



# THE ISLAND INSIDER

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## EAST ANACAPA ISLAND RESTORATION

Anacapa Island is a long and narrow strip of islets connected only at low tide and because of its geography it has a high ratio of coastline to interior. This expanse of ocean bluff and coastline provides critical and important habitat for seabirds, marine mammals, and a number of rare plants. The island boasts more than sixteen plant species that are found only on the Channel Islands, two of which are unique to Anacapa, and the largest breeding population of the formerly federally endangered brown pelicans in California. Anacapa Island is also an important breeding location for the Scripps's murrelet, one of the world's rarest seabirds, and the ashy storm-petrel, a California Species of Special Concern.



and with the help of hundreds of volunteers, we've made a huge impact. Today, the vast majority of the red-flowered ice plant has been removed, but there's still work to do and we're just as committed as ever. In addition to this project we have also worked to fill the bare open space with native plants such as gum plant, marsh frankenia, giant coreopsis, and many others. Currently we are working with the NPS and the California Institute of Environmental Studies to replant native habitat on the bare slope northwest of the lighthouse. Unsurprisingly, seabirds have already shown a strong preference for native habitat and the island seems to be coming alive.

One of the largest impacts to the island has been the dominance of non-native ice plant. Following the construction of the lighthouse in 1938, most of the eastern islet had been covered by ice plant, which quickly dominated the native vegetation. In 2012, the park superintendent set a goal to eradicate all red-flowered ice plant by the National Park Service's centennial in 2016. Channel Islands Restoration has been a key player in ice plant eradication since the inception of this project,

Our work on Anacapa Island has been a major

conduit to advance our mission to educate grade schoolers about our natural world and the importance of native habitat. One such recent chapter in this ongoing story was our work with Pacific High School in Ventura.

CIR supports the park and park programs in many ways including financial support to take three school groups out to Anacapa Island. After multiple delays due to



weather and stormy seas, Pacific High School was finally able to make it out to East Anacapa Island with CIR staff. By working with NPS Interpretive Staff, CIR ensured that the students received the best possible interpretation of Anacapa Island and the trip was extraordinary. We expect that it will leave a lasting impression on everyone involved.

Upon cresting the 154 steps that connect the dock and the top of sea cliffs, our arrival was greeted by what seemed like hundreds of western gulls in flight overhead, and a certain few of our group were exceedingly happy to have worn a hat that day.

After a brief introduction over lunch, we let the high schoolers loose on the ice plant, and with all of the enthusiasm that any high schooler can muster, they leapt at it. Now, that's not to say that they weren't effective - quite the contrary, really. It's hard to estimate just how much ice plant was pulled, but for reference: after we finished just a few hours later, it took two people about 15 minutes of shoveling ice plant out of the back of a truck bed to discard it all in the solarization mound. To put it bluntly, it was a lot.

At the end of the work day, the students took a hike out to Inspiration Point. The hike took us along restoration sites from past years to find new Giant Coreopsis growing up through the blanket of dead ice plant spurred on by the recent rain.



## HOW RAIN AFFECTS RESTORATION

This past winter, the Central Coast received a record-breaking deluge of rainfall – with over 4 inches of rain on February 17th alone. Any weather event will bring change to an ecosystem, whether it is drought, frost, fire, or rain.

By now we've been well acquainted with how our regional ecosystems have responded to drought and fire. The invasive annuals have died back quickly, leaving dormant natives to stand alone through the sun and heat to provide shelter to the wildlife. Wildfires like the Zaca Fire cleared away any sign of life along that stretch of the 101, and now following this, quick-growing pioneer species are taking their chance to grow while the slow growing and hardier shrubs patiently reestablish their dominance. But how does rain impact our ecosystems and our attempts to restore it? After so long, the memory of rain had seemed hard to fully recall. Luckily this year had given us a crash course to remind us.

With the rain arises a new array of benefits and obstacles. Much like the harsh drought helped eliminate poorly-adapted invasive species, yet made the establishment of new natives difficult; rain offers a gradient of impacts.

Rain, of course, helps plants grow - this is hopefully not new information - yet after a rain, it's often a race for seeds and dormant plants to grow and take up more sun and nutrients than the plants around them. Unfortunately, many non-native invasive species are highly adapted to responding quickly and growing much faster than their native competitors. At Hammond's Meadow in Montecito, CIR staff were battling wave after wave of invasives that sprung up after each rain. We were working to maintain what's known in the restoration community as a "Grow-Kill" cycle: allowing invasive seeds to germinate and then culling them before they can produce more seeds with the goal of exhausting the invasive seed bank. After each rain, we needed to respond quickly and cull the new growth before they could flower and go to seed, and being in a residential area we were using a number of organic known weed killers like oils from orange peels, cloves, and cinnamon, in addition to directly cutting the weeds with a scythe.

However, once natives are able to establish themselves, they are able to maintain their dominance over the invasive weeds because most of our native plants live year-round and simply go dormant in droughts, but spring up in response to rain without having to build new root structures. Therefore long term restoration sites like the San Marcos Foothills where plant communities in certain areas are comprised of 95% native plants responded exceedingly well to the rains with minimal intervention on our part.

On East Anacapa Island, volunteers and CIR staff have been working hard to eradicate ice plant and replace it with natives. As discussed above, if we plant natives in place of removed invasives, it will help prevent the invasives' reestablishment. On the western end of East Anacapa Island near Inspiration Point, CIR put



*Giant Coreopsis (Leptosyne gigantea) peaks up from beneath the dead ice plant after a little help from the early January rains.*

a lot of work into eradicating ice plant and planting coreopsis among the dead ice plant. Unfortunately, our timing had not been ideal as we planted four years ago, ahead of a four year drought. It was thought that the coreopsis would die off and the project would be deemed a failure, but on a recent trip out to the island in January, we found tiny coreopsis plants pushing their way up through the net of dead iceplant. Needless to say, we're incredibly happy about this.

Additionally, the rains have vastly helped in the establishment and maintenance of newly planted restoration

sites in areas like Burton Mesa, San Nicolas Island, and the San Marcos Foothills. Rather than devoting time and resources to getting out and ensuring the plants have the water they need to establish themselves enough to survive a drought, we can leave that to nature and put our focus on establishing new restoration sites.

However, the recent torrential rains have had much more of an impact than just allowing plants to grow. Because of the rain, we struggled to find a safe window to survey for invasive tamarisk along the Sisquoc River and mark its location for later eradication. We would plan a date to head out with the mule team from Los Padres Outfitters, each time our plans would be canceled due to rain and we would have to reschedule. Rescheduling is one thing, but on a much more devastating scale, these rains have led to floods.

Anyone that regularly receives and reads our emails will know that we've been fortunate enough to do a lot of work on San Nicolas Island. We've accomplished a lot out there, with over 30,000 plants grown on the island for various purposes - one of which has been to reconstruct habitat for the threatened island night lizard, habitat that they have already begun to use. It's with these accomplishments in mind that we can accept without too much frustration that the torrential downpour washed one of our newly planted wetland restoration sites to the sea.

As the recent weather events have demonstrated, ecosystems are dynamic and constantly changing, and there are seldom perfect conditions for habitat restoration. Critics of restoration often cite that if native habitats are well adapted to the regional climate and ecosystem, then we should not interfere and allow nature to take its course in returning the ecosystem to its native state. While this sounds good in theory, it is not that way in practice.

To talk



*Manzana Creek in February of 2017.*

briefly about ecological restoration theory, ecosystems can exist in multiple stable states that resist change. Originally, our native ecosystems would have been able to resist encroachment from invasive species, but with European induced disturbances like land clearing, grazing, logging, or road-building, the balance of our native ecosystems was tipped and novel invasive species were quick to fill the spaces due to the lack of natural bio-controls for such species. Conversely, to restore habitat to their native stable states requires effort to overcome that threshold of disturbance. This means clearing invasives, watering natives so that they can take root, controlling erosion, and putting up barriers to grazing around new plants. These things are not done because our native plants are not adapted to drought, rain, fires, or herbivory, but because proactive work is needed to push the ecosystem out of the invasive state and into the stable native state.

Part of restoring habitat is learning to work within the wide range of ecosystem dynamics. Whether drought or downpour, there's always work to be done.



# SEEDING THE CLOUDS

BY CIR VOLUNTEER & AUTHOR BRYAN SNYDER

By mid-afternoon on Santa Rosa Island, the winds reached gale force. 50mph gusts tore through our work site in the cloud forest, throwing grit in our eyes faster than our tear ducts could remove it. Still, we labored to the best of our ability, working to retrofit a series of erosion control barriers beneath the island oaks before the sun set behind San Miguel Island to the west.

I'd been expecting this. The winds that fly above the Pacific waves and course through California's Channel Islands can be intense, especially at upper elevations. As our project was situated fifty feet below the highest point on Santa Rosa, a little turbulence was unsurprising. Still, I was relieved as anyone when the call was made to retreat to the vehicles and return to staff housing. It took several minutes inside the truck before the wind-induced tension began to drain from my body. We were all a little dazed. With luck, calmer weather would reach the shores of the island by morning.

Our efforts were worthy, and badly needed. Santa Rosa Island native plant communities were negatively impacted by non-native ungulates introduced during the ranching era from about 1850s though 1990s.

The sheep chewed native plants down to the roots, and subsequent rains washed the exposed soil into the ocean.

Although the worst damage had been done, cattle, elk and deer

continued to degrade the landscape into the 21st century. Forests of oak and chaparral dwindled to isolated groves atop otherwise barren ridge lines. The island was purchased by the National Park Service in 1986, and the last of the non-native ungulates were removed in 2011.

But restoration here is not simple. Scant rain falls upon the island, and the trees and shrubs that used to grow atop the ridge lines gleaned most of their moisture from fog,

which condensed on the leaves and dripped down into the soil. Before ranching changed the ecosystem, this condensation produced enough groundwater to cause streams to flow at the base of the mountains. Today, there wasn't enough vegetation to collect fog and dampen the soil. And if the soil wasn't damp, vegetation couldn't grow on the barren hillsides. To break the contradiction, humans had to step in and jump-start the natural processes of healing. That's where we volunteers from Channel Island Restoration came in.



*Coyote bush (Baccharus pilularis) is planted between fog drip netting and erosion control waddles. Coyote bush is a hardy and resilient plant making it an excellent candidate for early restoration succession.*

With housing and transportation provided by NPS funding a small group of us helped for four days to build dams across gullies to trap sediment and reduce erosion. We worked beneath the shade of the

few island oak trees to survive the livestock hordes of the 19th and 20th centuries. Vast quantities of soil had





eroded away from underneath these ancient specimens, leaving them standing on stilt-like roots above crumbling bedrock. Our dams would hopefully fill with soil during rainstorms and be watered continuously by droplets of condensed fog from the oak branches overhead. Then new plants could finally grow within the cloud forest. Until the dams filled completely with sediment, the mesh fabric lining the barriers would also serve as artificial fog collectors, pulling moisture from the clouds and helping nurture seedlings during their first years of existence.

Channel Islands Restoration received generous funding from the National Park Service to cover the cost of equipment, supplies, housing, lodging, and staff time. Because restoration is expensive the need for volunteer assistance is critical and greatly appreciated. By using unpaid volunteer labor along with leftover staples from past projects, t-posts from old fencing and discarded eucalyptus logs, the managers were able to get these dams built and give the cloud forest a chance to recover before the majestic trees were lost forever. I was happy to do my part. In effect, I was helping make amends for my ancestors' mistakes, just as my descendants will undoubtedly work to repair damage from my unwitting errors.

For our efforts, we were given time to explore the east side of the island, including the grove of Torrey Pines – a subspecies found nowhere else in the world. The hillsides within the forest were carpeted with a smooth blanket of needles, which allowed the spherical pine cones to roll down the hill unchecked and collect by the thousands in depressions and gullies. Thankfully, the native mice seemed to be successful in helping the species expand its territory by planting seeds in the grasslands above the grove. Five-foot

saplings dotted these adjacent slopes, which helped me feel more optimistic about the resilience of the island.

Part of me wished that twenty years could flash by in a heartbeat so I might witness the results of our efforts in the cloud forest. I am often disheartened by the impact our species has had on the planet, from habitat destruction to the altering of our very climate. To maintain hope, it helps to see evidence of recovery, for it nurtures my belief that poor decisions made for short-term gain can sometimes be healed and forgiven.

Such evidence swam by our boat as we crossed the Santa Barbara Channel on our way back to the mainland – a blue whale. Whaling had reduced the population of these leviathans by over 99% during the 20th century, but now their numbers were unquestionably rising again. If the largest animal in Earth's history could mount a comeback, then something as big as the hydrology of an entire island stood a chance of recovering as well. I chose to dwell on that thought as the beast exhaled a great burst of air and mist, then slid out of sight once again into an ocean lit by the last rays of a November sun.

To find out more about Channel Islands Restoration and how to become a volunteer or supporter, visit [cirweb.org](http://cirweb.org).

For more of Bryan Snyder's stories and photographs, visit [www.offthemapbooks.com](http://www.offthemapbooks.com) or [www.facebook.com/offthemapbooks](http://www.facebook.com/offthemapbooks).

*This article was slightly revised by CIR staff in collaboration with Channel Islands National Park*



*Mosses, lichen, and other water loving organisms thrive beneath the canopy of the Island Oaks.*



# SCOUTING THE SISQUOC

CIR HEADS DEEP INTO THE BACKCOUNTRY IN SEARCH OF INVASIVE TAMARISK

Five days riding on the backs of mules left us sore but happy, as we scouted the Sisquoc River and Manzana Creek for Tamarisk trees (an invasive species that takes over riparian zones and eliminates nesting habitat for native songbirds). Elihu, Kevin and Daniel investigated the river and creek looking for the invasive tamarisk. The river had flooded just weeks before. The water must have been 6 feet higher than it was when we were there. We could see snags and branches that were high overhead having been washed downstream now resting against the trunks of standing trees.



*Field crew leader Kevin Thompson navigates through a dense maze of flood debris while moving up a tributary in search of tamarisk.*

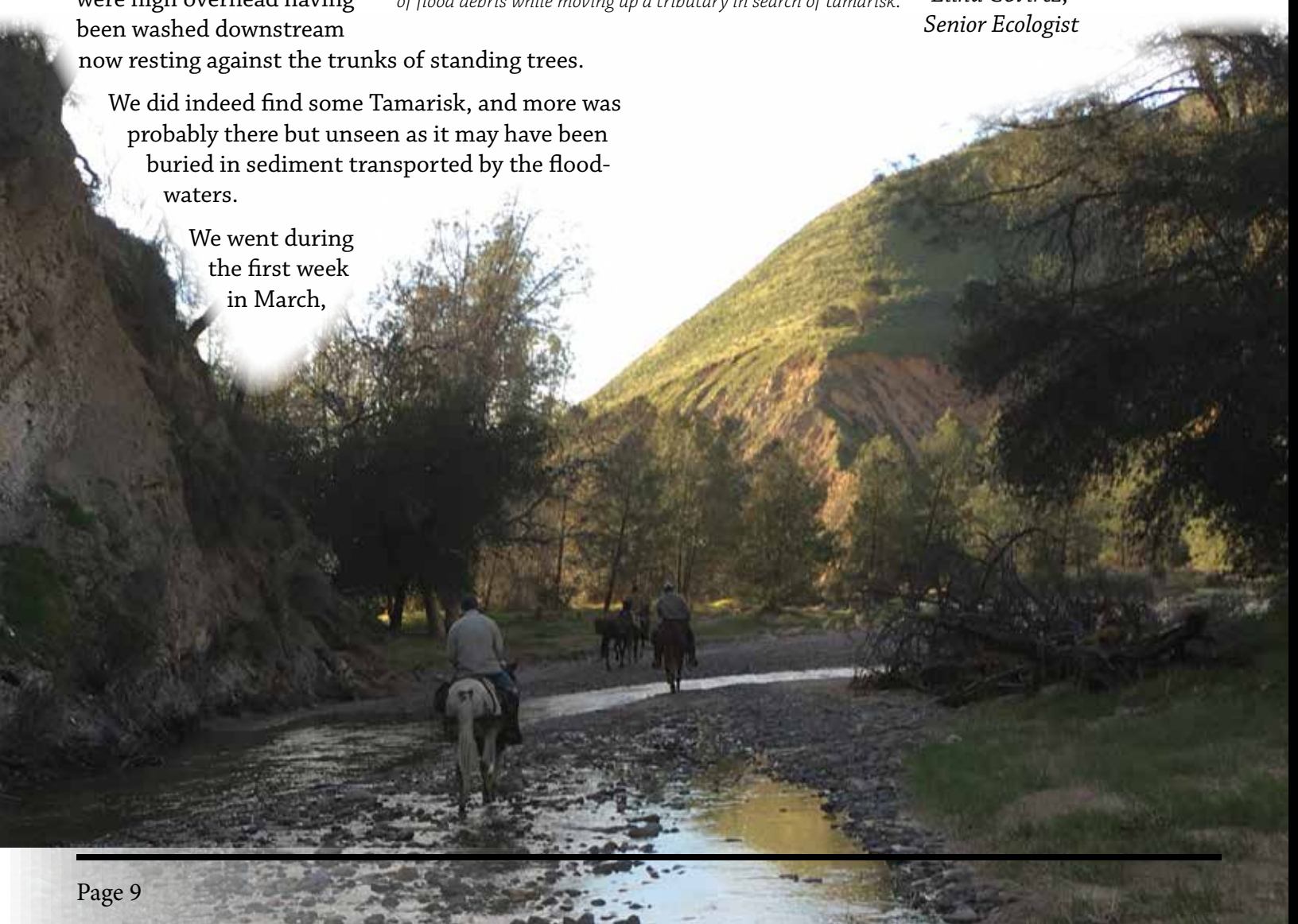
and already there were lots of flowers blooming. We were delighted to see a condor, California toads mating and their egg strings, both California tree frogs and Baja California tree frogs, some pond turtles exploring, and were content to a rattler from a safe distance.

It was a great trip and we hope to return with some of you intrepid hikers in mid to late October 2017 to scout and treat Tamarisk. Let us know if you want to be a part of it!

*-Elihu Gevirtz,  
Senior Ecologist*

We did indeed find some Tamarisk, and more was probably there but unseen as it may have been buried in sediment transported by the floodwaters.

We went during the first week in March,



# NATURAL HISTORY DAY TRIPS

## CENTRAL COAST TRAIN TOUR



On a gorgeous Day in March, over 50 CIR volunteers and donors were treated to a unique trip in a classic dome lounge-dinning train car up the coast to San Luis Obispo and back. The restored *Silver Splendor* dating from 1956 has a dining area below and the dome seating above.

Steve Junak, consummate botanist and historian told tales of the ranches and other interesting spots and old towns, while highlighting the ecology and wildflowers along the way. Tanya Atwater, world-renowned geologist, shared her extensive knowledge of the geology of the Santa Ynez Mountains and the Pacific coast along the way.

Passengers arrived at the Santa Barbara train station in the morning, and half were seated in the dome car with the guides while the others lounged in the lower diner portion of the car. On the return trip, the group switched locations on the train.

Passengers were also served tasty drinks including coffee, mimosas, wine and beer and soft drinks, plus a delicious buffet lunch.

Tickets for the trip sold incredibly quickly and was enjoyed by all. Because of this we plan to host another tour in the *Silver Splendor* this fall.

## WEST CAMINO CIELO JEEP TOUR

On Sunday June 4th, an adventurous group of CIR supporters and volunteers were treated to a unique tour of the Santa Ynez ridge as it has never been done before. Led by staff Senior Ecologist, Elihu Gevirtz and board member/renowned geologist Tanya Atwater, our tour ventured west from Santa Barbara, and after a brief stop to show the status of our restoration progress at Refugio State Beach, we turned north towards the Santa Ynez range.

Elihu recalled that “views of the Santa Barbara Channel and the Gaviota Coast



were abundant all day, but the equally pleasing treat was the up-close view of two endemic shrubs, including Refugio Manzanita (*Arctostaphylos refugioensis*) with overlapping leaves and California false lupine (*Thermopsis macrophylla*) with tall and bright yellow flowers. Other beauties included my favorite: Woolly Blue Curls (*Trichostema lanatum*) with plumes of wispy, feathery blue flowers.”

We ended the trip at the historic Cold Springs Tavern where we ate lunch to the backdrop of the verdant green riparian corridors and the melodious blues of Tom Ball and Kenny Sultan.

# CHANNEL ISLANDS RESTORATION

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Channel Islands Restoration protects rare and endangered plants and animals by restoring habitat in sensitive and unique natural areas on the California Channel Islands and adjacent mainland. We educate a variety of groups about the value of native habitat and how to protect it. We recruit volunteers and identify and develop public and private funding sources for habitat restoration programs. We create collaborative relationships within the environmental community. CIR is a 501(c)(3) non-profit organization.