

SECTION II. ENVIRONMENTAL SETTING

This section provides the Lyons Canyon Ranch floristic resources, including the project site flora and a description of the habitat types observed onsite. This section also includes the project site fauna and describes the soil units mapped onsite.

SITE CONDITIONS

The general condition of the Lyons Canyon Ranch project site is influenced by several factors. Although the approximate 400-acre project site is predominantly open space and is undeveloped, the project site has been influenced greatly by humans for many years. Historically, the Lyons Canyon property was used as an outdoor set for filmmaking. Although undeveloped, the site is bisected by numerous dirt roads, which were created for various television and film productions. The project site is scattered with film props and portions of the property (lower elevations) have been graded for filming purposes as well. DMEC has no information as to whether any of those activities within jurisdictional waters were conducted under the benefit of required permits from the Corps or CDFG.

The Lyons Canyon project site is also completely burned as a result of the October 2003 Simi Wildfire, which has significantly altered the vegetation onsite. The fire burned all vegetation onsite and killed several wildlife species.

Elevations of the project site range from approximately 1,350 feet to approximately 2,200 feet, and the topography consists of gradual to very steep slopes. The flora and fauna onsite are relatively high in species richness and diversity, especially considering the human and natural disturbances influencing the project site. The predominant vegetation types onsite include Riparian Scrub, Riparian Woodland, California Annual Grassland, Coastal Sage Scrub, Chaparral, California Walnut Woodland, and Coast Live Oak Woodland.



Lyons Canyon Creek, 23 February 2004, view north of burned Coast Live Oak trees and chaparral.



Lyons Canyon Ranch, 10 December 2003, view south of small drainage from southwest center area.



Lyon Canyon Creek, 17 December 2003 (left) and 23 February 2004 (right), view (upstream) southwestward at Transect H.

FLORA

Various combinations of plants form unique plant communities and wildlife habitats contributing to the landscape of an area. As a result of the October 2003 wildfire, the Lyons Canyon Ranch project site currently apparently has a relatively low species richness (observable), compared to the species richness present prior to the fire. However, plant species richness is expected to be higher the first few years following the wildfire because numerous fire-following annual and short-lived perennials will sprout after long dormancies. All vascular plant species, observed and identified during the wetland delineation field surveys, are listed in Table 1, Vascular Plants Observed at the Lyons Canyon Ranch Project Site. Table 1, which is alphabetized by scientific (botanical) name (according to Hickman 1993), includes the common name, growth habit, wetland indicator status (according to Reed 1988), and botanical family name for each vascular plant species observed onsite.

The Lyons Canyon Ranch project site contains at least 115 vascular plants, 90 (78%) of which are native species, while the remaining 25 species (22%) are introduced (nonnative) taxa. The ratio of native to nonnative taxa for the project site (76% to 24%) is close to the ratio for the entire California flora (Hickman 1993) and other smaller regions within California.

Twenty-five (25) of these 115 taxa are considered hydrophytes, and are assigned a status of least FAC (or facultative species [Reed 1988]). Several additional plant species likely occurred onsite prior to the wildfire, and many species may become identifiable as the vegetation succeeds back to normal conditions.



Marah macrocarpus (California Man-root), near Transect BW. (23 February 2004)



Juncus balticus (Baltic Rush) emerging at margins of Lyon Canyon Creek near Transect E. (23 February 2004)

Table 1. Vascular Plants Observed at the Lyons Canyon Ranch Project Site

Scientific Name ¹	Common Name	Habit ²	WIS ³	Family
<i>Adenostoma fasciculatum</i>	Chamise	S	.	Rosaceae
<i>Ambrosia acanthicarpa</i>	Burweed	AH	.	Asteraceae
<i>Amsinckia menziesii</i> var. ?	Common Fiddleneck	AH	.	Boraginaceae
<i>Anagallis arvensis</i> *	Scarlet Pimpernel	AH	FAC	Primulaceae
<i>Arctostaphylos glauca</i>	Bigberry Manzanita		.	Ericaceae
<i>Artemisia californica</i>	California Sagebrush	S	.	Asteraceae
<i>Artemisia douglasiana</i>	Mugwort	PH	FACW	Asteraceae
<i>Artemisia tridentata</i> spp. <i>tridentata</i>	Great Basin Sagebrush	S	.	Asteraceae
<i>Avena barbata</i> *	Slender Wild Oat	AG	.	Poaceae
<i>Baccharis pilularis</i>	Coyote Brush	S	.	Asteraceae
<i>Baccharis salicifolia</i>	Mulefat	S	FACW	Asteraceae
<i>Brassica nigra</i> *	Black Mustard	AH	.	Brassicaceae
<i>Brickellia californica</i>	California Brickellbush	S	FACU	Asteraceae
<i>Bromus diandrus</i> *	Ripgut Grass	AG	(FACU)	Poaceae
<i>Bromus hordeaceus</i> *	Soft Chess	AG	FACU-	Poaceae
<i>Bromus madritensis</i> ssp. <i>rubens</i> *	Red Brome	AG	NI	Poaceae
<i>Calystegia macrostegia</i> ssp. ?	Morning-glory	PV	.	Convolvulaceae
<i>Camissonia</i> cf. <i>californica</i>	Mustard Primrose	AH	.	Onagraceae
<i>Ceanothus crassifolius</i> var. <i>crassifolius</i>	Snowball Ceanothus	S	.	Rhamnaceae
<i>Centaurea melitensis</i> *	Tocalote	AH	.	Asteraceae
<i>Chenopodium album</i> *	Lambsquarters	AH	FAC	Chenopodiaceae
<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	Common Soap Plant	PH	.	Liliaceae
<i>Cirsium occidentale</i> var. ?	Cobweb Thistle	AH	.	Asteraceae
<i>Clarkia</i> sp. 1	Clarkia	AH	.	Onagraceae
<i>Clarkia</i> sp. 2	Clarkia	AH	.	Onagraceae
<i>Claytonia parviflora</i>	Small-flowered Miner's Lettuce	AH	FAC	Portulacaceae
<i>Claytonia perfoliata</i> ssp. <i>mexicana</i>	Mexican Miner's Lettuce	AH	FAC	Portulacaceae
<i>Conyza canadensis</i>	Horseweed	AH	FAC	Asteraceae
<i>Croton californicus</i> var. <i>californicus</i>	California Croton	PH	.	Euphorbiaceae
<i>Cryptantha</i> sp.	Forget-me-not	AH	.	Boraginaceae
<i>Datura wrightii</i>	Jimson Weed	AH	.	Solanaceae

¹ * = Introduced/nonnative plant species. Scientific names follow Hickman (1993), Flora of North America Committee (2001-2004), and Boyd (1999).

² Habit definitions: AG = annual grass; AH = annual herb; PF = perennial fern; PG = perennial grass; PH = perennial herb; PV = perennial vine; S = shrub; T = tree.

³ WIS = Wetland Indicator Status. The following code definitions are according to Reed (1988):

OBL = obligate wetland species, occurs almost always in wetlands (>99% probability).

FACW = facultative wetland species, usually found in wetlands (67-99% probability).

FAC = facultative species, equally likely to occur in wetlands or nonwetlands (34-66% probability).

FACU = facultative upland species, usually found in nonwetlands (67-99% probability).

+ or - symbols are modifiers that indicate greater or lesser affinity for wetland habitats.

NI = no indicator has been assigned due to a lack of information to determine indicator status.

* = a tentative assignment to that indicator status by Reed (1988).

Parentheses around a status indicates a wetland status as suggested by David L. Magney based on extensive field observations.

Scientific Name ¹	Common Name	Habit ²	WIS ³	Family
<i>Dichelostemma capitatum</i> ssp. <i>capitatum</i>	Blue Dicks	PH	.	Liliaceae
<i>Distichlis spicata</i>	Salt Grass	PG	FACW	Poaceae
<i>Emmenanthe penduliflora</i>	Whispering Bells	AH	.	Hydrophyllaceae
<i>Eremocarpus setigerus</i>	Dove Weed	AH	.	Euphorbiaceae
<i>Ericameria ericoides</i> ssp. <i>ericoides</i>	Mock Heather	S	.	Asteraceae
<i>Eriodictyon crassifolium</i>	Yerba Santa	S	.	Boraginaceae
<i>Eriogonum</i> sp.	Annual buckwheat	AH	.	Polygonaceae
<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>	Hoary California Buckwheat	S	.	Polygonaceae
<i>Eriophyllum confertiflorum</i>	Golden Yarrow	PH	.	Asteraceae
<i>Erodium cicutarium</i> *	Redstem Filaree	AH	.	Geraniaceae
<i>Eucrypta chrysanthemifolia</i> var. <i>chrysanthemifolia</i>	Common Eucrypta	AH	.	Boraginaceae
<i>Gnaphalium luteo-album</i> *	Cudweed Everlasting	AH	FACW-	Asteraceae
<i>Hazardia squarrosa</i>	Sawtooth Goldenbush	S	.	Asteraceae
<i>Heliotropium curassavicum</i>	Alkali Heliotrope	PH	OBL	Boraginaceae
<i>Heteromeles arbutifolia</i>	Toyon	S	.	Rosaceae
<i>Heterotheca grandiflora</i>	Telegraph Weed	BH	.	Asteraceae
<i>Hirschfeldia incana</i> *	Summer Mustard	BH	.	Brassicaceae
<i>Juglans californica</i> var. <i>californica</i>	Southern California Black Walnut	T	FAC	Juglandaceae
<i>Juncus cf balticus</i>	Baltic Rush	PH	OBL	Juncaceae
<i>Lactuca serriola</i> *	Prickly Wild Lettuce	AH	FAC	Asteraceae
<i>Lamium amplexicaule</i> *	Henbit	AH	.	Lamiaceae
<i>Lathyrus vestitus</i> ssp. ?	Pacific Peavine	PV	.	Fabaceae
<i>Leptodactylon californicum</i> ssp. <i>glandulosum</i>	Glandular Prickly Phlox	S	.	Polemoniaceae
<i>Lessingia filaginifolia</i>	Cudweed-aster	PH	.	Asteraceae
<i>Leymus condensatus</i>	Giant Wildrye	PG	FACU	Poaceae
<i>Lotus salsuginosus</i>	Coastal Lotus	AH	.	Fabaceae
<i>Lupinus bicolor</i>	Bicolored Lupine	AH	.	Fabaceae
<i>Lupinus hirsutissimus</i>	Stinging Lupine	AH	.	Fabaceae
<i>Lupinus sparsiflorus</i> ssp. <i>sparsiflorus</i>	Few-flowered Lupine	AH	.	Fabaceae
<i>Lupinus succulentus</i>	Fleshy Lupine	AH	.	Fabaceae
<i>Lupinus truncatus</i>	Truncate-leaved Lupine	AH	.	Fabaceae
<i>Malacothamnus</i> sp.	Bush mallow	S	.	Malvaceae
<i>Malacothrix saxatilis</i> var. ?	Cliff-aster	PH	.	Asteraceae
<i>Malosma laurina</i>	Laurelleaf Sumac	S	.	Anacardiaceae
<i>Malva parviflora</i> *	Cheeseweed	AH	.	Malvaceae
<i>Marah macrocarpus</i> var. <i>macrocarpus</i>	Large-fruited Man-root	PV	.	Cucurbitaceae
<i>Marrubium vulgare</i> *	White Horehound	PH/S	FAC	Lamiaceae
<i>Medicago polymorpha</i> *	Bur-clover	AH	(FACU)	Fabaceae
<i>Melilotus indica</i> *	Sourclover	AH	FAC	Fabaceae
<i>Mimulus longiflorus</i>	Bush Monkeyflower	S	.	Scrophulariaceae
<i>Mirabilis californica</i>	California Wishbone Bush	PH	.	Nyctaginaceae
<i>Nemophila</i> sp.	Nemophila	AH	.	Boraginaceae
<i>Nicotiana glauca</i> *	Tree Tobacco	S	FAC	Solanaceae
<i>Paeonia californica</i>	California Peony	PH	.	Paeoniaceae
<i>Pellaea mucronata</i> var. <i>mucronata</i>	Birdsfoot Fern	PF	.	Pteridaceae

Scientific Name ¹	Common Name	Habit ²	WIS ³	Family
<i>Pentagramma triangularis</i>	Goldenback Fern	PH	.	Pteridaceae
<i>Phacelia cf. brachyloba</i>	Lobed Phacelia	AH	.	Boraginaceae
<i>Phacelia cf. imbricata</i>	Imbricate Phacelia	AH	.	Boraginaceae
<i>Phacelia sp.</i>	Phacelia	AH	.	Boraginaceae
<i>Phoradendron villosum</i>	Oak Mistletoe	PH	.	Viscaceae
<i>Picris echioides*</i>	Bristly Ox-tongue	AH	FAC*	Asteraceae
<i>Polygonum sp.</i>	knotweed	PH	FAC	Polygonaceae
<i>Populus fremontii ssp. fremontii</i>	Fremont Cottonwood	T	FACW	Salicaceae
<i>Prunus ilicifolia</i>	Hollyleaf Cherry	S	.	Rosaceae
<i>Pterostegia drymarioides</i>	Fairy Mist	PF	.	Pteridaceae
<i>Quercus agrifolia var. agrifolia</i>	Coast Live Oak	T	(FACU)	Fagaceae
<i>Quercus berberidifolia</i>	Scrub Oak	S	.	Fagaceae
<i>Quercus douglasii</i>	Blue Oak	T	.	Fagaceae
<i>Quercus lobata</i>	Valley Oak	T	FAC*	Fagaceae
<i>Rhamnus ilicifolia</i>	Hollyleaf Redberry	S	.	Rhamnaceae
<i>Rhus ovata</i>	Sugar Bush	S	.	Anacardiaceae
<i>Rhus trilobata var. ?</i>	Skunkbrush	S	NI	Anacardiaceae
<i>Ribes cf. malvaceum</i>	Chaparral Current	S	.	Grossulariaceae
<i>Rumex crispus*</i>	Curly Dock	PH	FACW-	Polygonaceae
<i>Rumex hymenosepalus</i>	Wild Rhubarb	PH	.	Polygonaceae
<i>Salix lasiolepis var. lasiolepis</i>	Arroyo Willow	S/T	FACW	Salicaceae
<i>Salix laevigata</i>	Red Willow	T	FACW	Salicaceae
<i>Salsola tragus *</i>	Russian Thistle	AH	FACU+	Chenopodiaceae
<i>Salvia leucophylla</i>	Purple Sage	S	.	Lamiaceae
<i>Salvia mellifera</i>	Black Sage	S	.	Lamiaceae
<i>Sambucus mexicana</i>	Blue Elderberry	S	FAC	Caprifoliaceae
<i>Sanicula crassicaulis</i>	Pacific Sanicle	PH	.	Apiaceae
<i>Schismus cf. arabicus*</i>	Arabian Grass	AG	.	Poaceae
<i>Selaginella bigelovii</i>	Bigelow Spike-moss	PF	.	Selaginellaceae
<i>Silybum marianum*</i>	Milk Thistle	AH	.	Asteraceae
<i>Sisyrinchium bellum</i>	Blue-eyed Grass	PH	.	Iridaceae
<i>Sisymbrium sp.</i>	Mustard	AH	.	Brassicaceae
<i>Solanum xantii var. xantii</i>	Chaparral Nightshade	S	.	Solanaceae
<i>Sonchus asper*</i>	Prickly sow-thistle	AH	FAC	Asteraceae
<i>Stellaria cf. media*</i>	Common Chickweed	AH	FACU	Caryophyllaceae
<i>Stephanomeria sp.</i>	Wire-lettuce	AH	.	Asteraceae
<i>Tauschia arguta</i>	Tauschia	PH	.	Apiaceae
<i>Verbena lasiostachys</i>	Western Verbena	PH	FAC-	Verbenaceae
<i>Yucca whipplei</i>	Our Lord's Candle	S	.	Agavaceae



Lotus salsuginosus (Coastal Lotus), 23 February 2004, near Transect BW



Adenostoma fasciculatum (Chamise) stump sprouts, 23 February 2004, near Transect BW.

FAUNA

DMEC's site visits allowed only a cursory survey of and the project site's wildlife diversity. The Lyons Canyon Ranch project site wildlife survey found evidence of many wildlife species, especially mammals. The wildfire forced many animals into the drainages and waterways throughout the project site, where they became trapped and were killed by the fire. The project area appears to have consisted of a relatively species-rich fauna prior to the wildfire. The bird species observed onsite were especially abundant onsite and were observed in large flocks. At least 34 wildlife species were observed onsite as contributing to the Lyons Canyon Ranch fauna. Table 2, Wildlife Species of the Lyons Canyon Ranch Project Site, lists the

wildlife species directly observed (by sight) and detected (by sign). Table 2 includes the scientific and common names of the project site herptofauna (amphibians and reptiles), avifauna (birds), mammals, and invertebrates (insects and spiders). Additional wildlife may use the site at least seasonally, and species richness is likely to be higher than documented here, especially for invertebrates.

Table 2. Wildlife Species of the Lyons Canyon Ranch Project Site

Scientific Name ⁴	Common Name
<i>Herptofauna</i>	
<i>Bufo boreas halophilus</i>	California Western Toad
<i>Sceloporus occidentalis</i>	Western Fence Lizard
<i>Pituophis melanoleucus</i>	Gopher Snake
<i>Avifauna</i>	
<i>Cathartes aura</i>	Turkey Vulture
<i>Accipiter cooperii</i>	Cooper's Hawk
<i>Buteo jamaciaensis</i>	Red-tailed Hawk
<i>Columba fasciata</i>	Band-tailed Pigeon
<i>Callipepla californica</i>	California Quail
<i>Zenaida macroura</i>	Mourning Dove
<i>Calypte anna</i>	Anna's Hummingbird
<i>Colaptes auratus</i>	Northern Flicker
<i>Melanerpes formicivorus</i>	Acorn Woodpecker
<i>Aphelocoma coerulescens</i>	Western Scrub Jay
<i>Corvus brachyrhynchos</i>	American Crow
<i>Corvus corvax</i>	Common Raven
<i>Baeolophus ridgwayi</i>	Oak Titmouse
<i>Sialia mexicana</i>	Western Bluebird
<i>Turdus migratorius</i>	American Robin
<i>Mimus polyglottos</i>	Northern Mockingbird
<i>Pipilo crissalis</i>	California Towhee
<i>Zonotrichia leucophrys</i>	White-crowned Sparrow
<i>Euphagus cyanocephalus</i>	Brewer's Blackbird
<i>Sturnus vulgaris</i> *	European Starling
<i>Carpodacus mexicanus</i>	House Finch
<i>Mammals</i>	
<i>Spermophilus beecheyi</i>	California Ground Squirrel
<i>Thomomys bottae</i>	Botta's Pocket Gopher
<i>Peromyscus cf. californicus</i>	California Mouse
<i>Urocyon/Vulpes sp.</i>	Fox (skeleton)
<i>Canis latrans</i>	Coyote (scat, skeleton)
<i>Lynx rufus</i>	Bobcat (skull)
<i>Odocoileus hemionus</i>	Mule Deer (tracks, skeleton)
<i>Invertebrates</i>	
<i>Agelenopsis sp.</i>	Funnel Web Spider
Culicidae	Mosquito
<i>Apis mellifera</i> *	European Honey Bee

⁴ * = nonnative species. Note: this list of wildlife species is not intended to be considered complete by any definition; rather, it represent a listing of those wildlife species observed incidentally during the performance of the delineation of jurisdictional wetlands.

HABITAT DESCRIPTIONS

Three general habitat types currently exist in the immediate vicinity of the Lyons Canyon Ranch project site, including Riverine, Palustrine, and Upland habitats. These habitat types include several plant communities that make up the landscape of Lyons Canyon Ranch. Descriptions are provided in the following subsections for the following habitats and plant communities:

- **Riverine Habitat** (more or less unvegetated);
- **Palustrine Habitat** (Saltgrass Meadow, Mulefat Scrub, Mexican Elderberry Scrub, Arroyo Willow Woodland, and Red Willow Woodland); and
- **Upland Habitat** (California Annual Grassland, Ruderal Grassland, Coastal Sage Scrub, Chaparral, California Walnut Woodland, and Coast Live Oak Woodland).

The Palustrine and Riverine habitats include the plant communities associated with jurisdictional waters of the U.S. These habitat types were determined within the project site based on field surveys and observations, the wetland delineation results, and aerial photographs.

Riverine Habitat

A Riverine system includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens; and (2) habitats with water containing ocean-derived salts in excess of 0.5‰. Channel is defined as a conduit that periodically or continuously contains moving water, or that forms a connecting link between two bodies of water. The streambed habitat, observed within the Riverine system throughout the vicinity of the project site, is further classified as Riverine Intermittent Sand Streambed. The Intermittent subsystem of the Riverine system exists where the channel contains nontidal flowing water for only part of the year. When active flows are not present, surface water may be absent or water may remain in isolated pools. (Cowardin et al. 1979.)

The Riverine Intermittent Sand Streambed habitat occurs infrequently along small reaches of Lyon Canyon Creek and its tributaries. The Riverine habitat onsite is largely unvegetated and contains recent fluvially deposited sediments otherwise known as Riverwash materials (described below in Mapped Soil Units).

Palustrine Habitat

The Palustrine system includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5‰ (Cowardin et al. 1979). The Palustrine habitats observed at the Lyons Canyon Ranch site are further classified and defined below.

Palustrine habitats in Lyon Canyon Creek can be characterized as performing various hydrologic, geomorphologic, biogeochemistry, and plant and wildlife habitat functions. The performance of these functions is largely dependent upon the maintenance of natural channel morphology and native plant communities.

The Palustrine Shrub-Scrub and Forested habitats onsite are used as nesting and foraging habitat for several species of birds, and as cover and foraging habitat for small and large mammals, some of which may use the site as a movement corridor. Palustrine habitat function is increased by the presence of adjacent natural upland habitats, which together create high species richness and structural diversity onsite.

Palustrine Persistent Emergent Habitat

Palustrine Persistent Emergent habitat is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This habitat usually consists of persistent plant species that normally remain standing at least until the beginning of the next growing season (Cowardin et al. 1979). The Palustrine Emergent habitat observed onsite is described below as Saltgrass Wet Meadow.

SALTGRASS WET MEADOW

Saltgrass Wet Meadow is plant community dominated by the hydrophytic perennial grass *Distichlis spicata*. The National Inventory of Wetland Plants (Reed 1988) lists *Distichlis spicata* with a wetland indicator status of FACW (a facultative wetland species), meaning that 67 to 99 percent of observed occurrences are in wetlands (Reed 1988). This species occurs predominantly in saltmarshes and in moist alkaline or saline areas at elevations below 1,000 meters (Hickman 1993). Typically, Saltgrass Wet Meadow includes groundlayer contributions of annual grasses and herb species. This plant community forms a low, dense, often matted ground layer on permanently moist soils, and tolerates haline to saline water chemistry. This plant community occupies the landscape transitional between upland grassland habitats to wetter conditions and has the potential for higher species richness compared to other adjacent plant communities. Sawyer and Keeler-Wolf (1995) describe this plant community as Saltgrass Series.

Due to the vegetation clearing caused by the Simi Wildfire (October 2003), only a few sparse associate species (most were seedlings unidentifiable to the species level) were observed onsite contributing to the herbaceous layer of Saltgrass Wet Meadow, and they include *Verbena lasiostachys* (Western Verbena), *Medicago polymorpha* (Common Burclover), *Polygonum* sp. (knotweed), *Claytonia parviflora* (Small-flowered Miner's Lettuce), *Silybum marianum* (Milk Thistle), and several species of unidentifiable annual grasses (most likely *Avena barbata*, *Bromus diandrus*, and *B. madritensis* ssp. *rubens*). An example of Saltgrass Wet Meadow is located in the vicinity of Plot BB1.

Palustrine Scrub/Shrub Habitat

Palustrine Scrub/Shrub habitat is dominated by woody plants less than six meters tall. Contributing plants include true shrubs that are typically small or stunted due to environmental conditions. Palustrine Scrub-Shrub habitats may represent a successional stage leading to Palustrine Forested habitats, or may be relatively stable communities. (Cowardin et al. 1979.) The two Palustrine Scrub-Shrub habitats observed onsite are described below as Mulefat Scrub and Mexican Elderberry Scrub.

MULEFAT SCRUB

Mulefat Scrub is dominated by *Baccharis salicifolia*, which is a native shrub or small tree that is found at elevations below 1,250 meters (Hickman 1993). The National Inventory of Wetland Plants (Reed 1988) lists Mulefat with a wetland indicator status of FACW.

Mulefat Scrub, or Mulefat Series (Sawyer and Keeler-Wolf 1995), forms a continuous scrub canopy of less than four meters tall growing over a sparse ground layer. This plant community requires seasonally flooded or saturated, freshwater, wetland habitats, such as canyon bottoms, irrigation ditches, and moist streambanks or channels. Mulefat often occurs in pure stands or may mix, at a fine scale, with other wetland series. Mulefat often forms ecotonal transitions between riparian and upland scrub communities.

Mulefat was often the only species remaining and/or identifiable at several plots; however, the scattered (re)sprouting or remaining, associate, native and nonnative plant species observed growing with Mulefat Scrub include: annual grasses (*Avena* sp. and *Bromus* spp.), *Amsinckia menziesii* (Common Fiddleneck), *Anagallis arvensis* (Scarlet Pimpernel), *Artemisia douglasiana* (Mugwort), *Erodium cicutarium* (Redstem Filaree), *Eucrypta chrysanthemifolia* var. *chrysanthemifolia* (Common Eucrypta), *Heliotropium curassavicum* (Alkali Heliotrope), *Hirschfeldia incana* (Summer Mustard), *Leymus condensatus* (Giant

Wildrye), *Marah macrocarpus* var. *macrocarpus* (Big-fruited Man-root), *Medicago polymorpha*, *Sambucus mexicana* (Mexican Elderberry), and *Silybum marianum*. An example of Mulefat Scrub is located in the vicinity of Plot H1.

MEXICAN ELDERBERRY SCRUB

Mexican Elderberry Scrub is dominated by *Sambucus mexicana*, which is a common large shrub that produces cream-colored flowers and bluish-black berries. This species is commonly found growing along streams at elevations below 3,000 meters (Hickman 1993). Mexican Elderberry is listed with a wetland indicator status of FAC, or a facultative species that is equally likely to occur in wetlands as in non-wetlands (Reed 1988).

Mexican Elderberry Scrub, or Mexican Elderberry Series (Sawyer and Keeler-Wolf 1995) typically forms an intermittent shrub canopy, of less than eight meters tall, over various riparian scrub shrubs and a grassy ground layer. This series occurs in intermittently flooded or seasonally saturated soils of freshwater wetlands, such as stream banks, floodplains, and open riparian forests at elevations below 300 meters. *S. mexicana* is also common in many series, often as a small emergent tree over Coastal Sage Scrub, chaparral communities, and as an understory to woodlands. Mulefat was often the only species remaining and/or identifiable at several plots; however, the scattered (re)sprouting or remaining, associate, native and nonnative plant species observed growing with Mexican Elderberry Scrub include most of those listed above for Mulefat Scrub. However, *Distichlis spicata*, *Salix* spp. (Arroyo Willow and Red Willow), and *Baccharis salicifolia* were also observed frequently growing with stands of Mexican Elderberry. An example of Mexican Elderberry Scrub is located in the vicinity of Plot E1.

Palustrine Broad-Leaved, Winter-Deciduous Forested Habitat

Palustrine Broad-leaved, Winter-deciduous Forested habitat is characterized by woody, broad-leaved (as apposed to needle-leaved), winter-deciduous (looses leaves in the winter season) vegetation that is six meters tall or taller. This habitat possesses an overstory of trees, an understory of young trees and shrubs, and an herbaceous layer. (Cowardin et al. 1979.) The Palustrine Forested habitat observed onsite is described below as Arroyo Willow Woodland and Red Willow Woodland.

ARROYO WILLOW WOODLAND

Arroyo Willow Woodland, or Arroyo Willow Series (Sawyer and Keeler-Wolf 1995), is dominated by *Salix lasiolepis* (Arroyo Willow), with *Baccharis salicifolia* as an important contributor. Arroyo Willow is a winter-deciduous shrub or small tree with shinny dark green (upper surface) and grayish (lower surface) oblanceolate leaves. Arroyo Willow is listed with a wetland indicator status of FACW (Reed 1988). Arroyo Willow Series occurs in seasonally flooded or saturated freshwater wetland habitats, such as floodplains and low-gradient depositions along rivers and streams, and is abundant in marshes, meadows, and springs, at elevations below 1,800 meters. This woodland community forms an intermittent to open canopy less than 10 meters tall, growing over patchy shrub layer of predominantly *Baccharis salicifolia* and variable ground layer.

Associate species of Arroyo Willow Woodland onsite include *Artemisia douglasiana*, *Quercus agrifolia* (Coast Live Oak), *Rhus trilobata* (Skunkbrush), *Salix laevigata* (Red Willow), and *Sambucus mexicana*. An example of Arroyo Willow Woodland is located in the vicinity of Plot M2.

RED WILLOW WOODLAND

Red Willow Woodland, or Red Willow Series (Sawyer and Keeler-Wolf 1995), is dominated by *Salix laevigata*. Red Willow is a winter-deciduous shrub or small tree with bright green (upper surface) lanceolate leaves. Arroyo Willow is not listed with a wetland indicator status; however, this species is probably similar to Arroyo Willow with a wetland indicator status of FACW (Reed 1988). Red Willow

Series occurs in seasonally flooded or saturated freshwater wetland habitats, such as ditches, floodplains, lake edges, and low-gradient depositions along rivers and streams, at elevations below 1,700 meters.

A small dense Red Willow stand was observed onsite in the immediate vicinity of Transect J, while scattered trees of Red Willow were observed about the project site, especially scattered throughout Arroyo Willow Woodland. All willows were burned, but several retained some foliage, which made identification possible. The few scattered associate species observed remaining or (re)sprouting in the willow woodland onsite include *Baccharis salicifolia*, *Distichlis spicata*, *Hirschfeldia incana*, *Sambucus mexicana*, and *Populus fremontii* ssp. *fremontii* (Fremont Cottonwood).

Upland Habitat

The upland habitats observed at the Lyons Canyon ranch site are classified and described here as California Annual Grassland, Ruderal Grassland, Coastal Sage Scrub, Chaparral, and Coast Live Oak Woodland.

California Annual Grassland

California Annual Grassland Series (Sawyer and Keeler-Wolf 1995) consists of low herbaceous vegetation that is dominated by introduced annual grasses and is often associated with several native wildflower species, as well as introduced forbs. California Annual Grassland Series is typically dominated by annual grasses of various genera that are primarily of Mediterranean origin, including: *Avena* spp. (oats), *Bromus* spp. (bromes), and *Hordeum* spp. (barley). Because introduced annual grass species have irreversibly invaded the once native perennial stands, they are often referred to as naturalized, and are now considered important California Annual Grassland contributor species (Zedler et al. 1997).

California Annual Grassland Series occurs on all topographic locations, especially gradual slopes, of all slope aspects and occur in deep, well-developed soils, at elevations below 1,200 meters (Sawyer and Keeler-Wolf 1995). Species composition varies among stands, as the associate species may consist of several native herbs (or wildflowers). These wildflowers are important contributors to the ground layer, while emergent trees and shrubs may be present.

Very few native annual herbs were observed contributing to this plant community as most species were burned off during the fire. Several seedlings are sprouting onsite, and the only identifiable scattered native species directly observed in California Annual Grassland onsite include burned or very young *Ambrosia acanthicarpa* (Burweed), *Asclepias fascicularis* (Narrowleaf Milkweed), *Conyza canadensis* (Horseweed), *Croton californica* (California Croton), *Datura wrightii* (Jimson Weed), *Eucrypta chrysanthemifolia*, *Heterotheca grandiflora* (Telegraph Weed), *Lessingia filaginifolia* (Cudweed-aster), *Lupinus sparsiflorus* ssp. *sparsiflorus* (Few-flowered Lupine), and *Verbena lasiostachys* (Western Verbena). Several additional wildflowers are expected to inhabit this plant community.

California Annual Grassland also typically includes scattered nonnative forbs, such as those listed below in the Ruderal Grassland description. Only when California Annual Grassland becomes invaded, dominated, and/or colonized by one or more introduced/invasive plant species is it classified as Ruderal.

Ruderal Grassland

Ruderal Grassland Series is typically in early successional stages resulting from severe disturbance by natural or human causes, and/or is due to recurrent disturbance. These areas are dominated by pioneering herbaceous plants that readily colonize disturbed ground. The ability of exotic species to invade disturbed areas arises from their relationship to old-world ancestors that have co-existed with humans for millennia, and thus are more adapted to exploit disturbed land. Ruderal communities are typically a threat to regional biodiversity since they continually distribute nonnative propagules into native plant communities. These exotic species can colonize natural disturbances, such as burns, and typically can successfully compete with the more desirable natives. (Zedler et al. 1997.)

Many of the same grass species of California Annual Grassland Series are often abundant in Ruderal Grassland Series; however, Ruderal Grassland Series is dominated by introduced and often invasive plant species. The predominant invasive plant species observed throughout the burned project site is *Silybum marianum*, while other invasive species observed include *Lactuca serriola* (Prickly Wild Lettuce), *Medicago polymorpha*, *Nicotiana glauca* (Tree Tobacco), and *Picris echioides* (Prickly Ox-tongue).

Coastal Sage Scrub

Coastal Sage Scrub is a shrubland dominated by facultative drought-deciduous, low-growing, soft-leaved, and grayish-green (malacophyllus) shrubs and subshrubs. Coastal Sage Scrub plant series typically exhibit a patchy distribution, often in close association with areas inhabited by chaparral habitats. At one time, the Santa Clarita Valley area, supported the region's most extensive development of sage and sagebrush scrub plant communities prior to urbanization. Coastal Sage Scrub is a community at risk, with approximately 90 percent of it already lost to development (urban and agriculture) and that very little of it has been protected by any mechanisms, such as enforceable conservation easements (Davis et al. 1985). (Boyd 1999.)

Due to stand variations, Coastal Sage Scrub is often considered part of a collection of species-specific plant series (Sawyer and Keeler-Wolf 1995). The five most common sage and sagebrush scrub series described for the Santa Clarita Valley area include: California Sagebrush Series, Black Sage Series, Purple Sage Series, White Sage Series, and Mixed Sage Series (Boyd 1999).

Mixed Sage Series, which is described by Sawyer and Keeler-Wolf (1995), is a common and representative plant series of Coastal Sage Scrub collection. Mixed Sage Series includes at least two species of *Salvia* (or sage, typically *S. mellifera*, *S. apiana* [White Sage], and/or *S. leucophylla* [Purple Sage]) with an equal canopy contribution by *Artemisia californica*. No single species or pair of species can dominate stands of this series; instead, three or more must equally share commonness and cover. Mixed Sage Series forms an intermittent to continuous canopy over a variable ground layer, and grows on sandy, rocky, shallow soils of upland slopes at elevations below 1,200 meters. (Sawyer and Keeler-Wolf 1995.)

The (burned) identifiable, native shrub and perennial herb species observed contributing to Coastal Sage Scrub at Lyons Canyon Ranch include the following: *Artemisia californica*, *Artemisia tridentata* ssp. *tridentata* (Great basin Sagebrush), *Chlorogalum pomeridianum* (Soap Plant), *Dichelostemma capitatum* (Blue Dicks), *Ericameria ericoides* (Mock Heather), *Eriogonum fasciculatum* var. *polifolium* (Hoary California Buckwheat), *Hazardia squarrosa* (Sawtooth Goldenbush), *Lessingia filaginifolia*, *Leymus condensatus*, *Marah macrocarpus*, *Mimulus longiflorus* (Bush Monkeyflower), *Paeonia californica* (California Peony), *Salvia leucophylla*, *S. mellifera*, *Sanicula crassicaulis* var. *crassicaulis* (Pacific Sanicle), and *Yucca whipplei* (Our Lord's Candle).

Chaparral

Chaparral is a type of shrubland that is dominated by evergreen shrubs with small, thick, leathery, dark green, sclerophyllous leaves. The shrubs of chaparral are relatively tall and dense, and are adapted to periodic wildfires by stump sprouting or by germination from a dormant seed bank. These evergreen shrubs are also adapted to drought by deep extensive root systems, while their small thick leaf structure prevents permanent damage from moisture loss (Zedler et al. 1997). Many typical Coastal Sage Scrub species also grow intermixed as associates with chaparral species. Chaparral typically occurs on moderate to steep south-facing slopes with dry, rocky, shallow soils, becoming more abundant with higher elevations where temperatures are lower and moisture supplies are more ample.

The (burned) identifiable, native shrub species observed as dominants in the Chaparral stands at Lyons Canyon Ranch include the following: *Adenostoma fasciculatum* (Chamise), *Rhus ovata* (Sugar Bush), *Arctostaphylos glauca* (Bigberry Manzanita), *Ceanothus crassifolius* var. *crassifolius* (Hoary-leaf Ceanothus), *Eriodictyon crassifolium* (Yerba Santa), *Eriogonum fasciculatum* var. *polifolium*, *Heteromeles*

arbutifolia (Toyon), *Malosma laurina* (Laurelleaf Sumac), and *Yucca whipplei*. Several understory shrubs and herbs listed for Coastal Sage Scrub are expected as associates in Chaparral plant communities onsite.

California Walnut Woodland

California Walnut Woodland, or California Walnut Series (Sawyer and Keeler-Wolf 1995), is dominated by *Juglans californica* var. *californica* (Southern California Black Walnut), a broad-leaved winter-deciduous, monoecious tree. This walnut species is listed with a wetland indicator status of FAC (Reed 1988). California Walnut Series forms an open to closed canopy (less than 10 meters tall) growing over a common or infrequent shrub stratum and a sparse or grassy ground layer. This habitat requires deep, shale-derived, intermittently flooded/saturated soils of freshwater riparian corridors, floodplains, incised canyons, seeps, and stream or riverbanks at elevations between 150 and 900 meters.

Juglans californica is an uncommon endemic species, ranging from coastal southern California from Santa Barbara County to Los Angeles County. *J. californica* is a CNPS List 4 (limited distribution) and has a CNPS R-E-D (Rare-Endangerment-Distribution) Code of 1-2-3 ([1] Rare, but low potential for extinction-[2] Endangered in a portion of its range-[3] Endemic to California) (CNPS 2001). California Walnut Woodland is a much fragmented, declining natural community, and it is threatened by urbanization and grazing, which inhibit natural reproduction.

California Walnut Woodland was observed as an open canopy consisting of several large, mature trees growing over an understory of associate shrubs and herbs including *Artemisia californica*, *Brickellia californica* (California Brickellbush), *Dichelostemma capitatum*, *Hazardia squarrosa*, *Leymus condensatus*, *Lupinus succulentus* (Fleshy Lupine), *Marah macrocarpus*, *Salvia leucophylla*, and *S. mellifera*. California Walnut Woodland was observed near (upstream from) Transect BI.

Coast Live Oak Woodland

Coast Live Oak Woodland, or Coast Live Oak Series (Sawyer & Keeler-Wolf 1995), is dominated by *Quercus agrifolia* var. *agrifolia*, which is a broad-leaved, evergreen, wide-topped tree with furrowed, dark gray bark and weakly spine-toothed, convex, dark green leaves. *Q. agrifolia* is the most widely distributed species of the evergreen oaks, and it is capable of achieving large size and old age (Zedler et al. 1997). Coast Live Oak Series occurs predominantly on steep slopes and on raised stream banks and terraces at elevations below 1,200 meters. It forms a continuous to open 30-meter tall canopy, growing over an understory of occasional shrubs and an herbaceous ground layer, and it requires sandstone or shale-derived soils of elevations below 1,200 meters. Coast Live Oak Woodland was observed and classified as three different plant communities at the Lyons Canyon ranch project site:

- (1) Upland Coast Live Oak Woodland (the most common oak woodland) in which *Quercus agrifolia* forms a closed to intermittent canopy with a sparse to intermittent understory of Coastal Sage Scrub species;
- (2) Coast Live Oak Savannah in which *Q. agrifolia* forms an open canopy with a groundlayer understory of predominantly California Annual Grassland contributors; and
- (3) Coast Live Oak Riparian Woodland in which *Q. agrifolia* is growing along and contributing to the riparian corridor as an intermittent canopy with a sparse understory of riparian and Coastal Sage Scrub plant species (an example of Coast Live Oak Riparian Woodland is located in the vicinity of oak tree tag number 1627, near Plot N1).

Quercus lobata (Valley Oak) was observed onsite as a scattered associate species to the Coast Live Oak Woodland plant communities, especially in the lower elevational areas of the project site.

MAPPED SOIL UNITS

The Soil Conservation Service (SCS) *Soil Survey for the Antelope Valley Area, California* (Woodruff et al. 1970) indicates that the mapped soil units, in the vicinity of the wetland delineation at the Lyons Canyon Ranch project site, include Castaic Series and Yolo Series. These soil types are confirmed mapped soil units for several plots of the wetland delineation survey area. These mapped soil units are described according to Woodruff et al. (1970) in the following subsections. Riverwash is a nonsoil that was also observed/found at several wetland delineation data points onsite, and is described below as well.

Castaic Series

Castaic Series consists of well-drained soils that formed in material from soft shale and sandstone. These slopes are on uplands, and slopes range from 2 to 65 percent. The vegetation is mainly grasses and forbs; however, *Nassella* spp. is scattered in patches and scrub species grow in patches on north slopes. Elevations range from 1,250 to 1,500 feet. Castaic soils are associated with Balcom and Saugus soils. The Castaic Series soil units mapped at the Lyons Canyon Ranch project site are Castaic-Balcom Silty Clay Loams, 30 to 50 percent slopes, eroded (CmF2); and Castaic and Saugus Soils, 30 to 65 percent slopes, severely eroded (CnG3).

CmF2 is in the southwestern part of the survey area near Castaic Junction. This complex is 60 percent Castaic silty clay loam and 40 percent Balcom silty clay loam. A CmF2 typical profile is described as an example of the Castaic Series soil units, where the surface layer is pale-brown (10YR6/3, or dark brown 10YR4/3 moist) silty clay loam to about nine inches thick. Below is yellowish-brown (10YR5/4, or dark yellowish-brown 10YR4/4 moist) silty clay loam from approximately 9 to 26 inches deep, underlain by yellowish-brown (10YR5/4) soft shale and sandstone at a depth of about 26 inches.

CnG3 is an undifferentiated group of soils that is 35 percent Castaic silty clay loam and 30 percent Saugus loam. Included are exposed areas of soft shale and conglomerate making up as much as ten percent, and areas of Balcom silty clay loam making up as much as 25 percent. Areas of CnG3 are cut by many intermittent, very deep drainage channels with narrow V-shaped valleys. Soil slipping is common, and geologic erosion is active. During heavy rainstorms, much silt is washed from these soils.

Yolo Series

Yolo Series soils are well-drained soils that have formed in sedimentary alluvial fans. Slopes are zero to nine percent, grasses and oaks make up the vegetation, and elevations range from 1,175 to 1,200 feet. The Yolo Series mapped soil units at the Lyons Canyon Ranch project site include Yolo Loam, 0 to 2 percent slopes (YoA); and Yolo Loam, 2 to 9 percent slopes (YoC).

YoA is on alluvial fans near Newhall and Saugus. A YoA typical profile is described as an example of the Yolo Series soil units (0.4 mile east of I5 and Lyons Canon Road), where the surface layer is grayish-brown (10YR5/2, or very dark grayish-brown 10YR3/2 moist) loam to about six inches thick. Below is grayish-brown (10YR5/2, or very dark grayish-brown 10YR3/2 moist) loam from approximately 6 to 18 inches deep, underlain by yellowish-brown (10YR6/4, or yellowish-brown 10YR5/4 moist) loam at a depth of about 36 inches. Permeability is moderate, fertility is high, runoff is very slow, and the hazard of erosion is none to slight.

YoC is on fairly narrow alluvial fans near Newhall and Saugus. Slopes range from two to six percent in most places. Runoff is slight to moderate, and the hazard of erosion is slow to medium. Included in YoC are areas at the upper alluvial fan edges with slopes of 10 to 12 percent. Also included are small areas with a surface layer of sandy loam or pebbles and stones.

Riverwash

Riverwash generally occurs within the bed of intermittent streams, and consists of highly stratified, water-deposited layers of stony and gravelly sand that contains relatively small amounts of silt and clay. It is characterized as having high permeability, but is present as the result of frequent and regular fluvial processes. Riverwash is frequently inundated during high water flow immediately following storms, where fresh deposits of alluvium are laid down and removed as the result of streambank erosion. Riverwash is subject to frequent disturbance, such as scouring and deposition, and the development and establishment of riparian vegetation is severely limited. It is considered hydric by the National Resource Conservation District (1992). (Woodruff et al. 1970, Edwards et al. 1970.)

SECTION III. REGULATORY REQUIREMENTS

Wetlands such as freshwater stream channels are considered sensitive and declining by several regulatory agencies including CDFG and the U.S. Fish and Wildlife Service (USFWS). Stream channels and banks are specifically addressed by the California Fish and Game Code Section 1600 *et seq.* (Streambed Alteration Agreement). Waters of the U.S., including stream channels and wetlands, fall under the jurisdiction of the Corps under Section 404 of the Clean Water Act.

DEFINITIONS

Wetlands such as freshwater stream channels are considered sensitive and declining by several regulatory agencies including California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS). Waters of the State are regulated by the CDFG pursuant to Section 1600 *et seq.* of the California Fish and Game Code (Streambed Alteration Agreement). Waters of the U.S., including stream channels and wetlands, fall under the jurisdiction of the U.S. Army Corps of Engineers (Corps) and State Water Resources Control Board (SWRCB) pursuant to Sections 404 and 401 of the Clean Water Act, respectively. Certain floodways within Los Angeles County are regulated by the Los Angeles Regional Water Quality Control Board, Los Angeles County Flood Control and Conservation District.

Several agencies have jurisdiction over, or policies regarding, waters and/or wetlands, including the Corps, State Water Resources Control Board (SWRCB), CDFG, and County of Los Angeles. Each agency or jurisdiction has slightly different definitions for wetlands or descriptions of their policies regarding them. For the Lyons Canyon Ranch project, the Corps and SWRCB use the same definition for waters of the U.S. and wetlands as they apply to the Clean Water Act. The CDFG uses a broader definition under Section 1600 *et seq.* of California Fish and Game Code.

Corps Jurisdiction

Waters of the U.S., including wetlands, are under jurisdiction of the Corps pursuant the Clean Water Act, and discharging dredge or fill material into waters of the U.S. requires a permit from the Corps. Certain activities are covered under a number of General permits, known as General (Nationwide) Permits. Activities not covered by existing Nationwide Permits require an application for an individual permit from the Corps.

The term "waters of the United States" means:

- “(1) All waters, which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to ebb and flow of the tide;
- (2) All interstate waters including interstate wetlands;
- (3) All other waters - such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds – where the use, degradation, or destruction of which could affect interstate or foreign commerce, including any such waters:
 - (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes;
 - (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce;
 - (iii) Which are used, or could be used, for industrial purposes by interstate commerce industries; or
- (4) Including all impoundments of waters, otherwise defined as waters of the U.S., under the definition;
- (5) Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;
- (6) The territorial seas; and

- (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1)-(6) of this section.
Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 123.11(m) which also meet the criteria of this definition) are not waters of the United States.
- (8) Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA."

Basically, areas exhibiting clearly defined bed and banks of water courses with evidence of periodic or regular erosion and/or deposition by water are considered to be waters of the U.S., and are under the jurisdiction of the Corps.

CDFG Streambed Alteration Agreement

The following paragraphs are taken directly from CDFG's *A Field Guide to Lake and Streambed Alteration Agreements* (CDFG 1992) documentation.

"The California Fish and Game Code (FGC) sections 1601-1607 establish a fee-based process to ensure that projects conducted in and around lakes, rivers, or streams do not adversely impact fish and wildlife resources. When adverse impacts cannot be avoided, the process also ensures that adequate mitigation and/or compensation is provided for project impacts. It is the negotiation of a legally binding agreement between a project proponent and the CDFG, which contains the measures the project proponent must implement in order to avoid or mitigate any adverse impacts to fish and wildlife resources. The program developed by the Department, to implement this process, is generally referred to as the Streambed Alteration Agreement Program."

"Sections 1601 and 1603 of the FGC are the primary operative sections with regards to the developing Streambed Alteration Agreements. FGC Section 1601 regulates the agreement process for projects proposed by state or local government agencies or public utilities, while Section 1603 regulates the agreement process for projects proposed by all private projects, private Timber Harvest Plans (THPs), and federal projects without a state agency sponsor."

FGC Section 1601 is specifically concerned with any project proposed by a state or local government agency or public utility, which:

"...will divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake designated by the Department, in which there is at any time an existing fish or wildlife resource, or from which these resources derive benefit, or (any project which) will use material from the streambeds designated by the Department..."

D.R. Horton (Western Pacific Series) will be required to apply for a Streambed Alteration Agreement, pursuant to Section 1601.

Definitions of Wetlands

The Corps (Environmental Laboratory 1987) defines wetlands as:

"Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and bogs".

Specifically, to be a wetland as defined by the Corps, the wetland must possess the following three general diagnostic environmental characteristics:

1. **Hydrophytic Vegetation.** The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions described in wetland definitions above.
2. **Hydric Soil.** Soils are present and have been classified as hydric, or they possess characteristics that are associated with reducing soil conditions.
3. **Hydrology.** The area is inundated either permanently or periodically at mean water depths less than or equal to two meters (6.6 feet), or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.

The California Fish and Game Commission, and the California Department of Fish and Game, have adopted the USFWS definition for wetlands (Lollock 1987):

“When all three indicators (i.e., hydric soils, wetland vegetation, and hydrology) are present, the presumption of wetland existence shall be conclusive. Where less than three indicators are present, policy application shall be supported by the demonstrable use of wetland areas by wetland associated fish or wildlife resources, related biological activity, and wetland habitat values. The USFWS wetland classification system should be applied by professionals trained in its methodology.”

CDFG requires that one or more positive indicators must be found for only *one of the three wetland criteria* (hydrophytic vegetation, hydric soil, and/or hydrology as listed above) to be considered a jurisdictional wetland for the purpose of state regulations.

The USFWS wetland classification system (Cowardin et al. 1979) is as follows:

“Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water, or covered by shallow water, at some time during the growing season of each year.”

Wetlands are defined in the California Coastal Act (California Coastal Commission 1981) as:

“Land which [sic] may be covered periodically, or permanently, with shallow water and includes saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.”

Note: The project site is not within the coastal zone; however, the wetlands definition included in the California Coastal Act is generally accepted and adopted as the definition used statewide.

Furthermore, the Keene-Nejedly California Wetlands Preservation Act of 1976, Section 5812 of the Public Resources Code, defines wetlands as:

“(a) ‘Wetlands’ means streams, channels, lakes, reservoirs, bays, estuaries, lagoons, marshes, and the lands underlying and adjoining such waters, whether permanently or intermittently submerged, to the extent that such waters and lands support and contain significant fish, wildlife, recreational, aesthetic, or scientific resources.”