David Magney Environmental Consulting

BIOLOGICAL RESOURCES ASSESSMENT FOR DEALS FLAT PROPERTY ON PACIFIC VIEW DRIVE

Prepared for:

VENTURA COUNTY PLANNING DIVISION

On Behalf of:

MARCO BELTRAMI

May 2006

DMEC

Biological Resources Assessment for Deals Flat Property on Pacific View Drive

Prepared for:

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SECTION 1. INTRODUCTION

BACKGROUND

At the request of Marco Beltrami's architect, Gary Williamson, David Magney Environmental Consulting (DMEC) has conducted seasonal botanical field surveys of the Beltrami property on Pacific View Drive, at Deals Flat. Williamson and DMEC also worked with Mr. Tom Murphy of M3Civil to modify the project to avoid or minimize impacts to biological resources after a preliminary site assessment. The team followed the process outlined below to develop the proposed site development:

- The architect developed a site plan that located the access roads primarily on the existing dirt roads and the structures on existing cleared land.
- Based upon that site plan drawing, DMEC surveyed the project site, focusing on the proposed development sites, and assessed the project for potential direct impacts to special-status biological resources onsite.
- The architect revised the site plan drawing, altering the alignment of the access roads and building locations to minimize their impact on special-status plants and animals found onsite. The highest elevation site on the northwest corner of the property was abandoned and moved further south, to avoid impacts to occupied Coast (San Diego) Horned Lizard habitat.
- The proposed access road was realigned and buildings repositioned after an onsite meeting with DMEC, Williamson, and M3Civil to avoid and minimize direct impacts to known special-status species onsite.
- Comments were received from the Ventura County Planning Department.
- DMEC conducted a rare lichen survey onsite.
- A new site plan was developed based on the recommendations from DMEC, M3Civil, comments from the Ventura County Planning Department, and input from the property owner. This site plan is assessed in this report.
- The property owner (Marco Beltrami) has agreed in principle to allocate a considerable portion of his property as mitigation for remaining significant biological resource impacts, and to protect a majority of the undeveloped land from future development in order to protect existing sensitive biological resources present onsite.

This report describes the methods and results of the botanical field surveys performed by DMEC, and provides recommendations on how to avoid or mitigate for impacts to sensitive botanical resources found onsite. The following sections provide a description of the botanical resources present onsite, including plants and plant communities, as well as observed wildlife species.

PROPOSED PROJECT LOCATION AND PURPOSE

Mr. Beltrami proposes to develop his property on Pacific View Drive, at Deals Flat, Santa Monica Mountains, in Ventura County. Figure 1, Beltrami Project Site Location, maps the location of the project site in association with the surrounding area. The Beltrami property is located in the Santa Monica Mountains, at the southwest corner of Deals Flat, at the headwaters of Deer Canyon and west of Clarks Peak.

The development would consist of constructing a main house, a guest house, a barn and parking area, and a driveway to provide access to all three structures. Figure 2, Beltrami Proposed Building Sites, illustrates the locations of the three buildings and access driveway, as well as the anticipated area of grading for the buildings and associated patios, pools, sewer lines, septic system, and parking areas. This figure is provided for illustrative purposes and should not be considered an accurate site plan, which is provided separately by the project architect.

The project site is 20.73 acres in size. The proposed buildings would occupy approximately 5,735 square feet (sq. ft.) (0.13 acre). The surrounding hardscape (driveway, parking, walkways, etc.) will occupy approximately 27,777 sq. ft. (0.64 acre). An additional area of natural vegetation would be disturbed for required fuel modification per Ventura County Fire Department regulations, which currently require natural vegetation to be removed or significantly thinned for 100 feet from all structures over 100 square feet, and for 15 feet from any roads or driveways. This fuel modification area will then be landscaped with appropriate plantings. The total area disturbed by grading, construction, and landscaping is approximately 184,695 sq. ft. (4.24 acres), which includes the buildings and hardscape areas noted above.

Figure 3, Beltrami Property Existing Roads and Trails, illustrates the location and distribution of dirt roads and trails that existed onsite when the field surveys were conducted in June 2005.

Figure 1. Beltrami Project Site Location

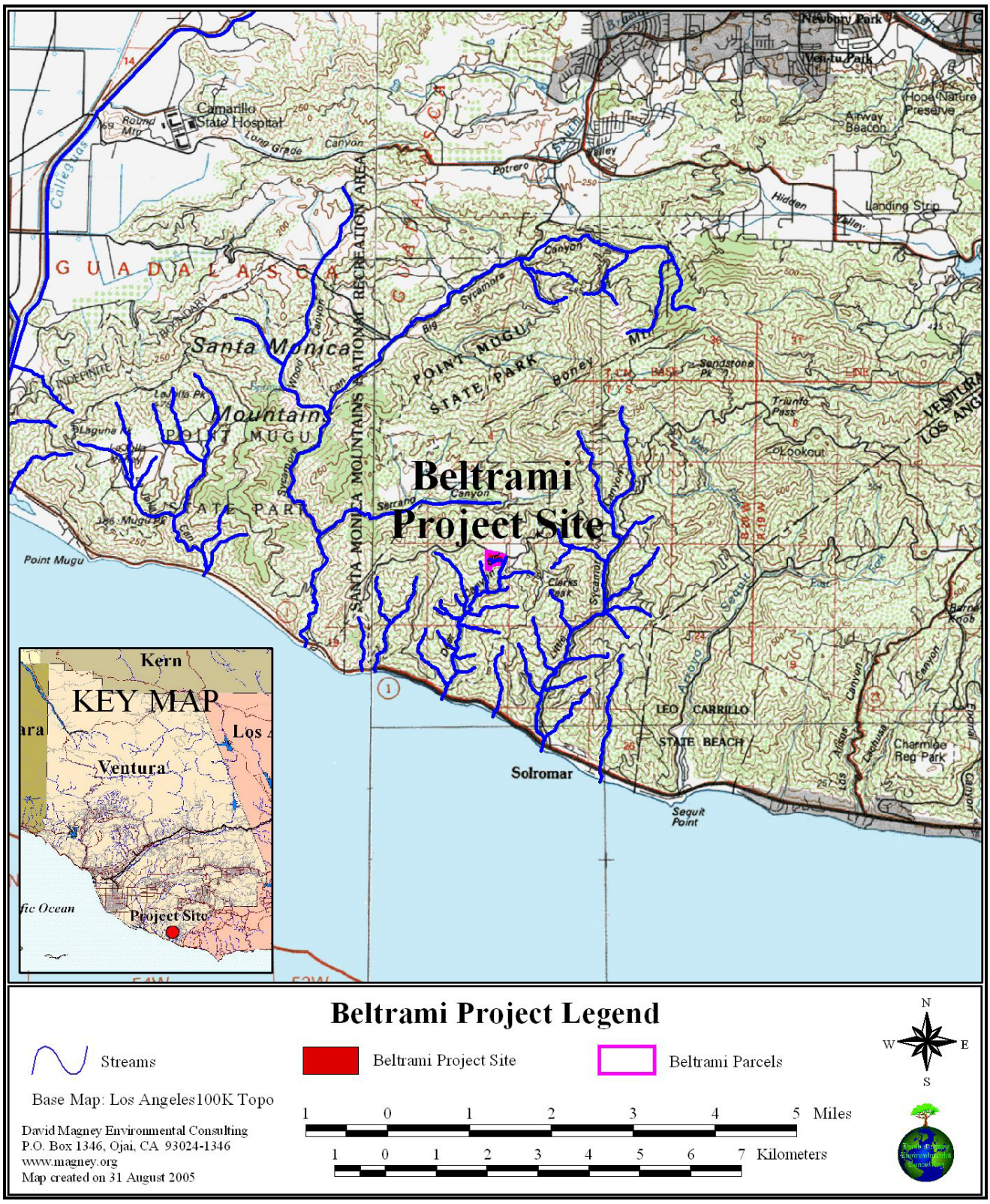


Figure 2. Beltrami Proposed Building Sites

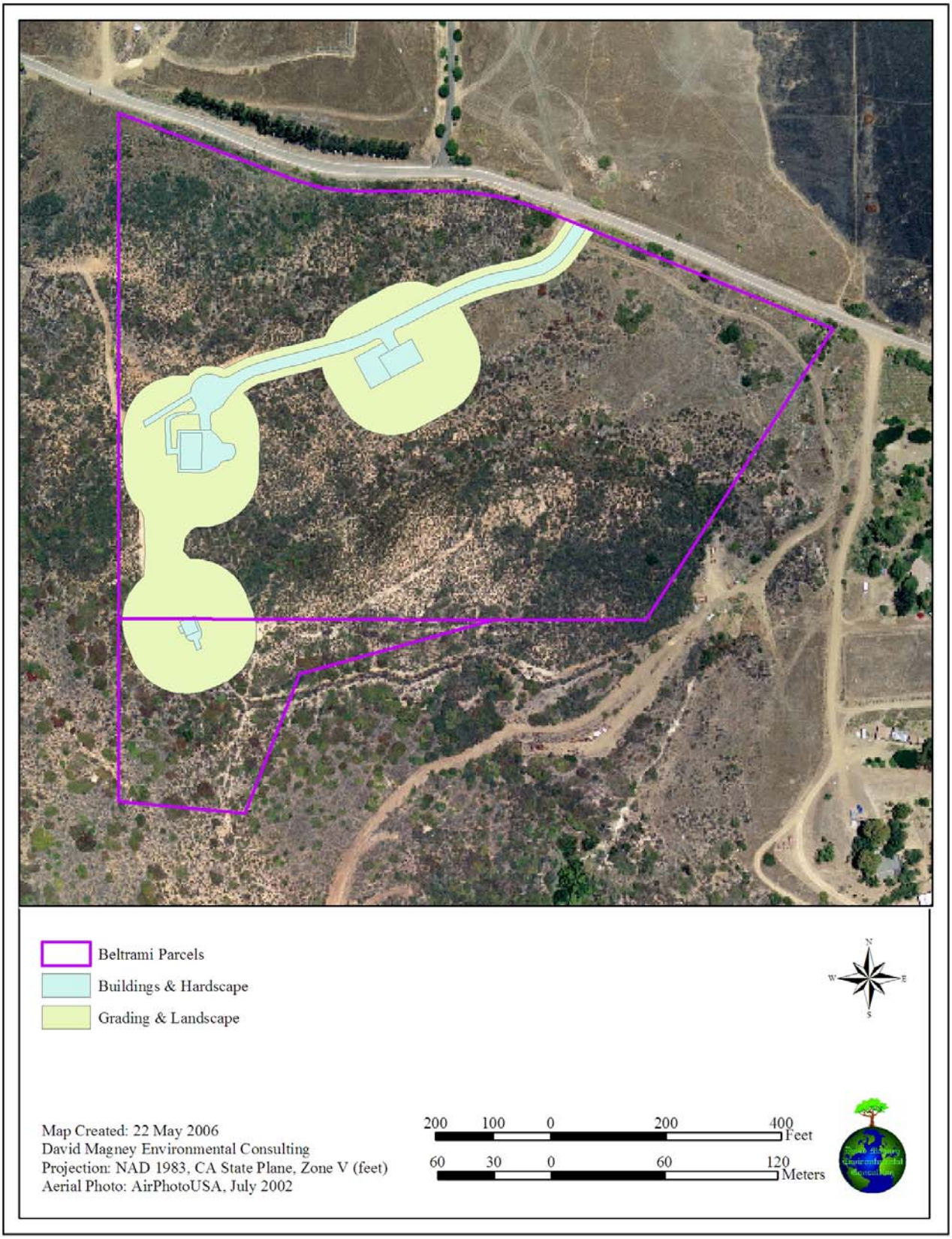
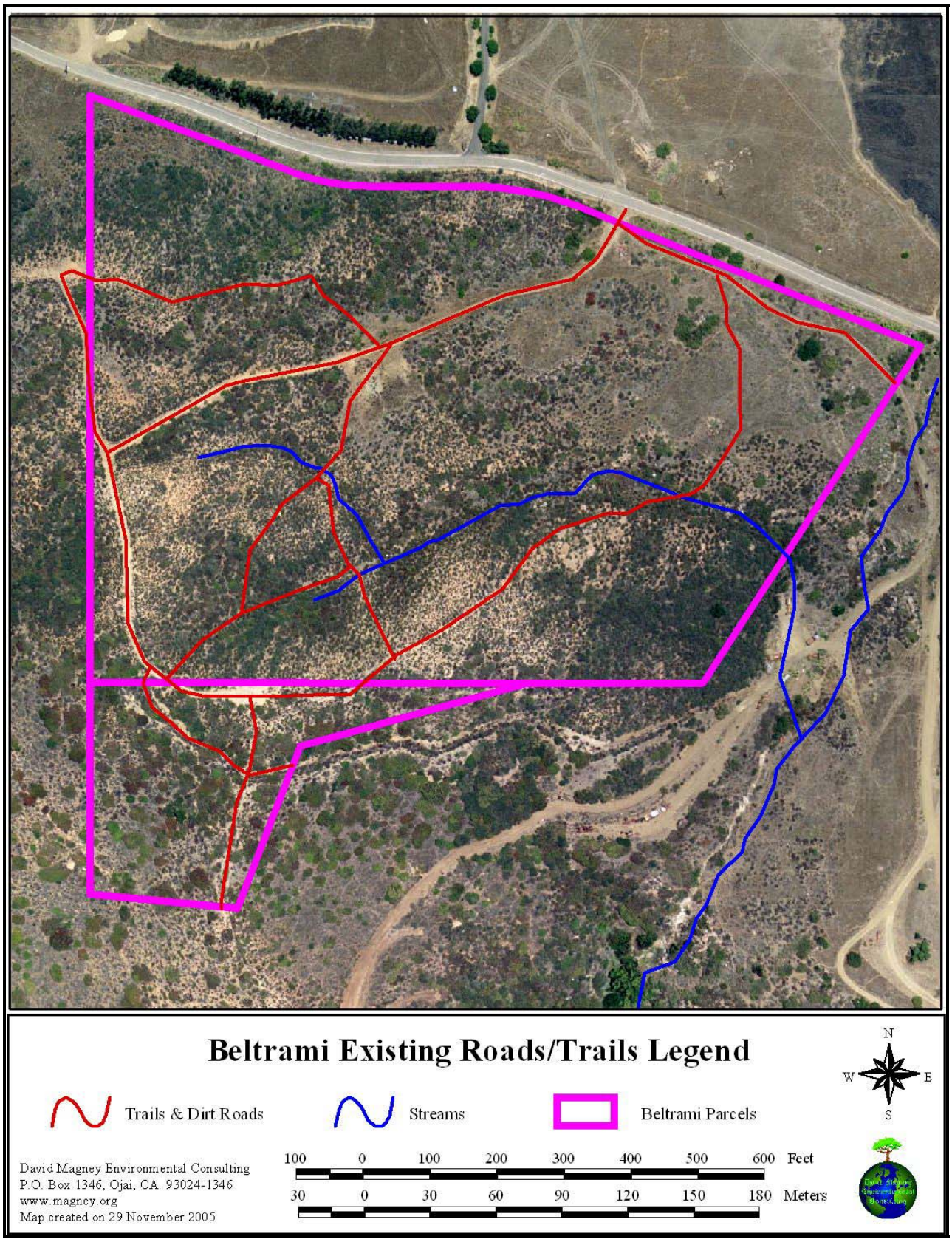


Figure 3. Beltrami Property Existing Roads and Trails



SECTION 2. METHODS

This section describes the methods used to assess project-related impacts to the biological resources present onsite, to satisfy Ventura County Planning Division requirements. Methods followed to conduct this assessment are described below, including protocols and methods for: botanical field surveys, special-species database searches, and vegetation mapping and classification.

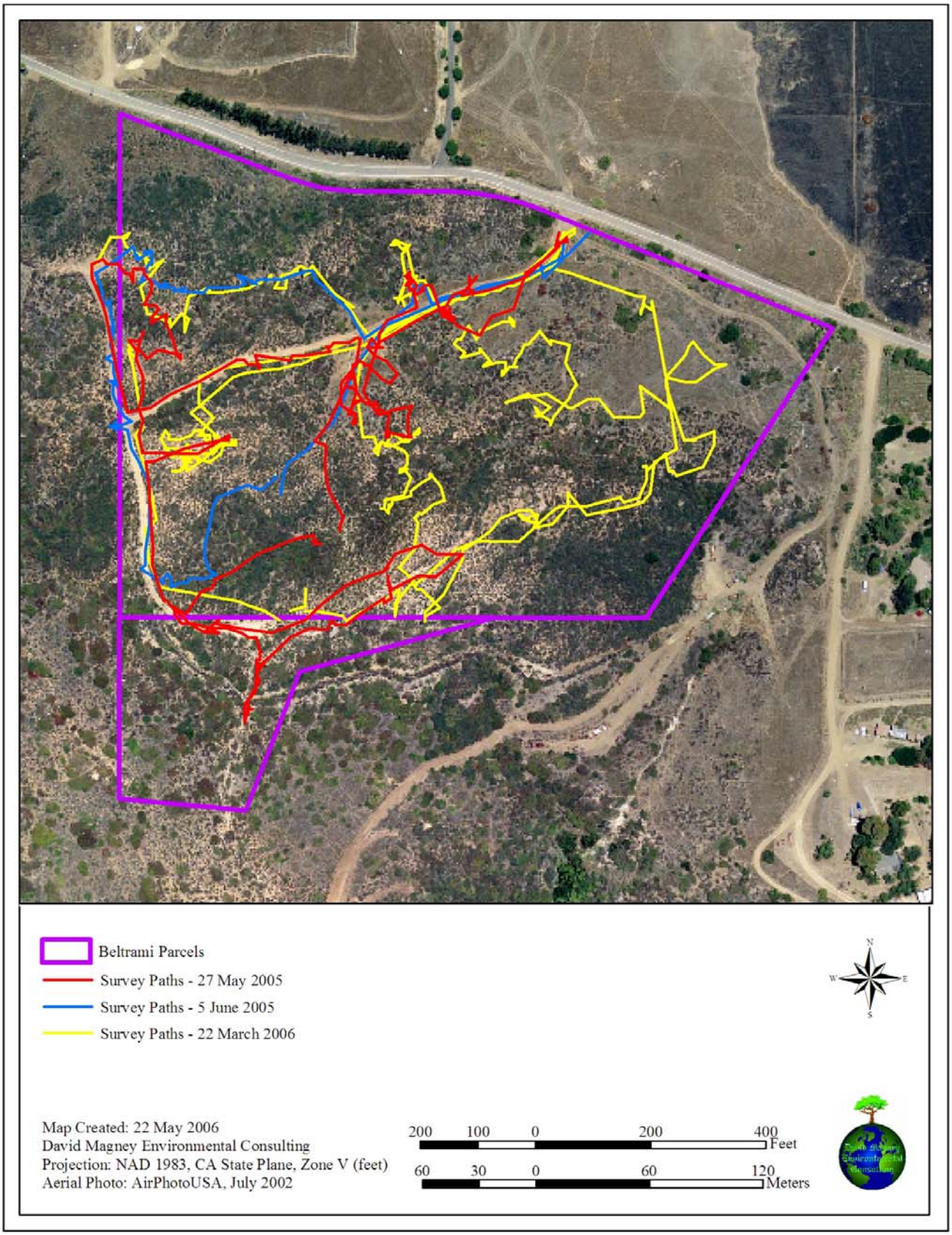
DMEC botanist David Magney conducted five seasonal field surveys of the project site to identify plant species present onsite, and map plant communities present. The field surveys were conducted on 27 May 2005; 5, 20, and 29 June 2005, and 22 March 2006, with focus on finding and mapping locations of special-status species that may constrain development of the main house, guest house, barn, and access driveway. Meandering-type transects were walked across the project site, focusing on areas to be developed. The 29 June survey focused on surveying potential alternate building sites to avoid sensitive resources found onsite on 27 May. The field surveys were floristic in nature. Voucher specimens were collected for selected plant species, and deposited in the Herbarium at the University of California, Santa Barbara (UCSB). Surveys for lichens were cursory and preliminary in nature and were not performed to professional standards.

Global Positioning System (GPS) waypoints and tracks were gathered using a Garmin eTrex Vista handheld GPS unit. Waypoints were taken when a new plant community was observed and when special-status species were found. The survey transects are shown on Figure 4, Botanical Survey Paths. The foot surveys traversed approximately 31,286 linear feet across the project site, with some areas surveyed more than once.

Plant communities were mapped and classified according to California Native Plant Society (CNPS) protocols (Sawyer and Keeler-Wolf 1995) to determine the location, type, and area of plant community associations present onsite. The vegetation mapping unit polygons were delineated onto a 2003 color aerial photograph of the project site using ESRI ArcView 3.3 Geographic Information System (GIS) software. Each plant association polygon was attributed with a unique identification number, a plant association name, plant community name, and perimeter and area values. Waypoint data were used as groundtruthing (on-the-ground verification) points to determine dominant plants for each mapped polygon. The resulting map and associated database was used to determine total acreage for each plant association present onsite, and how much and what types would be impacted by the proposed development.

DMEC conducted a search of the California Department of Fish and Game's (CDFG's) Natural Diversity Database (CNDDB) (CDFG 2005) to identify special-status species and sensitive habitats known to occur in the region of the project site. The CNDDB search included the Triunfo Pass, Calif. Quadrangle and the eight surrounding quadrangles, as recommended by CDFG protocols. DMEC consulted with CNPS as required by Ventura County General Plan policy to identify species and plant communities of special concern.

Figure 4. Botanical Survey Paths



SPECIAL-STATUS SPECIES DEFINITIONS

Special-status species are plants (including nonvascular plants) and animals that are either listed as Endangered or threatened under the Federal or California Endangered Special Acts; or considered to be rare under the California Native Plant Protection Act; or considered to be rare (but not formally listed) by resource agencies, professional organizations (e.g. Audubon Society, California Native Plant Society [CNPS], The Wildlife Society, California Lichen Society), and the scientific community. For the purposes of this assessment and County of Ventura General Plan policies, special-status species are further defined in Table 1, Definitions of Special-Status Species.

Table 1. Definitions of Special-Status Species

• Plants and animals legally protected under the California and Federal Endangered Species Acts or under other regulations. • Plants and animals considered sufficiently rare by the scientific community to qualify for such listing; or • Plants and animals considered to be sensitive because they are unique, declining regionally or locally, or are at the extent of their natural range.

Special-Status Plant Species	Special-Status Animal Species
• Plants listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (50 CFR 17.12 for listed plants and various notices in the *Federal Register* for proposed species). • Plants that are Category 1 or 2 (species of special concern) candidates for possible future listing as threatened or endangered under the Federal Endangered Species Act (55 CFR 6184, February 21, 1990). • Plants that meet the definitions of rare or endangered species under the CEQA (*State CEQA Guidelines*, Section 15380). • Plants considered by the CNPS to be "rare, threatened, or endangered" in California (Lists 1B and 2 in CNPS [2001]). • Plants listed by CNPS as plants about which we need more information and plants of limited distribution (Lists 3 and 4 in CNPS [2001]). • Plants listed by the California Lichen Society as rare in California (Magney 1999). • Plants listed or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act (14 CCR 670.5). • Plants listed under the California Native Plant Protection Act (California Fish and Game Code 1900 *et seq*.). • Plants considered sensitive by other federal agencies (i.e. U.S. Forest Service, Bureau of Land Management) or state and local agencies or jurisdictions. • Plants considered sensitive or unique by the scientific community or occurring at the limits of its natural range (*State CEQA Guidelines*, Appendix G).	• Animals listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (50 CFR 17.11 for listed animals and various notices in the *Federal Register* for proposed species). • Animals that are Category 1 or 2 candidates for possible future listing as threatened or endangered under the Federal Endangered Species Act (54 CFR 554). • Animals that meet the definitions of rare or endangered species under the CEQA (*State CEQA Guidelines*, Section 15380). • Animals listed or proposed for listing by the State of California as threatened and endangered under the California Endangered Species Act (14 CCR 670.5). • Animal species of special concern to the CDFG (Remsen [1978] for birds; Williams [1986] for mammals). • Animal species that are fully protected in California (California Fish and Game Code, Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).

To determine which special-status species are likely to occur in the vicinity of the study area, a literature survey (including a review of CNPS's *Inventory of Rare and Endangered Vascular Plants of California* [CNPS 2001] and a search of the CDFG's CNDDB RareFind3 [CDFG 2005]) was conducted for known occurrences in the study area.

The following assessment of special-status species includes the following information for each special-status species observed in the study area:

- Scientific and common (vernacular) names;
- Species Status (including federal, state, CDFG's CNDDB Element Ranking [Global and State ranking], and CNPS List and Rarity-Endangerment-Distribution [R-E-D] Code;
- Physical description;
- Habitat requirements;
- Distribution; and
- Survey results.

Listed species are those taxa that are formally listed as Endangered or Threatened by the federal government (e.g. U.S. Fish and Wildlife Service [USFWS]) pursuant to the national Endangered Species Act (ESA) or as Endangered, Threatened, or Rare (for plants only) by the State of California (i.e. California Fish and Game Commission) pursuant to the California ESA or the California Native Plant Protection Act.

The CNDDB Element Ranking system provides a numeric global and state ranking system for all special-status plant and wildlife species and rare habitats tracked by the CNDDB. The global rank (G-rank) is a reflection of the overall condition of an element (species or natural community) throughout its global range. The state ranking (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank. This Element Ranking system is defined below in Table 2, Natural Diversity Database Element Ranking System.

Not all special-status species considered in this report are tracked by the CNDDB, nor has a global or state rarity ranking been given to them. When a species lacks such rankings, DMEC has applied the rules described above to tentatively "rank" those special-status species lacking any rank. This applies to any rare lichen taxa found at the project site. Taxa for which Global and State rarity ranking have been devised here are followed by a "?" in parentheses, denoting tentative assignment.

CNPS' *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2001) categorizes rare California plants into one of five lists (1A, 1B, 2, 3, & 4) representing the five levels of species status, one of which is assigned to a sensitive species to indicate its status of rarity or endangerment and distribution. A CNPS List is a more general designation than the three separate sets of information provided in a CNPS R-E-D Code (defined in Table 4, California Native Plant Society R-E-D Code). However, the CNPS List is a significant designation in terms of a species' overall status throughout all of California, and it works well in conjunction to the specifications of the R-E-D Code. Table 3, California Native Plant Society List (CNPS List), provides a definition for each List code number.

The CNPS R-E-D Code is a three-numbered numeric ranking, which is assigned to a special-status species, consisting of one number (1, 2, or 3) for each of the three categories (Rarity-Endangerment-Distribution). Each number accurately describes the species' population levels and distribution patterns within each category. The number-codes are described for each of the three categories in Table 4, California Native Plant Society R-E-D Code, and are specific for each category.

Table 2. Natural Diversity Database Element Ranking System

Global Ranking (G)	
G1	Less than 6 viable elements occurrences (populations for species) OR less than 1,000 individuals OR less than 809.4 hectares (ha) (2,000 acres [ac]).
G2	6 to 20 element occurrences OR 809.4 to 4,047 ha (2,000 to 10,000 ac).
G3	21 to 100 element occurrences OR 3,000 to 10,000 individuals OR 4,047 to 20,235 ha (10,000 to 50,000 ac).
G4	Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern (i.e. there is some threat, or somewhat narrow habitat).
G5	Population or stand demonstrably secure to ineradicable due to being commonly found in the world.
GH	All sites are **historic**; the element has not been seen for at least 20 years, but suitable habitat still exists.
GX	All sites are **extirpated;** this element is extinct in the wild.
GXC	Extinct in the wild; exists in cultivation.
G1Q	The element is very rare, but there is a taxonomic question associated with it.
Subspecies Level: Subspecies receive a **T-rank** attached to the G-rank. With the subspecies, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety. For example: *Chorizanthe robusta* var. *hartwegii*. This plant is ranked G2T1. The G-rank refers to the whole species range (i.e., *Chorizanthe robusta*, whereas the T-rank refers only to the global condition of var. *hartwegii*.	
State Ranking (S)	
S1	Less than 6 element occurrences OR less than 1,000 individuals OR less than 809.4 ha (2,000 ac). S1.1 = very threatened S1.2 = threatened S1.3 = no current threats known
S2	6 to 20 element occurrences OR 3,000 individuals OR 809.4 to 4,047 ha (2,000 to 10,000 ac). S2.1 = very threatened S2.2 = threatened S2.3 = no current threats known
S3	21 to 100 element occurrences OR 3,000 to 10,000 individuals OR 4,047 to 20,235 ha (10,000 to 50,000 ac). S3.1 = very threatened S3.2 = threatened S3.3 = no current threats known
S4	Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern (i.e. there is some threat, or somewhat narrow habitat). NO THREAT RANK.
S5	Demonstrably secure to ineradicable in California. NO THREAT RANK.
SH	All California sites are **historic**; the element has not been seen for at least 20 years, but suitable habitat still exists.
SX	All California sites are **extirpated;** this element is extinct in the wild.

Notes: 1. Other considerations used when ranking a species or natural community include the pattern of distribution of the element on the landscape, fragmentation of the population/stands, and historical extent as compared to its modern range. It is important to take a bird's eye or aerial view when ranking sensitive elements rather than simply counting element occurrences.

2. Uncertainty about the rank of an element is expressed in two major ways: by expressing the rank as a range of values (e.g. S2S3 means the rank is somewhere between S2 and S3), and by adding a ? to the rank (e.g., S2?). This represents more certainty than S2S3, but less than S2. (CNDDB 2002.)

Table 3. California Native Plant Society List (CNPS List)

CNPS List	Definition
1A	Presumed Extinct in California
1B	Rare or Endangered in California and elsewhere
2	Rare and Endangered in California, more common elsewhere
3	Need more information
4	Plants of Limited Distribution

(CNPS 2001)

Table 4. California Native Plant Society R-E-D Code

Rarity (R)	
1	Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time.
2	Distributed in a limited number of occurrences, occasionally more if each occurrence is small.
3	Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported.
Endangerment (E)	
1	Not endangered.
2	Endangered in a portion of its range.
3	Endangered throughout its range.
Distribution (D)	
1	More or less widespread outside California.
2	Rare outside California.
3	Endemic to California

(CNPS 2001)

As described for the CNDDB ranking, not all special-status species considered in this report are tracked by CNPS at a statewide level, nor have R-E-D codes been given to them; however, CNPS, primarily through local chapters, has developed regional/county lists of species of local concern (locally rare).

The Channel Islands Chapter of CNPS has developed a list of locally rare plants of Ventura County (Magney 2005a), which is routinely updated. The Ventura County Planning Division (VCPD) has preliminarily adopted a list of locally rare species of plants and wildlife, referred to as Ventura County Locally Important Species (VCPD 2005).

For other untracked (by CNDDB) species, DMEC has applied the rules described above to "rank" those special-status species lacking such ranking. This applies to the rare moss, liverwort, and lichen taxa found in the study area, for which CNPS has not yet developed or incorporated a ranking system into its *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2001). Rare lichen taxa will be published by the California Lichen Society (CALS) in the future. Taxa for which CNPS R-E-D Codes have been devised for this report are followed by a "?" in parentheses, denoting tentative assignment.

SECTION 3. RESULTS

The results of the botanical survey of the project site are presented below. While wildlife surveys were not the focus of this assessment, wildlife species were observed, including special-status wildlife, so those observations and relevant information about them is provided.

The project site is in a relatively undisturbed condition, containing only a few dirt roads and recently created trails. The dirt roads are clearly visible on Figures 3 and 4 above. The trails were created after 2003.

BOTANICAL RESOURCES

The results of the botanical survey of the project site are presented below, including the floras of the vascular plants, lichens, and bryophytes observed onsite, as well as any known or potential special-status vascular plants, lichens, or bryophytes observed, reported, or tracked in the vicinity of the project site. The botanical resources onsite also include all plant communities making up the landscape of the property and any observed or tracked sensitive plant communities in the vicinity.

Flora

The flora of the project site is relatively rich, due primarily to the relatively low level of human disturbance. Based on what was actually observed during the late Spring and early Summer field surveys, a total of one species of fungus, 14 species of lichen, one species of moss, and 94 vascular plant species were observed onsite, as listed in Table 5, Plants Observed on the Beltrami Property. Table 5 includes the botanical (scientific) name, common name, growth habit, and family name of each taxon observed onsite. Voucher collection numbers are provided for all taxa so documented (e.g. *Magney 93-05*), and those voucher specimens will be deposited into the UCSB Herbarium.

Additional species of each group likely occur onsite; but additional seasonal or focused surveys would be needed during the late winter and early spring to detect them (anytime for lichens).

FUNGUS FLORA

DMEC observed three species of fungus on the Beltrami property. Species observed included: *Hygrophorus flavescens* (Golden Waxy Cap), *Astreus* sp. (Earthstar), and *Calvatia gigantea* (Giant Puffball). Additional species of fungus are expected to occur onsite; however, the total number is expected to be relatively low do to the general lack of well-developed soils and woodland habitats. No special-status fungus species are known to occur in the region, and none are expected onsite.

BRYOPHYTE FLORA

The bryophyte flora consists of nonvascular plants that photosynthesize, and includes mosses and liverworts. One species of liverwort was observed on the Beltrami property, and two species of moss was observed onsite, none of which were identified to species. The bryophyte flora is relatively depauperate due primarily to the lack of mesic habitats onsite, and the predominance of xeric shrublands, which are not usually rich in bryophyte species.

Table 5. Plants Observed on the Beltrami Property

Botanical Name[1]	Common Name	Habit[2]	Family
FUNGUS			
Calvatia gigantea	Giant Puffball Mushroom	F	Lycoperdales
Astreus sp.	Earthstar Mushroom	F	Lycoperdales
Hygrophorus sp.	a Waxy Cap (*Magney 5-06* UCSB)	F	Hygrophoraceae
Hygrophorus flavascens	Golden Waxy Cap	F	Hygrophoraceae
LICHENS			
Acarospora obpallens (*Knudsen & Magney 5624* UCR)	Cracked Lichen	CL	Acarosporaceae
Acarospora oligospora (*Knudsen & Magney 5597* UCR)	Cracked Lichen	CL	Acarosporaceae
Acarospora socialis	Cracked Lichen	CL	Acarosporaceae
Acarospora terricola (*Knudsen & Magney 5608, 5620* UCR)	Cracked Lichen	CL	Acarosporaceae
Acarospora veronensis (*Knudsen & Magney 5616, 5591* UCR)	Cracked Lichen	CL	Acarosporaceae
Aspicilia species #1 (*Knudsen & Magney 5589* UCR)	Sunken Disk Lichen	CL	Hymeneliaceae
Aspicilia glaucopsina (*Knudsen & Magney 5586, 5595* UCR)	Sunken Disk Lichen	CL	Hymeneliaceae
Buellia badia	Button Lichen	CL	Buelliaceae
Buellia punctata (*s. lato.*) (*Knudsen & Magney 5592* UCR)	Button Lichen	CL	Buelliaceae
Buellia sequax (*Knudsen & Magney 5670* UCR)	Button Lichen	CL	Buelliaceae
Caloplaca sp. (*Knudsen & Magney 5612* UCR)	Firedot Lichen	CL	Caloplacaceae
Caloplaca arenaria (*Knudsen & Magney 5602* UCR)	Granite Firedot Lichen	CL	Caloplacaceae
Caloplaca bolacina (*Knudsen & Magney 5619* UCR)	Waxy Firedot Lichen	CL	Caloplacaceae
Caloplaca citrina (*Knudsen & Magney 5629* UCR)	Mealy Firedot Lichen	CL	Caloplacaceae
Caloplaca epithallina (*Knudsen & Magney 5618* UCR)	Parasitic Firedot Lichen	CL	Caloplacaceae
Caloplaca impolita (*Knudsen & Magney 5631* UCR)	Firedot Lichen	CL	Caloplacaceae
Caloplaca luteominia ssp. *luteominia* (*Knudsen & Magney 5603* UCR)	Red Firedot Lichen	CL	Caloplacaceae
Caloplaca stellaris (*Knudsen & Magney 5630* UCR)	Firedot Lichen	CL	Caloplacaceae
Candelaria pacifica	Candleflame Lichen	FoL	Candelariaceae
Candelariella citrina (*Knudsen & Magney 5626* UCR)	Eggyolk Lichen	FoL	Candelariaceae
Candelariella vitellina (*Knudsen & Magney 5598* UCR)	Common Goldspeck Lichen	FoL	Candelariaceae
Cladonia chlorophaea	Mealy Pixie-cup	FoL	Cladoniaceae
Collema tenax	Soil Jelly Lichen	FoL	Collemataceae
Dimelaena radiata	Silver Moonglow Lichen	CL	Physciaceae
Diploschistes muscorum	Cowpie Lichen	CL	Thelotremataceae
Endocarpon pusillum (*Knudsen & Magney 5606* UCR)	Scaly Stippled Lichen	CL	Verrucariaceae
Flavoparmelia caperata	Common Greenshield Lichen	FoL	Parmeliaceae
Flavopunctelia flaventior	Greenshield Lichen	FoL	Parmeliaceae
Fuscopannaria californica (*Knudsen & Magney 5614, 5593* UCR)	Brown Shingle Lichen	CL	Panariaceae
Lecania brunonis (*Knudsen & Magney 5609* UCR)	Rim Lichen	FoL	Bacidiaceae
Lecania cyrtella	Rim Lichen	FoL	Bacidiaceae
Lecanora gangaleoides (*Knudsen & Magney 5628* UCR)	Rim-lichen	CL	Lecanoraceae
Lecanora muralis	Stonewall Rim-lichen	CL	Lecanoraceae

[1] * = Introduced/nonnative plant species. **Bold** = Special-status species (discussed below in the Special-Status Biological Resources section). Vascular plan species scientific names follow Hickman (1993), Flora of North America Committee (2001-2004), and Boyd (1999). Lichen scientific and common names follow Brodo et al. (2001).

[2] Habit definitions: AG = annual grass or graminoid; AH = annual herb; PF = perennial fern or fern ally; PG = perennial grass or graminoid; PH = perennial herb; PV = perennial vine; S= shrub; T = tree; BM = bryophyte moss; L = Liverwort; CL = crustose lichen; FoL = foliose lichen; FrL = fruticose lichen.

Botanical Name[1]	Common Name	Habit[2]	Family
Lecidea fuscoatra	Disk Lichen	CL	Lecideaceae
Lecidella asema	Disk Lichen	CL	Lecanoraceae
Lichinella stipatula (*Knudsen & Magney 5621* UCR)	Rock Licorice	FoL	Lichinaceae
Peltula euploca	Powdery Rock-olive	FoL	Peltulaceae
Peltula obscurans var. *hassei*	Common Rock-olive	FoL	Peltulaceae
Physcia adscendens	Hoodded Rosette Lichen	FoL	Physiaceae
Physcia dimidiata	Rosette Lichen	FoL	Physiaceae
Placynthiella knudsenii (*Knudsen & Magney 5600, 5610* UCR)	Knudsen's Rubble Lichen	CL	Trapeliaceae
Polysporina simplex	Common Coal-dust Lichen	CL	Acorosporaceae
Psora pacifica (*Knudsen & Magney 5590, 5594* UCR)	Pacific Scale	CL	Psoraceae
Ramalina sp.	Ramalina Lichen	FrL	Ramalinaceae
Sarcogyne privigna (*Knudsen & Magney 5623* UCR)	Grain-spored Lichen	CL	Acorosporaceae
Sarcogyne similis (*Knudsen & Magney 5615* UCR)	Grain-spored Lichen	CL	Acorosporaceae
Teloschistes chrysophthalmus	Gold-eye Lichen	FrL	Teloschistaceae
Thelomma santessonii (*Knudsen & Magney 5627* UCR)	Nipple Lichen	CL	Caliciaceae
Trapelia coarctata	Soil Lichen	CL	Trapeliaceae
Trapelia glebulosa (*Knudsen & Magney 5587* UCR)	Soil Lichen	CL	Trapeliaceae
Trapelia obtegens (*Knudsen & Magney 5599* UCR)	Soil Lichen	CL	Trapeliaceae
Usnea sp.	Beard Lichen	FrL	Parmeliaceae
Usnea glabrata	Lustrous Bear Lichen	FrL	Parmeliaceae
Verrucaria memnonia (*Knudsen & Magney 5611* UCR)	Speck Lichen	CrL	Verrucariaceae
Xanthoparmelia cumberlandia	Rock-shield	FoL	Parmeliaceae
Xanthoparmelia mexicana	Salted Rock-shield	FoL	Parmeliaceae
Xanthoria polycarpa	Pin-cushion Sunburst Lichen	FoL	Teloschistaceae
MOSSES & LIVERWORTS			
Bryum sp.1	Silver Moss	BM	Polytrichaceae
Grimmia sp.1	Grimmia Moss	BM	Polytrichaceae
?	Liverwort	L	?
VASCULAR PLANTS			
Adenostoma fasciculatum	Chamise	S	Rosaceae
*Anagallis arvensis**	Scarlet Pimpernel	AH	Primulaceae
Antirrhinum nuttallianum* ssp. *subsessile (*Magney 85-05* UCSB)	**Lesser Nuttall Snapdragon**	AV	Plantaginaceae
Artemisia californica	California Sagebrush	S	Asteraceae
*Avena barbata**	Slender Wild Oat	AG	Poaceae
Baccharis pilularis	Coyote Brush	S	Asteraceae
Bloomeria crocea var. *crocea*	Goldenstars	PH	Liliaceae
*Brachypodium distachyon**	Short-pediceled Brome	AG	Poaceae
*Bromus diandrus**	Ripgut Brome	AG	Poaceae
*Bromus hordeaceus**	Soft Chess	AG	Poaceae
Bromus madritensis ssp. *rubens**	Red Brome	AG	Poaceae
Calochortus catalinae (*Magney 93-05* UCSB)	**Catalina Mariposa Lily**	PG	Liliaceae
Calochortus plummerae	**Plummer Mariposa Lily**	PG	Liliaceae
Calystegia macrostegia var. *cyclostegia* (*Magney 7-06* UCSB)	Morning-glory	PV	Convolvulaceae
Camissonia bistorta (*Magney 97-05* UCSB)	California Sun-cup	AH	Onagraceae
*Carduus pycnocephalus**	Italian Thistle	AH	Asteraceae
Castilleja affinis ssp. *affinis* (*Magney 92-05* UCSB)	Lay-and-Collie's Indian Paintbrush	PH	Orobanchaceae
Ceanothus megacarpus var. *megacarpus*	Bigpod Ceanothus	S	Rhamnaceae

Botanical Name[1]	Common Name	Habit[2]	Family
Ceanothus spinosus	Greenbark Ceanothus	S	Rhamnaceae
*Centaurea melitensis**	Tocalote	AH	Asteraceae
Cercocarpus betuloides var. *betuloides* (*Magney 4-06* UCSB)	Birchleaf Mountain Mahogany	S	Rosaceae
Chaenactis artemisiifolia (*Magney 96-05* UCSB)	**White Pincushion**	AH	Asteraceae
Chorizanthe staticoides var. *staticoides* (*Magney 88-05* UCSB)	Turkish Rugging	AH	Polygonaceae
Chorizanthe xantii var. *xantii* (*Magney 89-05* UCSB)	Xantus Spineflower	AH	Polygonaceae
Corethrogyne filaginifolia var. *filaginifolia*	California Cudweed-aster	PH	Asteraceae
Crassula connata	Pygmy Weed	AH	Crassulaceae
Cryptantha decipens	**Gravel Forget-Me-Not**	AH	Boraginaceae
Cryptantha muricata (*Magney 90-05, 6-06* UCSB)	Jones Prickly Forget-Me-Not	AH	Boraginaceae
Daucus pusillus	Rattlesnake Weed	AH	Apiaceae
Deinandra fasciculata (*Magney 82-05* UCSB)	Fascicled Tarplant	AH	Asteraceae
Delphinium parishii ssp. *pallidum?*	Pale-flowered Larkspur	PH	Ranunculaceae
Dichelostemma capitatum ssp. *capitatum*	Blue Dicks	PH	Themidaceae
Dodecatheon clevelandii* ssp. *patulum (*Magney 9-06* UCSB)	**Lowland Padre Shooting Star**	PH	Primulaceae
Dudleya lanceolata	Lanceleaf Live-forever	PH	Crassulaceae
Encelia californica	California Bush Sunflower	S	Asteraceae
Epilobium canum ssp. *canum*	California Fuchsia	PH	Onagraceae
Eriogonum cinereum	Ashleaf Coast Buckwheat	S	Polygonaceae
Eriogonum fasciculatum var. *foliolosum*	Leafy California Buckwheat	S	Polygonaceae
Eriophyllum confertiflorum var. *confertiflorum*	Golden Yarrow	S	Asteraceae
*Erodium cicutarium**	Redstem Filaree	AH	Geraniaceae
Filago californica (*Magney 86-05* UCSB)	California Filago	AH	Asteraceae
*Foeniculum vulgare**	Sweet Fennel	PH	Apiaceae
Galium nuttallii* ssp. *nuttallii (*Magney 84-05, 11-06* UCSB)	**Climbing Bedstraw**	PH	Rubiaceae
*Gastridium ventricosum**	Nit Grass	AG	Poaceae
Hazardia squarrosa var. *grindelioides*	Sawtooth Goldenbush	S	Asteraceae
Helianthemum scoparium (*Magney 91-05* UCSB)	**Peak Rushrose**	PH	Cistaceae
Herniaria hirsuta ssp. *cinerea** (*Magney 87-05* UCSB)	Hairy Herniawort	AH	Caryophyllaceae
Hesperoyucca whipplei	Our Lord's Candle	S	Agavaceae
Heteromeles [*arbutifolia*] *salicifolia*	Toyon	S	Rosaceae
*Hirschfeldia incana**	Summer Mustard	BH	Brassicaceae
Hordeum murinum ssp. *leporinum**	Hare Barley	AG	Poaceae
*Hypochaeris glabra** (*Magney 84-05* UCSB)	Smooth Cat's-ear	AH	Asteraceae
*Lamarckia aurea**	Goldentop	AG	Poaceae
Leymus condensatus	Giant Wildrye	PG	Poaceae
Lomatium lucidum (*Magney 94-05* UCSB)	**Shiny Lomatium**	PH	Apiaceae
Lotus salsuginosus var. *salsuginosus*	Coastal Lotus	AH	Fabaceae
Lotus scoparius var. *scoparius*	Deerweed	S	Fabaceae
Malacothamnus fasciculatus var. *fasciculatus*	Chaparral Bushmallow	S	Malvaceae
Malacothrix saxatilis var. *tenuifolia*	Slenderleaf Cliff-aster	PH	Asteraceae
Malosma laurina	Laurel Sumac	S	Anacardiaceae
Marah cf. macrocarpus var. *macrocarpus*	Man-root	PV	Cucurbitaceae
*Medicago polymorpha**	Bur-clover	AH	Fabaceae
Melica imperfecta	Coast Melic Grass	PG	Poaceae
*Melilotus indica**	Yellow Sweetclover	AH	Fabaceae
Mimulus brevipes	Lemon Monkeyflower	AH	Phrymaceae

Botanical Name[1]	Common Name	Habit[2]	Family
Mimulus longiflorus var. *longiflorus* (*Magney 3-06* UCSB)	Sticky Bush Monkeyflower	S	Phrymaceae
Mirabilis laevis var. *crassifolia*	California Wishbone Bush	PH	Nyctaginaceae
Nassella lepida (*Magney 80-05 UCSB*)	Foothill Needlegrass	PG	Poaceae
Nassella cf. pulchra	Purple Needlegrass	PG	Poaceae
Navarretia jaredii (*Magney 149-05* UCSB)	**Paso Robles Navarretia**	AH	Polemoniaceae
Opuntia littoralis	Coastal Prickly Pear	S	Cactaceae
Paeonia californica	California Peony	PH	Paeoniaceae
Pentagramma triangularis ssp. *triangularis*	Goldenback Fern	PF	Pteridaceae
Phacelia cicutaria var. *hispida*	Hispid Caterpillar Phacelia	AH	Hydrophyllaceae
Phacelia parryi	**Parry Phacelia**	AH	Hydrophyllaceae
Poa annua	Annual Bluegrass	AG	Poaceae
Pseudognaphalium californicum	Green Everlasting	PH	Asteraceae
Psilocarphus tenellus var. *tenellus*	Slender Woolly Marbles	AH	Asteraceae
Pterostegia drymarioides	Fairy Mist	AH	Polygonaceae
Rafinesquia californica	California Chicory	AH	Asteraceae
Rhamnus crocea	Spiny Redberry	S	Rhamnaceae
Rhamnus ilicifolia	Hollyleaf Redberry	S	Rhamnaceae
Rhus integrifolia	Lemonadeberry	S	Anacardiaceae
Rhus ovata	Sugar Bush	S	Anacardiaceae
Rhus ovata* X *R. integrifolia	**Hybrid Sugar Bush**	S	Anacardiaceae
Ribes malvaceum var. *malvaceum*	Chaparral Currant	S	Grossulariaceae
*Rumex crispus**	Curly Dock	PH	Polygonaceae
Salvia leucophylla	Purple Sage	S	Lamiaceae
Salvia mellifera	Black Sage	S	Lamiaceae
Sambucus mexicana	Blue Elderberry	S	Caprifoliaceae
Sanicula arguta (*Magney 10-06* UCSB)	Southern California Sanicle	PH	Apiaceae
Sanicula bipinnata	Poison Sanicle	PH	Apiaceae
Sanicula crassicaulis var. *crassicaulis* (*Magney 8-06* UCSB)	Pacific Sanicle	PH	Apiaceae
*Schismus arabicus**	Abu Mashi	AG	Poaceae
Selaginella bigelovii (*Magney 95-05* UCSB)	Bigelow's Spike-moss	PF	Selaginellaceae
*Silene gallica**	Windmill Pink	AH	Caryophyllaceae
Silene laciniata ssp. *major*	Indian Pink	AH	Caryophyllaceae
Sisyrinchium bellum	Blue-eyed Grass	PG	Iridaceae
Solanum xantii var. *xantii*	Chaparral Nightshade	S	Solanaceae
Sonchus asper ssp. *asper**	Prickly Sow-thistle	AH	Asteraceae
*Sonchus oleraceus**	Common Sow-thistle	AH	Asteraceae
Stachys bullata	Pink Hedge Nettle	PH	Lamiaceae
*Stellaria media**	Common Chickweed	AH	Primulaceae
Stephanomeria virgata ssp. *virgata*	Twiggy Wreath Plant	AH	Asteraceae
Stylocline gnaphalioides (*Magney 81-05* UCSB)	**Everlasting Nest Straw**	AH	Asteraceae
Toxicodendron diversilobum	Western Poison Oak	S/PV	Anacardiaceae
Trichostema lanatum	Woolly Bluecurls	S	Lamiaceae
Uropappus lindleyi	Silver Puffs	AH	Asteraceae
Vulpia myuros var. *myuros**	Rattail Fescue	AG	Poaceae
Zigadenus brevibracteatus	**Death Camas**	PG	Melanthiaceae

LICHEN FLORA

Fifty-seven (57) lichen species belonging to thirty-one genera were observed and identified on the Beltrami property. Thirty-one (31) species were collected onsite and vouchered at the University of California at Riverside (UCR) Herbarium. Distribution information is based on a general knowledge of scientific literature or on specific literature citations or directly on the herbarium records at UCR, ASU, and SBBG herbaria, all of which contain large collections of California lichens. The voucher numbers (included in Table 5) belong to Knudsen with David Magney as co-collector, and all vouchers are deposited in the UCR Lichen Herbarium (The Herbarium, Department of Botany & Plant Sciences, University of California, Riverside). (Knudsen 2006.)

The lichen flora of the project site is very species-rich, primarily crustose lichens growing on rock outcrops. A few species were found on branches and trunks of shrubs; however, the fire history of the site has left the corticolous (bark-loving) lichen flora depauperate, with the last wildfire onsite occurring in 1993. Some species were found on thin soil habitat between rock outcrops. Thin-soil habitat is particularly important for a number of special-status lichen species as this habitat has become reduced in area regionally and has been found to contain populations of relatively rare species of lichens (Knudsen and Magney 2006).

The current National Park list for the Santa Monica Mountains (National Park Service 2003) lists 234 lichen taxa for Santa Monica Mountains. This list includes both verified and unverified reports from the Herbarium of the University of Minnesota (MIN), and from the literature including a National Park checklist. As part of a National Park Service initiative, Kerry Knudsen of UCR is working on a lichen flora of the Santa Monica Mountains. DMEC observed approximately 57 species of lichen onsite, representing approximately 24% of the known lichen flora of the Santa Monica Mountains, a relatively high percentage for a 20.73-acre area.

The lichen flora of the Ventura County portion of the Santa Monica Mountains and southern California as published by Knudsen (2005) includes *Aspicilia glaucopsina* and *Placynthiella knudsenii*, both of which Knudsen believes are rare (Knudsen pers. comm.; Knudsen and Magney 2006). Each of these lichen species was collected from Sandstone Peak, less than a mile north of the project site and could occur onsite.

VASCULAR PLANT FLORA

The vascular plant flora onsite consists of 110 identified taxa. A 110-taxa flora on a 20.73-acre site represents the species richness that would be expected to occur on such a site in the Santa Monica Mountains. Twenty-five (25) of the vascular plants are naturalized nonnative plants, representing 23% of the vascular plant flora, which is comparable with the ratio of native to nonnative species statewide (Hickman 1993). Many of the nonnative plants are concentrated in previously disturbed or grassland habitats, and less so in the chaparral areas.

Plant and Lichen Communities

The property is dominated by chaparral vegetation covering rolling slopes, draws, and hilltops. The alliances (or plant communities dominated by one plant species) and associations (alliances with other important species) found at the 20.73-acre project site are mapped Figure 5, Beltrami Site Plant Communities. The habitats, alliances, and associations (Sawyer and Keeler-Wolf 1995) observed onsite, and their corresponding acreage onsite are provided below in Table 6, Beltrami Property Plant and Lichen Communities.

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 Chaparral plant communities observed onsite are *Heteromeles salicifolia-Cercocarpus betuloides* Alliance (Toyon-Birchleaf Mountain Mahogany Chaparral), and *Adenostoma fasciculatum* Alliance (Chamise Chaparral).

Chaparral vegetation occupies approximately 12.91 acres of the property.

Heteromeles salicifolia Alliance

Heteromeles salicifolia Alliance is co-dominated by *Heteromeles salicifolia* [*H. arbutifolia*] (Toyon), which is an evergreen tall shrub with oblong, leathery, sharply toothed, dark green leaves. It produces white flowers and bright red pome fruit with mealy pulp. Toyon occurs in many plant communities, at elevations below 1,300 meters. *Heteromeles salicifolia* Alliance requires shallow soils on steeper slopes, and forms a tall intermittent canopy over lower shrubs.

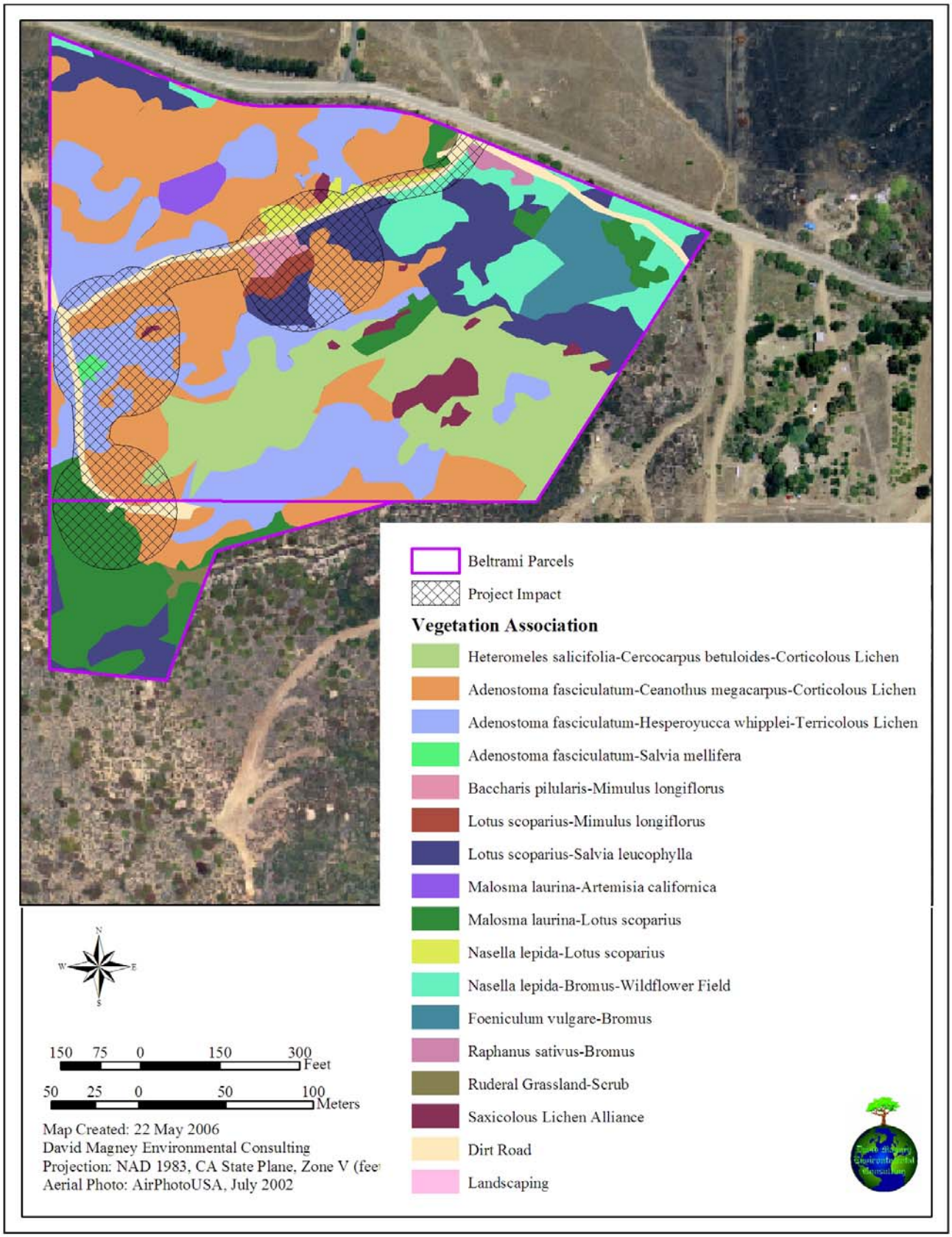
The *Heteromeles salicifolia* Alliance association observed onsite is *Heteromeles salicifolia-Cercocarpus betuloides*-Corticolous Lichen Association (or Toyon-Birchleaf Mountain Mahogany-Bark Lichen Chaparral). This association is influenced significantly by Birchleaf Mountain Mahogany, which is a tall shrub with obovate, thin, serrate, hairy leaves with prominent lateral veins. Other important associate species include *Adenostoma fasciculatum* (Chamise) *Artemisia californica* (California Sagebrush), *Ceanothus spinosus* (Greenbark Ceanothus), *Lotus scoparius* var. *scoparius* (Deerweed), *Malosma laurina* (Laurel Sumac), *Rhamnus ilicifolia* (Hollyleaf Redberry), *Rhus ovata* (Sugarbush), and *Salvia mellifera* (Black Sage). Lichen species growing on chaparral shrubs onsite include: *Candelariella* sp. (Eggyolk Lichen), *Ramalina* sp., and a *Xanthoparmelia* (a Bark Shield Lichen). These are common corticolous lichens.

Heteromeles salicifolia Alliance occupies approximately 3.18 acres of the project site.

Table 6. Beltrami Property Plant and Lichen Communities

Plant Community	Existing Onsite (acres)
Chaparral	**12.91**
Heteromeles salicifolia Alliance	3.18
Heteromeles salicifolia-Cercocarpus betuloides-Corticolous Lichen Association	3.18
Adenostoma fasciculatum Alliance	9.73
Adenostoma fasciculatum-Ceanothus megacarpus-Corticolous Lichen Association	5.65
Adenostoma fasciculatum-Hesperoyuccca whipplei-Terricolous Lichen Association	4.04
Adenostoma fasciculatum-Salvia mellifera Association	0.04
Coastal Sage Scrub	**4.58**
Baccharis pilularis Alliance	0.12
Baccharis pilularis-Mimulus longiflorus Association	0.12
Lotus scoparius Alliance	2.32
Lotus scoparius-Mimulus longiflorus Association	0.12
Lotus scoparius-Salvia leucophylla Association	2.20
Malosma laurina Alliance	2.14
Malosma laurina-Artemisia californica Association	0.18
Malosma laurina-Lotus scoparius Association	1.96
Opuntia littoralis Alliance (This alliance is too small to map, but is discussed in the paragraphs below)	< 0.01
Grassland	**2.25**
Nassella lepida Alliance	1.47
Nassella lepida-Lotus scoparius Association	0.18
Nassella lepida-Bromus-Wildflower Field Association	1.29
Ruderal Grassland Alliance	0.78
Foeniculum vulgare-Bromus Association	0.63
Raphanus sativus-Bromus Association	0.09
Ruderal Grassland-Scrub	0.06
Rock Outcrop/Bedrock	**0.36**
Saxicolous Lichen Alliance	0.36
Riparian Lichen Alliance (This alliance is too small to map, but is discussed in the paragraphs below)	< 0.01
Disturbed/Road	**0.63**
Total Area of Project Site:	**20.73**

Figure 5. Beltrami Site Plant Communities



Adenostoma fasciculatum Alliance

Adenostoma fasciculatum Alliance (Chamise Chaparral) is dominated by the evergreen shrub, *Adenostoma fasciculatum* (Chamise), which is the most abundant species in the non-desert shrublands of California. This species is a burled and many-branched shrub that has gray-brown trunk bark, clustered small linear leaves, and tiny white flowers. It is adapted to California's Mediterranean climate by a dual root system that has both deep and shallow roots. Chamise individuals recover from fire by both resprouting and seedling recruitment. (Zedler et al. 1997.)

Adenostoma fasciculatum Alliance forms an intermittent to continuous canopy less than three meters tall, growing over a sparse herbaceous layer, especially in older stands. *Adenostoma fasciculatum* is usually associated with all slope aspects, but is commonly found on the drier south- and west-facing slopes and ridges, growing in very shallow soils (mafic-derived). *Adenostoma fasciculatum* Alliance classifications must have at least 60% cover by Chamise. (Sawyer and Keeler-Wolf 1995.)

The associations of *Adenostoma fasciculatum* Alliance observed onsite include the following:

- *Adenostoma fasciculatum-Ceanothus megacarpus*-Corticolous Lichen Association (Chamise-Bigpod Ceanothus-Bark Lichen Association);
- *Adenostoma fasciculatum-Hesperoyuccca whipplei*-Terricolous Lichen Association (Chamise-Our Lord's Candle-Soil Lichen Association); and
- *Adenostoma fasciculatum-Salvia mellifera* Association (Chamise-Black Sage Association).

Other shrub canopy associate species observed as important contributors to these associations include: *Eriogonum fasciculatum* var. *foliolosum*, *Heteromeles salicifolia*, *Lotus scoparius* var. *scoparius*, *Malacothamnus fasciculatus* var. *fasciculatus* (Chaparral Bush Mallow), *Malosma laurina*, *Rhamnus ilicifolia*, and *Salvia leucophylla* (Purple Sage). Scattered understory herbaceous species include many of those listed below for the Coastal Sage Scrub plant communities.

Adenostoma fasciculatum Alliance occupies approximately 9.73 acres of the project site,

Adenostoma fasciculatum-Ceanothus megacarpus-Corticolous Lichen Association

Adenostoma fasciculatum-Ceanothus megacarpus-Corticolous Lichen Association is a plant association dominated by Chamise with Bigpod Ceanothus as an important canopy contributor species, and that is covered with a corticolous (bark-loving) lichen community. The corticolous lichen community occurs on bark and wood of chaparral shrubs. The effects of fire on the property were immediately noticed in assessing the corticolous lichen community. The lichen flora was depauperate and just recovering from the last fire on the property. The species of this flora are all rare on the property and many were too immature for proper determination.

Eleven species in ten genera were observed on the Beltrami property, including *Caloplaca* sp., *Candelaria pacifica, Flavoparmelia caperata, Flavopunctelia flaventior, Lecania cyrtella, Physcia adscendens, Ramalina* sp., *Teloschistes chrysophthalmus, Usnea* sp., *Usnea glabrata,* and *Xanthoria polycarpa.* All of these species are common to this community in the Santa Monica Mountains except *Teloschistes chrysophthalumas* (Knudsen 2004; Knudsen in ed.). (Knudsen 2006.)

Adenostoma fasciculatum-Hesperoyuccca whipplei-Terricolous Lichen Association

Adenostoma fasciculatum-Hesperoyuccca whipplei-Terricolous Lichen Association is a plant association dominated by Chamise with Our Lord's Candle as an important canopy contributor species, and that is covered with a Terricolous (soil-loving) lichen community growing below on

very thin soil. The Terricolous lichen community on the property had ten species in ten genera, including: *Acarospora terricola, Aspicilia glaucopsina, Cladonia chlorophaea, Collema tenax, Diploschistes muscorum, Endocarpon pusillum, Fuscopannaria californica, Placynthiella knudsenii, Psora pacifica, and Trapelia glebulosa.*

The *Cladonia* genus, which is widely distributed on soil throughout the world, was definitely recovering from fire. Only one species of *Cladonia* could be determined to species, and only one specimen of the common and global *Cladonia* parasite *Diploschistes muscorum* was seen. Squamules of young populations were observed scatterd throughout the property and it is expected that more than one species of *Cladonia* occurs on the property. *Trapelia glebulosa* was very predominant throughout the property, both as a pioneer on soil, mixed with other lichens, or on rock and pebbles.

The soil crusts were well developed in an area near the front of the property and in areas of stunted chamise chaparral on thin-soil habitat. The lichen component of these crusts, co-existing with mosses and liverworts, usually contained *Endocarpon pusillum* (no *Placidium* species was positively determined, but one or two common species are expected) with *Fuscopannaria californica, Collema tenax,* and possibly other cyanolichens that were too immature to determine. This is the first report of *Fuscopannaria californica* from the Santa Monica Mountains, and it was common on the property, though possibly under another name it was reported historically by Hasse from Topanga Canyon (Hasse 1913). It is common locally from of the coast of western North America and inland to Arizona at lower elevations. (Knudsen 2006.)

***Adenostoma fasciculatum-Salvia mellifera* Association**

Adenostoma fasciculatum-Salvia mellifera Association is a plant association dominated by Chamise with Black Sage as an important canopy contributor species. This association is very similar to Chamise Chaparral except that Black Sage is predominant in the canopy.

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. Due to stand variations, Coastal Sage Scrub is often considered part of a collection of species-specific plant series (Sawyer and Keeler-Wolf 1995). .

At one time, Ventura County 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 already lost to development (urban and agriculture); very little Coastal Sage Scrub has been protected by any mechanisms, such as enforceable conservation easements (Davis et al. 1985).

Coastal Sage Scrub generally occurs on rolling hills of the lower areas on the project site and transitions into chaparral where hills become steep. The plant alliances observed representing Coastal Sage Scrub at the Beltrami project site are *Bacchrais pilularis* Alliance (Coyote Brush Scrub), *Lotus scoparius* Alliance (Deerweed Scrub), *Malosma laurina* Alliance (Laurel Sumac Scrub), and *Opuntia littoralis* Alliance (Coastal Prickly Pear Scrub), which are described below.

Coastal Sage Scrub occupies approximately 4.58 acres of the project site.

Baccharis pilularis Alliance

Baccharis pilularis Alliance is dominated by *Baccharis pilularis* (Coyote Brush), a bright green, glabrous, native broad-leaved evergreen shrub with toothed, 3-veined leaves. It occurs in scrub and oak woodland communities on stabilized dunes of coastal bars, river mouths, coastline spits, coastal bluffs, open slopes, and ecotonal areas with grasslands (Hickman 1993). Coyote Brush Scrub forms a continuous or intermittent canopy (less than two meters tall) growing over a variable ground layer. Coyote Brush Series occurs at elevations below 1,000 meters.

Baccharis pilularis Alliance includes several associate species such as: *Artemisia californica* (California Sagebrush), *Calystegia macrostegia* var. *cyclostegia* (Morning-glory), *Corethrogyne filaginifolia* var. *filaginifolia* (California Cudweed-aster), *Encelia californica* (California Bush Sunflower), *Eriogonum fasciculatum* var. *foliolosum* (Leafy California Buckwheat), *Eriophyllum confertiflorum* var. *confertiflorum* (Golden Yarrow), *Malosma laurina* (Laurel Sumac), *Melilotus indica* (Yellow Sweetclover), *Phacelia cicutaria* var. *hispida* (Hispid Caterpillar Phacelia), *Sambucus mexicana* (Blue Elderberry), *Solanum xantii* var. *xantii* (Chaparral Nightshade), and *Toxicodendron diversilobum* (Western Poison Oak).

The association observed onsite is *Baccharis pilularis-Mimulus longiflorus* Association (Coyote Brush-Bush Monkeyflower Scrub).

Baccharis pilularis Alliance occupies approximately 0.12 acres of the project site.

Lotus scoparius Alliance

Lotus scoparius Alliance (Deerweed Scrub) is dominated by *Lotus scoparius* (Deerweed). Deerweed is a native drought-deciduous perennial herb or subshrub that is often shrubby with ascending to erect, clustered, bushy stems. It has yellow-reddish flowers, and elliptic, pinnately compound leaves that are often deciduous and well spaced. *Lotus scoparius* is common in scrub and chaparral types. It occurs on roadsides, coastal sands, desert slopes, and washes at elevations below 1,500 meters (Hickman 1993).

The two plant associations of *Lotus scoparius* Alliance onsite include: *Lotus scoparius-Mimulus longiflorus* Association (Deerweed-Sticky Bush Monkeyflower Scrub) and *Salvia leucophylla-Lotus scoparius* Association (Purple Sage-Deerweed Scrub). These Deerweed associations form an intermittent low canopy with important associate shrubs. Associated species include: *Artemisia californica*, *Baccharis pilularis, Calystegia macrostegia* (Morning-glory), *Eriogonum cinereum* (Ashleaf Coast Buckwheat), *Eriophyllum confertiflorum* var. *confertiflorum* (Golden Yarrow), *Hazardia squarrosa* var. *grindelioides* (Sawtooth Goldenbush), *Mimulus longiflorus* ssp. *longiflorus*, *Salvia leucophylla*, *Sambucus mexicana, Solanum xantii* var. *xantii* (Chaparral Nightshade), and *Trichostema lanatum* (Woolly Bluecurls).

The understory includes several native annual and perennial herbaceous species such as *Calochortus* spp. (Mariposa lilies), *Castilleja affinis* ssp. *affinis* (Lay-and-Collie's Indian Paintbrush), *Chorizanthe staticoides* var. *staticoides* (Turkish Rugging), *Corethrogyne filaginifolia* var. *filaginifolia* (California Cudweed-aster), *Cryptantha* spp. (Forget-me-nots), *Dichelostemma capitatum* ssp. *capitatum* (Blue Dicks), *Melica imperfecta* (Coast Melic Grass), *Paeonia californica* (California Peony), and *Pseudognaphalium californicum* (Green Everlasting).

Lotus scoparius Alliance occupies approximately 2.32 acres of the project site.

Malosma laurina Alliance

Malosma laurina Alliance is dominated by *Malosma laurina* (Laurel Sumac), which is a large shrub known to occur predominantly in chaparral and scrub communities. This evergreen shrub has a deep, extensive root system that penetrates deep moisture reserves during summer drought and has thick, curved, bright green leaves with reddish leaf margins, main veins, and petioles. The leaves are folded at the leaf margin.

Malosma laurina Alliance forms an open canopy over lower-growing shrubs with a sparse ground layer. This series prefers steep north- and south-facing slopes with shallow coarse soils at elevations below 400 meters. *Malosma laurina* is frost sensitive and does not grow where heavy frosts occur, such as in the higher elevations of the Transverse Ranges, and is a good indicator of frost-free areas.

Malosma laurina is abundant at the Beltrami property. Its primary associate species include *Artemisia californica*, *Baccharis pilularis* (Coyote Brush), *Encelia californica* (California Bush Sunflower), *Eriogonum fasciculatum* var. *foliolosum* (Leafy California Buckwheat), *Heteromeles salicifolia*, *Mimulus longiflorus* (Sticky Bush Monkeyflower), *Salvia leucophylla* (Purple Sage), *Rhamnus ilicifolia*, and *Sambucus mexicana* (Mexican Elderberry).

Malosma laurina Alliance includes two predominant associations, including *Malosma laurina-Artemisia californica* Association (Laurel Sumac-California Sagebrush Scrub) and *Malosma laurina-Lotus scoparius* Association (Laurel Sumac-Deerweed Scrub).

Malosma laurina Alliance occupies approximately 2.14 acres of the project site.

Opuntia littoralis Alliance

Opuntia littoralis Alliance (Coast Prickly Pear Scrub) occurs on steep upland slopes with shallow soils, often with exposed parent material, at elevations between sea level and 1,300 meters (Sawyer and Keeler-Wolf 1995).

Opuntia littoralis Alliance (also referred to as Maritime Succulent Scrub [Holland 1986] or Southern Cactus Scrub [Magney 1992]) consists of predominantly succulent, malacophyllous species (fleshy leaved or stemmed plants), as well as drought-tolerant, deciduous shrubs of less than two meters tall. Growth of these shrub types is concentrated in the spring. This plant community forms an intermittent shrub canopy over a variable to sparse groundlayer of grasses or succulent herbs. *Opuntia littoralis* Alliance is dominated by *Opuntia littoralis* (Coast Prickly Pear). Coast Prickly pear has flat elliptic stem segments with straight long yellowish spines.

The *Opuntia littoralis* association observed onsite is *Opuntia littoralis*-Terricolous Lichen Association, which is a plant community dominated by Coast Prickly Pear with Terricolous (soil-loving) Lichen growing below on very thin soil. Terricolous Lichens are described above in the *Adenostoma fasciculatum*-Terricolous Lichen Association subsection.

This *Opuntia littoralis* Alliance was observed only as a small patch onsite, and is too small to map on Figure 5; however, this plant community is an important attribute to the landscape of the Beltrami property and warranted discussion.

GRASSLAND

Grassland consists of low herbaceous vegetation that is dominated by introduced annual grasses, or less often by native perennial grasses, with herbaceous associates including either native wildflowers or invasive ruderal species. Grasslands generally grow in well-developed soils on gentle slopes and flats. For example, grassland covers the fine textured soils of coastal terraces, as well as the deeper soils of rolling hills at higher elevations. (Zedler et al. 1997.)

The two grassland plant communities observed at the Beltrami site include: *Nassella lepida* Alliance (Foothill Needlegrass Perennial Grassland), which is predominantly native and is dominated by native perennial bunchgrass species and native forbs; and Ruderal Grassland Alliance, which is typically a result of disturbance and is dominated by nonnative and often invasive grass and forb species.

Grassland habitat occupies approximately 2.25 acres of the project site.

Nassella lepida Alliance

Nassella lepida Alliance (Foothill Needlegrass Perennial Grassland) consists of low, herbaceous vegetation that is dominated by the perennial native bunchgrasses, *Nassella lepida* (Foothill Needlegrass). Introduced annual grassland plant communities (California Annual Grassland) have largely replaced the native perennial grassland communities throughout California. Many of the associate grasses and forbs, that are otherwise dominant in annual grassland and Coastal Sage Scrub communities, tend to grow in gaps made by the open perennial grassland cover.

A grassland is considered perennial when, in general, perennial grass species predominate, and more specifically, when a needlegrass species occupies at least approximately 10% of a community's ground cover. *Nassella lepida* Alliance is described by Magney (1992) as Southern Coastal Needlegrass Grassland, in which native and introduced annuals grow within the open gaps between the perennials, often actually exceeding the bunchgrass in cover. It is found as small, open pockets within Coastal Sage Scrub areas or intergrading with chaparral and woodland communities. This plant community prefers sites with fine-textured soils that are moist during winter and very dry during summer. *Nassella lepida* Alliance occurs on coastal terraces, foothills, valleys of California's south coast (Santa Ana Mountains), and in the coastal Transverse Ranges (including the Santa Monica Mountains).

Nassella lepida Alliance occurs on all topographic locations in deep, high clay content soils, and grows at elevations between sea level and 1,300 meters. Stands of this once extensive alliance now typically include non-native annual species mixed with the perennial grasses and herbs. *Nassella lepida* may grow sympatrically with other *Nassella* species; however, they do not typically mix, especially in southern California, and species of *Nassella* segregate based on substrate and slope factors. (Sawyer and Keeler-Wolf 1995.)

The plant associations of *Nassella lepida* Alliance include:

- *Nassella lepida-Lotus scoparius* Association (Foothill Needlegrass-Deerweed Native Perennial Grassland); and
- *Nassella lepida-Bromus*-Wildflower Association (Foothill Needlegrass-Brome Grass-Wildflower Native Perennial Grassland).

The associate grass species observed growing with *Nassella lepida* at the Beltrami site include: *Avena barbata* (Slender Wild Oat), *Bromus* spp. (brome grasses), and *Melica imperfecta*. The

wildflowers found in association with these grasslands include some of those listed above for Coastal Sage Scrub. It includes the following: *Bloomeria crocea* ssp. *crocea* (Golden Stars), Calochortus spp. (Mariposa Lilies), *Camissonia bistorta* (California Sun-cup), *Chaenactis artemisiifolia* (White Pincushion), *Corethrogene filaginifolia* (Cudweed Aster), *Daucus pusillus* (Rattlesnake Weed), *Deinandra fasciculata* (Fasciculed Tarplant), *Dodecatheon clevelandii* ssp. *patulum* (Lowland Padre Shooting Star), *Lotus salsuginosus* var. *salsuginosus* (Coastal Lotus), *Mimulus brevipes* (Lemon Monkeyflower), *Navarretia jaredii* (Paso Robles Navarretia), *Rafinesquia californica* (California Chicory), *Sanicula crassicaulis* var. *crassicaulis* (Pacific Sanicle), *Silene laciniata* ssp. *minor* (Indian Pink), and *Zigadenus brevibracteatus* (Death Camas).

Nassella lepida Alliance occupies approximately 1.47 acres of the project site.

Ruderal Grassland Alliance

Ruderal Grassland Alliance 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.)

Ruderal Grassland Alliance is found on most level areas and overgrown roads on the project site. Ruderal Grassland Alliance is dominated by introduced and often invasive plant species. The plant associations of Ruderal Grassland Alliance include: *Foeniculum vulgare-Bromus* Association (Sweet Fennel-Brome Ruderal Grassland), *Raphanus sativus-Bromus* Association (Wild Radish-Brome Ruderal Grassland), and Ruderal Grassland-Scrub.

The predominant invasive plant species observed making up the ruderal plant associations onsite include *Bromus diandrus* (Ripgut Grass), *B. hordeaceus* (Soft Chess), *B. madritensis* ssp. *rubens* (Red Brome), *Carduus pycnocephalus* (Italian Thistle), *Centaurea melitensis* (Tocalote), *Erodium cicutarium* (Redstem Filaree), *Foeniculum vulgare* (Sweet Fennel), *Hirschfeldia incana* (Summer Mustard), *Medicago polymorpha* (Bur-clover), and *Raphanus sativus* (Wild Radish), and *Sonchus* spp. (sow-thistles).

Ruderal Grassland Alliance occupies approximately 0.78 acre of the project site.

ROCK OUTCROP/BEDROCK

Lichens of Rock Outcrop/Bedrock communities are pioneer plants that are adapted to mineral or generally nonsoil substrates and help the decomposition process. Rock-loving lichens can also add considerable color to the substrate, from bright chartreuses, oranges and reds, to subtle shades of gray, white, yellow, brown, and green. The lichen flora of boulders is distributed on each boulder according to aspect, light intensity, and moisture availability, all of which are related. Certain species of lichens are usually found only on the most exposed, south-facing surfaces, requiring direct sunlight, while others are typically found on protected, north-facing aspects with little or no direct sunlight.

The two Rock Outcrop/Bedrock lichen communities that occupy the Beltrami property include Saxicolous Lichen Alliance and Riparian Lichen Allaince. These lichen communities are described in the following paragraphs.

Rock Outcrop/Bedrock occupies approximately 0.36 acre of the project site.

Saxicolous Lichen Alliance

The Saxicolous Lichen Alliance is dominated by saxicolous (rock-loving) lichens. The saxicolous lichens that occurr on the Beltrami property occur on the boulders, rocks, and pebbles of hard Conejo Volcanics and the softer and decaying volcanic breccias, generally lacking soil. Rock Outcrops are scattered around the property, and the landscape is covered with pebbles and smaller rocks from erosion.

Saxicolous Lichen Alliance occurs with grasses or sparse shrubs with substantial amounts of exposed parent material. The hard surfaces of the boulders and rock outcrops are covered, or partially covered, with little other plant species except for a diverse population of crustose (crust-like) and foliose (leaf-like) lichens, and mosses (one species observed onsite). The only other vegetation associated with this habitat is scattered plants typical of Chaparral and Coastal Sage Scrub within the adjacent areas. For example, the plant species observed as scattered associations of Saxicolous Lichen Alliance include: *Adenostoma fasciculatum, Hesperoyucca whipplei, Malosma laurina, Artemisia californica, Heteromeles salicifolia,* and *Salvia mellifera*.

The lichen flora observed inhabiting the boulders onsite appeared to be species-rich, and includes sensitive lichen species. Thirty-six species in seventeen genera of saxicolous lichens were observed or collected on Rock Outcrop onsite. All saxicolous lichen species observed making up the Saxicolous Lichen Alliance onsite are listed below in Table 7, Saxicolous Lichen Species Observed on the Beltrami Property.

The effects of the last fire on the property were evident in this community too. On many Rock Outcrops, saxicolous communities were just recovering and only a number of outcrops at the front of property showed signs they had escaped the last fire. The components of this community contained a maritime element, which generally occurs in the Santa Monica Mountains within a few miles of the coast mixed with the saxicolous community that occurs on Conejo volcanics and breccias throughout the Santa Monica Mountains. Most of these species occur commonly in the Santa Monica Mountains (Knudsen 2004; Knudsen in ed.) except for *Caloplaca stellata* and *Trapleia obtegans*. (Knudsen 2006.)

Saxicolous Lichen Alliance occupies approximately 0.36 acre of the project site.

Table 7. Saxicolous Lichen Species Observed on the Beltrami Property

Scientific Name	Common Name
Acarospora obpallens	Cracked Lichen
Acarospora oligospora	Cracked Lichen
Acarospora socialis	Cracked Lichen
Acarospora veronensis	Cracked Lichen
Aspicilia species #1	Sunken Disk Lichen
Buellia badia	Button Lichen
Buellia punctata (*s. lato.*)	Button Lichen
Buellia sequax	Button Lichen
Caloplaca arenaria	Granite Firedot Lichen
Caloplaca bolacina	Waxy Firedot Lichen
Caloplaca citrina	Mealy Firedot Lichen
Caloplaca epithallina	Parasitic Firedot Lichen
Caloplaca impolita	Firedot Lichen
Caloplaca luteominia ssp. *luteominia*	Red Firedot Lichen
Caloplaca stellaris	Firedot Lichen
Candelariella citrina	Eggyolk Lichen
Candelariella vitellina	Common Goldspeck Lichen
Dimelaena radiata	Silver Moonglow Lichen
Lecania brunonis	Rim Lichen
Lecanora gangaleoides	Rim-lichen
Lecanora muralis	Stonewall Rim-lichen
Lecidea fuscoatra	Disk Lichen
Lecidella asema	Disk Lichen
Lichinella stipatula	Rock Licorice
Peltula euploca	Powdery Rock-olive
Peltula obscurans var. *hassei*	Common Rock-olive
Physcia dimidiata	Rosette Lichen
Polysporina simplex	Common Coal-dust Lichen
Sarcogyne privigna	Grain-spored Lichen
Sarcogyne similis	Grain-spored Lichen
Thelomma santessonii	Nipple Lichen
Trapelia coarctata	Soil Lichen
Trapelia glebulosa	Soil Lichen
Trapelia obtegens	Soil Lichen
Xanthoparmelia cumberlandia	Rock-shield
Xanthoparmelia mexicana	Salted Rock-shield

Riparian Lichen Alliance

Riparian Lichen Allaince occupies the bedrock material, which makes up the substrate in the drainage occurring on the Beltrami property. The drainage onsite is ephemeral with a steep gradient and is lacking riparian vegetation. Riparian Lichen Allaince is a lichen community that is usually restricted to seasonal streambeds or creeks and drainages, generally occuring on bedrock material and typically among mosses, and seems to require some inundation each year. Only a single lichen of this community was collected in the main ravine, *Verrucaria memnonia*. Because of taxonomic confusion and a lack of a modern monograph for North America of the genus *Verrucaria*, *V. memnonia* is rarely collected or correctly determined, but is probably common in ravines and drainages near the coast or in shaded circumstances inland (Pinnacles National Monument). This is the third report for California and first for the Santa Monica Mountains. (Knudsen 2006.)

The Riparian Lichen Association observed onsite is Riparian Lichen-*Adenostoma fasciculatum-Malosma laurina* Association (Riparian Lichen - Chamise-Laurel Sumac).

This Riparian Lichen Alliance was observed only as a small patch onsite, and is too small to map on Figure 5; however, this plant community is an important attribute to the landscape of the Beltrami property and warranted discussion.

Special-Status Botanical Resources

Special-status botanical resources include vascular and nonvascular plants that are considered rare as defined above in the Methods Section. All special-status biological resources (special-status plants, animals, and habitats) found onsite are mapped on Figure 6, Beltrami Site Special-Status Biological Resources. Figure 6 also shows the sensitive resources in relation to the proposed project. Descriptions of each special-status plant species found onsite are provided below.

SPECIAL-STATUS VASCULAR PLANT SPECIES

A search of CNDDB found that 25 special-status vascular plant species are tracked within the vicinity of the project site, as listed in Table 8, Special-Status Plant Species with Potential to Occur Onsite.

No special-status vascular plants tracked by CNDDB, for the 9-quadrangle search of RareFind3, or reported in the CNDDB's online Quickviewer, were observed onsite; however, a total of fourteen (14) vascular plant Species of Local Concern were found on the Beltrami parcels, some of which have been assigned CNDDB global- and state-ranks. Table 9, Vascular Plant Species of Local Concern Observed at the Beltrami Property, lists the 14 rare plants observed onsite, which are also discussed in the following subsections.

Figure 6. Beltrami Site Special-Status Biological Resources

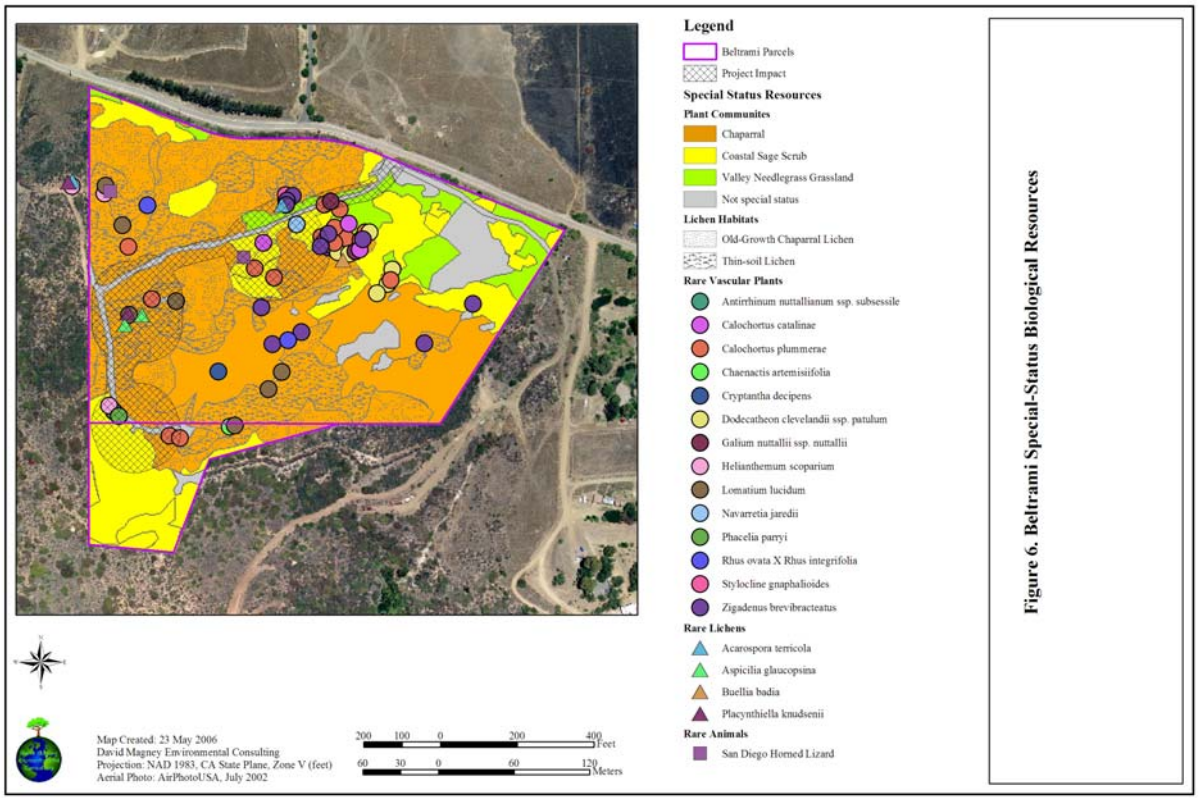


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Table 8. Special-Status Plant Species with Potential to Occur Onsite

Scientific Name	Common Name	Status						Required Habitat	Likelihood of Occurrence[3]
		G-Rank	S-Rank	Federal[4]	State	CNPS List	CNPS R-E-D Code		
Astragalus brauntonii	Braunton's Milkvetch	G2	S2.1	E	.	1B	3-3-3	Recent burns or disturbed areas; in stiff gravelly clay soils overlying granite or limestone. 4-640m.	Possible
Atriplex coulteri	Coulter's Saltbush	G2	S2.2	.	.	1B	2-2-2	Coastal bluff scrub, coastal dunes, Coastal Sage Scrub, valley and foothill grassland. Ocean bluffs, ridgetops, alkaline low places. 10-440m.	Unlikely
Baccharis malibuensis	Malibu Baccharis	G1	S1.1	.	.	1B	3-3-3	Coastal Sage Scrub, chaparral, cismontane woodland. In Conejo volcanic substrates, often on exposed roadcuts. Sometimes occupies oak woodland habitat. 150-260m.	Unlikely
Calochortus plummerae	Plummer's Mariposa Lily	G3	S3.2	.	.	1B	2-2-3	Coastal Sage Scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest. Occurs on rocky and sandy sites, usually of granitic or alluvial material. Can be very common after fire. 90-1,610m.	Known
Centromadia parryi ssp. *australis*	Southern Tarplant	G4?T2	S2.1	.	.	1B	3-3-2	Marshes and swamps (margins), valley and foothill grassland, vernal pools. Often in disturbed sites near the coast; also in alkaline soils sometimes with Saltgrass; also vernal pools. 0-425m.	Unlikely

[3] Likelihood of occurrence based on species' habitat requirements and the presence of required habitat in the project site.
Known = the species has been reported as inhabiting or frequenting the project site;
Likely = Required habitat exists at the project site and/or has been reported near by;
Possible = Marginal required habitat exists onsite, and/or required habitat exists in surrounding areas;
Unlikely = Required habitat does not exist at the project site nor does it exist nearby.
Highly Unlikely = Required or marginally suitable habitat not present onsite or nearby and potential for occurrence onsite is extremely remote.

[4] Federal and State Listings: E = Endangered; T = Threatened; R = Rare; C = Candidate. For special-status species definitions see Tables 1 through 4 above.

Scientific Name	Common Name	Status						Required Habitat	Likelihood of Occurrence[3]
		G-Rank	S-Rank	Federal[4]	State	CNPS List	CNPS R-E-D Code		
Cercocarpus traskiae	Catalina Island Mountain Mahogany	G1	S1.1	E	E	1B	3-3-3	Reported by CNDDB on Triunfo Pass quad along Yerba Buena Road in Los Angeles County; however, the report is highly questionable and will not be mapped by the CNDDB.	Unlikely
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's Pincushion	G5T3	S2.1	.	.	1B	2-3-2	Coastal bluff scrub, coastal dunes. Sandy sites. 3-100m.	Possible
Chorizanthe parryi var. *parryi*	Parry's Spineflower	G2T2	S2.1	.	.	3	?-2-3	Coastal Sage Scrub, chaparral. Dry slopes and flats; sometimes at interface of 2 veg types, such as chaparral and oak woodland; dry, sandy soils. 40-1,705m.	Possible
Cordylanthus maritimus ssp. *maritimus*	Salt Marsh Bird's-beak	G4?T2	S2.1	E	E	1B	2-2-2	Coastal salt marsh, coastal dunes. Limited to the higher zones of the salt marsh habitat. 0-30m.	Highly Unlikely
Deinandra minthornii	Santa Susana Tarplant	G2	S2.2	.	R	1B	2-2-3	Chaparral, Coastal Sage Scrub. On sandstone outcrops and crevices, in shrubland. 280-760m.	Unlikely
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's Dudleya	G2T2	S2.1	.	.	1B	2-3-2	Coastal Sage Scrub, coastal bluff scrub, valley and foothill grassland. Open, rocky slopes; often in shallow clays over serpentine or in rocky areas w/little soil. 5-450m.	Unlikely
Dudleya cymosa ssp. *agourensis*	Agoura Hills Dudleya	G5T1	S1.2	T	.	1B	3-2-3	Chaparral, cismontane woodland. Rocky, volcanic breccia. 200-500m.	Unlikely
Dudleya cymosa ssp. *marcescens*	Marcescent Dudleya	G5T2	S2.2	T	R	1B	3-2-3	Chaparral. On sheer rock surfaces and rocky volcanic cliffs. 180-520m.	Possible
Dudleya cymosa ssp. *ovatifolia*	Santa Monica Mountains Dudleya	G5T2	S2.2	T	.	1B	3-2-3	Chaparral, Coastal Sage Scrub. In canyons on sedimentary conglomerates; primarily north-facing slopes. 210-500m.	Possible
Dudleya parva	Conejo Dudleya	G2	S2.1	T	.	1B	3-2-3	Coastal Sage Scrub, valley and foothill grassland. In clayey or volcanic soils on rocky slopes and grassy hillsides. 60-450m.	Possible

Scientific Name	Common Name	Status						Required Habitat	Likelihood of Occurrence[3]
		G-Rank	S-Rank	Federal[4]	State	CNPS List	CNPS R-E-D Code		
Dudleya verityi	Verity's Dudleya	G1	S1.1	T	.	1B	3-2-3	Chaparral, cismontane woodland, Coastal Sage Scrub. On volcanic rock outcrops in the Santa Monica Mountains. 60-120m.	Possible
Eriogonum crocatum	Conejo Buckwheat	G2	S2.1	.	R	1B	2-2-3	Chaparral, Coastal Sage Scrub, valley and foothill grassland. Conejo volcanic outcrops; rocky sites. 50-580m.	Unlikely
Erodium macrophyllum	Round-leaved Filaree	G4	S2.1	.	.	2	2-3-1	Cismontane woodland, valley and foothill grassland. Clay soils. 15-1,200m.	Unlikely
Lasthenia glabrata ssp. *coulteri*	Coulter's Goldfields	G4T3	S2.1	.	.	1B	2-3-2	Coastal salt marshes, playas, valley and foothill grassland, vernal pools. Usually found on alkaline soils in playas, sinks, and grasslands. <1,400m.	Highly Unlikely
Nolina cismontana	Chaparral Nolina	G1	S1.1	.	.	1B	3-2-3	Chaparral, Coastal Sage Scrub. Primarily on sandstone and shale substrates; also known from gabbro. 140-1,275m.	Unlikely
Orcuttia californica	California Orcutt Grass	G2	S2.1	E	E	1B	3-3-2	Vernal pools. 15-660m.	Highly Unlikely
Pentachaeta lyonii	Lyon's Pentachaeta	G1	S1.1	E	E	1B	3-3-3	Chaparral, valley and foothill grassland. Edges of clearings in chaparral. Usually at the ecotone between grassland and chaparral or edges of firebreaks. 30-630m.	Unlikely
Senecio aphanactis	Rayless Ragwort	G3?	S1.2	.	.	2	3-2-1	Cismontane woodland, Coastal Sage Scrub. Drying alkaline flats. 20-575m.	Unlikely
Suaeda esteroa	Estuary Seablite	G4	S3.2	.	.	1B	2-2-2	Marshes and swamps. Coastal salt marshes in clay, silt, and sand substrates. 0-5m.	Highly Unlikely
Texosporium sancti-jacobi	Woven-spored Lichen	G2	S1.1	.	.	.	.	Open Sites in California chaparral habitats with *Adenostoma fasciculata*, *Eriogonum*, *Selaginella*. 290-660m.	Possible
Thelypteris puberula var. *sonorensis*	Sonoran Maiden Fern	G5T3	S2.2?	.	.	2	2-2-1	Meadows and seeps. Along streams, seepage areas. 50-550m.	Highly Unlikely

Table 9. Vascular Plant Species of Local Concern Observed at the Beltrami Property

Scientific Name	Common Name
Antirrhinum nuttallianum ssp. *subsessile*	Lesser Nuttall Snapdragon
Calochortus catalinae	Catalina Mariposa Lily
Calochortus plummerae	Plummer's Mariposa Lily
Chaenactis artemisiifolia	White Pincushion
Cryptantha decipiens	Gravel Forget-me-not
Dodecatheon clevelandii ssp. *patulum*	Lowland Padre Shooting Star
Galium nuttallii ssp. *nuttallii*	Climbing Bedstraw
Helianthemum scoparium	Peak Rushrose
Lomatium lucidum	Shiny Lomatium
Navarretia jaredii	Paso Robles Navarretia
Phacelia parryi	Parry Phacelia
Rhus ovata X *R. integrifolia*	Hybrid Sugar Bush
Stylocline gnaphaloides	Everlasting Nest Straw
Zigadenus brevibracteatus	Death Camas

Detailed descriptions of each of the special-status plants found onsite are provided below. The CNDDB status for each species is cited from CDFG (2005), and the CNPS status of each species is from the *CNPS Inventory* (CNPS 2001). For the species without CNPS statewide list status, but that are locally rare or uncommon in Ventura County (CNPS Channel Islands Chapter rarity status), the status is taken from CNPS's *Checklist of Ventura County Rare Plants* (Magney 2005a). The Ventura County occurrences are cited from the manuscript: *A Flora of Ventura County, California* (Magney 2005b).

Antirrhinum nuttallianum ssp. *subsessile*

STATUS		
Federal	**State / CNDDB**	**CNPS**
None	None / (G3, S3.2[5])	Locally Rare in Ventura County

Antirrhinum nuttallianum ssp. *subsessile* (A. Gray) D.M. Thompson – Lesser Nuttall Snapdragon
[*Antirrhinum subsessile* A. Gray, *Antirrhinum nuttallianum* Bentham var. *subsessile* (A. Gray) Jepson, *Sairocarpus pusillus* (Brandegee) D.A. Sutton]

Antirrhinum nuttallianum ssp. *subsessile* is an annual (rarely biennial) hairy herb with erect but weak, often climbing on shrubs or debris. The hairs are sparse to moderately dense, coarse, of ± uniform length, with the tips much enlarged. The leaves are opposite at lowest 2-5 nodes of main stem. The inflorescence consists of solitary flowers, with pedicels generally 2-18 mm long, and lowest generally subtended by twining branchlets, flower branchlets, or both, and flowers at all first-leaved nodes. The upper pedicels are generally < 6 mm long. The flower calyx lobes are ± equal;

[5] Neither NatureServe or the California Natural Diversity Database have assigned a global or state rank for this taxon. The ranks provided are suggested based on known distribution and number of populations in California.

corolla of opening flowers 7-12 mm long, lavender to blue-purple with 1-2 blue-veined white blotches on lower lip base and gold hairs in mouth, and has a whitish blotch on lower corolla lip generally interrupted by lavender. Seed ridges are broken, with fragments longitudinal or unpatterned. *Antirrhinum nuttallianum* ssp. *subsessile* blooms between February and May (CNPS 2001) and is part of the Plantain family (Plantaginaceae, formerly in the Scrophulariaceae). (Hickman 1993.)

Antirrhinum nuttallianum ssp. *subsessile* is an uncommon herb of rocky or disturbed places; Coastal Sage Scrub and Chamise Chaparral; <1,400 m in elevation (Hickman 1993). It occurs primarily in the southern portion of the Central Coast and the western South Coast, and is known in Santa Cruz, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Diego Counties (including Santa Catalina Island and Santa Rosa Island) (Hickman 1993). Type Locality: Santa Catalina Island, without exact locality, California. *Calochortus catalinae* is threatened by development.

Bioregional distribution: Central Coast, South Coast, Channel Islands of California, Arizona, Baja del Sur California, Mexico (Jepson Flora Project 2005).

Ventura County occurrences: Santa Monica Mountains, Potrero Valley on N slope of Boney Mountain [on 8-Apr-1956], SW edge of Deals Flat (Beltrami property).

Calochortus catalinae

STATUS		
Federal	**State / CNDDB**	**CNPS**
None	None / G3, S3.2	List 4 (Plants of Limited Distribution); R-E-D Code 1-2-3

Calochortus catalinae S. Watson - Catalina Mariposa Lily
[*Mariposa catalinae* Hoover, *Calochortus lyonii* S. Watson]

Calochortus catalinae is a bulbiferous perennial graminoid (grass-like) with 20- to 60-cm-long stems (bulblet-bearing) and withering basal leaves from 10 to 30 cm long. The inflorescence consists of 1 to 4 erect, bowl-shaped flowers with purple-spotted (near base) sepals (20 to 30 mm long), and white, tinged lilac, purple-spotted, nearly glabrous petals. The flowers include oblong, densely branched, hairy nectaries (not depressed) and erect, non-angled fruit (2 to 5 cm). *Calochortus catalinae* blooms between February and May (CNPS 2001) and is part of the lily family (Liliaceae). (Hickman 1993.)

Catalina Mariposa Lily is an uncommon bulb of heavy soil in open grassland, coastal scrub, and chaparral habitats and is known below 700 meters in elevation (Hickman 1993). It occurs primarily in the southern portion of the Central Coast and the western South Coast bioregions. *Calochortus catalinae* is known in Santa Cruz, San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Diego Counties (including Santa Catalina Island and Santa Rosa Island) (CNPS 2001). *Calochorthus catalinae* is threatened by development and over-collection from bulb enthusiasts.

Bioregional distribution: Central Coast, South Coast, Channel Islands of California (Jepson Flora Project 2005).

Ventura County occurrences (arranged by biogeographic regions):

- Cuyama Badlands;
- Mount Piños, at 2,059 m (6,800 ft);
- Dry Lakes Ridge, summit basins (Basins 1A & 3) (Magney 1986);
- Santa Ynez Mountains, Kennedy Canyon at burn site;
- Nordhoff Ridge, Pratt Trail;
- Ojai Valley, San Antonio Hill, Lake Casitas at 151 m (500 ft);
- Upper Ojai Valley, Dennison Park at bridge (observed 19-May-1981);

- Rincon Mountain, East Casitas Pass, Chismahoo Creek ¾ mile E of East Casitas Pass at 242 m (800 ft) [now under Lake Casitas];
- Sulphur Mountain, Adams Canyon on E end of headwaters;
- Red Mountain, above Rodriguez Canyon;
- Ventura Hills, Cañada Seca, Sexton Canyon, Lake Canyon, Harmon Canyon, Long Canyon, Hall Canyon;
- Santa Paula Ridge, N side of Toland Road Landfill;
- Ventura;
- Santa Clara River Valley, Santa Paula;
- Oxnard Plain, Camarillo;
- Oak Ridge, Happy Camp Canyon at 333 m (1,100 ft);
- Conejo Mountains, Conejo Grade, Conejo Valley in Thousand Oaks at 930 ft, Potrero Valley, at Rolling Oaks Rd. and Rimrock Dr. [extirpated];
- Simi Hills, 1½ mi W of Simi Peak at 363 m (1,200 ft), Ahmanson Ranch; and
- Santa Monica Mountains, Laguna Peak, Boney Mountain, Circle X Ranch on West Fork Arroyo Sequit, Decker Canyon at Decker Ranch, Point Mugu at Guadalaska Ranch, SW corner of Deals Flat (Beltrami property).

The proposed development will result in direct and possibly indirect impacts to this species. However, the majority of plants observed will be avoided. The locations of the buildings and driveway were designed to avoid most of the plants; however, since *Calochortus catalinae* was found scattered throughout the property at various densities, total avoidance was not considered feasible by the project architect.

Calochortus plummerae

STATUS		
Federal	**State / CNDDB**	**CNPS**
None	None / G1, S3.2	List 1B (Rare and Endangered); R-E-D Code 2-2-3

Calochortus plummerae E. Greene – Plummer's Mariposa Lily
[*Calochortus weedii* Alph. Wood var. *purpurascens* S. Watson]

Calochortus plummerae is a bulbiferous (with bulb coat fibrous) perennial graminoid with 30- to 60-cm high slender, generally branched stems. The withering basal leaves from are from 20 to 40 cm long while the cauline leaves are 4-17 cm long, upper leaves inrolled. The inflorescence consists of 2 to 6 erect flowers with leaf-like bracts. The flowers are widely bell-shaped, with petal margins toothed and long tapered. The sepals are 30 to 50 mm long while the pale pink to rose-colored petals (drying purplish) are 30-40 mm long, with long yellow hairs in a wide central band. The nectary on each petal is round, slightly depressed, ± glabrous, ± hidden by dense, orange bordering hairs. The fruit is erect, 4–8 cm long, linear, and angled. *Calochortus plummerae* blooms between May and July (CNPS 2001) and is part of the lily family (Liliaceae). (Hickman 1993.)

Calochortus plummerae is a rare herb (can be locally common) of dry rocky soil in perennial grassland, coastal scrub, chaparral, and Yellow Pine Forest habitats and is known below 1,700 meters in elevation (Hickman 1993). An endemic to California, it occurs in Ventura, Los Angeles, San Bernardino, and Riverside Counties (NatureServe 2005). Type Locality: Cajon Pass, San Bernardino County, California. *C. plummerae* is threatened by development throughout its range.

Bioregional distribution: South Coast, Peninsular Ranges of California (Jepson Flora Project 2005).

Ventura County occurrences (arranged by biogeographic regions):

- Santa Susana Mountains, Santa Susana Pass [in 1928] [likely extirpated];
- Simi Valley, Marr Ranch [likely extirpated],
- Conejo Mountains, Long Grade Canyon 1 mi E of Camarillo State Hospital [now CSU Channel Islands] [in 1968];
- Simi Hills, Ahmanson Ranch;
- Conejo Ridge, Thousand Oaks near SE corner of Rancho Rd. and US101;
- Hidden Valley, Potrero Seco Rd. at Lake Sherwood [likely extirpated]; and
- Santa Monica Mountains, SW portion of Deals Flat (Beltrami property).

The proposed development will result in direct and possibly indirect impacts to this species. However, the majority of plants observed will be avoided. The locations of the buildings and driveway were designed to avoid most of the plants; however, since *Calochortus plummerae* was found scattered throughout the property at various densities, total avoidance was not considered feasible by the project architect. The loss of individual *Calochortus plummerae* plants, a CNPS List 1B plant, is considered significant.

Chaenactis artemisiifolia

STATUS		
Federal	**State / CNDDB**	**CNPS**
None	None / G3?, S3.2[6]	Ventura County Locally Uncommon

Chaenactis artemisiifolia (A. Gray) A. Gray - White Pincushion

[*Chaenactis artemisiaefolia* (Harv. & Gray ex A. Gray) A. Gray, *Chaenactis artemisiaefolia* A. Gray, *Acarphaea artemisiaefolia* Harv. & Gray]

[6] The California Natural Diversity Database has not yet assigned a state rank for this taxon. The S-rank provided is suggested based on known distribution and number of populations in California and is generally supported by Roxanne Bittman of the CNDDB based on personal communications of 20 September 2005.

Chaenactis artemisiifolia is a coarse, robust, single-stemmed (branched above middle) annual herb less than 10(20) dm high. The stems have whitish scaly-puberulent below and on the leaves, with the hairs thinning with age. The leaves are less than 15(-20) cm long, not fleshy, with the basal rosette withering. The largest blades (2-)3-4-pinnately lobed, 1° lobes in 5-10 pairs, generally crowded, with the longest near base, and tips flat. The inflorescence consists of heads generally several per stem; peduncles shorter than 7 cm; involucre hemispheric, densely wavy-hairy; longest phyllaries 7-10 mm, tips erect, more or less rigid, and sharp. The flowers have radial corollas that are 5-7 mm long, generally equal in length, and white to pinkish in color. The fruit is 4-7 mm long, compressed, and lacks a pappus. *Chaenactis artemisiifolia* blooms between April and July (CNPS 2001) and is a member of the sunflower family (Asteraceae). (Hickman 1993.)

Chaenactis artemisiifolia is an uncommon herb of open slopes, disturbed areas; Chaparral habitats and is known below 1,600 meters in elevation (Hickman 1993). It occurs primarily in the Transverse Ranges of Ventura, Los Angeles, Riverside, and San Bernardino Counties, the Santa Maria Valley of San Luis Obispo County, and the Peninsular Ranges of Orange, and San Diego Counties (Hickman 1993). Type Locality: California, collected by Coulter. *Chaenactis artemisiifolia* is threatened by development.

Bioregional distribution: Central Coast; Transverse Ranges, and Peninsular Ranges of California; Baja California del Norte, Mexico (Jepson Flora Project 2005).

Ventura County occurrences (arranged by biogeographic regions):

- Pine Mountain Ridge, Chorro Grande Canyon near U.S. Gypsum quarry;
- Conejo Mountains, 3 miles SSE of Round Mountain, Hill Canyon;
- Simi Hills, Ahmanson Ranch; and
- Santa Monica Mountains, La Jolla Peak at 1,000 ft on Broome Ranch, Point Mugu State Park, SW edge of Deals Flat (*D. Magney 96-05* UCSB) (Beltrami property).

The proposed development will result in direct and possibly indirect impacts to this species as a result of grading the driveway and fuel hazard modification. The loss of individual *Chaenactis artemisiifolia* plants, a locally rare plant, is considered significant.

Photo by Charles E. Jones ©2003

Cryptantha decipens

STATUS		
Federal	**State / CNDDB**	**CNPS**
None	None / G4, S4 (Utah S2)	Ventura County Locally Uncommon

Cryptantha decipens (M.E. Jones) A.A. Heller - Gravel Forget-Me-Not
[*Krynitzkia decipiens* M.E. Jones, *Cryptantha decipiens* A.A. Heller]

Cryptantha decipiens is a slender loosely branched strigose to rough-hairy annual herb to 10-40 cm high. The corolla is inconspicuous whitish. The fruiting nutlet 1 (rarely 2) lanceolate white-granular throughout. *Cryptantha decipiens* blooms between March and May (Magney 2005) and is a member of the borage family (Boraginaceae). (Hickman 1993.)

Cryptantha decipiens is an uncommon herb of open, sandy areas in grasslands and shrublands below 1,500 meters in elevation (Hickman 1993). *Cryptantha decipiens* ranges from northern Baja California (Mexico) and southeastern California through southern Nevada to southwestern Utah and Arizona, occurring in gravelly (often calcareous) or sometimes sandy soil on slopes and plains in the desert. In California, it occurs in the Tehachapi Mountain Area, San Francisco Bay Area, southern San Joaquin Valley, South Coast Ranges, Western Transverse Ranges, White and Inyo Mountains, Mojave Desert, and northern Sonoran Desert. It is found in Alameda, Stanislaus, Merced, Monterey, San Benito, Fresno, Tulare, San Luis Obispo County, Kern, Santa Barbara, Ventura, Los Angeles, Riverside, San Bernardino, San Diego, and Imperial Counties (Hickman 1993). Type Locality: Yucca, Arizona. *Cryptantha decipiens* is threatened by development.

Bioregional distribution: Tehachapi Mountain Area, San Francisco Bay Area, s San Joaquin Valley, South Coast Ranges, Western Transverse Ranges, White and Inyo Mountains, Mojave Desert, n Sonoran Desert. **Distribution outside California:** to sw Utah, Arizona (Jepson Flora Project 2005).

Ventura County occurrences (arranged by biogeographic regions):

- Cuyama Badlands, sandy area in Cuyama River wash;
- Pine Mountain Ridge, Camp Scheideck;

- Dry Lakes Ridge, North Fork Matilija Creek at foot of Pollard Point at SR33;
- Matilija Canyon, Upper North Fork Matilija Canyon at 1,669 ft, at 3,816 ft;
- Nordhoff Ridge, 1 mi above Wheeler Hot Springs at 606 m (2,000 ft), Stewart Canyon along Pratt Trail at 1,558 ft; and
- Santa Monica Mountains, SW edge of Deals Flat (Beltrami property).

The proposed development will result in direct and possibly indirect impacts to this species as a result of grading the driveway and fuel hazard modification. The loss of individual *Cryptantha decipiens* plants, a locally rare plant, is considered significant.

Dodecatheon clevelandii ssp. *patulum*

STATUS		
Federal	**State / CNDDB**	**CNPS**
None	None / G5T5, S2	Ventura County Locally Rare

Dodecatheon clevelandii ssp. *patulum* (E. Greene) H.J. Thompson - Lowland Padre Shooting Star

Dodecatheon clevelandii ssp. *patulum* is a glandular-hairy perennial herb with oblanceolate, dentate-margined leaves. The inflorescence is 1- to 6-flowered with flower parts in fives. Corolla lobes magenta and tinged whitish. The filament tube has a yellowish to whitish spot below each anther, and the tissue at the base of each anther is maroon to blackish. *Dodecatheon clevelandii* ssp. *patulum* blooms between January and April (Magney 2005) and is a member of the primrose family (Primulaceae). (Hickman 1993.)

Dodecatheon clevelandii ssp. *patulum* is a rare herb of moist places, including grassy slopes, flats, meadows, and inhabits habitats such as Wildflower Field and Coastal Sage Scrub below 600 meters in elevation (Hickman 1993).

Bioregional distribution: *Dodecatheon clevelandii* ssp. *patulum* occurs in northern and central Sierra Nevada Foothills, central High Sierra Nevada, Great Central Valley, San Francisco Bay Area, and Inner South Coast Ranges.

Ventura County occurrences (arranged by biogeographic regions):

- Santa Monica Mountains, Deer Canyon Rd at 1,400 ft (this population represents a long-distance disjunct population from northern California and significantly expands the range of this subspecies; however, an unannotated specimen in Mandeville Canyon at 250 m in Los Angeles County in March 1929 suggests that it is scattered about the Santa Monica Mountains).
- Santa Monica Mountains, SW edge of Deals Flat (D. Magney 9-06 UCSB) (Beltrami property).

The proposed development will result in direct and possibly indirect impacts to this species as a result of grading the driveway and fuel hazard modification. The loss of individual *Dodecatheon clevelandii* ssp. *patulum* plants, a locally rare plant, is considered significant.

Galium nuttallii ssp. *nuttallii*

STATUS		
Federal	**State / CNDDB**	**CNPS**
None	None / G5T5, S2	Ventura County Locally Uncommon

Galium nuttallii A. Gray ssp. *nuttallii* - San Diego Bedstraw
[*Galium suffruticosum* Nuttall]

Galium nuttallii ssp. *nuttallii* is a dioecious, slender-stemmed, suffrutescent shrub 6-15 dm high. The leaves are arranged in whorls of 4. The stems and leaves become dark red with age, and have tiny, sharp, curved hairs. The flowers are usually greenish yellow in color. *Galium nuttallii* ssp. *nuttallii* blooms between March and June, sometimes to August at higher elevations (Magney 2005b) and is a member of the Rue or Madder family (Rubiaceae). (Hickman 1993.)

Photograph by Dean Taylor ©1993

Galium nuttallii ssp. *nuttallii* is an uncommon herb clambering among shrubs in shrubby hillsides primarily in chaparral, between 3-500 meters (Hickman 1993). *Galium nuttallii* ssp. *nuttallii* ranges from Solano County to San Diego County, with a large gap between Ventura County and Solano County. It occurs in the South Coast, Western Transverse Ranges, Peninsular Ranges (Jepson Flora

Project 2005). It is not known to occur in Orange or Los Angeles Counties. In Baja California, Mexico, it is found on granitic hillsides and arroyos in the western foothills of the Sierras Juarez and San Pedro Martir. Type Locality: San Diego, California. *Galium nuttallii* ssp. *nuttallii* is threatened by development.

Bioregional distribution: South Coast, Western Transverse Ranges, Peninsular Ranges, to Baja California (Jepson Flora Project 2005).

Ventura County occurrences (arranged by biogeographic regions):

- Matilija Canyon, Murietta Canyon along trail at 1,856 ft;
- Red Mountain, East Casitas Pass under SCE tower 5-3 at 1,240 ft, E. Casitas Pass on NW-facing slope under SCE tower 4-3 at 1,312 ft, Ayers Creek under SCE tower 4-1 S of Lake Casitas at 1,325 ft;
- Ventura Hills, Long Canyon on E-facing slope at SCE tower 3-N at 685 ft, Harmon Canyon on W-facing slope near SCE tower 2-1 at 1,100 ft;
- Simi Hills, Ahmanson Ranch; and
- Santa Monica Mountains, SW edge of Deals Flat (D. Magney 83-05 UCSB) (Beltrami property), Clarks Peak on N-slope below Cotharin Road.

The proposed development will result in direct and possibly indirect impacts to this species as a result of grading the driveway and fuel hazard modification. The loss of individual *Galium nuttallii* ssp. *nuttallii* plants, a locally rare plant, is considered significant.

Helianthemum scoparium

STATUS		
Federal	**State / CNDDB**	**CNPS**
None	None / G4, S4	Ventura County Locally Uncommon

Helianthemum scoparium Nuttall - Peak Rushrose

Helianthemum scoparium is a small shrub 12-45 cm high with stems 12-45 cm long. Leaves are 5-40 mm by 0.5-6 mm, generally linear to narrow-oblanceolate. The outer sepals of the flowers are 0.5-4.5 mm by < 0.5 mm, linear, while the inner sepals are 2.5-7 mm by 2-3.5 mm, ovate and acuminate. The petals are 3-11 mm long, obovate, with 12-45 stamens. The fruits are 2.5-4 mm long and ovoid, with 4-10 seeds. *Helianthemum scoparium* blooms between March and June (Magney 2005b) and is a member of the Rockrose family (Cistaceae). (Hickman 1993.)

Helianthemum scoparium is an uncommon shrub of dry sandy or rocky soil of hills, slopes, and ridges to 1,500 m (Hickman 1993). *Helianthemum scoparium* ranges from north central California south along the coast to southern California. It occurs in the North Coast Ranges, northern and central Sierra Nevada Foothills, northern High Sierra Nevada, San Joaquin Valley, Central Western California, South Coast, Channel Islands, San Bernardino Mountains, and Peninsular Ranges. (Jepson Flora Project 2005). It is not known to occur in Orange or Los Angeles Counties. In Baja California, Mexico, it is found on granitic hillsides and arroyos in the western foothills of the Sierras Juarez and San Pedro Martir. *Helianthemum scoparium* is threatened by mining.

Bioregional distribution: North Coast Ranges, northern and central Sierra Nevada Foothills, northern High Sierra Nevada, San Joaquin Valley, Central Western California, South Coast, Channel Islands, San Bernardino Mountains, and Peninsular Ranges. (Jepson Flora Project 2005).

Ventura County occurrences (Magney 2005b) (arranged by biogeographic regions):

- Dry Lakes Ridge, along firebreak trail;
- Nordhoff Ridge, Gridley Canyon;
- Conejo Mountains, Conejo Valley 3 mi E/SE of Conejo Mountain at 333 m (1,100 ft);
- Simi Hills, Box Canyon, Ahmanson Ranch; and
- Santa Monica Mountains, SW edge of Deals Flat (*D. Magney 91-05* UCSB) (Beltrami property).

The proposed development will result in direct and possibly indirect impacts to this species as a result of grading the driveway and fuel hazard modification. The loss of individual *Helianthemum scoparium* plants, a locally rare plant (five or fewer populations in Ventura County), is considered significant.

Lomatium lucidum

STATUS		
Federal	**State / CNDDB**	**CNPS**
None	None / G2, S2	Ventura County Locally Rare

Lomatium lucidum (Torrey & A. Gray) Jepson - Shiny Lomatium
[*Euryptera lucidum* Torrey & A. Gray, *Peucedanum euryptera* A. Gray, *Peucedanum hassei* Coult. & Rose, *Cogswellia lucidum* and *hassei* Jones]

Lomatium lucidum is a taprooted perennial herb 1.5-12 dm high, taproot slender, herbage glabrous green, and ±fleshy. The stems are very short, leaves w/petioles are 2-12 cm long and short sheathed. The leaves are triangular-ovate with the blade 4-12 cm wide, and 1-2 ternate. The oblong to ovate leaflets are 1.5-5 cm long, coarsely sharply dentate, and usually 3-lobed. The inflorescence is glabrous with peduncles 1.5-5 dm long with several bractlets. The inflorescence rays are 10-20, 3-8 cm long spreading or spreading-ascending and ±webbed. The pedicels are 5-12 cm long and webbed. The flowers are yellow. The fruits are 10-15 mm long, widely elliptic to round, glabrous with wings

thickened. *Lomatium lucidum* blooms between January and April (Magney 2005b) and is a member of the Carrot or Celery family (Apiaceae). (Hickman 1993.)

Lomatium lucidum is a rare perennial herb of scrub habitats, especially on burns, rocky loamy soil in primarily Coastal Sage Scrub found at elevations between 450-1,500 m (Hickman 1993). *Lomatium lucidum* is a southern California endemic, ranging from San Diego County in the south to southern Ventura County to the north. It occurs along the South Coast of and into the Western Transverse Ranges in the Santa Monica Mountains, eastward to the San Gabriel Mountains, San Bernardino Mountains, and San Jacinto Mountains, and into northern Baja California along the coast. (Jepson Flora Project 2005). *Lomatium lucidum* is threatened by development.

Bioregional distribution: South Coast, San Gabriel Mountains, San Bernardino Mountains, San Jacinto Mountains, and into northern Baja California. (Jepson Flora Project 2005).

Ventura County occurrences (Magney 2005b): Santa Monica Mountains, Point Mugu State Park, Mugu Peak along SW-flank, SW edge of Deals Flat (*D. Magney 94-05* UCSB) (Beltrami property).

The proposed development will result in direct and possibly indirect impacts to this species as a result of grading the driveway and fuel hazard modification. The loss of individual *Lomatium lucidum* plants, a locally rare plant, is considered less than significant because most individuals onsite will be avoided and preserved. Only a small portion of this population will be impacted and the preserved portion will remain viable.

Navarretia jaredii

STATUS		
Federal	**State / CNDDB**	**CNPS**
None	None / G3, S3.3	CNPS List 4 (Plants of Limited Distribution) R-E-D Code 1-1-2

Navarretia jaredii Eastwood - Paso Robles Navarretia
[*Navarretia mitracarpa* Greene ssp. *jaredii* (Eastwood) H. Mason]

Navarretia jaredii is an annual herb 3-20 cm high that is puberulent or white-hairy. The lower leaves are glabrous, 1-2-pinnate, axis linear, lobes needle-like; upper leaves are hairy below middle, tip toothed along wide axis. The inflorescence bracts are hairy, gland-dotted, tip of outer bracts toothed along wide axis. The flower calyx is ribs strap-shaped, lobes sometimes toothed, and the corolla is 7-11 mm long, exserted, with the tube and throat white, glandular-puberulent, and lobes 2-4 mm long, and blue. The stamens and style are exserted; stigmas 2. The fruit has 1 chamber with 4 valves, dehiscing in lower half, producing 1 seed. *Navarretia jaredii* blooms between May and July (Magney 2005b) and is a member of the Phlox family (Polemoniaceae). (Hickman 1993.)

Navarretia jaredii is an uncommon annual herb of open, grassy, often serpentine areas (none in Ventura County); occurring at elevations between 200 and 600 m (Hickman 1993). *Navarretia jaredii* is endemic to California and is known from Monterey and San Luis Obispo Counties (CNPS 2001), with additional collections known from Stanislaus, Fresno, San Benito, Kings, Santa Barbara, and Ventura Counties (Jepson Flora Project 2005). While it is considered rare, it occurs in sufficient numbers and is widely distributed such that the potential for extinction is currently low (CNPS 2001). *Navarretia jaredii* is found in cismontane woodland, valley and foothill grassland, and potentially in chaparral, where it grows on clay or serpentinite soils (CNPS 2001). It occurs along the South Coast of and into the Western Transverse Ranges in the Santa Monica Mountains. (Jepson Flora Project 2005). *Navarretia jaredii* is threatened by development and agriculture.

Bioregional distribution: South Coast Ranges, northern Southwestern California, and Western Transverse Ranges. (Jepson Flora Project 2005, Magney 2005b).

Ventura County occurrences (arranged by biogeographic regions):

- Nordhoff Ridge, Foothill Trail, ½ mi W of Gridley Canyon;
- Ojai Valley, Ojai between upper Foothill Rd. and downtown [likely extirpated], Camp Comfort near San Antonio Creek at bridge;
- Sulphur Mountain, along Sulphur Mountain Rd. c. 8 mi for SR150 in Upper Ojai Valley;
- Red Mountain, Coyote Creek canyon below Lake Casitas dam at 600 ft; and

- Santa Monica Mountains, SW edge of Deals Flat (*D.L. Magney 149-05* UCSB) (Beltrami property).

The proposed development will result in direct and possibly indirect impacts to this species as a result of grading the driveway and fuel hazard modification. The loss of individual *Navarretia jaredii* plants, a locally rare plant, is considered significant.

Phacelia parryi

STATUS		
Federal	**State / CNDDB**	**CNPS**
None	None / G4, S4.3	Ventura County Locally Uncommon

Phacelia parryi Torrey - Parry Phacelia
[*Phacelia parryi* Torrey var. *celata* Jepson]

Phacelia parryi is an erect, 0-few-branched, glandular-puberulent, stiff-hairy annual herb 10-70 cm high. The leaves are 10-120 mm long with leaf blade < or = petiole, oblong to ovate, irregularly toothed. The flower pedicel is 10-20 mm long, with calyx lobes 4-6 mm long, 6–8 mm long in fruit, ± linear, sparsely hairy, ± glandular. The corolla is 10-20 mm, rotate to widely bell-shaped, with the tube and lower throat white to light violet, limb violet to purple, deciduous, scales fused to filament base, and square. The stamens are 10-20 mm long, long-hairy; the style is 10-20 mm long, short-hairy. The fruit is 6-10 mm long, ovoid, beaked, short-stiff-hairy, gland-dotted, producing 40-60 seeds, each ± 1 mm long and pitted. *Phacelia parryi* blooms between March and May (Magney 2005b) and is a member of the Borage family (Boraginaceae – formerly of the Hydrophyllaceae). (Hickman 1993.)

Phacelia parryi is an uncommon annual herb of open areas, burns, slopes, Coastal Sage Scrub, chaparral; <2,400 m (Hickman 1993). *Phacelia parryi* is endemic to California and is known from Monterey to San Diego County, and into Baja California. It occurs in Monterrey, Santa Barbara, Ventura, Los Angeles, San Bernardino, Riverside, Orange, and San Diego Counties. *Phacelia parryi* is found in Chaparral, Coastal Sage Scrub, and Creosote Bush Scrub habitats. It occurs along the Inner South Coast Ranges, Southwestern California (except Channel Islands, w Western Transverse Ranges), west edge of the Mojave Desert, and Baja California. (Jepson Flora Project 2005). *Phacelia parryi* is threatened by development.

Bioregional distribution: Inner South Coast Ranges, Southwestern California (except Channel Islands, w Western Transverse Ranges), w edge Desert, Baja California. There are up to 74 populations supported by vouchered specimens. (Jepson Flora Project 2005, Magney 2005a).

Ventura County occurrences (Magney 2005b) (arranged by biogeographic regions):

- Dry Lakes Ridge, S slope along SR33 at 908 m (3,000 ft), along SR33 at 2,800 ft, and at 2,700 ft;
- Nordhoff Ridge, SR33 near Matilija Canyon Hot Springs Rd. at 363 m (1,200 ft);
- Conejo Mountains, Hill Canyon, Lewis Rd. near Calleguas Cr. at 80 ft;
- Santa Monica Mountains, Mugu Peak on S side, Point Mugu State Park above Thornhill Broome Beach at 31 m (100 ft), SW corner of Deals Flat (Beltrami property).

The proposed development will result in direct and possibly indirect impacts to this species as a result of grading the driveway and fuel hazard modification. The loss of individual *Phacelia parryi* plants, a locally rare plant, is considered significant.

Rhus ovata X R. integrifolia

STATUS		
Federal	**State / CNDDB**	**CNPS**
None	None / G1, S1.2	Ventura County Locally Rare

Rhus integrifolia (Nuttall) Brewer & S. Watson X *Rhus ovata* S. Watson - Lemonadeberry-Sugar Bush Hybrid

Rhus integrifolia-ovata hybrid is an evergreen, dense shrub 1-8 m high with deep green leaves intermediate between *Rhus integrifolia* and *Rhus ovata* characteristics. The flowers are pink. *Rhus integrifolia-ovata* hybrid blooms between February and May (Magney 2005b) and is a member of the Sumac family (Anacardiaceae). (Hickman 1993.)

Rhus integrifolia-ovata hybrid is a rare shrub of canyons, generally north-facing slopes in chaparral; at elevations below 900 m (Magney 2005b). *Rhus integrifolia-ovata* hybrid is an endemic of California, occurring in Los Angeles and Ventura Counties. *Rhus integrifolia-ovata* hybrid is threatened by development.

Bioregional distribution: Western Transverse Ranges (Santa Monica Mountains). *Rhus integrifolia-ovata* hybrid is known from two populations in the Santa Monica Mountains (Jepson Flora Project 2005, Magney 2005b).

Ventura County occurrences (Magney 2005b): Santa Monica Mountains, Mugu Peak at c. 242 m (800 ft) (*D.L. Magney 33-01* UCSB), SW corner Deals Flat (Beltrami property).

The proposed development will result in direct and possibly indirect impacts to this hybrid species as a result of grading the driveway and fuel hazard modification. The loss of individual *Rhus integrifolia-ovata* hybrid plants, a locally rare plant, is considered significant. However, none will be impacted by the proposed project.

Stylocline gnaphaloides

STATUS		
Federal	**State / CNDDB**	**CNPS**
None	None / G4, S4.4	Ventura County Locally Uncommon

Stylocline gnaphaloides Nuttall - Everlasting Nest Straw
[Misspelled *Stylocline gnaphalioides*]

Stylocline gnaphaloides is an grayish-tomentose annual herb <24 cm high with stems branched from base. The leaves are elliptic to obovate, generally obtuse, with the inflorescence clusters of spheric diskiform heads with scarious persistent ovate phyllaries, the receptacle cylindric, the chaff scales widely ovate membranous widely-ovately-winged throughout, and outer-most chaff scales ±closed cobwebby. The disk flowers are 1-2 mm long. The fruit is compressed side-to-side. *Stylocline gnaphaloides* blooms between March and May (Magney 2005b) and is a member of the Sunflower family (Asteraceae). (Hickman 1993.)

Left: D.W. Taylor ©1998; Right: Laura Ann Eliassen ©2005

Stylocline gnaphaloides is a rare annual herb of open, generally sandy soil of dry slopes, burns, etc.; Chaparral, Coastal Sage Scrub, Yellow Pine Forest; <1,200(1,700) m (Hickman 1993). *Stylocline gnaphaloides* occurs in Amador, Calaveras, Contra Costa, Fresno, Kern, Los Angeles, Madera,

Mariposa, Monterey, Orange, Riverside, San Benito, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, Santa Clara, Santa Cruz, Tulare, and Ventura Counties. *Stylocline gnaphaloides* occurs along the Inner South Coast Ranges, Southwestern California (except Channel Islands, w Western Transverse Ranges), west edge of Mojave Desert, and Baja California. (Jepson Flora Project 2005). *Stylocline gnaphaloides* is threatened by development.

Bioregional distribution: s Inner North Coast Ranges, Sierra Nevada Foothills, Tehachapi Mountain Area, San Joaquin Valley, Central Western California, Southwestern California, sw Desert to Arizona, NW Mexico. (Jepson Flora Project 2005, Magney 2005a).

Ventura County occurrences (Magney 2005b) (arranged by biogeographic regions):

- Simi Hills, Ahmanson Ranch; and
- Santa Monica Mountains, SW edge of Deals Flat (*D. Magney 81-05* UCSB) (Beltrami property).

The proposed development may result in direct and indirect impacts to this species as a result of grading the driveway and fuel hazard modification. The loss of individual *Stylocline gnaphaloides* plants, a locally rare plant, is considered significant.

Zigadenus brevibracteatus

STATUS		
Federal	**State / CNDDB**	**CNPS**
None	None / G3, S3.2	Ventura County Locally Rare

Zigadenus brevibracteatus (M.E. Jones) H.M. Hall - Desert Zigadene or Death Camas
[*Zigadenus fremontii* (Torrey) S. Watson var. *brevibracteatus* M.E. Jones, *Toxicoscordiun brevibracteatus* (M.E. Jones) R.R. Gates]

Zigadenus brevibracteatus is an erect perennial bulb-forming graminoid 25-40 cm from tunicate ovoid bulbs 18-40 x 9-35 mm. The inflorescence consists of a 20-80-flowered panicle with 1-8 branches and cream-colored flowers. *Zigadenus brevibracteatus* blooms between April and May and sometimes into June (Magney 2005b) and is a member of the Corn Lily family (Melanthiaceae). (Hickman 1993.)

Zigadenus brevibracteatus is a rare perennial of sandy desert habitats usually in Pinyon-Juniper Woodland, rarely in chaparral (Magney 2005b), at elevations between 600-1,800 m (Hickman 1993). *Zigadenus brevibracteatus* is an endemic of California, occurring in San Benito, San Luis Obispo, Kern, Santa Barbara, Los Angeles, Ventura, Riverside, San Bernardino, and Inyo Counties. (Jepson Flora Project 2005). *Zigadenus brevibracteatus* is threatened by development and off-highway vehicle activities.

Bioregional distribution: Tehachapi Mountain Area, Western Transverse Ranges, Mojave Desert. *Zigadenus brevibracteatus* is known from approximately 51 populations based on 58 voucher collections throughout California and observations (Jepson Flora Project 2005, Magney 2005b).

Ventura County occurrences (arranged by biogeographic regions):

- Cuyama Badlands, Apache Canyon in E½ Section 24 at 3,375 ft, Ozena Valley 3 mi E of SR33 along Lockwood Valley Road;
- Mount Piños, W side at 1,968 m (6,500 ft);
- Dry Lakes Ridge, summit basins; and
- Santa Monica Mountains, SW edge Deals Flat (Beltrami property), Clarks Peak S of Yellow Hill Rd (*D. Magney & N. Breslin 29-05* UCSB).

The proposed development will result in direct and possibly indirect impacts to this species as a result of grading the driveway and fuel hazard modification. The loss of an entire *Zigadenus brevibracteatus* population, a locally rare plant, is considered significant. The loss of individual *Zigadenus brevibracteatus* plants onsite is considered less than significant because most individuals onsite will be avoided and preserved. Only a small portion of this population will be impacted and the preserved portion will remain viable.

RARE LICHENS

Several lichen species known to occur in Ventura County and the Santa Monica Mountains are considered rare. Twenty-one species of lichen native to California are believed to be rare or uncommon in Ventura County. These are listed below in Table 10, Rare and Uncommon Lichens of Ventura County, based on literature searches (Reifner et al. 1995, Magney 1999, Knudsen 2005, Knudsen and Magney 2006) and professional judgement (Knudsen pers. comm.). Suitable habitat is present for several of these species onsite, primarily on rock outcrops and thin-soil habitats. Lichen rarity is based on the known distribution and population size estimates published in the scientific literature; however, much is not known about the lichen flora or species distribution and population sizes when compared to that for vascular plants.

Three rare terricolous (soil-loving) lichens were found on the Beltrami property, including *Acarospora terricola, Aspicilia glaucospina,* and *Placynthiella knudsenii. Acarospora terricola* and *Placynthiella knudsenii* appear to be relics of a once widely distributed species. *Aspicilia glaucospina* appears to be endemic to southern California, though like the other species, the California populations may be relics of a once more widely distributed species. All three species appear to be in danger of extinction due to the fragility and reduction of thin-soiled habitats in California (Knudsen and Magney 2006). These observed species are discussed in detatil in the following subsections.

Table 10. Rare and Uncommon Lichens of Ventura County

Botanical Name[7]	Common Name	Habit[8]	Family
Acarospora terricola	Cracked Lichen	CL	Acarosporaceae
Acarospora thelococcoides	Cobblestone Lichen	CL	Acarosporaceae
Aspicilia glaucopsina	Suncken Disk Lichen	CL	Hymeneliacaeae
Caloplaca chrysophthalma	Bark Sulphur-firedot Lichen	CL	Teloschistaceae
Caloplaca epithallina	Parasitic Firedot Lichen	CL	Teloschistaceae
Caloplaca castellana	Jewel Lichen	CL	Teloschistaceae
Caloplaca luteominia var. *bolanderi*	Bolander Red Firedot Lichen	CL	Teloschistaceae
Caloplaca subpyraceella	South Coast Jewel Lichen	CL	Teloschistaceae
Endocarpon pusillum	Chalice Lichen	CL	Verrucariaceae
Niebla [*Vermilacinia*] *ceruchoides*	Niebla Lichen	FrL	Ramalinaceae
Parmotrema austrosinense	Unwrinkled Ruffle Lichen	FoL	Parmeliaceae
Pertusaria flavicunda	Sulphur Wart Lichen	CL	Pertusariaceae
Phaeophyscia kairamoi	Shadow Lichen	FoL	Physciaceae
Phaeophyscia sciastra	Dark Shadow Lichen	FoL	Physciaceae
Placynthiella knudsenii	Knudsen's Rubble Lichen	CL	Trapeliaceae
Protoparmelia badia	Protoparmelia Lichen	CL	Protoparmeliaceae
Punctelia punctilla	Punctelia Lichen	FoL	Parmeliaceae
Ramalina fraxinea	Cartilage Lichen	FrL	Ramalinaceae
Teloschistes flavicans	Powder-orange Bush Lichen	FrL	Teloschistaceae
Texosporium santi-jacobi	Woven-spore Lichen	CL	Teloschistaceae
Xanthoparmelia angustiphylla	Rock Shield Lichen	FoL	Parmeliaceae

Information on each rare lichen species observed at the project site is based on their distribution within the Santa Monica Mountains and suitable habitat present onsite, and is based on the current knowledge of lichen distribution. Each description includes the lichen scientific name, growth form, habitat requirements, physical description, and distribution. Global-ranking status for lichens (general rarity class on a global scale) is based on rankings assigned by NatureServe, and the CALS status is from Riefner et al. (1995). The Ventura County occurrences provided in each description is taken from Riefner et al. (1995) as well. If CALS does not have a status listed for a species of lichen, then the status is taken from Magney (1999) as a preliminary ranking.

In addition to the rare lichens observed onsite, this section also discusses four lichens of special interest, including *Teloschistes chrysophthalumas*, *Caloplaca stellata*, *Trapelia obtegens*, and *Verrucaria memnonia*.

[7] Lichen nomenclature is based on Brodo et al. 2001. Bold = observed onsite and discussed in detail in the following subsections.
[8] Lichen Habit Definitions: CL = Crustose Lichen; FrL = Fruticose Lichen; FoL = Foliose Lichen

Acarospora terricola

STATUS		
Federal	**State / NatureServe**	**CALS**
None	None / Not Ranked	Ventura County Locally Rare

Acarospora terricola H. Magn., Kongl. Svenska Vetenskaps-Akademiens Handlingar, Stockholm 7: 157-158 (1929) - Cracked Lichen

Acarospora terricola is a rare terricolous (soil-loving) lichen species that was collected on the Beltrami property. *Acarospora terricola* is a crustose-type lichen in the Acarosporaceae family. The thallus is areolate or squamulose and sometimes indeterminate (up to 6 cm wide). The rim is down-turned, sometimes white. The upper surface is brown to reddish brown to black, sometimes darker toward center of squamules, matt, plane to convex, smooth to warty, usually with abundant creases and fissures. The algal layer is even but becoming uneven, penetrated by hyphal bundles, the bottom of algal layer often becoming feathered into medulla. The medulla is white, prosoplectenchymatous, indistinct in water. Its attachment is broad, with long white rhizohyphae, branching and anatomosing, often elongating above substrate and gelatinizing, elevating areoles (gomphate) without forming a stipe. The lower surface is narrow, white and thinly corticated. Occurs on soil in sunny western exposures, in sites with low competition with other lichens, bryophytes or vascular plants, from coast to high elevations. (Nash et al. 2002.)

Bioregional distribution: Western North America (Washington, Nevada) and South America (Brazil according to magnusson) (Nash et al. 2002). California occurrences include (S. Tucker, pers. comm.): Los Angeles County; Riverside County; San Bernardino County; and Ventura County.

Ventura County occurrences:

- Santa Monica Mountains (collection by Hasse, 1929); and
- Santa Monica Mountains, two separate locations in soil crusts on the Beltrami property, and may occur elsewhere in soil crusts. It is the first modern report from the Santa Monica Mountains.

This lichen may occur in the thin-soil habitats present onsite and the loss of individuals or a population would be considered a significant impact.

A. H. Magnusson first described this species from a single historic collection by Hasse from the Santa Monica Mountains (1929). It is known from five other sites in southern California in San Diego County (Torrey Pines), Riverside County (the west slope of San Jacinto Mountains associated with *Aspicilia glaucospina*, the Menifee Hills in Wildomar, and Banning area), and in Orange County (in Fremont Canyon where it was possibly just extirpated by the recent Corona fire). Two collections of small sterile specimens are known from Washington and Nevada, and a report from Brazil is beinginvestigated. Easily overlooked and often sterile, its full distribution is unknown, but it appears to be highly localized in its occurrences. Based on current knowledge, this species should be considered sensitive and protected. (Knudsen 2006; Nash et al. 2002.)

Aspicilia glaucopsina

STATUS		
Federal	**State / NatureServe**	**CALS**
None	None / Not Ranked	Ventura County Locally Rare

Aspicilia glaucopsina (Nylander *in* Hasse) Hue - Aspicilia Lichen

Aspicilia glaucopsina is a terricolous, sub-fruticose lichen in the Hymeneliaceae family. It lacks any lichen substances. Knudsen (2005) has collected it in other parts of southern California and found it to be rare and usually sterile (material in ASU, NY, UCR).

Bioregional distribution: California occurrences include (S. Tucker, pers. comm.): Los Angeles County; Riverside County; San Bernardino County; and Ventura County.

Ventura County occurrences:

- Santa Monica Mountains: thin-soiled Cenozoic surfaces below Sandstone Peak strewn with rubble, on *Selaginella bigelovii* and soil and *Cladonia* species, 34º07.266'N 118º56.049'W., elev. 890 m (*Knudsen 1963 & Owe-Larsson* UCR, hb. Lendemer).
- Santa Monica Mountains, Beltrami property.

This lichen may occur in the thin-soil habitats present onsite and the loss of individuals or a population would be considered a significant impact.

This species was described from the Santa Monica Mountains, and this is its third site in the Santa Monica Mountains. The other two occur on property belonging to the Santa Monica National Recreational Area, near Malibu Canyon and in Sandstone Peak area. It is currently only know from two sites in Riverside County and one site in San Diego County where it was probably extirpated in the Cedar Fire. This Beltrami property occurrence represents the sixth verified site. Though the property was searched for it after its discovery, it was only found in a small area on an east-facing slope in stunted Chamise Chaparral on freshly eroded sediment from several remaining volcanic rock outcrops. This species at this time appears to be both a rare and endangered southern California endemic. (Knudsen 2006.)

Placynthiella knudsenii

STATUS		
Federal	**State / NatureServe**	**CALS** (Lendemer 2004)
None	None / Not Ranked	Ventura County Locally Rare

Placynthiella knudsenii Lendemer *spec. nov*. - Knudsen's Rubble Lichen

Placynthiella knudsenii is in the family Trapeliaceae. It is described (Lendemer 2004) as thallus terricolous to saxicolous, areolate, dispersed to continuous, dark brown (not olive-gray), esorediate, isidia absent; areoles brown, with distinct margins at early stages of development, surface flat and quickly becoming wrinkled, fissured, and somewhat convex; with age margins of areoles becoming verruculose and eventually producing structures resembling small cylindrical to flattened isidia (up to ca. 140 μm tall), these structures overtake the surface of the areole as the cortex and eventually medulla break down giving the appearance of many small overlapping isidioid squamules. Apothecia common, rounded in outline when young, sessile; margins prominent, concolorous with disk, with

age becoming flexuous and deformed, eventually excluded; disk becoming slightly convex (not hemispherical); exciple black, K-, C-, ca. 30 µm wide; epihymenium brownish, K-C-; hypothecium brown, K-, C-; hymenium brown to yellow-brown or red, pigment turning brown-gray in K and eventually dissolving, ca. 100 µm tall, IKI+ blue; paraphyses slender, obtuse ellipsoid, often with oil droplets, colorless, 10-12-(14) µm x 6-8 µm; pycnidia not seen. The type collection of *P. knudsenii* contains two unknowns by TLC and lacks gyrophoric acid.

Placynthiella knudsenii prefers the compacted soil that overlays granitic boulders as a substrate, and also rock. It is often associated with other soil crusts such as species of *Peltula*, *Psora*, and members of the Verrucariaceae. It is a rare species with only four Southern California occurrences.

Bioregional distribution: Ozark Mountains (southern Missouri and Arkansas); Southern California. California occurrences are listed below:

- Riverside County, on soil over granite boulders, north side of hilltop on granite-derived soil in mixed chaparral, Menifee Hills, Wildomar, elevation 567 m., 33° 37.310' N, 117° 14.274' W (*Knudsen 389* NY, hb. Lendemer);
- San Diego County, Lakeside (*Knudsen 454* hb. Lendemer); and
- Ventura County.

Ventura County occurrences:

- Santa Monica Mountains on soil, thin-soiled Cenozoic surfaces below Sandstone Peak strewn with rubble, 34º07.266'N 118º56.049'W, elev. 890 m (*Knudsen 1964 & Owe-Larsson UCR*, hb. Lendemer) (Knudsen 2005).
- Beltrami Property

Placynthiella knudsenii may occurrence on the Beltrami property on thin-soil habitats between rock outcrops or on them. The proposed project is not expected to impact this lichen species. Sandstone outcrops are not proposed to be removed by the proposed project.

Placynthiella knudsenii is a rare terricolous lichen. It is known previously from six sites in southern California in Ventura, Riverside, and San Diego Counties. At all sites, it is uncommon to rare. It is also known from a disjunct collection in the Ozarks (Lendemer 2004; Hertel et al 2004). This is the second report from the Santa Monica Mountains where a specimen was previously found in the Sandstone Peak area (Knudsen 2005). Two specimens overgrowing moss at the base of Chamise plants were sampled from two separate locations on the property and more individuals are expected. It should be considered sensitive and protected. (Knudsen 2006.)

Lichens of Special Interest

Teloschistes chrysophthalumas was observed in the *Adenostoma fasciculatum*-Corticolous Lichen Alliance onsite. This species was once common in southern California (Hasse 1913) as it was in Europe; however, for unknown reasons (possibly increased fire frequency) this species has become rare to uncommon in modern times. Small populations have been observed in a number of locations in the Santa Monica Mountains in Ventura County (Knudsen in ed.). It is still common on the larger Channel Islands and north in areas like Santa Ynez Valley in Santa Barbara County. (Knudsen 2006.)

Caloplaca stellata has so far only been collected in Upper Deer Creek Canyon on a rock outcrop along Deer Canyon Road and on the Beltrami property. It is common in North America and central California where it occurs locally as well as in Baja. *Trapelia obtegens* was just recognized as occurring in California (Knudsen and Lendemer in ed). This represents only the third collection for the state and the first collection from southern California and the Santa Monica Mountains. It is expected to have a wide

range in the state but is easily over-looked because of its similarity in size and color to *Trapelia glebulosa*, which is abundant on the property on rock and soil. It was only collected in one small area on the property but could easily be elsewhere on the property. *T. obtegens* is common in North America, Europe, and parts of Asia but under-collected.

Only a single lichen was collected from the Riparian Lichen Allaince onsite within the main ravine, *Verrucaria memnonia*. Because of taxonomic confusion and a lack of a modern monograph for North America of the genus *Verrucaria*, *V. memnonia* is rarely collected or correctly determined, but is probably common in ravines and drainages near the coast or in shaded circumstances inland (Pinnacles National Monument). This is the third report for California and the first for Santa Monica Mountains.

RARE BRYOPHYTES

No special-status liverwort or moss species were observed onsite, nor are any special-status liverworts or moss expected onsite.

SENSITIVE PLANT AND LICHEN COMMUNITIES

A search of the CNDDB RareFind3 found eight (8) sensitive plant communities tracked in the vicinity of the Beltrami property. These plant communities are listed below in Table 11, Sensitive Plant Communities with Potential to Occur at the Beltrami Project Site. Three of the tracked sensitive habitats were observed onsite, including Valley Needlegrass Grassland, Coastal Sage Scrub, and Chaparral. These three observed sensitive habitats are described above in the Plant and Lichen Communities subsection of Section 3. In addition to the three sensitive vascular plant communities, DMEC observed two sensitive lichen plant communities, which are also included in Table 11, and are discussed following Table 11.

Table 11. Sensitive Plant Communities with Potential to Occur at the Beltrami Project Site

CNDDB Sensitive Habitat Name (Holland 1986, CNDDB 2005, and Knudsen & Magney 2006 [lichen])	**Observed Onsite?**	**Alliance/Association Name,** if Observed Onsite (Sawyer & Keeler-Wolf 1995)	**G-Rank**[9]	**S-Rank**
Southern Coast Live Oak Riparian Forest	No	*Quercus agrifolia Alliance*	G4	S4
Southern Coastal Salt Marsh	No		G2	S2.1
Southern Riparian Forest	No	*Platanus racemosa-Salix lasiolepis* Alliance	G4	S4
Southern Sycamore Alder Riparian Woodland	No	*Platanus racemosa-Alnus rhombifolia* Alliance	G4	S4
Valley Needlegrass Grassland	**Yes**	*Nassella lepida* Alliance	G1	S3.1
Valley Oak Woodland	No	*Quercus lobata* Alliance	G3	S2.1
Coastal Sage Scrub (Coastal Sage Chaparral Scrub)	**Yes**	*Baccharis pilularis* Alliance; *Lotus scoparius* Alliance; *Malosma laurina* Alliance; and *Opuntia littoralis* Alliance	G3	S3.2

[9] For special-status species definitions see Tables 1 through 4 above.

CNDDB Sensitive Habitat Name (Holland 1986, CNDDB 2005, and Knudsen & Magney 2006 [lichen])	Observed Onsite?	Alliance/Association Name, if Observed Onsite (Sawyer & Keeler-Wolf 1995)	G-Rank[9]	S-Rank
Chaparral (Coastal Sage Chaparral Scrub)	**Yes**	*Heteromeles salicifolia-Cercocarpus betuloides* Alliance; and *Adenostoma fasciculatum* Alliance	G3	S3.2
Old-Growth Chaparral Lichen Habitat	**Yes**	*Adenostoma fasciculatum*-Corticolous Lichen Association	-	-
Thin-Soil Lichen Habitat	**Yes**	*Adenostoma fasciculatum*-Terricolous Lichen Association	-	-

Sensitive Lichen Communities

Knudsen and Magney's (2006) study of the Santa Monica Mountains makes a preliminary classification of four lichen habitats that support high diversity and rare species, including Maritime Habitat, Thin-Soil Habitat, Relative High Humidity Habitat, and Old-Growth Chaparral Habitat. All of these habitats occur in Ventura County, while Old-Growth Chaparral Lichen Habitat (*Adenostoma fasciculatum*-Corticolous Lichen Association described above in the Plant and Lichen Communties subsection) and Thin-Soil Habitat (*Adenostoma fasciculatum*-Terricolous Lichen Association described above in the Plant and Lichen Communties subsection) both occur on the Beltrami Property, which are described in further detail below.

Old Growth Chaparral Lichen Habitat

Old Growth Chaparral Lichen Habitat (*Adenostoma fasciculatum*-Terricolous Lichen Association) occurs across southern California in a patchwork pattern. Old-growth chaparral supports epiphytic lichens in rich concentrations (Knudsen *in prep*). Old-growth chaparral supports many corticolous (bark-dwelling) lichen crusts including some endemic species that were once common in the Santa Monica Mountains in Los Angeles and Ventura Counties (Hasse 1913), but are now rare and possibly extirpated (Knudsen *in prep*). The probable cause of this rarity is that the anthropogenic increase in fire frequency has reduced the intervals between fires to 10 to 20 years in some areas. As a result, whole areas may support few or no lichens where the frequent occurrence of fires does not support the renewal and slow growth of lichen communities on bark and have depleted their spore and propagule banks. Though the air quality is relatively good in Ventura County, air pollution also decreases lichen diversity in chaparral, eliminating pollution-sensitive species. Air pollution can acidify bark pH, which probably limits the growth of algal species necessary for lichenization as well as eliminates acid-sensitive lichens from the local flora. (Knudsen and Magney 2006.)

Thin-Soil Lichen Habitat

Thin-Soil Lichen Habitat (*Adenostoma fasciculatum*-Terricolous Lichen Association) occurs throughout southern California in openings of chaparral and Coastal Sage Scrub, and on slopes and sandstone out crops, especially in terraces formed by Bigelow Spike-moss (*Selaginella bigelovii*). The soil is usually thin over bedrock and clay sediment, and is poor in nutrients and organic debris. This habitat supports native annuals and perennial bulbs, and lichens grow on soil in biological crusts with bryophytes. Several very rare lichens occur in Thin-soil Habitat. Thin-soil Habitat was probably common in southern California before ranching and then urban and suburban development

transformed the southern California landscape. Invasive non-native annual plants, probably favored through dry nitrate deposition from agricultural fertilizers and air pollution, have indirectly degraded this habitat in many areas including Sandstone Peak. Nonetheless, thin-soil habitat persists on ridges and arid inland locations. Damage to this habitat should be mitigated when it contains a rich lichen flora, or any rare lichen species. (Knudsen and Magney 2006.)

WILDLIFE

Numerous wildlife species are known to occur within the Santa Monica Mountains. Wildlife frequent the upland scrub, chaparral, and woodland habitats on a seasonal basis and/or regularly use resources provided by these unique coastal mountainous areas. Table 12, Wildlife Species Observed and Expected on the Beltrami Property, contains a list of animal species that were either observed or detected onsite during field surveys, or that are expected onsite based on required habitat and reports for the area. No fish or amphibian species were observed or are expected onsite.

Table 12. Wildlife Species Observed and Expected on the Beltrami Property

Scientific Name[10]	Common Name	Evidence
Reptiles		
Anniella pulchra pulchra	Silvery (California) Legless Lizard	Expected
Phrynosoma coronatum blainvillei	**Coast (San Diego) Horned Lizard**	**Observed**
Phrynosoma coronatum frontale	California Horned Lizard	Expected
Sceloporous occidentalis	Western Fence Lizard	Observed
Sceloporus occidentalis longipes	Great Basin Fence Lizard	Expected
Uta stansburiana elegans	California Side-blotched Lizard	Expected
Elgaria multicarinata multicarinata	California Alligator Lizard	Expected
Elgaria multicarinata webbi	San Diego Alligator Lizard	Expected
Eumeces skiltonianus skiltonianus	Western Skink	Expected
Cnemidophorus tigris multiscutatus	Coastal Whiptail	Observed
Leptotyphlops humilis humilis	Southwestern Blind Snake	Expected
Coluber mormon	Western Yellow-bellied Racer	Expected
Diadophis punctatus vandenburghi	Monterey Ringneck Snake	Expected
Hypsiglena torquata klauberi	San Diego Night Snake	Expected
Lampropeltis getulus californiae	California Kingsnake	Expected
Lampropeltis zonata pulchra	San Diego Mountain Kingsnake	Expected
Masticophis flagellum piceus	Red Coachwhip	Expected
Masticophis lateralis lateralis	California Striped Racer	Expected
Rhinocheilus lecontei lecontei	Western Long-nosed Snake	Expected
Salvadora hexalepis virgultea	Coastal Patch-nosed Snake	Expected
Tantilla planiceps	Western Black-headed Snake	Expected
Trimorphodon biscutatus vandenburghi	California Lyre Snake	Expected
Pituophis melanoleucus annectens	San Diego Gopher Snake	Expected
Pituophis melanoleucus	Gopher Snake	Expected
Crotalus viridis	Western Rattlesnake	Expected
Crotalus oreganus helleri	Southern Pacific Rattlesnake	Expected
Birds		
-*	parrot	Observed (flock)
Larus californicus	California Gull	Observed (on Chamise)
Cathartes aura	Turkey Vulture	Expected

[10] An asterisk "*" after the scientific name indicated non-native species. **Bold** = special-status species observed onsite. Expected amphibians and reptiles are based on species reported within the Santa Monica Mountains, available at http://www.herpscope.com/smm/4. Expected butterflies are based on species reported by the USGS Northern Prairie Wildlife Research Center's Butterflies of North America available at http://www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/chklist/states/counties/ca_111.htm.

Scientific Name[10]	Common Name	Evidence
Callipepla californica	California Quail	Observed
Accipiter cooperii	Cooper's Hawk	Expected
Buteo lineatus	Red-shouldered Hawk	Expected
Buteo jamaicensis	Red-tailed Hawk	Expected
Falco sparverius	American Kestrel	Expected
Falco columbarius	Merlin	Expected
Zenaida macroura	Mourning Dove	Observed
Calypte anna	Anna's Hummingbird	Observed
Melanerpes formicivorus	Acorn Woodpecker	Expected
Picioides pubescens	Downy Woodpecker	Expected
Picioides villosus	Hairy Woodpecker	Expected
Picoides nuttallii	Nuttall's Woodpecker	Expected
Colaptes auratus	Northern Flicker	Expected
Empidonax difficilis	Pacific-slope [Western] Flycatcher	Expected
Sayornis nigricans	Black Phoebe	Expected
Sayornis saya	Say's Phoebe	Expected
Tyrannus vociferans	Cassin's Kingbird	Expected
Aphelocoma californica	Western Scrub-jay	Expected
Corvus caurinus	American Crow	Expected
Corvus corax	Common Raven	Observed
Eremophila alpestris	Horned Lark	Expected
Petrochelidon pyrrhonota	Cliff Swallow	Expected
Hirundo rustica	Barn Swallow	Expected
Chamaea fasciata	Wrentit	Observed
Baeolophus inornatus	Oak Titmouse	Expected
Psaltriparus minimus	Common Bushtit	Observed
Thryomanes bewickii	Bewick's Wren	Expected
Troglodytes aedon	House Wren	Expected
Sialia mexicana	Western Bluebird	Expected
Mimus polyglottos	Northern Mockingbird	Expected
Toxostoma redivivum	**California Thrasher**	Observed
*Sturnus vulgaris**	European Starling	Expected
Vermivora celata	Orange-crowned Warbler	Expected
Dendroica petechia	Yellow Warbler	Expected
Geothlypis trichas	Common Yellowthroat	Expected
Pipilo crissalis	California Towhee	Observed
Chondestes grammacus	Lark Sparrow	Expected
Passerculus sandwichensis	Savannah Sparrow	Expected
Melospiza melodia	Song Sparrow	Expected
Melospiza lincolnii	Lincoln’s Sparrow	Expected
Zonotrichia leucophrys	White-crowned Sparrow	Expected
Sturnella neglecta	Western Meadowlark	Expected
Euphagus cyanocephalus	Brewer’s Blackbird	Observed
Carpodacus cassinii	House Finch	Expected
Carduelis psaltria	Lesser Goldfinch	Expected
Carduelis tristis	American Goldfinch	Expected
Carduelis lawrencei	Lawrence’s Goldfinch	Expected
Mammals		

Scientific Name[10]	Common Name	Evidence
Didelphis virginiana	Virginia Opossum	Expected
Scapanus townsendii	Townsend's Mole	Expected
Mustela frenata	Long-tailed Weasel	Expected
Spermophilus beecheyi beecheyi	California Ground Squirrel	Observed
*Sciurus niger**	Eastern Fox Squirrel	Expected
Sylvilagus bachmani	Brush Rabbit	Expected
Sylvilagus audubonii	Audubon's Cottontail	Observed
Lepus californicus	Black-tailed Jackrabbit	Expected
Thomomys bottae	Botta's Pocket Gopher	Observed
Peromyscus maniculatus	Deer Mouse	Expected
Perognathus californicus	Pocket Mouse	Expected
Neotoma fuscipes	Dusky-footed Woodrat	Expected
Neotoma lepida intermedia	**San Diego Desert Woodrat**	Detected (nest)
Dipodomys agilis	Pacific Kangaroo Rat	Expected
Microtus californicus	California Vole	Expected
Canis latrans	Coyote	Expected
Urocyon cinereoargenteus	Gray Fox	Expected
Taxidae taxus	Badger	Expected
Ursus americanus	Black Bear	Expected
Procyon lotor	Raccoon	Expected
Bassariscus astutus	Ringtail Cat	Expected
Spilogale putorius	Western Spotted Skunk	Expected
Mephitis mephitis	Striped Skunk	Expected
Puma concolor	Mountain Lion	Expected
Lynx rufus	Bobcat	Observed (~500 ft from edge of property)
Odocoileus hemionus californicus	Mule Deer	Observed
Invertebrates		
Otala lactea	Milk Snail	Observed
Lespisma sacchrina	Silverfish	Observed
Agelenidae	Funnel web spider	Observed
Lycosa sp.	Wolf Spider	Observed
Tetranychidae	Red spider-mite	Observed
Acari	Deer Tick	Observed
Coccoidea: Homoptera	Cottony scale	Observed
-	Green glabrous caterpillar	Observed
Aphidae	Green aphid	Observed
Tettigoniidae (Conocephidaceae)	Green Meadow Grasshopper	Observed
Acrididae (Oedipodinae)	Orange-winged grasshopper	Observed
Hemiptera	Plant bug	Observed
Homoptera: Cicadellidae	Pale yellow leafhopper	Observed
Miridae	Tiny black bug	Observed
Coleoptera	Bronze beetle	Observed
Forficula auricularia	European Earwig	Observed
Scyphophorus yuccae	Yucca Weevil	Observed
Coccinellidae	Six-spotted ladybird beetle	Observed
Eleodes sp.	Darkling Beetle	Observed

Scientific Name[10]	Common Name	Evidence
Coleoptera: Chrysomelidae	Pale Cucumber Beetle	Observed
Culicidae (Possibly *Aedes albopictus*)	(Asian Tiger) Mosquito	Observed
Diptera: Bombyliidae	Bee fly	Observed
Musca domestica	House Fly	Observed
Asilidae: Efferia	Robber fly	Observed
Rhagionidae	Snipe fly	Observed
Trialeurodes vaporariorum	White Fly	Observed
Diptera	Snakefly	Observed
Hymenoptera	Wasp	Observed
Hymenoptera	Steel-blue wasp	Observed
*Apis mellifera**	European Honey Bee	Observed
Hymenoptera: Apidae	Yellow-faced Bumble Bee	Observed
Hymenoptera: Apidae	Black Bumble Bee	Observed
Formicidae	Native brown ant	Observed
Formicidae	Tiny red ant	Observed
Pterophoridae	Plume Moth	Observed
Tegeticula maculata	Yucca Moth	Observed
Papilio rutulus	Western Tiger Swallowtail	Expected
Pieris rapae	Cabbage White	Expected
Anthocharis sara	Pacific Orangetip	Expected
Colias eurytheme	Orange Sulphur	Expected
Lycaena heteronea	Blue Copper	Expected
Habrodais grunus	Golden Hairstreak	Expected
Satyrium californica	California Hairstreak	Expected
Strymon melinus	Gray Hairstreak	Expected
Brephidium exile	Western Pygmy-blue	Expected
Leptotes marina	Marine Blue	Observed
Celastrina "ladon"	Spring Azure	Expected
Glaucopsyche lygdamus	Silvery Blue	Observed
Plebeius [*Icaricia*] *acmon*	Acmon Blue	Expected
Plebeius [*Icaricia*] *lupini*	Lupine Blue	Expected
Calephelis nemesis	Fatal Metalmark	Expected
Euphydryas chalcedona	Variable Checkerspot	Expected
Nymphalis antiopa	Mourning Cloak	Expected
Vanessa cardui	Painted Lady	Expected
Vanessa annabella	West Coast Lady	Expected
Vanessa atalanta	Red Admiral	Expected
Junonia coenia	Common Buckeye	Expected
Limenitis lorquini	Lorquin's Admiral	Expected
Adelpha bredowii	California Sister	Expected
Coenonympha tullia	Common Ringlet	Expected
Danaus plexippus	Monarch	Observed
Erynnis brizo	Sleepy Duskywing	Expected
Pyrgus scriptura	Small Checkered-Skipper	Expected
Hylephila phyleus	Fiery Skipper	Expected
Hesperia colorado	Western Branded Skipper	Expected
Ochlodes sylvanoides	Woodland Skipper	Expected
Panoquina errans	Wandering Skipper	Expected

Special-Status Wildlife Species

Special-status wildlife species include fish, reptiles and amphibians, birds, mammals, and invertebrates that are considered rare as defined above. A search of the CNDDB Rarefind3 found that 26 special-status wildlife species are known and reported to occur within the vicinity of the project site, as listed in Table 13, Special-Status Wildlife Species with Potential to Occur Onsite. No federally or state listed wildlife species were observed onsite; however, three special-status wildlife species were observed or detected onsite: two of the special-status wildlife species observed are tracked by CNDDB, including *Phrynosoma coronatum* (*blainvillei* population) (Coast [San Diego] Horned Lizard) and *Toxostoma redivivum* (California Thrasher); and one of the special-status wildlife species detected (nest) onsite that was not tracked by CNDDB for the 9-quad search, *Neotoma lepida intermedia* (San Diego Desert Woodrat). The three observed/detected species are described below.

The CNDDB Special Animals List (CDFG 2006b) (available at http://www.dfg.ca.gov/whdab/pdfs/SPAnimals.pdf.) was also referenced to account for any special-status species observed that RareFind3 may not have tracked. Coast Horned Lizard is tracked by CNDDB within the Triunfo Pass, California Quadrangle and the eight surrounding quadrangles; however, California Thrasher and San Diego Desert Woodrat are not, but they are included in the Special Animals List. Therefore, the number of special-status wildlife with potential to occur (tracked, reported, observed, or detectesd) onsite is 28.

SAN DIEGO DESERT WOODRAT

STATUS		
Federal	**State / CNDDB**	**CDFG**
None	None / G5T3?, S3?	California Species of Concern

San Diego Desert Woodrat (*Neotoma lepida intermedia*) is a California Species of Concern. A nest of this rodent was observed by DMEC during small mammal trapping onsite, but the species was not observed nor did small mammal trapping confirm its presence except for the observation of the apparently active nest. San Diego Desert Woodrat has a compact body, long tail, large ears, and large, slightly bulging, black eyes. Their feet are strongly built for grasping. This species has a pale to dark gray wash with yellow above, light undersides, grayish to yellowish below, and gray at the base of the throat region. Their tail, over half of the body length, is distinctively bicolored. Their hind feet are white. These woodrats live in high desert areas, chaparral, sagebrush flats, and Pinyon-Juniper Woodland. San Diego Desert Woodrat is vulnerable to predation by coyotes, raccoons, owls, gopher and rattlesnakes, and hawks. Populations may be impacted by habitat loss to agricultural and urban development, isolation, fragmentation of habitats, and wildfires, especially in cactus areas. (Aquarium of the Pacific Animal Data Base 2005.)

Table 13. Special-Status Wildlife Species with Potential to Occur Onsite

Scientific Name	Common Name	Status[11]					Required Habitat	Likelihood of Occurrence[12]
		Fed.	State	G-Rank	S-Rank	CDFG		
Aimophila ruficeps canescens	Southern California Rufous-Crowned Sparrow	G5T2T4	S2S3	.	.	SC	Resident in southern California Coastal Sage Scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass & forb patches.	Possible
Aquila chrysaetos	Golden Eagle	G5	S3	.	.	SC	(Nesting & wintering) rolling foothills mountain areas, sage-juniper flats, desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Unlikely
Aspidoscelis tigris stejnegeri	Coastal Western Whiptail	G5T3T4	S2S3	.	.		Found in deserts and semiarid areas with sparse vegetation and open areas. Also found in woodland & riparian areas. Ground may be firm soil, sandy, or rocky.	Possible
Buteo regalis	Ferruginous Hawk	G4	S3S4	.	.	SC	(Wintering) open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon-juniper habitats. Mostly eats lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Unlikely
Charadrius alexandrinus nivosus	Western Snowy Plover	G4T3	S2	T	.	SC	(Nesting) federal listing applies only to the pacific coastal population. Sandy beaches, salt pond levees & shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	Highly Unlikely
Cicindela hirticollis gravida	Sandy Beach Tiger Beetle	G5T4	S1	.	.		Inhabits areas adjacent to non-brackish water along the coast of Calif. from San Francisco Bay to no. Mexico. Clean, dry, light-colored sand in upper zone. Subterranean larvae prefer moist sand not affected by wave action.	Highly Unlikely
Cicindela senilis frosti	Tiger Beetle	G4T1	S1	.	.		Inhabits marine shoreline, from central California coast south to salt marshes of San Diego, also found at Lake Elsinore. Inhabits dark-colored mud in the lower zone and dried salt pans in the upper zone.	Highly Unlikely
Coelus globosus	Globose Dune Beetle	G1	S1	.	.		Inhabitant of coastal sand dune habitat, from Bodega Head in Sonoma County south to Ensenada, Mexico. Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation.	Highly Unlikely

[11] Federal and State Listings: E = Endangered; T = Threatened; R = Rare; C = Candidate. CDFG Listing: SC = California Species of Concern. For special-status species definitions see Tables 1 through 4 above.

[12] Likelihood of occurrence based on species' habitat requirements and the presence of required habitat in the project site.
Known = the species was observed onsite or has been reported as inhabiting or frequenting the project site;
Likely = Required habitat exists at the project site and/or has been reported near by;
Possible = Marginal required habitat exists onsite, and/or required habitat exists in surrounding areas;
Unlikely = Required habitat does not exist at the project site nor does it exist nearby.
Highly Unlikely = Required or marginally suitable habitat not present onsite or nearby and potential for occurrence onsite is extremely remote.

Scientific Name	Common Name	Status[11]					Required Habitat	Likelihood of Occurrence[12]
		Fed.	State	G-Rank	S-Rank	CDFG		
Danaus plexippus	Monarch Butterfly	G5	S3	.	.		Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey Pine, cypress), with nectar and water sources nearby.	Highly Unlikely as winter roosting site
Emys (=Clemmys) marmorata pallida	Southwestern Pond Turtle	G3G4T2T3Q	S2	.	.	SC	Inhabits permanent or nearly permanent bodies of water in many habitat types; below 6000 ft elev. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks. Need suitable nesting sites.	Highly Unlikely
Eremophila alpestris actia	California Horned Lark	G5T3	S3	.	.	SC	Coastal regions, chiefly from Sonoma Co., to San Diego Co. Also main part of San Joaquin Valley & east to foothills. Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	Unlikely
Eucyclogobius newberryi	Tidewater Goby	G3	S2S3	E	.	SC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego Co. to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water & high oxygen levels.	Highly Unlikely
Gila orcutti	Arroyo Chub	G2	S2	.	.	SC	Los Angeles Basin south coastal streams. Slow water stream sections with mud or sand bottoms. Feed heavily on aquatic vegetation & associated invertebrates.	Highly Unlikely
Microtus californicus stephensi	South Coast Marsh Vole	G5T1T2	S1S2	.	.	SC	Tidal marshes in Los Angeles, Orange and southern Ventura Counties.	Highly Unlikely
Neotoma lepida intermedia	**San Diego Desert Woodrat**	-	-	G5T3?	S3?	SC	Coastal so. Calif. from San Diego to San Luis Obispo Counties. Occupies arid areas with sparse vegetation (Coastal Sage Scrub and Desert Scrub). This subspecies of Desert Woodrat is restricted to the Pacific slope in a range that stretches from SLO County to northwestern Baja Calif.	**Known:** detected onsite by nest
Oncorhynchus mykiss irideus	Southern Steelhead - Southern California (Ecologically Significant Unit)	G5T2	S2	E	.	SC	Fed listing refers to pops from Santa Maria River south to southern extent of range (San Mateo Creek in San Diego Co.). Southern Steelhead likely have greater physiological tolerances to warmer water & more variable conditions.	Highly Unlikely
Panoquina errans	Wandering (=Saltmarsh) Skipper	G4G5	S1	.	.		Southern California coastal salt marshes. Requires moist Saltgrass for larval development.	Highly Unlikely
Passerculus sandwichensis beldingi	Belding's Savannah Sparrow	G5T3	S3	.	E		Inhabits coastal salt marshes, from Santa Barbara south through San Diego County. Nests in *Salicornia* on and about margins of tidal flats.	Highly Unlikely
***Phrynosoma coronatum (blainvillei* population)**	**Coast (San Diego) Horned Lizard**	G4T3T4	S2S3	.	.	SC	Inhabits Coastal Sage Scrub and chaparral in arid and semi-arid climate conditions. Prefers friable, rocky, or shallow sandy soils.	**Known:** observed onsite

Scientific Name	Common Name	Status[11]					Required Habitat	Likelihood of Occurrence[12]
		Fed.	State	G-Rank	S-Rank	CDFG		
Phrynosoma coronatum (frontale)	Coast (California) Horned Lizard	G4T3T4	S3S4	.	.	SC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, & abundant supply of ants & other insects.	Unlikely
Rallus longirostris levipes	Light-Footed Clapper Rail	G5T1T2	S1	E	E		Found in salt marshes traversed by tidal sloughs. Require dense growth of either Pickleweed or Cordgrass for nesting or escape cover; feeds on molluscs and crustaceans.	Highly Unlikely
Riparia riparia	Bank Swallow	G5	S2S3	.	T		(Nesting) colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Highly Unlikely
Sterna antillarum browni	California Least Tern	G4T2T3Q	S2S3	E	E		(Nesting colony) nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, land fills, or paved areas.	Highly Unlikely
Thamnophis hammondii	Two-Striped Garter Snake	G3	S2	.	.	SC	Coastal California from vicinity of Salinas to northwest Baja California. <7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	Highly Unlikely
Toxostoma redivivum	**California Thrasher**	G5	S?	.	.	.	An endemic of the California Biotic Province (mostly in the western part of the state). Breeds from sea level to the higher parts of the montane chaparral. Breeds in adjacent oak woodlands and pine-juniper scrub as well as in parks and gardens, but only if dense cover is available. Its dispersal is very limited.	**Known:** observed onsite
Trimerotropis occidentaloides	Santa Monica Grasshopper	G1G2	S1S2	.	.		Known only from the Santa Monica Mountains. Found on bare hillsides and along dirt trails in chaparral.	Possible
Tryonia imitator	Mimic Tryonia (=California Brackishwater Snail)	G2G3	S2S3	.	.		Inhabits coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County. Found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities.	Highly Unlikely
Vireo bellii pusillus	Least Bell's Vireo	G5T2	S2	E	E		(Nesting) summer resident of southern California in low riparian in vicinity of water or dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs in pathways, usually willow, *Baccharis*, mesquite.	Highly Unlikely

COAST HORNED LIZARD

STATUS		
Federal	**State / CNDDB**	**CDFG**
None	None / G4T3T4, S2S3	California Species of Concern

Coast [San Diego] Horned Lizard (*Phrynosoma coronatum blainvillii*) is in the Phrynosomatidae Family. This species has reddish, brown, yellowish, or gray flat body with dark blotches on its back. It has a large crown of spines on its head with two center spines as the longest. Coast Horned Lizard also has head scales that are smooth and convex (larger toward the center), and two rows of pointed scales that border the trunk. This species lays clutches of 6 to 21 eggs between May and June, which hatch late July through September. It inhabits Coastal Sage Scrub and chaparral plant communities in arid and semi-arid climate conditions; prefers friable, rocky, or shallow sandy loose soils; and is frequently found near ant colonies. Coast Horned Lizard is diurnal, where it is most active during the day in Spring and early Summer. [13]

The Coast Horned Lizard is currently represented by two subspecies in the Santa Monica Mountains. The California Lizard and the Coast Horned Lizard are very similar in appearance, and recent studies have suggested that all subspecies of *Phrynosoma coronatum* be invalidated, leaving only the species *Phrynosoma coronatum*, the Coast Horned Lizard. Until this is made official, both subspecies are represented. The Coast Horned Lizard is considered by many to be a difficult lizard to find. They inhabit open areas in chaparral and Coastal Sage Scrub, and their camouflage does make them difficult to see. They seem to have a very seasonal activity period (April through June). As the heat of summer intensifies in July and August, they tend to come out only during early morning and late afternoon hours. The native ants that they feed upon tend to do the same thing in Summer. Hatchlings can be found September to October, especially in mid-morning and afternoon. [14]

CALIFORNIA THRASHER

STATUS		
Federal	**State / CNDDB**	**CDFG**
None	None / G5/S?	None

California Thrasher (*Toxostoma redivivum*) is a striking songbird with a thick, long, decurved bill and a dark eye-line. This 12-inch long bird has orange undertail coverts and buffy underparts. Sexes are alike. An endemic of what is known as the California Biotic Province (mostly in the western part of the state), California Thrasher breeds from sea level to the higher parts of montane chaparral. It will breed in adjacent oak woodlands and pine-juniper scrub, as well as occasionally in parks and gardens, but only if dense cover is available. Its dispersal is very limited. In good habitat, California Thrasher flourishes, but when habitat becomes degraded or fragmented, its numbers decline. A mimic, the California Thrasher sings exuberantly year-round; its song has been likened to that of old world nightingales. The species forms pairs in winter. The female usually lays her clutch in February or March. Both sexes build the nest, hiding it well in dense vegetation. California Thrasher eats beetles, spiders, and other bugs year-round, and feasts on fruits when available. This ground-feeding bird will run for cover with its long tail raised. The species does not adapt well to habitat fragmentation and modification. California Thrasher leaves disturbed areas even when remnant habitat patches remain. A smaller threat is the use of pesticides on citrus crops where California Thrasher sometimes feeds. [15]

[13] http://www.herpscope.com/cgi/herpguide.cgi?Action=lookup&Key=Phrynosoma+coronatum+blainvillii
[14] http://www.herpscope.com/smm/lizards.html
[15] http://audubon2.org/webapp/watchlist/viewSpecies.jsp?id=60

LOCALLY IMPORTANT WILDLIFE

In addition to those species tracked by CNDDB, several wildlife species are considered locally important in the County of Ventura. No locally important wildlife species were observed on the Beltrami property. The following are a list of locally important wildlife species with their global- and state-rank status provided:

- Glossy Snake (*Arizona elegans*) G5/S4S5
- Ringneck Snake (*Diadophis punctatus*) G5/S5
- Night Snake (*Hypsiglena torquata*) G5/S5
- Mountain Snake (*Lampropeltis zonata*) G4G5/S4
- Western Blind Snake (*Leptotyphlops humilis*) G5/S5
- Southwestern Black-headed Snake (*Tantilla hbarsmithi*) G5/S3
- Lyre Snake (*Trimorphodon biscutatus*) G5/S4
- Slotted Lancetooth Snail (*Haplotrema caelatum*) G1
- Zaca Shoulderband Snail (*Helminthoglypta phlyctaena*) G1G2
- Trask's Shoulderband Snail (*Helminthoglypta traskii*) G1G2
- Ventura Shoulderband Snail (*Helminthoglypta venturensis*) G1Q
- Matilija Shoulderband Snail (*Helminthoglypta willeti*) G1
- Santa Monica Mountains Walking Stick (*Timema monikensis*) G1/S1.2

SECTION 4. PROJECT IMPACTS & RECOMMENDATIONS

PROJECT IMPACTS

The project site is relatively pristine with minor areas of previous disturbance, and dominated primarily by Chamise Chaparral. Numerous species of rare plants occur onsite, as discussed above.

The proposed project will result in direct and indirect impacts on plants and plant communities. Several individual special-status plant species and portions of chaparral, Coastal Sage Scrub, native perennial grassland, and sensitive lichen communities will be directly lost by the development. Additional sensitive resources will be indirectly impacted after implementation of fuel modification and subsequent landscaping. (The Ventura County Fire Department currently requires natural vegetation to be removed or significantly thinned for 100 feet from all structures over 100 square feet that have a roof and at least three walls.)

Table 14, Project Impacts to the Beltrami Property Vegetation, summarizes the impacts (in acres) to the plant communities occupying the Beltrami property. (Note that impacts to Chaparral, Coastal Sage Scrub, native perennial grassland, and sensitive lichen communities are considered a significant impact.)

The Beltrami project will result in direct and indirect impacts to biological resources, some of which are significant. The project will result in the permanent loss of 3.81 acres of natural vegetation due to direct and indirect impacts. (Although the total impact is 4.24 acres, 0.43 acre is already disturbed.) The project will also result in permanently lost individuals of rare plants (see Figure 6) and a loss of habitat for common and sensitive wildlife species (including Coast Horned Lizard, California Thrasher, and San Diego Desert Woodrat).

Loss of common plant communities is not considered significant. Chamise Chaparral in the Santa Monica Mountains, when part of a large, contiguous habitat, is considered an Environmentally Sensitive Habitat (ESHA) by the California Coastal Commission (Steve Hudson pers. comm.[16], Dixon 2003), and impacts to an ESHA is considered a significant adverse impact. Since the chaparral vegetation onsite is part of a larger, contiguous stand of chaparral and scrub habitat, it meets the Coastal Commission's definitions and criteria as an ESHA. Therefore, loss of chaparral onsite would be considered a significant impact.

Loss of most individual rare plants and lichens is considered a significant and unavoidable impact, even after the project has been redesigned to minimize impacts and meet project objectives. However, these impacts can likely be mitigated onsite to a less-than-significant level.

[16] Steve Hudson, Supervisor, California Coastal Commission, Ventura, telephone conversation 12 October 2005 regarding ESHAs and chaparral habitats in the Santa Monica Mountains. 805/585-1800.

Table 14. Project Impacts to the Beltrami Property Vegetation

Plant Community	Existing (acres)	Impact (acres)
Chaparral	**12.91**	**2.32**
Heteromeles salicifolia Alliance	3.18	0.03
Heteromeles salicifolia-Cercocarpus betuloides-Corticolous Association	3.18	0.03
Adenostoma fasciculatum Alliance	9.73	2.29
Adenostoma fasciculatum-Ceanothus megacarpus-Corticolous Lichen Association	5.65	1.41
Adenostoma fasciculatum-Hesperoyuccca whipplei-Terricolous Lichen Association	4.04	0.84
Adenostoma fasciculatum-Salvia mellifera Association	0.04	0.04
Coastal Sage Scrub	**4.58**	**1.21**
Baccharis pilularis Alliance	0.12	0.12
Baccharis pilularis-Mimulus longiflorus Association	0.12	0.12
Lotus scoparius Alliance	2.32	0.62
Lotus scoparius-Mimulus longiflorus Association	0.12	0.12
Lotus scoparius-Salvia leucophylla Association	2.20	0.40
Malosma laurina Alliance	2.14	0.47
Malosma laurina-Artemisia californica Association	0.18	0.00
Malosma laurina-Lotus scoparius Association	1.96	0.47
Opuntia littoralis Alliance (not mapped)	< 0.01	unknown
Grassland	**2.25**	**0.26**
Nassella lepida Alliance	1.47	0.24
Nassella lepida-Lotus scoparius Association	0.18	0.16
Nassella lepida-Bromus-Wildflower Field Association	1.29	0.08
Ruderal Grassland Alliance	0.78	0.02
Foeniculum vulgare-Bromus Association	0.63	0.00
Raphanus sativus-Bromus Association	0.09	0.02
Ruderal Grassland-Scrub	0.06	0.00
Rock Outcrop/Bedrock	**0.36**	**0.02**
Saxicolous Lichen Alliance	0.36	0.02
Riparian Lichen Alliance (not mapped)	< 0.01	unknown
Disturbed/Road	**0.63**	**0.43**
Total Area:	**20.73**	**4.24**

Of the fourteen special-status vascular plant species observed onsite, nine special-status plant species will be impacted by the proposed project, and they include:

- *Antirrhinum nuttallianum* ssp. *subsessile* (2 of 2 subpopulations impacted),
- *Calochortus catalinae* (1 of 3 subpopulations impacted),
- *Calochortus plummerae* (7 of 15 subpopulations impacted),
- *Galium nuttallii* ssp. *nuttallii* (1 of 2 subpopulations impacted),
- *Helianthemum scoparium* (2 of 4 subpopulations impacted),
- *Lomatium lucidum* (2 of 7 subpopulations impacted),
- *Navarretia jaredii* (1 of 1 population impacted),
- *Phacelia parryi* (1 of 1 population impacted), and
- *Zigadenus brevibracteatus* (4 of 12 subpopulations impacted).

The loss of individual plants of *Calochortus plummerae* is considered a significant impact due to this species' rarity statewide. The loss of one or more individuals of the locally rare species found onsite would not represent significant impacts unless the project resulted in the loss of the entire local population. Most of the locally rare plants to be impacted by the proposed project would not eliminate the entire local population; therefore, a significant impact would not occur. The proposed project will impact one or more of each of these plants, but impacts can be minimized or mitigated onsite, as described below.

The remaining five special-status vascular plant species observed onsite will not be impacted by the proposed project, and they include:

- *Rhus integrifolia-ovata* hybrid (0 of 2 subpopulations impacted),
- *Chaenactis artemisiifolia* (0 of 1 population impacted),
- *Cryptantha decipiens* (0 of 1 population impacted),
- *Dodecatheon clevelandii* ssp. *patulum* (0 of 9 subpopulations impacted), and
- *Stylocline gnaphaloides* (0 of 1 population impacted).

The proposed project will avoid direct impacts to five special-status plant species. The populations of these species onsite will be avoided by the proposed development and will not be impacted. To ensure that these species are not impacted by the proposed project, the populations should be temporarily and permanently protected from damage. The plants should be fenced off prior to construction to ensure grading or other construction-related activities do not disturb the plants or their habitats. The populations should be permanently protected onsite from future development through a legally binding deed restriction or conservation easement, or similar legal instrument. No mitigation other than avoidance is required.

The three special-status lichen species observed onsite will all be impacted by the proposed project, and they include:

- *Acarospora terricola* (1 of 2 subpopulations impacted),
- *Aspicilia glaucopsina* (2 of 2 subpopulations impacted), and
- *Placynthiella knudsenii* (1 of 1 population impacted).

The conservation of lichen habitats preserves the biodiversity of lichens in southern California and supports the rare lichen species enumerated as well as numerous species that could become rare in the future without far-sighted conservation planning at the local level. The recognition of lichen habitats as a valuable component of Ventura County biological resources enriches the natural beauty of existing open space with a colorful dimension often noticed, but whose aesthetic value has been neglected in the past. (Knudsen and Magney 2006.)

Of the three special-status wildlife species observed and detected onsite, two will be impacted by the proposed project, including:

- San Diego Desert Woodrat (nest) (1 of 4 subpopulations impacted), and
- Coast (San Diego) Horned Lizard (1 of 2 subpopulations impacted).

The proposed project will reduce occupied habitat to these wildlife species onsite, resulting in a potentially significant impact.

One special-status wildlife species observed onsite will not be impacted by the proposed project, and that speices is:

- California Thrasher (0 of 1 population impacted)

PROPOSED MITIGATION MEASURES

Most rare plants (individual plants) found onsite were avoided by the current project design; however, some species will still be impacted. That is, nine of the thirteen rare plant species occurring onsite will be impacted; however, most plants of each impacted species will be avoided.

Springtime field surveys will be conducted by a qualified botanist for each impacted rare plant species to mark all individuals within or immediately adjacent to proposed grading sites. Seed and bulb collecting and salvage is recommended for those species, with replanting elsewhere onsite as mitigation. Seed collection should be conducted at the next appropriate season by a qualified botanist. Specific recommendations to mitigate for significant impacts are proposed for each species impacted, provided below by basic plant group/type. Mitigation areas, rare plant populations, and remaining sensitive habitats should be avoided to the maximum extent possible, and should be protected onsite from future development or disturbance.

Perennial plants to be impacted should be salvaged and grown in a nursery for replanting onsite, or for propagule production to grow planting material. DMEC recommends planting 10 plants onsite for each individual rare plant directly impacted by the project. Planting will occur in appropriate habitats onsite within the areas of the project site to be protected. Scattered, previously disturbed, sites are present that would be suitable for replanting onsite. Care must be taken with selecting specific planting sites and maintenance after planting as a majority of such attempts elsewhere have failed, to varying degrees. The mitigation goal is to have an equal number of impacted plants surviving after completing the 5-year monitoring period.

The basic mitigation strategy for each rare plant species includes:

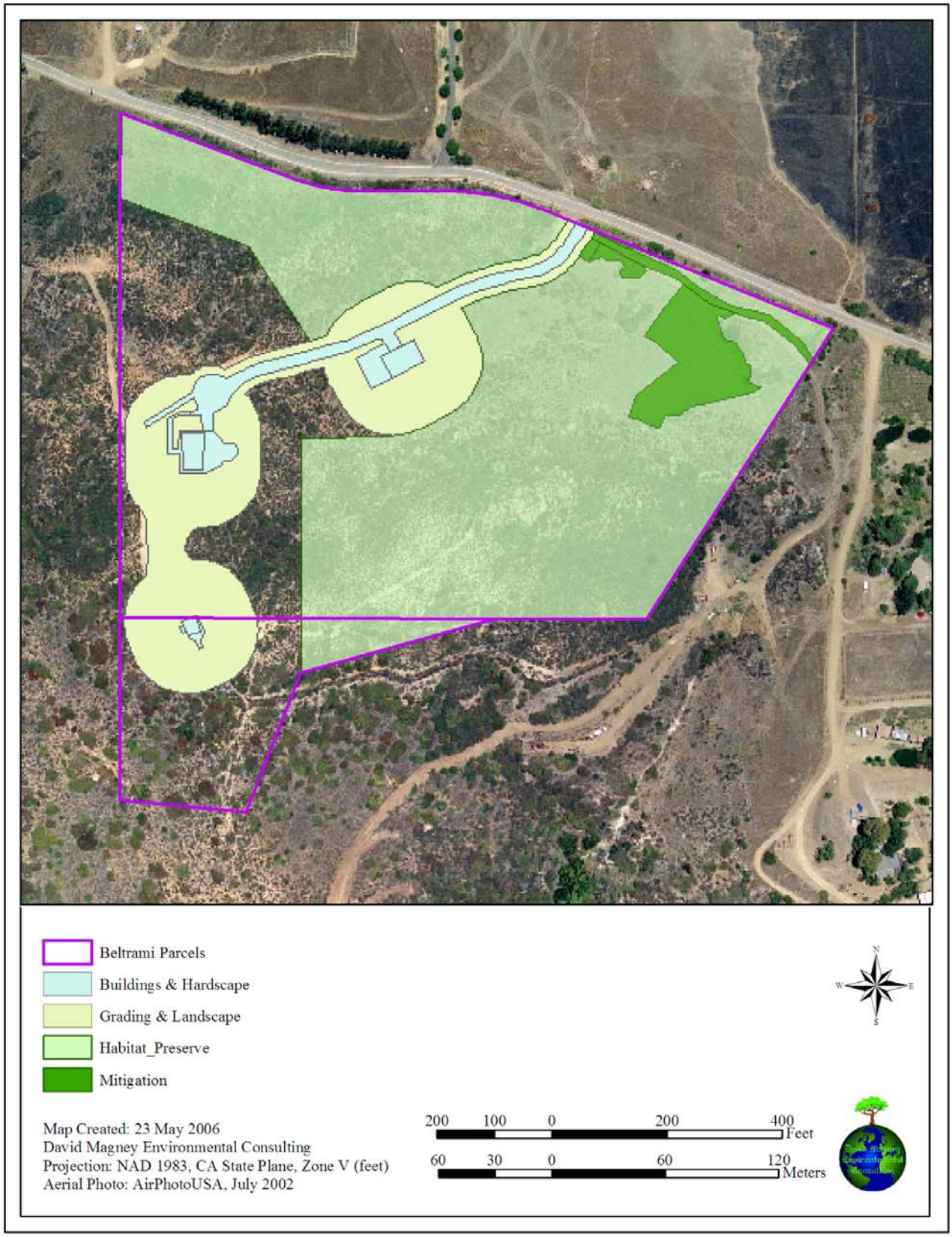
- Protect in perpetuity all avoided rare plant species onsite;
- Collect seeds or propagules from onsite plants to replace impacted plants onsite; and
- Salvage existing plants to be impacted, and translocate them to suitable planting area onsite.

Three special-status lichen species may be impacted by the project, including *Acarospora terricola, Aspicilia glaucopsina, and Placynthiella knudseni*i. DMEC recommends carefully lifting layers of soil, containing soil lichens, and placing the soil lichens in appropriate mitigation areas onsite. The soil should be laid down in areas where the shade/sun exposure is similar to the area from which the lichens were removed. In addition, the slope aspect, moisture level, and wind exposure should all be taken into account to ensure that the new microclimate is similar to the original lichen habitat location. Replaced lichens should be monitored to ensure their success; they should be monitored frequently for the first year until growth is established.

Sensitive chaparral, Coastal Sage Scrub, and native grassland vegetation can be mitigated, at least in part, by revegetating, or allowing natural succession to occur, in those areas onsite currently dominated by invasive exotic plants or in those areas made barren by humans. DMEC recommends that remaining areas of the sensitive vegetation onsite be preserved where site development or fuel modification will not conflict with preservation goals. The locations of the potential habitat preserve areas, totaling 12.02 acres, are shown on Figure 7, Habitat Mitigation Sites.

Portions of the property are currently dominated by invasive exotic weeds, which provide little habitat value, and these areas could be restored to mitigate for other onsite habitat impacts. The areas currently are dominated by *Foeniculum vulgare* and *Bromus* species and *Raphanus sativus*, all invasive exotic species. They are listed above in Section 3, Results, as *Foeniculum vulgare-Bromus* Association (Sweet Fennel-Brome Ruderal Grassland) and *Raphanus sativus-Bromus* Association (Wild Radish-Brome Ruderal Grassland) and are shown on Figure 5. Additionally, an area that is currently barren and contains an existing dirt road can be used as a habitat mitigation area. These areas total 0.84 acre. DMEC recommends that these areas be restored to mitigate for the permanent and partial losses of 3.77 acres of sensitive plant communities. The locations of the potential habitat mitigation areas are also shown on Figure 7.

Figure 7. Habitat Mitigation Sites



SECTION 5. ACKNOWLEDGEMENTS

This report was written by David Magney and Cher Batchelor, with assistance from Teri Reynolds and Wendy Cole. Mr. Magney conducted the field surveys. Mr. Magney and Teri Reynolds prepared the figures for this report, with assistance from Ken Niessen. Lichenologist Kerry Knudsen of UC Riverside reviewed the section on the lichen flora of the project site.

Architect Gary Williamson provided guidance and assistance with project site design and location alternatives.

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Kerry Knudsen, Lichen Herbarium Curator, UC Riverside, personal communication providing list of vouchered specimens collected from the Santa Monica Mountains, dated 28 December 2003, and 22 November 2005.

Steve Hudson, Supervisor, California Coastal Commission, Ventura, telephone conversation 12 October 2005 regarding ESHAs and chaparral habitats in the Santa Monica Mountains. 805/585-1800.

APPENDIX.
BELTRAMI PROPERTY LICHEN REPORT

Lichens on the Beltrami Property, Santa Monica Mountains, Ventura County, California

By: Kerry Knudsen, Lichenologist & Lichen Curator

30 March 2006

The Herbarium, Department of Botany & Plant Sciences, University of California Riverside, CA 92521-0124. kk999@msn.com

Introduction

On property of Marco Beltrami fifty-seven lichen species belonging to thirty-one genera were observed or collected, determined and vouched at the UCR Herbarium. Distribution information is based on a general knowledge of scientific literature or on specific literature citations or directly on the herbarium records at UCR, ASU, and SBBG herbaria, all which contain large collections of California lichens. Though common names for lichens have been proposed, none are in actual popular usage, and only the current scientific names are used. Numbers belong to Knudsen with David Magney as co-collector and are deposited in the UCR Lichen Herbarium.

Lichen Checklist

Acarospora obpallens (Nyl.) Zahlbr. on volcanic breccias 5624 WP52
Acarospora oligospora (Nyl.) Arn. on small volcanic rocks and boulders 5597 WP1/7
Acarospora socialis H. Magn. (Observed) WP 2 Throughout property on volcanic rock
Acarospora terricola H. Magn. on soil 5608 WP 13 5620 WP 20
Acarospora veronensis A. Massal. on volcanic rock and pebbles 5591 WP2 on volcanic rock 5616 WP29 Observed throughout property on volcanic rock
Aspicilia species #1 on volcanic rock 5589 WP2 This species and possibly two others were observed on volcanic rock throughout property.
Aspicilia glaucopsina (Nyl. ex Hasse) Hue on sediment derived recently from volcanic breccias 5586 WP2, 5595.2 WP6; on soil 5595.1 WP6
Buellia badia (Fr.) A. Massal. Rare. on *Aspicilia* species. WP35 (Observed)
Buellia punctata s. lato. (Hoffm.) A. Massal. on volcanic rock 5592 WP2
Buellia sequax (Nyl.) Zahlbr. on volcanic rock 5617 WP29 Common throughout property
Caloplaca sp. on small stems of *Malacothamnus fasiculatus* 5612 WP27
Caloplaca arenaria (Pers.) Mull. Arg. on volcanic breccia 5602 WP11
Caloplaca bolacina (Tuck.) Herre on volcanic rock 5619 WP35 Observed throughout property.
Caloplaca citrina (Hoffm.) Th. Fries on crevices of volcanic rock 5629 WP52
Caloplaca epithallina Lynge parasitic on *Aspicilia sp.* 5618 WP29
Caloplaca impolita Arup on volcanic rock 5631 WP52
Caloplaca luteominia (Tuck.) Zahlbr. *ssp. luteominia* on volcanic rock 5603 WP11
Caloplaca stellaris Wetmore & Karnfelt. 5630 WP52
Candelaria pacifica Westberg in ed. (observed) WP 27 WP 40 and scattered throughout property.
Candelariella citrina de. Lesd. on volcanic rock 5626 WP52
Candelariella vitellina (Ehrh.) Mull. Arg. on volcanic rock 5598 WP7
Cladonia chlorophaea (Flörke ex Sommerf.) Sprengel on soil (Observed) WP4
Collema tenax (Sw.) Ach. on soil 5604 WP11
Dimelaena radiata (Tuck.) Mull. Arg. on volcanic rock (Observed) WP 40
Diploschistes muscorum (Scop.) R. Sant. on soil (Observed) WP 2
Endocarpon pusillum Hed. on soil 5606 WP11

Flavoparmelia caperata (L.) Hale on shrub (Observed) WP 24 small amounts seen throughout property
Flavopunctelia flaventior (Stirton) Hale on chamise (Observed) WP?
Fuscopannaria californica (Tuck.) P.M. Jørg. on soil around boulders 5593 WP 4 on soil 5614 WP29 common throughout property
Lecania brunonis (Tuck.) Herre on volcanic rock 5609 WP15
Lecania cyrtella (Ach.) Th. Fr. on small stems of *Malacothamnus fasiculatus* (Observed) WP 27
Lecanora gangaleoides Nyl. on volcanic rock 5628 WP52
Lecanora muralis (Schreb.) Rabenh. On volcanic rock (Observed) WP 2, WP 7 Abundant throughout property.
Lecidea fuscoatra (L. Ach.) on volcanic breccia (Observed) WP 15
Lecidella asema (Nyl.) Knoph & Hertel on volcanic rock(Observed) WP4
Lichinella stipatula Nyl. on volcanic rock 5621 WP40 Common in small amounts through whole area
Peltula euploca (Ach.) Poelt. on volcanic rock(Observed) WP35
Peltula obscurans var. hassei (Zahlbr.) Wetmore on volcanic rock (Observed) WP 40
Physcia adscendens (Fr.) H. Olivier on bark(Observed) WP 15, WP 27
Physcia dimidiata (Arnold) Nyl. (Observed)
Placynthiella knudsenii Lendemer on moss 5600 WP 7 on soil and moss 5610 WP 24
Polysporina simplex (Davies) Vezda on volcanic rock (Observed) WP 2
Psora pacifica Timdal on soil 5590 WP 2, 5594 WP 6 common throughout property
Ramalina sp. on bark (Observed) WP 15, WP 27
Sarcogyne privigna (Ach.) Anzi on decaying volcanic breccia 5623 WP 52
Sarcogyne similis H. Magn. on volcanic breccia 5615 WP 29
Teloschistes chrysophthalmus (L.) Th. Fr. on *Malacothamnus fasciculatus* (Observed) WP13, WP 27
Thelomma santessonii L. Tibell on volcanic rock 5627 WP 52 observed WP 35
Trapelia coarctata (Turner ex Sm. & Sow.) (Observed) WP 2
Trapelia glebulosa (Sw.) J.R. Landon on rock and soil 5587 WP 2 Abundant throughout Property.
Trapelia obtegens (Th. Fr.) Hertel on hardened soil and pebbles 5599 WP 7
Usnea sp on bark. (Observed) WP 17, WP 27
Usnea glabrata (Ach.) Vain on bark (Observed) WP 27
Verrucaria memnonia Arnold on volcanic rock 5611 WP 27
Xanthoparmelia cumberlandia (Gyeln.) Hale on volcanic rock and soil (Observed) WP 2 abundant throughout property
Xanthoparmelia mexicana (Gyeln.) Hale on volcanic rock (Observed) WP 29
Xanthoria polycarpa (Ehr.) Fr. (Observed) WP 15, WP 27

Lichen Communities

Corticolous Lichen Community

The corticolous (bark-loving) lichen community occurs on bark and wood of chaparral shrubs. The effects of fire on the property were immediately noticed in assessing the corticolous lichen community. There were two main types of chaparral: Chamise chaparral and mesic chaparral. The lichen flora was depauperate and just recovering from the last fire on the property. This flora was observed as the species were all rare on the property and many were too immature for proper determination. Eleven species in ten genera were observed, all common to these communities in the Santa Monica Mountains except *Teloschistes chrysophthalumas* (Knudsen 2004; Knudsen in ed.). Many occurred on the fast-growing fire-follower *Malacothamnus fasciculatus* and will eventually migrate to the older branches of the various chaparral shrubs. *Teloschistes chrysophthalumas* was

once common in southern California (Hasse 1913) as it was Europe but for unknown reasons, possibly increased fire frequency, has become rare to uncommon in modern times. Small populations have been observed in a number of locations in the Santa Monica Mountains in Ventura County (Knudsen in ed.) It is still common on the larger Channel Islands and north in areas like Santa Ynez Valley in Santa Barbara County.

Table One. Corticolous Chaparral Lichens

Caloplaca sp.
Candelaria pacifica Westberg in ed.
Flavoparmelia caperata (L.) Hale
Flavopunctelia flaventior (Stirton) Hale
Lecania cyrtella (Ach.) Th. Fr.
Physcia adscendens (Fr.) H. Olivier
Ramalina sp.
Teloschistes chrysophthalmus (L.) Th. Fr.
Usnea sp.
Usnea glabrata (Ach.) Vain
Xanthoria polycarpa (Ehr.) Fr.

Saxicolous Lichen Community

The saxicolous (rock-loving) lichen community occurred on boulders, rocks and pebbles of hard Conejo volcanics and the softer and decaying volcanic breccias. Rock outcrops are scattered around the property and the landscape is covered with pebbles and smaller rocks from erosion. Thirty-five species in seventeen genera were observed or collected on rock. The effects of the last fire on the property were evident in this community too. On many outcrops saxicolous communities were just recovering and only a number of out crops at the front of property showed signs they had escaped the last fire. The components of this community contained a maritime element which generally occurs in the Santa Monica Mountains within a few miles of the coast mixed with the saxicolous community that occurs on Conejo volcanics and breccias throughout the Santa Monica Mountains. Most of these species occur commonly in the Santa Monica Mountains (Knudsen 2004; Knudsen in ed.) except for *Caloplaca stellata* and *Trapleia obtegans*. *Caloplaca stellata* has so far only been collected in Upper Deer Creek Canyon on a rock out crop along Deer Canyon Road and on the Beltrami property. It is common in North America and central California where it occurs locally as well as in Baja. *Trapelia obtegans* was just recognized as occurring in California (Knudsen and Lendemer in ed). This represents only the third collection for the state and the first collection from southern California and the Santa Monica Mountains. It is expected to have a wide range in the state but is easily over-looked because of its similarity in size and color to *Trapelia glebulosa*, which is abundant on the property on rock and soil. It was only collected in one small area on the property but could easily be elsewhere on the property. *T. obtegens* is common in North America, Europe, and parts of Asia but under-collected.

Table Two. Saxicolous Lichen Community on Conjeo Volcanics

Maritime Component

Buellia punctata s. lato. (Hoffm.) A. Massal.
Caloplaca bolacina (Tuck.) Herre
Caloplaca impolita Arup
Caloplaca luteominia var. *luteominia* (Tuck.) Zahlbr.
Dimelaena radiata (Tuck.) Mull. Arg

General Component

Acarospora obpallens (Nyl.) Zahlbr.
Acarospora oligospora (Nyl.) Arnold
Acarospora socialis H. Magn.
Acarospora veronensis A. Massal.
Aspicilia species #1
Buellia badia (Fr.) A. Massal.
Buellia sequax (Nyl.) Zahlbr.
Caloplaca arenaria (Pers.) Mull. Arg.
Caloplaca citrina (Hoffm.) Th. Fries
Caloplaca epithallina Lynge
Caloplaca stellaris Wetmore & Karnfelt. 5630
Candelariella citrina de. Lesd.
Candelariella vitellina (Ehrh.) Mull. Arg.
Lecania brunonis (Tuck.) Herre
Lecanora gangaleoides Nyl.
Lecanora muralis (Schreb.) Rabenh.36
Lecidea fuscoatra (L. Ach.)
Lecidella asema (Nyl.) Knoph & Hertel
Lichinella stipatula Nyl.
Peltula euploca (Ach.) Poelt
Peltula obscurans var. hassei (Zahlbr.) Wetmore
Physcia dimidiata (Arnold) Nyl.
Polysporina simplex (Davies) Vezda
Sarcogyne privigna (Ach.) Anzi
Sarcogyne similis H. Magn.
Thelomma santessonii L. Tibell
Trapelia coarctata (Turner ex Sm. & Sow.)
Trapelia glebulosa (Sw.) J.R. Landon
Trapelia obtegens (Th. Fr.) Hertel
Xanthoparmelia cumberlandia (Gyeln.) Hale
Xanthoparmelia mexicana (Gyeln.) Hale

Riparian Lichen Community

The riparian lichen community is usually restricted to seasonal streambeds or creeks and drainages, generally occuring on rocks or among mosses, and seems to require some inundation each year. Only a single lichen of this community was collected in the main ravine, *Verrucaria memnonia*. Because of taxonomic confusion and a lack of a modern monograph for North America of the genus Verrucaria, *V. memnonia* is rarely collected or correctly determined but is probably common in ravines and drainages near the coast or in shaded circumstances inland (Pinnacles National Monument). This is the third report for California and first for the Santa Monica Mountains.

Terricolous Lichen Community and Thin-soiled Lichen Habitat

The terricolous (soil-loving) lichen community on the property had ten species in ten genera. The *Cladonia* genus, which is widely distributed on soil throughout the world, was definitely recovering from fire. Only one species of *Cladonia* could be determined to species, and only one specimen of the common and global *Cladonia* parasite *Diploschistes muscorum* was seen. Squamules of young populations were observed scatterd throughout the property and it is expected then more than one species of *Cladonia* occurs on the property.

Trapelia glebulosa was everywhere, both as a pioneer on soil, mixed with other lichens, or on rock and pebbles.

The soil crusts were well developed in an area near the front of the property and in areas of stunted chamise chaparral on thin-soil habitat. The lichen component of these crusts, co-existing with mosses and liverworts, usually contained *Endocarpon pusillum* (no *Placidium* species was positively determined but one or two common species are expected) with *Fuscopannaria californica* and *Collema tenax* and possibly other cyanolichens too immature to determine. This is the first report of *Fuscopannaria californica* from the Santa Monica Mountains and it was common on the property, though possibly under another name it was reported historically by Hasse from Topanga Canyon (Hasse 1913). It is common locally from of the coast of western North America and inland to Arizona at lower elevations. Three rare terricolous lichens were found on the property.

The first is *Aspicilia glaucospina*. This species was described from the Santa Monica Mountains. This is its third site in the Santa Monica Mountains. The other two occur on property belonging to the Santa Monica National Recreational Area, near Malibu Canyon and in Sandstone Peak area. It is currently only know from two sites in Riverside County and one site in San Diego County where it was probably extirpated in the Cedar Fire. This represents the sixth verified site. Though the property was searched for it after its discovery it was only found in a small area on an east-facing slope in stunted chamise chaparral on freshly eroded sediment from several remaining volcanic rock outcrops. This species at this time appears to be both a **rare** and **endangered** southern California endemic.

The second rare terricolous species collected on the property is *Acarospora terricola*. A. H. Magnusson first described this species from a single historic collection by Hasse from the Santa Monica Mountains (1929). It is known from five other sites in southern California in San Diego County (Torrey Pines), in Riverside County (the west slope of San Jacinto Mountains associated with *Aspicilia glaucospina*, the Menifee Hills in Wildomar, and Banning area), and in Orange County (in Fremont Canyon where it was possibly just extirpated by the recent Corona fire.) I have seen two collections of small sterile specimens from Washington and Nevada and am investigating a report from Brazil. Easily overlooked and often sterile, its full distribution is unknown. But it appears to be highly localized in its occurrences. It was collected in two separate locations in soil crusts on the

Beltrami property and may occur elsewhere in soil crusts. It is the first modern report from the Santa Monica Mountains. Based on our current knowledge the species should be considered sensitive and protected.

The third rare terricolous lichen is *Placynthiella knudsenii.* It is known previously from six sites in southern California in Ventura, Riverside, and San Diego Counties. At all sites it is uncommon to rare. It is also known from a disjunct collection in the Ozarks (Lendemer 2004; Hertel et al 2004). This is the second report from the Santa Monica Mountains where a specimen was previously found in the Sandstone Peak area (Knudsen 2005.) Two specimens overgrowing moss at the base of chamise plants were sampled from two separate locations on the property and more individuals are expected. It should be considered sensitive and protected.

Acarospora terricola and *Placynthiella knudsenii* appear to be relics of a once widely distributed species. *Aspicilia glaucospina* appears to be endemic to southern California, though like the other species, the California populations may be relics of a once more widely distributed species. All three species appear to be in danger of extinction due to the fragility and reduction of thin-soiled habitats in California (Knudsen and Magney 2006).

Table Three. Terricolous Lichen Community

Acarospora terricola H. Magn.

Aspicilia glaucopsina (Nyl. ex Hasse) Hue

Cladonia chlorophaea (Flörke ex Sommerf.) Sprengel

Collema tenax (Sw.) Ach.

Diploschistes muscorum (Scop.) R. Sant.

Endocarpon pusillum Hed.

Fuscopannaria californica (Tuck.) P.M. Jørg.

Placynthiella knudsenii Lendemer

Psora pacifica Timdal

Trapelia glebulosa (Sw.) J.R. Landon

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