



*Salmon River Restoration Council 2021 Annual Report*



## News from the Watershed Center

As it did for everyone, SRRC's 2021 had its ups and downs. By the end of March, the majority of our staff were vaccinated and things were looking hopeful for a return to something closer to normal work life. We began to hold volunteer workdays and educational events again, and staff started meeting and working in-person. But by mid-summer it became clear that we weren't out of the woods yet and we had to pull back on in-person activities again. But overall, we weathered another year of the pandemic very well, keeping staff and crew employed and projects moving forward.

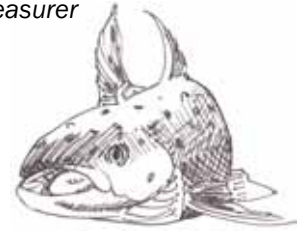
During the late summer and fall, many of our staff and our Watershed Center were once again under evacuations warnings or orders due to wildfire. In the past 8 years, the Watershed Center has been placed under evacuation 4 times. We've all learned to adapt fairly well to the inconvenience of closed roads and fire activity and we do our best to continue with business as usual. Once again our Restoration Director spent the late summer and fall deeply immersed in her role as the Salmon River Community Liaison, providing up-to-date fire information to the community and working with Incident Management Teams to assure that they were incorporating local knowledge into fire management decisions.

We had a couple of staffing changes this year. In spring of 2021 the Plants Program was fortunate to hire a new Noxious Weeds Project Coordinator, Bona Fries. Bona's perspective has greatly enhanced our noxious weeds work from her years of experience in forest restoration research, wildland fire, and youth programming to her enthusiasm for community-building. At the end of the year, our Fire, Fuels and Forestry Program Manager Brendan Twieg decided to move on from the job, and we hired Alex Varner to fill that position. Alex comes to us from the Nature Conservancy and has spent the past decade implementing more prescribed fire on their preserves in Alabama than we often dare to dream of here in the Klamath. We're super excited to have him come on board.

We feel good about the year and all that we've been able to accomplish despite the challenges. We're incredibly thankful for the support that you all have shown us during these trying times. Our fund raising drives contribute significantly towards our ability to carry out our work, and your contributions are much appreciated.

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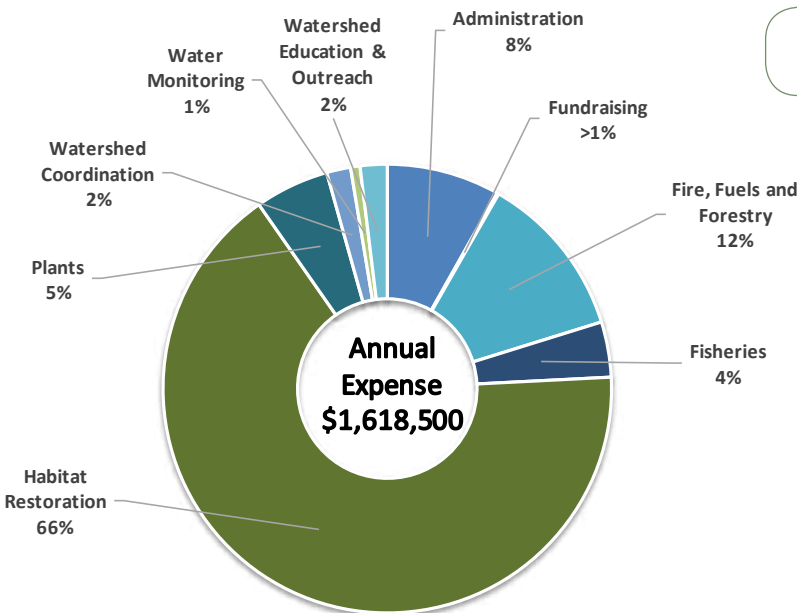


## SRRC 2021 Staff

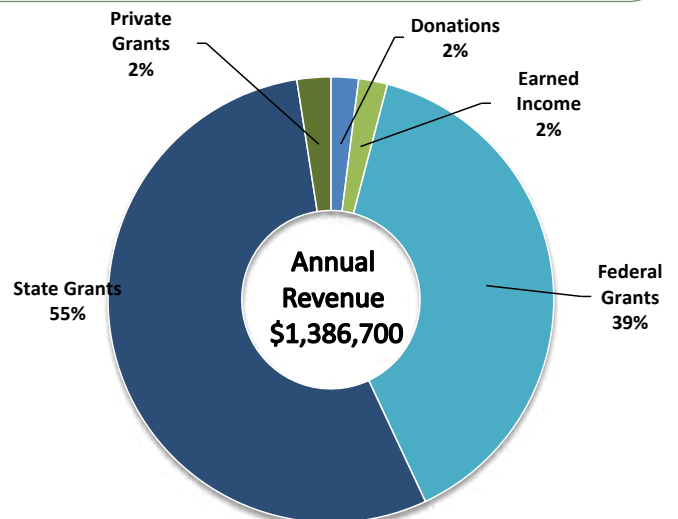
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 Bonnie Bennett, *Water Monitoring Project Coordinator*  
 Briona Fries, *Noxious Weed Project Coordinator*  
 Scott Harding, *Technical Assistant*  
 Sarah Hugdahl, *Program Staff and Outreach*  
 Brenda Hurlimann, *Bookkeeper*  
 Wind Beaver, *Watershed Center Maintenance*

## 2021 Field Crews

Andy Ayers, Bonnie Bennett, Linde Laya Cohen, Carol Cook, Sarah Hugdahl, Eric Logan, Beau Quinter, Irie Swift, John Stoa, Ren Treiber, Breanne Vargas, Sharon Victoria, Todd Whitmore and Wind Beaver



## 2021 Organizational Financials



# SRRC's 2021 Program Updates

## Fisheries Program

2021 has been a year of highs and lows. The pandemic, widespread wildfire, and drought conditions, presented major challenges for the Fisheries Program, and for



the fish. However, on June 16th the California Fish and Game Commission voted to add Upper Klamath Trinity River spring Chinook salmon to the endangered species list. This listing was based on a petition that the Karuk Tribe and SRRC submitted jointly in 2018, and the protection that Salmon River spring Chinook will enjoy as a result offered much hope as we navigated the challenges of the year.

In the spring, a severe fish disease outbreak in the Klamath River necessitated a swift start to our fish passage improvement season, in order to provide fish with access to thermal refugia as quickly as possible. SRRC worked collaboratively with the Mid Klamath Watershed Council (MKWC) to visit 57 tributary mouths throughout the Salmon River and Mid-Klamath basins to assess and improve passage and refuge opportunities for juvenile and adult salmonids. Sixty-three impediments to passage were remediated, opening up approximately 77 miles of stream to juvenile and adult fish. Crew members were pleased to observe adult Chinook holding in Knownothing and Nordheimer Creeks after passage improvement work was implemented at these creek mouths.

Six students participating in the Youth Environmental Summer Studies Program through Etna High School joined the Fisheries and Plants Programs for several days to help conduct fish passage work and noxious weeds removal. The students also learned about SRRC's restoration projects and participated in the spring Chinook cooperative dive.

SRRC was glad to welcome volunteers back to the annual spring Chinook cooperative dive event this year after a one-year hiatus from public involvement

due to COVID-19. Sadly, divers observed a distressingly small number of fish. The final count of spring Chinook including jacks was 95 - the second lowest count on record since 1990, and the 7th year in a row that the count has been below the long-term average. Summer steelhead numbers totaled 309 including half-pounders.

The fisheries crew worked with the Karuk Tribe during the spring and summer to help operate a rotary screw trap near the mouth of the Salmon River, and also conducted year-round monitoring at SRRC's restoration project sites. These surveys allow us to assess how fish are responding to restoration actions. We were happy to see juvenile Chinook making good use of the Hotelling Gulch alcove as a refuge from high flows in the spring, and from high temperatures in the summer.

SRRC collaborated with the CA Department of Fish and Wildlife, Forest Service, MKWC, and the Karuk Tribe to conduct spring and fall Chinook spawning ground surveys in the forks and mainstem of the Salmon River. With little funding available for spring Chinook surveys this year, we were especially grateful for the support of our collaborating partners. Spring Chinook surveys went smoothly considering the fire conditions, with the exception of the Wooley Creek survey which had to be cancelled due to fire activity in the Wooley Creek drainage. The Fall Chinook surveys, however, faced major disruptions due to storms and unusually high flows. For this reason, we were unfortunately not able to invite local students to participate in spawning ground surveys. Instead, students from Forks of Salmon Elementary School joined the Fisheries and Plants programs for riparian planting at Hotelling Gulch, and lessons in the salmon life cycle and survey techniques.

As always, we are so grateful to all of our volunteers, cooperators, funders, and donors, for making our work possible.

*The Fisheries Program is funded by US Fish & Wildlife Service, CA Dept of Fish & Wildlife, and the Karuk Tribe.*

## Habitat Restoration Program

This Program has grown enough to have three dedicated staff. Melissa continues to manage the program and assistants Deja and Stefan now lead a variety of program tasks. As the Plants

Program Manager, Deja leads revegetation efforts. Stefan leads engineering oversight and monitoring coordination. They both have been working for SRRC for a number of years and bring much needed skills to this program.

Due to delays from wildfires in 2020, the Hotelling Gulch Stream Restoration and Barrier Removal Project was not quite finished last year. Although we had additional wildfire delays in 2021, we managed



to complete the project and so far it is functioning beautifully. The realigned stream channel and new bridge are allowing the creek to flow freely for a much longer portion of the year, and the alcoves that we created are providing high quality rearing habitat for juvenile fish.

These restoration projects are quite complex and our year-round monitoring has been essential to helping us understand if our projects are working as planned. SRRC's post-project monitoring of both the Hotelling project and the Kelly Bar Floodplain Restoration Project revealed that they had features that could be further improved. So this summer we made some small adjustments to the streambed under the bridge at Hotelling and then headed to Kelly Bar to adjust a seasonal pond and an alcove. We are very happy with the results of these very quick treatments and will continue monitoring to see how well our adjustments go. Watching these projects evolve and adjust to the river and streams is such a rewarding part of restoration. The sites will always change and we are there to learn and adapt to the evolution as it unfolds through the years.

*Funding sources for this program include CA Dept of Fish & Wildlife, CA State Coastal Conservancy, USFS, and USFWS.*

## Plants Program

Our crews covered a lot of ground in 2021. From our routine surveys and treatments of top-priority noxious weed species on public and private lands, treatments at restoration sites, BAER surveys and exploratory surveys, to native seed collections, broadcast seeding and planting, our plants work spanned the watershed and featured more facets than ever before. Our program implemented comprehensive surveys and treatments on Italian thistle, dyer's woad, oblong spurge, yellow starthistle, Scotch broom, sulfur cinquefoil, puncturevine, Canada thistle, and spotted knapweed, among other priority species in select landscapes.

In addition to our annual surveys, this past year we embarked on exploratory surveys into the upper Little North Fork. Spurred by evidence of spotted knapweed transport by livestock, we sought to find out if the species had spread upstream. These surveys yielded one new spotted knapweed site and three new sulfur cinquefoil sites. We will return to the upper reaches next year to conduct additional surveys into terrain not yet surveyed.

Following the Red Salmon Complex of 2020, we were enlisted by Klamath National Forest to conduct Burned Area Emergency Response (BAER) surveys to detect any introduction or spread of noxious weeds within the fire management footprint. Crews took to the hills and surveyed roadways, dozer and handlines, and even conducted an overnight wilderness backpacking survey from High Point to Hotelling Ridge. Re-treatments of historic sites went well and overall there were few notable invasive species impacts from the mixed-severity fire in 2020.

Our native plant materials work incorporated seed

*Our Plants Program is funded by the National Forest Foundation Matching Awards Program, USFWS Partners Program, National Fish & Wildlife Foundation, USFS, Clif Bar Family Foundation and MKWC. Our work would not be possible without the experience, acumen, and dedication of our staff, crew, and community volunteers.*

Speaking of monitoring, we are seeing positive impacts from these restoration projects. At the Kelly Bar project, the fisheries crew saw one+ (yearling) Chinook in the project area this summer. Seeing Chinook that age and at that time of year, means they are spring-run and that they are using the project year-round. This just makes our hearts glow! These fish are so imperiled and everything we can do to help them is very rewarding. Additionally, our fisheries crew saw the alcove at the mouth of Hotelling Gulch, which we enhanced last year, packed full of juvenile salmonids. The enhanced mouth is like a big bathtub, with cold spring water from the gulch filling it. It has become a real haven for many young fish in that reach of the river during hot summer months.

Our other major projects continue to move forward. We completed designs to restore the lower reach of Nordheimer Creek. The Red Bank Floodplain Restoration Project is moving forward and we recently received news that it has been selected for funding. We plan to implement this project in 2023. This will be our largest and most complex project to date! The Windler Floodplain Restoration Project is currently in the design phase and the environmental compliance process is underway.



collections, broadcast seeding, and plug and container plantings across noxious weed sites and habitat restoration sites. In 2021 a total of 3.64 pounds of seed were collected from 20 native forbs, grasses, shrubs, sedges, and rushes. Fruitwood Nursery grew out a selection of six native species for plug planting at our sites. A total of four noxious weed sites were broadcast seeded and planted with plugs. Additionally, the Kelly Bar and Hotelling restoration sites were planted with plugs and container plants from regional nurseries.

The Mid Klamath Watershed Council (MKWC) and SRRC co-lead the collaborative Klamath Alliance for Regional Invasive Species. This group is currently drafting a regional strategy to manage invasive species within the unique context of the Klamath mountains. The strategy will highlight successful non-chemical treatment methodologies and successful outcomes demonstrated by regional partners, capture fire effects on invasive species, incorporate revegetation tools and resources, as well as encompass the management of forest pathogens as invasive species of concern. We are grateful to deepen our partnerships and for the support from regional collaborators in the cooperative management of invasive species.

# Water Monitoring Program

As usual, life on the Salmon River presented a variety of complications to be overcome in 2021. Pandemic logistics made coordination and field work more challenging than normal, and then a late July lightning storm sparked multiple fires that put most of the monitoring sites into active fire zones! Despite the challenges, we

still managed to deploy data loggers at all of our 38 temperature monitoring sites. We started flow measurements at all 14 sites in June due to low flow conditions and finished in October before the rains. It was important to document flows this year due to the continued low water drought conditions.

The Monitoring Program continued to do pre- and post-restoration monitoring on our recently implemented and upcoming habitat restoration projects. The Kelly Bar Habitat Enhancement Project monitoring has been going well. The groundwater fed off-channel pond maintained reasonable ranges of temperature and dissolved oxygen despite the high air temperatures. DO levels did drop as the water temps increased but the fish had plenty of cover, food and habitat so they continued to survive and grow despite that factor. The groundwater fed alcove on the west bar of the project area continued to be directly connected to the North Fork all summer and consistently had cooler water with healthy juveniles using the enhanced space.

The Hotelling Stream Restoration project provided huge benefits this summer! The alcove at the mouth of the creek, which was fed by hyporheic flow from the creek channel, provided much needed cool water for chinook that were stressed by consistent 25°C water temps from early July through August. This cold seep water was consistently 8-10°C colder than the South Fork. Although the main creek channel went sub-surface through the record heatwave this summer, pools remained throughout the project area and the new channel is functioning much better than the previous channel with easy access from the river and much needed cool water rearing habitat (see photo below).

We continued to collect pre-implementation monitoring data on the Red Bank Floodplain Enhancement Project. Even in the middle of multiple drought and high heat years, the existing back channel has groundwater fed pools that stay cool throughout the summer. This summer it peaked at 13°C while the main river nearby peaked at 25°C and was above 20°C for much of the summer months. We look forward to enhancing it to provide year round fish habitat.

Windler Bar Floodplain Enhancement project is a complex and extensive project in the early stages of development. We monitored ground water wells, river levels and temperature zones to assist the design process. This project will restore another area of the North Fork to further connect the habitat provided by the other projects already implemented and in the works.



July 13, 2021 Hotelling Creek, South Fork Salmon River Air temperature 38°C (100.4°F)

The Monitoring Program was funded by CA Dept of Fish & Wildlife Service, US Fish & Wildlife Service and SRRC's general fund.



## Fire, Fuels, & Forestry Program

A brutal heatwave followed by massive fires and oppressive smoke dominated our lives this summer and fall. This year may have set the local heat record, measuring in at a sweltering 112.5° F on June 27th in Forks of Salmon, and it certainly set the heatwave record for the entire region. We experienced an early

heatwave in May with temperatures reaching into the triple digits, followed by a slight cooling and then another heatwave with over 36 days in the triple digits between June 16th and July 31st. The extreme, seemingly endless heatwave (lasting over 6 weeks) included only 5 days below 95°F, and 13 days under 100°F. The average daily max temperature in July was 101.7°F!

This set the stage for an explosive fire season, and right on cue a large lightning storm thundered through the Salmon Mountains on July 31st setting over 30 fires and quickly overwhelming our local USFS and CalFIRE fire resources. While the vast majority of the fire starts were brought under control, the Summer, Haypress, Cronan (the River Complex), and McCash fires escaped initial suppression. All told these four fires burned over 114,000 acres within the Salmon River watershed. Nearly one quarter (23.8%) of the watershed burned in 2021. Our Community Liaison Program was in full swing for the second year in a row, working with fire teams and community members daily as a conduit for current fire information to the community and local data to fire teams. There were multiple near misses this year,



and sadly the Coffee Creek community saw devastating losses in a strong northeast wind event which burned over 30 homes.

Between smoke, emergency fire preparedness actions, Community Liaison activities, and long term fire planning, we didn't have a lot of bandwidth for on-the-ground fuels reduction efforts this year. Our Upper South Fork fuels reduction and oak woodland restoration project was put on hold while the three properties in the project were surrounded and partially inundated by wildfire and suppression efforts. We did get a few projects completed. We finished the last acres of fuels reduction in a strategic fuel break along the north side of Godfrey Ranch

that ties into strategic firelines put in during the 2020 River Complex, preparing this area for future prescribed fire. We also got over 50 acres of piles burned at Butler Flat, Godfrey Ranch and Finley Camp. Two SRR staff participated in the 2021 Klamath TREX (Prescribed Fire Training Exchange), getting valuable training in prescribed fire application.

The main focus of our program this year was on completing the new Salmon River Community Wildfire Protection Plan. This was a massive

effort that was hampered by COVID and two years of extensive fires, making community and agency engagement on the project difficult. Additionally, the first Western Klamath Restoration Partnership project within the Salmon River watershed, the Ixariyatuuuyship (Offield) Project continued in its planning stage, with many field trips to better understand the breadth of the complex project and work on developing preliminary prescriptions and best management practices.

*Fire, Fuels, & Forestry Program funding came from the USFS, USFWS Partners Program, Cal FIRE, CA Fire Safe Council, Karuk Tribe, MKWC, Bower Foundation, and Coalitions and Collaborations' AIM Program.*

## Watershed Education Program

This year's Watershed Ed Program activities were again impacted by COVID-19 restrictions, but were still able to provide a number of in-person science lessons, watershed science field trips, and STEM based homework activities for approximately 20 local students.

The Watershed Ed field trips provided a great way for our youth to visit familiar locations along their river corridor in a new capacity. The field trips gave students the opportunity to become familiar with the insects, fish, plants, and cultural and ecological resources that are so important to their individual, collective and spiritual health. Students visited the Hotelling Gulch Stream Restoration project site to learn about this newly implemented stream restoration and fish barrier removal project and plant/seed native plants in the disturbed areas. They took a water monitoring field trip to Merrill Creek to learn about monitoring stream



temperature and flow and do macroinvertebrate observation and ID. Students also identified 3 juvenile coho in the mouth of the creek. On Earth Day, students, instructors and family members visited a Scotch broom site on the lower Salmon and identified and removed invasive plants, wrote in their nature journals, did a scavenger hunt and learned Karuk language names of animals and plants.

Although students were unable to get out on fall Chinook spawning surveys due to cancellations for bad weather and high flows, we had Karuk Tribe fisheries biologists do 2 in person fisheries lessons with them. They brought live fish into the classroom and taught students about fish ID and life history. Other in-person lessons at Junction Elementary focused on the school garden, nature trail and nature journaling. The Forks of Salmon students received STEM based homework projects consisting of nature journaling, rain gauge/weather monitoring, and science kits for building robotics.

We were also able to offer the Klamath Salmon Outdoor Camp summer program for younger children in the community. Kids gathered at Nordheimer Campground for 4 field days in July where they learned about fire, fish, water and wildlife and had the opportunity to play and learn together in the outdoors.

*Watershed Ed. Program is funded by the Ford Family Foundation, Patagonia Environmental Grants and USFWS.*

# Thank You Volunteers, Members, Donors & Funders!



## 2021 Members, Donors and Funders:

*Spring Chinook Donors* - Bedrock Sandals' Nick Pence & Dan Opalacz, Jeff Brown, Richard Bruce, Jon Grunbaum, Ethan Guerra, Daniel & Eva Krall, Nick & Marilyn Letsos, Ed & Marcia Nute, Pacific Watershed Associates' Danny Hagans, Mahaj & Cedar Seeger

*Green Sturgeon Donors* - Frank Berry, Mary Ciavonne & John Ziegler, Elaine & Don Dvorak, Tesilya Hanauer & Brad Stanford, Larry Lestelle, Mike Love & Associates, Jacob McIntire, Ken Miller, Brian Price

*Coho Donors* - Denise Bearding, Donna Brucker & David Jacques, Waylen Brucker, Jeff Buchin, Philip Carl, Tom Carlson & Jennifer Sowerwine, Frank Colver, Don Comstock, Karen & Dean Davis, Susan Duncan, Jacquelyn Dyer, Don Elder, Jud Ellinwood & Andrea Webb, Yvonne Everett, David & Christina Everson, John Fingerle, Carl & Marie Flarity, Don Flickinger & Jennifer Silveira, Rosemary Fuhrmann, Charnna Gilmore, Dennis Grady, Geba Greenberg & Petey Brucker, Dan Grunbaum, Jo & Philip Guasco, Lynn Halpern, Creek & Betty Ann Hanauer, Theresa & Ken Harris, Ron Haug, Cassandra Hensher, Andy Kaul & Pamela Berman, Curtis Kinchen, Klamath River Lodge, Efremer Korngold & Harriet Beinfeld, Glenn Kubaki, Earl & Trace Landberg, Neal Latt & Karen Pawlyk, Gene Millburn & Jan Kieth, Anna & Anthony Miles Smith, Bobbi Miller, Yeschi Neumann, Myanna Nielsen & Richard Cormier, Don & Margery Osterhoudt, Liz & Jody Pullen, Francene & James Rizza, Steve Robinson, Salmon River Outpost, Sandy Bar Ranch, Jessica Savage, Galena Seeger & Lincoln Else, Sobol family, Alan & Sala Steinbach, Tom Stoa, Strothe family, Kristy & Peter Sturges, Michael Tierra, Dee Tolson, Milagra Tyler, Jackson Vanfleet-Brown, Edna Watson, Maya Williams

*Fall Chinook Donors* - Eli Asarian, Tim Ba, Backcountry Press, Nancy Bailey, Ben Beaver, Paula Bristol, Leslie Burkhart, Clayton Creager, Janjaap Dekker, Fran Forim, Karuna Greenberg, Will Harling, Mary Huffman, Jim & Suzanne Jennings, Linda & Les Libow, Nathan McCanne, Rachel Neumann, Felice Pace, Bob Pagliuoco, Doug Parkinson, Pam Rentz, Ethan & Trea Robinson, Kate Rowe, Michael Seeber, Kenny Suave, Christine Young & Daniel Kambitsch Trust

*Winter Steelhead Donors* - Craig Bunas, Jason Clarke, Sarah Colvig, Bill Condon & Judy McDowell, Alan & Clara Crockett, Ralph Del Pino, Jamelle Dube, Gail Feldman, Briona Fries, Robert Gale & Sarah Coleman, Charles Gillingham, Caitlin Gilroy, Jan Harding, Bill House & Allison Blackwell, Marla Knight, Ken Liberman, Bill Meadows, Jessie Olson, Ahni & Kit Robinson, Betsy Stapleton, Sam Stroich, Dave Sunoo & Beth Truso, Terry & Karin Swanson, Roberta & Richard Van De Water

*Other Donors include* - Stephen Joslin, Fred Mindlin, Deanne Prchal

*2021 Funders* - Bigfoot Trail Alliance, Bower Charitable Foundation, CA Coastal Conservancy, CA Dept. of Fish & Wildlife, CA FSC Grants Clearinghouse, Clif Bar Family Foundation, Coalitions & Collaboratives Inc., Firedoll Foundation, Ford Family Foundation, Karuk Tribe, Mid Klamath Watershed Council, National Fish & Wildlife Foundation, National Forest Foundation, Patagonia Environmental Grants, Sidney Stern Memorial Trust, US Fish & Wildlife Service, US Forest Service, and the Wild Salmon Center



Salmon River Restoration Council  
PO Box 1089 • 25631 Sawyers Bar RD  
Sawyers Bar, California 96027  
530-462-4665 Fax 530-462-4664  
e-mail: [Info@srrc.org](mailto:Info@srrc.org)  
website: [www.srrc.org](http://www.srrc.org)

## *Address Service Requested*

### *2021 Major Accomplishments*

**S**uccessfully petitioning the State of California to list spring Chinook salmon under the state Endangered Species Act. This year only 95 spring Chinook returned to the Salmon River, making it the second-lowest count on record and the seventh consecutive year with critically low populations.

**C**ontrolling 17 species of invasive weeds without using any herbicides. We work on more than 550 weed-infested sites spread across the entire watershed. In 2021, we focused on surveying burned areas and wilderness boundaries to prevent the spread of weeds into sensitive areas.

**R**educing wildfire risk on over 75 acres of private properties in the watershed by thinning small-diameter trees and brush and burning piles to protect communities, restore wildlife habitat, and create more fire resilient forests. In addition, we completed a new Community Wildfire Protection Plan to help guide future fire and fuels activities.

