

ESSAY

The California Vegetation Treatment Program: integrating biological resource protection into wildfire risk reduction

ALLISON FULLER¹, LARA RACHOWICZ^{2*}, AND HEATHER BLAIR¹

¹*Ascent Environmental, Inc., 455 Capitol Mall, Suite 300, Sacramento, CA, 95814, USA*

²*Ascent Environmental, Inc., 1111 Broadway, Suite 300, Oakland, CA, 94607, USA*

**Corresponding Author: lara.rachowicz@ascentenvironmental.com*

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California's wildfire crisis is continuing and could worsen with climate change. As noted in a report of California Governor Newsom's Wildfire Strike Force (2019): "Climate change has created a new wildfire reality for California. The state's fire season is now almost year-round. More than 25 million acres of California wildlands are classified as under very high or extreme fire threat. Approximately 25 percent of the state's population—11 million people—lives in that high-risk area." Since 2010, the number of wildfires occurring annually has increased, as has the total land area burned. The largest, most destructive, and deadliest wildfires on record in California history were wind-driven wildfires that occurred in 2018¹ (CAL FIRE 2019a, CAL FIRE 2019b, CAL FIRE 2019c). In addition, thousands of fires occur in the state every year that do not reach catastrophic levels.

The state's response to this crisis includes a comprehensive array of risk reduction and management strategies, such as vegetation treatments, home hardening, expanded evacuation capacity, comprehensive emergency planning, and improved land use practices, as well as investment in new suppression and response equipment and resources, use of technology tools, and establishment of strong utility oversight. In May of 2018, California Governor Brown signed Executive Order B-52-18, which bolstered one of these strategies by substantially increasing the pace and scale of vegetation treatments allowed in the state. Under the order, up to approximately 2,000 km² on nonfederal lands are targeted for treatment each year. This expanded target is a substantial increase compared to the current level of vegetation treatment activity in California. Legislation was subsequently passed in 2018 to expand on this Executive Order, including Senate Bill (SB) 1260, which required a streamlined process under the California Environmental Quality Act (CEQA) to help expedite implementation of vegetation treatments to address wildfire risk.

On 30 December 2019, the California Board of Forestry and Fire Protection (Board) fulfilled the SB 1260 requirement for streamlined CEQA coverage by approving the Cali-

¹ Since this article was accepted for publication in May 2020, six of the largest fires in California's history burned in the fall of 2020.

ifornia Vegetation Treatment Program (CalVTP) after certifying its Program Environmental Impact Report (EIR). The CalVTP was developed by the Board, in collaboration with the California Department of Forestry and Fire Protection (CAL FIRE). The CalVTP directs the implementation of vegetation treatments on up to approximately 1,000 km² per year within the treatable landscape of the State Responsibility Area, which encompasses more than 80,000 km² of nonfederal land throughout California. Wildfires occurring in steep topography or high fuel load areas, those that move more slowly through the landscape, and wind-driven fires after wind speeds diminish with weather change are fires that can be further slowed or stopped by vegetation treatment implemented under the CalVTP.

The CalVTP Program EIR is available for use by any state, regional, special district, or local government agency that seeks to fund vegetation treatments or implement treatments where it has land ownership, land management, or other regulatory responsibility in the treatable landscape. More than 200 such potential “project proponent” agencies could implement vegetation treatment projects using the Program EIR, including the California Department of Parks and Recreation, the California Department of Fish and Wildlife (CDFW), the California State Lands Commission, cities, counties, water and irrigation districts, conservation districts and conservancies, park and open space districts, universities and colleges, community service districts, utility districts, flood control districts, water agencies, and transportation authorities.

CEQA requires that public agencies implementing vegetation treatments inform decision makers and the public about significant adverse environmental impacts of proposed projects, and how to feasibly reduce those environmental impacts. The Program EIR is a powerful streamlining tool that is available to expedite environmental review under CEQA while providing environmental protections, which helps achieve the state mandates to increase the pace and scale of vegetation treatments and to conserve important habitats and biodiversity in the state. To maximize streamlining, it is designed to cover a full spectrum of potential biological resources impacts (e.g., effects on sensitive plants and animals, sensitive natural communities, and aquatic resources) and mitigation for treatments throughout the state. Because of this comprehensive analysis, many treatment projects can be covered under the CalVTP, so separate CEQA documents (such as a Mitigated Negative Declaration or EIR) will not need to be prepared.

Individual vegetation treatment projects that seek coverage under the CalVTP Program EIR must prepare a project-specific analysis (PSA), which is a checklist-based evaluation of whether a vegetation treatment project falls within the scope of the CalVTP Program EIR. Completing the PSA checklist and supporting analysis provides the documentation of this evaluation required to streamline CEQA review. If the vegetation treatment project is wholly “within the scope” of the CalVTP Program EIR, as documented in the PSA, the public agency may proceed with implementation after project approval. Depending on the complexity of the treatment project, a PSA may be completed in less than one month.

The CalVTP provides a toolbox of treatment types and treatment activities from which project proponents can select to design individual treatment projects. Treatment types are wildland-urban interface fuels reduction, fuel breaks, and ecological restoration. Wildland-urban interface fuels reduction treatments involve the strategic removal of vegetation to prevent or slow the spread of wildfire between structures and wildlands, and vice versa. Fuel break treatments modify flammable vegetation to reduce wildfire spread while providing a safer location for firefighters to fight fires. Ecological restoration treatments occur in areas

that have departed from the natural fire regime as a result of fire exclusion. These treatments restore ecosystem processes, conditions, and resiliency by moderating uncharacteristic wild-land fuel conditions to reflect historic vegetative composition, structure, and habitat values.

Treatment activities under the CalVTP are prescribed burning, mechanical treatment, manual treatment, prescribed herbivory, and herbicide application. Prescribed burning treatments involve the intentional application of low-intensity fire to target vegetation in a predetermined area. Typically, control lines or fuel breaks are constructed before prescribed burning is initiated. This treatment activity also includes pile burning, which typically is implemented after vegetation is removed during other treatment activities. Mechanical treatments involve the use of motorized equipment (e.g., tractors, masticators) to cut, mulch, uproot, crush, or chop target vegetation. Manual treatments include the use of hand tools and hand-operated power tools (e.g., chainsaws, loppers, pruners) to cut, clear, or prune herbaceous or woody species. Prescribed herbivory entails the use of domestic livestock (e.g., goats, sheep, cattle) to reduce a target plant population. Herbicide application is implemented through utilizing several ground-application methods.

Treatment activities could be applied within the approximately 80,000-km² treatable landscape, which contains a vast variety of habitat types. To address environmental impacts on wildlife, plants, sensitive natural communities, and habitat at this scale, the CalVTP Program EIR was organized geographically into “ecoregions” using the U.S. Forest Service National Hierarchical Framework of Ecological Units to capture areas with similar or recurring patterns of physical and biological characteristics. This approach provided a relevant geographic and ecosystem context for the impact analysis and will increase the efficiency of locating information during project-specific review of later treatments under the CalVTP.

Because the geographic scope of the program is large, over 300 special-status wildlife species, over 1,000 special-status plant species, hundreds of sensitive natural communities, and over 1,800 km² of aquatic resources were addressed in the Program EIR impact analysis. The ecoregion organization approach was used to analyze all these sensitive natural resources, and special-status wildlife species were further organized by grouping them into life history categories that respond similarly to the range of treatment activities (Figure 1). It was assumed that life history traits (e.g., breeding ecology, preferred habitat) predict potential impact mechanisms. For example, the tree nesting and cavity nesting category includes arboreal birds, as well as mammals, such as fisher (*Pekania pennanti*), Humboldt marten (*Martes caurina humboldtensis*), and ringtail (*Bassariscus astutus*), because physical modifications to breeding habitat as a result of treatment activities, including loss of tree or cavity habitat, would likely result in similar impacts for all these species.

Implementation of treatment activities would involve the use of prescribed burning, heavy equipment, and fire crews—activities that may adversely affect wildlife present in the treatment area to varying degrees. Impact mechanisms may include loss of active nests or dens when vegetation is removed, burned, or disturbed. Individuals may be injured or killed inadvertently by heavy machinery or fire crews, or by fire if they cannot flee during prescribed burning activities. Wildlife habitat may also be modified or lost during any of the treatment activities.

To address these potential impacts on wildlife and habitat, the CalVTP mitigation strategy was developed in close coordination with resource agencies, including the California Natural Resources Agency, CDFW, and the California Coastal Commission, and considered species and habitat protection, as well as feasibility and efficiency of pro-

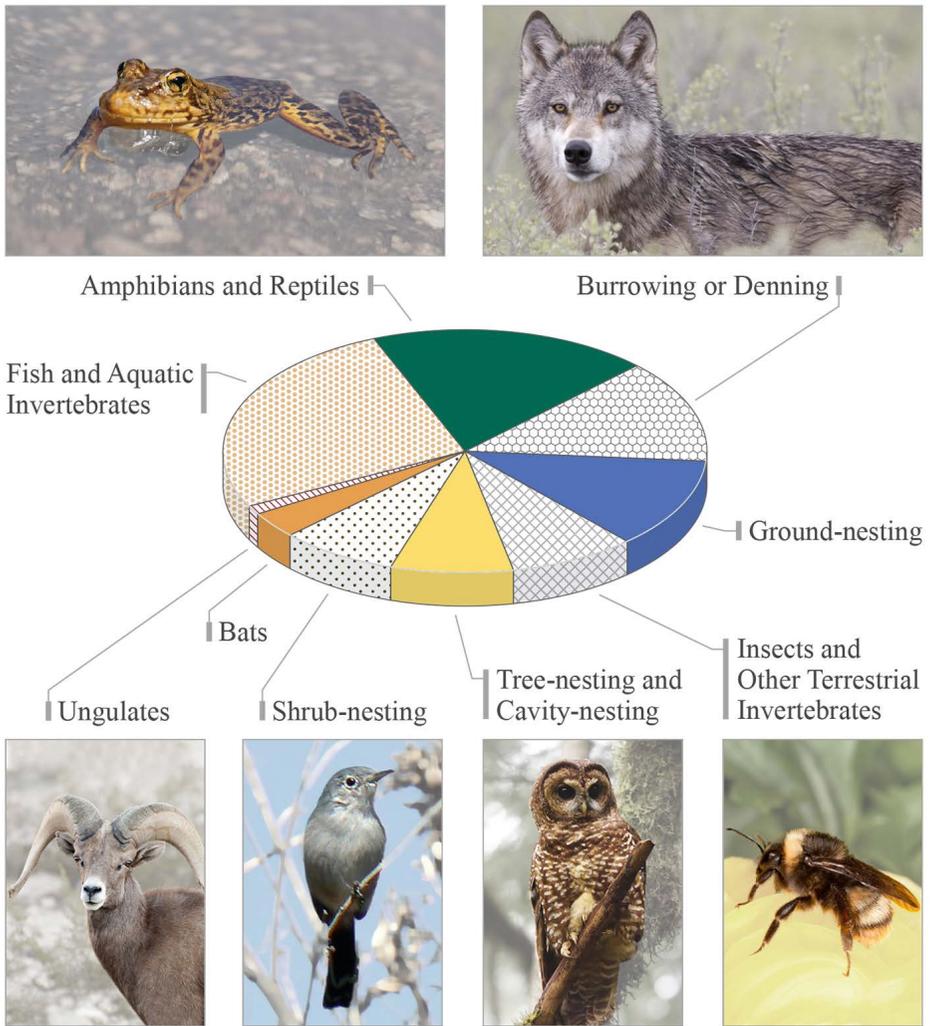


Figure 1. Life history categories considered in analysis of special-status wildlife in the CalVTP Program EIR.

tective measures. This strategy includes Standard Project Requirements (SPRs), which are integrated into treatment design to avoid and minimize impacts and include identification of biological resources through reconnaissance-level surveys and review of data sources (e.g., California Natural Diversity Database), focused or protocol-level surveys, and impact avoidance through physical no-disturbance buffers or seasonal limited operating periods. If, after implementation of SPRs, completion of the PSA identifies residual impacts that are potentially significant, a tiered mitigation approach using performance standards for maintenance of habitat function would be implemented that is tailored to the resource-specific conditions of the treatment project. Maintenance of habitat function includes retention of critical features that are important to wildlife, such as snags, large trees with cavities, and coarse wood debris as well as required canopy cover for species like northern spotted owl (*Strix occidentalis caurina*), California coastal gnatcatcher (*Poliptila californica*), and

fisher. If a treatment project cannot be modified or redesigned to maintain habitat function, compensatory mitigation and incidental take authorization from CDFW or the U.S. Fish and Wildlife Service may be necessary.

Adaptable SPRs and mitigation measures were designed according to listing status to apply to as many species as possible. For example, to mitigate impacts on state-listed or federally listed wildlife species and avoid take, treatments will not be implemented in habitats determined to be occupied by listed wildlife species. Alternatively, CDFW or other applicable responsible agencies (e.g., U.S. Fish and Wildlife Service) will be consulted to determine whether treatments could be implemented in a species' habitat but outside the sensitive period of its life history (e.g., breeding season) to avoid take. Following this tiered approach, if residual impacts would remain significant after implementation of applicable measures to avoid take through elimination of direct impacts and maintenance of habitat function, then consultation with CDFW or other applicable responsible agencies and implementation of compensatory mitigation would be required. Species-specific mitigation measures would be required for some species that did not fit within the overall framework of mitigation by listing status (e.g., bighorn sheep [*Ovis canadensis*], special-status butterflies), because these species may have extremely limited ranges, may occur within very specific habitat types, or may be difficult to detect during reconnaissance-level or focused surveys.

Not all effects of vegetation treatment on wildlife habitats and species are adverse. Some vegetation treatments, especially those that fall under the ecological restoration treatment type, may improve wildlife habitat over variable time scales by restoring habitat degraded by decades of fire suppression; restoring natural fire ecology and processes; and reducing the risk of catastrophic wildfire, which can damage or eliminate wildlife habitat. It is also likely that some wildlife species will be able to flee from fire crews or heavy equipment or could relocate to nearby suitable habitat if habitat on a treatment site is altered or removed.

California is experiencing a wildfire crisis. Vegetation treatments are a critical component of the state's approach to protecting residents, infrastructure, and prized biodiversity from the devastating effects of wildfire. Thorough analysis of impacts at a species, habitat, and treatment activity level, conducted using the best available science, is critical to avoid or minimize environmental impacts on wildlife and to conserve wildlife habitat, in particular for special-status species. The CalVTP Program EIR, especially its PSA checklist for later vegetation treatment projects, SPRs, and mitigation measures, provides a powerful tool to expedite the implementation of vegetation treatments to reduce wildfire risk while conserving biological resource values.

The CalVTP Program EIR and PSA checklist template are available on the Board's website (<https://bof.fire.ca.gov/projects-and-programs/calvtp/>).

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