

# **Grassland Assessment and Vegetation Mapping Survey Report**

**for the**

## **NEWPORT BANNING RANCH**

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# Grassland Assessment and Vegetation Mapping Survey Report

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## TABLE OF CONTENTS

<b><u>Section</u></b>	<b><u>Page No.</u></b>
<b>1.0 INTRODUCTION.....</b>	<b>1</b>
1.1 Project Location .....	1
1.2 Biological Setting.....	1
<b>2.0 METHODOLOGY .....</b>	<b>7</b>
2.1 Biological Survey Area.....	7
2.2 Grassland Assessment.....	7
2.2.1 Methodology of Recent Grassland Mapping on Newport Banning Ranch	8
2.2.2 Grassland Assessment per CCC Staff Recommendation.....	9
2.2.3 Definition of Native Grasslands.....	9
2.2.4 Baseline Grassland Assessment Surveys .....	13
2.2.5 Grassland Assessment Surveys.....	14
2.3 Vegetation Community Mapping .....	15
2.3.1 Assessment of Disturbed Areas Containing Native Vegetation .....	17
<b>3.0 RESULTS .....</b>	<b>25</b>
3.1 Grassland Assessment.....	25
3.2 Assessment of Disturbed and Maintenance Areas.....	35
3.2.1 Presence and Height of California brittlebush .....	35
3.2.2 Disturbed Transect and Categories .....	39
3.3 Vegetation Communities .....	41
3.3.1 Grassland and Forb-Dominated Communities.....	47
3.3.2 Scrub Communities.....	58
3.3.3 Woodlands and Tree Clusters .....	65
3.3.4 Non-Vegetated Areas.....	66
3.3.5 West Newport Oil Facilities and Operation and Maintenance Areas .....	67
<b>4.0 REFERENCES.....</b>	<b>69</b>

# Grassland Assessment and Vegetation Mapping Survey Report

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## APPENDICES

A	Photo Plates – Grassland Assessment
B	Grassland Assessment Baseline Transects - Data Sheets
C	Grassland Assessment Transects - Data Sheets
D	Photo Plates – Vegetation Mapping
E	Vegetation Mapping Polygons - Data Sheets
F	Vegetation Mapping Transects - Data Sheets

## LIST OF FIGURES

Figure 1	Site Location .....	5
Figure 2	Biological Survey Area.....	11
Figure 3	Grassland Assessment.....	27
Figure 4	Transects and Observation Points .....	37
Figure 5	Vegetation Communities .....	45

## LIST OF TABLES

Table 1	Summary of Surveys, Personnel, and Conditions for Grassland Assessment and Vegetation Community Mapping.....	13
Table 2	Vegetation Category Requirements, Data Collection, and Referenced Reports and Literature .....	21
Table 3	California Brittle Bush Scrub (CBBS) Polygon Statistics.....	23
Table 4	Overall Percent Cover of Plant Species and Physiognomic Categories Per Quadrat for Each Transect .....	29
Table 5	Transect Evaluation of Dominant Plant Species and the Percentage of Quadrat Occupied .....	32
Table 6	Number of Purple Needlegrass Individuals in Each Transect .....	34
Table 7	Presence and Height of California Brittlebush Based on Point-Intercept Transect Data .....	36
Table 9	Summary of Vegetation Communities and Maintained Areas within the Survey Area .....	41
Table 10	Vegetation Community Membership Rules .....	43
Table 11	Summary of Vegetation Communities and Acres .....	48

# Grassland Assessment and Vegetation Mapping Survey Report

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## 1.0 INTRODUCTION

Dudek has prepared this Grassland Assessment and Vegetation Mapping Survey Report (report) on behalf of the Newport Banning Ranch LLC to describe and graphically represent the location of grassland populations and vegetation communities found on the Newport Banning Ranch Project (Project) site. The intent of this report is to provide updated biological information in support of the project application through the Coastal Development Permit (CDP) review process. This report also provides baseline vegetation data relevant to standard operation and maintenance activities associated with the existing West Newport Oil facility, which remains an active oil production facility.

### 1.1 Project Location

The Project site is located in the City of Newport Beach, and unincorporated Orange County, California, on the southwestern boundary of the City of Costa Mesa and east of the City of Huntington Beach (*Figure 1*). The site is bordered by commercial and residential development in the City of Costa Mesa on the east, the Pacific Coast Highway and residential properties within Newport Beach on the south, the Santa Ana River and Santa Ana River estuary on the west, and Talbert Regional Park on the north. The Pacific Ocean is approximately 289 meters (947 feet) to the southwest of the site at its closest point.

### 1.2 Biological Setting

The 385.493-acre Project site is located between the westernmost portion of a coastal terrace, including adjacent bluffs, arroyos, and the Santa Ana River tide channel, salt marshes, and associated lowlands. The majority of the southern and eastern portions of the site are located on a 251.246-acre western portion of a coastal terrace, the Newport Mesa. This terrace supports areas of open grass and forb-dominated communities in the southeast, disturbed forb-dominated communities in the east-central portion of the terrace, scrub habitats in the northeastern portion of the site, and a mixture of scrub, and disturbed forb communities in the central portion of the site. An arroyo with an extensive area of southern willow scrub bisects the southern portion of the site from east to west. The bluffs bordering the terrace to the south and east are dominated by a variety of coastal scrub communities that include California brittlebush (*Encelia californica*), California buckwheat (*Eriogonum fasciculatum*), prickly pear (*Opuntia littoralis*), and coast cholla (*Cylindropuntia prolifera*). The 134.247-acre lowlands occupy mostly the northwestern portion of the site, adjacent to the Santa Ana River and the river estuary. They consist of limited tidally influenced saltmarsh habitats, disturbed open and scrub habitats, and an extensive area of disturbed willow forest and scrub.

## Grassland Assessment and Vegetation Mapping Survey Report

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The West Newport Oil Company currently operates an extensive commercial oil and gas facility on-site. Historically, oil exploration occurred in the 1930's with the initiation of commercial extraction and production of the West Newport Oil Field at Newport Banning Ranch in 1944. Therefore, nearly all portions of the site, the coastal terrace, bluffs, arroyos, and lowlands, have undergone modifications to varying degree by the installation and long-term operation and maintenance of oil well pads, roads, oil and gas pipelines, and maintenance activities associated with the oil and gas operation. Developed portions of the site consist of oil pads, oil facilities, offices, paved roads, parking lots, and storage, debris, and stockpile areas.

In addition, the oil field operation includes maintenance and security activities that are essential to efficient operations and the protection of the property, oil field employees, and persons and properties in the vicinity of the oilfield. These activities include, among others, road repairs, vegetation management, fire abatement, and weed control. Vegetation management is an integral component of the oil field maintenance program, and has been performed by oil operators since the early 1940s. The extent of vegetation clearance is limited to the amount necessary to ensure public safety, fire prevention, site security, and proper oil field functioning. Vegetation management is performed by mowing and manual removal (e.g., saws, weed whackers, and pruners) of flammable vegetation, including most open grass and weedy areas. Historically, the oil operators have performed vegetation management at least two times per year (depending upon the seasonal rainfall), and have periodically (typically annually) cleared vegetative growth along oil pipelines, gas pipelines, utilities, and well pad areas throughout the field. Pipeline clearing cannot be done by mechanical mowing; therefore, it is more difficult and labor-intensive resulting in a less frequent, but nonetheless important, component of the maintenance schedule.

Although the Project site is the location of an active oil facility and is situated within the largely urbanized coastal portion of Orange County (County), biological resources remain present on-site and on neighboring County properties. For instance, the adjacent estuarine habitat associated with the Santa Ana River is occupied by special-status bird species, including the Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), listed as endangered (SE) under the California Endangered Species Act (CESA), and the light-footed clapper rail (*Rallus longirostris levipes*), SE and listed as endangered (FE) under the federal Endangered Species Act (ESA). A mosaic of natural and restored coastal habitats is found north of the site and along the Santa Ana River, in Talbert Regional Park and Fairview Park. Coastal California gnatcatchers (*Polioptila californica californica*), a bird species listed as threatened (FT) under the ESA, is found in scrub habitats within these areas and on the Project site. Another state and federally listed bird species, the least Bell's vireo (*Vireo bellii pusillus*), occurs in habitats dominated by willows (*Salix* spp.) in the area, including in the lowlands of the Project site. Vernal pools in the undeveloped portions of Fairview Park near the Santa Ana River support the San Diego fairy shrimp (*Branchinecta sandiegonensis*), as do a number of seasonal features on the upland portion of

## Grassland Assessment and Vegetation Mapping Survey Report

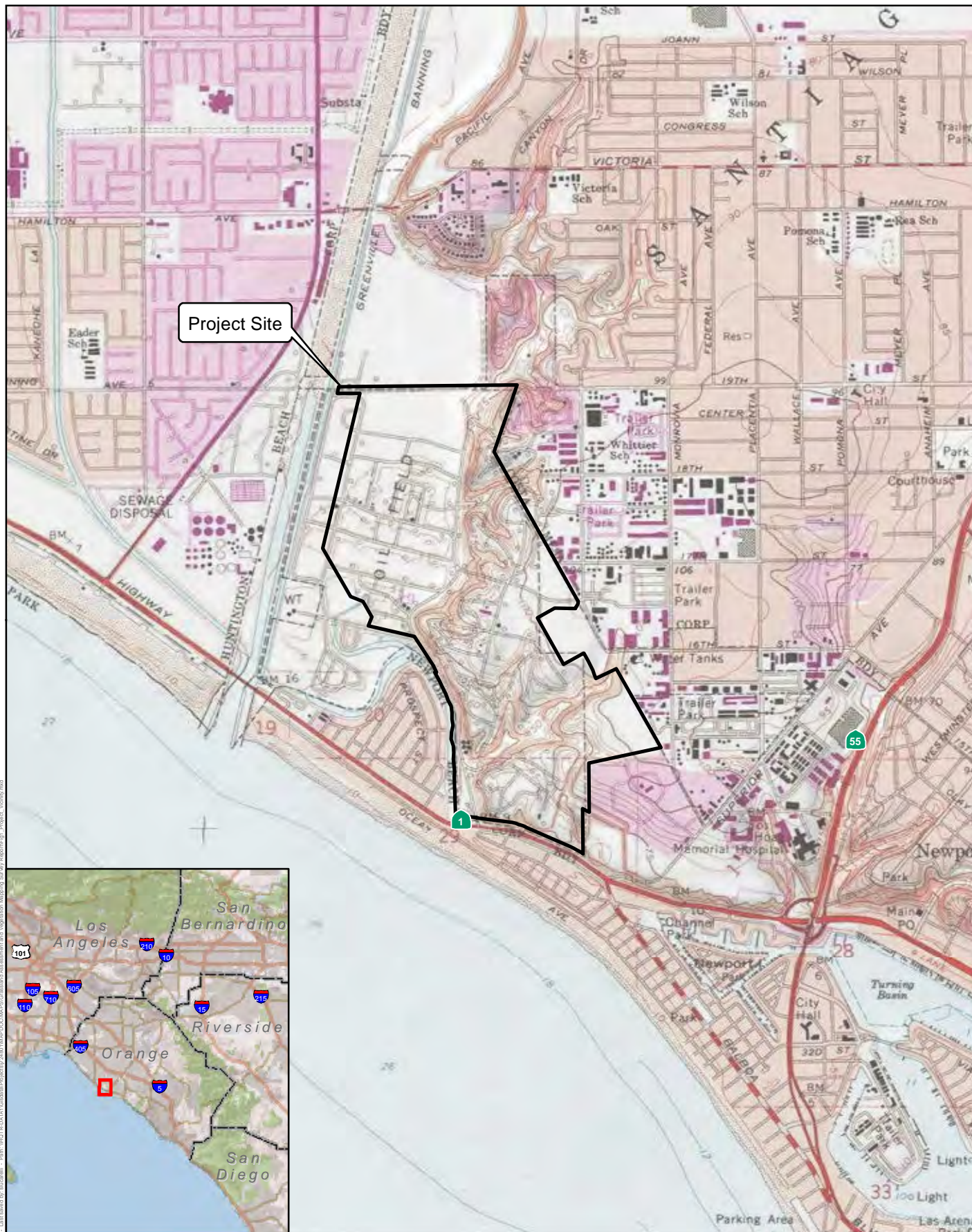
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Project site that pond water. The open habitats within the less developed corridor associated with the Santa Ana River also provide habitat for raptor species, including the northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*). Trees and wooded areas provide nesting habitat for raptors and foraging habitat for species such as Cooper's hawk (*Accipiter cooperii*) and red-shouldered hawk (*Buteo lineatus*). Osprey (*Pandion haliaetus*), which feed mostly on fish, are attracted to open water beyond the Project site.

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**Figure 1**  
**Site Location**

Service Layer Credits: Copyright: © 2011 National Geographic Society, i-cubed  
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Grassland Assessment and Vegetation Mapping Survey

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## 2.0 METHODOLOGY

Dudek conducted focused vegetation surveys on Newport Banning Ranch in 2012 to assess grassland composition, to analyze and describe areas of disturbed vegetation, verify previous vegetation community mapping, and update nomenclature to recently accepted standards. These surveys utilized standard methods to collect information regarding the vegetation communities on the site where previous survey information required verification and update as requested by personnel of the California Coastal Commission (CCC) and U.S. Fish and Wildlife Service (USFWS) for purposes of future permitting. The grassland assessment was performed to determine species composition and cover within areas previously mapped as annual grasslands. Vegetation community mapping was updated due to changes in nomenclature and classification requirements (i.e. membership rules), as well as site conditions. Additionally, disturbed vegetation, including areas containing the California brittlebush (*Encelia californica*), was analyzed to determine percent cover and degree of disturbance based on vegetation qualities.

### 2.1 Biological Survey Area

Field surveys for the Grassland Assessment and Vegetation Mapping Survey Report (report) were conducted on the coastal terrace, bluffs, arroyos, and lowland area of the Newport Banning Ranch Project site, including the existing vegetation maintenance areas required for oil operations, as shown in (Figure 2). Specifically, a grassland assessment and California brittlebush assessment were performed on the coastal terrace, referred to as Grassland Assessment Survey Area. Vegetation mapping was performed on the coastal terrace, bluffs, and arroyos, referred to as Vegetation Mapping Survey Area. Vegetation verification, confirming and updating vegetation community names, was performed in the lowland area, referred to as Vegetation Verification Survey Area. Previous biological studies were performed by Glenn Lukos Associates (GLA), results were documented in the *Biotechnical Report for the Newport Banning Ranch, Orange County, California* (GLA 2009), and BonTerra Consulting (BonTerra) as part of the Environmental Impact Report (EIR) for the Project (BonTerra 2011a and 2011b).

### 2.2 Grassland Assessment

The following describes previous grassland assessment efforts and Dudek's approach to establishing current baseline conditions relative to native grasslands occurring on the property in support the CCC's review of the Project following Coastal Development Permit Application submittal.

## Grassland Assessment and Vegetation Mapping Survey Report

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### 2.2.1 Methodology of Recent Grassland Mapping on Newport Banning Ranch

Vegetation mapping on the site was conducted by GLA beginning in October of 2006 with the majority of vegetation mapping completed by late November 2006; however, intermittent revisions and refinements to the vegetation mapping occurred during 2007 with the last revision made on January 2, 2008 (GLA 2009). GLA generally followed the County of Orange *Habitat Classification System Natural Resources Geographic Information System (GIS) Project* (OCHCS), which was specifically prepared for sites within the County of Orange to support the County's Natural Communities Conservation Planning program (NCCP) (County of Orange 1996). GLA (2009) mapped grasslands according to the definitions in the OCHCS.

During the 2006/2007 vegetation mapping, GLA detected areas containing sparse purple needlegrass (*Stipa pulchra*). These populations were found to occur in densities below the 10 percent threshold set forth in the OCHCS as the minimum necessary to be considered a Southern Coastal Needlegrass Grassland (4.3), which is defined on page 19 of the OCHCS as follows:

*A grassland with 10% or more of the cover, composed of Stipa pulchra and/or other species of Stipa. Associated with Agrostis [diegonensis] pallens, Koeleria macrantha, Vulpia myuros and Bromus spp. Forbs include Calochortus sp., Sisyrinchium bellum, Dichelostemma [pulchellum] capitatum, Bloomeria crocea, Hypochaeris glabra, and Dodecatheon clevelandii.*

In making this determination, GLA noted that the other diagnostic species of perennial grasses noted in the OCHCS, such as seashore bentgrass (*Agrostis [diegonensis] pallens*), prairie Junegrass (*Koeleria macrantha*), were completely absent from the site, as were all of the native forbs referenced including mariposa lilies (*Calochortus spp.*), western blue-eyed grass (*Sisyrinchium bellum*), bluedicks (*Dichelostemma [pulchellum] capitatum*) common goldenstar (*Bloomeria crocea*), and padre's shootingstar (*Dodecatheon clevelandii*). Given the low densities of purple needlegrass and complete absence of other diagnostic native plant species, it was determined by GLA that Southern Coastal Needlegrass Grassland (4.3) did not occur on the site.

Vegetation mapping was conducted by BonTerra Consulting (BonTerra) in September 2009 (BonTerra 2011a and 2011b), and a few select locations were revisited in January and October 2010 to update the vegetation map. Special-status plant surveys were conducted on the site in March-August 2009. As with GLA, BonTerra classified vegetation types based on the OCHCS, but also utilized the *List of California Terrestrial Natural Communities Recognized by the Natural Diversity Data Base* (CDFW 2003) where vegetation types were not represented by the OCHCS.

## Grassland Assessment and Vegetation Mapping Survey Report

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BonTerra mapped non-native grassland in the southern portion of the bluffs and noted the presence of native grasses intermixed with non-native grasses and forbs, with the non-native grasses constituting a larger percentage of vegetation cover than the native grasses. Species documented in the non-native grassland included foxtail chess (*Bromus madritensis* ssp. *rubens*), slender oats (*Avena barbata*), soft chess (*Bromus hordeaceus*), hare barley (*Hordeum murinum* ssp. *leporinum*), foxtail fescue (*Festuca myuros*), and red-stemmed filaree (*Erodium cicutarium*). As with GLA (2009), BonTerra described pockets of native grass species within the non-native grasslands, but characterized it as annual grasslands due to the dominance of the non-native grasses in the areas.

### 2.2.2 Grassland Assessment per CCC Staff Recommendation

Dudek's grassland assessment was conducted May through July 2012, as shown in *Table 1*. During the grassland assessment, Dudek conducted a focused assessment of all mapped grassland areas that were delineated and described during prior survey efforts and subsequent reporting. In May, June and July 2012, Dudek visited grassland areas originally mapped as non-native grassland and non-native grassland/ruderal by in GLA's *Biotechnical Report for the Newport Banning Ranch, Orange County, California* (GLA 2009) and BonTerra (2011a and 2011b). Baseline and random grassland survey transects were selected to document species diversity and relative percent cover. Timing of surveys allowed for identification of perennial plant species and most annual species. *Erodium* spp. and *Bromus* spp. had already started to desiccate, but in many cases, they were still identifiable to species. On occasions, *Bromus* spp. percent coverage may have been slightly over estimated due to high amounts of thatch, which may have been remaining from the previous year. Native grassland definition and detailed methods for each of these transects types is presented below.

### 2.2.3 Definition of Native Grasslands

Native grassland vegetation types are defined in *A Manual of California Vegetation, Second Edition* (MCV2; Sawyer et al. 2009). According to Sawyer et al. (2009), purple needle grass is dominant or characteristically present in the herbaceous layer of purple needle grass grasslands (Sawyer et al. 2009). Membership rules for this community include (1) greater than 10 percent relative cover of purple needle grass (*Stipa pulchra*) in the herbaceous layer or (2) greater than 5 percent absolute cover of purple needle grass as a characteristic to dominant species in the herbaceous layer (Sawyer et al. 2009).

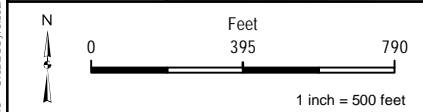
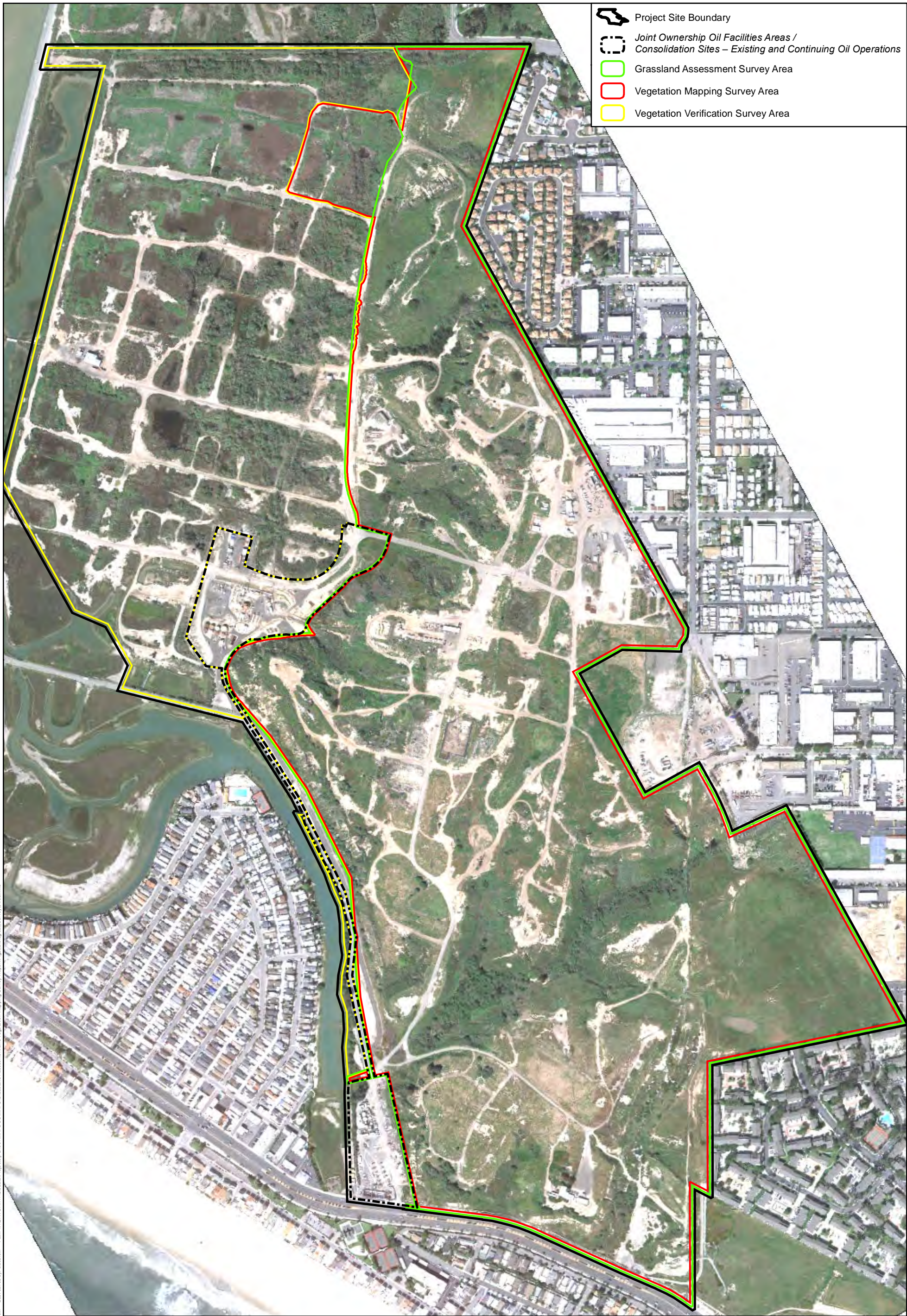
Sawyer et al. (2009) defines salt grass flats where salt grass (*Distichlis spicata*) is dominant or co-dominant in the herbaceous layer. Membership rules for this community include (1) greater than 50 percent relative cover in the herbaceous layer; or, salt grass exhibits higher cover than

## Grassland Assessment and Vegetation Mapping Survey Report

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SOURCE: 2011 Aerial provided by Fuscoc Engineering,  
Dudek 2012 Grassland Assessment and Vegetation Mapping Survey Data

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**Figure 2**  
**Biological Survey Area**



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## Grassland Assessment and Vegetation Mapping Survey Report

any other single grass species, or (2) greater than 30 percent relative cover in the herbaceous layer, *Sarcocornia* or *Salicornia* spp. if present, less than 30 percent relative cover.

### 2.2.4 Baseline Grassland Assessment Surveys

A total of six baseline grassland assessment transects were initially established in areas observed by Dudek to contain individuals of purple needlegrass (*Stipa pulchra*) or areas of salt grass (*Distichlis spicata*). The percent cover of each species, along with non-native grasses and forbs encountered was recorded at intervals of 5.0 meters (16.4 feet) or 1.0 meter (3.28 feet) along each transect within a meter square plot (i.e., quadrat). The location of the quadrat sampled alternated on either side of the transect tape along the entire length of the transect to reduce bias. The beginning and end points of each transect were recorded using a GPS with sub-meter accuracy (i.e., Trimble® GeoXT). Representative photographs of each transect were recorded at the start- and end-points facing along the transect line.

**Table 1**  
**Summary of Surveys, Personnel, and Conditions for Grassland Assessment and Vegetation Community Mapping**

Date / Time	Survey Type	Dudek Biologists	Site Conditions
May 17, 2012 / 8:00 am to 3:00 pm	BGA	John Davis IV, Heather Moine, Tony Bomkamp (GLA)	Overcast clearing to scattered clouds. Winds 2-7 mph out of the southwest and temperatures ranging from 60°F to 70°F.
May 23, 2012 / 8:00 am to 5:00 pm	GA	John Davis IV, Heather Moine	Overcast and clearing later to partly cloudy with winds 7-16 mph out of the south and temperatures ranging from 62°F to 73°F.
May 29, 2012 / 8:00 am to 5:00 pm	GA	Dave Compton, Heather Moine	Mostly sunny, winds variable 0-10 mph. Temperatures ranging from 63°F to 72°F.
June 12, 2012 / 7:45 am to 5:00 pm	GA	Dave Compton, Heather Moine	Overcast to partly cloudy with northwest to southwest winds at 0-7 mph. Temperatures ranging from 56°F to 58°F.
June 18, 2012 / 9:30 am to 5:00 pm	VEG	John Davis IV, Dave Compton, Heather Moine	Hazy with winds at 4-8 mph and temperatures ranging from 62°F to 68°F.
June 19, 2012 / 7:15 am to 5:30 pm	VEG	Dave Compton, Heather Moine	Mostly cloudy early and clearing later. Winds 2-8 mph out of the southwest and temperatures ranging from 60°F to 70°F.
June 20, 2012 / 7:20 am to 5:00 pm	VEG/GA	Dave Compton, Heather Moine	Overcast clearing to partly cloudy. Winds 3-8 mph out of the south and temperatures ranging from 63°F to 70°F.
June 21, 2012 / 8:20 am to 5:00 pm	VEG	Dave Compton, Heather Moine	Mostly cloudy early and clearing later. Winds 3-7 mph out of the south to southwest and temperatures ranging from 62°F to 72°F.
June 22, 2012 / 7:15 am to 6:00 pm	VEG	Dave Compton, Heather Moine	Overcast and clearing later with winds 0-10 mph out of the southwest and temperatures ranging from 62°F to 71°F.

# Grassland Assessment and Vegetation Mapping Survey Report

**Table 1**  
**Summary of Surveys, Personnel, and Conditions for Grassland Assessment and Vegetation Community Mapping**

Date / Time	Survey Type	Dudek Biologists	Site Conditions
July 19, 2012 / 8:00 am to 4:00 pm	VEG/BGA	John Davis IV	Sunny and clear above with slight to moderate breeze. Thin clouds to the east and temperatures approximately 65°F.
October 4, 2012 / 2:00 pm to 5:15 pm	VEG	Heather Moine	Sunny and clear with winds approximately 4 mph out of the south southwest and temperatures ranging from 72°F to 75°F.
November 9, 2012 / 9:15 am to 2:30 pm	VEG	John Davis IV, Heather Moine	Sunny to partly cloudy with winds 14-15 mph out of the west and temperatures ranging from 61°F to 64°F.
November 15, 2012 / 6:45 am to 5:00 pm	VEG	Dave Compton, Heather Moine	Overcast with winds 2-7 mph out of the south and temperatures ranging from 56°F to 67°F.
December 11, 2012 / 7:30 am to 5:05 pm	VEG	John Davis IV, Dave Compton, Heather Moine	Clear with winds 5-8 mph out of the south. Temperatures ranging from 52°F to 69°F.

Notes:

°F – degrees Fahrenheit

BGA – Baseline Grassland Assessment

GA – Grassland Assessment

GLA – Glenn Lukos Associates

mph – miles per hour

VEG – Vegetation Community Mapping

## 2.2.5 Grassland Assessment Surveys

Based on the results of the initial assessment, forty 50-meter (164-foot) long transects were established across the Project site, as shown in *Figure 3*. Transect locations were selected by geographic information system (GIS) staff in a random design (transect start points and orientation), but with a more or less even distribution throughout the site in areas of “non-native grassland” and “non-native grassland/ruderal vegetation” communities previously mapped by GLA (2009) and BonTerra (2011). The percent cover of each species encountered was recorded at intervals of 5.0 meters (16.4 feet) along each transect within a meter square plot (i.e., quadrat) resulting in a total of 11 quadrats per transect. The location of the quadrat sampled alternated on either side of the transect tape along the entire length of the transect. The start and end location of each 50-meter transect was recorded using a GPS with sub-meter accuracy (i.e., Trimble® GeoXT). Representative photographs of each transect were recorded at the start and end points.

The relative percent cover of native forbs, native shrubs, native grass species, non-native forbs, non-native shrubs, and non-native grass species recorded within the sampled quadrats along each transect was calculated. Each transect was named based on dominant thresholds established in the *Manual of California Vegetation Second Edition* (Sawyer et al. 2009) of plant species (i.e.



## Grassland Assessment and Vegetation Mapping Survey Report

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purple needlegrass, salt grass) or genera of plant species (i.e. brome grasses and wild oats). When a non-grass physiognomic category had the greatest relative cover (i.e. dominant), broader definitions applied such as native forbs, non-native forbs, native shrubs, and non-native shrubs.

Transects which met the native grassland species (purple needlegrass and salt grass) dominance thresholds in MCV2, were mapped as such regardless of another grass genera or physiognomic category having a higher percent coverage (Sawyer et al. 2009). If both purple needlegrass and salt grass met MCV2 thresholds, the transect was named purple needle grass.

### 2.3 Vegetation Community Mapping

The following describes in detail Dudek's approach, and modifications to our approach, in an effort to capture sufficient information to establish current baseline conditions in support of review and approval by the USFWS of current O&M procedures, and the CCC's review of the Project following Coastal Development Permit Application submittal.

It is important to reiterate that previous vegetation mapping for the site, incorporated into the DEIR by BonTerra (2011a and 2011b), was conducted using the *County of Orange Habitat Classification System Natural Resources Geographic Information System (GIS) Project* (Gray and Bramlet 1992) that was specifically prepared for sites within the County of Orange in support of the County's Natural Communities Conservation Planning program (NCCP). The EIR also noted that not all the vegetation types on the site are represented by this classification system so the *List of California Terrestrial Natural Communities Recognized by the Natural Diversity Data Base* (CDFW 2003) was also utilized. Similarly, vegetation mapping performed by GLA (2009) also followed Gray and Bramlet, where appropriate. In 2009 and 2010, following completion of GLA and BonTerra's vegetation community mapping efforts, a new vegetation classification system was introduced and accepted by the academic community (Sawyer et. al.) and the California Department of Fish and Wildlife (CDFW). In 2012, Dudek employed this new system along with CCC standards in their 2012 vegetation community mapping of the Newport Banning Ranch.

In 2003, the Vegetation Classification and Mapping Program of the CDFW, Wildlife and Habitat Data Analysis Branch, published the *List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database* (CNDDB) (CDFW 2003 [updated 2011]). In September 2010, the CDFW published the *Natural Communities List* (NCL; CDFW 2010), which uses the scientific name of the dominant species in that alliance as the alliance name, which is based on the *Manual of California Vegetation, Second Edition* (MCV2; Sawyer et al. 2009). These classification systems focus on a quantified, hierarchical approach that includes both floristic (plant species) and physiognomic (community structure and form) factors as currently observed (as opposed to predicting climax or successional stages). Nomenclature for

## Grassland Assessment and Vegetation Mapping Survey Report

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on-site vegetation communities reflects the most current system, MCV2 and NCL. Vegetation communities were mapped based on these sources along with CCC standards.

Initially, Dudek's classification of vegetation communities relied strictly on standard vegetation assignments adopted by the California Department of Fish and Wildlife (CDFW) and from A Manual of California Vegetation, Second Edition (MCV2; Sawyer, Keeler-Wolf, and Evens 2009). On Newport Banning Ranch, vegetation communities were assessed by Dudek in the field and mapped based by dominant plant species utilizing the CDFW/MCV2 system. Transect and observational data was collected for each community and compared to MCV2 membership rules and supporting literature and then assigned to the appropriate alliance (i.e. vegetation community). Areas of vegetation that were apparently disturbed by operation and maintenance (O&M) activities, but managed to retain an acceptable community structure were considered a valid vegetation community consistent with literature values, albeit "disturbed." This is most evident with shrub communities. An example is California brittlebush (*Encelia californica*) scrub that contained obvious manipulations that resulted in an open canopy (i.e. significant gaps between shrubs), low shrub diversity, and a high percentage of bare ground and/or non-native invasive plant species. In this case, the community was identified as disturbed (D)-California brittle bush scrub (D-CBBS). If, however, the disturbed area had considerable bare ground or lacked a dominant plant species or sufficient structure per the MCV2 (often height), then the mapped area (i.e. polygon) received a disturbed designation. These disturbed areas reflected obvious regular, and sometimes less regular O&M activities near well sites, pipelines, and other oil facilities.

In response to input from USFWS on O&M activities, Dudek further categorized disturbed areas on the Newport Banning Ranch that contain greater than 10 percent vegetation cover. To accomplish this, representative transect data was collected and observational notes recorded for each such polygon containing disturbed vegetation. A minimum mapping unit of 0.5 acre was utilized for all disturbed areas; however, many of the previously mapped areas (GLA 2009) were much smaller in size (< 0.1 acre) and others larger (2.0 acre), so in the majority of cases, Dudek retained previously mapped boundaries, unless notable expansion or contraction of vegetation was observed. Other areas that exceeded 10 percent vegetation cover were remapped, as appropriate, based on the extent of consistent vegetation and/or disturbance definitions. The result of this effort was the creation of two new categories to describe disturbed areas containing native vegetation: Disturbed-Maintained (D-M-) and Disturbed-Infrequently Maintained (D-I-).

Vegetation mapping on the coastal terrace, bluffs, and arroyos was conducted the week of June 18, 2012, with follow up surveys occurring in July, November, and December, as shown in *Table 1*. All mapping was performed in the field using standard methodology and tools. Biologists would interpret existing vegetation map (GLA 2009) maps with a high quality aerial photographic base (NAIP 2010) and then delineate vegetation communities using a Trimble Geo

## Grassland Assessment and Vegetation Mapping Survey Report

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XT Global Position System (GPS) unit capable of sub-meter accuracy or Apple iPad (iPad) screen displaying a high-quality aerial, where hard copy aerial interpretation was challenging. In some areas, the vegetation community type and boundaries were field verified directly with the existing vegetation map. Other areas required redrawing the vegetation community boundary or renaming the vegetation community with the current nomenclature or observed vegetation community. The GPS data was downloaded into GIS ARCVIEW for placement onto an aerial figure. In combination with the GPS data, GIS technicians digitized the delineated vegetation boundaries from field maps using ARVIEW and incorporated the vegetation community names to create the vegetation community map. The lowland area of the Biological Survey Area was subject to vegetation verification by Dudek during a December site visit. GLA mapped vegetation polygons (GLA 2009) were visited and vegetation communities were updated using current MCV2 and NCL nomenclature (Sawyer et al. 2009 and CDFW 2010).

### 2.3.1 Assessment of Disturbed Areas Containing Native Vegetation

To document species composition, percent cover, and categorize Disturbed areas mapped by GLA (2009), Dudek established 69 point-intercept transects in representative areas to document species composition, percent cover, and shrub height. The species encountered were recorded at intervals of 1 meter (3.285 feet) along each transect. The height of each shrub species was recorded where it intersected at the 1-meter intervals. The start and end location of each transect was recorded using a GPS unit with sub-meter accuracy (i.e., Trimble® GeoXT) or iPad screen displaying a high quality aerial. Representative photographs of each transect were recorded at the start and end points.

During vegetation mapping in June and July, numerous areas were mapped as Disturbed (D) since the area did not meet vegetation community membership rules defined in MCV2 or NCL (Sawyer et al. 2009 and CDFW 2010). To further document the species composition, percent cover, and categorize the Disturbed areas, additional point-intercept transects were established in November and December 2012. Since these area did not meet MCV2 or NCL vegetation community membership requirements additional categories were defined. Two categories were defined to document the presence of California brittlebush at low percent coverage and varying heights; Disturbed-Maintained- (D-M-) and Disturbed-Infrequently Maintained- (D-I-). As mentioned above, California brittle bush (*Encelia californica*) is a common shrub on Newport Banning Ranch. While primarily dominant or co-dominant in mature stands of on-site coastal scrub, it will occupy disturbed areas in various arrangements with other opportunistic plant species, especially when adjacent to areas of higher quality scrub habitat. Therefore, we have used this shrub to demonstrate intact vegetation communities of California brittle bush scrub and disturbed California brittle bush scrub (1a-b) and disturbed areas containing the minimum threshold of California brittle bush (2a-b).

# Grassland Assessment and Vegetation Mapping Survey Report

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## 1. Vegetation Communities

For a stand of California brittle bush to be classified as a shrubland vegetation community, the brittle bush must occupy greater than 30% relative cover within a closed, intermittent, or open canopy of greater than 50% absolute native shrub cover (*Table 2*). Areas mapped as California Brittle Bush Scrub (CBBS) and Disturbed-California Brittle Bush Scrub (D-CBBS) meets the criteria of a shrubland community as defined in further detail below.

### a. California Brittle Bush Scrub (CBBS)

According to A Manual of California Vegetation, Second Edition (MCV2; Sawyer et al. 2009), the *Encelia californica* shrubland alliance or California brittle bush scrub (CBBS) is dominant to co-dominant in the shrub canopy with greater than 30% relative cover. The California Brittle Bush alliance forms a mosaic with other native coastal shrubs usually forming a contiguous canopy, with a forb layer where openings exist. The shrubs in this community have an average height between 0.5 and 2.0 (1.6 to 6.6) meters (Beyers and Wirtz 1995 and MCV2). On the Project site, in areas containing a majority of brittle bush, the average height is usually around 1.0 meter, but in a diverse shrubland, when taller native shrubs or cacti are present, the average height is often greater.

Therefore, on the Newport Banning Ranch site stands of vegetation mapped as CBBS have at least 30% relative cover or greater of California brittle brush within an area dominated by shrubs, with an average shrub height exceeding 0.5 meter (1.6 feet). These areas have minimal disturbance or less than 5% of the stand or polygon is affected by roads, trails, disked activity, scrapes, or natural events.

### b. Disturbed-California Brittle Bush Scrub (D-CBBS)

On the Newport Banning Ranch, stands of vegetation mapped as Disturbed-California Brittle Bush Scrub (D-CBBS) have at least 30% relative cover or greater of California brittle bush, similar to CBBS; however, the shrub canopy is often open to intermittent with a significant forb/grass layer of invasive non-native and pioneering native plants, sometimes also including subshrubs. Additionally, due to previous disturbance, the average shrub height is less than 1 meter (3.3 feet) and 5 to 50 % of the polygon is affected by disturbance including but not limited to roads, trails, disked activity, or scrapes.

## Grassland Assessment and Vegetation Mapping Survey Report

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### 2. Disturbed Communities that Contain California Brittle Bush Shrubs

In the cases where mature California brittle bush shrubs are present in low quantities (less than 10% absolute cover) over 0.5 acre standard mapping unit or shrubs are obviously maintained to an average height of 0.5 meters, but are abundant (greater than 10% cover), non-community categories apply as described below.

#### a. Disturbed-Infrequently Maintained (D-IM)

Stands were mapped as Disturbed-Infrequently Maintained CBBS (D-IM-CBBS) if absolute cover of California brittle bush or other native shrub is less than 10% and herbaceous cover is continuous ( $\geq 66\%$  absolute cover) or if shrub cover is between 5-10% absolute cover, but herbaceous cover is non-continuous ( $\leq 66\%$  absolute cover), often with areas of bare ground. To be consistent with the MCV2, CBBS must have at least 30% relative cover in the shrub layer. Maintained areas occur around and adjacent to several oil wells, some active and others abandoned, forming islands of non-developed areas amongst well-maintained oil pads.

#### b. Disturbed-Maintained (D-M)

Stands were mapped as Disturbed-Maintained CBBS (D-M-CBBS) if absolute covers of California brittle bush or other native shrub greater than 10% absolute cover with a mean average native shrub height less than 0.5 meter. To be consistent with the MCV2, CBBS must have at least 30% relative cover in the shrub layer. Disturbed Maintained areas exhibit substantial variation of vegetated and non-vegetated ground surface caused by frequent maintenance activities often resulting in low-growing vegetation with a more or less unified height. This category occurs around active oil wells and other frequently maintained structures.

## Grassland Assessment and Vegetation Mapping Survey Report

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# Grassland Assessment and Vegetation Mapping Survey Report

**Table 2**  
**Vegetation Category Requirements, Data Collection, and Referenced Reports and Literature**

Vegetation Category	Acronym	Relative coverage (percent)	Total Scrub coverage (percent)	Mean Minimum Height (meters)	Maximum Height (meters)	Data Collection Methods					
						Photograph Documentation <sup>4</sup>	Visual Observation <sup>4</sup>	Point-intercept Transects <sup>4</sup>	GLA 2009	BonTerra 2011	Sawyer et al. 2009
California Brittle Bush Scrub	CBBS	≥30 <sup>1</sup>	>80	0.5	<2.0 <sup>1</sup>	✓	✓		✓	✓	✓
Disturbed-California Brittle Bush Scrub	D-CBBS	≥30 <sup>1</sup>	50 <sup>2</sup> to 95	0.5	<1.0 <sup>2</sup>	✓	✓	✓	✓	✓	
Disturbed-Infrequently Maintained-California Brittle Bush Scrub	D-I-CBBS	≥30 <sup>1</sup>	<10	0.5	<2.0	✓	✓	✓			
Disturbed-Maintained-California Brittle Bush Scrub	D-M-CBBS	≥30 <sup>1</sup>	>10 <sup>3</sup>	0.1	<0.5	✓	✓	✓			

**Notes:**

1 - Sawyer et al. 2009 – Sawyer et al. 2009 (Sawyer, J.O., Keeler-Wolf, T., and Evens, J.M.) 2009. *A Manual of California Vegetation*, Second Edition. Sacramento, California: California Native Plant Society.

2 - Beyers and Wirtz 1995

3 - CCC

4 - Data collected by Dudek between June 18 and December 11, 2012

NA - Not applicable

**BonTerra 2011** – BonTerra (BonTerra Consulting). 2011. Draft Environmental Impact Report, Newport Banning Ranch Project, City of Newport Beach. State Clearinghouse No. 2009031061. Prepared for City of Newport Beach. September 9. (Vegetation Mapping performed September 10 and 14-17, 2009, January 11, 2010, and October 7, 2010)

**GLA 2009** – GLA (Glenn Lukos Associates, Inc.) 2009. Biotechnical Report for the Newport Banning Ranch Property, Newport Beach, California. Prepared for Mike Mohler, Newport Banning Ranch LLC. April 21. (Vegetation Mapping performed October 20, 28, November 4, and 30, 2006 and on April 26, July 16, 20, December 14, 17, 18, 2007, and January 2, 2008.)

## Grassland Assessment and Vegetation Mapping Survey Report

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## Grassland Assessment and Vegetation Mapping Survey Report

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### 3. Vegetation Mapping Standards in Disturbed and Maintained Areas

#### a. Mapping Unit

- Standard Unit = 0.5 acre
- Range for CBBS is 0.05 – 2.2 (*Table 3*)

**Table 3**  
**California Brittle Bush Scrub (CBBS) Polygon**  
**Statistics**

Summary Statistic	Acres
Minimum	0.05093398042
Maximum	2.21131832416
Average	0.40207518935
Median	0.28917113800

#### b. Plant Height and Percent Coverage Standards

- Record heights of *Encelia californica* to nearest 0.1 meter
- Record percent cover to nearest 5 percent

## Grassland Assessment and Vegetation Mapping Survey Report

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### 3.0 RESULTS

This section describes results for grassland transect surveys, mapping of vegetation communities, and point-intercept transects. Grassland assessment baseline and assessment transect results are described in Section 3.1; vegetation community mapping is discussed in Section 3.2, including descriptions of each vegetation community and locations of occurrences; and, Section 3.3 describes the assessment of California brittlebush in disturbed areas of the site.

#### 3.1 Grassland Assessment

The grassland assessment survey area covered 252.763 acres or 66 percent of the approximately 385.493-acre Project site. Data recorded during baseline grassland transect surveys and grassland transects surveys were used to document percent coverage of species and physiognomic categories to determine dominant species. Dominant species recorded in each quadrat and overall dominance by transect is described below and shown in *Figure 3*. Grassland assessment photographs and data sheets are provided in *Appendices A, B, and C*.

Two species of native grasslands defined in MCV2 were identified on the Project site during the grassland assessment; purple needlegrass (*Stipa pulchra* [Purple Needle Grass Grassland]) and salt grass (*Distichlis spicata* [Salt Grass Flats]). Purple needlegrass is more common on site than salt grass; purple needlegrass occurs in 7.7 percent of the quadrats sampled whereas salt grass occurs in 4.7 percent of the quadrats sampled. Other native species include both shrubs and forbs, such as California brittlebush (*Encelia californica*), western ragweed (*Ambrosia psilostachya*), and dove weed (*Croton setigerus*).

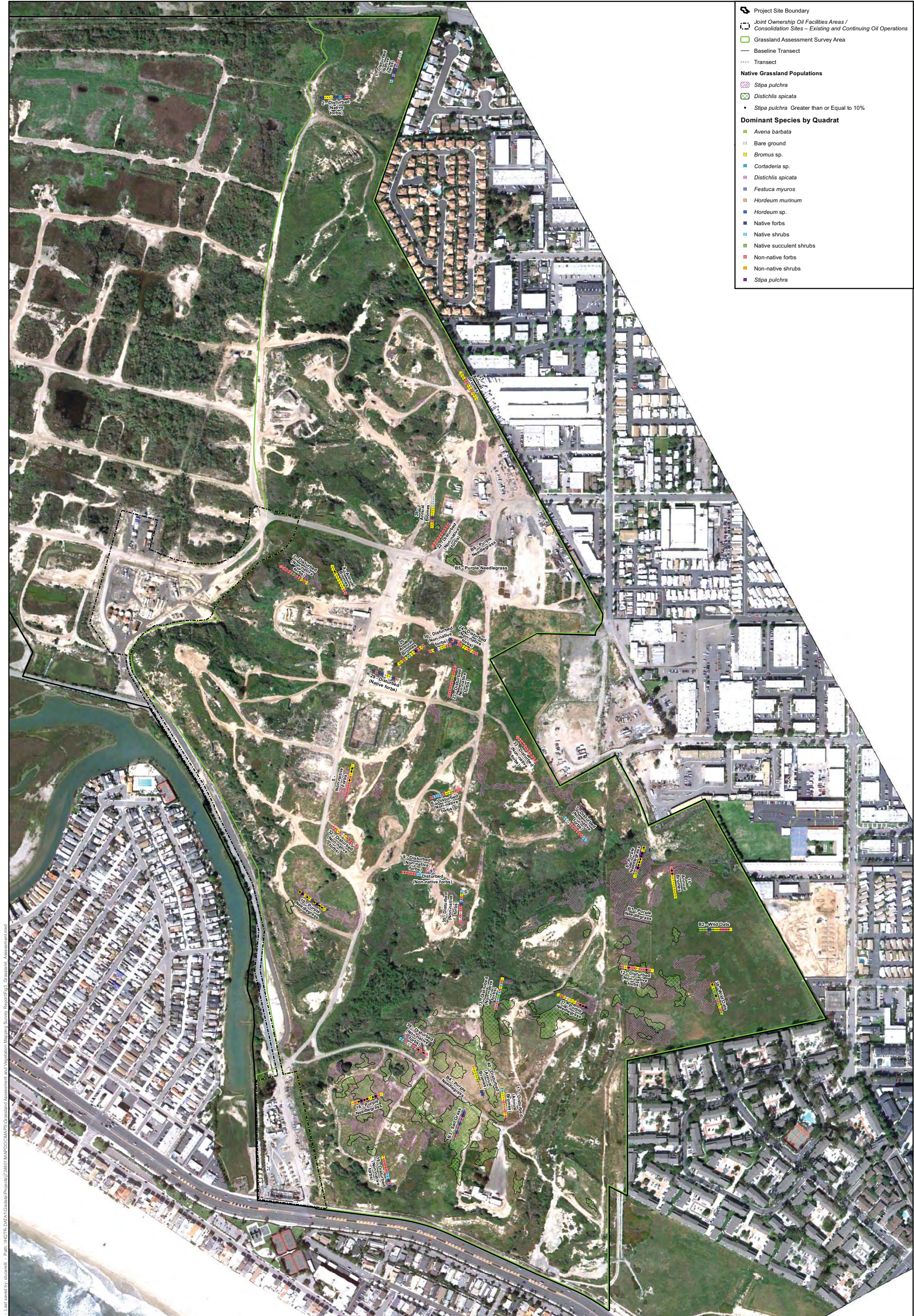
Non-native grassland species that were dominant in the quadrats sampled include bromes (*Bromus diandrus*, *B. hordeaceus*, *B. madritensis*), wild oat (*Avena barbata*), foxtail barley (*Hordeum murinum*), Italian rye grass (*Festuca perennis*), rattail sixweeks grass (*Festuca myuros*), and pampas grass (*Cordaderia* sp.). Of these, bromes (Annual Brome Grassland) and wild oat (Wild Oat Grassland) are recognized as dominants in vegetation communities per MCV2 (Sawyer et al. 2009) so they are considered separately in the third column of *Table 4*. Italian rye grass is also considered a dominant in vegetation communities per MCV2 (Sawyer et al. 2009), however, the percentage cover of this species was below the defined dominant threshold, thus grouped with the other non-native grasses. Other non-native species include mostly forbs, such as longbeak stork's bill (*Erodium botrys*), tocalote (*Centaurea melitensis*), shortpod mustard (*Hirschfeldia incana*), and black mustard (*Brassica nigra*), additionally some shrub species.

## Grassland Assessment and Vegetation Mapping Survey Report

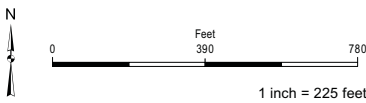
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DUDEK

SOURCE: 2011 Aerial provided by Fuscoe, Dudek 2012 Grassland Assessment Survey Data  
NOTES: Dominant species data collected at 1 meter intervals for B1 and B4. Data available on field sheets.

NEWPORT BANNING RANCH

Grassland Assessment and Vegetation Mapping Survey Report

Figure 3  
Grassland Assessment



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## Grassland Assessment and Vegetation Mapping Survey Report

Table 4 includes the dominant species present along each transect and their overall percent cover throughout the transect. The range of values recorded throughout each transect is included for the native grasses as well as the non-native grasses that comprise a specific vegetation community (i.e., *Bromus* spp. and *Avena barbata*).

**Table 4**  
**Overall Percent Cover of Plant Species and Physiognomic Categories**  
**Per Quadrat for Each Transect**

Transect	Percent Coverage of Native Grassland Species Mean per Transect (Minimum-Maximum per Quadrat)	Percent Coverage of Non-Native Grassland Species Mean per Transect (Minimum-Maximum per Quadrat)	Percent Coverage of Forbs/Shrubs Mean per Transect (Minimum-Maximum per Quadrat)	Vegetation Community Determination
B_1	<i>Stipa pulchra</i> 11.4 (0-50)	<i>Bromus</i> spp. 33.6 (0-85) <i>Avena barbata</i> 1.2 (0-10) Other non-native grasses 0.7	Non-native spp. 45.1 Native spp. 4.0	Purple Needlegrass
B_2	—	<i>Avena barbata</i> 28.2 (0-60) <i>Bromus</i> spp. 23.6 (0-60) Other non-native grasses 11.4	Non-native spp. 21.8 Native spp. 13.2	Wild Oats
B_3	<i>Distichlis spicata</i> 33.2 (0-70) <i>Stipa pulchra</i> 3.2 (0-35)	<i>Bromus</i> spp. 9.5 (0-35) <i>Avena barbata</i> 0.9 (0-10) Other non-native grasses 26.4	Non-native spp. 14.5 Native spp. 3.6	Salt Grass
B_4	<i>Stipa pulchra</i> 17.5 (0-50) <i>Distichlis spicata</i> 13.6 (0-45)	<i>Bromus</i> spp. 22.8 (0-55) Other non-native grasses 6.7	Non-native spp. 17.3 Native spp. 3.7	Purple Needlegrass
B_5	<i>Stipa pulchra</i> 21.2 (5-60)	—*	—*	Purple Needlegrass
B_6	<i>Stipa pulchra</i> 21.7 (5-45)	—*	—*	Purple Needlegrass
1	—	Other non-native grasses 6.4	Native spp. 13.6 Non-native spp. 1.4	Disturbed (Native Forbs)
2	—	<i>Bromus</i> spp. 21.2 (0-60) Other non-native grasses 9.1	Native spp. 34.5 Non-native spp. 24.1	Disturbed (Native Forbs)
3	—	<i>Bromus</i> spp. 18.6 (0-75)	Non-native spp. 72.4 Native spp. 11.8	Disturbed (Non-Native Forbs)
4	<i>Stipa pulchra</i> 1.4 (0-15)	<i>Bromus</i> spp. 62.3 (0-100)	Non-native spp. 34.5 Native spp. 1.3	Annual Bromes
5	<i>Stipa pulchra</i> 5.5 (0-15)	<i>Bromus</i> spp. 36.4 (0-45)	Non-native spp. 44.1 Native spp. 7.3	Non-Native Forbs
6	—	<i>Bromus</i> spp. 16.4 (0-85) <i>Avena barbata</i> 5.0 (0-40)	Non-native spp. 30.9 Native spp. 29.1	Disturbed (Non-Native Forbs)
7	—	<i>Bromus</i> spp. 9.1 (0-40)	Non-native spp. 39.1 Native spp. 20.5	Disturbed (Non-Native Forbs)
8	<i>Stipa pulchra</i> 24.5 (0-70)	<i>Bromus</i> spp. 28.6 (0-55) <i>Avena barbata</i> 22.3 (0-80)	Native spp. 1.4 Non-native spp. 15.9	Purple Needlegrass
9	—	<i>Bromus</i> spp. 5.9 (0-40)	Non-native spp. 45.0	Disturbed (Non-

## Grassland Assessment and Vegetation Mapping Survey Report

**Table 4**  
**Overall Percent Cover of Plant Species and Physiognomic Categories**  
**Per Quadrat for Each Transect**

Transect	Percent Coverage of Native Grassland Species Mean per Transect (Minimum-Maximum per Quadrat)	Percent Coverage of Non-Native Grassland Species Mean per Transect (Minimum-Maximum per Quadrat)	Percent Coverage of Forbs/Shrubs Mean per Transect (Minimum-Maximum per Quadrat)	Vegetation Community Determination
			Native spp. 40.5	<i>Native Forbs</i> )
10	<i>Stipa pulchra</i> 15.0 (0-50)	<i>Bromus</i> spp. 45.5 (0-75)	Non-native spp. 14.1 Native spp. 8.2	<i>Purple Needlegrass</i>
11	<i>Stipa pulchra</i> 6.4 (0-35)	<b><i>Bromus</i> spp. 44.1 (0-85)</b> <i>Avena barbata</i> 13.2 (0-30)	Non-native spp. 41.4 Native spp. 1.8	<i>Annual Bromes</i>
12	<i>Distichlis spicata</i> 14.5 (0-35) <i>Stipa pulchra</i> 3.2 (0-20)	<i>Bromus</i> spp. 36.4 (0-70)	<b>Non-native spp. 53.6</b> Native spp. 0.9	<i>Disturbed (Non-Native Forbs)</i>
13	<i>Distichlis spicata</i> 17.7 (0-50) <i>Stipa pulchra</i> 0.5 (0-5)	<i>Bromus</i> spp. 23.6 (0-100) <i>Avena barbata</i> 5.9 (0-50)	<b>Non-native spp. 24.5</b> Native spp. 22.3	<i>Disturbed (Non-Native Forbs)</i>
16	<i>Distichlis spicata</i> 14.5 (0-45) <b><i>Stipa pulchra</i> 13.6 (0-40)</b>	<i>Bromus</i> spp. 38.6 (0-65)	Non-native spp. 25.0	<i>Purple Needlegrass</i>
17	<i>Distichlis spicata</i> 0.5 (0-5)	<b><i>Bromus</i> spp. 24.5 (0-45)</b> <i>Avena barbata</i> 1.4 (0-15) Other non-native grasses 23.1	Non-native spp. 23.6 Native spp. 9.5	<i>Disturbed (Annual Bromes)</i>
19	<i>Distichlis spicata</i> 3.2 (0-20)	<i>Bromus</i> spp. 13.2 (0-50)	<b>Non-native spp. 34.1</b> Native spp. 18.2	<i>Disturbed (Non-Native Forbs)</i>
21	—	<b><i>Bromus</i> spp. 53.6 (0-80)</b> Other non-native grasses 0.9	Non-native spp. 31.8 Native spp. 1.4	<i>Annual Bromes</i>
22	<i>Distichlis spicata</i> 0.5 (0-5)	<i>Bromus</i> spp. 25.0 (0-40) Other non-native grasses 0.5	<b>Non-native spp. 49.5</b> Native spp. 12.3	<i>Disturbed (Non-Native Forbs)</i>
23	—	<i>Bromus</i> spp. 1.4 (0-10) Other non-native grasses 0.5	<b>Non-native spp. 75.9</b> Native spp. 20.5	<i>Disturbed (Non-Native Forbs)</i>
24	—	<i>Bromus</i> spp. 24.5 (0-60) <i>Avena barbata</i> 0.5 (0-5)	<b>Non-native spp. 40.0</b> Native spp. 16.4	<i>Disturbed (Non-Native Forbs)</i>
25	<i>Stipa pulchra</i> 4.5 (0-35)	<b><i>Bromus</i> spp. 50.0 (0-85)</b> <i>Avena barbata</i> 0.5 (0-5)	Non-native spp. 28.2 Native spp. 10.5	<i>Annual Bromes</i>
28	—	<b><i>Bromus</i> spp. 27.3 (0-80)</b>	Native spp. 14.5 Non-native spp. 13.2	<i>Annual Bromes</i>
29	—	<i>Bromus</i> spp. 19.1 (0-45)	<b>Native spp. 31.8</b> Non-native spp. 21.8	<i>Disturbed (Native Forbs)</i>



## Grassland Assessment and Vegetation Mapping Survey Report

**Table 4**  
**Overall Percent Cover of Plant Species and Physiognomic Categories**  
**Per Quadrat for Each Transect**

Transect	Percent Coverage of Native Grassland Species Mean per Transect (Minimum-Maximum per Quadrat)	Percent Coverage of Non-Native Grassland Species Mean per Transect (Minimum-Maximum per Quadrat)	Percent Coverage of Forbs/Shrubs Mean per Transect (Minimum-Maximum per Quadrat)	Vegetation Community Determination
30	<i>Stipa pulchra</i> 0.9 (0-10)	<i>Bromus</i> spp. 27.3 (0-50) <i>Avena barbata</i> 2.7 (0-15)	Non-native spp. 36.8 Native spp. 23.2	Disturbed (Non-Native Forbs)
32	—	<i>Bromus</i> spp. 24.1 (0-40)	Non-native spp. 43.6 Native spp. 10.9	Disturbed (Non-Native Forbs)
33	—	<i>Bromus</i> spp. 28.2 (0-45)	Non-native spp. 62.3 Native spp. 1.4	Disturbed (Non-Native Forbs)
35	<i>Stipa pulchra</i> 1.4 (0-5)	<i>Bromus</i> spp. 28.2 (0-50)	Non-native spp. 28.2 Native spp. 24.1	Disturbed (Non-Native Forbs)
37	<i>Distichlis spicata</i> 5.9 (0-30) <i>Stipa pulchra</i> 10.9 (0-65)	<i>Bromus</i> spp. 27.3 (0-50) <i>Avena barbata</i> 1.8 (0-20) Other non-native grasses 4.1	Non-native spp. 31.8 Native spp. 4.5	Purple Needlegrass
38	<i>Stipa pulchra</i> 5.0 (0-30)	<i>Avena barbata</i> 35.0 (0-65) <i>Bromus</i> spp. 27.3 (0-55)	Native spp. 6.8 Non-native spp. 23.2	Wild Oats
39	<i>Distichlis spicata</i> 15.0 (0-60) <i>Stipa pulchra</i> 3.6 (0-15)	<i>Bromus</i> spp. 8.2 (0-20)	Non-native spp. 29.1 Native spp. 18.2	Disturbed (Non-Native Forbs)
40	<i>Distichlis spicata</i> 1.8 (0-45)	<i>Bromus</i> spp. 23.6 (0-50) <i>Avena barbata</i> 6.8 (0-10) Other non-native grasses 33.2	Non-native spp. 16.4 Native spp. 10.4	Disturbed (Annual Bromes)

NOTE: Percentages across do not sum to 100 percent for each transect because bare ground, litter, and species with minimal coverage were not recorded.

\*Other plant species were not in identifiable condition.

Table 5 includes the percentage of quadrats within each transect dominated by a certain indicator grass species or group of species (i.e., other non-native grasses, native forb/shrubs, non-native forbs/shrubs). Dominant species within each quadrat was/were determined by which species or group of species accounted for the highest relative percent cover. The determination for the entire transect was based on the highest percentage of quadrats dominated by a certain indicator species or group of species. However, MCV2 (2009) and CDFW (2010) defines purple needlegrass grassland as having greater than 10 percent relative cover within the herbaceous layer. Therefore, purple needlegrass grassland was determined to be present where this species is dominant in more than 10 percent of quadrats. Areas where purple needlegrass exceeds the 10 percent cover within each quad are depicted on Figure 3. Additionally, MCV2 (2009) and

## Grassland Assessment and Vegetation Mapping Survey Report

CDFW (2010) defines salt grass flats as exhibiting greater than 50 percent cover within the herbaceous layer. Therefore, an area was determined to consist of salt grass flats where this species is dominant in more than 50 percent of quadrats. Transects where salt grass exceeds 50 percent cover within each quadrat is shown in *Figure 3*.

**Table 5**  
**Transect Evaluation of Dominant Plant Species and the Percentage of Quadrat Occupied**

	Percentage of Quadrats Occupied by Grass Species or Physiognomic Category								
Transect	Percentage of Quadrats Occupied by Native Grasses		Percentage of Quadrats Occupied by Non-Native Grasses			Percentage of Quadrats Occupied by Forbs/Shrubs		Bare ground	Vegetation Community Determination
	<i>Stipa pulchra</i>	<i>Distichlis spicata</i>	<i>Avena barbata</i>	<i>Bromus</i> spp.	Other	Native	Non-native		
B_1	14.0	—	—	42.0	—	—	44.0	—	Purple Needlegrass
B_2	—	—	36.4	27.3	—	9.1	27.3	—	Wild Oats
B_3	9.1	54.5	—	—	27.3	—	9.1	—	Salt Grass
B_4	27.5	21.6	—	—	3.9	5.9	9.8	—	Purple Needlegrass
1	—	—	—	—	27.3	36.4	9.1	27.3	Disturbed (Native Forbs)
2	—	—	—	27.3	9.1	45.5	18.2	—	Disturbed (Native Forbs)
3	—	—	—	18.2	—	9.1	72.7	—	Disturbed (Non-Native Forbs)
4	—	—	—	81.8	—	—	18.2	—	Annual Bromes
5	—	—	—	45.5	—	—	54.5	—	Non-Native Forbs
6	—	—	9.1	18.2	—	27.3	45.5	—	Disturbed (Non-Native Forbs)
7	—	—	—	—	—	27.3	54.5	18.2	Disturbed (Non-Native Forbs)
8	27.3	—	9.1	54.5	—	—	9.1	—	Purple Needlegrass
9	—	—	—	—	—	45.5	54.5	—	Disturbed (Non-Native Forbs)
10	18.2	—	—	72.7	—	9.1	—	—	Purple Needlegrass
11	—	—	—	72.7	—	—	27.3	—	Annual Bromes
12	—	—	—	27.3	—	—	72.7	—	Disturbed (Non-Native Forbs)
13	—	18.2	9.1	18.2	—	27.3	27.3	—	Disturbed (Non-Native Forbs)
16	18.2	—	—	45.5	—	—	36.4	—	Purple Needlegrass
17	—	—	—	36.4	27.3	9.1	27.3	—	Disturbed (Annual Bromes)
19	—	—	—	9.1	—	36.4	54.5	—	Disturbed (Non-Native Forbs)
21	—	—	—	72.7	—	—	27.3	—	Annual Bromes

## Grassland Assessment and Vegetation Mapping Survey Report

**Table 5**  
**Transect Evaluation of Dominant Plant Species and the Percentage of Quadrat Occupied**

	Percentage of Quadrats Occupied by Grass Species or Physiognomic Category								
Transect	Percentage of Quadrats Occupied by Native Grasses		Percentage of Quadrats Occupied by Non-Native Grasses			Percentage of Quadrats Occupied by Forbs/Shrubs		Bare ground	Vegetation Community Determination
	<i>Stipa pulchra</i>	<i>Distichlis spicata</i>	<i>Avena barbata</i>	<i>Bromus</i> spp.	Other	Native	Non-native		
22	—	—	—	—	—	9.1	90.9	—	<i>Disturbed (Non-Native Forbs)</i>
23	—	—	—	—	—	9.1	90.9	—	<i>Disturbed (Non-Native Forbs)</i>
24	—	—	—	27.3	—	18.2	54.5	—	<i>Disturbed (Non-Native Forbs)</i>
25	9.1	—	—	54.5	—	9.1	27.3	—	<i>Annual Bromes</i>
28	—	—	—	45.5	—	9.1	9.1	36.4	<i>Annual Bromes</i>
29	—	—	—	9.1	—	36.4	18.2	36.4	<i>Disturbed (Native Forbs)</i>
30	—	—	—	27.3	—	18.2	45.5	9.1	<i>Disturbed (Non-Native Forbs)</i>
32	—	—	—	18.2	—	—	63.6	18.2	<i>Disturbed (Non-Native Forbs)</i>
33	—	—	—	—	—	—	100	—	<i>Disturbed (Non-Native Forbs)</i>
35	—	—	—	9.1	—	27.3	45.5	18.2	<i>Disturbed (Non-Native Forbs)</i>
37	9.1	—	—	45.5	—	—	36.4	9.1	<i>Purple Needlegrass*</i>
38	—	—	54.5	27.3	—	—	18.2	—	<i>Wild Oats</i>
39	—	18.2	—	—	—	18.2	45.5	18.2	<i>Disturbed (Non-Native Forbs)</i>
40	—	—	9.1	36.4	36.4	18.2	—	—	<i>Disturbed (Annual Bromes)</i>

Notes:

Transects B5 and B6 were not included in the table since no other species were recognizable given survey timing so a relative percent cover could not be calculated. However, purple needlegrass exceeded 10 percent cover in 88.9 percent of the quadrats within Transect B5 and 71.4 percent of the quadrats within Transect B6. Therefore, a determination for purple needlegrass can still be made.

\* - Transect 37 determination Purple Needlegrass since overall percent cover of purple needlegrass (*Stipa pulchra*) throughout the transect was over 10 percent, as shown in *Table 5*.

To further document purple needlegrass, the number of individuals was counted in quadrats where purple needlegrass was found. *Table 6* includes the total number of individuals of purple needlegrass within each transect (note that transect lengths are not all the same). It also provides the mean number of purple needlegrass individuals per quadrat and the minimum and maximum number of individuals recorded within each quadrat for each transect.

## Grassland Assessment and Vegetation Mapping Survey Report

**Table 6**  
**Number of Purple Needlegrass Individuals in Each Transect**

Transect	Total Number of Purple Needlegrass Individuals within the Transect	Number of Purple Needlegrass Individuals per Quadrat <i>Mean (Minimum-Maximum)</i>
B_1	193	3.9 (0-24)
B_2	0	—
B_3	8	0.7 (0-8)
B_4	321	6.3 (0-50)
B_5	117	6.5 (1-17)
B_6	73	10.4 (1-24)
1	0	—
2	0	—
3	0	—
4	8	0.7 (0-8)
5	27	2.5 (0-27)
6	0	—
7	0	—
8	67	6.1 (0-13)
9	0	—
10	54	4.9 (0-21)
11	32	2.9 (0-20)
12	14	1.3 (0-7)
13	1	0.09 (0-1)
16	63	5.7 (0-19)
17	0	—
19	0	—
21	0	—
22	0	—
23	0	—
24	0	—
25	14	1.3 (0-11)
28	0	—
29	0	—
30	3	0.3 (0-3)
32	0	—
33	0	—
35	3	0.3 (0-1)
37	34	3.1 (0-17)
38	17	1.5 (0-9)

## Grassland Assessment and Vegetation Mapping Survey Report

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**Table 6**  
**Number of Purple Needlegrass Individuals in Each Transect**

Transect	Total Number of Purple Needlegrass Individuals within the Transect	Number of Purple Needlegrass Individuals per Quadrat <i>Mean (Minimum-Maximum)</i>
39	9	0.8 (0-3)
40	0	—

### 3.2. Assessment of Disturbed and Maintenance Areas

A disturbed qualifier (D) was placed on any native vegetation community where there was evidence of vegetation modification by mechanical disturbance or establishment of non-native plant species within the vegetation community. *Figure 4* displays transects and operation point used to categorize disturbed and maintained areas on-site.

#### 3.2.1 Presence and Height of California brittlebush

Based on the transect data collected in June and July 2012, a total of 172 California brittlebush shrubs were included in the sample. Heights ranged from 5 cm (2.0 inches) to 115 cm (45.2 inches) with a mean height of approximately 36.7 cm (14.4 inches). *Table 7* provides the percentage of points within the transect sampled that included California brittlebush, as well as minimum, maximum, and mean height of the California brittlebush along each transect. Areas mapped as California brittle bush scrub had a closed canopy with shrub heights greater than or equal to approximately 40 cm. Of the 30 point-intercept transects recorded in various vegetation communities and disturbed areas, nine transects were recorded to have a mean California brittlebush height greater than or equal to 40 cm.

## Grassland Assessment and Vegetation Mapping Survey Report

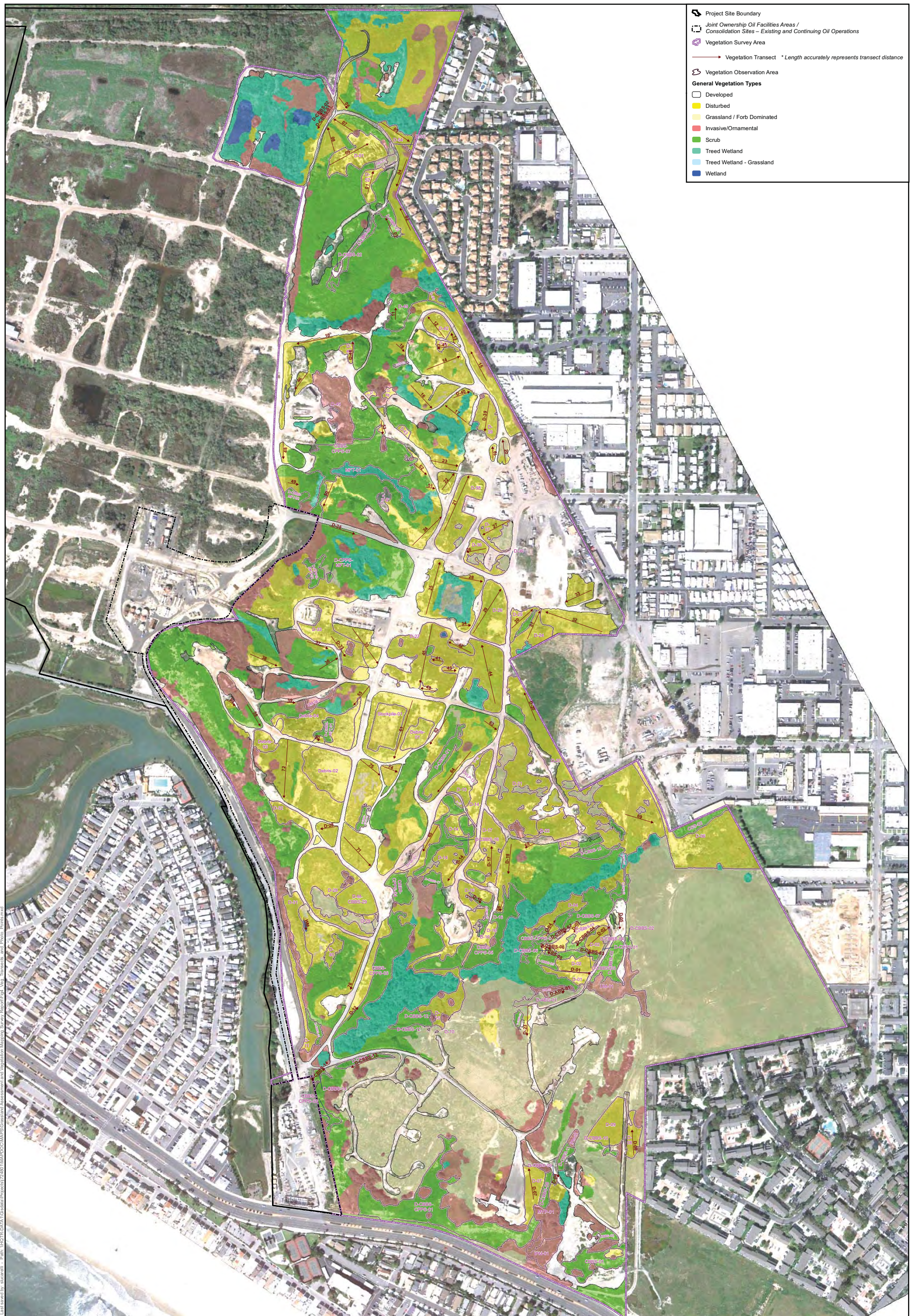
**Table 7**  
**Presence and Height of California Brittlebush Based on Point-Intercept Transect Data**

Transect Label	Percent of Point Intercepts with California Brittlebush	Minimum California Brittlebush Height (cm)	Maximum California Brittlebush Height (cm)	Mean California Brittlebush Height (cm)
D_01	2.4	14	14	14.0
D_02	0.0	—	—	—
<b>D_03</b>	<b>13.0</b>	<b>35</b>	<b>80</b>	<b>55.0</b>
D_04	6.1	15	25	20.0
<b>D_05</b>	<b>3.4</b>	<b>40</b>	<b>40</b>	<b>40.0</b>
D_07	0.0	—	—	—
D_08	0.0	—	—	—
D_12	25.0	5	20	10.0
D_14	0.0	—	—	—
D_16	17.2	10	40	23.0
D_17	0.0	—	—	—
D_18	21.4	15	40	23.3
D_20	0.0	—	—	—
D_23	21.4	10	50	24.4
D_28	16.7	10	30	17.0
D_33	16.7	5	30	15.0
<b>D_35</b>	<b>26.1</b>	<b>40</b>	<b>65</b>	<b>49.6</b>
D_39	0.0	—	—	—
D_40	10.0	5	25	16.7
D_41	14.3	15	25	20.0
<b>D_46</b>	<b>9.1</b>	<b>30</b>	<b>50</b>	<b>40.0</b>
<b>D_ABG_01</b>	<b>9.7</b>	<b>10</b>	<b>70</b>	<b>49.3</b>
<b>D_CBBS_03</b>	<b>36.8</b>	<b>25</b>	<b>70</b>	<b>43.6</b>
D_CBBS_04	40.5	5	35	22.9
<b>D_CBBS_05</b>	<b>78.6</b>	<b>30</b>	<b>95</b>	<b>54.1</b>
D_CBBS_06	53.3	10	65	35.0
D_CBBS_07	40.0	10	40	26.4
<b>D_CBBS_09</b>	<b>55.6</b>	<b>40</b>	<b>75</b>	<b>51.0</b>
D_CBBS_13	47.6	25	100	45.0
<b>D_CBBS_14</b>	<b>63.2</b>	<b>54</b>	<b>115</b>	<b>79.5</b>
<b>Total</b>	<b>16.9</b>	<b>5</b>	<b>115</b>	<b>36.7</b>

Note:

Bold text identifies transects with a mean California brittlebush height greater than or equal to 40 cm.







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## Grassland Assessment and Vegetation Mapping Survey Report

### 3.2.2 Disturbed Transect and Categories

A total of four D-CBBS vegetation communities and 13 D-M-CBBS, 1 D-I-CBBS, and 52 Disturbed categories were identified as shown in Figure 5. *Table 8* provides the percent coverage of shrubs, percent coverage of California brittlebush, average California brittlebush height, and polygon category determination.

**Table 8**  
**Point-Intercept Transect of Disturbed Areas**

Transect	Coverage of Shrubs (percent)	Coverage of California Brittlebush (percent)	Average Height of California Brittlebush (cm)	Determination
1	29.27	7.32	31.33	D
2	23.81	23.81	8.20	D-M-CBBS
3	33.33	30.95	40.77	D-CBBS
4	4.08	4.08	7.00	D
5	1.67	1.67	12.00	D
6	20.00	4.00	12.00	D
7	23.08	10.26	26.75	D-M-CBBS
8	4.76	4.76	17.50	D
9	18.42	6.58	43.00	D
10	25.40	4.76	53.67	D
11	31.82	31.82	66.71	D-CBBS
12	7.14	7.14	10.00	D
13	0.00	0.00		D
14	5.00	1.67	10.00	D
15	0.00	0.00		D
16	7.55	7.55	15.00	D
17	23.40	14.89	22.14	D-M-CBBS
18	19.05	9.52	29.50	D
19	0.00	0.00		D
20	0.00	0.00		D
21	4.95	1.98	10.50	D
22	2.78	2.78	14.00	D
23	0.00	0.00		D
24	18.57	11.43	23.75	D-M-CBBS
25	3.30	1.10	7.00	D
26	0.00	0.00		D

## Grassland Assessment and Vegetation Mapping Survey Report

**Table 8**  
**Point-Intercept Transect of Disturbed Areas**

Transect	Coverage of Shrubs (percent)	Coverage of California Brittlebush (percent)	Average Height of California Brittlebush (cm)	Determination
27	0.00	0.00		D
28	0.00	0.00		D
29	0.00	0.00		D
30	8.33	0.00		D
31	0.00	0.00		D
32	0.00	0.00		D
33	10.20	0.00		D
34	4.76	4.76	3.00	D
35	4.05	2.70	32.00	D
36	32.43	29.73	21.82	D-CBBS
37	21.05	21.05	19.38	D-M-CBBS
38	2.00	2.00	10.00	D
39	5.56	5.56	31.00	D
40	0.00	0.00		D
41	0.00	0.00		D
42	2.38	2.38	9.00	D
43	0.00	0.00		D
44	2.97	2.97	31.33	D
45	9.90	8.91	48.11	D
46	24.24	0.00		D
48	13.79	6.90	61.00	D
49	22.73	22.73	17.00	D-M-CBBS
50	11.90	7.14	22.33	D
51	15.00	15.00	7.00	D-M-CBBS
52	17.86	17.86	15.00	D-M-CBBS
53	11.54	0.00		D
55	12.82	7.69	15.00	D
56	7.69	0.00		D
58	31.82	31.82	41.07	D-CBBS
59	15.00	15.00	23.33	D-M-CBBS
61	7.14	3.06	22.67	D
62	18.18	2.27	5.00	D
63	0.00	0.00		D
64	13.48	13.48	19.33	D-M-CBBS

## Grassland Assessment and Vegetation Mapping Survey Report

**Table 8**  
**Point-Intercept Transect of Disturbed Areas**

Transect	Coverage of Shrubs (percent)	Coverage of California Brittlebush (percent)	Average Height of California Brittlebush (cm)	Determination
65	7.02	7.02	25.75	D
66	5.26	5.26	31.00	D
68	11.11	5.56	22.00	D
69	27.66	8.51	50.25	D
71	18.18	16.67	22.27	D-M-CBBS
72	6.19	5.15	9.40	D
74	14.29	14.29	9.50	D-M-CBBS
75	4.65	2.33	21.00	D
76	11.39	10.13	14.00	D-M-CBBS

### 3.3 Vegetation Communities

A total of four general physiognomic vegetation communities were mapped during field surveys identified by the *Manual of California Vegetation*, Second Edition (MCV2; Sawyer et al. 2009) and *Natural Communities List* (NCL; CDFW 2010): 1) grass and forb; 2) coastal scrub; 3) riparian scrub; and, 4) woodland and tree cluster dominated communities. These vegetation communities are summarized in *Table 9* and displayed on *Figure 5*. In this survey, non-vegetated areas (mudflats) are equivalent to a general physiognomic and physical location type, and are described at the end of the following section. Other site features associated with West Newport Oil Company standard operations and maintenance were also identified and mapped, and are described in the following section; these areas do not correspond to natural vegetation communities per the MCV2. Vegetation community mapping photographs and data sheets are provided in *Appendices D, E, and F*.

**Table 9**  
**Summary of Vegetation Communities and Maintained Areas within the Survey Area**

Physiognomic Category	General	Vegetation Communities	Abbreviation
Herbaceous Alliances and Stands	Grassland	Annual Brome Grassland	ABG
		Purple Needle Grass Grassland	PNG
		Rabbitsfoot Grassland	RFG
		Salt Grass Flats	SGF
		Wild Oats Grassland	WOG
	Forb Dominated	Alkali Heath Marsh	ASH

## Grassland Assessment and Vegetation Mapping Survey Report

**Table 9**  
**Summary of Vegetation Communities and Maintained Areas within**  
**the Survey Area**

Physiognomic Category	General	Vegetation Communities	Abbreviation
		California Bulrush Marsh	CBM
		Giant Reed Breaks	GRB
		Ice Plant Mats	IPM
		Pampas Grass Patches	PGP
		Pickleweed Mats	PWM
		Poison Hemlock Patches	PHP
		Upland Mustard	UM
		Woolly Marbles	WM
Shrubland Alliances and Stands	Coastal Scrub	California Brittle Bush Scrub	CBBS
		California Buckwheat Scrub	CBS
		California Sagebrush Scrub	CSS
		Coastal Prickly Pear Scrub	CPPS
		Coyote Brush Scrub	CYS
		Menzies's Golden Bush Scrub	MGBS
		Quailbush Scrub	QS
Shrubland Alliances and Stands	Riparian Scrub	Arroyo Willow Thickets	ARWT
		Mulefat Thickets	MFT
Woodlands and Tree Clusters	Woodlands and Tree Clusters (Planted or Naturally Occurring)	Black Willow Thickets	BWT
		Eucalyptus Groves	EG
		Golden Wattle Acacia	GWA
		Myoporum Groves	MYP
		Pepper Tree Stand	PT
Non-Vegetated Areas		Mudflats	MDFT
West Newport Oil Facilities and Operations and Maintenance Areas		Debris	Debris
		Developed	DVLP
		Disturbed	D
		Disturbed Infrequently Maintained California Brittle Bush Scrub	D-I-CBBS
		Disturbed Maintained California Brittle Bush Scrub	D-M-CBBS
		Stock Pile	Stock Pile
Restored		Restored California Brittle Bush Scrub	R-CBBS

Vegetation communities identified in MCV2 have specific membership rules, which quantitatively define dominant and co-dominant species (Sawyer et al. 2009). During vegetation mapping surveys, MCV2 definitions were consulted against observed percent coverage, then assigned a community name accordingly. Membership rules of the identified vegetation communities within the survey area are described in *Table 10*.

# Grassland Assessment and Vegetation Mapping Survey Report

**Table 10**  
**Vegetation Community Membership Rules**

Vegetation Community	Species Scientific Name	Membership Rules
Herbaceous Alliances and Stands - Grassland		
Annual Brome Grassland	<i>Bromus diandrus</i> , <i>B. hordeaceus</i> – <i>Brachypodium distachyon</i>	<i>Brachypodium distachyon</i> > 50 percent relative cover in the herbaceous layer.
		<i>Bromus diandrus</i> > 60 percent relative cover with other non-natives in herbaceous layer with a variety of annuals at low cover.
		<i>Bromus diandrus</i> , <i>B. hordeaceus</i> , and/or <i>Brachypodium distachyon</i> > 80 percent relative cover separately or co-dominant with non-natives; natives usually with low or insignificant cover.
		<i>Bromus hordeaceus</i> > 50 percent relative cover in the herbaceous layer.
Purple Needle Grass Grassland	<i>Stipa pulchra</i> ( <i>Nassella pulchra</i> )	<i>Stipa pulchra</i> ( <i>Nassella pulchra</i> ) usually > 10 percent relative cover of the herbaceous layer.
		<i>Stipa pulchra</i> ( <i>Nassella pulchra</i> ) > 5 percent absolute cover as a characteristic to dominant species in the herbaceous layer.
Rabbitsfoot Grassland	<i>Polypogon monspeliensis</i>	♦
Salt Grass Flats	<i>Distichlis spicata</i>	<i>Distichlis spicata</i> > 50 percent relative cover in the herbaceous layer; <i>D. spicata</i> has higher cover than any other single grass species.
		<i>Distichlis spicata</i> > 30 percent relative cover in the herbaceous layer, <i>Sarcocornia</i> or <i>Salicornia</i> spp. if present, < 30 percent relative cover.
Wild Oats Grassland	<i>Avena barbata</i> , <i>A. fatua</i>	<i>Avena</i> spp. > 75 percent relative cover; other non-native or native plants < 5 percent absolute cover, if present, in the herbaceous layer.
		<i>Avena fatua</i> > 50 percent relative cover, and native herbs relatively low in cover in the herbaceous layer.
		<i>Avena</i> spp. > 50 percent relative cover, and native herbs < 10 percent relative cover in the herbaceous layer.
Herbaceous Alliances and Stands – Forb Dominated		
Alkali Heath Marsh	<i>Frankenia salina</i>	<i>Frankenia salina</i> > 30 percent relative cover in the herbaceous layer, sometimes co-dominant with <i>Distichlis spicata</i> or other herbs and shrubs.
California Bulrush Marsh	<i>Schoenoplectus californicus</i>	<i>Schoenoplectus californicus</i> ≥ 10 percent absolute cover in the herbaceous layer; <i>Schoenoplectus acutus</i> , if present, < 50 percent relative cover, though it can be co-dominant with <i>Schoenoplectus californicus</i>
Giant Reed Breaks	<i>Arundo donax</i>	<i>Arundo donax</i> > 60 percent relative cover in the herbaceous and shrubs layer.
Ice Plant Mats	<i>Carpobrotus edulis</i> or other ice plants	*
Pampas Grass Patches	<i>Cortaderia jubata</i> , <i>C. selloana</i>	<i>Cortaderia jubata</i> or <i>C. selloana</i> > 80 percent relative cover in the shrub or herbaceous layer.
Pickleweed Mats	<i>Sarcocornia pacifica</i>	<i>Sarcocornia pacifica</i> > 10 percent absolute cover and sometimes over a high cover of short annual or perennial grasses; if <i>Distichlis spicata</i> ≥ 50 percent relative cover, stands are in the <i>Distichlis spicata</i> alliance
		<i>Sarcocornia pacifica</i> > 50 percent relative cover in the herbaceous layer
		<i>Sarcocornia pacifica</i> > 50 percent relative cover and <i>Distichlis spicata</i> < 30 percent relative cover in the herbaceous layer.
Poison Hemlock Patches	<i>Conium maculatum</i>	<i>Conium maculatum</i> > 50 percent relative cover in the herbaceous layer.
Upland Mustard	<i>Brassica nigra</i> and other mustards	*
Woolly Marbles	<i>Psilocarphus brevissimus</i>	♦
Shrubland Alliances and Stands – Coastal Scrub		
California Brittle Bush Scrub	<i>Encelia californica</i>	<i>Encelia californica</i> at least 30 percent relative cover in the shrub canopy.
California Buckwheat Scrub	<i>Eriogonum fasciculatum</i>	<i>Eriogonum fasciculatum</i> > 5 percent absolute cover in the shrub canopy.

## Grassland Assessment and Vegetation Mapping Survey Report

**Table 10**  
**Vegetation Community Membership Rules**

Vegetation Community	Species Scientific Name	Membership Rules
		<i>Eriogonum fasciculatum</i> > 2 percent absolute cover or > 50 percent relative cover in the shrub canopy; other shrubs, if present, < half its cover, but <i>Hyptis emoryi</i> or <i>Salvia dorrii</i> may be higher.
		<i>Eriogonum fasciculatum</i> > 50 percent relative cover in the shrub canopy; other shrubs, if present, < 50 percent relative cover except in some cases with <i>Rhus ovata</i> .
California Sagebrush Scrub	<i>Artemisia californica</i>	<b><i>Artemisia californica</i> &gt; 60 percent relative cover in the shrub canopy.</b> <i>Artemisia californica</i> > 3 times cover of <i>Baccharis pilularis</i> and other shrub species. <i>Artemisia californica</i> > 60 percent relative cover in the shrub canopy, or <i>Malosma laurina</i> or <i>Diplacus aurantiacus</i> > 30 percent relative cover.
Coastal Prickly Pear Scrub	<i>Opuntia littoralis</i>	<b><i>Opuntia littoralis</i> and/or other cacti (such as <i>Cylindropuntia prolifera</i> and <i>O. oricola</i>) are &gt; 50 percent relative cover in the shrub canopy.</b> <i>Opuntia littoralis</i> is > 30 percent relative cover as a dominant or co-dominant with other coastal sage scrub species.
Coyote Brush Scrub	<i>Baccharis pilularis</i>	<b><i>Baccharis pilularis</i> &gt; 50 percent absolute cover in the shrub layer.</b> <i>Baccharis pilularis</i> > 15 percent shrub cover over grassy understory; <i>B. pilularis</i> relative cover > 50 percent than other shrub species. Both <i>Artemisia californica</i> and <i>Baccharis pilularis</i> between 30 percent and 60 percent relative cover in the shrub canopy.
Menzies's Golden Bush Scrub	<i>Isocoma menziesii</i>	<b><i>Isocoma menziesii</i> &gt; 50 percent relative cover in the shrub canopy.</b>
Quailbush Scrub	<i>Atriplex lentiformis</i>	<b><i>Atriplex lentiformis</i> is &gt; 50 percent relative cover in the shrub canopy.</b>
<b>Shrubland Alliances and Stands – Riparian Scrub</b>		
Arroyo Willow Thickets	<i>Salix lasiolepis</i>	<b><i>Salix lasiolepis</i> &gt; 50 percent relative cover in the shrub or tree canopy.</b> <i>Salix lasiolepis</i> ≥ 25 percent absolute cover in the shrub or tree canopy.
Mulefat Thickets	<i>Baccharis salicifolia</i>	<b><i>Baccharis salicifolia</i> &gt; 50 percent relative cover in shrub canopy.</b> <i>Baccharis salicifolia</i> > 30 percent relative cover in the shrub canopy with <i>Sambucus nigra</i> .
<b>Woodlands and Tree Clusters - Woodlands and Tree Clusters (Planted or Naturally Occurring)</b>		
Black Willow Thickets	<i>Salix gooddingii</i>	<b><i>Salix gooddingii</i> &gt; 50 percent relative cover in the canopy; if other willows are present, willows may co-dominate and <i>S. gooddingii</i> &gt; 30 percent relative cover in the canopy.</b> <i>Salix gooddingii</i> > 50 percent relative cover in the canopy; if <i>Populus fremontii</i> present, trees may co-dominate and <i>S. gooddingii</i> > 30 percent relative cover, as a rule for the Central Valley.
Eucalyptus Groves	<i>Eucalyptus globulus</i> , <i>E. camaldulensis</i>	<b><i>Eucalyptus</i> species &gt; 80 percent relative cover in the tree layer.</b>
Golden Wattle Acacia	<i>Acacia pycnantha</i>	♦
Myoporum Groves	<i>Myoporum laetum</i>	<b><i>Myoporum laetum</i> &gt; 60 percent relative cover in the tree layer.</b>
Pepper Tree Stand	<i>Schinus molle</i> , <i>S. terebinthifolius</i>	<b><i>Schinus molle</i> &gt; 80 percent relative cover in the tree layer. <i>S. molle</i> &gt; 60 percent relative cover in the tree layer.</b>

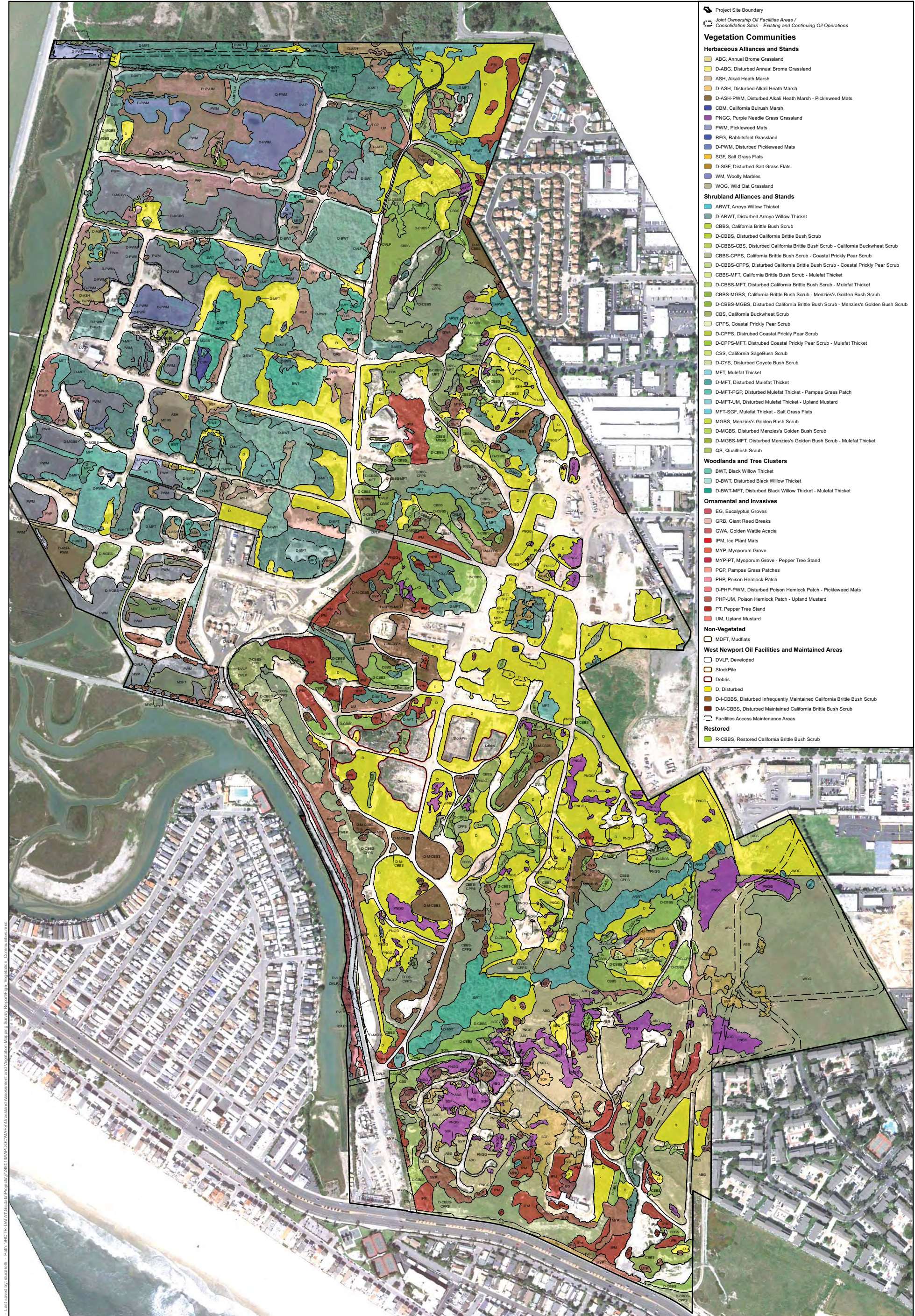
Note:

**Bold text** – Membership rule met on Newport Banning Ranch site.

\* - No membership rules noted in MCV2 (Sawyer et al. 2009)

♦ - Not listed in MCV2 (Sawyer et al. 2009).





- Project Site Boundary
- Joint Ownership Oil Facilities Areas / Consolidation Sites - Existing and Continuing Oil Operations
- Vegetation Communities**
- Herbaceous Alliances and Stands**
- ABG, Annual Brome Grassland
  - D-ABG, Disturbed Annual Brome Grassland
  - ASH, Alkali Heath Marsh
  - D-ASH, Disturbed Alkali Heath Marsh
  - D-ASH-PWM, Disturbed Alkali Heath Marsh - Pickleweed Mats
  - CBM, California Bulrush Marsh
  - PNGG, Purple Needle Grass Grassland
  - PWM, Pickleweed Mats
  - RFG, Rabbitsfoot Grassland
  - D-PWM, Disturbed Pickleweed Mats
  - SGF, Salt Grass Flats
  - D-SGF, Disturbed Salt Grass Flats
  - WM, Woolly Marbles
  - WOG, Wild Oat Grassland
- Shrubland Alliances and Stands**
- ARWT, Arroyo Willow Thicket
  - D-ARWT, Disturbed Arroyo Willow Thicket
  - CBBS, California Brittle Bush Scrub
  - D-CBBS, Disturbed California Brittle Bush Scrub
  - D-CBBS-CBS, Disturbed California Brittle Bush Scrub - California Buckwheat Scrub
  - CBBS-CPPS, California Brittle Bush Scrub - Coastal Prickly Pear Scrub
  - D-CBBS-CPPS, Disturbed California Brittle Bush Scrub - Coastal Prickly Pear Scrub
  - CBBS-MFT, California Brittle Bush Scrub - Mulefat Thicket
  - D-CBBS-MFT, Disturbed California Brittle Bush Scrub - Mulefat Thicket
  - CBBS-MGBS, California Brittle Bush Scrub - Menzies's Golden Bush Scrub
  - D-CBBS-MGBS, Disturbed California Brittle Bush Scrub - Menzies's Golden Bush Scrub
  - CBS, California Buckwheat Scrub
  - CPPS, Coastal Prickly Pear Scrub
  - D-CPPS, Disturbed Coastal Prickly Pear Scrub
  - D-CPPS-MFT, Disturbed Coastal Prickly Pear Scrub - Mulefat Thicket
  - CSS, California Sagebrush Scrub
  - D-CYS, Disturbed Coyote Bush Scrub
  - MFT, Mulefat Thicket
  - D-MFT, Disturbed Mulefat Thicket
  - D-MFT-PGP, Disturbed Mulefat Thicket - Pampas Grass Patch
  - D-MFT-UM, Disturbed Mulefat Thicket - Upland Mustard
  - MFT-SGF, Mulefat Thicket - Salt Grass Flats
  - MGBS, Menzies's Golden Bush Scrub
  - D-MGBS, Disturbed Menzies's Golden Bush Scrub
  - D-MGBS-MFT, Disturbed Menzies's Golden Bush Scrub - Mulefat Thicket
  - QS, Quailbush Scrub
- Woodlands and Tree Clusters**
- BWT, Black Willow Thicket
  - D-BWT, Disturbed Black Willow Thicket
  - D-BWT-MFT, Disturbed Black Willow Thicket - Mulefat Thicket
- Ornamental and Invasives**
- EG, Eucalyptus Groves
  - GRB, Giant Reed Breaks
  - GWA, Golden Wattle Acacia
  - IPM, Ice Plant Mats
  - MYP, Myoporum Grove
  - MYP-PT, Myoporum Grove - Pepper Tree Stand
  - PGP, Pampas Grass Patches
  - PHP, Poison Hemlock Patch
  - D-PHP-PWM, Disturbed Poison Hemlock Patch - Pickleweed Mats
  - PHP-UM, Poison Hemlock Patch - Upland Mustard
  - PT, Pepper Tree Stand
  - UM, Upland Mustard
- Non-Vegetated**
- MDFT, Mudflats
- West Newport Oil Facilities and Maintained Areas**
- DVLP, Developed
  - StockPile
  - Debris
  - D, Disturbed
  - D-CBBS, Disturbed Infrequently Maintained California Brittle Bush Scrub
  - D-M-CBBS, Disturbed Maintained California Brittle Bush Scrub
  - Facilities Access Maintenance Areas
- Restored**
- R-CBBS, Restored California Brittle Bush Scrub



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## Grassland Assessment and Vegetation Mapping Survey Report

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### 3.3.1 Grassland and Forb-Dominated Communities

The survey area includes four grassland-dominated (annual brome grassland, purple needle grass grassland, rabbitsfoot grassland, salt grass flats, and wild oat grassland) and eight forb-dominated (alkali heath marsh, California bulrush marsh, giant reed breaks, ice plant mats, pampas grass patches, pickleweed mats, poison hemlock patches, and upland mustard) vegetation communities.

#### 3.3.1.1 Grassland Communities

**Annual brome grasslands** contain ripgut brome (*Bromus diandrus*) and soft chess brome (*Bromus hordeaceus*) as dominant or co-dominant species in the herbaceous layer. Annual brome grasslands are typically found on seasonally dry hillsides and valleys in the Central Valley, interior valleys of the Coast Ranges, and along the coast of central and southern California as well as some of the offshore islands. This mix of grasses and forbs is often found on gravelly to deep, fine-grained soils well suited for annual growth (Sawyer et al. 2009). Annual brome grasslands have open to continuous cover less than 0.75 meters (2.5 feet) in height; low cover of emergent trees and shrubs may be present. This community occurs from sea level to 2,200 meters (7,218 feet) above mean sea level (amsl) (Sawyer et al. 2009).

The on-site annual brome grassland is composed primarily of non-native annual grasses and native and non-native broad-leafed forbs. Noxious weeds are also present in disturbed areas adjacent to this habitat type. Dominant grasses include soft chess brome, ripgut brome, foxtail chess (*Bromus madritensis*), Italian rye grass, and rattail sixweeks grass. Flowering herbs include western verbena (*Verbena lasiostachys*), scarlet pimpernel (*Anagallis arvensis*), common catchfly (*Silene gallica*), coast morning-glory (*Calystegia macrostegia* ssp. *cyclostegia*), and dove weed.

Annual brome grasslands predominantly occur throughout the southern portion of the site, especially in areas south of the arroyo willow and black willow thickets. The site contains a total of 22.806 acres of annual brome grasslands or approximately 44 percent of the grassland throughout the Project site. The annual brome grasslands dominate the mesas, which are also occupied by purple needle grass grassland, wild oats grassland, and salt grass flats. A total of 0.439 acres of disturbed annual brome grassland occur throughout the Project site.

**Purple needle grass grassland** occurs along the entire coast of California, the Central Valley, and the western Mojave. It includes the perennial bunchgrass purple needlegrass (*Stipa pulchra*) as a dominant or co-dominant grass. These communities are mid-height grasslands, typically up to 2 feet tall. According to Holland (1986), native and introduced annuals grow between bunches of purple needlegrass and often exceed it in cover. Trees or shrubs may also be present within the

## Grassland Assessment and Vegetation Mapping Survey Report

grassland (NatureServe 2009). Purple needle grass grassland usually occurs on deep soils that have a high clay content. Sites that are moist or waterlogged during winter and very dry during summer are favorable (Holland 1986). Serpentine soils often support purple needle grass grassland since introduced annual species (except *Avena barbata*) are unable to grow on serpentine soils (Holland 1986).

**Table 11**  
**Summary of Vegetation Communities and Acres**

Vegetation Category and Vegetation Community		MCV2 Global Rank/State Rank	Mesa Acres	Lowland Acres
<b>NATIVE AND NATURALIZED VEGETATION COMMUNITIES</b>				
<b>Grassland/Forb Dominated</b>				
Alkali Heath Marsh	Undisturbed (ASH)	G4/S3	0.156	3.160
	Disturbed (D-ASH)	-/-	0.000	2.401
Alkali Heath Marsh – Pickleweed Mats	Disturbed (D-ASH-PWM)	-/-	0.000	1.153
Annual Brome Grassland	Undisturbed (ABG)	-/-	22.806	0.000
	Disturbed (D-ABG)	-/-	0.439	0.000
California Bulrush Marsh	Undisturbed (CBM)	G5/S4?	0.000	0.211
Pickleweed Mats	Undisturbed (PWM)	G4/S3	0.000	16.857
	Disturbed (D-PWM)	-/-	0.000	6.710
Purple Needle Grass Grassland	Undisturbed (PNGG)	G4/S3?	10.027	0.000
Rabbitsfoot Grassland	Undisturbed (RFG)	-/-	0.023	0.000
Salt Grass Flats	Undisturbed (SGF)	G5/S4	3.797	0.236
	Disturbed (D-SGF)	-/-	0.105	0.000
Wild Oats Grassland	Undisturbed (WOG)	-/-	14.086	0.000
Woolly Marbles	Undisturbed (WM)	-/-	0.021	0.000
<b>Subtotal</b>			<b>51.460</b>	<b>30.728</b>
<b>Scrub</b>				
Arroyo Willow Thicket	Undisturbed (ARWT)	G4/S4	3.803	0.000
	Disturbed (D-ARWT)	-/-	0.000	0.009
California Brittle Bush Scrub	Undisturbed (CBBS)	G4/S3	7.445	0.023
	Disturbed (D-CBBS)	-/-	16.258	0.436
	Restored (R-CBBS)	G4/S3	0.133	0.000
California Brittle Bush Scrub – California Buckwheat Scrub	Disturbed (D-CBBS-CBS)	-/-	1.133	0.000
California Brittle Bush Scrub – Coastal Prickly Pear Scrub	Undisturbed (CBBS-CPPS)	-/-	14.188	0.000
	Disturbed (D-CBBS-CPPS)	-/-	6.084	0.000
California Brittle Bush Scrub – Mulefat Thicket	Undisturbed (CBBS-MFT)	-/-	0.721	0.000
	Disturbed (D-CBBS-MFT)	-/-	1.960	0.000
California Brittle Bush Scrub – Menzies's Golden Bush Scrub	Undisturbed (CBBS-MGBS)	-/-	0.125	0.000
	Disturbed (D-CBBS-MGBS)	-/-	0.047	0.000

# Grassland Assessment and Vegetation Mapping Survey Report

**Table 11**  
**Summary of Vegetation Communities and Acres**

Vegetation Category and Vegetation Community		MCV2 Global Rank/State Rank	Mesa Acres	Lowland Acres
California Buckwheat Scrub	Undisturbed (CBS)	G5/S5	0.911	0.000
California Sagebrush Scrub	Undisturbed (CSS)	G5/S5	1.081	0.000
Coastal Prickly Pear Scrub	Undisturbed (CPPS)	G3/S3	0.158	0.000
	Disturbed (D-CPPS)	-/-	0.048	0.139
Coastal Prickly Pear Scrub – Mulefat Thicket	Disturbed (D-CPPS-MFT)	-/-	0.259	0.000
Coyote Brush Scrub	Disturbed (D-CYS)	-/-	0.095	0.305
Menzies's Golden Bush Scrub	Undisturbed (MGBS)	G4?/S4?	0.030	1.133
	Disturbed (D-MGBS)	-/-	0.282	2.661
Menzies's Golden Bush Scrub – Mulefat Thicket	Disturbed (D-MGBS-MFT)	-/-	0.341	0.000
Mulefat Thicket	Undisturbed (MFT)	G5/S4	2.135	5.809
	Disturbed (D-MFT)	-/-	4.803	20.172
Quailbush Scrub	Undisturbed (QS)	G4/S4	0.320	0.063
Subtotal			62.360	30.750
<b>Scrub-Grassland/Forb Dominated</b>				
Mulefat Thicket-Salt Grass Flats	Undisturbed (MFT-SGF)	-/-	0.134	0.000
Subtotal			0.134	0.000
<b>Scrub-Invasive and Ornamental</b>				
Mulefat Thicket – Pampas Grass Patch	Disturbed (D-MFT-PGP)	-/-	0.000	0.458
Mulefat Thicket – Upland Mustard	Disturbed (D-MFT-UM)	-/-	0.000	0.193
Subtotal			0.000	0.651
<b>Woodlands and Trees</b>				
Black Willow Thicket	Undisturbed (BWT)	G4/S3	2.435	4.570
	Disturbed (D-BWT)	-/-	0.000	11.535
Subtotal			2.435	16.105
<b>Woodlands and Trees-Scrub</b>				
Black Willow Thicket – Mulefat Thicket	Disturbed (D-BWT-MFT)	-/-	0.000	3.698
Subtotal			0.000	3.698
<b>Non-Vegetated</b>				
Mudflats	MDFT	-/-	0.000	1.401
Subtotal			0.000	1.401
<b>INVASIVE AND ORNAMENTAL VEGETATION</b>				
Eucalyptus Groves	EG	-/-	0.985	0.000
Giant Reed Breaks	GRB	-/-	0.244	1.126
Golden Wattle Acacia	GWA	-/-	0.954	0.000
Ice Plant Mats	IPM	-/-	11.587	0.495
Myoporum Stand	MYP	-/-	5.397	1.222
Myoporum Stand – Pepper Tree	MYP – PT	-/-	0.000	0.867
Pampas Grass Patches	PGP	-/-	0.464	5.510
Pepper Tree Stand	PT	-/-	0.379	0.000
Poison Hemlock Patch	PHP	-/-	0.000	3.452

# Grassland Assessment and Vegetation Mapping Survey Report

**Table 11**  
**Summary of Vegetation Communities and Acres**

Vegetation Category and Vegetation Community		MCV2 Global Rank/State Rank	Mesa Acres	Lowland Acres
Poison Hemlock Patch – Upland Mustard	PHP – UM	-/-	0.000	4.904
Upland Mustard	UM	-/-	2.517	0.883
Poison Hemlock Patch – Pickleweed Mats	Disturbed (D-PHP-PWM)	-/-	0.000	0.876
Subtotal			22.527	19.335
<b>WEST NEWPORT OIL FACILITIES AND OPERATION AND MAINTENANCE AREAS</b>				
Debris	Debris	-/-	3.240	0.000
Developed	DVLP	-/-	44.142	21.719
Disturbed	D	-/-	52.919	9.800
Disturbed – Infrequently Maintained – California Brittle Bush Scrub	D-I-CBBS	-/-	0.445	0.000
Disturbed – Maintained – California Brittle Bush Scrub	D-M-CBBS	-/-	10.739	0.063
Stock Pile	StockPile	-/-	0.846	0.000
Subtotal			112.331	31.582
TOTAL*			251.247	134.250

**Global Ranking** - The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range.

**State Ranking** - The state rank (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.

G1, S1 = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres.

G2, S2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres.

G3, S3 = 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres.

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.

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.

G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world.

S5 = Demonstrably secure to ineradicable in California. No Threat Rank.

**Notes:**

\* - Total acreage is slightly different from Project site due to rounding.

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.
- By adding a ? to the rank: e.g., S2? This represents more certainty than S2S3, but less than S2.

## Grassland Assessment and Vegetation Mapping Survey Report

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According to Holland (1986), Valley Needlegrass Grassland has the following characteristic species; common yarrow (*Achillea millefolium*), blow wives (*Achyrachaena mollis*), mountain dandelion (*Agoseris heterophylla*), wild oat (*Avena fatua*), common goldenstar (*Bloomeria crocea*), ripgut brome, soft chess brome, red brome (*Bromus rubens*), wavyleaf soap plant (*Chlorogalum pomeridianum*), winecup clarkia (*Clarkia purpurea*), Sierra shootingstar (*Dodecatheon jeffreyi*), California melicgrass (*Melica californica*), smallflower melicgrass (*Melica imperfecta*), Indian paintbrush (*Castilleja attenuata*), California plantain (*Plantago hookeriana*), Sandberg bluegrass (*Poa secunda*), nodding needlegrass (*Stipa cernua*), and purple needlegrass. Similar to Holland, the MCV2 (Sawyer et. al. 2009) also identified several associate native forbs and grasses and naturalized annual grasses that co-occur with purple needlegrass as part of the purple needlegrass grassland vegetation community.

On-site purple needle grass grasslands were defined based on the MCV2 (Sawyer et al. 2009) vegetation community membership rules: *Stipa pulchra* usually greater than 10 percent relative cover of the herbaceous layer. The California Coastal Commission (CCC) guidance requires the same relative coverage threshold, but does not provide a lower threshold on patch size. Per the MCV2/CCC definition, purple needle grass grassland was observed and mapped in multiple patches on-site, particularly in the southern portion of the site, where the larger patches occurs. Several smaller patches occur north of the arroyo willow and black willow thickets (i.e., the Large Arroyo). A few patches also occur near developed areas near the West 17<sup>th</sup> Street property entrance. The purple needle grass grasslands found throughout the Newport Banning Ranch contain characteristic grasses; purple needlegrass, bromes, and wild oats, however, they typically only contain a low diversity of non-native forbs including tocalote, filaree, smooth cat's ears, etc. Native characteristic forb species identified by the MVC2 are rare on-site and not often associated with patches or areas containing purple needlegrass. The native forb clustered tarweed (*Deinandra fasciculata*), a forb adapted to disturbance, was occasionally observed in bloom within this community during summer months. The low diversity of native forbs in the purple needle grass grassland is likely due to oil field activities, including but not limited to exploration, drilling, and operation and maintenance activities.

Purple needle grass grassland is the most common native grass species found on Newport Banning Ranch. The site contains a total of 10.027 acres of purple needle grass grassland or 19 percent of the total grassland coverage. Areas mapped as purple needle grass grassland range from 10.9 to 24.5 percent relative coverage, as shown in *Table 11*. The mean number of purple needlegrass individuals within areas mapped as purple needle grass grassland have a range of 3.1 to 10.4 individuals per quadrat and are found to occur in 7.7 percent of the transect quadrats sampled, as shown in *Table 12*.

Areas of purple needle grass grasslands, as defined by MCV2 (Sawyer et al. 2009), and greater than 0.25 acres, have the potential to be good quality habitat in situations where anthropogenic



## Grassland Assessment and Vegetation Mapping Survey Report

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disturbance is limited and/or when located in serpentine soils, presumably based on the presence of other native grasses and forbs as noted by the MCV2 and Holland (1986). The areas (greater than 0.25 acre) or patches (less than 0.25 acres) of purple needlegrass grassland on the Newport Banning Ranch do not contain associate forbs or native grasses that distinguish this community as good quality habitat. In fact, invasive and naturalized grasses and forbs dominant all portions of the site that contain grasslands, even when purple needlegrass is present.

**Rabbitsfoot grassland** contain rabbit patches of rabbitsfoot grass (*Polypogon monspeliensis*). Rabbitsfoot grassland is not recognized by MCV2 (Sawyer et al. 2009) as an herbaceous alliance. However, patches of rabbitsfoot grassland within the survey area were mapped due to the size and extent of their presence. Rabbitsfoot grass is a non-native grass from southern Europe typically found in disturbed wetland-riparian areas. Approximately 0.023 acre of rabbitsfoot grassland occur throughout the Project site.

**Salt grass flats** contain salt grass as the dominant or co-dominant species in the herbaceous layer. There are two membership rules for the salt grass flats alliance: 1) salt grass flats are areas where salt grass provides greater than 50 percent relative cover in the herbaceous layer and has a higher cover than any other single grass species; 2) salt grass flats are areas where salt grass provides greater than 30 percent relative cover in the herbaceous layer and *Sarcocornia* or *Salicornia* spp. if present, occurs in less than 30 percent relative cover (Sawyer et al. 2009).

Salt grass flats have an open to continuous canopy less than 1 meter (3 feet) in height within the herbaceous layer. Throughout California, the salt grass flats alliance occurs in coastal marshes and in inland habitats including swales, playas, and terraces, and along washes that are typically intermittently flooded. Soils are alkaline, often deep, and have an impermeable layer making them poorly drained. Ground surfaces often have salt accumulations when the soil is dry (Sawyer et al. 2009).

The salt grass flats alliance occurs throughout most of temperate North America. In California, salt grass flats are found in alkaline or saline environments from the coast to mountains and deserts. Salt grass flats occur from sea level to 1,500 meters (4,921 feet) amsl (Sawyer et al. 2009). Saltgrass is also a well-documented phreatophyte capable of extending roots to depths of 11 feet and as such, is oftentimes an indicator of shallow aquifers or seasonally perched groundwater and not indicative of wetland conditions (Young and Blaney 1942). It is also important to note that *The National Wetland Plant List* was recently updated and the wetland indicator status of saltgrass changed from facultative wet (FACW) to facultative (FAC [Lichvar 2012]). This means that saltgrass has essentially an equal probability of occurring in uplands as in wetlands, and as such, is not a reliable indicator of wetlands in the absence of indicators of wetland hydrology or hydric soils.

## Grassland Assessment and Vegetation Mapping Survey Report

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Some species typically associated with the salt grass flats alliance include water beard grass (*Polypogon viridis*), beach bur (*Ambrosia chamissonis*), yerba mansa (*Anemopsis californica*), fat-hen (*Atriplex prostrata*), saltwort (*Batis maritima*), ripgut brome, brass buttons (*Cotula coronopifolia*), common spikerush (*Eleocharis palustris*), alkali heath (*Frankenia salina*), meadow barley, foxtail barley, marsh jaumea (*Jaumea carnosa*), arctic rush (*Juncus arcticus*), Cooper's rush (*Juncus cooperi*), broadleaved pepperweed (*Lepidium latifolium*), creeping rye grass (*Leymus triticoides*), California sealavender (*Limonium californicum*), scratchgrass (*Muhlenbergia asperifolia*), strigose sicklegrass (*Parapholis strigosa*), western wheat grass (*Elymus smithii*), Sandberg bluegrass (*Poa secunda*), Nuttall's alkaligrass (*Puccinellia nuttalliana*), pickleweed (*Sarcocornia pacifica*), alkali sacaton (*Sporobolus airoides*), and seaside arrowgrass (*Triglochin maritima*) (Sawyer et al. 2009). With the exception of brome grasses, none of these species occur within the areas mapped as saltgrass flats and as noted for the alkali heath, none of these areas should be considered wetlands in the absence of a wetland determination for the area.

In the Project site, 4.033 acres or 7.8 percent of grassland of salt grass flats occur in stands of variable sizes on mesa areas and adjacent to slightly depressed areas. Salt grass was observed growing in patchy areas within purple needle grass grassland and annual brome grassland, which are upland communities. The salt grass flats observed on the mesas were often near areas containing a thin layer of surface tar. It is thought that the impermeable tar makes the area drain poorly, thus allowing for rain water evaporation and salt accumulations. The physiological adaptation of salt grass allows it to occupy saline environments, thus occupying these tar areas. In addition, one disturbed salt grass flat area was observed along the southern boundary adjacent to Highway 1. A total of 0.105 acre of disturbed salt grass flats occur throughout the Project site.

**Wild oats grassland** includes wild oats (*Avena barbata* or *A. fatua*) as dominant or co-dominant species in the herbaceous layer (Sawyer et al. 2009). Wild oats are annual grasses from Eurasia that have a Cal-IPC rank of Moderate, indicating they have a substantial and apparent, but generally not severe, ecological impact (Sawyer et al. 2009; Cal-IPC 2012). This community forms an open to continuous herbaceous layer less than 1.2 meters (3.9 feet) and may include emergent trees and shrubs at low cover. It occurs in waste places, rangelands, and openings in woodlands from 10 to 1,200 meters (33 to 3,937 feet).

Wild oats grassland occurs in the south eastern portion of the site surrounded by annual brome grasslands, salt grass flats, and purple needle grass grassland. This community comprises 14.086 acres or 27 percent of the grasslands and is dominated by wild oat (*Avena barbata*) and includes ripgut brome, soft brome, longbeak stork's bill, and scattered Italian rye grass. Wild oat grasslands are known to have some ecological distinctions from annual brome grasslands. Wild oat grasslands dominate grassland areas with years of accumulated thatch. Wild oats grow slower

## Grassland Assessment and Vegetation Mapping Survey Report

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and produce less seed under high-frequency clipping (or grazing) regimes than do the shorter bromes (Sawyer et al. 2009).

### 3.3.1.2 *Forb-Dominated Communities*

**Alkali heath marsh** contains alkali heath (*Frankenia salina*) as the dominant or co-dominant species in the herbaceous and subshrub layers. Alkali heath marshes occur where alkali heath is greater than 30 percent relative cover in the herbaceous layer, and sometimes where it is co-dominant with salt grass or other herbs or subshrubs (Sawyer et al. 2009).

Alkali heath marshes occur in western California in coastal salt marshes, brackish marshes, alkali playas, and alkali meadows. These marshes have an open to continuous canopy with the herbaceous and subshrub layers less than 0.6 meter (20 feet) in height. Alkali heath marshes occur at elevations less than 300 meters (984 feet) amsl (Sawyer et al. 2009).

Some species typically associated with the alkali heath marsh alliance, as defined by Sawyer et al. 2009, include Parish's glasswort (*Arthrocnemum subterminale*), saltbush (*Atriplex* spp.), Pacific bentgrass (*Agrostis avenacea*), saltwort (*Batis maritima*), alkali weed (*Cressa truxillensis*), salt grass, foxtail barley, goldfields (*Lasthenia* spp.), pepper grass (*Lepidium* spp.), California sealavender, shore grass (*Distichlis littoralis*), and pickleweed.

In the Project site, alkali heath marshes occur in stands of variable sizes on flat or in slightly depressed areas. A total of 3.316 acres of alkali heath marsh occurs within the Project site. On the mesas, alkali heath grows in patchy areas surrounded by disturbed habitat dominated by predominately upland non-native grass and forb species. Large areas of alkali heath marsh occur throughout the lowlands, where it is more likely to be associated with wetlands associated with the Santa Ana River floodplain and adjacent depressed areas. A total of 2.401 acres of disturbed alkali heath marsh occur throughout the Project site. Additionally, 1.153 acres of co-dominant disturbed alkali heath marsh and pickleweed mats occur in the Vegetation Verification Survey Area.

**California bulrush marsh** contains California bulrush (*Schoenoplectus californicus*) as the dominant or co-dominant species in the herbaceous layer. It has a continuous or intermittent herb canopy of less than 4 meters (13 feet) in height. The California bulrush marsh alliance is California bulrush marsh greater than or equal to 10 percent absolute cover in the herbaceous layer. If present, hardstem bulrush (*Schoenoplectus acutus*) occurs in less than 50 percent relative cover, although it can be co-dominant with California bulrush (Sawyer et al. 2009).

The California bulrush marsh alliance often occurs in brackish to fresh water marshes, bars, shores, and channels of river mouth estuaries. California bulrush marsh is widespread throughout

## Grassland Assessment and Vegetation Mapping Survey Report

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California in emergent marshes. Soils have a high organic presence and are poorly aerated. This alliance occurs between sea level and 200 meters (656 feet) amsl (Sawyer et al. 2009).

Species associated with the California bulrush marsh alliance include Indian hemp dogbane (*Apocynum cannabinum*), salt marsh bulrush (*Bolboschoenus maritimus*), common water hyacinth (*Eichhornia crassipes*), western goldentop (*Euthamia occidentalis*), floating primrose willow (*Ludwigia peploides*), dotted smartweed (*Persicaria punctata*), common reed (*Phragmites australis*), hardstem bulrush, narrowleaf cattail (*Typha angustifolia*), southern cattail (*Typha domingensis*), and broadleaf cattail (*Typha latifolia*). Emergent species may include common buttonbush (*Cephalanthus occidentalis*), California wildrose (*Rosa californica*), or arroyo willow (*Salix lasiolepis*) (Sawyer et al. 2009).

In the survey area, California bulrush marshes are found in lowland areas. A total of 0.211 acre of California bulrush marsh occurs within the Project site. The marshes are dominated by California bulrush with some cattails and alkali bulrush (*Bolboschoenus maritimus*).

**Giant reed breaks** include giant reed (*Arundo donax*) as the dominant species in the herbaceous layer. In addition, giant reed breaks include giant reed as greater than 60 percent relative cover in the herbaceous and shrub layers (Sawyer et al. 2009).

Throughout California, the giant reed break alliance occurs along low-gradient streams, riparian areas, ditches, and coastal marshes. This species is an introduced aggressive perennial grass that forms massive thickets of vegetation that can cover several hectares. Giant reed out-competes native plants, forms dense stands, and chokes riverbanks and stream channels. Giant reed breaks have a continuous canopy less than 8 meters (26 feet) in height. They grow to a height of approximately 6 meters (20 feet) and occur from sea level to 500 meters (1,641 feet) amsl (Sawyer et al. 2009). A total of 1.370 acres of giant reed break occurs throughout the Project site.

**Ice plant mats** contain hottentot fig (*Carpobrotus edulis*), sea fig (*Carpobrotus chilensis*), or other ice plant taxa as the dominant or co-dominant species in the herbaceous layer. These species invade coastal bluff scrub, dune mat, dune scrub, and coastal prairies and compete with native plants (Sawyer et al. 2009).

Ice plant semi-natural herbaceous stands have an intermittent to continuous canopy within the herbaceous layer less than 0.5 meter (1.6 feet) in height. Shrubs and emergent trees may be present at low cover. Ice plant mats occur on disturbed land, bluffs, coastal sand dunes, and coastal and alkaline terraces from sea level to 100 meters (328 feet) amsl (Sawyer et al. 2009).

In the Project site, ice plant mats occur in stands of variable sizes in disturbed areas near access roads and oil production work areas. This community forms stands throughout the Project site and covers 12.082 acres. Ice plant was likely planted for either soil stabilization (erosion control)

## Grassland Assessment and Vegetation Mapping Survey Report

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or landscaping. Ice plant is known to spread and invade coastal bluff scrub and compete with native plants for moisture, nutrients, and space (Sawyer et al. 2009).

**Pampas grass patches** invade maritime chaparral and coastal scrub habitats along the coast in the Southern California Coast region, but also occurs elsewhere up to 800 meters (2,625 feet). Pampas grass patches are dominated by purple pampas grass (*Cortaderia jubata*) or Uruguayan pampas grass (*C. selloana*) in the herbaceous and shrub layers with greater than 80 percent relative cover (Sawyer et al. 2009). Both of these species have a California Invasive Plant Council (Cal-IPC) rank of High, indicating they are highly invasive with severe ecological impacts (Sawyer et al. 2009; Cal-IPC 2012). Emergent shrubs and trees may be present within this perennial grassland at low cover. Pampas grass patches occur in coastal land, disturbed areas, estuaries, grasslands, urban areas, and wetlands (Sawyer et al. 2009). In the Project site, 5.974 acres of pampas grass patches occur in disturbed areas, along developed access roads, and in lowlands.

**Pickleweed mats** contain pickleweed (*Sarcocornia pacifica*) as the dominant or co-dominant species in the subshrub and herbaceous layers. There are three membership rules for the pickleweed mat alliance: 1) pickleweed mats are areas where pickleweed occurs in greater than 10 percent absolute cover and sometimes where a higher cover of short annual or perennial grasses is present (if salt grass is greater than or equal to 50 percent relative cover, stands are in the salt grass flats alliance); 2) pickleweed mats are areas where pickleweed occurs in greater than 50 percent relative cover in the herbaceous layer; 3) pickleweed mats are areas where pickleweed occurs in greater than 50 percent relative cover and salt grass occurs in less than 30 percent relative cover in the herbaceous layer (Sawyer et al. 2009).

Pickleweed mats have an intermittent to continuous canopy less than 1.5 meters (4.9 feet) in height. Throughout California, the pickleweed mats alliance occurs from coastal marshes to inland alkaline seeps (Sawyer et al. 2009). The pickleweed mat alliance inhabits coastal California from the Mexico border, to depressions of the San Francisco Bay region, to the Oregon border. Pickleweed mats occur from 0.15 to 2.5 meters (0.49 to 8.2 feet) amsl (Sawyer et al. 2009).

Species associated with the pickleweed mats alliance include spear orache (*Atriplex patula*), fat-hen, saltwort (*Batis maritima*), salt marsh bulrush, brass buttons, swamp pricklegass (*Crypsis schoenoides*), saltmarsh dodder (*Cuscuta salina*), salt grass, watergrass, alkali heath, Oregon gumweed (*Grindelia stricta*), marsh jaumea, *Juncus* spp., broadleaved pepperweed, California sealavender, shore grass, gray willow weed (*Persicaria lapathifolia*), verrucose seapurslane (*Sesuvium verrucosum*), cordgrass (*Spartina foliosa*), seaside arrowgrass, cocklebur (*Xanthium strumarium*), and algae.



## Grassland Assessment and Vegetation Mapping Survey Report

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In the Project site, 16.857 acres of pickleweed mats occur in lowland areas, previously tidal areas, and occasionally on the sloped banks of tidal areas. Pickleweed mats occur in large stands with approximately 95 to 100 percent cover of pickleweed. Intermittent, low-lying, pickleweed areas contain low percentages of alkali heath and bare ground. Pickleweed on sloped banks within the lowland area contain herbaceous cover of salt grass and alkali heath. A total of 6.710 acres of disturbed pickleweed mats occur throughout the Project site.

**Poison hemlock patches** include poison hemlock (*Conium maculatum*) or other non-native invasive plants of the *Umbelliferae* are dominant or co-dominant with other non-native plants in the herbaceous layer. Poison hemlock patches include poison hemlock with greater than 50 percent relative cover in the herbaceous layer (Sawyer et al. 2009).

Poison hemlock patches have an open to continuous canopy less than 2 meters (7 feet) tall in the herbaceous layer. Throughout California, the poison hemlock alliance occurs in moist locations of various topography and is tolerant of semi-shaded areas. Poison hemlock patches occurs from sea level to 1,000 meters (3,281 feet) amsl (Sawyer et al. 2009).

In the Project site, 3.452 acres of poison hemlock patches occur in stands in the lowlands near moist disturbed locations. Additionally, 0.876 acre of disturbed poison hemlock patch co-dominate with pickleweed mats occur in the Vegetation Verification Survey Area.

**Upland mustard** contains black mustard (*Brassica nigra*), common mustard (*Brassica rapa*), Saharan mustard (*Brassica tournefortii*), shortpod mustard, Dyer's woad (*Isatis tinctoria*), or wild radish (*Raphanus sativus*) as the dominant species in the herbaceous layer (Sawyer et al. 2009).

Upland mustard has an open to continuous canopy less than 3 meters (9.8 feet) in height in the herbaceous layer. Throughout California, upland mustard occurs in fallow fields, roadsides, grasslands, levee slopes, riparian areas, disturbed scrublands, and waste places from sea level to 1,500 meters (4,922 feet) amsl (Sawyer et al. 2009).

In the Project site, 3.400 acres of upland mustard occur along developed access roads, at the edge of riparian areas, within California prickly pear scrub, and California sagebrush scrub. The mustard in this community grows in very dense stands, overtop most other plants, and exclude other herbaceous species whether native or non-native. Mustard thrives under regular frequent disturbance (fire, heavy grazing, or disking) and readily spreads throughout these areas (Sawyer et al. 2009). Upland mustard is also co-dominant with poison hemlock and covers 4.904 acres on the Project site.

**Woolly marbles** contain individual patches of woolly marbles (*Psilocarphus brevissimus*). Woolly marbles is not recognized by MCV2 (Sawyer et al. 2009) as an herbaceous alliance.

## Grassland Assessment and Vegetation Mapping Survey Report

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However, stands of woolly marbles within the survey area were mapped due to the size and extent of their presence. Woolly marbles is a native annual herb commonly found in wetland riparian areas. Approximately 0.021 acre of woolly marbles occur throughout the Project site.

### 3.3.2 Scrub Communities

Coastal scrub communities and riparian scrub communities, are general habitat types in the more general scrub community physiognomic group. Coastal scrub within the survey area includes seven individual vegetation communities: California brittle bush scrub, California buckwheat scrub, California sagebrush scrub, coastal prickly pear scrub, coyote brush scrub, Menzies's golden bush scrub, and quailbush scrub. Riparian scrub within the survey area includes two individual vegetation communities: arroyo willow thickets and mulefat thickets. Each vegetation community is described below.

#### 3.3.2.1 Coastal Scrub Communities

**California brittle bush scrub** occurs in coastal Southern California up to 1,200 meters (3,937 feet) (Sawyer et al. 2009). California brittle bush scrub includes California brittlebush (*Encelia californica*) as the dominant or co-dominant in the shrub canopy with at least 30 percent relative cover in the shrub canopy. California brittle bush scrub has an intermittent to continuous shrub canopy less with a variable herbaceous layer (Sawyer et al. 2009). Some species typically associated with the California brittle bush scrub alliance include California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), black sage (*Salvia mellifera*), and bush monkeyflower (*Diplacus aurantiacus*) (Sawyer et al. 2009). California brittle bush scrub occurs on sunny, steep slopes on sandstone, volcanic, or shale substrates (Sawyer et al. 2009).

California brittle bush scrub, disturbed California brittle bush scrub, California brittle bush scrub with co-dominant shrub species, and disturbed California brittle bush scrub with co-dominant species occur in various size patches throughout the survey area. A total of 7.468 acres of good quality (non-disturbed) shrubland of California brittle bush scrub dominated by California brittlebush with a relative cover of 30 percent or greater with an intermittent to closed canopy occur of 50 percent or greater associate shrubs or succulents. Mean California brittlebush shrubs ranged from 60 cm to 80 cm in height. An associated shrub species occurring at lower cover includes Menzies' goldenbush (*Isocoma menziesii*).

A total of 16.695 acres of disturbed California brittle bush scrub occur throughout the Project site. This community occurs adjacent to developed roads, adjacent to active oil operations, and adjacent to disturbed areas with high percentages of non-native species. Within the community, California brittlebush has an open canopy with high percentages of bare ground and non-native species including mustard, bromes, totalote, sweet fennel (*Foeniculum vulgare*), and iceplant

## Grassland Assessment and Vegetation Mapping Survey Report

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(*Carpobrotus* sp.). Some of these areas were previously mapped (GLA 2009) as Coyote brush scrub, ruderal, non-native grassland, and maritime succulent scrub, thus the recent survey documents regrowth of California brittlebush in these areas. Additionally, 10.802 acres of disturbed maintained California brittle bush scrub occur throughout the Project site. A total of 0.445 acre of disturbed infrequently maintained California brittle bush scrub occur throughout the Project site. A total of 0.133 acre of restored California brittle bush scrub occur in the northeast corner of the Project site.

Additionally, California brittle bush scrub and disturbed California brittle bush scrub occur with co-dominant communities including coastal prickly pear scrub (14.188 acres undisturbed and 6.084 acres disturbed), Menzies's golden bush scrub (0.125 acre undisturbed and 0.047 acre disturbed), mulefat thickets (0.721 acres undisturbed and 1.960 acres disturbed), and California buckwheat scrub (1.133 acres disturbed). The undisturbed California brittle bush scrub community occurs with the co-dominant community with a closed canopy and lacks significant percent cover of non-native species. Disturbed California brittle bush scrub and co-dominant communities have high percent cover of bare ground from anthropogenic disturbances or soil erosion and a high percent cover of non-native species.

**California buckwheat scrub** inhabits the broadest elevation range and extends the farthest inland of all coastal scrub alliances (Borchert et al. 2004). The alliance occurs in California from the Central Coast south to Baja California, Mexico and in the Mojave Desert from sea level to 2,300 meters (7,545 feet) (NatureServe 2010). California buckwheat scrub alliance communities include California buckwheat (*Eriogonum fasciculatum*) as the dominant or co-dominant shrub in the canopy. California buckwheat scrub has a continuous or intermittent shrub canopy less than 2 meters (7 feet) in height with a variable ground layer that may be grassy (Sawyer et al. 2009).

Species associated with the California buckwheat scrub alliance typically include California sagebrush, chaparral mallow (*Malacothamnus fasciculatus*), Menzies's goldenbush, coyote brush, deerweed (*Acmispon glaber*), black sage (*Salvia mellifera*), and white sage (*S. apiana*) (Sawyer et al. 2009). The California buckwheat scrub alliance occurs on dry slopes, washes, and canyons as well as coastal bluffs (Gordon and White 1994). The alliance occurs on relatively gentle, south-facing lower slopes and toe-slopes. The California buckwheat scrub alliance occupies mostly shallow and moderately deep, well-drained and somewhat excessively drained soils. Soils range from coarse sand to moderately fine sandy clay loam (Klein and Evens 2005). A total of 0.911 acre of California buckwheat scrub occurs along the steep western slopes of the coastal bluff and the south-facing slope of the Middle Arroyo.

**California sagebrush scrub** contains California sagebrush (*Artemisia californica*) as the sole or dominant shrub species. It has a continuous or intermittent shrub canopy of less than 2 meters (7

## Grassland Assessment and Vegetation Mapping Survey Report

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feet) in height with a variable ground layer. There are three membership rules for the California sagebrush scrub alliance: 1) California sagebrush scrub is present where California sagebrush occurs in greater than 60 percent relative cover in the shrub canopy; 2) California sagebrush scrub is present where California sagebrush is three times the cover of coyote brush and other shrub species; 3) California sagebrush scrub occurs where California sagebrush provides greater than 60 percent cover in the shrub canopy, although laurel sumac (*Malosa laurina*) or bush monkey flower sometimes occurs in greater than 30 percent relative cover (Sawyer et al. 2009).

The California sagebrush scrub alliance often occurs on steep, north-facing slopes and rarely in flooded low-gradient deposits along streams in shallow alluvial or colluvial-derived soils. Soils are alluvial or colluvial derived and shallow (Sawyer et al. 2009). California sagebrush scrub generally grows in areas with a long summer dry season with approximately 35 centimeters (14 inches) of annual precipitation that generally falls between November and April (NatureServe 2009).

California sagebrush scrub occurs along the central and south coast of California, as well as on the Channel Islands. Inland, this alliance occurs along the base of the Transverse and Peninsular ranges. In San Benito County, California, sagebrush scrub occurs in the central coastal interior mountains (NatureServe 2009). This alliance occurs between sea level and 1,200 meters (3,937 feet).

Species typically associated with the California sagebrush scrub include chamise (*Adenostoma fasciculatum*), bush monkey flower, California brittlebush, goldenhills (*Encelia farinosa*), California buckwheat, chaparral yucca (*Hesperoyucca whipplei*), Menzies's goldenbush, heartleaf keckiella (*Keckiella cordifolia*), coyote brush, deerweed, coastal prickly pear (*Opuntia littoralis*), white sage, black sage, purple sage (*Salvia leucophylla*), and poison oak (*Toxicodendron diversilobum*) (Sawyer et al. 2009).

California sagebrush scrub occurs in two areas within the property for a total of 1.081 acres. Associated shrubland species within the community include California buckwheat and coyote brush.

**Coastal prickly pear scrub** occurs along the coasts of Southern California, Baja California, and Mexico. This alliance can also be found on the Channel Islands (NatureServe 2010). Coast prickly pear scrub extends from sea level up to 1,200 meters (3,937 feet) (Sawyer et al. 2009; NatureServe 2010). Coast prickly pear scrub alliance communities include coastal prickly pear (*Opuntia littoralis*) and/or other cacti as dominant or co-dominant in the canopy. Coast prickly pear scrub has a two-tiered intermittent or continuous shrub canopy less than 2 meters (7 feet) in height with an open to continuous, diverse ground layer (Sawyer et al. 2009).

## Grassland Assessment and Vegetation Mapping Survey Report

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Species typically associated with the coast prickly pear scrub alliance include California sagebrush, California brittlebush, California buckwheat, and black sage. Emergent individuals of taller shrubs or trees, including lemonade berry (*Rhus integrifolia*) and blue elderberry (*Sambucus nigra*), may occur within this alliance (Sawyer et al. 2009). The coast prickly pear scrub alliance occurs on headlands and on steep slopes that are often south-facing (Sawyer et al. 2009; NatureServe 2010). This alliance occupies mostly shallow loamy or clay soils with a very low water-holding capacity that may be rocky (NatureServe 2010; Sawyer et al. 2009).

Coastal prickly pear scrub, disturbed coastal prickly pear scrub, and coastal prickly pear scrub with co-dominant shrub species, and disturbed coastal prickly pear scrub with co-dominant species occur in various size patches throughout the survey area. A total of 0.158 acre of coastal prickly pear scrub dominated by coastal prickly pear and coast cholla (*Cylindropuntia prolifera*) with a relative cover of 50 percent or greater with continuous closed canopy occur within the Project site. Associated shrub species occurring at lower cover include California sagebrush and California brittlebush. A total of 0.186 acre of disturbed California prickly pear scrub occur throughout the Project site.

Additionally, coastal prickly pear scrub and disturbed coastal prickly pear scrub occur with co-dominant communities including California brittle bush scrub (14.1883 acres undisturbed and 6.084 acres disturbed) and mulefat thickets (0.259 acre disturbed). The undisturbed coastal prickly pear scrub community occurs with the co-dominant community with a closed canopy and lacks significant percent cover of non-native species. Disturbed coastal prickly pear scrub and co-dominant communities have high percent cover of bare ground from anthropogenic disturbances or soil erosion and a high percent cover of non-native species.

**Coyote brush scrub** includes coyote brush as the dominant species (greater than 50 percent absolute cover) in the shrub layer. In addition, coyote brush scrub includes coyote brush as greater than 15 percent shrub cover over a grassy understory with coyote brush relative cover greater than 50 percent among shrub species. Coyote brush scrub also includes both quailbush and coyote brush with relative cover of both species between 30 percent and 60 percent in the shrub canopy (Sawyer et al. 2009).

Coyote brush scrub has a variable shrub canopy less than 3 meters (10 feet) in height with a variable herbaceous ground layer. Throughout California, the coyote brush scrub alliance occurs on streamsid es, stabilized dunes of coastal bars, river mouths, spits along the coastline, coastal bluffs, open slopes, ridges, and terraces. Soils are variable, from relatively heavy clay to sandy (Sawyer et al. 2009).

The coyote brush scrub alliance inhabits the entire coast of California and extends into southern Oregon. Inland, this alliance occurs in the interior of the Coast Ranges and in the Transverse

## Grassland Assessment and Vegetation Mapping Survey Report

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Ranges of the Los Padres National Forest in southern California. Coyote brush scrub occurs from sea level to 1,500 meters (4,921 feet) above mean sea level (amsl) (Sawyer et al. 2009).

Some species often associated with the coyote brush scrub alliance include California sagebrush, blueblossom (*Ceanothus thyrsiflorus*), beaked hazelnut (*Corylus cornuta*), bush monkey flower, California buckwheat, seaside woolly sunflower (*Eriophyllum staechadifolium*), California coffeeberry (*Frangula californica*), coast silktassel (*Garrya elliptica*), salal (*Gaultheria shallon*), oceanspray (*Holodiscus discolor*), deerweed, yellow bush lupine (*Lupinus arboreus*), California wax myrtle (*Morella californica*), California blackberry (*Rubus ursinus*), white sage, purple sage, and poison oak (Sawyer et al. 2009). In the Project site, 0.400 acre of disturbed coyote brush scrub occurs in stands surrounded by disturbed areas with high percentages of non-native species.

**Menzies's golden bush scrub** includes Menzies's goldenbush (*Isocoma menziesii*) as the dominant or co-dominant species (greater than 50 percent relative cover) in the shrub layer (Sawyer et al. 2009). Menzies's golden bush scrub occurs in southern California along the coast and in the southern California mountains and valleys. It often occurs in sandy areas, including alluvial fans, arroyos, and stream terraces, with frequent disturbance. Menzies's golden bush scrub has an open to intermittent shrub canopy less than 1 meter (3 feet) in height with an open to continuous, diverse, and grassy herbaceous layer (Sawyer et al. 2009). It occurs from sea level to 1,200 meters (3,937 feet) amsl (Sawyer et al. 2009). Some species typically associated with the Menzies's golden bush scrub alliance include California sagebrush, broom baccharis (*Baccharis sarathroides*), California matchweed (*Gutierrezia californica*), and Virginia glasswort (*Salicornia depressa*) (Sawyer et al. 2009).

Menzies's golden bush scrub, disturbed Menzies' golden bush scrub, Menzies's golden bush scrub with co-dominant shrub species, and disturbed Menzies's golden bush scrub with co-dominant species occur in various size patches throughout the survey area. A total of 1.163 acres of Menzies's golden bush scrub dominated by Menzies' goldenbush with a relative cover of 50 percent or greater with continuous closed canopy occur within the Project site. Associated shrub species occurring at lower cover include Eastwood's goldenbush (*Ericameria fasciculata*) and California brittlebush.

A total of 2.943 acres of disturbed Menzies' golden bush scrub occurs throughout the Project site. This community occurs adjacent to developed roads, adjacent to active oil operations, and adjacent to disturbed areas with high percentages of non-native species. Within the community, Menzies' goldenbush has an open canopy with high percentages of bare ground and non-native species.



## Grassland Assessment and Vegetation Mapping Survey Report

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Additionally, Menzies' golden bush scrub and disturbed Menzies' golden bush scrub occur with co-dominant communities including California brittle bush scrub (0.047 acre disturbed) and mulefat thickets (0.341 acre disturbed). The undisturbed Menzies' golden bush scrub community occurs with the co-dominant California brittle bush scrub community with a closed canopy and lacks significant percent cover of non-native species. Disturbed Menzies' golden bush scrub and co-dominant communities have high percent cover of bare ground from anthropogenic disturbances or soil erosion and a high percent cover of non-native species.

**Quailbush scrub** includes quailbush as greater than 50 percent of the relative cover in the shrub canopy. Quailbush scrub has an open to intermittent shrub canopy less than 5 meters (16 feet) in height with a variable herbaceous ground layer. Throughout southern California, the quailbush scrub alliance occurs on gentle to steep slopes from coastal shrublands, as alkali meadows, flats, washes, and wetlands, and inland at desert washes and oases. It is often found in disturbed areas where soils are alkaline or saline clays (Sawyer et al. 2009).

Some species often associated with the quailbush scrub alliance include California sagebrush, coyote brush, mulefat, California sunflower, green molly (*Kochia americana*), laurel sumac, myoporum (*Myoporum laetum*), arrowweed (*Pluchea sericea*), honey mesquite (*Prosopis glandulosa*), lemonade berry, and tamarisk (*Tamarix* spp.). In the Project site, a total of 0.383 acre of quailbush scrub occurs in isolated patches.

### 3.3.2.2 Riparian Scrub Communities

**Arroyo willow thickets** include arroyo willow (*Salix lasiolepis*) as the dominant or co-dominant shrub or tree in the canopy. Arroyo willow thickets have an open to continuous canopy less than 10 meters (33 feet) in height with a variable herbaceous ground layer. Arroyo willow thickets occur along stream banks and benches, on slope seeps, and on stringers along drainages (Sawyer et al. 2009).

Some species often associated with the arroyo willow thickets alliance include big leaf maple (*Acer macrophyllum*), coyote brush, mulefat (*Baccharis salicifolia*), common buttonbush (*Cephalanthus occidentalis*), American dogwood (*Cornus sericea*), wax myrtle (*Morella californica*), California sycamore (*Platanus racemosa*), black cottonwood (*Populus trichocarpa*), Fremont cottonwood (*Populus fremontii*), willows (*Salix* spp.), and blue elderberry (Sawyer et al. 2009).

Arroyo willow thickets occur in the riparian areas within the Large Arroyo within the southern portion of the property and along the eastern property boundary. In the Project site, this community covers 3.803 acres and is dominated by arroyo willow and sometimes includes a low

## Grassland Assessment and Vegetation Mapping Survey Report

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cover of coyote brush, mulefat, and black willows (*Salix gooddingii*). A total of 0.009 acre of disturbed arroyo willow thickets occur throughout the Project site.

**Mulefat thickets** include mulefat (*Baccharis salicifolia*) as the dominant or co-dominant species in the shrub canopy. There are two membership rules for the mulefat thicket alliance: 1) mulefat thickets occurs where mulefat comprises greater than 50 percent relative cover in the shrub canopy; 2) mulefat thicket occurs where mulefat comprises greater than 30 percent relative cover in the shrub canopy with blue elderberry (Sawyer et al. 2009).

Throughout California, the mulefat thickets alliance occur in canyon bottoms, irrigation ditches, floodplains, lake margins, and stream channels. It has a continuous two-tiered shrub canopy at less than 2 meters (7 feet) in height, or less than 5 meters (16 feet) with a sparse herbaceous layer. This alliance occurs on mixed alluvium soils between sea level and 1,250 meters (4,101 feet) amsl (Sawyer et al. 2009).

Species often associated with mulefat thickets include California sagebrush, willow baccharis (*Baccharis salicina*), coyote brush, tree tobacco (*Nicotiana glauca*), laurel sumac, arrowweed, blackberry (*Rubus* spp.), narrowleaf willow (*Salix exigua*), arroyo willow, blue elderberry, and tamarisk. Sparse emergent trees, such as California foothill pine (*Pinus sabiniana*), California sycamore, Fremont cottonwood, oaks (*Quercus* spp.), and willows, may occur (Sawyer et al. 2009).

Mulefat thickets, mulefat thickets with co-dominant shrub species, and disturbed mulefat thickets with co-dominant species occur in various size patches throughout the survey area. A total of 7.944 acres of mulefat thickets dominated by mulefat with a relative cover of 50 percent or greater with continuous closed canopy occur within the Project site. Mulefat shrubs had a mean of 3 meters in height. A total of 24.975 acres of disturbed mulefat thickets occur throughout the Project site.

Additionally, disturbed mulefat thickets occur with co-dominant communities including black willow thicket (3.698 acres disturbed), California brittle bush scrub (0.721 acre undisturbed and 1.960 acres disturbed), coastal prickly pear scrub (0.259 acre undisturbed), salt grass flats (0.134 acre undisturbed), pampas grass patch (0.458 acre disturbed), and upland mustard (0.193 acre disturbed). Disturbed mulefat thickets with co-dominant communities have high percent cover of bare ground from anthropogenic disturbances or soil erosion and a high percent cover of non-native species including bromes, mustard, and iceplant.

## Grassland Assessment and Vegetation Mapping Survey Report

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### 3.3.3 Woodlands and Tree Clusters

The tree-dominated physiognomic group in the survey area includes two general habitat types: woodlands and tree clusters. Within these two general habitat types in the survey area are five communities: black willow thickets, eucalyptus groves, golden wattle acacia, myoporum groves, and pepper tree stand. The vegetation communities are described below.

**Black willow thickets** occur in the inner North Coast, the Central Valley, the foothills of the Cascade Ranges, the foothills of the Sierra Nevada, South Coast, montane Penninsular Ranges, and the Mojave and Colorado Deserts. The alliance extends from sea level up to 500 meters (1,640 feet) (Sawyer et al. 2009). Black willow thicket alliance communities include black willow (*Salix gooddingii*) as the dominant or co-dominant tree in the canopy. Black willow thickets have an open to continuous tree canopy less than 30 meters (98 feet) in height with an open to continuous shrub canopy, and variable ground layer (Sawyer et al. 2009).

Species often associated with the black willow thickets alliance include white alder (*Alnus rhombifolia*), Fremont cottonwood, blue elderberry, and willows (*Salix laevigata*, *S. lasiolepis*, *S. lucida* ssp. *lasiandra*). Associated shrubs include coyote brush, mulefat, and American dogwood (Sawyer et al. 2009). The black willow thickets alliance occurs on terraces along large rivers and along rocky floodplains of small, intermittent streams, seeps, and springs, as well as in canyons (Sawyer et al. 2009). A total of 7.005 acres of black willow thickets occur throughout the Project site. A total of 11.535 acres of disturbed black willow thickets occur throughout the Project site. Additionally, 3.698 acres of disturbed black willow thicket with co-dominant mulefat thicket occur within the Project site.

**Eucalyptus groves** contain blue gum (*Eucalyptus globulus*), red gum (*Eucalyptus camaldulensis*), or other gum species as the dominant species in the tree canopy. Eucalyptus groves include *Eucalyptus* species with greater than 80 percent relative cover in the tree layer. The groves have an intermittent to continuous tree canopy less than 50 meters (164 feet) in height. Understory shrub and herbaceous layers are sparse to intermittent. Throughout California, the eucalyptus grove semi-natural woodland stands occur on naturalized upland and stream courses as planted trees, groves, and windbreaks. Eucalyptus groves occur from sea level to 300 meters (984 feet) amsl (Sawyer et al. 2009).

Eucalyptus groves occur along the eastern boundary of the survey area, adjacent to commercial building. This community comprises approximately 0.985 acre of the vegetation cover in the Project site. Plant species occurring in the understory of this community include mustard and non-native grasses such as bromes.

## Grassland Assessment and Vegetation Mapping Survey Report

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[Sydney] **Golden wattle acacia** contain individual trees or stands of Sydney golden wattle (*Acacia longifolia*) trees. Golden wattle acacia is not recognized by MCV2 (Sawyer et al. 2009) as a woodland alliance. However, stands of golden wattle within the survey area were mapped due to the size and extent of their presence. Golden wattle is a non-native tree from New South Wales, Southern Australia, and Victoria. Approximately 0.954 acre of golden wattle occur in various stand sizes throughout the Project site.

**Myoporum groves** contain myoporum (*Myoporum laetum*) as the dominant species in the tree canopy. Myoporum groves occur where Myoporum comprises greater than 60 percent relative cover in the tree layer. The groves have an open to continuous tree canopy less than 18 meters (59 feet) in height. Understory shrubs are infrequent or common and the herbaceous layer is simple to diverse. Throughout central and southern California, myoporum grove semi-natural woodland stands occur in coastal canyons, washes, slopes, riparian areas, and roadsides. Myoporum trees form dense single-species stands in coastal areas (Sawyer et al. 2009). Approximately 6.619 acres of myoporum groves occur in scattered stands of various sizes throughout the survey area. Additionally, 0.867 acres of myoporum groves co-dominated with pepper tree stands occur within the Project site.

**Pepper tree stands** contain pepper trees (*Schinus molle*, *S. terebinthifolius*) as the dominant species in the tree canopy with greater than 60 percent relative cover in the tree layer. Pepper tree groves form an open to continuous canopy less than 18 meters (59 feet) high with infrequent to common shrubs and a simple to diverse herbaceous layer. Both Peruvian peppertree (*S. molle*) and Brazilian peppertree (*S. terebinthifolius*) have a Cal-IPC rating of limited, indicating they are invasive, but have minor ecological impacts (Cal-IPC 2012). Throughout central and southern California, pepper tree semi-natural woodland stands occur in coastal canyons, washes, slopes, riparian areas, and along roadsides. Peruvian trees occur in riparian areas in Southern California sometimes with Canary Island date palm (*Phoenix canariensis*) and Washington fan palm (*Washingtonia robusta*) as associated species (Sawyer et al. 2009). Approximately 0.379 acre of pepper tree groves occur in scattered stands of various sizes throughout the survey area. Additionally, 0.867 acres of pepper tree stands co-dominated with myoporum groves occur within the Project site.

### 3.3.4 Non-Vegetated Areas

**Mudflats** are not recognized in MCV2 or NCL. They are characterized as un-vegetated areas containing fine-grained sediment (mud) that are sometimes flooded and occupy 1.401 acres of the Project site. Mudflats occur in tidal areas and in freshwater lake and river systems. Mudflats are considered “special aquatic sites” and are protected under the Clean Water Act. Although mudflats are characterized in part by their absence of vegetation, some plant species do occur there, including around the margins.

## Grassland Assessment and Vegetation Mapping Survey Report

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### 3.3.5 West Newport Oil Facilities and Operation and Maintenance Areas

**Debris** areas contain concrete pieces, metal pipes, rebar, and piled soil with scattered vegetation including mustard, castor bean (*Ricinus communis*), tree tobacco, mulefat, giant reed, California brittlebush, bromes, myoporum, Menzies's goldenbush, hottentot fig, sweet fennel, coyote brush, clustered tarweed, and telegraph weed (*Heterotheca grandiflora*). Three of the four debris areas contained California brittlebush with a maximum 10 percent cover. Representative photographs of each debris area are provided in Appendix D. Debris covers 3.240 acres of the Project site.

**Developed** areas within the Project site are disturbed areas that did not contain elements of natural vegetation and occupy 65.861 acres. Within the survey area, developed areas included anthropogenic disturbances for dirt access roads, impervious roads, graded areas, parking areas, built structures, oil field operations facilities, and associated infrastructure. Some areas characterized as developed within the survey area include a small amount of vegetation, however these areas have been graded or otherwise physically altered such that conditions are improbable for reestablishing a vegetation community. Developed areas are not recognized in MCV2 or NCL (Sawyer et al. 2009 and CDFW 2010).

A total of 62.719 acres of **Disturbed** areas were mapped within the survey area. These areas are adjacent to oil production facilities, within oil production facilities, abandoned oil production facilities, adjacent to dirt access roads and paved roads, show evidence of maintenance mowing in recent years, high percentage of non-native species, and high percentages of bare ground from erosional features and anthropogenic impacts. Disturbed areas have been physically disturbed or invaded by non-native species, such that few or no native plant species remain. Disturbed was also used as a qualifier for any native vegetation community with disturbance and/or non-native species presence (such as D-CBBS). However, a disturbed area (when not used as a qualifier) is no longer recognizable as a native or naturalized vegetation community, *with the exception of D-M-CBBS and D-I-CBBS, which are maintained and are not representative on a vegetation community*. Non-native plant species can out compete native vegetation in disturbed areas, thus altering the composition of the vegetation community. The presence of non-native species can lessen the habitat quality and reduce a vegetation community from a recognized MCV2 or NCL vegetation community to no longer meeting the vegetation community membership rules (Sawyer et al. 2009 and CDFW 2010).

Some of the disturbed areas had evidence of California brittlebush reestablishment. The individuals were observed as low growing California brittlebush shrubs with recent evidence of maintenance/mowing activities. A more detailed analysis of California brittlebush occurrence and height was performed with point-intercept transects with the results provided in Section 4.3.



## Grassland Assessment and Vegetation Mapping Survey Report

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The **Stock pile** area contains a soil pile surrounded by silt fencing and a soil berm covered with Visqueen plastic and occupies 0.846 acre. The stock pile is vegetated with species including mustard, rod wirelettuce (*Stephanomeria virgata*), Menzies's goldenbush, tree tobacco, coyote brush, telegraphweed, clustered tarweed, western ragweed, common iceplant (*Mesembryanthemum crystallinum*), mulefat, and hottentot fig. Stock piles are not recognized in MCV2 or NCL (Sawyer et al. 2009 and CDFW 2010).

# Grassland Assessment and Vegetation Mapping Survey Report

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## 4.0 REFERENCES

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# **APPENDIX A**

## ***Photo Plates – Grassland Assessment***





## APPENDIX A

### Photo Plates – Grassland Assessment

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Photo 1. Transect B 01 – Purple Needle Grass Grassland. Photograph recorded at start point. May 17, 2012.



Photo 2. Transect B 01 – Purple Needle Grass Grassland. Photograph recorded at end point. May 17, 2012.

## APPENDIX A

### Photo Plates – Grassland Assessment

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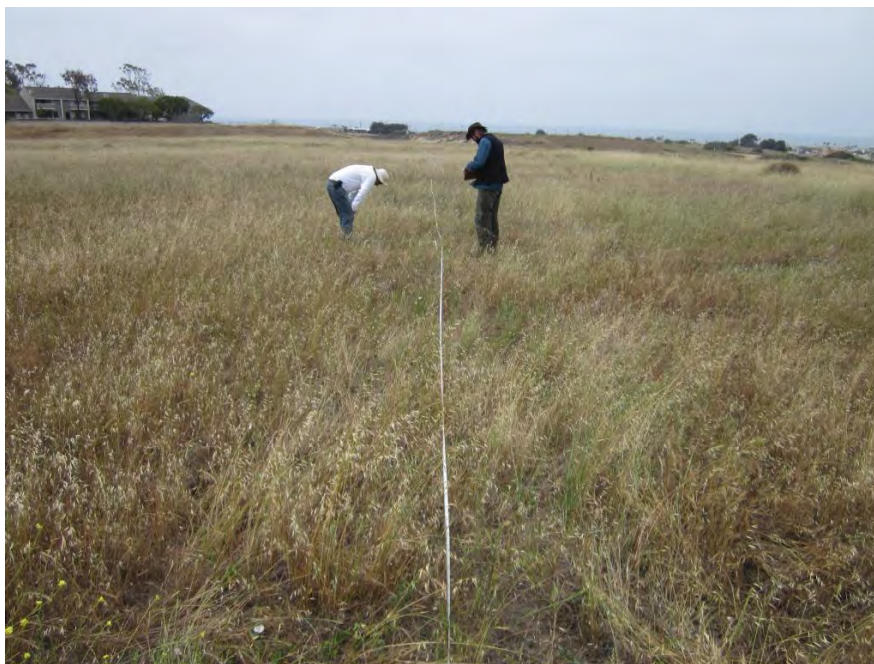


Photo 3. Transect B 02 – Wild Oats Grassland. Photograph recorded at start point. May 17, 2012.



Photo 4. Transect B 02 – Wild Oats Grassland. Photograph recorded at end point. May 17, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

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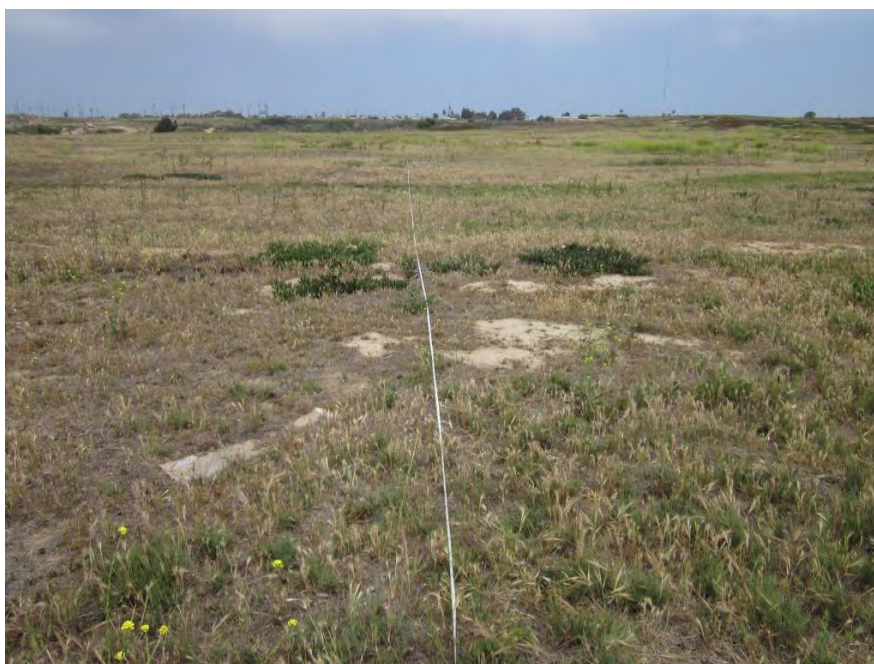


Photo 5. Transect B 03 – Salt Grass Flats. Photograph recorded at start point. May 17, 2012.



Photo 6. Transect B 03 – Salt Grass Flats. Photograph recorded at end point. May 17, 2012.

## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 7. Transect B 04 – Purple Needle Grass Grassland. Photograph recorded at start point. May 17, 2012.



Photo 8. Transect B 04 – Purple Needle Grass Grassland. Photograph recorded at end point. May 17, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 9. Transect 01 – Disturbed (Native Forbs). Photograph recorded at start point. May 29, 2012.



Photo 10. Transect 01 – Disturbed (Native Forbs). Photograph recorded at end point. May 29, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 11. Transect 02 – Disturbed (Native Forbs). Photograph recorded at start point. May 29, 2012.



Photo 12. Transect 02 – Disturbed (Native Forbs). Photograph recorded at end point. May 29, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 13. Transect 03 – Disturbed (Non-native Forbs). Photograph recorded at start point. May 29, 2012.



Photo 14. Transect 03 – Disturbed (Non-native Forbs). Photograph recorded at end point. May 29, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 15. Transect 04 – Annual Brome Grassland. Photograph recorded at start point. May 29, 2012.



Photo 16. Transect 04 – Annual Brome Grassland. Photograph recorded at end point. May 29, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 17. Transect 05 – Annual Brome Grassland. Photograph recorded at start point. May 29, 2012.



Photo 18. Transect 05 – Annual Brome Grassland. Photograph recorded at end point. May 29, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

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Photo 19. Transect 06 – Disturbed (Non-Native Forbs). Photograph recorded at start point. May 29, 2012.

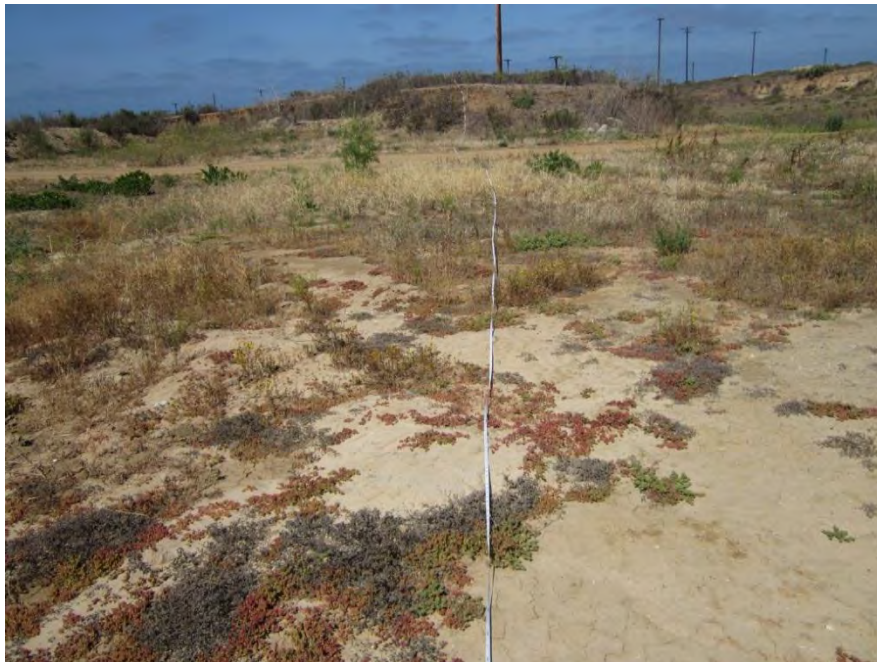


Photo 20. Transect 06 – Disturbed (Non-native Forbs). Photograph recorded at end point. May 29, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 21. Transect 07 – Disturbed (Non-Native Forbs). Photograph recorded at start point. May 23, 2012.



Photo 22. Transect 07 – Disturbed (Non-native Forbs). Photograph recorded at end point. May 23, 2012.

## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 23. Transect 08 – Annual Brome Grassland and Purple Needle Grass Grassland. Photograph recorded at start point. May 23, 2012.



Photo 24. Transect 08 – Annual Brome Grassland and Purple Needle Grass Grassland. Photograph recorded at end point. May 23, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 25. Transect 09 – Disturbed (Non-native Forbs). Photograph recorded at start point. May 29, 2012.



Photo 26. Transect 09 – Disturbed (Non-native Forbs). Photograph recorded at end point. May 29, 2012.

## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 27. Transect 10 – Annual Brome Grassland and Purple Needle Grass Grassland. Photograph recorded at start point. May 29, 2012.



Photo 28. Transect 10 – Annual Brome Grassland and Purple Needle Grass Grassland. Photograph recorded at end point. May 29, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 29. Transect 11 – Annual Brome Grassland. Photograph recorded at start point. May 23, 2012.



Photo 30. Transect 11 – Annual Brome Grassland. Photograph recorded at end point. May 23, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 31. Transect 12 – Disturbed (Non-native Forbs). Photograph recorded at start point. May 23, 2012.



Photo 32. Transect 12 – Disturbed (Non-native Forbs). Photograph recorded at end point. May 23, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 33. Transect 13 – Disturbed (Non-native Forbs). Photograph recorded at start point. May 23, 2012.



Photo 34. Transect 13 – Disturbed (Non-native Forbs). Photograph recorded at end point. May 23, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 35. Transect 14 - Photograph recorded at start point. May 23, 2012.



Photo 36. Transect 15 – Photograph recorded at start point. May 23, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 37. Transect 15 – Photograph recorded at end point. May 23, 2012.



Photo 38. Transect 16 – Annual Brome Grassland and Purple Needle Grass Grassland. Photograph recorded at start point. May 23, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 39. Transect 16 – Annual Brome Grassland and Purple Needle Grass Grassland. Photograph recorded at end point. May 23, 2012.



Photo 40. Transect 17 – Disturbed (Annual Bromes). Photograph recorded at start point. May 23, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---

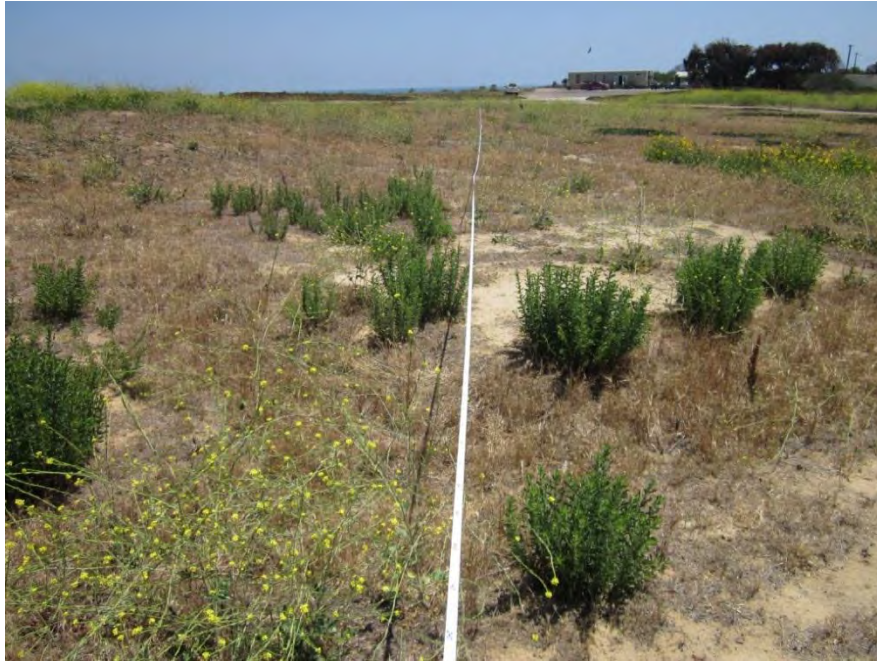


Photo 41. Transect 17 – Disturbed (Annual Bromes). Photograph recorded at end point. May 23, 2012.



Photo 42. Transect 18 – Photograph recorded at start point. May 23, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 43. Transect 18 –Photograph recorded at end point. May 23, 2012.



Photo 44. Transect 19 – Disturbed (Non-native Forbs). Photograph recorded at start point. May 23, 2012.

## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 45. Transect 19 – Disturbed (Non-native Forbs). Photograph recorded at end point. May 23, 2012.



Photo 46. Transect 20 – Photograph recorded at start point. May 23, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 47. Transect 20 – Photograph recorded at end point. May 23, 2012.



Photo 48. Transect 21 – Annual Brome Grassland. Photograph recorded at start point. May 29, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 49. Transect 21 – Annual Brome Grassland. Photograph recorded at end point. May 29, 2012.



Photo 50. Transect 22 – Disturbed (Non-native Forbs). Photograph recorded at start point. May 29, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 51. Transect 22 – Disturbed (Non-native Forbs). Photograph recorded at end point. May 29, 2012.



Photo 52. Transect 23 – Disturbed (Non-native Forbs). Photograph recorded at start point. May 29, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 53. Transect 23 – Disturbed (Non-native Forbs). Photograph recorded at end point. May 29, 2012.



Photo 54. Transect 24 – Disturbed (Non-native Forbs). Photograph recorded at start point. May 29, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 55. Transect 24 – Disturbed (Non-native Forbs). Photograph recorded at end point. May 29, 2012.



Photo 56. Transect 25 – Annual Brome Grassland. Photograph recorded at start point. May 29, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 57. Transect 25 – Annual Brome Grassland. Photograph recorded at end point. May 29, 2012.



Photo 58. Transect 28 – Annual Brome Grassland. Photograph recorded at start point. June 20, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 59. Transect 28 – Annual Brome Grassland. Photograph recorded at end point. June 20, 2012.



Photo 60. Transect 29 – Disturbed (Native Forbs). Photograph recorded at start point. June 20, 2012.

## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 61 Transect 29— Disturbed (Native Forbs). Photograph recorded at end point. June 20, 2012.



Photo 62. Transect 30 – Disturbed (Non-native Forbs). Photograph recorded at start point. June 20, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 63. Transect 30 - Disturbed (Non-native Forbs). Photograph recorded at end point. June 20, 2012.



Photo 64. Transect 32 – Disturbed (Non-native Forbs). Photograph recorded at start point. June 20, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 65. Transect 32 - Disturbed (Non-native Forbs). Photograph recorded at end point. June 20, 2012.



Photo 66. Transect 33 – Disturbed (Non-native Forbs). Photograph recorded at start point. June 20, 2012.

## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 67. Transect 33 - Disturbed (Non-native Forbs). Photograph recorded at end point. June 20, 2012.



Photo 68. Transect 35 – Disturbed (Non-native Forbs). Photograph recorded at start point. June 20, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 69. Transect 35 - Disturbed (Non-native Forbs). Photograph recorded at end point. June 20, 2012.



Photo 70. Transect 37 – Annual Brome Grassland. Photograph recorded at start point. June 12, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 71. Transect 37 – Annual Brome Grassland. Photograph recorded at end point. June 12, 2012.



Photo 72. Transect 38 – Wild Oats Grassland. Photograph recorded at start point. June 20, 2012.

## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 73. Transect 38 – Wild Oats Grassland. Photograph recorded at end point. June 20, 2012.



Photo 74. Transect 39 – Wild Oats Grassland. Photograph recorded at start point. June 12, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 78. Transect 39 – Wild Oats Grassland. Photograph recorded at end point. June 12, 2012.



Photo 76. Transect 40 – Wild Oats Grassland. Photograph recorded at start point. June 12, 2012.



## APPENDIX A

### Photo Plates – Grassland Assessment

---



Photo 77. Transect 40 – Wild Oats Grassland. Photograph recorded at end point. June 12, 2012.

APPENDIX A  
Photo Plates – Grassland Assessment

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# APPENDIX B

## *Grassland Assessment Baseline Transects - Data Sheets*





# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/17/2012

Biologists: John H. Davis IV Heather Moine  
 Weather Conditions: Start Time: 0930 End Time:

Transect #: 01 ~ Baseline samples

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	BRHO	100	ERBO	25	CEME	7	—	—	BRMA BRDI	8
1.5m	STPU 10	40	ERBO	30	BRHO	20	—	—	VUMI CEME	10
2.10m	ERBO	50	BRHO	30	CEME	10	HYGL	5	EMSE	5
3.15m	ERBO	80	BRHO	10	CEME	5	EM	5	—	—
4.20m	BRHO	40	ERBO	50	CEME	5	BRDI	3	HYGL	2
5.25m	ERBO	70	EMSE	25	STPU 1	5	—	—	BRHO	<1
6.30m	STPU 11	30	ERBO	30	CEME	10	Lotus	5	BRHO BG	5
7.35m	BRHO	30	SATR	20	STPU 7	20	AVBA	5	HYGL EMSE	10
8.40m	BRHO	60	SATR	25	ERBO	10	BRMA	5	CEME	—
9.45m	BRHO	40	STPU 7	30	SATR	15	BRMA	10	BG	5
10.50m	BRHO	70	ERBO	15	CEME	10	STPU 3	5	BRMA LOTUS	—
11.55m	BRHO	55	ERBO	15	SATR	10	STPU 4	15	MEOF CEME	5
12.60m	BRHO	55	ERBO	20	STPU 10	15	CEME	5	EMSE HYGL	5
13.65m	STPU 18	40	ERBO	25	Lotus	5	SATR	5	HYGL BG	—
14.70m	STPU 24	50	ERBO	25	BRHO	15	HYGL	5	BG	5
15.75m	ERBO	40	STPU 17	40	HASQ	10	ENIA	5	LO HYGL	5
16.80m	ERBO	55	BRHO	30	HYGL	10	STPU 2	5	CEME EMSE	—
17.85m	ERBO	40	STPU 8	40	BRHO	10	HYGL	10	BRDI EI AVBA	5
18.90m	ERBO	65	BRHO	10	EMSE	10	STPU 3	10	HYGL	5
19.95m	STPU 13	40	ERBO	40	BRHO	10	Lotus	5	HYGL	5
20.100m	ERBO	65	EMSE	15	BRDI	5	STPU 3	10	AVBA	5

Notes:

BG - bare ground Lotus - annual lotus

photo start 523  
 photo end 524  
 representative 100% + 525

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/17/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time:  
End Time:

Transect #: 01 Soreline Page 2 of 3

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
21.0m	ERB0	65	BRH0	15	STPU 6	10	HYGL	5	BRD1	5
22.5m	ERB0	45	STPU 7	25	EMSE	10	BRH0	15	AVBA	5
23.10m	ERB0	90	EMSE	5	HYGL	5	---	---	---	---
24.15m	BRH0	30	STPU 6	20	ERB0	40	HYGL	5	AVBA	5
25.20m	ERB0	75	BRH0	5	HYGL	15	EMSE	5	---	---
26.25m	ERB0	70	BRH0	10	HYGL	10	STPU 1	5	BRD1 EMSE	5
27.30m	ERB0	70	EMSE	10	BRD1	10	HYGL	5	AVBA	5
28.35m	ERB0	55	BRD1	20	STPU 5	10	HYGL	10	AVBA	5
29.40m	ERB0	60	STPU 7	10	EMSE	10	HYGL	10	AVBA	5
30.45m	ERB0	65	HYGL	20	STPU 6	10	BRD1	5	LOTUS AVBA	5
31.50m	STPU 9	50	BRH0	20	HYGL	15	BRD1	10	LOTUS	5
32.55m	BRD1	45	BRH0	30	ERB0	15	STPU 1	5	BRMA HYGL	5
33.60m	BRD1	50	HOMU	15	STPU 3	10	ERB0	10	BG	15
34.65m	BRH0	50	BRD1	15	HOM	15	ERB0	10	EMSE HYGL BG	10
35.70m	BRH0	75	BRD1	10	HOM	5	ERB0	10	HYGL CEME AVBA	5
36.75m	BRH0	55	HYGL	15	BRD1	10	ERSE	15	AVBA	5
37.80m	HYGL	55	ERB0	20	BRH0	10	BRD1	10	BG	5
38.85m	BRH0	60	HYGL	15	ERB0	15	BRD1	5	BG	5
39.90m	BRH0	70	BRD1	10	STPU 3	10	BRD1	25	---	---
40.95m	BRH0	50	ERB0	30	STPU 2	8	HYGL	10	AVBA	---
41.100 m	ERB0	35	BRH0	55	BRD1	5	HYGL	5	---	---

Notes:



# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/17/2012

Biologists: John H. Davis IV Heather Moine  
Weather Conditions: Start Time: End Time:

Transect #: 01 Baseline pg 3 of 3

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
420m	BRHO	55	ERBO	25	HYGL	10	BRDI	10		
435m	BRDI	55	AVBA	5	BRHO	10			BA	
440m	BRHO	50	ERBO	35	AVBA	10				
4515m	ERBO	45	EMSE	25	HYGL	10	BRHO	5	AVBA	5
4620m	ERBO	35	HYGL	30	EMSE	15	BRHO	15		
4725m	ERBO	35	BRHO	55	HYGL	20				
4830m	BRDI	30	HYGL	25	ERBO	25	BRHO	35		
4935m	ERBO	20	BRDI	20	HYGL	15	EMSE	15		
40m										
45m										
50m										
55m										
60m										
65m										
70m										
75m										
80m										
85m										
90m										
95m										
100m										

Notes:

SPECTULUM  
BACCUM

DUDEK

BASQUE WILD OAT

Project:

7248 - Newport Banning Ranch

Task: Native Grassland Assessment

Date:

5/17/12

Biologists:

John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time: 11:41  
End Time:

Transect #: 02

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	AVBA	60	LOMU	40	—	—	—	—	—	—
5 m	AVBA	50	LOMU	35	COAV	5	BRD1	5	—	—
10 m	AVBA	30	BRD1	30	LOMU	20	ERS4	10	ACGL	—
15 m	AVBA	25	ACGL	40	ATSG	15	LOMU	10	—	—
20 m	AVBA	30	DRBA	20	LOMU	20	ERDQ	15	ERSET	10
25 m	BRD1	40	ERBA	20	ERS4	20	AVBA	10	—	—
30 m	AVBA	20	BRD1	10	BRH4	40	COAR	20	ERDQ 10 RUMEX	1
35 m	ERCI	10	AVBA	15	ERS4	20	BRH4	10	—	—
40 m	BRD1	25	AVBA	20	ERCI	30	ERS4	25	—	—
45 m	BRD1	20	ERDQ	35	ERS4	20	AVBA	20	—	—
50 m	BRD1	60	ERS4	15	AVBA	20	COAR	5	—	—
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

START 06:20 526  
RUB QUANT 527  
END 528

ACGL - deer weed

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/17/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time:  
End Time:

Transect #: 03 Background Horizon 8. Dist. 15

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	DISP	50	CACH	30	HIIN	15	ERBO	5	—	—
5 m	BRHO	25	HOMU	20	BRMA	10	ERBO	40	—	—
10 m	HOMU	30	DISP	20	ERCI	15	BRHO	10	BRMA	—
15 m	DISP	70	HOMU	20	BRHO	5	BRDI	5	—	—
20 m	DISP	45	ERCI	10	HOMU	30	VUMY	10	SIIR	5
25 m	HOMU	50	FRSA	35	LENI	5	VUMY	5	—	—
30 m	DISP	50	HOMU	30	BRDI	5	VUMY	5	—	—
35 m	DISP	40	BRHO	10	ERBO	10	HOMU	5	—	—
40 m	BRHO	35	STPU	35	DISP	20	ERBO	5	—	—
45 m	HOMU	45	DISP	30	ERBO	10	HIIN	5	—	—
50 m	HOMU	40	DISP	40	AVBA	10	HIIN	10	—	—
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

photo start 529  
Quad photo 530  
photo end 531  
LENI

ERCI start 531



# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/17/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time:  
End Time:

Transect #: 04 Baseline page 1 of 3

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	DISP	45	BRHO	5	ERBO	10	HOMU	20	VUMY BRMA	5
1.5 m	HOMU	10	STPU 2	10	DISP	20	BRHO	30	ERCI	15
2.10 m	DISP	10	STPU 4	15	BRHO	40	ERCI	15	HOMU	5
3.15 m	STPU 16	45	DISP	15	ERCI	15	BRHO	20	BRDI	5
4.20 m	BRHO	30	HOMU	5	STPU 9	35	ERCI	20	BRDI	5
5.25 m	ERCI	30	STPU 8	15	BRHO	50	VUMY	5	—	—
6.30 m	BRHO	30	STPU 10	45	ERCI	10	VUMY	5	—	—
7.35 m	BRHO	30	STPU 12	40	DISP	5	ERCI	5	VUMY	5
8.40 m	STPU 15	50	ERCI	10	DISP	10	BRHO	25	HOMU	5
9.45 m	STPU 9	30	ERCI	20	BRHO	30	HOMU	10	VUMY	5
10.50 m	STPU 12	45	ERCI	25	BRHO	20	VUMY	5	—	—
11.55 m	BRHO	50	HOMU	5	STPU 2	5	ERCI	20	HOMU	5
12.60 m	ERBO	40	HOMU	15	BRHO	10	DISP	15	—	—
13.65 m	STPU 15	50	BRHO	20	DISP	20	HOMU	5	BRDI	5
14.70 m	STPU 12	35	DISP	15	ERBO	10	BRHO	40	—	—
15.75 m	BRDI	20	STPU 9	35	DISP	10	BRHO	35	—	—
16.80 m	STPU 9	35	ERBO	10	BRHO	41	BRDI	5	—	—
17.85 m	STPU 8	40	BRHO	30	ERBO	15	DISP	10	—	—
18.90 m	STPU 8	25	ERBO	30	DISP	25	BRHO	10	—	—
19.95 m	BRHO	40	STPU 10	25	ERBO	10	DISP	5	—	—
20.100 m	BRHO	30	STPU 9	20	ERBO	20	DISP	10	—	—

VUMY 5

BRDI 5

Notes: photo start 532  
photo quad 533

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/17/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time:  
End Time:

Transect #: CA Baseline page 2 of 3

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
21.0m	STPU 8	30	DISP	10	ERBO	15	BRHO	30	BRDI	5
22.0m	STPU 13	25	DISP	10	ERBO	20	BRHO	35	—	—
23.0m	ERBO	30	STPU 4	15	DISP	15	BRHO	30	—	—
24.0m	STPU 4	15	DISP	20	HOMU	15	BRHO	15	—	—
25.0m	HOMU	50	STPU 2	5	DISP	40	BRHO	5	—	—
26.0m	DISP	40	STPU 1	5	ERBO	25	HOMU	15	BRHO	20
27.0m	DISP	45	HOMU	35	BRDI	5	BRHO	20	ERBO	15
28.0m	STPU 3	10	DISP	35	HOMU	30	BRHO	30	ERBO	15
29.0m	STPU 1	5	DISP	25	HOMU	30	BRHO	20	ERBO	10
30.0m	DISP	40	HOMU	25	ERBO	20	BRHO	10	BG	—
31.0m	DISP	30	HOMU	20	BRDI	15	BRHO	15	ERBO	15
32.0m	STPU 2	5	DISP	25	ERBO	20	BRHO	15	—	—
33.0m	DISP	20	ERBO	20	BRHO	10	VUMY	5	—	—
34.0m	DISP	35	STPU 4	10	ERBO	10	PLER	5	BRHO	10
35.0m	STPU 3	10	DISP	25	ERBO	10	PLER	25	RUCR	5
36.0m	STPU 10	30	PLER	20	HASQ	5	ERBO	15	DISP	5
37.0m	DISP	30	STPU 6	10	ERBO	10	BRHO	20	HASQ	5
38.0m	ERBO	20	STPU 4	5	DISP	10	BRHO	10	CEME	5
39.0m	ERBO	25	STPU 1	5	BRHO	20	CEME	5	—	—
40.0m	ERBO	10	STPU 1	5	DISP	5	BRHO	15	BG	—
41.0m	STPU 7	20	DISP	15	BRHO	20	ERBO	15	—	—

Notes: BG = bare ground

# DUDEK

Project:

7248 - Newport Banning Ranch

Task: Native Grassland Assessment

Date:

3/17/2012

Biologists:

John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time:  
End Time:

Transect #: 04 Baseline pg 3 of 3

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
420m	STPU 3	5	DIFA	5	BRHO	20	ERBO	15	CEME	5
435m	STPU 6	25	BRHO	20	ERBO	15	CEME	10	DIFA	5
4410m	ERBO	40	STPU 3	5	BRHO	15	CEME	15	—	—
4515m	ERBO	20	BRHO	10	STPU 7	20	CEME	5	HASQ	10
4620m	STPU 4	15	HIIN	10	BRHO	30	CEME	10	—	—
4725m	HASQ	15	EMER	25	ERBO	15	BRHO	10	—	—
4830m	STPU 3	5	HASQ	20	BRHO	20	SEME	15	ERBO	20
4935m	STPU 3	5	HASQ	10	CEME	5	—	—	—	—
5040m	HASQ	40	ERBO	10	CEME	5	—	—	—	—
45 m										
50 m										
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:



# APPENDIX C

## *Grassland Assessment Transects - Data Sheets*



# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/29/12

Biologists: John H. Davis IV Heather Moine Weather Conditions: Dave Compton

Start Time: 1629  
End Time: 1635

Transect #: 01

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	HASQ	15							BG	85
5 m	ALPS	15	VUMI	10	DE	5			BG	70
10 m	VUMI	15	ENCA	5	EMSE	5			BG	75
15 m	VUMI	15	EUCA	10	CEME	5	CACI	30	BG	40
20 m	VUMI	5	CACI	45	ENCA	5			BG	45
25 m	VUMI	5							BG	95
30 m	VUMI	15							BG	85
35 m	CEME	5							BG	95
40 m									BG	100
45 m	GPLI	15							BG	85
50 m	VUMI	5	CEME	5					BG	90
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

photo 642 start  
photo 643 50m  
photo 644 end  
UNK B - grass  
DE - Deiondra sp.  
transect within restoration area  
CACI - Calandrinia ciliata  
VUMI - Vulpia microstachys



# DUDEK

Project:

7248 - Newport Banning Ranch

Task: Native Grassland Assessment

Date:

5/29/2012

Biologists:

John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time: 1550  
End Time: 1610

Transect #: 62

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	AMPS	10	HEGR	10	COFI	15	BRMA	20	BG	45
5 m	COFI	30	BRMA	50	AMPS	10	BRMA	10		
10 m	SASA	10	ENCA	20	HIIN	25	AMPS	15	BRMA	40
15 m	COFI	20	HIIN	10	BRDI	10	BRMA	50	BG	10
20 m	COFI	30	Spergularia	25	DEFA	5	unknowns	5	BG	35
25 m	COFI	45	Spergularia	15					BG	40
30 m	Cortaderia	100								
35 m	ACGL	50	CEME	25	HIIN	5	BRMA	10	BG	10
40 m	CEME	60	BRMA	35	HIIN	5				
45 m	HIIN	90	ACGL	5					BG	5
50 m	HIIN	45	ACGL	55	OPLT	10	BRMA	10		
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

photo 639 short  
photo 640 25 m end  
photo 641 end  
Erosional  
grass  
Native dominated by perennials  
near center of transect

# DUDEK

Project:

7248 - Newport Banning Ranch

Task: Native Grassland Assessment

Date:

5/29/12

Biologists:

John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time: 1430  
End Time: 1445

Transect #: 03

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	BRMA	70	ERBD	10	CEME	5			BC	15
5 m	HIIN	65	BRMA	50	BRHO	10				
10 m	BRMA	65	HASQ	25	BRHO	10				
15 m	BRNI	85	HIIN	15						
20 m	BRNI	100								
25 m	OPLI	60	BRNI	40						
30 m	BRNI	90	COMA	10						
35 m	OPLI	40	COMA	15	HIIN	45				
40 m	OPLI	5	HIIN	90					BC	5
45 m	HIIN	85	COMA	25						
50 m	HIIN	90	COMA	30						
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

photo 633 short  
photo 634 35m quad  
photo 635 end

# DUDEK

Project:

7248 - Newport Banning Ranch

Task: Native Grassland Assessment

Date:

5/29/12

Biologists:

John H. Davis IV  
Heather Moine

Weather Conditions:

Dave Compton

Start Time:

1354

End Time:

1414

Transect #: 04

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	CAED	100								
5 m	CAED	80	HAHQ	10	BRMA					
10 m	BRMA	90	FNCA	5	ERBO	15				
15 m	BRMA	70	BRHO	10	CEME	5	ERBO	10		
20 m	BRMA	65	CEME	25	ERBO	10				
25 m	CEME	50	BRMA	45	BRHO	5				
30 m	BRMA	60	CEME	10	HIIN	30				
35 m	BRMA	85	HIIN	10						
40 m	STPUg	15	HIIN	35	BRMA	55				
45 m	BRHO	25	BRMA	75						
50 m	BRHO	90	BRMA	20						
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

photo 630 start  
photo 631 45m quad  
photo 632 begin  
More Stipa adjacent (unmapped)  
OPLI adjacent  
Transect moved slightly west to avoid mule flat



# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/29/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time: 0840  
End Time: 0910

Transect #: 05

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	ERBO	45	BRHO	45	CEME	5				
5 m	STPU 1	5	CEME	30	BRHO	20	ERBO	20		
10 m	STPU 2	5	BRHO	30	ERBO	30	CEME	30		
15 m	STPU 3	5	BRHO	30	CEME	45	ERBO	10		
20 m	STPU 2	5	BRHO	35	CEME	45	RRMA	5		
25 m	STPU 6	15	HIIN	15	ACGL	20	BRHO	30	CEME	15
30 m	BRHO	35	CEME	60	BRMA	5	HIIN	5		
35 m	BRHO	45	ERBO	45	ACGL	5				
40 m	STPU 3	10	CEME	30	BRHO	40	ACGL	10		
45 m	STPU 2	15	BRHO	40	HIIN	10	CEME	30	AMPS	15
50 m	BRHO	40	AMPS	30	HIIN	15				
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes: photo 610 start  
photo 611 quad  
photo 612 end

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/29/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time: 0950  
End Time: 1005

Transect #: 06

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	BRMA	10	HUN	65	DIFA	10	CEME	5		
5 m	ENCA	100								
10 m	ENCA	90							BG	10
15 m	ENCA	75	HASQ		10				BG	15
20 m	ENCA	10	BRMA	15	BRN1	35	AVBA	15		
25 m	BRMA	85	CEME	10						
30 m	BRMA	40	RUCR	30					BG	30
35 m	AVBA	40	ENCA	10	ATSE	15	CEME	10	BRMA	10
40 m	BRMA	10	DIFA	15	CEME	15	ERBO	15	MECR	40
45 m	BRMA	5	MECR	65					BG	30
50 m	CEME	10	BRMA	5	MECR	25			BG	60
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes: photo 615 start  
photo 616 end  
photo 617 quad  
fringe start 75 in ENCA scrub  
ATSE Atriplex confertifolia  
MECR - ice plant

# DUDEK

Project: 7248 – Newport Banning Ranch Task: Native Grassland Assessment Date: 5/23/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time:  
End Time:

Transect #: 07

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	HASQ	15	—	—	—	—	—	—	BG ? 40%	—
5 m	—	—	—	—	—	—	—	—	BG	100
10 m	—	—	—	—	—	—	—	—	BG	100
15 m	CEME	40	HASQ	10	ERBO	25	BRHO	30	—	—
20 m	CEME	55	ERBO	25	BRHO	20	—	—	—	—
25 m	CEME	100	ERBO	25	BRMA	30	ERHO	10	—	—
30 m	CEME	40	ENCA	15	BRMA	10	ERBO	10	—	—
35 m	HIIN	70	CEME	50	—	—	—	—	—	—
40 m	HIIN	25	ENCA	5	—	—	—	—	—	—
45 m	ENCA	100	—	—	—	—	—	—	—	—
50 m	ENCA	30	HASQ	50	CEME	5	—	—	—	—
55 m	—	—	—	—	—	—	—	—	—	—
60 m	—	—	—	—	—	—	—	—	—	—
65 m	—	—	—	—	—	—	—	—	—	—
70 m	—	—	—	—	—	—	—	—	—	—
75 m	—	—	—	—	—	—	—	—	—	—
80 m	—	—	—	—	—	—	—	—	—	—
85 m	—	—	—	—	—	—	—	—	—	—
90 m	—	—	—	—	—	—	—	—	—	—
95 m	—	—	—	—	—	—	—	—	—	—
100 m	—	—	—	—	—	—	—	—	—	—

Notes:

photo 583 start  
photo 584 end  
photo 585 quad

open and forest



# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/23/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time:  
End Time:

Transect #: 08

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	STPU (7)	25	ERBO	20	BRHO	20	BRDI	10		
5 m	BRHO	40	AVBA	35	STPU (2)	5	CEME	5		
10 m	STPU (12)	50	AVBA	30	BRHO	10	HIIN	5		
15 m	STPU (13)	60	AVBA	15	GRCA	5	BRHO	10		
20 m	BRHO	30	STPU (10)	30	AVBA	25	ERBO	10		
25 m	STPU (3)	5	BRHO	55	SATR	15	ERBO	30		
30 m	STPU (9)	25	BRHO	45	ERBO	30				
35 m	STPU (11)	70	GRCA	10	AVBA	15	BRHO	5		
40 m	BRHO	20	CEME	20	AVBA	20	ERBO	15		
45 m	AVBA	80	BRHO	15	BRMA	5				
50 m	BRHO	50	AVBA	25	ERBO	20	CEME	5		
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes: photo 556 start

photo 557 location of original transect 08,

photo 558 quad

photo 559 end

moved transect 08 out of steep cess/riparian habitat

SATR - riparian habitat

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/29/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time: 0915  
End Time: 0940

Transect #: 09

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	BRNI	75	ENCA	25						
5 m	BRNI	100								
10 m	BRNI	90	HIN	10						
15 m	HIN	60	BRNI	40						
20 m	BRNI	75	ENCA	25						
25 m	ENCA	90	Grasses	10						
30 m	ENCA	65							EG	35
35 m	ENCA	80							EG	20
40 m	ENCA	100								
45 m	ENCA	50	BRHO	10	BRNA	5	DIFA	5		
50 m	BRNA	30	BRNI	40	HASQ	5	HIN	5	BRHO	10
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

## Notes:

photo 613 start  
photo 614 end

transsect through head ridge BRNI and ENCA species. End point is in grassland area also. BRNI: BRNI, DIFA, HIN  
HASQ: ENCA, HASQ

Project: 7248 - Newport Banning Ranch

Task: Native Grassland Assessment

Date: 5/29/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time: 0800  
End Time: 0835

Transect #: 10

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	STPV 4	5	BRHO	50	BRMA	25	ERBO	15		
5 m	STPV 10	15	BRHO	25						
10 m	STPV 6	15	BRHO	25	AMPS	15	ERBO	20		
15 m	STPV 21	50	BRHO	30	BRMA	5	FRBO	10		
20 m	STPV 2	10	BRHO	55	CEME	15	BRMA	5		
25 m	BRHO	30	AMPS	45	ERBO	20				
30 m	ERGO	30	BRHO	40	CEME	5	AMPS	5		
35 m	STPV 7	10	BRHO	50	ERBO	20	BRMA	5		
40 m	STPV 1	5	BRHO	55	ANAR	10	BRMA	10		
45 m	STPV 7	50	BRHO	30	BRMA	10				
50 m	STPV 1	5	BRHO	50	AMPS	25	ERBO	10		
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes: photo start 607  
photo quad 608  
photo end 609  
transect within a STPV population  
AMPS - western meadow  
adj. HUN, DIFA



# DUDEK

Project:

7248 - Newport Banning Ranch

Task: Native Grassland Assessment

Date:

MAY 23, 2012

Biologists:

John H. Davis IV  
Heather Moine

Weather Conditions:

Partly cloudy, 60-70°F, light to mod breeze

Start Time: 9:40 AM  
End Time:

Transect #: 11

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	BRHB	45	ERBO	35	AVBA	15	HYGC	10		
5 m	BRHB	55	ERBO	25	AVBA	20	HYGC	15		
10 m	BRHB	50	ERBO	35	AVBA	30	BRDI	5		
15 m	BRHB	55	ERBO	30	AVBA	20	HYGC	35	STIPA PUCHRA CLOSTR	
20 m	BRHB	40	AVBA	25	ERBO	30	BRDI	10	GRASSHOPPER	
25 m	BRHB	65	ERBO	20	AVBA	5	BRDI	20	GRASSHOPPER	
30 m	BRHB	55	ERBO	25	AVBA	10	HYGC	20		
35 m	BRHB	45	ERBO	30	AVBA	20	HYGC	15		
40 m	STPU	(20) 30	ERBO	50	BRHB	10	HYGC	10		
45 m	STPU	(11) 35	ERBO	40	BRHB	10	HYGC	5		
50 m	STPU	(1) 5	ERBO	35	BRHB	20	ERBA	20		
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes: photo 551 (Hammond's Camper) 5:50 PM

Photo 552 - 554 Camper

END POINT

ADJUSTED TRANSECT TO WEST APPROX 6 METERS. ROAD WAS AT ORIGINAL START POINT

MAPPED AN AREA 5 METERS WIDE AND ADJ TO TRANSECT CONTAINING STIPA

# DUDEK

Project:

7248 - Newport Banning Ranch

Task: Native Grassland Assessment

Date:

3/23/2012

Biologists:

John H. Davis IV  
Heather Moine

Weather Conditions: S66 - 70% S67 X

X

Start Time: 10:40 AM

End Time: 11:08 AM

Transect #: 12

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	DISP	35	BRMA	25	GRB	25	HIIN	20	CAMA	10
5 m	DISP	20	BRMA	40	RRHO	20	ERBO	15	CAMA	10
10 m	DISP	20	STPA	20(7)	ERRD	40	BRHO	20		
15 m	DISP	30	ERBO	65	BRHO	10	CAMA	10		
20 m	DISP	10	ERBO	40	CAMA	20	BRMA	35	CAMA	10
25 m	BRMA	70	ERBO	30						
30 m	DISP	25	ERBO	60	BRMA	20				
35 m	DISP	15	HIIN	45	BRMA	40	CARV	10		
40 m	STPA	15(7)	ERRD	60	HYGL	20	BRHO	20		
45 m	DISP	5	ERBO	60	BRMA	30	ERRD	10		
50 m	BRDI	40	BRBO	30	BRHO	30	HYGL	10		
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

photo 560 spot

S61 END POINT GUN

S62 END-TRANSIT

NAME GUNLET, STATIONING ALONG THE 1000' TRANSECT. 1. 1000' MAPPED STATIONING  
2. 1000' THE TRANSECT

BRMA = BRHO/BRMA/BRDI

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/23/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time:  
End Time:

Transect #: 13

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	ERBO	85	DISP	10	—	—	—	—	—	—
5 m	DISP	50	ERBO	30	CEME	5	Bromer	10	—	—
10 m	ERBO	30	DISP	30	—	—	—	—	—	—
15 m	STPU (1)	5	DISP	10	ENCA	30	Bromer	15	—	—
20 m	AVBA	50	DISP	5	ENCA	25	Bromer	10	—	—
25 m	ENCA	100	—	—	—	—	—	—	—	—
30 m	DISP	50	BRMA	20	BRHO	20	ERBO	10	—	—
35 m	DISP	40	BRMA	15	BRHO	30	ERBO	25	—	—
40 m	ENCA	90	BRHO	10	ERBO	5	—	—	—	—
45 m	CAPY	35	BRNI	25	AVBA	15	Bromer	30	—	—
50 m	BRHO	100	HIIN	10	CAPY	10	—	—	—	—
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes: photo 573 start  
photo 574 quad  
photo 575 end

Opuntia & GRCA debris



# DUDEK

Project: 7248 – Newport Banning Ranch Task: Native Grassland Assessment Date: 5/23/2012

Biologists: John H. Davis IV Heather Moine Weather Conditions: Start Time: End Time:

Transect #: 14

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m										
5 m										
10 m										
15 m										
20 m										
25 m										
30 m										
35 m										
40 m										
45 m										
50 m										
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

## Notes:

photo 576 photo point  
ENCA dominated habitat ~70% + OPLI, ISA2  
not grassland habitat

5/23/2012

## Task: Native Grassland Assessment

**7248 – Newport Banning Ranch**

**Project:**

**Biologists:** John H. Davis IV  
Heather Moine

**Weather Conditions:**

Start Time:  
End Time:

Transect #: 15

[illegible]

**Notes:** P563 START pc. 11

PS64 609 201-

AURA / FERM SYSTEM / SECURITAS - THE SYSTEM OF SAFETY

PS65 57-061/01SP 60 100000

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/23/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time:  
End Time:

Transect #: 16

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	ERBO	15	BRHO	50	BRMA	10	HUN	5		
5 m	CEME	20	ERBO	25	BRHO	50				
10 m	STPU (4)	10	RUCR	10	BRMA	55	BRHO	10		
15 m	STPU (10)	40	ERBO	20	BRHO	10	CEME	5		
20 m	STPU (5)	10	ERBO	40	BRHO	30	CEME	10		
25 m	STPU 19	25	DISP	20	ERBO	30	BRHO	20		
30 m	STPU 3	5	DISP	30	ERBO	20	BRHO	35		
35 m	STPU 4	15	DISP	30	BRHO	50	ERBO	10		
40 m	STPU 11	40	ERBO	20	DISP	15	BRHO	25		
45 m	STPU 1	5	ERBO	35	DISP	20	BRHO	35	CEME	5
50 m	DISP	45	BRMA	20	ERBO	5	BRHO	25		
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

## Notes:

photo 577 start  
photo 578 quad  
photo 579 end

transect through STPU grassland

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/23/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time:  
End Time:

Transect #: 17

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	CAED	50	Brome	20						
5 m	BRHO	15	BRMA	15	HOMU	5	ERBO	25		
10 m	HIIN	70	BRMA	30	BRHO	15	DISO	5	LENI	5
15 m	HOMU	70	BRHO	20						
20 m	HOMU	55	BRHO	20	LENI	5				
25 m	MECR	35	LENI	15	BRHO	15	HOMU	10		
30 m	HOMU	30	BEDI	30	ME	15	LENI	10		
35 m	BROI	25	HOMU	10	HIIN	10	ERGO	25		
40 m	HOMU	30	BRHO	20	BRMA	15	HASQ	10		
45 m	HASQ	60	HIIN	20	BRMA	15	FEMU	5		
50 m	HOMU	40	AVBA	15	ERBO	10	BRHO	15		
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

## Notes:

photo 570 start  
photo 571 quad  
photo 572 end

ENCA adjacent  
CPED - Carobrotus edulis  
RUCK - Rumex crispus  
area is ruderal

MECR - Melampyrum  
LENI - Lonicera  
SWAL - Swallow  
CRYST - Crystallum



# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/23/2012

Biologists: John H. Davis IV Heather Moine Weather Conditions: Start Time: End Time:

Transect #: 18

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m										
5 m										
10 m										
15 m										
20 m										
25 m										
30 m										
35 m										
40 m										
45 m										
50 m										
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes: Transect is mixed area CACH, ENCA, HINN, Bromes, ACGL

photo 508 start  
photo 509 end

non-grassland

CACH patch in the west

10-70% vegetated

Project: 7248 – Newport Banning Ranch Task: Native Grassland Assessment

Date: 5/23/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time:  
End Time:

Transect #: 19

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	DISP	20	BRHO	30	BRMA	70	CEME	40		
5 m	BRHO	30	ENCA	15	CEME	15	ERBO	20	photo	
10 m	ENCA	15	CEME	10	ERBO	10	BRHO	10	BE	
15 m	CEME	70	BRMA	30	ERBO	5				
20 m	HIIN	10	BRMA	10	ERBO	25	CEME	10	photo	
25 m	CEME	40	ERBO	20	BRHO	15			photo	
30 m	ENCA	30	ERBO	10					photo	
35 m	ENCA	20	ERBO	10					BG	
40 m	DIFA	45	ERBO	30					BG	
45 m	DIFA	35	CEME	20	ERBO	15			photo	
50 m	DIFA	35	DISP	15	ERBO	15	HASQ	5		
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

photo 580 start  
photo 581 end  
photo 582 quad

# DUDEK

Project: 7248 – Newport Banning Ranch Task: Native Grassland Assessment Date: 5/23/12

Biologists: John H. Davis IV Heather Moine  
Weather Conditions: Start Time: End Time:

Transect #: 20

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m										
5 m										
10 m										
15 m										
20 m										
25 m										
30 m										
35 m										
40 m										
45 m										
50 m										
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes: Transect is mixed area dominated by CME, DIFA, HIN, bareground  
photo 566 start  
photo 567 end

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment

Date: 5/24/12

Biologists: John H. Davis IV Dave Campbell Weather Conditions:  
Heather Moine

Start Time: 1501  
End Time: 1520

Transect #: 21

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	ATSU	20	BRMA	50	BRDI	10	HTIN	15	BG	5
5 m	ATSU	15	BRMA	50	ERBO	5			BG	30
10 m	BRMA	65		5	HTIN	5	ERBO	20	BG	5
15 m	ATSU	10	BRMA	35	HTIN	5	ERBO	20	BG	30
20 m	BRMA	55	HTIN	5	ERBO	15			BG	25
25 m	ERBO	30	BRMA	45	HTIN	5	MENO	10	BG	10
30 m	ATSU	10	FRSA	15	ERBO	35	BRMA	35	HTIN	5
35 m	ATSU	40	BRMA	40	HTIN	5	ERBO	10	BG	5
40 m	HTIN	15	BRMA	60	ATSU	5	ERBO	10	BG	10
45 m	HOMU	5	ATSU	5	BRMA	70	BRDI	10	BG	10
50 m	ERBO	30	BRMA	55	HOMU	5	BRDI	10		
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes: photo 636 start MENO - crystalline iceplant  
photo 637 15m grass ATSU - Atriplex suberecta  
photo 638 end



# DUDEK

Project:

7248 - Newport Banning Ranch

Task: Native Grassland Assessment

Date:

Biologists:

John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time: 1318  
End Time: 1344

Transect #: 22

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	AMP3	75	BRH0	20	POMO	5	BRMA	10		
5 m	ERB0	35	AMP3	10	HIN	5	BRMA	15		
10 m	ERB0	60	DEFA	5	BRMA	15	CEME	10		
15 m	ERSA	20	CEME	30	BRMA	30	ERB0	35		
20 m	ERB0	55	BRH0	5	HIN	10	CEME	5	BRMA	30
25 m	ERB0	40	BRMA	20	HIN	5	CEME	5		
30 m	ERB0	55	BRMA	30	CEME	5	BRH0	10		
35 m	ERB0	40	BRH0	10	BRMA	15			BG	35
40 m	ERB0	40	HIN	20	Spergularia	15	BRMA	15	BRH0	15
45 m	ERB0	45	DISP	5	Spergularia	10	BRMA	10	BRH0	10
50 m	ERB0	40	BRMA	15	HIN	5			BG	40
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

photo 627 start  
photo 628 40m quad  
photo 629 end

Highly disturbed area.  
Adjacent dominant spp. are  
Bromes, HIN, UNK A  
H4SO

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/29/2012

Biologists: John H. Davis IV Heather Moine Weather Conditions: Start Time: 1020 End Time: 1040

Transect #: 23

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	HIIN	75	AMPS	35	BRMA	10				
5 m	HIIN	95	HECU	10	POLO	5	AMPS	5		
10 m	HIIN	50	HECU	20	DIFA	20	CEMU	5		
15 m	HIIN	55	CEME	15	DIFA	25	FRSA	5		
20 m	HIIN	90	FRSA	20						
25 m	HIIN	100								
30 m	OPLI	75	HIIN	10	MAVU	15				
35 m	RICO	50	HIIN	35	BRMA	5			BG	10
40 m	HIIN	95							BG	5
45 m	HIIN	55	AMPS	5	ERBU	5			BG	35
50 m	HIIN	85	GNCA	10	AMPS	5				
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

## Notes:

photo 618 start  
photo 619 quad  
photo 620 end  
POMO Pyrago punctipennis  
FRSA Franklinia latifolia  
OPLI Oplismenus hirtellus  
MAVU Mammillaria vivipara  
GNCA Gnaphalium obtusifolium  
adj areas den by HIIN, ANP ACGL,  
BFFS  
RICO - Ricinus communis  
HECU - Heliotropium curassavicum

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/29/2012

Biologists: John H. Davis-W<sup>e</sup>  
Heather Moine

Weather Conditions:

Start Time: 1055  
End Time: 1115

Transect #: 24

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	HIIN	45	BRMA	5	CEME	5	DIFA	5		
5 m	HIIN	60	ENCA	35	BRMA	5				
10 m	BRHO	35	BRMA	10	CEME	5	DIFA	5	EG	45
15 m	BRHO	25	CEME	30	BRMA	10	ERBN	15		
20 m	BRMA	50	BRHO	10	CEME	45				
25 m	BRMA	45	CEME	45	DIFA	10				
30 m	CHCO	50	BRMA	15	BRHO	10	AMPS	10		
35 m	CHCO	45	MEIN	20	BRHO	10	AVBA	5		
40 m	DIFA	30	MECR	15	AMPS	20	BRMA	10		
45 m	CHCO	35	DIFA	25	HIIN	15	AMPS	5		
50 m	BRMA	30	HECU	35	CHCO	10				
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

photo 621 start  
photo 622 end  
photo 623 end

ME - 100%  
Highly disturbed - HIIN, DIFA, CHCO, AMP, CEME, BRMA  
CHCO - Chrysanthemum coronarium

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 5/29/2012

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time: 11:10  
End Time: 11:35

Transect #: 25

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	HIIN	45	CAPY	20	BRMA	30				
5 m	BRMA	30	BRHO	30	EMSE	5				
10 m	STPU	5	ERBO	55	BRHO	35	ACGL	5		
15 m	STPU	35	ACGL	15	ERBO	30	BRHO	25		
20 m	ERBO	35	STPU	5	BRHO	45			BG	15
25 m	STPU	5	BRHO	80	BRMA	5	ENCA	5	ERBO	5
30 m	ENCA	50	BRMA	20	ERBO	10				
35 m	BRMA	80	AVBA	5	CEME	5	HIIN	5	DEFA	5
40 m	HIIN	50	DEFA	10	MASA	10	BRMA	35		
45 m	BRMA	30	HIIN	15	ACGL	10	BRHO	35		
50 m	BRMA	60	CEME	25	HIIN	10	BRHO	10		
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

## Notes:

photo 624 start  
photo 625 quad  
photo 626 end

MASA - Malacothrix saxatilis  
CAPY - Carduus pycnocephalus



# DUDEK

Project:

7248 - Newport Banning Ranch

Task: Native Grassland Assessment

Date:

6-12-20

Biologists:

John H. Davis IV  
Heather Moine

Weather Conditions:

Start Time: 1440  
End Time: 1452

Transect #: 28

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	HIIN	15	brones	80						
5 m	BRHO	70	HIIN	15	DEFA	10				
10 m	BASA	15	DEFA	15	HIIN	40	brones	15	ERCA	10
15 m	SODO	65	CAPV	5						
20 m	brones	35	HIIN	20	AMPS	10	ISMIE	5		
25 m	ISMIE	10	RICO	5	brones	40				
30 m	ISMIE	10	brones	20						
35 m	HIIN	5							BG	95
40 m	CEME	15	DEFA	5	brones	15			BG	60
45 m	CEME	5	brones	10	ERBU	15			BG	70
50 m	DEFA	5	CEME	5	brones	15			BG	75
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

Photos  
Start 798  
quad 799  
end 800

0-30 not identified  
35-50 obvious vegetation

ERCA = Erigeron canadensis

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 6-20-12

Biologists: John H. Davis IV Dave Compton Weather Conditions: Start Time: 1356 End Time: 1407

Transect #: 29

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	HECU	35	BASA	20	CEME	5				
5 m	HTIN	40	brmes	45	CEME	10				
10 m	DEFA	50	HTIN	30	brmes	25	PSLU	5		
15 m	DEFA	55	HTIN	30	ISM2	10	brmes	20	CEME	10
20 m	HECU	20	MECR	5	brmes	15			BG & litter	60
25 m	DEFA	40	ISM2	10	brmes	35	POMO	10		
30 m	DEFA	10							ISC (rock)	90
35 m	DEFA	50	CEME	10	PSLU	5	brmes	15		
40 m	CEME	30	HTIN	35	brmes	25				
45 m	brmes	15	CEME	15	HTIN	5	DEFA	10	litter	55
50 m	DEFA	40	brmes	15	CEME	5			litter & BG	40
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

Photos Start 795 quad 796 end 797  
Highly disturbed; some grass probably moved

PSLU = Pseudogynopodium luteo-album

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 6-20-12

Biologists: John H. Davis IV Dave Crompton Heather Moine Weather Conditions:

Start Time: 1334  
End Time: 1346

Transect #: 30

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	STPU-3	10	ERBO	50	brmes	35	AMPS	5		
5 m	BRHO	45	HTIH	10	AMPS	10	ERBO	35		
10 m	AMPS	60	AVBA	5	brmes	30				
15 m	AMPS	10	HTIH	5	ERBO	10	brmes	15		
20 m	AMPS	5	brmes	50	AVBA	15	ERBO	15		
25 m	AMPS	35	AVBA	10	brmes	40	ERBO	10		
30 m	unk A	15	AMPS	10	brmes	35	HTIH	5	ERBO	30
35 m	unk A	35	brmes	35	HECU	25	RUCK	5		
40 m	HTIH	35	unk A	30	HECU	35	DEFA	5		
45 m	unk A	35	DEFA	15	AMPS	5	brmes	15		
50 m	HTIH	30	DEFA	35	MECR	10	RICO	40		
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes: Photos 792 794 793  
Start end quad  
Maintained (mowed); highly disturbed  
Unknown A = Chrysanthemum coronarium CHCO

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 6-20-12

Biologists: John H. Davis IV Dave Curphey Weather Conditions: Start Time: 1450 End Time: 1501

Transect #: 32

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	TSME	10	HTIN	15	ERBO	20	bromes	20		
5 m	CEME	15	HTIN	10	bromes	35	ERBO	20		
10 m	TSME	20	CEME	10	bromes	30	ERBO	20		
15 m	DEFA	5	ERBO	55	CEME	15	TSME	5		
20 m	ERBO	25	CEME	5	bromes	20			BC	50
25 m	CEME	20	TSME	20	bromes	40	ERBO	10		
30 m	HTIN	65	ENCA	25	CEME	15	bromes	10		
35 m	HTIN	45	bromes	35	CEME	15				
40 m	CEME	20	ERBO	20	bromes	30				
45 m	CEME	15	bromes	15	ENCA	15	DEFA	5	BC	50
50 m	CEME	35	ENCA	15	bromes	30	ERBO	10		
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes: Photos Start 801 quad 802 end 803



# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 6-20-12

Biologists: John H. Davis & Dave Compton  
Heather Moine Weather Conditions:

Start Time: 1312  
End Time: 1325

Transect #: 33

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	HTIN	85	BRMA	10						
5 m	HTIN	40	ERBO	35	BRMA	40	BRHO	5		
10 m	HTIN	35	HEGR	5	CEME	10	BRHO	20	BSG	30
15 m	HTIN	40	ERBO	35	CEME	10	DEFA	5		
20 m	ERBO	30	CRSE	5	BRHO	30			high % litter	
25 m	ERBO	50	BRMA	25						
30 m	HTIN	15	ERBO	40	CEME	15	branes	30		
35 m	CEME	20	ERBO	40	HTIN	10	branes	30		
40 m	ERBO	55	CEME	5	branes	35				
45 m	CEME	20	ERBO	35	branes	45				
50 m	ERBO	50	branes	40	CEME	10				
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes: Photos Start 789 End 791 Quad 790  
Mowed area (possibly w/o buffer around perimeter)

# DUDEK

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 6-20-12

Biologists: John H. Davis IV Dave Conner Weather Conditions: Start Time: 1245 End Time: 1300

Transect #: 35

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	ERGO	30	CEME	10	BRHO	30	DEFA	10	BSG	10
5 m	DEFA	20	CEME	10	BRHO	20	STPU-1	5	BSG	45
10 m	CEME	15	DEFA	10	BRHO	20	ERBO	50		
15 m	ISME	5	DEFA	5	ENCA	5	BRHO	20	BSG	65
20 m	STPU-1	5	CEME	5	DEFA	10	ERBO	40	BRMA	35
25 m	DEFA	10	ERGO	50	CEME	10	BRMA	25		
30 m	FRSA	35	DEFA	20	CEME	5	BRMA	30		
35 m	ENCA	35	CEME	5	BRMA	25	DEFA	5	HTIN	5
40 m	ENCA	20	CEME	35	HTIN	15	BRMA	25	STPU-1	5
45 m	ENCA	25	HTIN	10	BRMA	50	CEME	5		
50 m	ENCA	50	HTIN	10	BRMA	30				
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes: Photos 786 788 797  
sketch end quad

Project: 7248 - Newport Banning Ranch Task: Native Grassland Assessment Date: 6-12-12

Biologists: John H. Davis IV Dan Gungl Weather Conditions:  
Heather Moine

Start Time: 1339  
End Time: 1659

Transect #: 37

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	STPU-17	65	CEME	5	ERBO	20	ANAK	5	MAVU	5
5 m	STPU-12	40	ACGL	5	ERBO	40	CEME	10	BRHO	5
10 m	CEME	30	RUOK	10	STPU-3	10	BRNT	10	BRMA	15
15 m	CEME	40	BRNT	5	BRMA	10	BRHO	10	BRDI	5
20 m	ERBO	25	CEME	10	BRHO	25	HOMU	10	BRMA	20
25 m	DEFA	5	CEME	20	ERBO	15	brmes	45	HOMU	10
30 m	CEME	15	BRHO	15	VUMP	15	BRMA	25		
35 m	CEME	25	BRHO	20	BRMA	5			BR	50
40 m	ENCA	35	DISP	25	HOMU	10	BRMA	10	AVBA	20
45 m	STPU-2	5	DISP	10	CEME	15	brmes	40	ERBO	30
50 m	MAVU	10	ACGL	5	brmes	50	DISP	30	HIN	5
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

Photos  
Start - 673  
separated - 674  
end - 675

Project:

7248 - Newport Banning Ranch

Task: Native Grassland Assessment

Date:

6-20-12

Biologists:

John H. Davis IV  
Heather Moine

Weather Conditions:

Clear

Start Time:

1515

End Time:

1528

Transect #:

38

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	AVBA	20	CRSE	20	brmes	30	ERBU	10	STPU-7	20
5 m	ATSE	15	AVBA	20	STPU-1	5	brmes	40	ERBU	20
10 m	AVBA	45	CRSE	15	CEME	5	brmes	30		
15 m	AVBA	50	brmes	25	ERBU	10				
20 m	AVBA	30	STPU-9	30	brmes	25	CRSE	10		
25 m	AVBA	40	ERBU	15	brmes	25	ANAR	15		
30 m	AVBA	25	ERBU	40	CRSE	10	brmes	20		
35 m	AVBA	65	ERBU	15	brmes	20				
40 m	AVBA	20	ERBU	20	brmes	55				
45 m	AVBA	35	ERBU	45	brmes	20				
50 m	AVBA	35	HTIN	15	ERBU	30	brmes	10	CRSE	20
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

Photos  
ster  
quid  
end  
804  
805  
806



# DUDEK

Project:

7248 - Newport Banning Ranch

Task: Native Grassland Assessment

Date:

6-12-12

Biologists:

John H. Davis  
Heather Moine

Weather Conditions:

Clear

Start Time:

1307

End Time:

1324

Transect #: 39

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	ENCA	75								
5 m	ENCA	85	BRMA	5	RUCR	5				
10 m	CEME	20	ENCA	10	DISP	25	BRMA	10	FOVU	5
15 m	DEFA	5	BRMA	5	BRNT	10			BG	80
20 m	CEMR	10	BRMA	20	BRNT	10	FOVU	10	BG	50
25 m	ERBO	60	STPU-2	5	DEFA	5	CEME	10	DISP	10
30 m	ENCA	15	STPU-1	5	BRHO	10	DISP	25	DEFA	5
35 m	ERBO	65	DISP	5	STPU-3	10	BRHO	5		
40 m	ANAR	10	STPU-2	5	DISP	40	CEME	30	BRHO	10
45 m	STPU-1	15	DISP	60	ERBO	25	BRDI	5		
50 m	CEME	15	ERBO	35	BRHO	15	BRMA	5		
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

disturb start 670  
rep restoration 671  
end 672

# DUDEK

Project: 7248 - Newport Banning Ranch

Task: Native Grassland Assessment

Date: 6-12-12

Biologists: John H. Davis IV  
Heather Moine

Weather Conditions: Clear

Start Time: 1237

End Time: 1257

Transect #: 40

Quad #	Species #1	%	Species #2	%	Species #3	%	Species #4	%	Additional Species	%
0 m	FRSA	70	AVBA	5	BRDI	5	BRHO	5	HOMU	5
5 m	FRSA	45	MECR	5	AVBA	5	BRHO	20	HOMU	20
10 m	HOMU	75	MENO	5	LENT	5	AVBA	5	BRHO	5
15 m	MECR	20	MENO	20	HOMU	45	BRHO	15		
20 m	MENO	45	HOMU	45	BRHO	10				
25 m	RUCR	10	AVBA	45	HOMU	40	BRHO	5		
30 m	MECR	15	HOMU	35	BRHO	35			BRG	15
35 m	RUCR	20	HOMU	20	BRHO	40	DTSP	5	AVBA	10
40 m	DTSP	10	RUCR	20	BRDI	35	HOMU	10	BRHO	15
45 m	RUCR	10	MECR	10	GRDI	25	BRHO	15	HOMU	10
50 m	HOMU	60	BRHO	20	BRDI	10	DTSP	5	AVBA	5
55 m										
60 m										
65 m										
70 m										
75 m										
80 m										
85 m										
90 m										
95 m										
100 m										

Notes:

miss start - 667  
reg quad - 668  
end - 669

INTENTIONALLY LEFT BLANK

# **APPENDIX D**

## ***Photo Plates – Vegetation Mapping***





## APPENDIX D

### Photo Plates – Vegetation Mapping

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ABG\_01 – Annual Brome Grassland 01: photograph 903. June 22, 2012.



CBBS\_01 – California Brittle Brush Scrub: photograph 738. June 19, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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CBBS\_02 – Annual Brome Grassland 01: photograph 739. June 19, 2012.



CBBS\_CPPS\_01 – California Brittle Brush Scrub & Costal Prickly Pear Scrub: photograph 698. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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CBBS\_CPPS\_01 – California Brittle Brush Scrub & Coastal Prickly Pear Scrub:  
photograph 699. June 18, 2012.



CBBS\_CPPS\_02 – California Brittle Brush Scrub & Coastal Prickly Pear Scrub:  
photograph 751. June 19, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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CBBS\_CPPS\_03 – California Brittle Brush Scrub & Coastal Prickly Pear Scrub:  
photograph 760. June 19, 2012.



CBBS\_CPPS\_04 – California Brittle Brush Scrub & Coastal Prickly Pear Scrub:  
photograph 761. June 19, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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CBBS\_CPPS\_05 – California Brittle Brush Scrub & Coastal Prickly Pear Scrub:  
photograph 768. June 19, 2012.



CBBS\_CPPS\_06 – California Brittle Brush Scrub & Coastal Prickly Pear Scrub:  
photograph 770. June 19, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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CBBS\_CPPS\_07 – California Brittle Brush Scrub & Coastal Prickly Pear Scrub:  
photograph 882. June 22, 2012.



CBBS\_CPPS\_07 – California Brittle Brush Scrub & Coastal Prickly Pear Scrub:  
photograph 883. June 22, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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CBBS\_CPPS\_07 – California Brittle Brush Scrub & Coastal Prickly Pear Scrub: photograph 900. June 22, 2012.



CSS\_01 – California Sagebrush Scrub: photograph 725. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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CSS\_02– California Sagebrush Scrub: photograph 726. June 18, 2012.



D\_01 – Disturbed: photograph 701. June 18, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_01 – Disturbed: photograph 702. June 18, 2012.



D\_02 – Disturbed: photograph 707. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_02 – Disturbed: photograph 708. June 18, 2012.



D\_03 – Disturbed: photograph 720. June 18, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_03 – Disturbed: photograph 721. June 18, 2012.



D\_03 – Disturbed: photograph 722. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_04 – Disturbed: photograph 714. June 18, 2012.



D\_04 – Disturbed: photograph 715. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_04 – Disturbed: photograph 716. June 18, 2012.



D\_05 – Disturbed: photograph 723. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_05 – Disturbed: photograph 724. June 18, 2012.



D\_06 – Disturbed: photograph 727. June 18, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_07 – Disturbed: photograph 728. June 18, 2012.



D\_07 – Disturbed: photograph 729. June 18, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_07 – Disturbed: photograph 730. June 18, 2012.



D\_08 – Disturbed: photograph 741. June 19, 2012

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_08 – Disturbed: photograph 742. June 19, 2012.



D\_09 – Disturbed: photograph 743. June 19, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_09 – Disturbed: photograph 744. June 19, 2012.



D\_10 – Disturbed: photograph 747. June 19, 2012

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_11 – Disturbed: photograph 756. June 19, 2012.



D\_12 – Disturbed: photograph 758. June 19, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_12 – Disturbed: photograph 759. June 19, 2012.



D\_13 – Disturbed: photograph 763. June 19, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_14 – Disturbed: photograph 765. June 19, 2012.



D\_14 – Disturbed: photograph 766. June 19, 2012

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_15 – Disturbed: photograph 769. June 19, 2012.



D\_16 – Disturbed: photograph 772. June 20, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_16 – Disturbed: photograph 773. June 20, 2012.



D\_16 – Disturbed: photograph 774. June 20, 2012

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_17 – Disturbed: photograph 775. June 20, 2012.



D\_17 – Disturbed: photograph 776. June 20, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_18 – Disturbed: photograph 777. June 20, 2012.



D\_18 – Disturbed: photograph 778. June 20, 2012



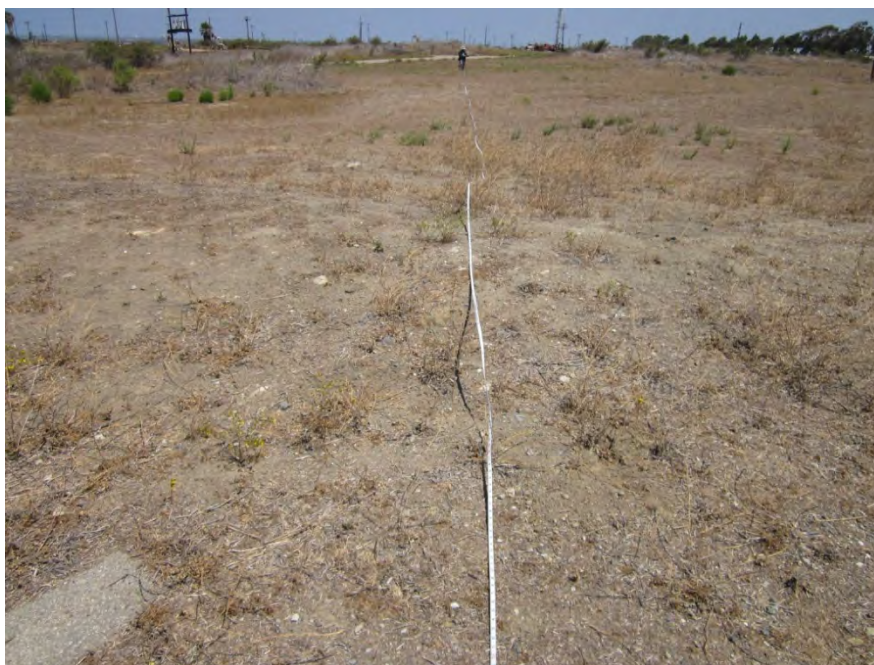
## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_19 – Disturbed: photograph 779. June 20, 2012.



D\_20 – Disturbed: photograph 781. June 20, 2012

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_20 – Disturbed: photograph 782. June 20, 2012.



D\_20 – Disturbed: photograph 783. June 20, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_21 – Disturbed: photograph 784. June 20, 2012.



D\_22 – Disturbed: photograph 785. June 20, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_23 – Disturbed: photograph 808. June 20, 2012.



D\_23 – Disturbed: photograph 809. June 20, 2012

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_24 – Disturbed: photograph 810. June 21, 2012.



D\_24 – Disturbed: photograph 811. June 21, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_25 – Disturbed: photograph 812. June 21, 2012.



D\_26 – Disturbed: photograph 813. June 21, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_27 – Disturbed: photograph 814. June 21, 2012.



D\_27 – Disturbed: photograph 815. June 21, 2012

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_27 – Disturbed: photograph 816. June 21, 2012.



D\_27 – Disturbed: photograph 817. June 21, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_28 – Disturbed: photograph 828. June 21, 2012.



D\_28 – Disturbed: photograph 829. June 21, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_29 – Disturbed: photograph 830. June 21, 2012.



D\_29 – Disturbed: photograph 831. June 21, 2012

## APPENDIX D

### Photo Plates – Vegetation Mapping

---



D\_29 – Disturbed: photograph 832. June 21, 2012.



D\_30 – Disturbed: photograph 833. June 21, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_31 – Disturbed: photograph 834. June 21, 2012.



D\_32 – Disturbed: photograph 835. June 21, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_32 – Disturbed: photograph 836. June 21, 2012.



D\_33 – Disturbed: photograph 849. June 21, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_33 – Disturbed: photograph 850. June 21, 2012.



D\_33 – Disturbed: photograph 851. June 21, 2012

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_34 – Disturbed: photograph 852. June 21, 2012.



D\_35 – Disturbed: photograph 863. June 21, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_35 – Disturbed: photograph 864. June 21, 2012.



D\_36 – Disturbed: photograph 866. June 21, 2012

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_36 – Disturbed: photograph 867. June 21, 2012.



D\_37 – Disturbed: photograph 868. June 21, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_38 – Disturbed: photograph 869. June 21, 2012.



D\_39 – Disturbed: photograph 870. June 21, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_39 – Disturbed: photograph 871. June 21, 2012.



D\_40 – Disturbed: photograph 872. June 22, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_40 – Disturbed: photograph 873. June 22, 2012.



D\_41 – Disturbed: photograph 874. June 22, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_41 – Disturbed: photograph 875. June 22, 2012.



D\_42 – Disturbed: photograph 876. June 21, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_43 – Disturbed: photograph 879. June 22, 2012.



D\_44 – Disturbed: photograph 881. June 22, 2012

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_45 – Disturbed: photograph 884. June 22, 2012.



D\_45 – Disturbed: photograph 885. June 22, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_46 – Disturbed: photograph 886. June 22, 2012.



D\_46 – Disturbed: photograph 887. June 22, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_47 – Disturbed: photograph 888. June 22, 2012.



D\_47 – Disturbed: photograph 889. June 22, 2012

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_48 – Disturbed: photograph 890. June 22, 2012.



D\_48 – Disturbed: photograph 891. June 22, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_49 – Disturbed: photograph 893. June 22, 2012.



D\_49 – Disturbed: photograph 894. June 22, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_50 – Disturbed: photograph 899. June 22, 2012.



D\_51 – Disturbed: photograph 901. June 22, 2012

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_51 – Disturbed: photograph 902. June 22, 2012.



D\_52 – Disturbed: photograph 904. June 22, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_53 – Disturbed: photograph 908. June 22, 2012.



D\_54 – Disturbed: photograph 909. June 22, 2012



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_ABG\_01 – Disturbed Annual Brome Grassland: photograph 692. June 18, 2012.



D\_ABG\_01 – Disturbed Annual Brome Grassland: photograph 693. June 18, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_ABG\_01 – Disturbed Annual Brome Grassland: photograph 694. June 18, 2012.



D\_CBBS\_01 – Disturbed California Brittle Brush Scrub: photograph 690. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_01 – Disturbed California Brittle Brush Scrub: photograph 691. June 18, 2012.



D\_CBBS\_02 – Disturbed California Brittle Brush Scrub: photograph 695. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_02 – Disturbed California Brittle Brush Scrub: photograph 696. June 18, 2012.



D\_CBBS\_03 – Disturbed California Brittle Brush Scrub: photograph 704. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_03 – Disturbed California Brittle Brush Scrub: photograph 705. June 18, 2012.



D\_CBBS\_03 – Disturbed California Brittle Brush Scrub: photograph 706. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_04 – Disturbed California Brittle Brush Scrub: photograph 709. June 18, 2012.



D\_CBBS\_04 – Disturbed California Brittle Brush Scrub: photograph 710. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_06 – Disturbed California Brittle Brush Scrub: photograph 713. June 18, 2012.



D\_CBBS\_06 – Disturbed California Brittle Brush Scrub: photograph 717. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_07 – Disturbed California Brittle Brush Scrub: photograph 718. June 18, 2012.



D\_CBBS\_07 – Disturbed California Brittle Brush Scrub: photograph 719. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_08 – Disturbed California Brittle Brush Scrub: photograph 728. June 18, 2012.



D\_CBBS\_09 – Disturbed California Brittle Brush Scrub: photograph 732. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_09 – Disturbed California Brittle Brush Scrub: photograph 733. June 18, 2012.



D\_CBBS\_09 – Disturbed California Brittle Brush Scrub: photograph 734. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_10 – Disturbed California Brittle Brush Scrub: photograph 740. June 19, 2012.



D\_CBBS\_11 – Disturbed California Brittle Brush Scrub: photograph 746. June 19, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_12 – Disturbed California Brittle Brush Scrub: photograph 748. June 19, 2012.



D\_CBBS\_13 – Disturbed California Brittle Brush Scrub: photograph 749. June 19, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_13 – Disturbed California Brittle Brush Scrub: photograph 750. June 19, 2012.



D\_CBBS\_14 – Disturbed California Brittle Brush Scrub: photograph 753. June 19, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_14 – Disturbed California Brittle Brush Scrub: photograph 754: June 19, 2012.



D\_CBBS\_14 – Disturbed California Brittle Brush Scrub: photograph 755. June 19, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_15 – Disturbed California Brittle Brush Scrub: photograph 757: June 19, 2012.



D\_CBBS\_16 – Disturbed California Brittle Brush Scrub: photograph 764. June 19, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_17 – Disturbed California Brittle Brush Scrub: photograph 767: June 19, 2012.



D\_CBBS\_18 – Disturbed California Brittle Brush Scrub: photograph 771. June 19, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_19 – Disturbed California Brittle Brush Scrub: photograph 780: June 20, 2012.



D\_CBBS\_20 – Disturbed California Brittle Brush Scrub: photograph 807. June 20, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_21 – Disturbed California Brittle Brush Scrub: photograph 824: June 20, 2012.



D\_CBBS\_22 – Disturbed California Brittle Brush Scrub: photograph 826: June 21, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_22 – Disturbed California Brittle Brush Scrub: photograph 905: June 22, 2012.



D\_CBBS\_23 – Disturbed California Brittle Brush Scrub: photograph 906. June 22, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_24 – Disturbed California Brittle Brush Scrub: photograph 907: June 22, 2012.



D\_CBBS\_CPPS\_01 – Disturbed California Brittle Brush Scrub and Coastal Prickly Pear Scrub: photograph 752. June 19, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_CPPS\_02 – Disturbed California Brittle Brush Scrub and Coastal Prickly Pear Scrub: photograph 827. June 21, 2012.



D\_CBBS\_MFT\_01 – Disturbed California Brittle Brush Scrub and Mulefat Thicket: photograph 844. June 21, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_CBBS\_MFT\_01 – Disturbed California Brittle Brush Scrub and Mulefat Thicket: photograph 845. June 21, 2012.



D\_CPPS\_01 – Disturbed Coastal Prickly Pear Scrub: photograph 703. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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D\_MFT\_CPPS\_01 – Disturbed Mulefat Thicket and Coastal Prickly Pear Scrub: photograph 862. June 21, 2012.



Debris\_01 – Debris: photograph 818. June 21, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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Debris\_01 – Debris: photograph 819. June 21, 2012.



Debris\_01 – Debris: photograph 823. June 21, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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Debris\_02 – Debris: photograph 837. June 21, 2012.



Debris\_02 – Debris: photograph 838. June 21, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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Debris\_02 – Debris: photograph 839. June 21, 2012.



Debris\_03 – Debris: photograph 840. June 21, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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Debris\_03 – Debris: photograph 841. June 21, 2012.



Debris\_04 – Debris: photograph 842. June 21, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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Debris\_04 – Debris: photograph 843. June 21, 2012.



Debris\_04 – Debris: photograph 846. June 21, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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DVLP\_01 – Developed: photograph 762. June 19, 2012.



DVLP\_02 – Developed: photograph 892. June 22, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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IPM\_01 – Ice Plant Mats: photograph 737. June 19, 2012.



IPM\_02 – Ice Plant Mats: photograph 745. June 19, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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MFT\_01 – Mulefat Thicket: photograph 880. June 22, 2012.



MYP\_01 – Myoporum Stand: photograph 736. June 19, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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Pile\_01 – Stockpile: photograph 820. June 21, 2012.



Pile\_01 – Stockpile: photograph 821. June 21, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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Pile\_01 – Stockpile: photograph 822. June 21, 2012.



UM\_01 – Upland Mustard: photograph 697. June 18, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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UM\_02 – Upland Mustard: photograph 700. June 18, 2012.



UM\_03 – Upland Mustard: photograph 847. June 21, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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UM\_04 – Upland Mustard: photograph 848. June 21, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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01 – Disturbed: photograph 1354. November 15, 2012.



01 – Disturbed: photograph 1355. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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02 – D-M-CBBS: photograph 1357. November 15, 2012.



02 – D-M-CBBS: photograph 1356. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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03 – D-CBBS: photograph 1358. November 15, 2012.



03 – D-CBBS: photograph 1359. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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04 – Disturbed: photograph 1360. November 15, 2012.



04 – Disturbed: photograph 1361. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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05 – Disturbed: photograph 1363. November 15, 2012.



05 – Disturbed: photograph 1364. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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06 – Disturbed: photograph 1365. November 15, 2012.



06 – Disturbed: photograph 1366. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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07 – D-M-CBBS: photograph 1367. November 15, 2012.



07 – D-M-CBBS: photograph 1368. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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08 – Disturbed: photograph 1369. November 15, 2012.



08 – Disturbed: photograph 1370. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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09 – Disturbed: photograph 1372. November 15, 2012.



09 – Disturbed: photograph 1373. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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10 – Disturbed: photograph 1374. November 15, 2012.



10 – Disturbed: photograph 1375. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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11 – D-CBBS: photograph 1376. November 15, 2012.



11 – D-CBBS: photograph 1377. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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12 – Disturbed: photograph 1378. November 15, 2012.



12 – Disturbed: photograph 1379. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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13 – Disturbed: photograph 1380. November 15, 2012.



13 – Disturbed: photograph 1381. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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14 – Disturbed: photograph 1382. November 15, 2012.



14 – Disturbed: photograph 1383. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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15 – Disturbed: photograph 1384. November 15, 2012.



15 – Disturbed: photograph 1385. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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16 – Disturbed: photograph 1386. November 15, 2012.



16 – Disturbed: photograph 1387. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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17 – D-M-CBBS: photograph 1388. November 15, 2012.



17 – D-M-CBBS: photograph 1389. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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18 – Disturbed: photograph 1390. November 15, 2012.



18 – Disturbed: photograph 1391. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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19 – Disturbed: photograph 1392. November 15, 2012.



19 – Disturbed: photograph 1393. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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20 – Disturbed: photograph 1394. November 15, 2012.



20 – Disturbed: photograph 1395. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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21 – Disturbed: photograph 1396. November 15, 2012.



21 – Disturbed: photograph 1397. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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22 – Disturbed: photograph 1398. November 15, 2012.



22 – Disturbed: photograph 1399. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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23 – Disturbed: photograph 1400. November 15, 2012.



23 – Disturbed: photograph 1401. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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24 – D-M-CBBS: photograph 1402. November 15, 2012.



24 – D-M-CBBS: photograph 1403. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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25 – Disturbed: photograph 1404. November 15, 2012.



25 – Disturbed: photograph 1405. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

---



26 – Disturbed: photograph 1406. November 15, 2012.



26 – Disturbed: photograph 1407. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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27 – Disturbed: photograph 1408. November 15, 2012.



27 – Disturbed: photograph 1409. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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28 – Disturbed: photograph 1410. November 15, 2012.



28 – Disturbed: photograph 1411. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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29 – Disturbed: photograph 1412. November 15, 2012.

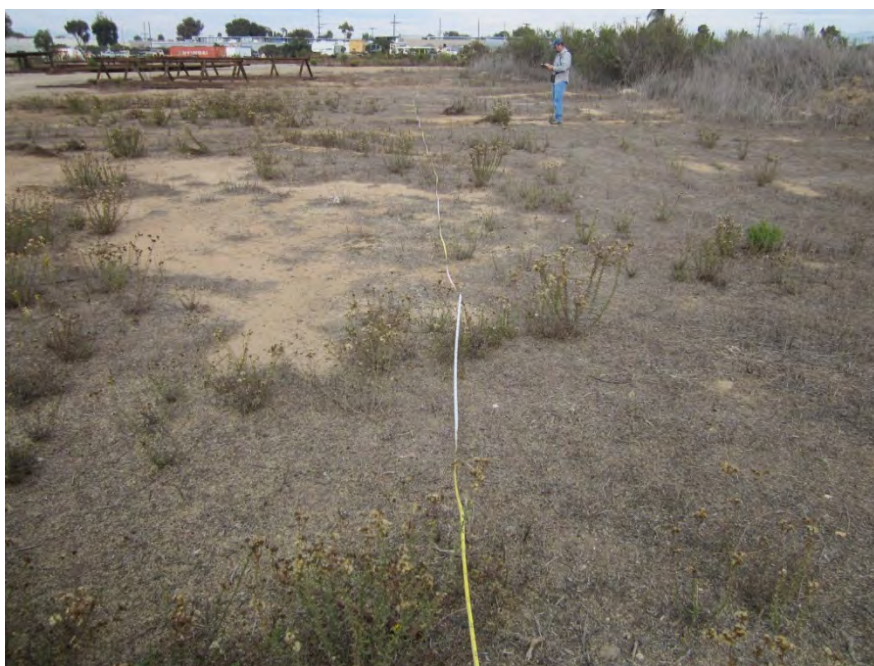


29 – Disturbed: photograph 1413. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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30 – Disturbed: photograph 1414. November 15, 2012.



30 – Disturbed: photograph 1415. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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31 – Disturbed: photograph 1416. November 15, 2012.



31 – Disturbed: photograph 1417. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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32 – Disturbed: photograph 1418. November 15, 2012.



32 – Disturbed: photograph 1419. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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33 – Disturbed: photograph 1420. November 15, 2012.



33 – Disturbed: photograph 1421. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

---



34 – Disturbed: photograph 1422. November 15, 2012.



34 – Disturbed: photograph 1423. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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35 – Disturbed: photograph 1424. November 15, 2012.



35 – Disturbed: photograph 1425. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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36 – D-CBBS: photograph 1426. November 15, 2012.



36 – D-CBBS: photograph 1427. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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37 – D-M-CBBS: photograph 1428. November 15, 2012.



37 – D-M-CBBS: photograph 1429. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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38 – Disturbed: photograph 1430. November 15, 2012.



38 – Disturbed: photograph 1431. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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39 – Disturbed: photograph 1432. November 15, 2012.



39 – Disturbed: photograph 1433. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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40 – Disturbed: photograph 1434. November 15, 2012.



40 – Disturbed: photograph 1435. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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41 – Disturbed: photograph 1436. November 15, 2012.



41 – Disturbed: photograph 1437. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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42 – Disturbed: photograph 1438. November 15, 2012.



42 – Disturbed: photograph 1439. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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43 – Disturbed: photograph 1440. November 15, 2012.



43 – Disturbed: photograph 1441. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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44 – Disturbed: photograph 1442. November 15, 2012.



44 – Disturbed: photograph 1443. November 15, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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45 – Disturbed: photograph 1444. November 15, 2012.



45 – Disturbed: photograph 1445. November 15, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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46 – Disturbed: photograph 1446. December 11, 2012.



46 – Disturbed: photograph 1447. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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47 – Disturbed: photograph 1448. December 11, 2012.



48 – Disturbed: photograph 1449. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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48 – Disturbed: photograph 1450. December 11, 2012.



49 – D-M-CBBS: photograph 1451. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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49 – D-M-CBBS: photograph 1452. December 11, 2012.



50 – Disturbed: photograph 1453. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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50 – Disturbed: photograph 1454. December 11, 2012.



51 – D-M-CBBS: photograph 1455. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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51 – D-M-CBBS: photograph 1456. December 11, 2012.



52 – D-M-CBBS: photograph 1457. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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52 – D-M-CBBS: photograph 1458. December 11, 2012.



53 – Disturbed: photograph 1459. December 11, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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53 – Disturbed: photograph 1460. December 11, 2012.



54 – Disturbed: photograph 1461. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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55 – Disturbed: photograph 1462. December 11, 2012.



55 – Disturbed: photograph 1463. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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56 – Disturbed: photograph 1464. December 11, 2012.



56 – Disturbed: photograph 1465. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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57 – Disturbed: photograph 1466. December 11, 2012.



58 – D-CBBS: photograph 1467. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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58 – D-CBBS: photograph 1468. December 11, 2012.



59 – D-M-CBBS: photograph 1469. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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59 – D-M-CBBS: photograph 1470. December 11, 2012.



60 – Disturbed: photograph 1471. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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61 – Disturbed: photograph 1472. December 11, 2012.



61 – Disturbed: photograph 1473. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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62 – Disturbed: photograph 1474. December 11, 2012.



62 – Disturbed: photograph 1475. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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63 – Disturbed: photograph 1476. December 11, 2012.



63 – Disturbed: photograph 1477. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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64 – D-M-CBBS: photograph 1478. December 11, 2012.



64 – D-M-CBBS: photograph 1479. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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65 – Disturbed: photograph 1480. December 11, 2012.



65 – Disturbed: photograph 1481. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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66 – Disturbed: photograph 1487. December 11, 2012.



66 – Disturbed: photograph 1488. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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67 – Disturbed: photograph 1489. December 11, 2012.



68 – Disturbed: photograph 1491. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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68 – Disturbed: photograph 1492. December 11, 2012.



69 – Disturbed: photograph 1493. December 11, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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69 – Disturbed: photograph 1494. December 11, 2012.



70 – Disturbed: photograph 1495. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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71 – D-M-CBBS: photograph 1496. December 11, 2012.



71 – D-M-CBBS: photograph 1497. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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72 – Disturbed: photograph 1498. December 11, 2012.



72 – Disturbed: photograph 1499. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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73 – D-M-CBBS: photograph 1500. December 11, 2012.



74 – D-M-CBBS: photograph 1501. December 11, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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74 – D-M-CBBS: photograph 1502. December 11, 2012.



75 – Disturbed: photograph 1503. December 11, 2012.



## APPENDIX D

### Photo Plates – Vegetation Mapping

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75 – Disturbed: photograph 1504. December 11, 2012.



76 – D-M-CBBS: photograph 1505. December 11, 2012.

## APPENDIX D

### Photo Plates – Vegetation Mapping

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76 – D-M-CBBS: photograph 1506. December 11, 2012.



APPENDIX D  
Photo Plates – Vegetation Mapping

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# APPENDIX E

## *Vegetation Mapping Polygons - Data Sheets*





Feature ID: D-CBBS-01

Dominant species: ENCA

Associated species: DISP

Photos (loc., orient.): P-690, P-691

Notes (% coverage): 95% ENCA closed canopy, overlapping, 5% BG  
5ft in from road recently disturbed/maintenance activities, understory DISP  
open canopy 50cm

Feature ID: D-ABG-01

Dominant species: ABG, COFIL

Associated species: STIPUL over 10%, previously mapped

Photos (loc., orient.): p692, p693, p694

Notes (% coverage): 60% ABG, 20% Stipa, 20% COFI  
ABG overlands into Stipa, HIIN spread throughout  
several ENCA scrub, some ACGL

Feature ID: D-CBBS-02

Dominant species: ENCA

Associated species: ACGL, ABG

Photos (loc., orient.): P-695, P-696

Notes (% coverage): 85% ENCA, 5% ACGL, 10% ABG. Southern portion lower% ENCA  
roadside ENCA recently maintained, open canopy 40cm  
interior ENCA closed canopy with overlap, few gaps 20cm

Feature ID: UM-01

Dominant species: HIIN

Associated species: ISME, CEME, ABG, ACGL

Photos (loc., orient.): P-697

Notes (% coverage): isolated ENCA shrubs within polygon  
80% HIIN, 10% ABG, 5% CEME, 5% ACGL  
COMA within poly, access road with slurry

Feature ID: CBBS-CPPS-01

Dominant species: ENCA, OPLI

Associated species: ISAR, Cholla → CYPR

Photos (loc., orient.): P-698, P-699

Notes (% coverage): 80% ENCA, 10% OPLI, 5% CYPR, 5% ISAR  
Undisturbed. closed canopy ENCA ~ 85cm



Feature ID: UM-02

Dominant species: Mustard

Associated species: BAP1

Photos (loc., orient.): P-700

Notes (% coverage):

Feature ID: D-01

Dominant species: leaf litter, asphalt ~ 60%

Associated species: ACGL, CEME

Photos (loc., orient.): P-701, P-702

Notes (% coverage): scattered ENCA ~ 25cm height  
near oil well 153

Feature ID: D-CPPS-01

Dominant species: OPL1 CYPR

Associated species: ISME

Photos (loc., orient.): P-703 15% ENCA

Notes (% coverage): 30% OPL, 30% CYPR, 15% ISME, 10% BG/ARG  
road side, appears disturbed, not recent

Feature ID: D-CBBS-03

Dominant species: ENCA

Associated species: OPL1, HIIN

Photos (loc., orient.): P-704 - P-706

Notes (% coverage): 80% ENCA, 10% OPL1, 5% HIIN, 5% BG/Litter  
D-ERBO on two sides poly is along ridge

Feature ID: D-02

Dominant species: ERBO

Associated species: CEME, ISME

Photos (loc., orient.): P-707

Notes (% coverage): 90% ERBO, 5% CEME, 5% ISM  
Scattered STPU <10%, Scattered ENCA  
almost a mono-culture of ERBO

Feature ID:	D- CBBS-04
Dominant species:	ENCA
Associated species:	ACGL
Photos (loc., orient.):	P-709 , P710
Notes (% coverage):	highly disturbed near oil well pad 130 Some ENCA growing through slurry
Feature ID:	D- CBBS-05
Dominant species:	ENCA
Associated species:	ISAR
Photos (loc., orient.):	P-711 , P-712
Notes (% coverage):	previously mapped as MGBS, now dominated by ENCA. Disturbed adjacent to oil well #140
Feature ID:	D- CBBS-06
Dominant species:	ENCA
Associated species:	HIIN , DEFA , CEME
Photos (loc., orient.):	P-713 , 1
Notes (% coverage):	highly disturbed ENCA around oil well #140 regrowth due to no recent mowing/maintenance large BG and asphalt/slurry areas adjacent
Feature ID:	D- 03
Dominant species:	None
Associated species:	CEMB , ENCA , BRMA , DEFA
Photos (loc., orient.):	
Notes (% coverage):	
Feature ID:	D-04
Dominant species:	CEME , HIIN
Associated species:	ACGL , STPU , ISAR
Photos (loc., orient.):	P 714 , P 715
Notes (% coverage):	



Feature ID: AWT-01

Dominant species: SALLAS

Associated species: SALEXI

Photos (loc., orient.):

Notes (% coverage): Riparian dominated by SALLAS w/ large  
area of SALEXI as associated sp @ boundary  
Closed canopy

Feature ID: D-05

Dominant species:

Associated species: HIIN, DISP, ISME

Photos (loc., orient.): P-723, P-724

Notes (% coverage):

Feature ID: D-CBBS-07

Dominant species: ENCA

Associated species: ABG, ACGL,

Photos (loc., orient.): P-718, P-719

Notes (% coverage): previously mapped as ruderal  
~85% ENCA, pockets of other Alliances mapped w/ GPS

Feature ID: D-CBBS-08

Dominant species: ENCA

Associated species: P-726

Photos (loc., orient.):

Notes (% coverage): Previously mapped as Coyotebrush

Feature ID: CSS-01

Dominant species: ARCA

Associated species: BAPI

Photos (loc., orient.): P-725

Notes (% coverage): Previously mapped as coyotebrush

Feature ID:	CSS_02
Dominant species:	ARCA
Associated species:	ERFA
Photos (loc., orient.):	P-726
Notes (% coverage):	along property boundary, slope that is sloping towards south
Feature ID:	D-06
Dominant species:	AVBA
Associated species:	AVBA, DEFA, HIIN, ATSE, castor bean, wild radish, MEOR
Photos (loc., orient.):	P-727
Notes (% coverage):	highly disturbed
Feature ID:	D-07
Dominant species:	
Associated species:	
Photos (loc., orient.):	P-728
Notes (% coverage):	highly disturbed area adjacent to access road, evidence of recent mowing
Feature ID:	D-CBBS-08
Dominant species:	ENCA
Associated species:	Carpobrotus sp.
Photos (loc., orient.):	P-731
Notes (% coverage):	ENCA shrubs avg ~70cm, on eroded E-facing slope. ~75% ENCA coverage, 15% BG, 10% Carpobrotus. Disturbed due to erosion and non-irrigation. No evidence of maintenance
Feature ID:	D-CBBS-09
Dominant species:	ENCA
Associated species:	HEGR, HIIN, ISME, Carpobrotus
Photos (loc., orient.):	P-732
Notes (% coverage):	~60% ENCA, 20% HEGR, 10% HIIN, 10% BG



Feature ID: D-08  
Dominant species: P-735  
Associated species: BASA, ENCA, ATLE, Myoporum, Caryobrotus  
Photos (loc., orient.):  
Notes (% coverage): Disturbed from presence of non-natives, but no sign of  
maintenance. 30% ENCA, 30% BASA, 25% Caryobrotus, remainder BG  
Average light ENCA = 70 cm. Within depressed, eroded area

ATLE,  
Myoporum

Feature ID: MYP-01  
Dominant species: MYLA  
Associated species: Caryobrotus, BASA, ENCA,  
Photos (loc., orient.): P-736  
Notes (% coverage): 60% MYLA, 15% BASA, 15% Carpo, 5% ENCA

Feature ID: IPM-01  
Dominant species: Caryobrotus  
Associated species: BASA, ISME, MYLA, ENCA, ACGL  
Photos (loc., orient.): P-737  
Notes (% coverage): 75% Caryobrotus, 15% BASA, 5% ISME  
5% other. Area has succeeded from GBS to IPM

Feature ID: CBBS-01  
Dominant species: ENCA  
Associated species: ISAR, ERFA  
Photos (loc., orient.): P-738  
Notes (% coverage): 90% ENCA, 5% ERFA, 5% ISAR  
edge of low-lying eroded area in SE corner of site  
Continuous closed canopy, avg ENCA height ~ 80 cm

Feature ID: CBBS-02  
Dominant species: ENCA  
Associated species: ISAR  
Photos (loc., orient.): P-739  
Notes (% coverage): 90% ENCA, 10% ISAR; avg ENCA hgt =  
~ 60 cm. Canopy somewhat broken

transect?  
Feature ID: D-CBBS-10  
Dominant species: ENCA  
Associated species: ACGL, ISAR  
Photos (loc., orient.): P-740  
Notes (% coverage): ~70% ENCA, 15% ACGL, 5% ISAR, 10% BG  
open canopy, avg hgt ENCA = ~60cm; active maintenance adjacent

Feature ID: D-08  
Dominant species: \_\_\_\_\_  
Associated species: ACGL, HIIN, ERBO, ISME, Carpobrotus, Bromes, AMPS  
Photos (loc., orient.): P-741, P-742 Avena  
Notes (% coverage): 30% ACGL, 20% Carpobrotus, 10% ISME,  
20% BG, 20% other  
ground disturbed; evidence of mowing

Feature ID: D-09  
Dominant species: \_\_\_\_\_  
Associated species: ACGL, Bromes, AMPS, HIIN, Avena, CEME, Carpobrotus  
Photos (loc., orient.): P-743, P-744  
Notes (% coverage): Mowed area - obvious recent signs; avg hgt ~2  
veg = ~5cm. Coverage very mixed between noted spp.

transect  
Feature ID: D-CBBS-11  
Dominant species: ENCA  
Associated species: Carpobrotus, BASA, ACGL, BAPI  
Photos (loc., orient.): P-746  
Notes (% coverage): 50% ENCA, 20% Carpobrotus, 10% BG, 10% BASA,  
5% BAPI 5% other

Feature ID: IPM-02  
Dominant species: Carpobrotus  
Associated species: BASA, ENCA  
Photos (loc., orient.): Carpobrotus = 60%, BASA = 15%, BG = 20% → P-745  
Notes (% coverage): \_\_\_\_\_



transsect 1  
Feature ID: D-10

Dominant species: HIIN

Associated species: AVBA, CAPY, ACGL, RARA, STPU, MAVU

Photos (loc., orient.): P-747

Notes (% coverage): 80% AVBA/HIIN, 20% other

Densely vegetated - multiple erosional features

transsect 2  
Feature ID: D-CBBS-12

Dominant species: ENCA

Associated species: ISAR, GNCA, HIIN, Bromes, STPU (several)

Photos (loc., orient.): P-748

Notes (% coverage): Encroaching from adjacent D-CBBS into Borne "Rudora"  
80% ENCA

Feature ID: D-CBBS-13

Dominant species: ENCA

Associated species: ISAR, HIIN, Bromes

Photos (loc., orient.): P-749, P-750

Notes (% coverage): 60% ENCA, 20% HIIN, 10% Bromes, 5% ISAR  
Adjacent to road and maintained area

Feature ID: CBBS-CPPS-02

Dominant species: ENCA, OPLI

Associated species: ERFA, CYPR

Photos (loc., orient.): P-751

Notes (% coverage): Southwest facing bluff slope, some erosion  
undisturbed CBBS & CPPS, some CAED

Feature ID: D-CBBS-CPPS-01

Dominant species: ENCA/OPLI

Associated species: Clolla, Carpobrotus, ISMR, ISAR, ERFA, MIGL, RICO, FOUU

Photos (loc., orient.): P-752

Notes (% coverage): 80% ENCA/OPLI, 5% ISAR, 15% misc. Carpobrotus  
Myoporum polygams adjacent and internal

Feature ID: D-CBBS-14

Dominant species: ENCA

Associated species: HIIN, MAW, AMPS, Brones, HEGR, Carpobrotus

Photos (loc., orient.): P-753, P-754, P-755

Notes (% coverage): 70% ENCA, 15% HIIN, 5% AMPS, 10% other  
disturbed because high % non-natives; open canopy; includes  
small dirt berm. Adjacent to paved road

Feature ID: D-11

Dominant species:

Associated species: Carpobrotus, MYLA, COSE, BAPI, BASA, HEGR, DISP, ENCA, JSME

Photos (loc., orient.): P-756

Notes (% coverage): 30% Carpo, 10% MYLA, 10% BAPI, 5% BASA, 5% COSE, 10% DISP, 5% other  
High amount of non-natives, portion cleared recently (5% JSME)  
dirt berm along wedge, paved rd to E.

Feature ID: D-CBBS-15

Dominant species: ENCA

Associated species: ISAR, Carpobrotus, OPLI

Photos (loc., orient.): P-757

Notes (% coverage): 55% ENCA, Carpo 25%, ISAR 5%, OPLI 5%, BG 10%  
Graded slope, very open canopy, high concentration Carpo.

Feature ID: D-12

Dominant species:

Associated species: ENCA, ISAR, HEGR, HIIN, CEHE

Photos (loc., orient.): P-758, P-759

Notes (% coverage): 30% ENCA, 40% BG, HIIN 10%, ISAR 5%, 15% Brones etc  
Evidence of past mowing; adjacent to paved rd. But adj to CBBS-CPPS  
ENCA may be reestablishing

Feature ID: CBBS-CPPS-03

Dominant species: OPLI / ENCA

Associated species: FOVU, ISAR, CYPR

Photos (loc., orient.): P-760

Notes (% coverage): 90% ENCA/OPLI, 5% ISAR, 5% CYPR



6-19-12

Feature ID: C BBS- CPPS-04

Dominant species: ENCA (OPL)

Associated species: HIIN, FOU

Photos (loc., orient.): P-761

Notes (% coverage): ENCA 95%, HIIN 5%. Area connects two larger areas of C BBS- CPPS and is thus mapped as continuous with those. Previously mapped "Ruderal" but ENCA apparently has grown in from both sides

Feature ID: DVL P-01

Dominant species: NONE

Associated species: none

Photos (loc., orient.): P-762

Notes (% coverage): Previously mapped as ruderal, but now entirely bare/graded. Well @ edge of area may be new.

Feature ID: D-13

Dominant species:

Associated species: CEMB, HONU, ENCA, ATSE, BRHO, ISME, RUCR, FOU, FUDC

Photos (loc., orient.): P-763 HIIN

Notes (% coverage): ENCA 10%, HIIN 15%, RUCR 10%, CEMB 15%, FOU 5%, HONU/Gromes 35%  
Some ENCA regrowth on western portion. Changed from NNG because of predominance of forbs.

Feature ID: D-C BBS-16

Dominant species: ENCA

Associated species: HIIN, AMPS, Bromes, DISP (minimal)

Photos (loc., orient.): P-764

Notes (% coverage): 70% ENCA, HIIN 10%, AMPS 10%, BG 10%  
North portion shows signs of mowing, and includes scattered ENCA; S portion shows no signs of mowing, and has nearly closed ENCA canopy.

Feature ID: D-14

Dominant species:

Associated species: ERBO, ISME, HIIN, RUCR, STPU, AMPS, ACGL, Bromes

Photos (loc., orient.): P-765, P-766

Notes (% coverage): ERBO 25%, HIIN 15, Bromes 15, and misc.

Feature ID: D-CBBS-17

Dominant species: ENCA

Associated species: HIIN, ISAR

Photos (loc., orient.): P-767

Notes (% coverage): 80% ENCA, 10% HIIN, 5% ISAR Heavily eroded slope  
Not previously mapped as CBBS. Disturbed because somewhat open canopy,  
plus non-native HIIN, combined as D-CBBS w/ adj. area prev mapped as such

Feature ID: CBBS-CPPS-05

Dominant species: ENCA / OPLI

Associated species: ISAR, CYPR, SATR, MEGR, HIIN

Photos (loc., orient.): P-764

Notes (% coverage): 90% ENCA / OPLI, 5% ISAR, 5% BG.  
Mostly closed canopy; low concentration non-natives, mostly around small  
bare area. Slope facing south toward riparian. Adj to large CPPS polygon to east.

Feature ID: D-15

Dominant species: DEFA

Associated species: HIIN, CAPY, HEGR, ISME, MEIN, BRMA, CEMB, ENCA

Photos (loc., orient.): P-769

Notes (% coverage): 45% DEFA, remaining is mixture, including 15% BG  
ENCA = ~1%, 10-15 cm tall

Feature ID: CBBS-CPPS-06

Dominant species: ENCA / OPLI

Associated species: CYPR, ISAR

Photos (loc., orient.): P-770

Notes (% coverage): 90% ENCA / OPLI, 5% CYPR, 5% ISAR.  
Closed canopy, no significant non-native component, avg  
hgt of ENCA = 80cm; some OPLI and CYPR extends above ENCA canopy.

Feature ID: D-CBBS-18

Dominant species: ENCA

Associated species: OPLI, ISAR, HIIN, ISME, HEGR, CEMB, Brumex

Photos (loc., orient.): P-771 || Closed canopy area is narrow (20ft) and small

Notes (% coverage): 65% ENCA, 10% OPLI, 5% ISAR, 5% HIIN, 5% BG,  
100% non-native mix. Closed canopy in about 30% of polygon, with  
avg ENCA hgt of 60cm; open canopy of 30-40 cm elsewhere and evidence of

D-14

DVLP-01

CBBS-CPPS-04

D-CBBS-17

D-CBBS-CPPS-01

IPM-02

CBBS-02

MYP-01

CSS-02

AWT-01

D-CPPS-01

UM-02

Page 1 of 24

D-ABG-01

obvious non-  
tenance adjacent  
includes new  
ENCA



Feature ID: D-16

Dominant species: None

Associated species: ERBO, ENCA, HIIN, CEME, DEFA, ACGL, Bromes, STPU

Photos (loc., orient.): P-772, P-773, P-774

Notes (% coverage): dead Bromes/CEME/ERBO = ~ 70%, ENCA = 5%, BG = 10%,  
remaining is mixture of active and non-active. Evidence of incinerance,  
ENCA does not exceed 55 cm and is mostly 520 cm.

Feature ID: D-17

Dominant species:

Associated species: ERBO, Bromes, DEIN, FOUU, ISME, ENCA, HIIN, STPU, ERFA

Photos (loc., orient.): P-775, P-776

Notes (% coverage): 30% ERBO, 25% Bromes, 15% leaf litter, 5% ENCA, 5% ISME,  
5% HIIN, 5% BG; Forb dominant, mostly non-native; ENCA growing mostly  
to south, on oil pad; scattered, avg 25 cm

Feature ID: D-018

Dominant species: None

Associated species: ERBO, HIIN, CEME, ENCA, MAVU, FRSA, ISME, SATR

Photos (loc., orient.): P-777, P-778

Notes (% coverage): HIIN 20%, BG 20%, ENCA 15%, CEME 15%, remaining is misc  
Avg hgt of ENCA is 25 cm; potential for regrowth, but currently scattered,  
small plants

Feature ID: D-019

Dominant species: None

Associated species: CEME, ACGL, OPLI, ERBO, ISME, HIIN

Photos (loc., orient.): P-779

Notes (% coverage): 15% OPLI, 25% ACGL, 20% HIIN, 15% ERBO, 15% CEME, 15% BG  
Avg hgt of OPLI = 430; max = 40 cm; scattered. Area 5% ISME  
clears signs of obvious incinerance.

Feature ID: D-CBBS-19

Dominant species: ENCA

Associated species: HIIN, ISME, STPU, ISAR, CEME

Photos (loc., orient.): P-780

Notes (% coverage): ENCA 65%, ISME 20%, BG 15%, 10% misc  
Avg hgt of ENCA 250 cm; max 40 cm; open canopy, very open  
in places

Feature ID: D-20

Dominant species: none

AMPS, HOKU MECK, ENCA

Associated species: ERBO, CEME, HIIN, DEFA, ISME, MAVU, BRMA, BRHO, RUCK, Avena, STPU

Photos (loc., orient.): P-781, P-782, P-783

Notes (% coverage): ERBO, CEME, HIIN, DEFA are dominant over portions; non-native grasses  
dominant in smaller area in middle of polygon

Feature ID: D-21

Dominant species: none

Associated species: AUBA, ERBO, AMPS, CEME, BRHO, GRCA, HEGR, RUCK, HIIN, STPU, BRMA

Photos (loc., orient.): P-784

Notes (% coverage): AUBA, ERBO, AMPS, GRCA dominant over stretches; BRHO widespread  
but never dominant; 10% BG; STPU widespread  
AUBA ~ 15% coverage; Bromes ~ 5% coverage

Feature ID: D-22

Dominant species: none

Associated species: ISME, ACGL, ERBO, DEFA, HIIN, COSE, CEME, HEGR, STPU

Photos (loc., orient.): P-785

Notes (% coverage): Maintained in recent yrs; No ENCA, few grasses  
HIIN, ISME, ERBO, CEME are most prevalent spp.; 10% BG

Feature ID: D-CBBS-20

Dominant species: ENCA

Associated species: AUBA, OPLI, HIIN, ACGL, bromes, GRCA

Photos (loc., orient.): P-807

Notes (% coverage): ENCA 60%, ACGL 15%, HIIN 5%, OPLI 5%, unk tree 5%, 5% Bromes  
Open canopy, interspersed w non-native, signs of regrowth (formerly mapped  
as NNG). ENCA avg hgt = 50 cm

Feature ID: D-23

Dominant species: none

Associated species: ENCA

Photos (loc., orient.): P-800

Notes (% coverage):



Feature ID: D-24  
Dominant species: none  
Associated species: CEME, bromes, ERBO, ISME, HIIN, AMPS, HECU, DEFA  
Photos (loc., orient.): P-810, p-811  
Notes (% coverage): dominated by forbs - CEME, ERBO, DEFA, ERBO with  $\leq 20\%$  grasses. Past maintenance, but possibly not for several yrs. Approx 20' x 20' ENE patch re-establishing

Feature ID: D-25  
Dominant species: ISME (None)  
Associated species: CEME, bromes, HIIN, DEFA, AMPS  
Photos (loc., orient.): P-812  
Notes (% coverage): ISME 30%, CEME 20% AMPS 10%, BG & Misc 40%. Obvious signs of maintenance. ISME max hgt 50 cm; avg 30 cm.

Feature ID: D-26  
Dominant species: \_\_\_\_\_  
Associated species: unk A, DEFA, AMPS, HIIN, ENXA, SAME  
Photos (loc., orient.): P-813  
Notes (% coverage): DEFA 25% unk A 30%, HIIN 10%, BG 15%; others  $\leq 5\%$ . approx 10' x 10' patches of ENXA where evidence of maintenance; 20' x 20' patch of black sage, undisturbed. One ENXA patch around active pipeline. Most maintenance, however, at road.

Feature ID: D-27  
Dominant species: \_\_\_\_\_ ( $\leq 1\%$ ) ( $\leq 1\%$ ) ACGL  
Associated species: AMPS, unk-A, HIIN, DEFA, bromes, RUCR, BASA, ENXA, STPW ( $\leq 1\%$ )  
Photos (loc., orient.): P-814, P-815, P-816, P-817 OPLI ( $\leq 1\%$ ) BG  
Notes (% coverage): Large area in active oil field w/ wells and pipelines. Some STPW max.  $\leq 5\%$  isolated OPLI plants. Isolated 20' x 20' ENXA patch on active pipeline. Widespread evidence of maintenance around pipes and wells.

Feature ID: \_\_\_\_\_ Additional scattered OPLI in actively maintained area;  $\leq 45$  cm, around pipelines.  
Dominant species: \_\_\_\_\_  
Associated species: \_\_\_\_\_ Grassland transects taken in this area.  
Photos (loc., orient.): \_\_\_\_\_  
Notes (% coverage): \_\_\_\_\_

D-23  
D-CBBS-20  
CBBS-CPPS-06  
DVLP-01

D-CBBS-CPPS-01  
IPM-02  
CBBS-02  
MYP-01

Page 4 of 24

CSS-02  
AWT-01  
D-CPPS-01  
UM-02

D-ABC-01

Feature ID: Dp 6015 - 01

Dominant species:

Associated species: HIIN, HECU, RICO, BASA, NIGL, ARDO, bromes, MYLA, ISME

Photos (loc., orient.): P-818, P-819, P-823

Notes (% coverage): HIIN/BG = 85% (HIIN  $\leq$  50% overall)

Feature ID: Pile - 01

Dominant species:

DEFA

Associated species: HIIN, STVI, ISME, NIGL, BAPI, MEGR, HEGR, AHPS, BASA, CAED

Photos (loc., orient.): P-820, P-821, P-822

Notes (% coverage): Contaminated earth from remediation; HIIN, BG, STVI combined = 80%  
Otherwise, a variety of mostly non-natives

Feature ID: D- CBBS 21

Dominant species: ENCA

Associated species: HIIN, CEME

Photos (loc., orient.): P-824

Notes (% coverage): ENCA 75%, HIIN 15%, BG 5%, Disturbed because of open canopy  
in majority of area w/ high % BG & HIIN. Area is part of larger mosaic of  
scrub habitats in area previously mapped as NNG & RUD. Did not do transect because of active CAGN farm in  
area and potential habitat change.

Feature ID: D- CBBS 22

Dominant species: ENCA

Associated species: HIIN, bromes

Photos (loc., orient.): P-826

Notes (% coverage): ENCA maybe  $<$  50%; avg hgt 25 cm, max 35 cm. Previously  
mapped as ESC (CBBS) but now showing obvious signs of maintenance (mowing). Adjacent  
to oil pad and partly covering active pipeline, which is otherwise covered by adjacent CBBS.

Feature ID: /

Dominant species:

Associated species:

Photos (loc., orient.):

Notes (% coverage):

Adjacent areas of CBBS, CPPS  
(previously mapped as ornamental) and  
D- CBBS, complex of communities suitable  
for CAGN. Pipeline cuts through  
complex. Check of adjacent D- CBBS  
mapped as "NNG."



Feature ID: D-CBBS-CPPS-02

Dominant species: ENCA/OPLI

Associated species: ISMZ, HIIN, browes, COSE

Photos (loc., orient.): P-827

Notes (% coverage): ENCA/OPLI 65%, COSE 15%, BG 10%, remainder 10%

Along and partly covering active pipeline. (see photo). Likely post maintenance, but no obvious recent sign; ENCA 45 cm avg.

Feature ID: D-28

Dominant species: none

Associated species: HIIN, ENCA, DEFA

Photos (loc., orient.): P-828

Notes (% coverage): ENCA 20%, HIIN 30%, BG 20%, litter 15%, DEFA 5%

Previously mapped as disturb ES (CBBS), but likely subject to maintenance.

Low % ENCA w/ max height 45 cm; lots of non-native and BG coverage

Feature ID: D-29

Dominant species: none

Associated species: ENCA, STPU, HIIN, AVBA, AMPS, browes, ISAR, RUCR, DEFA, ERBU

Photos (loc., orient.): P-830, P-831, P-832

Notes (% coverage): No species exceeds 20% cover. ENCA ~5%, Highly varied area w/ pockets of ENCA. Low terrace edge w/ thin strip of disturbed ENCA is adjacent to terrace w ~20% ENCA averaging ~30 cm. Likely maintained occasionally

Feature ID: D-30

Dominant species: none

Associated species: COSE, SCTE, ENCA, ISMZ, MYO

Photos (loc., orient.): P-833

Notes (% coverage): ENCA 20%, COSE 25%, SCTE 30%, MYO 5%, ISMZ 5%, BG 5%, EKCA 5%

Previously mapped as disturbed ES (CBBS), but mostly SCTE and COSE; small area of ENCA is open and max 50 cm.

Feature ID: D-31

Dominant species: none

Associated species: ACGL, ENCA, COSE, CAED, ISAR, DPLT, ISMZ, FOUU

Photos (loc., orient.): P-834

Notes (% coverage): No dominant, 5% COSE, CAED 15%, BG 10%. ACGL @ 15%, is most common native. Formerly mapped as coastal bluff scrub.

Feature ID: D-32

Dominant species: none

Associated species: CAED, HIIN, DEFA, BASA, OPLI

Photos (loc., orient.): P-835, P-836,

Notes (% coverage): No transect since hard to get one representative of diverse areas. Formerly mapped as part of disturbed sou. coastal bluff scrub, most of which is extent down slope. Area is on terrace top, adjacent to a

Feature ID:

Dominant species: well in actively maintained area.

Associated species: 20% HIIN, 25% CAED, 10% ENCA (open canopy, narrow

Photos (loc., orient.): strip, max 75 cm), 25% BG & leaf litter

Notes (% coverage):

Feature ID: Debris-02

Dominant species: none DEFA CAED, NIGL

Associated species: HIIN, CAED, FOUU, ENCA, COSK, MYLA, Accia, BASA, BAPI, RICO,

Photos (loc., orient.): P-837, P-838, P-839

Notes (% coverage): HIIN 30%, BG 30%, DEFA 5%, CAED 10%, ENCA 5%

Feature ID: Debris-03

Dominant species: none

Associated species: CAED, HIIN, BAPI, ENCA, COSK, RICO, DEFA, ISAR, HEGR

Photos (loc., orient.): P-840, P-841

Notes (% coverage): CAED 30%, BG 25%, ENCA 10%, HIIN 10%, RICO 5%

20' x 30' patch of BAPI, dense ENCA on S side of poly, max 75 cm.

CAGN seen in BASA in area.

Feature ID: Debris-04

Dominant species:

Associated species: Accia, HIIN, CAED, BASA, MYLA, ENCA

Photos (loc., orient.): P-842, P-843, P-844

Notes (% coverage): CAED, BG, MYLA = 65%, BASA = 10%, ENCA = 5%, HIIN = 5%



Feature ID: D-CBBG-MFT-01  
 Dominant species: P-844, P-845  
 Associated species: ENCA/BASA  
 Photos (loc., orient.): BAPI, CAED, FOUU, HIIN, MYLA  
 Notes (% coverage): ENCA & BASA = 80% combined, BAPI 5%, BG 5%, misc = 10%  
ENCA areas narrow, but closed canopy, avg hgt 80 cm; BASA & BAPI  
avg 225 cm

Feature ID: UM-03  
 Dominant species: HIIN  
 Associated species: CAED, ENCA, OPLI, CYCA  
 Photos (loc., orient.): P-847  
 Notes (% coverage): 70% HIIN, 10% OPLI, 5% CAED, 5% ENCA, 10% BG  
Previously mapped CBBG-CYS. Active pipeline (rerily) @ west end; possibly  
maintained in recent yrs, except mature (to 150 cm) OPLI left standing. CAGU in adj  
area

Feature ID: UM-04  
 Dominant species: HIIN  
 Associated species: DIEFA, ENCA, CEME  
 Photos (loc., orient.): P-844  
 Notes (% coverage): HIIN = 90%, BG = >5%, misc <5%

Feature ID: D-33  
 Dominant species: None  
 Associated species: ENCA, HIIN, ERBO, bromes, HEGR, CEME,  
 Photos (loc., orient.): P-849, P-850, P-851  
 Notes (% coverage): HIIN 35%, BG 15%, ENCA <5%  
Area of ENCA is ~ 60' x 60', but shrubs avg 20 cm w/ max = 30;  
ENCA = 30% in densest area.

Feature ID: D-34  
 Dominant species: None  
 Associated species: ENCA, HIIN, bromes, CEME, ERBO  
 Photos (loc., orient.): P-852  
 Notes (% coverage): Previously mapped D-CBBG, but shows signs of maintenance,  
w/ clear border to taller, remaining ENCA, adjacent. 30% ENCA, 20% HIIN,  
15% BG, large areas of litter. Tallest ENCA = 45 cm.

Feature ID: D-MFT-CPPS-01

Dominant species: BASA, OPLI

Associated species: HIIN, ISAR, Pampas grass, ABG

Photos (loc., orient.): P-862

Notes (% coverage): MFT/CPPS on west slope, adjacent to IPM  
40% BASA, 40% OPLI, CAGN observed in BASA

Feature ID: D-35

Dominant species:

Associated species: ENCA, HIIN, ACGL, ISMB, RICO, COFI

Photos (loc., orient.): P-863, P-864

Notes (% coverage): 23% ENCA, 20% ACGL, 15% HIIN, 5% COFI, 5% RICO  
5% CAGN, 5% ISMB; remaining = BCG & litter

Feature ID: D-CBBS-MFT-02

Dominant species: BASA, ENCA

Associated species: HIIN, ISAR, HEGR, OPLI

Photos (loc., orient.): P-865

Notes (% coverage): 35% ENCA, 35% BASA, 25% HIIN, 5% other  
10 per large area of HIIN

Feature ID: D-36

Dominant species: none

Associated species: bromes, DISP, AMPS, HECU, HEGR, DEFA, ERBO, STPU

Photos (loc., orient.): P-866, P-867

Notes (% coverage): Bromes, AMPS = 7500% combined; HIIN, DISP (small patches)  
HECU are widespread. High % BCG. Recent maintenance obvious. Avg light grasses =  
3 in; max = 8".

Feature ID: D-37

Dominant species: none

Associated species: Bromes, STPU, AMPS, ERBO, HIIN, ANAR, FRSA

Photos (loc., orient.): P-868

Notes (% coverage): Bromes, AMPS, STPU 10-20% each. 15%+ BCG. Remaining ~30% m/s.  
Grasses avg ~3". Max = 8". Obviously unattended.

6/22/2012



Feature ID: D-38  
Dominant species: none  
Associated species: Bromes, ERBO, PRSA, ISME, HEGR, AMPS, HECU, HIIN, DEFA, DISP, STPU  
Photos (loc., orient.): P-869  
Notes (% coverage): Bromes, ISME, AMPS, HIIN, ERBO comprise 60% of veg; IS-30%, BG.  
Most of area obviously maintained, except for unmowed strip down middle along  
abandoned pipeline route. Avg height of grasses in mowed area = 3", max = 6".

Feature ID: D-39  
Dominant species: ISME, STPU  
Associated species: ERBO, HUMU, AUBA, HIIN, SATR, bromes, CEME, MEGR, DEFA  
Photos (loc., orient.): P-870, P-871  
Notes (% coverage): ERBO, bromes, HUMU, BC = 80% cover

Feature ID: D-40  
Dominant species: none  
Associated species: HIIN, AMPS, ENCA, CEME, bromes, CAPY  
Photos (loc., orient.): P-872, P-873  
Notes (% coverage): 30% litter/BG, 15% HIIN, 10% ENCA, 10% CAPY, 10% AMPS  
10% CEME.

Feature ID: D-41  
Dominant species: none  
Associated species: HIIN, ENCA, HEGR, ISME, COFI, bromes  
Photos (loc., orient.): P-874, P-875  
Notes (% coverage): 15% ENCA, 10% HEGR, 5% ISME, 10% bromes, 5% COFI  
DEFA 5%, 15% BG. Previously mapped D-mule lat/golden bush.

Feature ID: D-42  
Dominant species: none  
Associated species: HIIN, ENCA, DEFA, CAPY, HEGR, ISME  
Photos (loc., orient.): P-876  
Notes (% coverage): ENCA ~10%, HIIN 15%, DEFA 5%, CAPY 5%, HEGR 5%,  
ISME 5%, BG 15%. Some regrowth of ENCA; avg height ENCA = 20",  
max = 50.

Feature ID: D\_43

Dominant species: none

Associated species: ENCA, HIIM, ISME, DEFA, CEME, NECU, ACGL

Photos (loc., orient.): P-879

Notes (% coverage): Prev mapped as part of disturbed Encelia/Isocoma polygonifolia (actually CBBS), but has been mowed. ENCA regrowth evident, but sparse, @ 20%; ISME 5%, HIIM 15%, BG 25%

Feature ID: MFT\_01

Dominant species: BASA

Associated species:

Photos (loc., orient.): P-880

Notes (% coverage): Appears to be nearly pure stand of BASA, but previously mapped as Encelia/B. Salicifolia scrub. Stand is 3 meters or higher @ max. Surrounded by CBBS-CPPS and CBBS

Feature ID: D\_44

Dominant species: none

Associated species: DEFA, ENCA, ISME, HIIM, FOUU

Photos (loc., orient.): P-881

Notes (% coverage): Formerly mapped as "CBS/HFS" (MABS-MFT), but obviously mowed. Veg averages 8-10 cm throughout, w/ some HIIM to 25cm. ENCA widely dispersed, but only 5% and never exceeding 20cm. 35% BG

Feature ID: CBBS-CPPS\_07

Dominant species: ENCA/OPAL

Associated species:

Photos (loc., orient.): P-882, P-883, P-900

Notes (% coverage): Previously mapped "mesquite succulent scrub." Pipeline now runs through portion of polygon (photos), with clearing; otherwise in tact.

Feature ID: D\_45

Dominant species: none

Associated species: ACGL, CAED, BASA, ENCA, MYLA, COSE, ISME

Photos (loc., orient.): P-884, P-885

Notes (% coverage): ACGL 30%, 30% CAED, 5% BASA, <5% ENCA, 20% BG

Formerly mapped as Encelia/B. salicifolia (disturbed), but neither species is @ >5% coverage. Highly disturbed area w/ CAED, ACGL, and BG accounting for 80% of area



Feature ID: D-46

Dominant species: none

Associated species: ISME, ENCA, ACGL, HIIN

Photos (loc., orient.): P-886, P-887

Notes (% coverage): Previously mapped "disturbed/developed." Area 70% vegetated, including some ENCA ( $\leq 10\%$ ) and ISME ( $\leq 10\%$ ). Adjacent to CBBS.

Feature ID: D-47

Dominant species: none

Associated species: ISME, DEFA, HEGR, ACGL, MEIN

Photos (loc., orient.): P-888, P-889

Notes (% coverage): Formerly "ES/GBS" (CBBS-MGBS), part of larger area. Habitat since removed (grading) and some ISME regrowing but very little ENCA. 15% ISME (to 80 cm max), 5% ACGL, 50% BG, HEGR 5%

Feature ID: D-48

Dominant species: none

Associated species: HIIN, RICO, ISAR, ENCA, HECU, ACLO

Photos (loc., orient.): P-890, P-891

Notes (% coverage): < 5% ENCA (avg 75 cm, max 100 cm), in 1 m wide strip. 30% HIIN, 30% RICO, 15% ISAR.

Feature ID: DVLP-02

Dominant species: none

Associated species: ENCA, CEMB, HIIN

Photos (loc., orient.): P-892

Notes (% coverage): 85% BG/1, 1st, 5-10% ENCA (avg = 30 cm). Possibly cleared to access utility pole.

Feature ID: D-649

Dominant species: none

Associated species: ACLO, COSE, BASA, ISAR, ENCA

Photos (loc., orient.): P-893, P-894

Notes (% coverage): ACLO 35%, COSE 5%, BASA 10%, ENCA 10%, BG 20%, brambles 5%. Formerly mapped D-ES (D-CBBS), but little ENCA. Invasives and BG are majority. No transect because of terrain.

ACLO = *Acacia Longidolia*

Feature ID: D-50

Dominant species: none

Associated species: CADY, HIIN, BASA

Photos (loc., orient.): P-899

Notes (% coverage): 90% HIIN/CADY,  $\geq 5\%$  BG,  $\leq 5\%$  BASA  
Previously part of larger D-ES (D-CBBS) polygon. Almost entirely  
invasive non-natives.

Feature ID: D-51

Dominant species: none

Associated species: ACGL, COSE, BASA

Photos (loc., orient.): P-901, P-902

Notes (% coverage): Area is 50% eroded slope w/ 50% BG, plus CAED, CUSC  
and some grasses; 50% flat lowlands w/ 65% ACGL, 20% BG, plus  
BASA, CAED, etc. Overall ~1% ENCA.

Feature ID: ABG-01

Dominant species: none

Associated species: STPU, AVBA, bromes, ENCA, HIIN, CEME, ISME

Photos (loc., orient.): P-903

Notes (% coverage): 75% grasses (STPU, bromes, AVBA), 5% ENCA (70 cm max),  
plus ISME, CEME, etc. Previously mapped "Invasive / unmanageable"

Feature ID: D-52

Dominant species: none

Associated species: ISME, CEME, HEAR, DEFA, NIQL, HIIN, bromes

Photos (loc., orient.): P-904

Notes (% coverage): ISME 25%, CEME, bromes, HIIN ~10% each, NIQL 10%,  
BG 30%.

Overgrown road bed/pad.

Feature ID: D-CBBS-22

Dominant species: ENCA

Associated species: HIIN, ISME, FOVV

Photos (loc., orient.): P-905

Notes (% coverage): ENCA = 55%, BG = 25%, HIIN and other non-natives majority  
of remainder. between rd and abandoned (verify) pipeline. Previously  
mapped w/ large maritime succulent scrub area.

Avg height of ENCA is 35cm; max is 60cm. Very open canopy.



Feature ID: D-CBBS-23

Dominant species: ENCA

Associated species: HIIN, CEME, ISME

Photos (loc., orient.): P-906

Notes (% coverage): 50% ENCA, 15% BG, 35% CEME/HIIN.  $\checkmark$

ENCA height mostly between 15cm and 50cm. Max = 80cm. Very open canopy. Previously part of ES (CBBS) poly, but likely maintained in past.

Feature ID: D-CBBS-24

Dominant species: ENCA

Associated species: bromes, HIIN, CAED, ERER

Photos (loc., orient.): P-907

Notes (% coverage): ENCA ~ 55%, patchy, open, 30% bromes, 15% other. Avg ENCA height 40 cm; max 60 cm.

Feature ID: D-53

Dominant species: none

Associated species: bromes, ENCA, CEME, ISME, COFI, CAED, AUBA, HIIN

Photos (loc., orient.): P-908

Notes (% coverage): Previously mapped as "ES" (CBBS). 85% bromes, AUBA, non-udire herbs. 5% ENCA. Scattered ENCA shrubs avg 60cm, w max = 100 cm

Feature ID: D-54

Dominant species: none

Associated species: ERBO, DEFA, HIIN, AMPS, COFI, ACGL, ISME

Photos (loc., orient.): P-909

Notes (% coverage): Mapped as "ES" (CBBS), but no ENCA present. Grasses and herbs mostly  $\leq 15$  cm.

Feature ID: \_\_\_\_\_

Dominant species: \_\_\_\_\_

Associated species: \_\_\_\_\_

Photos (loc., orient.): \_\_\_\_\_

Notes (% coverage): \_\_\_\_\_

Feature ID:	D-41	originally collected 6/21/12	ENCA poor D-M
Dominant species:	none		
Associated species:	see notes		
Photos (loc., orient.):	P-363		
Notes (% coverage):	Coverage, max, avg: <10%. ENCA max 1.0m avg 0.2m 10% HEGR max 1.5m avg 0.7m 5% ISME max 0.5 avg 0.3 lacks closed canopy cover, <60% total ground cover		
Feature ID:	D-40	originally collected 6/21/12	ENCA good small area D-M-CBBS
Dominant species:	none		
Associated species:	see notes		
Photos (loc., orient.):	P-364		
Notes (% coverage):	Coverage, max, avg: <10%. ENCA max 0.6 avg 0.2 10% AMPJ max 1.2 avg 0.6, Acacia 5% cover = 3.0m tall shrubs lack closed canopy		
Feature ID:	D-55		ENCA poor D-M
Dominant species:	none		
Associated species:	see notes		
Photos (loc., orient.):	P-365, P-366		
Notes (% coverage):	<5% ENCA max 0.3 avg 0.1, <5% ISME max 0.8 avg 0.4 ground cover Bromes & Erodium shrubs lack closed canopy		
Feature ID:	D-4b	originally collected 6/22/12	ENCA poor D-M
Dominant species:	none		
Associated species:	see notes		
Photos (loc., orient.):	P-367		
Notes (% coverage):	<10% ENCA max 0.7 avg 0.3, <10% ISME max 0.8 avg 0.5, <5% HEGR max 0.9 avg 0.6, 15% ACAL max 0.7 avg 0.4 shrubs lack closed canopy		
Feature ID:	D-56		ENCA good medium area D-M-CBBS
Dominant species:	none		
Associated species:	see notes		
Photos (loc., orient.):	P-368		
Notes (% coverage):	<10% ENCA max 0.7 avg 0.4 new growth, <10% ISME max 0.7 avg 0.3, CAGN heard adj. MFT. Appears as though portion of area could regrow to D-CBBS in 1 to 2 years. Shrubs lack closed canopy		



Feature ID:	D-35	originally collected 6/21/12	D-M D-M-CBBS
Dominant species:	none		
Associated species:	see notes		
Photos (loc., orient.):	P-369 = D-M. P-370 = D-M-CBBS		
Notes (% coverage):	area $\approx$ 5-10' from road maintained = D-M. area further from road D-M-CBBS: 23% ENCA, 20% ACGL 5% COFI, 5% RICO ENCA max 0.7 avg 0.5		
Feature ID:	D-57		
Dominant species:	none		
Associated species:	Mustard, BASA, CAED, FOVU, OPLI, ISME, ENCA		
Photos (loc., orient.):	P-371		
Notes (% coverage):	large complex polygon. Should be broken into smaller polygons. CAGN heard in MFT adj. Unable to max % determination.		
Feature ID:	D-33	originally collected 6/21/12	D-M
Dominant species:	none		
Associated species:	see notes		
Photos (loc., orient.):	P-372		
Notes (% coverage):	overall polygon $<$ 5% ENCA max 0.6 avg 0.2 scattered BASA. If mapped to smaller mapping unit also D-M-CBBS shrubs lack closed canopy. Large complex polygon. Should make smaller polygons.		
Feature ID:	D-58		D-M-CBBS ENCA poor large area
Dominant species:	none		
Associated species:	see notes		
Photos (loc., orient.):	P-373		
Notes (% coverage):	$\approx$ 25% ENCA max 0.4 avg 0.2 shrubs lack closed canopy		
Feature ID:	D-29	originally collected 6/21/12	D-M
Dominant species:	none		
Associated species:	see notes		
Photos (loc., orient.):	P-374		
Notes (% coverage):	$<$ 5% ENCA max 0.5 avg 0.2, $<$ 5% ISME max 0.6 avg 0.4, $<$ 5% HEGR max 1.2 avg 0.8, $<$ 5% AMPJ max 0.4 avg 0.2 shrubs lack closed canopy. BG, litter, ABG		

Feature ID: D-28 originally collected 6/21/12 D-M-CBBS  
Dominant species: none  
Associated species: see notes  
Photos (loc., orient.): P-375  
Notes (% coverage): 20% ENCA max 0.3 avg 0.2  
lacks closed shrub canopy

Feature ID: \_\_\_\_\_  
Dominant species: \_\_\_\_\_  
Associated species: \_\_\_\_\_  
Photos (loc., orient.): \_\_\_\_\_  
Notes (% coverage): \_\_\_\_\_

Feature ID: \_\_\_\_\_  
Dominant species: \_\_\_\_\_  
Associated species: \_\_\_\_\_  
Photos (loc., orient.): \_\_\_\_\_  
Notes (% coverage): \_\_\_\_\_

Feature ID: \_\_\_\_\_  
Dominant species: \_\_\_\_\_  
Associated species: \_\_\_\_\_  
Photos (loc., orient.): \_\_\_\_\_  
Notes (% coverage): \_\_\_\_\_

Feature ID: \_\_\_\_\_  
Dominant species: \_\_\_\_\_  
Associated species: \_\_\_\_\_  
Photos (loc., orient.): \_\_\_\_\_  
Notes (% coverage): \_\_\_\_\_



Feature ID: 47  
Dominant species: BG (70%), GWA (20%)  
Associated species: \_\_\_\_\_  
Photos (loc., orient.): \_\_\_\_\_  
Notes (% coverage): Most of area cleared and graded - i.e. <sup>up to</sup> 5 ft of earth (vertical) removed and transported out.  
photo 1448

Feature ID: 54  
Dominant species: ISME (20%)  
Associated species: ENCA (5%), maximum 30 cm  
Photos (loc., orient.): 2  
Notes (% coverage): Sp - 1461 (82°)

Feature ID: 57  
Dominant species: \_\_\_\_\_  
Associated species: \_\_\_\_\_  
Photos (loc., orient.): 1466 (340°)  
Notes (% coverage): < 5% ENCA, 70% BG, w/ mixture of Erodium (10%), HTIN (10%), and other species @ < 5%

Feature ID: 60  
Dominant species: DEFA (70%)  
Associated species: HTIN (15%), other annuals  
Photos (loc., orient.): 1471 (293°)  
Notes (% coverage): \_\_\_\_\_

Feature ID: D-13  
Dominant species: \_\_\_\_\_  
Associated species: ENCA (10%) - avg = 45 cm  
Photos (loc., orient.): \_\_\_\_\_  
Notes (% coverage): \_\_\_\_\_

Feature ID:	67
Dominant species:	
Associated species:	
Photos (loc., orient.):	1489 (95°)
Notes (% coverage):	<3% ENCA; HIIN, ISME, DEFA are dominant w/ 5% BG.
Feature ID:	70
Dominant species:	
Associated species:	
Photos (loc., orient.):	1495 (12°)
Notes (% coverage):	AMPS, HIIN, and annual forb cover, <5% ENCA (avg = 20cm) ISHM
Feature ID:	73
Dominant species:	
Associated species:	
Photos (loc., orient.):	1500 (117°)
Notes (% coverage):	10-15% ENCA - avg = ~12cm; also CAED, DEFA, HIIN
Feature ID:	
Dominant species:	
Associated species:	
Photos (loc., orient.):	
Notes (% coverage):	
Feature ID:	
Dominant species:	
Associated species:	
Photos (loc., orient.):	
Notes (% coverage):	



Feature ID: 01  
Dominant species: \_\_\_\_\_  
Associated species: \_\_\_\_\_  
Photos (loc., orient.): \_\_\_\_\_  
Notes (% coverage): road goes through part of polygon. Open canopy  
even in area of densest shrubs.

Feature ID: 02  
Dominant species: \_\_\_\_\_  
Associated species: \_\_\_\_\_  
Photos (loc., orient.): \_\_\_\_\_  
Notes (% coverage): Formerly mapped as CBBS, but moved since  
June. Most "L" refers to remains of BNCA

Feature ID: \_\_\_\_\_  
Dominant species: \_\_\_\_\_  
Associated species: \_\_\_\_\_  
Photos (loc., orient.): \_\_\_\_\_  
Notes (% coverage): \_\_\_\_\_

Feature ID: \_\_\_\_\_  
Dominant species: \_\_\_\_\_  
Associated species: \_\_\_\_\_  
Photos (loc., orient.): \_\_\_\_\_  
Notes (% coverage): \_\_\_\_\_

Feature ID: \_\_\_\_\_  
Dominant species: \_\_\_\_\_  
Associated species: \_\_\_\_\_  
Photos (loc., orient.): \_\_\_\_\_  
Notes (% coverage): \_\_\_\_\_

# APPENDIX F

## *Vegetation Mapping Transects - Data Sheets*





Feature ID: <u>D-ABG-01</u>				
Transect GPS Points: _____				
Shrub species:	Shrub height (cm):			
0 CEME				
1 BRHO				
2 GRCA				
3 BRHO				
4 "				
5 GRCA				
6 ERBO				
7 BRMA				
8 ENCA	10			
9 ENCA	70			
10 ENCA	68			
11 BRMA				
12 HIIN				
13 "				
14 "				
15 BRMA				
16 BRMA				
17 BRHO				
18 HIIN				
19 "				
20 BRMA				
21 "				
22 COFI				
23 ACGL				
24 HIIN				
25 BRHO				
26 COFI	100			
27 "	45			
28 "	69			
29 "	80			
30 "	71			
<div></div>				
Photos (loc. orient.): <u>Start 692; end-693</u>				
Notes (canopy openness): <u>p694</u>				

Feature ID: <u>D-01</u>		
Transect GPS Points: _____		
Shrub species:	Shrub height (cm):	
0 SELAG. (corosis)		
1 "		
2 leaf litter		
3 ACGL		
4 ENCA	14	
5 HEGR		
6 leaf litter		
7 "		
8 ACGL		
9 leaf litter		
10 HEGR	87	
11 BG		
12 "		
13 GNCA		
14 thatch		
15 BG		
16 "		
17 HIIN		
18 "		
19 BG		
20 ACGL		
21 BG		
22 "		
23 leaf litter		
24 HIIN		
25 BG		
26 "		
27 "		
28 "		
29 "		
30 ACGL		
31 BG		
32 "		
33 "		
34 CEME		
35 leaf litter		
36 "		
37 ACGL		
38 BG		
39 "		
40 ACGL		
41 leaf litter/scrub		
Photos (loc. orient.): <u>P-701, P-702</u>		
Notes (canopy openness): _____		

42	cont.	
43	ACGL	
44	asphalt	
45	"	
46	ENEA	15
47	BG	
48	BG	
49	ACGL	
50	ENCA	36



Feature ID: D-CBBS-03

Transect GPS Points:

Shrub species:

Shrub height (cm):

ENCA

70

"

"

"

50

BG

-

BG

-

HIIN

60

ENCA

30

EVCA

30

leaf litter

BG

ENCA

30

OPLI

ACGL

ENCA

25

ACGL

litter

BG

"

ACGL

Photos (loc. orient.):

p705(E) p706(S)

Notes (canopy openness):

Feature ID: D-02

Transect GPS Points:

Shrub species:

Shrub height (cm):

BG

ERBO

"

BC

ERBO

"

litter

CEME

BG

ERBO

"

"

litter

ERBO

litter

ERBO

CEME

ERBO

ACGL

20

litter

CEME

ERBO

litter

ERBO

litter

ERBO

Photos (loc. orient.):

P.707(S) P.708(E)

Notes (canopy openness):

D\_02 (cont)

42 ERBO

43

44

45

46

47

48

49

litter

COFI

ENCA

15

Feature ID: <u>D-CBBS-04</u>		Feature ID: <u>D-CBBS-05</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0 BG		BG	
1 Litter		ENCA	50
2 ENCA	15		30
3 Litter		Litter	
4 ENCA	20	ENCA	35
5 Litter			45
6 ENCA	5		50
7 "	15	ISAR	35
8 "	30	ENCA	50
9 "	30		70
10 Litter			35
11 "			80
12 "			55
13 BG			95
14 ERBO			
15 ENCA	30		
16 Litter			
17 ENCA	25		
18 BG			
19 Litter			
20 ENCA	35		
21 Litter			
22 "			
23 ERBO			
24 ENCA	20		
25 "	30		
26 Litter			
27 Litter			
28 "			
29 ENCA	25		
30 Litter			
31 ENCA	25		
32 BG			
33			
34			
35 asphalt			
36			
37 ENCA	15		
38 Litter			
39 ENCA	20		
40	25		
41	25		
Photos (loc. orient.): <u>P-709, P-710</u>		Photos (loc. orient.): <u>P-711, P-712</u>	
Notes (canopy openness):		Notes (canopy openness):	



D-CBBS-04

42	ENCA	30
43	BG	
44		
45	ENCA	30
46	BG	
47	ENCA	35
48	asphalt	
49	BG	
50	ENCA	5

Feature ID: <u>D-CBBS-06</u>		Feature ID: <u>D-04</u>	
Transect GPS Points: _____		Transect GPS Points: _____	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0 ENCA	10	BG	
1 BG		CEME	
2 ENCA	25	I	
3 CEME		Grass sp	
4 ENCA	45	CEME	
5 ENCA	50	litter	
6 BG		I	
7 litter		ABG	
8 I		litter	
9		I	
10 ENCA	40	STPU	
11	65	ABG	
12	20	ACGL	50
13	25	STPU	
14 BG		litter	
15		BG	
16		I	
17		ENCA	15
18		I	25
19		BG	
20		ISAR	40
21		I	100
22		ABG	
23		litter	
24		ISME	30
25		COFI	30
26		I	20
27		ABG	
28		BG	
29		HIIN	115
30		ACGL	35
31		litter	
32			
Photos (loc. orient.): <u>P-713, P-717</u>		Photos (loc. orient.): <u>P-714, P-715</u>	
Notes (canopy openness): _____		Notes (canopy openness): _____	
		P-716 (overall)	

Page 5 of 16



6/18/12  
6/19/12

Feature ID: D-05	Feature ID: D-07
Transect GPS Points:	Transect GPS Points:
Shrub species:	Shrub species:
Shrub height (cm):	Shrub height (cm):
0 HIIN	litter
1 I	ISNE
2 DISP	CEME
3 HIIN	Caryobrotus
4 ABG	I
5 litter	litter
6 DISP	BG
7 ISNE	I
8 DISP	ERBO
9 BG	litter
10 I	DISP
11 I	ERBO
12 DISP	I
13 BG	litter
14 DISP	BG
15 ABG	I
16 ISNE	ERBO
17 BG	litter
18 DISP	DISP
19 I	litter
20 BG	Caryobrotus
21 ABG	litter
22 ACGL	DISP
23 ABG	litter
24 ISNE	ERBO
25 I	litter
26 ABG	DISP
27 litter	ERBO
28 ISNE	litter
29	I
30	BG
31	litter
32	CEME
33	I
34	litter
35	ABG
36	CEME
37	I
38	DEFA
39	I
40	CEME
41	
Photos (loc. orient.): P-723(s), P-724(e)	Photos (loc. orient.): P-724(s), P-725(e)
Notes (canopy openness):	Notes (canopy openness):
	P-730

D-07 (cont)

42	CEME
43	DEFA
44	litter
45	BG
46	DEFA
47	BG
48	litter
49	BG
50	BG

Feature ID: <u>D-C 1335-09</u>	Feature ID: <u>D08</u>
<b>Transect GPS Points:</b>	<b>Transect GPS Points:</b>
<b>Shrub species:</b>	<b>Shrub species:</b>
<b>Shrub height (cm):</b>	<b>Shrub height (cm):</b>
0 <u>ENCA</u>	<u>litter</u>
1 <u>I</u>	<u>ACGL</u>
2 <u>I</u>	<u>HTIN</u>
3 <u>BG</u>	<u>litter</u>
4 <u>ENCA</u>	<u>ACGL</u>
5 <u>I</u>	<u>litter</u>
6 <u>I</u>	<u>ACGL</u>
7 <u>I</u>	<u>BG</u>
8 <u>HEGR</u>	<u>ISMB</u> 20
9 <u>I</u>	<u>BG</u>
10 <u>ENCA</u>	<u>litter</u>
11 <u>HEGR</u>	<u>I</u>
12 <u>litter</u>	<u>ACGL</u>
13 <u>ENCA</u>	<u>BG</u>
14 <u>litter</u>	<u>ACGL</u>
15 <u>ENCA</u>	<u>litter</u>
16 <u>litter</u>	<u>ISMB</u> 30
17 <u>HTIN</u>	<u>BG</u>
18	<u>ACGL</u>
19	<u>I</u>
20	<u>BG</u>
21	<u>ACGL</u>
22	<u>BG</u>
23	<u>litter</u>
24	<u>I</u>
25	<u>ACGL</u>
26	<u>litter</u>
27	<u>ABG</u>
28	<u>litter</u>
29	<u>I</u>
30	<u>ERBO</u>
31	<u>ACGL</u>
32	<u>I</u>
33	<u>HTIN</u>
34	<u>BG</u>
35	<u>litter</u>
36	<u>ACGL</u>
37	<u>litter</u>
38	<u>I</u>
39	<u>ACGL</u>
40	<u>litter</u>
41	
<b>Photos (loc. orient.):</b> <u>P-733(s) P-734(e)</u>	<b>Photos (loc. orient.):</b> <u>P-741(s), P-742 (E)</u>
<b>Notes (canopy openness):</b>	<b>Notes (canopy openness):</b>



D08 (cont.)

42

AGGL

43

litter

	Feature ID:	D-CBBS-13	Feature ID:	D.CBBS-14
	Tansect GPS Points:		Tansect GPS Points:	
	Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	HIN		HIN	
1	Litter		ENCA	75
2	HIN		I	65
3	ABG		Litter	
4	Litter		HEGR	
5	ENCA	60	HIN	
6		35	ENCA	54
7		55	I	80
8		40	HIN	
9		25	ENCA	70
10		35		95
11		35		110
12		55		80
13		45		65
14	Litter		HIN	
15	I		ENCA	80
16	ENCA	30		115
17		30		65
18		60	BG	
19		45		
20	Litter			
21				
22				
23	HIN			
24	ENCA	100		
25	Litter			
26	I			
27	ENCA	25		
28		35		
29		30		
30	ABG			
31				
32	ENCA	35		
33	I	40		
34	Litter			
35	ENCA	85		
36	Litter			
37	ABG			
38	Litter			
39				
40				
41				
	Photos (loc. orient.): P_744(s), P_750(e)		Photos (loc. orient.): P_753(s), P_754(e)	
	Notes (canopy openness):		Notes (canopy openness):	

cont  $\longrightarrow$

D-CBBS-13 (cont)

42	ISAR	30
43	ENCA	20
44		45
45	ISAR	40
46	litter	
47	ENCA	35
48		10
49	BG	
50	litter	



Feature ID: D-12		Feature ID: D-14	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
1 ENCA	5	0-AMP	
2 BG		ABC	
3 ENCA	5	ERBO	
4 ISAR	25	AMP	
5 litter		BG	
6		litter	
7		ABC	
8 ABG		litter	
9 BG		litter	
10		ABG	
11 ENCA	20	ERBO	
12 BG			
13 ENCA	5	litter	
14 litter			
15		BG	
16 BG		litter	
17 ENCA	15	ISME	
18 BG		BG	
19 ENCA	5	BG	
20 BG			
21		ERBO	
22 CEMB		BG	
23 litter			
24 BG		ERBO	
25 ABG		litter	
26 ENCA	15	ISME	
27 litter		BG	
28 CEMB		STPU	
29		ERBO	
30		ISME	
31		litter	
32		ERBO	
33		litter	
34		ISME	
35		litter	
36		BG	
37			
38			
39			
40			
41			
42			
Photos (loc. orient.): P-758(S), P-759(E)		Photos (loc. orient.): P-765(S), P-766(E)	
Notes (canopy openness):		Notes (canopy openness):	

D-141 (cont.)

43	litter	
44	ENCA	20
45	FRSA	
46	1	
47	ISMR	
48	litter	
49	ABC	
50	1	

Feature ID: <u>D-16</u>	Feature ID: <u>D-17</u>
Transect GPS Points: _____	Transect GPS Points: _____
Shrub species: _____ Shrub height (cm): _____	Shrub species: _____ Shrub height (cm): _____
0 CAED	litter
1 CEME	ABG
2 litter	ERBO
3 ERBO	DEFA
4 litter	ABG
5 ABG	litter
6 STPU	BG
7 ERBO	litter
8 l	ERBO
9 litter	litter
10 ACGL	litter
11 litter	litter
12 ERBO	ERBO
13 litter	litter
14 HIIN	BG
15 ERBO	litter
16 ENCA 10	ERBO
17 BG	litter
18 litter	ERBO
19 ENCA 15	ABG
20 litter	ERBO
21 l	ABG
22 BG	ERBO
23 ENCA 25	ABG
24 l 40	ERBO
25 litter	litter
26 l	litter
27 ENCA 25	ERBO
28 litter	litter
29	litter
30	litter
31	ERBO
32	litter
33	litter
34	ERBO
35	ABG
36	litter
37	BG
38	litter
39	ABG
40	
41	
Photos (loc. orient.): <u>P-772(S), P-773(E)</u>	Photos (loc. orient.): <u>P-775(S), P-776(E)</u>
Notes (canopy openness): <u>Transect includes more ENCA than is typical of polygon</u>	Notes (canopy openness): _____



42	ERBO
43	ABC
44	I
45	litter
46	I
47	HIIN
48	CEME
49	litter
50	ERBO

Feature ID: <u>D-18</u>		Feature ID: <u>D-20</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0 HIIN		HIIN	
1		litter	
2			
3		CEME	
4 litter		HIIN	
5		BG	
6			
7		litter	
8 ENCA	15	BG	
9 litter		HIIN	
10 HIIN		litter	
11 ERBO		HIIN	
12 litter		litter	
13 HIIN			
14		CEME	
15 litter		ERBO	
16 ENCA	40	litter	
17	30	ERBO	
18 BG		litter	
19 ENCA	30	CEME	
20 BG		litter	
21		CEME	
22		litter	
23 litter		BG	
24 CEME		litter	
25 ENCA	20	CEME	
26 CEME		litter	
27 HIIN			
28		ABG	
29 CEME		BG	
30 litter		litter	
31 CEME		CEME	
32		litter	
33 litter			
34 ENCA	15	BG	
35	20	ERBO	
36 litter		ABG	
37 ENCA	15	litter	
38	25		
39 BG			
40		CEME	
41 CEME			
Photos (loc. orient.): <u>P-777(S), P-778(S)</u>		Photos (loc. orient.): <u>P-781(S), P-782</u>	
Notes (canopy openness):		Notes (canopy openness):	

D-18 (cont)

D-20 (cont)

42	litter	litter
43	CEME	ABG
44	ERBO	BG
45	litter	HIIN
46	HIIN	BG
47	ABG	HIIN
48	litter	ERBO
49	I	BG
50	HIIN	HIIN



Feature ID: <u>D-23</u>	Feature ID: _____
Transect GPS Points: _____	Transect GPS Points: _____
Shrub species: _____ Shrub height (cm): _____	Shrub species: _____ Shrub height (cm): _____
0 ENCA 15	
1 litter 15	
2 ENCA 10	
3 litter	
4 I	
5 HIIN	
6 DISP	
7 CEME	
8 litter	
9 DISP	
10 I	
11 ERBO	
12 HIIN	
13 BG	
14 ERBO	
15 litter	
16 HIIN	
17 ERBO	
18 litter	
20 ACGL	
21 ENCA 25	
22 CEME	
23 ACGL	
24 DEFA	
25 ENCA 35	
26 DEFA	
27 ENCA 50	
28 HIIN	
29 CEME	
30 BG	
31 ENCA 20	
32 DEFA	
33 BG	
34 I	
35 litter	
36 ENCA 30	
37 litter	
38 I	
39 ENCA 20	
40 CEME	
41	
Photos (loc. orient.): <u>P-808(S) P-809(E)</u>	Photos (loc. orient.): _____
Notes (canopy openness): _____	Notes (canopy openness): _____
_____	_____
_____	_____
_____	_____

Cont. →

D\_23 (cont)

42	litter
43	CEMB
44	1
45	ISMB
46	litter
47	GRCA
48	ERBO
49	CEMB
50	DISP

Feature ID: <u>D-28</u>		Feature ID: <u>D-33</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	HIIN	litter	
1			
2		BG	
3	ENCA	ERBO	
4	BG	BG	
5	HIIN	CEME	
6	litter		
7	BG	APX	
8		ENCA	10
9	litter	ERBO	
10		HIIN	
11	HIIN	ENCA	10
12	litter	BG	
13	BG	ENCA	30
14	litter	BG	
15	BG		
16	ENCA	ENCA	5
17	HIIN	BG	
18	BG	litter	
19			
20	ENCA	CEME	
21	litter	ENCA	5
22	BG	BG	
23		litter	
24	litter	CEME	
25	ENCA	ENCA	15
26	litter	BG	
27	DEFA	CEME	
28	BG	BG	
29	ENCA		
30		litter	
31			
32		HIIN	
33			
34		litter	
35		HIIN	
36		litter	
37		BG	
38		ENCA	30
39		litter	
40		HIIN	
41			

Photos (loc. orient.): P-828(S), P-829(E)      Photos (loc. orient.): P-849(S), P-850(E), P-851

Notes (canopy openness): \_\_\_\_\_      Notes (canopy openness): transect chosen to show high amount of ENCA compared to other areas w/in D-33



Feature ID: D-35			Feature ID: D-39		
Transect GPS Points:			Transect GPS Points:		
Shrub species:	Shrub height (cm):		Shrub species:	Shrub height (cm):	
0 ENCA	45		CEME		
1 COFI			ERBO		
2 CAED			litter		
3 HIIN			ERBO		
4 ISME	80		litter		
5 COFI			CEME		
6 ENCA	40		litter		
7 BG			ABG		
8 ISME	35		ABG		
9 ACGL			ERG		
10 I			litter		
11 HIIN			ERBO		
12 I			I		
13 litter					
14 ENCA	50		HOMU		
15 litter			litter		
16 HIIN			I		
17 HIIN					
18 ENCA	50		ERBO		
19 ENCA	65		litter		
20 ACGL			HOMU		
21 litter			CEME		
22 HIIN			ABG		
23 RICO			ERBO		
24 litter			I		
25 I					
26 ACGL			CEME		
27 ENCA	50		HOMU		
28 litter			ERBO		
29 I			I		
30 BG			CEME		
31 I			HOMU		
32 ENCA	40		ABG		
33 I	40		ERBO		
34 ACGL			I		
35 HIIN			litter		
36 ACGL			BG		
37 ENCA	60		ERBO		
38 I	50		CEME		
39 litter			HIIN		
40 ENCA	45		litter		
41 I	60		I		
Photos (loc. orient.): P-863(S), P-864(E)			Photos (loc. orient.): P-870(S), P-871(E)		
Notes (canopy openness): CAGAs heard nearby			Notes (canopy openness):		

D-35 (cont)

412 ACGL

413 litter

414 ACGL

415 CAED

416

417

418

419

50

D-39 (cont)

CHCO

ABG

1

HIIN

litter

BG

HOMU

BG

litter

Feature ID: <u>D-40</u>	Feature ID: <u>D-41</u>
Transect GPS Points: _____	Transect GPS Points: _____
Shrub species: _____ Shrub height (cm): _____	Shrub species: _____ Shrub height (cm): _____
0 Litter	Litter
1 I	I
2 BG	ENCA 20
3 ABG	I 15
4 ENCA 25	Litter
5 ABG	CEMB
6 CAPY	ERBO
7 HIIN	Litter
8 I	BG
9 AMPS	I
10 CAPY	ABG
11 I	COFI
12 AMPS	Litter
13 I	CAPY
14 Litter	Litter
15 CAPY	BG
16 RUCK	ENCA 25
17 Litter	HIIN
18 HIIN	HEGR
19 BG	Litter
20 ENCA 20	CEME
21 Litter	
22 ENCA 5	
23 HIIN	
24 I	
25 Litter	
26 CEMB	
27 Litter	
28 CEMB	
29 BG	
30	
Photos (loc. orient.): <u>P-872(S), P-873(E)</u>	Photos (loc. orient.): <u>P-874(S), P-875(E)</u>
Notes (canopy openness): _____	Notes (canopy openness): _____
	Transect captures maximum ENCA



Feature ID: <u>D-46</u>	Feature ID: _____
Transect GPS Points: _____	Transect GPS Points: _____
Shrub species: _____ Shrub height (cm): _____	Shrub species: _____ Shrub height (cm): _____
0 Litter	
1 CEME	
2 ACGL	
3 BASA	
4 Litter	
5 ACGL	
6 I	
7 BG	
8 DEFA	
9 CEME	
10 I	
11 Litter	
12 ENCA 40	
13 BG	
14 ENCA 30	
15 I 50	
16 BG	
17 I	
18 Litter	
19 ISME 60	
20 BG	
21 ISME 70	
22 Litter	
23 ISME 70	
24 BG	
25 I	
26 HIIN	
27 CEME	
28 ISMR 45	
29 BG	
30 BG	
31 I	
32 HIIN	
Photos (loc. orient.): <u>P-886(S), P-887(E)</u>	Photos (loc. orient.): _____
Notes (canopy openness): _____	Notes (canopy openness): _____

Feature ID: D-M-CBBS-01

Feature ID:  $\leftarrow$  continued

**Transect GPS Points:**

D-M-CBBS-01-start  
-end

**Transect GPS Points:**

**Shrub species:**

**Shrub height (cm):**

**Shrub species:**

**Shrub height (cm):**

0	L	-
1	L	-
2	ENCA	27
3	BG	-
4	L	-
5	ENCA	23
6	ENCA	21
7	BG	-
8	L	-
9	ENCA	3
10	L	-
11	ENCA	22
12	L	-
13	ENCA	35
14	ENCA 8	ACGL 66 HIIN 40
15	HIIN 57	ACGL 48
16	L	-
17	L	-
18	L	-
19	ENCA	10
20	ENCA	11
21	L	-
22	ENCA	17
23	ENCA	19
24	ENCA	4
25	ENCA	3
26	ENCA	21
27	ENCA	101
28	HIIN	56
29	HIIN	25
30	ENCA	11
31	L	-
32	ENCA 8	HIIN 19
33	ENCA	2
34	L	-
35	ENCA	5
36	L	-
37	ENCA	49
38	L	-
39	ENCA	47
40	ENCA	21
41	ENCA	41

Photos (loc. orient.):  $S - 1350 - 150$   
 $S - 1351 - 330$

**Notes (canopy openness):**

25/46 ENCA = 54%.  
ENCA average height 21 cm

**Photos (loc. orient.):**

Notes (canopy openness):

GPS File NBR2017-11-09

[illegible]



Feature ID: 01	Feature ID: 02
Transect GPS Points:	Transect GPS Points:
Shrub species:	Shrub species:
Shrub height (cm):	Shrub height (cm):
0 BG	L
1 L	L
2 CEMR	ENCA 10
3 L	L
4 ENCA 38	ENCA 19
5 " 34	L
6 L	L
7 COFI 63	L
8 grass	ENCA 2
9 CEMR	L
10 L	ENCA 2
11 L	L
12 L	ENCA 3
13 HIIN 40	L
14 BG	L
15 NIQL 110	L
16 L	L
17 L	L
18 CEMR	L
19 L	L
20 BG	L
21 L	L
22 L	L
23 ISMR 33	L
24 L 22	L
25 HIIN 35	L
26 L 31	ENCA 4
27 ISMR 80	L 15
28 L 84	L
29 L 88	L
30 L 95	ENCA 15
31 L 76	L
32 L	L
33 CEMR	BG
34 L	L
35 L	ENCA 10
36 ISMR 68 (ENCA-30)	L
37 ENCA 22	BG
38 L	L
39 ISMR 20	L
40 L	ENCA 2
41 L	L
Photos (loc. orient.): 1354(S)355°/1355(E)	Photos (loc. orient.): 1357(S)-340°/1356(E) -155
Notes (canopy openness): 180	Notes (canopy openness):

Feature ID: 03			Feature ID: 04		
Transect GPS Points:			Transect GPS Points:		
	Shrub species:	Shrub height (cm):		Shrub species:	Shrub height (cm):
0	L			L	
1	BG				
2	L				
3	HIIN	25		MENO	
4	ENCA	10		grass	
5	L			L	
6					
7	HIIN	38			
8	L				
9	BG			ATSE	
10					
11	L				
12	BG				
13					
14	L				
15	BG			grass	
16	HIIN	22		L	
17	L				
18				grass	
19				L	
20	ENCA	10		BG	
21		12		L	
22	L			COFI	
23	ENCA	35		L	
24	HIIN	25			
25	ENCA	55		grass	
26		50			
27		65			
28		54		ATSE	
29	HIIN	30		BG	
30	ENCA	40		ATSE	
31		46		L	
32		60			
33		57		BG	
34	OPLI	23		L	
35	ENCA	36		ATSE	
36	L			BG	
37				L	
38					
39					
40				ENCA	10
41				L	
Photos (loc. orient.): 1358(S)-330°/1359(E)-150°			Photos (loc. orient.): 1360(S)-208°/1361(E)-18°		
Notes (canopy openness): rough / unevenly maintained area thru middle of polygon; less maintained area w/ ENCA is southern part of poly			Notes (canopy openness): Lots of visible maintained ENCA in end of transect		

more data  
on back



04 (cont)

42

BG

43

L

44

L

45

ENCA - 4

46

L

47

BG

48

L



1362 - 280 - brush pile Pr  
clearing, maintenance

Page 4 of 34

Page 5 of 34



Feature ID: 09		Feature ID: 09 (cont.)	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
6 L		ENCA	34
1 I		L	
2 ISME	8	ACGL	
3 L		BG	
4 BG		ACGL	
5 CRME		BG	
6 L		I	
7 I		CAED	
8 I		I	
9 I		ACGL	
10 I		I	
11 BG		I	
12 ACGL		I	
13 BG		L	
14 ACGL		BG	
15 BG		L	
16 BASA	135	ACGL	
17 L		L	
18 ACGL		ACGL	
19 ENCA	53	L	
20 I	27	I	
21 I	52	I	
22 ACGL		ACGL	
23 BASA	239	I	
24 BG		I	
25 BASA	268	BG	
26 I	258	ACGL	
27 I	173	I	
28 I	127	I	
29 BG		L	
30 I		BASA	121
31 I		I	16
32 HEGR		ACGL	
33 ENCA	49	BG	
34 BG			
35 I			
36 I			
37 I			
38 I			
39 CARD			
40 I			
41 ACGL			

Photos (loc. orient.): 1372(S)-59°/1373(E)-240°

Notes (canopy openness): Open canopy; Did not capture entire slope within polygon

Photos (loc. orient.):

Notes (canopy openness):

Feature ID: 10			Feature ID: 10 (cont.)		
Transect GPS Points:			Transect GPS Points:		
Shrub species:	Shrub height (cm):		Shrub species:	Shrub height (cm):	
0	Grass		COSR	158	42
1	L		I	100	43
2	BG		BASA	21	44
3	L		I	96	45
4	I		I	158	46
5	I		I	160	47
6	I		L		48
7	I		I		49
8	BG		BG		50
9	L		L		51
10	HIIN	84	CAED		52
11	L		I		53
12	I		L		54
13	I		COMA	98	55
14	I		COSR	72	56
15	I		BG		57
16	BASA	104	I		58
17		139	HIIN	62	59
18	L		I	47	60
19	BASA	133	L		61
20	L		I		62
21	BASA	97			
22	L				
23	I				
24	I				
25	I				
26	I				
27	ENCA	26			
28	I	62			
29	I	73			
30	L				
31	BASA	110			
32	RICO	168			
33	I	90			
34	BG				
35	HIIN	28			
36	BASA	68			
37	asphalt				
38	NIGL	200			
39	BG				
40	COSR	50			
41	I	152			
Photos (loc. orient.): 1374(S)-267°/1375(S)-			Photos (loc. orient.):		
Notes (canopy openness): 80°			Notes (canopy openness):		
Relatively closed canopy for much of polygon (mostly) adjacent to closed canopy CBS					

Conium  
 Pampas

Feature ID: <u>11</u>	Feature ID: <u>12</u>
Transect GPS Points:	Transect GPS Points:
Shrub species:	Shrub species:
Shrub height (cm):	Shrub height (cm):
0 <u>L</u>	<u>CEMB</u>
1 <u>ENCA</u>	<u>I</u>
2 <u>BG</u>	
3 <u>L</u>	<u>BG</u>
4 <u>ENCA</u>	<u>L</u>
5 <u>I</u>	<u>I</u>
6 <u>I</u>	<u>BG</u>
7 <u>I</u>	<u>I</u>
8 <u>COSE</u>	
9 <u>COSE</u>	<u>HIIN</u>
10 <u>I</u>	<u>I</u>
11 <u>L</u>	<u>L</u>
12 <u>I</u>	
13 <u>I</u>	
14 <u>I</u>	
15 <u>ENCA</u>	<u>CEMB</u>
16 <u>L</u>	<u>L</u>
17 <u>I</u>	<u>ENCA</u>
18 <u>ENCA</u>	<u>L</u>
19 <u>BG</u>	<u>ENCA</u>
20 <u>HEGR</u>	<u>L</u>
21 <u>L</u>	<u>I</u>
22 <u>I</u>	<u>ENCA</u>
23 <u>I</u>	<u>L</u>
24 <u>I</u>	
25 <u>I</u>	
26 <u>I</u>	
27 <u>I</u>	
28 <u>I</u>	
29 <u>I</u>	<u>CEMB</u>
30 <u>I</u>	<u>L</u>
31 <u>I</u>	<u>BG</u>
32 <u>I</u>	<u>I</u>
33 <u>I</u>	<u>L</u>
34 <u>I</u>	
35 <u>I</u>	
36 <u>I</u>	
37 <u>I</u>	
38 <u>I</u>	<u>HIIN</u>
39 <u>I</u>	<u>L</u>
40 <u>I</u>	<u>I</u>
41 <u>I</u>	
Photos (loc. orient.): <u>1376(S) 15° / 1377(E) -185°</u>	Photos (loc. orient.): <u>1378(S) -330° / 1379(E) 145°</u>
Notes (canopy openness):	Notes (canopy openness):
<u>open canopy</u>	



more data  
on back



# 14 (cont)

42	L	
43	FRSA	
44	L	
45		
46		
47	HJIN	28
48	I	39
49	ACacia	54
50	BG	
51	BASA	15
52	L	
53	BASA	85
54	BG	
55		
56		
57		
58	L	
59	I	

Feature ID: <u>15</u>		Feature ID: <u>15 (cont.)</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	L	L	42
1			43
2			44
3	BG		45
4			46
5			47
6	L		48
7			49
8			50
9			51
10		BG	52
11		L	53
12		AMPS	54
13		L	55
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29	grass		
30	L		
31	HIIN		
32	L		
33			
34			
35	HIIN		
36	L		
37			
38			
39			
40	AMPS		
41	L		
Photos (loc. orient.): <u>1384(S) 328° / 1385(E) - 148°</u>		Photos (loc. orient.):	
Notes (canopy openness):		Notes (canopy openness):	



Page 11 of 34

Feature ID: <u>17</u>	Feature ID: <u>17 (cont.)</u>	
<b>Transect GPS Points:</b>	<b>Transect GPS Points:</b>	
<b>Shrub species:</b>	<b>Shrub species:</b>	
<b>Shrub height (cm):</b>	<b>Shrub height (cm):</b>	
0 <u>ENCA</u>	<u>L</u>	42
1 <u>L</u>	<u>L</u>	43
2 <u>L</u>	<u>BG</u>	44
3 <u>BG</u>	<u>HIIN</u>	45
4 <u>DISP</u>	<u>BG</u>	46
5 <u>L</u>		
6 <u>ENCA</u>		
7 <u>L</u>		
8 <u>BG</u>		
9 <u>L</u>		
10 <u>ENCA</u>		
11 <u>L</u>		
12 <u>L</u>		
13 <u>ENCA</u>		
14 <u>L</u>		
15 <u>BASA</u>		
16 <u>L</u>		
17 <u>L</u>		
18 <u>L</u>		
19 <u>HIIN</u>		
20 <u>ENCA</u>		
21 <u>L</u>		
22 <u>HIIN</u>		
23 <u>BG</u>		
24 <u>L</u>		
25 <u>CAPY</u>		
26 <u>HIIN</u>		
27 <u>L</u>		
28 <u>RUCR</u>		
29 <u>L</u>		
30 <u>L</u>		
31 <u>L</u>		
32 <u>L</u>		
33 <u>BG</u>		
34 <u>L</u>		
35 <u>Grass</u>		
36 <u>L</u>		
37 <u>L</u>		
38 <u>L</u>		
39 <u>L</u>		
40 <u>L</u>		
41 <u>L</u>		
<b>Photos (loc. orient.):</b> <u>1384(S)-315°/1389(E)-127°</u>	<b>Photos (loc. orient.):</b>	
<b>Notes (canopy openness):</b>	<b>Notes (canopy openness):</b>	

Feature ID: 18	Feature ID: 19
Transect GPS Points:	Transect GPS Points:
Shrub species:	Shrub species:
Shrub height (cm):	Shrub height (cm):
0 L	BG
1 ENCA 42	L
2 HIIN 12	DEFA
3 I 87	BG
4 L	ACGL
5 HIIN 37	L
6 I 73	I
7 L	DEFA
8 I	BG
9 CEMB	I
10 L	L
11 COFI 32	BG
12 CEMB	ACGL
13 COFI 31	DI2FA
14 ISAR 134	I
15 I 72	L
16 HIIN 59	I
17 BG	I
18 L	I
19 I	I
20 ENCA 17	AMPS
21	DEFA
22	I
23	
24	
25	
Photos (loc. orient.): 1390(s)-1270/1391(E)-312°	Photos (loc. orient.): 1392(s)-355°/1393(E)-183°
Notes (canopy openness):	Notes (canopy openness):
	Very little ven >40 cm



Feature ID: <u>20</u>		Feature ID: <u>          </u>	
Transect GPS Points: <u>          </u>		Transect GPS Points: <u>          </u>	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	L		
1	BG		
2	L		
3	L		
4	L		
5	L		
6	BG		
7	L		
8	BG		
9	L		
10	L		
11	L		
12	L		
13	L		
14	L		
15	L		
16	L		
17	L		
18	L		
19	L		
20	STPU		
21	L		
22	BG		
23	STPU		
24	L		
25	L		
26	L		
27	L		
28	STPU		
29	L		
30	AMPS		
31	STPU		
32	L		
33	L		
34	HTGR		
35	L		
36	L		
37	STPU		
38	STPU		
39	BG		
40			
41			

Photos (loc. orient.): 1394(3)-0 / 1395(12)-180°

Notes (canopy openness): First part of transect is virtually devoid of veg - apparently maintained

Photos (loc. orient.):           

Notes (canopy openness):

Feature ID: <u>21</u>		Feature ID: <u>21 (cont.)</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	HECR	L	
1	L		
2			
3			
4	BG		
5	L	BG	
6		L	
7			
8	BG		
9	L		
10			
11	BG		
12	L	BG	
13			
14	BG		
15		CEMB	
16			
17		BG	
18			
19	CEMB	L	
20	L		
21		BG	
22		L	
23	BG		
24			
25		BG	
26	ISMR	L	
27	L		
28		FRSA	
29	BG	L	
30	BASA		
31	ISME		
32	L		
33			
34			
35			
36			
37	BG		
38	L		
39			
40		BG	
41		HIFN	23
Photos (loc. orient.): <u>139(S)-46°/1397(E)-206°</u>		Photos (loc. orient.):	
Notes (canopy openness):		Notes (canopy openness):	

more data  
on back

21 (cont)

84	L
85	BG
86	I
87	L
88	I
89	I
90	— BG
91	ENCA - 5
92	DEFA
93	ENCA - 16
94	L
95	BG
96	I
97	L
98	HIIN - 24
99	L
100	I



Feature ID: 22	Feature ID: 23
Transect GPS Points:	Transect GPS Points:
Shrub species:	Shrub species:
Shrub height (cm):	Shrub height (cm):
0 DEFA	0 DEFA
1 L	1 L
2 DEFA	2 L
3 L	3 DEFA
4 BG	4 L
5 L	5 DEFA
6 L	6 L
7 L	7 L
8 L	8 L
9 L	9 COSE 46
10 L	10 DEFA
11 L	11 L
12 L	12 L
13 DEFA	13 L
14 L	14 COSE 97
15 L	15 L
16 L	16 COSE 121
17 L	17 L 96
18 L	18 L
19 BG	19 L
20 DEFA	20 L
21 BG	21 DEFA
22 HIIN 17	22 L
23 L	23 DEFA
24 L	24 L
25 HIIN 29	25 L
26 L	26 L
27 L	27 L
28 L	28 COSE 98
29 HIIN 27	29 COSE
30 L	30 DEFA
31 BG	31 L
32 L	32 STVI
33 ENCA 14	33 DEFA
34 HIIN 21	34 L
35 L 34	35 AMPS
36	36 L
37	37 L
38	38 L
39	39 L
40	40 L
41	41 L
Photos (loc. orient.): 1399(s) - 42° / 1399 (12) -	Photos (loc. orient.): 1400(s) - 104° / 1401 (E) - 270°
Notes (canopy openness): 204°	Notes (canopy openness):

more data  
on back

23 (cont.)

43 DEFA

44 |

45 |

46 L

47 |

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~~44~~

Page 17 of 34



Feature ID: 25		Feature ID: 25 (cont.)	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	BG	L	42
1	ISMB	HTIN	43
2	HTIN	BG	44
3	BG	CAED	45
4	L	L	46
5	L	L	47
6	L	CAED	48
7	BG	L	49
8	L	L	50
9	L	L	51
10	ENCA	BG	52
11	L	L	53
12	BG	BG	54
13	HTIN	CAED	55
14	BG	BG	56
15	L	L	57
16	BG	CAED	58
17	L	ISMB	20
18	L	L	59
19	L	HTIN	20
20	HTIN	L	60
21	L	L	61
22	L	L	62
23	L	L	63
24	BG	DEFA	64
25	L	BG	65
26	BG	L	66
27	L	L	67
28	L	L	68
29	L	L	69
30	L	L	70
31	L	L	71
32	L	L	72
33	L	L	73
34	DEFA	BG	74
35	L	L	75
36	BG	CEME	76
37	L	DEFA	77
38	CAED	L	78
39	HTIN	L	79
40	L	L	80
41	L	BG	81
		L	82
			83
Photos (loc. orient.): 1404(S)-70°/1405(E)-		Photos (loc. orient.):	
Notes (canopy openness): 250°		Notes (canopy openness):	

more  
data  
on  
back

25(cont.)

84

L

85

|

86

87

DEFA

88

L

89

|

90

AMPS

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Feature ID: <u>26</u>		Feature ID: <u>27</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	BG	L	
1	L	I	
2	BG	DEFA	
3	L	L	
4	AMPS	DEFA	
5	L	L	
6	I	I	
7	AMPS	BG	
8	L	I	
9		L	
10			
11			
12			
13			
14	BG		
15	I		
16	L		
17			
18			
19	BG		
20	I	BG	
21	L	L	
22			
23			
24			
25	BG		
26	I	EMSE	
27	L	L	
28	BG		
29	I		
30	L		
31			
32	BG		
33	I		
34		STPU	
35		L	
36		BG	
37		L	
38			
39			
40			
41			
Photos (loc. orient.): <u>1408(S)-258° / 1407(E)</u>		Photos (loc. orient.): <u>1408(S)-240° / 1409(E)-63°</u>	
Notes (canopy openness): <u>84%</u>		Notes (canopy openness):	
Very little veg > 15 cm			

more data  
 on back  




27 (cont)

42

L

43

44

45

46

47

48

49

50

51

B9

Page 20 of 34

Feature ID: 29		Feature ID: 29 (cont.)	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	L	GLCO	
1			
2	AMPS		
3			
4			
5	L		
6	BG	BG	
7	AMPS	GLCO	
8	L		
9		L	
10		GLCO	
11			
12			
13			
14			
15		L	
16	BG		
17			
18	L		
19		HIIN	18
20			5
21	AMPS	BG	
22	GLCO	L	
23			
24	L		
25	BG		
26	GLCO	BG	
27		L	
28		BG	
29			
30		L	
31	L		
32			
33	GLCO		
34		BG	
35		L	
36			
37			
38	L		
39			
40		BG	
41	GLCO	L	

Photos (loc. orient.):

Notes (canopy openness): 1412(S)-38°  
1413(E)-220°

Photos (loc. orient.):

Notes (canopy openness):

42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82

→  
more data  
on back

GLCO = Glebionis coronaria



29(cont)

83 L

84 HIIN - 35

85 BG

86 L

87 1

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Feature ID: 30		Feature ID: 30 (cont.)	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	L	BG	
1	ISME	L	
2	I	BG	
3	L	I	
4	ISME	L	
5	L	I	
6			
7			
8			
9			
10			
11	ISME		
12	BG		
13	L		
14	CEME		
15	BG		
16	I		
17	L		
18	BG		
19	ISME		
20	BG		
21	L		
22			
23			
24			
25			
26			
27			
28			
29			
30			
31	BG		
32	DEFA		
33	BG		
34	I		
35	L		
36	DEFA		
37	L		
38			
39			
40			
41	BG		
Photos (loc. orient.): 1414(S)-58° / 1415(E).		Photos (loc. orient.):	
Notes (canopy openness): 229°		Notes (canopy openness):	

Feature ID: <u>31</u>		Feature ID: <u>31 (cont.)</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	L	L	42
1	I	I	43
2	CEMB	BG	44
3	L	L	45
4	I	CEMB	46
5	I	L	47
6	I	I	48
7	I	MAUU	49
8	I	BG	50
9	BG		
10	L		
11	I		
12	I		
13	I		
14	I		
15	I		
16	CEMB		
17	BG		
18	CEMB		
19	L		
20	BG		
21	L		
22	I		
23	BG		
24	GLCO		
25	CEMB		
26	GLCO		
27	L		
28	I		
29	I		
30	I		
31	I		
32	I		
33	I		
34	BG		
35	I		
36	CEMB		
37	L		
38	I		
39	CEMB		
40	L		
41	I		
Photos (loc. orient.): <u>1416(S)-30°/1417(E)-</u>		Photos (loc. orient.):	
Notes (canopy openness): <u>203°</u>		Notes (canopy openness):	



Feature ID: 32		Feature ID: 32 (CONT.)	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	BG	L	42
1	HIIN		43
2	L		44
3	AMPS		45
4	L		46
5	L	BG	47
6		L	48
7		BG	49
8		L	50
9		BG	51
10		L	52
11		L	53
12		DEFA	54
13		L	55
14		L	56
15	CAED	MAVU	57
16	L	BG	58
17	L	L	59
18		L	60
19		BG	61
20		MAVU	62
21		BG	63
22		FRSA	64
23		L	65
24		BG	66
25		FRSA	67
26		L	68
27		L	69
28			70
29			71
30		BG	72
31		L	73
32			74
33			75
34			76
35			77
36	HIIN		78
37	BG		79
38	L		80
39			81
40			82
41			83

Photos (loc. orient.): 1418(S)-295°

Notes (canopy openness): 1419(E)-116°

Photos (loc. orient.):

Notes (canopy openness):

more data  
on back

32 (cont.)

84	L
85	BG
86	L
87	I
88	DEFA
89	L
90	
91	
92	
93	
94	
95	
96	
97	
98	
99	
100	↓ AMPS

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Feature ID: <u>33</u>		Feature ID: <u>33 (cont.)</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	L	L	42
1	EUOC		43
2	L		44
3	I		45
4		HIIN	46
5	OPLT	CEME	47
6	L	DEFA	48
7	DEFA		49
8	L		50
9	I		
10			
11	BG		
12	I		
13			
14	L		
15	BASA		
16	L		
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27	EUOC		
28	L		
29	I		
30			
31	HEGR		
32	I		
33	HIIN		
34	L		
35	BASA		
36	I		
37	BAPT		
38	L		
39	I		
40			
41			
Photos (loc. orient.): <u>1420(S)-244°/1421(E)-60°</u>		Photos (loc. orient.):	
Notes (canopy openness):		Notes (canopy openness):	
ENCA present (<1% of total cover)			



Page 26 of 34

Feature ID: 35		Feature ID: 35 (cont.)	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0 L		BG	42
1		DEFA	43
2		BG	44
3 COSE	120		45
4 L	105	L	46
5 L		HIIN	47
6 COSE	120		48
7 L			49
8			50
9			51
10 COSE	120		52
11	100		53
12 OPLI	62		54
13 HIIN	80	L	55
14 COSE	49		56
15 HIIN	61	BG	57
16 L		DISP	58
17 concrete		BAHY	59
18		DEFA	60
19			61
20 L		BG	62
21 COSE	108		63
22	76		64
23 HIIN	29		65
24 L		L	66
25 HIIN	46		67
26	34	BG	68
27 L			69
28			70
29 BG			71
30 L		L	72
31 BG			73
32 ENCA	36		74
33	28		75
34 L			76
35			77
36			78
37			79
38			80
39			81
40 SATR			82
41			83
Photos (loc. orient.): 1424(S)-143°		Photos (loc. orient.):	
Notes (canopy openness): 1425(E)-350°		Notes (canopy openness):	
Concrete pad w/in transect			

Feature ID: <u>36</u>		Feature ID: <u>37</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0 ENCA	25	BG	
1	21	L	
2 L			
3 HIIN	54		
4	29		
5 ENCA	12		
6 HIIN	39	ENCA	10
7	18	L	
8 ENCA	6		
9	10		
10 L			
11 ENCA	15	BG	
12 BG			
13 L			
14		ENCA	18
15 ENCA	46		24
16	26	BG	
17	16	L	
18	31	ENCA	6
19 HIIN	66	L	
20 NIQL	60		
21 L		ENCA	4
22 ENCA	32		23
23 L		L	
24 HIIN	44		
25 L			
26 BG			
27 CAED			
28			
29			
30		CEME	
31			
32		ENCA	26
33 RILO	130		44
34	118	L	
35 L			
36		BG	
37			
38			
39			
40			
41			
Photos (loc. orient.): 1426(S)-55°		Photos (loc. orient.): 1428(S)-108°	
Notes (canopy openness): 1427(E)-244°		Notes (canopy openness): 1429(E)-303°	
South of broken asphalt thru			
poly			



Feature ID: <u>38</u>		Feature ID: <u>38(cont.)</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	ENCA	10	
1	BG		
2	L		
3			
4			
5			
6	DETA		
7			
8			
9	L		
10			
11			
12			
13			
14	BG		
15	L		
16	BG		
17	L		
18			
19			
20	BG		
21	L		
22			
23	HIIN	21	
24	L		
25	HIIN	18	
26	L		
27			
28			
29			
30	HIIN	61	
31		59	
32		44	
33		40	
34	L		
35	BG		
36	L		
37	BG		
38			
39	CEME		
40	L		
41	BG		
Photos (loc. orient.): <u>1430(s) - 120°</u>		Photos (loc. orient.):	
Notes (canopy openness): <u>1431(E) - 300</u>		Notes (canopy openness):	

Page 30 of 34

Feature ID: 41	Feature ID: 412
Transect GPS Points:	Transect GPS Points:
Shrub species: Shrub height (cm):	Shrub species: Shrub height (cm):
0 BG	0 BNCA 9
1 L	1 L
2	2
3	3
4 ACGL	4 HJIN 12
5 L	5 L
6	6
7	7
8	8
9	9 GLCO
10	10 DEFA
11	11 L
12	12
13	13
14	14 HEGR 46
15 ACGL	15 L 85
16 L	16 L
17 AMPS	17
18 L	18
19	19
20	20 AMPS
21	21 L
22	22
23	23 AMPS
24	24 L
25	25
26	26
27	27
28	28
29	29 GLCO
30	30 L
31	31 DEFA
32	32 L
33	33 DEFA
34	34
35	35
36	36 BG
37	37 L
38	38
39	39
40	40
41	41
Photos (loc. orient.): 1436(S) - 284°	Photos (loc. orient.): 1438(S) 311°
Notes (canopy openness): 1437(E) 86°	Notes (canopy openness): 1439(E) - 110°



Page 32 of 34

Feature ID: <u>44</u>		Feature ID: <u>44(cont.)</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	L	BG	42
1			43
2		GLCO	44
3		L	45
4	DEFA		46
5	L	ENCA	18
6	DEFA	L	47
7	L	ENCA	8
8		GLCO	48
9		L	49
10		ENCA	50
11		L	51
12	CEME	ENCA	46
13	L		40
14		L	52
15	HIIN	BG	53
16		L	54
17			55
18		GLCO	56
19			57
20	L	L	58
21		BG	59
22	HIIN	L	60
23	L	GLCO	61
24	HIIN	BG	62
25	L	GLCO	63
26	BG	BG	64
27	L		65
28		L	66
29	GLCO	BG	67
30			68
31			69
32			70
33			71
34		L	72
35		BG	73
36		L	74
37	L	BG	75
38			76
39		L	77
40		BG	78
41	GLCO	L	79
			80
			81
			82
			83

Photos (loc. orient.): 1442(S)-350°

Notes (canopy openness): 1445(E)-167°

Photos (loc. orient.): \_\_\_\_\_

Notes (canopy openness): \_\_\_\_\_

→  
more data  
on back

44 (cont)

84	L	
85	TSG	
86	L	
87	AMPS	
88	L	
89		
90		
91		
92		
93		
94		
95		
96		
97	HIIN	20
98	L	
99	?	
100	AMPS	



Feature ID: 45		Feature ID: 45 (cont.)	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	BSG	ENCA	66
1	L	L	
2			
3			
4		ENCA	54
5			35
6			55
7			56
8			44
9		L	
10			
11	HIIN		
12			
13			
14	L		
15			
16			
17		ACGL	
18	DEFA	HIIN	41
19	L		36
20		L	41
21	DEFA		
22		HIIN	18
23	BSG		60
24	L		71
25			49
26		L	
27	DEFA		
28	BC		
29	ENCA	BSG	
30	DEFA		
31	L		
32	BC	HIIN	60
33	L		91
34			56
35			81
36		L	
37		OPLI	43
38	ENCA	L	
39	L	HIIN	104
40		L	
41	ENCA	HIIN	130
			185
Photos (loc. orient.): 1444 (S) - 186°		Photos (loc. orient.):	
Notes (canopy openness): 1445 (E) - 90°		Notes (canopy openness):	

→  
more data  
on back

45 (cont.)

84	HIIN	96
85	L	
86		
87		
88		
89	HIIN	72
90	L	
91		
92		
93		
94	BG	
95	L	
96	HIIN	30
97	L	
98	DEFA	
99		
100		

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Feature ID: <u>46</u>		Feature ID: <u>48</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0 BG		HIIN	24
1 L		L	
2 I		HIIN	61
3 ISME	51	I	49
4 L		BG	
5 I		HEGR	66
6 I		I	30
7 ISME	20	L	
8 BG		HEGR	97
9 HIIN	44	BG	
10 L		L	
11 I		HIIN	44
12 I		I	80
13 I		I	70
14 STVI		I	59
15 ISME	96	HEGR	74
16 I	119	RICO	67
17 I	83	ENCA	49
18 DISP		↓	73
19 ISME	11	HIIN	44
20 I	22	L	
21 L		HIIN	60
22 ISME	16	L	
23 L		I	
24 I		BASA	75
25 BG		FRSA	
26 I		HIIN	31
27 I		BG	
28 I		L	
29 L			
30 I			
31 I			
32 I			
33			
34			
35			
36			
37			
38			
39			
40			
41			

Photos (loc. orient.): S-1446 (17°)

Notes (canopy openness): E-1447 (199°)  
disturbance patch, thru several dirt stock piles.

Photos (loc. orient.): S-1449 (350°)

Notes (canopy openness): E-1450 (170°)  
Species mostly are from previous growing season.



Feature ID: <u>49</u>		Feature ID: <u>50</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0 ENCA	10	BG	
1 HIIN	25	ACGL	
2	75	BG	
3	46	ENCA	8
4 ENCA	11	BG	
5 HIIN	67	L	
6	66	ACGL	
7 ENCA	40	BG	
8 HIIN	74		
9	81	HEGR	71
10 L		BG	
11 HIIN	42	ACGL	
12 ENCA	18	HEGR	21
13 L		ACGL	
14 ENCA	6	BG	
15 L		L	
16			
17 CAED		BASA	198
18			86
19		BG	
20			
21		CAED	
22			
23			
24			
25			
26			
27			
28			
29			
30		BG	
31			
32			
33			
34			
35			
36		ENCA	30
37		HIIN	41
38			41
39			34
40		ACGL	
41		ENCA	29
Photos (loc. orient.): <u>S-1451 (277°)</u>		Photos (loc. orient.): <u>S-1453 (193°)</u>	
Notes (canopy openness): <u>e-1452 (85°)</u>		Notes (canopy openness): <u>e-1454 (120°)</u>	

Feature ID: 51		Feature ID: 52	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0 ENCA	4	0 ENCA	28
1	3	1	10
2	3	2 L	
3 BG		3	
4 -1		4	
5 CEME		5 ENCA	15
6		6 BG	
7 HIJN	70	7	
8	54	8 ENCA	8
9 ENCA	14	9	14
10 BG		10 L	
11		11	
12		12 Erodium	
13 CEME		13 BG	
14 BG		14	
15 FRSA		15 Erodium	
16 Erodium		16 BG	
17 BG		17	
18 Erodium		18	
19 BG		19	
20		20	
21		21	
22		22	
23		23	
24		24	
25		25 Erodium	
26		26 BG	
27		27	
28		28	
29		29	
30		30	
31		31	
32		32	
33		33	
34		34	
35		35	
36		36	
37		37	
38		38	
39		39	
40		40	
41		41	
Photos (loc. orient.): S-1455 (117°)		Photos (loc. orient.): S-1457 (123°)	
Notes (canopy openness): e-1456 (30%)		Notes (canopy openness): e-1458 (310°)	

Feature ID: <u>53</u>		Feature ID: <u>55</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	BG	0	62
1	L	1	L
2	BG	2	HIIN
3	ISME	3	FRSA
4	Erodium	4	OPLI
5		5	L
6	BG	6	
7	L	7	BG
8	BG	8	L
9		9	HIIN
10		10	L
11		11	L
12	ISME	12	BG
13	Erodium	13	Erodium
14	BG	14	L
15	L	15	Erodium
16	ISME	16	
17	BG	17	ENCA
18		18	
19		19	ACGL
20	L	20	Erodium
21		21	L
22	BG	22	ENCA
23		23	Erodium
24	FRSA	24	
25	BG	25	BG
26		26	CAED
27		27	
28		28	BG
29		29	HIIN
30		30	
31		31	
32		32	
33		33	
34		34	
35		35	
36		36	
37		37	
38		38	
39		39	
40		40	
41		41	

Photos (loc. orient.): S-1459 (165°)

Notes (canopy openness): E-1460 (339°)

Very sparse, new growth - P

ENCA, 510 cm

Photos (loc. orient.): S-1462 (30°)

Notes (canopy openness): E-1463 (210°)



Feature ID: <u>56</u>		Feature ID: <u>58</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0 <u>BAPI</u>	<u>43</u>	<u>ENCA</u>	<u>55</u>
1 <u>Erodium</u>		<u>L</u>	<u>56</u>
2 <u>L</u>		<u>L</u>	<u>70</u>
3 <u>Erodium</u>		<u>L</u>	<u>71</u>
4 <u>HIIN</u>	<u>52</u>	<u>L</u>	<u>30</u>
5 <u>ENCA</u>		<u>L</u>	<u>71</u>
6 <u>ACGL</u>		<u>L</u>	<u>60</u>
7 <u>COFI</u>		<u>L</u>	
8 <u>L</u>		<u>L</u>	
9 <u>HIIN</u>	<u>58</u>	<u>ENCA</u>	<u>42</u>
10 <u>BG</u>		<u>L</u>	<u>24</u>
11 <u>L</u>		<u>L</u>	<u>66</u>
12 <u>L</u>		<u>L</u>	
13		<u>ENCA</u>	<u>10</u>
14		<u>BG</u>	
15		<u>Erodium</u>	
16		<u>L</u>	
17		<u>L</u>	
18		<u>BG</u>	
19		<u>L</u>	
20		<u>L</u>	
21		<u>BG</u>	
22		<u>L</u>	
23		<u>L</u>	
24		<u>BG</u>	
25		<u>L</u>	
26		<u>L</u>	
27		<u>ENCA</u>	<u>4</u>
28		<u>L</u>	
29		<u>ENCA</u>	<u>10</u>
30		<u>BG</u>	
31		<u>L</u>	
32		<u>Erodium</u>	
33		<u>ENCA</u>	<u>6</u>
34		<u>L</u>	
35		<u>L</u>	
36		<u>BG</u>	
37		<u>L</u>	
38		<u>L</u>	
39		<u>L</u>	
40		<u>L</u>	
41		<u>CAED</u>	

Photos (loc. orient.): S 1464 (200°)

Notes (canopy openness): e 1465 (130°)

Abscure oil well pad and

pipe and other metal structures

Photos (loc. orient.): S-1467 (146°)

Notes (canopy openness): e-1468 (334°)

Feature ID: 59	Feature ID:
Transect GPS Points:	Transect GPS Points:
Shrub species:	Shrub species:
Shrub height (cm):	Shrub height (cm):
0 CAED	
1 I	
2 L	
3 BG	
4 I	
5 L	
6 BG	
7 L	
8 HTN 24	
9 ACGL	
10 L	
11 ENCA 32	
12 I 18	
13 I 20	
14 CAED	
15 L	
16 Eragrostis	
17 BG	
18 I	
19 I	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	
37	
38	
39	
40	
41	
Photos (loc. orient.): S-1469-(299°)	Photos (loc. orient.):
Notes (canopy openness): e-1470 (113°)	Notes (canopy openness):

Feature ID: <u>61</u>		Feature ID: <u>        </u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	L	Erodium	42
1	BG	BG	43
2	L	L	44
3	L	ISME	24 45
4	BG	BG	46
5	HIIN	ISME	50 47
6	BG	Erodium	48
7	Erodium		49
8		BG	50
9		L	51
10			52
11	L	L	53
12	ISME	CEME	54
13	ACGL	Erodium	55
14	HIIN		56
15	ACGL		57
16	ENCA		58
17	Erodium	HIIN	24 59
18	HIIN	Erodium	60
19		HIIN	14 61
20	34	L	62
21	Erodium		63
22			64
23	L	Erodium	65
24	Erodium		66
25	HIIN		67
26	BG	HIIN	21 68
27	L	Erodium	69
28	Erodium	HIIN	13 70
29	BG	CEME	71
30	Erodium		72
31	ACGL	BG	73
32	Erodium	ACGL	74
33	ACGL	COFI	75
34	BG	HIIN	56 76
35	Erodium	L	77
36	BG	CAED	78
37	ISME	L	79
38	L	ENCA	12 80
39	ENCA	HIIN	60 81
40	BG	BAHY	82
41	L	L	83
Photos (loc. orient.): <u>s-1472 (2°)</u>		Photos (loc. orient.): <u>        </u>	
Notes (canopy openness): <u>e-1473 (198°)</u>		Notes (canopy openness): <u>        </u>	



84	L
85	
86	BAHY
87	BG
88	
89	
90	MECR
91	BG
92	
93	
94	MECR
95	BG
96	
97	└─

Feature ID: <u>62</u>		Feature ID: <u>63</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0 ISME	54	L	
1 BG		Erod	
2 grass		HIIN	23
3 BG		I	32
4 grass		Erod	
5 DEFA		grass	
6 ISME	57	Erod	
7 L		I	
8 ISME	10	CEME	
9 I	30	unl	
10 L		Erod	
11 BG		I	
12 L		CEMB	
13 grass		Erod	
14 BG		I	
15 CEME			
16 BG			
17 ISME	31	HIIN	24
18 BG		BG	
19 grass		CEME	
20 I		I	
21 BG		Erod	
22 I		grass	
23 I		Erod	
24 I		grass	
25 I			
26 I			
27 L			
28 BG			
29 DEFA			
30 BG			
31 I			
32 L			
33 BG			
34 I			
35 I			
36 I			
37 ISME	5		
38 I	14		
39 ENCA	5		
40 grass			
41 Erodium			

Erod:  
 Erodium

Photos (loc. orient.): S-1474 (22°)  
 Notes (canopy openness): e-1475 (200°)

Photos (loc. orient.): S-1476 (119°)  
 Notes (canopy openness): e-1477 (294°)

42 Erodium  
 43 I

Feature ID: <u>64</u>		Feature ID: <u>—</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0 ENCA	24	Erod	42
1 Erod		BG	43
2 ENCA	5	CENB	44
3 Erod		Erod	45
4 ENCA	4	ENCA	46
5 grass		Erod	47
6 BG			48
7 L			49
8		CENB	50
9 AMPS		HIIN	51
10 grass		L	52
11 AMPS		BG	53
12		Erod	54
13		L	55
14 grass			56
15 Erod		BG	57
16 AMPS		L	58
17		BG	59
18		L	60
19			61
20 L		Erod	62
21 AMPS			63
22 L		BG	64
23 AMPS		L	65
24 L		Erod	66
25		BG	67
26 Erod			68
27 AMPS		L	69
28		HIIN	70
29			71
30		grass	72
31 L			73
32		BG	74
33 AMPS		HIIN	75
34 HIIN	29		76
35 AMPS		Erod	77
36 grass		ENCA	78
37 ENCA	41	DEFA	79
38	48	ENCA	80
39	11		81
40 AMPS		Erod	82
41 Erod			83
Photos (loc. orient.): <u>S-1478 (22°)</u>		Photos (loc. orient.): <u>—</u>	
Notes (canopy openness): <u>E-1479 (210°)</u>		Notes (canopy openness): <u>—</u>	

ENCA — 13 — 84  
 L — 24 — 85  
 ENCA — 24 — 86  
 grass — 87  
 L — 88



Feature ID: <u>65</u>		Feature ID: <u>      </u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	Erod	L	42
1	I	CEME	43
2	CEME	grass	44
3	grass	Erod	45
4	Erod	BG	46
5	I	I	47
6	I	Erod	48
7	I	I	49
8	L	L	50
9	HIIN	ENCA	36
10	L	L	51
11	Erod	Erod	52
12	I	L	53
13	I	Erod	54
14	HIIN	L	55
15	ENCA		56
16	grass		
17	I		
18	Erod		
19	I		
20	HIIN		
21	grass		
22	I		
23	ENCA		
24	BG		
25	I		
26	Erod		
27	I		
28	I		
29	L		
30	I		
31	Erod		
32	BG		
33	Erod		
34	I		
35	HIIN		
36	I		
37	L		
38	Erod		
39	L		
40	ENCA		
41	HIIN		
Photos (loc. orient.): <u>S 1480 (21°)</u>		Photos (loc. orient.): <u>      </u>	
Notes (canopy openness): <u>e-1441 (185°)</u>		Notes (canopy openness): <u>      </u>	

Feature ID: <u>66</u>		Feature ID: <u>68</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	L	CENR	
1	CENR	grass	
2	I	BG	
3	L	L	
4	Erod	I	
5	CENR	CENR	
6	I	HIIN	48
7	ENCA	ENCA	22
8	CENR	BG	
9	L	I	
10	CENR	HIIN	30
11	I	CENR	
12	BG	I	
13	CENR	L	
14	I	HIIN	52
15	I	Erod	
16	I	ENCA	4
17	I	ISMR	20
18	L		
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			
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39			
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41			
Photos (loc. orient.): <u>S 1487 (196°)</u>		Photos (loc. orient.): <u>S-1491 (50°)</u>	
Notes (canopy openness): <u>e 1488 (23°)</u>		Notes (canopy openness): <u>e-1492 (226°)</u>	

Feature ID: <u>69</u>		Feature ID: <u>      </u>	
Transect GPS Points: <u>      </u>		Transect GPS Points: <u>      </u>	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0 L		BG	42
1 CEME		SATR	43
2 BG		Erod	44
3 CEME		I	45
4 grass		BG	46
5 ISME	20		47
6 grass			48
7 PHIN	46		49
8 CEME			50
9			
10			
11			
12			
13 ISME	46		
14 L			
15 ISME	15		
16 L			
17 OPLI	19		
18 ACGL			
19 ENCA	26		
20	75		
21	56		
22	44		
23 L			
24			
25 ISME			
26 Erod			
27			
28			
29			
30 ISME	8		
31	44		
32	60		
33	41		
34 SATR			
35 OPLI	38		
36 L			
37 SATR			
38 Erod			
39 L			
40 SATR			
41 ATSE			
Photos (loc. orient.): <u>S-1493 (101°)</u>		Photos (loc. orient.): <u>      </u>	
Notes (canopy openness): <u>E-1494 (270°)</u>		Notes (canopy openness): <u>      </u>	



Feature ID: 71		Feature ID: _____	
Transect GPS Points: _____		Transect GPS Points: _____	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0 BG		grass	42
1 HIIN	10	Erod	43
2 grass		L	44
3 L		Erod	45
4 ENCA	22	I	46
5 I	55	ENCA	47
6 BG		L	48
7 L		HIIN	49
8 HIIN	15	ENCA	50
9 I	39	Erod	51
10 ENCA	9	ENCA	52
11 Erod		Erod	53
12 ENCA	10	HIIN	54
13 I	16	Erod	55
14 Erod			56
15 L			57
16 BG			58
17 Erod			59
18 I			60
19 HIIN	21	CEMB	61
20 ISMB	56	Erod	62
21 HIIN	25		63
22 Erod			64
23 HIIN	40	BG	65
24 I	120		66
25 Erod			67
26			68
27			69
28			70
29 ENCA	10		71
30 Erod			72
31 I			73
32			74
33 BG			75
34 grass			76
35 ENCA	41		77
36 I	15		78
37 BG			79
38 I			80
39 grass			81
40 Erod			82
41 I			83
Photos (loc. orient.): S-1496 (115°)		Photos (loc. orient.): _____	
Notes (canopy openness): c-1497 (296°)		Notes (canopy openness): _____	

Feature ID: 72		Feature ID: _____	
Transect GPS Points: _____		Transect GPS Points: _____	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0 BG		L	42
1 DEFA		Erod	43
2 L			44
3 Erod			45
4 L			46
5 Erod			47
6 L		L	48
7 Erod		CEME	49
8		L	50
9			51
10 ENCA	4		52
11 Erod			53
12 FRSA		BG	54
13 L		Erod	55
14 Erod		CEME	56
15 L		BG	57
16 BG		Erod	58
17			59
18 Erod		Erod	60
19 ENCA	4	ENCA	61
20 Erod		CAED	62
21			63
22		Erod	64
23		grass	65
24 ENCA	6	Erod	66
25 AMPS		CEME	67
26		BG	68
27 Erod		HTIN	69
28 CEME		Erod	70
29 Erod			71
30 HTIN	31	AMPS	72
31 CEME		Erod	73
32 Erod		DEFA	74
33		L	75
34 CEME			76
35 Erod		grass	77
36		L	78
37 CEME		Erod	79
38 L			80
39			81
40 Erod			82
41		6PLI	83
Photos (loc. orient.): S-1498 (352°)		Photos (loc. orient.): _____	
Notes (canopy openness): E-1499 (196°)		Notes (canopy openness): _____	

84	L	
85	L	
86	I	
87	AMPS	
88	BG	
89	L	
90	I	
91	Erod	
92	L	
93	I	
94	ENCA	19
95	Erod	
96	<u>I</u>	



Feature ID: <u>74</u>		Feature ID: <u>75</u>	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	BCG	DEFA	
1	I	Erod	
2	Erod	I	
3	I	BCG	
4	CEME	CEME	
5	Erod	Erod	
6	I	I	
7	I	BCG	
8	I	Erod	
9	I	BCG	
10	I	Erod	
11	BCG	I	
12	I	HITN	25
13	ENCA	L	
14	I	I	
15	ACGL	BCG	
16	ENCA	L	
17	Erod	ENCA	21
18	L	L	
19	Erod	HITN	15
20	I	L	
21	I	Erod	
22	ENCA	ACGL	
23	L	Erod	
24	BCG	I	
25	I	CEMB	
26	I	Erod	
27	Erod	I	
28		grass	
29		Erod	
30		grass	
31		BCG	
32		Erod	
33		CEME	
34		BCG	
35		ACGL	
36		DEFA	
37		I	
38		STPU	
39		AMPS	
40		ISME	20
41		Erod	
Photos (loc. orient.): <u>S-1501 (277°)</u>		Photos (loc. orient.): <u>S-1503 (140°)</u>	
Notes (canopy openness): <u>e-1502 (100%)</u>		Notes (canopy openness): <u>e-1504 (305%)</u>	

Feature ID: 76		Feature ID: _____	
Transect GPS Points:		Transect GPS Points:	
Shrub species:	Shrub height (cm):	Shrub species:	Shrub height (cm):
0	13 rod	Erod	42
1	ENCA		43
2	↓		44
3	BG		45
4	NJIN	CEME	46
5	CEME	BG	47
6	ENCA	Erod	48
7	CEME	AMPS	49
8	ACGL	L	50
9	BG	Erod	51
10	Erod		52
11			53
12			54
13		BG	55
14		Erod	56
15	ENCA		57
16	Erod	AMPS	58
17	ENCA	Erod	59
18	Erod		60
19	ENCA		61
20	Erod	L	62
21		STPU	63
22	ACGL		64
23	Erod	Erod	65
24		BG	66
25		L	67
26	L	Erod	68
27	ACGL		69
28	Erod		70
29		BG	71
30	ISME	Erod	72
31	Erod		73
32		L	74
33	L	ENCA	75
34	Erod		76
35		Erod	77
36			78
37			79
38	STPU		80
39	Erod		81
40			82
41			83
Photos (loc. orient.): S-1505 (62°)		Photos (loc. orient.): _____	
Notes (canopy openness): C-1506 (183)		Notes (canopy openness): _____	

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