

Appendix A

A number of stakeholders have submitted project proposals to be included in the CWPP. Their inclusion in the plan does not ensure funding or permitting. The following list shows the project proponent and type. Specific plan details are maintained by CAL FIRE and the RCD.

Santa Cruz County – Road right of way and fuel reduction project in the Trabing Fire area.

Big Creek Lumber Company – Roadside shaded fuelbreaks on specific truck trails and implementation of a standardized road naming program.

Pilkington Road Area – Arana Gulch Watershed Alliance and the RCD – Road crossing project restoring access between the Pilkington Road neighborhood and Paul Sweet Road.

UCSC Natural Reserve – Research alternatives to burning in chaparral habitats. Post Highlands Recreation District

BLM – Roadside fuel reduction along Warnella, San Vicente, Swanton, Laguna Creek and Bonny Doon Roads.

Bonny Doon Community Fire Protection Projects – Roadside and neighborhood shaded fuel breaks in the Bonny Doon area.

Deer Creek Landowners Inc. – Roadside fuel reduction projects on more than 15 miles of roadways in the Deer Creek Road area.

Las Cumbres – Roadside fuel reduction throughout the community.

Highlands Recreation District – Maintain existing and develop new fire breaks.

Soquel Fire Safe Council – Roadside shaded fuel breaks.

Appendix B

Map of proposed projects/fuelbreaks

Appendix C

SENSITIVE HABITATS AND PERMITTING

It's widely recognized that wildfires are a natural and vital force in maintaining biological diversity, including species, habitats, watersheds, nutrient cycles, and landscape patterns. However, high severity wildfires, like those experienced recently on the Central Coast, can result in loss of habitat and cause significant direct wildlife mortality. Thus, the state mandated defensible space guidelines have become increasingly important to implement not only for public safety, but for environmental protection as well. However, it is important to recognize that balance between habitat protection and degradation. This chapter aims to provide guidance on natural resource protection in conjunction with fuel load management.

Natural Resources

From the shoreline of the beautiful Monterey Bay National Marine Sanctuary to the interior redwoods, San Mateo and Santa Cruz Counties are rich in terms of biological diversity and uniqueness. Hundreds of miles of waterways – creeks, streams, and rivers – thread themselves through both counties. Sensitive habitats host a variety of threatened and endangered species. Scattered wetlands provide vital ecosystem services. Many of our communities in areas that are prone to wildfire have been built adjacent to these valuable natural resources. We can work to increase human safety while also maintaining biological diversity on a landscape prone to wildfire by considering the natural resources surrounding homes and other structures and modifying fuel load management activities accordingly.

Santa Cruz Long-toed Salamander

If you are within one mile to the ocean side or three miles to the mountain side of Highway 1, between Rio Del Mar and Buena Vista, you are probably in Santa Cruz Long-toed Salamander (*Ambystoma macrodactylum croceum*) habitat. The salamander

inhabits upland scrub and woodland areas (particularly coast live oak (*Quercus agrifolia*) and Monterey Pine (*Pinus radiata*) during the nonbreeding season (early November to April).

This State and federally protected species was historically found in montane regions from Santa Cruz County to Baja California, Mexico. Today, only seven populations are known within Santa Cruz and Monterey Counties. The entire extent of this species has been proposed as critical habitat (specific areas that have been found to be essential to the conservation of the species and which may require special management considerations or protection). The loss of native vegetation, and invasion of exotic plant species, is one of the primary reasons for decline of the species. To minimize your impact, while achieving fuel reduction, follow these few guidelines.

- Leave as much native vegetation on your property as possible.
- Control invasion and spread of non-native plants, which can colonize disturbed areas, particularly French broom (*Genista monspessulana*), eucalyptus (*Eucalyptus* spp.), and ice plant.
- Avoid soil disturbance, as salamanders spend much of their life underground
- Try to maintain a 12 to 18 inch tall understory of native vegetation and separate it from the canopy by limbing trees 10 feet above ground level.
- Leave damp logs with plenty of soil contact.

San Francisco Garter Snake

If you live within the following area: the northern boundary of San Mateo County south along the eastern and western bases of the [Santa Cruz Mountains](#), to the Upper [Crystal Springs Reservoir](#), and along the [Pacific](#) coast south to Waddell Creek, your activities may impact the San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*).

There are only six known significant populations of the San Francisco garter snake remaining, and at least four of these populations have declined in recent decades. This

State and federally protected species' preferred habitat is a densely vegetated pond near grassy uplands with brushy cover. They are threatened by loss and adverse modification of wetland and adjacent upland habitat, as well as loss of prey, particularly the California red-legged frog. To minimize your impact, while achieving fuel reduction, follow these few guidelines.

- Leave as much native vegetation on your property as possible.
- Control invasion and spread of non-native plants, which can colonize disturbed areas, particularly French broom (*Genista monspessulana*), eucalyptus (*Eucalyptus* spp.), and ice plant.
- Avoid soil disturbance and maintain leaf litter
- Try to maintain a 12 to 18 inch tall understory of native vegetation and separate it from the canopy by limbing trees 10 feet above ground level.

California Red-legged Frog

The historic range of the federally threatened California red-legged frog extended along the coast from the vicinity of Point Reyes National Seashore in Marin County, California and inland from the vicinity of Redding, California southward to northwestern Baja California, Mexico (Jennings and Hayes 1985, Storer 1925, Hayes and Krempels 1986). Extirpated from 24 of the 46 counties once occupied, the species is still common in the San Francisco Bay area and along the central coast. They are threatened by loss and adverse modification of wetland and riparian habitat.

While it is hard to describe their exact geographic location, the California red-legged frog can commonly be found in both aquatic and upland habitats. The adults require dense, shrubby or emergent riparian vegetation closely associated with deep (greater than 2 1/3-foot deep) still or slow moving water. The largest densities of California red-legged frogs are associated with deep-water pools with dense stands of overhanging willows (*Salix* spp.) and an intermixed fringe of cattails (*Typha latifolia*). Well-vegetated terrestrial areas within the riparian corridor may provide important sheltering habitat during winter.

California red-legged frogs have been found estivating (entering a dormant state during dry weather) in small mammal burrows and moist leaf litter up to 100 feet from water in adjacent dense riparian vegetation. During the winter season, the species may travel a few miles to return to a breeding pond.

Critical habitat (specific areas that have been found to be essential to the conservation of the species and which may require special management considerations or protection) was designated for the California red-legged frog on March 13, 2001. Almost 30,000 acres was designated as critical habitat within Santa Cruz and San Mateo counties. To minimize your impacts, follow the guidance measures provided for the Santa Cruz Long-toed Salamanders and for work near a riparian corridor and wetlands.

Marbled Murrelet

The Marbled Murrelet is generally restricted to old-growth redwood forests, although murrelets have been found in mature and second-growth forests in areas where residual older trees remain. The designation of critical habitat for the marbled murrelet identifies 32 critical habitat units, including 48,000 acres in central California. The estimated 2000 breeding individuals in California are largely concentrated on coastal waters off Del Norte and Humboldt counties (about 75% of the population), and in lesser numbers off San Mateo and Santa Cruz counties (about 14%) (Sowls et al. 1980).

Stand size is an important factor for marbled murrelets. In California, marbled murrelets are usually absent from stands less than 60 acres in size and generally do not occur in isolated stands of coastal old-growth forest (57 FR 45329). The major cause of decline for the marbled murrelets has been the destruction and fragmentation of the coastal old growth conifer forest. Remnant murrelet populations are dependent on this habitat for reproduction. To minimize your impact to this federally and State-protected species, while achieving fuel reduction, follow these few guidelines.

- Avoid critical habitat, if possible.

- Maintain all old growth trees for murrelet habitat.
- Limit limbing to the lower 10 feet of the tree and avoid limbing of old growth trees in the upper canopy, as the birds nest on the limbs.
- Perform activities after September 15th to avoid the nesting season (late March to September).

Coastal Zone

If you live within the Coastal Zone, there may be limitations and restriction for removal of large, significant, and heritage trees.

Sandhills Habitat

If you live in Bonny Doon, Ben Lomond, or anywhere in the hills west of Soquel-San Jose Road and the soils look like beach sand, you could be in the rare sandhills habitat, a unique community of plants and animals found only on outcrops of Zayante sand soil. The sandhills support two endemic [communities](#); 1) [Sand chaparral](#), dominated by shrub species including manzanita, and 2) [Sand parkland](#), characterized by sparse stands of towering [ponderosa pines](#) with a dense and diverse understory of native wildflowers.

With fewer than 4,000 acres of sandhills left, it is important to protect the four (4) plant and three (3) animal species, which are found nowhere else in the world. The greatest cause of extirpation of populations is the [loss](#), [fragmentation](#), and [degradation](#) of habitat. To minimize your impact, while achieving fuel reduction, follow these few guidelines.

- Leave as much native vegetation on your property as possible.
- Control invasion and spread of non-native plants on newly disturbed areas, which may be fire hazards, such as French broom (*Genista monspessulana*).
- Revegetate, if applicable with native Sandhills plants obtained from local seed sources.
- If the project involves removing woody vegetation (e.g, non-native shrubs or trees), material should not be chipped and distributed on Zayante sand soils as it

may smother existing native plants or inhibit germination of natives which require bare soils.

- Never use sod-forming grasses (i.e. turf) or thick ground cover (i.e. mulch), as it may smother existing native plants or inhibit germination of natives which require bare soils.
- Avoid clearing, burying, or trampling herbaceous material and avoid soil disturbance to protect larva which live underground.
- Leave the roots of removed vegetation, in place, to protect larva which live underground.
- Avoid clearing around dusk in the summer months (May 15 to August 15) to avoid the flight season of sensitive species.
- Avoid stockpiling of vegetation (tree and shrub cuttings, etc.), as it might bury larva.

Maritime Chaparral

While large areas of California's central coast were covered with dense chaparral at the end of the nineteenth century, today, only small, isolated fragments of northern and central maritime chaparral can be found along ridgelines and on coastal terraces between Sonoma and Santa Barbara counties (Holland 1986). Maritime chaparral, which is dominated by manzanita (*Arctostaphylos* ssp.), is considered a threatened habitat type, and is protected by many agencies along the coast of California.

A number of rare manzanitas can be found in this habitat, as well as other rare plant and animal species. Most maritime chaparral species benefit from 'renewal' of the habitat by fire. Deviation from the natural fire frequency may alter the relative proportions of shrubs in the chaparral canopy by favoring seeding *Arctostaphylos* species over crown sprouters (Keeley and Zedler 1978). To minimize your impact, while achieving fuel reduction, follow these guidelines.

- Leave as much native vegetation on your property as possible.
- Control invasion and spread of non-native plants, which can colonize disturbed areas, particularly jubata grass (*Cortaderia jubata*), iceplant (*Carpobrotus edulis* and *C. chilense*), French broom (*Genista monspessulana*), and blue gum eucalyptus (*Eucalyptus globulus*).
- If you are altering manzanitas, (first ensure that it is not rare or protected), allow the manzanita to seed before trimming or leave the first few branches if there is no burl at the ground level of the stem.

Oak Woodlands

Oak Woodlands are dominated by [Coast Live Oak](#) (*Quercus agrifolia*), but also include [Valley Oak](#) (*Q. lobata*), [California Black Oak](#) (*Q. kelloggii*), [Canyon live oak](#) (*Q. chrysolepis*), and other California oaks. The understory may consist of black berry ([Rubus ursinus](#)), hedge-nettle ([Stachys bullata](#)), [snowberry](#) ([Symphoricarpos mollis](#)), and poison oak ([Toxicodendron diversilobum](#)) Many areas of this plant community have been removed or degraded due to exotic species. To minimize your impact, while achieving fuel reduction, follow these few guidelines. Retain as many healthy trees as possible.

- Retain as much native understory as you can.
- Separate the canopy from the understory by limbing up branches.
- Leave island of shrubs where it won't form a fuel ladder to trees, when possible.

Riparian Corridors and Wetlands

A wetland is an area of land whose [soil](#) is [saturated](#) with [moisture](#) either permanently or seasonally. Wetlands are considered the most [biologically diverse](#) of all [ecosystems](#), **comparable to rain forests and coral reefs**. They provide habitat for many different [amphibians](#), [reptiles](#), [birds](#), and mammals.

A riparian corridor is a unique plant community consisting of the vegetation growing near a river, stream, lake, lagoon or other natural body of water. It serves a variety of functions including protecting stream banks from erosion, providing food and habitat for fish and wildlife, and providing protection from flooding. All work should be avoided in these areas, if possible. If it is vital for safety to modify vegetation, follow these few guidelines:

- Leave all the mature vegetation within 100 feet of standing water, 50 feet of a year-round stream, and 20-30 feet of a stream that goes dry regularly.
- Retain as many trees as possible.
- Retain as much native understory as you can.
- Separate the canopy from the understory by limbing up branches.
- Leave island of shrubs where it won't form a fuel ladder, when possible.
- Minimize your noise and plan your activities around sensitive life stages of aquatic species.

Sudden Oak Death (SOD)

Santa Cruz and San Mateo Counties are within the zone of infestation of Sudden Oak Death (*Phytophthora ramorum*). Host plants for SOD occur in many of the vegetation types within our counties. Movement of SOD infected material or host plants is regulated by the county Agricultural Commissioners, the California Department of Food and Agriculture (CDFA) and the Animal and Plant Health Inspection Service (APHIS). The California Oak Mortality Task Force Website contains all the most up-to-date information regarding the status of the disease, treatment and management guidance, current regulations, current events and monthly newsletters. Visit the website at <http://www.suddenoakdeath.org/index.html> to read and download information.

Permitting/Ordinances

According to the State Guidelines regarding defensible space, homeowners engaging in fuel load reduction activities are required to comply with all federal, state, and local laws

and ordinances. To ensure compliance, contact the appropriate agencies for guidance. The following provides a few general items to assist in regulation compliance.

- Maintain some vegetative cover or apply appropriate mulch, such as rice straw. Clearing to bare soils may result in erosion and hillside destabilization
 - Santa Cruz Erosion Control Ordinance 16.22
 - Santa Cruz County Water Quality Control 16.24

- Minimize clearing mature vegetation
 - Santa Cruz Riparian Corridor and Wetland Protection Ordinance 16.30
 - Santa Cruz Sensitive Habitat Ordinance 16.32
 - California Department of Fish and Game
 - Regional Water Quality Control Board
 - United States Fish and Wildlife Service
 - National Marine Fisheries Service

- Retain significant and heritage trees.
 - Santa Cruz Significant Trees Protection Ordinance 16.34
 - Santa Cruz Land Clearing Permit
 - Santa Cruz Coastal Development Permit (if you are in the Coastal Zone)
 - San Mateo County Ordinance 2427
 - Santa Cruz Sensitive Habitat Ordinance 16.32

- Avoid impact to rare habitat and protected species
 - US Fish and Wildlife Service
 - California Department of Fish and Game
 - National Marine Fisheries Service

If you need additional assistance to determine the impacts of fuel load management, please contact your local RCD office or the Natural Resource Conservation Service.

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