

U.S. Department of the Interior
Bureau of Land Management

**PROGRAMMATIC
ENVIRONMENTAL ASSESSMENT
EA Number CA-660-05-38**

DATE: March 28, 2005

TITLE / PROJECT TYPE: Fuels Reduction Permits
For Private Property Defensible Space

APPLICANT: Various private landowners

BLM OFFICE: Palm Springs-South Coast Field Office
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El Centro Field Office
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LOCATION of PROPOSED ACTION: BLM-administered public lands along the wildland-urban interface in Los Angeles, Riverside, and San Diego Counties, California.

PURPOSE AND NEED

The purpose of this programmatic environmental assessment is to analyze potential impacts that may occur by permitting the public to reduce/remove vegetation (fuel reduction) from public lands adjacent to private property.

Within the last five years persistent drought has fueled several devastating fires resulting in the loss of human life and property in Los Angeles, Riverside and San Diego Counties. These same counties are now emphasizing the establishment of defensible space between dwellings and wildland by requiring a minimum 100-foot fuel modification zone. The National Fire Plan and California Fire Plan also emphasize protection of private property and emphasize the need for Fire Agencies to work closely with the local communities to promote fire safety.

The South Coast Management Area of the Palm Springs-South Coast Field Office and the El Centro Field Office administer Bureau of Land Management (BLM) public lands within the aforementioned counties. These highly urbanized counties contain private dwellings that are located within 100 feet of BLM administered lands. The BLM has received several requests from private landowners to clear vegetation from the public lands, in order to comply with county regulations requiring a minimum 100 foot defensible space.

The California State BLM, consistent with its authorities and responsibilities under the Federal Land Policy and Management Act of 1976 (FLPMA), is charged with managing public lands in a manner that will "protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values.... and that will provide for outdoor recreation and human occupancy and use." Under 43 CFR 2920 the BLM is authorized to issue short-term revocable permits for the use of public lands for specified purposes.

LAND USE PLAN CONFORMANCE and REGULATORY COMPLIANCE

A. Land Use Plan Conformance

In compliance with 43 CFR 1610.5-3, the proposed action described in this environmental assessment has been reviewed and has been found to be in conformance with the approved Land Use Plan: *South Coast Resource Management Plan* (1994) and the *Eastern San Diego County Management Framework Plan* (1981).

BLM's National Fire Plan and the State Fire Plan emphasize protection of private property and define the need for Federal Agencies to work closely with local communities to promote fire safety through education.

B. Wildlife and Plants

A number of public laws, acts, executive orders, and regulations provide direction to the BLM in managing wildlife resources. These include, but are not limited to: Sikes Act of 1960 (as amended); National Environmental Policy Act of 1969; Fish and Wildlife Coordination Act (16 U.S.C. 661-666c); Endangered Species Act of 1973 (as amended); Joint Counterpart Endangered Species Act Section 7 Consultation Regulations California Endangered Species Act of 1984; Executive Order No. 11514, Protection and Enhancement of Environmental Quality; Migratory Bird Treaty Act of 1918 (as amended); Executive Order 13186 of 2001, Responsibilities of Federal Agencies to Protect Migratory Birds.

The BLM has translated applicable parts of these laws, acts, and executive orders into policies and guidance, which are contained within the BLM Manual system. Manual 6840 provides guidance to the Wildlife Program for Special Status Species Management. BLM Manual 6740 provides direction for Wetland-Riparian Area Protection and Management

The BLM Special Status Species Management policy requires that actions authorized by the BLM shall further the conservation of federally listed and other special status species and shall not contribute to the need to list any special status species under the provisions of the ESA or designate additional sensitive species under provisions of this policy.

Endangered Species Act (ESA). The provisions of the ESA, as amended, apply to plants and animals that have been listed as endangered or threatened, those proposed for being listed, and designated and proposed critical habitat. The responsibility for carrying out the ESA was assigned to the Federal Government (50 CFR Part 402).

There are a total of 18 sections within the ESA, 9 of which contain requirements or authorizations for the BLM. For the purposes of the proposed action, the following sections of

the ESA are most applicable. A summary of each section taken from the BLM 6840 Manual is included:

Section 2 (Policy on conservation of listed species). The BLM shall seek to conserve listed species and shall utilize its authorities in furtherance of the purposes of the ESA.

Section 7 (Interagency Coordination). Outlines requirements and procedures for interagency cooperation to conserve listed species and designated critical habitats. This section:

1. Requires BLM, in consultation with the Fish and Wildlife Service (FWS, the Service), to use its authorities to further the purposes of the Act by carrying out conservation programs for listed species.
2. Requires BLM, in consultation with the FWS, to ensure that any action it authorizes, funds or carries out is not likely to jeopardize the continued existence of any listed species, using the best scientific and commercial data available.
3. Requires BLM to confer with the FWS on any action this is likely to jeopardize proposed species or result in the destruction or adverse modification of proposed critical habitat.
4. Requires BLM to prepare a biological assessment if listed species or critical habitat may be present in the area affected by any major construction activity.
5. Prohibits BLM and applicants from making any irreversible or irretrievable commitment of resources with respect to the agency action which would foreclose the formulation and implementation of any reasonable and prudent alternatives that might avoid jeopardy to listed species or prevent the adverse modification of critical habitat.
6. Requires BLM to request early consultation on any action at the request of, and in cooperation with, the prospective permit or license applicant if the applicant has reason to believe that a listed species may be present in the area affected by the project and that implementation of such action will likely affect such species.
7. Sets procedures for BLM or a permit or license applicant to apply for an ESA exemption.

Section 9 (Prohibited Acts). This section identifies prohibited acts by any person subject to the jurisdiction of the United States, relating to species protected under the ESA:

1. The BLM shall not take endangered species of fish or wildlife. Take is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation that

results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

2. With respect to endangered plants, the BLM shall not remove or reduce to possession any such species from areas under Federal jurisdiction; maliciously damage or destroy any such species on any such area; or remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a state criminal trespass law.

Section 10 (Exceptions to Prohibited Acts). This section identifies means by which exceptions to Section 9 of the ESA can occur for activities that include scientific purposes, establishment of experimental populations, or take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. The BLM shall acquire appropriate permits or authorizations to comply with the ESA and implementing regulations if its actions would result in a prohibited act.

Section 11 (Penalties and Enforcement). Within its authority, BLM may modify, suspend or revoke the lease, license, permit or other agreement authorizing the use of BLM managed lands, or any person who is convicted of a criminal violation of the ESA or any regulation, permit, or certificate issued pursuant to the ESA.

Joint Counterpart Endangered Species Act Section 7 Consultation Regulations (50 CFR Part 402, 2003). These counterpart regulations allow an accelerated approval process for proposed projects that support the National Fire Plan (NFP), an interagency strategy approved in 2000 to reduce risks of catastrophic wildland fires and restore fire-adapted ecosystems.

The counterpart regulations complement the general consultation regulations by providing an alternative process for completing section 7 consultations for agency projects that authorize, fund, or carry out actions that support the NFP. The alternative consultation process contained in these counterpart regulations eliminated the need to conduct informal consultation and eliminated the requirement to obtain written concurrence from the Service for those NFP actions that the Action Agency (i.e. the BLM) determines are “not likely to adversely affect” any listed species or designated or proposed critical habitat.

The counterpart regulations contain a process for making sure that the Action Agencies have the necessary skills to make the “not likely to adversely affect” determinations without Service concurrence.

Alternative Consultation Agreement (ACA). On March 3, 2004 the BLM signed an Alternative Consultation Agreement (ACA) with the Service and National Marine Fisheries Service (NMFS). The ACA was required under the Joint Counterpart Regulations to the ESA that the FWS and the NMFS developed jointly with the Bureau of Indian Affairs, National Park Service, USDA Forest Service and the BLM.

The ACA addresses proposed Fire Plan Projects (FPP) determined by the BLM to be within the scope of the National Fire Plan, such as prescribed fire, mechanical fuels treatments (thinning

and removal of fuels to prescribed objectives), emergency stabilization, burned area rehabilitation, road maintenance and operation activities, ecosystem restoration, and culvert replacement actions.

As agreed to in the ACA by the BLM, the Counterpart Regulations may be used by any BLM biologist, botanist or ecologist who conducts section 7 effects analyses for proposed actions that are Fire Plan Projects and makes determinations of effect under the ESA and has completed the required web-based system training. Assessments of the effects of proposed NFP actions, when making “not likely to adversely affect” determinations, will include (1) direct and indirect effects (2) effects of inter-related or inter-dependent actions, (3) the environmental baseline, and (4) whether effects are insignificant, discountable, wholly beneficial, or adverse.

Consultation with the USFWS. The BLM informally consulted with the Carlsbad FWS Office August 19, 2004 regarding potential impacts to threatened and endangered (T&E) species and designated or proposed critical habitat as a result of the proposed action. The Service determined that actions authorized by BLM to reduce/remove vegetation on BLM lands where T&E species or candidates for listing as threatened or endangered, or designated or proposed critical habitat may occur, would require formal section 7 consultation (on a case-by-case basis) with the Service or implementation of the Alternative Consultation Agreement (ACA) by the BLM.

B. Cultural

Authorities for managing cultural resources and programs of historic preservation exist under the National Environmental Policy Act Executive Order 11593, the Archaeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, the Historic Sites Act of 1935, the Antiquities Act, the American Indian Religious Freedom Act, Executive Order 13007 ("Sacred Sites"), and the National Historic Preservation Act of 1966 (NHPA). BLM responsibilities for Section 106 of the National Historic Preservation Act are implemented through an alternative procedure pursuant to the State Protocol Agreement between The California State Director of The Bureau of Land Management and the California State Historic Preservation Officer (1998).

DESCRIPTION of ALTERNATIVES

A. Proposed Action

BLM proposes to issue temporary use permits (43 CFR 2920) to private landowners or their authorized agents for the purpose of reducing and removing vegetation from contiguous public lands. Fuels reduction on BLM administered public lands would be a maximum of 100 feet from buildings located on private property. Permits would be valid for one year, and may be renewed as needed. All permits would be subject to the stipulations outlined in *Appendix A*. Additional species-specific stipulations may be added as deemed appropriate by the BLM Authorized Officer.

This programmatic environmental assessment provides analysis for a maximum of 12 acres of permitted vegetation removal for the entire project area. Upon reaching the 12 acres threshold, BLM would re-evaluate the programmatic environmental assessment and re-initiate informal consultation with the U.S. Fish and Wildlife Service.

Fuel reduction 2920 permits would not be issued for projects in wilderness, wilderness study areas (WSA), or Areas of Critical Environmental Concern (ACEC) under this programmatic environmental assessment. Such projects would be analyzed in a separate document.

Permitting Process. The following process for issuing permits would ensure sensitive, natural, and cultural resources are protected and would facilitate prompt public service:

- Upon receipt of a 2920 permit application, the BLM project lead will forward the application to the BLM biologist and cultural resource specialist. This will initiate a 30-day permit processing period to complete the analysis and to issue a permit.
- Prior to issuance of each permit, the project site would be assessed by qualified BLM staff to determine how vegetation would be cut to promote a mosaic pattern in the landscape, and to determine if avoidance areas (no cutting zones) need to be established for the protection of sensitive resources within the maximum 100-foot fuels reduction zone. Fuels modification would be divided into two zones:
 - Zone One: is an area within a 50 foot radius of a dwelling, in which 90% of the vegetative material is removed. The remaining 10% of the vegetation would be in the form of low growing plants with low fuel volume.
 - Zone Two: is an area 50 to 100 feet from the dwelling in which the vegetation would be removed by 50% (in a mosaic pattern) as specified in the permit.
- At the time of the assessment, the proposed project area would be photographed and the acreage of vegetation removal would be recorded.
- Sensitive areas such as wetlands, riparian areas, vernal pools, coastal sage scrub, archaeological sites, active nesting sites, and habitat for threatened, endangered or sensitive species require special attention and may be flagged as avoidance areas where no-cutting of vegetation would be allowed.
- A qualified BLM biologist, botanist or ecologist would assess the effects of the project on threatened and endangered species, and make a “no effect,” “may affect, not likely to adversely effect,” or a “likely to adversely effect” determination, in accordance with the Endangered Species Act.

- If it is determined that there would be “no effect” on threatened and endangered species, a permit may be issued under the auspices of this environmental assessment. No consultation with the U.S. Fish and Wildlife Service (USFWS) would be required.
 - If it is determined that threatened and endangered species may be affected but “not likely to be adversely affected,” the *Alternative Consultation Agreement* would be implemented prior to issuance of a permit. Consultation with the USFWS would not be required. The General Stipulations (*Appendix A*) would apply, as well as additional species-specific stipulations as deemed appropriate.
 - If it is determined that threatened and endangered species would “likely to be adversely affected,” a permit would not be issued until formal Section 7 consultation has been completed. The 30-day permit processing period would not apply.
- The BLM staff archaeologist would assess the effects of the project on cultural resources and make a determination if further Section 106 consultation is required.
 - In areas of particularly high sensitivity, the BLM may determine that an on-site monitor is required during fuels reduction activities. The on-site monitor would be provided by the BLM. The permittee and the BLM would coordinate schedules in order to facilitate the monitor being present.
 - The BLM would conduct an on-site inspection and monitoring after completion of the project to ensure compliance with the permit and to note any non-native/noxious plant species that may be present. The project area would again be photographed and the actual post-treatment acreage would be recorded.
 - Upon notification that the permittee wishes to cut re-growth within a previously cut area under the one-year permit, BLM qualified staff shall conduct a site visit prior to re-cutting and may establish additional no-cutting zones for the protection of wetlands, riparian areas, vernal pools, coastal sage scrub, archaeological sites, active nesting sites, and habitat for threatened, endangered or sensitive species.

B. No Action

Under this alternative, temporary use permits would be considered on a case-by-case basis with separate NEPA analysis for each permit.

AFFECTED ENVIRONMENT

The proposed action encompasses BLM administered lands within the Palm Springs-South Coast Field Office and the El Centro Field Office. The South Coast Resource Management Area encompasses portions of three highly urbanized southern California counties, all with burgeoning populations. The majority of BLM administered lands are located in western San Diego and Riverside counties. BLM lands range in elevation from near sea level to over 6,000 feet. Plant communities of coastal sage scrub, chaparral, oak woodlands, willow scrub, cottonwood-willow riparian, sycamore-alder riparian, inland cypress forest, vernal pools, and grasslands occur in the project area.

The community of Snow Creek is surrounded by BLM lands within the Santa Rosa and San Jacinto Mountains National Monument. This area is located within the extreme northwest portion of the National Monument (T. 3 S., R. 3 E., Sections 20 and 21).

The BLM lands located along the western border of the El Centro Field Office include the communities of Julian, Whispering Pines, Kentwood, Banner, McCain Valley, and Canebreak Springs. The community of Canebreak Springs lies at the base of the escarpment at the edge of the Carrizo Valley. The communities of Julian, Whispering Pines, Kentwood and Banner skirt the southern portion of the Volcan Mountains south of Banner Canyon.

The public lands around these communities support a wide variety of plants and animals. Refer to the South Coast Resource Management Plan and Final Environmental Impact Statement (1992), the Draft Santa Rosa and San Jacinto Mountains National Monument Management Plan and Draft Environmental Impact Statement (2003), and the Eastern San Diego County Planning Unit Management Framework Plan (1981) for additional information regarding description of the affected environments.

A. Air Quality

The South Coast Air Quality Management District (SCAQMD) and the San Diego Air Pollution Control District (SDAPCD) are aware of pollutants (such as smoke) generated into their respective areas. Suspended particulate matter is the most serious air quality issue faced by the region, which occasionally exceeds both state and federal standards. Both air basins are classified as non-attainment areas because they do not meet the National Ambient Air Quality Standards in the Clean Air Act as amended (1990). Areas that are classified as non-attainment are required to prepare and implement a State Implementation Plan that identifies and quantifies sources of emissions and a strategy to reduce emissions. Sources of emissions include mining, OHV use, grazing and wildfires.

The air basin in the Coachella Valley is classified as a non-attainment area. Man-made and natural dust-causing activities, such as agricultural tilling in fields, construction and demolition operations, or driving on paved or unpaved roads account for the majority of the poor air quality in the valley.

B. Health and Safety Concerns along the Wildland-Urban Interface

The South Coast management area is susceptible to large-scale wildfires due to combustible vegetation, heavy fuel loading, drought conditions, unwanted ignitions, and an expanding urban interface. These conditions have historically contributed to the cause of wildland fires in southern California. Wildland fires continue to impact urban communities, resulting in catastrophic loss of life and property and increasing the demands on local fire agencies.

Local counties and fire agencies have emphasized increasing defensible space to reduce impacts from wildfire. As a result, the state of California has enacted ordinances which reduce fire hazards around structures by creating 100-foot fuel modification zones.

C. Wildlife and Plants

The Carlsbad FWS prepared maps for the BLM identifying the known occurrences of T&E species and designated or proposed critical habitat on BLM lands in Los Angeles, Riverside and San Diego Counties. Three of the species identified occur within the jurisdiction of the Ventura FWS Office: Braunton's milk-vetch, arroyo toad, and unarmored three-spine stickleback.

The following table contains those species that would require formal consultation or implementation of the ACA prior to the BLM authorizing any action in areas of their occurrence, zone of influence or within designated or proposed critical habitat. A detailed description of each of these listed species is provided in *Appendix B*.

It is important to note that this Programmatic Environmental Assessment for the proposed project would need to be reviewed periodically and possibly amended to reflect changes in the status of threatened, endangered and special status species, along with designated and proposed critical habitat.

Threatened and Endangered Species within The Fuels Reduction Project Area								
Scientific Name	Common Name	Lead Office	Listing Status	Recovery Plan	Crit Habitat	LA Co	Riv Co	SD Co
PLANTS								
<i>Astragalus brauntonii</i>	Braunton's milk-vetch	VFO	FE	F 99		X		
<i>Astragalus lentiginosus</i> var. <i>coachellae</i>	Coachella Valley milk-vetch	CFWO	FE				X	
<i>Baccharis vanessae</i>	Encinitas baccharis	CFWO	FT, SE					X
<i>Ceanothus ophiochilus</i>	Vail Lake ceanothus	CFWO	FT, SE				X	
<i>Dodecahema leptoceras</i>	Slender-horned spine flower	CFWO	FE, SE	D		X	X	
<i>Eriastrum densifolium</i> spp. <i>sanctorum</i>	Santa Ana River woolly-star	CFWO	FE, SE	D			X	
<i>Erigeron parishii</i>	Parish's daisy	CFWO	FT	D2	P		X	
<i>Eryngium aristulatum</i> var. <i>parishii</i>	San Diego button celery	CFWO	FE, SE	F 98			X	X
<i>Orcuttia californica</i>	California Orcutt grass	CFWO	FE, SE	F 98		X	X	X
<i>Poa atropurpurea</i>	San Bernardino bluegrass	CFWO	FE					X
INVERTEBRATES								
<i>Euphydryas editha quino</i>	Quino checkerspot butterfly	CFWO	FE	F 03	D-02		X	X
FISH								
<i>Catostomus santaanae</i>	Santa Ana sucker	CFWO	FT		D-04	X	X	
<i>Gasterosteus aculeatus williamsoni</i>	Unarmored threespine stickleback	VFO	FE, SE	F 85		X		X
AMPHIBIANS								
<i>Bufo californicus</i>	Arroyo toad	VFO	FE	F 99	RV	X	X	X
<i>Rana muscosa</i>	Mountain yellow-legged frog	CFWO	FE			X	X	
BIRDS								
<i>Polioptila californica californica</i>	Coastal California gnatcatcher	CFWO	FT*		RP	X	X	X
<i>Vireo bellii pusillus</i>	Least Bell's vireo	CFWO	FE, SE	D 98	D	X	X	X

Threatened and Endangered Species within The Fuels Reduction Project Area								
Scientific Name	Common Name	Lead Office	Listing Status	Recovery Plan	Crit Habitat	LA Co	Riv Co	SD Co
MAMMALS								
<i>Dipodomys merriami parvus</i>	San Bernardino kangaroo rat	CFWO	FE		D-02	X	X	
<i>Dipodomys stephensi</i>	Stephens' kangaroo rat	CFWO	FE, ST	D 97			X	X
FE: Federal endangered species								
FT: Federal threatened species								
SE: State endangered								
ST: State threatened								
R.P.: Recovery Plan, F =Final, D =Draft, w/o date = in progress								
CH: Critical Habitat P =Proposed, D =Designated								
RP: CH Remanded and now repropoed								
T*: Proposed DPS (distinct population segment)								
RV: Remanded and CH designation vacated								

California-BLM Sensitive Species. BLM sensitive species are those designated by the California State Director, generally in cooperation with State agencies that are responsible for fisheries, wildlife and botanical resources and State Natural Heritage programs. The protection provided by the policy for (ESA) candidate species is used as the minimum level of protection for BLM sensitive species. The sensitive species designation is normally used for species that occur on Bureau administered lands for which BLM has the capability to significantly affect the conservation status of the species through management. An in-depth discussion of BLM's criteria for assigning sensitive species status can be found in the BLM Manual, 6840-Special Status Species Management.

Although consultation with the USFWS is not required for sensitive species, the BLM would employ avoidance measures (no-cutting zones) as incorporated into this fuels reduction project description for the protection of sensitive species.

The California-BLM Sensitive Species List was updated in April 2004. The following table contains BLM Sensitive Species occurring within the Palm Springs-South Coast Field Office Area and may occur within the proposed project area.

CALIFORNIA-BLM SENSITIVE SPECIES within THE FUELS REDUCTION PROJECT AREA	
Species	Common Name
PLANTS	
<i>Arctostaphylos otayensis</i>	Otay manzanita
<i>Astragals deanei</i>	Deanes's milk-vetch
<i>Astragals douglasii</i> var. <i>perstrictus</i>	Jacumba milk-vetch
<i>Astragals oocarpus</i>	San Diego milk-vetch
<i>Brodiaea orcuttii</i>	Orcutt's brodiaea
<i>Ceanothus cyaneus</i>	Lakeside ceanothus
<i>Chamaesyce platysperma</i>	Flat-seeded spurge
<i>Deinandra (Hemizonia) floribunda</i>	Tecate tarplant
<i>Dudleya multicaulis</i>	Many-stemmed dudleya
<i>Dudleya variegata</i>	Variegated dudleya
<i>Galium californicum</i> ssp. <i>primum</i>	California bedstraw
<i>Galium grande</i>	San Gabriel bedstraw
<i>Hazardia orcuttii</i>	Orcutt's hazardia
<i>Lepechinia ganderi</i>	Gander's pitcher-sage
<i>Lepidium flavum</i> var. <i>felipense</i>	Borrego Valley peppergrass
<i>Linanthus maculatus</i>	Little San Bernadino Mtns. Linanthus
<i>Linanthus orcuttii</i>	Orcutt's linanthus
<i>Lupinus excubitus</i> var. <i>medius</i>	Mountain Springs bush lupine
<i>Muilla clevelandii</i>	San Diego goldenstar
<i>Ribes canthariforme</i>	Moreno currant, San Diego currant
<i>Tetracoccus dioicus</i>	Parry's tetracoccus
MAMMALS	
<i>Ovis canadensis nelsoni</i>	Desert bighorn sheep
BIRDS	
<i>Athene cucularia</i>	Burrowing owl
<i>Vireo vicinior</i>	Gray vireo
REPTILES	
<i>Phrynosoma coronatum</i> [=blainvillii]	Coast horned lizard
<i>Thamnophis hammondii</i>	Two-striped garter snake
<i>Clemmys marmorata pallida</i>	Southwestern pond turtle
AMPHIBIANS	
<i>Scaphiopus hammondii</i>	Western spadefoot toad

Plant Communities.

Coastal Sage Scrub. Coastal sage scrub is a vegetation community of shrubs predominantly confined to the coastal regions of Southern California. It is dominated by California sage brush (*Artemisia californica*), Flat topped buckwheat (*Eriogonum fasciculatum*), and Laurel sumac (*Malosma laurina*). Coastal sage scrub supports a number of endemic species that have been or could be listed as rare and endangered. Specifically, the federal threatened coastal California gnatcatcher and the federal endangered Quino checkerspot butterfly require Coastal Sage Scrub. This community is adapted to periodic fire, however, disturbance from fires may provide an avenue for infestation by weed species including a number of non-native invasive species. It is estimated that loss of coastal sage scrub habitat in the U.S. is as much as 70-90%, with approximately 33% lost since 1993.

Chaparral. Chaparral in various forms is the predominant vegetation community in San Diego County and provides the basic wildlife habitat for the region. Chaparral consists of a variety of forms including Mixed chaparral composed of several species of Ceanothus, Scrub oak, and Manzanitas which form dense canopies up to 13 feet high; Chamise chaparral, which is dominated by Chamise and at times is practically the only shrub, forms a dense cover up to 10 feet tall and has very little herbaceous understory or litter; and Redshank chaparral which often forms pure stands up to 10 feet tall. This type of vegetation needs to be monitored to insure that weed species do not displace the natural chaparral components. Chaparral that occurs on Gabbro soil is especially susceptible to erosion when the soil has been disturbed.

Riparian Woodland. Riparian Woodland is composed mostly of winter-deciduous trees that require water near the soil surface. In this community Willow (*Salix* spp.), White Alder (*Alnus thombifolia*), California Sycamore (*Platanus racemosa*), Ash (*Frasinus oregana* var. *velutina*) and Cottonwood (*Populus fremontii* and *P.trichocarpa*) form dense woodlands in moist canyons and drainage bottoms. Riparian Woodland is of great importance as a wildlife habitat, particularly for birds, such as the federal endangered least Bell's vireo.

Oak Woodlands. The eight species of tree oaks in California provide shelter and food for a vast array of wildlife species including over 300 vertebrates and an estimated 5,000 species of insects. California's oak woodlands include some of the largest remaining old-growth forest in the United States. If oak trees are cleared and are not left in sufficient density, isolated trees may fail to reproduce because sources of pollen are too far away (>100m).

Oak woodlands in California face at least two major threats. First is inadequate regeneration, which appears to be affecting at least three of the eight species (blue oak *Quercus douglasii*, valley oak *Q. lobata*, and Engelmann oak *Q. engelmannii*) throughout much if not all their range. Poor regeneration may be a result of overgrazing, fire suppression or altered landscape composition including the almost universal replacement of native perennial grasses with introduced European annual grasses. A second, more recent threat is from the disease "sudden oak death," or SOD. Two widespread species of California oaks, the coast live oak (*Q. agrifolia*) and California black oak (*Q. kelloggii*) are particularly susceptible to SOD, as is tanoak (*Lithocarpus densiflorus*), a closely-related species that grows primarily in coastal forests throughout the state. SOD has thus far killed thousands of trees in coastal areas of the state both

north and south of the San Francisco Bay region. Together, poor regeneration and SOD threatens at least five of eight species and virtually all oak habitats in California.

Vernal Pools. Vernal pools are a unique and extremely rare wetland habitat type and have been described as an “endangered ecosystem”. Vernal pools provide essential habitat for six federally endangered species: San Diego mesa mint, San Diego button celery, California Orcutt grass, Otay mesa mint, Riverside fairy shrimp and San Diego fairy shrimp and two federal threatened species: thread-leaved brodiaea and spreading navarettia.. In addition, the pools contain a high number of sensitive and endemic plant and invertebrate species. It is estimated that 97 percent of the vernal pool habitat in San Diego alone, has been lost.

D. Cultural

A general discussion of cultural resources located on public lands managed by the BLM within the area covered by this programmatic permit is found in the *South Coast Resource Management Plan* (1991), *Proposed California Desert Conservation Area Plan Amendment for the Coachella Valley and Final Environmental Impact Statement* (2002), and the *Eastern San Diego County Management Framework Plan* (1981). Most of the public lands covered by this programmatic permit are small, isolated tracts averaging about 320 acres in size, the majority of which can be characterized as difficult, mountainous terrain. Only a small percentage, less than 2.5 percent, of the public lands in the permit area have been surveyed for the presence of cultural properties. Most of these surveys were conducted by the County of San Diego to meet the terms of their Recreation and public Purposes Act leases.

Cultural properties on public lands in the San Diego portion of the project area are predominantly characterized as prehistoric, and primarily include subsistence resource activity areas, which are usually indicated by the presence of bedrock milling features, or lithic quarry and reduction areas. Important quarry areas are found in the vicinity of Otay Mountain. Historical resources consist of sites associated with three major activities: mining, grazing, and transportation. California Indian sites expected to occur in eastern San Diego County include agave roasting pits, trails and seasonal residential sites.

Cultural properties on public lands in Riverside County are predominantly characterized as historic, often connected with historic settlement activities, such as mining, ranching, and agriculture. Prehistoric cultural properties found in the Snow Creek area of the Santa Rosa and San Jacinto Mountains National Monument are primarily related to the Cahuilla Indians who settled in the Coachella Valley and include sites associated with subsistence resources activities. Property types prevalent in the area include lithic scatters, bed rock mortars, and agave roasting pits. Historic properties on public lands in the area are generally related to ranching, logging, and mining activities that took place primarily in the San Jacinto and Santa Rosa Mountains.

Los Angeles County has low potential for archaeological sites as the public lands are parcels in steep rugged areas. The few sites that are known on public lands are predominantly prehistoric and, for the most part, limited to sparse lithic scatters.

ENVIRONMENTAL CONSEQUENCES

A. Critical Elements

The following table summarizes potential impacts to various elements of the human environment, including the "critical elements" listed in BLM Manual H-1790-1, Appendix 5, as amended. Elements for which there are no impacts will not be discussed further in this document.

Environmental Element	Proposed Action	No Action Alternative
Air Quality	Short-term impacts	Potential negative impacts
ACECs	No Impact	No Impact
Cultural Resources	No Impact	No Impact
Native American Concerns	No Impact	No Impact
Farmlands	No Impact	No Impact
Floodplains	No Impact	No Impact
Energy (E.O. 13212)	No Impact	No Impact
Minerals	No Impact	No Impact
T&E Animal Species	See discussion below	See discussion below
T&E Plant Species	See discussion below	See discussion below
Invasive, Nonnative Species	See discussion below	No Impact
Wastes (hazardous/solid)	No Impact	No Impact
Water Quality (surface and ground)	No Impact	No Impact
Wetlands/Riparian Zones	See discussion below	See discussion below
Wild and Scenic Rivers	No Impact	No Impact
Wilderness	No Impact	No Impact
Environmental Justice	No Impact	No Impact
Health and Safety Risks to Children	Reduce Risks	See discussion below
Visual Resource Mgmt.	No Impact	No Impact

B. Discussion of Direct, Indirect and Residual Impacts

1. Proposed Action

Air Quality. The project would allow private landowners to remove vegetation from BLM administered lands. Up to 100 households across three counties (Los Angeles, Riverside, San Diego) could be mechanically cutting vegetation each year. Cutting of vegetation would take place throughout the year, most taking place in the spring and summer months. It is anticipated that cutting of vegetation would take place within an eight-hour day. Removal of the vegetation would release a marginal amount of dirt and debris into the air. The dirt and debris would settle back onto the project site except on windy days. Small amounts of dirt and debris released on windy days would most likely dissipate very quickly, traveling no further than onto lands in close proximity to the project site. The dirt and debris would not be released in large enough amounts to reduce visibility or air quality on BLM or adjacent lands.

Wildland Urban Interface. The proposed action would help land owners to comply with local and state government ordinances in Los Angeles, Riverside and San Diego Counties by allowing private lands owners to reduce vegetation on contiguous BLM lands and to develop defensible space along the wildland urban interface.

Wildlife and Plants. If fuels reduction projects are carried out as stipulated and no consultation is required, no adverse or undetermined impacts would occur to threatened, endangered or sensitive species, or their critical habitats. There may be some beneficial, benign, discountable or insignificant effects.

The removal of decadent, closed canopy chaparral may benefit coastal sage scrub oriented species by creating open spaces within the chaparral. On the other hand, creating open spaces may provide inroads for non-native invasive species. Stipulations incorporated into the proposed project designed to minimize soil/ root disturbance will help to fend off, but will not eliminate these non-native invasive species. One of the purposes of monitoring incorporated into the proposed project is to assess the spread of non-native invasive species into the defensible zones.

Vernal pools typically do not have high fuel loads that contribute to high flame lengths, such that avoidance areas established to protect these habitats from cutting would not compromise defensible space.

Riparian areas tend to provide habitat for sensitive species and where practical, would be excluded from fuels reduction activities. In order to minimize the potential for crown fires, fuels reduction activities in riparian areas would focus on thinning the riparian understory. If significant amounts of riparian vegetation must be removed in order to create defensible space, consultation may be required.

Foraging, nesting, and breeding of birds may be adversely affected if fuels reduction is conducted during sensitive time periods. Trampling and crushing of fauna may also occur in the course of vegetation removal. Vegetation communities (coastal sage scrub, vernal pools) that are already imperiled may be further reduced. Stipulations incorporated into the proposed project designed to avoid foraging/nesting/breeding birds, sensitive plants communities, and to minimize

soil/ root disturbance would help to avoid direct impacts, but would not eliminate indirect and residual disturbances to these sensitive species and plant communities.

If the fuel reduction projects are not carried out as stipulated, there could be adverse effects to wetlands, vernal pools, riparian areas, threatened and endangered plants and animals, coastal sage scrub, cultural resources and other natural resources. In those cases, BLM would conduct follow-up analysis and consultation with the appropriate regulatory agencies. Permits would not be re-issued to those landowners that do not comply with the stipulations of this programmatic environmental assessment.

If formal Section 7 consultation is required, site-specific analysis would be conducted to determine the impacts to threatened, endangered or sensitive species or critical habitat, and mitigated in accordance with the resultant Biological Opinion.

Cultural. BLM responsibilities for Section 106 of the National Historic Preservation Act are implemented through an alternative procedure pursuant to the State Protocol Agreement between the California State Director of The Bureau of Land Management and the California State Historic Preservation Officer (2004). BLM, through the State Protocol Agreement, has found that the potential effects of this undertaking are foreseeable and likely to be minimal or not adverse. As such, this undertaking meets the criteria for exempted categories of undertakings as defined in 36 CFR 800.14(c) (Protection of Historic Properties) and as is stipulated in the Statewide Protocol Agreement (Appendix D, Category B7).

BLM has found that fuels reduction projects that conform to the stipulations outlined in the proposed action and conducted pursuant to this permitting process are exempt from further review under Section 106 of the National Historic Preservation Act, and as such, will have no affect on historic properties. Fuels reduction projects approved and carried out under the terms of this programmatic permit will be subject to review by the staff archaeologist. The staff archaeologist may elect to exclude a permit request from qualification for a programmatic permit if an issue involving cultural properties is identified. The Fire Management Officer will submit an account of fuels reduction projects issued under this programmatic permit as part of required cultural resources documentation for the Statewide Protocol Agreement and for inclusion in the Annual Report to Congress for the cultural program.

Health and Safety Risks to Children. Health and safety for children would be improved by providing an effective and efficient process for issuing fuels reduction permits on public lands that would help to protect residences.

2. No Action

Air Quality. If no fuel reduction is done in the vicinity of structures, and as a result those structures burn, there is a potential for the release of contaminants into the air and negative impacts to local air quality standards.

Wildland Urban Interface. Under the No Action alternative, removal of vegetation on BLM administered lands adjacent to private property would be considered on a case-by-case basis. If fuel reduction is not done in the vicinity of structures, vegetation on BLM lands would continue

to build a fuel base susceptible to wildfire that could threaten the lives and property of private land owners adjacent to public lands.

Cultural. Under the No Action alternative, removal of vegetation on BLM administered lands adjacent to private property would be considered on a case-by-case basis. Site specific analysis would need to be conducted at that time.

Health and Safety Risks to Children. Under the No Action alternative, removal of vegetation on BLM administered lands contiguous to private property would be considered on a case-by-case basis. If no fuel reduction is done in the vicinity of structures, children would be at greater risk from wildfire.

C. Mitigation Measures

In order to ensure the fuel reduction activities by private landowners are carried out in a manner that provides for the protection of wetlands, vernal pools, riparian areas, threatened and endangered plants and animals or cultural resources, all permits would be subject to the stipulations outlined in *Appendix A*. Additional stipulations may be added as deemed appropriate by the BLM Authorized Officer to ensure “may affect – not likely to adversely affect” determinations remain so.

D. Cumulative Impacts

A total of 12 acres of vegetation (mostly chaparral) would be removed within three counties under the auspices of this programmatic environmental assessment. If permits are issued for the same area over multiple years, some native plants may become extant, due to the inability to reproduce as the seed bank may become depleted. Elimination of native plants could create a void that might be filled by non-native invasive species.

CONSULTATION and COORDINATION

A. Persons/ Agencies Consulted

Richard Franklin, BLM Regional Fire Management Officer - CDD
Christopher Roholt, BLM Wilderness - CDD
James Newman, BLM Fire Biologist – CASO
Kathleen Brubaker, US Fish and Wildlife Service
Erin Fernandez, US Fish and Wildlife Service

B. List of Preparers

Ronald Woychak, BLM Fire Management Officer- PSSCFO
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Greg Hill, BLM Planning and Environmental Coordinator
Joyce Schlachter, Wildlife Biologist-PSSCFO

FREEDOM OF INFORMATION ACT CONSIDERATIONS

Public comments submitted for this environmental assessment, including names and street addresses of respondents, will be available for public review at the Palm Springs-South Coast Field Office during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except holidays. Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

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APPENDIX A

GENERAL PERMIT STIPULATIONS

1. The landowner may cut and remove vegetation on BLM-administered public lands, no more than 100 feet from an existing building.
2. Grasses and weeds may be removed by mechanical "weed eaters", mowers or any other hand tools. Mechanized tools shall have USDA Forest Service approved spark arrestors. Fire suppression tools such as shovels, garden hoses and fire extinguishers shall be kept at hand when operating mechanized tools.
3. In order to minimize soil erosion, surface disturbances such as disking, digging, thatching, grubbing or plowing to remove vegetation or its roots shall not be permitted.
4. In order to further reduce surface disturbance, riding mowers and light tractors with motors more than 45 horsepower are not allowed (e.g. no tracked vehicle equipment, no scrapers, no dozers); chippers may be used if moved on site by hand; equipment with air-filled tires only shall be utilized. The use of any vehicles other than those mentioned above is prohibited.
5. Oaks and other native trees shall not be removed under this permit. Pruning trees to remove low hanging branches is permitted but, no higher than six feet above the ground.
6. To the extent possible, vegetation shall be cut and removed outside of the breeding season for birds: September through February. If cutting and removal of vegetation is not possible outside the breeding season for birds, all active nests shall be flagged by the BLM and avoided by the permittee.
7. Herbicide or chemical treatments of vegetation shall not be authorized.
8. After vegetation is cut and removed, no seeding or planting by private property owners will be authorized.
9. Permitted applicants, to the satisfaction of the BLM Authorized Officer, shall remove and properly dispose of all cut vegetation, garbage, trash, litter, discarded equipment or parts, waste material, or other refuse within 14 days of the operation. Chipped vegetation may be left on site if it is spread evenly over the area.
10. During red flag alert days, only the use of hand tools shall be authorized. Prior to using mechanized equipment for the cutting of vegetation, contact your local fire station to determine current fire hazard conditions.
11. Burning of vegetation (live, cut or chipped) on public lands is not authorized by this permit.
12. Permitted applicants shall protect all survey monuments, witness corners, reference monuments and bearing trees against destruction, obliteration, or damage during operations.

13. If the permitted applicant finds an historical/ Native American feature or artifact, avoid working in the area and contact the BLM Authorized Officer for further guidance.
14. The permitted applicant shall not block roads or trails on public lands.
15. Permitted applicants would be required to notify the BLM Authorized Officer two weeks prior to cutting any re-growth in previously cut areas under the one-year permit.

APPENDIX B

THREATENED & ENDANGERED SPECIES DESCRIPTIONS

Plants.

Braunton's milk-vetch (*Astragalus brauntonii*)

Astragalus brauntonii is a federal endangered species found in Los Angeles County. A Recovery Plan for the species was finalized in 1999.

Braunton's milk-vetch is a robust, short-lived perennial in the pea family (Fabaceae). It is one of the tallest members of the genus, reaching a height of 60 inches and is covered with woolly hairs. It is associated with steep, rugged, fire-dependent chaparral habitat in the mountains surrounding the Los Angeles basin. Populations of *Astragalus brauntonii* are only known to occur on small limestone outcrops. The only populations not found on limestone have been located on down-wash sites (seed drift following a fire event). Limestone outcrops are extremely rare within the distribution of this species.

Fire is a natural requirement for the survival of this species. The natural frequency of fire in the habitat of *A. brauntonii* is unknown, but estimates range between 20 to over 100 years with an average of 70-year intervals. Higher fire frequencies have resulted from increasing human populations in southern California, mostly in the form of arson-caused fires. This species has a life span of 2 to 3 years, and depending on fire interval, a given population is visible only once in 20 to 50 years or more.

A. brauntonii is threatened by direct loss from urban development, fragmentation of habitat, fragmented ownership of single populations resulting in different landscape treatments, alteration in fire cycles, fire suppression activities, over collecting, extinction from naturally occurring events due to small population sizes and low numbers of individuals, and competition from invasive weeds.

Coachella Valley milk-vetch (*Astragalus lentiginosus* var. *coachellae*)

A thorough description and analysis of this species can be found in the BLM Draft *Coachella Valley Multiple Species Habitat Conservation Plan/Natural Communities Conservation Plan* (August 2001).

Encinitas baccharis (*Baccharis vanessae*)

Encinitas baccharis is a federal threatened and State endangered species found in San Diego County. It is a member of the sunflower family (Asteraceae) and is a broom-like shrub measuring 1.6 to 4.3 feet in height. It is frequently associated with southern maritime chaparral but also extends into other plant communities. Southern maritime chaparral is a low, fairly open chaparral typically dominated by ceanothus, mission manzanita, chamise, Nuttall's scrub oak, bush rue, red berry, Mojave yucca, and occasionally bush poppy. Southern maritime chaparral is considered to be a unique and threatened plant community.

Encinitas baccharis occurs in the vicinity of Encinitas, central San Diego County and extends inland to Mount Woodson (at an elevation of 2,890 ft) and Poway where it is associated with southern mixed chaparral. One population of this plant occurs in the Santa Margarita Mountains of northern San Diego County.

Baccharis vanessae is threatened by one or more of the following: trampling by farm workers or recreational activities; fuel modification; competition from non-native plant species; and habitat destruction due to residential, agricultural, commercial recreational development.

Vail Lake ceanothus (*Ceanothus ophiochilus*)

Vail Lake ceanothus is a federal threatened and State endangered species. The Riverside County Multi-Species Habitat Conservation Plan has conducted a conservation analysis for this species and developed conservation objectives.

Ceanothus ophiochilus occurs in restricted, localized populations in southwestern Riverside County in the vicinity of Vail Lake. It is restricted to dry habitats on ridge tops and north to northeast facing slopes in chamise chaparral. It occurs along the borders of creeks and dry canyons in shallow clay soils formed from gabbro bedrock. Clay soils have unique physical and chemical properties that support many sensitive, rare, or endangered plant and animal species.

Ceanothus ophiochilus is a member of the buckthorn family (Rhamnaceae) and is found in chamise chaparral. It is a rounded shrub with widely forked branches, about 4-5 ft tall. It has opposite, narrow leaves, pale green color below, blue flowers, and hornless fruits. Vail Lake ceanothus flowers from mid-February to March, with its seed maturing from May to mid-June. It grossly resembles *Adenostoma fasciculatum* (chamise), the codominant shrub in its habitat.

Threats include habitat alteration, fragmentation, hybridization, destruction and degradation from urban development, as well as fire regime alteration. Increased wildland fire frequency, due to development, is a threat for this fire-dependent species. A high frequency fire regime would first eliminate older plants and then eliminate younger plants before they reach reproductive maturity, thus depleting the seed bank and disrupting or eliminating seedling establishment.

Slender-horned spine flower (*Dodecahema leptoceras*)

The slender-horned spine flower has federal and State endangered species status. A draft Recovery Plan is in progress. Also, species conservation objectives have been developed for this species in the Western Riverside Multi-Species Habitat Conservation Plan.

This species is found in Los Angeles County: Bee Canyon and Tujunga Wash; San Bernardino County: the Santa Ana River wash and Cajon Wash; and western Riverside County in the foothills of the Transverse and Peninsular Ranges at approximately 660-2310

ft elevation: Temescal Wash at Indian Creek along the eastern flank of the Santa Ana Mountains; the upper San Jacinto River near Valle Vista and Hemet; central Bautista Creek. It is dependent on mature alluvial scrub habitat that is maintained by periodic flooding and sediment transport every 50 to 100 years. Cryptogamic soil crusts are frequently present in areas occupied by slender-horned spine flower. Cryptogamic crusts maintain moisture and may help to suppress invasion by non-native plant species.

This spine flower is an herbaceous annual that is small and prostrate (lies close to the ground), with flower stalks 2.3 to 6.8 inches in height and the base of the plant from 1.4 and 4.5 inches in diameter. It blooms from April through June and has white to pink flowers 0.2 to 0.3 inches in length. The flowers produce small (1.7 to 2 mm long), brown or black achenes (seed pods). Because individuals are small they may be difficult to locate. This species is only readily detectable in the spring when in bloom. With age, the leaves and bracts turn bright red.

This species is threatened by urbanization, off-road vehicle use, sand and gravel mining, trampling associated with recreation, flood control measures (flood control dams), grazing by domestic animals, and competition from non-native plant species.

Santa Ana River woolly-star (*Eriastrum densifolium* spp. *sanctorum*)

The Santa Ana River woolly-star is a federal and State endangered species. A draft Recovery Plan is in progress. Species-specific conservation objectives have been developed for this species in the Western Riverside Multiple Species Habitat Conservation Plan.

Like the Slender-horned spine flower, this species occupies open washes and early-successional alluvial fan scrub on open slopes, above main watercourses where flooding and scouring occur at a frequency that allows the persistence of open scrublands. *Eriastrum densifolium* occurs along the Santa Ana River and Lytle and Cajon Creek flood plains from the base of the San Bernadino Mountains in San Bernadino County southwest along the Santa Ana River through Riverside County into the Santa Ana Canyon of northeastern Orange County from about 1,200 to 2,000 ft elevation.

Santa Ana River woollystar blooms from June to August. The flowers are bright lavender-blue that occur in heads of about twenty large (over one and a quarter inches long) blooms. It is a shrub which occasionally reaches 3.3 ft in height and has gray-green stem and leaves.

The threats for this species are the same as those for the slender-horned spine flower.

Parish's daisy (*Erigeron parishii*)

Parish's daisy is federal threatened species. A draft Recovery Plan is in progress and critical habitat has been proposed for this species.

This plant is a perennial herb in the Asteraceae family which is restricted to carbonate soils in the San Bernadino Mountains. It is found along a 35 mile portion of the San Bernadino Mountains between 3,842 and 8,800 feet in elevation (in pinyon and juniper woodland or

Mojavean desert scrub). This area contains outcrops of carbonate substrates, primarily limestone and dolomite, in several bands running on an east-west axis along the desert-facing slopes of the San Bernadino Mountains; it's generally known as the "carbonate belt". All of the carbonate plants are endemic to California.

Threats to this species (and carbonate plants in general) are limestone mining, population reduction, habitat loss, degradation and fragmentation from surface mining activities.

San Diego button-celery (*Eryngium aristulatum* var. *parishii*)

Eryngium aristulatum is a federal and State endangered species. A Recovery Plan for the species was completed in 1998.

San Diego button-celery is associated with vernal pools with white clay bottoms without hard pans. Vernal pools form where slight depressions become seasonally wet or inundated following fall and winter rains. Water remains in the pools for several months at a time. This plant can also be found in atypical habitat of vernal moist grasslands.

San Diego button-celery currently occurs on the Santa Rosa Plateau in Riverside County; on Otay Mesa, Kearny Mesa, Del Mar Mesa, Miramar Naval Station, and Camp Pendleton in San Diego County; and in northern Baja California, Mexico.

Depending on environmental conditions, the herb *E. aristulatum* is usually an annual but is capable of becoming a perennial with a perennial tap root. The plant is about 16 inches in height with stems and lanceolate leaves that are gray-green with spiny lobes which give it a prickly appearance. Round greenish heads with a few small white flowers form at the ends of short stalks. San Diego button-celery blooms from April to June.

This species is threatened by urban and agricultural development, off-road vehicle use, cattle trampling, human trampling, road development, military actions, water management activities (urban and agricultural run-off causing prolonged periods of inundation in the pools; blocking or diverting flow of water to the pools), fire, fire suppression, competition from non-native invasive plant species, trash dumping, and drought.

California Orcutt grass (*Orcuttia californica*)

Orcuttia californica is a federal and State endangered species. A Recovery Plan for this species was finalized in 1998.

This plant is also associated with vernal pools. The bottoms of vernal pools have a "water-proof" or impervious layer such as clay, basalt, or hard pan which holds the ephemeral waters of the pools. California Orcutt grass, unlike the San Diego button-celery, is limited to deeper vernal pools with basaltic claypan or alkali (Domino, Willows and Traver) soils.

O. californica historically occurred in vernal pools from San Quintin, Baja California, Mexico north to Riverside, Los Angeles, and San Diego Counties. Known occurrences at this time are: The Nature Conservancy's Santa Rosa Plateau Reserve, Salt Creek drainage near

Hemet, the Skunk Hollow pool in Riverside County, Otay Mesa in San Diego County, and a vernal pool in Woodland Hills of Ventura County.

Orcuttia californica is an inconspicuous prostrate grass of the Poaceae family. It is an annual about four inches in height, bright green, and secretes sticky, bitter droplets. Flowers appear May through June.

Threats to this species are the same as those for the California Orcutt grass and any other vernal pool species in southern California.

San Bernadino bluegrass (*Poa atropurpurea*)

San Bernadino bluegrass is a federal endangered species. It occurs in montane meadows in the Big Bear region of the San Bernardino Mountains, as well as in meadows in the Laguna Mountains and Palomar Mountains of San Diego County at elevations of 6,000 to 7,000 feet. This species occurs near the drier margins of meadows.

Poa atropurpurea is a member of the grass family (Poaceae). It is a tufted perennial with creeping rhizomes. The flowers are dense and spike-like, 8-18 inches high. This species flowers from early May to June or July.

The decline of this species is attributed to urbanization, ORV traffic, and the alteration of hydrological regimes that have destroyed, degraded, or fragmented its meadow habitat. High magnitude threats throughout its range include development, grazing, road maintenance, introduced plants, and the increasing fragmentation of habitat due to the above activities.

Invertebrates.

Quino checkerspot butterfly (*Euphydryas editha quino*)

The Quino checkerspot butterfly (QCB) was listed as endangered on January 16, 1997. The Recovery Plan for this species was finalized in 2003. Designation of critical habitat was completed in 2002.

The historical distribution of the QCB included Los Angeles, Orange, Riverside and San Diego Counties. Distribution and abundance has declined steadily over the years. It disappeared from Los Angeles and the Orange County by 1967. It was thought to be extirpated in Riverside County until it was rediscovered on Oak Mountain in 1990. Other populations have been found in Riverside since that time. San Diego populations are mainly limited to areas of Otay Mountain, Brown Field, sections of Otay Mesa, Jamul, Marron Valley and Jacumba. In 2001, specimens were sighted near San Vicente Reservoir and on northeast slopes within the Cleveland Nation Forest near Oak Grove. Surveys in 2003 found two adults in Alpine and soon after, QCB was seen at Warner Springs.

The life cycle of the QCB is approximately one year-from egg to adult. Primary larval host plants for the QCB are dwarf plantain (*Plantago erecta*) at lower elevations and woolly plantain (*Plantago patagonica*) and white snapdragon (*Antirrhinum coulterianum*) at higher

elevations. Thread-leaved bird's beak (*Cordylanthus rigidus*) has also been observed as a preferred larval host plant in San Diego. Owl's clover (*Castilleja exserta*) is considered a secondary larval host plant if the primary host plants have gone to seed.

Adult QCB take nectar from low growing annuals such as popcorn flowers (*Plagybothrys* and *Cryptantha* spp.), lomatium (*Lomatium* spp.), goldenstar (*Muilla* spp.), yarrow (*Achillea millefolium*), fiddleneck (*Amsinkia* spp.), goldfields (*Lasthenia* spp.), gilia (*Gilia* spp.), and onion (*Allium* spp.). Flat-topped buckwheat (*Eriogonum fasciculatum*) is also utilized.

Critical habitat identifies specific areas, both occupied and unoccupied, that are essential to the conservation of a listed species and that may require special management considerations or protection. The primary constituent elements for the QCB are those habitat components that are essential for the QCB (i.e. larval host plants and adult nectar sources). All areas designated as critical habitat for the QCB contain one or more of the primary constituent elements essential to the conservation of the species.

The biggest threats to QCB are loss and fragmentation of habitat. Connectivity of habitat allows for dispersal and population movements of QCB to maintain the gene pool. The average dispersal distance is between one and three kilometers. Wildfire, which destroys larval host plants and nectar sources, and burns surface litter containing pupae and larvae, can have a detrimental effect on QCB also.

Fish.

Santa Ana sucker (*Catostomus santaanae*)

The Santa Ana sucker is a federal threatened species. Critical habitat was designated for *Catostomus santaanae* in 2004.

This species is now restricted to three noncontiguous populations in three different stream systems in southern California: the lower and middle Santa Ana River in San Bernardino, Riverside, and Orange Counties; the East, West, and North forks of the San Gabriel River in Los Angeles County; and lower Big Tujunga Creek in Los Angeles County.

The Santa Ana sucker inhabits streams that are generally small and shallow, less than seven meters wide. Preferred substrates are generally sand, gravel, cobble and boulders with currents ranging from swift in canyons to slow in the bottom lands. This species feeds mostly on algae. The Santa Ana sucker, typical of the sucker family, has large, thick lips and a small mouth used to "vacuum" algae and invertebrates from stream beds. They are most abundant where the water is clear, cool, and clean. Partially submersed emergent aquatic riparian vegetation is used for cover. Streams where this species is found are subject to severe flooding. Spawning occurs from April to early July, with the peak of spawning in late May through early June. Santa Ana suckers do not live beyond the fourth year.

Threats to this species include the modification and channelization of rivers; dams which fragment populations and destroy spawning areas; debris torrents; pollution; introduced non-native fishes; increased turbidity from sand mining.

Unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*)

The unarmored threespine stickleback is a federal and state endangered species. A Recovery Plan for the stickleback was finalized in 1985.

This species is a small laterally compressed fish, lacking scales which averages about two inches long, with three spines in front of the dorsal fin. It breeds throughout the year, with a peak in March. Males guard the eggs in nests made from aquatic vegetation which are constructed on stream bottoms in shallow water. It eats mainly insects and snails. The lifespan is usually only about one year at the most.

This species is now extirpated from most of its range. Current distribution is a small tributary in the San Francisquito Canyon in the upper Santa Clara River drainage in Los Angeles County; the Santa Clara River at Soledad Canyon, and the Del Valle area further downstream; potential remnant population in Shay Creek, San Bernardino County, and an isolated introduced population outside its historic range in San Felipe Creek, San Diego County.

Major threats include stream channelization, urbanization (increased siltation and decreased water quality), agricultural development, groundwater pumping, introduction of predators (e.g. African clawed frog) and competitors (mosquitofish), ORV use, hybridization with introduced subspecies, and chemical spills

Amphibians.

Arroyo toad (*Bufo californicus*)

The arroyo toad is a federal endangered species. A Recovery Plan was finalized in 1999. Critical habitat was designated but later remanded and the designation vacated. The Ventura Fish and Wildlife Office is the lead for consultation on this species.

The arroyo toad is a small, dark-spotted toad, approximately 2.2-3.3 inches in length. Adult toads have a light-olive green or gray to tan back with dark spots and warty skin. The underside of the toad is white or buff and without dark blotches or spots. A light-colored V-shaped stripe crosses the head and eyelids, and the anterior portion of the oval parotoid glands (just behind the eyes) is pale. There is usually a light area on each side of the sacral (pelvic) hump and in the middle of the back. The arroyo toad generally lacks a middorsal stripe.

The arroyo toad occurs principally along coastal drainages, it is also found at several locations on the desert slopes of the Transverse and Peninsular Mountain ranges south of the Santa Clara River, Los Angeles County. Since the early part of the century, the toad has been found in at least 22 river basins in California. Currently, most arroyo toad populations in the northern and central parts of their range are restricted to elevations of 1,000 to 4,600 feet, however the elevational range can extend from sea level to 8,000 feet. The Recovery Plan for

the arroyo southwestern toad gives a complete analysis of its distribution and population status.

The primary cause for decline of the arroyo toad is habitat loss and degradation. Other causes of decline include disease, pollution (pesticides), and introduced species. Human-related activities that change hydrological processes or affect water quality, such as agriculture adjacent to riparian habitats, dam building, sand and gravel mining, suction dredge mining, road placement, off-highway vehicle use, livestock grazing, placing campgrounds on stream terraces, concentration of hiking, mountain biking or horseback riding in streams, also threatens the existence of the arroyo toad:

Mountain yellow-legged frog (*Rana muscosa*)

The mountain yellow-legged frog is a federal endangered species. Mountain yellow-legged frogs were historically found in approximately 166 locations in creeks and drainages of the southern California mountains, at elevations that ranged from 1,200 to 7,500 ft. Currently the frog is known to occur in only seven locations in southern California within the San Gabriel, San Bernadino, and San Jacinto Mountains, primarily on public land.

Rana muscosa is a medium sized frog about 1.5 to 3 inches in length from the nose to the tip of the urostyle (pointed bone at the base of the spine). The body color varies but is usually brown and yellow, and often is mixed with gray, red, or green-brown. The skin pattern can be a few discrete, large dark spots or many small spots in a mixture of sizes and shapes. Some frogs are dark brown and have almost no pattern. The eyes are gold with a horizontal, black counter shading stripe. The throat is white or yellow and can be mottled with dark pigment. The belly and hind legs are pale yellow to a bright yellow in color.

Mountain yellow-legged frogs are active during daylight hours. They are highly aquatic and occupy rocky, shaded streams, creeks, lakes and small pools with cool waters originating from springs and snowmelt. They appear to prefer sloping banks with rocks or vegetation close to the waters edge. These frogs overwinter (hibernate) possibly under water or in crevices in the stream banks. After emergence in the spring, March-May at lower elevations and July-August at higher elevations, breeding begins and lasts for about one month. Egg masses varying from 15 to 350 eggs are normally laid in shallow water and attached to rocks, gravel, or vegetation. It appears that the larvae overwinter at least twice for six to nine months intervals before metamorphosing into a mature frog that can reproduce. From fertilization of the egg to metamorphosis can take about 3.5 years. Reproductive maturity occurs three to four years after metamorphosis. Larvae forage on algae and diatoms at the stream substrate and postmetamorphic and adult frogs forage mostly on beetles, flies, ants, bees, wasps, and true bugs.

Threats to *Rana Muscosa* include alteration and degradation of habitat from recreational activities: hiking, mountain climbing, camping, swimming; stocking of non-resident trout which eats the larvae; suction dredge mining for gold; release of toxic or hazardous materials into streams or dumping of trash which degrades the water quality; wildfire, introduced bullfrogs; diseases caused by bacteria and fungus; and pesticides.

Birds.

Coastal California gnatcatcher (*Polioptila californica californica*)

The coastal California gnatcatcher is a federal threatened species. Critical habitat was designated in October of 2004 but, has since been remanded and repropoed.

The California gnatcatcher is a tiny (4 ½ to 5”), gray, nonmigratory songbird with a long black tail with white tips and fine white edging. During the breeding season, males have a black cap but otherwise have a black line over the eye. Males are mostly gray with dark upper parts. Females have a brown tone on the back, flanks and belly. Both sexes have a distinctive white eye ring. Their call is a kitten-like mew.

Polioptila californica breed from mid-February through mid-August. Peak nesting activity occurs from mid-March through mid-May. The nest is a small, smooth cup-shaped basket usually found one to three feet above the ground in shrubs or cactus. Nests are made from grasses, bark strips, small leaves, spider webs, down, and other materials. Clutch size is generally four eggs that incubate for about 14 days. The nestling period lasts about 16 days. Juveniles are dependent upon or stay close to the parents for months after leaving the nest. Their diet consists of leafhoppers, crickets, spiders, beetles, true bugs, wasps, flies, the larval stages of arthropods, and ants. Gnatcatchers typically live for two to three years but, some banded birds have been known to live as long as five years.

Coastal California gnatcatchers occur almost exclusively in coastal sage scrub, but can be found in chaparral, grassland, and riparian habitats where they exist adjacent to sage scrub. Coastal sage scrub is composed of relatively low-growing, dry-season deciduous, and succulent plants: California sagebrush (*Artemisia californica*), various species of sage (*Salvia* sp.), California buckwheat (*Eriogonum fasciculatum*), lemonadeberry (*Rhus integrifolia*), California encelia (*Encelia californica*), prickly pear and cholla cactus (*Opuntia* sp.), and various species of *Haplopappas*. Almost all of the locality records for coastal California gnatcatchers occur at or below an elevation of 984 feet within California sagebrush dominated stands on mesas, gently sloping areas, and along the lower slopes of the coastal ranges.

Habitat loss is the main threat for this species. It is estimated that loss of coastal sage scrub habitat in the U.S. is as much as 70-90%, with approximately 33% lost since 1993 when *P. californica* was federally-listed as threatened. Historical habitats have been destroyed, altered and fragmented due to urbanization/development, grazing, military activities, pollution, and fires. Parasitism by the brown-headed cowbird also continues to impact the gnatcatcher.

Least Bell’s vireo (*Vireo bellii pusillus*)

The least Bell’s vireo (*Vireo bellii pusillus*), federally listed as endangered, is a migratory songbird dependent upon riparian habitat for breeding. Historically, this species was widespread throughout riparian woodlands in the central Valley and low elevation riverine valleys of California and northern Baja California. Populations also were found in the Owens Valley, Death Valley, and at scattered oases and canyons throughout the Mojave Desert.

Within California, least Bell's vireo is now absent from the bulk of its historical range and is restricted in its distribution to eight southern counties, with the majority of birds occurring in San Diego County.

The decline in numbers of least Bell's vireo is attributable to the loss and degradation of riparian habitat throughout its range, as well as to the expansion in the range of the brown-headed cowbird. Breeding habitat has been removed for agricultural purposes or inundated by dam construction. Lowered water tables prohibited the growth of dense vegetation preferred by the species. The remaining small, scattered and isolated populations were particularly vulnerable to catastrophic events, demographic failure, and loss of connectivity, which reduced opportunities for dispersal. Habitat degradation characterized by changes in predator-prey relationships (increase in nest predators), fragmentation, isolation, pollution, and human disturbance is associated with habitat loss.

Mammals.

San Bernardino kangaroo rat (*Dipodomys merriami parvus*)

The San Bernardino kangaroo rat (SBKR), one of 19 recognized subspecies of the Merriam's kangaroo rat (*Dipodomys merriami*), is a federal endangered species. Critical habitat for this species was designated in 2002.

The historic range of the SBKR lies west of the desert divide of the San Jacinto and San Bernardino mountains and extends from the San Bernardino Valley in San Bernardino County to the Menifee Valley in Riverside County. Currently this subspecies of kangaroo rat occurs in about seven general locations, including the Santa Ana River, Cajon Creek Wash, Lytle Creek Wash, City Creek and upper Etiwanda Wash in San Bernardino County. In Riverside County the primary populations are along the San Jacinto River and Bautista Creek in the vicinity of San Jacinto, Hemet and Valle Vista.

SBKR habitat primarily consists of a variety of sage scrub vegetation, where the common element is sandy soils. This kangaroo rat prefers open habitats characterized by low shrub canopy cover (mostly 7-22 percent) and rarely occurs in dense vegetation. In Riverside County the SBKR is typically found in Riversidean alluvial fan sage scrub and sandy loam soils, alluvial fans and flood plains, and along washes with nearby sage scrub. Sandy loam soils allow for the digging of simple, shallow burrows. The highest densities of SBKR are found in areas of high quality habitat with California buckwheat, California croton (*Croton californicus*), and deerweed (*Lotus scoparius*) as dominant species, and scattered Our Lord's Candle (*Yucca whipplei*), cacti (*Opuntia* spp.) and a variety of native annual forbs such as phacelia (*Phacelia* sp.), lupine (*Lupinus* sp.), cryptantha (*Cryptantha* sp.), and popcorn flower (*Plagiobothrys* sp.)

Dipodomys merriami parvus has a body length of about 3.7 inches. It is a light yellow color with a heavy overwash of dusky brown. It is the only species of kangaroo rat with four toes on each of its hind feet. The tail stripes are medium to dark brown and the foot pads and tail hairs are dark brown. The flanks and cheeks are also a dusky color. The SBKR is primarily granivorous (seeds). Seeds are collected and carried in furlined cheek pouches to be stored in

surface caches near their home burrows. Green vegetation and insects are also an important part of the diet and are consumed at certain times of the year when available. The SBKR is a nocturnal animal but also engages in foraging and other activities at dusk and dawn (crepuscular behavior).

As with most threatened and endangered species, the main threat to the San Bernardino kangaroo rat is the loss of habitat and habitat fragmentation. Additional threats include urban and industrial development, highway construction, flood control and water conservation projects, sand and gravel mining, grazing, vandalism (the intentional destruction of SBKR habitat), disking of habitat for weed abatement, and off-road vehicles.

Stephen's kangaroo rat (*Dipodomys stephensi*)

The Stephen's kangaroo rat (SKR) is a federal endangered and State threatened species. A draft Recovery Plan for this species was completed in April 1997.

The SKR belongs to the family Heteromyidae as do all the other kangaroo rats (genus *Dipodomys*). Heteromyidae are a distinct group of rodents in that they are related to squirrels rather than mice or rats. All species in the genus *Dipodomys* are similar. Characteristics common to all kangaroo rats include external cheek pouches, large hind legs, small front legs, long tails, and large heads. The SKR is medium-sized, has dusky cinnamon buff overfur, pure white underfur, and a lateral white tail band. The tail is crested and bicolored. The total length, including the tail, is about 9-12 inches. The tail is 1.5 times the length of the head and body. The average adult weight is approximately 2 ounces. The soles of the hind feet are dusky rather than dark and there are 5 toes on each of the hind feet.

Historically, the geographic distribution of SKR included the San Jacinto Valley and adjacent areas of western Riverside, southwestern San Bernardino, and northwestern San Diego counties. Currently, the SKR may no longer occur in San Bernardino County. In recent years SKR has been found in Riverside County: Norco and Anza Valley. Also, a trapping study for SKR at the Ramona Airport in San Diego County recorded numerous SKR individuals and verified a major southern range extension for this species into the Santa Maria Valley. Most populations of SKR occur below 2,000 feet but, in the Anza Valley, populations occur at approximately 3,600 to 4,100 feet.

The SKR is native to open annual grassland and sparse coastal sage scrub habitats (e.g. usually less than 30 percent cover) where perennial species such as encelia, coastal sagebrush, and California buckwheat occur. Perennial shrub cover and dense grasses can restrict the presence of SKR. Typical habitat consists of native and non-native annual herbs (*Erodium cicutarium*). SKR have been documented from relatively flat terrain to fairly steep slopes (45 percent) when vegetation and soils are appropriate. The SKR like other kangaroo rats is granivorous and eats the seeds of annual grasses and forbs. They also feed on fruits, leaves, stems, buds and insects. Burrows are dug in well-drained, sandy or gravelly soils and are often as deep as 18 inches or more. SKR will occasionally use abandoned pocket gopher burrows..

The major threat to the Stephens' kangaroo rat is the destruction of its habitat. Remaining habitat is threatened by housing and agricultural development. Most of the remaining SKR colony sites are in private ownership and subject to future development.