

Trinity County Resource Conservation District Fall ~ Winter 2024 Conservation Almanac

Trinity County Resource Conservation District Quarterly Newsletter

Fall - Winter 2023-24 Vol. XXXII No.3

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Updates from Forest Health

Weaverville Community Forest Meeting

The annual Weaverville Community Forest (WCF) public meeting took place on October 6th with nearly 25 attendees. Representatives from the Nor Rel Muk Wintu and Yurok Tribe, BLM, USFS, and the Watershed Research and Training Center discussed their ongoing projects. The Weaver Creek Project will take place off of the Yurok reservation in the Klamath River, downstream of the confluence of East and West Weaver. The goal of the project is to increase the amount of instream habitat for Coho salmon and create new floodplain areas. The BLM completed the Northwest California Integrated Resource Management Plan (NCIRMP) and is currently in its public comment period, USFS completed burns in various locations throughout the WCF, and The Watershed Research and Training Center completed many trails with the help of the Trinity Trail Alliance and community volunteers.



Sandra Perez (Environmental Specialist, Yurok Tribe) presenting the Weaver Creek project at the Weaverville Community Forest public meeting, 2023

Oregon Mountain Harvest Field Tour

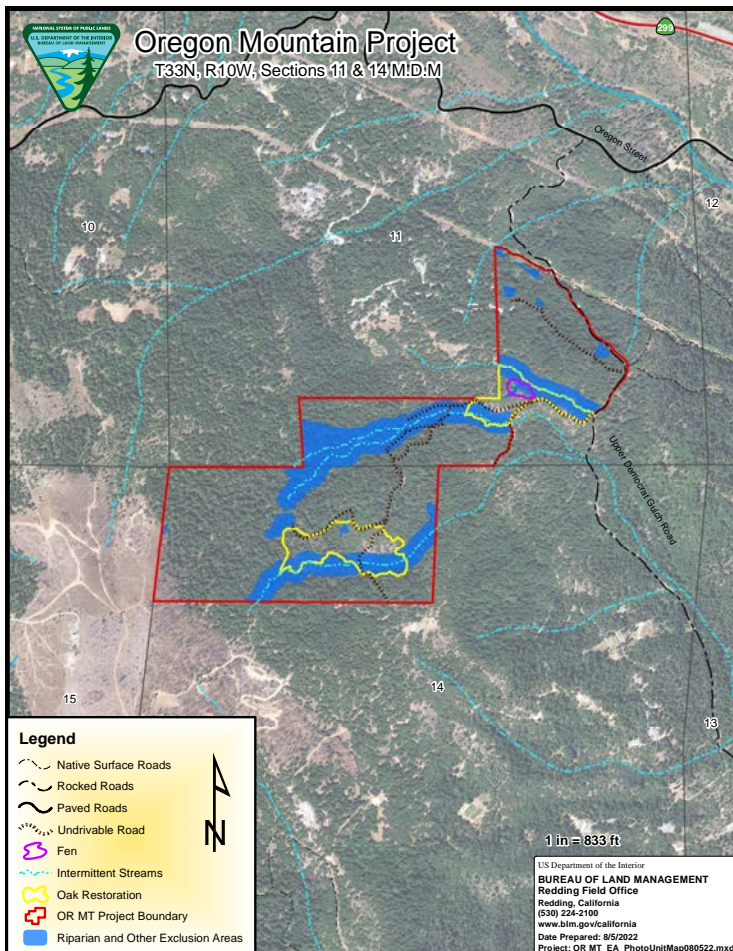
On September 16th, the Bureau of Land Management forestry team gathered with representatives from the TCRC, WCF steering committee, and USFS on Oregon Mountain to discuss plans for an upcoming timber harvest, titled the Oregon Mountain Forest Health Thinning and Fuels Reduction Project. The preference for cutting trees will be as follows: white fir (not present on stand), lodgepole pine, blister rust sugar pine, diseased Douglas-fir, dying ponderosa pine, incense-cedar, Douglas-fir, ponderosa pine, and non-blister rust sugar pine.

To promote natural forest growth, only trees greater than 8 inches in diameter at breast height that won't make it for the next 2-3 years will be cut. Larger trees that are healthier than the surrounding stand and trees that are not merchantable

for the mill will be left. The increase in dying Douglas-fir is more reason to remove them and open the canopy further to increase healthier competition in the stand. The prescription aims for 80-180 ft of basal area because it will be easier for the forester and logger to understand to ensure the desired prescription is achievable. The current canopy cover is between 50-60%, although the desired outcome is 30-40% cover, which is roughly 80-180ft basal area. The mixture of drought and overstocking is causing an increase in disease that we are currently seeing in the stand.

Even-age Douglas-fir stands, or areas that were previously clear-cut, will have indiscriminate marking methods, such as marking trees with both disease and good wood in order to prioritize health and spacing. Snags (dead or dying standing trees) that benefit wildlife will be left. The only markings that will be present are boundary marks and cut tree marks. The harvest will be prepped and ready for bid at the beginning of the new year. Weather severity will determine when the advertisement will begin. The harvest of roughly 139 acres will be given a timeline of 18 months to complete, which is taking fire restrictions into consideration.

The forestry crew from the TCRC has been hard at work completing the flagging and boundary marking. They are currently marking cut trees and will begin cruising soon.



Updates from Forest Health, cont.

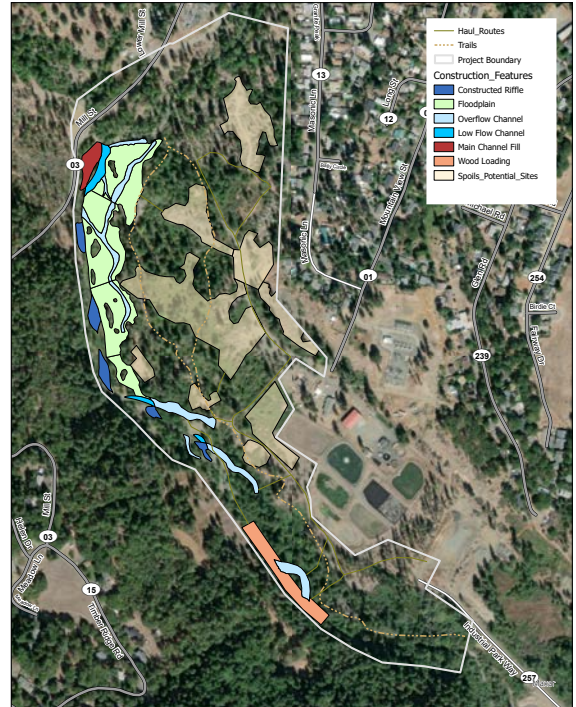
Weaver Creek Field Tour

On September 13th, members of BLM, TCRC, WRTC, and other organizations met at the downstream end of the project area for an overview that was provided by the Yurok Tribe team. The goal of the project is to create more floodplain and instream habitat for fish, as well as improve riparian habitat while controlling the spread of invasive plant species. This location was chosen due to its high accessibility and high value. Weaver Creek is also a watershed that has high potential for Coho Salmon, which is federally listed as threatened. Implementation of the project is dependent on funding, but may occur in 2024/2025.

To cause less disturbance, the area chosen is mostly stabilized. Potential revegetation design could be implemented for competing noxious weeds. A modest amount of funding is currently available for a trail planner. No new trails would be cut, but there is potential for future designs that would be beneficial to the interpretation of restoration activities and historical features. The following steps of the project include design completion, environmental compliance and coordination with the BLM and Trinity County, and to seek funding.



Weaver Creek Restoration Project 60% Design



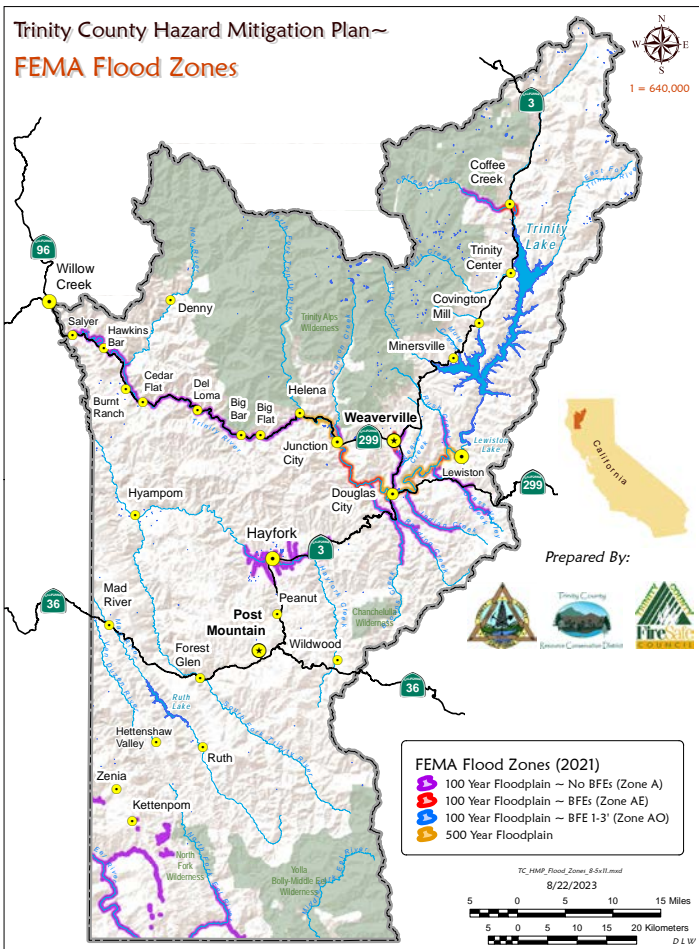
Attendees of the Weaver Creek Project Tour presented by the Yurok Tribe

Hazard Mitigation Mapping

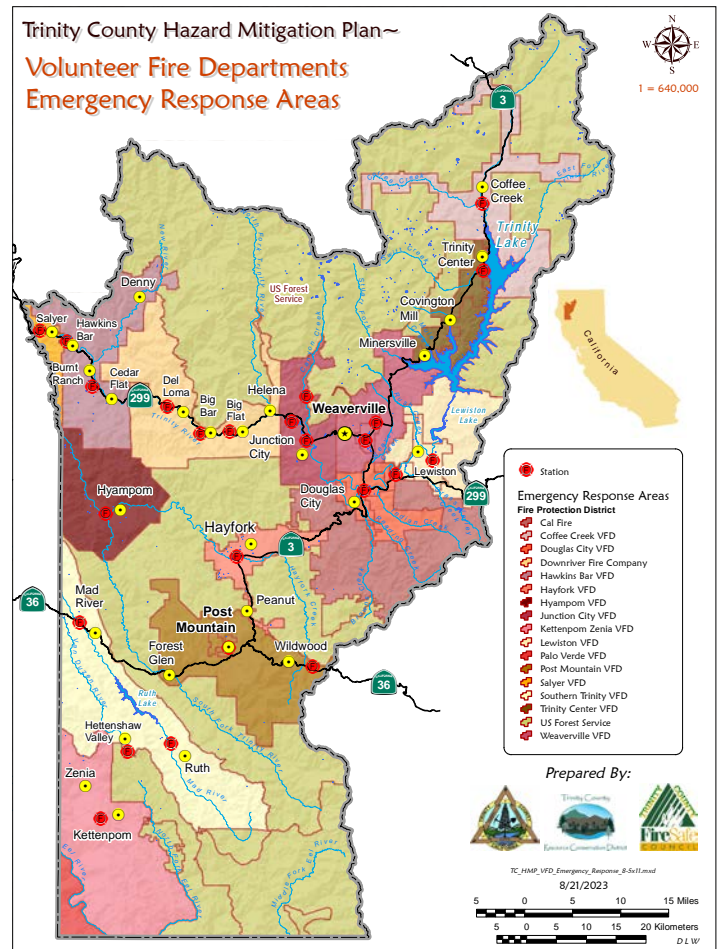
In support of the Trinity County Hazard Mitigation Plan (HMP), the GIS Department created the cartographic layout, and provided data management and mapping for (38) maps that went into this project. These maps highlighted hazards and related infrastructure to assist in building disaster resilience within Trinity County as part of a comprehensive plan to address and minimize potential hazards.

Hard work and attention to data integrity are involved in the preparation of community mapping projects like this, starting with the acquisition of the most current and highest accuracy GIS data available. Data for this project uses 2021 flood zone information from the Federal Emergency Management Agency (FEMA), 2022 landslide susceptibility and earthquake locations from the U.S. Geological Survey (USGS), Fire perimeters data (1910- 2023) obtained from Cal Fire & the National Interagency Fire Center (NIFC), waterways and watershed locations created from the National Hydrography dataset, Volunteer Fire District (VFD) locations and communications data maintained by TCRC, wind-speed data obtained from the National Renewable Energy Laboratory (NREL), maximum average temperature data from the U.S. Forest Service Pacific Northwest Research station, drought conditions from the U.S. Drought monitor and fire behavior data layers from the Fire & Resource Assessment Program (FRAP).

Did you know that the Trinity County RCD maintains a robust library of GIS data layers including administrative, state, and tribal land boundaries, aerial imagery, elevation contours, geology, glaciers, mountain peaks, streams, rivers, watershed basins, lakes, points of reference (parks, rest areas, shopping locations), parcels, public land survey (PLSS) and roads GIS data? Providing updates to the base map data library is a key function of the GIS Manager. Much of the data obtained for this project is now part of this data storage system and is available for use by county partners, RCD project planners, and the community by request.



FEMA Flood Zones HMP Map



Volunteer Fire District (VFD) HMP Map

Environmental Camp: A Journey of Learning and Exploration



Learning fire history through tree rings

This year's Environmental Camp was a resounding success, made possible through the combined efforts of the Trinity County RCD, the Watershed Research and Training Center, and the Trinity River Restoration Program.

A highlight of this year was our expanded outreach, engaging 6th graders from Hayfork, Trinity Prep Academy, and 6th and 7th graders from Junction City and Lewiston. These students embarked on a two-day overnight adventure, filled with learning and exploration.

Nestled in the serene setting of historic Bar 717 Camp near Hyampom, the students participated in various hands-on activities. They explored everything from orienteering and fire ecology and management, to macroinvertebrate analysis and stream flow monitoring. These sessions were professionally facilitated by representatives from Cal Fire, Trinity Together, the United States Forest Service, Ascend Wilderness Experience, Trinity County RCD, Watershed Research and Training Center, and the Natural Resource Conservation Service.

Reflecting on the camp, a student from Junction City Elementary School shared, "Camp was a mix of fun, learning, and making new friends." This statement captures the essence of the camp: providing practical learning experiences while fostering a deeper connection with nature and scientific methods.

Looking forward, we aim to include more 6th-grade classes from across the county in next year's program. Our goal is to ensure that more students have the opportunity to experience the wonders of our environment firsthand.



Stream flow surveying



Oak identification activity

Salmon Meets Harvest Festival

The 2023 Salmon Meets Harvest Festival, held on October 7th, was a resounding success, attracting over 300 attendees from the local community and beyond. This event was a unique combination of two long-standing festivals: The Trinity River Salmon Festival and the North Fork Grange's Harvest Festival. This day's success can be attributed to the collaborative efforts of the Trinity River Restoration Program, North Fork Grange, Trinity County RCD, vendors, agencies, organizations, and all attendees who participated.

Set to a festive atmosphere with musical performances by Trinity Tribal Drum, Mojito, and Grizzly Roots, Sonny Hayward from the Nor-Rel-Muk Wintu Nation inaugurated the festivities with a traditional blessing. The event was particularly enjoyable for children, who delighted in the famous giant salmon tent and Super Salmon Mascots, along with activities such as fish prints and animal track molds. A live animal show from Turtle Bay Exploration Park captivated the audience, especially the Porcupine's appearance, which was a standout moment.

Another festival highlight was the North Fork Grange's 18th annual chili cook-off, which featured five contestants. Congratulations are in order for Adam and Avalon Koeller, who won both the People's Choice and the Judged 1st Place awards!



The Other Cheek face painting



Colin Speirs, Chili Cookoff contestant with Adriana Rodriguez and the Salmon Mascots



Junction City Fire Jills



Folks from the North Fork Grange



Grizzly Roots

Arundo donax Removal in Weaverville

This fall, an excellent opportunity to protect Trinity County watersheds from invasive giant reeds presented itself. Through close partnerships with weed management professionals, our Botany Program staff took the first steps in eradicating the oldest population of *Arundo donax* known in Trinity County.

The plants were located on a small private parcel on the corner of Miner Street and Highway 299 near Trinity High School. At one time, the stand of giant reeds was utilized as a privacy screen by the residents, but over time, the stalks began to migrate into the right-of-way of both a county road and state highway. Eventually, they caused a visual barrier for traffic turning at the corner, and now that the plants were in the right of way, their presence would become a problem for road departments, at both the local and state levels. Because *Arundo donax* roots easily from cut stalks lying on the ground, this posed an even greater concern because the material cut here had the potential to grow anywhere it was transported.

Luckily, in our small community of conservation professionals, the word got out quickly the first time this happened, and we removed those plants last year. Our coordinated teamwork has resulted in communication with friends and colleagues in multiple agencies who made the removal of these original plants a reality. From the view of a healthy watershed ecosystem, we can't thank the property owner enough for their interest and openness to allow us to eradicate this species from this location.

The treatment for this species requires removing the root clumps from the soil as well as tarping for several months to prevent the growth of any root fragments. It is currently covered. Next year, the area will be revegetated with native grasses and a few beautiful dogwood and western redbud plants, which we grow at our native plant nursery. Pictures and updates will be published in our future almanacs.



Arundo donax population
before removal



Site after removal, before tarping for
several months to prevent growth of any
remaining root fragments

Summertime Salmon

Annually, local fisheries and watershed management agencies join together to survey the large tributaries of the Trinity River and to count the Spring Chinook and Summer Steelhead. This year, the Trinity County Resource Conservation District (TCRCD) and the Watershed Research and Training Center (WRTC) coordinated the dives on behalf of the United States Forest Service Shasta-Trinity National Forest (USFS) and the California Department of Fish and Wildlife (CDFW).

Divers surveyed the New River, South Fork Trinity River, East Fork North Fork Trinity River, and Canyon Creek. The North Fork Trinity River and Hayfork Creek were not surveyed this year due to sediment turbidity that caused visibility issues.

This year, we had a total of 57 divers participate in the survey dives, with many divers swimming back-to-back days of surveys each week. Over the course of 7 survey days and several weeks of planning, 180.8 miles of stream were surveyed via visual observation by dutiful divers with snorkels and wetsuits. Thank You to the volunteers who joined the hosting staff from

partnering agencies including; The SMART Center Workforce working in conjunction with USFS and TCRCD, Hoopa Tribal Fisheries, The Yurok Tribe, Trinity County staff, Trinity County Search and Rescue volunteers, local landowners, and out-of-town volunteers.

Tributary	Canyon Creek	South Fork Trinity River	New River	East Fork North Fork Trinity River	Total
Miles Surveyed	16.60	43.60	26.80	6.80	180.8
Adult Spring Chinook	19	27	384	0	430
Adult Summer Steelhead	21	4	48	1	74
Divers	12	23	15	7	57

2023 Season Spring Chinook and Summer Steelhead Counts



TCRCD Staff Annyssa Interrante hanging over a small waterfall on East Fork North Fork Trinity River checking a pool for fish before additional staff progress downstream and disrupt schools of fish. Credit: Michael Bradford

Roads Department Winter 2023

Wow, what a work season the TCRCD road crew had on the Shasta-Trinity and Six Rivers National Forests! We found extensive road-related erosion issues in the fire areas and spent considerable time clearing the main roads of downed trees, unplugging culverts, as well as repairing fill failures and landslides that left the roads impassable to vehicles. We worked in the August/McFarland Fire footprints on both forests, including work way out in southern Trinity towards the Travis Ranch in the North Fork of the Eel River, the Monument Fire area around Junction City, and ended the year with Lightning Fire repairs near Hawkins Bar for Six Rivers and a two small scattered road decommissioning projects. Keeping the roads open for public access was our main priority this year. The USFS, TRRP, and the Ca OHV Division funded this work. Here are a few photos of the work completed this summer. We'll be back at it in the spring.



Fill failure repair on Wild-Mad Road (30 Road) in Upper Bierce Creek, Shasta -Trinity National Forest.



Rock slide cleared from road along Ruth Lake, Six Rivers National Forest , 1S06 Road



Large log jam was cleared from inlet basin of tributary to Soldier Creek in the Monument Fire area and rip rap was installed to eliminate bank erosion.

Trinity County Fire Safe Council (TCFSC)

Fall and winter was a busy time for the Trinity County Fire Safe Council (TCFSC). The season commenced in October with the initiation of fall community chipping. Staff from the Trinity County Resource Conservation District and Watershed Research and Training Center embarked on a county-wide journey, providing free chipping services to those who signed up.

During October and November, the TCFSC organized several Firewise engagement events. Fourteen Firewise community board meetings were convened, eliciting valuable input from community members. Their insights covered a spectrum of needs, encompassing outreach, education, fuel reduction, home hardening, and evacuation planning projects envisioned for 2024. Furthermore, a series of three Firewise gardening presentations were held at Trailhead Pizza in Coffee Creek, Strawhouse Café in Big Flat, and the Hawkins Bar VFD. These sessions included great tips on creating defensible space around homes and implementing gardening techniques to mitigate fire risk.

We started November strong with the TCFSC's participation in a community meeting in Willow Creek, alongside the Humboldt County Resource Conservation District, U.S. Forest Service, Watershed Research and Training Center, Lower Trinity River Prescribed Burn Association, and Willow Creek Fire Safe Council, Community Services District, and Volunteer Fire Department. This gathering centered on the Greater Willow Creek Community Wildfire Defense Grant project, aimed at targeting Willow Creek, Salyer, and Hawkins Bar. The project's scope encompasses fuel treatment, community chipping, Firewise education, home assessments, and various other initiatives geared toward reducing fire risks in the region. On November 30th, the TCFSC hosted a neighborhood ambassador appreciation event and strategy session. We look forward to supporting the incredible events our ambassadors are envisioning for 2024.

Our commitment to wildfire risk reduction continues with our regular monthly meetings held at the Trinity County Resource Conservation District Conference Room, also accessible via Zoom, every fourth Thursday at 1pm. To accommodate holiday schedules, the final meeting of the year took place on December 7th. This meeting included robust discussions regarding project updates, the 2025 update to the Community Wildfire Protection Plan, and the upcoming May 4, 2024 Wildfire Awareness Day event.



Photo of attendees from the November 8, 2023 Greater Willow Creek Community Wildfire Defense Grant project kick-off meeting



Flow Variability in the Trinity River

Imagine a winter storm brewing in the west, clouds accumulating over the mountain peaks dropping a dusting of snow and at lower elevations, dripping down as rain. Waters accumulate and funnel toward low points in steep terrain running down stream paths catching sediment, leaves, and branches, delivering them into the tributaries of the Wild and Scenic Trinity River. Depending on the amount of precipitation or snow melt, creeks can daintily deliver cool mountain waters with smaller sediments while larger rain events can powerfully move tree logs and large rocks.

Between 1960 and 2022, when this wild pulse of storm-fed tributaries finally converged with the Trinity River, something peculiar happened; the mainstem did not match the same force of its smaller tributaries. The river's flatlined flow left debris delivered by the tributaries stacked and settled at their mouths. In the wet winter of 2022-'23, the community witnessed Deadwood Creek deliver a plume of sediment from its wildfire-scarred upper reaches after a significant rain. The plume settled on a large group of salmon redds at the mouth of the creek, and the Trinity River, at its baseline winter flow of 300 cfs, couldn't mobilize the sediments. The embryos developing in redds at the mouth of the Deadwood Creek likely died by suffocation.

As you are probably aware, the Trinity River has two dams which hold back waters from its upper watershed. In the absence of flow from those tributaries, the river then must rely on two hydrologic sources for river health: downstream tributaries and restoration flow actions released from the dam. Restoration flows have been managed by the Trinity River Restoration Program since 2004 and until quite recently, flow amounts during winter months were managed to maintain a consistent low flow (300 cfs) from October 15 through mid-April. Management was designed this way because the science of how flow influences the ecology of the river wasn't as far along as the physical river sciences, and further, the water year type, which establishes the volume of restoration flow, is not determined by the California Department of Water Resources until April 15. Based upon that water year determination, program staff develop a hydrograph for its spring restoration release which intends to mimic an important ecological function of mountainous river systems – the snow melt flood.

As described in the first paragraph, the snow melt flood moves mountains, well the loose parts anyway. High flows during melt events benefit the river in form by moving sediments, logs, and rocks which are critical in building habitat for salmonids. Logs slow upstream current, allowing migrating fish to rest and providing cover from predators. Rocks create oxygenation in riffles and provide nesting salmonids a place to dig their redds when spawning. Sediments, when settled and in healthy amounts, encourage proper algae and thus hatches of bugs, which feed fish on their path of migration.

With the snow melt restoration release, the Trinity River began to heal from decades of dam-regulated flows. Data shows that the Program has been successfully sending more young fish to the ocean, suggesting that habitat is increasing with more water in the system (Pinnix et al, 2022), although adult fish returns have not met expectations and scientists wanted to know why. In the mid-2010's the Program began to explore the use of flows during winter months. A significant portion of rain events that trigger tributary flows happen from December to April and flows below the dam don't match that pattern. Studies commenced on temperature, salmonid growth, food availability, habitat availability, redd scour, and geomorphic and hydrologic benefits of current and potential flow practices. The results from these studies became clear and culminated in the Trinity River Winter Flow Project report (Abel et al., 2022). The research led to a proposal of using some of the restoration flow volume earlier in the year by synchronizing a dam release with a winter storm between December 15– February 15 and then providing the river with an elevated base flow between February 15 and April 15; the balance of the restoration water volume would still be used to mimic spring snowmelt in the spring. The authors hypothesize that this change in flow management would more efficiently use the same amount of water to move rock in the river, while also increasing habitat and food availability for young salmon.

When you think about it, it makes sense. All the native species of the Trinity River evolved with winter storm flows, higher winter base flows, spring snow melt and dry hot summers. But for the past 56 years, water dispersal from the dam has been flipped and has largely disregarded vital variability in flow patterns outside of the spring and early summer. Key floodplain habitat that was once inundated for months during winter and provided an abundance of rearing areas and food production to Trinity River fish has been lost, unless flow patterns change. Catch data from downstream screw traps show that inundation of that rearing habitat does not occur until most juvenile salmonids are downstream of the restoration reach (Petros et al. 2017), meaning most juvenile salmon don't have a chance to use all that habitat that has been created by restoration projects in the last 18 years, again, unless flow patterns change. We are also learning that water released from the dam can be so cold that it slows the growth of juvenile salmon and that the right temperatures and abundant food will translate into faster growth for salmonids (Lusardi et al. 2019).

Young fish need diverse habitats, appropriate temperatures, and abundant food to thrive and survive as they travel down the river to the ocean. More natural flows, including winter floods, increased winter base flows, and spring snowmelt better support a healthy ecosystem that many species depend upon. The system is a balancing act of physical processes like flow, seasonality, and a vast network of species that rely on each other to thrive. The Trinity River Restoration Program is looking to give that power back to the ecosystem so that our cherished fish of the Trinity can be armed with bigger, healthier bodies when they meet the challenges of their harrowing migration to and from the ocean.

Trinity County RCD
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Trinity County RCD Board Meetings

Third Wednesday
5:30 PM
Open to the Public

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Cari deJong - Bookkeeper
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John Dickerson
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Jeremiah Weiss

Liam Bassler - Grizzlycorps Fellow

Botany Crew

Maryann Perdue
Jack McGlynn
Tyler McKinley

The Trinity County Resource Conservation District (TCRCD) is a special district set up under state law to carry out conservation work and education. It is a not-for-profit, self-governing district led by a volunteer board of directors.

The Trinity County RCD Vision

The Trinity County RCD envisions a balance between utilization and conservation of our natural resources. Through economic diversity and ecosystem management our communities will achieve and sustain a quality environment and healthy economy.



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