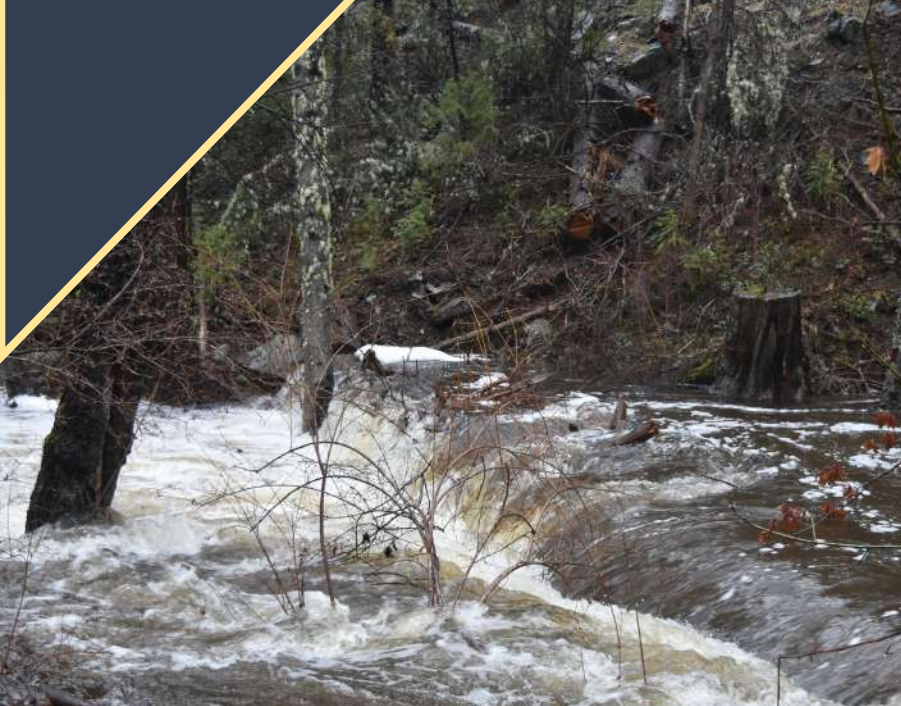


# Scott Watershed Informational Forum (SWIF) Field Tours 2023





## SWIF Field Tours 2023

Scott River Watershed Council Office, 514 North Hwy. 3, Etna California

Time	Wood Augmentation for Process Based Restoration in Scott River's tributaries	Time	Multiple Pilot Approaches to Restoring Scott River Mining Tailings	Time	Soil Health, Water Management, and Resource Protection on the Scott Watershed Working Lands
9:00 AM	Sign in	9:00 AM	Sign in	9:00 AM	Sign in
9:15 AM	Welcome and Meet & Greet	9:15 AM	Welcome and Meet & Greet	9:15 AM	Welcome and Meet & Greet
9:45 AM	Leave to tour	9:45 AM	Leave to tour	9:45 AM	Leave to tour
10:15 AM	Sugar Creek Wood Loading	10:15 AM	Scott River "Oasis" Project	10:00 AM	Siskiyou Land Trust - Conservation Easement and how they work to preserve working lands
12:15 PM	Beaver Haven Lunch	11:15 AM	Sugar Creek Coho Salmon Refugia	11:45 AM	Innovative Soil Carbon Amendment Demonstration Using Locally Produced Biochar in Hay, Pasture, and Rangeland Production Systems
1:15 PM	French Creek Restoration Complex	12:00 PM	Lunch	12:15 PM	Lunch - Scott River Ranch Sheep Barn
2:15 PM	Patterson Creek Wood Loading	12:45 PM	Sugar Creek BDAs	1:00 PM	Scott Valley Irrigation District Groundwater Recharge
3:30 PM	Tour Debrief and Social	1:45 PM	Sugar Creek Floodplain	2:15 PM	EFM's Effort to Bring Resiliency back to the Uplands of Scott Valley
5:00 PM	No host dinner	2:15 PM	Natural Beaver Dam	3:30 PM	Tour Debrief and Social
6:30 PM	Kiss the Ground Film	2:45 PM	Beaver Haven	5:00 PM	No host dinner
		3:30 PM	Tour Debrief and Social	6:30 PM	Kiss the Ground Film
		5:00 PM	No host dinner		
		6:30 PM	Kiss the Ground Film		

## Scott Watershed Informational Forum (SWIF) 2023

Avery Theatre 430 Main Street, Etna California

Time	Presenter	Title
8:00am	Check in & Morning Social	
9:00am	Becky Hatfield Hyde	Welcome & Opening Commentary
9:15am	Natalie Kelly, District Ranger & Danika Carlson, Deputy District Ranger, Klamath National Forest, Scott & Salmon	Update on the Klamath National Forest
9:35am	Christine Found-Jackson, Wildlife Management Supervisor, California Department of Fish & Wildlife	Managing Deer Populations in the Scott River Watershed
9:55am	Kent Laudon, Senior Environmental Scientist Specialist, California Department of Fish & Wildlife	California Department of Fish & Wildlife Wolve Program
10:15am	Theo Johnson, Founding member of Scott Valley Agriculture Water Alliance	A voice for Scott Valley's farmers and ranchers
10:45am	Break	
11:00am	Jon Traum, Hydrologist, U.S. Geological Survey	Quartz Valley Indian Reservation Hydrologic Groundwater Model
11:20am	Laura Foglia, PhD., Department of Land Air and Water Resources, University of California, Davis	Scott Valley Irrigation District Groundwater Recharge Project
11:40am	Chris Voigt, District Manager, Siskiyou Resource Conservation District	Scott Valley's Local Cooperative Solutions
12:00pm	Robyn Grimm, Director, OpenET	Open ET
12:20pm	Lunch	

# Scott Watershed Informational Forum (SWIF) 2023 (continued)

Avery Theatre 430 Main Street, Etna California

Thursday, February 23, 2023 - SWIF Presentation Day - Avery Theater, Downtown Etna		
1:05pm	Dave Coffman, PG, Director, Northern California and Southern Oregon, RES	Klamath Dam Removal Update
1:25pm	Harrison Morrow, Fisheries Biologist, Scott River Watershed Council and Alta Harris, Ecologist	Klamath Basin Passive Integrated Transponder (PIT) Database
1:55pm	Erich Yokel, Monitoring Supervisor, Scott River Watershed Council	Restoration Implementation and Planning in the Scott River Tailings
2:15pm	Michael Pollock, PhD., Ecosystem Analyst, National Oceanic and Atmospheric Administration	Restoration of fish, hydrology and biological diversity in the Scott Valley in the context of drought and a changing climate.
3:00pm	Break	
3:15pm	Will Harling, Director Mid Klamath Watershed Council	Bringing Fire Back to the Klamath Mountains
3:45pm	Paul Hessburg, PhD., Senior Research Ecologist, US Forest Service, Pacific Northwest Research	Forests and fire in an era of climate change: A case for proactive management
4:45pm	Becky Hatfield Hyde	Closing statement
5:00pm	Adjournment	

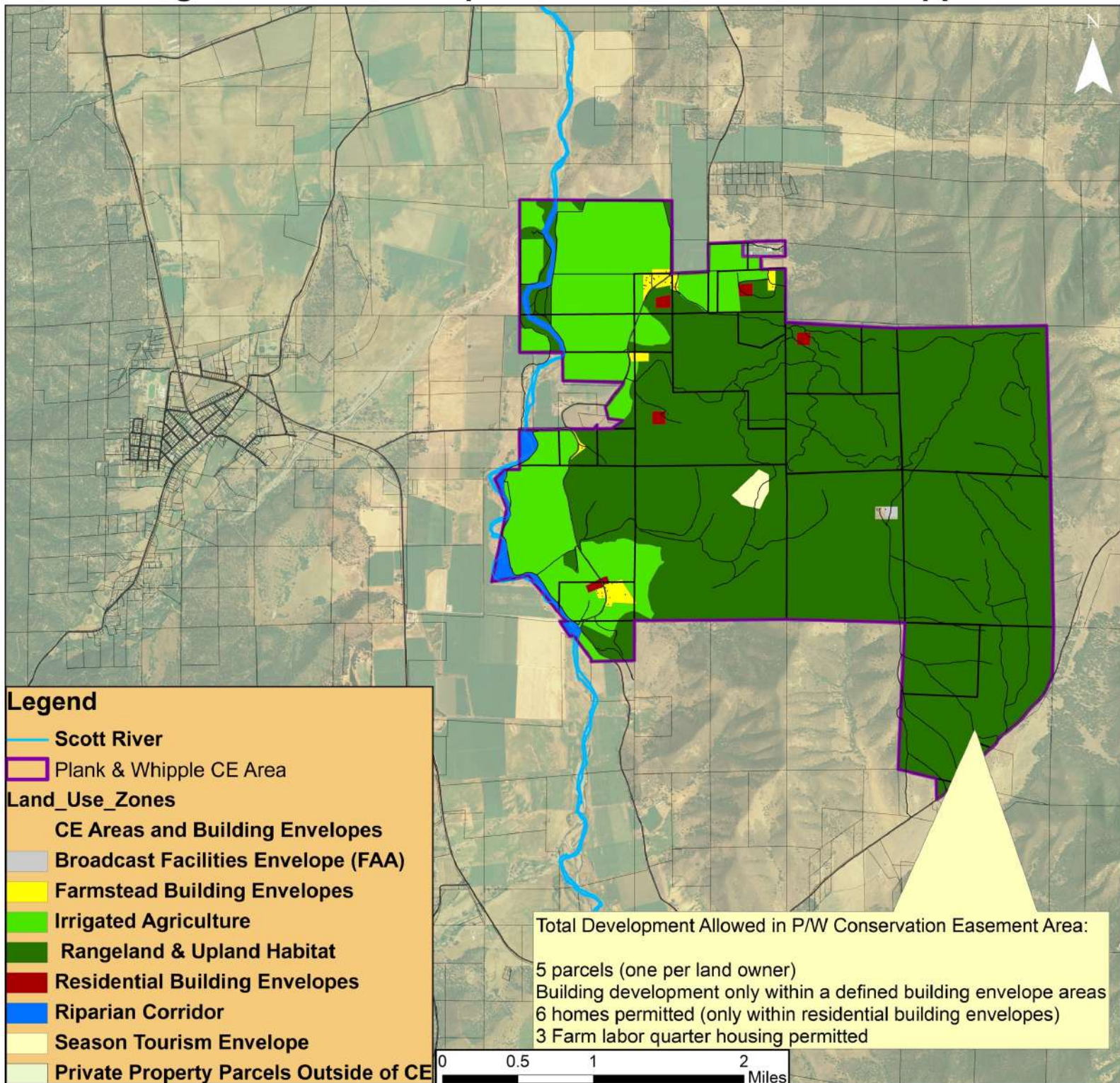
## SWIF Forest Health & Resiliency Summit

Avery Theatre 430 Main Street, Etna California

Friday, February 24, 2023 – Forest Health & Resiliency Summit - Avery Theater, Etna		
Time	Presenter	Title
8:00am	Sign in and morning social	
8:30am	Jake Burgess, CALFIRE Scott Valley Battalion Chief	Welcome & Event Details
8:45am	Yurok Tribe Vice Council Chairman Mr. Myers	Opening Commentary
9:00am	Lyndsey Lascheck, Forest and Fuel Project Manager, Shasta Valley RCD	Bringing Beneficial Fire Back to Communities with the Siskiyou Prescribed Burn Association (PBA)
9:30am	Megan Ireson, Mountain Meadow Coordinator, Scott River Watershed Council	Meadows and Restoration Work in the Scott River Watershed
9:50am	Break	
10:00am	Adam Cummings, Ecologist, United States Forest Service, Pacific Southwest Research Station	Klamath Mountain Meadow Partnership and tools to support this important work
10:45am	Eric Knapp, Research Ecologist, United States Forest Service, Pacific Southwest Research Station	The influence of forest thinning and prescribed fire on wildfire effects: outcomes from the 2021 Antelope Fire
11:30am	Emily Fairfax, PhD., Assistant Professor at California State University Channel Islands and Adjunct	Smokey the Beaver: how beavers keep ecosystem green during megafires
12:15pm	Jake Burgess, CALFIRE Scott Valley Battalion Chief	Closing
12:30pm	No host lunch	
2:00pm	The Beaver Believer Film	

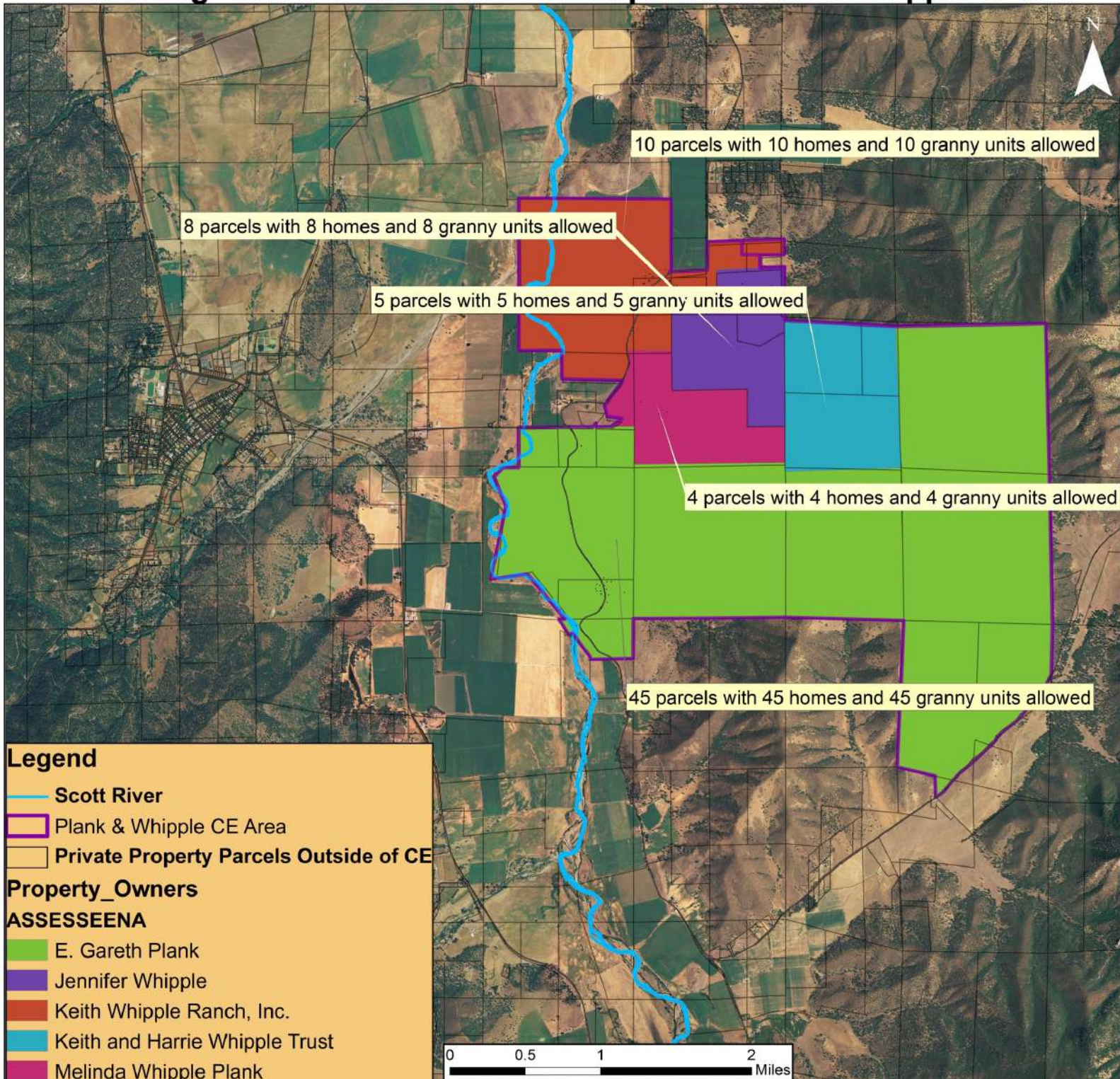


## Working Lands CE Development Limitations - Plank/Whipple CEs



Conservation easements are legal agreements set by a landowner specifying the future use of their land. Siskiyou Land Trust helps landowners create easements, and we are also the holders of easements, taking on the permanent job of monitoring that land and working with the landowners to make sure that the promises of the easement are kept “in perpetuity.” This responsibility stretches into the future whether the land is sold or is passed from generation to generation through the family.

## Working Lands CE Allowable Development - Plank/Whipple CEs

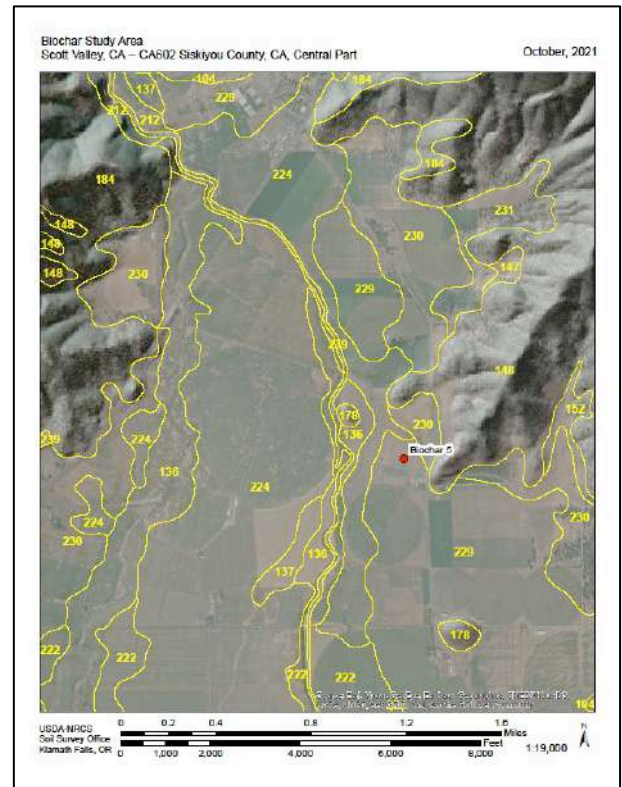


# *Innovative Soil Carbon Amendment Demonstration Using Locally Produced Biochar in Hay, Pasture, and Rangeland Production Systems*

The project is building on the new Natural Resource Conservation Service (NRCS) Conservation Practice Soil Carbon Amendment 808 and will evaluate the effectiveness of locally produced biochar and compost as soil amendments and testing composted biochar as practice enhancement. In December 2020, SRWC managed the production of 432 yards of biochar from 373 bone dry tons of forest fuel thinning with funding from the North Coast Regional Partnership, the CA Natural Resources Agency, and California Climate Investments. This biochar was transported to five agricultural producers in the Scott Valley that were interested in testing the effectiveness of a biochar application in their production systems.

The Project will innovate by scientifically quantifying the increased soil moisture retention and carbon sequestration effects into a whole watershed process to apply excess forest biomass as a locally produced composted biochar to agriculture fields. The data will be used to inform greenhouse gas calculations for the biochar as a whole and model how this project could scale to apply for the off-set carbon market.

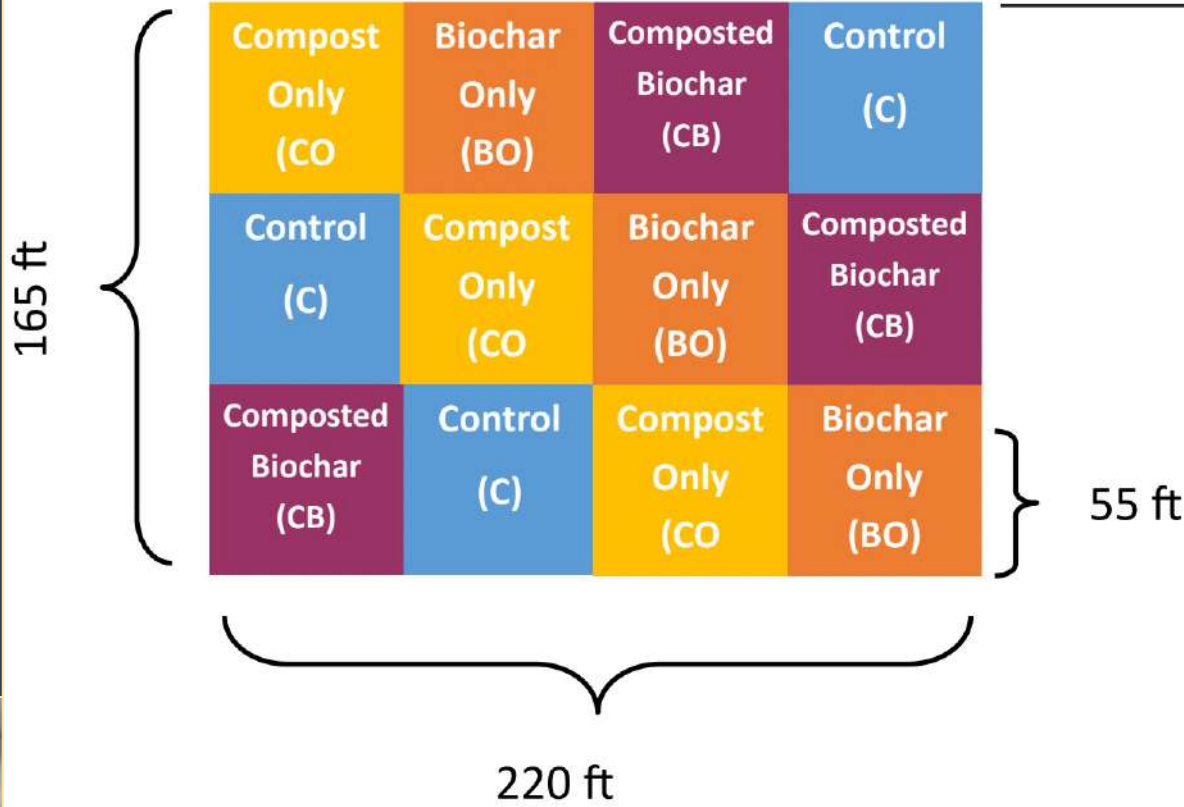
The first phase of this project was funded by the North Coast Regional Partnership. The North Coast Resource Partnership is an innovative, stakeholder-driven collaboration among local governments, Tribes, watershed groups, and other interested partners focused on integrated resource planning and local project implementation in California's North Coast region. The funding for this phase of the project is from NRCS and the Conservation Innovation Grant Program.



# Randomized Block Design:



NORTH COAST RESOURCE PARTNERSHIP

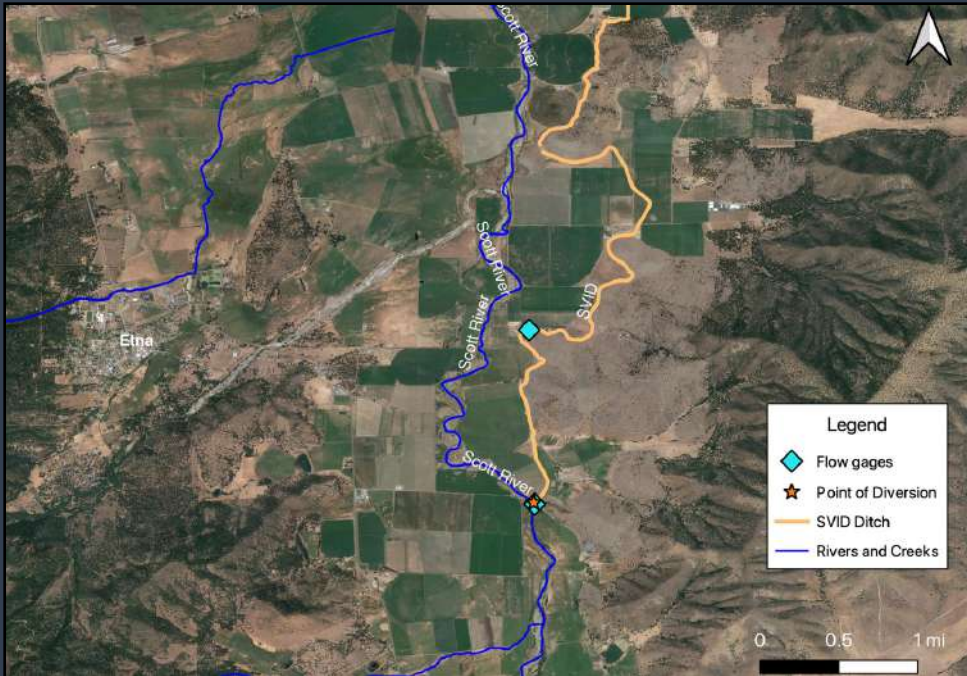


# SVID RECHARGE PROJECT MONITORING

## FLOW MONITORING

Flowmeters in Scott River, above the point of diversion, and in the SVID ditch were installed and are maintained by Larry Walker Associates (seen in **Figure 1**). Data is collected continuously via telemetry at these stations. A flowmeter downstream of the point of diversion (north of point of diversion, not shown on **Figure 1**), is monitored by the Siskiyou Resource Conservation District. Flow data is used to:

- Ensure water diverted is less than 10% of natural flows in the river at the point of diversion
- Determine the rate and amount of water diverted from Scott River into the SVID ditch
- Monitor flows downstream of the point of diversion



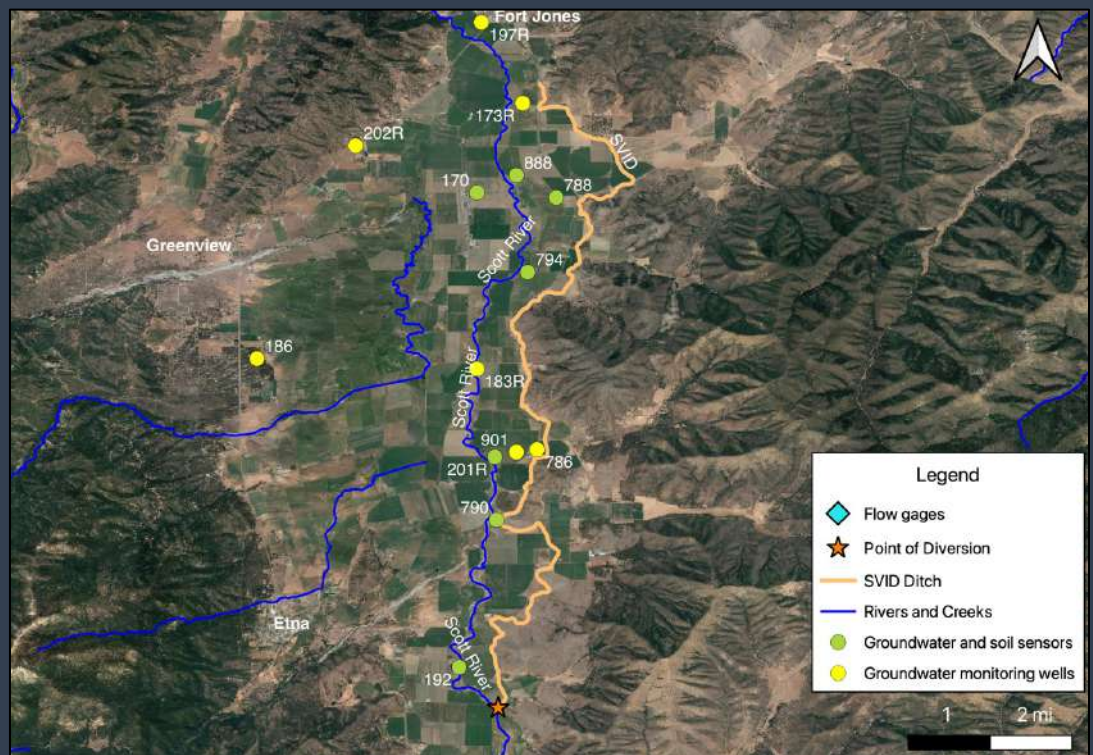
**Figure 1: Flow gauges at the point of diversion and in the SVID ditch.**

## •MONITORING OF GROUNDWATER LEVELS

Groundwater level and temperature changes are measured with pressure transducers in monitoring wells located between the recharge application site and the Scott River (sites shown in **Figure 2**).

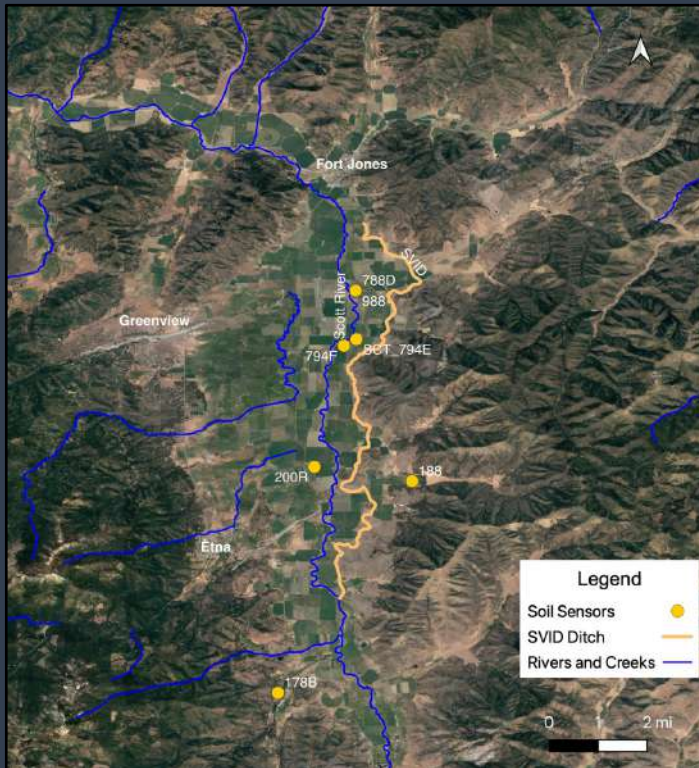
Data is collected continuously via telemetry and data are used to: Evaluate the groundwater response from recharge conducted.

**Figure 2: Groundwater monitoring wells, and groundwater monitoring wells with soil sensors proximal to the SVID ditch with continuous measurement.**

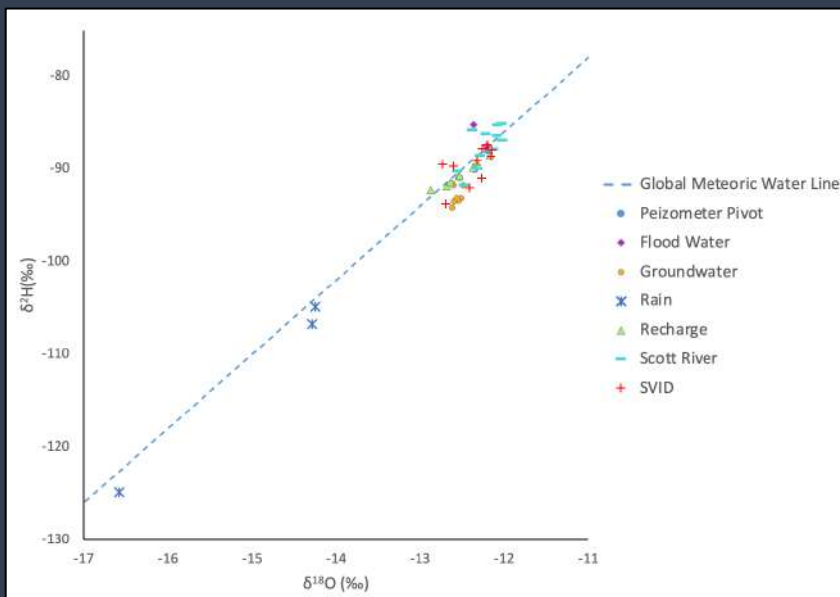




Additionally, there are monitoring sites with just soil sensors, as shown **Figure 3**.



**Figure 3: Soil sensor sites in Scott Valley.**



**Figure 4: Isotopic composition of samples taken during the SVID Recharge Project in January through March of 2022**

## ISOTOPE MONITORING

Samples from key water sources are also collected and analyzed for stable isotopes of water to help characterize groundwater recharge dynamics. Sources monitored include flood water used for field recharge, groundwater, rain, Scott River, and the SVID ditch. Water is comprised of two elements – oxygen (O) and hydrogen (H) – each of which has two abundant and easily measured stable isotopes or nuclear configurations with varying numbers of neutrons. Because additional neutrons add mass to an atom without altering its chemical characteristics, water molecules can have different masses depending on the O and H isotopes they contain. These slight mass differences result in ‘fractionation’ or preferential removal of relatively light/heavy water molecules at various stages in the hydrological cycle including evaporation, condensation, and precipitation.

The outcome is that different water sources have naturally distinct isotopic signatures denoted as  $\delta^{18}\text{O}$  and  $\delta\text{D}$  (D for deuterium or  $^2\text{H}$ ), which are normalized ratios of the heavy to light isotopes for oxygen and hydrogen. **Figure 4** shows initial results from samples collected during winter 2022. The isotopic signature of rainwater collected from an individual precipitation event can look very different from long-term trends reflected in river water and groundwater, which both average inputs over longer time scales and larger geographic areas. This pattern is evident in **Figure 4**. With additional data and longer-term monitoring, these distinct isotopic signatures can be leveraged to help differentiate which sources and mechanisms are important for SVID groundwater recharge.

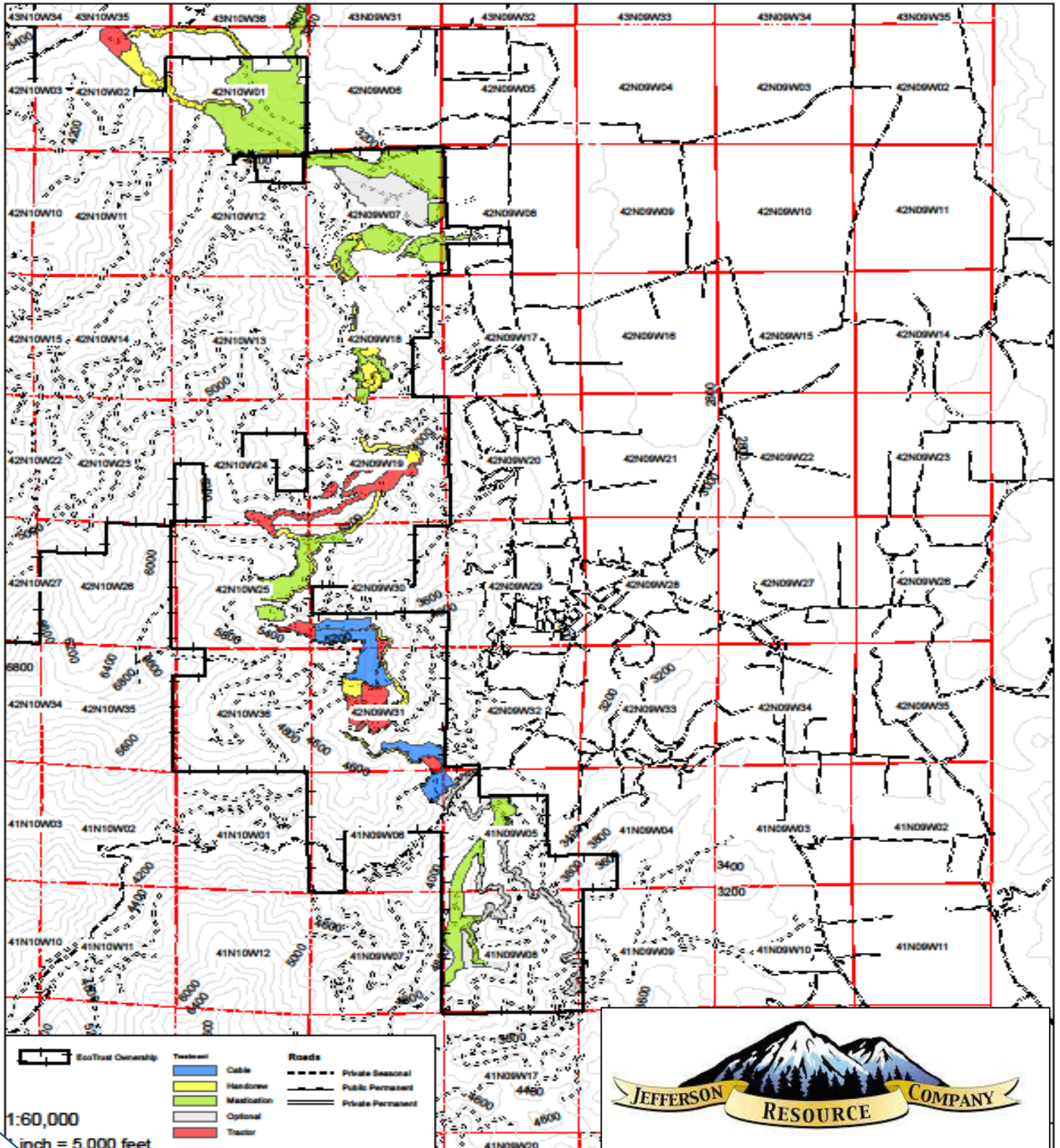
## BIOLOGICAL MONITORING

A biological monitoring plan was developed in parallel with the permit application and is included as an attachment to the permit application (see Biological Monitoring Plan attachment of the permit). The monitoring plan was developed with the goal of ensuring that fish, specifically Chinook or coho salmon, are not adversely affected due to MAR operations. The Siskiyou Resource Conservation District (RCD) is the primary responsible party for carrying out this monitoring.

# Scott Valley/Etna Fuel Reduction & Forest Resiliency Project

USGS Quads: Etna, Greenview  
 Contour Interval: 40'  
 Produced by: JRC GIS Dept.

## Scott Valley/Etna Fuel Reduction and Forest Resiliency Project



A fuel break along a 1200 acre stretching from Kidder Creek Orchard Camp to Ruffy Gap, southwest of Etna. Additional fuel reduction work around the Quartz Valley Indian Reservation is being done.

In 2014, the Log Fire burned approximately 1,600 acres of EFM land and in 2017 fire struck again, burning an additional 150 acres. Of those acres, 1,100 were considered to be high severity. This project reforested 1123 acres

Before



After



EFM

EFM owns 36,685 acres of Scott Valley, including 274 miles of streams that feed the Scott River.

Before



After



For over a decade, EFM has been developing climate-smart approaches to natural forest management that are the key to unlocking value in a carbon-constrained future. Their expertise in conservation finance to develop mutually beneficial public-private projects, and draw from the relationships with forest product companies, public agencies, non-profits and tribes to develop compelling investment opportunities.

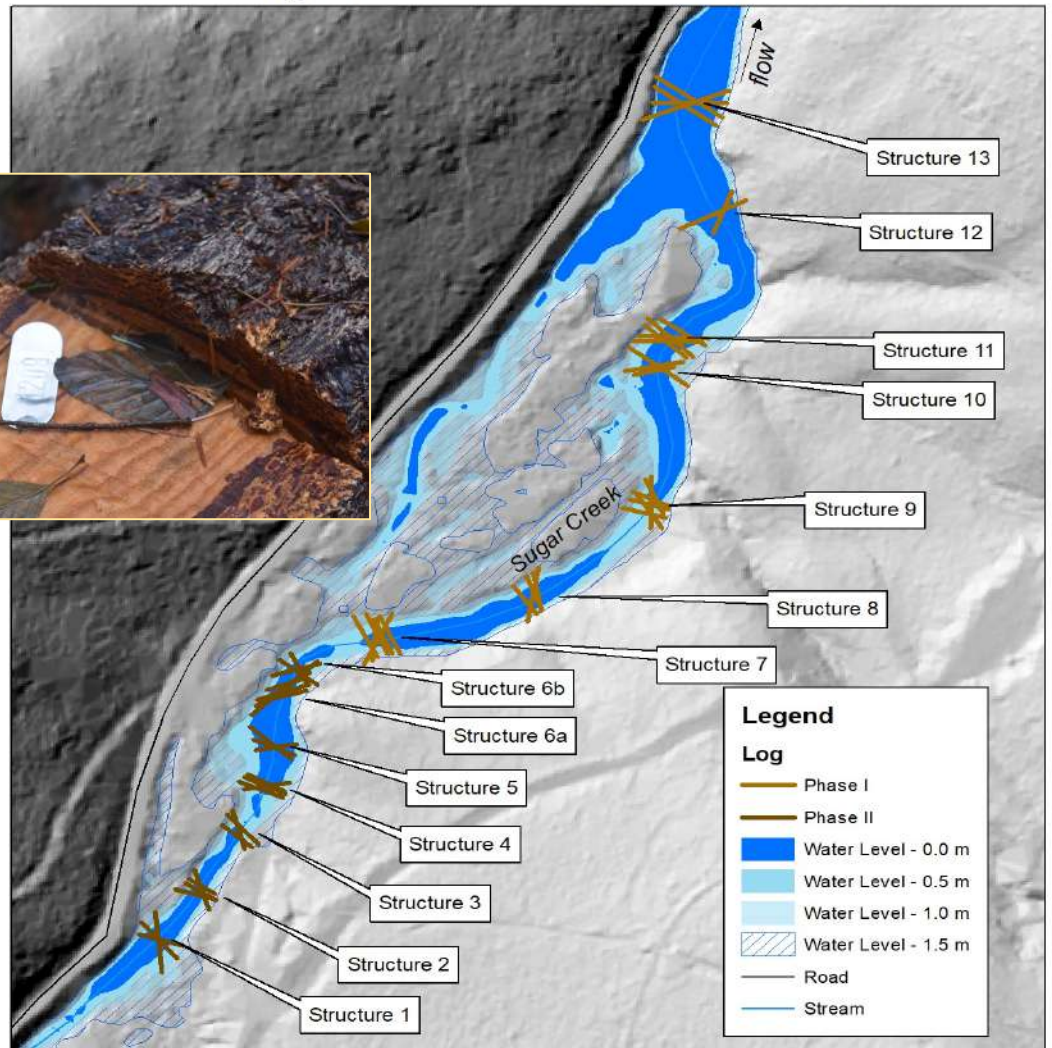
SRWC is currently underway on a project in Kidder Creek that helps address water quality but replacing a series of culverts along the main road system leading up the Kidder Creek Lake trailhead. This is just another example of private landowners who partner with local organizations to get good work done within the basin.



We give each structure a number, tag each log with a metal tag, and identify its species (Douglas fir, Ponderosa pine or Incense cedar), and its size or DBH (diameter breast height).

## Upper Sugar Creek Large Wood Augmentation Project Existing Phase I and Phase II Structures

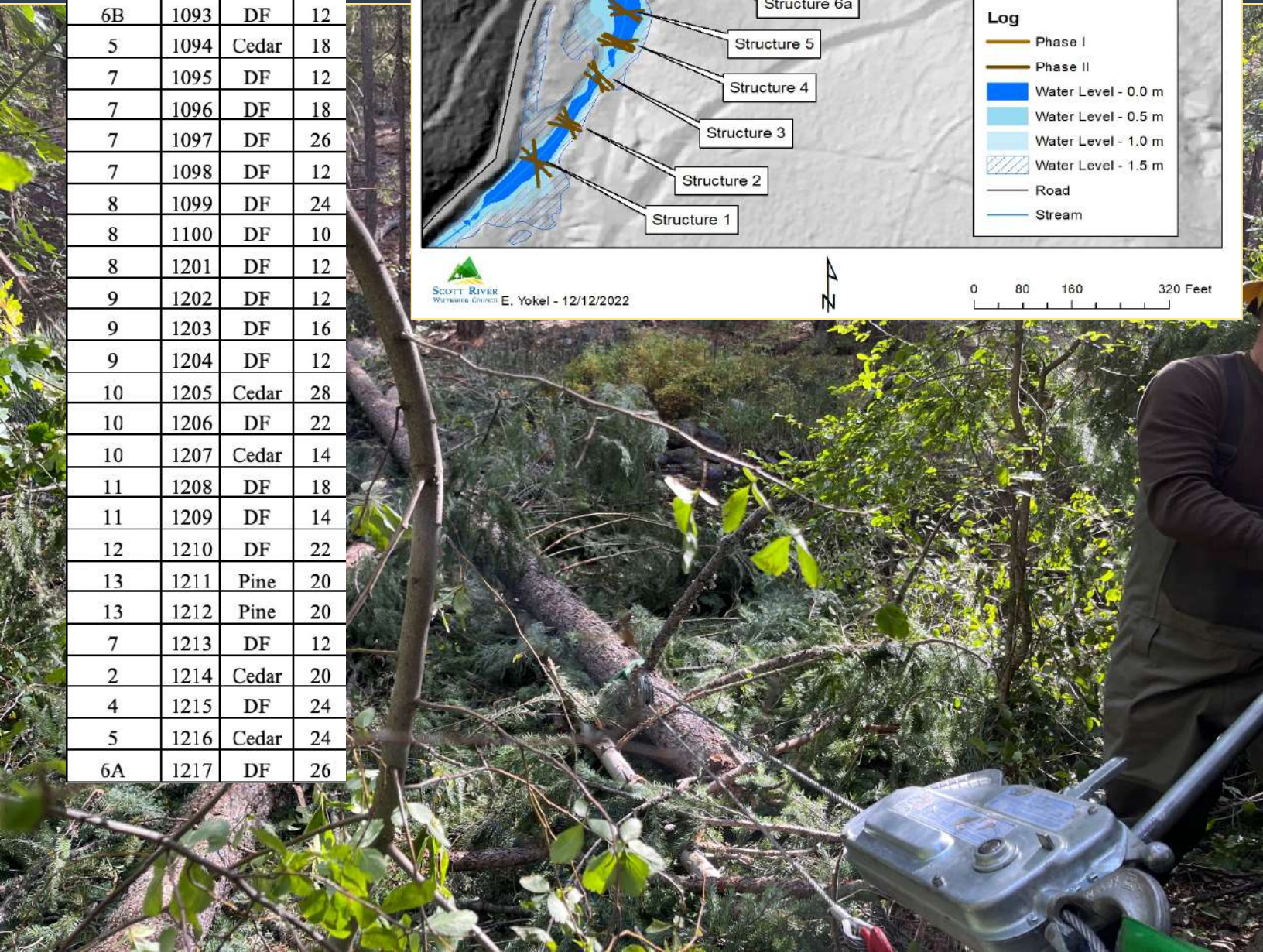
Structure	Tag #	Species	DBH
1	1079	DF	16
1	1080	Cedar	12
2	1081	Cedar	20
2	1082	DF	12
2	1083	Cedar	12
3	1084	DF	12
3	1085	Cedar	16
4	1086	DF	16
4	1087	DF	18
6A	1088	DF	14
6A	1089	DF	12
6A	1090	Cedar	18
6B	1091	DF	12
6B	1092	DF	14
6B	1093	DF	12
5	1094	Cedar	18
7	1095	DF	12
7	1096	DF	18
7	1097	DF	26
7	1098	DF	12
8	1099	DF	24
8	1100	DF	10
8	1201	DF	12
9	1202	DF	12
9	1203	DF	16
9	1204	DF	12
10	1205	Cedar	28
10	1206	DF	22
10	1207	Cedar	14
11	1208	DF	18
11	1209	DF	14
12	1210	DF	22
13	1211	Pine	20
13	1212	Pine	20
7	1213	DF	12
2	1214	Cedar	20
4	1215	DF	24
5	1216	Cedar	24
6A	1217	DF	26



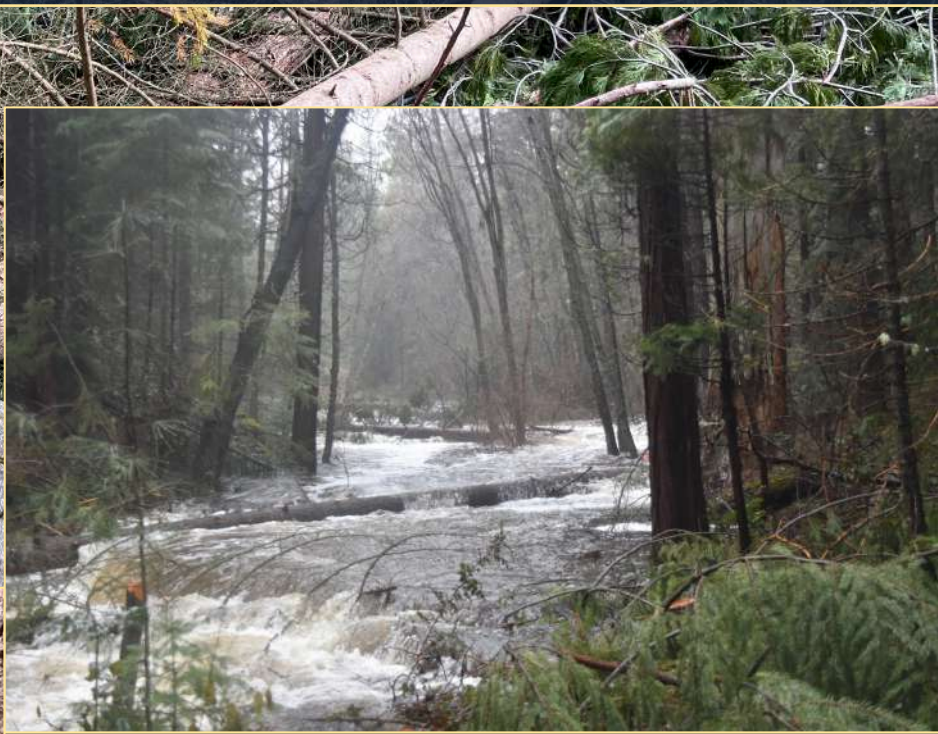
SCOTT RIVER  
WATERSHED GROUP E. Yokel - 12/12/2022



0 80 160 320 Feet



## Sugar Creek Wood Loading Project - Phase I & II



Instream wood structures in Upper Sugar Creek were monitored in 2022. Six structures were placed in Upper Sugar Creek in 2021 in areas that will increase habitat volume without negatively affecting existing habitat. Andy Dean (Professional Sawyer - MAD Fallers) directionally fell 38 identified trees in the locations of the structures under the direction of SRWC project coordinators.

Trees were felled in stages (different days) with the initial felled trees moved into desired placement with hand labor (grip hoists, blocks and cable) before the next stage of trees were dropped. Selected trees were significantly greater than 1.5 times the bank full channel width. The felled trees were moved with block and tackle into anchored positions. Anchoring points included existing tree trunks, other channel-spanning logs, and leaving significant amounts of the tree on the bank above the bank full elevation. The combined anchoring techniques were utilized to minimize the possibility of log mobilization from rotational forces (horizontal movement) and buoyancy (vertical movement). After two to three iterations of felling trees and then moving trees, the wood structures were complete.

To ensure the ability to monitor project effectiveness in coming years, SRWC established an extensive photo point network and tagged the trees with metal tags with individual numbers. These efforts will allow SRWC and project partners to monitor if there is any movement of trees and the impacts on the channel formation.

**Fun fact:** Sugar Creek is home to the “[Miracle Mile](#)”, one of the world’s highest conifer diversity sites – 18 species having been identified in the Sugar Creek drainage just above the Sugar Creek Wood Loading site:

1. Foxtail pin
2. Whitebark pine
3. Western white pine
4. Jeffrey pine
5. Ponderosa pine
6. Lodgepole pine
7. Sugar pine
8. White fir
9. Shasta fir
10. Subalpine fir
11. Engelmann spruce
12. Brewer spruce
13. Mountain hemlock
14. Douglas-fir
15. Pacific yew
16. Incense-cedar
17. Common juniper
18. Western juniper – as documented by Richard Moore in 2013





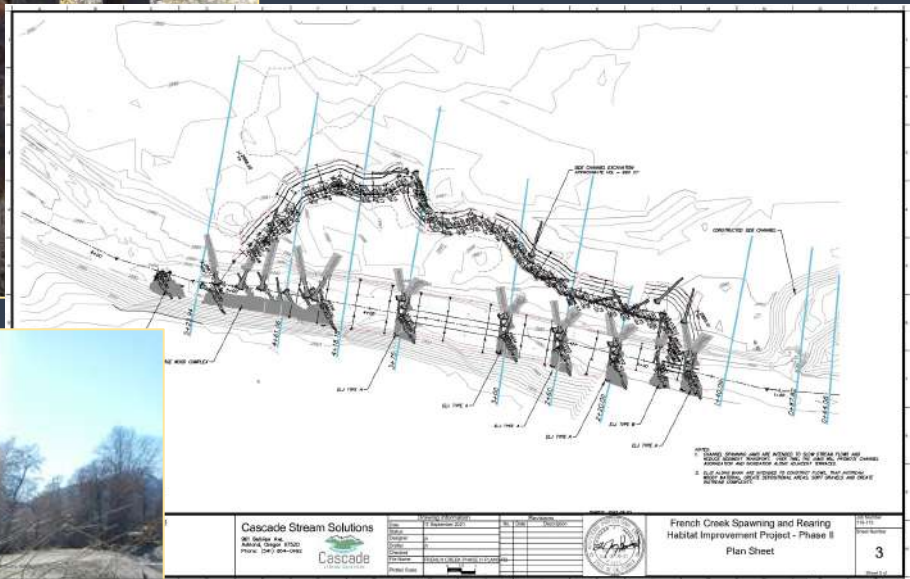
# French Creek Beaver Dam Analogues (BDAs) Implemented in 2017

## French Creek Side Channel & Instream ELJs Implemented in 2018

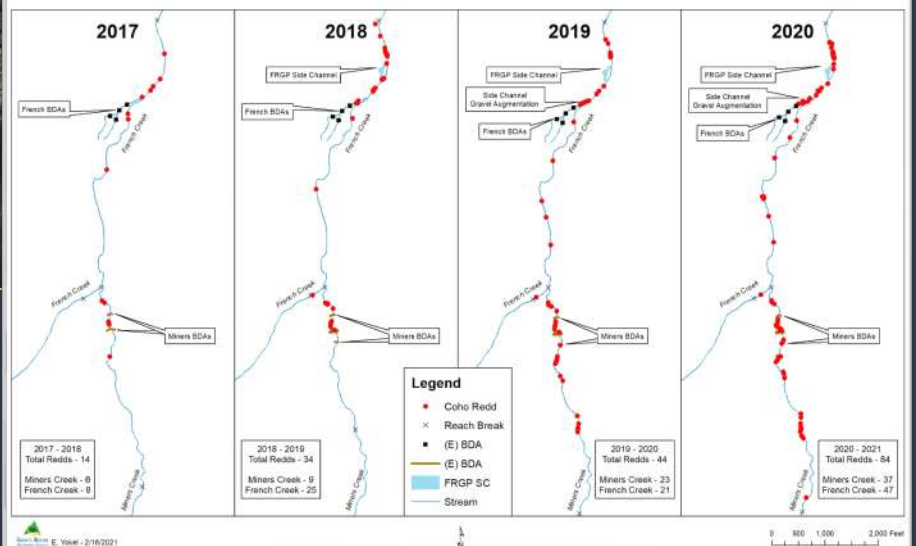


## French Creek Wood & Gravel Augmentation Implemented in 2019

**NORTH RIVERS**  
CONSTRUCTION

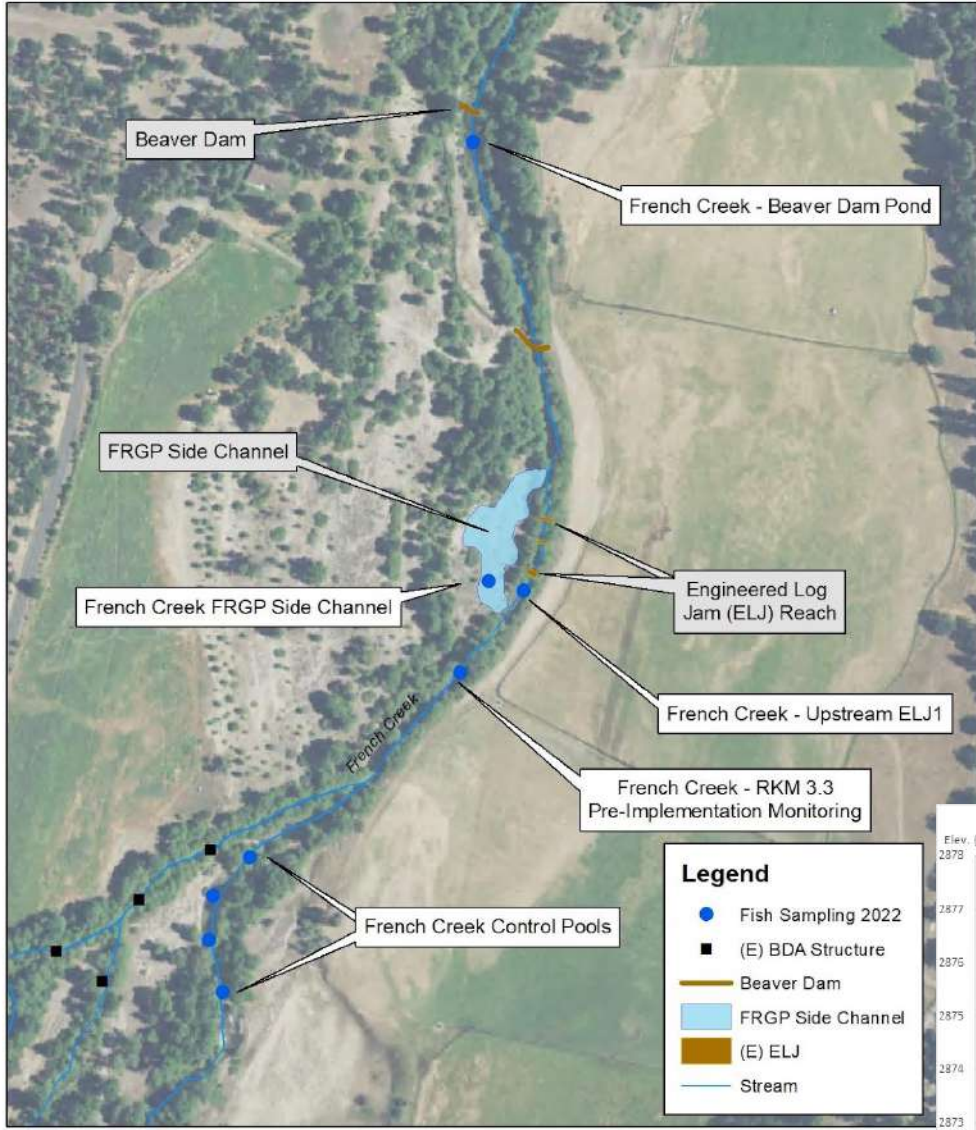


Mid French Creek and Lower Miners Creek - Coho Salmon Redds - Brood Year 2017 to Brood Year 2020

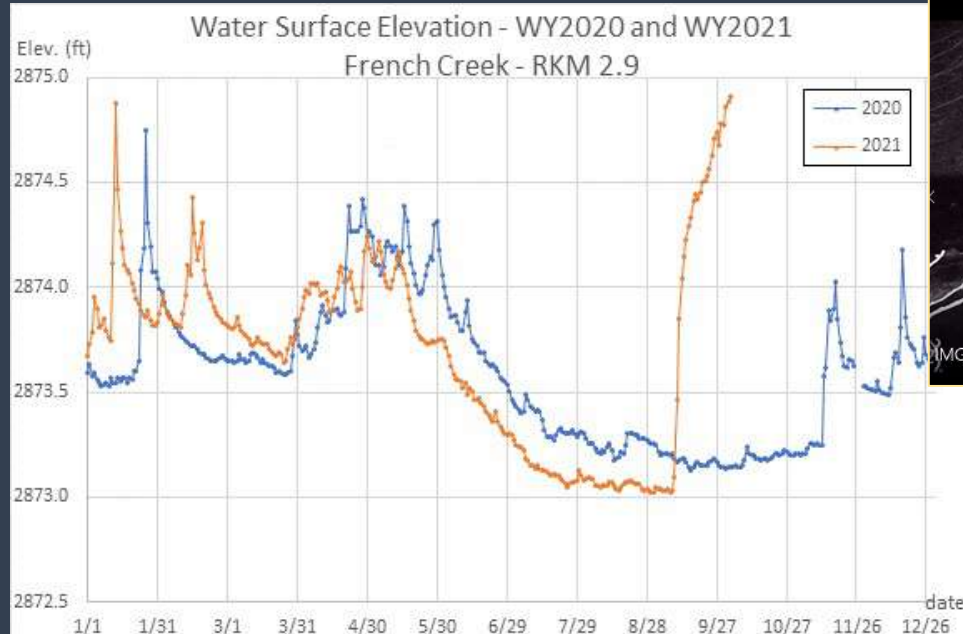
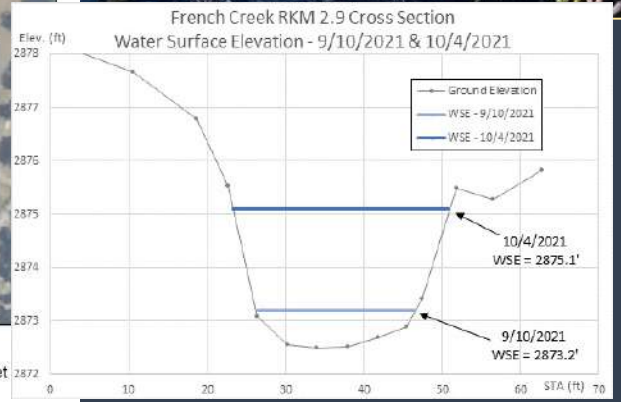
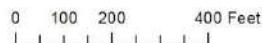


**Cascade**  
STREAM SOLUTIONS

# French Creek - Fish Sampling Locations - August 2022



E. Yokel - 8/30/2022



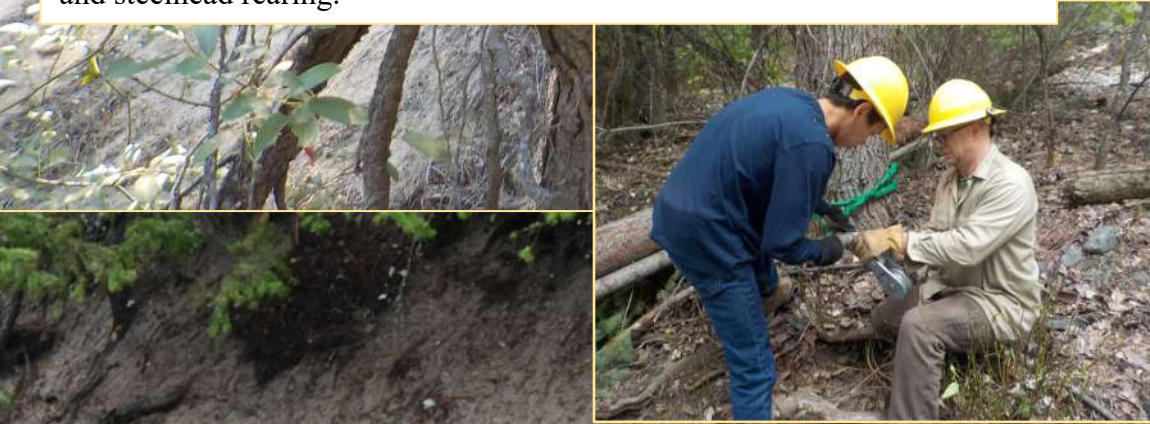
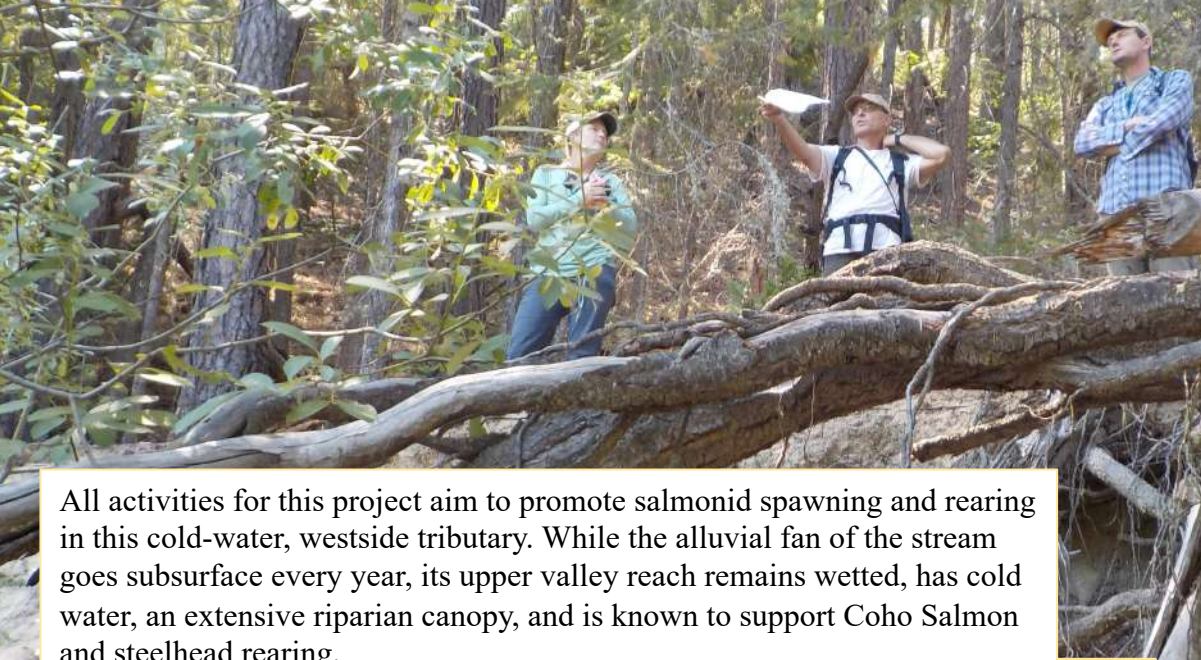
# *Patterson Creek Accelerated Wood Loading Project Phase I, II, III & IV*



**EFM**

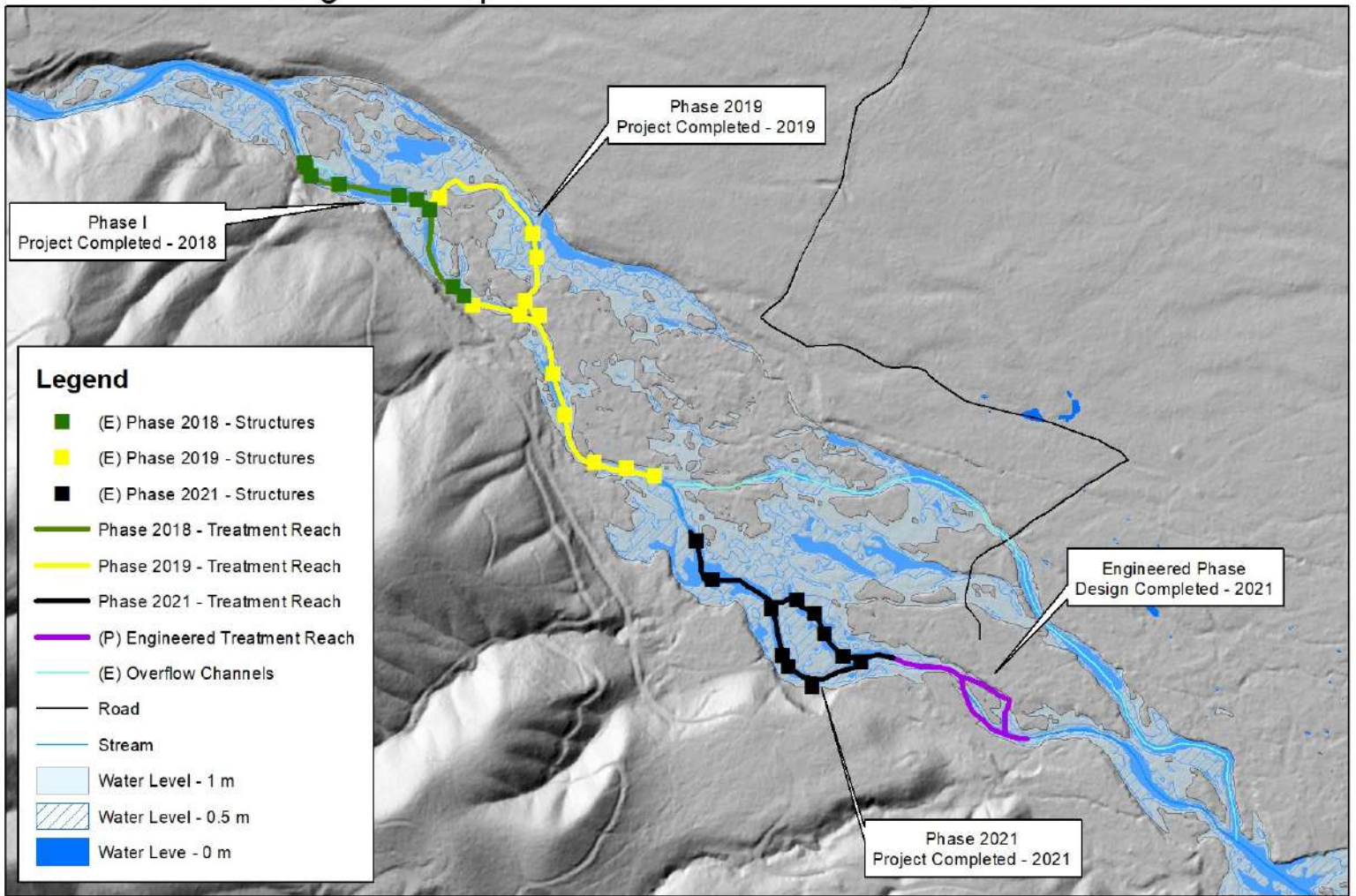


All activities for this project aim to promote salmonid spawning and rearing in this cold-water, westside tributary. While the alluvial fan of the stream goes subsurface every year, its upper valley reach remains wetted, has cold water, an extensive riparian canopy, and is known to support Coho Salmon and steelhead rearing.





# Patterson Creek Accelerated Wood Recruitment Project Existing and Proposed Treatment Reaches - 2018 - 2021



E. Yokel - 9/30/2021



0 200 400 800 Feet



# Scott River Habitat Enhancement & Restoration "Oasis" Project



Scott River Watershed Council  
514 N HWY, Etna, CA 96027

Cascade Stream Solutions

961 Bellview Ave.  
Ashland, Oregon 97520  
Phone: (541) 936-0492



Drawing Information		Revisions	
Date	Description	No.	Description
03 February 2022	Preliminary		

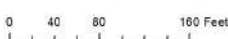
Scott River - Phase 4-B  
Habitat Restoration Project  
Plan Sheet 2

Sheet Number: 2016-111  
Sheet Number: **3**  
Sheet 3 of 6

## Scott River Tailings "Oasis" Restoration Project 2022 As Built Photogrammetry



Ortoimagery - 11/3/2022  
Cascade Stream Solutions  
E. Yokel - 12/9/2022



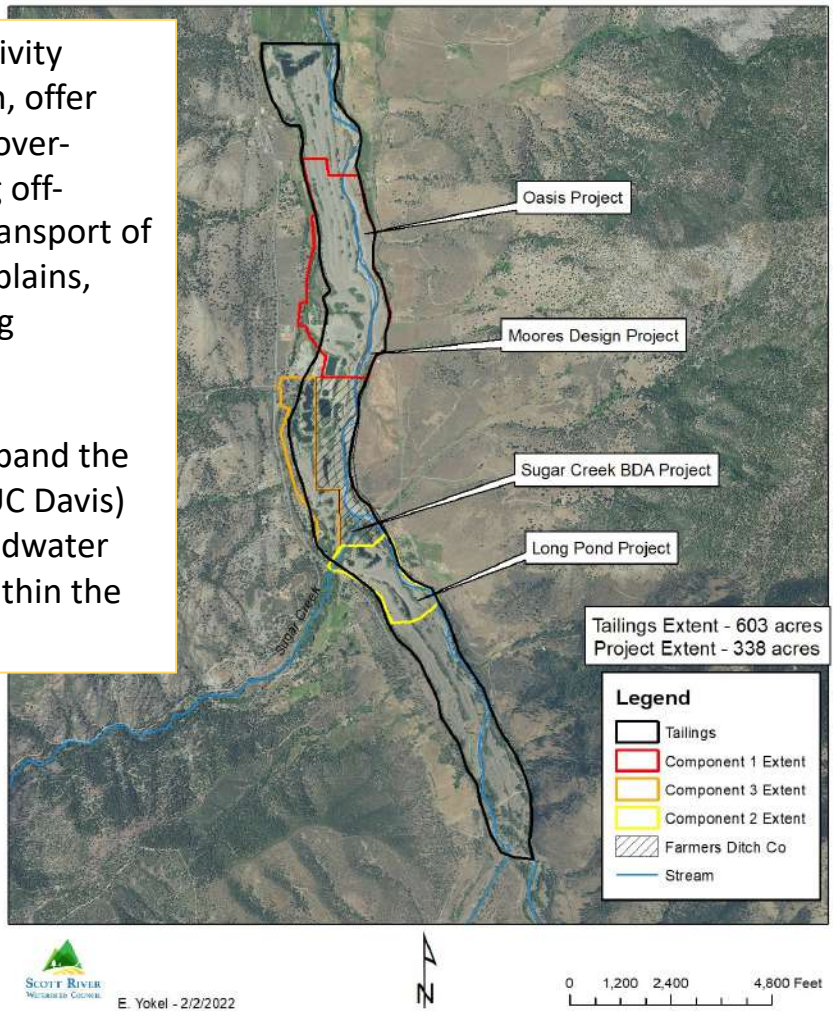
In the fall of 2022, additional phases of work were completed at this location in the Scott River tailings. Funding from the California Department of Fish and Wildlife and the United States Fish and Wildlife Service (USFWS) funded the Scott River Tailings "Oasis" Restoration Project. Cascade Stream Solutions, SRWC, and North Rivers Construction installed large wood structures (LWS: Type A, B, & C) and plantings per the engineer's design. Plantings (willow and cottonwood stakes) were established within the Type A and Type B structures and in trenches downstream of the Type C structures. Additional plantings were established in trenches in the project site. Planting trenches were treated with nurse logs and wood chips to improve moisture retention and organic material in the planting medium. High-pressure water was used to "jet in" all excavated surfaces and backfill to wash the fines into the interstitial spaces of the streambed substrate. This project is located on private land.



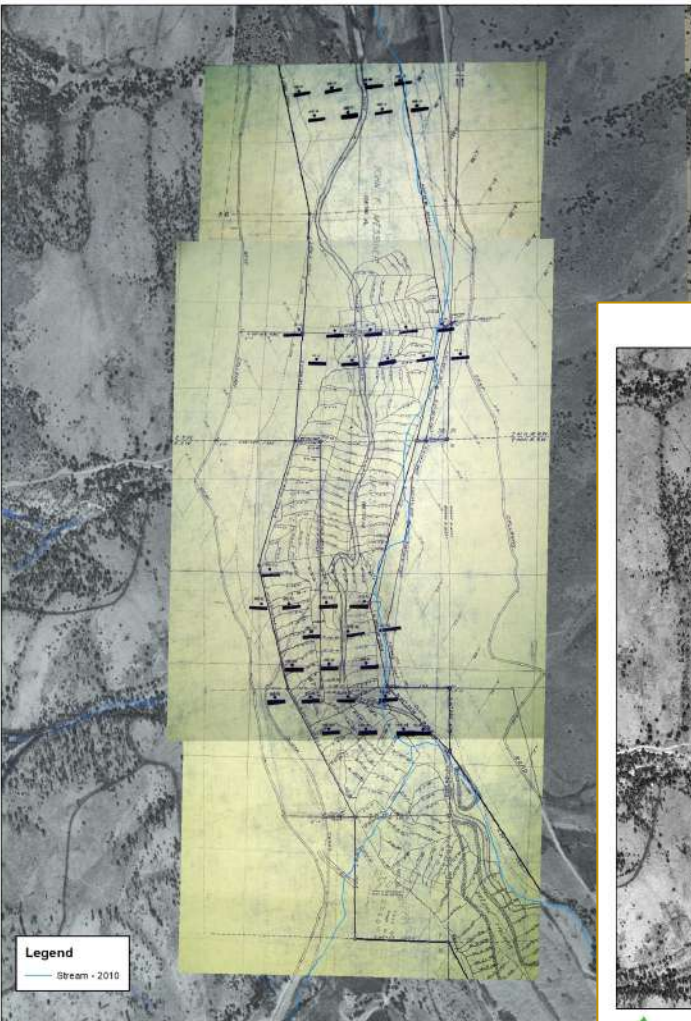
# Scott River Tailings Streamflow and Ecological Benefit Restoration Planning Project

The goals of this project are to Improve connectivity through 1.1 miles for migrating anadromous fish, offer slow, cold-water refugia for over-wintering and over-summering juvenile Coho Salmon by connecting off-channel habitat and to decrease downstream transport of sediment. Additionally, Connect adjacent floodplains, creating seasonal wetland habitat and increasing groundwater recharge.

Project team is seeking additional funding to expand the scope and to incorporate Dr. Thomas Harter's (UC Davis) groundwater model to understanding the groundwater effects of restoration project or other actions within the Tailings reach.



Scott River Tailings - Dredger Logs



Scott River Tailings - Historic Ortho Images



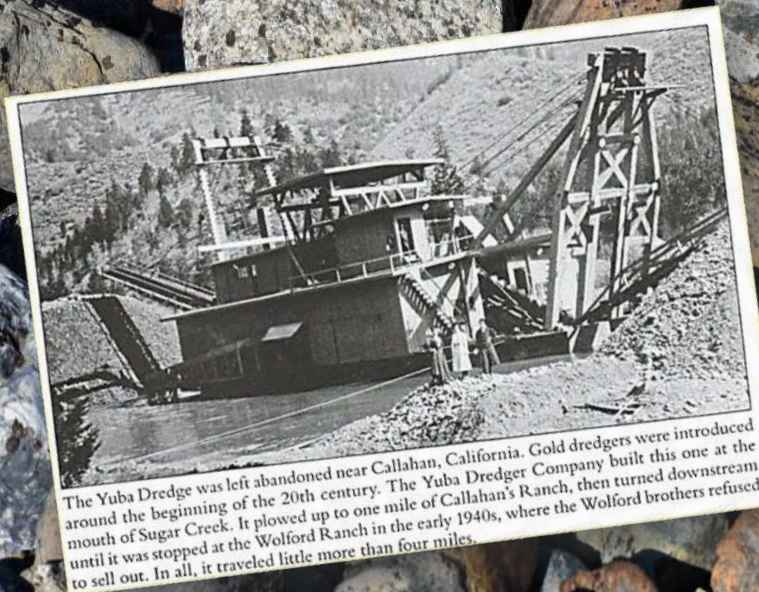
# Scott River Tailings Restoration Design and Modeling



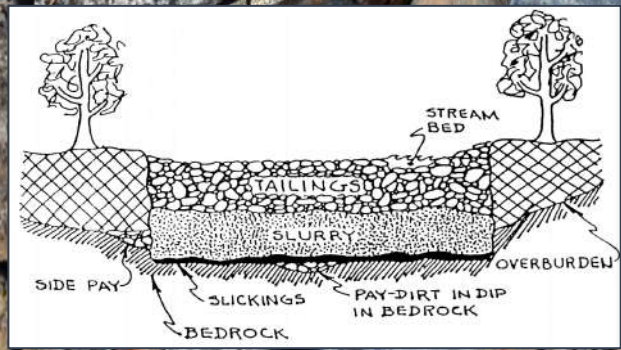
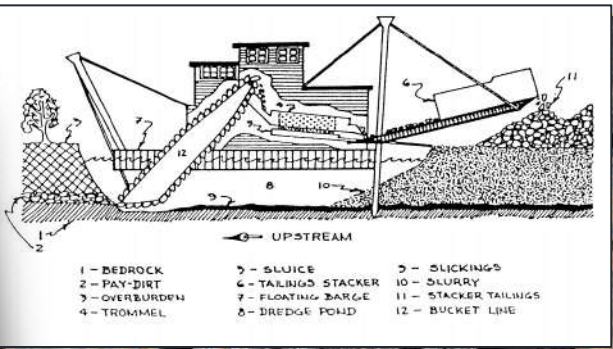
Prior to the western expansion of settlers into Scott Valley during the early 1800s, the river occupied an expansive floodplain aquatic and riparian habitat where a dynamic river channel contained complex morphology, multiple flow paths connecting to the floodplain, abundant large woody debris, and frequent beaver ponds. The river through the current “Tailings” reach likely had year-round flows and supported large salmon and steelhead runs.

Since then, the Scott River basin has been altered by many human activities that have affected aquatic and riparian habitats, including removal of beaver, hydraulic and dredge placer mining, construction of dams and diversions, river channelization, agricultural conversion, road construction, timber harvest, and rural residential development. Trappers removed large numbers of beaver from Scott Valley during the 1820s and 1830s. Many beaver ponds, which historically provided important off-channel rearing habitats and diverse channel margin habitats attractive to coho salmon, were lost with the removal of beaver.

Pervasive and lasting changes to the landscape began in about 1850 when alluvial reaches of the Scott River and major tributaries were extensively mined for placer gold deposits. From 1936 to 1951, a floating dredge owned by the Yuba Consolidated Gold Fields Company mined the Scott River for placer deposits within a 4.7-mile reach downstream of Callahan. SRWC is tackling one of the most challenging problems for the watershed, the legacy impacts from bucket-line dredging along a 5-mile reach of the Scott River, which annually disconnects the upper 20 percent of the watershed. Bringing together a team consisting of the University of California-Davis, Stillwater Sciences, Larry Walker and Associates, and a technical advisory committee, SRWC is developing modeling tools that will help plan and implement effective, large-scale restoration in this extremely dynamic reach of the river.

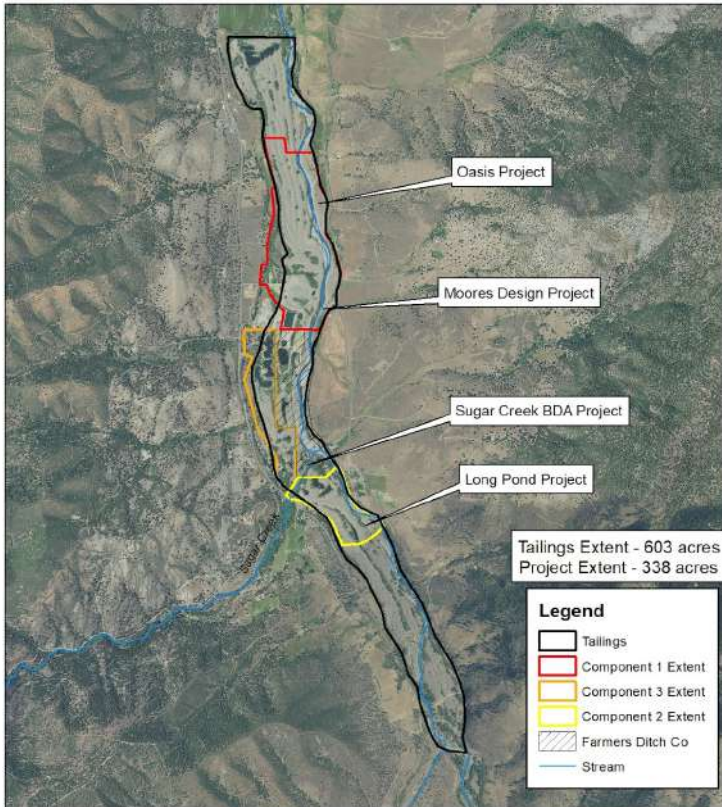


The Yuba Dredge was left abandoned near Callahan, California. Gold dredgers were introduced around the beginning of the 20th century. The Yuba Dredger Company built this one at the mouth of Sugar Creek. It plowed up to one mile of Callahan's Ranch, then turned downstream until it was stopped at the Wolford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





**Scott River Tailings Streamflow and Ecological Benefit Restoration Planning Project**



E. Yokel - 2/2/2022



0 1,200 2,400 4,800 Feet

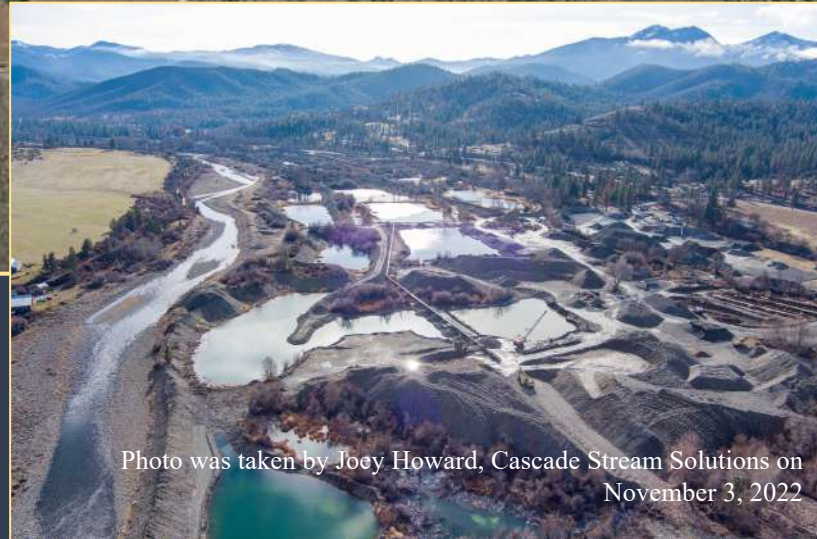
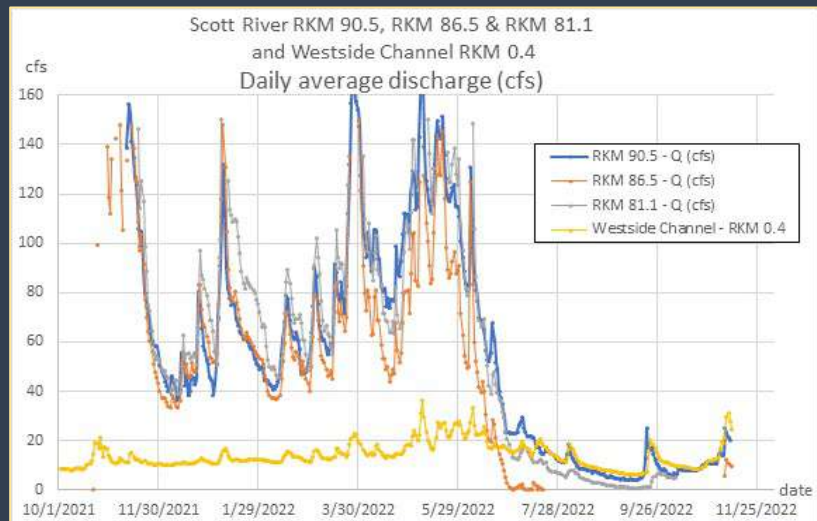


Photo was taken by Joey Howard, Cascade Stream Solutions on November 3, 2022



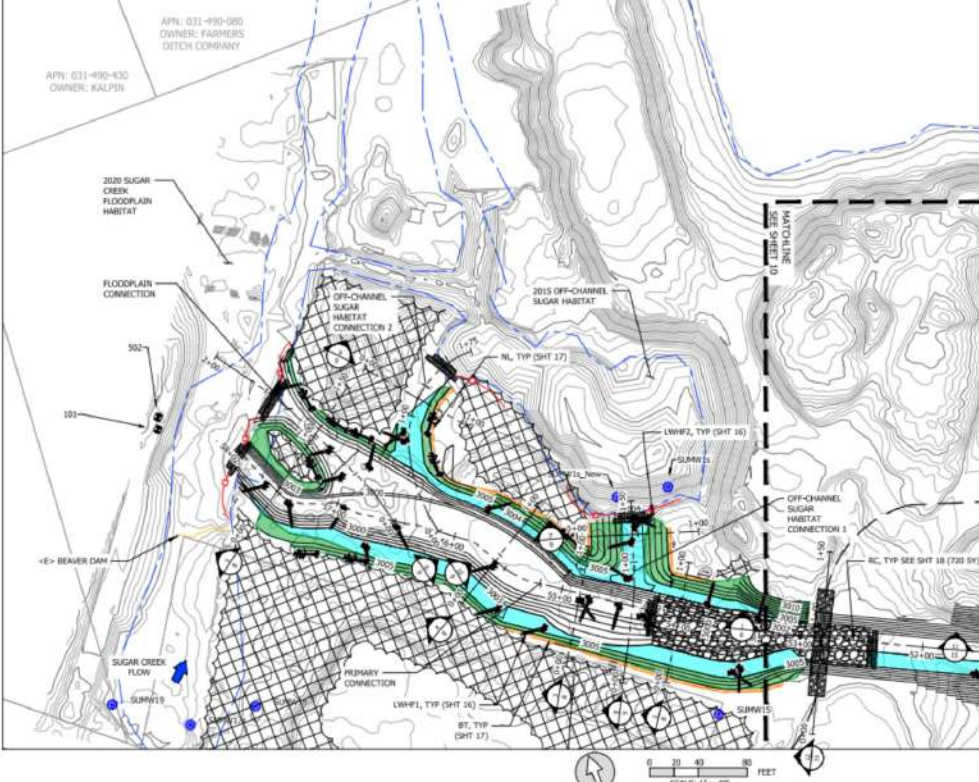
In addition to field reconnaissance and data collection, SRWC continues to work closely with the project consultants on the development of modeling tools to complete an options analysis and a recovery framework for future restoration actions to help address these legacy impacts, including the following:

- Refine inflows into the valley through the Precipitation-Runoff Modeling System (PRMS) model.
- Refine the MODFLOW model around the tailings, both horizontally and vertically.
- Recalibrate the model using the data that SRWC has collected.
- Run MOPATH simulation using temperature data.
- If time and funding permit, use the new MT3D USGS which is capable of dealing with temperature exchanges between surface and groundwater.





HABITAT FEATURE SCHEDULE			
TYPE	NORTHING	EASTING	KEY ELEVATION
LWHP1	237221.53	6335308.66	3005.00
LWHP1	2372247.64	6335274.49	3005.00
LWHP1	2372113.33	6335222.89	3004.00
LWHP1	2372291.46	6335212.55	3004.00
LWHP1	2372260.59	6335196.80	2999.00
LWHP1	2372273.99	6335130.36	3005.00
LWHP1	2372302.29	6335101.07	3004.00
LWHP1	2372136.26	6335110.66	2999.00
LWHP1	2372179.05	6335138.53	3004.00
LWHP1	2372380.64	6335094.42	3004.00
LWHP1	2372418.91	6335014.21	2999.00
LWHP1	2372448.53	6335021.11	3005.00
LWHP1	2372473.50	6335015.85	3005.00
LWHP1	2372533.08	6335014.03	3005.00
LWHP1	2372386.46	6335056.15	2999.00
LWHP1	2372426.27	6334978.43	2999.00
LWHP1	2372454.23	6335096.97	3005.00
LWHP1	2372405.69	6335060.34	2999.00
LWHP2	2372176.41	6335272.22	3005.00
LWHP2	2372246.27	6335218.87	2999.00
LWHP2	2372324.55	6335244.69	3004.00
LWHP2	2372275.67	6335175.65	2999.00
LWHP2	2372462.19	6335082.02	3004.00
NL	2372332.09	6335185.66	3006.00
NL	2372380.82	6335014.92	3005.75
NL	2372429.67	6335104.09	3005.75
NL	2372462.74	6335112.38	3005.00
NL	2372399.79	6334979.26	3007.00
NL	2372471.99	6335096.67	3004.00
NL	2372488.91	6335041.24	3004.00
NL	2372462.58	6335095.79	3004.00
NL	2372516.70	6335025.33	3003.00



CUT AND FILL SUMMARY			
SITE	CUT (CU YD)	FILL (CU YD)	BALANCE (CU YD)
LONG POND PRIMARY CONNECTION WITH OFF-CHANNEL SUGAR HABITAT CONNECTIONS 1 & 2, AND FLOODPLAIN CONNECTION	7,950	50	7,900
FILL AREA 1*	0	39,500	-39,500
TOTAL	7,950	39,450	-31,500

\* SITE LOCATED ON SHEET 12, INCLUDES APPROXIMATELY 2,150 CU YD FILL FROM HABITAT FEATURE AND PLANTING ZONE SOIL AMENDMENT OVER EXCAVATION.

**GENERAL NOTES**

- CONTRACTOR SHALL LIMIT EARTHWORK TO PERMANENT AND TEMPORARY FEATURES SHOWN ON THE PLANS AND PER DIRECTION OF CAR.
- DISTURBANCE OUTSIDE THE WORK SHOWN SHALL BE MINIMIZED.
- THE FILL AREA SHALL BE STABILIZED, WITH A MINIMIZED FOOTPRINT AND MATCHED EXISTING GRADES, TOP ELEVATION OF FILL AREA NOT TO EXCEED HIGHEST EXISTING GRADE TIE-IN PER DIRECTION OF CAR.
- NEGATIVE VALUES SHOWN IN CUT AND FILL SUMMARY TABLE DENOTE SITE FILL VOLUME DEFICIT, NEGATIVE BALANCE VOLUMES INDICATE SITES REQUIRING MORE FILL VOLUME THAN CUT VOLUME PER PLAN VIEW SHOWN ON SHEET.
- IF BEDROCK IS ENCOUNTERED ABOVE PROPOSED GRADE, SPECIAL CONTRACT TO ADJUST PROPOSED GRADE ELEVATION TO MATCH EXISTING BEDROCK ELEVATION AND PER DIRECTION OF CAR.
- ESTABLISH PLANTING ZONES FOLLOWING APPROVAL BY CAR AND ENGINEER OF PROPOSED GRADE, SEE SHEETS 19 AND 20, AND SPECIAL PROVISIONS FOR PLANTING ZONE LAYOUT AND DETAILS.

PROJECT NUMBER: 904.00  
SCALE: AS NOTED  
DATE: 12/3/21  
DESIGN: JS/RWK  
DRAWN: HLG/RWK  
CHECKED: JS/JM  
APPROVED: JS/JM

LONG POND REST. STA  
51+00 TO 58+00 PLAN

SHEET 7 OF 20

The Sugar Creek Coho Refugia Project will establish a connection to Sugar Creek and further enhance the complex mosaic of existing and restored aquatic and riparian habitat in the area. Specific activities include:

- (1) Construction of multiple connection points between Sugar Creek and the Project area.
- (2) Channel forms with variable side slopes and benches inundated at different widths and water depths in a 1 acre constructed floodplain;
- (3) Roughened channel grade control that provides bed stability and helps oxygenate water entering the downstream rearing area
- (4) 33 Large wood habitat features that provide structure and cover, moderate velocities, entrain sediment, and contribute food
- (5) Treatments that promote healthy soil development (e.g., nurse logs, brush trenching, wood chips, biochar, and topsoil)
- (6) 1 acres of native planting and seeding
- (7) Removal of existing roadways and addition of a waterway crossing structure
- (8) Project effectiveness monitoring
- (9) Project reporting and public dissemination.

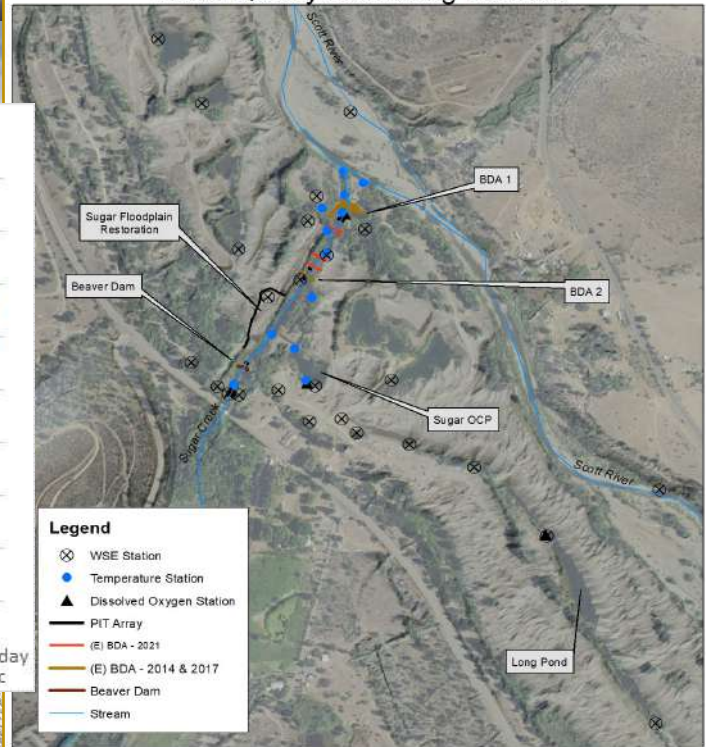
# Sugar Creek Beaver and Beaver Dam Analogs (BDAs)

Photo was taken October 28, 2022

- Beaver Dam Analogs (BDAs) Construction
  - 2014, 2017, 2021, 2022
- Beaver Dam Analogues (BDAs) Maintenance
  - 2015, 2016, 2017, 2018, 2019, 2020, 2021
- Existing pond connected to Sugar Creek (Siskiyou RCD)
  - 2015
- Constructed floodplain
  - 2020
- Riparian Planting
  - 2017, 2018, 2020, 2022
- Monitoring 2014-2022
  - Fish Utilization
  - Surface Water Elevations
  - Water Quality
  - Beaver Utilization
  - Food Web
  - Geomorphic Change
  - Discharge (streamflow).

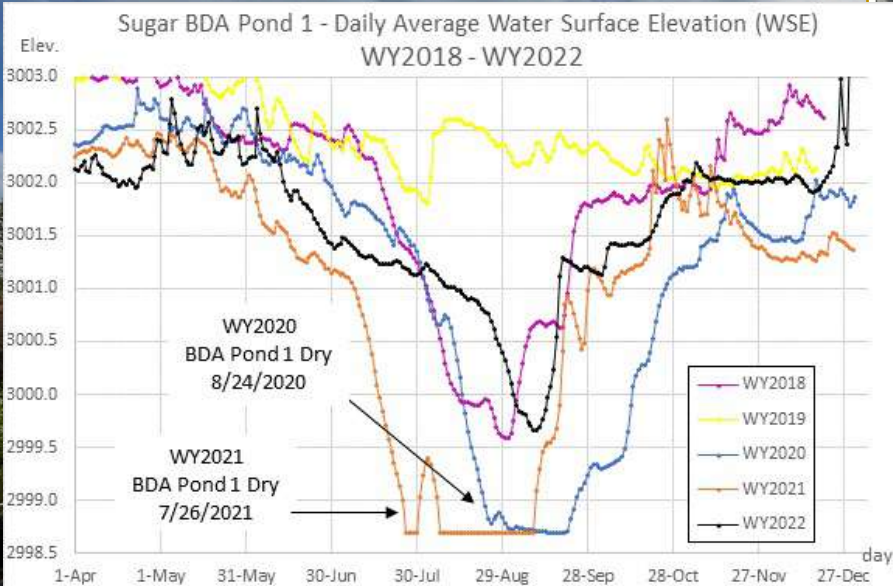


Sugar Creek - Scott River - Long Pond Water Quality Monitoring Network



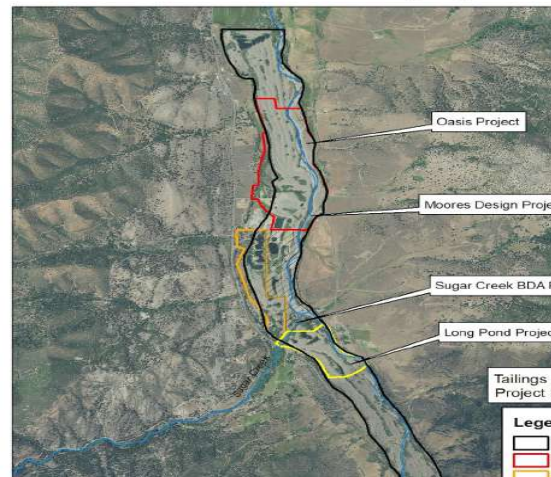
**Legend**

- ⊗ WSE Station
- Temperature Station
- ▲ Dissolved Oxygen Station
- PIT Array
- (E) BDA - 2021
- (E) BDA - 2014 & 2017
- Beaver Dam
- Stream





Scott River Tailings Streamflow and Ecological Restoration Planning Project



Sugar Creek Floodplain Restoration - Pre and Post Construction Ortho Photos



Pre Construction



Post Construction





## *Protection for Future Generations of Beaver Believers– Beaver Haven*

In the spring of 2022, one of SRWC's dreams became a reality. One of the most intact ecological properties in the valley came up for sale. Partnering with beaver allies, Bettina Von Hagen and Brian Kirkpatrick, a purchase was made with the goal of SRWC raising enough money to make a final purchase, retiring development rights, and making this property an outdoor classroom for our local youth. This 11-acre property has both beaver and Coho, a fully intact riparian area, and the coveted, perennial Sugar Creek running directly through it.

In the coming year, the Coho Enhancement Fund (CEF) will fund work to begin the construction of an access trail that will be created as a walking trail to help gain viewing locations of beaver and Coho activity. We will also construct beaver dam analogs and wood jams for the primary and secondary channels to provide some channel roughness and complexity. The hope is to have students from Southern Oregon University and Cal Poly-Humboldt use this site for research projects and along with a place to tour for professional and community groups.

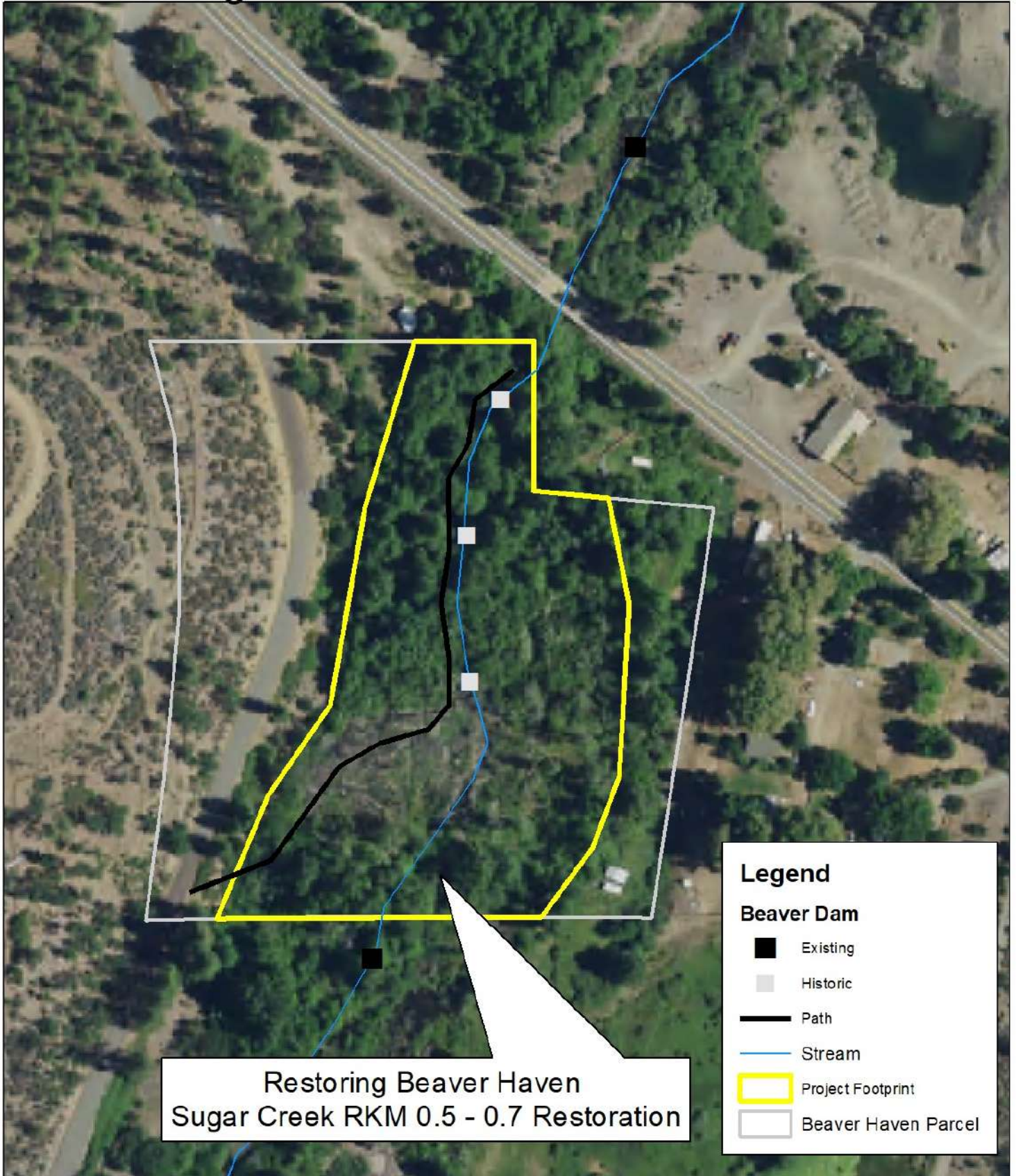
For anyone who would like to help protect this property for all future generations, we most welcome your beaver bucks.

[Click here to donate today.](#)



Wonderful drone photo was taken by Joey Howard,  
Cascade Stream Solutions on November 3, 2022

# Restoring Beaver Haven Sugar Creek RKM 0.5 - 0.7 Restoration



Orthoimagery - NAIP 2020

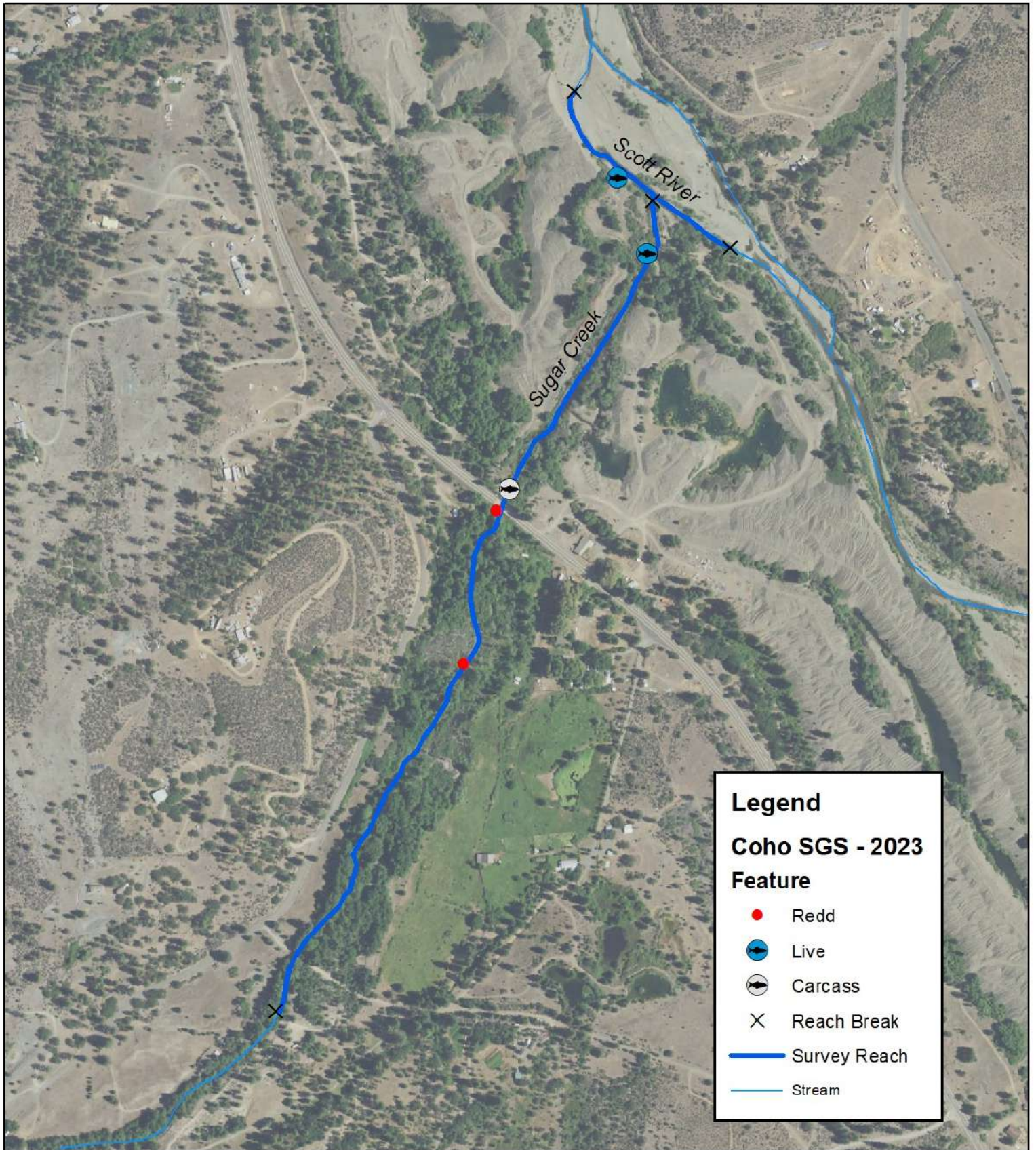


E. Yokel - 8/18/2022



0 75 150 300 Feet

# Sugar Creek - Scott River at Sugar Confluence Coho Salmon Spawning Ground Surveys - January 2023

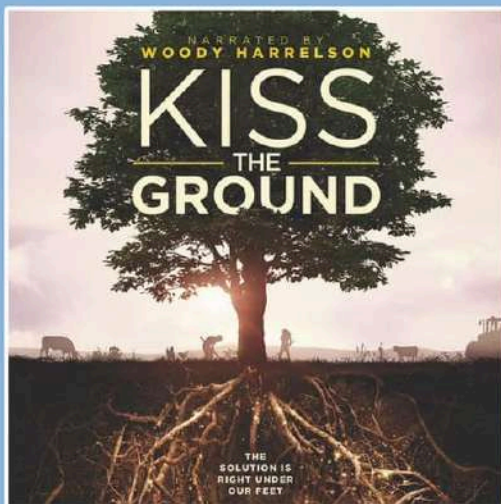




# THE AVERY

## Scott Watershed Informational Forum

February 22 - 24



2/22

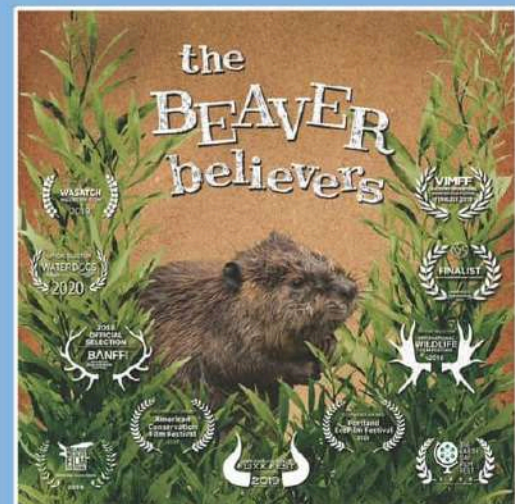
SCOTT VALLEY INFORMATIONAL  
FIELD TOURS ... "KISS THE  
GROUND" SCREENING

2/23

SCOTT WATERSHED  
INFORMATIONAL FORUM

2/24

FOREST HEALTH & RESILIENCY  
SUMMIT ... "THE BEAVER  
BELIEVERS" SCREENING



VISIT [WWW.SCOTTRIVER.ORG/SWIF](http://WWW.SCOTTRIVER.ORG/SWIF) FOR DETAILS