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SPRING 2022



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Protecting California's environment and economy from invasive plants

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Cal-IPC Dispatch

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FROM THE DIRECTOR'S DESK

Send field techs for free

By Executive Director Doug Johnson

his year's Symposium, our 31st annual, will be held online November 1-3, with additional in-person events over the summer in southern California (Cal Poly Pomona, June 13) and northern California (CSU East Bay's Concord campus, July 18).

One of the big benefits of holding the Symposium online is increased accessibility. The registration cost is lower, and no travel is required. Attendees can participate in sessions that fit their interests and their schedule.

This accessibility also makes it possible for us to reach new audiences. We have a free registration rate for field techs, conservation corps crew members, and other frontline staff on limited income. We need the help of those of you in positions as supervisors to let your crews

Remembering Dr. Nina Roberts

Cal-IPC mourns the passing of Dr. Nina Roberts, a leader in advancing environmental equity. We were honored to

interview her for the Summer 2018 *Dispatch*. She truly captured the energy and enthusiasm of the movement, and her presence will be deeply missed.

Here are some words of inspiration from Nina: "We must each learn to challenge systems, change institutional



Dr. Nina Roberts in action. Photo courtesy TOGETHER Bay Area.

know, to encourage them to register and attend a session or two, and to give them paid work time to do so.

We will make it clear on our program which sessions have content that is likely to be most useful for this audience. Our career panel will include individuals who can speak to a range of pathways for conservation jobs.

This is all part of building tomorrow's conservation workforce. To increase the pace and scale of restoration, we need a larger workforce. To increase societal equity and to capture the full range of our collective talents, we need a conservation workforce as diverse as the mix of people in California.

So please, for stewardship benefits today and in the future, send your field techs to the Symposium for free!

injustices and more. How? We must all do our part, show up, speak up, do not tolerate hate and injustice. Be brave, be bold, be inspirational. Now is the time for

> new changes and transformation. In the process, reach deep down to share empathy, be patient with yourself and each other, and be authentic is your exchange of love, laughter, fear, and hope."

Read Nina Roberts homepage here: https://ninarobertssfsu.com/

ON THE COVER

Zachery Flores, Restoration Coordinator at Newport Bay Conservancy (NBC), searches for Egyptian knapweed (*Volutaria tubuliflora*) under native coastal sage scrub, where this pesky plant often likes to hide! NBC, in partnership with Orange County Parks and the California Dept of Fish & Wildlife have been working to eradicate the emergent invasive from the Upper Newport Bay since 2017. *Volutaria*,



Landscape view of Newport Bay. Photos (here and cover) by Alys Arenas.

native to Northern Africa and the Mediterranean Basin, has the potential to become a common weed in Orange County if left untreated. This collaborative program highlights the value of early detection, accurate identification, and rapid response.

Wildland Weed News

CAL-IPC UPDATES

Symposium 2022 – We have a new configuration this year. The Symposium is online, Nov. 1-3, and we have two in-person events over the summer, one in SoCal and one in NorCal. See details on page 9.

IPM Innovator Award – The California Dept. of Pesticide Regulation presented Cal-IPC with their 2021 annual award for innovative work in the realm of integrated pest management. The award recognized our effort in developing best practices for non-chemical weed control methods and building the online WeedCUT decision support tool.

Conservation Corps training – This spring, we held trainings for three conservation corps groups in the San Francisco Bay Area — Civicorps in Oakland, San Jose Conservation Corps, and Conservation Corps North Bay. We are looking for funding to expand this program and build the ecological workforce.

State policy – We submitted comments on the state's draft 30x30 conservation strategy, advocating for increased funding for invasive species management. We are co-sponsoring a bill to fund more ecologically sensitive vegetation management for fuels reduction. See update on page 12.

Sea lavender treatment – Our fifth full season of Limonium treatment in San Francisco Bay salt marshes is in full swing, with funding from the National Fish & Wildlife Foundation and County Agricultural Commissioner offices in Alameda, Marin, San Francisco, San Mateo, and Santa Clara counties. We estimate that we have reduced the net area of Limonium by over 50%, and we expect to

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. control all 86 known populations this year for the first time.

PRE screening partnership – The Western IPM Center has awarded Cal-IPC, in partnership with PlantRight, a grant to continue our work screening potential Watch species using the Plant Risk Evaluator (PRE) tool and collaborating with Oregon, Washington, the Yurok Tribe, Nevada, and Arizona on building capacity for screening more plant species.

Orange County planning – The Natural Communities Coalition has contracted with Cal-IPC to help develop a 5-year multi-jurisdictional weed management plan for lands enrolled in the regional Natural Communities Conservation Plan, which will include control priorities, EDRR survey routes, and more.

OTHER NEWS

Meadow assessment – The Pacific Southwest Region of the USDA Forest Service has published a "Comparison of Meadow Assessment Protocols" that compares 11 methodologies used in California to help managers select the most appropriate approach for their situation.

Cape-ivy biocontrol – USDA-ARS out of Albany, CA, has released the Cape-ivy gall fly at 12 sites, with establishment documented at six in northern California, while UC Santa Barbara scientists have made releases in southern California. We are waiting to see if these sites develop large populations that can be used to move flies to new areas. A second biocontrol agent, a stem-boring moth, is in the works, with release permission still a few years away.

Yellow starthistle biocontrol – The California Dept. of Food & Agriculture has funding to rear and release the first new insect agent targeting yellow starthistle in almost 30 years, and the first ever that feeds on immature plant parts (mainly the taproot, but also rosette leaves), rather than flowers or seedheads. The root weevil is the result of research by Lincoln Smith of USDA-ARS.

Western grass maps – The USGS

Ilustration by Ryan Jones

Earth Resources Observation and Science Center has released a satellitederived dataset that maps the recent history of fire-fueling invasive annual grasses, species by species, spreading through the western U.S.

Standardizing terminology – A University of Florida Extension paper defines seven terms to use (native, non-native, introduced, established, invasive, nuisance, and range change) as well as six terms to avoid (native invasive, invasive exotic, invasive weed, alien, foreign, and non-indigenous) for clear and effective outreach.

Airborne eDNA – Researchers from Texas Tech University sequenced environmental DNA found in passive outdoor dust traps and identified pollen from tree-of-heaven, an invasive species that had previously been overlooked in field surveys. (Published in *BMC Ecology and Evolution*.)

Wildfire risk – University of Hawaii researchers have developed a screening system to predict the wildfire risk of invasive plant species. Starting by scoring 21 plant traits, they determined that a set of four variables provide accurate determinations. (Published in *Biological Invasions*.)

US Register – The USGS has released an online US Register of Introduced and Invasive Species (US-RIIS), serving as a comprehensive and authoritative list of non-native taxa established in the country.

Tropical milkweed – CDFA has given *Asclepias curassavica* (tropical milkweed) a "B" rating due to its potential negative effects on the health and migratory behavior of monarch butterflies.

EDRR in action: False yellowhead identification and control at Hunter's Point Naval Shipyard

Cree Morgan, San Francisco County Agricultural Commissioner/Sealer of Weights & Measures, and Phil Calhoun, Industrial Hygienist, San Francisco County Agriculture/Pesticide Use Enforcement Program

n September 2021, the San Francisco **County Agricultural Commissioner** (SFCAC) confirmed the presence of false yellowhead (Dittrichia viscosa) at the decommissioned Hunters Point Naval Shipyard. This A-rated noxious weed has been designated by the California Department of Food and Agriculture (CDFA) as a target for eradication, since the only other known populations in the United States are found in Solano County. Our early detection and rapid response (EDRR) to this find has provided us an opportunity to eradicate false yellowhead before it is able to infest areas outside of San Francisco County.

The site of the former Hunters Point Naval Shipyard (HPNS) is located on a peninsula in the south-eastern portion of the City of San Francisco. The facility consists of almost 700 acres of land and was operated as a commercial dry dock facility from 1869 until the US Navy purchased the property in 1939. For nearly 40 years, the Navy predominantly used HPNS as a repair facility as well as the home of its Naval Radiological Defense Laboratory. HPNS was a major employer in San Francisco; in the 1950s, they employed 8,500 civilians. In 1974, the Navy ceased shipyard operations at HPNS and leased areas of the site as a commercial ship repair facility.

HPNS was closed in 1991. At that time, HPNS was divided into multiple parcels to further the environmental cleanup efforts and to enable timely transfer of the property. In 2004, the Navy transferred the first 75-acre parcel of HPNS (known as Parcel A) to the City of San Francisco for residential housing development, community parks, and commercial venues. The remainder of HPNS is still under US Navy control and some buildings are leased by the City and County of San



San Francisco County Agricultural Commissioner Cree Morgan and San Francisco Weed Management Area lead Peter Brastow stand aside a large false yellowhead bush.

Francisco. The Master Plan is to convey the remainder of the site to San Francisco on a parcel-by-parcel basis once the environmental cleanup is complete.

False yellowhead is an erect, perennial, soft-wooded shrub with grevish-green, elliptical leaves, and vellow, daisy-like flowers. It is native to Northern Africa, the Middle East, India, and southern Europe, and has expanded its range in response to human disturbance. In its home range, false vellowhead inhabits disturbed places, roadsides, pastures, fields, riparian woodlands, levees, washes, and margins of tidal marshes and is tolerant of harsh water and mineral stress. This plant produces numerous wind-dispersed seeds. Its young stems and leaves are covered with glandular hairs which exude a sticky foul-smelling oil which can cause allergic reactions. False yellowhead was first found in California in 2014 and its ecology seems to mirror its close relative stinkwort (D. graveolens), which is a now

a prevalent invasive weed in California. The population at HPNS was first reported by a community scientist through a posting on iNaturalist and is only the third known population of this species in California.

Staff from the SFCAC collected plant samples and submitted them to CDFA's Plant Pest Diagnostics Center for identification. CDFA confirmed the plant's identity as Dittrichia viscosa. Once confirmed, SFCAC conducted a delimitation survey starting at the location of the original find and identified hundreds of plants of various life stages and sizes, spread over approximately 200 acres of land at HPNS. Some isolated plants had established themselves in small cracks in pavement on a decommissioned helipad tarmac, and in crevices around the perimeter of numerous buildings. Most notable, however was a dense concentration of established bushes in an open field and along fence lines protecting a site

drainage culvert. Historical aerial photographs indicate that some of the plants had been growing for at least five years.

Given the scope of the infestation problem, SFCAC determined the need to: immediately remove all fruiting and flowering plants to minimize the likelihood of viable seed spread off site; establish the best temporary storage and the disposal method for such a large amount of viable plant material; and define and implement long term plans to achieve eradication goals.

In order to inform local land management partners in areas adjacent to HPNS, we contacted the San Francisco Department of the Environment (Peter Brastow, San Francisco Weed Management Area Lead), San Francisco Recreation and Parks (Matt Pruitt, PCA, Senior Integrated Pest Management Specialist), Presidio Trust

(Christa Conforti, PCA, IPM Coordinator), National Park Service (Bruce Badzik, PCA, IPM Coordinator), and San Mateo County Agriculture Department (Nancy Poss, Biologist/Standards Specialist). With the established potential for this plant to disperse offsite, we wanted to leverage the collective weed management expertise from this group and to alert these stakeholders, so that they were prepared for immediate action in their respective areas.

Given the high likelihood of an established seedbank in the area, our stakeholder partners agreed that an

eradication effort at HPNS would likely take years to accomplish. They assisted in developing our early detection and rapid response approach while we simultaneously worked on the ground to remove the existing plants. We recognized that any EDRR approach we developed would need to be site- and condition-specific.

The timing, scale, and location of this invasive species discovery presented many immediate challenges. At the time of the delimitation survey, many of the



Close-up of leaves and flowers. Removal crews worked to carefully cut and bag all plants identified for removal.

In 2019, the CDFA restored the Noxious Weed Grant Program, which provides funding to California Agricultural Commissioners to implement weed management programs throughout California. With these funds, San Francisco County established a contractual relationship with Cal-IPC to manage a broad list of invasive weeds, which allowed for the rapid deployment of Ecological Concerns, Inc. (ECI) to perform emergency removal of existing plants. Through Cal-IPC, we were also able to consult with On Point Land Management (OPLM, Mark Heath, Pest Control Advisor) to request a written PCA recommendation covering an immediate site assessment and options for a long-term eradication plan for the site.

Hunter's Point Naval Shipyard is property of the United States Depart-



ECI crew foreman Esteban Ruiz carefully clipping and bagging flowering plant tops loaded with seeds. All ECI crewmembers and Navy subcontractors wore protective suits during this delicate operation to prevent carrying viable seeds offsite on their clothing.

plants were loaded with seeds that were ready to be dispersed by the strong prevailing winds common to the area. SFCAC was also unclear on how our limited jurisdiction and enforcement authority on Federal lands would impact our eradication efforts. Adequate funding for a project of this scale was not immediately available. Along with these challenges, we had some key resources available that helped us meet our goals.

ment of Defense, and California County Agricultural Commissioners do not have direct regulatory authority to enforce state codes on federal property. Fortunately, were able to work through the Office of Community Investment and Infrastructure (OCII), a state-authorized local entity serving to develop a cooperative working group between the San Francisco Department of Public Health (parent agency for the San Francisco County Agricultural Commissioner/Weights and Measures Units), and the US Navy to work on base closure, site remediation, and ownership transfer issues. Tapping

into this established cooperative relationship with the Navy was key to implementing a rapid response on the ground. Additionally, the Navy contributed key personnel resources to the removal efforts, and provided secure onsite storage of all removed and collected plant biomass.

Over the course of two weeks, ECI along with Navy-supplied contracted labor — worked diligently to identify,

(Continued on page 7)

Inventory Update 2022

Jutta Burger, Science Program Director, California Invasive Plant Council

very year, new species are ∎introduced into California. either accidentally as unwanted hitchhikers through trade and travel, or consciously as horticultural or agricultural imports. Based on Calflora's online database of plant species, there are now around 1,961 non-native species (including subspecies) recorded in California and counting! The Cal-IPC inventory is also growing incrementally as we evaluate species



Top row, left to right: Asparagus aethiopicus, photo: Ron Vanderhoff; Euphorbia myrsinites, photo: Tom Getts; Hieracium aurantiacum, photo: Zoya Akulova. Bottom row, left to right: Lythrum junceum, photo: Jennifer Mo; Melinis repens, photo: Ron Vanderhoff; Potentilla recta, photo: Kier Morse; Senecio elegans, photo: Ethan Rayner.

that may have become or are showing the potential to become invasive. These are evaluated either with our Plant Assessment Form, that scores a species as "High," "Moderate," or "Limited" invasive status, or with the Plant Risk Evaluator (PRE) tool, that scores species as "High" risk if they meet a combination of climate matching, innate reproductive output, and impacts criteria. "High" risk plants receive a "Watch" rating. This tool was originally designed to screen horticultural imports but is currently our go-to tool for species that are not yet broadly established in the state.

Last year, we partnered with PlantRight to train new PRE evaluators and reviewers and screen twelve escaped high priority horticultural species for their risk of becoming invasive in California. This work was supported by a grant from the Western Center for Integrated Pest Management, which also funded us to train partners in Washington, Oregon, and Arizona on using the PRE tool and evaluating five high priority species for each of their regions.

Eight of our twelve species received a "High" risk (PRE score > 15) and have been added as "Watch" species. This brings our current inventory total to 318 species that are either listed as invasive or as "High" risk of becoming so ("Watch"). The new additions are: Italian Arum (Arum italicum, described in the Summer 2021 Dispatch), Asparagus fern (Asparagus aethiopicus), myrtle spurge (Euphorbia myrsinites), orange hawkweed (Hieracium aurantiacum), creeping loosestrife (Lythrum junceum), natal grass (Melinis repens), sulphur cinquefoil (Potentilla recta), and purple ragwort (Senecio elegans). These species are briefly described below; go to our online inventory to view evaluations and additional resources.

Asparagus aethiopicus (Asparagus fern; PRE score: 17) is an herbaceous

perennial (Family Asparagaceae) native to South Africa, sold as a houseplant and landscape ornamental because of its attractive feathery appearance. This species is listed as an invasive in several areas, including Australia, Florida, and Hawaii, where it can dominate shrub and forest understories and outcompete other plants. Although most other climates that it is invasive in are wetter than California, reports from coastal southern California and other similar habitats suggest that it can spread into natural areas and do harm there as well.

Euphorbia myrsinites (myrtle spurge; PRE score: 17) is a yellow-flowered, succulent herbaceous perennial (Family Euphorbaceae) native to southeastern Europe and Asia Minor, commonly sold as an ornamental. To date, most reports indicate it as a garden escapee in northeastern California. Myrtle spurge can outcompete natives, reduce rangeland forage quality, and cause nausea, diarrhea, and vomiting when ingested, as well as skin irritation when touched. It has an "A" rating by the California Department of Food and Agriculture (CDFA), and has been rated as noxious in Washington, Oregon, Colorado, and Utah, mostly because of its potential rangeland impacts.

Hieracium aurantiacum (orange hawkweed; PRE score: 22) is an orangeflowered herbaceous perennial (Family Asteraceae) from Europe that reproduces by seed, rhizome, and stolon. Once established, it can spread quickly, forming dense mats that exclude other forage and native species. It was first found in California in 2013 and has since been recorded in four northern California counties. Orange hawkweed was first introduced to the US in Vermont, in 1875, as a garden ornamental. It has since escaped cultivation in several areas. This plant has a "B" rating from CDFA and is listed as a noxious weed in Colorado, Idaho, Oregon, Montana, and Washington, where it is abundant. It was a Cal-IPC/CDFA Weed Alert in 2019.

Lythrum junceum (creeping loosestrife; PRE score: 17) is an herbaceous perennial (Family Lythraceae) with showy purple flowers that is native to Europe and the Mediterranean region. It has naturalized in New South Wales, Australia, in climate matching that of California, and was first found (but incorrectly identified) in California in 1905. More recently, creeping loosestrife has been reported from riparian areas in Alameda and Santa Clara County, with reports suggesting that it is competitive and spreading. As a result, it was listed as a Cal-IPC/CDFA "Weed Alert" in 2020. Creeping loosestrife is closely related to purple loosestrife (Lythrum salicaria), a highly invasive species across North America.

Melinis repens (Natal grass; PRE score: 17) is an annual/short-lived perennial ornamental grass (Family Poaceae) with an attractive ruby-red inflorescence that is native to southern Africa. Natal grass has naturalized across seven counties in California; it has spread into many other parts of the world and is listed as invasive in Australia and Florida. It can displace native plants and increase fire hazard by increasing dead, standing fuel. Natal grass also produces many seeds that are easily dispersed by wind and animals.

Potentilla recta (sulphur cinquefoil; PRE score: 21) is a pale, yellow-flowered herbaceous perennial (Family Rosaceae) that is native to the eastern Mediterranean and naturalized in many regions around the world. Leaves are palmately compound, with 5-7 leaflets each. Reports suggest that it reduces the carrying capacity for livestock and ungulate wildlife in rangelands. It also can create monocultures and outcompete native plants in all but the most shaded habitats. Sulphur cinquefoil produces copious seeds, has a high germination rate, and can establish a viable seed bank for up to four years. It has been documented across several counties in northern and northwestern California. It is listed as a noxious weed by the CDFA, as well as in Nevada, Oregon, Washington, Colorado, and Montana.

Senecio elegans (purple ragwort; PRE score: 19) is a showy purple and yellowflowered annual (Family Asteraceae) that is native to the Cape Region in South Africa. Since it was first recorded in San Francisco in the mid-1920s, it has spread within dune habitat across seven coastal counties in California. Although purple ragwort appears to be restricted to coastal dune habitat, it can grow and spread aggressively and displaces native vegetation in this sensitive habitat. It has also spread along the southeastern and southwestern coast of Australia (including Tasmania), New Zealand, and the Azores, and is listed as an environmental weed in Australia.

Four species that we evaluated did not score highly enough to be considered "high" risk. These are tropical milkweed (Asclepias curassavica), sun spurge (Euphorbia helioscopia), evergreen bugloss (Pentaglottis sempervirens), and African sumac (Searsia lancea). Although tropical milkweed is not invasive in California per se, it is still a concern because of its potential impact on monarch butterflies and was recently "B" listed by CDFA. Sun spurge has naturalized in disturbed sites in Santa Clara County. Evergreen bugloss has naturalized in disturbed areas in Washington and Oregon. African sumac has naturalized along some seasonal drainages in parts of southern California and Arizona. Please keep your eyes out for unruly behavior from these species.

Thanks to Western IPM and WIPM Partners, our Inventory Committee, and to PlantRight for support in maintaining our inventory.

EDRR in action

(Continued from page 5)

geotag, hand-remove, and bag a total of 20 cubic yards of plant biomass from over 200 acres of land. This plant biomass (which likely contains millions of viable seeds) is currently securely stored in a warehouse on site. The SFCAC is working with the Navy to explore various methods of disposal. Of the various options (solarization, burning, deep burial, etc.), a steam sterilization treatment appears to be the most efficient. Since HPNS is isolated, it would be feasible to steam sterilize the collected biomass and return the treated material to a designated area on site and continually monitor it for seedlings. We expect that the entire 200 acres of infestation has a deep seed bank, so any new growth that may come from the steam treated biomass would not significantly impact the area. Any new seedlings from the entire previously infested area will be removed before it reaches the problematic flowering/fruiting stage.

The timeframe for false yellowhead seed viability is unknown, so monitoring of the infested area will need to continue annually during times of expected seedling emergence. The Navy is currently considering PCA recommendations provided by OPLM, as they review future remediation and development options for the site. SFCAC will continue to partner with the Navy throughout this process and will monitor county owned and managed areas adjacent to HPNS.

All photos courtesy Phil Calhoun.

Newport Bay Conservancy diversity initiatives

Susan C. Jarratt, Board Secretary and Naturalist, Newport Bay Conservancy

he murder of George Floyd on May 25, 2020 launched a nation-wide tidal wave of reflection — both personal and institutional — about race and racism. Like many organizations, Newport Bay Conservancy (NBC) responded to this opportunity by proposing that our board convene a special committee on Diversity, Equity, and Inclusion. The board enthusiastically accepted this initiative. Over the past two years, the committee has embarked on a number of activities. Below, we

highlight three: the monthly reading group, our diversity speaker series, and a Naturalist Training Diversity Scholarship.

The environmental movement, from its beginnings in the 1970s, has been largely associated with white, middle-class Americans. But, as we discovered, questions of race and class have been relevant from the very beginnings of the movement. Our DEI reading group began in July 2020 with articles from environmental justice scholars who tracked early cases of environmental transgression and racial discrimination, such as those in Warren County, North Carolina. We learned about courageous efforts on the part of African-American homeowners to protest the state dumping contaminated soil in one of the only counties with a majority Black population.

As we explored the history of environmental studies, we were shocked to discover racism at the core of our history in the writings of iconic figures such as John Muir and James J. Audubon. Exploring memoirs such as J. Drew Lanham's *Home Place* and the powerful anthology edited by Ayana Elizabeth Johnson and Katherine Wilkinson, *All We Can Save*, has provided helpful perspectives from people of color committed to environmental movements. Our reading and listening lists also include reports on



A selection of books from the reading group. The group also discusses articles and podcasts about environmental justice.

land-back initiatives benefiting Indigenous tribes in the state. In January, a 523-acre area in Mendocino County was transferred to the InterTribal Sinkyone Wilderness Council, a consortium of 10 Northern California tribal nations focused on environmental and cultural preservation.

To build on our efforts to learn more about the already-existing diversity efforts and leaders in our region, we organized a virtual speaker series in the spring and summer of 2021. Speakers included Marcos Trinidad, director of the Audubon Center at Debs Park, Los Angeles (and Cal-IPC Board Member); Eboni Preston, Director of Operations, Greening Youth Foundation (Atlanta, GA); Dina Gilio-Whitaker, Indigenous scholar and author; and, leaders of the Orange County Environmental Justice (OCEJ) group in Santa Ana. From each of these speakers, we gained insight into the challenges of embracing diversity in environmental sites and projects.

Marcos Trinidad, for example, explained how he reached out to Latinx communities surrounding the inner-city Audubon site. He sought to understand how adjacent communities defined nature and their experiences of the outdoors. Dina Gilio-Whitaker offered vital historical information on Indigenous peoples in the region through an approach she calls "indigenized environmental justice." Her book *As Long As Grass Grows* (Beacon Press, 2019) served as a valuable resource. OCEJ reported on their efforts at collecting information on air and water quality in Santa Ana. With these young leaders, we strategized about how to connect NBC with citizens in Santa Ana, part of our watershed.

A third initiative was introduced by past-president Randall English, who funded a pair of scholarships to enable diverse

activists from OCEJ to attend our Naturalist Training course. The course involves weekly seminars throughout the fall with related weekend field trips. Topics include ecology, marine life, plants, birds, insects, and more. The history of the Back Bay and Native American presence, past and present, are also included. Graduates serve as core members of our cadre of volunteers. NBC has evaluated the success of the scholarship pilot and will be offering four diversity awards for the fall 2022 course. We are now revising our naturalist course materials to integrate a diverse stewardship lens throughout the training.

Connecting with other, regional groups committed to diversifying environmental work, including Cal-IPC, has been one of the positive outgrowths of these efforts. NBC plans to continue building such relationships and is working with Mario Cuevas, a fifth-grade teacher in the Santa Ana Unified School District and new NBC Board member, to organize activities for students and their parents in the Back Bay. We are also launching a series of Accessibility Days, shaping programming explicitly for visitors living with disabilities (including hearing loss, vision, mobility, etc.).

Learn more about our work and find recommended reading/listening on our site: newportbay.org/diversity/

Invasive Plant Management from Cities to Wildlands

2022 Cal-IPC Symposium | Online, Nov. 1-3 Cal Poly Pomona, June 13 | CSU East Bay, July 18

Photo: Arlee Montalvo

Join land management colleagues to learn and celebrate at the 2022 Cal-IPC Symposium!

SYMPOSIUM FEATURES

Join us online November 1-3 to share the latest updates on effective tools, relevant research, and strategic management approaches. And come together in person for our summer mini-symposia at Cal Poly Pomona, June 13, and CSU East Bay, July 18!

This year's theme highlights the connectedness of our landscapes, from urban areas to remote areas. Between developed and undeveloped lands is the important interface where a lot of our recreation happens, where wildfires threaten both habitat and homes, and where invasive plants escape from horticultural plantings.

California's cities are situated in special places on the land, and remnant habitat fragments can support irreplaceable biodiversity. Our cities and wildlands are connected by waterways, roads, the atmosphere, and the biosphere. Special sessions will explore management challenges in this interconnected landscape.

Other sessions will dig into techniques for mapping and controlling invasive plants, lessons learned from management programs over time, ecological workforce and equity issues, and research that further illuminates the impacts and interactions of invasive plants across California's varied geography.

Our online platform promotes interaction through topic boards, discussion groups, a poster and lightning talk session, and chatting with sponsors and exhibitors. Our in-person events will include presentations as well as the opportunity to learn from your fellow attendees.

2022 STATEWIDE WMA MEETING

Join participants from Weed Management Areas across the state to share information on coordination, mapping, early detection, and collaborative projects. We will have updates from the California Dept. of Food & Agriculture and the Invasive Species Council of California.

DPR CREDITS

We will apply for continuing education units from the California Dept. of Pesticide Regulation, including 2 units fulfilling Laws & Regulations requirements.

SPONSORSHIP

Your organization can sponsor the Symposium! Help us keep registration affordable and support our work. Sponsoring organizations receive two or more free admissions, exhibitor space, recognition on Symposium materials, and membership benefits.

STUDENTS AND EARLY CAREER

Student presenters who choose to participate in our student contests for talks and posters receive feedback from expert reviewers. Cash prizes are awarded to top presenters!

Students and emerging professionals, join the Career Panel to explore your options with seasoned staff.

We're offering a free rate for individuals who find registration costs prohibitive. We encourage supervisors to share this opportunity with field techs, conservation corps members, and other front-line staff to support their professional growth.

REGISTRATION

Visit cal-ipc.org/symposium to register, sponsor, submit an abstract, and find the latest Symposium information.

State policy updates

Doug Johnson, Executive Director, Cal-IPC

he legislature is in full swing in Sacramento, with new bills being reviewed in committees and the budget process slowly developing. As Cal-IPC works to strengthen policy and funding for controlling invasive plants, there is interesting activity on several fronts.

ISCC and CISAC

The interagency Invasive Species Council of California (ISCC) is led by the state's Dept. of Food and Agriculture (CDFA) and the state's Natural Resources Agency, which encompassed State Parks, the Dept. of Fish and Wildlife, the Dept. of Water Resources, CAL FIRE, Dept. of Conservation, and more. ISCC appoints 19 individuals to serve on the California Invasive Species Advisory Committee (CISAC).

ISCC and CISAC were created in 2009 by state agencies. They were codified in 2018 through AB 2470, authored by Assembly Member Tim Grayson and sponsored by Cal-IPC. In this year's budget, they were provided with funding for the first time; \$5 million was put into the newly created Invasive Species Fund. At meetings in December and January, CISAC members developed a set of recommendations to ISCC for allocating these funds.

One of the priorities identified was the state's Weed Management Area (WMA) program, which provides grants to county-based collaborative projects to address high-priority invasive plants. CISAC recommended that \$1 million be allocated for the WMA program.

Other recommendations for funding include addressing the invasive seaweed *Caulerpa prolifera* found in Newport Bay (covered in the Summer 2021 *Dispatch*); tackling tree-damaging shothole borers in southern California; reinstating statewide surveys for insect pests and aquatic pests; and hiring a coordinator for ISCC and CISAC. Future funding can



speed action to address new invasive species as they arise. We are working to get an additional \$5 million to the ISCC in the next budget.

CISAC's quarterly meetings are an opportunity for Cal-IPC members to interface directly with discussions of invasive species policy decisions. Meetings are live streamed, and public comment is taken. Sign up online for the CISAC listserv to receive notification when meetings are scheduled.

WMA funding

Though county WMAs have not been funded in a decade, there is some good news on state grants supporting local weed management. Increased gas tax funds are being used by CDFA to provide grants to County Agricultural Commissioners (CACs) to map and control invasive plants that are formally listed in state code as noxious weeds. Current grants offered \$64,000 to each CAC office for a two-and-a-half-year period. Most CACs chose to access this funding.

Some CACs have active weed management programs and used this funding to expand what they are able to accomplish. Other CACs have used the



funding to restart programs that had gone dormant. Some CACs who lead active WMAs have contracted out funding to WMA partners such as county park agencies. This is reenergizing local programs, which is a big step forward since CACs, in partnership with CDFA, are mandated to control noxious weeds.

Cal-IPC continues to advocate for annual funding for WMAs, similar to funding available from 2000 to 2010 until program funding was cut during a budget crisis and never restored. There are several aspects to this funding that make it special. First, it is expressly designed to support collaborative projects that address invasive weeds in multiple jurisdictions. It required regular WMA meetings and an updated strategic plan.

Second, it is not limited to CACs or noxious weeds. It can be awarded to entities like Resource Conservation Districts (RCDs) that lead some WMAs, and it can be used to control invasive plants that are not listed by the state as a noxious weed (pampas grass, for example).

Student and early career professionals

Clarissa Rodriguez, UC Riverside PhD Student and Chair of the Cal-IPC Student Section

he Cal-IPC student section was established by graduate students at UC Riverside in 2007, and has now expanded to include undergraduates, graduate students, and emerging professionals across California. Typically, our group would only meet in person at the annual Symposium. With our expanding membership, we wanted to build a more cohesive community that can connect us year-round. That is why we have launched a Cal-IPC Student Section and Early Career Professionals (SEC) blog!

We designed our blog to have a community forum component, based on community chats from the 2020 and 2021 virtual Symposia. There, we found it easy to discuss important plant management topics and to have some fun conversations about plants. On the new site, members can create posts and interact with each other on shared topics such as navigating graduate school,

State policy updates

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Finally, program funding not only provides grants to WMAs – it also provides grants to organizations working on prevention, research, and other important aspects of effective weed management. Over the years, this covered research on treatment methods at UC Davis and biocontrols work at the USDA ARS lab in Albany. Other likely work that could be funded would be PlantRight's work to prevent horticultural introductions, Calflora's work on mapping tools, and Cal-IPC's work helping regions to prioritize target weeds.

As the legislature and governor determine how to use a budget surplus this year, we are speaking with staff in legislator's offices to steer funding to the WMA program. It is challenging because



Find the "Invader of the Month" series and other great content online.

invasive species research, careers in invasive species and plant management, and more. The Cal-IPC student board members have also created several blog series that will be released monthly. Topics include "Invader of the Month," "Interview with a land practitioner," "Meet the Cal-IPC board members," as well as blog posts related to invasive species management, community outreach, and more.

This spring, we are hosting our very own Invasive Plant Species Art Contest (deadline May 10)! Whether your strong suit is drawing, painting, photography, or other media, we welcome you to share your talent to help spread awareness of invasive species. Students, recent graduates, and early career professionals are all invited to join the Cal-IPC community forum today and get connected with other Cal-IPC members across the state!

Visit the blog site: calipcstudents.wixsite. com/studentsection

natural resource management funding typically goes to the Natural Resources Agency, understandably, and CDFA does not advocate for WMA program funding because they have higher priority agricultural programs that need funding.

30x30 Initiative

As part of the global effort to protect 30% of lands and waters by 2030, California has initiated its own 30x30 campaign. The Natural Resources Agency is releasing a "Pathways to 30x30" strategy, which will guide implementation. Cal-IPC provided input to the draft version of the strategy, recommending that more emphasis be put on stewardship activities like early detection and rapid response for invasive plants.

We are engaging with 30x30 in several ways. We serve as one of the many nonprofits in the California Biodiversity Network, working to strengthen state agency efforts to protect biodiversity, meeting the goals of 30x30 and the State Wildlife Action Plan. We are also working through the policy committee of TOGETHER Bay Area, a collaboration of park districts, land trusts, and other conservation organizations. We are working to understand how GIS metrics will be used to measure progress towards the goals of conserving 30% of the state's lands and waters.

Mandated by legislation, the state has also produced a "Natural and Working Lands Climate Smart Strategy" covering much of the same ground. At some point, the legislature will look to provide funding for implementing actions to meet the goals of 30x30 and the climate smart strategy. We will look for opportunities to direct appropriate funding to the WMA program and ISCC.

We are also coordinating with the (Continued on page 14)

Regional invasive plant prioritization

vest

Nikki Valentine, Conservation Specialist, Cal-IPC

alifornia is a diverse state, consisting of 58 counties, encompassing various ecoregions. Prioritizing North weed control across such a vast landscape is a complex task. The Cal-IPC inventory contains 223 invasive species and another 91 high-risk Watch species. Cal-IPC partnered with the California Department of Agriculture (CDFA) to prepare regional invasive plant priorities across California. For this project, the state was divided into 19 regions based on county and WMA boundaries.

In order to determine regional priorities, Cal-IPC first interviewed County Agriculture Commissions (CACs) then Weed Management Areas (WMAs) to determine county priorities. CACs operate under CDFA to manage invasive and noxious weeds for the protection of California's agriculture and environment. WMAs are also county-based, but are stakeholder collaborations.

During these discussions, each county was presented with a spreadsheet of the invasive plant species reported present in their county in relatively low amounts. These spreadsheets were populated using presence data from CalWeedMapper and Calflora to determine the percentage of USGS guads in the region a species is found in — we focused primarily on those found in less than 10% of the quads in a region. Species were also organized by their CDFA rating and noxious weed status, which are tied to CAC goals (and current CDFA funding). CACs and WMAs filled in which species are being managed, what level of management was occurring, and a rationale for the given level of management. (Levels include "containment," in which all populations are being managed and no spread is allowed, and "control," in which most populations are being managed but spread may still occur.)



The Regional Invasive Plant EDRR Target map.

County responses were then consolidated into regional spreadsheets.

Additional meetings with each CAC were created to determine which species could be agreed upon as targets across each multi-county region. We confirmed that all counties in a region were onboard to manage a proposed regional target, even if it was not currently present in all counties. Several obstacles prevented a species from becoming a regional target; some species were too widespread, and some areas had limited land access. These meetings resulted in a final list of the regional priority species that are being managed at a fairly consistent level across a region.

Although we confirmed regional targets with CACs, these are non-binding. The regional targets are meant to highlight and promote landscape-scale invasive species management coordination. They

may also guide future investments through CDFA's grants.

Most regional targets are early detection rapid response (EDRR) targets, since most are species reported present in less than 10% of the region, with the potential to spread much farther. Managing species before they become more established is effective in reducing the impact of a species and the cost of long-term management.

We have encouraged land managers to set up "email alerts" for their region's EDRR target species in Calflora. The "email alert" function in Calflora alerts you by email as new observations are submitted of a list of plants (that you define) in a set area (that you define). Lists of regional CDFA-rated EDRR targets for each region are made available through the "Regional Prioritization" group in Calflora, to help anyone set up

an email alert for their regional priorities.

We have also encouraged land managers to use the "management status" field in population records of weed species. This can be used to note that a population is under management, and when records from revisits to a site are combined in a "history stack." help track treatment over time. The field can also be used when working to verify old or guestionable observation records in Calflora. Some species were identified during our process as "investigate further" since there are Calflora records that indicate sightings that don't match the knowledge of the CAC or WMA. These can be field checked, and then the records in Calflora can be marked as "verified" or "not found."

Using the "management status" field in Calflora will enable better tracking of management progress. We have held multiple trainings for land managers on utilizing these Calflora tools and will hold more in the future.

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Supporting Cal-IPC and defending the natural world

Denise is a dedicated San Francisco activist for land stewardship. When she learned about the challenges involved in protecting native plants and habitats, she jumped in with both feet, working on the ground and advocating for stronger policies. In 2021, in honor of our 30th anniversary year, Denise provided a generous \$30,000 matching grant for our year-end fundraising campaign. We asked her to share her story.

f all my various interests, Cal-IPC and the California Native Plant Society are tops. (Ending institutionalized discrimination, especially against Asian Americans, is a close third.) When I do advocacy for plants and biodiversity, I find I have to address invasive as well as native species.

This all started in 2011, when a neighbor standing in my kitchen looked out and said I had invasive French broom in my backyard. Invasive? French broom? I was clueless.

Two weeks later, another neighbor opened her native plant garden to the public. I spent almost two hours there talking with David Schooley, a major advocate for saving San Bruno Mountain from development as well as my neighbor's friend and landscaper. I was on a mission to learn more, so I joined various groups and activities to learn what folks were doing for biodiversity. And I took ecology classes from excellent instructors at City College of San Francisco. I met Doug Johnson, Cal-IPC's executive director, in 2011 while asking for Cal-IPC brochures to distribute.

While my husband and I removed all the French broom shrubs from our property, I still remove hundreds of seedlings every year. I've also pulled weeds in Yosemite National Park, Marin County, and many parts of San Francisco, where I live. My favorite tool is the hori hori. It works well even on big weeds I can't pull out. I scrape 4 inches of stem

Denise Louie, Cal-IPC supporter

down to the soil and cut it at 4 inches. I avoid the weed wrench now because I overused it and hurt my elbow. It does work well on broom, though, unless the



Denise rappelling to weed her steep backyard with her hori hori. Challenging weeds include non-native grasses, oxalis, chickweed, and French broom. Denise is protecting naturally occurring California polypody (Polypodium californicum) and California brome (Bromus carinatus). She also planted Dudleya farinosa of local genetics, from a naturally occurring population half a block away in an open space at a similar location, the crest of a slope. Photo: Henry Louie broom stem is too thick.

In 2011, I hired a landscaper who was also a partner in a native plant nursery. After he removed non-natives, we found over a dozen San Francisco native plants on the main slope. It's so steep that no one before me had ever done any gardening there; I'm out there on tether and harness. I think, "If I can do this, anyone can." In fact, I don't ask folks to do anything I haven't done. With all the plants I've added, I have about 50 San Francisco native species, representing about 1/10th of the number of different indigenous plants in the city. Constant weeding is necessary to defend them.

A San Francisco State University study found that parks surrounded by native plant gardens have more types of pollinators and a greater abundance of them. So, I've planted local native plants around my neighborhood (always with landowner permission). And I've signed up neighbors to pitch in with weeding.

My husband and I have done well financially, so we agreed to dedicate an inherited mutual fund from my mother to Cal-IPC and CNPS. It makes me feel good, as I'm quite conscious of my giant climate change footprint. Also, I think it's smart to give generously sooner rather than later, for the organization's sake as well as the environment's and for managing my annual taxes. Another important consideration is that I know Doug and trust he will continue to do great things at the helm of Cal-IPC.

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To learn more, contact Claire F. Meyler at cmeyler@cal-ipc.org or visit cal-ipc.org/legacy.

Know the Land, Save the Land

ducators at the University of Idaho created a novel approach to increase awareness of invasive species in their state, with a collaboration between Melissa Hamilton, the Valley County Extension Educator, and Lori Wahl, an apparel, textiles and design instructor in the College of Agricultural and Life Sciences. The project, called "Know the Land, Save the Land," combines the idea of telling stories through apparel with invasive weed patterns to help slow the spread of the weeds. Students created scarf designs featuring three plant species that are also invasive in California: spotted knapweed (Centaurea stoebe ssp. micranthos), yellow toadflax (Linaria vulgaris) and ox-eye daisy (Leucanthemum vulgare).





(Left) The spotted knapweed design incorporates the specific identifying feature of the bract tip pattern below the flower head. Student designers also included the root boring weevil, a biological control insect. (Right) The ox-eye daisy scarves include an antler motif, alluding to the fact that these plants can take over pastures and native meadows, depriving both wildlife and cattle of forage. Images from uidaho.edu.

Learn more about the project: uidaho. edu/extension/news/story/2018/ communication-through-apparel Find the scarves online: uidaho.edu/ weedscarves

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California Landscape Stewardship Network (CLSN), which supports several dozen regional networks across the state. We published a white paper with the CLSN on the importance of invasive plant management to protecting biodiversity in California. The CLSN is taking a leadership role in promoting re-evaluation of conservation systems and structures. They worked with the state to start the Cutting Green Tape initiative, which has resulted in a new CEQA exemption for restoration projects and discussions regarding more potential changes.

It is an exciting time, with visionary leaders like Secretary Wade Crowfoot and Jennifer Norris, Deputy Secretary for Biodiversity and Habitat, at the California Natural Resources Agency. It's also a scary time, with the impacts of climate change and biodiversity loss mounting. We will continue to collaborate with partners and look for windows of opportunity for positive change.

Regional invasive plant prioritization

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The process was very informative for updating data. There were outdated occurrences of species in CalWeedMapper and Calflora that are no longer present. Moving forward, updating the management status of an observation may resolve these incidents. The process also notified CACs and WMAs to reported invasive species occurrences of which they were not aware. Discussing the rationales for given levels of management with land managers informed us of the various issues facing each region. CDFA will revisit these priorities with local partners over time, and work to report aggregate progress made in addressing these regional priority management targets.

Regional Invasive Plant EDRR Targets: cal-ipc.org/regional_EDRR

Calflora Regional Prioritization group: calflora.org/entry/onegroup.html?gid=345

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See cal-ipc.org for full membership details

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Check all websites for latest event updates

SERCAL 2022 May 11-13, Carmel Valley, CA

sercal.org/sercal2022

California Invasive Species Action Week June 4-12 wildlife.ca.gov/Conservation/Invasives/ Action-Week

Cal-IPC Symposium June 13, Pomona, CA July 18, Concord, CA

November 1-3, Online cal-ipc.org/symposium California Native Plant Society October 20-22, San Jose, CA conference.cnps.org/

California Islands Symposium November 7-11, Ventura, CA californiaislands.net/symposium

NAISMA Annual Conference November 7-10, Fort Myers, FL conference.naisma.org

Innovations in Invasive Species Management Conference December 13-16, Nashville, TN invasiveplantcontrol.com/conference California's incredible nature is under threat. Climate change and other stressors destabilize our ecosystems, our communities, and our livelihoods... California has long been a leader in environmental conservation and bold action is needed to protect our natural communities now and into the future.

— Pathways to 30x30 California: Accelerating Conservation of California's Nature, Draft December 15, 2021