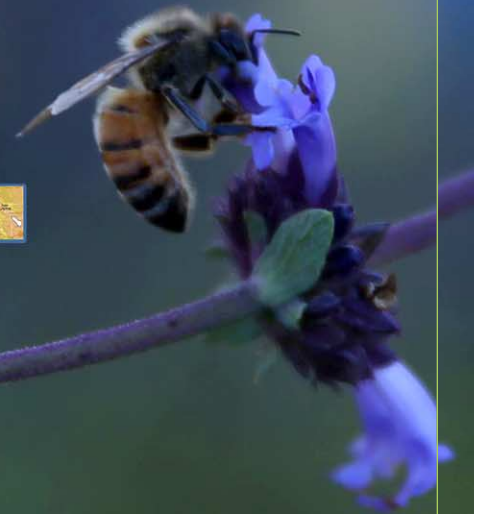




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2021 Restoration in Our Backyard

*Live on Zoom September 13–17, 2021
with links to recordings for registrants*

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And the all-important shout out to our student sponsors!

At the eve of the conference, 123 students have registered — this is a 400% increase from any previous conference. If this interest does not demonstrate that there is a future in field of ecological restoration — and that we need to continue building support systems for these future colleagues — what does? So many thanks to these forward thinkers whose generosity is making the future brighter for ALL of us:

Gregory Andrew (1) | Raquel Atik (1) | Philip Brownsey (1) | Laura Cunningham (1) | Melissa Denena (3) | Taraneh Emam (1) | Laura Garrison (1) | Nick Garrity (1) | Karen Holl (2) | H. T. Harvey & Associates (6) | Denise Knapp (1) | Kristin Lantz (1) | Richard B Lewis III (2) | Jane Manning (1) | LeeAndrea Morton (1) | Cassie Pinnell (4) | Jenise Porter (1) | Cris Sarabia (1) | Linnea Spears-Lebrun (2) | Jill Sunahara (2) | Julie Uyehara (4) | Madeleine Van Der Heyden (1) | Jennifer Zell (1)



How We Organized the Conference

- 1) The conference is set up as a Zoom webinar. Enter the waiting room prior to 9am using the link we've sent you. Although we will be using the same link throughout the conference, we will send you a reminder via Mailchimp at least 1 hour before each day begins.
- 2) **Each day will be recorded and available to all registrants** — a link will be sent via Mailchimp later that day.
- 3) Enjoy the sessions! Some have built-in breaks, others will not. Each day has a mix of presentations and panel discussions. Some days have a keynote presentation.
- 4) At the end of each day, we will invite all participants over as "panelists" so that everyone can see and be seen, talk and be heard. One of our sponsors will host a Meet and Greet for about 15 minutes.
- 5) At the end of the Meet and Greet, **we will hold a raffle drawing.** *You must be present to win. Prizes include swag, gift certificates, and two spots on a canoe tour of Mono Lake!*
- 6) **Attendance is taken through Zoom, so please make sure you log in as yourself** so that we can authorize your certificate of attendance (for example, for SER CERP credits).
- 7) On the last day, we will send you a link for a quick survey. **Please help us continue to improve our online offerings!**
- 8) Last but not least, within a month you will receive a Call for Abstracts for next Spring in Monterey! We are excited about gathering in-person again and will set up the proper protocols to make sure it is a safe experience for all who attend. This will be a hybrid (virtual) event for those who will not be able to join us in person.

Thank you for being a part of this year's gathering!

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MONDAY 13 September 2021

09:00am **Welcome** Allegra Bukojemsky, SERCAL President

Wetlands Technical Session — Chair: Kealie Pretzlav, Balance Hydrologics

- 09:05 **Keynote** Successful Creation of over 10 Acres of Wetland Habitat for San Francisco Garter Snake and California Red-legged Frog—Madeleine Van der Heyden (25 min + 5 min Q&A)
- 09:35 Tidal Marsh Restoration and Mitigation Project in the Yolo Bypass—Chris Campbell (20 min + 5 min Q&A)
- 10:00 Ecological Restoration for the Klamath River Renewal Project, Southern Oregon and Northern California—Gwen Santos (20 min + 5 min Q&A)
- 10:25 Vernal Pools in Urban Mitigation—Joanna Tang (20 min + 5 min Q&A)
- 10:50 Natural Processes Restoration, Looking Over the Sand Bar—Mark Young (20 min + 5 min Q&A)
- 11:15 Marsh Restoration and Resiliency, a Co-Benefit for Safeguarding Critical Infrastructure in San Francisco Bay—Mark Brandi & Laura Moran (20 min + 5 min Q&A)
- 11:40 Nitrogen Source or Sink? Results from a Soil Core Incubation Experiment During Winter in an Elkhorn Slough Salt Marsh—Andi Greene (20 min + 5 min Q&A)

Cutting the Green Tape: An Introduction, Presentations & Panel — Moderator: Mauricio Gomez, South Coast Habitat Restoration

- 12:05 Navigating the Permitting Process for Aquatic Habitat Restoration—R.J. Van Sant (20 minutes)
- 12:25 Permitting Small Habitat Restoration: CDFW's HRE Act Informs State's Cutting Green Tape Initiative—Erik Schmidt and Madeleine Wieland (20 minutes)
- 12:45 Moderated Discussion (20 minutes)
- 01:05 **Meet and Greet with H. T. Harvey & Associates** (15 min)
- 01:20 **Raffle Drawing and Close**

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Successful Creation of Over 10 Acres of Wetland Habitat for San Francisco Garter Snake and California Red-legged Frog

Madeleine van der Heyden*¹, Carin Apperson¹, and Anna Larsen²

¹San Francisco Public Utilities Commission, mvanderheyden@sfgwater.org, capperson@sfgwater.org.

²AECOM, anna.larsen@aecom.com

After many years of planning and construction followed by five years of monitoring, the San Francisco Public Utilities Commission (SFPUC) has recently submitted final monitoring reports to the state and federal permitting agencies for its two largest wetland mitigation projects on the Peninsula watershed in San Mateo County, CA. The wetland mitigation sites were created as part of a larger mitigation program that was designed to compensate for capital infrastructure construction related impacts to endangered species and their habitats including San Francisco garter snake (SFGS, *Thamnophis sirtalis tetrataenia*) and California red-legged frog (CRLF, *Rana draytonii*). Despite various challenges including drought, invasive plants, and plant pathogens; in the end, the mitigation projects were very successful with SFGS and CRLF arriving soon after the wetlands were built and increasingly inhabiting the sites. Monitoring confirmed that heterogeneous habitats were created, and CRLF and SFGS were observed every year in various life stages. Hydrology monitoring showed that the wetlands are responding to surface and groundwater inputs as designed, filling in mid-winter and drawing down in the summer. This hydroperiod is long enough to support CRLF breeding but is still ephemeral, avoiding permanent water that would support predators such as the non-native invasive bullfrog. In addition to CRLF and SFGS, other special-status species and a diverse assemblage of wildlife are utilizing the new habitats. The projects were designed to generate 9 acres of wetlands but, in the end, the SFPUC created 11 acres of new wetland.

Tidal Marsh Restoration and Mitigation Project in the Yolo Bypass

Chris Campbell

cbec eco engineering, c.campbell@cbecoeng.com, 916.668.5232

In conjunction with the California Department of Water Resources (DWR), Westlands Water District, Hallmark Group, ICF, and cbec eco engineering designed, permitted, and constructed a 2,149-acre tidal marsh restoration project in the Lower Yolo Bypass near the Cache Slough Complex. The goal of the project was to benefit native fish, including delta smelt (*Hypomesus transpacificus*) and winter- and spring-run salmonids. The Lower Yolo Ranch Restoration Project, which adjoins the Yolo Flyway Farms tidal marsh restoration project completed in 2018, represents a significant milestone with the completion of a 'turn key' tidal marsh restoration project to partially fulfill mitigation obligations associated with the ongoing operation of the State and Federal Water Projects, which both deliver irrigation and municipal water to Central and Southern California. The design development and entitlement of the project was overseen by the multi-agency Fish Agency Strategy Team, or FAST, which is tasked with approving mitigation for the ongoing need. The Lower Yolo Restoration Project was designed to take advantage of the large areas of the site that were at ideal elevations for tidal marsh restoration, and that would contribute to the food web of the Cache Slough Complex quickly and without large amounts of earthwork. Construction of the project, under a compressed schedule, began in August 2020 and was completed in October 2020. DWR, in conjunction with the California Department of Fish and Wildlife, will begin collecting monitoring data at the site in 2021. <https://www.cbecoeng.com/our-projects/lower-yolo-restoration-project/>

Restoration Elements of the Klamath River Renewal Project

Carl Jensen¹ and Gwen Santos, CSE*²

¹ICF, Carl.Jensen@icf.com, 916.231.7676. ²Resource Environmental Solutions (RES), Senior Wetlands Ecologist; David Coffman, PG, RES Restoration Program Manager; Daniel Chase, RES Senior Fisheries Biologist

Removal of four hydropower dams (Iron Gate, Copco Nos. 1 & 2, and J.C. Boyle) on the Klamath River in northern California and southern Oregon represents the largest dam removal and river restoration project in the country. The project will restore free-flowing conditions and

continued next page

MONDAY Wetlands *Abstracts in order of presentation*

volitional fish passage to more than 400 miles of currently cut-off anadromous fish habitat upstream of the lower-most dam, Iron Gate. RES was selected by the Klamath River Renewal Corporation (KRRRC) to lead restoration for this ambitious effort, as well as accept liability associated with ensuring restoration meets ecological and biological performance standards and long-term goals/objectives. RES is leading design efforts for the restoration of nearly four miles of priority tributary streams and associated fish habitat, as well as vegetation restoration for approximately 2,000 acres of previously inundated lands. Restoring volitional fish passage to hundreds of miles of the Klamath River, once the third largest producer of salmon on the West Coast, will be an important achievement for this large, complex project. Area Tribes have relied on salmon as a vital resource for generations; rehabilitation of salmon and steelhead populations is not only environmentally important but critical to sustaining their culture. RES will rely on native seed propagation for revegetation of upland, riparian, and wetland habitats, and large wood placement to stabilize sediments and improve habitat for native fish and increase river and tributary functionality. This presentation provides a general overview of the project, restoration goals and approach, and key elements of riparian and wetland restoration.

Vernal Pools in Urban Mitigation

Joanna Tang

University of California, Santa Barbara, Department of Ecology, Evolution, & Marine Biology,
joannatang@ucsb.edu

Urban mitigation projects present a suite of unique challenges and opportunities, being constrained by small public open space parcels and subject to pollution and other urban stressors. Thus, the long-term ecological functioning and success of mitigation projects are often not guaranteed. Vernal pool restoration and creation also comes with a host of unique challenges and opportunities, but the opportunities may address the challenges of urban mitigation. Vernal pools are often cast as sensitive ecosystems, dependent on specific topography and hydrology to sustain their seasonal flooding that gives rise to endemic vernal pool species. However, as isolated rainfed wetlands, single pools can be

created in small (<1 acre) parcels, and may benefit from this isolation: restoration projects often suffer from invasion by exotic grasses when pools are incorporated in larger grassland matrices. Vernal pools' unique floral displays also make them a charismatic ecosystem, providing valuable services such as native biodiversity and aesthetic value that engage the community. We assessed the success of vernal pool mitigation projects in southern California. Engaged community members assisted practitioners with excavating seventy 1,300-m² pools, then provided the pools with 1–3 years of native seed inoculation, native transplants, supplemental irrigation, and hand-weeding, which resulted in high native diversity that is sustained even 15 years after restoration. Furthermore, native diversity was higher in smaller, more isolated mitigation sites compared to sites that included larger grassland parcels. Our findings indicate that vernal pools are ideal urban mitigation projects that can withstand, and even benefit from, existing with an urban matrix.

Natural Processes Restoration, Looking Over the Sand Bar

Mark Young

Westervelt Ecological Services, 600 North Market Blvd., Suite 3, Sacramento, CA 95834, 916.646.3644;
myoung@westervelt.com

Understanding the natural processes for restoration projects is essential to achieving success. The Bullock Bend and Cosumnes River Floodplain Mitigations Banks counted on current and future natural processes to re-establish much needed floodplain habitat within the California Central Valley. Since construction in 2016, the roughly 120-acre Bullock Bend preserve has met expectations for native fish use and riparian vegetation growth in this backwater riverine floodplain. Since construction in 2011, the roughly 500-acre Cosumnes River Floodplain preserve has met all regulatory performance standards. The preserve is on trajectory to become freshwater tidal wetland and a Great Valley Mixed Riparian Forest over time. Comparison of growth between container planting and natural recruits, and results from the hydrology monitoring required some adjustments with land management strategies and provided some guidance for future restoration designs.

continued next page

MONDAY Wetlands *Abstracts in order of presentation*

Marsh Restoration and Resiliency, a Co-Benefit for Safeguarding Critical Infrastructure in San Francisco Bay

Laura Moran*¹, Mark Brandi*¹, Lauren Huff¹, Ben Snyder¹, Lorraine Htoo², Richard Laureta², Sergio Ramirez³

¹SWCA Environmental Consultants, Half Moon Bay, CA, USA, laura.moran@swca.com, mark.brandi@swca.com

²Freyer & Laureta Inc., San Mateo, CA, USA ³West Bay Sanitary District., Menlo Park, CA, USA

West Bay Sanitary District's flow equalization and resource recovery facility is surrounded by levees designed to protect the site from tidal intrusion, as well as to protect San Francisco Bay from wastewater treated at the facility during certain wet weather conditions when wastewater diversion to the facility is necessary. Several areas along the levee are lower than the FEMA floodplain elevation, no longer protect the facility from tides, and do not protect against sea level rise. In coordination with state and federal resource agencies, design engineers, ecological restoration specialists, non-profits and university research affiliates, the District has incorporated an Ecotone Levee and Living Shoreline into the levee design. This nature based approach aims to meet regional and national climate change resiliency goals by mitigating the impact of coastal flooding and risk to key infrastructure while preserving the habitat functions and values of coastal marsh habitat through decades of sea level rise. The levee incorporates a stairstep design that allows for near-term enhancement of existing marsh while allowing for migration of low, mid, and high marsh habitats through currently modeled sea level rise scenarios. This project will contribute to the local integrity of San Francisco Bay's shoreline ecology for the benefit of fish and wildlife for decades by incorporating long term monitoring and adaptive management plans.

Nitrogen Source or Sink? Results from a Soil Core Incubation Experiment During Winter in an Elkhorn Slough Salt Marsh

Andria Greene*¹, Margaret Zimmer², Corianne Tatariw³, Ate Visser⁴, Erin Seybold⁵, and Anna Braswell⁶

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Located at the terrestrial-marine interface, salt marshes are capable of biogeochemical retention and removal of anthropogenic nitrogen. Through measuring the accumulation of nitrogen gas (N₂) during a 12-hour laboratory experiment in winter (January 2020), we calculated total nitrogen removal using nine soil cores extracted across a *Salicornia pacifica* dominated salt marsh in the Elkhorn Slough, CA. We delineated the salt marsh by degree of tidal inundation, which varied between 1.5 hrs and 2.5 hrs of inundation across a 24-hour tidal cycle (upper: 1.5 hrs, middle: 1.9 hrs, lower: 2.5 hrs). Between 499 and 980 μmol/m²/hr of nitrogen was removed during incubation, indicating the potential for the intertidal wetland to act as a nitrogen sink even during the absence of nitrogen uptake by senesced *S. pacifica*. Nitrogen removal was highest in the lower wetland position, and decreased with increasing elevation. We hypothesize that the upper wetland position underwent removal via coupled nitrification-denitrification due to a measured net deficit of NO_x (NO₃⁻ + NO₂⁻), while the middle and lower wetland positions underwent retention through dissimilatory nitrate reduction to ammonium (DNRA), because of ammonium (NH₄⁺) accumulation. Pools of bioavailable NH₄⁺, the dense rhizosphere of *S. pacifica*, and abundant organic carbon in the salt marsh may have led to an established and active nitrogen transforming community. Determining the status of California salt marshes as nitrogen sources versus sinks across seasons may invigorate management and restoration efforts in light of our continued dependence on big agriculture and non-renewable energy.

MONDAY Cutting the Green Tape *Abstracts in order of presentation*

Navigating the Permitting Process for Aquatic Habitat Restoration

RJ Van Sant

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As if restoration wasn't challenging enough, deciphering what permits are required to actually implement a restoration project can be just as difficult. State, Federal, local permits... what, when, how? This discussion will focus on permitting requirements for aquatic habitat restoration projects (wetlands, streams, estuaries, etc.). Sorry upland folks. Regulations pertaining to the Clean Water Act, Fish and Game Code, State Waste Discharge Requirements (WDR), Endangered Species Act, CEQA, historic and cultural resources, etc. will be explored.

Permitting Small Habitat Restoration: CDFW's HRE Act Informs State's Cutting Green Tape Initiative

Erik Schmidt*¹ and Madeleine Wieland*²

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The environmental permitting process has been perceived as a barrier to restoring habitat in California. Restoration

can benefit fish and wildlife, functioning ecological systems, and water quality and flows. In 2014, the Habitat Restoration and Enhancement Act established a new approval process with California Department of Fish and Wildlife for small habitat restoration. Projects approved by CDFW through the Act do not require additional permits from CDFW, such as a Section 1600 Agreement or Section 2081 Incidental Take permit. The HRE Act links CDFW approval to the State Water Board's review and permitting process under Clean Water Act Section 401 as a means to speed review through coordination of applications, information submittal, and monitoring plans. CDFW review time is abbreviated to 30-60 days, a significant reduction from other permitting timelines. During 6 years of HRE Act implementation, CDFW has worked closely with project applicants to facilitate complete and appropriate applications and has approved almost 100 projects statewide. Though projects must be small in scope, fish passage projects in particular can have outside benefits. The Act's success in furthering state habitat goals and interagency cooperation is informing the Governor's Cutting Green Tape Initiative to benefit larger, more complex projects, potentially enabling efficient regulatory approval for floodplain reconnection, estuary and wetlands projects, and other types of restoration work identified as State priorities. We examine HRE Act data from projects submitted for approval through this process, as the State moves to take further actions to speed funding and approval of restoration statewide.



Stickers (top) for your car, bike, laptop, water bottle... dog?!?

And 2-color logo tees (right) in field-worthy cotton, unisex long sleeve or women's cut.

You can start ordering during the conference!

Did anyone hear the word "SWAG"?

Woo hoo! Coming soon!



TUESDAY 14 September 2021

09:00am **Welcome** Lindsay Teunis, SERCAL Leadership Team

Diversity, Equity, and Inclusion in California's Restoration Community – Chairs: Lindsay Teunis, SWCA, and Barbra Calantas, ESA

09:05 **Keynote** Reflecting, Renewal, and Restarting: A Journey of Discovery —Mamie Parker (30 minutes)

09:35 The Joy in Cultivating Liberatory Inclusion in Restoration Spaces: Shifting from Diversity as an Afterthought to Inclusion as a Necessary Foundation—Leticia Morris (15 minutes followed by 5 minute break)

09:55 Behind the Scenes of Restoration: The Unsung Workforce—Sonya Vargas (20 minutes)

10:15 Elevating Young Environmental Leaders—Patrick Rump and Nina Omomo (20 minutes)

10:35 Morrison Creek Revitalization—Nailah Pope-Harden (20 minutes)

10:55 Engaging the Next Generation—Lindsay Teunis and Christina Contreras (20 minutes followed by 5 minute break)

11:20 How to Start in Your Own Company? Internships and more—Barbra Calantas (30 minutes)

11:50 Highlighting Indigenous Stewardship — Valentin Lopez (20 minutes)

12:10 **Panel Discussion with all speakers** (30 minutes)

12:40 **Meet and Greet with HRS and Dudek** (15 min)

12:55 **Raffle Drawing and Close**

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TUESDAY Diversity, Equity, and Inclusion *In order of presentation*

Mamie Parker, PhD

Dr. Mamie Parker is a professional fish and wildlife biologist and a conservation success coach. She is President of MA Parker and Associates and Principal Consultant at EcoLogix Group. Dr. Parker is the chairwoman of the Student Conservation Association (SCA), the first Black woman to be elected to this position. She recently served as chair of the Department of Wildlife Resources Commission and is on the Board of Directors of The Nature Conservancy-Virginia Chapter, and the National Wildlife Federation. Featured on NPR Morning Edition radio show, Parker made history as the former FWS Head of Fisheries in this country. The President presented her the Presidential Rank Award, the highest recognition given to federal government senior executives.

Leticia “TC” Morris

“TC” is an ecologist with GEI Consultants in Sacramento. She played a defining role in the latest issue of *Ecesis*, contributing to the first in a series of “Diversity & Inclusion Conversations” — “Any conversation of race and place in our industry comes with it a responsibility not only to see things as they are but also to see and envision things as they can be.”

Sonya Vargas

Sonya, a Senior Biologist at ESA in San Diego, shares this about her presentation — “Habitat restoration would not be possible without the hardworking field staff (crews) who work long days in all weather conditions installing and maintaining each and every project. The majority of the field staff are from historically underrepresented groups, often first generation or immigrants themselves from Latin American countries with English as their second language. Other than the casual interactions that occur in the field between project staff and these crew members, These individuals remain hidden work behind the scenes in our industry. They are generally not seen at conferences and trainings, often not recognized, celebrated, or included — an unsung workforce. This presentation will review the perspectives of select field staff and dive into how we can elevate this group in our industry.”

Patrick Rump and Nina Omomo

The Eco-Apprentice program is a cornerstone of Literacy for Environmental Justice (LEJ), allowing the organization to achieve ecological restoration initiatives, engage the local community in park stewardship and environmental education, and invest in young environmental leaders. Interns are primarily underrepresented People of Color and 80% of interns secure employment at the end of the Eco-Apprentice program. LEJ has many lessons to share from its 20-year history in youth development, openspace restoration & stewardship, community engagement, and advocacy in a vibrant, low-income, and heavily polluted community in Southeast San Francisco, Bayview Hunters Point.

Patrick has served as LEJ’s Executive Director for 11 years. He’s been with the organization for 22 years, serving in many roles. He is deeply passionate about LEJ’s core mission and focus. Patrick has developed LEJ’s Eco-Adventures, on the water kayaking, Programs and the new walk, bike, & boat-in campsites at Candlestick Point State Recreation Area (one of only two campsites in San Francisco County). Patrick is currently working on the expansion of the native plant nursery and community garden at Candlestick State Park to amplify LEJ’s impact on green infrastructure, habitat restoration, environmental education, community stewardship, and environmental workforce development in Southeast San Francisco. Patrick is an avid skateboarder in his late 40’s and enjoys it more today than back in 1987 when he started. He enjoys playing badminton with his family, vinyl record collecting, and recently agreed to a family dog for his kids (despite being allergic to it).

Nina is LEJ’s Restoration Coordinator. She found LEJ through the Environmental Studies program at SFSU and decided to volunteer on Saturdays. During her last semester of school, she was hired as a part-time intern through the Eco-Apprentice program. She ended up really enjoying the work at LEJ and after graduating, decided to continue full-time. One aspect that really drew her in was the intersectionality of goals within the work, specifically the connection between social justice and science-based practices. She loved being able to work with native plants and do land-based restoration, but also be involved in community events and advocacy in environmental injustice. She reflected, “One of the best parts of my job is

continued next page

TUESDAY Diversity, Equity, and Inclusion *In order of presentation*

going on botanical and seed collection hikes because it's where I learn the most about native plants and I ultimately get paid to go hiking. I'm extremely fortunate to have the chance to work outdoors every day alongside people who have inspired me and taught me so much just at the start of my career in the environmental field."

Nailah Pope-Harden

Although she recently became Executive Director of ClimatePlan, Nailah shares this about her work — I was, and in many ways still am, a community organizer. For the last 13 years, I have worked in various capacities to help people advocate for themselves. I have covered a variety of issues areas across local, statewide, national and international campaigns. I believe in the power of people coming together, I believe in community, I believe we can win... My lens, my bottom-line, my area of interest will always be centered around how policy is actualized, especially for those in historically discriminated communities. Plans are essential, declarations are important, but implementation and accountability are real."

Lindsay Teunis and Christina Contreras

Lindsay, Principal Restoration Ecologist at SWCA, is co-chair of this session as well as the guest editor of the recently published "Diversity, Equity, and Inclusion" issue of Ecesis. A long-time mentoring volunteer at Ocean Discovery Institute (ODI), Lindsay takes very seriously the role professionals can play in providing young people with opportunities for educational and professional development. Christina, ODI's Program Specialist for College and Career, will provide an introduction to ODI and share her experience working in a diverse community with many first-generation underrepresented students. The aim of their presentation is to challenge individuals, companies, and the restoration industry as a whole into

action; to be a bridge to the future work force and move toward a diverse industry that reflects the communities, cities, states, and countries we work in.

Barbra Calantas

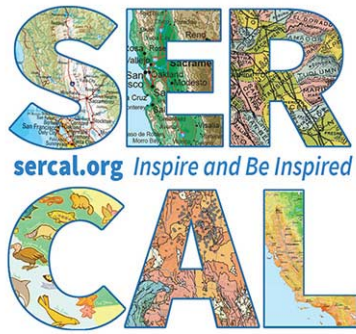
Barbra is Biological Resources Director of Environmental Science Associates' (ESA) Southern Calif. region. She recently founded the Environmental Professional Diversity Collective (EPDC), a San Diego-based program to address the lack of diversity, equity, and inclusion (DEI) in the environmental consulting, architecture, and engineering industries. She shares this about her presentation — "It may feel like a challenge to think about how to implement change and contribute to a truly equitable, inclusive, and diverse industry. This session will focus on successful examples of feasible programs and processes that can be implemented in the workplace so that as an environmental industry 1) every colleague from an underrepresented group feels they have equity in career growth and professional advancement and 2) our workforce more closely reflects the communities where we live, work, and serve." Barbra is co-chair of this session.

Valentin Lopez

Valentin Lopez is the Chairman of the Amah Mutsun Tribal Band, one of three historic tribes that are recognized as Ohlone. The Amah Mutsun are comprised of the Indigenous descendants forcibly taken to Missions San Juan Bautista and Santa Cruz. Chairman Lopez is also the President of the Amah Mutsun Land Trust which was established in 2012. Chairman Lopez will be speaking about the work of the Amah Mutsun, who are currently working to restore their traditional Indigenous knowledge regarding land stewardship so they can return to the path of their ancestors. Consequently, the Amah Mutsun are very active in conservation and protection efforts within their traditional tribal territory.

SERCAL, the California Society for Ecological Restoration, is a non-profit membership-based organization dedicated to advancing the science, art, and practice of restoring native California habitats.

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Thank you 2021 Mentors!

Chad Aakre, Westervelt

Gregory Andrew, retired

Alys Arenas, Newport Bay
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Courtney Casey, ICF

Laura Cunningham, Western
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Nick Garrity, ESA

Andria Greene, H. T. Harvey

Brad Hoge, The Nueva School

Nina House, California Botanic
Garden

Kristin Lantz, ICF

Jean-Philippe Marié, UC Davis

Julia Michaels, Reed College

Leticia Morris, GEI Consultants

Gwen Santos, RES

Geoff Smick, WRA

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Peninsula Land Conservancy

Wendy Young, Harris & Associates

Matt Yurko, Project Grow

About SERCAL's Conference Mentorship Program

SERCAL is embarking on a new outreach adventure for early-career restoration professionals, college students, and underrepresented communities. As an education-based organization, we would like to offer those who are just starting their careers, or looking to broaden their career, a way to connect with mentors within our membership during our annual conference. With a wealth of knowledge and experience to impart, and resources to share, SERCAL mentors can bridge the gap for their mentees and set them up for success in our field.

Mentor Expectations:

- * Be available during the conference to answer via email any questions that mentees may have. Some mentees may be completely new to scientific conferences and may not know what to expect.
- * Participate in a follow-up meeting after the conference to debrief and have 1:1 time with your mentee.
- * Offer your mentee professional advice on how to advance their careers or education.

Mentor Time Commitment:

- * Two one-hour meetings, one before and another after the conference.
- * Be available throughout the conference via email (or any other technology that works well for the both of you)
- * Participate in a survey to provide any feedback about being a mentor.

Mentee Expectations:

- * Follow-up with your mentor prior, during, and after the conference to ask any questions.
- * Participate in a follow-up meeting after the conference to debrief and have 1:1 time with your mentor.
- * Participate in a survey to provide any feedback about being a mentee.


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WEDNESDAY 15 September 2021

09:00am **Welcome** Cassie Pinnell, SERCAL Leadership Team

Invasives Technical Session — Chair: Cassie Pinnell, Vollmar Natural Lands Consulting

09:05 **Keynote** Herbicide Use in Habitat Restoration: Organic Versus Outcome—Scott McMillan (25 min + 5 min Q&A)

09:35 Finding Balance When You are Stuck in a Marsh: Achieving Effective Invasive Plant Management in Upper Newport Bay—Alys Arenas (20 min + 5 min Q&A)

10:00 Saltcedar (*Tamarix ramosissima*) Control at CD Hillman Mitigation Site, Kern County—Chad Aakre (20 min + 5 min Q&A)

10:25 Vegetation Management of Native Grasslands—JP Marié (20 min + 5 min Q&A)

10:50 Invasive Species Management for Fire Risk Reduction in the Los Gatos Vegetation Management Plan—Charlotte Soergel and Erich Schickenberg (20 min + 5 min Q&A)

Building Our Workforce, Presentations & Panel — Moderator: Gregory Andrew, Retired

11:15 Establishing an Ecological Workforce: Developing Training and Certificate for laborers and operators—Mark Cederborg and Sally Bolger (20 minutes)

11:35 The California Conservation Corps and Watershed Stewards Program (CCC & WSP): Protecting and Enhancing Natural Resources While Empowering Young Adults—Jody Weseman (20 minutes)

11:55 Tribal EcoRestoration Alliance: Working to Revitalize Ecology, Economy, and Culture through Indigenous-led Stewardship—Lindsay Dailey (20 minutes)

12:15 **Moderated Discussion** (30 minutes)

12:45 **Meet and Greet with Westervelt Ecological Services** (15 min)

01:00 **Raffle Drawing and Close**



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Herbicide Use in Habitat Restoration: Organic Versus Outcome

Scott McMillan^{*1}, Kyle Matthews², Cindy Thompson², Mark Berninger³, and Sara Allen³

¹Dudek, 2280 Historic Decatur Road, Suite 200, San Diego, CA 92106, smcmillan@dudek.com, kmatthews@hrs.dudek.com ²Habitat Restoration Sciences Inc., 1217 Distribution Way, Vista, CA 92081 ³City of San Diego, Parks and Recreation Department, 202 C Street, San Diego, CA 92101

For over 25 years in Southern California, herbicide application has been one of the most effective and efficient weed control tools available to habitat restoration ecologist. Highly trained habitat restoration implementation crews use herbicide successfully and appropriately on general restoration efforts, as well as highly sensitive habitats with rare and endangered species. The use of herbicide for weed control has been an important tool in habitats that support sensitive species like vernal pool plants and animals, sensitive bird and butterfly species, and desert species like the desert tortoise. This tool has helped achieve the success criteria goals and requirements of the regulatory agencies on projects for mitigation, targeted species recovery, and long term management. Recently, the use of herbicide for habitat restoration and management efforts has come under increasing scrutiny. Many cities, counties, and other land managers now require organic herbicides, or restrict herbicide application entirely. Safe and effective use of natural or organic herbicides is relatively untested around sensitive resources. Natural herbicides result in more time intensive and costly weed control, with less confidence of success. Where herbicide application is completely restricted, other weed control methods like hand weeding or mowing can be implemented successfully, but they often fall short of herbicide in effectiveness. This resulting reduction in effective weed control must be taken into account in future plans for habitat restoration and management, and our existing programs will have to re-evaluate the proposed efforts, cost of those efforts, and expectations for success, both short and long term.

Finding Balance When You are Stuck in a Marsh: Achieving Effective Invasive Plant Management in Upper Newport Bay

Alys Arenas^{1*}, Heather Cieslak¹, Josie Bennett^{1,2}

¹Newport Bay Conservancy, Newport Beach, CA, alys.arenas@newportbay.org, heather.cieslak@newportbay.org ²Laguna Canyon Foundation, Laguna Beach, CA, josie@lagunacanyon.org

Upper Newport Bay (UNB) is the largest remaining estuary in southern California, making it an invaluable resource that provides critical habitat for wildlife and numerous ecosystem services to the public. While much of the remaining habitat within UNB is now protected, several challenges still exist that greatly impact the management and monitoring of hundreds of invasive plant species found within the Bay. Among the many challenges affecting targeted invasive control efforts are the complexity in land ownership, its location within a highly urbanized environment, and that it is the final destination for surface water flows from the surrounding 154 square-mile watershed. Working across boundaries is a challenge experienced by many doing targeted invasive control. The purpose of this presentation is to offer a framework for how we are working to break down such challenges and develop solutions to balance relationships and limited resources for managing invasive plants in UNB. This framework incorporates multiple partner and stakeholder relationships along with the intricacies of the public realm, and we will address some of the specific environmental pressures UNB faces in relation to its position within a highly urbanized landscape. We will interweave elements of specific restoration and targeted invasive control efforts in both salt marsh and transitional habitats throughout UNB. By considering all the different components that impact invasive plant management in an organized, cohesive framework, we hope other land managers may glean insights as to the challenges and potential solutions associated with targeted invasive control efforts in an urban-wildland.

continued next page

WEDNESDAY Invasives *Abstracts in order of presentation*

Saltcedar (*Tamarix ramosissima*) Control at CD Hillman Mitigation Site, Kern County

Chad Aakre (caakre@westervelt.com)*, Beau Miller (beau.miller@yahoo.com), Brent Helm (bhelm@tansleyteam.com), Matt Coyle (mcoyle@westervelt.com), and Tara Collins (tcollins@westervelt.com)

Saltcedar (*Tamarix* spp., commonly called tamarisk) is a non-native tree or shrub that was intentionally introduced to the western United States in the late 1800s and promoted for use as bank and roadside stabilization, windbreaks, and for ornamental purposes. These plants have invaded stream banks and other riparian habitats throughout the west displacing native plants, changing soil ecology, and generally degrading habitat values. Approximately 10 acres of *Tamarix ramosissima* was identified along wetland swale banks at the 239-acre CD Hillman Mitigation Site (Kern County), established as a preserve in 2017. The mitigation site supports alkali sink habitat occupied by a number of special-status plant and wildlife species including King's gold (*Tropidocarpum californicum*), kern mallow (*Eremalche parryi* subsp. *kernensis*), San Joaquin kit fox (*Vulpes macrotis*), Tipton kangaroo rat (*Dipodomys nitratooides nitratooides*), blunt-nosed leopard lizard (*Gambelia sila*), San Joaquin valley antelope squirrel (*Ammospermophilus nelsoni*), and Swainson's hawk (*Buteo swainsoni*). The site's special-status species posed constraints to the saltcedar control program and required the implementation of specific avoidance and minimization measures to prevent impacts to these species. Based on local interviews, reviewing best management practices, and expert experience; a focused herbicide application management strategy was developed which included basal-bark application and foliar spray. Saltcedar management was implemented 2018 through 2020, resulting in approximately 98 percent control of saltcedar on the site.

Vegetation Management of Native Grasslands

J.P. Marié

Manager, UC Davis Putah Creek Riparian Reserve, Campus Planning & Environmental Stewardship, jpmarie@ucdavis.edu

Using the success of the UCD Russell Ranch grassland mitigation site, JP Marie will go over tools available to control weed grass, broadleaves and to reduce thatch on

restored California native grasslands. From mowing, burning, spraying, haying/bailing to grazing.

Invasive Species Management for Fire Risk Reduction in the Los Gatos Vegetation Management Plan

Charlotte Soergel*, Erich Schickenberg, Mark Brandi, Lauren Huff, Ben Snyder, Laura Moran, and Juliet Bolding
SWCA Environmental Consultants, Half Moon Bay, CA, USA, charlotte.soergel@swca.com, erich.schickenberg@swca.com

The Community Wildfire Prevention Plan for the Town Los Gatos identified the Town as a high wildfire risk area due to its steep terrain, varied vegetation composition including high acreage of invasive species, and high acreage of open space adjacent to urban areas. SWCA prepared a Vegetation Management Plan (VMP) that describes the strategy and guidelines that the Town of Los Gatos will take to reduce wildfire hazard on 194 acres of Town-owned open space land and undeveloped parks, as well as 32 miles of roadway generally in the Town's designated Very High Fire Hazard Severity Zone (VHFHSZ). Implementation of this VMP is designed to reduce wildfire hazard and risk and allow safe passage for emergency personnel and residents through active management strategies that avoid and minimize impacts to natural resources and aid in local and regional goals to reduce wildfire risk as detailed in the California Vegetation Treatment Program (CalVTP) (California Board of Forestry and Fire Protection 2019a). The CalVTP identifies specific approved vegetation treatment methods including prescribed burning, mechanical treatments, manual treatments, herbicides, and herbivory to reduce wildfire fuels, create fuel breaks and restore natural ecological fire regimes (CalVTP 2019). These standards have ultimately been developed to reduce fuel loads, eliminate ladder fuels, disrupt the horizontal continuity of vegetation, remove non-native invasive species, minimize ignition potential, and prioritize retention of non-combustible plants. Removal of invasive combustible vegetation includes eucalyptus (*Eucalyptus* spp.), acacia (*Acacia* spp.), scotch broom (*Cytisus scoparius*), French broom (*Genista monspessulana*), non-native annual grasses, English ivy (*Hedera helix*), Italian thistle (*Carduus pycnocephalus*), and giant reed (*Arundo donax*).

WEDNESDAY Building a Workforce *Abstracts in order of presentation*

Establishing an Ecological Workforce: Developing Training and Certificate for laborers and operators

Mark Cederborg*¹, Sally Bolger*², and Bruce Wilson³

¹CEO, Hanford, m.cederborg@hanfordarc.com ²Director, Ecological Workforce Initiative, HanfordFUND sally@hanfordarcfund.org ³Executive Director, Workforce Alliance of the North Bay, bwilson@workforcealliancencorthbay.org

A coalition of restoration industry leaders, employers, workforce development partners, training providers, and community colleges are establishing an Ecological Workforce Training Program and industry-recognized Certificate. The Program, which will be piloted in June and July 2021, is a combination of specially developed curriculum supplemented by worksite training. The Program delivers restoration-focused curriculum to on-the-ground laborers and equipment operators, giving them the skills and knowledge to work appropriately in ecologically sensitive habitats, including an understanding of the permitting requirements and restrictions, habitat types, and species of concern. It is on the ground where the labor force interfaces with the resources, yet there currently is no publicly available training for those workers. The extent to which workers are trained in this specialty is primarily based on on-the-job training, which varies dramatically between employers. Lack of industry standards can lead to damage to resources and unsatisfactory project outcomes. The Environmental Restoration Industry is growing exponentially and is already unable to meet its workforce needs. Creation of a respected training program will foster recognition of Environmental Restoration as an economic driver for our communities and identify an Ecological Workforce separate from, and with more specialized skills than, traditional civil construction laborers. This initiative is a powerful means of addressing the long-standing barriers to employment in restoration work faced by many in our underserved communities. The Program will expeditiously retrain laborers of all levels into highly paid and fulfilling jobs with excellent wages and benefits, while supporting more successful restoration project outcomes.

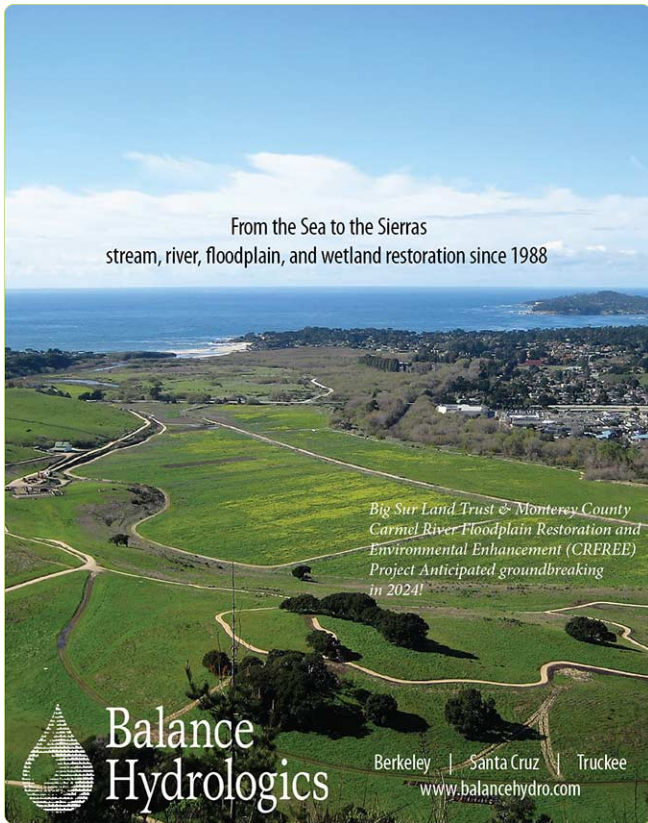


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THURSDAY 16 September 2021

09:00am **Welcome** Geoff Smick, SERCAL Treasurer

Restoration in Our Backyard Technical Session — Chair: Denise Knapp, Santa Barbara Botanic Garden

09:05 Introduction—Denise Knapp (20 minutes)

09:25 From Parking Lot to Tidal Salt Marsh—Jennifer Zell (20 minutes)

09:45 Community Based Habitat Restoration at Byrne Preserve: Keys to Success—Kristen Williams (20 minutes)

10:05 Restoring in Urban and Rural Settings: Motivating Communities to Get on Board with Restoration in their Backyards and Lessons Learned—Sarah Phillips (20 minutes)

10:25 Improving Habitat Values in a South Davis Neighborhood—Pat Reynolds (20 minutes)

10:45 Adopt-a-Plot: Empowering the Community to Restore Habitat—Megan Wolff (20 minutes)

11:05 Transforming Farmlands: Planting a Dream for a New Park In Salinas—Rachel Saunders and Beth Febus (20 minutes)

11:25 Different Jargon, Same Goals: Landscape Architects and Ecologists can Work Together to Maximize Biodiversity—Julia Michaels and Haven Kiers (20 minutes)

11:45 Habitat Horticulture: How to Encourage your Community to Bring Habitat Home—Rachel Davis (20 minutes)

12:05 **Panel Discussion with Presenters** (40 minutes)

12:45 **Meet and Greet with Ecological Concerns** (15 min)

01:00 **Raffle Drawing and Close**



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From Parking Lot to Tidal Salt Marsh

Jennifer Zell

ASLA, PLA. 5320 E. Calderwood Street, Long Beach, CA 90815, 562.668.0251, jzell@migcom.com

It was not long ago the saying “once asphalt, never again a field,” held true. Today however that paradigm is shifting. At the Colorado Lagoon in Long Beach, California, 73 parking spaces and nearly 30,000 square feet of roadway have recently been removed to re-establish tidal wetland habitat. Work to improve the health and ecological functions of the Colorado Lagoon has spanned decades and several phases of work. Storm drains have been rerouted and contaminated sediment has been dredged and removed. Considering salt marshes rank among the most productive ecosystems on earth, the 1.3 acres of freshly un-paved earth is a considerable bounty for native plant and animal species and local environmental advocates. Balancing the needs of urban populations and the needs of coastal wildlife is tricky. It took a surge in local activism, primarily through the efforts of the Friends of Colorado Lagoon, to get the attention of policy makers and funding agencies to commit to making the lagoon healthy for humans, plants and animals. The community-based restoration effort actively engages local communities and involves both professionals and volunteers. The next phase of work will establish new subtidal, intertidal, eelgrass and native coastal scrub habitats and create a new open water channel to improve the tidal regime of the lagoon. This is a vital step necessary to completely restore the structure and function of the lagoon’s ecosystem and complete the work started by a committed group of friends advocating for the health of the lagoon in their backyards.

Community Based Habitat Restoration at Byrne Preserve: Keys to Success

Kristen Williams

Grassroots Ecology, 3921 East Bayshore Road, Palo Alto CA 94303, kristen@grassrootsecology.org, 707.972.8279

Grassroots Ecology is a non-profit with a mission to engage and educate the public to restore local ecosystems. Based in Palo Alto, Grassroots Ecology has 23 habitat restoration sites within San Mateo and Santa Clara counties where 12,000+ people participate each year to learn about and steward public lands and watersheds. In 2014 Grassroots Ecology started a community based habitat restoration project at 88-acre Byrne Preserve in Los Altos Hills. Six years into the project, major

accomplishments include riparian habitat improvements, reduction in invasive plant populations, and increased engagement of local schools and community groups in environmental service and learning. Specific components that led to a successful project include: attainable project size and goals, community partnerships, dedicated volunteers, consistency in project management, strategic prioritization, and adaptive management. To date 4,000 volunteers have come together to remove invasive plants, revegetate with native species, install willow stakes, collect and plant acorns, and create community over shared work and values. Through these collaborative efforts, the historic floodplain of Moody Creek went from 6% to 44% native cover in just four years. Fields of Italian thistle, black mustard, and yellow starthistle have transformed into springtime native blooms of California poppies, lupine, and yampah. In addition to these ecological benefits, park users appreciate that paths are cleared of stinkwort and thistle, allowing them to fully enjoy the site’s recreational benefits.

Restoring in Urban and Rural Settings: Motivating Communities to Get on Board with Restoration in their Backyards and Lessons Learned

Sarah Phillips

Sarah@marinrcd.org, 415.663.1170 ext 302

There are many hurdles a watershed faces while navigating through an urbanized landscape, including the people. Certainly getting residents on board with restoration can prove challenging, especially in urbanized watersheds. Yet it is people that can make a difference. Luckily, there is a multitude of ways to engage the communities around you in order to see the change we need to see in our impacted waterways. This presentation will cover a series of strategies used by Marin Resource Conservation District’s Urban Streams Program Manager, Sarah Phillips, who carries out such efforts throughout Marin County’s watersheds, including both rural and urban watersheds, as the two require differing messages and at times, varying approaches. It all starts with making a personal connection followed by education then finding the motivation that will entice the community to join in with ways to improve the watershed that they live in. In some cases, it’s a matter of providing incentives and in other cases, it can be as simple as taking people out to observe juvenile salmonids up close and personal thus inspiring them to change behavior and improve habitat conditions in whatever ways possible. This presentation will take a hard look at the successes and lessons learned

continued next page

THURSDAY Restoration in Our Backyard *Abstracts in order of presentation*

since the Urban Stream Program was initiated in September, 2014, so that others may gain knowledge on key elements that have worked and have not. Lastly, this presentation will also touch on ways in which the practice of facilitation and mediation may prove very crucial when used at the right time in the right place.

Improving Habitat Values in a South Davis Neighborhood

Patrick Reynolds

River Partners, Sacramento Valley Regional Director,
preynolds@riverpartners.org

Restoration in urban settings can substantially improve habitat values and social connections. The Willowbank Habitat Improvement Program (WHIP), is a habitat program of neighbors working together to establish valley oaks and pollinator habitat patches. It became the subject of a University at California Davis class in the spring 2018 quarter titled "Social-ecological Connectivity in an Urban Context". The class collected valley oak, herbaceous vegetation, insect and social connectivity data from 18 different neighbors. Valley oaks and pollinator patches were mapped, and participants interviewed about their experiences, social networks, and motivations. Valley oaks established via planting and natural recruitment in 17 of the 18 sites with 7.1 valley oaks per ½ acre lot. The average diameter-at-breast height (DBH) was 12.5 inches and the average height 33.7 feet. All were rated as very healthy. As plant diversity increased, the number of honey bee, native bee, and fly visitations increased. When compared to control plots, plant and pollinator diversity was higher in habitat patches and sites with higher plant diversity had higher pollinator diversity. Areas with high insect and plant diversity had high social connectivity. Factors identified as contributing to WHIP participation included: a keen sense of place, positive environmental values, high levels of educational, and strong, community-minded leadership. Residents reported the primary benefit of WHIP was increased community connectedness. The core leadership group of WHIP was most central in the network. The WHIP project seems to have improved both the environmental and social health of the neighborhood.

Adopt-a-Plot: Empowering the Community to Restore Habitat

Megan Wolff

Palos Verdes Peninsula Land Conservancy,
mwolff@pvplc.org, 310.541.7613

The Palos Verdes Peninsula Land Conservancy has developed a program over the last decade that allows community members: families, school and environmental clubs, and neighbors, to steward habitat independently. Volunteers in this adopt-a-plot program receive training, materials and coordination from Land Conservancy staff, however, the successful restoration of each site is in the community's hands. This is the ultimate way to engage the community in critical conservation projects that allow them to experience change over time. Projects prioritize the reintroduction of habitat designed to support federally listed species including the Palos Verdes blue butterfly, El Segundo blue butterfly and California gnatcatcher.

Transforming Farmlands: Planting a dream for a new park In Salinas

Beth Febus*, Jennifer Vasquez, and Rachel Saunders*

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bfebus@bigsurlandtrust.org,
jvasquez@bigsurlandtrust.org,
rsaunders@bigsurlandtrust.org

Carr Lake is a 480-acre seasonally dry lake bed in the heart of the City of Salinas that empties into the Monterey Bay National Marine Sanctuary. Historically the largest of seven lakes in the Salinas Valley, it was drained and converted to farmland nearly 100 years ago. In 2017, Big Sur Land Trust acquired 73 acres of Carr Lake and is currently planning a multi-benefit restoration project including flood and stormwater management, with water quality benefits achieved through restoration of natural hydrology, wetlands and other habitats. The project is also designed to provide much-needed parkland to the community and improve access to the many benefits of nature. In efforts to foster a sense of collective ownership, Big Sur Land Trust is engaging residents in envisioning a new park and community space for the people of Salinas that could become a hub for outdoor recreation. The project includes trails for nature viewing, areas for play,

continued next page

THURSDAY Restoration in Our Backyard *Abstracts in order of presentation*

and new community spaces in a city that lacks places for youth and families to gather. A Carr Lake Partners Group was developed to create and implement robust community engagement strategies to ensure that the local community is fully included and represented in the co-creation of a future park at Carr Lake and we are engaging the general public in design planning meetings and events at the site. The project is currently at 30% design and starting the CEQA/environmental review process in early 2020. It is anticipated that construction will begin in 2024 and the park will be open in 2027."

Different Jargon, Same Goals: Landscape Architects and Ecologists can Work Together to Maximize Biodiversity

Julia Michaels*¹, Haven Kiers*², Billy Krimmel³, Caroline Larson-Bircher⁴, and Ash Zemenick⁵

¹Reed College (jmichaels@reed.edu) ²U.C. Davis (ahkiers@ucdavis.edu) ³Miridae Landscapes (billy@miridae.com) ⁴UC Davis (carwright@ucdavis.edu) ⁵Auburn University (zemenic1@msu.edu)

While landscape architects have begun embracing native plants in urban projects, ecologists are also turning their attention to urban areas restore biodiversity. Landscape architecture dictates that in urban contexts, aesthetic design is at the forefront and must be given substantial attention. At the same time, there is a dearth of ecological research to guide the design of 'backyard restorations' at both the yard and neighborhood scale. For example, how should cities prioritize spending on urban habitat? Should they create a program that distributes five native plants to every house in a neighborhood, or a single grant for one full-yard replacement per neighborhood? What are the ecological, aesthetic and social tradeoffs? Through an extensive interdisciplinary literature review, we found that aesthetic and social goals are not mutually exclusive with optimizing habitat impact. in urban areas. We present a new glossary tool that we created to highlight parallel concepts across these fields. We discuss specific case studies in which aesthetic design goals can be leveraged to maximize ecological function—for example, in landscape architecture, same-species 'swaths' are considered more visually compelling, and in restoration, planting individuals in clumped arrangements can increase survival through ecological facilitation. We

propose that more attention should be placed on the design elements of residential-scale restoration projects, including size, distribution, connectivity, structure, and heterogeneity. Finally, we argue that each backyard conversion is an opportunity to test ecological theory and to conduct much-needed research on the impacts of these design elements on habitat potential.

Habitat Horticulture: How to Encourage your Community to Bring Habitat Home

Rachel Davis

UC Davis Arboretum and Public Garden, Valley Oak Cottage, 448 La Rue Road, Davis, CA 95616, 707.799.9404, ramdavis@ucdavis.edu

The UC Davis Arboretum and Public Garden's Learning by Leading™ Program offers student leadership opportunities from a variety of academic departments. The Habitat Horticulture Learning by Leading™ team brings the principals and goals of habitat restoration to the home gardener. We focus on encouraging urban wildlife corridors, with an emphasis on plant and pollinator biodiversity. Our students get hands on field skills while learning how to impact our community. Examples of pilot projects: • The Habitat Horticulture team spearheaded our Bee Campus USA designation, pledging to create and maintain native pollinator habitat in and around our campus. • Use iNaturalist to survey native and drought tolerant plant visitation by pollinators. • "Research to Retail"—collaborative data from UC Davis researchers to create planting lists and recommendations at our seasonal plant sales. • Created home garden scale native plant planting plans, specific to our region. • Potted Plants for Pollinators—container gardening plant lists for people who rent or do not have large yards but still want to contribute to urban corridors. This initiative also addresses DEI considerations. This talk will address the creative ideas and the steps taken to engage our community to bring habitat home.



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FRIDAY 17 September 2021

09:00am **Welcome** Thor Anderson, SERCAL Leadership Team & SERCAL 2022 Conference Chair

Fire Technical Session — Chair: Eric Piehel, AECOM

09:05 Achieving Wildfire Resilience that Supports both Ecological and Built Communities—Marc Doalson (20 min + 5 min Q&A)

09:30 Southern California Edison is Conducting Live Fuel Moisture Sampling to Help Assess Wildfire Risk—Tom Rolinski (20 min + 5 min Q&A)

09:55 Successful Re-vegetation Strategies on High Severity Burn Areas on the Carr Fire—Bill Agnew (20 min + 5 min Q&A)

10:20 Back-to-back Burns: Post-fire Restoration of Coast Range Grasslands and Forests—Michelle Halbur (20 min + 5 min Q&A)

10:45 Glass Fire Impacts on the Upper York Creek Restoration Project—Jenn Hyman (20 min + 5 min Q&A)

11:10 Observations of Cultural Fire in the Klamath River Watershed—Laura Cunningham (20 min + 5 min Q&A)

11:35 Panel Discussion with Presenters (25 min Q&A)

12:00 **Jobs & Networking Panel—Will Spangler, Moderator**

Representatives from our sponsoring organizations — including Balance Hydrologics, Ecological Concerns, Harris and Associates, ICF, RES, SWCA, and Westervelt — will be on hand to 1) share their professional path and wisdom to help students and early career folks in their journey, and 2) highlight their organizations and opportunities they see on the horizon (45 minutes)

12:45 **Meet and Greet with SWCA** (15 min)

01:00 **Raffle Drawing and Close**

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Achieving Wildfire Resilience That Supports Both Ecological and Built Communities

Marc Doalson*¹ and Terressa Whitaker*²

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In 2019, San Diego Gas & Electric (SDG&E) launched a pilot program to manage and reduce wildfire fuels along transmission and distribution infrastructure and associated rights-of-way (ROWs) in Tier 3 High Fire Threat District within the service territory. The purpose of the Wildfire Fuels Management Program is to reduce the risk of point source wildfire ignitions and reduce the intensity of fire around SDG&E infrastructure during wildfire events while maintaining and supporting native ecological functions and habitat value for native plant and wildlife species. In order to achieve this goal, SDG&E developed a fuels reduction methodology that integrates an understanding of wildland fire behavior with site-specific biological survey data to guide the fuels modification approach. SDG&E coordinated with state and federal land management and wildlife agencies to decide on the ideal treatment approach. The results of the pilot program provided a solid foundation for continued work within this and similar wildfire fuel management programs.

Southern California Edison is Conducting Live Fuel Moisture Sampling to Help Assess Wildfire Risk

Tom Rolinski

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Moisture within the living vegetation plays a critical role in fire danger and fire behavior calculations as it influences the initiation, spread and the intensity of wildfires. Sampling live fuel moisture is also important for situational awareness as it provides insight into the environmental conditions that lead to the onset of significant fire. Traditionally, live fuel moisture is gathered by fire agencies by physically collecting samples of the native vegetation every two weeks. Unfortunately, this sampling is done at sporadic locations, and sampling times can occasionally be missed due to staffing shortages. In 2019, Southern California Edison (SCE) began a live fuel moisture sampling program to help fill in data gaps that exist both spatially and temporally. SCE's live fuel moisture sampling began in the summer in the form

of a pilot program, with help from the Los Angeles County Fire Department, before launching its permanent program in the fall. Currently, SCE is sampling across three regions (four locations at each region) within its service territory using the vendor, AECOM. Samples are collected every two weeks and results are posted in the National Fuel Moisture Database which is available to the public online.

Successful Re-vegetation Strategies on High Severity Burn Areas on the Carr Fire

Bill Agnew, MS, CPESC

Agnew Environmental Consulting, LLC (VOSB), 11781 South Elm Ridge Road, Sandy, UT 84094, bill@agnewconsulting.us, 801.930.5445 (Office), 801.824.1219 (Cell)

Western Shasta Resource Conservation District (WSRCD) applied erosion control best management practices (BMPs) to high severity burned areas on the Carr Fire in Shasta County, CA. BMPs included native and rice straw, hydraulic Bonded Fiber Matrix, native perennial and annual seed, slow release fertilizer and mycorrhizae inoculant. Areas were treated soon after the fire was extinguished with treatment efforts beginning the first week of December 2018. The primary goals of the Carr Fire Recovery project was to reduce sediment transport to stream systems associated with the Sacramento River and to protect waterways critical to the Sacramento River Fishery. Following BMP installation and over time, vegetation herbaceous canopy cover and sediment delivery information was collected in a series of monitoring plots/stations established by the WSRCD and Water Quality Control Board. Overall vegetation cover was highest on straw treated areas (91%), followed by hydraulic treatments (74%). Untreated control plots showed the least vegetation cover (33%). Considerable vegetation cover was established following seeding and soil enhancement efforts and significantly reduced the erosion rate on target areas. It was determined by sediment collection, monitoring and testing efforts that nearly 12 times more sediment was transported to downstream location on untreated (control) areas than areas treated with straw, seed, fertilizer and mycorrhizae. Similarly, the sediment collection data reveal a reduction in the rate of erosion over 4 times that of untreated slopes when hydraulically treated. Sediment reduction was

continued next page

FRIDAY Fire *Abstracts in order of presentation*

significant and extremely important to help quantify the benefit of treating high severity burn areas using cost effective best management practices, including regionally adapted California sourced native seed.

Back-to-back Burns: Post-fire Restoration of Coast Range Grasslands and Forests

Michelle Halbur*, Devyn Friedfel, Michael Gillogly, and Tasha Comendant

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Increasing wildfire frequencies and footprints bring unique land stewardship, restoration, and planning challenges. Located in the inner coastal range of Sonoma County, Pepperwood is an adaptively managed research preserve that experienced two wildfires in two years (October 2017 and 2019). Here we share our experiences and lessons learned about grassland and forest restoration following fire, highlight our bulldozer line and salvage logging restoration projects, and introduce ways to utilize fuels management and fire impacts to enhance restoration outcomes.

Glass Fire Impacts on the Upper York Creek Restoration Project

Jenn Hyman, PE

WRA, Senior Restoration Engineer, jennyhyman@yahoo.com, 831.251.3626

The Glass Fire swept through the City of St. Helena's Upper York Creek Dam Removal and Creek Restoration Project just after the project was nearly complete. The earthen dam and sediment had been removed, the 36 log structures had been installed and the creek was flowing through its new channel, ready for the migration of steelhead. The straw wattles had been placed for erosion and control and hydroseeding remained on the punchlist. Some concerns about post construction sediment transport became dwarfed by the ground newly exposed throughout the completely burnt watershed. To address

the concerns, a post-fire team was formed consisting of the project management and restoration engineers, permitting agencies and Napa County emergency response personnel. The team met monthly to track the progress of the Watershed Emergency Response Team (WERT), review the winter monitoring program observations, and agree on remedial measures to be taken in the project. The restoration design consultant WRA inspected the restoration project area and recommended repairs. The following post-fire remedial measures were taken: • Hydroseeding of seeds native to the County was carried out in accordance with the original design. • Erosion control straw wattles were all completely burnt and required replacement. • 6 of the 36 log structures damaged and required repair. A dry winter has allowed vegetation to start to return in the project area. Hazard mitigation monitoring along the creek will continue the next winter or until heavy rains are observed.



Observations of Cultural Fire in the Klamath River Watershed

Laura Cunningham






Western Watersheds Project, California Director, lcunningham@westernwatersheds.org

In October, 2019, a group of fire journalers, including myself, was invited by the Karok and Yurok Tribes to observe at close range their prescribed fire program along the Klamath River, CA. We followed the fire crews in gear through several days of restoration activities using fire to restore prairies, oak woodlands, and forests, as well as culturally important plants. Tribal experts discussed the importance of fire management to salmon populations, food and basketry plants, water, and tribal culture. Historic fire regimes, the notion of culturally important "Good Fire", future long term goals for restoring watersheds and fire cycles, and policy obstacles are discussed, with full permission from the Tribes to relay this information.




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LAST BUT NOT LEAST:

1) **Attendees:** please help us improve future online and in-person events by completing a quick survey! A link will be provided at the end of the conference.

2) **Members:** please complete our **super simple member survey** in future Mailchimp emails! Just 3 questions:

What are we doing best?

What could we be doing better?

What *should* we be doing?

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The Call for Abstracts goes out this Fall —
Please **PRESENT!** Plan to **ATTEND!**

*We'll create safe protocols for those who attend
and a hybrid event for those who can't join us.*

We can't wait to see you!