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Protect the Source

by Phoenix Lawhon Isler
Program Director

This issue of our newsletter has the theme *Protect the Source*. Mount Shasta and the Medicine Lake Highlands are known to be incredibly prolific sources of pristine fresh water that flows from these volcanic aquifers downstream into the Upper Sacramento, Klamath, McCloud, and Pit River watersheds. These rivers provide important habitat for endangered fish species, recreational opportunities, are important sources of hydropower, and are the major sources of inflow into Shasta Lake, which is a key part of California’s water system, supplying 40% of Central Valley Project water. Since many of these rivers have springs as their sources, they have not been as affected by the California drought as other surface waters in the state and are likely more resilient to climate change.

Despite the clear significance of these headwaters, the volcanic aquifers and recharge areas are at risk from extractive industries including as water and beverage bottling around Mount Shasta and industrial geothermal development and fracking in the Medicine Lake Highlands, as well as increasing pressure from changing land uses and tourism/recreation in sensitive areas. We envision the future designation of our region as a North State Water Preserve that would acknowledge the significance and contribution of these water



Photo by John Veltri

sources and ensure that they are protected from potentially harmful land use, development, and extraction.

These days, most of our work here at the Ecology Center centers on our bioregion as a source of pristine, abundant water. The Save Medicine Lake Highlands Campaign, our climate adaptation plan *Renew Siskiyou*, H.O.M.E. Project protection and restoration efforts at Panther Meadows, and our support of the campaign to ensure a thorough EIR for the Crystal Geysler plant – all of these programs and projects center on watershed stewardship.

By working together as community and engaging downstream stakeholders, we can Protect the Source and ensure that these waters keep flowing into the future.

A Day of Thanks, Two Days of Deals, and a Day to Give Back North State Giving Tuesday is December 1st

After Thanksgiving, Black Friday, and “Cyber Monday” comes Giving Tuesday—a nationwide campaign to give back to the nonprofits who make their communities better.

This year the Shasta Regional Community Foundation is organizing a 12-hour online giving event to benefit over 60 nonprofits in Shasta and Siskiyou Counties, including the Ecology Center.



From 6 AM to 6 PM on Tuesday, December 1st, donors can go to the giving portal at www.northstategives.org and donate a minimum of \$10 to the Ecology Center and any other local nonprofits

you may choose to support. Your donations will go further thanks to a \$75,000 incentive pool that will be shared by all participating nonprofits, based on their proportion of total funds raised. There are also \$1500 cash prizes for the nonprofit with the first and last donation of the day, most donors, most funds raised and a random draw. Join us on Giving Tuesday and help **Protect the Source**—our amazing mountain environment!

Crystal Geyser EIR Update

by Phoenix Lawhon Isler
Program Director

Many readers will have heard that in September 2015, Crystal Geyser released a statement that they have “become aware” that they will require a permit from the Siskiyou County Air Pollution Control District (APCD) and because of this they will prepare an Environmental Impact Report (EIR) that will make it possible to analyze all potential impacts of plant operations in Mount Shasta.

Questions remain about what this statement actually means, and whether the company’s acceptance of an EIR means that the concerns of local citizens will actually be addressed. Who is the lead agency in charge of doing the EIR? Will the EIR consider all impacts?

W.A.T.E.R. (We Advocate Thorough Environmental Review) has been leading the campaign for an EIR for the Crystal Geyser plant for more than two years. In a recent press release they point out that the Air Pollution Control District is actually the Siskiyou County Board of Supervisors – the same county government body that has supported the Crystal Geyser project and denied the need for an EIR for over two years. In an article in the Mt. Shasta Herald on 10/7/15, Siskiyou County Counsel Brian Morris said “From the county’s perspective, we have not yet determined whether there will be an Environmental Impact Report done with the Control District as lead agency, or what the scope of any such EIR might be.”

The article went on to say that any EIR would only cover items for the specific permits submitted – not a full EIR of all aspects of Crystal Geyser’s operations. A full EIR would con-

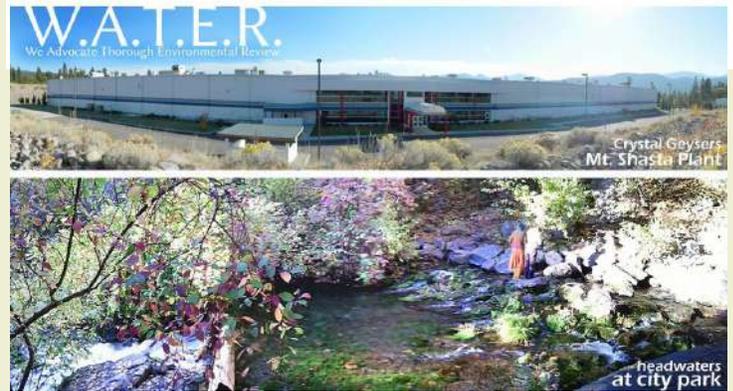


Image: W.A.T.E.R.

sider all potential impacts including: industrial water extraction and consequent possible groundwater depletion during historic drought conditions, effects on local domestic wells within the shared aquifer, pollution from plastic bottle production, hazardous material storage (two 30,000 gallons tanks of propane), pollution from industrial waste, plant noise, air pollution and odors, truck traffic, general plant aesthetics on our scenic rural environment and the ability of the City waste treatment plant to process the plant’s effluent.

There is no guarantee that the County Board of Supervisors will require Crystal Geyser to do a full and impartial EIR for the project that it already seems to support unconditionally. However, there is too much at stake to give up the fight now or be complacent that because the corporation agreed to an EIR that everything will be fine. Sustained pressure from the public is needed.

What can you do to ensure that a full and impartial EIR is conducted for the Crystal Geyser plant? Contact your County Supervisor, write a letter, attend County Board of Supervisors meetings, and make sure your voice is heard.

Climate Adaptation Community Forum Series –Join the Conversation!

In 2014, the Ecology Center initiated a collaborative climate adaptation plan designed to engage diverse stakeholders in addressing climate risks in the region. With the initial draft of *Renew Siskiyou - Roadmap to Resilience* complete, we are now in the process of building local buy-in to generate consensus around adaptation priorities.

One way we are raising awareness and inviting citizen participation is through a series of monthly community forums. The format consists of half of the time for an educational presentation and half of the time dedicated to discussion.

Anyone who is interested in climate change and would like to learn and come up with ideas about how we can work locally to respond to climate risks, including persistent drought, lack of snow, and extreme wildfire, is encouraged to attend the forums and contribute to the conversation.

Our final community forum of 2015 is scheduled for 12/15/15 from 7 - 8 pm at the Mount Shasta Library on 101 E. Alma St.

For anyone who would like to read the plan, it can be downloaded from our website at

<http://mountshastaecology.org/climate-adaptation/renew-siskiyou/>.

Our goal for the forums is to enroll 5 - 10 community members representing diverse perspectives to serve on a steering committee that will help us refine the plan, implement priority actions and achieve measurable goals by the year 2020. Feel free to contact Angelina Cook at angelina@mountshastaecology.org for more information.

Engaging Downstream Stakeholders to Protect and Restore Headwaters and Forests

by Angelina Cook
Stewardship Coordinator

As beneficiaries of abundant, clean, cold water that emerges from the flanks of Mount Shasta, agricultural, industrial and municipal water users throughout California have a direct stake in the health of Siskiyou County ecosystems. As downstream interests navigate increasing demand and shrinking supply during times of climate instability, they would be wise to invest in resource conservation and ecosystem restoration in source water regions.

Siskiyou County has more timberland acreage than any other county in California. Our forests filter, store, and purify profound amounts of water. The region's snowpack, volcanic aquifers, mountain meadows, and spring-fed rivers deliver gravity-fed freshwater gradually, which is particularly important for downstream users during the dry summer months.

As California's mega-drought continues, Federal, State and regional stakeholders must coordinate efforts to find comprehensive solutions to fundamental challenges. These collaborations should include urban-rural partnerships where downstream interests invest in "green infrastructure" solutions upstream. With adequate funding for restoration and conservation in headwater regions, foresters and water managers can keep as much water in-stream as possible. This type of landscape-scale collaboration is one of the most cost-effective ways the state can secure water quantity and quality from source to sea.

Productive partnerships between California's urban and rural headwaters communities are beginning to take shape. One example is the Sierra Nevada Conservancy's Watershed Improvement Program (WIP).

The WIP is a cooperative endeavor between the Sierra Nevada Conservancy and the US Forest Service Pacific South-



Photo by Terry Lawhon

west Research Station that aims to restore contiguous forest health. The program is investing \$25 million over 3 years in headwater communities to manage threat of wildfire and secure California's water supply throughout the year. The WIP was motivated by lessons learned after the catastrophic 2013 Rim Fire, the third largest ever in California. Diverse stakeholders are working together to streamline and enhance forest restoration projects on a scale that will be capable of reducing risk of stand-replacing wildfire and ensuring in-stream flows in the Sacramento and San Joaquin valleys.

Renew Siskiyou is a collaborative effort to facilitate climate adaptation in Siskiyou County. It highlights improving forest health as a top priority for protecting communities against persistent drought and catastrophic wildfire. By cultivating partnerships with urban and agricultural water users, we can build a foundation for advancing conservation, restoration and resilient community development. Engaging downstream stakeholders to support upstream conservation and restoration is a powerful opportunity to generate local prosperity, while enhancing water supply reliability downstream.

Coming in 2016 : *The Way of the Mountain—The Natural History of Mount Shasta*

Abby Edwards and Mount Shasta native Chad Oliver have a vision of a natural history guide to Mount Shasta. Having discovered that no such book exists, these recent graduates in Ecology and Environmental Studies and keen naturalists decided they would write it themselves.

"The last comprehensive ecological study of Mount Shasta was published over a century ago—the mountain needs a fresh voice to speak of its incredible beauty, diversity and ecological significance," they explain. The book will cover all aspects of the mountain ecosystem - flora, fauna, geology, fungi, human history, and more. What's more, they have generously offered to share 50% of the profits from book sales to the Ecology Center.



Learning more about the plants, animals, and rocks around us, and their roles in the ecosystem can deepen our connection to nature and inspire conservation and wise resource management.

"We want people to pick up this book and engage with the natural world. Not only to identify the Manzanita on the mountain, but to feel the toughness of a leaf, understand the meaning of the name (little apple) and know who dwells in its understorey"

Chad and Abby need our help to finish this amazing project! A crowdfunding campaign will launch soon to raise funds to cover the costs of the project. The Ecology Center will collect tax-deductible donations on their behalf. Look for more information on this exciting project coming soon on our website and social media!

Protecting the Source at the Medicine Lake Highlands

by Michelle Berditshevsky
Senior Conservation Consultant

A poetic excursion into natural history... On a sunny day in early October, members of the Stanford Environmental Law Clinic and the Ecology Center board and staff set out in canoes across Big Lake at Ahjumawi Lava Springs State Park. Our destination: the springs 2½ miles across the lake at the edge of the lavas that have their origins 35 miles away in the mystical Medicine Lake Highlands. These waters are part of the renowned Fall River Springs, California's largest spring system, flowing at over a million acre-feet a year toward Shasta Lake Reservoir and the Sacramento River.

The lake starts out murky over the marsh and gradually clarifies into turquoise pools as we approach Ja-She springs on the north shore. Ancient black lava fish traps that the Ahjumawi Band of the Pit River Tribe has maintained and used for five thousand years carve the water's edge. These traps are remarkable as they demonstrate the Native American ethic of both "improving spawning conditions for the resident suckers as well as enabling their selective harvest." (more on Ajumawi fish traps and management practices at www.parks.ca.gov/?page_id=23153)

It feels like a timeless primordial world ... these ice-cold, nutrient-rich, crystal-clear waters so perfectly streaming from the lava tubes and strata spreading out of the distant volcano. That the area is steeped in creation stories and sacred places is understandable given its haunting beauty, rich cultural history and fascinating hydrology. Some of the waters originating from the volcano have been stored in deep ice caves for 10,000 years. Most of the waters take 10 to 40 years after they fall as snow to reach the surface, abundantly endowing the Fall River Valley's world-class trout fishery, agricultural lands, communities, and millions of people downstream with their elixir of life.



The crystal-clear springs at Ahjumawi

The Fall River Springs are a big reason we're in our 18th year of defending the Medicine Lake Highlands (the upper reaches of the volcano) from industrial geothermal development including hydro-fracturing and acid-leaching that has been proposed by a multinational corporation. The long drought has brought water issues to the forefront, as has Calpine's increased ambition to develop 480 megawatts of power that would turn the high elevation recharge area at the source of these waters into an industrial



Stanford Environmental Law Clinic members paddle across Big Lake (photo by Julian Aris)

wasteland.

On the legal front we're entering the home stretch.

Together with our allies, the Pit River Tribe, Medicine Lake Citizens and Native Coalition, we're celebrating this summer's Ninth Circuit Court Victory and preparing for the next round with the invaluable legal expertise of the Stanford Law Clinic. The victory confirmed that we have standing to take our case challenging the geothermal lease extensions—covering 66 square miles of the prime recharge area that is the Medicine Lake Highlands—back to District Court in Sacramento. This is the same court that ruled in 2013 that Native American Tribes and public interest organizations lack the right to bring claims under the Geothermal Steam Act on national forest lands that have been designated eligible as a Native American Traditional Cultural District.

Now that the standing issue is clear, the Stanford legal team will argue that in renewing the 26 geothermal leases the Bureau of Land Management failed to comply with environmental and cultural preservation laws as well as the government's trust responsibility to Indian Tribes. Similar arguments were successful in defeating Calpine's first project at Fourmile Hill in 2006, and we are optimistic that our legal case will come to successful completion within the next two years.

On the science and watershed protection front, following our recent July meeting with the California Department of Water Resources, we continue to educate agencies about the high water use and threats to water quality that industrial geothermal development poses. Our science-based strategy will bring the hydrologic study we commissioned from Dr. Robert Curry and supporting work by Davisson & Rose to influence state and federal cooperation in protecting this magnificent volcanic recharge area and its aquifer, the source of the Fall River Springs.

Our long-term vision is for our far Northern California region to become protected as a "Water Preserve," as the waters from our area are immensely important in providing a pure and reliable water supply to the Sacramento River as well as natural groundwater storage. These source waters become increasingly valuable in the context of climate change and drought. With a huge storage ca-

Protecting the source in the Medicine Lake Highlands (continued)

capacity, the Medicine Lake volcanic aquifers and spring fed rivers gather water when it is plentiful and consistently deliver it locally and downstream to the Sacramento River via the Fall and Pit Rivers. This reliable and pristine water supply has continued even during the present extended drought. Protecting the aquifers and recharge areas on Mount Shasta and in the Medicine Lake Highlands ensures high quality and secure quantity of water for millions of downstream urban and agricultural users.

For more information on the Medicine Lake Highlands/Fall River Springs, contact michelle@mountshastaecology.org



Western grebe feeding on Big Lake (photo by Julian Aris)

Report From Bioneers 2015 – (R)Evolution From the Heart of Nature



by Angelina Cook
Stewardship Coordinator

Every harvest season, thousands gather in San Rafael, CA to explore how society is navigating the most pressing issues of our day. With an evocative array of presentations and art, the conference excels at examining crisis through the lens of opportunity. By celebrating the beauty and bounty of nature and showcasing solutions to systemic problems, Bioneers transcends the emotional paralysis that tends to occur when people examine the ramifications of exploitative, continual growth-based capitalism.

While climate disruption was the all-encompassing theme of the 26th annual conference, gender bias emerged as the subtle theme that reveals deeper insight into how humanity has arrived at this time in which humans are threatening Earth's natural capacity to sustain modern civilization. The take-home message was: patriarchy is at the root of racial discrimination and environmental degradation. In order to rebalance human systems and ecosystems, we must reconcile the sacred feminine and true masculine energies, within and around us.

In the symphony of inspiring talks, a few stood out; Henk Ovink of the Netherlands, Andy Lipkis of TreePeople and Fania Davis of Restorative Justice for Oakland Youth were some of the most memorable.

The Netherlands is largely below sea level. After centuries of trial and error, the country adopted a design concept called “room for the river”. By retrofitting infrastructure to regard rivers’ natural meandering tendencies and continual ebb and flow, they have secured fresh water supplies and established a built environment that accommodates a dense population while stemming the frequency and severity of floods. As lead for “Rebuild by Design”, a cooperative competition that facilitated New York’s recovery after super storm Sandy, Henk emphasized the power and necessity of collaboration to adequately address the challenges presented by climate change. The Kingdom of the Netherlands has formed a partnership with California, which is in the process of forming a partnership with China, to support and advance each other’s efforts on global climate leadership.

In the late 1970s, at age 18, Andy Lipkis learned about the impacts and rapid rate of deforestation, and in response began planting trees in the watersheds of Los Angeles. He understood that trees cool rivers and landscapes by providing shade, act as sponges to naturally filter and store water, and regulate atmospheric chemical composition. He formed the nonprofit TreePeople, which coordinates volunteers in myriad restoration efforts. Andy is now working with City and County of Los Angeles to connect agencies whose work is interconnected but have historically functioned in “silos”. Through effective collaboration, the districts are saving money and making strides towards alleviating regional problems.

Once an activist with the Black Panthers, Fania Davis has been a civil rights trial lawyer for 27 years. After witnessing the inordinate incarceration of black inner-city youth, Fania dedicated her life’s work to addressing the “school to prison pipeline.” Restorative Justice is a social technology based in indigenous concepts of interrelatedness and wholeness that intercepts disenfranchised and non-conforming youth, before they succumb to a life of crime. Moving from separation, domination and extreme individualism towards acceptance,

inclusiveness and partnership, Restorative Justice has significantly reduced youth incarceration in Oakland and is gradually being adopted by schools and communities around the world.

Additional noteworthy presentations came from: Shannon Dosemagen of Public Laboratory who is using open-source citizen science to bring to light critical information currently considered “proprietary” to protect public health and ecosystems; Ben Knight of Loomio, a web-based collaborative decision making platform that emerged from the ingenuity and chaos of the Occupy movement; Jessie Cool, a consultant for Stanford Hospital Food Services who is infusing hospital cafeterias with healing, locally sourced foods, and Paul Hawken of Project Drawdown, whose team is compiling a substantive

list of the top 100 solutions to climate destabilization.

In summary, the challenges facing humanity in the 21st century require holistic remedies that address the root, not just the symptoms, of our common disease. By honoring the sacred feminine, we learn to listen to our intuitive wisdom. This heart-centered intelligence provides a compass for healing interpersonal dynamics and our relationship with Mother Earth. Respecting ourselves, each other and nature is key to human survival. In order for ecosystems to continue sustaining communities, we must encourage diversity and restore right relationship with the natural order. To learn more, visit www.bioneers.org. I hope to see you next year’s conference!

Stewardship on Mount Shasta—Honoring Our Mountain Environment

by Courtney Laverty
Administrative Director and H.O.M.E Project Coordinator

Another successful “season of stewardship” at Panther Meadow has come to a close. The Meadow is preparing for winter, having gone to seed and displaying the beautiful fall colors of red and gold.

Each summer, from July through October, Ecology Center volunteers partner with the Shasta-Trinity National Forest – Mount Shasta Ranger District, to provide interpretive services on the mountain and to assist with housekeeping tasks. This year, we welcomed a few new faces to the H.O.M.E. project. Each year, thousands of visitors make their way to the meadow and the spring. As meadow educators, we have the opportunity to share our love for the mountain and the meadow ecosystem with people of all ages. People enjoy learning the names of the plants, walking through the woods, and sitting by the spring. It is always a delicate balance to allow visitors to enjoy their time at the meadow and to protect the delicate, sub-alpine plants from damage.

This year was a particularly interesting year in a variety of ways. The continued drought is evident with the drying up of the spring. This has happened for the past couple of years, which is disconcerting. People come to the spring wanting to drink the water and take water with them. It’s important to realize that the meadow also needs the water to thrive and that the water needs to make its way down the mountain. When thousands of visitors also want to take water, right from the source, a conflict can arise. Respect for the meadow and its importance to the indigenous communities that hold it sacred is a message we share with visitors.

On October 10th, nearly 30 volunteers and Forest Service staff gathered at Panther Meadows for the 19th Annual Community Planting Day at Panther Meadows with the US Forest Service. Volunteers gathered wildflower seeds for future planting, did a bit of trail maintenance, and heard a fascinating talk from Shasta-Trinity National Forest Archaeologist Julie Cassidy.

Please consider joining us next season! It’s very rewarding to meet people from all over the world and to share our passion for protecting the meadow for future generations to enjoy!

For more information about the H.O.M.E. Project, email Courtney at courtney@mountshastaecology.org



Volunteers at the 2015 Panther Meadows Planting Day Photo: USFS

source waters

the taste of snow is still there, decades later
in this liquid crystal that fills our cups
and courses through our blood

the snow still brings its white silence
running a shivering charge through
the particles of this immaculate substance

the whisper of snowstorms
dissolving all abysses, losses, broken songs
and coloring the world transparent

as spring sun undresses the mountain
of its ermine robe
and high glaciers and snows recede

into saturated forests and meadows
filtering through lavas, mingling in rocky veins
emerging decades later

in the springs where we brim our jugs
and the first snowflake still melts
on the tongue of childhood wonder

retaining its crystalline purity
in this elixir of life that fills our cups
and courses through our blood

- *Michelle Berditshevsky*



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