

Restoring biodiversity after fire: Report from the Sierra

by Vivian Parker,
Sierra Forest Legacy,
California Native Plant Society

For more than half a century, the role that fire plays in the evolution of California's unique and biologically rich landscapes has been well known to experts. The forests of the Sierra Nevada, where black oak is the predominant oak species, are well adapted to frequent, low intensity fires. Both oaks and conifers have evolved thick bark that enables them to withstand the heat of low intensity fire. Unlike conifers, oaks can also re-sprout after fire from the crowns of the trees buried in the ground. Fire provides multiple ecological benefits, including the release of nutrients, fresh habitat for wildlife, regeneration of fire-dependent plant species and mushrooms, and control of disease and insect outbreaks. These functions contribute to maintaining high levels of biodiversity throughout

the food web. However, this information has rarely informed changes to public fire and forestry policy.

Today, forests in the Sierra Nevada are crowded with immature trees that lack the fire resiliency of the old-growth forests that once graced the mountain range. Rising temperatures, drought, a bark beetle epidemic, invasive Scotch broom, introduced annual grasses, and continued population growth have contributed to tree mortality and megafires at a scale and intensity rarely experienced in recorded history.

The 2013 Rim Fire in the Stanislaus National Forest and Yosemite National Park was the largest fire ever recorded in the Sierra Nevada, and the third largest fire recorded in California (257,314 acres). The following year, the Happy Complex burned 135,369 acres in Siskiyou County, and the King Fire in El Dorado County burned 97,000 acres. This summer's Detwiler Fire in Mariposa County burned 81,826 acres.

A new Fire Partnership Memorandum of Understanding (MOU), grounded in principles of ecological science, is bringing public land managers, CalFire, the U.S. Forest Service, air pollution control districts, industry, and environmental groups together to promote the use of beneficial fire and limit practices that negatively impact biodiversity. California Wildlife Foundation/California Oaks is a signatory to the MOU.

Advocating for the use of prescribed or beneficial fire, scientists with the U.S.



© Craig Thomas

Lion's mane mushroom fruiting on fire scar of black oak.

Forest Service have calculated that the agency would have to burn approximately 500,000 acres per year in the Sierra Nevada to achieve a level of burning in sync with historical fire return intervals. With such a deficit, it would be reassuring to think that megafires like the Rim Fire are contributing to achieving goals for fuel reduction and biodiversity. However, what happens after the fire is just as important as the decisions that are made to let burn or suppress.

The reality is that post-fire "restoration" activities in burned forest landscapes impede recovery in multiple ways. When forests are logged after fire, they are essentially converted to tree cropping systems. The ground is subjected

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California Oaks Coalition

California Oaks Coalition is a statewide network organized to address issues in counties where oaks play a critical wildlife habitat role and are essential in sustaining healthy watersheds.

Groups partnering with California Oaks to conserve oak-forested lands for future generations include:

American River Watershed Institute
California Invasive Plant Council
California Native Plant Society
Californians for Western Wilderness
Carpe Diem West
Clover Valley Foundation
Dumbarton Oaks Park Conservancy
Elder Creek Oak Woodland Preserve
Endangered Habitats League
Environmental Defense Center
Environmental Protection Information Center (EPIC)
Environmental Water Caucus
Forests Forever
Friends of the Richmond Hills
Friends of Spenceville
Hills for Everyone
Los Padres Forest Watch
Napa County Water, Forest and Oak Woodland Protection Committee
Northern California Regional Land Trust
Planning and Conservation League
Rural Communities United
Sacramento Tree Foundation
Santa Clarita Organization for Planning and the Environment (SCOPE)
Sierra Club Placer County
Tejon Ranch Conservancy

The four areas of support being developed are:

- 1) research and advocacy updates (available at www.californiaoaks.org);
- 2) information disseminated via the media to educate and engage the public;
- 3) tools for engaging in planning processes and educating opinion leaders; and
- 4) materials to inform local, regional, and state governmental agencies of the opportunities for and benefits of protecting oak woodlands.

Fighting for El Dorado County's imperiled oaks

El Dorado County has more oak woodlands at risk than any other county in the state.

Tom Gaman, *Oaks 2040: The Status and Future of Oaks in California*

California Oaks continues a decades-long battle to ensure El Dorado County's oak resources receive adequate protections as part of the adoption of the county's General Plan. Recent actions have been letters to the Board of Supervisors and Community Development Agency, Long Range Planning Division.

The Board of Supervisors adopted the Oak Woodland Management Plan and its implementing ordinance in May 2008. California Oaks, then California Oak Foundation, participated in a lawsuit that was filed in El Dorado Superior Court in June 2008 against the Oak Woodland Management Plan (OWMP) due to its inadequacies. The Court ruled to uphold the Board's action to adopt the Plan in February 2010. However, the Appellate Court over-ruled that decision, remanding the case back to Superior Court, with the requirement that the County prepare an Environmental Impact Report for the OWMP. The OWMP and implementing ordinance were rescinded in September 2012.

Since that time a Final Environmental Impact Report (FEIR) and General Plan Biological Resources Policy Update, (now called) Oak Resources Management Plan (ORMP), and Oak Resources Conservation Ordinance have been prepared and presented to the county's Planning Commission and Board of Supervisors.

A central concern for California Oaks is that when the ORMP exemptions are considered, a total of 145,552 acres of oak woodland could be lost, including over 135,000 acres that are not subject to mitigation. The 145,552 acres represent almost 55% of the oak resources within the geographic area covered by the General Plan. Additionally, the EIR analysis fails to adequately account for the climate change impacts of the oak removal. Further, in issuing its decision the Appellate Court proclaimed: "...the trial court erred in assuming that EIR analysis for the oak woodland management plan could be postponed until formulation of the integrated plan had been completed." However, an integrated plan has not been developed subsequent to the court's decision. Instead the proposed revisions to the General Plan include the deletion of the integrated plan requirement, to be replaced by a series of studies, strategies, and programs, which are under development.

Equally concerning is that the next steps in the county's approval process are unclear, with the final decision expected to emerge during a session closed to public comment. El Dorado County has not been forthcoming in its communications with the public, which stands to lose its important natural capital.



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MARK YOUR CALENDARS!

California Oaks Coalition will be hosting an open house from 4:40 - 5:30 pm on February 1 during the California Native Plant Society 2018 Conservation Conference. California Wildlife Foundation/California Oaks is also sponsoring a session on Oaks and Oak Rangelands during the conference.



California Invasive Plant Council

California Invasive Plant Council (Cal-IPC) is a nonprofit organization working to protect the state's environment and economy from invasive plants. Cal-IPC, a member of California Oaks Coalition, provides resources to professional land managers and stewardship volunteers, including publications on invasive plant management.

Over 200 plant species are designated "invasive" by Cal-IPC, and the risk assessment and mapping involved in maintaining the list of invasive plants, the Cal-IPC Inventory, is a big part of what the organization does. This spring, Cal-IPC worked with local partners around the San Francisco Bay Area to provide four weed management trainings for 200 volunteers. Plans for 2018 trainings are underway.

The organization also brings together hundreds of land managers every year for the Cal-IPC Symposium, with presentations, discussion groups, field trips, and more. The 26th annual Symposium will be held at the Riviera Palm Springs from October 24-27, 2017.

Cal-IPC establishes strategic invasive plant management projects across the state, focusing on the regional landscape scale. Current projects include invasive knotweed control on the north coast, invasive sea lavender control in San Francisco Bay salt marshes, and desert knapweed control near Anza Borrego State Park.

Ecologists recognize invasive plants as a top global threat, yet California does not fund a coordinated statewide invasive plant program. Climate change impacts to wildlife will be exacerbated by invasive species, and controlling invasives is one of the recommended strategies for helping wildlife adapt to climate change. Cal-IPC works at the state and federal level to advocate for a better-coordinated and better-funded response to this conservation priority, and works at the local and regional levels to facilitate information exchange and coordination.

To access Cal-IPC's many resources—mapping tools, Best Management Practices, early detection tools, research reports, publications, video materials, and more—visit cal-ipc.org.



© Tejon Ranch Conservancy

Valley oak at Tejon Creek

Landscape-scale conservation of oaks on Tejon Ranch

by **Laura Pavliscak**,
Stewardship Manager,
Tejon Ranch Conservancy

While the majority of California's oaks are located on private lands potentially threatened by urban or agricultural development, approximately 85,000 acres of oak woodlands have been protected on Tejon Ranch. The ranch is the largest contiguous private property in the state and one of California's most biodiverse conserved areas, due to the convergence of multiple ecological regions on the property—the Sierra Nevada, Central Valley, Mojave Desert, and Southwestern California regions. Tejon Ranch Conservancy, a member of California Oaks Coalition, was established in 2008 through an agreement between Tejon Ranch Company and a number of conservation organizations.

Although Tejon Ranch represents about 0.25 percent of the spatial area of the state, 13 percent of California's native flora have been documented here, including one-third of the state's oak taxa. The ranch encompasses most of the Tehachapi Mountain range, with diverse oak communities thriving in this extremely complex topography, which ranges from 1,000 to 6,000 feet in elevation and spans from the Mojave Desert to the San Joaquin Valley. Tejon Ranch hosts several special-status species associated with oak woodlands, including Tehachapi slender salamanders, yellow-blotched ensatinas, golden eagles, and one of the last significant populations of purple martins that nest in oak cavities.

The conserved lands of Tejon Ranch are protected from development, but they are not exempt from the perils facing oak woodlands across the state. Invasive species present a significant threat to oaks on the ranch, influencing both the regeneration of woodlands and the survivorship of established trees.

Invasive annual grasses and herbaceous plants have become a common understory, competitively excluding the emergence and establishment of oak seedlings. Cattle grazing is an integral tool to reduce understory on Tejon Ranch, but it can also inhibit oak regeneration through the consumption of acorns and seedlings and soil compaction. In addition to invasive plants, thousands of feral pigs, which consume acorns, root extensively in Tejon's woodlands and under tree canopies, depredating native animals that live in these habitats.

Invertebrate pests are another serious concern. Goldspotted oak borer beetles were introduced to Southern California oak woodlands, likely through the transport of firewood (visit <http://bit.ly/1SJvsR8> for more information). They have decimated oaks from San Diego to Los Angeles, and no effective treatment methods can stop landscape-scale infestations once they begin. To date, goldspotted oak borers have been found in the La Liebre Mountains on the southern border of Tejon Ranch. Drought also increases the impact of invasive species in Tejon oak communities, leading to stressed trees with thin canopies, higher tree mortality, and low recruitment rates.

The Conservancy strives for thoughtful management to ameliorate the effects of invasive species impacts and drought. Controlled, timely grazing and weed abatement can help to reduce the invasive understory in these oak woodlands. Feral pigs are hunted and restrictions on the importation of firewood have kept the goldspotted oak borer at bay. Through landscape-scale photo monitoring we are tracking the toll of drought in our oak communities. We are learning as we go, both anticipating and adapting to threats as we aim to enhance and preserve the diverse and critical oaks, which provide vital habitat to Tejon's plant and wildlife communities.

Fire — continued from cover page

to disturbances that have no ecological or evolutionary analog. Typically, the forest floor is bulldozed, reburned, planted with uniform and overly dense ponderosa pine seedlings, and subjected to repeated herbicide applications. The result is that the benefits of fire are, in effect, cancelled out. “Rapid re-establishment of extensive tracts of dense coniferous forests is not appropriate for many other ecological values,” venerable forest ecologist Jerry Franklin wrote in 2004, after the Biscuit Fire in northern California, “By creating such plantations, we are simply creating the conditions—the fuel—for the next uncharacteristic stand-replacement fire!”

Numerous plant species, including many that are rare, depend on wildfire for regeneration. After fire, these populations need to flower and reproduce annually to restore the seed bank necessary to maintain them over time. Habitat is optimal for early successional plant species for approximately 30 years after wildfire, and sometimes much longer in the case of forest stands with poorer soil types. During the post-fire period, forest biodiversity is at its highest. Food in the form of acorns, seeds, nuts, foliage, and berries is plentiful, as are habitat elements for cover, nesting, resting, denning, and birthing. The early forest is truly the foundation of the forest food web.

After forest canopy closes again, some 30 to 50 years after fire, early successional plants begin to disappear, but in reality, they are still there. They exist as seeds in the soil seed bank, where they remain dormant for years—decades or longer—until the next wildfire brings them to life, and another round of forest successional processes begins. Post-fire salvage logging and replanting interrupts this cycle and may lead to extirpation of even relatively common forest species.

Other beneficial elements from fire are structural, and include legacy structures such as snags and large down wood that remain after fire. “The early-successional habitat that some-

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© Mike Eaton, Cosumnes River Coalition

Valley oak woodlands are adapted to winter and early spring floodwaters, which slow and spread storm runoff and recharge groundwater.

Groundwater overdraft threatens riparian oak communities

by Mike Eaton,
Cosumnes River Coalition

Is groundwater overdraft a sentence of slow death for many of the Central Valley’s remaining groves of valley oak trees? That question is acquiring a new official urgency with the gradual implementation of California’s Sustainable Groundwater Management Act (SGMA), which took effect in 2015. Last among states to mandate groundwater management, California law and policy treated groundwater and surface water as independent systems, despite abundant scientific evidence to the contrary.

SGMA mandates the preparation of local plans to identify and gradually address the “undesirable results” of groundwater extraction, including impacts on groundwater-dependent ecosystems, which include streams and marshes historically maintained by high groundwater levels. Questions addressed by these plans include, for example, “Is a riparian forest sustained historically by high groundwater levels a groundwater-dependent ecosystem?” and “Is groundwater overdraft that denies seedling oaks the moisture they need to survive an undesirable result?” SGMA is driving researchers to assess the relationship between oak forest vitality and groundwater levels and, more broadly, the linkages between ecosystem health and groundwater.

One important laboratory for this work is the Cosumnes River Preserve—the Cosumnes lies between the larger American and Mokelumne River drainages. The Preserve protects a necklace of riparian oak forests that stretch from the tidal zone of the Cosumnes River, where groundwater levels are high, to areas five miles upstream, where groundwater withdrawal for agricultural and municipal uses has lowered groundwater levels substantially and created deep cones of depression. The Nature Conservancy, one of the Preserve’s major landowners, is leading this research under the direction of groundwater scientist Melissa Rohde, and stewardship ecologist Sara Sweet. The research team is focusing on the recruitment (survival past seedling stage) of new valley oaks and the overall health of the entire forest plant community, as well as developing information on the age and diversity of forest species from soil level to tree top. The team is developing metrics of diversity to complement more obvious measures of recruitment success, and has been correlating these to groundwater levels as measured by monitoring wells and in electrical conductivity assessments of water saturation in soils beneath forests.

The results to date are concerning. The Preserve’s lowest elevation forest, surrounded by perennial tidal water that sustains high groundwater levels, is a dense, mixed-age marvel, lush with vegetation ranging from whiteroot sedge at the soil level to native California grape pushing to the top of the tallest oaks. Five miles away, where ground surface elevations are about 20 feet higher and groundwater elevations are 40 to 60 feet below sea level, the forest has no young trees and no mid-story vegetation.

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Groundwater — continued from page 4

Further research is needed to correlate groundwater levels, forest health, and other factors, such as soil type. Work to date has confirmed that riparian forests are indeed groundwater-dependent ecosystems. The ecological integrity of our remaining riparian oak forests has been undermined by groundwater overdraft, an issue that will need to be addressed—and fixed—as local entities develop Groundwater Sustainability Plans that meet the requirements of the new law.

Napa County initiative update

Wildlife of all sorts is the bi-catch of development, and there's no release for it. The loss of habitat is as culpable as purposeful destruction of wildlife... Author James Conaway, <http://bit.ly/2y3a9SD>

California Oaks has been reporting on the roadblocks proponents of the Napa Water, Forest, and Oak Woodland Protection initiative of 2016 faced. In response, a new initiative, developed by proponents of the 2016 measure in collaboration with Napa Valley Vintners, was recently submitted to the county. The deadline to qualify the measure for the June 2018 ballot is December 5.

Napa County Watershed and Oak Woodland Protection Initiative of 2018 would amend county code and the General Plan for Agricultural Watershed-zoned lands that are not currently operating as vineyards. It would establish water quality buffer zones that prohibit tree removal, except in very limited circumstances, on parcels one-acre and greater.

The measure would also establish an

oak removal limit of 795 acres after September 1, 2017 within the Agricultural Watershed Zoning District (AWZD) after which removals will only be allowed in very limited circumstances. The 795 acres track to vineyard acreage conversions envisioned in Napa County's General Plan, which anticipated oak woodland removal with the build out of new vineyard development through 2030.

Oak removals within the AWZD will also be subject to a new mitigation ratio of 3:1, replacing the current ratio of 2:1 for replacement or permanent preservation of like habitat when retention of existing vegetation is found to be infeasible. A qualified professional must prepare the mitigation plan and at least 80 percent of the replanted trees must survive at least five years.

County of San Luis Obispo oak protections

San Luis Obispo County adopted an oak woodland ordinance that went into effect in May 2017, as reported in the Spring/Summer 2017 newsletter. The ordinance governs activities on unincorporated lands outside of the county's coastal zone where California Coastal Zone Act protections are in place. For an overview of the ordinance visit: <http://bit.ly/2xkhJbh>. Additional information, including a summary of provisions of the ordinance, a link to the ordinance language, a link with information for landowners interested in preparing oak woodland management plans, and a link to individuals and consulting firms that Department of Planning and Development has approved for preparing management plans is at: <http://bit.ly/2y4k1in>.

San Luis Obispo County Planning and Building Department staff members con-

ducted outreach about the ordinance's implementation and are reviewing a number of oak woodland management plans submitted by landowners. Jacqueline Protsman, a Planner with the Department, can answer questions from interested landowners: (805) 781-4979 or jprotsman@co.slo.ca.us.

The ordinance was enacted in large part because of the active engagement of San Luis Obispo's citizenry and civic institutions. Its effectiveness too will be reliant on input from the county's stakeholders, including conscientious landowners. The county welcomes feedback on the implementation of ordinance—possible violations, areas where it could be strengthened, or ideas for outreach. Please contact Ms. Protsman with such feedback.



Whitewater, Bear River just above Dogbar Bridge, July 2017

New dam fight rages in Sierra Nevada oak-forested lands

by Otis Wollan,
Bear River Awakening

In the heart of the Sierra Nevada, controversy swirls over the proposed Centennial Dam. Promoted as a "climate change solution," the dam would flood the last seven miles of publicly accessible, free-flowing Bear River, inundating over 140 Native American sites, including eight village and burial sites, and over 2,200 acres of oak-forested lands. Also at risk are two federally listed species (valley elderberry longhorn beetle [*Desmocerus californicus dimorphus*] and California red-legged frog [*Rana draytonii*]), four state species of special concern, and four sensitive plant species.

The rich forests of black oak and canyon live oak, mixed with sugar pine and ponderosa pine, supported a dense population of Nisenan tribes along this Bear River trade route. Next came the Emigrant Trail, the Transcontinental Railroad, the Rising Sun Mine and stagecoach crossings, marble and limestone mines, and finally today's residential, recreation, and tourist economies along the corridor. Lands are held by California Department of Fish and Wildlife, U.S. Bureau of Land Management, and local public and private entities.

The Nevada Irrigation District (NID) first proposed this dam in 1926. Rejected for almost a century, NID argues this billion-dollar project will protect water supplies from the vagaries of climate change and disappearing snowpack. Our analysis points to flawed precipitation and river flow projections by NID, and to far greater potential in watershed restoration, enhanced groundwater storage, and the adoption of conservation measures.

Rarely have battle lines been drawn more clearly. Four Nisenan tribes, environmentalists, recreationists, and local residents are rallying to the cause. Leading the opposition is the Foothills Water Network, which is coordinating over 20 environmental, recreation, and tribal groups, including American River Watershed Institute's Bear River Awakening Project. The network is developing long-term plans to protect the river's cultural and natural resources. California Wildlife Foundation/California Oaks is supporting the Bear River Awakening Project's analyses of alternatives to Centennial Dam, public education efforts, and coalition-building activities (www.bearriver.us).

Crestridge Ecological Reserve protects San Diego County's biodiversity

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Greater Crestridge Ecological Reserve

by Michael Beck,
Executive Director,
Endangered Habitats Conservancy

San Diego County's Mediterranean climate, matrix of micro environments, and varied topography have produced an extraordinary abundance of plant and animal species—more than any other county in the continental United States. San Diego is also the southernmost county in the country's most populous state, with commensurate development pressures and high land values. These factors have earned the region the dubious distinction of being a globally significant biological hot spot—an area with very high biodiversity and an equally high number of rare and endangered species.

In response, San Diego adopted the Natural Communities Conservation Plan (NCCP) in the mid 1990s. NCCP is a partnership between U.S. Fish and Wildlife Service, California Department of Fish and Wildlife (CDFW), local governments, and environmental organizations to conserve and recover sensitive and listed plant and animal species through habitat acquisition, species monitoring, and adaptive management measures that meet state and federal Endangered Species Act standards. The county's Multiple

Species Conservation Program (MSCP) is a sub-regional plan under NCCP, which is implemented through local subarea plans. The plan covers 85 plant and animal species, encompassing an area of approximately 180,000 acres, which provides habitat for native plants and wildlife. The **Endangered Habitats League** (EHL, www.ehleague.org), a member of California Oaks Coalition, formed in 1991 to drive high conservation standards and policies for the NCCP and MSCP and has been a key stakeholder since that time.

Conservation strategy: The 2,600-acre Crestridge Ecological Reserve, located between El Cajon and Alpine, forms one of the biological cores that advance the county's habitat conservation strategy. Protected in 2001, the property is owned by CDFW and managed by **Endangered Habitats Conservancy** (EHC, www.ehleague.org/EndangeredHabitatsConservancy.html), a land trust established by EHL in 2005 to implement the MSCP. Although the Reserve is located on the urban fringe, it supports numerous sensitive species, including mountain lion, American badger, ringtail (*Bassariscus astutus*), Blainvill's horned lizard, San Diego thornmint (*Acanthomintha ilicifolia*), Dehesa bear grass (*Nolina interrata*), the easternmost population of endangered

Encinitas baccharis (*Baccharis vanessae*), and the largest extant population of the beautiful rare endemic, Lakeside ceanotheus (*Ceanotheous cyaneus*).

Frank Gatlin was the owner of Crestridge when efforts to conserve the property were initiated. He had an approved map for a 92-lot subdivision, yet was open to the conservation vision and eventually sold the property at a significant discount. This reestablished two key regional wildlife linkages fragmented by private ownership. It also catalyzed a cascade of subsequent acquisitions and conservation actions, thereby creating the Greater Crestridge Ecological Reserve (the Reserve).

Building the Reserve: Since 2005, EHC has acquired and added over 20 additional properties to this area, some as small as a few acres, and others hundreds of acres in size and at risk of major subdivision development. Parcel by parcel, key linkages have been conserved. Today the Greater Crest-

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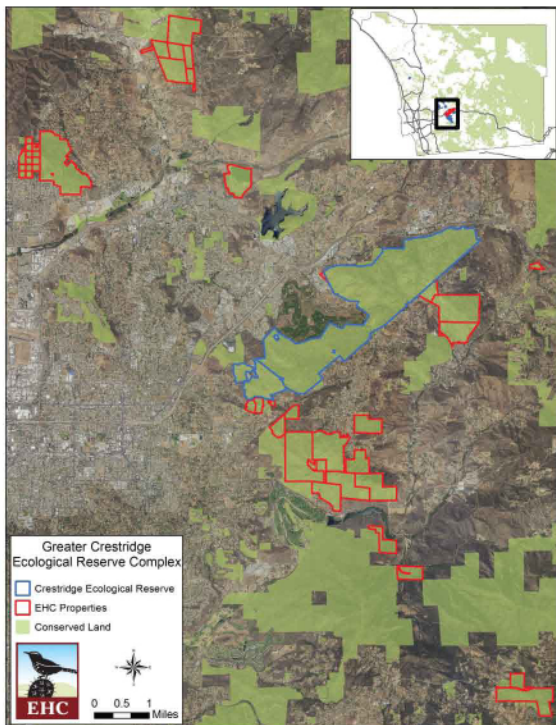
Lakeside ceanotheus
(*Ceanotheous cyaneus*)

© Craig Benkman



Ringtail (*Bassariscus astutus*)

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ridge Ecological Reserve totals over 5,500 acres and supports over 20 species covered by the MSCP. Acquisition costs to date, funded primarily by grants from the California Wildlife Conservation Board (WCB) and the Federal Cooperative Endangered Species Conservation Fund, total over \$40 million. Additionally, Mr. Gatlin donated Crestridge conservation credits—units of exchange defined by the ecological value associated with his action to not convert natural habitat for economic purposes—upon transfer of the property. The purchase of mitigation credits by developers has funded an endowment and an acquisition account, which are directed and supervised by Region 5 of CDFW and managed by California Wildlife Foundation (CWF).

Advancing conservation on the Reserve: EHC engaged its primary science partner, the Conservation Biology Institute, to develop a resource monitoring and adaptive management plan for the Greater Crestridge Ecological Reserve, seeking to establish the highest biological standards for implementing the MSCP. Most recently, the Conservation Biology Institute completed the Strategic Resource Management and Monitoring Plan for the Reserve. Management and Monitoring Plan for the Reserve.

EHC works closely with state and federal wildlife agencies to identify key acquisition targets, implement species monitoring, and identify management priorities. Land agents from the California Wildlife Conservation Board bring significant knowledge and skill to advance the conservation strategy, implement the MSCP, and achieve important state conservation objectives. State wardens have been highly responsive to security issues and have been key in stemming illegal motorcycle use. The San Diego County sheriff and CalFire are integral partners on security and wildfire-related issues.

Engaging the public: Endangered Habitats League founded **Earth Discovery Institute** (EDI, www.earthdiscovery.org) to develop and implement an environmental education program for Crestridge to advance a broader understanding of San Diego's unique biodiversity. EDI implements innovative and effective environmental education programs grounded in Next Generation Science Standards curriculum, serving 3,000 elementary students

annually. EDI, now an independent 501(c)(3), has also led the development of relationships within the community of Crest to address neighbor, security, and public use concerns through volunteer work programs and the establishment of the Eyes on the Reserve group. Over the years, these programs and relationships have delivered significant dividends that advance the core biological conservation objectives for the Reserve. Earth Discovery Institute has received support from CWF's Vesta Fund for Conservation and Restoration of Wildlife Habitat and from California Oaks. (See the Spring/Summer 2017 Oaks newsletter to read more about the EDI's educational programs.)

Enduring results: The Crestridge endeavor to conserve a critical core area of biodiversity in perpetuity has required effort, generosity, and many dedicated individuals who understand their relationship and responsibility to the natural world. Restoration management and monitoring activities have led to significant recovery of target species. Outreach and education activities have informed and inspired the next generation of environmental stewards and engendered positive engagement with the local community.



Earth Discovery Institute is educating and inspiring the next generation of environmental stewards.

© Michael Beck



Black oak sprouting after King Fire, 2015.

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times develops following wildfire is optimal for many bird species (including neotropical migrants), game species, and important ecological processes, such as nitrogen fixation,” Franklin told a subcommittee of the U.S. House of Representatives in 2005. “Naturally disturbed areas with their legacies of dead wood intact and not yet dominated by closed coniferous forest are, in fact, the most biodiverse stage in forest succession. Providing for early successional habitat of this type by leaving all or portions of some naturally disturbed areas unsalvaged and unplanted is certainly an appropriate component of a regional plan to maintain biological processes and ecological diversity.”

On public lands such as those impacted by the Rim and King Fires, a portion of the burned acres will not be reforested. This is partially due to public concerns and negotiations, and partially due to the inaccessibility of lands that for now, at least, will be allowed to recover naturally. However, on private forest lands managed by the timber industry, conversion of post-fire habitat into tree plantations has already taken place. Oaks are sprayed with herbicides along with other hardwood species that provide abundant and nutritious resources for wildlife. Across tens of thousands of acres, these practices virtually guarantee that every fire that threatens these investments will be suppressed, thereby compounding the current untenable fuel conditions. Without a turn-around in state and federal policy relative to post-fire activities, the impacts on biodiversity are likely to be significant and cumulative.

Additional information:

Learn about the Fire Partnership MOU that is bringing public land managers, CalFire, the U.S. Forest Service, and industry together to promote the use of beneficial fire: <http://bit.ly/2vpJa6k>.

Link to vegetation ecologist Malcolm North’s presentation on fire deficit in the Sierra Nevada: <http://bit.ly/2vCLcw2>.

California Oaks often includes information on issues associated with fire management in the newsletter since fire is an important component of oak woodland and forest ecosystems. A number of California Oaks Coalition member organizations, which include American River Watershed Institute, California Native Plant Society, California Invasive Plant Council, and EPIC, engage in research, education, and/or advocacy associated with issues related to fire in forested and woodland landscapes.



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How you can help:

California Oaks is a fund within California Wildlife Foundation, federal tax identification number 68-0234744. Contributions of cash, stocks, and bonds are tax deductible. California Oaks also works with partners to protect land and establish easements for conservation purposes.

- Send a donation in support of California Wildlife Foundation/California Oaks. A donor directive form is included in this mailing and a secure donation can be made from our website: www.californiaoaks.org.
- Spend time in an oak woodland or forest: www.californiaoaks.org includes a listing of oak landscapes around the state that have public access.
- Please consider including oak conservation in your financial and estate planning efforts. Additional information can be found at www.californiaoaks.org.
- Be vigilant about threats to oak woodlands and oak-forested lands in your community and email California Oaks for information: oakstaff@californiaoaks.org.
- Sign up for the Oaks e-newsletter at www.californiaoaks.org.
- Send letters in support of oak protections. The Oaks e-newsletter and Take Action page on the Oaks website provide background and template letters.

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