

## Restoration of floodplain gem in heart of the San Joaquin Valley

by Sean Murphy, Marketing and Communications Specialist, River Partners

River Partners, a member of California Oaks Coalition, will soon complete restoration of its 360-acre Hidden Valley Ranch, a former dairy 10 miles west of downtown Modesto. But as River Partners places the final tree along the final row in the final field, we have larger plans for the site and region.

Situated along the San Joaquin River, the state's second-largest waterway, Hidden Valley Ranch is adjacent to River Partners' historic Dos Rios Ranch, California's newest state park (see: [riverpartners.org/news/park-of-the-future-demonstrates-power-of-healthy-rivers-for-resilient-california](https://riverpartners.org/news/park-of-the-future-demonstrates-power-of-healthy-rivers-for-resilient-california)). Eventually Hidden Valley will provide the park-starved San Joaquin basin with another recreation option, while also serving as a vital parcel in one of the state's largest contiguous corridors of floodplain habitat.

**Restoration of groundwater, floodplains, and imperiled species:** Purchased by River Partners in 2014 with funding from the California Department of Water Resources (DWR) and the Wildlife Conservation Board, the site's riparian habitat is being restored. Freshwater on and off the property is being replenished by transitioning commercial crops into low-water native plants to improve groundwater recharge. After 3 years of irrigating native plants, River Partners will shut off the property's pumps, conserving water for the river, local ecosystem, and communities.



© Savon Holt/PhotoBotanic

Valley oaks line the San Joaquin River at Dos Rios, the crown jewel of River Partners' restoration projects. After more than a decade of restoration, Dos Rios, adjacent to Hidden Valley, officially opened as California's newest state park in June 2024.

"Hidden Valley Ranch promotes California's climate resilience by providing space for the increased flash-flood flows expected as the result of a changing climate, as well as providing more inundated floodplain and riparian areas to benefit special status species," says Steve Rothert, Manager of the DWR Division of Multi-Benefit Initiatives. Likewise, future floodplains at the site could aid recharge of the aquifer, Rothert notes, which is important to multiple groundwater-dependent plant and animal species, including oaks. "Groundwater infiltration occurring during the wet season could also improve water quality and provide cooler flows back into the river during warm, dry summer months."

Prior to European settlement, the area sustained diverse riparian vegetation and wildlife. Numerous smaller channels supported a range of river processes, including erosion, sediment transport, and floodplain formation, all of which shape healthy ecosystems. Land-use conversion along the San Joaquin River in the 19th and 20th centuries replaced much of the area's riparian vegetation with agriculture, eliminating processes that sustained native habitat recruitment and succession.

River Partners planted over 75,000 native trees and plants, including fast-growing Fremont cottonwoods and willows, which provide upper-tree canopy for migratory birds. The early successional growth is preferred habitat for the federally and state-endangered Least Bell's Vireo (*Vireo bellii pusillus*). Valley oaks—a keystone species that provides food and habitat for many vertebrates, invertebrates, and plants—also help to recharge the aquifer. Within a few years, these trees will grow up to 10 feet tall, towering over native shrubs we planted, including elderberry (crucial habitat for the federally threatened valley elderberry longhorn beetle [*Desmoecurus californicus dimorphus*]) and California blackberry, which provides habitat for the federally and state-endangered riparian brush rabbit (*Sylvilagus bachmani riparius*).

To achieve a highly diverse understory resistant to invasive weeds, we planted creeping wild rye, gumplant, mugwort, and other native flowering and herbaceous species.

Restored native grasslands are attracting state threatened Sandhill Cranes (*Antigone canadensis tabida*) and other migratory waterfowl.

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# Larger swaths of natural lands promote climate resilience and biodiversity

© Bryant Baker, Los Padres ForestWatch



**The Hubbard Hill and Freeborn Mountain units are proposed for inclusion in Carrizo Plain National Monument, as seen from Machesna Mountain Wilderness in Los Padres National Forest to the west.**

As we navigate the climate and biodiversity crises, the expansion of protected lands bolsters habitat connectivity, conserves unique biological and cultural places, builds climate resilience, benefits imperiled species, and enhances opportunities for recreation. Two members of California Oaks Coalition are at the forefront of these efforts in California.

California Oaks readers were introduced to Dos Rios Ranch in the Fall-Winter 2021 issue of *Oaks*. River Partners and Tuolumne River Trust, both members of the California Oaks Coalition, collaborated to purchase the land at the confluence of the San Joaquin and Tuolumne rivers. Since that time the site's hydrologic connections to the riparian corridor were restored; over 350,000 native trees and shrubs, including valley oaks, were planted; and the land became Dos Rios, California's newest state park, on June 12, 2024. These enhancements, led by River Partners, are further leveraged by Hidden Valley Ranch, a 360-acre parcel adjacent to Dos Rios, which expands the restored habitat and floodplain, regenerates the aquifer, and is rebuilding connections to the cultural landscape for Indigenous people and those interested in these practices. Together, the 8 miles of restored Hidden Valley and Dos Rios riparian corridor are helping to recover threatened and endangered terrestrial and aquatic species, build resilience for flood protection, improve water quality, and deliver opportunities for enjoying natural landscapes in the highly disturbed San Joaquin basin.

Farther to the south and west, oaks coalition members Carrizo Plain Conservancy and Los Padres ForestWatch, in collaboration with conservation and Tribal partners, are working to expand the Carrizo Plain National Monument and enhance access from Kern County. The vision of an expanded national monument includes enhanced protections for Tucker and blue oak habitat, juniper stands that are over 1,000 years-old, and the extremely rare Upper Sonoran Subshrub Scrub habitat. The proposal includes lands that are adjacent to the monument as well as other parcels that are connected to the monument via other protected lands.

Alongside these vital efforts to reconnect imperiled landscapes, important work is underway to stem conversions of oak woodlands. We commend Sonoma County for enacting an oak woodland conversion ordinance that aligns with language in the general plan that calls for protections of oak woodlands. The process took 5 years and engaged many stakeholders, requiring vision, patience, and perseverance.

In both the San Joaquin River basin and the Carrizo Plain, the sum of enhanced protections is greater than its parts, creating multiple benefits for communities and the environment. Protections, be they public land designations or prohibitions on oak removals, are essential to sustaining biodiversity and building a climate-resilient future.

Sincerely,

A handwritten signature in black ink that reads "Janet". The signature is fluid and cursive.

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.

Amah Mutsun Land Trust  
American River Conservancy  
American River Watershed Institute  
AquAlliance  
Audubon California  
Butte Environmental Council  
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 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  
Foothill Conservancy  
Forests Forever  
Friends of Harbors, Beaches and Parks  
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Friends of the Richmond Hills  
Friends of Spenceville  
Global Conservation Consortium for Oak (GCCO)  
Hills For Everyone  
Laguna de Santa Rosa Foundation  
LandPaths  
Loma Prieta Resource Conservation District  
Lomakatsi Restoration Project  
Los Padres ForestWatch  
Lower Kings River Association

Micke Grove Zoo  
 Mountains Recreation and Conservation Authority  
 Northern California Regional Land Trust  
 Ojai Trees  
 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  
 Tuleyome  
 Tuolumne River Trust  
 Universidade de Trás-os-Montes e Alto Douro, Department of Forest and Landscape Architecture (Vila Real, Portugal)  
 University of California, Los Angeles, Mildred E. Mathias Botanical Garden  
 Ventura Land Trust  
 Western Shasta Resource Conservation District  
 Woodland Tree Foundation

**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 local, regional, and state 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](mailto:amoskow@californiaoaks.org).

## Award shared by California Wildlife Foundation

California Wildlife Foundation was a joint recipient of the Outstanding Environmental Project Award at the State of the Estuary Conference on May 28, 2024, for Phase 2 Restoration of the South Bay Salt Pond Restoration Project at Ravenswood.



**Left to right:** Award recipient representatives Mason Hill and Nick Torrez, Ducks Unlimited; Dave Haling, South Bay Salt Pond Restoration Project; Renee Spent, Ducks Unlimited; Amy Larson, California Wildlife Foundation; Laura Cholodenko and Evyan Borgnis Sloane, California State Coastal Conservancy; Rachel Tertes, U.S. Fish and Wildlife Service; Donna Ball, San Francisco Estuary Institute; Chris Barr, U.S. Fish and Wildlife Service; and Ariel Ambruster, California State University, Sacramento.

## RESOURCES

**Free online plant conservation program:** The Center for Plant Conservation is developing a new educational resource, the Applied Plant Conservation Course. This free online professional development program covers best practices of rare plant stewardship and conservation. Participants will learn from plant conservation experts through lectures, animated lessons, knowledge checks, and integrated Rare Plant Academy resources. Topics range from rare plant genetics and reintroductions to seed collections, exceptional species, and more. The first five modules are complete. Four additional modules are in production, for launch later in 2024. Visit: [saveplants.org/courses](https://saveplants.org/courses)

**Oak landowner guide:** Klamath Siskiyou Oak Network and Umpqua Oak Partnership recently released Version 3.0 of *Restoring Oak Habitats in Southwest Oregon & Northern California: A Guide for Private Landowners*. The new publication has expanded content on Indigenous stewardship of black and Oregon white oak ecocultural systems, prescribed fire, post-wildfire restoration, and native understory retention and restoration. The guide's geographic focus is oak habitat in Douglas, Josephine, Jackson, and Klamath counties in Oregon, and Siskiyou County in California. Many of the restoration principles and recommendations are relevant outside of the region. Download from: [avianknowledgenorthwest.net](https://avianknowledgenorthwest.net), using the *Oak and Prairie* link under the *Decision Support Tools* dropdown menu.

### PREVENT THE SPREAD OF SOIL-BORNE PHYTOPHTHORA PATHOGENS

*Phytophthora* pathogens can debilitate or kill planted material, and spread from the planting site to attack and kill adjacent vegetation. These pathogens can be delivered into the landscape by infected nursery plants. The planting site can become permanently infested, causing long-term problems in the landscape, limiting the type of plants that can be grown, and serving as a source of spread to other areas.

**Best Management Practices for Producing Clean Nursery Stock**, when consistently followed by nurseries, have produced nursery stock free of detectable *Phytophthora* infection. Visit: [phytosphere.com/BMPsnursery/index.htm](https://phytosphere.com/BMPsnursery/index.htm)

**Accreditation to Improve Restoration (AIR)** is a program to implement the systematic use of clean production practices designed to exclude *Phytophthora* plant pathogens from nurseries: Visit: [airnursery.ucdavis.edu/](https://airnursery.ucdavis.edu/)

## ReOaking recollections after the Caldor Fire

By Tal Blackburn and Virginia Meyer, PhD, California Native Plant Society—El Dorado Chapter

© Tal Blackburn



**Not fancy, but effective: The local post office and cafe receive plants and information weekly during the spring and fall from ReOak Grizzly.**

ReOak Grizzly began in 2021 after the Caldor Fire burned over 200,000 acres in the Eldorado National Forest and private lands across El Dorado, Amador, and Alpine counties that summer. An effort of local citizens, ReOak Grizzly distributed more than 400 oak seedlings to Caldor Fire victims. Several project participants are active in the El Dorado chapter of California Native Plant Society ([eldorado.cnps.org](http://eldorado.cnps.org)), a member of California Oaks Coalition. Interest last year from several local teachers is putting ReOak Grizzly on the path of growing more seedlings, supporting more fire victims, and engaging more citizens of El Dorado County about the importance of our native oaks.

The fall of 2021 was bountiful for black oak acorns in El Dorado County. Towns such as Grizzly Flat had been severely burned and the fire sent thick, sky-covering smoke throughout the county, but the oaks nonetheless responded favorably with high-quality and bountiful acorns. ReOak Grizzly's beginning was a 5-gallon bucket of acorns placed under the public mail-sorting table at the local post office where evacuees collected their mail, from which anyone could take acorns to plant. After a few days a frustration arose—a full bucket of acorns as well as the bucket vanished.

Not giving up, ReOakers began planting acorns in tall-tree pots and doubled-up milk cartons, and this has worked better. For 3 years, oak seedlings have been dropped off weekly during the spring and fall at the post office and cafe next door. Each establishment receives a box of seedlings labeled “free,” informational handouts about how to plant and care for oak seedlings, and California Native Plant Society's *Fire Recovery Guide* ([cnps.org/give/priority-initiatives/fire-recovery](http://cnps.org/give/priority-initiatives/fire-recovery)). Locals sometimes offer a personal thanks or observation as they make their selection of seedlings. For instance, Rachel expressed disappointment that her mature black oaks never resprouted, and Maggie reached out in gratitude, recounting that watching the seedling grow helped her in grieving after her husband's death.

Other native trees in addition to black oaks

were made available, including canyon live oak seedlings and arroyo willow cuttings. Surprisingly, the willows, trees whose ecological value is not widely understood, were well received. This year ReOak Grizzly expanded to include first-graders at an El Dorado County school who are growing oak seedlings. The source of the acorns for the school project is black oaks in Shingle Springs that grew from acorns planted by a local Brownie troop in the early

1990s. Another local school club is collecting valley oak acorns for ReOak Grizzly. Though seemingly out of their typical range, the valley oak acorns are local, so we are interested in how well they will survive.

Most of ReOak Grizzly's seedlings will succumb within their first year: Surviving a pot, even a tall one, then a hot summer and fall is tough. Nevertheless, we measure our success by the oaks that live and the lives we touch.



© Virginia Meyer

© Virginia Meyer

**Kristen Meyer, early 1990s, preparing ground for planting acorns in Shingle Springs.**

**Kimmy Geddes and Kristen (Meyer) Baker in August 2024 with black and valley oak trees they helped to plant, which are now providing acorns for ReOak Grizzly.**

## Sonoma County adopts oak woodland conversion ordinance

By Douglas Bush, Planner, County of Sonoma

Recognizing the significance of oak woodlands and the increasing impacts of development and environmental pressures, Sonoma County acted earlier this year by passing an ordinance to limit their conversion to other uses. Prior to its enactment, most oak woodland conversion was allowed without development permits or environmental review.

Sonoma County is one of the most biologically diverse places in the country, home to thousands of species of plants and animals, including 20 species that are found nowhere else. Local habitats include wind-swept coastal bluffs, redwood forests, rolling native grasslands, vernal pools, chaparral, and extensive oak woodlands. As of 2013, almost 20% of the county (over 170,000 acres) was mapped as oak woodland. These woodlands are the backbone of their respective ecosystems, sustaining local flora, fauna, and fungi, while providing significant watershed and carbon sequestration benefits as well as aesthetic and cultural values for almost half a million county residents.

Historic drought, wildfire, disease, extreme weather, and development have placed significant pressure on oak woodlands. Since 2017, for example, around a quarter of the county (234,000 acres) has been affected by wildfire. These stressors, combined with uncertainties about regeneration of oaks due to changing climate and other factors, highlight the importance of conserving existing woodlands.

**Developing the ordinance:** County land use policies and regulations have limited impacts on many threats, but local land-use regulations can limit the role of rural and urban development on oak woodland conversion. Since 2008, the Sonoma County General Plan has included language to protect and enhance oak woodlands, but no regulations were in place to implement these policies. To develop the Sonoma County Oak Woodland Ordinance, the county spent 5 years collaborating with a wide range of stakeholders including California Wildlife Foundation/California Oaks, California Native Plant Society–Milo Baker Chapter, Sonoma County Farm Bureau, Community Alliance with Family Farmers, local foresters, builders, county agencies, and many dedicated community members.

Adopted in April 2024, the ordinance requires a discretionary permit for the removal of over a half-acre of oak woodland in most unincorporated areas of Sonoma County, with a number of exemptions. The county utilized local vegetation mapping data from 2013 to



© Douglas Bush

**Oaks are a vital part of Sonoma County's natural and cultural fabric.**

apply the ordinance to parcels containing at least a half-acre of oaks. The parcel is then flagged as likely to contain oak woodland using a zoning overlay, with the extent of actual woodlands determined on a case-by-case basis. The ordinance defines woodlands as contiguous stands of native oak trees where the stand is at least a half-acre, the periphery of which is established by all trees greater than 6-inches in diameter whose canopies are within 200 feet of one another.

The ordinance applies to all tree and vegetation removal within these woodlands, as well as any development activity that would remove the capability of the land to support oak trees and associated vegetation (utilizing principles of the state's timberland conversion rules). This capability is largely based on whether oak woodlands occurred in that location as of the county's 2013 vegetation maps, which set the ordinance baseline. For example, parcels that had oak woodlands as of the 2013 vegetation mapping that burned in 2017 are still considered oak woodland even if mature oaks are no longer present on the site.

These measures are intended to limit large-scale conversion of oak woodlands. Any such removal or conversion activities are subject to the ordinance and require a conditional use permit, unless specifically exempt. Exemptions include the one-time allowance of up to one-half acre of woodland clearing per parcel to accommodate an allowed use (e.g., new residence and associated well and septic system), development of housing in designated urban service areas, activities under an approved oak woodland management plan, maintenance of residences and existing crop-cultura-

tion areas, activities necessary to comply with defensible space requirements, and similar activities.

**Reflections:** When residents imagine Sonoma County, undoubtedly oaks will be part of that picture. This fundamental piece of our natural and cultural fabric was evident during the planning process, when the depth of connection with trees and forests was shared by many residents. We spoke with ranchers who talked about the beauty of the trees and the valuable shade they provide to cattle, and also about how seeing old trees represents the passing of time, reminding them of the generations that came before them and their desire to preserve those trees for their children and grandchildren. We heard from local high school students that the ordinance represented something more than the importance of trees and woodlands; for many of them it was a question of whether adults, and particularly those in positions of power, cared about their future.

My efforts to steward this project in collaboration with my colleague, Registered Professional Forester Robert Aguero, are driven by the belief that local measures to prevent or slow the conversion of oak woodlands are some of the most efficient and effective ways of protecting local biodiversity and ecosystem and cultural values. I encourage others to consider the value of oak woodlands in their communities, the pressures they face, and whether a local ordinance might be part of an effective local conservation strategy. Sonoma County's ordinance is no silver bullet but it holds significant potential to slow woodland conversions.

# Proposed Carrizo Plain National Monument expansion to enhance connectivity and protect important ecological and cultural values

By Neil Havlik, PhD, President, Carrizo Plain Conservancy, and Bryant Baker, MS, Director of Conservation and Research, Los Padres ForestWatch

Carrizo Plain National Monument's grasslands, renowned for their wildflower blooms, preserve a remnant of California's Central Valley landscape where tule elk and pronghorn were once widespread. Established in 2001, the monument still supports these and other wildlife species, several of which are federally listed as endangered or threatened. The 205,000-acre monument in eastern San Luis Obispo and western Kern counties includes most of the Carrizo Plain itself, nearly all of the adjacent Caliente Range on the west and southwest, and portions of the Temblor Range on the east.

The Carrizo Plain Conservancy ([carrizoplainconservancy.org](http://carrizoplainconservancy.org)) and Los Padres ForestWatch ([lpfw.org](http://lpfw.org)), members of the California Oaks Coalition, and other collaborators, including California Wildlife Foundation, are working to expand the monument to include several additional areas and develop access into the monument from Kern County. The fall-winter 2023 issue of *Oaks* reported on efforts to include the eastern side of the Temblor Range, including Upper Sonoran Subshrub Scrub habitat, which is one of the rarest vegetation types in California. Additional to the eastern side of the Temblors and a small canyon in the northern Temblor Range, local conservation and Tribal organizations are now proposing that three other areas in the

region be added to the monument through either presidential proclamation or an act of Congress. Although not adjacent to the monument itself, these three areas are connected by intervening protected lands.

Two potential expansion areas to the northwest are Hubbard Hill and the Freeborn Mountain units, which comprise 7,027 acres of Bureau of Land Management land that is largely covered by juniper woodland, including trees up to 1,000 years old, and scattered scrub and grassland. The land is sandwiched between two portions of Las Piletas Ranch, a formerly private ranch recently purchased by The Nature Conservancy because of its conservation potential.

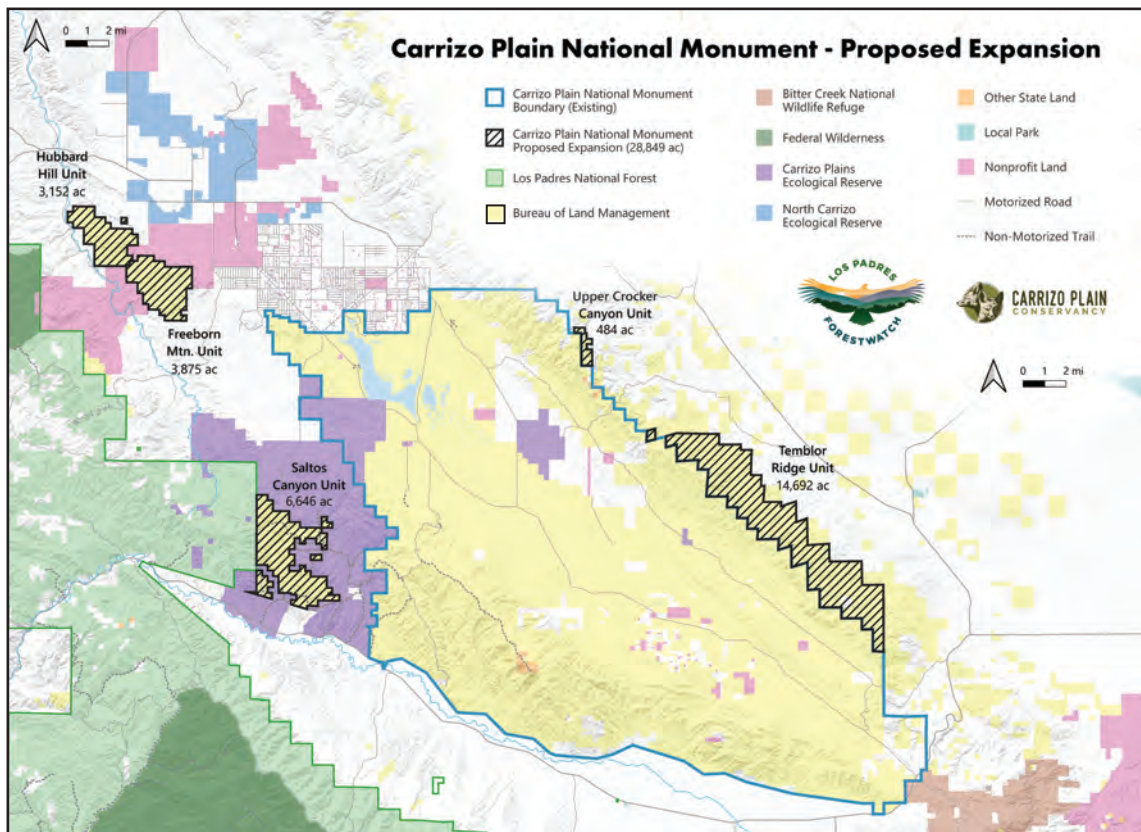
The Saltos Canyon Unit is a proposed expansion area to the west of the monument. Its 6,646 acres of isolated Bureau of Land Management terrain transition from juniper woodland and grassland into blue oak woodland and adjoin the Los Padres National Forest on the west and state-owned Carrizo Plain Ecological Reserve to the east. This area was designated a part of the San Luis Obispo Forest Reserve by President Theodore Roosevelt in 1906. In 1913, parts of the reserve were removed to allow for homesteading, but much has remained as public land. The proposed addition would restore and enhance protection for the land's habitat, cultural, scenic, and,

recreational values.

These lands in total would add 28,849 acres of grassland, Upper Sonoran Subshrub Scrub habitat, and oak and juniper woodlands to the monument, and provide connectivity to many more conserved lands. The proposed expansion would add significantly to the protection of the locally unique subshrub habitat type and other habitats that are not well represented within the current boundaries of the monument; provide new opportunities for wildlife habitat enhancement; and provide protection for historical and archaeological artifacts (known and unknown) in the expansion areas.

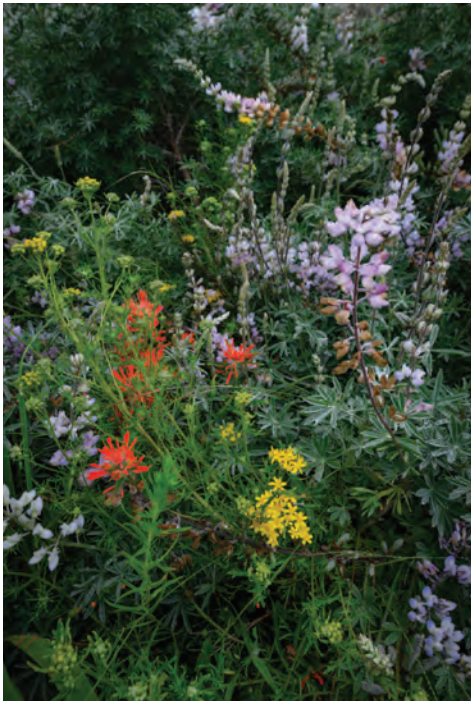
The proposal would not change any existing rights within any of the expansion areas. At least 98% of the land proposed for addition to the monument is in federal ownership. Moderate levels of livestock grazing would be expected to continue, as is the case with the overall monument today.

A final piece of the request is to seek Congressional appropriations for acquisition and possible development of a road to gain legal access to the monument from the city of Taft. Despite being a "gateway" to the monument, Taft has no direct route; one must travel miles before reaching the monument on existing public roads.



# Santa Monica Mountains wildflower collection digitized for protection and access

© Michael Ready



Spring wildflower display in the Santa Monica Mountains, red = paintbrush (*Castilleja affinis*), yellow = golden yarrow (*Eriophyllum confertiflorum*), purple = Hall's bush lupine (*Lupinus albifrons* var. *hallii*)

By Keith Lombardo, PhD, Director, Southern California Research Learning Center, National Park Service

Spring in Southern California is a magical time. Not only is the amazing Mediterranean climate agreeable, but there are vibrant displays of wildflowers everywhere! Across the unique coastal sage scrub and chaparral plant communities that dominate these natural landscapes, annual wildflowers fill the empty spaces between perennial shrubs each spring. However, wildflower displays differ from year-to-year depending on the timing and abundance of rainfall and if there have been any wildfires the previous year.

National Park Service botanists at the Santa Monica Mountains National Recreation Area annually document wildflower diversity through established monitoring protocols. These snapshots are used to help park managers understand how natural and anthropogenic drivers impact these landscapes. But the surveys are much more than mere numbers. Our team has begun to collect and preserve individual specimens of every wildflower species documented in the Santa Monica Mountains.

The practice of documenting specimens is hardly new. Scientists have been gathering plant specimens in this region since the late 1800s. Collections help document the presence of a species in the area and also allow for the future study of the species, long after the plants have been collected and preserved. For example, modern-day botanists have utilized live

and preserved plant collections to facilitate genetic analyses, refining and improving our understanding of these species. Collecting plant samples from the wild follows a meticulous process to ensure that a specimen is properly prepared for long-term storage in what is known as an herbarium—a facility that can maintain a constant temperature and prevent pests from munching on plant tissues.

Despite best efforts, even the most secure facilities can't ensure the safety of preserved specimens from all threats. The Woolsey Fire of 2018 destroyed multiple structures in the Santa Monica Mountains, including a building that housed precious herbarium collections. Every-

thing was lost, and the effort to build a new herbarium began anew. However, this time, we've taken an extra step to protect park specimens, which has simultaneously expanded their availability for scientific use. In our new protocols, each time a plant is collected, pressed, and preserved we also record it using a special digitization process developed specifically for this application. The specimens are then uploaded onto the California Consortium of Herbarium website ([cch2.org/portal](http://cch2.org/portal)), where anyone can access these high-resolution images and their associated information. We still have access to genetic material from the "hard copy," kept in our new herbarium facility, however, we also have reassurance knowing that these collections will be digitally available should another tragedy strike.

The California Wildlife Foundation played a critical role in helping our team begin the digitization process by providing funding for the purchase of photographic equipment used in digitization. The foundation also provided support for nature photographer Michael Ready to capture images of our specimens in the wild, prior to collection. Michael and our team are building out communications pieces so that the public is aware and informed of this important scientific collection process and its significance.

The next time you're driving along a scenic road in California and see a wildflower display, think about all of the information that is stored in a flower and know that there is likely a collection of that species, both physical and digital, that can be viewed today and well into the future by botanists and flower-lovers alike.



Santa Monica Mountains Herbarium specimen of purple sage (*Salvia leucophylla*)



Digitized Santa Monica Mountains Herbarium specimen of cardinal catchfly (*Silene laciniata*)

© Michael Ready



© River Partners

Three large mounds of dirt were built to create habitat for the endangered riparian brush rabbit.

— continued from page 1

Three large dirt mounds were installed to benefit riparian brush rabbits. Each mound is nearly 50 feet high, ranging in size from roughly 1 to nearly 3.5 acres, providing safe shelter for the rabbits and their food during floods. Native to the Central Valley’s dense riparian forests, 95% of their habitat has been lost, fragmented, or redeveloped for cities and farming since the mid-1800s. Over the last 20 years, River Partners has restored thousands of acres of their habitat.

**Cultural restoration:** Austin Stevenot, River Partners’ San Joaquin Valley Field Manager and a member of the Northern Sierra Miwok Tribe, is creating spaces for Indigenous people to practice their culture and to foster opportunities for visitors to connect with the landscape and better understand Indigenous cultural practices.

This involves planting native grasses, for example, so Tribal members can once again touch the plant, smell the soil, and feel what their ancestors sustained for millennia. Stevenot notes that families would tend patches of certain native grasses as if they were tending a garden, and River Partners adds these culturally important elements to restoration when and where possible.

“It’s not just restoration of the floodplain, but it’s also bringing back the environment that was here for our people for millennia,” Stevenot says. “For me, it’s being able to give back to my cultural community I grew up in and being able to help our culture revive itself, to be able to create spaces to open up these places for people who want to learn our culture.”

**More to do:** Though the restoration process is nearly complete, we will spend the next 3 years irrigating, monitoring, and maintaining the site to maximize the growth and health of our restoration. Top on the priority list is invasive plant management, which Senior Restoration Science Ecologist and Project Manager Neil Wilson calls “pretty boring but extremely critical” to ensuring the health of the project.

River Partners also hopes to receive approval from the U.S. Army Corps of Engineers to modify an existing levee adjacent to Hidden Valley Ranch to reconnect the property to its natural floodplain and enable floodwaters from the nearby San Joaquin and Tuolumne rivers to inundate the ranch. This will provide food and protection for struggling salmon and improve flood safety for downstream communities.

“You’re talking about thousands and thousands of acre-feet of water that has room to move out onto the expanded floodplain, which is a really meaningful amount for local flood planning,” Wilson says. “Hidden Valley is a final piece of the puzzle that brings Dos Rios Ranch to its true potential.”

River Partners envisions transferring Hidden Valley Ranch to state or federal agencies to manage in perpetuity for the benefit of healthy local ecosystems and communities.

*An earlier edition of this article first appeared as a blog on April 19, 2024 (see: [riverpartners.org/news/restoring-floodplain-jewel-in-heart-of-san-joaquin-valley-nears-completion](https://riverpartners.org/news/restoring-floodplain-jewel-in-heart-of-san-joaquin-valley-nears-completion)).*

### Acknowledgements

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### How you can help:

- Donate to California Wildlife Foundation/California Oaks. A secure donation can be made from our website: [californiaoaks.org](https://californiaoaks.org)
- Spend time in an oak woodland or forest. Click on [californiaoaks.org/resources](https://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. Information can be found at: [californiaoaks.org/donate](https://californiaoaks.org/donate)
- Be vigilant about threats to oak woodlands and oak-forested lands in your community and consult [californiaoaks.org](https://californiaoaks.org) for guidance.
- Restore oaks to areas where they historically grew.
- Sign up for the Oaks e-newsletter at [californiaoaks.org](https://californiaoaks.org)
- 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.

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*Latin names are used for species with designated state or federal conservation status.*

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