The Island Insider

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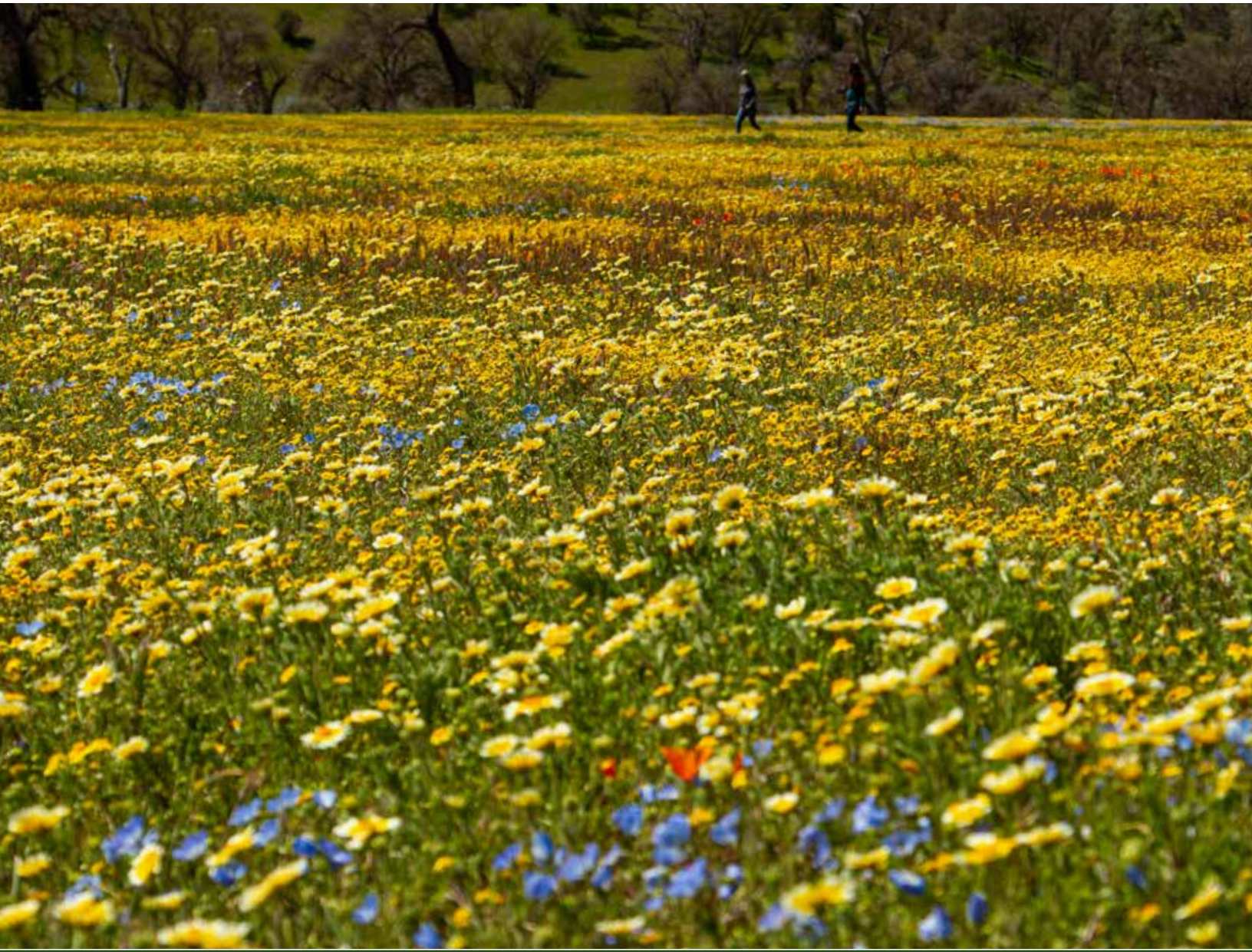

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CIR Field Tech Professional Development Workshop

"We turn a monotone music sheet into a symphony. We enjoy transforming a monocrop into a diverse paradise." - *Jeremy Ruiz, CIR Field Technician*

CIR field techs listen to a presentation at a professional development workshop in Fillmore.

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Morey Spellman
Marketing Manager

On February 28th, Channel Islands Restoration (CIR) staff gathered at Fillmore City Hall for professional development and knowledge sharing. The workshop aimed to provide field techs with some bilingual skills and riparian knowledge, supporting effective communication between crews in the field and enhancing their understanding of restoration work and related topics such as ecology and natural resource protection.

The morning session by Marianne and Alikio Parra included insight into Chumash culture, past and present, and the Chumash's stewardship of the land. This session provided a unique perspective on the restoration work that CIR handles, helping the field techs gain a greater sense of involvement with the restoration of the Santa Clara River and forming connections to professionals and stakeholders working in other aspects of the field.

One of the main goals of the workshop was to provide professional development opportunities for CIR field techs and landscapers, allowing them to gain new skills, knowledge, and experiences related to their work. This workshop also provided an avenue for sharing knowledge among colleagues and coworkers, which can be challenging due to time constraints.

The workshop also highlighted the collaboration between CIR and other organizations providing similar programs. For instance, CIR has connected with Theodore Payne, who sponsored this training for free, further demonstrating the commitment of CIR to promoting professional development and continuous learning among its field techs.

Overall, the workshop at Fillmore City Hall was a successful event that provided CIR staff with valuable professional development opportunities, including gaining bilingual skills and riparian knowledge, learning about Chumash culture and language, and connecting with other professionals in the field.

It further emphasized the importance of ongoing learning and knowledge sharing in restoration work and fostered a greater sense of involvement and connection among staff.

CIR field techs and staff gather for a group photo after the professional development workshop.

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Channel Islands Restoration - Vol. 21, Issue #1: May 2023
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Thank you to our newsletter sponsor Russ Charvonia, Attorney-at-Law, Channel Islands Law Group.

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WHAT ABOUT SAN CLEMENTE ISLAND?

Supporters often ask us when we'll return to San Clemente Island. CIR has been in discussions with the U.S. Navy to resume our pre-pandemic volunteer restoration trips! This has been a particularly busy time of year for island personnel and organizing trips has been difficult. We're eager to continue to provide opportunities on San Clemente Island once details are finalizd with the U.S. Navy.

CIR has been working all year with volunteers, and trail expert Gerry Ching on a trail maintenance program at the San Marcos Foothills. This program is providing easier trail accessibility and better walking paths for visitors, hikers, and outdoor enthusiasts at the Foothills.

Meet Our Newest Board Member!

A Short Questionnaire with Alana Rader

Alana Rader
Board Member

Channel Islands Restoration Board Member, Alana Rader.

What is your environmental experience?

I've been immersed in the biophysical environment, both recreationally and through stewardship, my entire life. Growing up in Boise, Idaho, I spent nearly every weekend camping, hiking, rafting, and skiing while also volunteering in restoration and environmental NGOs that worked in our local Idaho foothills. Beyond my youth, I immersed myself in concepts and theories of the environment during my undergraduate, masters, and doctoral degrees, all in Geography.

Specifically, I became passionate about coastal landscapes and began examining the complex relationship between biophysical processes, landforms, and policy that define a landscape as a 'coast'. Since then, my research and work has focused on processes of coastal landscape regeneration. I have been lucky to study coastal regeneration in diverse environments across the Americas, including coastal beach-dune recovery following vegetation restoration in both northern California and British Columbia, coastal erosion mitigation strategies in New York State, and coastal forest regeneration after hurricanes in southeastern Mexico. As a new Assistant Professor at California State University Northridge, as well as a new community member in Los Angeles, I look forward to applying my research focus and lifelong passion for the environment to our coastal landscapes in Southern California!

Why you were interested in CIR?

Southern California's coastal landscapes, and in particular the Channel Islands, provide incredible ecological resources to our ecological and human communities. Channel Islands Restoration has been central to protecting, restoring, and supporting these important landscapes and resources in the face of compounding global pressures such as climate change and development. While this objective is central to my research, even more important is that CIR's approach to stewardship as well as community engagement in the environment is aligned with my personal values. I know firsthand from my youth the opportunities that being involved in restoration, environmental service work, and a community of environmentalists can provide.

I look forward to working alongside community members and CIR volunteers in supporting, restoring, and understanding our beautiful Southern California environments into the future!

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In addition to supporting habitat restoration, your donation will give you access to tiers of benefits, which include invitations to private events, merchandise, virtual talks, and of course our sincere gratitude.

A LETTER FROM KEN OWEN, CIR EXECUTIVE DIRECTOR

Well, as they say, when it rains, man it pours in Southern California (pardon the mixing of metaphors and song lyrics). Starting a few years ago, I made a personal vow to never complain about excessive rain. Even though the winter storms have caused suffering for so many across the state, I try to remember the sight of the parched and cracked land in our region. This makes me wish it had rained even more this year!

According to most climate scientists, this wet year is an aberration, and we will soon be back to experiencing megadrought throughout most of the region. However, CIR has taken an economic hit, because flood damage has (at least temporarily) denied us access to our restoration sites in the Los Padres National Forest and along the Santa Clara River. We have found good workarounds, but it's like we prayed for rain, and then it softly knocked us over our collective heads with it.

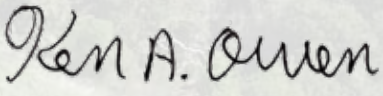
I turned 60 this year, and it amazes me that I have witnessed such a change in the climate over such a short period of time. Ongoing, severe droughts that span many years are new to California, and native habitat has been deeply affected by these events. The chief culprit is not just the lack of water but has more to do with habitat "type conversion" where one set of species (usually nonnative) replace another set of species. The nonnatives are more tolerant of drought than the existing vegetation and the resulting ecosystem ends up much less biologically diverse. Examples include conversion from grasslands and coastal scrub to high-saline patches of non-native ice plant on Anacapa and Santa Barbara Islands. This is mostly due to the spread of crystalline ice plant (Mesembryanthemum crystallinum). Mesembryanthemum thrives in dry conditions, and it concentrates salt in the soil where it grows, literally poisoning the ground for its competition. I have watched over the years as island meadows have turned into "monocultures" of ice plant, which do not support nearly the same amount and types of fauna that depend on the native plants. Mesembryanthemum seeds may last as long as 100 years, so NO ONE will live long enough to see it eradicated by hand or by any other existing method. Many restoration professionals feel that these new, poor habitats that have replaced the natural ones are here to stay.

So, when I see it rain day after day, and I watch CIR crews lose access to highly important restoration projects, you still won't find me complaining about the weather. I'm not a superstitious person, so I don't curse the "bad" weather, because I miss the "normal" I was born into 60 years ago and how it contrasts with the new reality of climate change. I find myself hoping the rain will last just a little longer, and I know how hard it is for native wildlife to deal with a changing climate, because most lack the ability to adapt quickly to radical change. With that in mind, please continue to conserve precious water, and please help CIR keep ahead of the type conversion happening in some of our rare, native habitats!

Sincerely,

Ken Owen

CIR Executive Director



Support A Rainy Day Matching May!

As you may remember, the rainy season in 2022/23 started off with gentle rains in October and November, and we were excited about our ambitious plans for our backcountry projects, and the revenue to our organization that such projects generate. However, unexpected events, including rivers shifting and landslides, severely affected our project sites and changed our revenue projections for the year. Our team has been working tirelessly to develop alternative plans and secure new work opportunities with our grant partners.

As restoration experts, we are determined to meet this challenge head-on and continue our mission of restoring and protecting the natural resources of the Central Coast. This is where we need your help. We are launching a Matching May campaign to raise funds that will directly support our restoration projects and help us recover from the setbacks caused by recent extreme weather events. Your donation will be matched, dollar for dollar up to $21,000, doubling the impact of your generosity. With your support, we can overcome the challenges we face and continue our vital work in restoring and protecting precious ecosystems for native species.

Thank you for your generosity, and we look forward to updating you on our progress. If you would like to make a gift please scan the QR code, visit our website, or send us a check to PO Box 40228, Santa Barbara, CA 93140 - Thank you!

Why make your contribution to Channel Islands Restoration?

1. Support a worthy cause sustaining environmental restoration.
2. Renew your CIR membership benefits and get additional perks.
3. Your contribution is matched dollar-for-dollar up to $21,000.
4. See the impact of your work throughout the Central Coast.
5. Join a thriving community of environmentalists and friends.

Scan The QR Code to Contribute Today!

- Support regional habit restoration.
- Fund important scientific research.
- Provide life long environmental education.

From the CIR Desert Island Division!

Ken Owen
Executive Director

Carol Gravelle, a long-time volunteer for CIR and a fairly new member of our Board said to me recently, "I'm an island gal, but what you showed us from your desert trip looks amazing!"

Maybe only a few of you attended CIR's annual trips to Death Valley National Park and other locations in the Mojave Desert. Over the course of more than a decade, botanist Steve Junak and geologist Tanya Atwater took us to dozens of amazing desert locales, on trips that sold out just about every year.

During these adventures, we would watch as areas dominated by Joshua tree (Yucca brevifolia) would be built on. One year there would be thousands of native Joshua tree, and the next year they had disappeared under tract homes and strip malls. We were witnessing the urban spall despoiling habitat for hundreds of species of desert plants and animals.

Long before the idea of purchasing and preserving the West Mesa of San Marcos Foothills had been on our radar, the idea of CIR owning and/or stewarding a desert sanctuary occupied a lot of our time. On trips to and back to Death Valley, mostly Steve and I would search for low-cost land that was in the path of development. Although that search temporarily ended as the pandemic took us away from the desert, our interest in preserving ALL of California's native landscapes (including the desert) had not faded. During the campaign to buy the foothills, we all got to know Ed Scott and his daughter Kristen Procter. They can easily be considered angels, because Kristen attracted Ed to the West Mesa campaign, and Ed made the purchase possible by loaning the campaign a very large sum of money.

Aerial view of Bartlett Mountains with Yucca Valley in the distance.

During one of their visits to Santa Barbara, Ed and I got talking about the "mountain" he owns in Yucca Valley near Joshua Tree National Park. In early April, I was joined by Steve Junak and two Board members as we visited the land and visited with Ed, Kristen and Marti Jak, a neighbor of the land property. Marti had only ever talked to Ed on the phone over the course of the many years she lived next to Ed's "Bartlett Mountains" land.

There cannot be any greater steward of the property. Without pay, and over the course of many years, Marti personally cleaned out illegal camps, closed off ATV routes and personally carried out over 500 pounds of trash. Ed suggested we meet this neighbor who cared so deeply for the land, who he also wanted to get to know better. The property is an amazing example of a granite mountain exposed in the high desert. In early April, it was quite cool in the evenings, and many of the characteristic desert wildflowers were beginning to emerge. The views from

the rugged trail to the high point (just under 4000 feet) were amazing. A few nonnative plants are spreading along the trail, but for the most part, the habitat is intact. We all talked about ways to create a volunteer program for the mountain that would keep barriers to trespassing up and keep the nonnative weeds down.

Marti owns five-acres near the mountain, which she offered as a great temporary volunteer camp, and one local B&B has offered discounts for those who like to stay indoors. In coming years, we will be establishing a local volunteer corps, but we will also be offering volunteer and educational opportunities in the area.

View of Bartlett Mountains from Marti Jak's yard.

Phacelia grows along a trail to Bartlett Mountain.

fiddle neck, desert dandelion.

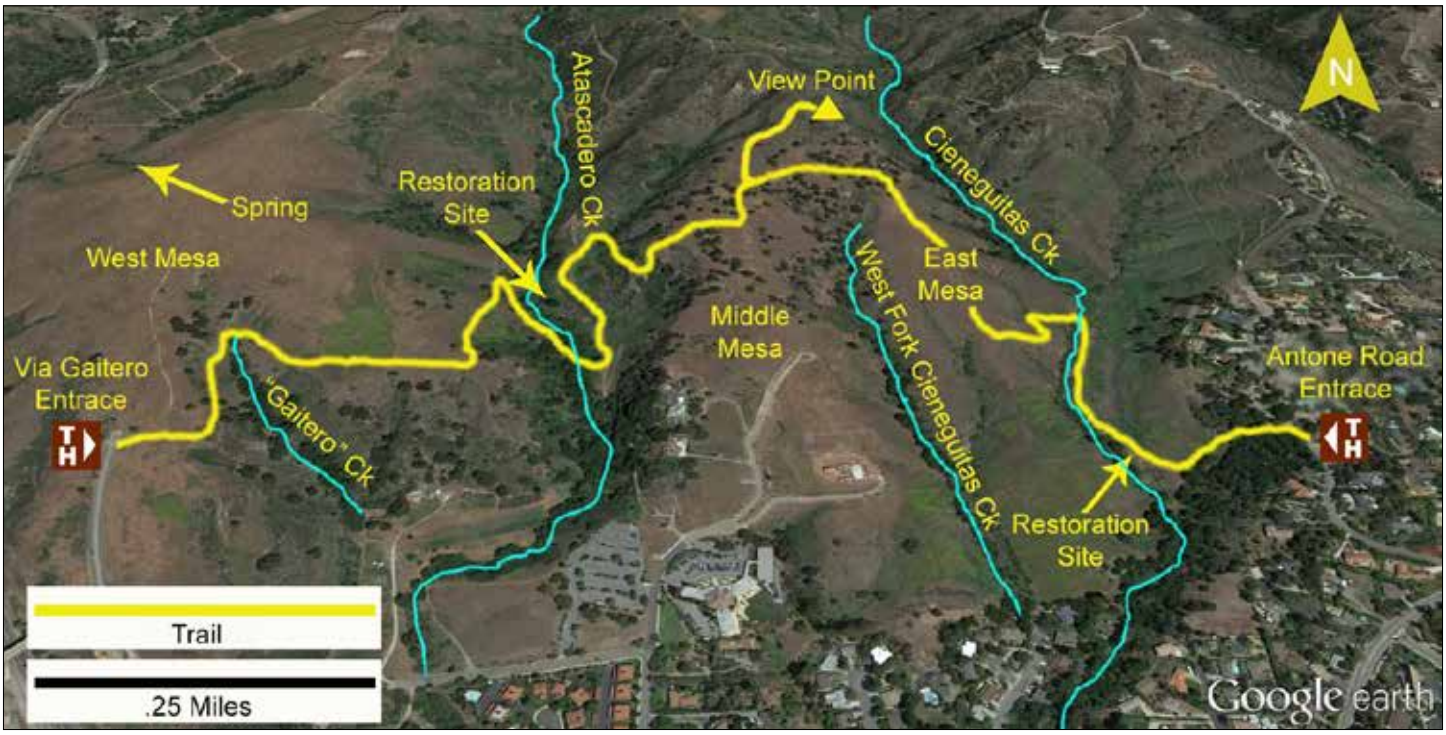
cottontop cactus.

blazing star.

View of San Gorgonio Mountain from Bartlett Mountains.

apricot mallow.

Join Our New Foothills Docent Program



CIR is making improvements to the trail system at the West Mesa to enhance the visitor experience and protect native wildlife such as the burrowing owl and red-tailed hawk.

At the San Marcos Foothills each plant community, species of animal, group of invertebrates, rock formation, and geophysical feature interact to form intricate systems.

These systems speak a beautiful language that everyone sees and many of us hear, but few of us understand.

Those of us who are active naturalists have some knowledge of these ecological dialects, but most casual observers may not recognize the complexity that surrounds them or the effect they have when they visit the area.

For many years CIR has contemplated forming a program at the San Marcos Foothills to help share these stories. Nearly a decade in the making, the San Marcos Foothills Educational Docent Program will now provide opportunities for those who love nature to pass on mind-blowing environmental principles to their friends and neighbors who visit the San Marcos Foothills Preserve.

It will also provide the opportunity to learn from Chumash people about their traditions and connections to the land. We hope that, you'll want to learn more about environmental education at the Foothills!

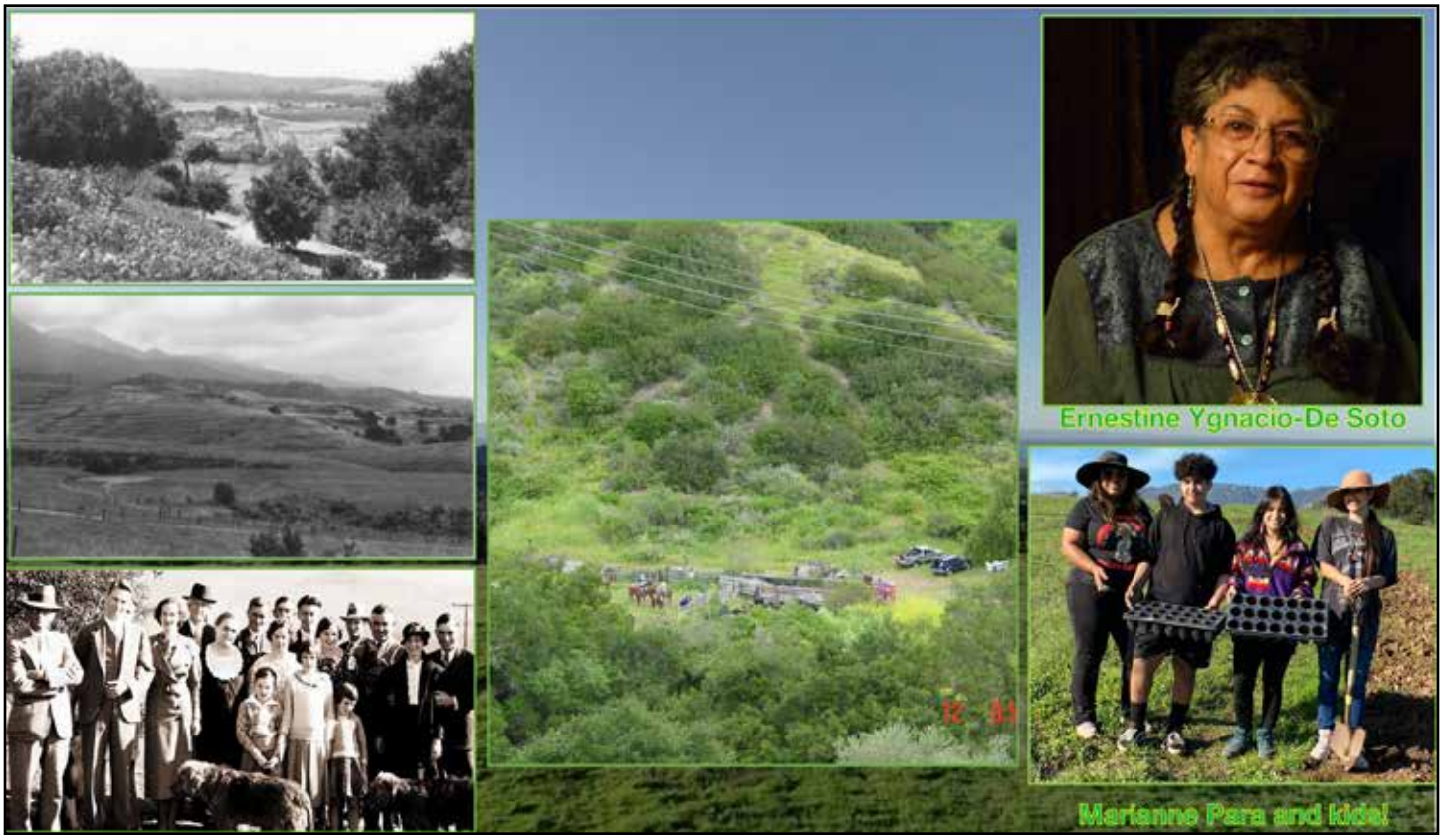
If you would like to join our program, please visit our website to sign up or email us at docent@cirweb.org

JOIN US TODAY


Burrowing owl


Western Meadowlark

The docent program will provide the opportunity to learn from Chumash people about their traditions and connections to the land.



Docents can help protect ground-nesting bird habitats at the Foothills, such as the grasshopper sparrow and western meadowlark.

The Benefits Of Grazing

In addition to restoring the grassland to a more natural state than currently exists, grazing has a demonstratable effect for fire safety. We started our grazing program early in 2018 on the San Marcos Foothills Preserve (SMF). In November of that year, the Cave Fire rapidly swept down the Santa Ynez Mountains, but it was extinguished at the SMFP.

County Fire Chief Rob Hazard credits CIR's grazing program with saving a neighborhood around the SMFP. In a letter to CIR, Chief Hazzard wrote:

"By all accounts most firefighters were convinced the fire would burn into the developed neighborhoods in the North La Cumbre area and had the potential to result in significant structure loss. This did not happen, no structures were lost, and the primary reason was the buffer provided by the grazed areas in the preserve."

CIR started with carefully designed grazing techniques to restore the grassland, but our work also helped prevent a disaster!

The San Marcos Foothills

The San Marcos Foothills "West Mesa" is a 101-acre open space grassland near highway 154 between Santa Barbara and Goleta. A planned development for the 101-acres was canceled when a coalition of groups that included Channel Islands Restoration (CIR) purchased the property for inclusion into the greater San Marcos Foothills Preserve (SMFP). The SMFP is a County of Santa Barbara open space immediately east of the West Mesa. The Preserve encompasses 200 acres. Habitat restoration activities on the entire 301 acres are managed by CIR.

Sheep Docent Work

Sheep docents provide information and engage in conversation with visitors of the Foothills. We need your help with explaining this restoration project to people visiting the West Mesa.

How it works: The sheep eat everything: the invasives and the natives. The difference is in the plants' response to this grazing impact. The native bunchgrasses have huge root systems that reach 10 to 20 feet deep. These root systems create underground ecosystems of mycorrhizal relationships that support diverse soil biota, which in turn support native wildflowers, oak trees, and forbs. This investment in their roots enables the bunchgrasses to recover quickly, even after the last rain has fallen, and continue to flower and seed. In contrast, the invasive annual plants have shallow roots and have little stored energy to recover.

Where Can I Learn More?

The restoration plan has a lot of scientific research and other information that is interesting and helpful. It can be read here: https://cirweb.org/grassland-restoration

CIR recognizes and reminds us all that the beautiful land we all enjoy in this region is the unceded territory of the indigenous Chumash people.

A Brief History Of Grazing

Native grasses evolved over hundreds of thousands of years together with grazing by native animals. The native grasses are adapted to being stepped on and grazed by large animals and burning by indigenous Chumash People. These disturbances encourage regrowth and vitality that contributes to the health of the ecosystem.

Livestock grazing has been used to manage grasslands for thousands of years. In recent years, it has begun to be used as a holistic technique to restore native grasslands in western states. Grasses reproduce with seeds and annual grasses have a short life cycle. Many studies in the past, (plus CIR's own studies) have shown that annual grasses can be suppressed with targeted grazing.

Also, native purple needlegrass responds favorably to high intensity-short duration grazing. Needlegrass is also susceptible to competition from non-native species, and when growing among non-native annual species, it benefits from grazing because competition from these annuals is reduced.

Removal of thatch increases the amount of bare ground and increases the establishment of needlegrass seedlings. Patches of bare ground are used by birds and other animals as part of their foraging grounds. Grazing creates a mosaic of grassland in which some areas have bare ground between native grasses, and other areas have some thatch between grasses with which ground nesting birds can build and hide nests. The sheep grazing is designed to change the habitat for the benefit of the native birds and has the side effect of helping to slow wildfires.

Sheep graze at the San Marcos Foothils West Mesa during the most recent grazing cycle.

About the Sheep: They are a Rambouillet - Targhee - Merino cross. Merino sheep originated in Spain, and were kept a prized secret by Spanish royalty for centuries. The origin of Rambouillet sheep (aka "French Merino") began when King Louis XVI purchased a flock of Merino sheep from his cousin King Charles III of Spain in 1786. Targhee sheep were bred in the American West starting around 1900 for their hardiness on dry Western range, and for their dual-purpose lamb and fine wool production.

Left: A sheep grazes at the San Marcos Foothills West Mesa in Santa Barbara. Sheep eat everything: the invasives and the natives. The difference is in the plants' response to this grazing impact.

Right: Carolyn Chaney, a sheep docent smiling at the San Marcos Foothills West Mesa. Docents help inform the public on the importance of grazing for habitat restoration, fire safety, and a variety of other benefits that help our land and community.

Witnessing the Wildflowers at Carrizo Plain

Morey Spellman
Marketing Manager

Carrizo Plain National Monument, an enclosed grassland plain a few hours north east of Santa Barbara, has been on my bucket list for quite some time. So, I was excited to learn that Channel Islands Restoration would host day trips on April 1st and April 24th to the region to witness the incredible wildflower bloom that has overtaken California.

Just a few hours away from Santa Barbara and Ventura, the Carrizo Plain is a hidden natural gem with a thriving ecosystem of native flora and fauna that are endemic to the region, and I was eager to witness the natural landscape and diverse plant and animal life for myself.

On the day of the first trip on Saturday, April 1st, I joined our hearty group of environmental enthusiasts, as we set off from Santa Maria to explore the National Monument. We had a quick pit stop in Santa Margarita where CIR's Executive Director, Ken Owen, discussed some of the region's natural history including its geology, cultural significance, and the botany that we were expected to see on this excursion. Each of us was outfitted with a map of the area and a handy plant checklist. Connie Jenkins on our Board, along with our CIR operations crew Holly Wright and Doug Morgan, served as the trip's co-hosts and provided additional knowledge throughout the day along with insight into ways to help ensure the health of the area in the future.

As we made our way through the Carrizo Plain, oak woodland turned into fields fully in bloom with poppies, lupines, goldfields, fiddlenecks, phacelias, owl's clover, and blue dicks. The vibrant colors and diversity of the wildflowers was breathtaking, and I felt grateful to witness them up close.

The bloom was most evident during our stop at Shell Creek Road, a renowned meeting point to see carpets

We witnessed the full bloom of poppies, lupines, goldfields, fiddlenecks, phacelias, owl's clover, and blue dicks at Shell Creek Road.

of wildflowers. Guests were advised to be mindful of their feet and watch where they walked so as not to disturb natives. Our trip included a stop for lunch at Soda Lake, the largest remaining natural alkali wetland in Southern California, and I marveled at the natural beauty of the area.

We had two vantage points for our eating destination, an overlook with breathtaking views of the valley and a scenic walk along the lake shore. This lakebed is usually dry but because of the deluge of rain and snow that the Carrizo Plain has experienced in the past several months, it was quite full!

As we returned to Santa Barbara, we had a couple more stops and witnessed the valley floor transition into rolling hills.

While the first trip was spectacular, guests who attended the second trip on April 24th trip were treated to the peak of the wildflower bloom.

As always on trips with Channel Islands Restoration, I felt a sense of gratitude for the opportunity to witness such natural beauty and learn from our guides about the history and significance of preserving our environment. I left with a newfound appreciation for the Carrizo Plain and a desire to continue exploring the natural wonders of the National Monument.

Guests learned about natural history from our educational guides while exploring different areas of Carrizo Plain National Monument.

How the Rainy Season Devastated CIR's Project Sites and Forced a Change in Plans

Doug Morgan
Operations Manager

Some may remember how the 2023 rainy season began. A few gentle rains in October and November and by News Years we had a nice manageable germination of weeds happening across all our project sites. Conditions were very favorable, and we assumed we would be starting early on many of our projects. We planned a very ambitious back country schedule on both of our existing grants. We negotiated an ambitious plan on the Santa Clara River with our project partners to treat a wide spectrum of weeds that had capitalized on the void created by our previous year's Arundo removal. Our cash flow projections were grand (we rely on many of our project for a lot of our funding) and we were prepared to mobilize on what would have been one of the busiest years in our history…

And then it got wet, wetter, wettest.

The Santa Clara River peaked at a flow rate of about 100,000 cubic feet per second. The ridges above the Santa Ynez River watershed received a good year's rainfall in 48 hours. And every few days it would rain again. Every road to the remote areas we had planned on accessing had dozens of landslides covering them. Every wet crossing was dangerous. Rivers changed course and devoured the landscape. We were experiencing a devastation that was unprecedented. Many of our jobsites were now in Federal Disaster Areas.

What was to be a very well-planned year was suddenly a chaotic triage of reacting to daily reports of devastation and deluge. Here is a partial list of the damage directly affecting CIR work sites:

Our Santa Clara River project in Santa Paula had the river shift 400 meters to the south and washed away at least 40 acres of our intended work area. It is still too dangerous to enter and accurately assess what remains to work on. In April, we found that a large mudslide across South Mountain Road had deposited enough fine-grained mud on our storage area that we almost got our

Job sites like the Sisquoc and Santa Clara River have been impacted by the deluge of rain that has occurred across Southern California this year.

truck stuck.

The Santa Ynez River experienced a scouring event that left only bedrock showing in many places and debris piles 25 feet high. In much of our project site there is literally nothing left in the riparian zone. The Los Padres National Forest (LPNF) would not allow us to enter even to survey.

Highway 33 was the best access to our Sisquoc River project but it is still closed due to landslides and a big section of road washed away. The road up Santa Barbara Canyon has several massive slides covering it, and the north facing slopes are still snow-covered.

I was able to survey our Piru Lake worksite and the scouring event there removed roughly 50% of the land on which our targets were located. 47 landslides covered the Piru Ranch Road we used to access our farther upstream sites.

But none of that matters as the lake is overflowing and everything we were working on is underwater for the first time in decades.

A CIR Field Technician carries a tamarisk husk out of the Sisquoc River in the Los Padres Forest.

Our projections for staffing needs for the year were so completely devastated we went into emergency mode. Holly Wright, Field Projects Administrator, and I began to contact every past project contact and soon small jobs began to materialize. Holly spent most of January and February in daily conversations with LPNF and the National Fish and Wildlife Foundation (NFWF) trying to develop an alternative plan for the grant monies that were due to expire in the next 14 months or less. Due to the excellent relationship we have with LPNF and NFWF we learned at the beginning of April that we can shift the project sites to more manageable areas. Other work materialized and went from concept to accepted bid stage in record time. This was the hardest I have worked since joining CIR.

Our job in Operations is to predict what we want to happen and react to what nature decides is going to happen. It is often that variable that makes this work exciting.

There is always an element of surprise and discovery, even in the most mundane work areas. The entire crew loves this aspect, loves the challenge, loves nature. There were dark periods during this time where even my eternal optimism was challenged. We are not over this crisis yet, but we have a plan, we have a challenge and every person in Operations is looking forward to meeting this challenge as soon as it is safe to get back out there.

There is always an element of surprise and discovery, even in mundane work areas.

How Our Organization Combats Climate Change

Phil White
CIR *Board Member*

Channel Islands Restoration is doing its part to help reverse climate change and global warming.

We're all rightfully concerned about climate change and global warming, and most of us are taking actions on a daily basis to reduce the greenhouse gas emissions in our lives; actions like driving less and moving towards electrification of our lives with the electricity generated by renewable sources like wind and solar. While the threat posed by climate change is serious, there is certainly hope that commitments and actions to quickly reduce carbon dioxide and other greenhouse gases in the atmosphere around the world will eventually solve the problem.

Reducing emissions of carbon dioxide and other greenhouse gases from burning fossil fuels is the basis of most climate strategies. We normally think of electric vehicles, and electrification of power plants and building energy systems, but actually removing CO2 from the atmosphere, called carbon sequestration, is another important strategy. That's where CIR's restoration work comes into the picture. Restoring native plant communities on the islands and mainland has been CIR's main mission since its inception 20 years ago.

Young live oaks ready for planting. Credit from Phil White, CIR Board Member and member of the Ventura Climate Emergency Council.

One of CIR's other important missions is education, and periodically we host webinars on scientific subjects related to our restoration work. In July 2021, we were blessed to have the appearance of Dr Patrick Gonzalez, Principal Climate Scientist with the US National Park Service, and his presentation "Human-caused Climate Change and Solutions in the Channel Islands."

One of the most interesting parts of his presentation was a summary of his studies of the carbon stored in the vegetation on the Channel Islands. Over the time period 2001-2010, Dr. Gonzalez and his colleagues observed and measured significant increases in the carbon stored in the vegetation on Santa Cruz and Santa Rosa Islands.

The plant restoration work of CIR and others and the removal of uncontrolled grazing animals from the islands have resulted in a significant increase in the number and overall mass of native plants which pull CO2 out of the atmosphere and store it in their plant tissues and roots, and in the soil. Santa Rosa Island in particular has seen a large increase in the amount of stored carbon, carbon that has

been pulled from the atmosphere.

Although all plants remove atmospheric CO2, one of the very best plants to sequester carbon is the oak tree. An excellent discussion of this effect is described in the book "The Nature of Oaks," by Douglas Tallamy (if you haven't yet read it, you really must do so.) Here is a quote from the book:

"Like all plants, oaks fix atmospheric carbon dioxide (CO2) through photosynthesis and store its carbon in their tissues. In fact, about half of a plant's dry weight comes from carbon. For an average oak tree, this amounts to tons and tons of carbon.

The more densely a plant's cells are packed together, the more carbon it can store, and it should come as no surprise that oaks produce some of the densest wood of all North American hardwoods.

Oak contributions to below-ground carbon sequestration are also noteworthy. Like oak tissues above the ground, oak root systems are massive and built from carbon. But what makes oaks a particularly valuable tool in our fight against climate change is their relationship with mycorrhizal fungi: Mycorrhizae make copious amounts of carbon-rich glomalin and deposit it into the soils surrounding oak roots. Glomalin remains in the soil for hundreds, if not thousands, of years."

CIR staff plant trees at Elings Park in Santa Barbara. Every time a tree or native plant is planted, the sequestration process of pulling carbon from the atmosphere begins.

So, every time a CIR staff person or volunteer plants a tree or other native plant, the sequestration process of pulling carbon from the atmosphere begins. An example is the project at Elings Park in Santa Barbara where CIR planted many oak trees and other plants as part of a bike path mitigation project. Over the years, CIR has planted over 50,000 plants which are working to sequester carbon.

Grasslands, especially those with a diversity of plant species, are major sequesters of carbon; particularly the deep-rooted perennial grasslands such as those CIR is working to re-establish on the San Marcos Foothills property. With their deeper root structures, perennial grasses and other native plants are able to store higher levels of carbon underground than exotic shallow-rooted plants. For example, Purple needlegrass (Stipa pulchra) is a native perennial grass whose roots can grow down as deep as 20 feet, pulling down and storing carbon deep underground.

By removing non-natives and employing controlled grazing with sheep, the competition from annual grasses and exotic weeds is reduced, allowing the perennial grasslands to thrive – and store more carbon.

While we always think of Channel Islands Restoration as the go-to organization for restoring native plant communities and establishing improved habitat for many species of animals, it's good to know that CIR is also having an impact on reducing climate change and global warming.

The Island Insider

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