A Year in Review

Scott River Watershed Council 2018

The mission of the Scott River Watershed Council is to facilitate communication and science based collaborative solutions for natural resource concerns in Scott Valley. We promote and support education, restoration, and scientific planning and monitoring in order to ensure the sustainability of the natural and human communities of the watershed, now and for future generations. Our leadership in addressing these complex issues will bring effective solutions to the local community and beyond.

SRWC Areas of Focus for 2018

- Education & Outreach
- Planning & Design
- Project Implementation
- Monitoring
- Scientific Research

Giving Thanks

We would like to extend our sincere gratitude to all the individuals, groups, and agencies who have contributed to our work throughout the past year. Our partnerships with landowners, scientists, community members, and fellow restoration practitioners makes possible our work supporting natural resources in our watershed.

SCOTT RIVER
WATERSHED COUNCIL

EDUCATION

Youth Environmental Summer Studies (YESS)

Youth Environmental Summer Studies (YESS) is a program established in 2017 as a partnership between SRWC, the Klamath National Forest, the Quartz Valley Indian Reservation, Salmon River Restoration Council and the Etna Police Activities League. In 2018, eight local Scott Valley youth were hired through the Youth Conservation Corp (YCC) and spent 6 weeks (1,675 hours) doing a variety of restoration activities including noxious weed eradication, beaver dam analogue maintenance, water quality monitoring, aspen stand monitoring, Salmon River chinook dives, trail maintenance and fisheries habitat work.

"This summer was something I was very happy to have experienced. I made good friendships with co-workers and the variety of jobs was a highlight!"

Hayden Hogun, Etna High School Graduate 2018, Chico State University Freshman

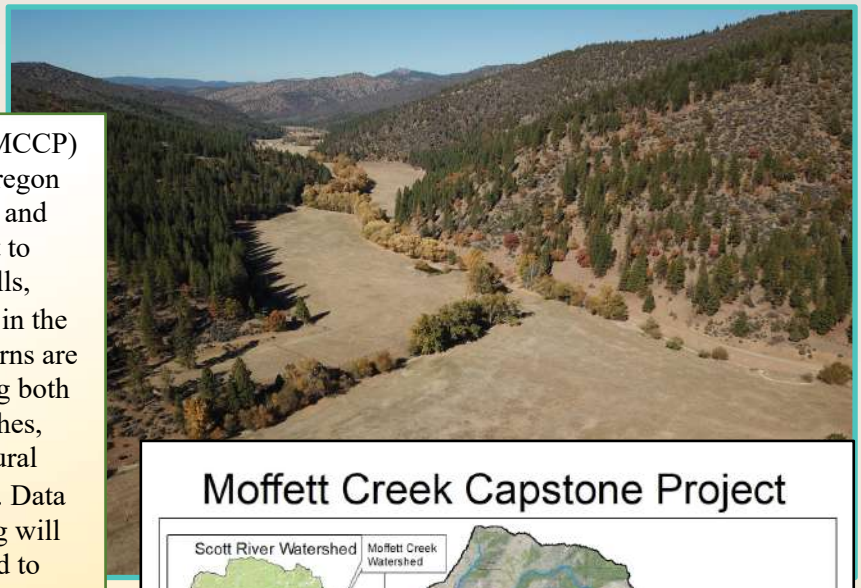
"The YESS program is an amazing experience of a lifetime. YESS offers a great work experience for anyone interested in the Forest Service, watershed things or for anyone who enjoys the outdoors. With my time on the YESS crew I did a lot of hard work, learned a lot about leadership and made lifelong friends."

Reno Davis, Crew Leader. Etna High School Senior

EDUCATION/OUTREACH

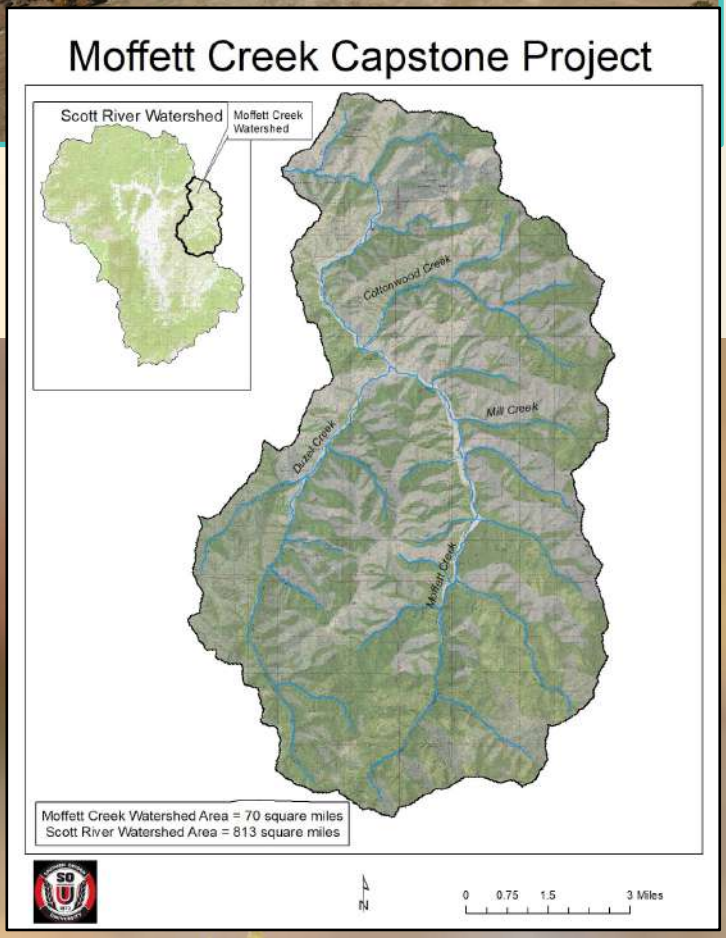
Event	Date	Content	Attendees	Participates
SRWC Board & Community	1-9-2018	Rocky Mountain Elk Foundation	21	Community members, Quartz Valley Indian Reservation staff, US Fish and Wildlife Service, California Department of Fish and Wildlife, Natural Resource Conservation Service, SRWC Board and staff
Scott Watershed Informational Forum (SWIF) Meeting	2-23-2018	Westside Planning	40	Local and regional community members, agency personnel, Scott River restoration practitioners
SRWC Board & Community	3-12-2018	Water Rights Voluntary Monitoring Program & USFWS Oak Ecology	17	Shasta and Scott Watermaster District, community members, Quartz Valley Indian Reservation staff, US Fish and Wildlife Service, California Department of Fish and Wildlife, Natural Resource Conservation Service, SRWC Board and staff
Tour Sugar and Mid French Beaver Dam Analogue Restoration Projects	3-24-2018	Beaver and BDA Education	12	Scott Valley Hiking Group
Speaker for University of Washington Policy Class	3-18-2018	Current policy on BDAs/Beavers fish passage, water quality	30	University of Washington, Professor Wolfe-Erskine's Integrated Assessment in Marine and Environmental Affairs
Lincoln High School Ag Class	3-26-2018	Sugar Creek Beaver Dam Analogue Tour	10	Lincoln High School students and staff
Southern Oregon University	1-18-2018	Beaver Dam Analogue Restoration Presentation	30	Southern Oregon University Environmental Science and Policy and Biology students and professors
Salmon Restoration Federation	4-11-2018	Beaver Dam Analogue Restoration Presentation	120	Restoration practitioners, Federal, State and County agency personnel
Klamath Basin Monitoring Program (KBMP)	5-2-2018	Beaver Dam Analogue Restoration Presentation	60	Restoration practitioners, Federal, State and County agency personnel
SRWC Board & Community	4-10-2018	Wetland Conservation in the Klamath Basin & Southern Oregon-Northeastern California Region	16	Ducks Unlimited Intermountain West Joint Venture, Quartz Valley Indian Reservation, Natural Resource Conservation Service, Community Members, California Department of Fish and Wildlife, SRWC Board and Staff
Toured Sugar Creek Beaver Dam Analogue Restoration Project	4-17-2018	Beaver Dam Analogue Restoration Presentation	3	UC Davis staff
Regional North Coast Waterboard Tour	4-18-2018	Scott River Beaver Dam Analogue Project	8	Regional North Coast Waterboard and staff
River Network River Rally International Conference	5-2-2018	Beaver Dam Analogue Restoration Presentation	30	National and international restoration practitioners
SRWC Board & Community	5-8-2018	Beaver Dam Analogue Restoration Presentation	12	Community members, Quartz Valley Indian Reservation staff, US Fish and Wildlife Service, California Department of Fish and Wildlife, Natural Resource Conservation Service, SRWC Board and staff
Scientific and restoration practitioners meeting	5-11-2018	Discussion monitoring protocols and scientific issues relating to beaver dam analogue restoration	7	UC Davis, Yurok, National Oceanic and Atmospheric Administration, SRWC Board and Staff
Presentation/webinar to present 2017 Beaver Dam Analogue Monitoring Report	5-14-2018	Scott River Beaver Dam Analogue Coho Salmon Habitat Restoration Program 2017 Monitoring Report	15	US Fish and Wildlife Service, National Oceanic and Atmospheric Administration, California Department of Fish and Wildlife, SRWC staff
SRWC Board & Community	6-12-2018	Juvenile Salmonid Monitoring Project on the Scott River	10	Community members, Quartz Valley Indian Reservation staff, US Fish and Wildlife Service, California Department of Fish and Wildlife, Natural Resource Conservation Service, SRWC Board and staff
Beaver Believer Tour	7-12-2018	BDA and Scott Valley tour	4	Joe Wheaten with Utah State University and Occidental Arts and Ecology Center staff
Integrated Fisheries Restoration and Monitoring Plan for the Klamath River	7-10/11-2018	Work Group Meeting		Attending meeting, reviewing and producing documents, attending meetings, and other functions required to effectively represent the Scott River Watershed Council in preparation of the Klamath Plan
Moffett Creek Group	7-29-2018	Toured BDA sites and discussed how could they apply to Moffett Creek	7	US Fish and Wildlife Service, National Oceanic and Atmospheric Administration, California Department of Fish and Wildlife, North Coast Regional Water Quality Control Board, SRWC staff
SRWC Board & Community	9-11-2018	Restoring Priority Coho Habitat in the Scott River Watershed Modeling and Planning Report	15	Community members, Quartz Valley Indian Reservation staff, US Fish and Wildlife Service, California Department of Fish and Wildlife, Natural Resource Conservation Service, SRWC Board and staff
SRWC Board & Community	12-13-2018	Murry Taylor – Living in the Age of Catastrophic Wildlife and SRWC End of the Year Summary Report	20	Community members, Quartz Valley Indian Reservation staff, US Fish and Wildlife Service, California Department of Fish and Wildlife, Natural Resource Conservation Service, SRWC Board and staff

EDUCATION/PLANNING



The Moffett Creek Capstone Project (MCCP) is in partnership with the Southern Oregon University's Environmental Science and Policy Program's Capstone Project to demonstrate the culmination of skills, methodology, and knowledge learned in the undergraduate curriculum. Several interns are utilizing mixed methods research using both quantitative and qualitative approaches, assessing anthropogenic versus natural impacts on water quality and quantity. Data collection, data analysis and modeling will provide information that can be used to evaluate the possible effects of potential restoration activities. The parameters that are being utilized are groundwater and surface water levels, stream discharge, turbidity, stream channel configuration, and soil profiling. A social element to the project will include a landowner survey that will seek to understand current attitudes and perceptions about restoration. A full report will be produced at the end of the project which can be used as a foundational document for landowners, restoration practitioners and agencies for future restoration and monitoring efforts.

This project is in partnership with several Moffett Creek landowners and the North Coast Regional Water Control Board.



CALIFORNIA Water Boards
STATE WATER RESOURCES CONTROL BOARD
REGIONAL WATER QUALITY CONTROL BOARDS

SOU Southern OREGON UNIVERSITY

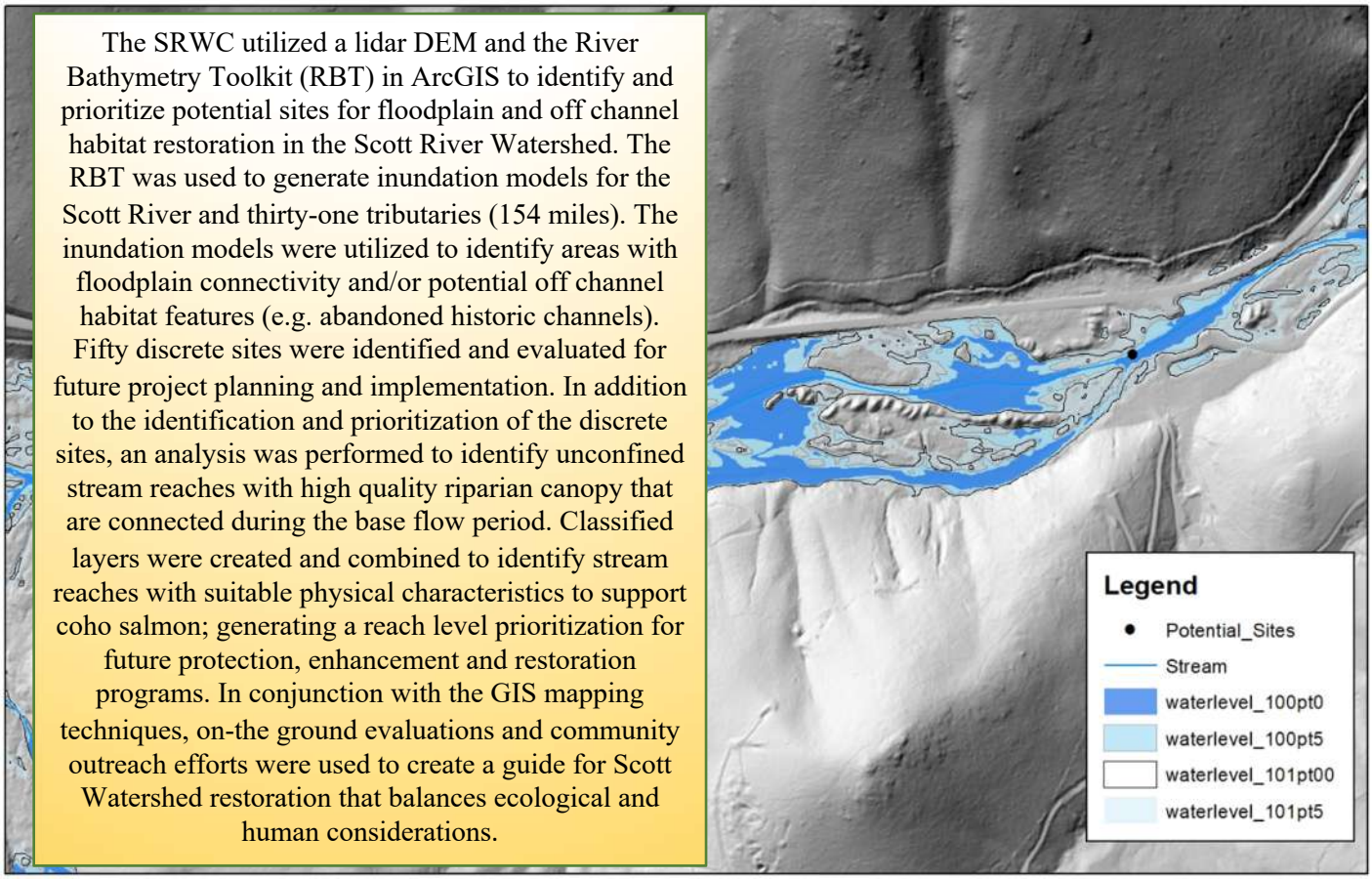
PLANNING/DESIGN

Restoring Priority Coho Habitat in the Scott River Watershed Modeling and Planning Report

Objective: Increase floodplain connectivity occurrence, and improve quality and volume of **year round rearing habitat** for juvenile coho salmon in the Scott River by **working with willing landowners** to implement **effective directed restoration** and protection measures **within the existing working landscape.**

Potential Site

The SRWC utilized a lidar DEM and the River Bathymetry Toolkit (RBT) in ArcGIS to identify and prioritize potential sites for floodplain and off channel habitat restoration in the Scott River Watershed. The RBT was used to generate inundation models for the Scott River and thirty-one tributaries (154 miles). The inundation models were utilized to identify areas with floodplain connectivity and/or potential off channel habitat features (e.g. abandoned historic channels). Fifty discrete sites were identified and evaluated for future project planning and implementation. In addition to the identification and prioritization of the discrete sites, an analysis was performed to identify unconfined stream reaches with high quality riparian canopy that are connected during the base flow period. Classified layers were created and combined to identify stream reaches with suitable physical characteristics to support coho salmon; generating a reach level prioritization for future protection, enhancement and restoration programs. In conjunction with the GIS mapping techniques, on-the ground evaluations and community outreach efforts were used to create a guide for Scott Watershed restoration that balances ecological and human considerations.



SCOTT RIVER WATERSHED COUNCIL

E. Yokel - 11/15/2017

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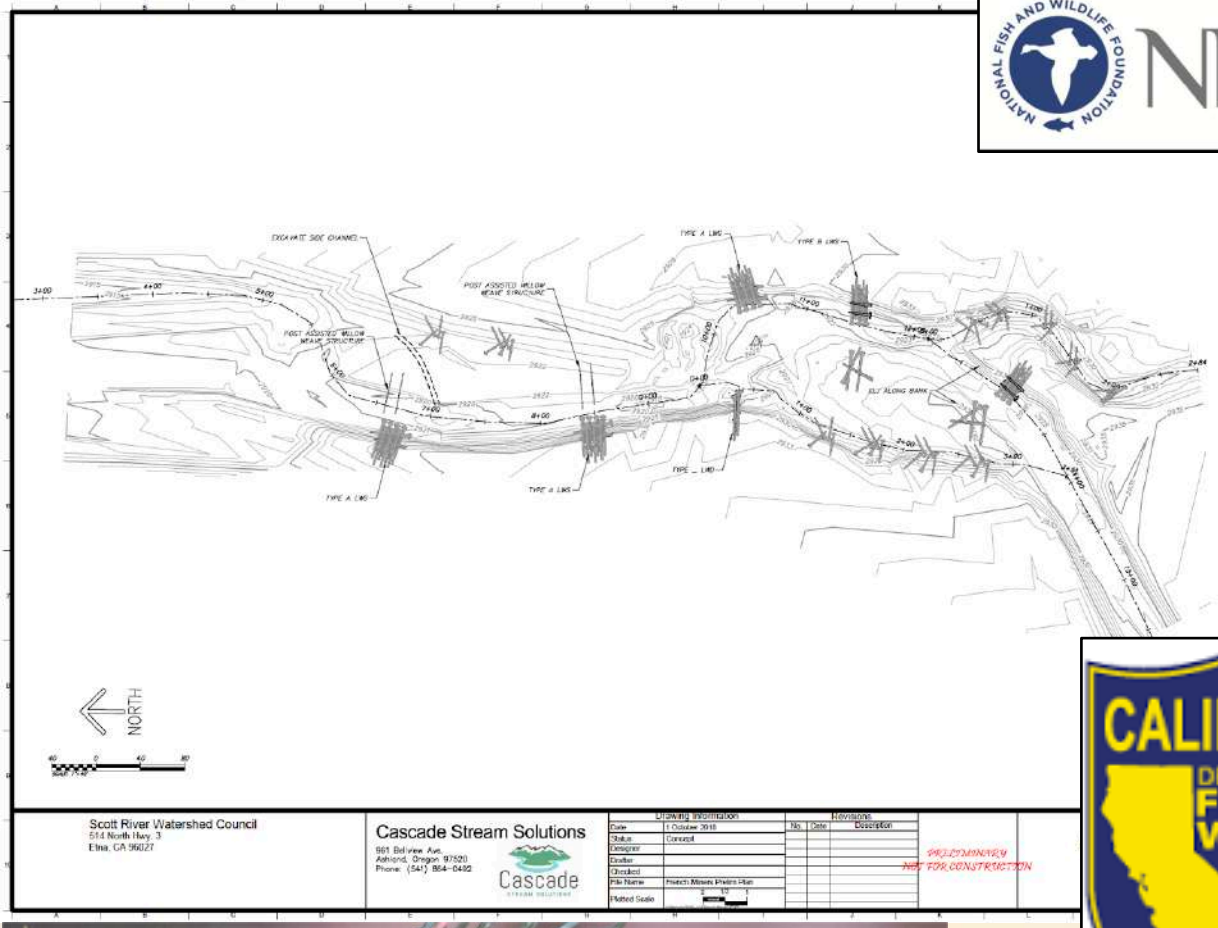
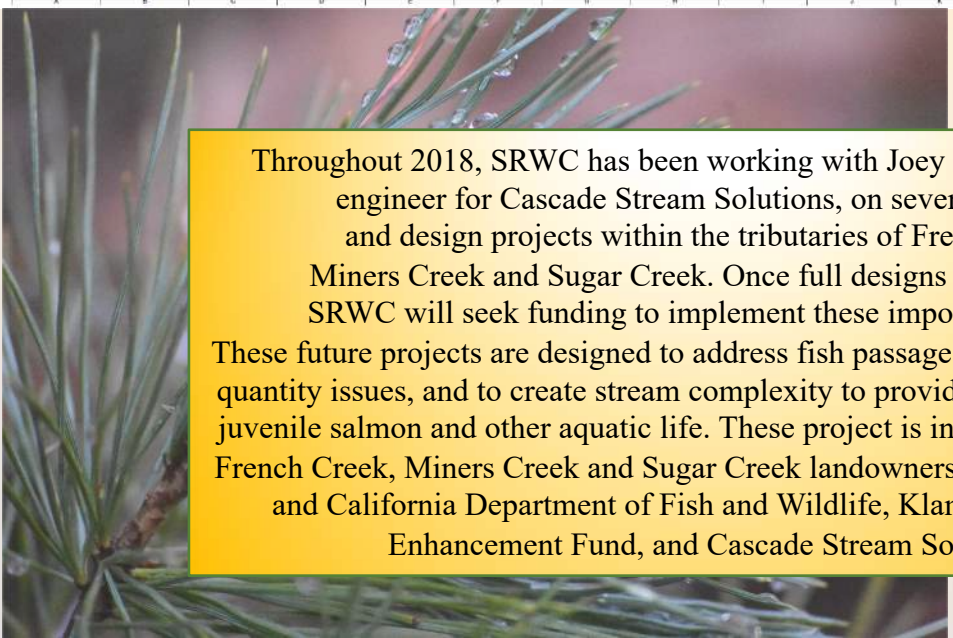
Full report can be found at www.ScottRiverWatershedCouncil.com

NATIONAL FISH AND WILDLIFE FOUNDATION NFWF

PLANNING/DESIGN





Throughout 2018, SRWC has been working with Joey Howard, principal engineer for Cascade Stream Solutions, on several planning and design projects within the tributaries of French Creek, Miners Creek and Sugar Creek. Once full designs are complete, SRWC will seek funding to implement these important projects. These future projects are designed to address fish passage, water quality and/or quantity issues, and to create stream complexity to provide suitable habitat for juvenile salmon and other aquatic life. These project is in partnership with the French Creek, Miners Creek and Sugar Creek landowners, water right holders, and California Department of Fish and Wildlife, Klamath River Coho Enhancement Fund, and Cascade Stream Solutions.

Scott River Tailing Design and Implementation
Coho Habitat and Water Quality Improvement Project

For the purposes of enhancing coho salmon summer and winter rearing habitat, the main proposed activity of this project is to use heavy equipment to create a complex groundwater-fed stream channel in the Scott River floodplain mine tailings. The project objectives include connecting an isolated groundwater-fed pond to Sugar Creek, just upstream of where it joins the Scott River; additional activities will be to excavate a flood plain terrace to provide seasonal floodplain habitat, improve cover and complexity at the site, build 3 beaver dam analogues, and provide monitoring of the project benefits. The expected outcome is the creation of about 1.7 acres of high quality summer and winter rearing habitat available for coho salmon (and other salmonids) approximately doubling the amount of rearing habitat currently available to coho salmon in lower Sugar Creek.

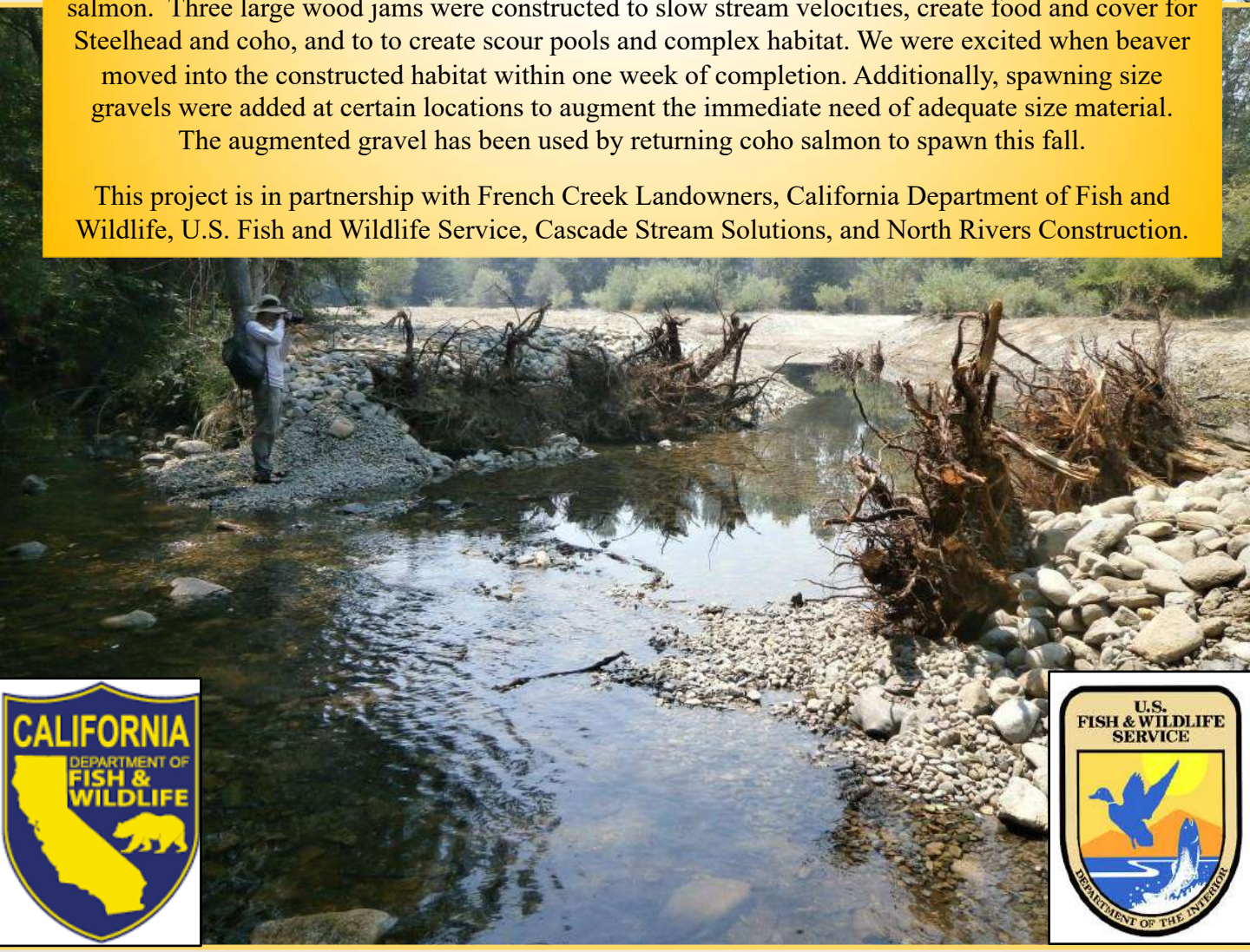
This project is in partnership with Scott River and Sugar Creek Landowners, National Oceanic and Atmospheric Administration, Bureau of Reclamation, Klamath River Coho Enhancement Fund, Cascade Stream Solutions, and North Rivers Construction.

NORTH RIVERS CONSTRUCTION

French Creek Off Channel Pond, Large Wood and Spawning Gravel Augmentation

This exciting project was created in one of the State's highest value coho spawning and rearing streams, to offer both cold water summer and slow velocity winter rearing opportunities for coho salmon. Three large wood jams were constructed to slow stream velocities, create food and cover for Steelhead and coho, and to to create scour pools and complex habitat. We were excited when beaver moved into the constructed habitat within one week of completion. Additionally, spawning size gravels were added at certain locations to augment the immediate need of adequate size material. The augmented gravel has been used by returning coho salmon to spawn this fall.

This project is in partnership with French Creek Landowners, California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, Cascade Stream Solutions, and North Rivers Construction.



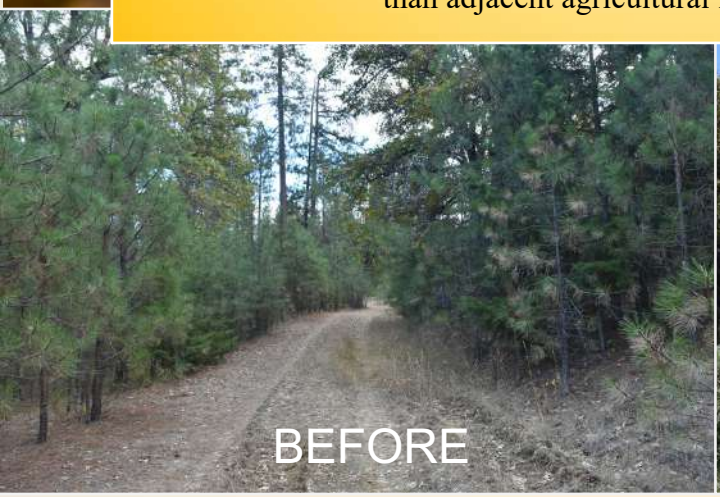
CALIFORNIA DEPARTMENT OF FISH & WILDLIFE

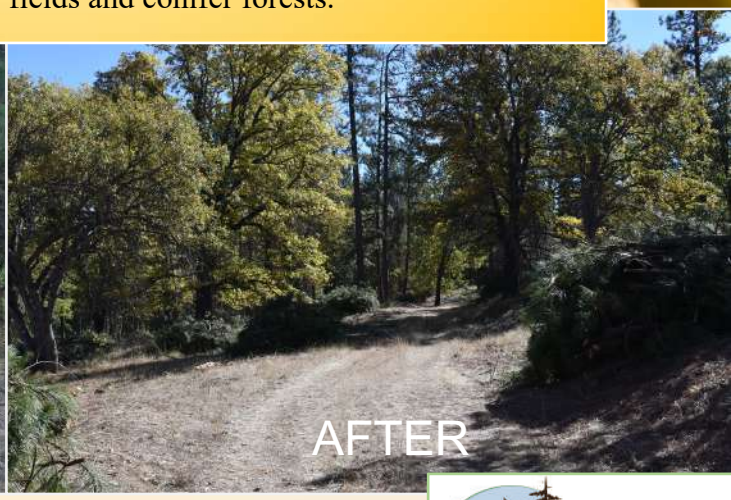
U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR

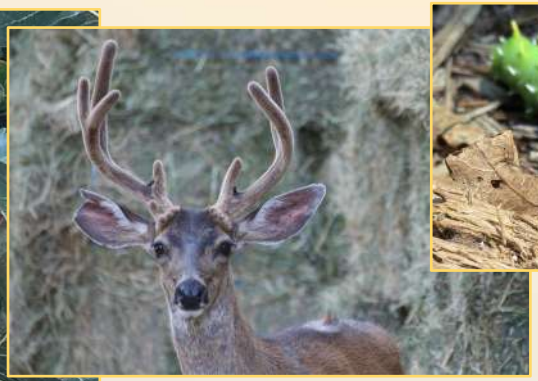
Crystal Creek Oakwood Land Restoration

The Crystal Creek Oaks Project treated 30 acres for conifer (evergreen) encroachment on critical oak habitat outside of Etna. Oaks are slow-growing, shade-intolerant species that can be rapidly overtopped and suppressed by faster growing conifers. Historically, frequent low-intensity fire kept the more fire intolerant coniferous species from encroaching upon oak habitats. This project was done in a partnership with the US. Fish and Wildlife Services and Lomakatsi Restoration Project. Additionally, the YESS crew eradicated approximately 5 acres from Marlahan Mustard (Dyer's woad).

In California, oak woodlands and savannahs are richer in wildlife species, than any other terrestrial system. More than 300 vertebrate species are known to use oaks, including resident and migratory birds, large and small mammals, amphibians, and reptiles. Oak savannahs and woodlands are important contributors to the biodiversity of the Pacific Northwest and support communities of plants and animals that are remarkably different than adjacent agricultural fields and conifer forests.







MEET STUBBY
Photo by Mel Fechter

Lomakatsi Restoration Project
Restoring Ecosystems, Sustaining Communities

U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR

Beaver Dam Analogue (BDA) Restoration Program

Rattlesnake Creek BDA and Wood Loading

Using a combination of techniques, SRWC, North Rivers Construction, California Conservation Corps (CCC) and an involved landowner constructed 5 beaver dam analogues and 3 large wood jams to aggrade an incised portion of Rattlesnake Creek, a higher gradient Scott River tributary. The project goals are to improve floodplain connectivity, improve groundwater recharge, attenuate (and extend the period of time the stream has water during) summer low flow periods. SRWC is piloting these innovative restoration efforts in this drier, steep areas of the Scott River Watershed in order to develop techniques that can be used in similar settings across the landscape.

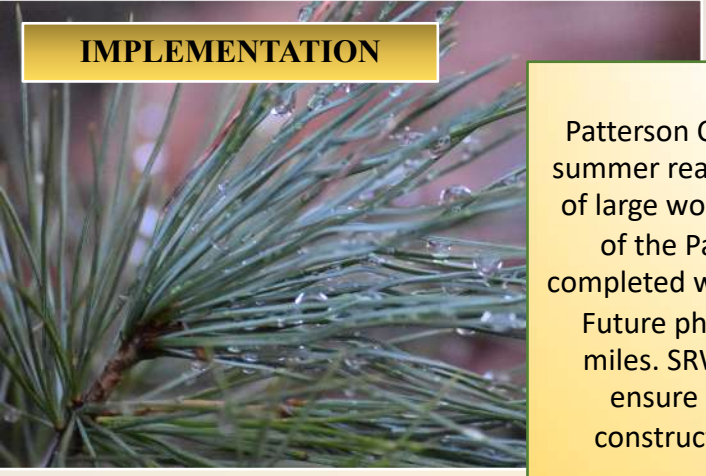
'The Scott River Watershed Council is a living example of what a group of focused and dedicated people can do to restore salmon habitat. I am optimistic that coho salmon in the Scott River will eventually come off the ESA list, and when that happens, we will have the Watershed Council to thank."

Dr. Michael Pollock, NOAA Research Scientist

Miners Creek BDA

Three new Beaver Dam Analogues (BDAs) were installed in thishigh value coho spawning and rearing tributary to French Creek, to continue the habitat improvements initiated by the installation of two structures in 2015. BDAs are a "processed based restoration" technique, meaning that a "light touch" is used with the intention to continue to manage and care for the site for long-term benefit for groundwater recharge, instream flows and slow water habitat. This project is in partnership with a committed landowner, U.S. Fish and Wildlife, North Rivers Construction, and California Conservation Corp. (The beavers immediately found their way and seem to approve the work by starting to add material to structures.)

IMPLEMENTATION



Patterson Creek Wood Loading

Patterson Creek offers critically needed cold water habitat for summer rearing of coho salmon, but suffered from the removal of large wood needed to create complexity and cover. Phase 1 of the Patterson Creek Wood Augmentation project was completed with 43 logs placed along a 770 ft reach of the creek. Future phases of the project will add wood to a total of 1.2 miles. SRWC utilized the hand labor of the CCCs in order to ensure minimal impact to the natural resources during construction and to offer youth from across the state the opportunity to experience Scott Valley.

In partnership with EFM (landowner), U.S. Fish and Wildlife, National Oceanic and Atmospheric Administration, California Conservation Corp and two of the finest fallers and overall great guys, Andy Dean and Tim Murray.

MONITORING

The ecological, or processed based, restoration approach requires adaptive management to deal with the complex and dynamic nature of ecosystems and the absence of complete knowledge or understanding of their functioning. Ecosystem processes are often non-linear, and the outcome of such processes often shows time lags. SRWC/NOAA team have made substantial progress towards establishing the infrastructure needed to carry out effectiveness monitoring and clarifying the essential project effectiveness questions that need answering.

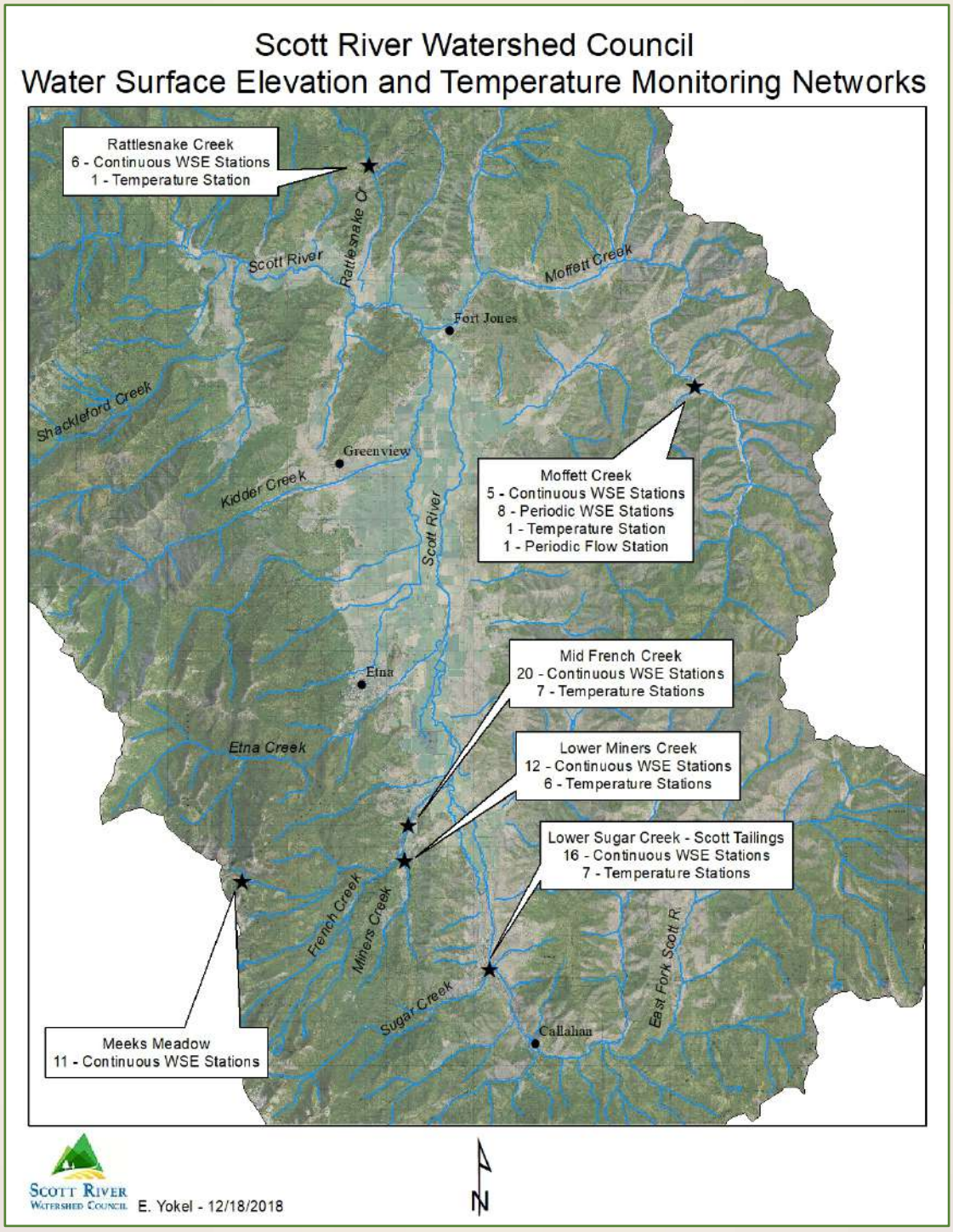
Generally, the expected result to the restoration intervention is change. However, much of the time the exact nature and magnitude of the change cannot be determined in advance. Measures may need to be taken even when some cause-and-effect relationships are not yet fully established scientifically. In order to achieve the best outcome, adaptive management, which is defined as a framework and flexible decision-making process for ongoing knowledge acquisition, monitoring, and evaluation leading to continuous improvements in management planning and implementation of a project, is needed.

An adaptive management approach provides a structured process that allows for taking action under uncertain conditions based on the best available science, closely monitoring and evaluating outcomes, and re-evaluating and adjusting decisions as more information is learned.

SRWC, in partnership with other restoration practitioners, funders, and permitting partners, is working hard to forge ways to promote adaptive management within restoration projects and to help direct restoration practices toward process based activities.

MONITORING

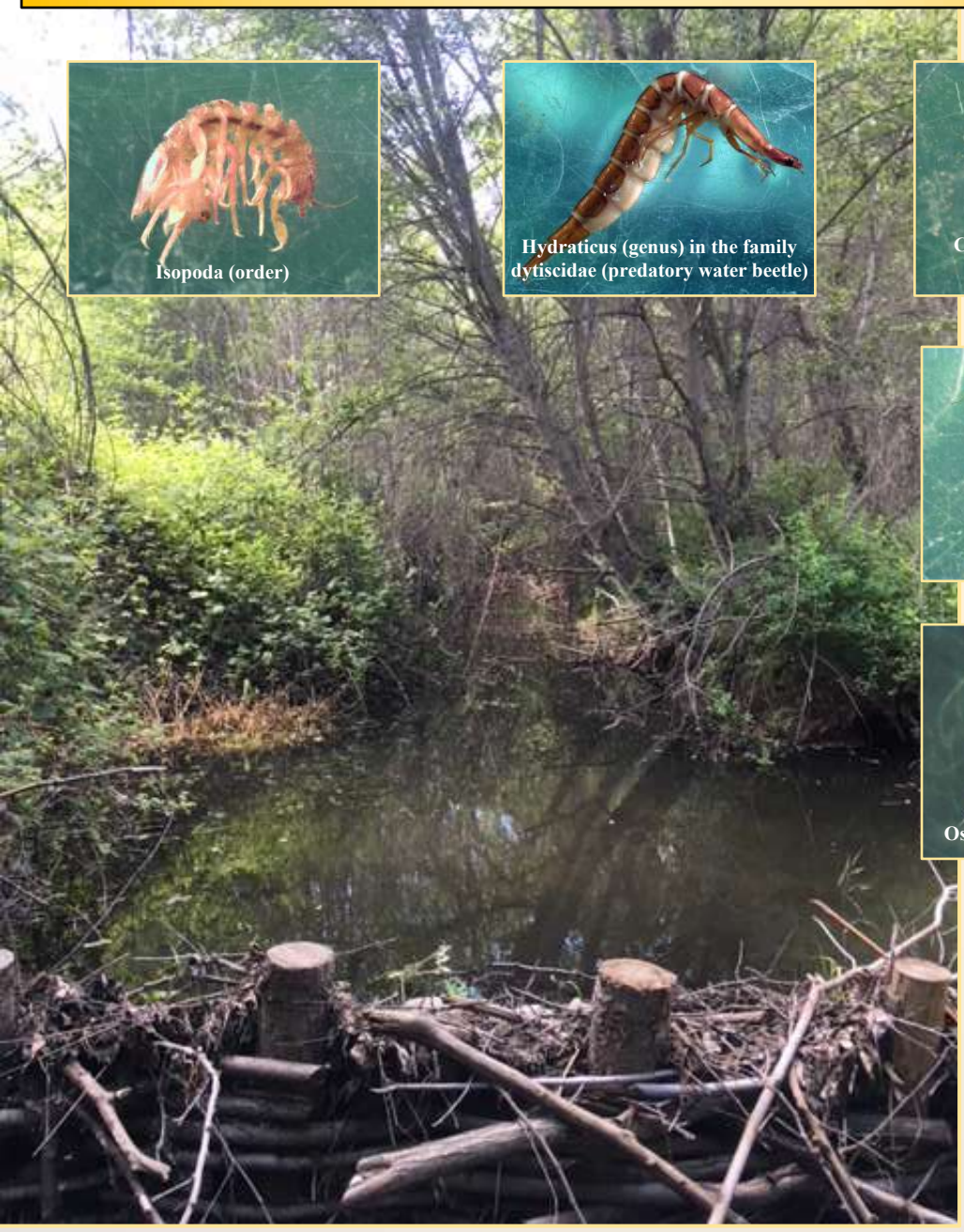
SRWC Board and staff continue to monitor groundwater and surface water levels, water temperature, periodic flow, dissolved oxygen, juvenile fish movement and habitat utilization, and adult salmon returns. For a full report, *Scott River Beaver Dam Analogue Coho Salmon Habitat Restoration Program 2017 Monitoring Report, please go to our website:* www.ScottRiverWatershedCouncil.com



French Creek Food Web Analysis

In collaboration with SRWC, the University of California, Davis, Watershed Science Center has started an evaluation of "Food-webs" at BDA restoration sites in order to understand whether these habitats increase the macro-invertebrates (bugs) that salmon need to thrive. Preliminary results show that BDA habitats have significantly more macro-invertebrates than nearby untreated streams. Future phases of this project will expand the number of locations being monitored, as well as adding different restoration types to the program. (Length of macro-invertebrates in photos ~1 to 2.5 cm)

This project is in partnership with French Creek and Sugar Creek Landowners, University of California, Davis and the Bella Vista Foundation.



Isopoda (order)

Hydraticus (genus) in the family dytiscidae (predatory water beetle)

Chironomidae (family; non-biting flies or midges)

Siphlonurus spp. (genus; minnow mayfly)

Ostracod (order); seed shrimp

UCDAVIS

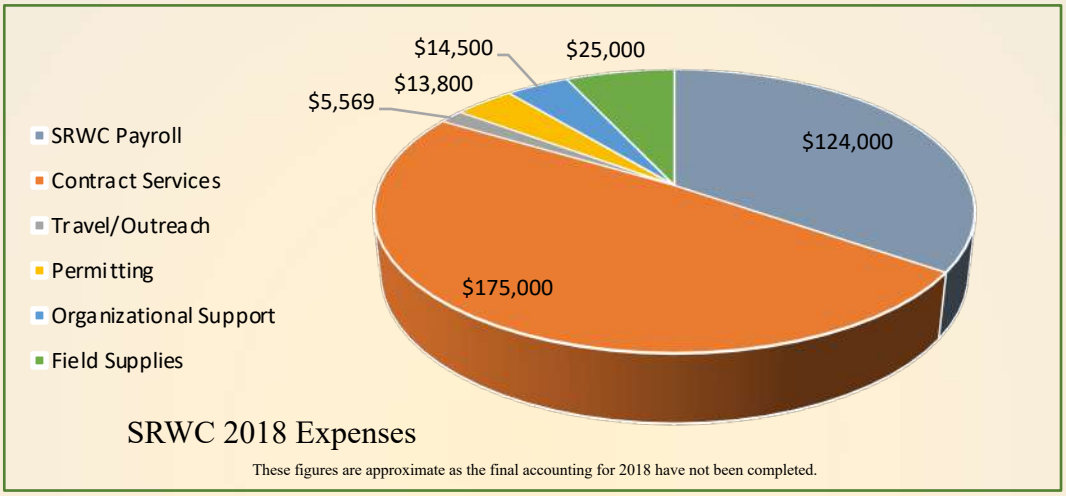
Bella Vista FOUNDATION

GRANTS SUMMARY

Grant Name	Funder	SRWC Permits
Scott River Watershed Coordinator	U.S. Fish and Wildlife Services	N/A
Youth Environmental Summer Studies Program	United States Forest Services – Klamath National Forest	N/A
Restoring Priority Coho Habitat in the Scott River Watershed Modeling and Planning, Phase I	Klamath River Coho Enhancement Fund	N/A
French Creek In-Stream and Off Channel Habitat Enhancement Design, Phase II	Fisheries Restoration Grant Program	N/A
French Creek Fish Screen and Fish Passage Improvement	Fisheries Restoration Grant Program	N/A
Scott River Tailing Design and Implementation Coho Habitat and Water Quality Improvement Project	Bureau of Reclamation administrated the National Fish and Wildlife Foundation	Habitat Restoration Enhancement Act, Clean Water Act Section 401 Water Quality Certification
French Creek Off Channel Pond, Large Wood and Spawning Gravel Augmentation	Fisheries Restoration Grant Program and U.S. Fish and Wildlife Service's Partners Program	Section 1602 Streambed Alteration Agreement, Clean Water Act Section 401 Water Quality Certification
Crystal Creek Oakwood Land Restoration	United States Fish and Wildlife Service	N/A
Rattlesnake Creek Beaver Dam Analogue and Wood Loading	United States Fish and Wildlife Service	Habitat Restoration Enhancement Act, Clean Water Act Section 401 Water Quality Certification
Miners Creek Beaver Dam Analogue	United States Fish and Wildlife Service	Habitat Restoration Enhancement Act, Clean Water Act Section 401 Water Quality Certification
Patterson Creek Wood Loading	United States Fish and Wildlife Service	Habitat Restoration Enhancement Act, Clean Water Act Section 401 Water Quality Certification
French Creek Food Web Analysis	Bella Vista Foundation	N/A

SRWC Financial Summary 2018

There are socioeconomic benefits to the work that SRWC brings to our community. The Scott Valley community cherishes its resources and understands the importance of a healthy ecosystem, including biodiversity. Our natural world is our foundation and from it, we have life and derive many benefits including economic, ecological, cultural, scientific, and recreational. SRWC is proud to add to all these areas of our community. Without the partnership with landowners, dedicated community members and funders, these added benefits would not be possible.



SRWC 2018 Expenses

These figures are approximate as the final accounting for 2018 have not been completed.

Scott Watershed Informational Forum (SWIF) 2019

February 21, 2019
8:00am - 5:00pm
Will be held at the REC
11236 North Hwy. 3, Fort Jones California

Presentations by Northern California Resource Center, Quartz Valley Indian Reservation, Scott River Water Trust, Siskiyou County Supervisor, Siskiyou Resource Conservation District

Rob Lusardi, PhD UC Davis & Scott River Watershed Council
Food Web Analysis and Coho Salmon at Scott River Beaver Dam Analogue Sites

Susan Charnley, PhD – Research Social Scientist, USFS
Beavers, Landowners, and Watershed Restoration in the Scott River Basin, California

Karen Pope, PhD – USFS Research Biologist
Restoring Ecological Function to Montane Meadows

Dave Meurer – Klamath River Renewal Corporation
Dam Removal Update and what it means to the Scott and Shasta Rivers

Basil Newmerzhycky, PhD - BLM, Predictive Program Manager
Correlation of Artic Ice Melt on Northern California Winters and Fire Frequency

Paul Hessburg, PhD - Research Landscape Ecologist, USDA
The Rise of Highly Destructive Megafires

Wildfires over 100,000 acres has become one of today's most pressing and complex problems. Our communities, homes, businesses and even our very way of life are threatened by them. Facing the reality of this issue can be nothing short of daunting. But like all wicked problems, ***through education we can change the way fire comes to our forests and communities.***

"Think globally, act locally."
Paul McCartney

An extra special thanks to our committed Board of Directors and Staff! Without your dedication and passion none of this would be possible.