Oaks

FALL/WINTER 2026 CALIFORNIA OAKS

Threats to blue and valley oaks due to altered habitats

By Maria Viteri, PhD; Applied Scientist, The Nature Conservancy, California Chapter

This is the second article about a Blue and Valley Oak Workgroup, which is developing and implementing actions to address conservation goals for these two iconic species.

Oaks are foundational to many California ecosystems, providing food and habitat for a diverse array of wildlife. Despite their ecological importance, these ecosystems face mounting pressures from land use change and a rapidly warming climate.

Land use change: Oak woodlands are among the least protected ecosystems in California, making them particularly vulnerable to land use change and development. Large-scale conversion has already resulted in the loss of over 1 million acres of California oak habitat, with about 750,000 acres projected to be at risk of urban development by 2040.[1] Agricultural expansion is also a significant driver of oak decline in California. For example, vineyard development resulted in the loss of over 1,660 acres of oak woodland in Sonoma County between 1990 and 1997.[2] Emerging land uses, such as solar energy development, are creating additional pressures on California's oak habitats.

Grazing pressure and rangeland conversion: Much of California's remaining oak woodlands are used as rangeland for cattle. While widespread ranching has protected large swaths of oak woodlands from more intensive land uses, cattle operations managed solely for maximizing economic returns can result in grazing practices that are incompatible with ecological outcomes. Cattle grazing can lead to the direct predation of oak acorns and seedlings, stunted saplings, and compacted and degraded soils, which can limit seedling establishment and lead to adult mortality.[3, 4]



© Maria Viteri

An old blue oak at the Frank and Joan Randall Preserve in the Tehachapi Mountains shows seedling recruitment.

However, the complete exclusion of grazing can also cause problems for oak regeneration. Rangelands are now dominated by invasive annual grasses and forbs rather than the native perennial grasses that used to characterize California's oak understories. Leaving these systems ungrazed can lead to the spread of harmful invasive forbs and excessive grass accumulation, or thatch build-up, which can increase acorn and seedling predation by small mammals and limit the ability of plants to access light and soil moisture.[4] Thatch and other understory build-up can also increase fine fuel loads, contributing to hotter fires, which can damage acorns, seedlings, and even adult trees.[5]

Well-managed rangelands, especially those that exclude cattle from key areas, may therefore have a role to play in both preventing habitat conversion to higher-intensity uses and maintaining the open understory conditions that support oak regeneration.[6] However, increasing land values and the subdivision of properties due to intergenerational succession are making it increasingly difficult to maintain large, contiguous ranch properties.[7] The economic viability of ranching in California is also increasingly threatened by the more volatile environmental conditions associated with climate change.[8] As the economic viability of ranching declines, the likelihood of rangeland conversion to more intensive land use increases.

Altered fire regimes: Shifting fire regimes also represent a large-scale threat to California's oaks. Historically, California's oak ecosystems experienced frequent, low-intensity fires via lightning and Indigenous cultural burning practices.[9] Since European settlement and the widespread adoption of fire suppression, intervals between fires have lengthened considerably, leading to increased fuel and hotter fires.[9] These changes, combined with droughts and higher temperatures, have contributed to more severe wildfire behavior in many oak habitats.[9] While mature oaks, especially blue oaks, are fire adapted and generally withstand burning, these altered fire regimes in combination with other stressors are an increasing threat to oak survivorship and regeneration. Studies show that more grass biomass in oak woodland understories

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Building a sustainable future


© California Rangeland Trust

Bruce Rominger stands beside an oak planted to restore his ranch's native vegetation.

Byron Sher, a South Bay Democrat who served in the California Assembly from 1980 to 1996 and State Senate from 1996 to 2004, passed away on September 13. His unsurpassed legacy as a legislator includes a suite of environmental protections: the California Clean Air Act, California Safe Drinking Water Act, Integrated Waste Management Act, Renewable Energy Portfolio Standard, expansion of the California Wild and Scenic Rivers Act, and legislation to stop strip mining on Native American sacred sites. Writing about Sher in the Spring-Summer 2020 *Oaks* newsletter, Kip Lipper observed: "Most Californians will never know that the air they breathe, the forests and mountains where they hike, and the water they drink are better off for Sher's work." Lipper, who served as Sher's chief of staff from 1980–2004, wrote "His work would become a model for, and the basis of, other states' laws and federal legislation passed by the U.S. Congress." (See page 8: californiaoaks.org/wp-content/uploads/2020/04/Spring-2020-Newsletter-reduced-size.pdf)

Building upon the protections that we have Bryon Sher to thank for, it is essential that the next generation learns to appreciate and steward the ecosystems that sustain us. Many of California Wildlife Foundation's collaborations are delivering vital environmental education and developing a climate-literate workforce. This includes the opportunities that the California Department of Fish and Wildlife's Back Bay Science Center provides for young environmental professionals (page 6).

Conservation and restoration efforts are also essential in stewarding California's unique biodiversity. The oaks at the Rominger Ranch (page 5) were planted on behalf of generations to come; it is this long view and generosity of spirit that is needed to sustain our world. From the Tehachapi Mountains to woodlands adjacent to the Cleveland National Forest to the rich farming lands of Yolo County, California Oaks is grateful to the California Oaks Coalition and Blue and Valley Oak Workgroup for their collaboration and perseverance on behalf of oaks, California's primary old-growth resource.

The Blue and Valley Oak Conservation Action Plan will be published later this year. We are grateful to Maria Vitari, PhD, for her cover article in this newsletter, the research on blue oaks she is engaged in at the Frank and Joan Randall Preserve, and her leadership of the blue and valley oak sub-workgroup focused on altered habitats.

As we gather our forces for the work in front of us, we remember that although we may not see the trees that grow from the acorns we plant, generations that follow will.

Sincerely,



Janet S. Cobb, Executive Officer
California Wildlife Foundation/California Oaks

California Oaks Coalition

California Oaks Coalition brings together international, national, Tribal, state, regional, and local organizations to conserve and perpetuate the state's primary old-growth resource. Members of California Oaks Coalition are united by the vital role of oaks in sequestering carbon, maintaining healthy watersheds, providing habitat, and sustaining cultural values.

- Agricultural Institute of Marin (AIM)
- Alameda County Resource Conservation District (ACRCD)
- Alameda Native History Project
- Amah Mutsun Land Trust
- American River Conservancy
- American River Watershed Institute
- Anderson Valley Land Trust
- AquAlliance
- Audubon California
- Baduwa't Watershed Council
- Butte Environmental Council
- Calaveras County Resource Conservation District
- California Institute for Biodiversity
- California Invasive Plant Council (Cal-IPC)
- California Native Plant Society (CNPS), including Dorothy King Young, El Dorado, Sanhedrin, and Yerba Buena chapters and the San Diego Restoration Committee
- California Rangeland Conservation Coalition
- California Rangeland Trust
- California State University Chico Ecological Reserves
- California Water Impact Network (C-WIN)
- California Wilderness Coalition (CalWild)
- Californians for Western Wilderness (CalUWild)
- Canopy
- Carrizo Plain Conservancy
- Center for Biological Diversity
- Central Coast Heritage Tree Foundation
- Chimineas Ranch Foundation
- Clover Valley Foundation
- Coastal Corridor Alliance
- Conejo Oak Tree Advocates
- Confluence West
- Dumbarton Oaks Park Conservancy
- Earth Discovery Institute
- El Cerrito Trail Trekkers
- Endangered Habitats Conservancy
- Endangered Habitats League
- Environmental Defense Center
- Environmental Protection Information Center (EPIC)
- Environmental Water Caucus
- The Fire Restoration Group
- Foothill Conservancy
- Forest Unlimited
- Forests Forever
- Friends of Harbors, Beaches and Parks
- Friends of Olompali
- Friends of Spenceville
- Friends of the Richmond Hills
- Global Conservation Consortium for Oak (GCCO)
- Hills For Everyone
- Laguna de Santa Rosa Foundation
- LandPaths
- Loma Prieta Resource Conservation District
- Lomakatsi Restoration Project

Los Angeles Audubon Society
Los Padres ForestWatch
Lower Kings River Association
Micke Grove Zoo
Mother Lode Land Trust
Mountains Recreation and Conservation Authority
Northern California Regional Land Trust
Ojai Trees
Old-Growth Forest Network
100K Trees for Humanity
Pacific Birds Habitat Joint Venture
Placer Land Trust
Planning and Conservation League
Point Blue Conservation Science
Redbud Audubon Society–Lake County
Redlands Conservancy
Regrounding
ReLeaf Petaluma
Resource Conservation District of Santa Monica Mountains
River Partners
River Ridge Institute
Rural Communities United
Sacramento Tree Foundation
Sacramento Valley Conservancy
Santa Barbara Botanic Garden
Santa Clarita Organization for Planning and the Environment (SCOPE)
Save Lafayette Trees
Save Napa Valley
Sequoia Riverlands Trust
Shasta Environmental Alliance
Sierra Club Northern California Forest Committee–Oak Woodland Subcommittee
Sierra Club Placer Group
Sierra Foothill Conservancy
Smith River Alliance
Stewards of the Arroyo Seco
Tejon Ranch Conservancy
Tending the Ancient Shoreline Hill
The Urban Wildlands Group
Tuleyome
Universidade de Trás-os-Montes e Alto Douro, Department of Forest and Landscape Architecture (Vila Real, Portugal)
University of California Botanical Garden at Berkeley
University of California, Los Angeles, Mildred E. Mathias Botanical Garden
Ventura Land Trust
Western Shasta Resource Conservation District
Woodland Tree Foundation
Yosemite Rivers Alliance (formerly Tuolumne River Trust)

California Oaks provides the following support for coalition members:

1) Research and advocacy updates.
2) Collaboration in protecting oaks.
3) Information to educate and engage the public.
4) Tools for participating in planning processes and educating opinion leaders.
5) Materials to inform governmental agencies of the opportunities for and benefits of protecting oak woodlands.
6) Sharing stories from coalition efforts to keep oaks standing.

For more information, please contact Oak Project Director Angela Moskow, amoskow@californiaoaks.org.


© Maria Viteri

Cattle under the shade of a blue oak at Randall Preserve.

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increases damage to oak saplings, and these fine fuel loads can significantly reduce acorn survival and germination following fire.[5]

In addition to the direct ecological impacts of catastrophic fires, wildfire management and response practices are also damaging to individual oaks. Bulldozer lines and the creation of fuel breaks to control wildfires can directly remove oak seedlings and saplings, increase the likelihood of non-native vegetation

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RESOURCES

Roadmap for restoration of the Central San Joaquin Valley: Sequoia Riverlands Trust, a member of California Oaks Coalition, recently issued the *Ecosystem Restoration Plan for the Central San Joaquin Valley* (sequoiariverlands.org/our-work/ecosystem-restoration-plan-for-the-central-san-joaquin-valley/). The plan—which was developed in partnership with the Bren School of Environmental Science and Management at University of California, Santa Barbara, and in collaboration with many community partners—covers Fresno, Madera, Tulare, and Kings counties.

Recommendations for managing oak and hardwood resprouts: Factsheet authored by Michael Jones, PhD, University of California Cooperative Extension, with information focused on oak-forested lands that have experienced disturbance (ucanr.edu/site/forest-research-and-outreach/document/pfrmohs).

OAK RESTORATION

California Oak Planting Guide (pointblue.org/wp-content/uploads/2023/06/Planting-Oaks-Guide-Version-1.pdf), a publication by Point Blue Conservation Science, a member of California Oaks Coalition, 2023.

California Riparian Habitat Restoration Handbook (riverpartners.org/initiatives/riparian-restoration-handbook/), *Second Edition*, by F. Thomas Griggs, River Partners (a member of California Oaks Coalition), July 2009.

How to Collect, Store, and Plant Acorns (californiaoaks.org/wp-content/uploads/2016/05/HowToAcorns07.pdf), by Douglas D. McCreary, published by California Oak Foundation (now California Wildlife Foundation/California Oaks).

Regenerating Rangeland Oaks in California (californiaoaks.org/wp-content/uploads/2016/04/Regenerating-Rangeland-Oaks-in-California.pdf), *Second Edition*, by Douglas D. McCreary, University of California Agriculture and Natural Resources, 2009.

Restoring native California oaks on grazed rangelands (californiaoaks.org/wp-content/uploads/2016/04/Oaks_Grazing.pdf), by Douglas D. McCreary and Jerry Tecklin, in Dumroese, RK et al. *National Proceedings: Forest and Conservation Nursery Associations*, USDA Forest Service Proceedings, Rocky Mountain Research Station, 2005.

Restoring Oak Woodlands in California: Theory and Practice (phytosphere.com/restoringoakwoodlands/oakrestoration.htm) by Elizabeth A. Bernhardt and Tedmund J. Swiecki, 2001.

California cattle rancher's perspectives on ranching in the oaks: Part 2

Audrey Cline



Adam Cline, Cline Livestock Co.

By Adam Cline, Operator, Cline Livestock Co.

This article follows Cline's Spring-Summer 2025 Oaks *article on grazing methods designed to support oak regeneration (californiaoaks.org/wp-content/uploads/2025/05/Oaks-SpringSummer2025.pdf). Cline Livestock Co. is a family-owned cattle ranching operation in the Sacramento Valley.*

From a rancher's perspective, the loss of oaks may seem inconsequential compared to the amount of feed grown by the ranch or the economic performance of its cattle. It can be daunting to consider how to perpetuate oaks, given the many challenges of staying viable in the cattle business. Even so, most ranchers have an abiding love for the land, and they would choose an easier and more lucrative livelihood if they didn't. Thus, the loss of oaks and lack of regeneration is a shared concern.

Flourishing oak populations benefit cattle ranches, providing important wildlife habitat. Tree shade helps cool predominantly black-hided cows during hot summer months, and nutrient-rich soil surrounding oaks is held together by tree roots that prevent soil erosion during winter storms.

Threats to rangeland oaks

In the Sacramento Valley, cattle, deer, fire, and drought are among contributors to the absence of young oaks. Cattle are most likely to browse mature oak trees during the summer when other rangeland vegetation is dry and oaks still have moisture in their leaves. This is also when cattle congregate in the shade of oaks to escape the heat of the midday sun and flies, using low-lying branches to scratch their backs and heads.

Cows can create the telltale browse line often seen on the canopy of oak trees below which the vegetation was eaten. Deer take advantage of the work done by cows and graze shoot regrowth after the cows are gone. Summer use of oak woodlands and rangelands may also stomp out oak seedlings that often sprout near the driplines of parent oaks.

Oaks on several ranches where I operate burned and broke apart in wildfires. Recent droughts are also likely contributing to oak deaths.

Resources

Ranchers can be incentivized to manage their land in a way that improves the chances of oak regeneration. The Natural Resources Conservation Service (www.nrcs.usda.gov) helps develop grazing plans for those enrolled in their Environmental Quality Incentive Program (EQIP: www.nrcs.usda.gov/programs-initiatives/environmental-quality-incentives-program) and provides cost-share grants and reimbursement for ranchers using prescribed grazing. I believe more can be done to expand the use of cost-share conservation practices in EQIP such as encouraging ranchers to cage and mulch around oak seedling and saplings, and cut and pile oak branches to make habitat and decrease fuel dispersal on the ground. Conservation grazing certification programs, such as the Audubon Conservation Ranching Program (www.audubon.org/california/projects/audubon-conservation-ranching-california), of which I am enrolled through Audubon's Bobcat Ranch in Winters (as well as another ranch in the Dunnigan area), can provide beneficial consumer appeal for direct marketers of beef who use prescribed grazing among many other environmentally beneficial practices.

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encroachment, and impact soil quality,[10] which cause additional stress on already vulnerable systems.

Additionally, defensible space regulations by governing bodies and insurance companies encourage or require vegetation clearance around homes and other infrastructure, particularly at the wildland-urban interface without distinguishing between highly flammable vegetation such as eucalyptus and oaks, which are harder to ignite and not as prone to rapid combustion. These policies can result in the widespread removal of oaks in fire-vulnerable regions. Overall, both the small- and large-scale removal of living oaks increases fragmentation and decreases genetic diversity. When it is required, mitigation for the removal of oaks is often inadequate. For example, replacing a mature oak tree with a seedling or sapling fails to compensate for the ecosystem services provided by mature oaks or to take into consideration important underground associates, such as mycorrhizae. The common practice of removing fallen dead oaks from the landscape also decreases habitat for wildlife and removes nutrients from systems.

Climate change: Although blue and valley oaks are widespread in California, the concern that they are not regenerating at the rate required to replace mortalities is long-standing. As climate change transforms our environment, increasingly severe droughts, declining groundwater resources, and higher temperatures are placing additional stress on oak ecosystems.

Climate models predict a dire future for blue and valley oaks, with significant projected declines in habitat suitability by 2050.[11] Under the International Union for the Conservation of Nature's "red list" criteria, incorporating future habitat losses due to climate change increases the status of both blue and valley oaks to "endangered" or "critically endangered" depending on the severity of the underlying climate projection.[12] Extreme drought events are already linked to elevated mortality in blue oak populations,[13] while valley oak declines are associated with groundwater depletion in some regions.[14] Pests and pathogens also compound climate impacts to threaten oak populations (see *Oaks*, Spring-Summer 2026: californiaoaks.org/wp-content/uploads/2026/05/Oaks-SpringSummer2026reduced.pdf).

Ensuring long-term survival of oaks: Although these and other threats for blue and valley oaks are significant, actions can be taken to ensure their long-term survival. A Blue and Valley Oak Working Group has been convened by California Oaks and the Global Conservation Consortium for Oak (a member of California Oaks Coalition) to discuss these issues and come up with actionable solutions. The Altered Habitats subgroup is tackling the pressing issues discussed above. Our goals include supporting oak climate resilience research and management, bringing together regional action groups to author best management practices for oaks on private lands, adding oak education to existing certification programs, and creating a workforce develop

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ment program about conservation grazing. We hope action groups will develop partnerships between land managers and CAL FIRE, produce updated guidance for how landowners can mitigate fire risk, and create educational materials for broader dissemination.

We envision the development of a workforce program (similar to Grizzly Corps, which promotes regenerative agri-food systems and fire and forest resilience) to provide oak-friendly rangeland management education and promote emerging tools such as virtual fencing, which may increase the ecological sustainability and economic viability of cattle grazing. It is also important to explore and implement innovative scientific solutions that increase the climate resilience of oak woodlands, such as assisted dispersal[15] and the identification of climate refugia. Non-governmental organizations (NGOs) and other entities can also help prevent additional loss of oak woodlands via direct land acquisition and conservation easements on working lands. Together, policymakers, NGOs, landowners, ranchers, scientists, Tribes, and individuals can perpetuate California's iconic oaks.

Further Resources

[1] Gaman T, et al. 2006. *Oaks 2040: The Status and Future of Oaks in California*. California Oak Foundation, Oakland, CA.

[2] Brooks CN, et al. 1999. *Modeling vineyard expansion in California's North Coast: developing statistical models and evaluating consequences for the surrounding oak woodland landscape.* (www.krisweb.com/biblio/ncc_esri_brooksetal_xxxx.htm).

[3] Swiecki TJ, et al. 1997. Factors Affecting Blue Oak Sapling Recruitment. *Proceedings of a Symposium on Oak Woodlands: Ecology, Management, and Urban Interface Issues*. USDA Forest Service General Technical Report PSW-GTR-160, 157–168.

[4] Reiner R, et al. 2011. Conservation easements in California blue oak woodlands: Testing the assumption of livestock grazing as a compatible use. *Natural Areas Journal*, 31(4), 408–413.

[5] Nation RE, et al. 2021. Impacts of increasing fine fuel loads on acorn germination and early growth of oak seedlings. *Fire Ecology*, 17(1).

[6] Palmerlee A, et al. 2025. Escaping the browse trap: Patterns of natural blue oak regeneration in grazed landscapes. *Rangeland Ecology & Management*, 98, 561–567.

[7] Biggs NB. 2022. Drivers and constraints of land use transitions on Western grasslands: Insights from a California mountain ranching community. *Landscape Ecology*, 37, 1185–1205.

[8] Ostoja SM, et al. 2023. The Impact of Climate Change on California Rangelands and Livestock Management. *Agriculture*, 13(11), 2095.

[9] Purcell KL, et al. 2005. Changing fire regimes and the avifauna of California oak woodlands. *Studies in Avian Biology*, 30, 33–45.

[10] Kaczynski KM. 2026. Dozer line impacts to vegetation recovery post-wildfire. *Ecologies*, 7(2), 43.

[11] Rose MB, et al. 2023. Rarity, geography, and plant exposure to global change in the California Floristic

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Planting oaks with an eye to the future



© California Rangeland Trust

At Rominger Ranch in Yolo County, oak plantings are part of the stewardship.

By Dallis Beverlin, Programs Communication Outreach Coordinator, California Rangeland Trust

For brothers Bruce and Rick Rominger, conserving their ranch in Yolo County was never the end of their work on the land—rather, it was part of their long-term commitment to caring for and ensuring its future.

The brothers partnered with California Rangeland Trust (rangelandtrust.org), a member of California Oaks Coalition, to permanently conserve Rominger Ranch through conservation easements completed in 2018 and 2019. With their ranch protected from future development, the Romingers continue to own and manage it as a working landscape, with cattle grazing an important part of how they care for the land. Well-managed grazing can help control vegetation, reduce fire risk, and support the ecological health of the ranch.[1]

The Romingers' stewardship also includes planting native species, including oaks, on 7 miles of riparian corridor, which is helping improve wildlife habitat across the ranch. "We are working to vegetate it with species that would have been there before the Europeans settled and cleared the land," Bruce Rominger said.

The Romingers planted blue, interior live, and valley oaks, along with elderberry, manzanita, sage, and other native plants including rangeland forbs and shrubs. Oak trees are a foundational part of California's landscape, helping to maximize ecosystem resilience and function, support biodiversity, and provide wildlife habitat.[2]

This work is long term. Most of the new oaks are still too young to make a significant contribution to the ecosystem, but the Romingers are already observing small changes, which give them hope for the future.

"We are seeing more grasses and groundcover come up, which has attracted more rodents and small reptiles to the area, and we should be seeing the oaks start to mature in the next 5 years," Bruce explained.

The Romingers' commitment to oak restoration extends beyond their own efforts, and they are also making their land available to support oak research. They are working with the University of California, Santa Cruz, and Point Blue Conservation Science (a member of California Oaks Coalition) to plant blue oak acorns from the xeric (hot and dry) San Joaquin region, where oaks are experiencing decline due to increasing heat and drought conditions. The research explores the use of these acorns to preserve their genetic diversity and potentially optimize their genetic traits for resilience as weather conditions in their new location change.[3]

The Rominger family continues to advance their goal of caring for and improving their land's health, so that it stays productive for both agriculture and the ecosystems that depend on it. Their stewardship reflects a long-term approach to the ranch's future. Although they may not see the full effect of their work in their lifetimes, the conservation easements held by the Rangeland Trust will ensure that the land remains protected as the trees grow, allowing the ranch to remain both a working landscape and a place where native California oaks and restored habitat can sustain a livable climate for future generations.

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[1] University of California Agriculture and Natural Resources (UC ANR) Fire Network: *Grazing*. ucanr.edu/program/uc-anr-fire-network/grazing

[2] Zack S, et al. 2002. The oak woodland bird conservation plan: A strategy for protecting and managing oak woodland habitats and associated birds in California. In: Standiford RB, et al., tech. eds. *Proceedings of the Fifth Symposium on Oak Woodlands: Oaks in California's Challenging Landscape*. General Technical Report PSW-GTR-184, 845–846.

[3] UC ANR. Blue oak xeric edge planting experiment. Hopland Research and Extension Center: ucanr.edu/rec/hopland-research-and-extension-center/blue-oak

Back Bay Science Center: A place for young professionals to grow



© Celine Rafie

Celine Rafie (left) and Emily Garcia (right) work in the field to restore native habitat at Laurel Canyon Ecological Reserve.

By Emily Garcia, California Climate Action Corps Fellow; and Jene Dietz, Program Coordinator, Back Bay Science Center, California Department of Fish and Wildlife

At the Back Bay Science Center, located in the Ecological Reserve of Upper Newport Bay in Newport Beach (Orange County), young professionals are working at the intersection of climate education and volunteer action while learning about wildfire resiliency and the importance of native species. This science education facility provides hands-on environmental education programs for students and the public to study the estuarine ecology of the Upper Newport Bay, promoting natural resource conservation and stewardship throughout the watershed. Located in one of the few remaining estuaries in Southern California, the center operates at the nexus of a highly populated urban area and the sensitive ecosystem. Programs highlight the importance of community stewardship and volunteer engagement to better protect our public lands.

The protected habitat of Upper Newport Bay is managed by several government organizations working to steward the complex habitat, with support by a number of partners, including California Wildlife Foundation. The Back Bay Science Center provides an amazing opportunity for rising professionals to grow their skills and to connect with tenured individuals working to advance California climate goals under the tutelage of staff with California Department of Fish and Wildlife (CDFW), the state agency that manages Upper Newport Bay Ecological Reserve. Leveraging the power of the bay, CDFW is collaborating with California Climate Action Corps, an AmeriCorps branch, to bring individuals interested in climate careers for a year of hands-on and integrated learning at the Back Bay Science Center.

California Climate Action Corps is a national service program led by California Volunteers (Office of the Governor) and orchestrated by Bay Area Community Resources, a nonprofit organization. The corps places 400 fellows at 100 host sites across the state to engage in climate work related to volunteerism, outreach, education, and in-field climate action. Back Bay Science Center hosts two fellows from this program as Climate Action Interpreters. The fellows work with CDFW staff and collaborate with other organizations to advance program goals and develop as professionals.

Fellows learn about the importance of native habitats such as oak and coastal sage scrub to promote biodiversity and wildfire resiliency, utilizing these lessons to gain field experience in mitigation and monitoring. They also create and lead their own interpretive programs focused on climate and conservation, and develop technological skills by designing tools to link education to action, such as the Volunteer Storymap (storymaps.arcgis.com/stories/d0c384fe1baa4072b36905a630fed6f6). California Wildlife Foundation's partnership with CDFW over the past 20 years has supported the development of a number of these materials.

Visit backbaysciencecenter.org/volunteer-at-the-bay to learn more about volunteer opportunities.

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Province. *Global Ecology and Biogeography*, 32(2), 218–232.

[12] McLaughlin B, et al. 2026. Adapting species risk assessments to a changing climate: The underestimated vulnerability of foundational trees. *Global Change Biology*, 32(4), e70866.

[13] Macon D, et al. 2020. Recent blue oak mortality on Sierra Nevada foothill rangelands may be linked to drought and climate change. *California Agriculture*, 74(2), 71-72.

[14] Brown RW, et al. 1991. Historical mortality of valley oak (*Quercus lobata*) in the Santa Ynez Valley, Santa Barbara County, 1938–1989. *Proceedings of the Symposium on Oak Woodlands and Hardwood Rangeland Management*. USDA Forest Service General Technical Report PSW-GTR-126, 202–207.

[15] Buck RC, et al. 2026. Applying both landscape genomic and ecological niche model predictions to inform conservation strategies of a California foundational oak species. *Molecular Ecology*, 35(7), e70322.


© Maria Viteri

Blue oaks surrounding the Tehachapi Loop.

New addition to Skyline complex of conserved lands provides vital habitat for imperiled species


© Dan Marschalek

A male Hermes copper butterfly perches on the flowers of a California buckwheat plant. Hermes butterflies feed almost exclusively on California buckwheat nectar.

By Michael Beck, Executive Officer, Endangered Habitats Conservancy

Endangered Habitats Conservancy (www.ehleague.org/EndangeredHabitatsConservancy.html), a member of California Oaks Coalition, completed an important 1,266-acre habitat acquisition in July 2026, with major funding provided by the California Wildlife Conservation Board. Located at the base of Lawson Peak on the western edge of Cleveland National Forest, the land includes Engelmann and coast live oak woodlands, coastal sage scrub, and oak riparian and chaparral plant communities. Known as Skyline II, the acquisition continues a series of important Skyline Preserve acquisitions initiated in 2014 that will eventually total approximately 4,000 acres in southern San Diego County. We thank the Sycuan Band of the Kumeyaay Nation for their important support.

Linking adjacent conserved lands, the Skyline complex will secure a critical regional wildlife corridor for megafauna including mountain lion (*puma concolor*, the Southern California distinct population segment is state-threatened) and Golden Eagle (*Aquila chrysaetos*, California fully protected). On the other end of the species spectrum is the federally threatened Hermes copper butterfly (*Lycaena hermes*), a major driver of this conservation effort. Found only in limited locations in San Diego County, annual monitoring by the San Diego Management and Monitoring Program and Daniel Marschalek, PhD, Associate Professor of Insect Ecology and Conservation, University of Central Missouri, confirms that the entire range of the Hermes butterfly is limited to a handful of very small sites, including this property.

Major restoration projects are planned, including the expansion of spiny redberry habitat that the Hermes butterflies depend upon for reproduction and the restoration of a 3-acre pond to support the translocation of federally threatened red-legged frog (*Rana draytonii*) and southwestern pond turtle (*Actinemys pallida*, candidate for federally threatened status). Red-legged frog has been extirpated from San Diego for more than 50 years and the Skyline translocation will be only the second into San Diego County. Egg masses will be transferred from a genetically appropriate population of the Sierra de San Pedro Martir in Baja California. Endangered Habitats Conservancy will partner with the U.S. Geological Survey on the restoration and translocation project.

The plan also includes establishing a node for researchers and other conservation practitioners in a two-story Spanish-style house and casita on the property. One option being contemplated is for Earth Discovery Institute, also a member of the California Oaks Coalition, to establish an environmental education summer camp at the property.

The Fall-Winter 2025 issue of Oaks *(californiaoaks.org/wp-content/uploads/2025/10/Oaks-FallWinter2025_reduced.pdf) provides additional background on the effort to recover the Hermes copper butterfly and California red-legged frog.*


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The future site for researchers and conservation practitioners.

Acknowledgements

The Board of Directors supports the important conservation efforts of California Wildlife Foundation/California Oaks (CWF/CO). We extend our deepest gratitude to Ellen Maldonado, Chair; Jim Lightbody, Treasurer; and Lynn Barris, Secretary, for their time and dedication to California's environment.

Many thanks also to CWF/CO Advisor Janet L. Byron and CWF/CO intern Katherine Kerstetter for their editorial review of the articles, Eddie Bartley of the Yerba Buena Chapter of the California Native Plant Society for the information he shared for the *in memoriam* about Jake Sigg, and Stefani Berger for assistance with mailing.

In Memoriam: Jake Sigg


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Combining effective activism and hard work in San Francisco's natural areas, Jake Sigg inspired and educated many about the importance of preserving biodiversity. He is pictured, above, in the red vest, on an outing to Bayview Hill with members of the board of the California Native Plant Society Yerba Buena Chapter. This was one of his favorite places, which he considered to be the best native grassland in San Francisco.

Jake Sigg, a longtime supporter of California Oaks and founding member of California Invasive Plant Council and the Yerba Buena Chapter of California Native Plant Society, died on June 10, at the age of 99.

A Montana native, Sigg fell under San Francisco's spell while stationed on Treasure Island at the end of World War II. He returned after completing college and working on the family farm in Montana. His career included banking and ballet, but plants were his calling. A 1957 stroll through Golden Gate Park's Rhododendron Dell with his mother inspired Sigg to work in the park. An apprenticeship with Duncan Munro, a landscape designer, led to Sigg's work as a park gardener starting in 1959. Sigg became supervisor of gardeners at the park's Strybing Arboretum (now known as the San Francisco Botanical Garden at Strybing Arboretum) in 1983. There he worked with Arthur Menzies, noted horticulturalist and grandfather to Governor Newsom, to create a native plant garden, which was posthumously named in Menzies's memory. In 1988 Sigg was transferred from the park to San Francisco's southeast corner, where he discovered remnant native wildflower fields. This experience led to his assessment that "horticulture is superficial compared to complex natural systems" and his decision to retire to pursue ecological restoration.

Sigg served for many years on the board of the Yerba Buena Chapter of the California Native Plant Society, shaping the chapter's focus on ecological restoration. He is credited with helping to protect the dunes, grasslands, coastal scrub, and rare plant habitats of San Francisco's Presidio. He and longtime friend and inspiration, Greg Garr, worked tirelessly to remove invasive plants to make room for San Francisco's 509 native species. While serving on San Francisco's Open Space Committee, they teamed up to create the Natural Areas Program (now called Natural Resources Division) of San Francisco's Parks and Recreation Department, which identified 32 parcels of public land that were brought into park stewardship. Thus far 1,100 acres of these parklands—which include oak woodland, coastal scrub, grassland, and wetland—have been restored by community volunteers.

Sigg also served on California Native Plant Society's statewide board as chair of the Invasives Exotics Committee, bringing a focus on invasive plants to the organization. He also authored the popular *Jake's Nature News*, which had over 1,200 subscribers before the days of social media. Jake Sigg's legacy is reflected in restored natural areas and carried forward by those who understand the importance of protecting biodiversity.

California Native Plant Society (cnps.org) is a member of California Oaks Coalition, as is the Yerba Buena Chapter (cnps-yerbabuena.org) and the California Invasive Plant Council (cal-ipc.org).

How you can help:

- Donate to California Wildlife Foundation/California Oaks. Visit californiaoaks.org to make a secure donation.
- Spend time in an oak woodland or forest. Click on californiaoaks.org/resources for a partial listing of oak landscapes around the state that have public access.
- Consider including oak conservation in your financial and estate planning efforts. See californiaoaks.org/donate for information.
- Be vigilant about threats to oak woodlands and oak-forested lands in your community and consult californiaoaks.org for guidance.
- Avoid spreading oak pests and pathogens.
- Restore oaks to areas where they historically grew.
- Sign up at californiaoaks.org for the *Oaks* e-newsletter.
- Support local and statewide measures to protect natural resources.
- Hold decision-makers accountable for protecting green infrastructure.
- Learn about and support Indigenous stewardship of oak ecosystems.

California Oaks is a fund within California Wildlife Foundation, federal tax identification number 68-0234744. Contributions of cash, stocks, and bonds are tax deductible. Please be sure to write "CWF/California Oaks" in the *pay to the order of* line if you send a check. Our bank will not cash checks unless CWF or California Wildlife Foundation is listed as a payee.



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