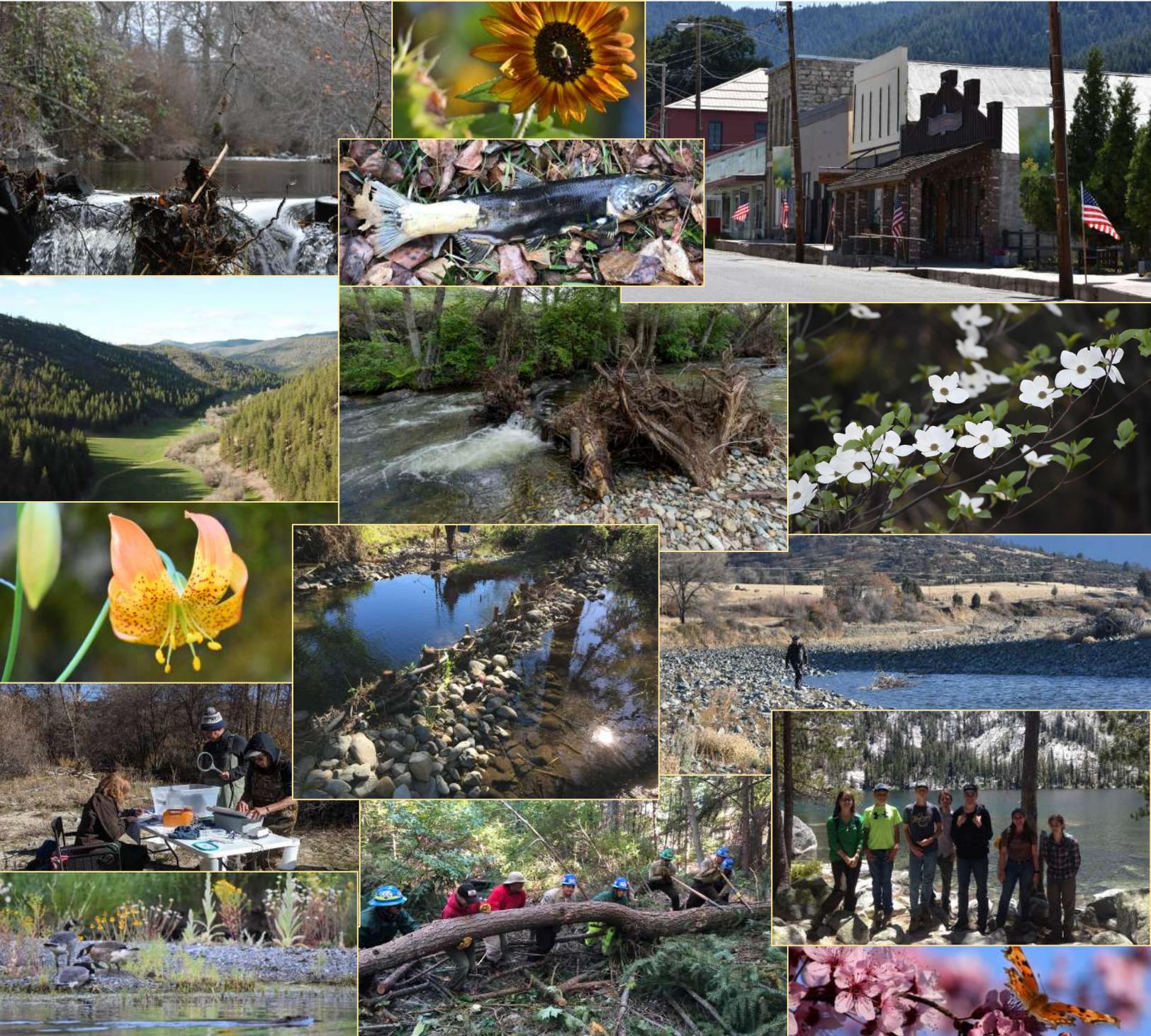




SCOTT RIVER
WATERSHED COUNCIL

A Year in Review 2019



"Heaven is under our feet as well as over our heads."
Henry David Thoreau



A Letter from the Director

As a young woman, I had the fortunate experience of living with my grandparents for a short time. One talk stands out above all else. Sitting at their kitchen table, pondering their life, I said "You have seen so much in your life, Grandma." She turned to me and said, "It will be nothing compared to what you are going to see." Even before the internet or cell phones, somehow, she knew that during my time we were going to see change like never before. Today, I still wonder how she knew this with such conviction.

To say we are living in historic times would be an understatement. There has never been a moment in human history where information about our own species, our planet and our universe has been more readily available. However, even with scientific knowledge being so accessible, facts are under attack. The vast areas of concern about our planetary health can't be overstated. Yet, our world continues to hold limitless and changing beauty. Change is inevitable, therefore let us seek opportunities to expand our views, increase our knowledge, and let it fuel the fire in our spirit to find ways to work together to meet the challenges of both today and tomorrow. We owe that much to our future generations.



I hope 2020 provides us the ability to recognize our shared values, find opportunities to build relationships and seek the inspiration for us to take action that is filled with empathy, compassion, kindness and environmental justice. Let's all think globally and act locally.

Best wishes for good health to all.

Charna



SCOTT RIVER
WATERSHED COUNCIL

Our Mission, Our Passion

Education and Outreach



Planning and Design



Project Implementation



Monitoring and Research



Who is the Scott River Watershed Council?

Board of Director 2019/2020

Betsy Stapleton, Board Chair
 Matt Thomas, Treasurer
 Larry Alexander
 Michael Stapleton
 Craig Thompson
 Kory Hayden
 Jen Bray
 Judd Hanna



Staff 2019/2020

Charnna Gilmore, Director
 Erich Yokel, Monitoring Supervisor
 Amanda Schmalenberger, Administrative
 Shirley Johnson, Administrative
 Jess McArthur, Administrative
 Dale Munson, Field Technician
 Linda Bailey, Field Technician
 Darrell Mitchell, Field Technician



The Etna Farmers Market, operating since 2012, made a move this year and now operates alongside the Scott River Watershed Council and the upcoming Etna Community Garden located at 514 N. Hwy 3 in Etna, California. The Etna Farmers Market is committed to creating an opportunity for Siskiyou County producers to sell their products locally and offer fresh produce directly to consumers. The market opens the 2nd Saturday in June and ends the last Saturday in September. The hours are from 10 am until noon. Hope to see you all in June 2020.

Another exciting partnership that formed in 2019 was the establishment of the Etna Community Garden also located at the Scott River Watershed Council's office. A cover crop was planted this fall thanks to local landowner and rancher, Gareth Plank. The newly formed Garden Board of Directors will be looking to turn the longtime dream of a community garden into reality. Thank you to those who are making this happen and to the leadership team for your dedication to our community!

Karen Arruda, Katherine Chaplin, Randy Eastlick,
 Charnna Gilmore (Secretary), Megan Ireson, Shirley Johnson,
 Celeste McFall, Tamila Medinnus (Board Chair),
 Deborah Meyers, Carrie Campbell Peterson



A huge thank you to our funders!



SRWC Grant Summary

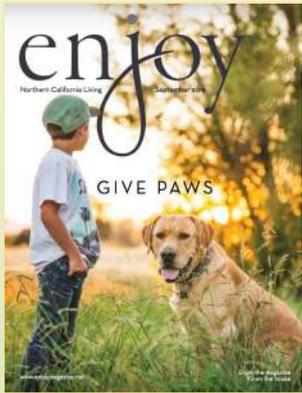
| Grant Name | Funder |
|---|---|
| Coordination Projects | |
| Scott River Watershed Coordinator | United States Fish and Wildlife Service |
| Youth Environmental Summer Studies Program | United States Forest Services-Klamath National Forest |
| Implementation Projects | |
| French Creek and Rattlesnake Creek Beaver Dam Analogue Project | United States Fish and Wildlife Service |
| French Creek Off Channel Pond, Large Wood and Spawning Gravel Augmentation | Coho Enhancement Fund - Administered by National Fish and Wildlife Foundation |
| Patterson Creek Wood Loading – Phase II | Bureau of Reclamation - Administered by National Fish and Wildlife Foundation |
| Patterson Creek Wood Loading – Phase III | United States Fish and Wildlife Service |
| Miners Creek Beaver Dam Analogue | United States Fish and Wildlife Service |
| Big Meadows Aspen and Wet Meadow Restoration | United States Fish and Wildlife Service |
| Scott River Riparian Plant Project | United States Fish and Wildlife Service |
| Scott River Habitat Enhancement and Restoration | California Department of Fish and Wildlife |
| Planning, Design and Permitting Project | |
| Restoring a Critical Population of Coho Salmon in the Klamath River Basin (CA) by Restoring Floodplain Habitat, Monitoring and Designing Addition Features. | Bureau of Reclamation - Administered by National Fish and Wildlife Foundation |
| Coho Habitat Restoration Design on French Creek (CA)"French Creek Design" | Bureau of Reclamation - Administered by National Fish and Wildlife Foundation |
| French Creek In-Stream and Off Channel Habitat Enhancement Design, Phase II | California Department of Fish and Wildlife |
| Grouse Creek Floodplain Restoration | United States Forest Services-Klamath National Forest |
| Mad River Ranger District, Six Rivers National Forest - Rattail Planning, Design and Permitting Project | Northern California Resource Center |
| Effectiveness Monitoring and Research Projects | |
| Effectiveness and Validation Monitoring of Scott River Beaver Dam Analogues | California Department of Fish and Wildlife |
| Scott River Beaver Dam Analogues: Implementation, Monitoring and Passage Assessment | Coho Enhancement Fund - Administered by Humboldt State University |
| French Creek Food Web Analysis | Bella Vista Foundation |
| Sugar Creek Food Web | Bella Vista Foundation |
| Integrated Fisheries Restoration and Monitoring Plan for the Klamath River | Pacific States Marine Fisheries Commission |



Outreach and Community Service Summary

For SRWC, one of our founding principles has been to provide community outreach and education. Over the past decade, we have expanded to include regional and state outreach. Telling the wider world about all the amazing restoration work and scientific research occurring in Scott Valley allows the work to receive its deserving acknowledgement. The information derived from local projects is informing future projects, locally and across the state. In total, SRWC has performed the following outreach activities in 2019.

- Provided 186 students (primary, high school, and college) with opportunities to learn about natural resource work, beaver, and restoration efforts in the Scott River;
- Conducted numerous field tours of restoration sites with a total of 63 participants;
- Presented SRWC work at local, regional and state events, ~ 436 attendees, including hosting the Scott Watershed Informational Forum featuring local, regional and world speakers;
- Hosted a Watershed Clean-Up Day removing 2000 lbs. of garbage from the headwaters of Etna Creek, the residential water source for the City of Etna;
- Featured in five publications and articles, see an example in the Enjoy Magazine;
- Served as a guest speaker on HMUD Radio Talk Show about SRWC's work in the Scott regarding beaver and the implementation of beaver dam analogues.

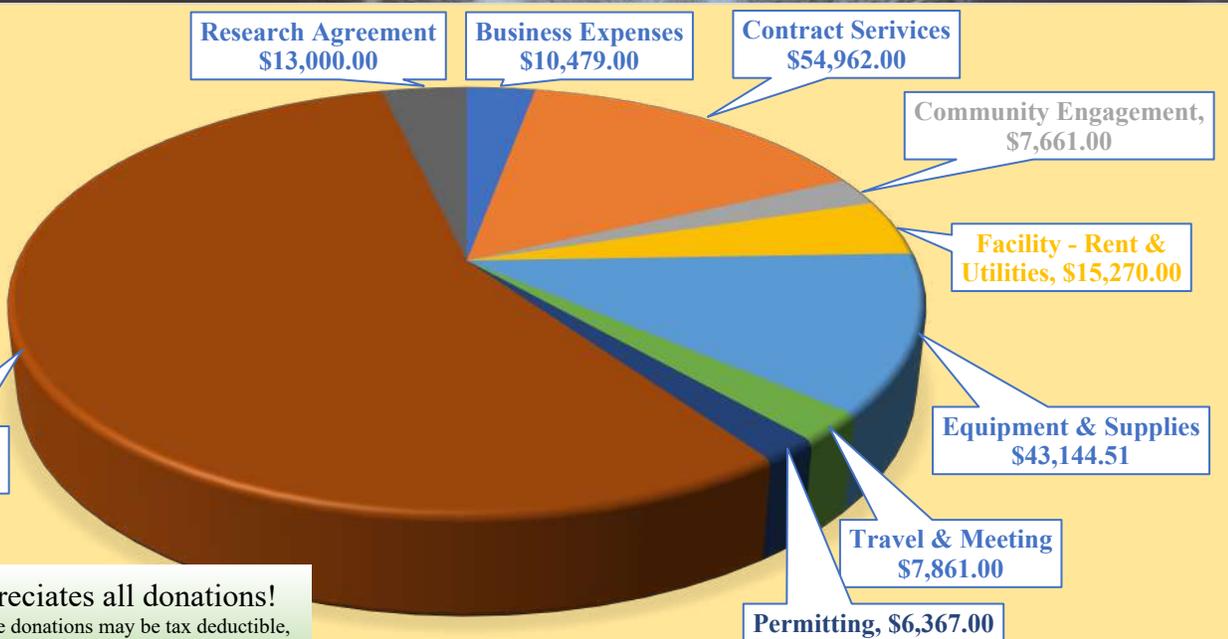


[Click here for full article](#)

2019 Value of Volunteer Hours, Cash Donations & Other Contributions - \$266,536

SRWC Financial Snapshot

SRWC is proud of the socioeconomic benefits that our work brings to our community.



SRWC greatly appreciates all donations!
 (SRWC is a 501(c)(3) therefore donations may be tax deductible, please consult your tax professional for more details.)

[Click here to donate](#)



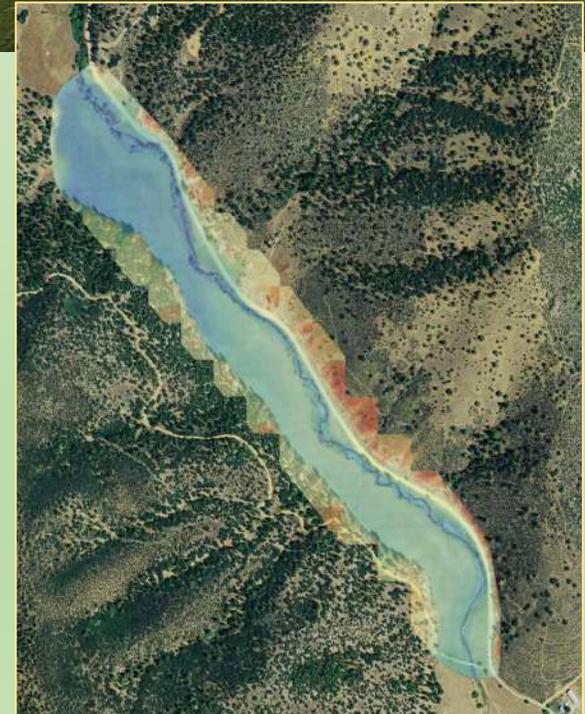
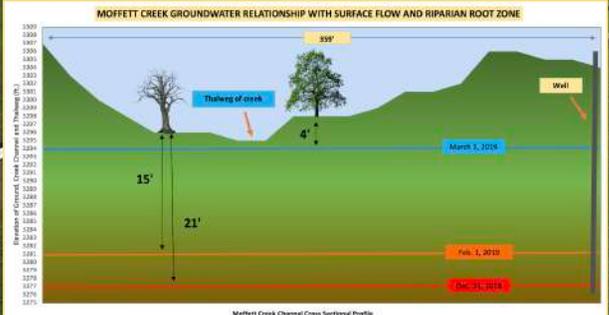
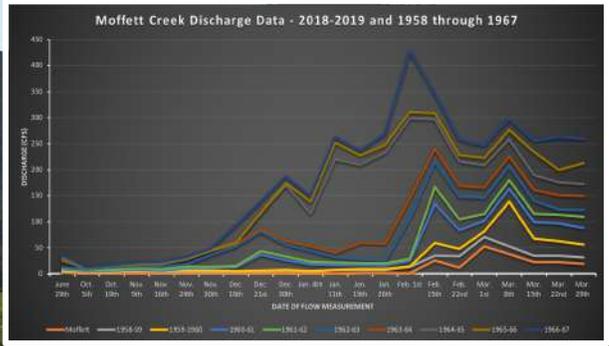
Youth Environmental Summer Studies

Youth Environmental Summer Studies (YESS) Siskiyou program was established in 2017 as a collaborative partnership between the Klamath National Forest (KNF), Scott River Watershed Council (SRWC), Quartz Valley Indian Reservation (QVIR), Salmon River Restoration Council (SRRC), and the Etna Police Activities League (PAL). In 2019, seven Etna High School students and one Yreka High School were hired through the Youth Conservation Corps to perform a variety of natural resource related work activities in the Scott River and Salmon River watersheds. The main objective of the program is to give Siskiyou County youth the opportunity to gain field experience in natural resource and environmental science work, and to increase their understanding of the importance of creating a stewardship culture within rural landscapes.

Work performed varied throughout the season and included trail work, fisheries restoration, data collection, invasive weed management, Beaver Dam Analogue maintenance, riparian planting, water quality testing, fuel reduction and oakwood release projects. The myriad of experiences has given these students a summary view of what opportunities are available and several students who have finished the program are pursuing educational avenues in natural resources.



Moffett Creek Capstone Projects



The Moffett Creek Capstone Projects (MCCP) are focusing on developing materials and information for the upper Moffett Creek watershed which encompasses approximately 45,000 acres of mixed terrain. The first Capstone cohort finished up in the spring of 2019 and then passed the torch to another set of students from the Southern Oregon University Environmental Science and Policy program.

Under section 303(d) of the Clean Water Act (CWA), the U.S. Environmental Protection Agency included the Scott River in the list of impaired waters for excessive levels of suspended sediment and elevated water temperature. These water quality parameters are known to impact the habitat and survival of salmonid species and the designated beneficial uses which work to protect cold water, migratory fish and habitat. In 2005, the North Coast Regional Water Quality Control Board (NCRWQCB) adopted the Action Plan for the Scott River Sediment and Temperature Total Maximum Daily Loads (TMDL). Sedimentation from the Moffett Creek drainage has been identified as one of the main contributors to the Scott River's impairment status.

Southern Oregon University's Environmental Science and Policy Program's Capstone Projects are focused on the utilization of the culmination of skills, methodology, and knowledge learned in the undergraduate curriculum. A mixed methods research using both quantitative and qualitative approaches and focused on the following areas: GIS, remote sensing and mapping - Drone photos were taken and georeferenced; Data collection and analysis including longitudinal cross sections profiles, flow and velocity data analysis; Model potential effects of restoration using Stella®, a systems dynamics model, and developed an Environmental Impact Statement for a watershed Programmatic Permit.

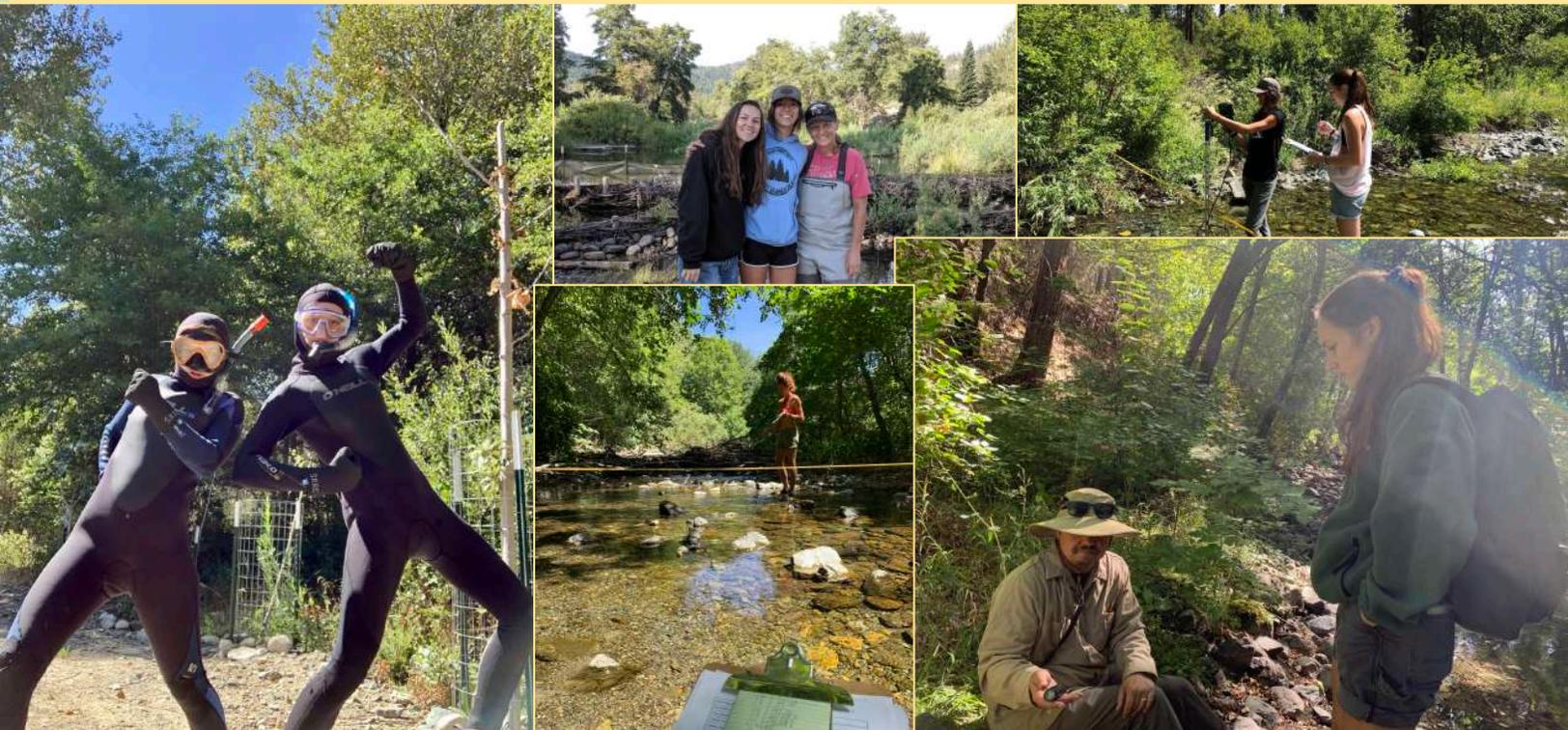
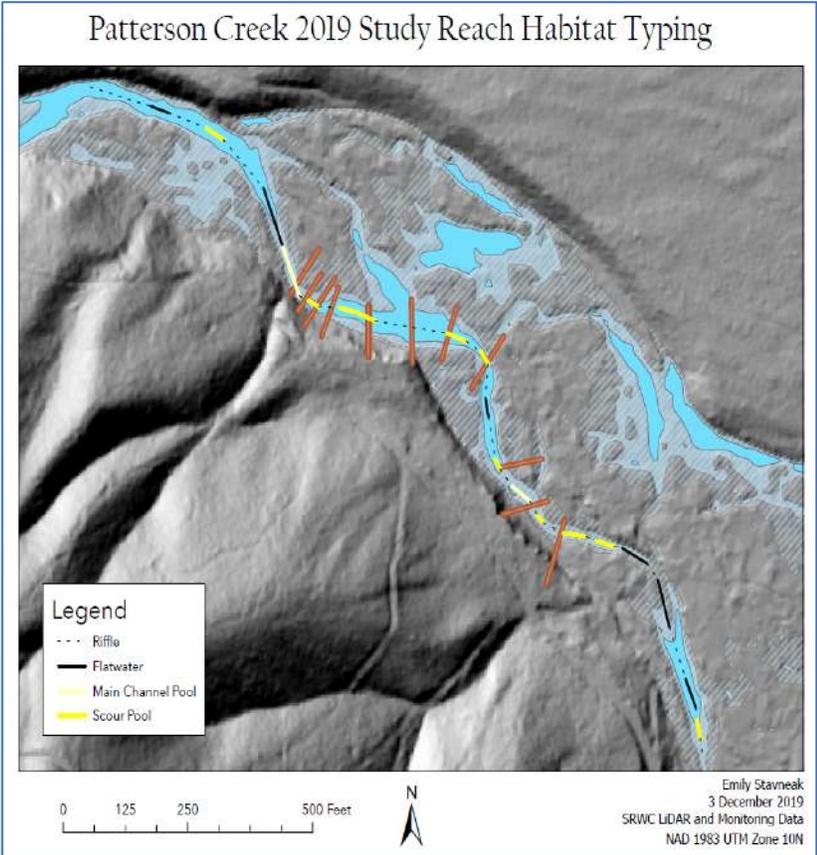
Good luck Moffett Creek Team 2019/2020!



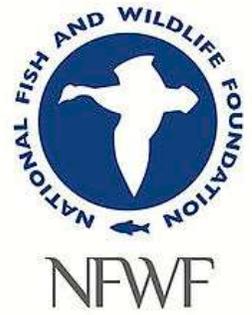


Evaluating the Effectiveness of Artificially-Introduced Instream Woody Debris for Restoring Coho Salmon (*Oncorhynchus kisutch*) Habitat in Patterson Creek

Southern Oregon University's Environmental Science and Policy students, Emily Stavneak and Taylor Owen, completed their Capstone project analyzing data collected around the influence of large woody debris on stream morphology and coho habitat parameters. They worked through the summer and fall of 2019 to collect five data components: stream flow, water temperature, streambed substrate composition, pool frequency and quality, and vegetative coverage instream. These components were identified for their usefulness in creating a thorough profile of Patterson Creek's current coho habitat quality as well as their value as quantitative descriptors of large woody debris influence on stream morphology. Their study sought to provide data regarding morphological characteristics that could be referenced in the future to compare stream conditions before and after woody debris implementation. Their research methodology was developed with the goal of setting a precedent for future data collection for upcoming Patterson Creek project phases scheduled for 2020 and 2021 and will document the long-term effects of large woody debris on coho habitat quality within the system. Taylor and Emily with present their findings at SWIF 2020.



Do Beaver Dam Analogues Act as Passage Barriers to Juvenile Coho Salmon and Steelhead Trout?



Humboldt State University’s graduate student Chris O’Keefe spent most of the summer in the Scott River working towards a Master’s of Science in Fisheries Biology degree. Chris’s thesis abstract is the following:

Beaver dam analogues (BDAs) are well-documented to increase suitable rearing habitat for juvenile salmonids. Installing BDAs is an increasingly popular alternative to more intensive restoration techniques. Traditional restoration methods often focus on small scale, site-specific habitat and can be expensive to implement, while BDAs can provide an option for large scale restoration due to the relatively low cost and effort required to install them. BDA structures also allow streams to be more dynamic, and they promote the restoration of stream processes to a more natural state. However, widespread installation of BDAs has been slowed by regulatory agencies’ concerns that beaver dams may impede fish passage. Few studies have empirically assessed the extent to which BDAs impede fish passage, and no studies have elucidated environmental and BDA-specific factors that affect passage. This knowledge gap in the scientific literature warrants further investigation in order to discern the suitability of BDAs for future restoration. Accordingly, we will quantify the ability of Coho Salmon (*Oncorhynchus kisutch*) and steelhead trout (*Oncorhynchus mykiss*) to bypass beaver dam structures by monitoring movement of fish in the field, conducting field experiments on existing BDAs, and conducting controlled hatchery experiments. Our findings will provide regulatory agencies with empirical evidence as to whether BDAs prevent coho and steelhead passage in order to inform permitting and implementation.



University of Washington Ecocultural Restoration and Salmon Science in the Klamath Basin Summer Course



This course was designed as an intensive immersion in transdisciplinary research praxis for students who want to understand how tribal and non-tribal science and ecocultural systems intersect in large-scale environmental governance projects. The students undergraduate and graduate students from UW along with Karuk students in the Píkyav Field Institute came together to learn and research together in the Klamath Basin and on the UW Seattle campus.

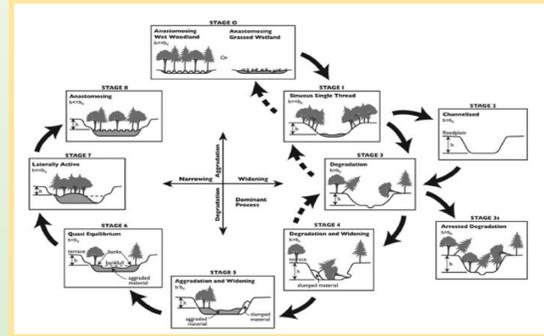


French Creek Instream and Off Channel Habitat Enhancement Design Project – Phase II



The project’s overarching objective is to restore stream habitat essential to salmonid production. Specifically, the goals are aimed to improve instream and floodplain habitat both in the immediate short term and in the long term for Coho Salmon in French Creek, a highly productive spawning and rearing tributary of the Scott River. Furthermore, the project aims to create both over summering and overwintering habitat for Coho Salmon by increasing the frequency of inundation of the extensive anabranching channels in the adjacent floodplain to provide access to off-channel/side-channel habitats.

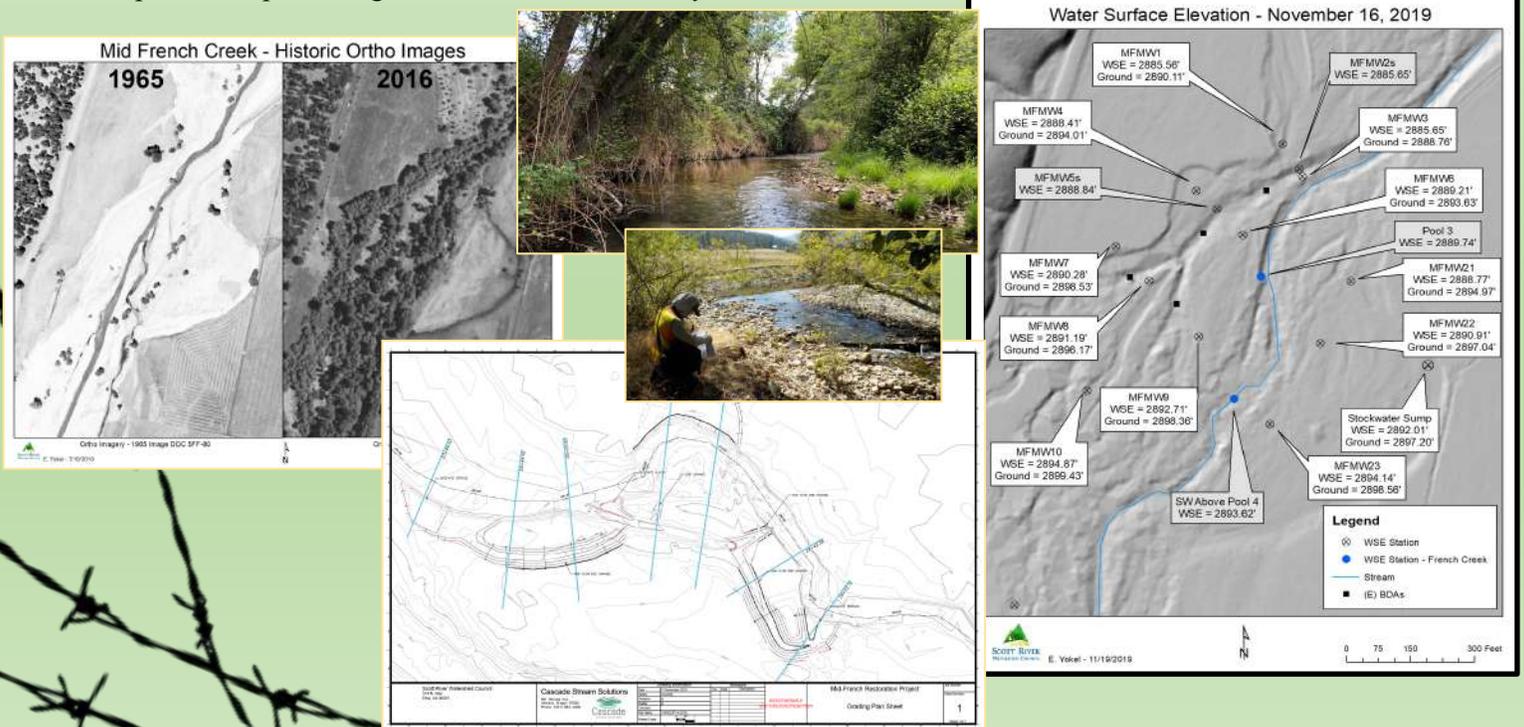
The short-term objective of the project is to increase and improve the quality and quantity of pool habitats within the project reach, with the long-term objective to move this reach from its current Stage 3-4 semi-stable degraded status towards Stage 6-8 with improved ecological services, outlined in Cluer, B., & Thorne, C. 2014, A Stream Evolution Model Integrating Habitat and Ecosystem Benefits paper. This will effectively increase stream complexity, floodplain activation, simultaneously improving pool frequency and depth.



Conceptual stream evolution model illustrating pathways of degradation and recovery of streams (Cluer and Thorne, 2014).

Large wood serves as a food resource for microbes, fungi, and macroinvertebrates, and contributes to habitat formation, aquatic food webs, and biogeochemical processes. Wood also contributes to the natural spatial and temporal dynamics of channel processes and is essential to sustain healthy streams. Furthermore, large wood that is within the active stream channel provides velocity refuges for fish during peak winter flows, decreases average water velocities, and sorts critical spawning gravel.

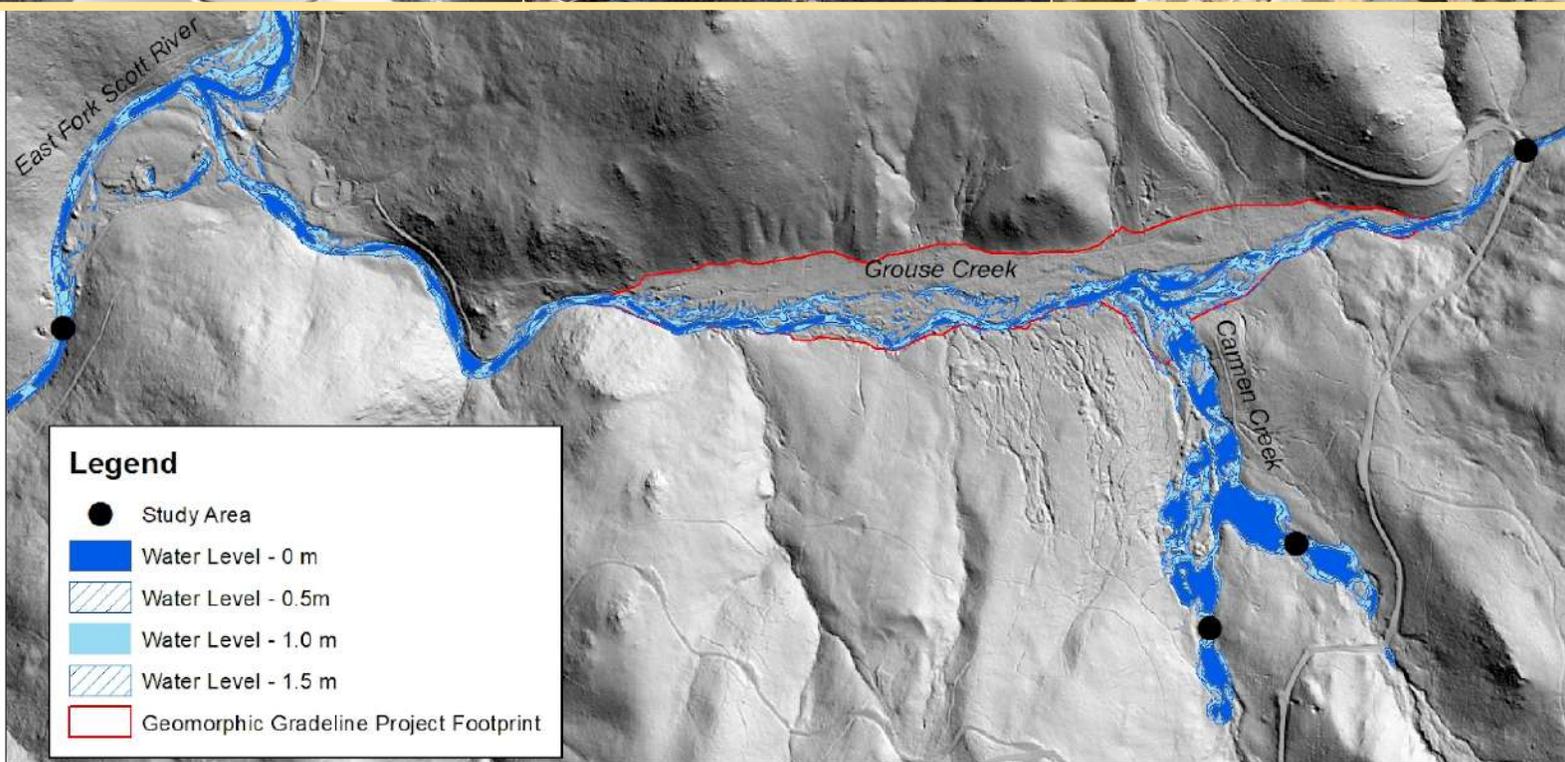
Final deliverables are to produce 100% site design that incorporates the goals and objectives of this project by creating instream structures, off channel features, and other habitat improvements in order to provide overwintering and summer rearing Coho Salmon habitat, improve floodplain connectivity, aggrade incised sections of the stream channel, and reduce pressure on eroding stream banks. In doing so, the project seeks to increase stream length, habitat complexity, and improve all riparian vegetation function and vitality.



Grouse Creek Floodplain Restoration: Whole Valley Restoration for Coho Salmon



To address the dire impacts of accumulated anthropogenic impacts and climate change on Coho Salmon, and all riparian dependent species, the scale and scope of recovery efforts must increase. Moving from site scale to whole valley restoration with the goal of achieving Stage Zero conditions meets this imperative. The Klamath National Forest has identified the East Fork of the Scott River as a focus watershed for restoration, and among the high priority actions is restoring Grouse Creek, which has been highly degraded by placer mining resulting in a loss of floodplain connectivity and associated habitats. The stream bed has severely incised, eliminating pools, spawning gravel, and vegetation necessary to provide shade to the stream, also lowering the water table of the former floodplain. As a result, fish have no refuge from high stream velocities and therefore cannot persist without access to missing slower water habitats provided by side channels, oxbows and wetlands terraces, all functions of accessible floodplains.



Scott River Tailings Projects

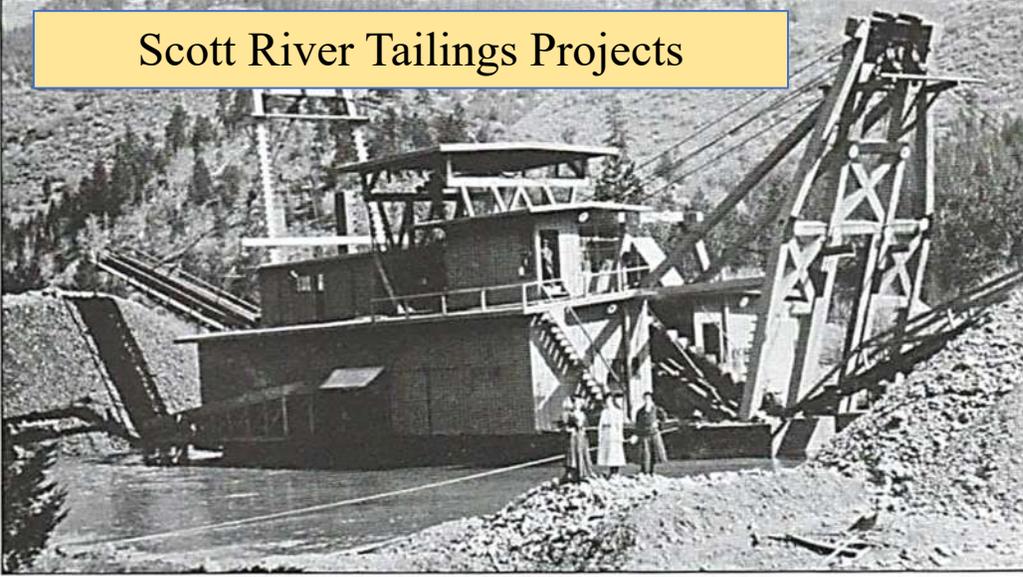


Photo of The Yuba Dredge near Callahan, California



The Yuba Dredge was left abandoned near Callahan, California. Gold dredgers were introduced around the beginning of the 20th century. The Yuba Dredger Company built this one at the mouth of Sugar Creek. It plowed up to one mile of Callahan's Ranch, then turned downstream until it was stopped at the Wolford Ranch in the early 1940s, where the Wolford brothers refused to sell out. In all, it traveled little more than four miles.

The Scott River Tailings reach was mined by a Yuba Dredge from the late 1930's through the early 1950's creating a significantly impaired stream channel with limited floodplain connectivity, riparian vegetation and channel complexity. The Tailings reach becomes disconnected for long periods of time and offers limited rearing habitat for juvenile salmonids and is a potential year-round impediment to the migration of adult and juvenile coho salmon.

SRWC has several projects within this important reach including two design projects and one implementation project.

Scott River Tailings - Design and Implementation Projects



Legend

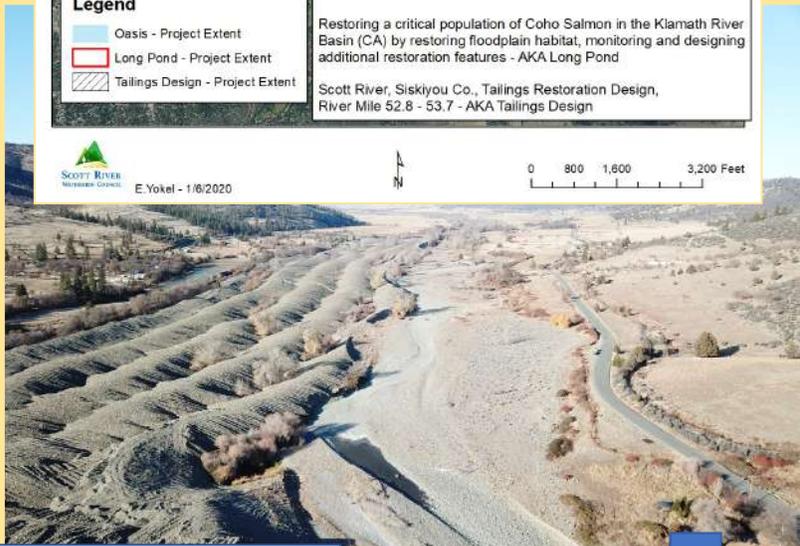
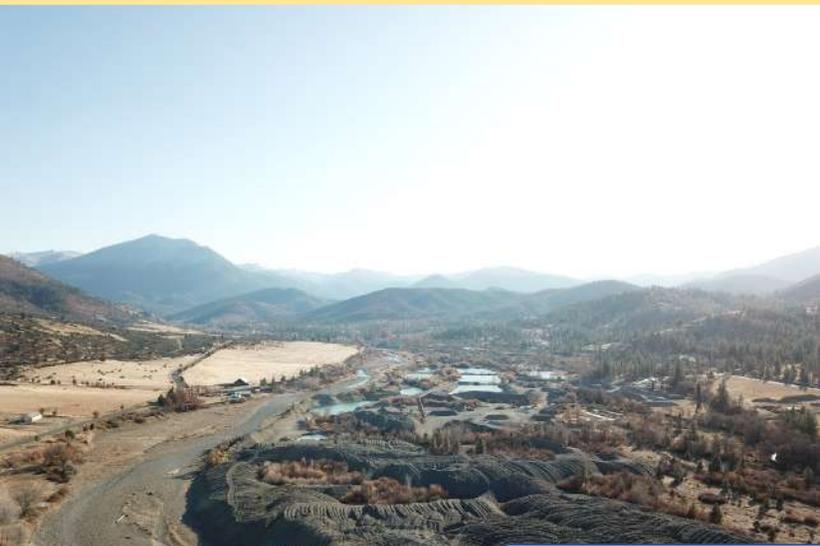
- Oasis - Project Extent
- Long Pond - Project Extent
- Tailings Design - Project Extent

Scott River Habitat Enhancement and Restoration - AKA Oasis
 Restoring a critical population of Coho Salmon in the Klamath River Basin (CA) by restoring floodplain habitat, monitoring and designing additional restoration features - AKA Long Pond
 Scott River, Siskiyou Co., Tailings Restoration Design, River Mile 52.8 - 53.7 - AKA Tailings Design

SCOTT RIVER Watershed Council
 E. Yokel - 1/6/2020

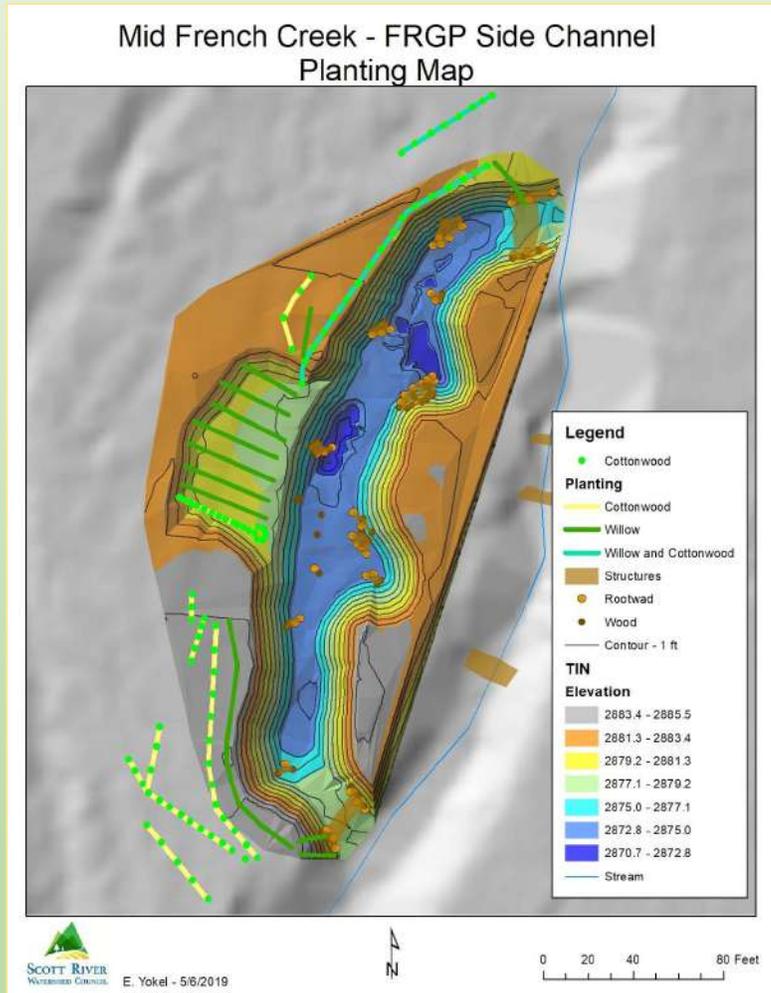
N

0 800 1,600 3,200 Feet



French Creek Side Channel Planting Project

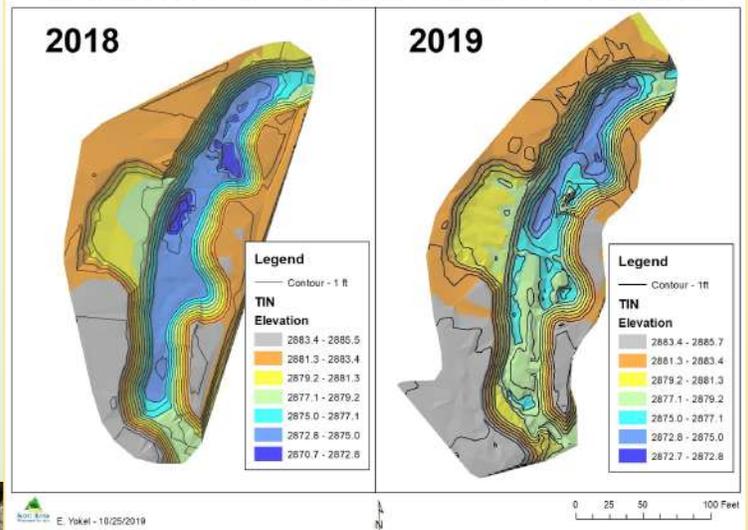
In 2018, construction of a side channel and instream log jams was completed with the funding from California Department of Fish and Wildlife's Fisheries Restoration Grant Program (FRGP). In association with this work, in the spring of 2019, eighteen truckloads of willow and ninety-eight cottonwoods were collected and planted at the project site. Trenches were dug and filled with either willow, cottonwood or a mixture of both. Cottonwoods were planted at a spacing of approximately 10 feet per stem. Willow was placed in the trench at high density with stem counts greater than five per linear foot in the areas of highest density. Approximately 625 linear feet of willow was planted at the project site. It is estimated that 1200 to 2000 willow stems were planted in the effort. Willow plantings were cut to approximately 6 inches above the ground to support root development and survival. All cottonwood trees were protected with fence to prevent browse from beaver and deer, until they reach a level of maturity to sustain browse. Manual watering during the extremely dry fall was required. Initial survival is estimated at ~90%.



French Creek Side Channel Project – Adaptive Management

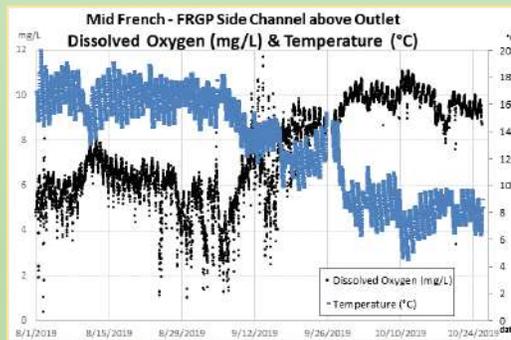
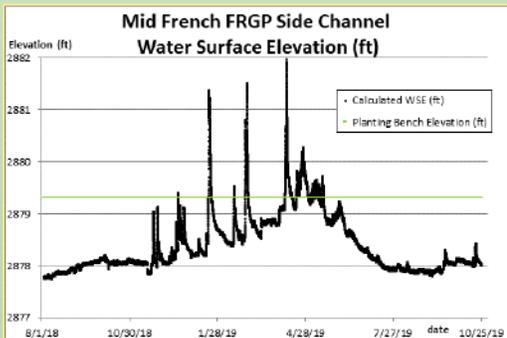
Continued “adaptive management” activities were performed in the FRGP Side Channel in Mid French Creek in early October to increase habitat complexity and reduced the amount of fine sediment deposited in the off-channel feature during winter flows. Large wood structures with rootwads were installed at the inlet and on a bar downstream of the inlet. Willow plantings were installed with the structures. Posts were established on a bar on the river left downstream of the inlet and willow baffles were constructed with willow plantings.

Mid French Creek FRGP Side Channel - Surface Model - 2018 and 2019



French Creek Side Channel Project – Water Quality

The water surface elevation (WSE), water temperature and dissolved oxygen monitoring networks established in the project area were maintained, monitored and data was post-processed and analyzed through Water Year 2019 (WY19).



| Maximum Moving Weekly Average Temperature (MWAT) - °C | | |
|---|-----------|-----------|
| Mid French Creek Mainstem and FRGP Side Channel | | |
| Location | MWAT (°C) | Date |
| French Creek above FRGP Side Channel | 16.9 | 8/30/2019 |
| French Creek below FRGP Side Channel - Glide | 17.7 | 8/8/2019 |
| French Creek below FRGP Side Channel - Margin Pool | 16.6 | 8/30/2019 |
| FRGP Side Channel - Bottom | 16.8 | 7/27/2019 |
| FRGP Side Channel - Above Outlet | 18.4 | 7/23/2019 |



Patterson Creek Wood Loading - Phase II 2019 Implementation

Patterson Creek is a salmonid spawning and rearing cold-water westside tributary. While the alluvial fan of the stream goes subsurface every year, it's upper Valley reach remains wetted, has cold water, an extensive riparian canopy and is known to support coho and steelhead rearing. The confinement and increased velocities have reduced the ecological services that stream can offer, with reduced slow water habitat, gravel sorting and groundwater recharge. This year's phase is the second of three phases. Streamside trees were fell directionally by local fallers, Andy Dean and Tim Murray, across the stream channel and were wedged into adjacent live trees for improved stability. Most all trees were left whole with the goal to minimize mobilization. Once fell, SRWC staff, volunteer Ken Collins and the Siskiyou California Conservation Corp crew moved them into desired locations. Funding for two phases of this project has been provided by the United States Fish and Wildlife Service Partners Program and third phase (scheduled for implementation in 2020) has been funded by the Bureau of Reclamation which is administrated by the National Fish and Wildlife Foundation.



French Creek Side Channel Gravel and Wood Augmentation



French Creek is a key subwatershed in the Scott River basin that supports spawning and year-round rearing of a significant population of Coho Salmon during all brood years according to the California Department of Fish and Wildlife. French Creek maintains connectivity and suitable water quality throughout summer during all water year types including critical drought, offering critical habitat for Coho Salmon. To further illustrate the importance of French Creek, it was one of the only tributaries connected to the Scott River during the Coho Salmon spawning season both in the 2018/2019 and 2019/2020 years. Additional benefit of this project was the reduction in upland overstocked conifer.

One of the limiting factors deemed for French Creek is the lack of sufficient spawning substrate. One of the project goals is to improve immediate spawning conditions at two locations which will provide immediate benefit to the Scott salmonid population, specifically Coho Salmon. To do so, ~ 50 tons of spawning size gravel was placed into a side channel of French Creek, where flows were considered to be ideal for spawning activities. Additionally, large wood was placed across the channel to help deflect higher flows and dissipate some of the energy of more episodic rain or runoff events.

SRWC worked with its partners to conduct adult spawner surveys to assess utilization and found several redds (a nest where the female salmon will deposit her eggs which subsequently gets fertilized by a male). Several redds have been identified in the project reach. Final surveys and results will be published in 2020.

The next steps for this project is to complete some additional analysis and design work and move toward future work that adds immediate benefit to returning salmon to help complete their life cycle.





Scott River Beaver Dam Analogues (BDAs)



Studies have highlighted the benefits of beaver pond habitat and how creating man made beaver dam analogues (BDAs) can help provide critical habitat for endangered salmonids. In 2014, the SRWC partnered with NOAA, USFWS, and CDFW to construct a series of BDAs in the Scott River, a tributary to the Klamath River watershed. Being the first in California, much has been learned over the past 5+ years.

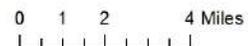
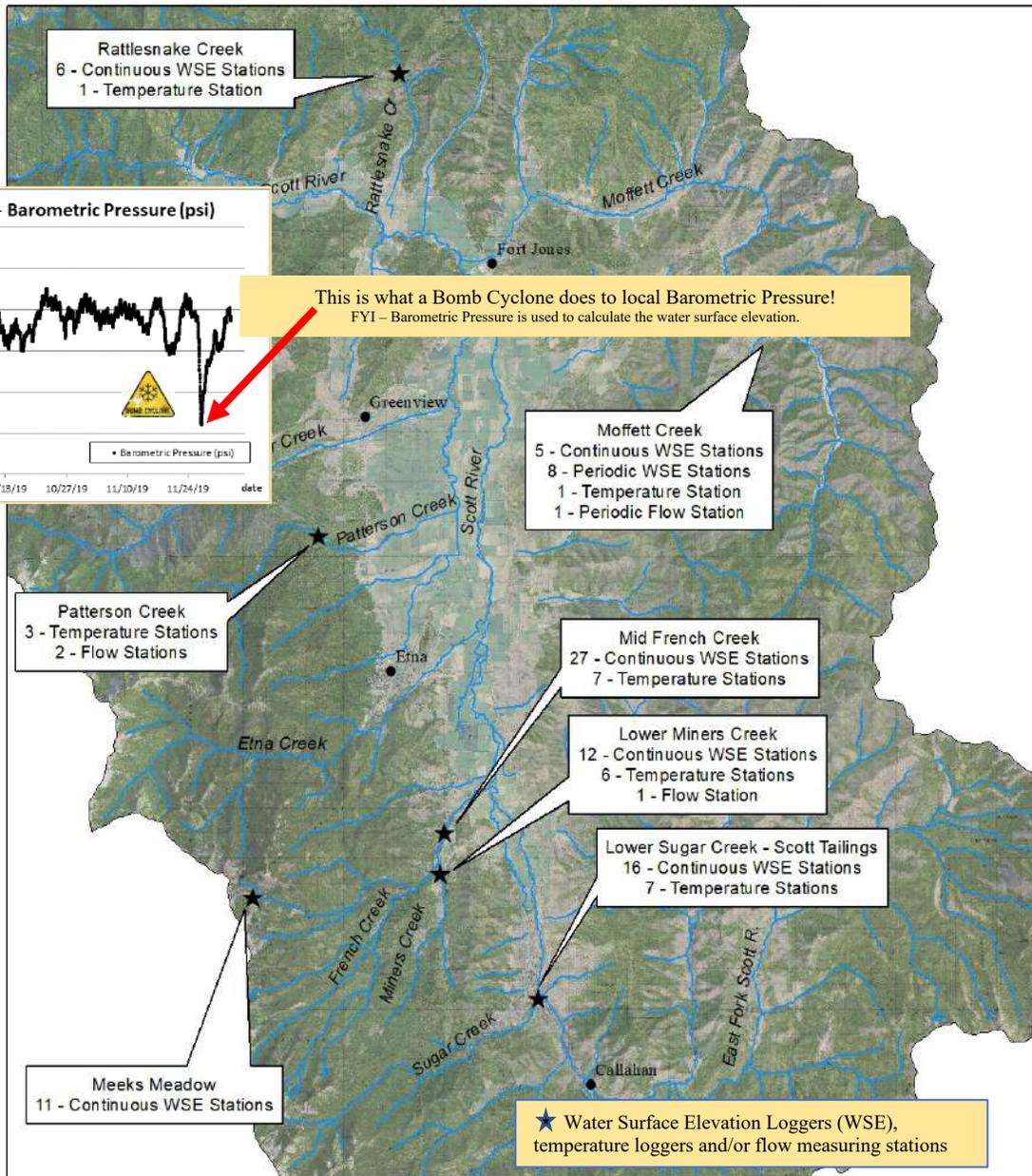
Over the years, six sites have had BDAs installed, and five of those sites have received adaptative management, and in some cases annual maintenance. SRWC is actively monitoring for fish utilization, water quality and groundwater recharge. One of the byproducts of this effort has been the partnership with beaver which has proven to aid in biodiversity. Photos below are from a game camera set up at a BDA that has been fully taken over by beaver and is a sample of the different species observed at dam.



Water Quality Networks within the Scott River Watershed

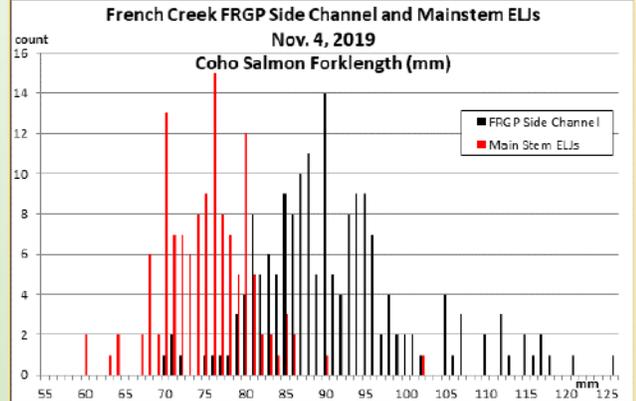
SRWC is committed to better understanding the relationship between our work and the effects on both groundwater and surface water. To that extent, a series of networks throughout the Scott River watershed are maintenance and monitored in hopes of better understand the critical water resource.

Scott River Watershed Council Water Quality Monitoring Networks - 2019



French Creek

SRWC committed to a rigorous effort to monitor juvenile Coho Salmon in 2019. The primary objectives were to collect growth data between the different habitats via recaptures, deploy PIT (Passive Integrated Transponder) tags and utilize the PIT arrays to document movement and survival and document relative condition between the sample units. In total, 1,275 fish were tagged.



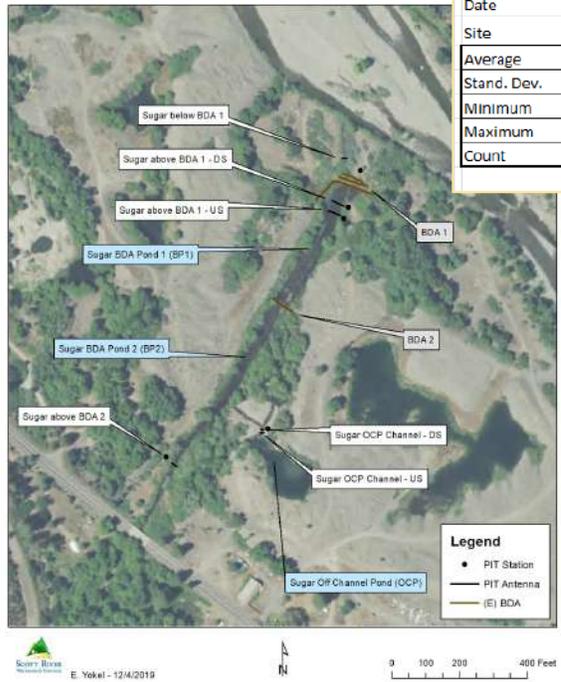
| Date | 11/4/2019 | 11/4/2019 | 10/28 & 10/29/2019 |
|-------------|----------------|------------------|----------------------|
| Site | French FRGP SC | French ELJ Reach | French Control Pools |
| Average | 91 | 75 | 76 |
| Stand. Dev. | 10.1 | 5.8 | 8.7 |
| Minimum | 70 | 60 | 57 |
| Maximum | 126 | 102 | 115 |
| Count | 173 | 129 | 583 |



Fisheries Monitoring



Sugar Creek - PIT Array Network



| Date | 10/31 - 11/1/219 | 11/5/2019 |
|-------------|------------------|-----------|
| Site | Sugar BP1 | Sugar BP2 |
| Average | 80 | 80 |
| Stand. Dev. | 6.4 | 8 |
| Minimum | 62 | 55 |
| Maximum | 102 | 115 |
| Count | 848 | 234 |

Sugar Creek



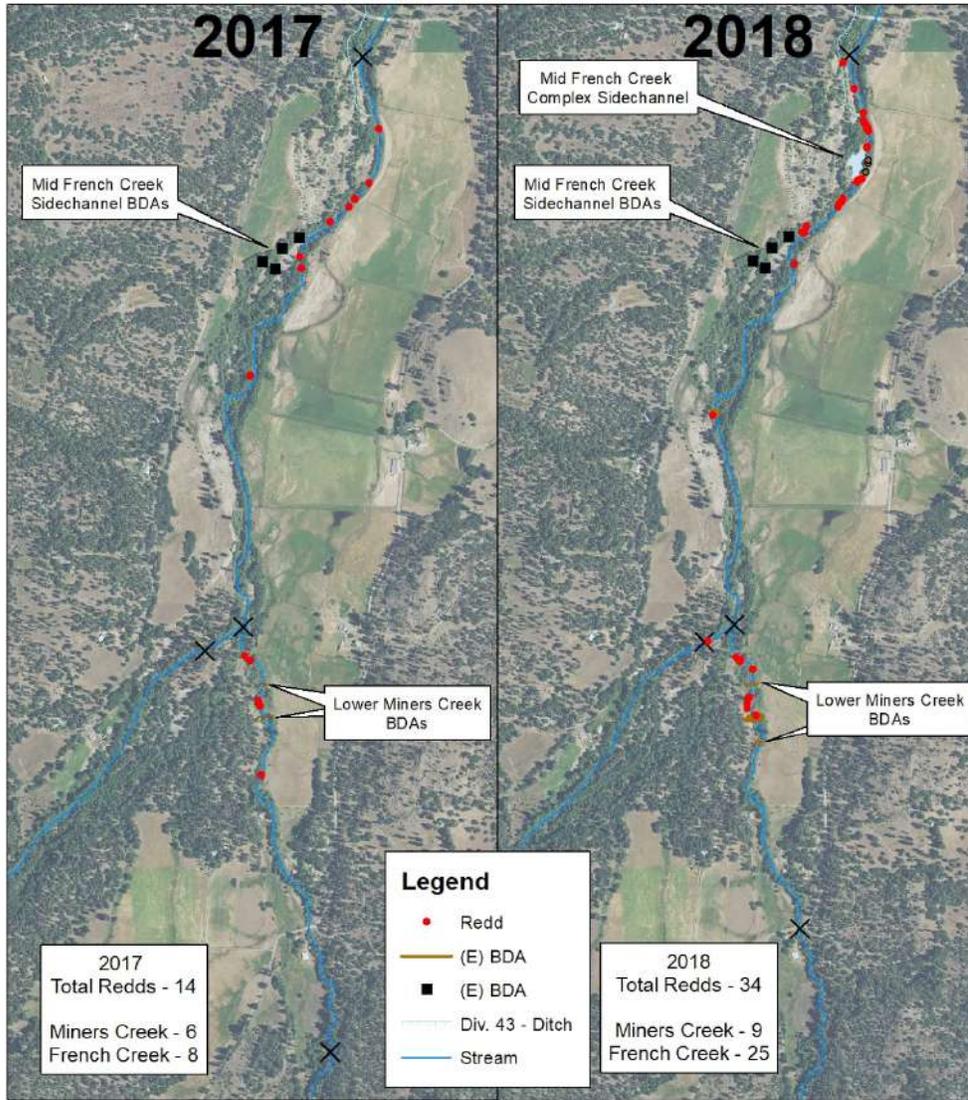
Six units were sampled during the base flow period of 2019. In total, 1391 juvenile Coho Salmon were tagged within this project reach from July through December. Seine, fyke and minnow traps were used to catch the fish and a 12mm PIT (Passive Integrated Transponder) tag was inserted to track fish movement.



Scott River Coho Spawning Surveys

Due to the low flows in the Scott River, the Coho Salmon spawning surveys for 2019 got a late start. This year's efforts are in coordination with the Siskiyou Resource Conservation District (RCD), Quartz Valley Indian Reservation, United States Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA). Results will be available later in 2020.

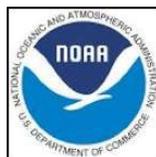
Lower Miners Creek & Mid French Creek - Coho Spawning Ground Survey
Redds - 2017 and 2018



E. Yokel - 1/9/2019



0 525 1,050 2,100 Feet



Sugar Creek & French Creek BDA Food Web Analysis



Beaver dam analogues (BDAs) may be a valuable tool to improve juvenile fish rearing habitat, particularly in aquatic ecosystems exhibiting disconnections between surface flow and groundwater or from floodplains. Yet, we know little about how BDAs affect stream ecosystem structure and function.



UC Davis Center for Watershed Sciences, in collaboration with the Scott River Watershed Council, sampled the BDA complex at French Creek for environmental and food web characteristics during June 2019. Specifically, the researchers are examining potential food web benefits associated with BDA habitat when compared to “typical” stream habitat and the conservation implications for coho salmon. Specifically, we quantified the effects of BDAs on wetted habitat area, temperature, water surface elevation, and food webs, including benthic and pelagic invertebrates, and compared to a control reach. Results suggest strong shifts in both physical and biological habitat with implications for rearing fishes.



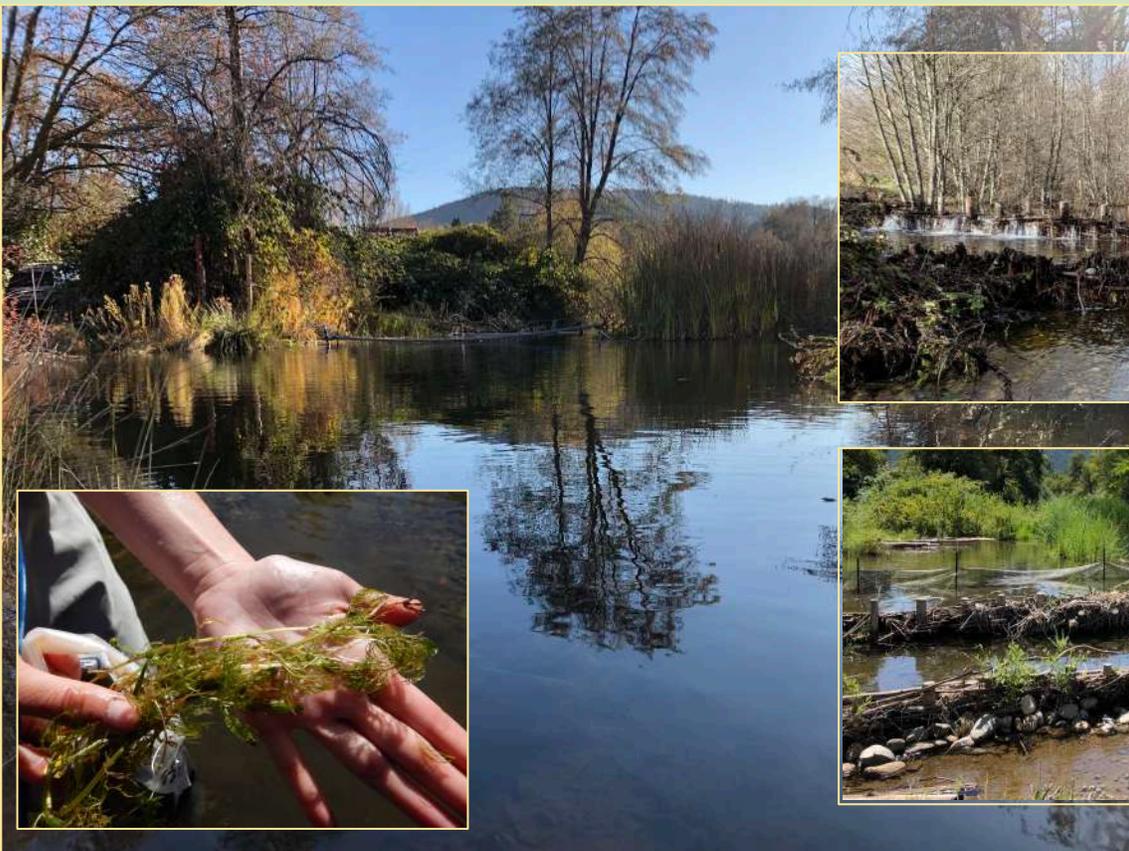
Bella Vista
FOUNDATION

UC Davis has also recently expanded their research program to Sugar Creek and will be comparing habitat conditions associated with this BDA complex to a stream reach located higher in the watershed. The goals of the study are to expand beyond French Creek to better understand food web benefits associated with BDA habitat, but also to determine if there are differences in trophic pathways between habitats. For this study, the researchers are using stable isotope tracers to better understand how predator/prey dynamics might change under different habitat conditions.

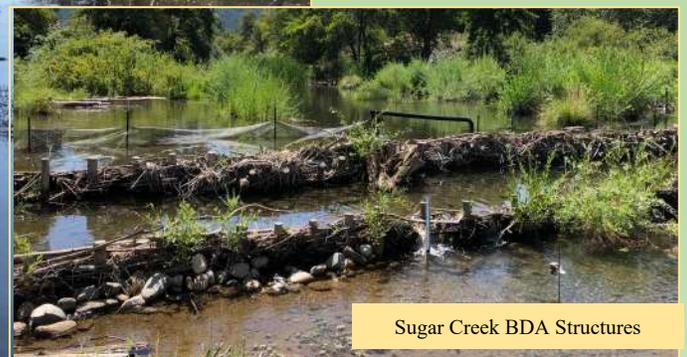


Dr. Rob Lusardi

Currently, laboratory samples are being processed and the project team is in the early stages of drafting a peer reviewed publication. Dr. Robert A. Lusardi and Erich Yokel presented some of these findings during the SWIF 2019.

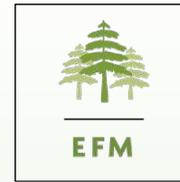


French Creek BDA Structures



Sugar Creek BDA Structures

Big Meadow Aspen and Mountain Meadow Enhancement Project



Waking up to a beautiful sunrise over Mt. Shasta to start bird surveys at dawn. (Big Meadows sunrise Mt. Shasta (c) Sarah Rockwell)

High elevation wet meadow habitat with aspen stands around the edges. These habitats will be restored via conifer thinning and cattle fencing. (Big Meadows habitat (c) Sarah Rockwell)

An aspen stand surrounded by wet meadow habitat at Big Meadows. (Big Meadows aspen stand (c) Sarah Rockwell)

This project aims to enhance aspen and mountain meadow habitats at Big Meadows, a property that is privately owned by EFM. Treatments will include commercial harvests of the conifers, and construction of 1.2 miles of a combination of livestock wire fence and wood fencing (e.g. buck and pole). The project aims to protect and restore 22 acres of aspen woodland and 55 acres of wet meadow in the Marble Mountains. The Klamath Bird Observatory will monitor for project effectiveness on avian response.

Bird Surveys at the Big Meadows Aspen and Meadow Restoration Site

– by Sarah Rockwell, Research Biologist, Klamath Bird Observatory



Klamath Bird Observatory (KBO) is working with the Scott River Watershed Council and EcoTrust Forest Management to study bird response to restoration of high elevation meadows and aspen stands in an area called Big Meadows, adjacent to the Marble Mountain Wilderness. Birds are considered good ecological indicators and using data on wildlife use of habitats before and after restoration provides a more meaningful assessment of success than monitoring changes in vegetation alone. In summer 2019, KBO biologists conducted a set of three surveys at Big Meadows during the songbird breeding season (early June – mid-July at this high elevation site) to study the pre-restoration bird community. During these surveys, we recorded 38 different bird species using the open meadow or aspen stands. The most abundant species observed in the meadow were Oregon Junco, Lincoln’s Sparrow, and American Robin.

The most abundant species in the aspen stands were Warbling Vireo, Western Wood-Pewee, Lazuli Bunting, and Dusky Flycatcher. Many species are using Big Meadows as breeding habitat – we observed Oregon Juncos, Lincoln’s Sparrows, Chipping Sparrows, Mountain Chickadees, Brown Creepers, Northern Flickers, House Wrens, and Warbling Vireos either with fledglings or carrying food (a sign that parents are feeding nestlings or fledglings). We also found several Red-breasted Sapsucker pairs nesting in cavities excavated in the older aspens. In future years, smaller cavity-nesters like chickadees and wrens will use these holes created by the sapsuckers for their own nests. Big Meadows visitors included Wild Turkeys with chicks, Red-Tailed Hawks, Sooty Grouse, and high elevation specialists like Cassin’s Finch and Calliope Hummingbird (the smallest hummingbird in North America). The field site is beautiful, with spectacular views of Mt. Shasta, and we look forward to working there again after restoration actions have taken place!



Lazuli Bunting and Warbling Vireo were two of the most common bird species at Big Meadows. (Lazuli Bunting and Warbling Vireo (c) Frank Lospalluto)



Siskiyou Prescribed Burn Association

Significant increase in wildfire incident size and complexity over the last several years has been accompanied by catastrophic losses including life, community structures, infrastructure, valuable timber resources and biodiversity. These changing patterns of fire behavior rank amongst the most pressing concerns, both locally, across the west and in growing areas around the world. Australia is certainly in all our prayers during this horrendous time.

Factoring recent fire severity data, climate trends and ecosystem changes, the question we must ask ourselves here in the Scott is not IF a wildfire will burn, but when it will burn. How can communities reduce the risk from future fires? One tool, to be used in association with other methods to reduce fuel loads and improve forest health, is prescribed burning.

Scott River Watershed Council, along with partners Will Harling from the Mid Klamath Watershed Council, Lenya Quinn-Davidson and Jeffery Stackhouse, advisors with UC Cooperative Extension and co-founders of the Humboldt County Prescribed Burn Association, and representatives from the Etna Fire, CAL Fire, USFS Klamath National Forest, Mt. Shasta Regional Bioregional Ecology Center, and local Fire Councils have initiated the discussions with the Siskiyou County communities about what role a Prescribed Burn Association (PBA) play in reducing fire risk. These discussions are being followed up by the beginning stages of establishing a PBA and are hoping to get good fire onto the ground in 2020.



SAVE THE DATES
Scott Watershed Informational Forum (SWIF)
FEBRUARY 19th and 20th 2020

Please join us for TOUR & SWIF 2020!

Community sponsor

Tour some of the great work being done on February 19th at 1:00pm- 5:00pm
 (514 N. Hwy. 3, Etna at the SRWC office)

SWIF, February 20th from 8:30am-5:30pm will be held at the REC in Fort Jones
 (11236 N. HIGHWAY 3, FT. JONES, CA 96032)

Forum open and free to all and is designed to focus on issues that affect the Scott River watershed and the larger Klamath River basin.

Presentations this year will focus on the following topics:

Dam Removal * Scott River Fisheries * Restoration Efforts
Prescribe Fire * Water Quality * Forest Management Practices
BEAVERS!

*We will feature the award-winning movie **The Beaver Believers***



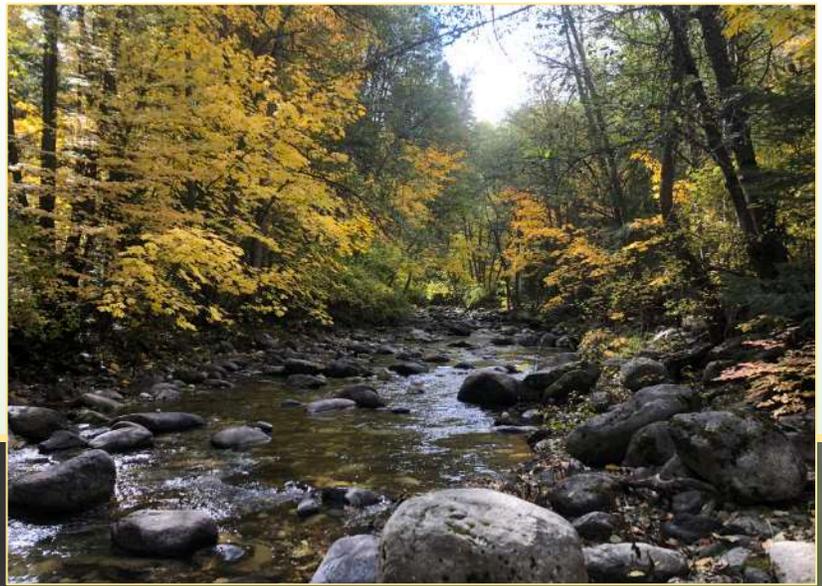
[Click here to RSVP](#)



The Council's mission is to serve the Scott Valley and larger Klamath River communities. We are steadfast in our commitment to continue working on the complex and critical issues that relate to all aspects of our watershed.

To that end, there are no words to express the gratitude we hold for the landowners, community members and project partners who work towards our common goals.

This newsletter is dedicated to Dr. Michael Pollock, NOAA and Mark Cookson, USFWS. Thank you for believing in us before we knew how to believe in ourselves.



We create our tomorrows by what we dream today...Let us all dream together!

