Fall Biological Survey Report for Santa Susana Field Laboratory Area IV and Northern Undeveloped Areas

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1 Introduction

Science Applications International Corporation (SAIC) scientists conducted rare plant surveys at the Santa Susana Field Laboratory (SSFL) Area IV and Northern Undeveloped Areas. The purpose of the surveys was to determine the presence of Braunton's milk-vetch (*Astragulus brauntonii*) and Santa Susana tar plant (*Deinandra minthornii*) and other special status plant species detectable at the time of the surveys within the Area IV and undeveloped areas. As part of this effort, a floristic inventory of the area was initiated, focusing on species identifiable at the time of the surveys, and a vegetation map was prepared. An initial wildlife assessment of the site was conducted, focusing on habitat and seasonally identifiable features. It is planned that these efforts will be supplemented by additional surveys to be conducted during the late fall/early winter, spring, and late spring early summer to identify species during the season(s) when they are evident.

2 Methods

Data Review. The California Native Diversity Database (CNDDB) was accessed to obtain the list and locational information of all species with special status that are known to occur in the SSFL area. Special status species include those listed as threatened or endangered under the Endangered Species Act (federally listed species), under the California Endangered Species Act (state listed species), and as other regionally declining, rare, or sensitive species tracked by CNDDB. Per Ventura County guidelines, a 9-USGS quadrangle area was reviewed to get a sense of the species that occupy the vicinity. The only known listed and sensitive species recorded in the CNDDB as occurring in the SSFL were plant species. Prior reports produced for the site owner were reviewed as they became available. These include MWH 2009, MWH, 1998 and a supplement produced in 2005.

Survey Method. Surveys were conducted on 5 October through 9 October and on 21 October and 22 October 2009. A supplemental visit was made on November 10, 2009 to field check the mapped vegetation categories within the previously developed portions of the site. The biological survey routes and coverage were determined with the aid of high resolution aerial photographs. Surveys were conducted by biologists walking parallel transects over a defined area where permitted by the habitat conditions (e.g., in grassland and low scrub) and terrain with some meandering back and forth over the centerline of each transect to more closely inspect features of interest. In general, transect spacing was about 15 meters (~49 feet). In steeper terrain and dense vegetation, especially in the northern undeveloped areas, additional departures from the centerline were required to negotiate the terrain and vegetation. Binoculars and spotting scopes were used from suitable vantage points to supplement the walking transects and to scan inaccessible portions of the site, such as steep rock outcrops. Photographs were taken to document habitat types, sensitive species, and important features.

Locations and boundaries of sensitive species occurrences and other noteworthy features were delineated using differential global positioning system (dGPS) equipment (Trimble® GeoXT™) capable of sub-meter accuracy (i.e., repeat measurements would fall less than 1 meter from the actual location).

Braunton's Milk-vetch Critical Habitat. In the critical habitat in the southwestern portion of Area IV, individuals of Braunton's milk-vetch were counted in circular plots with a 2 meter radius approximately 15 meters apart. If no Braunton's milk-vetch plants were observed in the sample plot, but Braunton's milk-vetch plant(s) were observed outside but within 7.5 meters from the center of the sampling plot (the midpoint between plots) the data for the sampling plot was recorded as a "+" instead of a zero. Sampling plot locations were determined with the aid of dGPS. Although the focus was delineating the areas occupied by Braunton's milk-vetch at different densities, the data were also used to approximate the population size within the survey area.

Santa Susana tarplant. For Santa Susana tarplant, the location of each occurrence was identified using dGPS. For clusters of plants occurring within a few meters of other plants, the location was recorded with dGPS and the number of plants were counted. For inaccessible areas the locations of the Santa Susana tarplants were recorded

using high-resolution aerial photography. A TruPulse® Laser Rangefinder was used in conjunction with the dGPS on the October 21 and 22 survey to document the locations of inaccessible plants.

Other plant species. The locations of California walnut trees *(Juglans californica)* were recorded with dGPS supplemented with use of high resolution aerial photographs or use of a TruPulse® Laser Rangefinder coupled with dGPS in relatively inaccessible areas. Locations of other biological features of interest were also recorded for future reference with dGPS or mapping on aerial photographs.

Vegetation Mapping. All surveys within the Area IV and northern undeveloped areas boundaries were conducted with the aid hard copies of high resolution aerial photos, which were used to supplement the dGPS in locating and delineating areas of interest. Maps of the vegetation within the survey area were created by delineating polygons of different vegetation types using the GIS and a digital version of the same high resolution aerial photographs as a base. Vegetation categories are consistent with *Preliminary Descriptions of Terrestrial Natural Communities of California* (Holland 1986), except where no suitable categories exist. For example, there is no suitable category for weed-dominated areas and so a category was developed to identify this type. This vegetation categorization and discussion, including information on herbaceous plant species, will be adjusted following future rare plant surveys and data analysis planned for spring 2010.

In addition to vegetation mapping, SAIC biologists identified and recorded a preliminary list of identifiable plant species observed during surveys. A list of these species is included in Attachment B. Scientific plant names follow *The Jepson Manual* (Hickman 1993). This preliminary list will be refined and augmented with the results of planned future seasonal surveys.

Wildlife Habitat Assessment. SAIC wildlife biologists conducted a site walkover October 5-8 focusing on characterizing habitat with the aid of high resolution aerial photographs. Incidental wildlife observations were recorded but additional seasonal surveys would be required for resident birds and seasonally active species including most amphibians and reptiles and sensitive invertebrates. Buildings and fenced sites were not entered as part of this survey.

3 Results

3.1 Sensitive Plant Species Surveys

Braunton's milk-vetch, Santa Susana tarplant, and California black walnut were identified from the site and their locations mapped. Figure 1 provides an overview of the locations of Braunton's milk-vetch and Santa Susana Tarplant for the entire study area. Braunton's milk-vetch are concentrated within and near the designated critical habitat in the southwestern part of the site. Santa Susana tarplants are closely associated with sandstone outcrops where they are typically found growing in fissures in the rock. Some occurrences are in cracks in pavement or remediated sites near sandstone outcrops populated by tarplants, which act as a seed source. Because of their occurrence in contrasting geologic/soil conditions, Braunton's milk-vetch and Santa Susana tarplants were found in proximity to one another only in a couple of exceptional occurrences.

Figure 2 shows an expanded view of the northwestern part of Area IV and the adjacent northern undeveloped area with locations of Braunton's milk-vetch and Santa Susana tarplant. Note that there are two occurrences of Braunton's milk-vetch shown in Figure 2 that are within the previously developed area north of the main population and the designated critical habitat. Each of these isolated occurrences is a single individual. Figure 3 shows an expanded view of the northern portion of Area IV and the adjacent northern undeveloped area. The close association of Santa Susana tarplant with sandstone outcrops is clearly visible in Figures 2 and 3.

Figure 4 shows the locations of California black walnut identified from the study area. California black walnuts were primarily associated with lower portions of north-facing slopes.

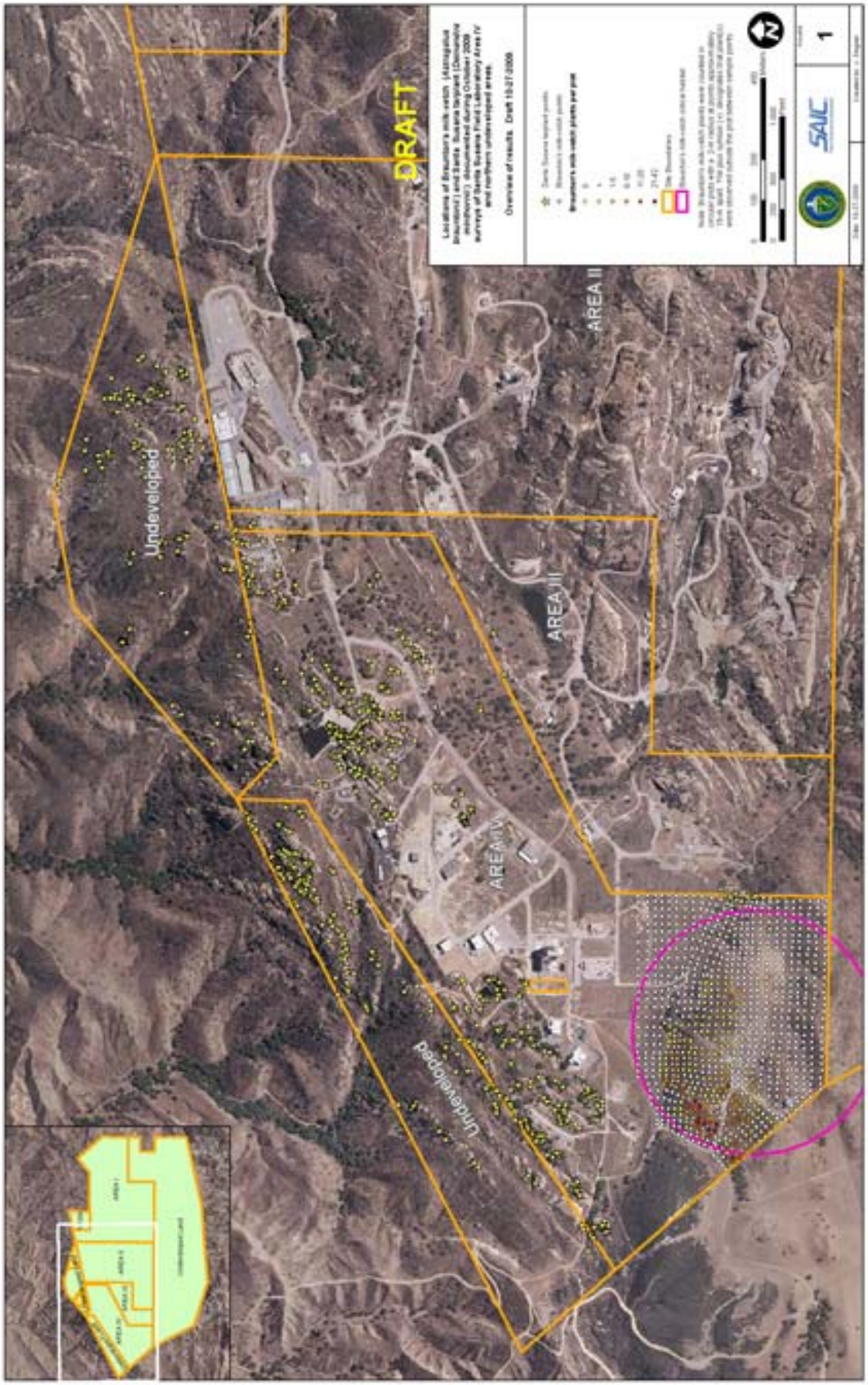
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Figure 5 shows an expanded view of the southwestern portion of Area IV including the boundaries of the designated Braunton's milk-vetch critical habitat. The colored circles indicate where the numbers of Braunton's milk-vetch are highest. The white line indicates the limit of Braunton's milk-vetch occurrences documented during surveys in spring 2006, conducted following the September 2005 Topanga fire that had burned through the site and stimulated the germination and establishment of the Braunton's milk-vetch. There is a close correspondence between the area occupied in 2006 and that occupied in 2009, with the occupied area slightly expanded to the north in 2009, compared to 2006.

Numbers of Braunton's milk-vetch. Although the surveys were conducted primarily to determine locations of Braunton's milk-vetch and where the highest concentrations of Braunton's milk-vetch individuals were located, the data were used to provide a rough estimate of Braunton's milk-vetch numbers. The area occupied by Braunton's milk-vetch was estimated based on the contiguous plus or positive counts for the sample plots in the sampling area. The areal extent of the main area of occurrence within the critical habitat includes some zero values which were surrounded by positive and plus counts. The areal extent of the main area of occurrence within the critical habitat was estimated to be 71,000 square meters, which included 299 sample plots. There were on average 3.27 plants per plot for the 299 plots. Each plot size is 12.57 square meters. The plant density was estimated by dividing the average count by the plot size resulting in 0.26 plants per square meter. The population was estimated by multiplying the plant density by the area of occurrence (71,000 square meters), resulting in an estimate of 18,500 individuals of Braunton's milk-vetch. There were six isolated Braunton's milk-vetch plants outside of the main area of occurrence in the critical habitat.

*Number of Santa Susana tarplant*s. There were 679 locations of Santa Susana tarplant recorded on the dGPS, many of which represented multiple plants. Based on preliminary analysis of the data recorded, the total number of Santa Susana tarplant in Area IV and the Northern Undeveloped Areas observed is roughly 850 individuals.

3.2 Vegetation

Figure 6 is a vegetation map of the study area. The map contains nine vegetation types, two with three subtypes each for a total of thirteen subtypes. These categories are described in detail below. Table 1 details the acreage of each type within the overall survey area at the proposed project site. Tables 2, 3, and 4 provide a breakdown of the acreages within Area IV, western portion of the Northern Undeveloped Area, and the eastern portion of the Northern Undeveloped area, respectively.

Topography at the Santa Susan Field Laboratory is variable. In the majority of Area IV, land is relatively flat with a few large sandstone outcrops in scattered locations, mainly in the northern part of the site. The southwestern portion of Area IV contains portions of two hills that continue of the site to the west and south. The northern undeveloped Area is distinguished by very steep north-facing slopes and massive sandstone outcrops.

Table 1. Areas of Vegetation Types Identified within the Overall Study Area

Type	*Acres*	*Hectares*
Northern Mixed Chaparral – Burned (C-B)	216.6	87.7
Northern Mixed Chaparral – Sandstone Outcrops (C-S)	40.5	16.4
Northern Mixed Chaparral – Unburned (C-UB)	8.8	3.6
Formerly Disturbed – Mulefat – dominated (MF)	3.0	1.2
Formerly Disturbed – Revegetated (RV)	13.5	5.5
Formerly Disturbed – Weed-Dominated (WD)	51.8	20.9
Coast Live Oak Woodland/ Savanna (CLO)	62.9	25.5
Unvegetated Disturbed/Developed (UDD)	46.2	18.7
California Walnut Woodland (CWW)	8.7	3.5
Non-native Annual Grassland (AG)	8.6	3.5
Steep Dipslope Grassland (SDG)	7.7	3.1
Venturan Coastal Scrub (VCS)	3.1	1.3
Disturbed Riparian (DR)	0.2	0.1
Total	**471.6**	**191.0**

Table 2. Areas of Vegetation Types Identified within Area IV

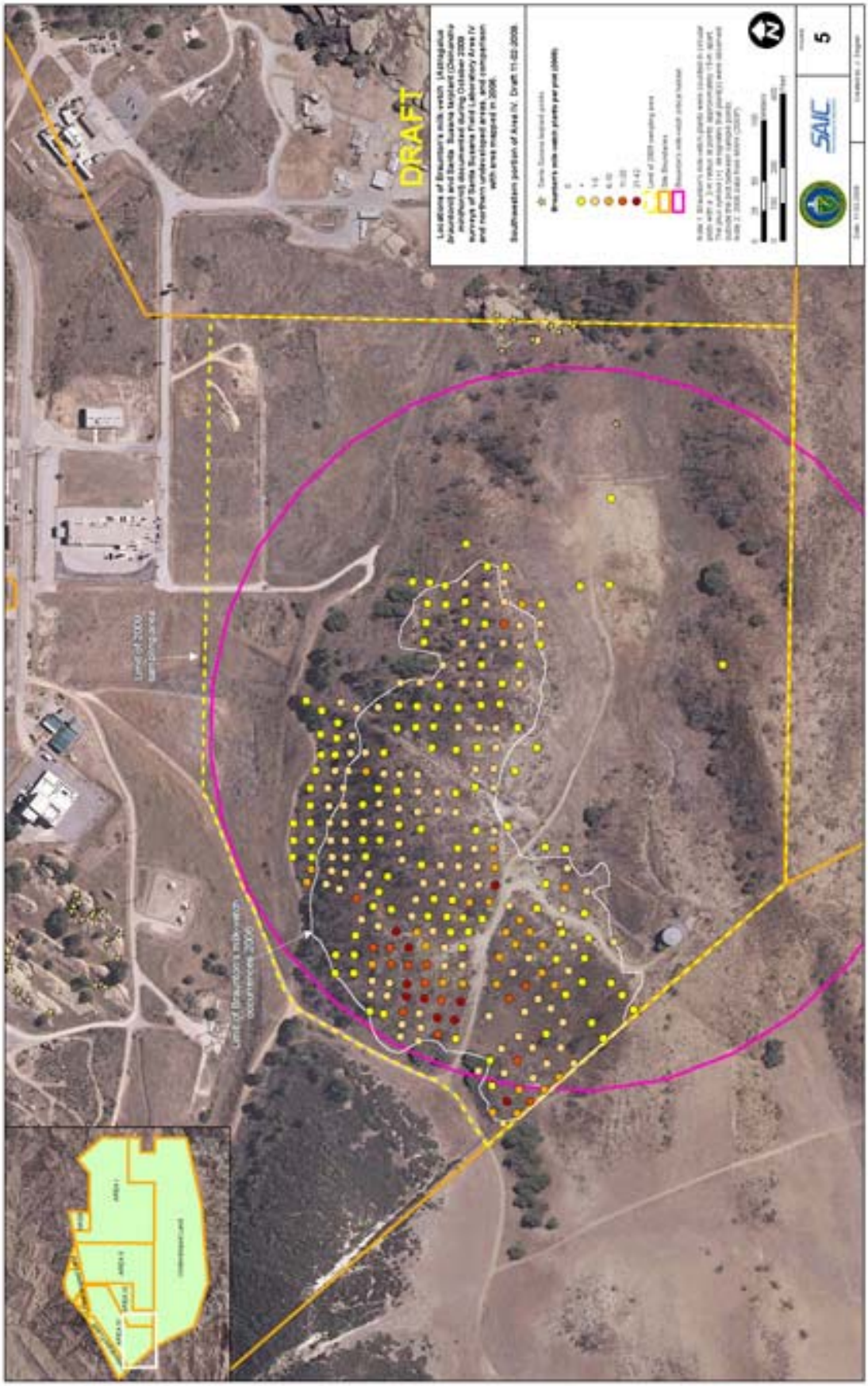
Type	*Acres*	*Hectares*
Northern Mixed Chaparral – Burned (C-B)	97.3	39.4
Northern Mixed Chaparral – Sandstone Outcrops (C-S)	10.9	4.4
Northern Mixed Chaparral – Unburned (C-UB)	5.0	2.0
Formerly Disturbed – Mulefat-dominated (MF)	3.0	1.2
Formerly Disturbed – Revegetated (RV)	12.6	5.1
Formerly Disturbed – Weed-dominated (WD)	52.6	21.3
California Live Oak Woodland and Savanna (CLO)	50.6	20.5
Unvegetated Disturbed/Developed (UDD)	43.9	17.8
California Walnut Woodland (CWW)	7.3	3.0
Non-native Annual Grassland (AG)	3.6	1.4
Venturan Coastal Scrub	3.1	1.3
Total	**289.9**	**117.4**

Table 3. Areas of Vegetation Types Identified within the western portion of the Northern Undeveloped Area

Type	*Acres*	*Hectares*
Northern Mixed Chaparral – Burned (C-B)	53.2	21.5
Northern Mixed Chaparral –Sandstone Outcrop (C-S)	13.2	5.3
Northern Mixed Chaparral –Unburned (C-UB)	2.5	1.0
Coast Live Oak Woodland and Savanna (CLO)	4.9	2.0
Non-native Annual Grassland (AG)	3.3	1.3
Unvegetated Disturbed/Developed (UDD)	1.5	0.6
California Walnut Woodland (CWW)	0.4	0.2
Steep Dipslope Grassland (SDG)	0.4	0.2
Total	**79.4**	**32.1**

Table 4. Areas of Vegetation Types Identified within the eastern portion of the Northern Undeveloped Area

Type	*Acres*	*Hectares*
Northern Mixed Chaparral – Burned (C-B)	66.2	26.8
Northern Mixed Chaparral – Sandstone Outcrops (C-S)	16.4	6.6
Northern Mixed Chaparral – Unburned (C-UB)	1.3	0.5
Coast Live oak Woodland and Savanna (CLO)	7.4	3.0
Steep Dipslope Grassland (SDG)	7.3	3.0
Non-native Grassland (AG)	1.8	0.7
California Walnut Woodland (CWW)	1.0	0.4
Unvegetated Disturbed/Developed (UDD)	0.9	0.4
Disturbed Riparian ((DR)	0.2	0.1
Total	**102.5**	**41.5**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Vegetation Mapped in Study Area
Code
Vegetation Type
AG Non-native Annual Grassland
C-B Burned Northern Mixed Chaparral
C-S Sandstone Outcrops Northern Mixed Chaparral
C-UB Unburned Northern Mixed Chaparral
CLO Coast Live Oak Woodland and Savanna
CWW California Walnut Woodland
DR Disturbed Riparian
MF Mulefat-dominated Formerly Disturbed
RV Revegetated Formerly Disturbed
WD Weed-dominated Formerly Disturbed
SDG Shed Drainage Grassland
UDD Unvegetated Disturbed/ Developed
VCS Ventiuran Coastal Scrub
Site Boundaries
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0 250 500 1,000 Feet
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3.2.1 Description of Vegetation Types Identified on Area IV and the Northern Undeveloped areas.

3.2.1.1 Steep Dipslope Grassland

Steep dipslope grassland occurs on steep north-facing slopes in the northern undeveloped area. In particular, these sites have sandstone bedrock which follows the slope angle over lain by a thin (one to several inches) layer of soil. This type is dominated by non-native annual grasses and herbs including wild oats (*Avena* sp.), ripgut brome (*Bromus diandrus*), and tocalote (*Centaurea melitensis*). Sizable areas that support annual and perennial native herbs and wildflowers (e.g. Bigelow's spike-moss [*Selaginella bigelovii]*, shooting stars [*Dodecatheon clevelandii*] wild onion [*Allium* sp.] common goldenstar [*Bloomeria crocea*.], blue dicks [*Dichelostemma pulchellum*], chalk dudleya [*Dudleya pulverulenta*] and mariposa lily [*Calochortus* spp.]) are also present within this type.

3.2.1.2 Northern Mixed Chaparral

Northern mixed chaparral is the most abundant habitat type in areas that have not been mechanically disturbed in the past. It generally occurs on steeply sloping hillsides. It is particularly well-developed in the northern undeveloped area and two hills in the western portion of Area IV. Due to different appearance and functionality of the habitat, three subtypes are mapped and described below: burned, unburned, and sandstone outcrops.

Burned Northern Mixed Chaparral

Large portions of the Field Laboratory site burned in 2005. The fire burned different portions of the site with variable intensity, resulting in a mosaic of degree of burning, with some areas not burned at all (see below). Burned northern mixed chaparral occupies one hill in the western portion of Area IV and most of the northern undeveloped area. Dominant species vary in different portions of the site, but most sites include resprouting and seedlings of woody chaparral species such as chamise (*Adenostoma fasciculatum*), laurel sumac (*Malosma laurina*), sugar bush (*Rhus ovata*), and ceanothus (*Ceanothus crassifolius, oliganthus*, and *megacarpus*). Dense stands of shrubs, subshrubs and perennials have established in some areas including poison oak (*Toxicodendron diversilobum*) coastal deerweed (*Lotus scoparius*), thickleaf yerba santa (*Eriodictyon crassifolium*), and sticky snapdragon (*Antirrhinum multiflorum*). Species typical of sage scrub including black sage (*Salvia mellifera*), purple sage (*Salvia leucophylla*), and coastal sagebrush (*Artemisia californica*) are abundant in places among the resprouting chaparral dominants.

Braunton's milkvetch (*Astragalus brauntonii*), discussed above, is one of the dominant plants in localized portions of burned northern mixed chaparral.

Unburned Northern Mixed Chaparral

Unburned chaparral occurs on the hilltop at the northwestern corner of Area IV. Vegetation on this hilltop is dominated by mature chaparral species including chamise, Our Lord's Candle (*Yucca whipplei*), holly leaf redberry (*Rhamnus ilicifolia*), hoary leaf ceanothus (*Ceanothus crassifolius*), and bigberry manzanita (*Arctostaphylos glauca*). Shrubs are about four feet in height and, in most places, the vegetation is thick and impenetrable. Occasional disturbed paths and clearings in the chaparral support stands of non-native grasses and forbs including wild oats, ripgut brome, Mediterranean mustard (*Hirschfeldia incana*), and tocalote.

In addition to the hilltop described above, small pockets of Northern Mixed Chaparral that were missed by the fire due to protection by rock outcrops or chance are included in this category. These areas support tall chaparral shrubs, similar in species composition as described for burned Northern Mixed Chaparral. Although uncommon, where unburned areas occur along ridgelines, they are dominated by chamise and

species of manzanita (*Arctostaphylos* sp). In most cases, unburned areas are restricted to low lying swales dominated by Ceanothus and laurel sumac.

Sandstone Outcrops Northern Mixed Chaparral

Very large sandstone outcrops dominate portions of the habitat in the survey area. Some outcrops are at or near the soil level and others are 40 or more feet above the soil level. Due to size and frequency of the outcrops, the habitat function of the chaparral is very different in these areas. Sandstone outcrops Northern Mixed Chaparral is located in the northern undeveloped areas where there are large outcrops that dominate 80 precent or more of the ground surface. In general, these occur as wide, linear features, as the outcrops form in natural rows. Chaparral, similar to as described above, occurs around the edges and the interspaces between outcrops. However, the outcrops support limited cover by shrubby species. Plants frequently observed on outcrops include the Santa Susana tarplant (*Deinandra minthornii*), listed under the California Endangered Species Act (CESA) as Rare and discussed above.

3.2.1.3 Venturan Coastal Scrub

Venturan Coastal Scrub occurs around the base of a hill at the northwest corner of Area IV. This location is transitional between unburned Northern Mixed Chaparral and California Walnut Woodland. Dominant plant species in this vegetation type at the Field Laboratory include giant wild rye (*Leymus condensatus*), black sage (*Salvia mellifera*), and purple sage (*Salvia leucophylla*).

3.2.1.4 Coast Live Oak Woodland and Savanna

Coast live oak woodland is dominated by coast live oak trees (*Quercus agrifolia*) with a variable understory, depending on surrounding habitat. In the northern part of Area IV, it generally occurs in with an understory of annual grasses and forbs such as ripgut brome, wild oats, and tocalote with scattered large sandstone outcrops. In the northern undeveloped area, it occurs at margins with Northern Mixed Chaparral and chaparral species are intermixed.

3.2.1.5 California Walnut Woodland

California walnut woodland is defined by the presence of California black walnut trees (*Juglans californica*). In Area IV, California Walnut Woodland occurs in at the base of two hills at the western edge. They are on north or east-facing slopes in the transition between chaparral / coastal scrub and grassland. In these areas, coast live oaks are also dominant and the understory is characterized by shrubs and subshrubs, including poison oak and purple sage.

3.2.1.6 Formerly Disturbed Sites

Formerly disturbed sites support a variety of native and non-native plants. For that reason, this category is divided into three subcatgories: mulefat, weed-dominated, and revegetated. These subcategories are described below.

Mulefat-Dominated Formerly Disturbed Sites

Mulefat-dominated formerly disturbed sites are dominated heavily by mulefat (*Baccharis salicifolia*), a species chiefly known to occur along sandy floodplains of streamcourses. Understory is minimal and this habitat may be transitional to other naturally-occurring habitats, such as chaparral. Its dominance on the some of the sandy previously disturbed habitats may be related to the coincidence of freshly disturbed sandy soil following restoration of these sites and ample rainfall coinciding with the release of the short-lived wind dispersed seeds during the fall. Mulefat-dominated areas occur in two locations in the northern portion of Area IV.

Weed-dominated Formerly Disturbed Sites

Weed-dominated formerly disturbed sites support extensive stands of invasive non-native species such as Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), Russian thistle (*Salsola tragus*) and Mediterranean mustard. This category only applies to large scale weed infestations. Localized infestations of non-native invasive species are identified separately.

Revegetated Formerly Disturbed Sites

Revegetated formerly disturbed sites occur in various locations where buildings and pads have been removed and plants with a mix of native species. These areas are typically somewhat open shrub-dominated areas with annual grasses in the space between shrubs. Many of these sites support stands of mule fat or coyote brush (*Baccharis pilularis*). Coast goldenbush (*Isocoma menziesii*), coastal bush sunflower (*Encelia californica*), and deerweed (*Lotus scoparius*) may be present or prevalent on these sites. On a few sites good stands of native perennial bunchgrass (*Nassella* sp.) are present.

3.2.1.7 Unvegetated Disturbed/ Developed

This mapping category is applied to areas with existing pads, buildings, or roads. Small dirt tracks (e.g. "two tracks") are not included in this category, but rather that of the surrounding vegetation. Most areas in this designation are located in Area IV.

3.2.1.8 Non-native Grassland

This mapping category is applied to areas dominated by annual species, particularly annual grasses such as rip-gut brome and wild oats. Cover is typically dense and soils are relatively deep. This type occurs in scattered locations in Area IV and the northern undeveloped area.

3.2.1.9 Disturbed Riparian

Disturbed riparian habitat is present along one drainage feature at the eastern end of the northern undeveloped area. It is characterized by scattered riparian trees, such as willows (*Salix* spp.) and one western sycamore (*Platanus racemosa*). Other trees that are that can occur in riparian habitats and uplands are present as well including coast live oak and California bay laurel (*Umbellularia californica*). The channel bottom is bedrock and, at the time of the October 2009 field visit following heavy rainfall in the preceding week, contained some pools. Plants typical of shady slopes were noted in nearby including California wild rose (*Rosa californica*), California blackberry (*Rubus ursinus*), and coastal wood fern (*Dryopteris arguta*).

3.3 Wildlife

The fall surveys focused on habitat for native wildlife species. Coast live oak (*Quercus agrifolia*) communities, especially those having connectivity to other undisturbed and/or healthy habitats, even if offsite, are considered most valuable to wildlife. Oak woodlands are thought to have the richest wildlife species abundance of any habitat in California and support up to 331 species to varying degrees (Verner 1980; Barrett 1980; Block and Morrison 1998 - all cited in PIF 2002). The high wildlife value of oaks is due both to acorn production and the cavity-nesting sites afforded by large oak trees in the landscape. Birds utilize all canopy levels for nest placement in association with oaks from the highest branches to mid-canopy cavities to the grasses on the ground underneath. Bird species that utilize oak woodlands include jays, woodpeckers, nuthatches, oak titmouse, and wintering ruby-crowned kinglets and yellow-rumped warbler (PIF 2002; SAIC personal observations).

Riparian areas, normally providing very important wildlife habitat, are nearly absent on the site due to the site's location at the top of the watershed. There are very limited areas occupied by willows where

intermittent runoff concentrates, though these areas are too small to support an abundance or variety of species. During the survey, SAIC biologists did not observe avian species normally associated with riparian zones within these small areas – and these areas were far too removed from permanent water and undeveloped to support sensitive amphibian species. Mule fat, normally a plant characteristic of sandy stream channels, is prevalent on the sandy soils in many formerly disturbed sites and is frequented by common songbirds.

Dense stands of mixed chaparral were also considered high value for their cover and nesting potential for bird species. Birds that use chaparral include spotted towhee, California thrasher, gray vireo, wrentit, blue-gray gnatcatcher, California towhee, lesser goldfinch, western scrub jay, and California quail (PIF 2004; SAIC personal observations).

Species that nest and roost within sandstone rock outcrops include white-throated swift, barn owl, cliff and barn swallows, canyon wren, raven, turkey vulture, golden eagle, honey bees, woodrat, and bats. Some of the oak woodland species utilize rock cavities to cache acorns and other food items.

Formerly developed areas and areas occupied by existing structures and pavement are for the most part sparsely vegetated and exhibit limited value for most wildlife species due to the sparseness or absence of plant cover (for food, nesting, and cover). These areas do support common songbirds such as mourning dove, house finch, and American crow, which forage on the bare ground for seeds and invertebrates. Stands of flowering tree tobacco support Anna's hummingbirds and areas that are currently revegetating provide foraging opportunities for flocks of migratory and wintering songbirds. Additionally, overhead power and communication lines stretching from existing structures are frequent perching sites for avian species such as western kingbird, mourning dove, western scrub jay, black phoebe, and western meadowlark. Existing buildings also provide space for roosting or nesting barn and cliff swallows, owls, and bats.

4 Summary and Conclusions

These surveys documents the locations of Braunton's milk-vetch and Santa Susana tarplant and relatively extensive areas of native vegetation and wildlife habitat, especially on the Northern Undeveloped Areas and the western and southwestern portions of the site. Most of the woody vegetation onsite is recovering from a wildland fire that burned most of the site in September of 2005. The fire skipped over localized areas including patches of oaks and chaparral in the northern undeveloped areas and chaparral in the western corner of the site. Much of the more or less flat previously developed portion of the site is in some stage of vegetation recovery following removal of structures and remediation of the individual building sites at various times over the years. The vegetative cover of these areas varies dramatically from site to site related to a variety of factors including the year and seasonal timing of remediation, type of restoration activities, and characteristics of adjacent sites. Vegetative cover of these sites varies considerably from site to site with some sites supporting high abundance of invasive exotic species and other sites supporting a prevalence of native species.

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Attachment A

Representative Photographs

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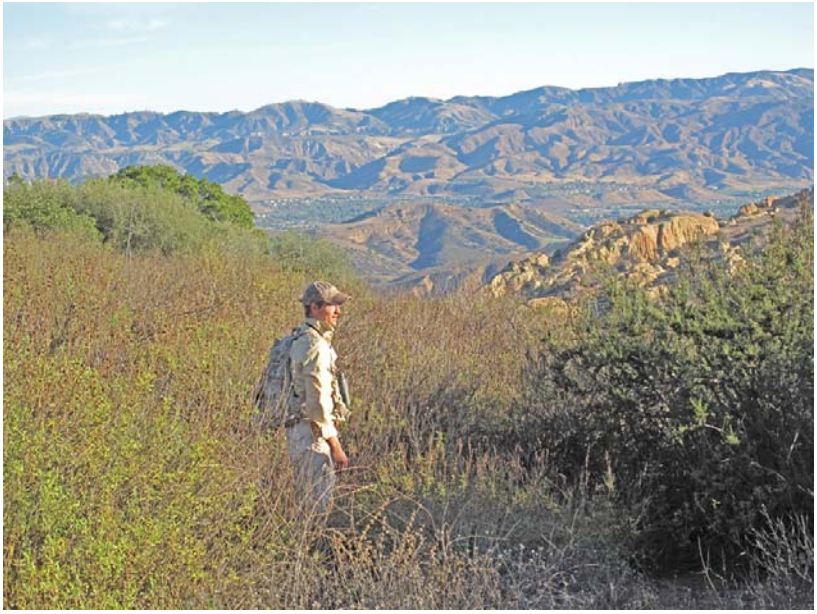
Steep Dipslope Grassland. This steep slope has a thin layer of soil over standstone bedrock. This site supports several annual grass species as well as spike-moss. Many areas mapped as Steep Dipslope Grassland support a variety of bulbs and other wildflowers in the spring. 5 October 2009.

Burned Northern Mixed Chaparral. Many resprouting mature chaparral shrubs are visible in this photograph including chamise and laurel sumac. Perennials and subshrubs that are "fire followers" are also apparent, including sticky snapdragon. 6 October 2009.

Burned Northern Mixed Chaparral. This photograph is taken in the western part of Area IV on a hilltop. Dominant plants in this view are black sage and chamise. 21 October 2009.

Northern Mixed Chaparral Sandstone Outcrops. Sandstone out crops are common in the Northern Mixed Chaparral, especially in the northern undeveloped area. Most of the habitat is relatively unvegetated. The Santa Susana tarplant is commonly found in this habitat. 6 October 2009.



Venturan Coastal Scrub. Venturan Coastal Scrub occurs near the base of a slope in the western part of Area VI. Common species in this habitat include black sage, purple sage, and giant wild rye. 21 October 2009.

Coast live Oak Woodland/ Savanna. Coast Live Oak Woodland and Savnana occur in portions of Area VI. Canopy cover is highly variable and many areas have a grassy understory. 6 October 2009.

California Walnut Woodland and Weed-Dominated Formerly Disturbed Areas. This photograph was taken below a hill in the western part of Area IV. It shows Weed-Dominated Formerly Disturbed Areas on the left and California Walnut Woodland on the right. Invasive exotic species on the left include Mediterranean mustard and Italian thistle. The California walnut woodland consists of resprouting walnut trees and coast live oaks in a matrix of snowberry and poison oak.

Non-native Grassland and Coast Live Oak Woodland/ Savana. The photographs was taken in the eastern part of the northern undeveloped area and shows Non-native Grassland on the right and Coast Live Oak Woodland and Savana on the left. The grassland is dominated by species of annual grasses that were senescent when the photograph was taken. 6 October 2009.

Disturbed Riparian. This type is present along a drainage feature in the eastern part of the northern undeveloped area. Coast live oaks and willows are present along a bedrock-lined channel. 20 October 2009.

Attachment B

Plant Species Observed During Vegetation Surveys

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Plant Species Identified During Surveys

Scientific Name[1]	*Common Name*[2]	*Native (Y/N)*
Anacardiaceae		
Malosma laurina	Laurel sumac	Y
Toxicodendron diversilobum	Poison oak	Y
Apiaceae		
Lomatium sp.	Desert parsley	Y
Asclepiadaceae		
Asclepias fascicularis	Narrow-leaf milkweed	Y
Asteraceae		
Acourtia microcephala	Sacapellote	Y
Artemisia californica	California sagebrush	Y
Baccharis pilularis	Coyote Brush	Y
Baccharis salicifolia	Mulefat	Y
Brickellia sp.	Brickellbush	Y
Centaurea calcitrapa	Purple starthistle	N
Centaurea melitensis	Tocalote	N
Centaurea solstitialis	Yellow starthistle	N
Carduus pycnocephala	Italian thistle	N
Deinandra minthornii	Santa Susana tarplant	Y
Encelia californica	California brittlebush	Y
Eriophyllum confertiflorum	Golden yarrow	Y
Lactuca sp.	Lettuce	N
Lessingia filaginifolia	California-aster	Y
Stephanomeria sp.	Wire lettuce	Y
Silybum marianum	Milk thistle	N
Venegasia carpesioides	Canyon sunflower	Y
Boraginaceae		
Amsinckia sp.	Fiddleneck	Y
Brassicaceae		
Hirschfeldia incana	Mediterranean mustard	N
Raphanus sativus	Wild radish	N
Caprifoliaceae		
Sambucus mexicana	Elderberry	Y
Symphoricarpos mollis	Snowberry	Y
Caryophyllaceae		
Silene sp.	Catchfly	N/A
Cistaceae		
Helianthemum scoparium	Rush rose	Y
Crassulaceae		
Dudleya lanceolata	Lanceleaf liveforever	Y
Dudleya puverulenta	Chalk dudleya	Y
Ericaceae		
Arctostaphylos glauca	Bigberry manzanita	Y
Euphorbiaceae		
Eremocarpus setigerus	Turkey mullein	Y
Fabaceae		
Astragalus brauntonii	Braunton's milk vetch	Y
Lotus scoparius	Coastal deer weed	Y
Lotus sp.	Lotus	Y
Lupinus hirsutissimus	Stinging lupine	Y
Fagaceae		
Quercus agrifolia	Coast live oak	Y
Geraniaceae		
Erodium sp.	Stork's bill	N
Hydrophyllaceae		
*Emmenanthe penduliflora**	Whispering bells	Y
Eriodictyon crassifolium	Thickleaf yerba santa	Y
Phacelia ramosissima	Branching phacelia	Y
Juglandaceae		
Juglans californica	California black walnut	Y
Lamiaceae		
Marrubium vulgare	Horehound	N

Plant Species Identified During Surveys

Scientific Name[1]	*Common Name*[2]	*Native (Y/N)*
Salvia columbariae	Chia	Y
Salvia leucophylla	Purple sage	Y
Salvia mellifera	Black sage	Y
Trichostemma lanata	Wooly blue curls	Y
Lauraceae		
Umbellularia californica	California bay laurel	Y
Liliaceae		
Allium sp.*	Wild onion	Y
*Bloomeria crocea**	Golden stars	Y
*Dichelostemma pulchellum**	Blue dicks	Y
Calochortus sp.*	Mariposa lily	
Yucca whipplei	Our Lord's candle	Y
Malvaceae		
Malacothamnus fasciculatus	Bush mallow	Y
Onagraceae		
Clarkia sp.*	Farewell to spring	Y
Epilobium canum	California fuchsia	Y
Paeoniaceae		
Paeonia californica	Peony	Y
Plantanaceae		
Platanus racemosa	California sycamore	Y
Poaceae		
Avena sp.	Wild oats	N
Bromus diandrus	Ripgut brome	N
Bromus hordeaceus	Soft chess	N
Bromus madritensis ssp. *rubens*	Red brome	N
Melica imperfecta	Coast Range melic	Y
Leymus condensatus	Giant wild rye	Y
Pennisetum setaceum	Fountain grass	N
Polygonaceae		
Eriogonum elongatum	Longstem buckwheat	Y
Primulaceae		
Dodecatheon clevelandii	Shooting star	Y
Rhamnaceae		
Ceanothus crassifolius	Hoary leaf ceanothus	Y
Ceanothus cuneatus	Buckbrush	Y
Rhamnus ilicifolia	Holly-leaf redberry	Y
Rosaceae		
Adenostoma fasciculatum	Chamise	Y
Cercocarpus betuloides	Mountain mahogany	Y
Heteromeles arbutifolia	Toyon	Y
Prunus ilicifolia	Holly-leaved cherry	Y
Rosa californica	California wild rose	Y
Salicaceae		
Salix spp.	Willow	Y
Simaroubaceae		
Ailanthus altissima	Tree of heaven	N
Scrophulariaceae		
Antirrhinum couterianum	Coulter's snapdragon	
Mimulus aurantiacus	Bush monkey flower	Y
Solanaceae		
Nicotiana glauca	Tree tobacco	N
Zygophyllaceae		
Tribulus terrestris	Puncture vine	N

Notes:

1. Scientific plant names follow the Jespon Mnaual (Hickman 1993)
2. Common plant names follow the Jepson manual or the Plants database (USDA 2009)
3. Plants designated with a * are preliminary identifications based on dried portions visible in the fall and need to be verified in the spring