Symposium Program

52nd Annual Southern California Botanists Symposium

Where Cities Bloom: The Future of Urban Botany in Southern California

Saturday, November 7, 2026

California Botanic Garden, Forest Pavillion

1500 N College Avenue, Claremont CA 91711

8:00-9:00 am. **Registration**

9:00-9:10 am. **Annual SCB Business Meeting**

9:10-9:15 am. **Opening Remarks**

9:15-9:45 am. Aaron Echols

Protecting the Earth's oldest living Oak

9:45-10:15 am. Matt Guilliams

Using phylogenomics and morphometrics to evaluate the circumscription of the Channel Islands endemic Santa Cruz Island fringepod (Thysanocarpus conchuliferus Greene; Brassicaceae)

10:15-10:35 am. **BREAK**

10:40-11:10 am. Darrel Jenerette

The Novel Urban Flora of Southern California's Cities

11:10 am -11:45 am. Jon Rebman

Hidden in Plain Sight: Botanical Discoveries in San Diego's Urban Canyons

11:45 -1:25 pm. **LUNCH**

1:30-2:00 pm. Noriko Smallwood

The ecological role of native-plant landscaping in residential yards to birds during the nonbreeding period

2:00-2:30 pm. Emma Kemp

No Canyon Hills: Botanical Significance, Cultural Meaning, and Collective Action in the Verdugo Mountains

2:30-3:00 pm. Lila Higgins

Biodiversity in Urban Gardens: How Community Science and Policy can create 'Landscapes for Change'

3:00-3:20 pm. **BREAK**

3:20-3:50 pm. Neil Uelman

Once an Island and Now an Island in a Sea of Concrete: Flora of the Palos Verdes Peninsula (vascular and non-vascular)

3:50-4:20 pm. Jen Toy

Test Plot: Community-led Landcare in Urban Parks

4:20-4:30 pm. **Closing Remarks**

Evening events continue at California Botanic Garden

5:00-6:00 pm. **Poster Session**: Lenz Room

5:30-6:30 pm. **Mixer**: Forest Pavilion
(Open to symposium attendees)

6:30-8:30 pm. **Reception:** Forest Pavilion
(Add-on ticket required)

6:30-8:00 pm. **Dinner Service:** Vegetarian Catering

7:30-8:30 pm. **Sage Against the Machine**

Presentation Abstracts and Speaker Bios

Protecting the Earth's oldest living Oak

Aaron Echols, Restoration Ecologist, Inland Empire Resource Conservation District

In September of 2024, the City of Jurupa Valley approved the Rio Vista Specific Plan, a large-scale development that threatened the oldest known living oak on Earth. The Jurupa Oak is a singular individual Palmer's Oak (*Quercus palmeri*) and is estimated to be between ~13,000 and ~18,0000 years old, making it the third oldest living plant on the planet. The approved development project would have allowed for grading and partial removal of the small granite mountain atop which the Jurupa Oak is located and would have allowed for explosives blasting to remove adjacent granite ridges to flatten the area for light industrial warehouse and business park development. Shortly after the project approval, environmental organizations sued the City and developer for violations of environmental laws and ultimately settled the lawsuit earlier this year in May 2026. The outcome of the settlement agreement has allowed for an opportunity to create a 100-acre preserve to protect the Jurupa Oak in its natural context in perpetuity.

Aaron Echols is Conservation Chair of the California Native Plant Society Riverside/San Bernardino Chapter and worked extensively to oppose the Rio Vista Specific Plan project. He founded the Friends or the Jurupa Oak advocacy group which served as an information outlet to provide community members with information about the project, important project deadlines, and status updates. He is a dedicated conservationist, a CNPS certified botanist, a professional Restoration Ecologist with the Inland Empire Resource Conservation District, and is currently in his second year of Law School pursuing a J.D. at Northwestern California University School of Law.

Using phylogenomics and morphometrics to evaluate the circumscription of the Channel Islands endemic Santa Cruz Island fringepod (*Thysanocarpus conchuliferus* Greene; Brassicaceae)

Matt Guilliams, Ph.D., Ken and Shirley Tucker Plant Systematist and Curator of the Clifton Smith Herbarium, Santa Barbara Botanic Garden

Thysanocarpus conchuliferus Greene is a diminutive annual herb in the Brassicaceae, or mustard family. Known as the Santa Cruz Island fringepod, the species was thought to be limited to a global distribution of only 15 Element Occurrences on Santa Cruz Island (SCR), California. Due to its rarity, the species was listed as Endangered under the Federal Endangered Species Act, and has been given a CNPS Rare Plant Ranking of 1B.2. Recently, plants identified as *T. conchuliferus* were collected in the Santa Monica Mountains (SMM), northwest of Los Angeles. Since that time, additional mainland SMM populations have been documented, calling into question the circumscription and distribution of this rare species. Here we use phylogenomics and morphometrics to evaluate the circumscription of *T. conchuliferus* and assess its relationship to plants from the SMM. The genomic analyses included 93 samples of Thysanocarpus. Samples from the SMM form a strongly supported evolutionary group distinct from *T. conchuliferus* of SCR.

The morphometrics analysis included measurements of 72 individuals of *T. conchuliferus*, 22 from SCR and 50 from the SMM. We measured eight characters and found that plants from SCR and SMM were strongly statistically different in four of them. Although still preliminary, it appears that the plants from the SMM are genetically and morphologically distinct from *T. conchuliferus* from SCR and likely warrant taxonomic recognition. Excitingly, this new taxon would be an SMM endemic, awaiting detection in a relatively small mountain range surrounded by the second largest metro area in the United States.

Matt Guilliams, Ph.D., is the Ken and Shirley Tucker Plant Systematist and Curator of the Clifton Smith Herbarium at Santa Barbara Botanic Garden. As a botanist and evolutionary biologist, he studies the flora of California with an emphasis on the plants of the Central Coast and California Channel Islands. His research includes floristics, biodiversity description, inferring evolutionary relationships, and conservation genetics of rare plants. Matt earned his bachelor's and master's degrees in evolutionary biology from San Diego State University and his doctorate in integrative biology from University of California, Berkeley. He has been working as a botanist in the state since 1998.

The Novel Urban Flora of Southern California's Cities

Darrel Jenerette, Director of the Center for Conservation Biology, University of California, Riverside

For nearly twenty years, my colleagues and I have studied the conspicuous but often overlooked plant communities of southern California's urban landscapes. Urban plant biodiversity, both naturalized and cultivated, is an important component of the regional botanical system and provides ecosystem services that can directly benefit the health and well-being of residents. Results from field surveys of trees, parks, and community gardens have identified unexpectedly high biodiversity in southern California's cities. Although only about 10 tree species are native to our region, we have sampled more than 300 tree species within its cities. Cultivated plant diversity is equally striking: a subsample of Los Angeles community gardens contains more than 700 plant species. Together, these species represent the novel urban flora of southern California. They differ not only in identity but also in function, with rates of photosynthesis, growth, and water use that reflect novel urban conditions rather than those of native counterparts. The trajectories of the southern California urban plant communities will be influenced by warming, drought, new pests, and changes in values. Incorporating urban plant communities into our understanding of the region will provide a more holistic view of botanical variation in southern California.

Dr. Darrel Jenerette is a landscape and ecosystem ecologist at the University of California, Riverside, where he is a Professor in the Department of Botany and Plant Sciences and Director of the Center for Conservation Biology. He has authored more than 160 peer-reviewed articles, with a strong emphasis on the biodiversity and functioning of urban plants in southern California and around the world. A major focus of his work has been the role of vegetation in reducing

neighborhood heat vulnerability. Through this research, he has developed a framework showing that urban plants act as a negative climate feedback and that the distribution of urban heat risk reflects social inequities. More recently, he has begun investigating how vegetation influences catastrophic urban fires, including the January 2025 Los Angeles firestorm.

Hidden in Plain Sight: Botanical Discoveries in San Diego's Urban Canyons

Jon P. Rebman, Ph.D., Mary and Dallas Clark Endowed Chair/Curator of Botany, San Diego Natural History Museum

San Diego's urban canyons form an extensive network of natural open spaces woven throughout one of the most highly urbanized landscapes in Southern California. Easily accessible to millions of residents, these fragmented habitats support substantial native plant diversity and important populations of rare and sensitive species. Since 2024, the Healthy Canyons Initiative has conducted intensive botanical surveys in nearly 20 urban canyons and open-space areas, combining historical herbarium records and community-science observations with repeated field surveys.

The resulting inventories have documented 1,016 plant taxa, including 560 native taxa (55%) and 456 non-native taxa (45%), with 65 (12% of the native flora) rare, threatened, or otherwise listed taxa. Targeted surveys have added at least 2,125 new canyon records, revealing previously undocumented rare plants, overlooked species, unusual biogeographic occurrences, and newly naturalizing non-native plants. Repeated visits also demonstrate that rainfall, season, phenology, and survey effort strongly influence what is detected.

A comparison of four intensively surveyed canyons illustrates the value of focused botanical fieldwork. Among 844 documented canyon-taxon records, historical herbarium specimens and public iNaturalist observations accounted for only 322 (38%), while targeted surveys added 522 (62%) previously undocumented records. Targeted surveys also added 17 of 27 (63%) rare or sensitive plant occurrences.

Focused surveys were especially important for documenting graminoids. Across the four canyons, public iNaturalist observations captured only 15 (12%) of 125 grass, sedge, and rush records, compared with 121 (97%) documented during targeted botanical surveys. Of these, 106 (85%) were new canyon records not represented by historical specimens or public iNaturalist observations.

These results demonstrate that San Diego's urban canyons are not simply remnants of native vegetation within the city, but dynamic reservoirs of biodiversity. Repeated, focused botanical exploration is essential for documenting rare and overlooked species, detecting changes in the regional flora, and establishing meaningful baselines for conservation and management.

Jon P. Rebman, Ph.D. has been the Mary and Dallas Clark Endowed Chair/Curator of Botany at the San Diego Natural History Museum (SDNHM) since 1996. Dr. Rebman is a plant taxonomist and conducts extensive floristic research on the Baja California peninsula and in San Diego and

Imperial counties of California. He leads various field classes and botanical expeditions each year and is actively naming new plant species from the region. Rebman does a lot of floristic and taxonomic research and has co-published the new Checklist of the Vascular Plants of San Diego County (6th edition), and the Annotated Checklist of the Vascular Plants of Baja California, Mexico. He has over 30 years of field experience with surveying and documenting plants including rare and endangered species. As a field botanist, he is an active collector of scientific specimens with his personal collections numbering over 37,000. He is the director of the San Diego County Plant Atlas project (www.sdplantatlas.org) and also identifies/verifies plant observations on the iNaturalist platform for San Diego and Imperial counties and the Baja California region for botanical research (currently with more than 1,130,600 identifications). As the curator of the SD Herbarium at the SDNHM, he is in charge of this dried plant specimen collection that contains over 298,000 specimens dating back to the 1870s. Rebman published the most recent edition of the Baja California Plant Field Guide with co-author Norman Roberts in 2012, and is working on a new bilingual, plant field guide for the Cape region of Baja California Sur.

The ecological role of native-plant landscaping in residential yards to birds during the nonbreeding period

Noriko Smallwood, Wildlife Ecologist

Residential yards are a form of urban land use that cover a considerable amount of area in cities worldwide and provide important habitat for wildlife, especially when landscaped with native plants. We quantified non-breeding bird ecological interactions, as well as insect and bird flower interactions in native and non-native landscaped yards throughout Greater Los Angeles. We surveyed birds, insects, and habitat features at 22 pairs of native and nonnative landscaped yards plus ten additional native-landscaped yards from October-March of 2020-2021 and from April-September 2023. We compared avifaunal communities, including feeding and nonfeeding behaviors, and habitat features between native and non-native landscaped yards. Second, we quantified relationships between habitat features and bird richness, abundance, and feeding and nonfeeding behaviors — focusing on species affiliated with urban or natural terrestrial ecosystems of the region. Third, we documented feeding and non-feeding behaviors by birds with native and non-native plants. Native-landscaped yards had a greater cover of native trees, shrubs, and herbaceous plants, and a higher cover of natural habitat elements, including leaf litter and bare-ground cover. Bird richness and abundance — especially bird species affiliated with tree and shrub-dominated ecosystems — were greater in native than nonnative-landscaped yards. Further, yards with a higher cover of native plants supported greater numbers of feeding birds, with individuals focusing their foraging behaviors on distinct native trees and shrubs, including *Quercus* spp., *Heteromeles* spp., *Arctostaphylos* spp., and *Salvia* spp. Building off of this work, we found that native-landscaped yards supported 4× higher floral-visitor abundance and 1.5× higher richness than non-native yards, largely driven by bees (Apidae) and hoverflies (Syrphidae), which were positively associated with native plant richness, flower-color diversity, and housing price. Several

native plant species, including California buckwheat (*Eriogonum fasciculatum*) and white sage (*Salvia apiana*) anchored interaction networks. Floral visitors used native plants disproportionately, with native plants receiving 88% of visits despite representing 80% of availability. Native plant landscaping provides important habitat for birds and insects, improves ecosystem functioning, and bolsters biodiversity, thus homeowners and city managers should be encouraged to plant native plants over non-native plants when possible.

Noriko is a Southern California based wildlife ecologist focused on urban ecology, avian ecology, and habitat conservation. Noriko received her master's degree in Environmental Science from Cal State Los Angeles where she studied the benefits of native plant landscaping to avifauna in the Wood Lab. She works with Dr. K. Shawn Smallwood as a consultant and researcher on topics related to human impacts on wildlife. When she is not working, you can find her tending to her native yard or photographing people or wildlife.

No Canyon Hills: Botanical Significance, Cultural Meaning, and Collective Action in the Verdugo Mountains

Emma Kemp, Assistant Professor of Design, California Polytechnic State University, San Luis Obispo
Devon Christian, Conservation Seedbank Technician, California Botanic Garden

The Verdugo Mountains form one of the Los Angeles Basin's few remaining contiguous wildlands, where chaparral, coastal sage scrub, and oak woodland communities persist within a dense metropolitan landscape. This talk examines the botanical significance of the Verdugos, including rare plant populations documented through a recent multi-season floristic study, while asking how ecological knowledge intersects with the cultural meanings residents and advocates attach to these mountains.

We trace how this convergence of botanical value and development pressure has shaped collective action, from community organizing and litigation to an emerging effort to conserve roughly 300 acres currently proposed for residential development. Co-presented by Assistant Professor of Design and No Canyon Hills co-founder Emma Kemp and NCH Lead Field Botanist Devon Christian, the talk considers the Verdugos as both a distinctive botanical landscape and a case study in what it takes to conserve urban wildlands when ecological significance, private property, development entitlements, and public value collide.

Emma Kemp is a writer, media researcher, and educator whose interdisciplinary practice investigates ecological aesthetics, multispecies relations, and environmental justice. She currently serves as Assistant Professor of Design at California Polytechnic State University, San Luis Obispo, and is the co-founder of No Canyon Hills / Concerning Landscape, a nonprofit engaging with ecological best practices and conservation in the foothills of Northeast Los Angeles. Her work explores the complex relationships between environment, sub/culture, and

media landscape, with a focus on how native plant communities and urban wildlands shape community advocacy. She holds an MFA from the California Institute of the Arts.

Devon Christian is a Los Angeles–based field botanist dedicated to documenting and conserving the flora of Southern California and beyond. As lead botanist for No Canyon Hills' floristic study in the Verdugo Mountains, he directed botanical surveys of the proposed development site. His work is grounded in the belief that careful documentation and local ecological knowledge are essential to conservation, particularly amid accelerating climate change and habitat loss. He advocates for closer engagement with the ecosystems that surround us, especially those in urban and suburban landscapes, where biodiversity is often overlooked. Devon currently works as a field botanist at California Botanic Garden.

Biodiversity in Urban Gardens: How Community Science and Policy can create 'Landscapes for Change'

Lila Higgins, Director of Education and Horticulture, CNPS

California's urban and suburban landscapes hold an immense potential to support biodiversity, climate resilience, and community well-being. This presentation will explore how the CNPS Landscapes for Change campaign and Biodiversity in Urban Gardens initiative are working to expand the use of California native plants in private and public landscapes. Native plant-rich landscapes not only create habitat for pollinators, birds, and other species from the more-than-human world; they also support human physical and mental health. Drawing on emerging research, community science data, and policy efforts, we will examine the ecological and human health benefits of native plant gardening, barriers to broader adoption, and opportunities to scale impact statewide. Attendees will gain practical insights into how scientists, horticulturists, educators, and other community members can join the movement to transform urban landscapes into thriving ecosystems.

Lila is a science educator, conservation leader, and biodiversity advocate with more than 20 years of experience connecting people with nature through museums, nature centers, and public agencies. Their passion for native habitats and insects led them to pursue degrees in Entomology and Environmental Education. Before joining the California Native Plant Society (CNPS), Lila spent 17 years at the Natural History Museum of Los Angeles County, where they helped create the Nature Gardens and Nature Lab, launched the Community Science program, co-authored *Wild LA*, and founded the global City Nature Challenge. At CNPS, Lila leads the Biodiversity in Urban Gardens Initiative and advances Education & Horticulture programs that inspire stewardship of California's native plants and ecosystems.

Once an Island and Now an Island in a Sea of Concrete: Flora of the Palos Verdes Peninsula (vascular and non-vascular)

Neil Uelman, Native Seed Farm Manager and Field Botanist, Palos Verdes Peninsula Land Conservancy

The Palos Verdes Peninsula is a peninsular subregion of the Los Angeles metropolitan area in southwestern Los Angeles County. It is a mixture of suburban communities and open space. It is known for its scenic coastline, island history, and remnant patches of native plant communities, including coastal sage scrub, willow riparian, back dune, coastal bluff scrub, grassland, and chaparral. Numerous native plant species, both vascular and non-vascular, still occur in this area, including unique species such as *Crossosoma californicum* (Catalina Rockflower), *Dudleya virens* ssp. *insularis* (Island Green Dudleya), *Erigeron palosverdensis* (Palos Verdes Daisy), *Lycium brevipes* subsp. *hassei* (Catalina Island Desert Thorn), *Ambrosia pumila* (Diego Ambrosia), *Leptosyne maritima*(Sea Dahlia), *Platanthera michaelii* (Michael's Rein Orchid), and *Tortula californica* (California Tortula Moss). The Palos Verdes Peninsula's unique biogeographical relationships to the Channel Islands, the islands of Baja California, and coastal southern California raise numerous questions and conservation concerns about its vascular and non-vascular flora in this now mostly suburban area.

Neil Uelman is the Native Seed Farm Manager and Field Botanist for the Palos Verdes Peninsula Land Conservancy. He holds an M.S. in Environmental Science with an emphasis in Botany from California State University Dominguez Hills. Neil has studied the flora of the Palos Verdes Peninsula for the past 18 years. He also studies Southern California bryophytes, biological soil crust, Verbenaceae, and Asteraceae. He is also an avid native plant propagator, gardener, and student of native California plants.

Test Plot: Community-led Landcare in Urban Parks

Jen Toy, Director, Test Plot

Community led-landcare has the power to connect people to their local landscapes through ongoing hands-in-the-soil experiences. Jen will talk about her work with Test Plot, which now supports 20 test plots across California and has inspired affiliate plots nationwide. She will share how they connect communities with land managers and support work that encompasses site analysis, invasive species removal, design strategies for biodiversity, fire and water adaptation, community building, workforce development, and ongoing monitoring.

Jen Toy is a landscape architect, community builder and habitual weed puller. She leads Test Plot, a California-based nonprofit that supports community-led landcare. Through design and stewardship, she partners with local residents to plant and care for habitat restoration gardens on public lands. Her work focuses on urban biodiversity, regenerative practices, and care of the commons. Jen graduated from Harvard College with a degree in the History of Science and from the Graduate School of Design in Landscape Architecture and Urban Planning. She grew up in the Bay Area, where her deep connection to the California landscape first took root.