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*Protecting California's environment and
economy from invasive plants*

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FROM THE DIRECTOR'S DESK

"Wild Billions"

By Executive Director Doug Johnson

Bay Nature Magazine has an intriguing new project tracking the \$100 billion+ in federal funds going to natural resources via the Bipartisan Infrastructure Law (BIL) and Inflation Reduction Act (IRA). The graphics associated with their "Wild Billions" initiative allow you to explore all the pots of funding by scale and agency. They will also be tracking grants made in California.

Securing and managing federal grants is notoriously difficult. Applicants must jump through different bureaucratic hoops for each funding agency. These obstacles may be challenging enough for organizations who have experience working with federal grants. They are prohibitive for smaller, grassroots groups who do a large portion of the good work on the ground. Some of the funding is explicitly dedicated to nontraditional recipients, and agencies are trying to take on this barrier.

One positive is the trend toward agencies making large "block grants" to NGOs, who can then use the funds to provide smaller grants to partners on the ground. This leverages the networks of umbrella organizations to disperse funds in a way that is not possible for the state agencies to do on their own. Cal-IPC has applied for such a grant from the California Department of Conservation. If received, we would then provide funds to county Weed Management Areas (WMAs) statewide.

There is a bigger problem with this

federal funding, and with a similar pulse of funding coming from the state: it needs to be spent quickly, within about four years. Much of the natural resource work that needs to be done is not of the "quick fix" variety. To be sure, some good work will get done with these funds. But a lot more good work could be done if the funds were parsed out over a longer timeframe.

Few invasive plant management projects can be fully accomplished within the period of time afforded by short-term grants. Likewise, funders typically don't want to (or even legally cannot) invest in a project that will only be successful if future support is found. Even if one has success in securing sequential grants for a long-term project, an inordinate amount of energy can be spent doing it, and one risks losing key project staff due to the lack of certainty.

Beyond individual projects, invasive plant management benefits from a broader programmatic approach. Rather than focusing on a specific action in a specific place, such an approach supports activities like surveying a region for early detection, responding flexibly as required, adjusting ongoing priorities, and tracking progress.

Infrequent pulses of funding are "no way to run a railroad," as they say. Funding certainty would enable organizations to build appropriate programmatic capacity to work towards long-term conservation goals. If we want "durable" conservation, we need durable funding.



ON THE COVER

Over the past four years, Cal-IPC has collaborated with a network of local park districts, government agencies, and regional consultants to provide stewardship training for members of local conservation corps agencies in the Bay Area. On the cover, Oakland Civicorps crews learn about shoreline restoration while walking to pull invasive *Limonium* (photo: Constance Taylor).

After a busy morning, several crew members pose with a truck bed loaded with trash bags of pulled Limonium (inset photo: Claire F. Meyler). Read more on page 6.

Wildland Weed News

CAL-IPC UPDATES

Symposium 2023 – We hope to see you in Chico (or online) October 25-28! See details on page 9.

Action Week – Executive Director Doug Johnson was a panelist with California Natural Resources Secretary Wade Crowfoot for Invasive Species Action Week in June. Also, University of California Cooperative Extension held five lunchtime webinars. All recordings are now online.

Advocacy – Cal-IPC continues to advocate in Sacramento for a return of \$5 million for invasive species response that was removed from the state budget. We also continue to track AB-99, a bill that aims to restrict Caltrans use of herbicides on roadsides.

Limonium – We are wrapping up the eighth season of controlling invasive sea lavender in San Francisco Bay marsh habitat. Bay-wide levels are down some 80%. Local volunteer groups play a critical role in some locations (see articles in Spring 2023 *Dispatch*).

Research – With support from the California Dept. of Fish & Wildlife, Cal-IPC is studying impacts of invasive plants on rare plant species on the central coast. We are conducting field work at sites for three of the rare plants and modeling invasive plant risk for all fifty endangered plant species in the region.

WeedCUT – A technical team is drafting content for adding chemical methods to the online WeedCUT tool for determining appropriate control approaches.

YOUR MEMBERSHIP

Thank you for keeping your membership current. Note that your expiration date is shown on the mailing label of this newsletter. Cal-IPC's success in meeting its mission depends on your vital support.

OTHER NEWS

CNPS committee – The California Native Plant Society rebooted their Statewide Invasive Weed Committee, engaging those in local CNPS chapters who are working to control invasive plants.

Paradigm shift – The California Landscape Stewardship Network released a report on the Cutting Green Tape initiative that has resulted in streamlined permitting for restoration projects. The effort carries key lessons for other barriers that need to be addressed.

Retraining farmworkers – Immigrants and indigenous farmworkers in California are being retrained in cultural burning and land management, including control of *carrizo*, or *Arundo* (Yes! Magazine, April 25).

Natural hazards – The costs of invasive species are of the same magnitude as the costs of natural hazards such as storms, floods, and wildfires, according to a study published in *Perspectives in Ecology and Conservation* (April-June 2023).

Goats – SB-675 is making its way through the California Legislature, seeking to ensure that using goats for vegetation management remains feasible.

Rats – Wildlife on islands worldwide are vulnerable to introductions of rats, which can decimate ground-nesting birds. *Scientific American* (May 12, online)

reports on efforts to eradicate rats on islands, including a recent successful effort by the Republic of the Marshall Islands.

Extinctions

Australia's Invasive Species Council published a report documenting how invasive species have caused two thirds of all likely extinctions in Australia since 1960. Cats, foxes, wolf snakes, black rats, and brown trout are some of the culprits.

Knotweed wars

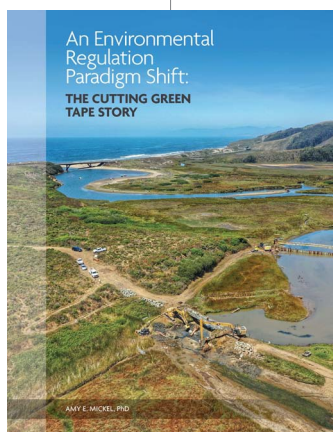
Fallopia japonica continues to wreak havoc on British property values, as reported by *The Guardian* (May 23), turning botanists into homeowner consultants and lawyers into "wheelbarrow chasers."

30x30 progress

The California Natural Resources Agency published an annual progress report, stating that approximately 631,000 acres of land were newly conserved, bringing the total to within 6% of the 30% goal. Projects also connected habitats and

made nature more accessible to communities.

Spartina in China – China is undertaking work to remove invasive Atlantic cordgrass from tidal wetlands at a cost of hundreds of millions of dollars (*Science*, March 8).



Japanese knotweed.
Photo: Kier Morse.

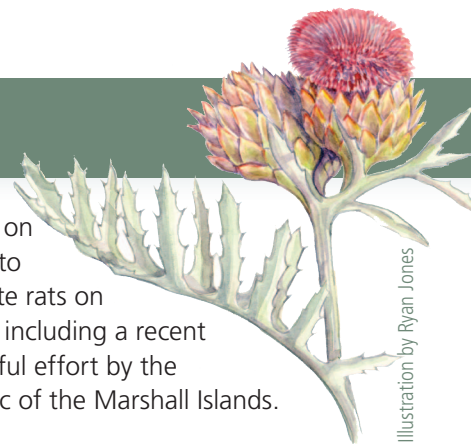


Illustration by Ryan Jones

The Ecological Workforce Initiative: Aligning the health of our economy with the health of our ecology so that both can thrive

Sally Bolger, Director, Ecological Workforce Initiative

The not-for-profit Ecological Workforce Initiative (EWI) is catalyzing an effort to create a specialized ecological workforce — the folks on the ground who directly interface with the natural resources and species of concern. It is at ground level where the impacts to resources occur and where regulatory requirements are implemented. Without properly trained crews, construction activities intended to restore or enhance our environment can instead result in habitat degradation, species mortality, and destruction of cultural artifacts.

Trade workers on restoration projects need the skills and knowledge to work appropriately in sensitive habitats and within permitting constraints. Currently, these workers are not seen as any different from the folks who build our freeways and pave our roads. Ecological workers deserve respect for the role they play in project success and remuneration for having an enhanced level of competency.

The ecological workforce is the common denominator of all restoration projects. Whether publicly or privately funded, whether the project proponent is a state or federal agency, non-profit or for-profit, the success of a project — often a decade or more in the making — all comes down to the quality of the on-the-ground workers implementing the designs and abiding by the permits.

The training program

We have created a 10-hour Ecological Worker Awareness and Compliance Training Program that educates participants in the purposes of restoration, the regulatory context within which they work, the types of permits that may be encountered, and the reasons why permitting restrictions must be followed. The training, available in both Spanish and English, is designed to be an enhance-



Equipment operators and laborers working in sensitive habitat.

ment to a broad range of existing workforce development programs, such as conservation corps, high schools, and community colleges, as well as used by land managers, environmental non-profits, and restoration companies as part of their employee training.

To date, EWI has trained more than 300 existing and entry-level restoration workers in partnership with Conservation Corps North Bay, Workforce Alliance North Bay, local land management agencies, and private employers. Maira, one of the graduates who went on to full-time employment in the environmental field, commented: *Lo que más me gusta del programa es que nos están enseñando nuevas cosas y pues para que nosotros podamos ver como cuidar el medio ambiente y protegerlo y pues así proteger a nuestras aves y peces. Después de aquí quiero seguir de lo mismo como trabajando por el medio ambiente.* (What I like most about this program is that they are teaching us new things so that we can see how to take care of the environment, to protect it, and protect our birds and fish. After here, I want to continue in the same way, working for the environment.)

The effort is analogous to the OSHA (Occupational Safety and Health Administration) health and safety trainings, where everyone on a job site is required to have a minimum level of understanding of their role in creating a safe workplace. Our goal



Plant identification worksite mentoring session.

is to establish similar industry-wide training requirements leading to a culture of worksite safety for the resources, just as OSHA has created a culture of workplace safety for humans. Continuing to parallel OSHA, EWI's basic training is designed to be supplemented by topic-specific modules such as habitat-specific best management practices, ecologically appropriate fuels management, and native plant identification and invasive species removal.

With the help of the California Ecological Restoration Business Association, EWI is bringing together partners throughout the restoration industry — policymakers, resource agencies, restoration companies, environmental non-profits, educators, and workforce development partners. The Initiative's goal is to "meet the moment" by creating a rigorous training and respected certificate capable of being used as a qualification metric for employment, permit issuance, or contract award.

While there are qualification metrics for contracting companies, there are none for the workers themselves. Establishing a requirement that all on-the-ground workers be ecologically trained will promote better environmental outcomes while creating pathways to lifetime, living-wage jobs available to all members of our community, regardless of socioeconomic background, education level, or English language proficiency.

(Continued on page 5)

Weeds on the move

Cal-IPC

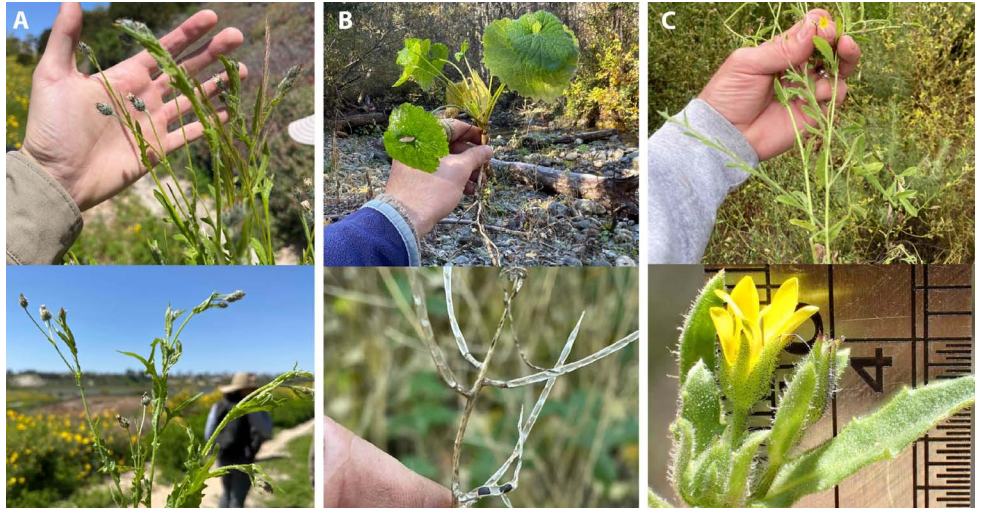
As we track invasive plant species on the move across California, these are a few species that bear sharing with the broader land management community. All have been evaluated and given a pest rating of “A” by the California Dept. of Food and Agriculture (CDFA) in the last five years. Technically, this identifies them as important targets for strong containment response, aiming toward eradication. Unfortunately, acting in some cases is complicated, even when funding is available. Dedicated individuals and local organizations have been able to partially bridge slowdowns in institutional response in each of the three examples described here. A rundown of “weed alerts” for species that are new to the state or are showing disturbing increases in their range will be presented at the Symposium in October.

***Volutaria tubuliflora* (desert knapweed)**

We have been tracking desert knapweed since 2017, supporting local partners in San Diego and Orange counties controlling the only known infestations in North America. Modeling shows that the plant would likely spread across the Southwest U.S. and northern Mexico. New finds this year illustrate the imminent risk of spread. Plants were found along a trail in the Cleveland National Forest near Ramona, 50 miles west of the main Borrego Springs infestations, and along the roadside north from the Salton Sea into Riverside County. The Wildlife Conservation Board has expressed interest in funding control of the main infestation in Borrego Springs, but bureaucratic challenges have kept San Diego County from being able to implement a full management effort. The plant was rated “A” by CDFA in 2018.

***Alliaria petiolata* (garlic mustard)**

Garlic mustard is a highly impactful invasive plant in much of the country and has recently made its way to California. Three years ago, a population was found along a stream in the San Bernardino Mountains.



Column A: desert knapweed (top Jacob Donaldson, bottom Zan Flores). Column B: garlic mustard (Bryce Ryals). Column C: stinking roger (top Chris McDonald, bottom Ron Vanderhoff). All images from Calflora.

The Inland Empire Conservation District, California Botanic Garden, and UC Extension have valiantly pitched in to map and control the population, but a more formal control plan still pending. Last year, a new population was reported through Calflora along a creek near Weaverville in Trinity County, more than 600 miles from the San Bernardino site and therefore likely an independent introduction. Shasta-Trinity National Forest staff are working to remove it and will be attempting to coordinate with private landowners upstream to remove any found on their property. The plant was rated “A” by CDFA in 2021.

***Osteospermum calandulaceum* (Stinking Roger)**

Stinking Roger, an unfortunately named South African native in the sunflower family, was found in a wildland park in Orange County last year by local California Native Plant Society botanists. This find, combined with the fact that it is naturalized in parts of Australia and Hawaii, was enough to warrant a “weed alert” at last year’s symposium and Cal-IPC and CDFA review of the species. A working group has been formed to organize its management and track its spread. Local volunteers have worked with UC Irvine researchers to do germination trials. Removal efforts are underway,

including a project by Laguna Canyon Foundation and Orange County Parks. The plant was rated “A” by CDFA in 2022.

If you have new finds to report, please record your observations in Calflora and notify us at info@cal-ipc.org. Nominations for weed alerts should be sent to jburger@cal-ipc.org with photo documentation and location information.

Ecological Workforce

(Continued from page 4)

The Ecological Workforce Initiative uniquely sits at the intersection of three of the most critical issues of our time: climate resiliency; economic development; and Diversity, Equity, and Inclusion in the environmental field. There are thousands of projects being undertaken in every corner of the state, from the Sierra to the desert and all along the coast. State and federal funding is increasing, and the pieces are being set in place to increase the pace and scale of restoration. We need a workforce trained to accomplish this work, and all communities deserve equitable access to the jobs created by these investments in environmental health and resilience.

Learn more at ecologicalworkforce.org

All photos courtesy Ryan O’Halloran, Catch Creative.

Cal-IPC and Conservation Corps training

Claire F. Meyler and Constance Taylor, Cal-IPC

Over the past four years, Cal-IPC has collaborated with Oakland Civicorps (Civicorps), San Jose Conservation Corps and Charter School (SJCCS), and Conservation Corps North Bay (CCNB) to train young adults on the basics of land stewardship. Our aligned vision for this project puts into practice the belief that education and workforce development are powerful tools to promote racial and economic equity in conservation.

Training sessions provide expanded tools and education for young people who are passionate about working in nature, but who were not able to thrive in traditional classroom learning spaces. Participants may also belong to communities that have historically been denied access to public parks or stewardship careers. Based on exit surveys, we see great enthusiasm from our participants.

From 2019-2023, we were able to provide 29 programs for 359 corps members, promoted crew leaders, and staff. Cal-IPC works with instructors from

local park districts, government agencies, and regional consultants to provide invaluable insight into stewardship practices as well as employment and career connections. Topics covered have included tool safety, plant ID, preventing plant pathogens and weed seed spread, urban ecology, fuel load reduction in wildlands, and considerations for wildlife ecology in stewardship projects.

Based on the keen response from

attendees and instructors, Cal-IPC is seeking grants to expand this program outside the Bay Area. We see great potential to grow the next generation of California's ecological workforce, an essential step to create both cultural and environmental solutions as we work together to protect the state's complex ecosystems.

Enjoy a small selection of images from training sessions in 2022-23.



Civicorps crew members smile during a training and workday at Albany Cove with Drew Kerr, Invasive Spartina Project Treatment Manager. Participants gain insights on marsh habitat protection, including the impacts and management of invasive Spartina and other threats to the estuary. Photo: Drew Kerr.



NBCC corps members compare notes on a "plant scavenger hunt" to practice looking closely at plant shapes at Hamilton Wetlands Restoration Project Nursery, under the guidance of instructors from Novato Bayland Stewards, Golden Gate National Parks Conservancy, California State Parks, and Marin County State Parks. Photo: Claire F. Meyler.



Civicorps crew leaders and staff learn from East Bay Regional Parks District instructors about biodiversity, the difference between native, introduced, and invasive species, and how human history has shaped the land at Lake Temescal in the Oakland hills. Photo: Claire F. Meyler.



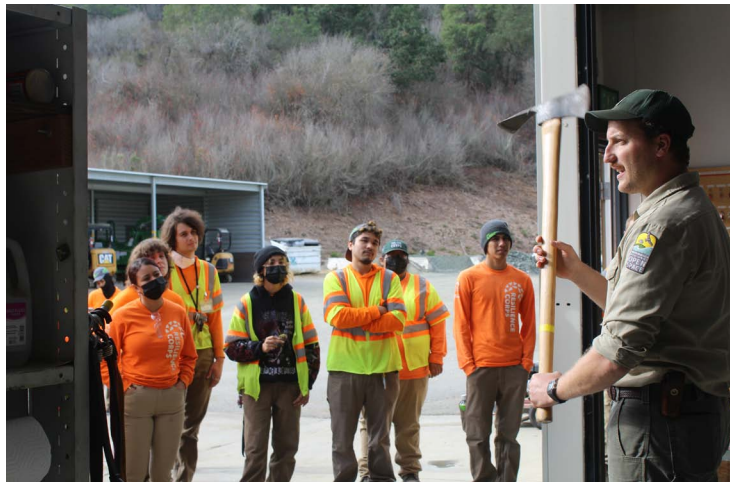
Civicrops rising crew leads practice looking at leaf shapes to determine plant ID at Dimond Park. Trainers from the East Bay Regional Park District and Friends of Sausal Creek discuss efforts to restore this creek to protect wild rainbow trout and salmonids, and the constraints of land management in an urban and riparian setting. Photo: Claire F. Meyler.



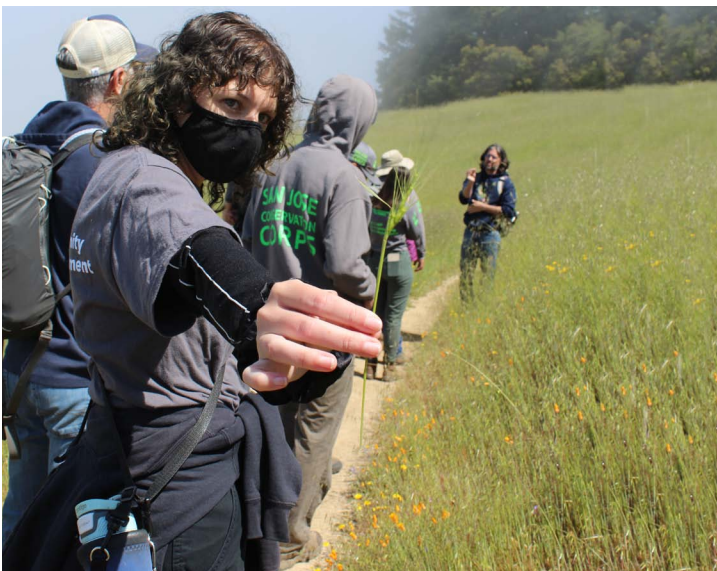
Corps members from NBCC practice plant ID using the Seek app at McInnis Park, aided by instructors from California State Parks, the Marin Audubon Society, and Main County State Parks. Photo: Claire F. Meyler.



Another group of NBCC corps members works together to identify plants on the Seek app in McInnis Park. Photo: Claire F. Meyler.



Arborist John Holback of the Midpeninsula (Midpen) Regional Open Space District (right) leads a Tool Talk for the SJCCS at the Rancho San Antonio Preserve in Cupertino. He demonstrates different tools, tool use, safety, and basic instructions on cleaning. Photo: Claire F. Meyler.



Coty Sifuentes-Winter, Senior Resource Management Specialist at Midpen (right, in the distance) discusses early detection and rapid response efforts to control invasive goatgrass (held out by corps member) and methods to control pathogen spread at Longridge Preserve in Cupertino. Photo: Claire F. Meyler.



Crew supervisors and staff from SJCCS visit Horseshoe Lake in Skyline Ridge Preserve to hear about considerations for wildlife ecology in stewardship projects, led by Biologists Karine Tokatlian (left in blue) and Hannah Liu (right in white), from Midpen. Photo: Claire F. Meyler.

Santa Cruz County's new Regional Conservation Investment Strategy will fund habitat enhancement

Kelli Camara, Resource Conservation District of Santa Cruz County

On January 1, 2017, Assembly Bill 2087 went into effect, creating the California Dept. of Fish and Wildlife's Regional Conservation Investment Strategy (RCIS) pilot program. The program includes information and analyses related to the conservation of focal species and their associated habitat.

The Santa Cruz County Regional Transportation Commission (RTC) and the Resource Conservation District of Santa Cruz County (RCD) recently announced the completion of the eighth RCIS in California. This new RCIS provides a unified strategy to guide conservation investment within Santa Cruz County while also addressing regulatory mandates from local, state, and federal natural resource agencies.

Funding for development of the RCIS was provided by the California Wildlife Conservation Board. This voluntary, non-binding guidance document was developed over a period of four years through a stepwise conservation planning framework with extensive input from the community, from local, state, and federal resource agencies and organizations, and from technical experts.

The RCIS aligns the anticipated need for major infrastructure improvement projects, such as those included in Measure D,



a local sales tax for multi-modal transportation improvements in Santa Cruz County (2016), and approval of Senate Bill 1 (2017) the California Road Repair and Accountability Act (2017), with the need for conservation work. By identifying and prioritizing the best opportunities for high-value conservation and habitat enhancement work it informs where mitigation dollars should go. It supports regional "advance mitigation" planning (where mitigation funds can be spent on conservation before infrastructure construction has happened). The goal is to focus project mitigation funds on the highest conservation priorities.

The RCIS identifies strategies to address "pressures and stressors" on biodiversity and healthy, resilient ecosystems as well as key conservation opportunities and habitat enhancement actions to protect these values. One of the key pressures and stressors identified by the RCIS is the threat of non-native, invasive plant species.

Due to its history of land use and diversity of natural systems, Santa Cruz County supports (at last tally) 556 exotic plant taxa (i.e., those not native to California) living outside cultivation,

which constitute more than one third of the region's flora. Some of these exotic species exert strong negative impacts on our ecosystems by outcompeting native plants, reducing habitat diversity and complexity, altering ecosystem properties (including nutrient cycling and disturbance regimes), or directly impacting the nesting and foraging success for native riparian birds and other native animals.

The RCIS provides priorities for sustaining the 13 identified natural communities outlined in the document, as well habitat connectivity and working lands. It recommends actions designed to benefit entire assemblages of species and the ecosystems that they rely on.

Such recommendations include, but are not limited to, the removal of:

- Vine-like species in riparian and riverine habitats such as Cape ivy and Himalayan blackberry, which form impenetrable mats that smother vegetation, limit sapling recruitment, and interrupt natural sediment transport dynamics of riparian floodplains.

- Eucalyptus, tree-of-heaven, or other non-native trees that take up greater amounts of freshwater than native trees. Non-native trees can reduce the availability

(Continued on page 14)



The Ohlone tiger beetle is found only in Santa Cruz County. It was federally listed as endangered in 2001. Photo: Alex Jones, University of California, Santa Cruz.

Reuniting for Resilience

Photo: Annette Tang CC by 3.0

2023 Cal-IPC Symposium CSU Chico and Online, Oct. 25-28

Connect with colleagues in-person at CSU Chico or stream online. Early Bird Rates end Aug. 25.

SYMPOSIUM FEATURES

Join us to share the latest updates on effective tools, relevant research, and strategic management approaches! We're excited to gather in-person once again — and for those unable to join us in Chico, we're keeping an online platform to live stream talks and take questions.

WED., OCT. 25: WMA MEETING, LAWS & REGS, AND MORE

9:00 am – 12:00 pm: 2023 Statewide Weed Management Area Meeting. (Free – separate registration needed for those not attending the Symposium)

11:30 am – 1:00 pm: Career Panel

1:30 pm – 4:30 pm: Workshops

- Herbicide calibration for invasive plant management
- What to do when you're expecting (a fire)
- Hands-on Calflora

6:00 pm – 8:00 pm: DPR Laws & Regulations

THUR. & FRI., OCT. 26-27: SESSIONS AND MORE

Session talks, discussion groups, lightning talks, and posters cover a range of topics, including:

- Aquatic, riparian, and wetland weeds
- Biocontrol
- Community engagement/volunteers
- Control methods for new weeds
- Grasslands management
- Intersection of art and science
- Invasive species in changing landscapes
- Rare plants and weeds
- Regional updates
- Restoration and stewardship
- Tools and techniques
- Wildlife responses
- And more!

SAT., OCT. 28: FIELD TRIPS

Oroville Wildlife Area (Full day, \$50)

Big Chico Creek Ecological Reserve
(Half day, \$25)

Bidwell-Sacramento River State Park
(Half day, \$25)

CA State Parks (Half day, \$25)

SPECIAL SESSIONS

- Collaborating with tribal partners
- Fighting fire and weeds together
- Large-scale weed management collaborations

Plus, our annual Photo Contest, Reception and Raffle, Exhibitor Gallery, and Awards Luncheon!

REGISTRATION

Early Bird through Aug. 25 / Regular through Oct. 10 / Late registration through Oct. 18, 5:00 pm (in-person, max attendees 330) and Oct. 23, 5:00 pm (online).

Limited Income and Student rates are available for individuals who find registration costs prohibitive. We encourage field techs, conservation corps members, and other front-line staff to use this rate.

Register, join the Photo Contest, and more at cal-ipc.org/symposium.

Conservation symposium celebrates recovery on the islands of the Californias

Denise Knapp, Santa Barbara Botanic Garden

The islands of the Californias are precious ecological gems strung along the coast of western North America — stunningly beautiful and home to unique plants and animals found nowhere else in the world, like the diminutive island fox, the cobalt blue island scrub-jay, and the iconic island oak. These unique ecosystems, like those on other islands, are particularly vulnerable to introduced species. Fully 75% of bird, mammal, and reptile extinctions worldwide have occurred on islands.

On these islands — part of California in the U.S. and Baja California in Mexico — a suite of non-native, invasive animals were introduced between 150 and 100 years ago. Fenced in by the ocean with no animal predators, populations of introduced sheep, goats, deer, and other animals reached unsustainable densities.

Native plants on the islands, having evolved without any herbivores larger than a rodent, had lost their defensive spines and chemicals, and were targeted like baby salad mix by these new herbivores. Without the native vegetation to hold it together, bare soils eroded in sheets off of the landscape, leaving tree roots exposed up to an adult human's hip. Whole new sandspits were formed from the eroding soil — enough to alter topographic maps. Meanwhile, voracious rats, cats, and mice plucked baby seabirds from the cliffs, and Argentine ants inhibited native insects, rodents, and reptiles, doing more damage than creatures many times their size.

Fortunately, over the last three decades, indomitable conservationists stepped in across the archipelago to do the near impossible job of removing these introduced species. Against steep logistical, legal, and political headwinds, these conservation heroes stayed firm in their knowledge that the islands couldn't recover without this crucial action — and they made it happen.



The islands of the Californias are precious ecological gems strung along the coast of California and Baja California. Photo courtesy of the Santa Barbara Botanic Garden.

In February 2023, Santa Barbara Botanic Garden (SBBG) bestowed their Pritzlaff Conservation Award on three of the many conservation heroes who have led these efforts: Peter Schuyler from The Nature Conservancy and Catalina Island Conservancy, Kate Faulkner from the National Park Service, and Grupo de Ecología y Conservación de Islas from Baja California.

These awardees were joined by seven other speakers at the Garden's hybrid in-person/digital Conservation Symposium on February 25, to celebrate the recovery that followed: vegetation transforming from a sea of invasive grasses to diverse native shrublands, and rare plants and animals recovering and recolonizing. The recovery process made many other efforts possible, including thousands of tree plantings and the fastest removal of a mammal (the island fox) from the endangered species list in history.

In their talks, Kate Faulkner and Peter Schuyler focused on the ingredients for success. For Kate, people, partnerships, and persistence were key. When Anacapa Island rat eradication was challenged in court, an Environmental Impact Report, well-prepared by collaborators, led the

judge to rule in their favor. A required public meeting about feral pig removal on Santa Cruz Island wasn't going well — until a local veterinarian stood up and supported the project. This lent credibility and “changed the tenor of the entire meeting,” with many others standing up in support of the project.

Faulkner noted the importance of working with the media to “get your story out there” — which for them, was aided by a partnership with The Nature Conservancy. Peter added three ingredients to the mix: preparation, adaptability, and passion for getting the work done. Preparation was important for (among other things) avoiding unintended consequences (like the release of invasive plants) and documenting recovery. He found adaptability to be key when funds kept running out or opportunities came up on short notice. Peter also found that it was critical to have a vision for success, and reminded everyone that much of this work was happening in the days before modern communication, which added significant challenges to working in these remote places.

Grupo de Ecología y Conservación de Islas, represented at the conference by

Federico Méndez Sánchez and Luciana Luna-Mendoza, has all of these ingredients. They described how 60 invasive species eradications on 39 of the Mexican Islands have benefitted 206 endemic species to date. Of 27 extirpated seabird colonies, 23 have recovered, and 12 new native species have colonized. They have also benefited from many partnerships between NGOs and the federal government within Mexico, as well as a trinational collaborative and a binational biosecurity working group. By 2030, they envision all of the Mexican islands will be free of invasive mammals.

Rare plant recovery was the focus of talks by Kathryn McEachern from the U.S. Geological Survey, Heather Schneider from Santa Barbara Botanic Garden (SBBG), and Kim O'Connor from the U.S. Navy. Kathryn described an average 270% increase in rare plant abundance over 16 years following invasive species



Island foxes, native to California's Channel Islands, were first listed under the Endangered Species Act in 2004. Twelve years later, the removal of three subspecies of island fox was the fastest successful recovery for a mammal in the history of the Act. Spread out over the Channel Islands, each island has its own unique subspecies. Photo: U.S. Fish and Wildlife Service

removal. The Torey pine (*Torrey torreyana*) had been reduced to about 100 individuals in 1988, but number over 12,000 individuals today, while box bedstraw (*Galium buxifolium*) has been moving off of the cliff faces where it evaded introduced herbivores and back onto the terraces; it will soon be de-listed.

Heather told of a multi-year collaborative effort to conserve and recover 14 listed species, which entailed 540 rare plant observations across seven islands to plan recovery. Many new populations were found and over 400,000 seeds were collected from plants grown in the SBBG nursery to increase populations. Kim described how four plants and one bird were delisted in January — the largest group delisting in the 50-year history of the Endangered Species Act. Remarkably, this was achieved on one of the most heavily used military training ranges in the country. She hailed many of the same ingredients for success, adding the importance of a “culture of stewardship” within Naval Base Coronado, and sufficient program funding (they have a \$6 million annual budget for natural resources management!).

John Knapp with The Nature Conservancy and Bill Hoyer with the U.S. Navy took us several steps beyond the removal of large herbivores. John described how using small, maneuverable helicopters allowed him and his crew to survey the islands to map 55 invasive plant species

and target 28 for eradication 12x faster for half the cost (and more safely to boot). Fourteen of their 28 target species have been controlled to zero density over the past 15 years, with only 10% of 1,000 original infestations still requiring follow-up. Helicopters have also been a key tool in their ongoing eradication of Argentine ants.

Bill described how San Nicolas Island became one of the largest islands on earth to remove cats without a toxicant, via novel tools and a multifaceted partnership. The endemic island night lizard, released from the cats' predation pressure, was delisted

in 2014 and later successfully colonized cactus scrub habitat that was restored for their benefit. Today, the focus has turned to the search for a biocontrol agent for invasive crystalline iceplant (*Mesembryanthemum crystallinum*) — and a weevil from the plant's home range in South Africa may just be the ticket.

Scott Morrison from The Nature Conservancy rounded out the day by reminding us that islands are useful as model systems for increasing the pace, scale, and effectiveness of conservation. We in the restoration and stewardship community can learn a lot by studying the lessons learned from decades of conservation leadership and accomplishment on the islands of the Californias.

Watch conference recordings online: <https://tinyurl.com/34kjfmw2>



Invasive ice plant formed thick mats over the breeding sites of nocturnal seabirds on Todos Santos Island, preventing natural burrowing and nesting. Staff at Grupo de Ecología y Conservación de Islas removed ice plant and built protected burrows to assist birds such as the Cassin's Auklet (*Ptychoramphus aleuticus*), shown here. Photo: J. A. Soriano.



The Torrey pine is the rarest native pine in the United States and, possibly, the rarest pine in the world. It only grows naturally in two places: Santa Rosa Island and near San Diego. Photo: Geographer, CC BY 2.5

Piloting an innovative weed management program for Marin County through a healthy soil lens

Lily Verdone, Marin Agricultural Land Trust and Stefan Parnay,
Marin County Department of Agriculture

As in so many other places in California, invasive weeds have become an extensive problem for the agricultural lands of Marin County, a verdant ranching and farming landscape just north of San Francisco. Exacerbated by the 2019-2022 drought, thousands of acres of historic pasturelands and rangelands have become unusable as invasive weeds continue to push out desirable plant species and beneficial forage. With fewer acres to graze livestock, these invasive plants are compromising the viability of local ranches and, at the community level, forming dense stands of continuous fuel that increase the risk of catastrophic wildfires.

To address this challenge, the Marin County Department of Agriculture, Weights and Measures and the Marin Agricultural Land Trust (MALT) joined forces to implement a three-year pilot program to control invasive weeds on farms and ranchlands through sustainable pest management with a focus on healthy soil. The University of California's Cooperative Extension agents in Marin and Sonoma counties and the USDA Natural Resources Conservation Service out of Petaluma are also essential partners in this effort.

We launched the voluntary invasive weed cost-share program as a pilot in early 2023 within a segment of the Chileno Valley, a 20.25 square mile area of the county. The valley is composed of working cattle ranches and dairies that have been significantly impacted by invasive weeds.

The primary goal of this initiative is to encourage local ranchers to participate in the development of sustainable pest management plans (SPMs) that consider the environmental, social, and economic costs of invasive species removal. Developing SPMs encourages a holistic,



A pasture overtaken by woolly distaff thistle (Carthamus lanatus) is unsafe, as spiny foliage and flowerheads can injure the eyes and mouths of grazing livestock. Photo courtesy MALT.

healthy soils-based approach toward pest management. The hope is to establish a new model for eradicating invasive plants that simultaneously supports soil health, water quality, and biological diversity within this watershed.

Examples of the soil health practices that can be used: planting cover crops; using no-till approaches that avoid soil disturbance (or reduced tilling with attention paid to managing the residue and tillage); implementing prescribed grazing; amending pasture and rangeland soils with compost; managing nutrients; overseeding to establish desirable plant communities; planting hedgerows and other shrubs and trees; and restoring adjacent riparian areas.

A secondary goal of the pilot program is to reduce or eliminate the use of herbicides by supporting non-chemical control methods. We are prioritizing physical, biological, and cultural control methods over the use of chemical controls. However, certain populations of weeds have boomed so much during the recent drought that they cannot feasibly be addressed using only non-chemical methods. Therefore, some SPMs begin with a combination of soil health practices and chemical application to manage these species and will then transition



Volunteer workdays help restore Chileno Valley. Photo courtesy MALT.

towards a non-chemical approach over time. This is a necessary step, given the extreme challenge of managing and eradicating some of these weed species.

The success of the program will be evaluated based on the number of local ranchers engaged within the program, the number of SPMs developed, and the acreage managed. If successful, the program has the potential to be extended to other agricultural lands in the valley and elsewhere in the county in the coming years.

Driving through the Chileno Valley today, it is difficult to witness thousands of acres inundated with these invasive plants. Dense stands of weeds are beginning to change the soil chemistry such that other plant species can no longer grow and — because ranchers are unable to graze livestock — the fuel loads continue to build amid the summer dry season. Huge swaths of these prime agricultural lands have been weakened. By building more healthy soils, we aim to help these lands capture and store planet-warming greenhouse gases, improve ground water infiltration, and sustain the region's wide range of biological diversity.

With impacts so far ranging, solving this crisis is only possible with a collective effort and a willingness to be as creative as the weeds themselves.

SERCAL conference and CNGA Field Day at Hedgerow Farms

Constance Taylor and Nicole Valentine, Cal-IPC

2023 California Society for Ecological Restoration

Cal-IPC was delighted to attend part of the 2023 California Society for Ecological Restoration (SERCAL) conference in April. The theme this year was “cultivating connections” and featured a variety of presenters in the concurrent Flowing, Growing, and Knowing sessions.

Flowing focused on presentations about floodplain restoration, revegetation of riparian habitats, and building living shorelines. Growing featured diverse topics ranging from bridging intentions and outcomes of restoration projects, to managing invasives, to sourcing and using native seeds in restoration efforts, while Knowing had equally robust offerings that touched on learning and connection in natural spaces, uplifting urban ecosystems, dismantling professional barriers, listening to traditional ecological knowledge, and much more.

We’d like to thank the SERCAL organizers for putting on a fantastic event this year, and for inviting us to come and participate!

CNGA’s 15th Annual Field Day at Hedgerow Farms: Community Supporting Grasslands, Grasslands Supporting Community

The California Native Grasslands Association (CNGA) hosts an annual field day at Hedgerow farms in Northern California, a farm that produces native California seeds for sale. This year marked the 15th annual field day, and it landed on a pleasant, sunny day amidst the storm-filled March.

Although the growing season was behind schedule due to the intense winter, the poppy and phacelia fields were flowering en masse, with some instances of lupine encroaching upon the neighboring rows. Rows of native grasses were bulking up and the blue-eyed grass was about to bloom by late March.



The courtyard of the Davis Veterans Memorial Center was the perfect spot for gathering everyone together for breakfast, lunch, and the all-important raffle-drawing. Photo courtesy of SERCAL leadership.



It couldn’t have been a lovelier day for CNGA’s Field Day at Hedgerow Farms. Photo: Jock Hamilton.

The renowned hayride tour ferried our group around the farm, giving us a view of their native namesake hedgerows, including oaks, redbuds, and willows. Within one hedgerow, we witnessed a flock¹ of cedar waxwings descend upon a berry-laden toyon.

The redbuds and the neighboring almond and walnut orchards were some of the few species in bloom. One of the fun facts I learned during our tour is that there are so few crops blooming in winter that 90% of U.S.-based European honeybee hives are brought to California

to pollinate almond tree blooms.

We also enjoyed a barn tour, walking tour, sponsor exhibits, and a great line-up of speakers. The walking tour took our group along pathways that utilized walnut shells as mulch to manage plant growth. The sponsor exhibits featured live falcons, native plants for sale, live rattlesnakes, and a wealth of resources. Visitors to the Cal-IPC exhibit enjoyed strategizing and commiserating over managing yellow starthistle. Thank you, CNGA!

¹The term for a flock of cedar waxwings is a “museum.”

Santa Cruz County's new Regional Conservation Investment Strategy

(Continued from page 8)

of surface water, leaving fish stranded and preventing native amphibians from achieving metamorphosis. Eucalyptus also produces allelopathic chemicals that reduce native understory diversity, can limit wildlife movement, and potentially degrade water quality.

- European beachgrass and ice plants, which alter the structure and species composition of dunes and marsh plain habitats, negatively affecting habitat for native animals, including nesting birds.
- Non-native plants in Sandhills habitat, including European plants that are pre-adapted to sandy soil and a Mediterranean climate and have become patchily abundant, particularly in the sand parkland community. They can outcompete rare plants, degrade habitat for rare animals, reduce the amount of open canopy habitat, alter soil chemistry, and can promote fire as well as further exotic plant invasions.
- Exotic annual grasses and forbs that outcompete native grasses and forbs and convert native grasslands to exotic-dominated grassland (e.g., California annual grassland). The resulting dense thatch prohibits seedling establishment for rare plants such as tarplant and limits habitat for species such as the Ohlone tiger beetle.
- Eucalyptus, acacias, brooms, ivy species, and other invasive plants that alter plant community structure and species composition, outcompete populations of rare plant species, degrade native animal habitat, and/or increase the risk of unnatural fire.

Specific priorities include restoring forests invaded by eucalyptus in the San Andreas Oak Woodland community in the western Pajaro Valley and Aptos areas to restore important upland habitat used by dispersing Santa Cruz long-toed salamanders and to support Monterey spineflower and robust spineflower.

In addition, the plan stresses the need for early detection and rapid response for new invasive species hazards (plant and animal) and new infestations through partnership with the Santa Cruz Weed Management Area, California Department of Fish and Wildlife, California Invasive Plant Council, and other partners.

Implementation of the RCIS is not the purview or responsibility of any one entity; rather, the strategy will be implemented through the actions of many agencies, organizations, and individuals seeking to conduct conservation projects through a variety of mechanisms, including grant and mitigation funding. With the document completed, it is time to look towards implementing priority actions for habitat protection, creation, restoration, and enhancement that will promote habitat connectivity, improve water quality, and increase water quantity.

Learn more about SCCRCIS at www.sccrtc.org/rcis or the RCD at www.rcdsantacruz.org/rcis. For information on the RCIS program, visit wildlife.ca.gov/Conservation/Planning/Regional-Conservation.

Did you know August is National Make-A-Will Month?

With a legal will, you can approach the future with peace of mind by having a plan that communicates your wishes, provides for your loved ones, and sustains the causes you believe in.

Cal-IPC has partnered with FreeWill to make it easier than ever to start your will and make your most important plan for the future. The online tool also offers you the ability to create a free revocable living trust.



Visit cal-ipc.org/plan or scan the QR code to learn more.

Natasha Rodriguez

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NAISMA Annual Conference

October 16-19, Lincoln, NE
conference.naisma.org

Cal-IPC Symposium

October 25-28, CSU Chico, CA and
Online
cal-ipc.org/symposium

Southern California Botanists Symposium

November 5, Pomona, CA
socalbot.org/symposia

California Islands Symposium

November 6-10, Ventura Beach, CA
californiaislands.net/symposium

Trends in Biodiversity and Evolution

November 28-30, Vila de Conde,
Portugal
tibe.biopolis.pt

Wildspotter Invasive Species Ambassador Training Course

December 5-7, Couer D'Alene, ID
invasivesfree.org

Public Lands Alliance

March 4-8, 2024, San Francisco, CA
publiclandsalliance.org

*"This work we're doing today
[as trabajadores de la tierra] is
very different from what we
do in the fields. Here we don't
work for profit. We work for
the benefit of the land, the
animals, for us humans too."*

— Sandra de Leon, in "From
Farmworkers to Land Healers" by
Brooke Anderson in *Yes! Magazine*,
April 25, 2023