkway and securing Wild and Scenic River protections under the California Natural Resources Agency (CNRA). The Parkway is often called the "crown jewel" of the region and is the only State Wild and Scenic River corridor flowing through a major U.S. metropolitan area. In the heart of California's capital, it is a living experiment asking whether a major city and a functioning river ecosystem can thrive together. SARA believes the answer is "yes," but the Parkway's values face severe and accelerating pressures.

This article outlines SARA's view that the American River Parkway is in peril and has begun dialogue with CNRA's to actively assist and enforce its unique legal protections and to ensure that government actions are consistent with the American River Parkway Plan (ARPP) and the California Wild and Scenic Rivers Act (CAWSRA). Our intent in publishing this information to this audience is to connect with other communities who have a designated Wild and Scenic River and have encountered a lack of local and/or state compliance with the laws that protect it.

CRNA Authority Over the American River Parkway

The Lower American River is a designated component of the California Wild and Scenic Rivers System (Pub. Res. Code §5093.54). Therefore, the Act provides that the Resources Agency "shall be responsible for coordinating the activities of state agencies … affecting rivers in the system" (§5093.60). It prohibits any state agency from assisting with projects that would adversely affect a designated river's free-flowing condition or natural character (§5093.56) and requires all state departments and local governments to exercise their powers to protect the river's free-flow and extraordinary values (§5093.61).

While the Lower American River is classified as a Recreational river and subject to the full substantive protections of CAWSRA, we are experiencing lack of recognition from local City Councils and Planning Departments.

The American River Parkway Plan (ARPP), adopted under the Urban American River Parkway Preservation Act (UARPPA) (Pub. Res. Code §§5840–5843), serves as the management plan for the Lower American River under state and federal Wild and Scenic law. It provides binding management guidance and direction for state departments, agencies, and local governments. Sacramento County Regional Parks manages day-to-day operations, but CNRA retains the duty to coordinate and to ensure consistency with the Plan across state and local actions. By enacting UARPPA, the Legislature adopted the ARPP into state law and required that "actions of state and local agencies with regard to land-use decisions shall be consistent with the American River Parkway Plan" (PRC §5842), subject only to narrow flood-operations carve-outs that must be "as nearly as practicable" consistent. The Parkway is therefore both a local and a state responsibility, with CNRA charged with safeguarding compliance with the ARPP framework.

American River Parkway in Peril

The Parkway hosts more than 8 million visits per year, more than Yosemite, yet it occupies a long, narrow corridor confined by levees and surrounded by urbanization. The ARPP calls for maintaining habitat connectivity and wildlife movement while safeguarding flood control (Policy 3.3).

A growing series of actions is eroding Wild and Scenic values (free-flowing condition, scenic quality, fishery, wildlife, and quiet, nature-based recreation) and straining ARPP consistency:

- **Land-use rollbacks and adjacent development pressures**, such as withdrawal of the Parkway Corridor Combining Zone in the River District without equivalent protective standards, and the proposed "American River One" project whose tall glass towers, lighting, and reflectivity would intrude visually on the Parkway and pose risks to anadromous fish and birds.

- **Commercialization and crowding**, including application of statewide commercial-vending statutes inside or immediately adjacent to the Parkway, increasing litter, noise, and wildlife food-conditioning contrary to ARPP guidance.

- **Intrusive access projects**, such as new or expanded motorized access at Sailor Bar, formalized trail systems in sensitive areas (e.g., Rossmoor Bar), and promenade concepts at Sutter's Landing that urbanize edges designated for naturalistic visual character or Preservation/Nature Study uses under the ARPP.

- **Large-venue and infrastructure concepts,** including stadium proposals near floodplain edges, new bridge concepts with piers and lighting in or into the Parkway, and housing pushed into undeveloped floodway lands rather than true infill, all of which conflict with ARPP land-use designations and the Parkway's scenic and habitat functions.

- **Chronic impacts and missed protection opportunities,** such as large-scale camping-related trash and contamination, upstream diversion pressures that threaten flows and cold-water management, and failure to secure key adjacent parcels like the Trumark (former Kassis) floodway property, despite 30×30 conservation objectives.

Without adherence to ARPP standards within the Parkway and on adjacent lands, and without the proactive land acquisition envisioned in the concept, these actions cumulatively undercut ARPP objectives and the river's State Wild and Scenic values.

A Focused Concern: American River Common Features

Recent American River Common Features (ARCF) erosion-protection packages, especially Contract 3B, along with related 3A/4A/4B work, would substantially expand rock revetment/riprap and launchable rock trenches, as well as large-scale tree and canopy removal with loss of shaded riverine aquatic habitat. Collectively, these changes would significantly alter the Parkway's scenic and ecological character.

The Final SEIS/SEIR (May 2025) acknowledges extensive permanent and temporary impacts across multiple segments but leaves many means-and-methods choices, and much vegetation removal, to contractor discretion. That approach obscures the true scope of loss and weakens avoidance and minimization.

This trajectory conflicts with ARPP policies that prefer biotechnical stabilization, emphasize impact avoidance, and protect a naturalistic visual character. It risks violating CAWSRA's §5093.56 "no-assist" standard if state actions materially impair the river's free-flowing condition or its extraordinary recreational, fishery, wildlife, and scenic values. It also raises CEQA Guidelines §15125(d) plan-consistency concerns and argues for a more rigorous cumulative-impact and alternatives analysis (Guidelines §§15126.4, 15126.6), including:

- construction-phase alternatives that sharply reduce temporary habitat clearing, and
- off-site mitigation and land acquisition to offset losses.

SARA never opposes necessary flood-protection work. However, less-destructive alternatives were not meaningfully analyzed, even as the Parkway faces broader pressures, including:

- **Bank armoring**: Existing riprap inside the Parkway covers about 2.52 river miles. ARCF additions (3B North/South; 4A/4B) would add roughly 8.5 miles, potentially hard-armoring nearly half of the 23-mile Parkway and substantially interfering with its natural banks and perceived free-flowing character.
- **Vegetation removal:** Hundreds of trees are identified for removal in 3B and 4B, with incomplete counts for 4A and the American River Mitigation Site. Using standard CEQA planning factors for mature riparian woodland suggests many hundreds more trees could be lost, in a corridor already narrowed and stressed by adjacent urban development.

In a State Wild and Scenic reach where nature-based recreation and anadromous fish depend on intact riparian structure, continuous shade, and natural banks, the combined effect of extensive new revetment and large-scale tree removal, much of it driven by contractor convenience, would produce significant degradation of ARPP-protected values.

Under PRC §§5093.56, 5093.60–.61, and PRC §5842, this is precisely where CNRA's coordination and plan-consistency roles should be brought to bear. Local groups such as SARA and American River Trees (ART) need CNRA's help to:

- enforce a hard separation between permanent and temporary disturbance;
- require low-clearance construction approaches and narrow access corridors;
- elevate biotechnical bank-stabilization alternatives; and
- where losses are "substantial and unavoidable," secure off-site land acquisition to restore buffers and habitat connectivity consistent with the ARPP.

SARA and ART, joined by the Center for Biological Diversity, have sought judicial relief to pause tree removal under Contract 3B and related work so that compliance with Wild and Scenic, NEPA, CEQA, and ARPP/UARPPA standards can be meaningfully considered before irreversible damage occurs. We respectfully ask CNRA to:

1. **Direct a Parkway-wide review of ARCF 3B and related packages,** requiring explicit accounting for permanent vs. temporary vegetation removal and committing to less-impactful construction methods and enforceable oversight that truly minimize clearing and bank hardening.
2. **Convene formal coordination** (PRC §5093.60) with SARA, ART, and other stakeholders to ensure consistency with the ARPP and CAWSRA and to address cumulative impacts and alternatives in a transparent, science-based manner.
3. **Safeguard the "adjacent lands" framework**, so local land-use decisions remain consistent with UARPPA §5842 and ARPP policies governing development visible from, or hydrologically connected to, the Parkway.
4. **Expand and buffer the Parkway**, prioritizing land acquisition through existing state conservation programs (including 30×30 opportunities) to preserve free-flowing, scenic, wildlife, and recreation values. Properties such as the Kassis/Trumark site and other remaining open lands along the corridor merit urgent evaluation and protection.

River groups must work together. What is happening on the American River today may reflect, or foretell, what other urban rivers will face tomorrow. We are grateful for the leadership of river-protection organizations across California and beyond and look forward to collaboration that ensures the American River Parkway—the only State Wild and Scenic River corridor running through a major U.S. metropolitan area—continues to demonstrate to the nation that flood safety, river health, and world-class naturalistic recreation can truly coexist. ❖

Brenda Gustin and Mark Berry are with the Save the American River Association (SARA) and invite guidance and assistance to keep this river Wild and Scenic at info@sarariverwatch.org.

California: A Salmon Society?

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by Carson Jeffres

Consider for a moment the identity of the Pacific Northwest as a Salmon Society. When you fly into an airport in the Pacific Northwest, salmon are on the floors and walls as art. This art is an expression of societal values in which salmon are important. In contrast, when you fly into Sacramento you see art of a river, birds, agriculture, but the salmon are missing. We have forgotten our past as a Salmon Society. That doesn't mean that they can't be in California's future.

Historically, California was a land of abundant natural resources. Indigenous communities from time immemorial lived in reciprocity with the land and water. One of these resources was prolific populations of Chinook salmon. People cared for the salmon, and the salmon provided for California's peoples. The diversity of rivers and habitats throughout Northern California led to the evolution of 4 distinct runs of Chinook salmon (winter, spring, fall, and late-fall) named for the time of year that they arrived in freshwater to begin their upstream migration toward spawning grounds. This life-history diversity meant that there were adult salmon in the rivers almost every month of the year. The diversity of life histories and habitats resulted in one of the largest salmon populations in the world. Yes, California was once a "salmon society"—meaning a society of people that relied on and valued healthy rivers and the fishes that lived within them, but following the arrival of European settlers, that changed rather quickly.

When gold was discovered at Sutter's Mill in 1848, salmon were still abundant in the Central Valley of California, and they would remain so for almost 50 more years despite the extreme degradation of the rivers in the relentless pursuit of gold. In 1881, there were 20 salmon canneries in Northern California. Even as late as the early 1900s, following the era of hydraulic mining and the beginning of the great damming and leveeing of California's rivers, there were still salmon canneries, even in West Sacramento. The last salmon cannery in California was closed by 1919. In a mere 40 years of environmental degradation, overexploitation, and genocide of the Indigenous communities who served as the first salmon stewards, Californians lost their identity as a Salmon Society.

Letting Salmon be Salmon

In present day California, salmon populations are a small fraction of their historic numbers. California's rivers are dammed, leveed, and highly managed to deliver water for a variety of human uses. This has resulted in several salmon populations being listed as threatened or endangered under state and federal laws. We are now in the third year of a commercial salmon fishing closure, with only a very limited recreational fishery allowed this year. Most salmon stocks are propped up by hatchery populations to mitigate for the lost habitats from dam construction in the early and mid-1900s.

Example of salmon art at SeaTac Airport. Work by Pat McGuire. Photo: Carson Jeffres

Once thought of as the solution to mitigate for lost habitats, hatcheries have largely resulted in a homogenization of what was once a complex of uniquely evolved traits specially suited for specific watersheds, and in most circumstances no longer let salmon express the diversity of life histories that have made them successful for millions of years. In short, reflecting on traditional knowledge from Chief Sisk with the Winnemem Wintu Tribe, it is clear we no longer let the salmon be salmon.

This all overlays the fact that the rivers in which these fish evolved have been so heavily altered that the fish have a hard time recognizing lost habitats and flow regimes. Our wild-spawning fish are mostly confined below dams in locations where they never spawned historically and struggle in all but the wettest years, which, not coincidentally, provide a glimpse of the ghost of historic flow and habitat conditions.

Hopeful Spots for Salmon

Is it all bad? Do we have any hope for the return of self-sustaining populations? In the last 20 or so years it has been difficult to have hope, but some changes are happening now, and we have others are on the horizon. One of the largest hope spots is the removal of four large dams on the Klamath River in 2024. This effort was led by Indigenous communities and supported by a variety of NGOs and state and federal agencies. The results have been swift and amazing. In the weeks after the removal of the final dam, adult salmon passed the dam site that had blocked their migration for the previous 60 years and found and recognized their historic habitats. They were allowed to be salmon again.

In addition to the Klamath, there is an effort to bring salmon in the Central Valley to their historic habitats above the large rim dams. These efforts are currently underway in the McCloud, Feather, and Yuba Rivers where eggs have been placed and hatched, juveniles collected and assisted around the reservoirs to continue their journey to the ocean. This is part of a recognition that we are asking these fish to live in locations (below the dams on the valley floor) where they never were historically during the increasing warmer summer months. As Chief Sisk would say, "These fish are mountain climbers". Having some portion of the population in higher elevation cold waters is bet hedging for our warmer, drier future.

In addition to accessing historic habitats long cut off by dams, there is a concerted effort to have landscape-scale restoration and flow management in the Central Valley. These efforts are led by a diverse set of state, federal, tribal, and NGOs trying to reimagine how we move water and provide access to habitats salmon can recognize, even if they are a fraction of their historic magnitude and extent.

Reimaging a Salmon Society

Indigenous communities that were brutally removed from their homelands and natural resources need to be brought into the conversation and supported. They are the original Salmon Society. The Klamath River dams, McCloud River reintroduction efforts, and traditional burning to reduce fuel loads in our forests that also provides smoke to cool rivers are all examples where traditional knowledge and inspiration have led to dramatic changes for the betterment of not only the Salmon Society, but society in general. Indigenous-led conservation and management that incorporates traditional values and knowledge can help inform a different way of thinking about our connection to our resources.

If we are going to have a future where wild salmon persist on our heavily modified landscape, it is going to take more than the scientists, NGOs, and resource managers to make it happen. We need to reimagine what a Salmon Society looks like in California. We need a Salmon Society where every person who fishes, studies, manages, spends time by rivers, or even benefits from clean and reliable water sources realizes the importance of salmon in our rivers. Salmon are a flagship species whose mere presence and sustainability indicates healthy rivers that can supply our water for drinking, boating, swimming, and irrigating our agriculture.

A recent project to bring high school students into salmon research has highlighted the importance of bringing along future generations of people who care about salmon in their rivers. If we want to have salmon in California in 50 years, we need to start bringing along the people who will still be here. The youth are important. Like oral histories, understanding the story and developing an appreciation of the salmon need to start early and happen often to provide a sense of place. With a sense of place and appreciation, we rebuild a Salmon Society that will be here for generations to come.

Example of salmon art at SeaTac Airport. Work by Judith and Daniel Caldwell. Photo: Carson Jeffres

It took between 50 to 100 years for colonizers to decimate our salmon populations and our identity as a Salmon Society. We should not expect that this is something that we can reverse in only a matter of years. These are generational challenges that will take decades or centuries to recover salmon populations or at least bring to a sustainable glimmer of their former state. We can't start our 100-year plan in 99 years and expect it to come to fruition. We need to reimagine ourselves as a Salmon Society and reimagine the way we protect our rivers and the animals that rely on them, including ourselves. This starts with bringing a diversity of voices into the conversation and beginning generational change that includes the next generation who are next in line to keep moving the needle in the right direction.

What can you do? As fall approaches, the salmon are beginning to return to the rivers of Northern California. Spend some time outside and go to your local waterway (see list of opportunities on original post) and enjoy and appreciate watching these amazing animals finish their journey of hundreds or thousands of miles over the past 3-5 years. I promise, you will be inspired. Support local efforts to bring salmon to the classrooms. Support your local watershed groups. Most importantly, bring an appreciation of what salmon mean to our rivers, our health, our economies, and our society as a whole.

I would like to thank the many people who provided thoughtful and important edits to this blog. I would especially like to thank Chief Sisk for helping me (a person so has loved and studied fish for over 40 years) truly appreciate the deep relationship that we can have with our salmon. ❖

Dr. Carson Jeffres is a Senior Researcher at the UC Davis Center for Watershed Science.

Rogue River Update: Fire & New Challenges Ahead

Rogue River After Moon Complex Fire: *Rusty brown foliage in October 2025. Photo: Larry Orman*

By Frances Oyung

The Rogue River in southern Oregon—one of America's original Wild and Scenic Rivers—is facing both renewal and uncertainty. A wildfire this past season has managers, advocates, and local communities now turning their attention from suppression to restoration—and toward a new, growing concern: possible nickel mining in a major tributary of the Rogue.

The Moon Complex Fire: A New Management Concern

In early September, a lightning storm ignited multiple fires on ridges near Agness in the Rogue River–Siskiyou National Forest. Six of these fires merged to form what is now called the Moon Complex, which burned over 19,000 acres.

The Rogue has long been celebrated for its remote wilderness character—40 miles of Wild Section that offers whitewater, solitude, and provides valuable aquatic habitat in one of the salmon strongholds of the Pacific Northwest. This summer's Moon Complex brought fire with mixed-severity burns extending down steep coniferous slopes to the water, altering riparian and forest ecosystems, and potentially affecting aquatic habitat, sediment delivery, and shading, as well as impacting recreation. Early assessments suggest patchy mosaics rather than uniform high-intensity damage; a positive sign for long-term forest recovery and riparian resilience.

For river professionals, the Moon Complex Fire will offer a case study in balancing natural fire processes with recreation access, infrastructure repair, and post-fire ecosystem recovery in a designated Wild and Scenic corridor. The many impacts from the fire will be felt for a long time. The road serving the primary shuttle route and a 16-mile stretch of the Rogue River Trail between Marial and Foster Bar are closed indefinitely due to damage.

The Wild and Scenic Rogue has both the Rogue River–Siskiyou National Forest and the Medford District Bureau of Land Management as managers, and the aftermath of this new fire will highlight the need for the agencies to work together to update the Rogue comprehensive river management plan which is required under the Wild and Scenic Rivers Act. The current Rogue comprehensive river management plan is over 50 years old and even within the managing agencies, the plan is considered outdated and in need of revision due to changes in management including the establishment of the Wild Rogue Wilderness Area in 1978 and the 2019 designation of 120 miles of tributaries as Wild and Scenic. It remains to be seen what activities and management will occur as the agencies now are contending with the impacts of a sharply altered federal government, employee departures, hiring freezes, and a long federal shutdown.

A New Challenge on the Horizon: Nickel Mining in the Illinois River Basin

As the new federal administration has taken a markedly different approach to regulation, environmental protection, and resource extraction, a new threat looms in the Rogue basin. The Illinois River—renowned for its emerald pools, rugged gorges, and rich biodiversity—is one of the Pacific Northwest's most treasured waterways and part of the National Wild and Scenic Rivers System. Yet despite these protections, exploratory work for nickel deposits has resurfaced on nearby federal lands, alarming conservationists, and local communities as nickel mining would be a threat to one of the Rogue's most pristine tributaries. Although 50 miles of the Illinois are designated Wild and Scenic, only a quarter-mile buffer on either side is protected, leaving much of the watershed vulnerable to development and potential strip mining.

Using Designation as a Tool: Outstanding Resource Waters

The threat of nickel mining in the region brings advocates together to urge the Oregon Department of Environmental Quality to grant Outstanding Resource Waters (ORW) designation for the Illinois River and Rough and Ready Creek. Such a designation would give the Illinois watershed the highest level of state water-quality protection—giving Oregon a stake in the argument that these waterways are special and worthy of protection.

The effort to secure ORW status is both a policy challenge and an opportunity for collaboration. This effort will integrate science, policy, and community engagement to protect a pristine river and valuable piece of the salmon stronghold in the Pacific Northwest. The work to attain ORW status also reflects the need to anticipate and prevent degradation before it begins.

Looking Forward

The Rogue River Basin today embodies the dual realities facing river professionals across the continent: natural disturbance and human pressure, resilience and risk, restoration, and resistance.

On one hand, fire—while disruptive—remains a natural part of the Rogue's ecosystem, offering renewal and adaptation opportunities when managed wisely. On the other, mining represents an avoidable, preventable threat to the very integrity of the watershed. The intersection of these forces reminds us that protecting rivers is never static—it is a dynamic process requiring vigilance, science-based management, and strong public engagement and support. As we enter winter, the Rogue River Basin stands at a pivotal moment. The fires of the recent past will shape the forest and river for years to come. Meanwhile, the decisions made in the coming months regarding mineral exploration will determine whether one of Oregon's most treasured river systems remains intact for future generations.

Whether through on-the-ground restoration, policy advocacy, or education, collaboration among agencies, tribes, NGOs, and river professionals will be essential as each contribution strengthens the broader effort to keep these waters wild, scenic, and resilient. For the River Management Society community, these events underscore why our work matters—why the integration of science, stewardship, and advocacy remains vital. The Rogue River continues to inspire and challenge us all, reminding every river professional that management is not merely about maintaining flow or access—it is about safeguarding and advocating for the landscapes and living systems that sustain both nature and people—a topic that is only growing in importance as climate variability continues. ❖

Frances Oyung is the Rogue Riverkeeper Program Manager for the Klamath-Siskiyou Wildlands Center based in Ashland, Oregon. To stay in touch, visit www.roguerriverkeeper.org.

Looking Upstream Towards Clay Hill: *Rogue River after the Moon Complex Fire. Photo: Half Moon Bar Lodge*

Rogue River After Moon Complex Fire: *October 2025 after Moon Complex Fire showing mixed and low severity burn. Photo: Frances Oyung*

Nearshore Post-Fire Impacts: *October 2025 after Moon Complex Fire showing mixed and low severity burn. Photo: Frances Oyung*

The Tuolumne River

Wild and Scenic, Past and Future

by Bob Stanley

Rivers provide the most diverse ecosystem services in the mountains of the Pacific Coast region. Our Wild and Scenic Rivers (WSR) System is a great forward movement in our effort to maintain vibrant ecosystems throughout our nation. Yet, WSRs are often directly affected, and diminished by human developments and management in and adjacent to river corridors. The Tuolumne is one such river.

Tuolumne River Impact History

The 149-mile Tuolumne River drains half of Yosemite National Park and half of Stanislaus National Forest, about 2,000 square miles. Discharging an average of two million acre feet of water annually, it is the largest river in the Southern Sierra Nevada. It has faced large-scale historical altercations due to management in the last hundred years, and its water is still in demand today. Annually, the river provides drinking water to over three million people, irrigates 250,000 acres of farmland, and provides recreational opportunities to about two million people. This article addresses the history and ongoing situation on the 35-mile lower section of the 83-mile-long WSR section of the Tuolumne River, managed primarily by the U.S. Forest Service (USFS), and affectionately known as the "T".

Sediments and Ecology

The section of the T between around 900 and 4,000 ft is in the "sediment transition zone," the part of the river where sediments shift downstream during high-flow storm events and are replenished as flows slow at the end of storm and snowmelt events. Aerial photography and field surveys reveal that since the early 1940s, the T has lost at least half of the sediment that once supported riparian habitat. This loss has occurred over the past century with the construction of reservoirs in the Main Tuolumne and Cherry Creek watersheds.

The sediment transition zone plays a crucial role in maintaining ecological services and stability for the river's ecosystem. Without a healthy sediment supply, the river system is deprived of essential substrates and therefore habitat and nutrients, leading to the loss of critical habitats for aquatic and riparian species. Storm flows through the watershed are intercepted by the reservoirs, resulting in flood management schemes, power generation regimes, and irrigation water deliveries that scour the sediments from the transition zone. Vertical habitats of seeded trees and bushes are among the hardest hit. Large scale fires like the Stanislaus Complex (1987) and Rim (2013) are also factors in vegetation loss. Post Rim Fire, tributaries brought large amounts of organic and mineral sediments into the mainstem T. The riparian zone flourished; for example, from 2013 to 2016, the number of cottonwood trees between the South Fork and North Fork confluences increased from nine to over 120. However, most of this regeneration was later lost from clear water scouring. Less than half of camping capacity remains since 1984. The deep-rooted perennial herbs and grasses that evolved in the steep south-facing oak-grasslands were removed by agricultural grazing practices in the latter half of the nineteenth century. They were replaced by shallow-rooted annual vegetation that cannot hold soils on the slopes during high intensity rainfall events, leading to massive slumping and loss of soils into the river and infilling of the Don Pedro Reservoir. This effect was dramatically demonstrated in March 2018, when around 15,000 acre feet of soil and vegetation were transported down to the river and into the reservoir in an eight-hour "narrow-band cold front" (atmospheric river) event. This dropped enough rain to almost breach the Moccasin Creek coffer dam that holds water before entering the trans San Joaquin Valley Water Tunnel.

The recent U.S. Environmental Protection Agency listing of yellow-legged frogs and pond turtles in the T is a marker of the severity of the situation. Only one pair of bald eagles nests on the mainstem of the T; osprey and river otters are only occasionally seen, and golden eagles seem to have vanished. It has been ten years since the occasional pile of bivalves has been seen on the shores. Clear-water scouring (without replacement of sediments) from reservoirs, fire management practices, climate change, past vegetative management, have all contributed to the cascading loss of soils, biomass, and biodiversity of the river and its watershed.

Some Recent Human History

The 1970s saw the end of big dam projects in the United States, but a dam proposed on the Stanislaus River, just north of the T, by the Department of the Interior, Bureau of Reclamation to replace the original Melones Dam. During this time, the Stanislaus was the most boated whitewater river in the west. River folks protested, put an advisory measure on the California ballot, and a fellow named Mark Dubois chained himself to a rock. Despite these efforts, the New Melones Dam was ultimately constructed.

The T was Stanislaus' big sister, quickly becoming popular as the cutting edge of river boating (sections above the reservoirs still are). Irrigation districts had proposed another dam on the T at Wards Ferry Bridge with a pool that would inundate 28 miles of the river in the sediment transition zone, eliminating river boating for nearly all users. River advocates were successful at stopping this project. The Tuolumne River was federally designated a WSR in 1984. As was customary in that era, designation came with a river ranger, and the river had one until 1988, the same year the T's WSR Management Plan was approved—and never updated.

A New Era of Management

Starting in 2010, a focused river patrol program began (2-5 days weekly in summer) on the T and other rivers on the Stanislaus National Forest where commercial rafting was popular throughout the spring and summer. River rangers who patrolled the T (the Patrol) saw that its health had been deteriorating, as well a problem with access and decline in non-commercial use of the river, due to sediment and riparian vegetation loss.

The Patrol began a decade-long collaboration with other national forests and Bureau of Land Management (BLM) units to share knowledge and skills of river management techniques. River skills training and low/high water rescue training for Stanislaus National Forest and other agencies were held each year. From 2011-2018, the USFS district staff coordinated efforts for specialists to help assess the T's ecosystem degradation and work to mitigate it. In 2019, the district sponsored a three-day symposium addressing challenges facing Pacific rivers.

Massive storm events over decades along with neglected maintenance made road access an increasing problem. After a lot of work with federal agencies and the City of San Francisco, the USFS rebuilt Lumsden Road between 2011 and 2013. In 2023, the road was closed again and has yet to be reopened. The launch and retrieval sites were notoriously difficult and dangerous to use. From 2016 to 2018, the patrol refurbished Meral's Pool Launch, and in 2018, the Cherry Creek Launch Ramp was installed to address this safety issue.

Starting in 2011, tunnel debris flowing from the City of San Francisco Mountain Tunnel began to severely damage the primary river access at Meral's Pool during storm-induced mass-movement events. In 2020, the Patrol made a YouTube video of the debris flow, showing how big water flows had severely damaged the Lumsden Road and the Meral's Pool launch. The SFPUC and Hetch Hetchy Water and Power (HHWP) offered to establish a MOU to manage future debris flows, but the USFS did not take action on that offer. In 2023, Lumsden Road sustained heavy storm damage, blocking access to Meral's Pool launch. The SFPUC again offered to rebuild the road at minimal cost, but the USFS did not take action on that offer either.

In 2014, the USFS declined to be a direct participant in planning for the Wards Ferry Recreation Site as part of the relicensing of Don Pedro Reservoir, managed by the BLM. Meetings by the planning group were not attended by the irrigation districts and the results of the negotiations in 2018 were unfortunate at best. The 2018 FERC and BLM-approved plan was a concrete deck off the south side upstream of the bridge for commercial lift booms. This boom deck design has numerous dangerous safety issues. Private boaters are not permitted to use or rent booms on the south side and would instead be provided access via a single track dirt trail to the river. However, the trail is so steep and narrow that it is extremely difficult, if not impossible to carry rafts up from the river safely. This is out of USFS jurisdiction, and not addressed by the primary managing agency for the whitewater section of the river.

Indian Creek Camp on the Tuolumne River: *The camp has lost about 80 percent of its sand since 1984. Photo: OARS*

USFS Management Survey Accomplishments

- **2010-2011**: The Patrol supported a comprehensive survey of archaeological resources over two summers (4 days/week).
- **2011-2019**: The Patrol enlisted specialists in aquatic biology, wildlife, botany, forestry, and soils to do repeated surveys annually, resulting in seven botany surveys with associated weed control efforts, six wildlife surveys, two aquatic biology surveys, and three soils surveys (each conducted as two-day trips).
- **2015**: Lichen/moss survey - one new species of moss not previously known on the T was documented (California Natural History Museum/National Park Service (NPS)).
- **2019-2021**: Two bat surveys - one new species of moss not previously known on the T were documented.
- **2016-2018**: Two NPS/SFPUC yellow legged frog surveys were accomplished.
- **2016-2017**: The Patrol monitored the irrigation district's aquatic and riparian surveys required by the Don Pedro (FERC-issued) hydropower license.
- **2015**: USFS soil scientists began establishing sediment survey points assisted by the Patrol, but could not continue due to other USFS priorities.
- **2018**: USFS soil scientist assisted U.S. Geological Survey (USGS) in assessing the March "narrow-band cold front" (also called a thunderburst or atmospheric river), which removed nearly 15,000 acre-feet of topsoil from the Tuolumne and tributaries, resulting in a USGS publication about the event.

Other Contributions

In 2006, the SFPUC initiated a research program Upper Tuolumne River Ecological Program (UTREP) into the ecological effects of the Hetch Hetchy Reservoir on 11.8 miles of river below the dam as a condition for permission to further dewater the river in 1986. This research continues to the present and has led to valuable insights about flow regime effects in the Poopenaut Valley below the dam and to the Kirkwood Powerhouse. However, scouring from hydropower operations is not included in the project scope.

In 2018, the USFS hosted the Regional Forester to raise awareness of the situation on the T, resulting in the funding approval for a launch ramp on Cherry Creek just above its confluence with the T.

In April 2019, the Patrol hosted a three-day symposium, *Challenges for Rivers of the Pacific Coast*, attended by 70 folks. In 2022, the Patrol assisted the River Management Society (RMS) and Happy Camp District KNF hosted a four-day workshop on the Klamath River Restoration Project. Articles were written for the *RMS Journal* twice during this period.

By 2016, it was difficult for the public to get permits for legal access, due to systematic USFS funding cuts. The Patrol had advocated for a new permit system since 2013. The COVID-19 epidemic provided enough social momentum to build a web river permit system (Recreation.gov), built in 2020-21. The Patrol also created an 11-minute *Guideline* video for the USFS YouTube channel to go with the permit system.

Hungry Waters: *Clear water releases from Hetch Hetchy Reservoir scour sediments from the river that are deposited by downstream tributaries during storms. Photo: Bob Stanley*

By 2018, it was obvious that reaching outside the agency to enlist partners was necessary in the effort to function at acceptable levels of care for the WSR corridor. The Patrol engaged with the Yosemite River Alliance (YRA) to find ways to assist and enrich the declining riparian habitat. YRA came on the river with the Patrol and saw a situation they knew little about. Interest from YRA started slowly and is gradually increasing. In 2021, the Patrol teamed up with Columbia College and helped institute a River Ecology and Management Program. Heavily oriented toward river skills, fieldwork, and science, students now learn skills to accomplish science and field management throughout entire watersheds, source to delta.

Where Will We Go From Here?

Ranging from one to over twenty degrees of non-continuous gradient, the Tuolumne sediment transition zone is a steep, pool/drop river. Coordinated effort will be necessary to understand the hydro-geo-soil-morphology of its riverbed and banks in relation to its use as a conduit for industrial irrigation and power generation. Designing flow regimes and structural sediment catchments may help to stabilize the sediment transition zone and prevent further erosion from clear water scouring associated with flows sent through the plumbing systems of the reservoirs. Such work in conjunction with revegetation efforts, increasing vertical habitat, can help to regenerate a healthy balance of sediment transport in the river and promote the formation of structurally diverse riparian habitats for plant and animal species, and in turn, aquatic species. By finding and implementing sustainable sediment management practices here, we can help ensure other rivers with similar profiles can provide essential services to human populations and our environment for generations to come.

Responsible river access for recreation continues to be neglected at Wards Ferry. Workable solutions to storm damage for Lumsden Road and Meral's Pool launch have not been created. The original plan for a river trail along the WSR corridor was forgotten rather than actualized. The historic Indian Creek Wagon Road (a major access and evacuation route) lies in ruins. There is less than half the campsite area available along the permitted section of river since T's designation as a Wild and Scenic River.

The USFS alone may never have the capacity to effectively care for and manage WSR resources and access on the T. The trend of recent decades is to reduce or defund USFS operations with contracting, often abandoning resource, fire, recreation management, and engineering functions in the corridor. It may be time to integrate other organizations to accomplish management operations of the WSR. Exceptional insight and effort by local USFS management allowed the Patrol to accomplish things thought improbable for 10 years. A committed, full time patrol no longer exists.

Priorities for a Thriving Tuolumne Wild and Scenic River

We can slow and turn this situation around by uniting our efforts to rehabilitate and re-wild the watershed. The path to a flourishing Tuolumne is clear:

1. **Ignite a Constituency:** Re-establish an active, passionate public support base for the river.
2. **Forge a Cooperative Team**: Bring the main management stakeholders together to collaboratively research and manage the river system and address ecological challenges.
3. **Ensure Reliable Access**: Maintain roads and trails to and along river for access, evacuation, and historical purposes.
4. **Innovate Sediment Solutions**: Research and implement strategies that counter clear-water scouring and rebuild sediments in the transition zone.
5. **Public Launch Rehabilitation**: Design and construct a take out facility at Ward's Ferry that is safe, efficient, and serves the general public equally. Provide adequate parking for private vehicles at all access points.
6. **Heal Habitats**: Initiate research and restoration of steep oak savannah habitats to control topsoil erosion, preventing storage capacity loss in Don Pedro reservoir and enhancing wildlife forage availability and habitat.
7. **Enjoy the Harvest**: Sit under newly flourishing cottonwoods and oaks alongside a thriving river!

It's critical that we pay attention to biological indicators and work to maintain, re-establish, and monitor the health of our rivers. There is much to do for the Tuolumne and all of our rivers. They are the life blood of our terrestrial and coastal ecosystems systems. We will do well to invest all available resources on the rivers behalf.

Ongoing and Potential Partners

Several entities are already partners or are ideally positioned to join USFS in the effort. This collective could create a focused and sustainable model for addressing the sediment transition zone's health and other issues within the WSR corridor.

NPS manages the upper section of the WSR and has sent biologists into the USFS zone for initial surveys along with SFPUC, and other researchers. It is possible to include other entities in this effort. Irrigation districts controlling the Don Pedro Reservoir might be interested in studying revegetation efforts to mitigate massive rain events that are scouring grassland topsoils to bedrock and depositing large amounts of sediments into the reservoir.

Partner	Focus Area & Contribution
Yosemite Rivers Alliance	Coordination, grants, and building a strong volunteer and financial base.
Columbia College	Field operations/river transport, monitoring, public contact, and implementing vegetation and rewilding strategies.
UCMerced	Cutting-edge soil and ecological research, water resource analysis, and policy guidance.
USFS	Policy, management direction, operations, law enforcement, andprimary equipment and logistic hub.
SFPUC	Researching downstream reservoir management effects and developing mitigation strategies for clear-water scouring.
NPS	Policy, management, and collaboration on research and flow regimes.
BLM	Focusing attention on reservoir issues and Wards Ferry access.

In the Future

Dedicated constituencies for all rivers are essential. Ensuring safe and reasonable access to the Tuolumne is essential for this goal. A new generation of dedicated rangers, researchers and managers may carry the torch of regeneration for this river's ecosystems. We can revive public passion in pursuing resuscitation of the aquatic and riparian systems of the T, and rivers everywhere.

Heartfelt thanks to all my co-workers and friends who participated in efforts on behalf of all the rivers we worked on. It is an honor to have served with you in caring for our rivers during my tenure, words do not convey my appreciation. ❖

Bob Stanley is a retired USFS river ranger and natural resource specialist with 25 years of professional work on the Tuolumne River. Over the last 40 years, he has worked with wilderness and river crews across the western United States and in expeditionary commercial programs as a river and mountain guide from Alaska to Patagonia and South Asia, with a focus on steep gradient, Class V rivers.

Reconnecting with *Hope* through Rivers and Art

Words and watercolor by Sage Hagopian

As I approach my college graduation, uncertainty about my own future parallels uncertainty for the future of rivers, as well as the broader world. For me, rivers and their inspirations to art, hope, and creating plans for the future can have a profound impact. This article details my own experiences over the last year, grappling with fear, hope, wonder, and inspiration on whitewater, as well as my experiences in the professional river community through the River Management Society (RMS).

The opportunity to raft the Grand Canyon came to me through the recommendation of a class from a friend. The class, *The Riparian Conservation in the Grand Canyon* with John McLaughlin, also happened to fulfill one of the requirements for my River Studies and Leadership Certificate (RSLC) that I was aiming to attain. Little did I know, this class and the RSLC certificate would open my eyes to what I consider a great privilege in life, a vocation that is filled with passion. I wrote this passage on my first day spent exploring the Colorado River with a group of peers that would soon become close friends, as we rowed past towering rock walls and hidden worlds encapsulated by twisting side canyons:

> I take a deep breath. What feels like a deeper breath than I have taken in a long time. Looking down at the river, I notice the twisting, turning ripples of current, invisible when you look right at them, but always in the corner of my eye. The vegetation and environment along the riverbed are constantly changing, from soft, green, vibrant-looking vegetation to sandy, dry beaches. I ponder the many species, systems, and worlds that exist both there along the banks–and in the many places this river brings water to. The impact is almost never ending, rippling outward. Rivers fill me with questions, curiosity, and a yearning to know more. Not only is rivers' impact ecological, but they also fill me with a knowing, spark of passion deeper than any other part of my life: a sense of hope. An understanding that time, life, and change have been flowing through the world since long before I arrived and will continue long after I am gone.

Months after my Grand Canyon trip, back in my everyday life, after a long day of rushing from one thing to the next, I ran my hands over my worn journal. The book has a funny shape, it looks as if something is trying to burst out of it, so many pieces of art and memories have been taped, painted, or written inside it is almost full. Opening it feels like a pull back to a more real me—someone introspective and creative, taking the time to slow down and notice little details. The paintings make me feel like I can reach out and touch the water, plants, and sky. I remember each detail, the way I watched my surroundings, seared it in my mind to later mimic in dashes of color and water. Art feels like becoming a part of the landscape you are experiencing, through adding feeling and experience to your observation.

To me, the most fascinating part of the Grand Canyon's stunning landscape was the side canyons, bursting with life and green in the seemingly lifeless desert. It reminded me of the wonder of the river. The experience of the Grand Canyon allowed me to feel in a very real way the importance of rivers, backed by the hours in the classroom in the previous quarter, the natural landscape and history wove together into a seamless exploration of an awe-inspiring place.

Rivers embrace change, constantly forming and reforming their ever-winding bends. Rivers make me feel not powerful, a feeling that to me is centered around control and force, but strong. Change is inevitable, for good or bad, and it can often feel out of control. In the last year, I have felt this loss of control. In my feelings of shock, chaos and overwhelm at the changes in many environmental career paths, I find myself limited in my ability to hold onto my dreams and passions, envisioning a path forward. Yet, when I think of the river—its quiet, steady and unwavering perseverance—how could I not be inspired? I watch the river carve away a new sweeping bend in the bank, leaving behind little pieces in the past. I imagine how those pieces will become a new bank, full of history—how could I not want to do the same? How could I not want to create a path ahead of me, shaping the world that I see in my mind.

Little did I know, this Grand Canyon trip served as my first step down that path. After the joy, inspiration, and art that came out of my time on the canyon, I was pushed to attend the RMS Symposium through the RSLC program. Stepping into the wide conference room full of tables, my mind was full of uncertainty. I had arrived in Ashland the night before, to attend my first conference, focused on the story of the Klamath River. I had no idea what I was going into. But at the end of the four days of collaboration, I stepped out with new knowledge, passion, and gratitude; I was filled with pride and excitement. I revel in the feeling of both having a community behind me and being a part of something bigger than myself.

My river community and its connection to RMS and the RSLC program led me to pursue my first position in a river related career. I find the power of education, nature, and art can bring purpose and direction in times of uncertainty. Now as an intern at Skagit Fisheries Enhancement Group, I contribute to stewarding and restoration of thousands of acres of salmon habitat in Washington streams and rivers. Rivers will always be a part of my life, and now, I can be a part of changing the future of these rivers as well. ❖

Sage Hagopian is an RSLC student pursuing Environmental Studies GIS bachelor's degree and certificate at Western Washington University. She plans to graduate Spring 2026, and is currently working with Rivershed SPC supporting natural resource planning and mapping.

River Studies & Leadership Certificate Reflections

Words and photos by Cooper Lowe

Every summer growing up, I would spend a large portion of my free time with my grandparents at Lake Anna, Virginia. I would wake up to help around the house, then immediately head down to the lake to swim and play with my family and dogs. It truly was a key aspect in shaping my love for rivers and waterways that I have today. In high school, I was a part of an environmental academy where we focused on many aspects of environmental protection. The topic that always drew my attention was related to water quality and testing the water for its safety. For my senior project, I developed a rudimentary turbidity sensor out of Arduinos, a light sensor, and a portable battery that could detect the level of suspended solids in the water based on the voltage that was sent through the sensor. Upon graduating, I wasn't sure if I wanted to continue my interests with environmental sciences or switch to my other interests with math and sciences. I chose the latter, and started at West Virginia University (WVU) as an engineer, confused and overwhelmed. Realizing that this path wasn't the one for me, I shifted after two and a half years to return to the natural side that had always been my comfort from when I was younger. I changed majors to study forestry, but it still felt like a key portion was missing and that I hadn't found a true calling yet. That was until I took a watershed management course, which combined the real world importance of understanding the impacts of the ever changing waterways.

At WVU, my love for water has been reignited. I have learned more and more about the science behind watersheds and how they are ever changing. I was introduced to the River Studies and Leadership Certificate (RSLC) in my final year of college and found that many of my classes that I have taken out of curiosity were applicable to this program. Furthermore, Professor Dr. Nicolas Pierre Zegre encouraged me to pursue this passion and helped me orient my schedule for my final semester to achieve this certification. He also introduced me to the Friends of Deckers Creek (FODC), a local watershed organization, where I have interned and assisted with their projects.

Working with FODC was the highlight of my last semester and truly shown me the importance of the work local watershed organizations do. I first met FODC during a class lab about measuring streamflow to assist with building a linear park in Morgantown, West Virginia (see *RMS Journal*, Fall 2024, p. 9). One of the key aspects of this lab was talking about the flooding this waterway experiences during heavy rainfall, which really interested me.

After connecting with FODC as part of my RSLC requirement, I worked alongside the staff collecting water samples from acid mine drainage treatment sites to test the water quality above and below the different sites, both active and passive. It was incredible to see the impacts of acid mine drainage on the surrounding areas, as well as how much the water improved by being filtered through these treatment basins. Towards the end of the semester, Abby—the other WVU RSLC student—and I had the opportunity to attend Cheat Fest [an annual river festival founded to support environmental restoration and awareness of the Cheat River watershed] as ambassadors for FODC. In this role, we helped spread the word about the work FODC has done for the surrounding watersheds. It was amazing to see the local community show interest in preserving the local environment and to teach them the impacts this will have on future generations.

***Helping Local Watersheds**: Friends of Deckers Creek collecting water samples and filtering using pressure.*

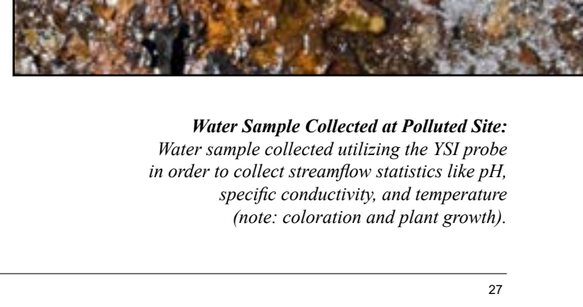
***Outflow Testing Site:** One of the outflows of the Friends of Decker's Creek testing sites that directly flows into Deckers Creek.*

My time at WVU has taught me a great deal about pursuing my passions to protect our waterways and addressing the major challenges with water in our world. I have learned many things related to hydrology, watershed management, and combating pollution sources in rivers. I am most passionate about flooding and how we can better plan around these powerful natural disasters. In 2024 alone, 181 people died in the U.S. due to flooding according to the National Weather Service, but only 10 bills were enacted in four states that had a flood resilience aspect in them. Flooding is getting worse every year from the impacts of climate change, and more people are losing homes and businesses from flooding impacts. To protect lives and livelihoods, it is crucial that we push for change to environmental laws and regulations that supports communities and develops more methods utilizing nature based solutions. These changes can create healthy rivers and communities that can withstand these extreme weather events.

I also seek to combat pollution entering rivers and streams to keep them clean and usable by the community and promote recreational use of these water systems. One of the best experiences I have had in the last couple of years was snorkeling along the Cheat River for my watershed management class. We explored the wildlife that has returned to the river since enacting acid mine drainage programs. It was truly inspirational that the river was toxic years ago and was rehabilitated by a passionate community uniting to preserve it for future generations.

My future includes my goals to to further explore water conservation and flood prevention, while continuing to further my education in graduate school. In pursuit of this passion, I hope to create an early detection method for tracking flood events to help warn people of oncoming floods, help shield these streams from pollution from surrounding communities, and develop a plan of action to those communities that are susceptible to flooding. I enjoy being hands-on when working on projects, and hope to find a job where I can combine all these skills in order to help protect local communities and make waterways safe again. Most importantly, I want to protect waterways and contribute to improving the health of them for years to come. ❖

Cooper Lowe is a recent graduate from WVU and received a degree in Forestry and is an RSLC recipient. He is beginning his career as an Environmental Health Specialist in Kearny, Nebraska.



***Water Sample Collected at Polluted Site:** Water sample collected utilizing the YSI probe in order to collect streamflow statistics like pH, specific conductivity, and temperature (note: coloration and plant growth).*

From Creek-Stomping to Career Goals: A Tribute to the River Studies and Leadership Certificate Program

by Abby Walters-Gonzalez

Some of my earliest and fondest memories involve squishing my toes in the mud, flipping over rocks in search of little critters, and wading through icy creek water for hours on end. I grew up playing in creeks, and somewhere between those childhood adventures and college courses, my love for water turned into something more: a drive to understand, protect, and work with rivers for the rest of my life.

The River Studies and Leadership Certificate (RSLC) gave me the perfect excuse to dive deeper, literally and figuratively, into river resource management. Through macroinvertebrate sampling and water quality testing like REE (rare earth element) sampling, I learned how to read the health of a river and understand the stories it's telling through chemistry and critters.

I also found that my love of being on the water, whether kayaking or just floating around, was only part of the picture. The RSLC helped me see rivers as complex, dynamic systems worth protecting not just for recreation, but for their ecological and community value.

One of my favorite parts about obtaining this certificate was working with Friends of Deckers Creek (FODC) through West Virginia University (WVU). FODC is a nonprofit organization that focuses on improving the natural qualities of the Deckers Creek watershed in Morgantown, West Virginia. Their work involves remediation projects, trash clean-ups, community outreach, and environmental education especially surrounding environmental degradation caused by acid mine drainage (AMD). West Virginia's deep ties to coal mining have made the effects of AMD visible across much of the state, with Deckers Creek serving as a clear example of its lasting impact. The dedicated team at FODC let us work closely with them to sample for REE and study AMD.

***Learning with Local Groups**: Measuring flow using the bucket method at one of Friends of Decker's Creek's rare earth element sampling sites. Photo: Abby Walters-Gonzalez*

One particular treatment site stood out to me as a step in the right direction. This site used a limestone bed to help balance the pH of the inflowing water, and after a set amount of time, the treated water was released.

When we tested the pH, the inflow measured around 2, but by the time the water was released, it had risen to about 5. While still too acidic to be drinkable, the improvement definitely shows the effectiveness of this process. Seeing that change reminded me that restoration doesn't happen all at once, but is a gradual shift that relies on persistence and celebrating the small victories.

The RSLC didn't just give me skills, it gave me direction. It showed me that river restoration and watershed health aren't just important; they're where I want to build my future. I'm especially interested in working with nonprofits or agencies that balance data-driven decisions with community collaboration. I want to help connect the dots between lab results, local voices, and long-term stewardship.

These experiences confirmed that I want a career where science, community, and muddy boots all go hand in hand. Whether it's through watershed restoration, public outreach, or field research, I'm excited to work in spaces where I can help rivers thrive and inspire others to care about them too.

The RSLC gave me the tools, experiences, and direction I needed, but it was that creek-stomping kid in me that started it all. ❖

Abby Walters-Gonzalez is a recent graduate from WVU's RSLC program, where she also she received her bachelors in Forest Resources Management. Before attending WVU, she earned her associates degree from Allegany College of Maryland. After graduating, Abby started a job with Pennsylvania's Department of Conservation and Natural Resources as a forest technician in Buchanan State Forest. Since then, she was offered the job of recreation technician in the same state forest.

"Seeing that change reminded me that restoration doesn't happen all at once, but is a gradual shift that relies on persistence and celebrating the small victories."

#TheRiverIsMyOffice: Leigh Karp

Through RMS' #TheRiverIsMyOffice video series, we highlight the dedicated professionals and behind-the-scenes work that make wise river management and stewardship possible. Explore the full playlist on our YouTube channel, and enjoy this featured video showcasing Pacific Chapter member and officer Leigh Karp, BLM California Partnership Lead.

Colorado's River Watch Cultivating Next Generation River Stewards

by: Genevieve Hankins, Anna Dispirito, Jayde Cummings

Water quality monitoring is a vital practice that allows us to develop an understanding of our waterways and how to protect them, as noted by the Environmental Protection Agency (EPA). Yet many regions—both globally and within the United States—lack the infrastructure for consistent, long-term monitoring. This can be harmful for a plethora of reasons, not least of which being the potential for contaminated waters to go undetected by those who rely on it, as found by the EPA regarding the safety of drinking water. River Watch of Colorado is a volunteer water quality monitoring program seeking to educate communities and inform decision-makers about the condition of Colorado's waters. Training citizens to monitor their own waters can empower communities, as well as offer a hands-on learning experience for students, cultivating the next generation of river stewards in Colorado.

Student Leadership: *Student Genevieve Hankins leading other students on data collection. Photo: University of Northern Colorado*

Over the past nine months, students and faculty members at the University of Northern Colorado (UNC) have worked diligently to reestablish the River Watch water quality monitoring site at the Poudre Learning Center (Cache la Poudre River) in Greeley. This project began with a small group of two environmental science students and a single professor leading the team, Dr. Sharon Bywater-Reyes. Together, this team began collecting data for the River Watch of Colorado database. It has now grown to be incorporated into several UNC course curricula and is primed to be taken on by a new wave of students in a variety of fields in the upcoming 2025-26 academic year. The Poudre Learning Center, designated as site 208 by River Watch of Colorado, is the only water quality monitoring site to exist in Greeley, Colorado for several decades. This site in particular is important to UNC students, as it is a place of field work and experience for many UNC environmental students. We hope that with enough continued passion and support, the UNC water quality monitoring team can prevent this site from falling into disuse again.

Monitoring in the city of Greeley is a crucial step towards improving water quality in Northern Colorado, as data collected can be used to address environmental disparages in local communities. Any potential issues cannot be addressed without first knowing that the issue exists in the first place. While there are upstream water quality monitoring sites, none have consistently monitored the Poudre River in Greeley since the 1990s. With known issues in the Poudre river such as *Escherichia coli (E. coli)* contamination and disconnection from the floodplain as noted in a study conducted by the U.S. Geological Survey (USGS), it is imperative to have data available, particularly data that the community can access independently.

As UNC environmental science students involved in the RMS River Studies and Leadership Certificate (RSLC) program, we are very passionate about our local river's health. The Poudre River is our most familiar example of many of the hydrologic and geomorphic concepts we learn within the classroom, and one we often visit—both as students of science and as members of the Greeley community. It is such a rewarding experience to be able to apply your academic knowledge in a way that not only follows your own passion, as well as provides long-lasting benefits to the local community and the local ecosystem.

Data collection at Site 208 has been conducted on a monthly basis since September 2024. The data is collected in teams, led by environmental science professor Dr. Sharon Bywater-Reyes, environmental studies professor Dr. Chelsie Romulo, and chemistry professor Dr. Melissa Weinrich, with the help of various students. In spring 2025, two courses at UNC incorporated River Watch data collection into the curriculum: *Introduction to Water Quality Management and Environmental Chemistry*. To collect our data, we take samples of river water from the designated site adjacent to the Poudre Learning Center in Greeley. Using these samples, we are able to determine river temperature, pH, dissolved oxygen, dissolved metals, alkalinity, and hardness using various probes and chemical titrations for each parameter. Filtered and unfiltered river water samples are sent back to River Watch labs to test for heavy metals and nutrient loads. We work using a mobile chemistry lab, provided by River Watch of Colorado, and several tools from the Earth and Atmospheric Sciences department at UNC. By continuing this research, we have monitored that value ranges for pH and dissolved oxygen in the Cache La Poudre River have remained consistent when comparing data collected from the 90s to modern day. These findings suggest that the care and maintenance of the Poudre River has continued throughout the years despite monitoring having been ceased for the decades in between.

Water Lab: *Professor Chelsie Romulo guiding students on testing for hardness. Photo: University of Northern Colorado*

For many students, this is their first experience actively engaging in fieldwork and data collection. For students going into environmental and chemistry fields, it is incredibly valuable to get the chance to apply academic knowledge in a real-world setting. The inclusion of students within the process of River Watch data collection is a great opportunity for students to apply topics that they learn in their courses into a real data collection process. This also allows students to understand what the data collection process entails, as well as see what future career possibilities could look like. River Watch is also a great experience for students because it gives them resume building materials for assistance in future job searches.

Graduates Genevieve Hankins and Anna Dispirito will pursue work in the water quality field as they move on from working as students in this project. Student Jayde Cummings will continue her degrees in environmental science and environmental studies at UNC with an emphasis in field work and applied water quality techniques. For us, working with River Watch on this project has launched a passion for water quality monitoring we will be taking into our future careers. ❖

Data Collection on Rivers: *Professor Chelsie Romulo leading students in river data collection. Photo: University of Northern Colorado*

Authorship Statement:
All authors conceived the original article project and contributed to article design and collection of references. Anna Dispirito wrote the methods outlining data collection described in the article, sourced photographs, and conducted primary editing. Genevieve Hankins wrote the introduction, background information, and conclusion. All authors discussed the direction of the article throughout the writing process, and reviewed the manuscript at all stages.

Genevieve Hankins and Anna Dispirito graduated from the UNC in May 2025 with degrees in environmental science, as well as earning the RMS RSLC. Jayde Cummings is expected to graduate from UNC in May of 2026, double majoring in environmental science and environmental studies, and also receiving the RSLC.

River professionals are just as diverse as the rivers they manage. There are countless ways to channel a passion for rivers into a career.

Source to Steward celebrates the unique paths that river professionals have followed to study, protect, and manage rivers.

Dave testifying before the Energy and Commerce Committee in 2017

Dave Steindorf

From River Advocate to River Professional

by Dave Steindorf

Modified from article originally published by American Whitewater May/June 2024.

We all encounter moments that pivot the course of our lives. For me, that moment came in 1997, when American Whitewater asked me to attend a meeting about the future of California's North Fork Feather River and Pacific Gas and Electric's (PG&E) plan to renew its hydropower license. I had no idea that day would transform both my life and the river.

From a young age, I was connected to rivers through fishing and exploring, and I had recently fallen in love with kayaking. I knew nothing of the complex world of hydropower relicensing, where engineering, law, and ecology collide, nor did I know that attending that first meeting would change my life's path forever.

From the Classroom to the River
Before my river advocacy career, I spent years teaching high school. Managing classrooms of restless teenagers taught me the most important skill I would ever use in hydropower relicensing: communication. As a teacher, I learned how to listen, translate complex ideas, and keep a diverse group focused on a shared goal.

When I entered the hydropower world, those same abilities proved invaluable. Negotiating with engineers, biologists, and lawyers required patience, humor, and clarity. Like students, they came with strong opinions, and progress depended on understanding their perspectives. My classroom experience gave me the confidence to speak up even when I was the least credentialed person in the room.

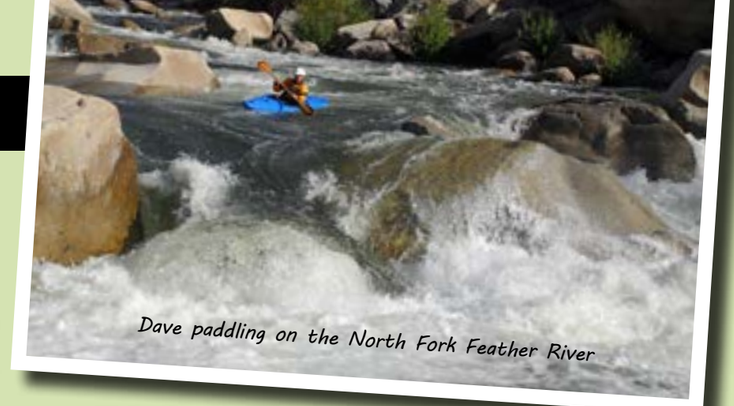
The First Meeting
About twenty people gathered in a windowless room under buzzing fluorescent lights. On one side sat PG&E managers, biologists, and lawyers; on the other were the state and federal agencies charged with protecting the river. I represented the Chico Paddleheads, joined by Kevin Lewis of the Shasta Paddlers [paddling club based in Northern California] and American Whitewater's Conservation Director, John Gangemi, who called in from Montana.

We were a ragtag trio, a high school teacher, an auto mechanic, and a fish biologist, but we shared a belief that the North Fork Feather, dry and lifeless for decades, could once again flow free.

The Maroon Lincoln and the Dollar Bill
A month later, John drove down in a rented maroon Lincoln Continental Town Car to pick up Kevin and me for the next meeting. The car, absurdly luxurious for a river trip, became our traveling command center. We stopped often to gaze at the river, reduced by diversions to a string of stagnant pools, and imagined what it might become.

After a discouraging meeting where the Forest Service told us to "find another river to save," we retreated to the Belden Town Bar to regroup. Above us, the ceiling was covered with dollar bills. We wrote our hopes for boating flows on one, tacked it up, and toasted to the dream.

"Somebody Forgot to Tell the Fish"
At subsequent meetings, we faced a barrage of resistance.



Dave paddling on the North Fork Feather River

PG&E's representatives dismissed the idea that the North Fork Feather had any whitewater value. To make their point, they held up The Best Whitewater in California by Lars Holbeck and Chuck Stanley, essentially the paddlers' bible, and cited the brief write-up on the Rock Creek Run, which mentioned a portage around one rapid. That single word, "portage," became their entire argument. "People aren't going to want to boat a river they have to portage," they said confidently, as if they understood the mindset of paddlers.

Curious how this assessment had come about, I called Lars Holbeck. When I told him PG&E was using his guidebook to argue against restoring flows, he laughed in disbelief. He explained that he and Chuck had run the section only once, on a cold, rainy day, while nursing hangovers, and had never intended that brief description to define the river's potential. Lars quickly offered to clarify that his write-up should not be treated as a definitive evaluation. His good-natured candor exposed how flimsy PG&E's position really was, and how little the company actually knew about the river it controlled.

PG&E's fish studies were equally suspect. One graph claimed fish habitat improved at a dam-controlled 100 cubic feet per second (cfs) compared to the natural 600 cfs flows that once supported a thriving trout fishery. When I asked how that was possible, the company biologist replied, "Well, I guess somebody forgot to tell the fish." It was clear we had our work cut out for us.

The Whitewater Study
After months of advocacy, we persuaded PG&E to conduct a whitewater study. The company provided the flows, and American Whitewater designed the study: three river reaches, three flow levels, and over forty paddlers.

The first day on the Cresta Reach went smoothly. On the second, my cousin's raft wrapped on a rock we later named Karl's Kitchen. Downstream, expert kayaker Risa Shimoda became pinned vertically in a slot and was heroically rescued by an expert C-1 (decked canoe) paddler, Norwood Scott. The Outdoor Life Network captured it all. That rapid is now known as "Piece of Risa."

Despite the near misses, the study proved a turning point. PG&E saw that we were professional, capable, and committed. The tone of negotiations shifted from skepticism to cautious respect.

Dancing with Those Who Brought You
As talks moved toward an agreement, water temperature standards became the last major roadblock. When PG&E refused to adopt a numeric standard, the entire NGO and agency group walked out. In the hallway, we recalled a favorite bit of advice from CalTrout's Jim Edmondson: "You dance with those that brought you."

We stood together, and that solidarity eventually led PG&E back to the table. The final settlement restored year-round flows, established ramping rate limits, and created an Ecological Resources Committee to oversee river management. The North Fork Feather was on its way to being a living river again.

The Tutu and the Dollar Bill
In 2000, representatives from all parties met in Quincy to sign the agreement. PG&E Vice President Randy Livingston reminded everyone that his attorney, Dick Locke, had promised to dance on a table in a tutu if a deal was reached. Livingston pulled a pink tutu from his pocket and said, "Dick, it's time to dance." And he did.

Years later, when the Belden Town Bar changed ownership, the old owner mailed me the dollar bill we'd pinned to the ceiling years earlier. Our scribbled hopes nearly matched what we had achieved.

A River, and a Life, Transformed
What began as a single meeting turned into a 27-year career. The restored North Fork Feather now draws thousands of paddlers each year, and American Whitewater's Feather Fest has become the West Coast's largest river festival.

Since that first relicensing, I've worked on more than 20 hydropower projects across California, helping craft agreements that restore rivers for people and ecosystems. In 2017, I testified before Congress on the impacts of hydropower on rivers, a long way from my high school classroom.

The North Fork Feather taught me that change starts with curiosity, courage, and persistence—and sometimes, with three river lovers in a maroon Lincoln, a dollar bill, and a dream. ❖

In his 25 years with American Whitewater, Dave negotiated improved flows or access on over 40 river reaches in California. In retirement, he looks forward to spending time with his wife and the rivers he loves.

Dave, wife Vicky, and dog Nalu, on the Rogue River

Source to Steward

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Elektra Mathews-Novelli

Following the Flow of What Moves You

by Elektra Mathews-Novelli

In all aspects of life, I try to follow what feels soulfully right. This has led me to many opportunities in my life, including my professional life. When it comes to rivers, there were two major professionally-changing moments that have led me down my professional path as a forest hydrologist and an American Canoe Association-certified whitewater kayak instructor. The first significant moment was at the age of nineteen when I worked for a nonprofit, EarthCorps (AmeriCorps), based in Seattle, Washington. EarthCorps not only taught me about environmental restoration and community stewardship, but it opened my heart to the world of woody debris in rivers. From that moment on, I have sniffed out anything and everything woody debris and riverine related. All that sniffing has made me the forest hydrologist I am today. The second moment was in 2019, when I attended a conference in Chile called *Wood in World Rivers*. There were many many amazing things about this conference, though the most pivotal to my life was after the conference, when I saw my newly formed friends whitewater kayak. Those moments in Chile, learning about whitewater kayaking, put me on a path to becoming a professional whitewater kayak instructor.

To understand why these two periods in my life were so impactful, I think back to what they had in common. Ultimately, I found that during these experiences, my soul was singing. That's how I knew they were important. My soul now sings so loud for river restoration and whitewater sports, that it stays true during the toughest of times. These are not jobs, but professions. Jobs come and go, but the professional titles I have now are beyond what I do, they are who I am. As long as I stay true to who I am and true to what makes my soul sing, I do not worry about the path I am on. A career is a personal adventure and I treat it as such.

After my time at EarthCorps, I was told in order to have a career in river restoration I needed to attend college. I had no interest in attending college, but with this advice I went down the higher education path. As a way to convince myself to attend college, I started out by making sure to have an art class every semester. It was my passion for art that helped me eventually find my way through academia. It is important to note that not only did art convince me to go to campus every day, but it actually helped me win a position on a National Science Foundation grant as well. I was a bit shocked to receive the position, so I asked why I was picked. When talking to my lead, they mentioned seeing that I had art on my CV. This made them think that we would have something to talk about on the long car rides to the field other than work. Being true to who I am and not hiding parts of myself to our professional peers, has been what makes me shine through the rest. This experience still influences me today.

Throughout college, I volunteered and joined anything related to forestry, restoration, or rivers. I participated in both on- and off-campus events, was involved in several clubs, held various jobs, and attended conferences. The idea was that by exploring as many communities as possible, I would graduate with a clearer sense of where I wanted to work and the type of professional I aspired to become. The outcome of this strategy is that nearly all of my restoration jobs have come from the professional community I cultivated. Not just my professional network, but my professional community—people who see me for who I am as a professional, not merely for my job title. Sharing my *passions* with a supportive community, allowed for *opportunity* and luck to work its magic.

I have painted broad strokes about my life in this article because I think the spirit of my journey matters more than the exact steps, especially in how it relates to yours. Following what feels soulfully right, seeking out opportunities from those who support you, and expressing what you want are key pieces to finding fulfillment and success in one's career. I wish you the best on your path and I hope to see you on the river. ❖

Elektra Mathews-Novelli is a forest hydrologist and whitewater kayak instructor active in RMS.

In Memoriam: Dr. Sarah Praskievicz

by Denielle Perry and Adam Praskievicz (Sarah's brother)

It is with deep sadness we share that Dr. Sarah Praskievicz passed away on Aug. 11, 2025 at her home in Greensboro, North Carolina following a valiant 15-month battle with cancer. Praskievicz taught and conducted research in the areas of hydrology, fluvial geomorphology, and water resources in University of North Carolina Greensboro's (UNCG) Department of Geography, Environment, and Sustainability. She was a consummate geographer, having visited all seven continents in her short 39 years. More importantly, she was a consummate human being and colleague, with a generous spirit, contagious (and loud!) laugh, and *joie de vivre* (joy of living) that brightened any space she entered.

Praskievicz joined UNCG in 2018 after serving as an Assistant Professor at the University of Alabama. She had a formidable record of scholarship for someone at her career stage, with around 40 peer-reviewed journal articles published in leading journals of her field. Much of her work was grant-supported through the National Science Foundation and other agencies. As family and friends noted, Praskievicz had a vision, devised a plan, and remained singularly focused on completion of her varied projects.

At 16, Sarah completed her Associate of Arts degree at Mt. Hood Community College before enrolling in Southern Oregon University in Ashland, where she received her Bachelor of Science in Environmental Studies in 2006. She earned a Master of Science in Geography from Portland State (2009), and a Ph.D. in Geography from the University of Oregon (2014). At Oregon, she was an integral part of the "River Rats," a group of water-centered geographers, mostly women scientists, which provided a professional network, friend group, and mutual aid cohort that endures. She was also active in the RIVER Field Studies Network that works together with RMS's RSLC program to train river instructors. In addition to her degrees, she received Wilderness First Responder and Swift Water Rescue certifications. Beyond the great outdoors and travel, her hobbies included playing the ukelele, reading and watching sci-fi, listening to show tunes and the Indigo Girls, and playing trivia.

Praskievicz was happiest outdoors. She could be seen walking the two miles each way to and from her campus or hoisting her arms up in her trademark triumphal pose when she reached the highest point on any given trail. Atop Humphreys Peak, Arizona she would proudly recount, she was the highest person in Arizona on that day. (Puns were among her strong suits). Most of all, she was happiest in the rivers and streams she made her professional calling, from North Buffalo Creek in Greensboro, to the coastal plains of Alabama and North Carolina, to the Great Smoky Mountains, to the San Juan and many other great Western rivers, to the headwaters of the Ganges. She had waders and was willing to travel, often accompanied by student researchers and other collaborators. Prior to her illness, she had hiked many of the world's most daunting trails, including Mount Kilimanjaro and the Kalalau Trail on the Napali Coast, Kauai, Hawaii.

Sarah mentored RSLC students and attended the RMS Symposium in San Antonio, where she presented *Environmental justice and stream restoration: Lessons for inclusive access*. She has a long list of powerful and relevant publications for RMS members. Check out a video of Sarah in the field with RIVER Field Studies Network, an initiative she helped shape and participated in through various capacities here: https://ges.uncg.edu/in-memoriam-dr-sarah-praskievicz/.

Dr. Praskievicz, cherished colleague and friend, devoted mentor and educator, and passionate advocate for Planet Earth, will be dearly missed. ❖

Source to Steward

River professionals are just as diverse as the rivers they manage. There are countless ways to channel a passion for rivers into a career.

Source to Steward celebrates the unique paths that river professionals have followed to study, protect, and manage rivers.

Americorps Volunteer to River Professional

by Gigi Knowlton

Growing up in Prather, California, I never imagined that the winding channels of the Merced River and its glacially carved canyon would one day take my breath away and shape my career.

After college, I began my environmental journey with the Sierra National Forest—my childhood backyard, my old stomping grounds, and eventually my place of work. During college, I worked as a biology and chemistry tutor, tackling everything from microbiology and anatomy to biochemistry, and served as the lead lab assistant for both departments. That experience sparked my passion for helping people learn and understand the science I loved. I also found that I enjoyed experimentation, trial and error, and digging deeper to collect raw data. This curiosity led me to spend two seasons conducting raptor surveys for the High Sierra Ranger District Wildlife Biologist. I loved every minute, but by the end of an eight-month stretch, I knew I wanted to amplify my impact. I wanted to reconnect with a community, elevate local stewardship, and pair my start-up mindset with full-system recovery. That realization led me to an AmeriCorps fellowship with the Sierra Nevada Alliance (SNA) as the Watershed Project Coordinator in Mariposa, California with the Upper Merced River Watershed Council (UMRWC).

Today, my work with the UMRWC focuses on protecting and understanding the Merced River watershed, and developing field programs that bring the community into the science. From water quality monitoring and watershed classroom talks to revitalizing the salmon culture that defines our region's ecology and hosting the Wild and Scenic Film Festival, my goal is to build lasting connections between the river and the people it sustains. This work aligns seamlessly with AmeriCorps' stewardship mission and SNA's support for creating opportunities where people can engage in meaningful work, contribute to their community, and explore their local environment with curiosity. Through data-driven science and hands-on stewardship—in the field or the classroom—we aim to help people of all ages see the environments they can have a positive impact on in an inspiring light.

This last year, that passion took me to the national stage at the River Management Society (RMS) Symposium. There, I exchanged ideas with river experts from across the country, shared insights from the Merced, and returned home energized by the breadth of work happening beyond our watershed. I learned new approaches to data collection, project design, and river management—and witnessed a community of specialists whose experience and curiosity were as powerful as the landscapes they work to protect.

The most unforgettable moment came during our visit to the Klamath Dam Removal Project. Seeing an entire river system reclaim its identity was profound—a rare blend of ecological restoration and cultural healing. It represents long-overdue justice for species displaced over generations and for the communities, from Southern Oregon through Northern California, who are witnessing the return of their salmon and their river. That story continues to inspire the work I bring back to the Merced.

My entry into watershed work wasn't without turbulence. Soon after I started, the AmeriCorps program I was hired through was suddenly shut down. At the time, I was serving the Upper Merced River Watershed Council through the Sierra Nevada Alliance, building capacity in community education, stewardship, and program development.

I was fortunate. My supervisors at both organizations fought to keep me on. Through generous community support, they hired me directly through SNA so I could continue serving the watershed. Meanwhile, California volunteers pursued the legal effort that ultimately overturned the mass AmeriCorps terminations. In my case, the support of SNA, my direct supervisors, and the UMRWC board of directors kept me grounded through the uncertainty. Because of them—and my deep love for this work—I returned for a second year, able to continue building on the projects and programs I started and deepen my commitment to this watershed and community. ❖

Gigi Knowlton is an Americorps service member serving the Upper Merced River Watershed Council as a watershed project coordinator. You may recognize her from volunteering at the RMS Symposium in Ashland where she was excited to join RMS…and take her very first rafting trip on the Klamath!

RMS 2025 Federal Rivers Impact Project

Issue

February 2025: Dramatic federal workforce reductions affected those who work on and in support of our nation's rivers: seasonal employees, probationary staff and seasoned managers who chose deferred resignation or retirement instead of risking termination. These actions impacted River Management Society members, many of whom are current or past employees of federal river administering agencies, and seemed to forecast a significant risk to public safety and the services owed to members of the public who use our rivers.

River use by the public is greatest during the spring, summer, and fall, especially on holiday weekends and times when school is not in session. Having 'no' seasonal staff on rivers seemed extremely unwise, particularly on rivers when the added factors of moving water and extended immersion poses risks for the uninitiated.

Objective

The River Management Society initiated a project to illustrate the impact of seasonal layoffs and forced leave for the most experienced among river-related professional staff on public safety.

Methodology

The Rivers - March through May 2025

We reached out to members, colleagues and partnership organizations to identify federally managed or supported rivers whose use may be impacted by staff reduction. For each river, we asked for:

- the river's projected level of visitation;
- projected impacts of reductions;
- the types of users they host;
- services provided to the public, and
- staff certifications (e.g., Wilderness First Aid).

The Impact - June through August 2025

We reached out again, requesting photos illustrating the impact of budget cuts: the proof of the public suffering from the field-based reality of being short staff and related resources, such as the ability to maintain facilities.

Response

Rivers and Projected Impact -

We received information for 35 federally managed or supported rivers whose projected visitorship totals 10,270,000.

Impact 'Evidence' - Very lean.

We received input for five individual rivers and one response for three Partnership Wild and Scenic Rivers, and have seen over 2,600 visitors to the project site.

We called and spoke to colleagues about rivers whose use they are familiar as staff or visitors, and for which we did not receive photos of disarray or other negative impact. They responded that they have been able to keep up with public-facing tasks such as bathroom maintenance due to:

- Senior leadership demanded that the public not see supply shortages or dirty facilities, even when it requires senior staff such as staff scientists to clean toilets (A. Harrell, National Parks Bureau Chief, SFGate, April 11, 2025).
- Current and planned projects that should be attended to support programs, staff development are not taking place.
- River management compliance is being worked around to keep up with operational needs.
- Staff are doing what they can, sometimes employing creative workarounds, while "doing what they are told," and are fearful to complain or tell the truth about shortcuts and violation or non-compliance.

Ask

Please offer advice for what we can do to discontinue the disruptive, irresponsible level of staffing for rivers and outdoor space-related staffing. ❖

Learn more and register on the RMS website.
With questions, email rms@river-management.org.

Tire removal from river via raft

Photos: Cannon Colegrove

River Ranger Rendezvous 2025: Snake River, Wyoming

As a point of historical reference, the very first River Ranger Rendezvous (RRR) was held on the Snake River around 2002. David Cernicek was instrumental in organizing that event also. The venue for that first year was at the Boy Scout Camp, located just downstream of Hoback Junction. For nearly 25 years the purpose and goals of the RRR have been met!

by Lelia Mellen and Martin Hudson

An amazing team, led by Cannon Colegrove, organized the River Management Society (RMS) River Ranger Rendezvous in August 2025. This trip was centered around the Snake River, with three days and evenings of floating, learning, sharing, paddling, and observing how various management protocols work on three sections of the Snake River around Jackson, Wyoming (WY). Here's a breakdown by day.

Day One:
Everyone arrived the first evening, met, set up camp at the U.S. Forest Service (USFS) Administrative Site—a fabulous spot behind seasonal staff's homes and next to the workshop and boat house for the Snake River Rangers.

On the first day on the river, the group rafted from Pacific Creek to Deadman's Bar. This 11-mile stretch of the river is under National Park Service (NPS) jurisdiction within Grand Teton National Park. The flow was mostly calm, allowing ample time to soak in the breathtaking first views of the central Tetons. This includes the iconic Cathedral Group of Mountains: Middle, South, and Grand Tetons, along with Teewinot and Mount Owen. The group was welcomed by Simeon Caskey, Chief Science Officer and Wild and Scenic River contact for the Grand Teton National Park. Haily Endicott, non-law enforcement officer and river ranger a gave short at lunch about how river permits and NPS management work within this section of the Snake River.

Back at camp that evening, we had two presentations. First, Darren Rhea, from Wyoming Fish and Game Department, gave a talk about proposed fishing guide regulations within the state. Second, Andrew Byron, Wyoming House District 22 Representative and a Bridger-Teton National Forest fishing permittee spoke about proposed commercial use river regulations and agency implementation within the state of Wyoming.

Day Two:
The second day on the river had the group floating from Wilson, Wyoming to South Park Access. This 13-mile scenic stretch flows entirely outside Grand Teton National Park and upstream of the USFS boundary, with the access sites managed by the Bureau of Land Management (BLM) and the river users are managed by Teton County. The river here winds past predominantly private lands bordered by levees. Despite the developed surroundings, the route offered stunning views of the Teton Range.

In addition to floating, we were welcomed at the put-in by Teton County Parks and Recreation Commissioner Len Carlman. During the float, Tony Mancuso, Utah Department of Natural Resources and president of the RMS Southwest Chapter, discussed stream access, and John Kreski, from Colorado Department of Natural Resources talked about the Arkansas Headwaters Recreation Area permitting processes. It was interesting to learn how different states and rivers manage the use on their respective resource.

The access sites were hopping! While the Teton County Commissioner and former Snake River Fund Director Len Carlman and the new Parks and Recreation Director were speaking to us, the group got to witness a commercial scenic tour, private trips, and numerous other groups rigging their boats and getting into the water. Many in our group were familiar with the organized chaos of the morning and shared their insights into the history and complexities of creating equitable management scenarios that might work in this unique reach of the Snake River.

After dinner, our organizers hosted a Partner Friends Group Panel, moderated by Dave Cernicek. On the panel were:

- Orion Hatch, Snake River Fund
- Scott Kosiba, Executive Director of the Friends of the Bridger-Teton National Forest
- Nick Delmolino, Grand Teton Association

During this conversation, the groups discussed their perspective roles in managing the river and how the various partnerships interact with the different agencies involved.

Day Three:
Our final, full day took us to the whitewater section of the Snake. Before launching, Louis Shahan, river program manager, and Kevin Kobe, lead river ranger, ran us through their entire USFS Snake River shop. They showed us how they organize gear, plan the crew's days and weeks, plan and provide support and feedback to one another. One thing Kevin started doing (at the suggestion of one of his rangers) was to regularly ask for feedback, seeing how they could improve their operations. He said a number of very good suggestions had come from that.

Kevin also said they approach their jobs and interacting with the public in as positive a manner as possible. They want people to enjoy their floats and leave with good feelings about how the rangers treated them. They said that has brought more cooperation from them than using a 'hammer' approach.

We ran the 16-mile whitewater stretch from Pritchard to Sheep Gulch. This section of the Snake began with a tranquil scenic float from the Pritchard put-in, followed by an exhilarating whitewater run with Class III rapids that carried us all the way to Sheep Gulch. Alpine Canyon is a legendary whitewater run in the west and the most popular stretch on the Snake River. Several in squirt boats (and others on the water that day) enjoyed excellent playboating opportunities. This segment is part of the federally-designated Wild and Scenic River system, managed by the USFS.

Gratitude
Kudos to Cannon, Martin, and Dave for putting on a fabulous event together! Louis Shahan was also involved in planning and the gracious host of the event as the manager of the river floated. There are so many logistics are involved with feeding, transporting, and arranging boats and speakers—it's enough to need a vacation afterwards—which they all did calmly with smiles the entire time. *Gracias*! Everyone left with new knowledge, having had fun on a varied river, from calm flatwater and stunning mountainous scenery to exciting whitewater. ❖

Lelia Mellen is the RMS Northwest Chapter events coordinator who worked for more than 30 years with the National Park Service Rivers and Trails Program while remaining actively involved with RMS. Martin Hudson is seven years retired BLM outdoor recreation planner living in Pinedale, WY. As a lifetime RMS member, he has served several terms as an officer of the Northwest Chapter.

One Year After Helene:

River Managers Share Lessons Learned

by Bekah Price

At the October 2025 River Management Roundtable, we asked representatives from three river stewardship organizations to share what river managers across the country can learn about recovery and resilience from Tropical Storm Helene. They offered practical advice, examples of what worked, and candid reflections on what they would have done differently.

We're sharing these insights here for those who couldn't attend or haven't yet watched the recording visit our YouTube channel: https://www.youtube.com/watch?v=wKW2TYHzSdE.

We sincerely appreciate our speakers, who made time to share their expertise amidst a great deal of ongoing recovery work:

- Anna Alsobrook - MountainTrue,
- Andy Brown - Appalachian Resources Conservation and Development Council, and
- Kevin Colburn - American Whitewater.

Tips and Takeaways

1. Be patient—it is a long process.

One year later, debris cleanup is still ongoing across the region, and bank stabilization not related to road or railroad repair is just beginning. Several communities are just now assessing needs and beginning bank stabilization and revegetation on private lands. The processes of applying for and receiving funding, hiring staff, and implementing programs take time.

2. Just show up.

MountainTrue was able to assess needs in the community by cooking meals for flood victims in the days just after the storm. These conversations built relationships and gave them an idea of which areas were most damaged so they could prioritize field assessments.

3. Collaborate, communicate, and clarify roles.

Communication across agencies and organizations—both online and in person—was critical. Sharing information on social media, showing up to meetings, and staying visible in the community helped organizations coordinate volunteers and resources while avoiding duplication. These touchpoints also created opportunities for agricultural extension offices and nonprofits who might not be considered traditional river stewards to apply their expertise. Don't assume someone else is taking the lead: ask who's doing what, identify gaps, and find opportunities to leverage each other's dollars and strengths. Joint grant proposals can be more compelling, but only if partners understand each other's roles, priorities, and allowable funding uses.

4. Build local response capacity, and know your permitting authorities and legislators.

Establish relationships with the U.S. Army Corps of Engineers, state environmental agencies, nonprofits, counties, and landowners ahead of time to foster open lines of communication and make coordinated response easier when disasters like flooding strike.

5. Use data and mapping tools to triage restoration projects.

In one example, a county-level collaborative developed an app for landowners and volunteers to report and triage sites. On another river, a stream survey is underway to assess damage, water quality, and invasive species. Mapping tools can also pinpoint river access closure, river hazards, and water quality concerns.

6. Balance environmental protection with debris removal and rebuilding.

Remove only what poses safety or infrastructure risks. Retain large woody material where possible to stabilize banks and maintain habitat. Work with experts (hydrologists, fluvial geomorphologists, and others) and understand permit requirements to ensure that cleanup and rebuilding do not cause new problems. Lean on partners such as nonprofits and boating clubs to help reach areas inaccessible by vehicle.

7. Evaluate and document what is stored along your waterways.

Work with local businesses and governments to identify and relocate flood-vulnerable materials—such as plastics or fuel stored outdoors—that can become hazardous debris in future floods. Avoid building or storing materials within floodplains whenever possible.

8. Communicate with the public about restoration plans and recreation.

You may need to share information about recovery timelines, restoration best practices, financial assistance, volunteer opportunities, recreation hazards, current conditions, permit comment periods, and more. Continue attending community meetings to ensure everyone delivers consistent messages and shares the workload.

9. Consider reopening accesses before they are fully redeveloped.

Several river accesses reopened with gravel and port-a-potties to allow commercial rafting and private boating to continue, while others remained closed as staging areas for infrastructure repair. Always assess in-channel hazards before reopening river access.

By sharing what's working and the challenges that remain, we hope to move toward more resilient rivers and communities. Every storm tests us, but the recovery process adds to a growing body of knowledge across the river management community. Thank you to all who continue this work on the ground and who generously shared their experience to help others prepare for the next event. ❖

***Feeding First**: Preparing food in the community was a strong first step to understand the scope of damage. Photo: Anna Alsobrook*

***Monitor Water Quality:** Working to monitor water quality helped identify sources and levels of contaminants. Photo: Anna Alsobrook*

***Testing Wells:** Free well tests helped residents regain access to drinking water. Photo: Anna Alsobrook*

Welcome New RMS Members

Individual

Rachel Hovel
University of Maine-Farmington
Farmington, ME

Josh Egenolf
The Nature Conservancy
Bloomington, IN

Jeffery Schiffman
Clinton River Watershed Council
Rochester Hills, MI

Abby Goodrich
Brentwood, TN

Walter Parker
Meadowview, VA

Willow DeMulder-Eyres
The Nature Conservancy
Albany, NY

Margaret McBurney
West Kingston, RI

Elizabeth Lee
Bozeman, MT

Matt Eland
Western Slope Ecological Restoration Services
Paonia, CO

Allison Perlman
MA Division of Ecological Restoration
Marblehead, MA

Jennie Weathered
Washington State Department of Ecology
Spokane, WA

Jeri Fleming
Grand River Dam Authority
Welling, OK

Andrea White
Cross Currents Leadership
Kennesaw, GA

Anna Calderon Cleland
Hispanic Access Foundation & National Park Service
Seattle, WA

Associate

Wendy Shellito
Waite-Heindel Environmental Management
Burlington, VT

Jonathan Galuchie
The Nature Conservancy
Richmond, VA

Jennifer Bronson Warren
Texas Parks and Wildlife
Waco, TX

Danny Collins
37 North Expeditions, Ecological Design Group
Bentonville, AR

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BoardSafe Docks
Tom Warchol
Fleetwood, PA

Trutta Environmental Solutions
Brett Connell
Emy Parham
Hendersonville, TN
Panama City, FL

Student

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American Public University
Columbia, SC

Ryan Deam
Charlotte Luth
Fort Lewis College
Durango, CO

Ashley Smith
Harvard University / Cahaba River Coalition
Birmingham, AL

Whitney Formon
NC State University
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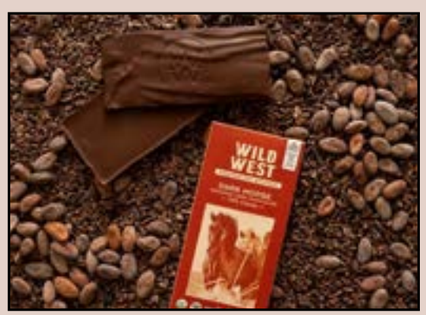

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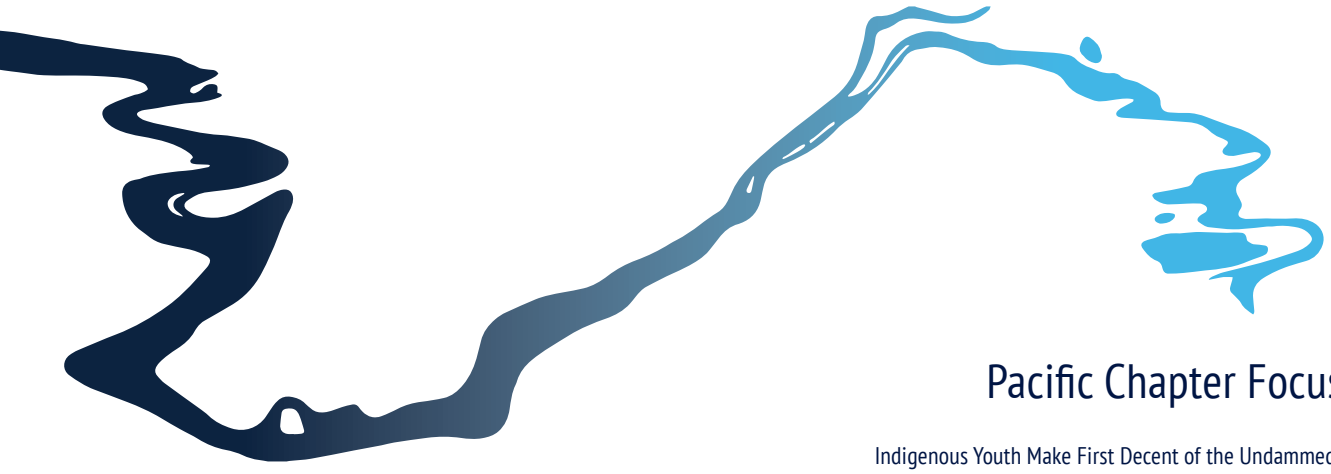

Pacific Chapter Focus

RMS Journal Submission Deadlines

Spring 2026	Vol. 39, No. 1	Alaska	Feb
Summer 2026	Vol. 39, No. 2	Southeast	May
Fall 2026	Vol. 39, No. 3	Midwest	Aug
Winter 2026	Vol. 39, No. 4	Southwest	Nov
Spring 2027	Vol. 40, No. 1	Northwest	Feb
Summer 2028	Vol. 40, No. 2	Northeast	May
Fall 2028	Vol. 40, No. 3	Pacific	Aug