Summer 2015

the current

abundant wild fish · healthy waters · better California

CALIFORNIA TROUT
FISH · WATER · PEOPLE

Sierra Meadows Restoration

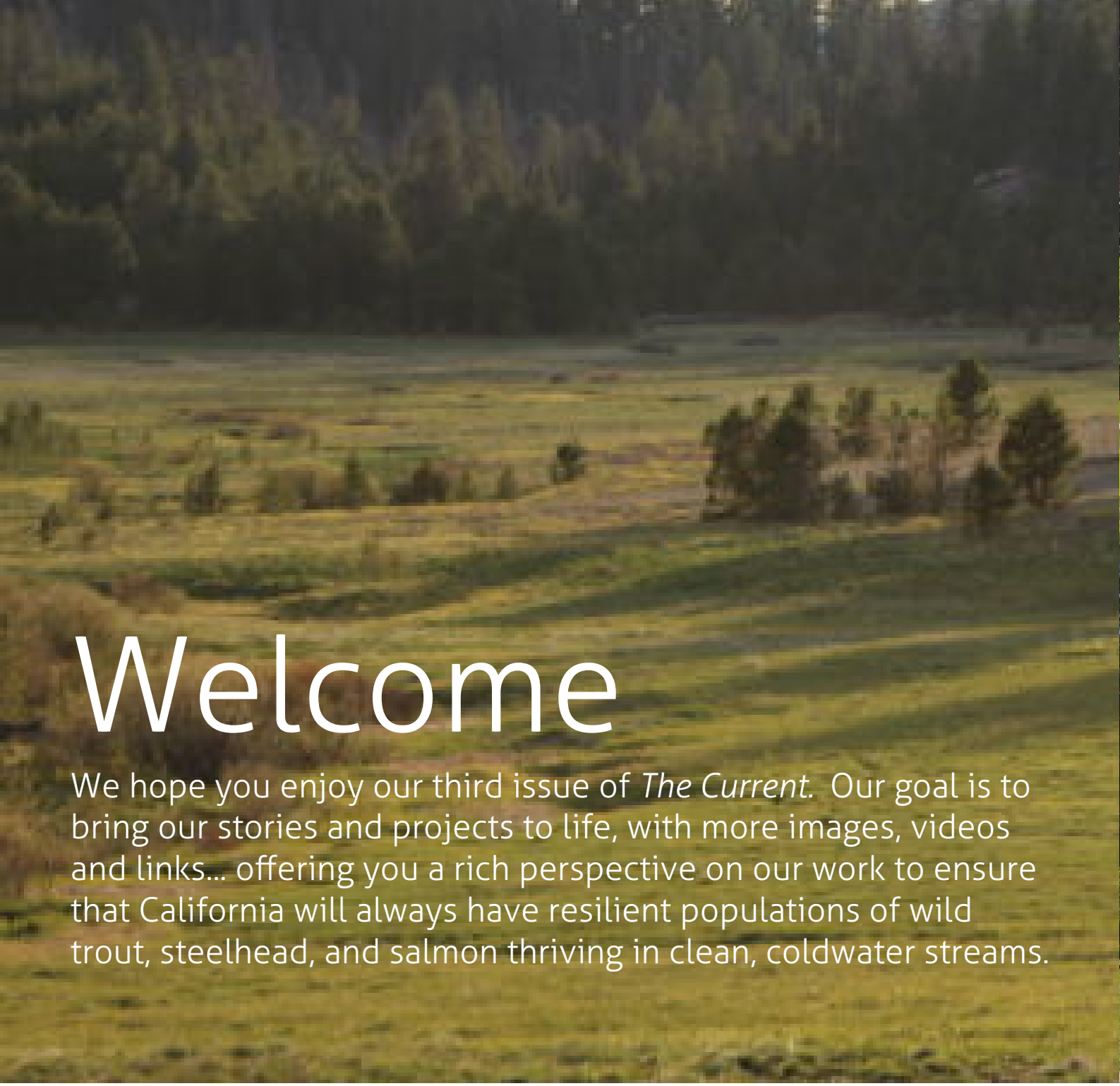
Creating greater ecological resilience to a changing climate

SMITH RIVER ALLIANCE

Partners in restoring a legacy

FISH PASSAGE IN SOCAL

Tackling the Harvey Diversion

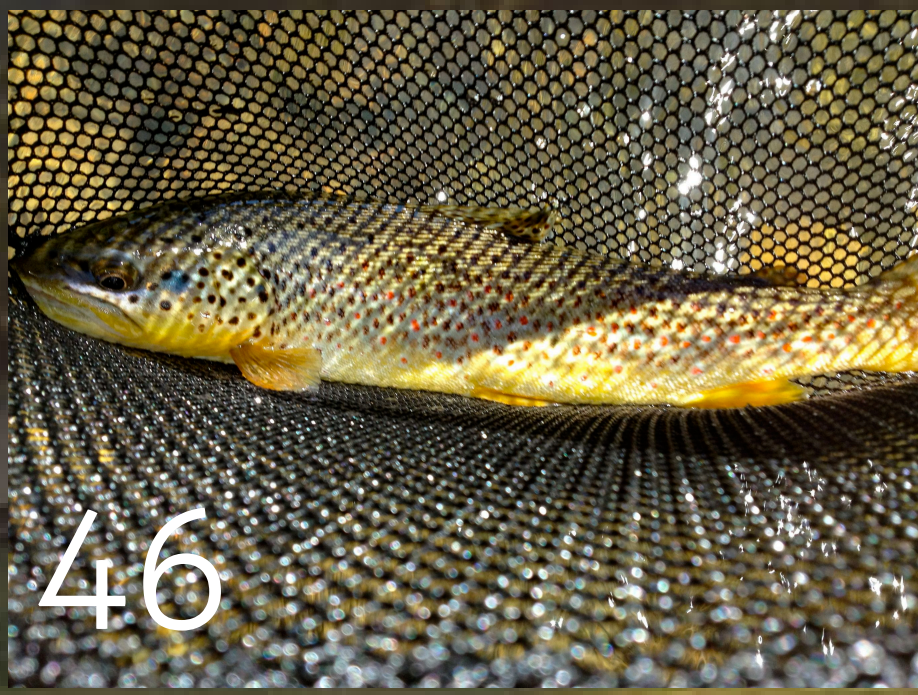


Welcome

We hope you enjoy our third issue of *The Current*. Our goal is to bring our stories and projects to life, with more images, videos and links... offering you a rich perspective on our work to ensure that California will always have resilient populations of wild trout, steelhead, and salmon thriving in clean, coldwater streams.

FEATURE

PROJECTS



REFLECTIONS

REGULARS

VIDEOS

Who We Are

IN THE SPOTLIGHT

MIKE WIER *Outreach and Fly Fishing Ambassador*

Growing up in the Sierra Foothills, Mikey was always close to nature. Spending much of his time at the lakes and rivers, he learned to fish and tie flies at a young age. After moving to Lake,Tahoe, he began to split his time betwee snowboarding in the winters and fly fishing in the summers. Mikey spent 15 seasons fishing and guiding the waters of the Truckee, Carson, and Walker rivers and surrounding waters. In 2001, he started BURL Productions specializing in adventure and outdoor films. Mikey has been with CalTrout since 2013 helping to raise awareness for the organizaiton and connect with communities throughout the state. Mikey is also an ambassador for Patagonia Fly-Fishing, Dragon Eyewear, Loon Outdoors, Galvan Reels and Outcast boats.

Central Office Staff

Executive Director
Curtis Knight cknight@caltrout.org

Finance & Administration Director
Alan Roesberry aroesberry@caltrout.org

Membership Manager
Tony Van Houten tvanhouten@caltrout.org

Development/Institutional Giving
Gaby Roff
groff@caltrout.org

Grants Manager
Melissa Racklyeft mracklyeft@caltrout.org

Development/Individual Giving
Lisa Clarke
lclarke@caltrout.org

Marketing
Tracey Diaz
tdiaz@caltrout.org

Fly Fishing & Community Outreach
Mike Wier
mwier@caltrout.org

Fly Fishing Ambassador
Craig Ballenger craig@craigballenger.com

Friends & Partners

Governors
Doug Ballinger, Chair
Linda Rosenberg Ach
Gary Arabian
Andrew Bassak
Tony Brookfield
Andy Eckert
Bill Epstein
Dick Galland
Nick Graves
Rick Kaufman
Tom Larsen
Laureston McLellan
Stephen Rogers
Bob Rosenberg
Scott Tucker
Alan Vidinsky
Richard West
Jeff Williams
Jerome Yesavage, MD

Emeritus Governors

Conservation Staff

Mt. Shasta/Klamath

Drew Braugh
dbraugh@caltrout.org

Meadow Fitton
mfitton@caltrout.org

North Coast

Darren Mierau
dmierau@caltrout.org

Mary Burke
mburke@caltrout.org

Sierra Headwaters

Mark Drew, PhD
mdrew@caltrout.org

Central California

Jacob Katz, PhD
jkatz@caltrout.org

Southern California

Sandra Jacobson, PhD
sjacobson@caltrout.org

Candice Meneghin
cmeneghin@caltrout.org

Roy Crawford
Nicholas Di Croce
Craig Fusaro, PhD
Bill Hooper
Richard May
Frank Pipgras
Joel Scheinberg
John Slezak
Will Trefry

Academic/Science Partners

UC Davis, Center for Watershed Sciences
Dr. Peter Moyle
Dr. Jeff Mount
Dr. Jay Lund
Carson Jeffres
Dr. Rob Lusardi, Leader, CalTrout/UC Davis Wild Fish Partnership

Humbolt State
Dr. Walt Duffy
Dr. Bill Trush

University Nevada-Reno
Dr. Sudeep Chandra

UC Santa Barbara
Dr. Tom Dudley

Strategic/Legal Advisors
Jeff Thompson, Business Strategy Advisor
Conservation Strategy Group
LFJ Strategies
Water Power & Law Group, Richard Roos Collins
Shute, Mihaly & Weinberg
Manatt, Phelps & Phillips

Sacramento Advocacy Consultants
Environmental and Energy Consulting (EEC)
Conservation and Natural Resources Group (CNRG)

Contact us

360 Pine St., 4th Floor
San Francisco, CA 94104
(415) 392-8887
info@caltrout.org
Visit us on the web:
caltrout.org

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of wild fish and people. We do this because i
healthy waters and healthy wa

Watch this video and learn more about what we do and why

s complex resource issues while balancing the needs
t's our belief that abundant wild fish indicate
aters mean a better California.

we do it. Then visit caltrout.org to support the organization.

Sierra Meadows Re

Creating greater ecological resilience to a chang

By FRANK ELDREDGE and MARK DREW, Ph.D.

Frank is a 26-year member of CalTrout and contributing writer to The Current. Mark is CalTrout's Sierra Headwaters Director.

What if the benefits of restoring a Sierra meadow to full health included the recovery of native flora and fauna, more reliable water supplies for farmers and urban users, and significant reductions in greenhouse gases that are the leading cause of climate change? California Trout and several partners are trying to do just that by embarking on an innovative collaboration to determine whether healthy, functioning meadows are more effective at capturing greenhouse gases than degraded meadows.

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In short, CalTrout and partners of a new **Sierra Meadows Research and Restoration Partnership (SMRRP)** will quantify greenhouse gas benefits that result from meadow restorations throughout the Sierra Nevada. If the initial restoration projects demonstrate a strong correlation between improved meadow health and carbon storage capacity, CalTrout and its partners plan to utilize the findings to improve meadow restoration practices and thereby create enhanced resiliency to the impacts of climate change more broadly across the Sierra Nevada and southern Cascades as part of the state's strategy to battle global warming.

This new and promising phase of meadow restoration work arose out of a Sierra Meadow Business Plan created by the National Fish and Wildlife Foundation (NFWF), which established a program to advance meadow restoration for the benefit of fish and wildlife.

40 to 60% of Meadows are Degraded

Several years ago, conversations began among a broad coalition of environmental groups, academic institutions, and government agencies that were all working to address the challenges of restoring Sierra meadows, an urgent issue given that **40 to 60% of the range's meadows are considered degraded.** However, up until more recently, there was a paucity of coordination amongst those involved. The breakthrough came in February of 2014 during a workshop in Calistoga where members decided to come together to leverage their collective expertise and align work on restoring meadows. Last autumn, this coordination resulted in a suite of proposals being submitted to develop a standard quantification protocol for measuring greenhouse gas dynamics and apply this protocol to meadow restoration projects throughout the region.

Four of the proposals were awarded grants from the California Department of Fish and Wildlife (DFW) to apply this new research and restoration approach to Sierra meadows. The DFW funding comes from California's Greenhouse Gas Reduction Fund, which is supported by the state's cap-and-trade auction proceeds. Two additional Sierra meadow projects were also funded that center on quantifying carbon sequestration.

Collectively, the body of work from all of the funded projects will inform the scientific understanding of greenhouse gas dynamics in meadows throughout the region.

CalTrout's own piece of this funding was a $922,000 grant to support its work in formalizing the quantification protocol for the partnership, carrying out restoration work at Osa Meadow in the Kern River drainage, and collecting and analyzing data. CalTrout will work with partners and a core science team to develop a predictive model that will then be used to develop a more cost-effective and efficient protocol for measuring greenhouse gases in meadows. Another key goal is to eventually establish carbon credits that can be sold to generate long-term funding for meadow restoration and management.

Dr. Mark Drew, Director of the Sierra Headwaters Program with CalTrout, sees this as an exciting new chapter in meadow restoration work. "We have a tremendous opportunity, collectively and through CalTrout's leading role in the partnership, to accelerate and coordinate our restoration work while dramatically increasing our scientific understanding of meadow systems."

The Importance of Healthy Meadows

Sierra Nevada headwaters provide roughly 60% of California's water supply, are home to the majority of California's inland native trout species, and are critical to supporting local and downstream economic livelihoods. However, Sierra Nevada headwater areas are also one of the most degraded regions throughout this vast landscape, threatening California's way of life. California's future and wellbeing depends on healthy headwaters, particularly given the uncertainty associated with a changing climate.

As Mark says, "Meadows are critical not only to the ecosystem, but they are also a key component of California's water infrastructure. Restoring meadows to their ecological health will in turn benefit California's water supply and quality for all."

In a degraded meadow, the hydrologic dynamics have been altered in a way that often lowers the water table and disconnects the stream from the meadow's flood plain. Over time, the meadow dries out leading to changes in vegetation, soil composition, and organic matter, as well as negative impacts to the aquatic environment critical to fish. The case for meadow restoration is fairly straightforward: by restoring the meadow you improve

its ability to store, filter, and release water more gradually, and the improved hydrologic functioning of the meadow results in higher quality soil that is more efficient at storing carbon.

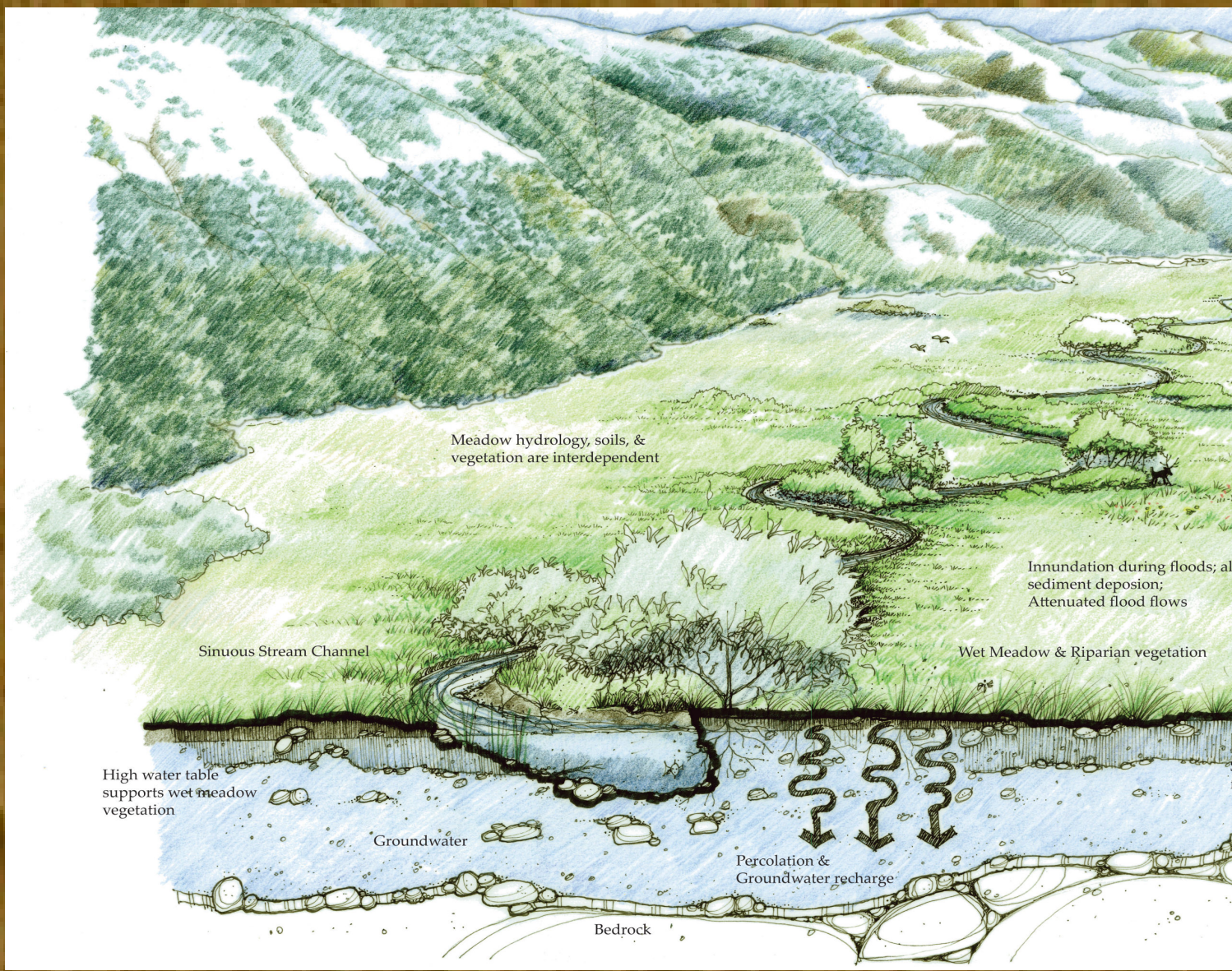
One of the primary goals of this work is to **demonstrate that restored meadows are able to store more carbon than degraded meadows,** and then convert this sequestered carbon into credits that can be traded on California's cap-and-trade market. In the ideal scenario, the credits will be turned into funding to restore additional meadows, thus creating a self-sustaining cycle that would result in broader restoration of meadows across the Sierra and southern Cascades. The reality is that there are dozens of meadows that are considered prime candidates for restoration.

One way to frame the importance of this work is to consider its potential to help alleviate two of our state's most pressing environmental challenges: global warming and the drought. With projections of climate change showing that more Sierra precipitation will come in the form of rain rather than snow, the ability of meadows to store and release water efficiently will become even more critical to our state's water supply.

MEADOWS

Everyone benefits from meadow restoration: flora and fauna, fi
people. That is a fairly unique situation in the environmental re
Everyone should be able to get behind this work and move us f
conversation centered on who wins and who loses from enviro
stewardship to a recognition that we all can benefit."

- Mark Drew, Sierra Headwaters Director



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Curtis Knight, CalTrout's Executive Director, offered this perspective: "With this project, our organization is taking its first step into the larger arena of addressing climate change, the most complex ecological problem of our time."

Although the science of how a restored meadow is better at storing carbon is very new, there are some early studies that point to large potential benefits. For example, a Feather River watershed study showed that restoring meadows could provide a one-time increase in below ground carbon stores by 110 to 220 CO2e tons per acre over a 2 to 10 year post-restoration period (Wilcox et al. unpublished project results 2009). These carbon sequestration numbers are very large and comparable to estimated rates of CO2e sequestration reported for Delta fresh water wetlands and redwood forests (Miller et al. 2008, Miller et al. 2011, Knox et al. 2014).

The initial four projects, including CalTrout's project at Osa Meadow, will follow the same research design in terms of applying the greenhouse gas protocol to evaluate how meadows located in different geographical settings respond to restoration practices. Each project will compare and measure differences between the restored meadow and a control meadow that is in a degraded state. Another goal is to compare the results from these two meadows in each study to a "reference" meadow that is fully functioning and not in need of restoration.

As Mark explains, "We will be able to measure the marginal differences between functioning, degraded, and restored meadows over a period of four years, which is the length of the initial projects. We will be able to see if we are getting closer (in the case of a restored meadow) over time to the reference meadow."

(*continued on page 56)*

Overcoming Div

By CANDICE MENEGHIN
Coalition Coordinator

Candice comes to CalTrout all the way from South Africa where she studied and worked on ratural resource and coastal and marine management. She's been with CalTrout since 2012 working as the Santa Clara River Steelhead Coalition Coordinator.

Restoration to Promote Recovery of Southern Calif

Santa Paula Creek and its tributary Sisar Creek, together host the most productive steelhead habitat in the entire Santa Clara River watershed (Stoecker and Kelley, 2005). It is imperative that fish have access to this spawning and rearing habitat for the population numbers to improve. The Santa Clara River watershed is not only important on a local level as a Core 1 watershed in the Monte Arido Highlands Biogeograpic Population Group (BPG), but was named the Southern California regional Salmonid Stronghold for Southern California steelhead (O. mykiss) by the Wild Salmon Center (National Marine Fisheries Service, 2012).

The Harvey Diversion Fish Passage Restoration Project is located 3.6 miles upstream of the confluence of Santa Paula Creek and the Santa Clara River, north of the city of Santa Paula, alongside Highway 150. The California

ersions

ornia Steelhead in the Santa Clara River Watershed

Department of Fish and Wildlife's Passage Assessment Database lists the diversion as a complete fish passage barrier.

While diversion of water from Santa Paula Creek for agricultural purposes began as early as 1860, the current Harvey Diversion was built in 1910. Over time, the scouring effect of falling water caused the elevation of the creek bed below the Diversion to decline significantly. A concrete and steel, 23 foot "jump box" fish ladder was attached to the Diversion. It was originally constructed in 1939, rebuilt in 1950, and then completely rebuilt as a reinforced concrete fish ladder in 2000. As the creek has continued to erode downstream of the diversion structure, additional steel jump boxes have been added on the downstream end of the ladder. Storms, erosion and sediment have continued to add to the problem.

Fixing the Problem

Since 2005, the California Department of Fish and Wildlife (CDFW) service through its Fisheries Restoration Grant Program (FRGP), in conjunction with the Santa Paula Creek Fish Ladder Joint Powers Authority and National Marine Fisheries Service (NMFS), have been studying the Santa Paula Creek watershed. A team of consultants and scientists, after extensive investigation, identified five passage alternatives ranging from no action to complete removal of the Diversion. The Diversion persists to limit access to 38.85 miles of prime steelhead habitat. As a result, this is a priority project of the Santa Clara River Steelhead Coalition, to which CalTrout is the chair.

Harvey Diversion Fish Passage Restoration Project

In April 2014, CalTrout was awarded two grants to construct the Harvey Diversion Fish Passage Restoration project. This pilot project is a scaled down version of the recommended alternative to partially remove the Diversion and mechanically stabilize the canyon reach. It is intended to meet

the immediate need of stream restoration to restore fish passage to the existing fish ladder while permitting and funding are being secured for Phase II. The pilot project is a crucial step as the construction and monitoring of the project can be used to resolve outstanding issues and concerns associated with elements of the long-term recommended solution. As there have been unsuccessful attempts in the past, it is important to veryify the design on a small scale before investing substantially in the larger project.

The pilot project will be designed to stabilize and restore approximately 900 feet downstream of the Diversion structure. The final design and construction is intended to elevate the grade of the existing streambed to the elevation of the existing concrete and steel fish ladder, and provide valuable information into the design and construction of the larger recommended project. CalTrout believes the project will meet an immediate need, but also inform the correct long-term solution.

Preparing to Get the Project Off the Ground

CalTrout's, Candice Meneghin, has been working with CDFW, NMFS, USFWS, Frank B. & Associates, RBF Consulting, Stillwater Sciences, and funders to secure permits, access, contractors, funding, and develop Revegetation Plans with the project slated for implementation mid-September, 2015.

Santa Clara River watershed in home to some 47 species of special status and/or concern. While this project is focused on steelhead recovery, it should not negatively affect other species. During site visits, California Red Legged Frog (RLF) habitat was identified by U.S. Fish and Wildlife. Project

This project is vital to the recovery of the endangered Southern California Steelhead.

To donate to this project CLICK HERE

proponents decided RLF protocol surveys were needed to inform whether RLF's are indeed present, and how that would impact construction. CalTrout is contracting with consultants to conduct a series of RLF surveys. The total cost of the project is estimated at $586k. CalTrout has secured approximately $250k from the Santa Clara River Trustee Council (CDFW and USFWS are the two Trustees on the Council, formed following an oil pipeline spill in 1994) and $140K from CDFW's Oil Spill Response and Prevention (OSPR) unit. **CalTrout is currently seeking the balance of $196k from potential match sources and donors.**

Legislation Update

With the state facing one of the worst droughts in its history, our f
programs that preserve habitat for aquatic species and protect wa
has been involved in both legislative and Resource Agency actions
focusing not only on weathering the drought but also on climate c
California's watersheds. We're currently focusing on the following

Expenditure of Prop 1 (Water Bond) Funds

Governor Brown has made it a priority to expedite the expenditure of the $7.5 billion in Water Bond funding passed by the voters last fall. CalTrout has provided comments on draft guidelines for funds that will be expended by the Wildlife Conservation Board and the California Department of Fish and Wildlife, encouraging the continued use of the best available science and engagement with landowners as part of the grant process.

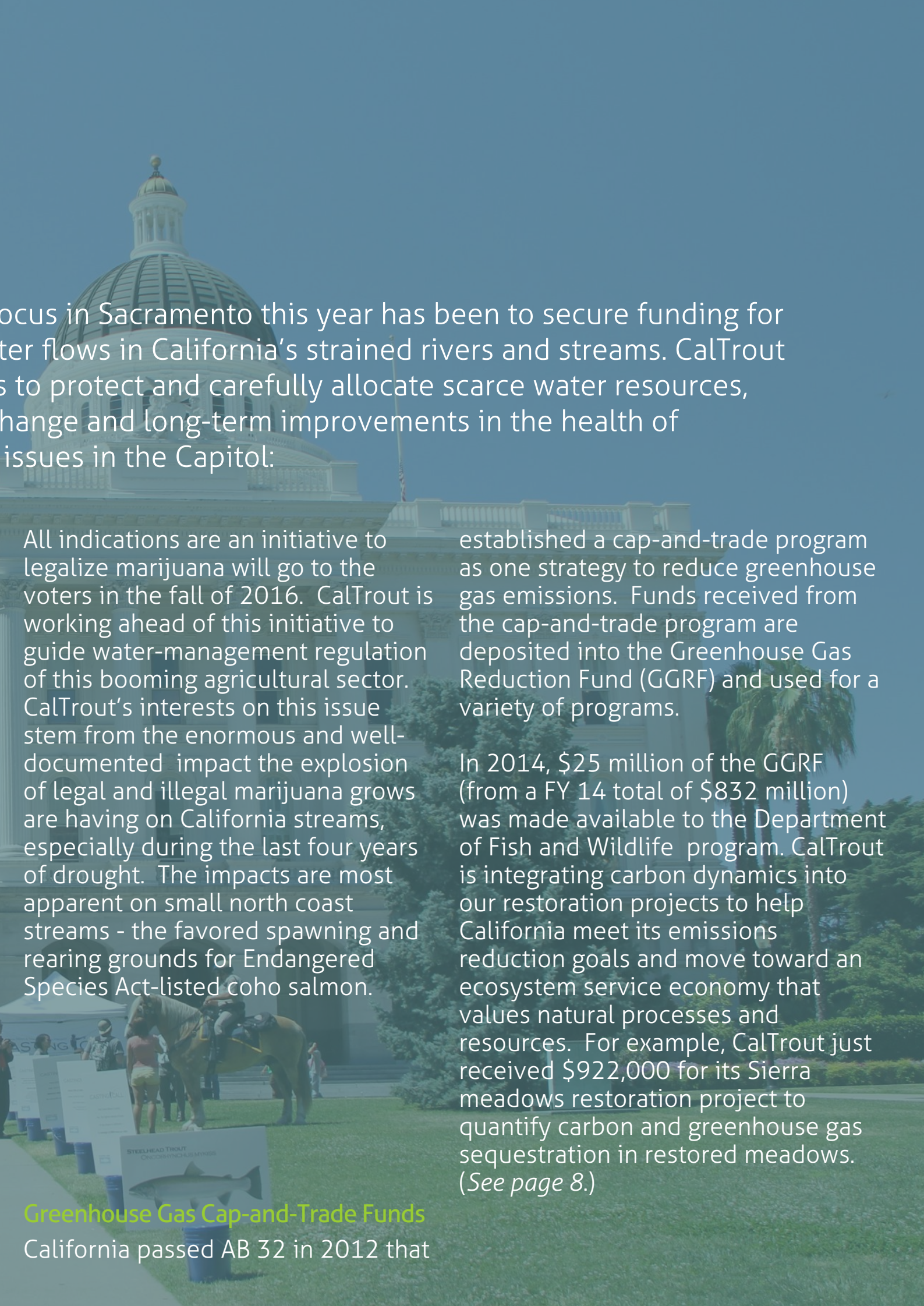
CA State Budget

Every year, CalTrout works to ensure funding through the state budget for aquatic species and habitat protection. This year, we are advocating for funding from the cap-and-trade auction proceeds to fund fisheries, wetlands, and watershed restoration. In April, CalTrout was awarded $922,000 from cap-and-trade dollars to develop a protocol for measuring net carbon sequestration from restoration of Eastern Sierra meadows.

Marijuana Legislation; Regulating Impacts to Streamflow

ocus in Sacramento this year has been to secure funding for ter flows in California's strained rivers and streams. CalTrout s to protect and carefully allocate scarce water resources, hange and long-term improvements in the health of issues in the Capitol:

All indications are an initiative to legalize marijuana will go to the voters in the fall of 2016. CalTrout is working ahead of this initiative to guide water-management regulation of this booming agricultural sector. CalTrout's interests on this issue stem from the enormous and well-documented impact the explosion of legal and illegal marijuana grows are having on California streams, especially during the last four years of drought. The impacts are most apparent on small north coast streams - the favored spawning and rearing grounds for Endangered Species Act-listed coho salmon.



Greenhouse Gas Cap-and-Trade Funds

California passed AB 32 in 2012 that established a cap-and-trade program as one strategy to reduce greenhouse gas emissions. Funds received from the cap-and-trade program are deposited into the Greenhouse Gas Reduction Fund (GGRF) and used for a variety of programs.

In 2014, $25 million of the GGRF (from a FY 14 total of $832 million) was made available to the Department of Fish and Wildlife program. CalTrout is integrating carbon dynamics into our restoration projects to help California meet its emissions reduction goals and move toward an ecosystem service economy that values natural processes and resources. For example, CalTrout just received $922,000 for its Sierra meadows restoration project to quantify carbon and greenhouse gas sequestration in restored meadows. (*See page 8.*)

Bills CalTrout supports and is actively working on:

AB 243 (Wood) Medical Marijuana Cultivation

CalTrout supports this bill to assess a fee on the cultivation of medical marijuana. We are actively working on legislative language to direct some of the fee money to mitigate for the impacts of medical marijuana grows on streamflow and riparian habitats.

SB 643 (McGuire) Medical Marijuana

CalTrout supports this bill to establish the Bureau of Medical Marijuana Regulation with the power to issue marijuana cultivation licenses, permits, and penalties. The license, penalty, and permitting process would raise funds to regulate the marijuana cultivation industry and fund other activities like law enforcement. CalTrout is working to include environmental restoration in the activities that could be funded by the license and permitting fee.

SB 788 (McGu… Protection Act

CalTrout provi… support for Ca… Protection Act… will not only p… Marine Protect… also help the s… greenhouse ga… targets and he… Governor in hi… reduce fossil f… consumption … The bill closes… allows oil drill… Protected Area…

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SB 317 (De Leon) State Parks Bond

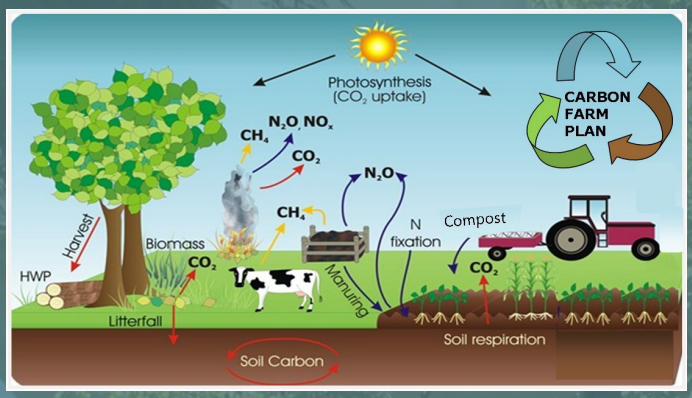
CalTrout strongly supports this legislation, which would put a bond on the 2016 ballot to fund open space and parks projects in California. The bond currently includes $370,000,000 for rivers, lakes, and streams, $350,000,000 for coastal watersheds, estuaries, and ocean ecosystems, and $280,000,000 for climate resilience. This parks bond gives Californians an opportunity to provide emergency funding for ecological systems that are in danger due to drought and climate change.

Gas Reduction Fund – Biomass Plants

CalTrout supports this bill by Asm. Dahle to allow for the use of Greenhouse Gas Reduction Fund to maintain biomass electric generation plants. This bill would allow for the use of funds to help cover the costs of forest thinning to feed biomass plants, encouraging better forest management to restore watersheds, protect sensitive habitats and reduce the threat of wildfire.

AB 1205 (Gomez) CalRiver

CalTrout supports this bill, which establishes a CalRIVER grant program at the Natural Resource Agency for eligible applicants to develop projects on or adjacent to riparian corridors that assist the state in implementing its greenhouse gas reduction goals. Restoring urban rivers to their natural state can help provide healthier water systems, resulting in more percolation of rainwater into groundwater aquifers and more drought-resilient ecosystems for fish and wildlife.



AB 761 (Levine) Carbon Farming

CalTrout supports this bill, which requires the Department of Food and Agriculture to establish a grant program to fund voluntary projects that increase carbon sequestration and greenhouse gas emissions reductions on working lands. Farmers and ranchers are realizing the need to make their land more resistant to drought and changing climate patterns. Practices like riparian restoration, compost application, and cover cropping, can increase the water-holding capacity of soils on working lands while also improving watersheds and stream conditions. Improving the water-holding capacity of soils prevents pesticide and pollutant runoff to rivers and streams.

(Image: Intergovernmental Panel on Climate Change)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waters mean a better California. We're committed to a better Calif
the state will always have resilient populations of wild trout, steelh
thriving in clean, coldwater streams.

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PARTNER PROFILE

Protecting California's Last Wild River

By Grant Werschkull and Patty McCleary, Executive Director Team, Smith River Alliance

The Smith River Alliance Executive Team of Grant Werschkull and Patty McCleary each have decades of experience from senior management positions with The Nature Conservancy, Trust for Public Land, Land Trust Alliance, private sector consulting , Washington Water Trust, and the Sierra Club.

The Smith River Alliance (SRA) and California Trout have been partners since 1980 in the protection of the Smith River – California's only completely undammed river system and the state's premier salmon stronghold. For decades, SRA and CalTrout have been raising the bar to achieve the best protection possible for this gem of California rivers.

The Smith's wild and strong runs of salmon and steelhead exemplify CalTrout's core belief that abundant wild fish are the key indicator of healthy waters. A few of the many actions taken by CalTrout, SRA and others over the years to safeguard this California jewel include:

- Securing designation of 325 miles in the National Wild and Scenic River System, one of the longest stretches of any river.
- Leading a project that established the 460+ square mile Smith River

National Recreation Area. This was in response to the threat of strip mines in the basin and as a way to improve protection of forest land under U.S. Forest Service management.

SMITH RIVER ALLIANCE

The SRA Team includes three full-time staff and twelve part-time and seasonal field biologists and professionals supported by an average annual budget of $950,000. In the last 15 years SRA has been a key partner or lead in the acquisition and permanent protection of over 40,000 acres of land and secured over $7. 8 million in watershed restoration grants.

Nickel Mine Threat

But, due to political realities at the time, 45,000 acres of the North Fork Smith River basin in Oregon was left out of the SRNRA, and now, 25 years after the defeat of one nickel strip mine proposal in the Smith basin, Red Flat Nickel Corporation has launched an effort to mine the unprotected headwaters of the North Fork Smith.

The proposed mine area is drained by Baldface Creek, a North Fork Smith tributary that is a known hotspot for endangered wild coho salmon, Chinook salmon, and steelhead. All of Baldface Creek's tributaries were found eligible for addition to the National Wild and Scenic River System in 1994. The watershed is located in the South Kalmiopsis Roadless Area, which was recommended for Wilderness status by the Bush Administration.

Hardrock mining — including strip mining — is the largest source of toxic

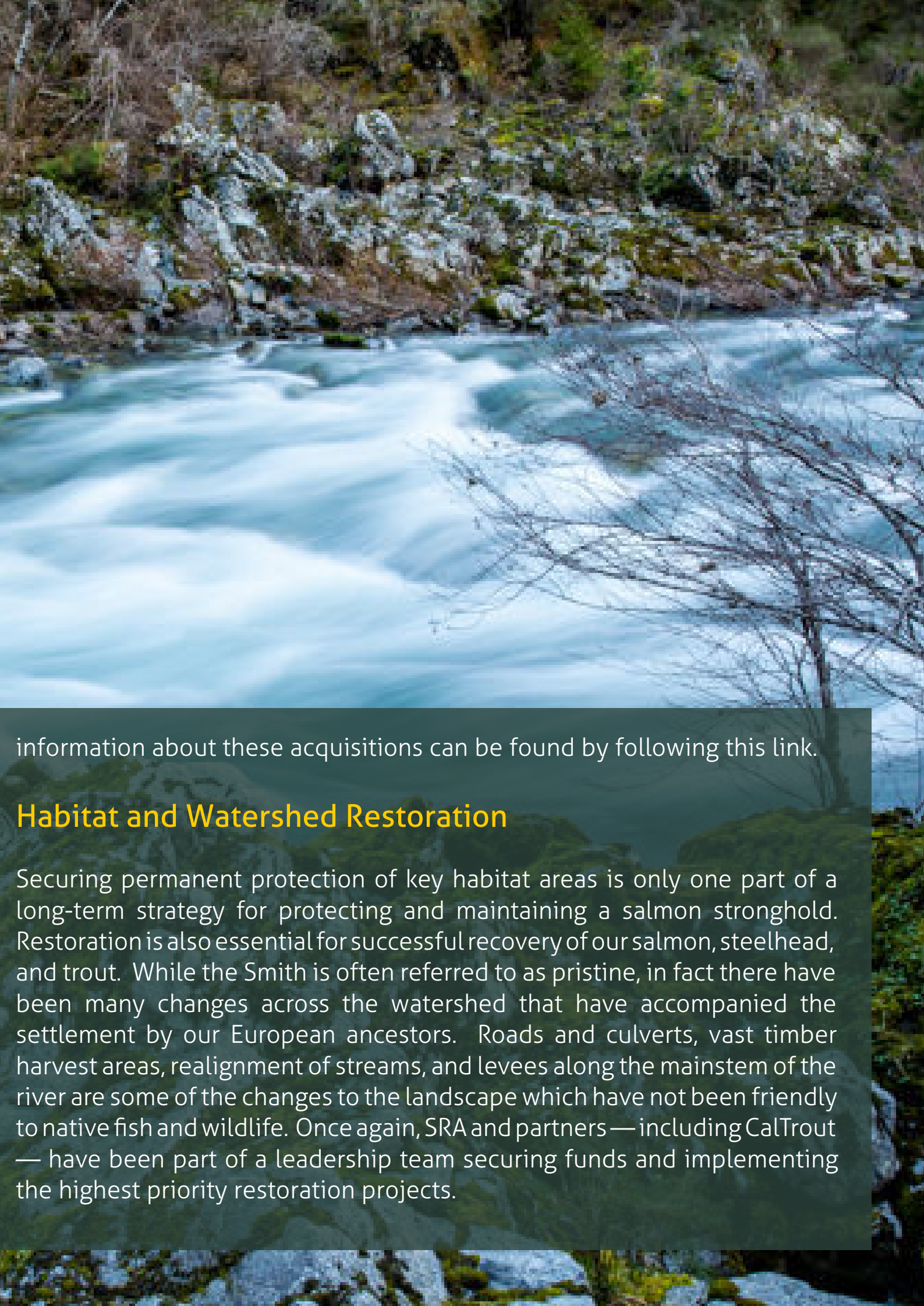
pollution in the United States, according to the U.S. EPA. "Locating a strip mine in the headwaters of the wild and scenic Smith River is like putting ice cubes made with toxic waste in your favorite drink," said Werschkull in a 2014 San Francisco Chronicle story detailing the mining proposal.

A broad coalition of organizations including SRA and CalTrout are fighting these mining proposals on multiple fronts --- and we've been effective at raising awareness to the threat. Earlier this year, State Senator Mike McGuire introduced legislation urging federal action to safeguard the unprotected portions of the Smith River, which passed the senate and is awaiting a vote by the assembly. **"Any future mining activities will unnecessarily put the people and wildlife that rely on the Smith River at risk and would create irreversible impacts to the entire watershed,"** Senator McGuire said in a statement about the legislation.

SRA Work Goes Well Beyond Just Fighting Mines

During the last 15 years, the SRA/CalTrout team has been a key partner or lead in the permanent protection of over 40,000 acres of important habitat and land in the watershed. In 2002, SRA worked with Save The Redwoods League to purchase and transfer 25,000 acres of the Mill Creek watershed — long recognized as the core-production tributary for Smith River salmon — into Del Norte Coast Redwoods State Park.

Protection of Mill Creek was followed in 2008 by the purchase and transfer into the SRNRA of 9,500 acres of the Goose Creek basin, another critically important tributary for salmonids that drains over seven percent of the Smith River watershed. From 2003 to present, SRA has worked with a private timber company to acquire the last remaining large private inholding in the SRNRA ---- the 5,400 acre Hurdygurdy Creek property. This property includes 4,400 acres in the watershed of Hurdygurdy Creek, providing prime spawning and rearing habitat for salmon, steelhead and coastal cutthroat trout. More



information about these acquisitions can be found by following this link.

Habitat and Watershed Restoration

Securing permanent protection of key habitat areas is only one part of a long-term strategy for protecting and maintaining a salmon stronghold. Restoration is also essential for successful recovery of our salmon, steelhead, and trout. While the Smith is often referred to as pristine, in fact there have been many changes across the watershed that have accompanied the settlement by our European ancestors. Roads and culverts, vast timber harvest areas, realignment of streams, and levees along the mainstem of the river are some of the changes to the landscape which have not been friendly to native fish and wildlife. Once again, SRA and partners — including CalTrout — have been part of a leadership team securing funds and implementing the highest priority restoration projects.

One such project is Cedar Creek Fish Passage Restoration which removed a culvert that blocked the migration of every life stage of salmon and trout, and replaced it with a bridge.

At Mill Creek, which is now designated by DFW as a life-cycle monitoring station, SRA has secured over $7m for habitat and watershed restoration projects over the last 10 years. A 2015-16 project will remove a salmon and trout blocking culvert on Hamilton Creek, a tributary to the West Branch of Mill Creek.

Science and Monitoring

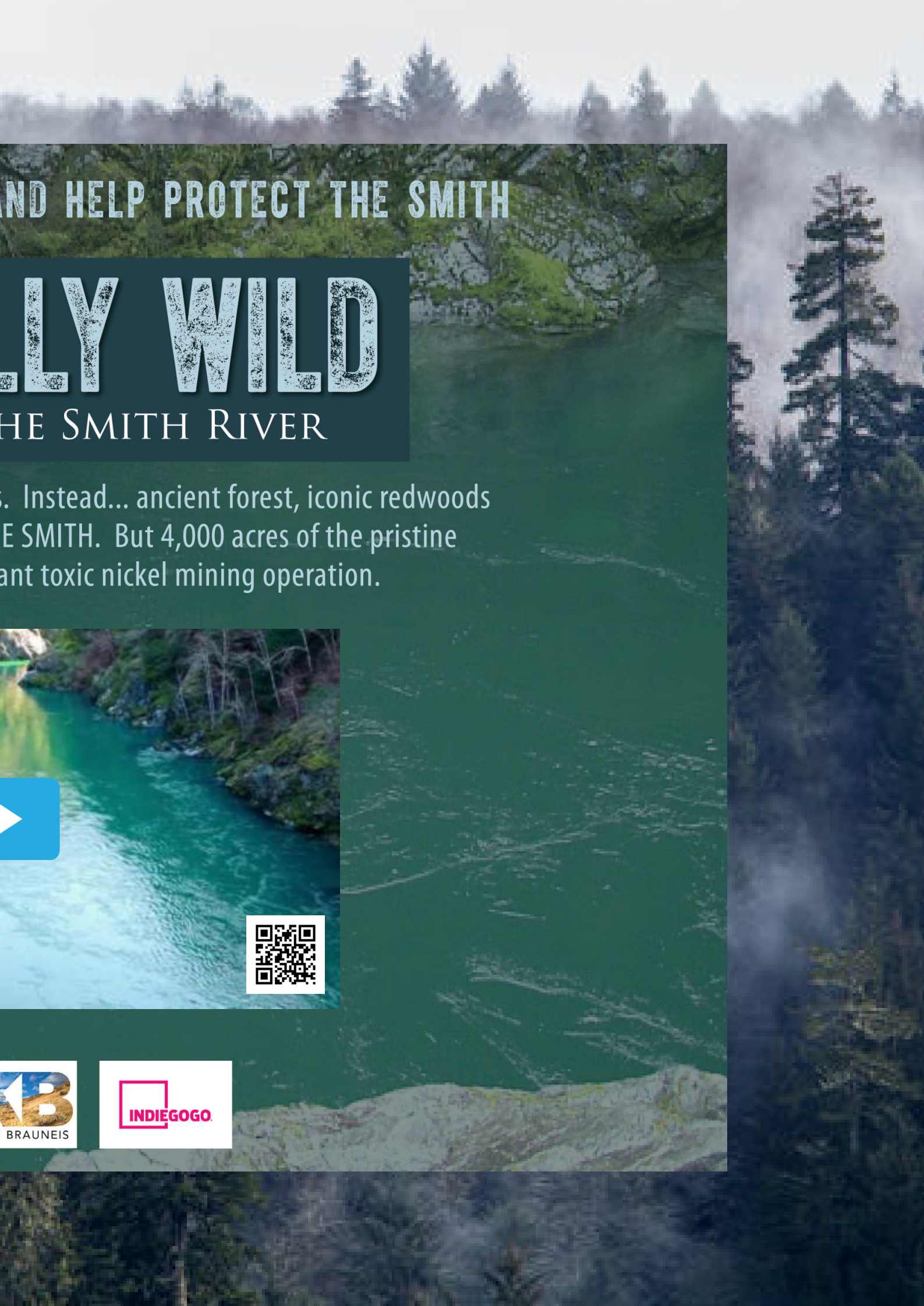
SRA is partnered with the Department of Fish and Wildlife (DFW) on a *Reconnaissance of Salmonid Redd Abundance and Juvenile Salmonid Spatial Structure in the Smith River with Emphasis on Coho Salmon*. Restoration is guided by good science, and this study provides important data on adult abundance and habitat utilization by juveniles -- critical information in identifying factors limiting the recovery of salmonids. An annual summer fish count on the Smith River invites the community to take part in citizen science and appreciate the river at Rock Creek Ranch, SRA's off-the-grid facility on the South Fork Smith that hosts youth camps, community education programs, and retreats.

Research on the relationship between structures built by beavers and salmonids was launched by SRA in 2014, providing new insight on how rearing coho salmon utilize beaver habitat.

Partnering for Salmon Stronghold

In 1980, CalTrout provided important start-up funding for SRA and a partnership was born. Teamwork, persistence, and hard work has been a successful recipe for securing improved protection for the watershed --- and with a strip mine looming in the headwaters, this teamwork is now more important than ever.


PLEASE SUPPORT THIS FILM A
ETERNAL
A FILM ABOUT TI
Here there are no dams, no clear-cut blocks
and a powerful symbol of freedom – TH
North Fork are threatened by a gia
CALIFORNIA TROUT
KEITH


ND HELP PROTECT THE SMITH
LY WILD
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. Instead... ancient forest, iconic redwoods
E SMITH. But 4,000 acres of the pristine
ant toxic nickel mining operation.
BRAUNEIS
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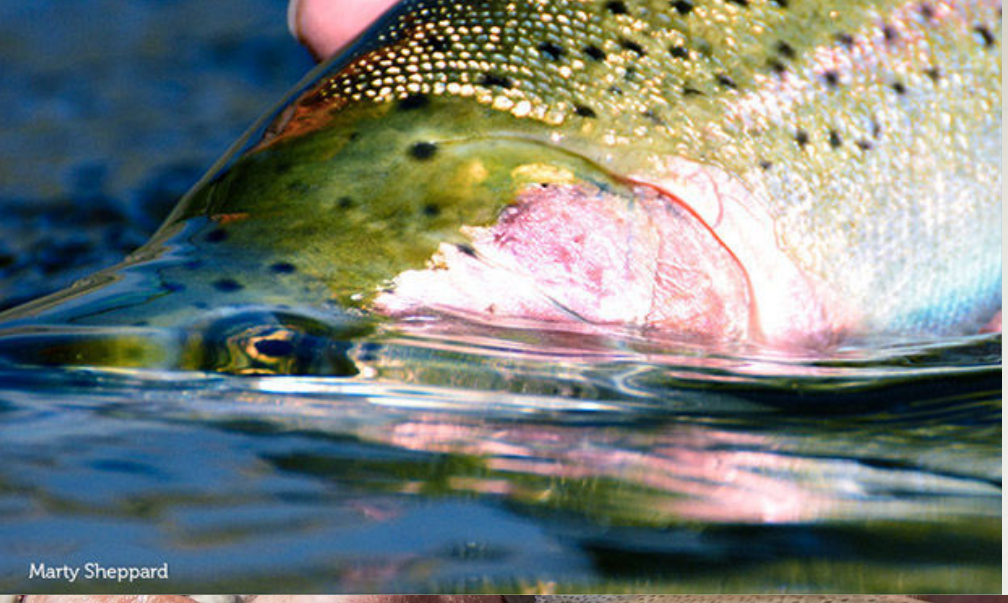

Keep 'Em Wet refers to keeping your catch underwater. Research shows that prolonged exposure to air greatly reduces a trout, salmon or steelheads ability to recover after a fight and severely reduces productivity at spawning.

While we have all been guilty of those big, grip and grin hero shots, CalTrout is making an effort to promote keeping your catch wet. We suggest you try new creative camera angles to showcase the beauty or size of your catch without hoisting them up onto the bank or lifting them up into the air for a prolonged period.

Wet gills equal future thrills! Show your support, get a CalTrout Keep 'Em Wet sweatshirt.

Buy a CalTrout sweatshirt for $50

For some suggestions on photo angles and techniques check out the Native Fish Society's Keep 'Em Wet photo contest.

Craig's Corner

by Craig Ballenger, CalTrout Ambassador

As trout and drought are on anglers' minds this summer, two questions always arise. The first is, 'How long will it last?" And second, "What is the real story of drought in the past?"

What the weather holds for the future is as reasonable as...well...predicting the weather. As my dad used to say, "only a fool or a newcomer would try to predict the weather around here." However, meteorologist's models suggest a wet future is expected. The weak link though, is climate change and whether wet in what they call 'the new normal,' will increase snow pack.

The past does illuminate facts of California's previous droughts. One occurred during the late 1970's and lasted into the 1980's. Mono Lake, that peculiar piece of water beneath Mount Dana in the eastern Sierra, has much to tell us about past climate. A walk along the shore reveals ancient 'bathtub' rings and a time when the lake was larger. On the other hand, while the lake was drawn down during the Rush Creek water diversion (over which Caltrout, et al, sued LA Water and Power), juniper stumps appeared along the then dry shoreline. In the past, droughts have occurred for a long enough period of time for these tenacious conifers to grow. When these stumps, hundred of years old, were analyzed, dendrachronology (the study of tree rings) showed two droughts lasting over 100 years, from around 900 AD to 1000 AD and another from 1150 AD to 1300 AD. These have been named megadroughts, and no researcher is putting our current drought in that category.

New terms, as I've used above, have now become part of a Californian's vernacular: Climate Change, The New Normal, Megadrought, and Ground Water Depletion. Unfortunately, during the two droughts of the 20th century, once the drought was over, the view has been,' back to business as usual.' While all experts I've spoken with agree that California can adapt and live with less water, changes are looming. For a revealing look at water, see *Last Call at the Oasis*, a documentary available on Netflix.

CalTrout is helping to solve California's complex resource issues while balancing the needs of people and wild fish. Proceeds from the sale of our gear go towards this effort.

Baseball hat $22
One size - khaki or navy

CalTrout logo t-shirt $25
Women's & Youth sizes available

Men's retro t- $25

CALTROUT GE

All these items and more are available to buy on our website, caltro


CALIFORNIA REPUBLIC
CALIFORNIA REPUBLIC
Sale
California Republic t-shirt
Women's sizes available
$25
California Trout 1971
shirt
CALIFORNIA TROUT
KEEPER OF THE STREAM
Water bottle
Stainless steel
$10
CALIFORNIA TROUT
Trucker hat
One size
$25
EAR
out.org

Spot Check

by Mikey Weir

Independence Lake

Independence Lake is a hidden gem in the high sierra and a great option to beat the heat this summer. There's not too many places left in California where you can catch native trout in a pristine setting that are accessible by road.

Nestled in the mountains at just under 7,000 feet elevation, the lake's water keeps cold and clear all year long. Independence Lake is located between the towns of Truckee and Sierraville off the hwy 89 corridor. It's roughly a 20 minute drive via dirt road off the main highway.
The lake holds one of only two native wild lake-based populations of Lahontan Cutthroat Trout left in California.

This, the fact that it's a holdi
pristine drinking water for t
among other factors, led to
the Nature Conservancy in
This purchase will help ensu
undeveloped and pristine fo

Lahontan Cutthroat are nativ
in good numbers and size. Th
brook trout and some brown
regulations call for only barb
All Cutthroat must be relea
keep five Kokanee, brook or
eradicate, or at least knock
that were introduced in the

ng lake for some of the most
he Truckee River watershed,
the purchase of the lake by
2010 from Nevada Energy.
ure that the lake will remain
or generations to come.

e to the lake and still abound
ere are also Kokanee salmon,
trout left in the lake. Fishing
less hooks and artificial lures.
sed but you are allowed to
brown trout. The goal is to
back, these invasive species
early 1900's to create less

competition for the native cutthroat. Anglers are not allowed to fish in any of the tributaries flowing in or out or within 300 feet of the mouth of any tributaries leading into or out of the lake. These regulations are in place to protect the spawning LCT. In the spring this is a great place to observe spawning Cutthroat Trout. Anglers are not the only ones these spawning fish attract. Bears, eagles, osprey and other wildlife target these fish and can often be seen doing so.

(continued on page 56)

Photo courtesy of The Nature Conservancy Nevada Chapter

ART HAU, San Anselmo, CA: *'Green Creek Brown.'*

REFLECTIONS

MIKE WIER, South Lake Tahoe, CA: *'Silver Lake Golde*

n Light'

MIKE WIER, South Lake Tahoe, CA: *'Lahontan Cutthroa*

t hide and seek.'

ART HAU, San Anselmo, CA: *'Art and Sparky East Boul*

der Lake'

CALTROUT VIDEO VAULT

CALIFORNIA TROUT = FISH, WATER, PEOPLE

California Trout is working to ensure resilient populations of wild fish in clean, coldwater streams for a better future of California. Take a moment, watch this video and learn about what inspres

LAHONTAN CUTTHROAT TROUT

of the Walker Basin

FLY FISHING IS A JOKE

The Weekly Fly: This film comments on the nature of fly fishing and the difference between observation and experience.

TROUT FLY FISHING - SIERRA NEVADA

From Red Truck Fly Rods and Leland Fly Fishing

Sierra Meadows *continued from page 14*

Osa Meadows Project

In the case of Osa Meadow, which is located at the headwaters of the Kern River at 8,000 feet elevation in Sequoia National Forest, CalTrout began its work in late May by sending a small team to initiate the process of gathering baseline data that will inform the project's research design. Over time, in addition to greenhouse gas measurements, the team will be collecting data for a broad set of metrics, including water flows, ground water levels, water temperatures, and other data.

The plan calls for restoring 25 acres of Osa Meadow and stream to reverse the effects of historical seasonal grazing of sheep and cattle, forest fires, and timber encroachment on the meadow. If all goes well, the restoration work will commence later in the summer and take about a month to complete; this is anticipated to be a one-time effort that will put Osa Meadow back on a path to a healthy, functioning condition. One of the beneficiaries of this work will be the Kern River rainbow trout, which has traditionally inhabited the meadow's stream.

A similar process will be followed on the other projects, with data being sent to partner universities (UC Merced, in the case of Osa Meadow data) for greenhouse gas data analysis. All of the meadows offer some different characteristics such as elevation and terrain, which means that the sample data set will be even richer and more broadly applicable. CalTrout and partners will collate and synthesize the data from the four projects and convene quarterly conference calls with the partners to share the latest findings. There will also be an annual in-person meeting, tentatively labeled "Calistoga II", to drill deeper on results and solidify future plans.

By establishing greater ecological resilience, meadows should be better able to withstand the evolving threats posed by global warming such as changes in precipitation patterns and increases in forest fires.

Next Steps

The funded meadow restoration projects will begin this summer, with members of the SMRRP staying in close communication and attending regular meetings to share results and lessons learned. The SMRRP provides a forum for those in meadow-related work to share information, coordinate efforts, and leverage resources to advance this work. With an open door policy, Mark envisions the partnership growing and serving as a critical body involved with meadow restoration and research efforts throughout the Sierra Nevada and southern Cascade region. According to Mark:

"What is really exciting about the growing collaboration centered on Sierra meadows is the opportunity to bring a plethora of great folks together and collectively move the needle forward."

Spot Check

Fishing the lake is best morning an
on your average summer day. The
and there are trails that circle muc
allowed to boat on the lake but y
provided by The Nature Conserv
aluminum boats, eight kayaks, i
pontoon boats on premises that y
serve basis. To protect this pristin
so many of California's lakes hav
boats are only lent out every other
your own craft or wear any felt so

Best fishing techniques vary depe
and weather. LCT are typically not
of getting a fly in front of them. I
can target rising fish with a floatin
the lake are callabeatis dries like Qu
like black ants, beetles and hopp
cover water you can troll a sinking
most leach patterns in black or p
can also work well, either under an
an intermediate or sinking line an

Independence is a true wild experi
The lake offers much more then jus
hiking and great wildlife viewing. I
on leash. Bikes are also permitted
respectful of the wildlife.

The lake is open to walk-in day u
often not maintained in the winte
from October to June some years.
you park to the lake as well. There
there's some developed camp gr
few undeveloped camp sites off t

Good luck and have fun! Keep Em

Mikey Wier

continued from page 44

d evenings. Midday can get windy
ere is great fishing from the shore
h of this 2.4 mile long lake. You're
you have to use one of the boats
vancy. There are three 14 foot
ncluding two tandem, and three
ou can borrow on a first come first
e lake from invasive species that
e now been infested with, motor
week and you cannot bring or use
led wading boots.

ending on time of year, time of day
very picky so it's usually a matter
n the mornings and evenings you
g line and dry fly. My favorites for
uigly's hackle stacker or terrestrials
ers. If it's windy or your trying to
g line with a cone head bugger or
urple work well. Drifting nymphs
indicator on a floating line or with
d a slow strip or short bumps.

ence for the intrepid outdoorsman.
st fishing. There are great trails for
Dogs are allowed on trails but only
d on some of the trails. Please be

se year round though the road is
r months and can be snowed over
There is a short walk from where
is no camping right at the lake but
ounds within the area and also a
he forest service roads near by.

n Wet!

Did you enjoy *The Current*?

Please send us your emails, photos and comments to current@caltrout.org We want to hear from you!

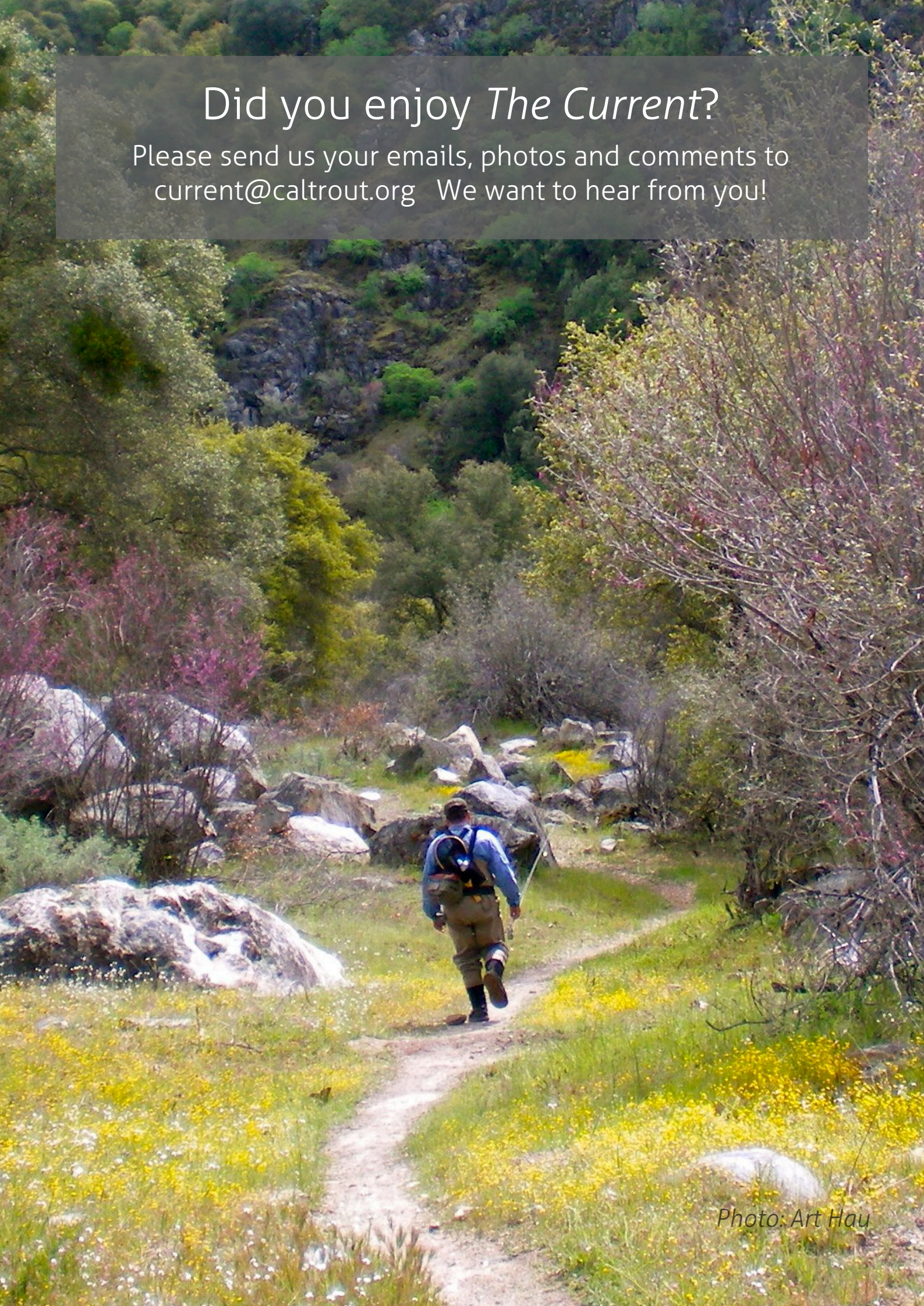

Photo: Art Hau