FINAL

USGS-NPS VEGETATION MAPPING PROGRAM

SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA
PHOTO INTERPRETATION REPORT

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TABLE OF CONTENTS

SECTION **PAGE**

I. INTRODUCTION 4

II. SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA AND PROJECT STUDY AREA - GENERAL DESCRIPTION 4

Region 1 – The Western Fog Zone 5

Region 2 – The Immediate Coast 6

Region 3 – The Upper Elevation Santa Monica Mountains 7

Region 4 – The Lower Elevation Inland Santa Monica Mountains 8

Region 5 – The Inland Dry 8

Region 6 – The Simi Hills Inland 9

Region 7 – The Eastern Urban 10

III. SUMMARY OF THE MAPPING EFFORT AT SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA 10

IV. VEGETATION MAPPING AT SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA (SAMO) 14

Photo Interpretation Mapping Criteria 14

SAMO-Specific Mapping Protocols and Criteria 16

Project Materials 18

Photo Interpretation Mapping Procedures 19

V. DATA CONVERSION 21

Data Automation 21

Data Rectification and Polygon Attribute Assignment 21

Code Verification and Edit Plot Quality Assurance 21

Final Quality Assurance of the Vegetation Map 21

TABLE OF CONTENTS (Continued)

SECTION **PAGE**

VI. APPENDICES 22

I. SAMO Final Mapping Classification 22

II. SCAG 1993 Land Use Classification..... 29

III. SAMO Regions and Subregions 32

IV. Mapping Descriptions 33

I. INTRODUCTION

The National Park Service (NPS), in conjunction with the Biological Resources Division (BRD) of the U.S. Geological Survey (USGS), has implemented a program to "develop a uniform hierarchical vegetation methodology" at a national level. The program will also create a geographic information system (GIS) database for the parks under its management. The purpose of the data is to document the state of vegetation within the NPS service area, thereby providing a baseline study for further analysis at the Regional or Service-wide level.

Several parks, representing different regions, environmental conditions, and vegetation types, were chosen by BRD to be part of the prototype phase of the program. The initial goal of the prototype phase is to "develop, test, refine, and finalize the standards and protocols" to be used during the production phase of the project. This includes the development of a standardized vegetation classification system for each park and the establishment of photointerpretation, field, and accuracy assessment procedures.

The Santa Monica Mountains National Recreation Area (the Park) and a portion of its environs is one of the post-prototype parks in the NPS Western Region selected for mapping. The Park is located in the Santa Monica Mountains of coastal southern California northwest of Los Angeles. It is a rugged mountain environment with many canyons and inland valleys. The vegetation types include riparian woodlands, oak woodlands, wetlands, chaparral, and coastal sage scrub. The park is a patchwork of federal, state, conservancy and private land holdings. Rural and suburban development occurs within and on the fringes of the park.

Aerial Information Systems (AIS) was subcontracted by Environmental Systems Research Institute (ESRI), the prime contractor, to perform the vegetation photo-interpretation (PI) and automation for the program. NPS contracted with NatureServe and the California Department of Fish and Game for the development of the National Vegetation Classification System. The Park conducted the field sampling effort to support the development of the National Vegetation Classification System, as feedback for the photo interpreters, and to provide samples for Accuracy Assessment.

II. SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA AND PROJECT STUDY AREA - GENERAL DESCRIPTION

The Santa Monica Mountains National Recreation Area was created by the National Park Service on November 10, 1978. The park occupies 154,095 acres of land in the Santa Monica Mountains of southern California, and is 46 miles at its longest extent from the edge of the Oxnard Plain to the eastern Hollywood Hills. Located in the Los Angeles metropolitan area, it is the largest urban park in the world. The Park is a patchwork of public, quasi-public and private lands. Public lands are under the control of many government jurisdictions including the National Park Service, California Department of Parks and Recreation, Ventura County, Los Angeles County, the Santa Monica Mountains Conservancy, and local cities, as well as other government agencies. Public lands include state, county and city parks/beaches, and designated open space areas and reserves.

The Park functions as a regional recreation area for the Los Angeles metropolitan area. It contains hiking and equestrian trails, paved and dirt roadways, local parks and beach parks. In addition, the Park serves to protect the natural and cultural resources of the Santa Monica Mountains.

The Park is bordered on the south by the Pacific Ocean and the coastal plain of Los Angeles, on the east by Cahuenga Pass, on the north by the San Fernando Valley, the Simi Hills, and the Conejo Valley, and on the west by the Oxnard Plain/Mugu Lagoon marshland. US 101 runs along the north edge, and the Pacific Coast Highway (US 1) borders the Park at the southern edge along the Pacific Ocean. The Park is traversed north and south by several roads including Kanan-Dume Road, Las Virgenes Road/Malibu Canyon Road, Topanga Canyon Blvd (State Highway 27), Interstate 405 (Sepulveda Pass), and US 101 (Cahuenga Pass). Mulholland Highway/Mulholland Drive runs east-west through most of the Park.

The study area for the project extends outside the park to the north as far as the northern extent of the Las Posas Hills, State Highway 118, and the northern extent of the Simi Hills. To the east it extends to include Griffith Park and the urban Hollywood Hills between Ventura Blvd on the north and the coastal plain on the south. To the west it extends almost to Calleguas Creek.

The Santa Monica Mountains National Recreation Area (NRA) project study area contains seven main ecologic or geomorphologic areas:

- **Region 1 - The Western Fog Zone** (Oxnard Plain Fog Belt)
- **Region 2 - The Immediate Coast** (Coastal Fog Belt)
- **Region 3 - The Upper Elevation Santa Monica Mountains** (Santa Monica Mountains Proper)
- **Region 4 - The Lower Elevation Inland Santa Monica Mountains** (North Slope Urban Transition)
- **Region 5 - The Inland Dry** (Inland Urban Area)
- **Region 6 - The Simi Hills Inland**
- **Region 7 - The Eastern Urban** (Hollywood Hills)

The following is a brief and general description of the major regions and their associated vegetation types:

Region 1 - The Western Fog Zone

The Western Fog Zone is located at the western edge of the study area adjacent to the Oxnard Plain and extends eastward inland to Big Sycamore Canyon at the southern end. Urban development marks the eastward extent of the Zone's central and northern portions. This region includes the western edge of the Santa Monica Mountains, Conejo Mountain, the Santa Rosa Valley, and the Las Posas Hills. The north contains low hills and flat valleys with agriculture. The central area consists mainly of tall, steep rocky slopes. The south has rounded ridges and fewer rocky canyons than the central portion. The vegetation for this area includes the Mugu Marshlands, coastal sage scrub, and rock outcrops. A limited amount of chaparral occurs primarily at the transition to the main body of the Santa Monica Mountains.

The Western Fog Zone is subdivided into three subregions. The Western Slope Area (Subregion 1A) contains very steep and sometimes rocky mountain slopes, hillsides, canyons, and valley bottoms that have direct contact with the oceanic fog layer. Thus, it is more

frequently affected by fog than the other subregions. The Eastern Slope Area (Subregion 1B) is where the fog spills over the crest, via the east-west canyons of the western subregion, and into the interior valleys, in those times when is thick enough to do so. The Mugu Marshland Area (Subregion 1C) is the flat wetland part of the study area at the southeastern edge of the Oxnard Plain.

The vegetation of this region is composed mainly of coastal sage scrub and cactus scrub. The northerly hillsides contain mainly *Artemisia californica*, with *Salvia leucophylla*, *Leymus condensatus, Mimulus aurantiacus,* and *Baccharis pilularis*. The southerly slopes contain *Malosma laurina, Rhus integrifolia, Salvia mellifera, Eriogonum cinereum, Eriogonum fasciculatum, Encelia californica*, and *Opuntia littoralis*. The western rocky slopes contain rock outcrops, *Selaginella bigelovii, Artemisia californica, Eriogonum fasciculatum*, and *Salvia mellifera*. The eastern slope transitions to some chaparral species such as *Adenostoma fasciculatum, Cercocarpus betuloides, Ceanothus megacarpus,* and *Ceanothus spinosus*. Canyon bottoms in all subregions may contain *Baccharis pilularis, Baccharis salicifolia, Malacothamnus fasciculatus,* and *Malosma laurina*. *Foeniculum vulgare* occurs on some of the lower slopes to flat canyon bottoms adjacent to the Oxnard Plain. *Coreopsis gigantea* occurs to a very limited extent on northerly slopes directly at the Plain. The marshland is composed mainly of *Atriplex lentiformis, Salicornia virginica, Salicornia subterminalis, Distichlis spicata,* and *Frankenia salina*. There are also mudflats and saltpans throughout the marsh. Post-fire and some post-disturbance sites may contain *Malacothamnus fasciculatus* or *Lotus scoparius*. Post-disturbance areas may also contain *Eriogonum fasciculatum, Artemisia californica*, or *Encelia californica.*

Region 2 - The Immediate Coast

The Immediate Coast Zone is situated at the southernmost edge of the Santa Monica Mountains where they meet the Pacific Ocean. It is made up of beach areas, coastal marine terraces, and the lowermost slopes of the north-south canyons and ridges along the base of the Santa Monica Mountains. The coastal fog moves from west to east in this region. The vegetation is composed mainly of coastal sage scrub, with riparian and semi-riparian woodlands within some of the canyons and floodplains.

Point Dume serves to subdivide the region further into western and eastern halves with very similar vegetation. The coastline of the Western Area (Subregion 2A) trends northwest to southeast. The coastline of the Eastern Area (Subregion 2B) trends west to east. The transition zone from coastal sage scrub to chaparral appears to be wider in the west than in the east. Urbanization occurs along the coast, especially in the Point Dume region and eastward through Malibu to the Pacific Palisades area.

The vegetation of this region is composed mainly of coastal sage scrub transitioning to chaparral northward. North slope coastal sage scrub tends to be composed of *Artemisia californica, Salvia leucophylla, Mimulus aurantiacus,* and *Leymus condensatus*. South slope coastal sage scrub tends to be composed of *Malosma laurina, Salvia mellifera, Eriogonum cinereum, Encelia californica, Opuntia littoralis* and *Rhus integrifolia*, and sometimes *Artemisia californica*. *Coreopsis gigantea* occurs to a very limited extent directly at the coast. The chaparral north slopes usually contain *Ceanothus spinosus, Cercocarpus betuloides*, and sometimes *Ceanothus megacarpus*. The southerly chaparral slopes contain *Ceanothus megacarpus, Malosma laurina*, and *Salvia mellifera*. Sometimes *Adenostoma fasciculatum* occurs on ridges or southerly upper slopes. At times *Ceanothus spinosus* may occur on protected southerly slopes also. *Cercocarpus betuloides* tends to occur on directly north-facing

steep slopes near the coast in the coastal sage scrub areas. Post-fire and some post-disturbance sites may contain *Malacothamnus fasciculatus* or *Lotus scoparius*. Post-disturbance areas may also contain *Eriogonum fasciculatum, Artemisia californica*, or *Encelia californica*.

Region 3 - The Upper Elevation Santa Monica Mountains

The Upper Elevation Santa Monica Mountains Zone is the main body of the Santa Monica Mountains from Big Sycamore Canyon in the west to Sepulveda Pass in the east. It is made up of steep, rugged canyons and mountain slopes, with some wide valley areas. The vegetation is composed of chaparral, with riparian and semi-riparian woodlands within some of the canyons and floodplains, and oak woodlands on some slopes.

This region is subdivided into eastern, central and western thirds. The west and central portions are further divided into regional north slope, regional south slope, and upper elevation, thus making eight subregions. The Western Regional North Slope Area (Subregion 3A) is north of the Sandstone Peak-Boney Ridge area and is steeply north-facing, with oak woodlands and chaparral. The Western Regional Crest Area (Subregion 3B) encompasses Sandstone Peak and Boney Ridge. It is a high rocky ridge area composed of chaparral with some oak woodlands. The Western Regional South Slope Area (Subregion 3C) is south of the Sandstone Peak-Boney Ridge area. It is composed mainly of north-south trending rugged canyons and ridges with chaparral, oak woodlands, and riparian and semi-riparian drainages. The Central Regional North Slope Area (Subregion 3D) is north of Etz-Meloy Motorway, Saddle Rock and Castro Crest. It is composed mainly of rugged canyons and ridges with chaparral, oak woodlands, and riparian and semi-riparian canyons. The Central Regional Crest Area (Subregion 3E) ranges from Etz-Meloy Motorway to Castro Crest. It is composed of chaparral and some oak woodlands. The Central Regional South Slope Area (Subregion 3F) is south of the Etz-Meloy to Castro Crest belt. It is composed of east-west as well as north-south trending canyons and ridges with chaparral, oak woodlands, rock outcrops, and riparian and semi-riparian drainages. The Eastern Regional North Slope Area (Subregion 3G) is north of Calabasas Peak Motorway and Mulholland Drive. It is composed of short north-south trending canyons and ridges with chaparral, coastal sage scrub, oak woodlands, walnut woodlands, and some riparian and semi-riparian drainages. The Eastern Regional South Slope Area (Subregion 3H) is south of Mulholland Drive. It contains north-south trending canyons and ridges with chaparral, oak woodlands, and riparian and semi-riparian drainages.

The north-facing chaparral is composed of *Ceanothus spinosus, Ceanothus megacarpus*, and *Cercocarpus betuloides*. *Heteromeles arbutifolia* may also occur on northerly slopes within the chaparral. Canyon chaparral is usually composed of *Ceanothus spinosus*. In the protected canyons of the crest areas, *Ceanothus spinosus* transitions to and hybridizes with *Ceanothus oliganthus*. The southerly slopes are composed of *Ceanothus megacarpus*, with *Ceanothus spinosus* in more protected southerly ravines and canyons. Also southerly are *Malosma laurina, Salvia mellifera, Eriogonum cinereum* and *Eriogonum fasciculatum. Adenostoma fasciculatum* may occur on ridge tops, spurs, and on southerly slopes. Rocky areas tend to have *Eriogonum fasciculatum* and sometimes *Selaginella bigelovii*. Oak woodlands can be composed of *Quercus agrifolia, Juglans californica,* and *Umbellularia californica*, with an understory of *Ceanothus spinosus, Toxicodendron diversilobum, Mimulus auriantiacus*, or grass. Upper elevation woodlands may contain *Ceanothus oliganthus* in place of *Ceanothus spinosus,* and *Ceanothus crassifolius* in place of *Ceanothus megacarpus*. Other upper-elevation plants include *Quercus berberidifolia, Arctostaphylos glandulosa, Arctostaphylos glauca*, and *Adenostoma sparsifolium*. Riparian and semi-riparian drainages may contain

Quercus agrifolia, Platanus racemosa, Salix spp*. Umbellularia californica*, and *Alnus rhombifolia*, with an understory of *Baccharis salicifolia*, grass, or other miscellaneous plants. Coastal sage scrub plants include *Artemisia californica, Salvia leucophylla, Eriogonum cinereum, Malacothamnus fasciculatus, Leymus condensatus*, and *Mimulus aurantiacus*. *Baccharis pilularis* may occur in some canyons and lower slopes. Post-fire and some post-disturbance sites may contain *Dendromecon rigida, Malacothamnus fasciculatus* and/or *Lotus scoparius*. Post-disturbance areas may also contain *Eriogonum fasciculatum, Artemisia californica*, or *Encelia californica*.

Region 4 - The Lower Elevation Inland Santa Monica Mountains

The Lower Elevation Inland Santa Monica Mountains Zone is the transitional buffer area between the north slope of the Santa Monica Mountains and the interior urban valleys. It contains the foothill areas of Hidden Valley, Ventu Park, Newbury Park, Triunfo Canyon, Liberty Canyon, and lower Las Virgenes Canyon. The vegetation consists of a mosaic of chaparral, live oak woodlands, valley oak savannahs, and coastal sage scrub. It is also characterized by rural to suburban development.

This region is subdivided into a western half south of the urban center of Thousand Oaks, and an eastern half in the Agoura-Calabasas area. The Western Area (Subregion 4A) includes Hidden Valley, the Ventu Park and Newbury Park hills, and Ladyface Mountain. The Eastern Area (Subregion 4B) includes the area from Liberty Canyon to Calabasas, south of U.S. Highway 101.

The chaparral vegetation consists of a mix of *Ceanothus megacarpus, C. spinosus, C. oliganthus, C. crassifolius*, and *C. cuneatus* as well as hybrids between these species. It also contains *Cercocarpus betuloides, Quercus berberidifolia, Adenostoma fasciculatum*, and *Adenostoma sparsifolium*. The live oak woodlands consist of *Quercus agrifolia,* with or without *Quercus lobata,* over grass or coastal sage scrub. Other oak woodlands are made up of *Quercus agrifolia* over *Ceanothus spinosus, Toxicodendron diversilobum, Quercus berberidifolia* or *Mimulus aurantiacus*. Coastal sage scrub consists of *Artemisia californica, Salvia leucophylla, Leymus condensatus, Mimulus aurantiacus* and *Malocothamnus fasciculatus*. Post-fire and some post-disturbance sites may contain *Malacothamnus fasciculatus* or *Lotus scoparius*. Post-disturbance areas may also contain *Eriogonum fasciculatum, Artemisia californica*, or *Encelia californica*.

Region 5 - The Inland Dry

The Inland Dry Zone occupies the interior valleys and hills north of the Santa Monica Mountains. The area includes the Conejo Valley, Tierra Rejada Valley, Little Simi Valley, and southernmost Simi Hills. The vegetation consists of coastal sage scrub, grasslands, and limited chaparral. Most of the area contains suburban development.

This region is divided into three subregions, the Northern Urban Area (Subregion 5A) around Moorpark, the Central Urban Area (Subregion 5B) around Thousand Oaks, and the Eastern Grasslands Area (Subregion 5C) around Agoura Hills-Calabasas. The northern subregion is made up of urban areas, grasslands, coastal sage scrub consisting of *Artemisia californica, Eriogonum fasciculatum, Salvia leucophylla, Salvia mellifera, Opuntia littoralis, Encelia californica* and some *Malosma laurina*. *Baccharis pilularis* occurs in places. There is patchy chaparral consisting of *Ceanothus megacarpus, Malosma laurina*, and *Quercus berberidifolia*. Trees such as *Quercus agrifolia* are very limited. Exotic *Schinus molle* occurs frequently.

Some of the coastal sage scrub areas are thin-soiled or rocky. The central subregion is more urbanized than the northern subregion, with similar vegetation. However, *Encelia californica, Opuntia littoralis*, and *Quercus berberidifolia* are less common here. There is an increase in *Adenostoma fasciculatum*, especially toward the east. *Salvia mellifera* also increases. *Rhus ovata* replaces *Malosma laurina*. There are limited occurrences of *Juglans californica*. There are more instances of steep south-facing *Salvia leucophylla* and *Eriogonum cinereum* than in the northern subregion. Toward the west and south there is more chaparral consisting of *Ceanothus megacarpus* and *Cercocarpus betuloides*, with some *Quercus berberidifolia*. *Quercus agrifolia* occurs on slopes and in drainages, sometimes with *Quercus lobata*. *Salix* spp. occur in drainages with *Quercus agrifolia*. The eastern subregion consists of large urban islands surrounded by coastal sage scrub or grasslands. The coastal sage scrub is mainly *Artemisia californica* with *Salvia leucophylla* on north-facing slopes. The southerly slopes support *Salvia mellifera* and sometimes *Artemisia californica*. Some steep southerly slopes have *Eriogonum cinereum* or *Salvia leucophylla*. *Malosma laurina* occurs in places, but is also replaced by *Rhus ovata*. *Juglans californica* occurs in limited extent on northerly slopes. *Quercus agrifolia* occurs with *Quercus lobata* on some slopes and drainage areas. *Salix* spp. also occur in drainages. The grasslands contain large expanses of grasses as well as patches of *Hazardia squarrosa, Leymus condensatus*, and *Artemisia californica* with *Salvia leucophylla*, all on northerly slopes. *Quercus agrifolia, Quercus lobata*, and *Juglans californica* also may occur in the grassy areas.

Region 6 - The Simi Hills Inland

The Simi Hills Inland Zone is the main body of the Simi Hills north of the Santa Monica Mountains. The San Fernando Valley lies to the east. The Simi Valley lies to the north. Moorpark and Thousand Oaks are located to the west, and Agoura Hills to the south. The area contains rolling to rugged rocky slopes and canyons. The vegetation is composed primarily of chaparral, with some oak woodland and riparian or semi-riparian woodlands.

This region is divided into three subregions. The Regional North Slope Western Area (Subregion 6A) has gentle hills at the west and more rugged canyons to the east corresponding to a mix of coastal sage scrub transitioning to chaparral. The coastal sage scrub is composed of *Artemisia californica,* with *Salvia leucophylla, Malosma laurina,* and *Juglans californica* on northerly slopes and *Salvia mellifera* and *Malosma laurina* on southerly slopes. *Baccharis pilularis* may also be present on northerly swales. The chaparral consists primarily of *Ceanothus crassifolius* and *Adenostoma fasciculatum* on most slopes. Also present on southerly slopes may be *Salvia mellifera* and *Malosma laurina*. Protected drainages may contain *Ceanothus oliganthus*. Other chaparral shrubs, such as *Quercus berberidifolia* and *Cercocarpus betuloides,* may be present. *Quercus agrifolia* may occur in some drainages and flats. The Regional Northeast Rocky Area (Subregion 6B) has thin soils with many large rock outcrops and boulders. The area contains *Ceanothus crassifolius, Ceanothus oliganthus, Prunus illicifolia, Adenostoma fasciculatum, Umbellularia californica*, *Quercus agrifolia, Artemisia californica, Salvia mellifera, Cercocarpus betuloides,* and *Malosma laurina* on north-facing slopes. Southerly areas may contain *Adenostoma fasciculatum*, *Salvia mellifera*, grasses, *Malosma laurina*, *Quercus agrifolia*, and *Ceanothus crassifolius*. Patches of *Eriodictyon crassifolius* may also be present in open areas. The Regional South Slope Area (Subregion 6C) is primarily a chaparral area on rugged canyons and slopes. It contains *Ceanothus crassifolius, Adenostoma fasciculatum, Ceanothus megacarpus, Salvia mellifera, Salvia apiana, Eriogonum fasciculatum, and Malosma laurina. Prunus illicifolia, Ceanothus oliganthus,* and *Quercus agrifolia* occur in more protected areas.

Region 7 - The Eastern Urban

The Eastern Urban Zone is the narrow eastward extension of the Santa Monica Mountains. The area contains north-south canyons and ridges, with a main east-west backbone ridgeline. The Hollywood Hills lie between the Sepulveda Pass to the west and the Los Angeles River, at the mouth of the San Fernando Valley, to the east. The urbanized San Fernando Valley is to the north, and the urbanized Los Angeles coastal plain is to the south. The vegetation is composed of chaparral, oak woodlands, and some coastal sage scrub. Urban hillside development occurs throughout this region.

This region is subdivided into the regional north slope and the regional south slope. It is further divided into the western and eastern halves of those regional slopes. The Western North Slope Area (Subregion 7A) mixes with vacant hillsides and urban residential. It is composed of *Juglans californica, Quercus agrifolia, Ceanothus spinosus, Cercocarpus betuloides, Sambucus mexicana*, and *Artemisia californica* on north-facing slopes, with southerly *Ceanothus megacarpus, Heteromeles arbutifolia, Salvia mellifera*, and *Encelia californica*. The Western South Slope Area (Subregion 7B) is also a mosaic of vacant hillsides and urban residential. It is composed of north-facing *Juglans californica, Quercus agrifolia, Ceanothus spinosus, Quercus berberidifolia, Heteromeles arbutifolia*, and *Sambucus mexicana*. The south-facing slopes include *Malosma laurina, Salvia mellifera, Encelia californica, Ceanothus megacarpus, Rhus integrifolia, Heteromeles arbutifolia, Artemisia californica, Adenostoma fasciculatum,* and *Malacothamnus fasciculatus*. The Eastern North Slope Area (Subregion 7C) is mainly within Griffith Park, and is composed of northerly *Heteromeles arbutifolia, Mimulus aurantiacus, Quercus berberidifolia, Toxicodendron diversilobum, Sambucus mexicana, Ceanothus spinosus, Cercocarpus betuloides, Quercus agrifolia*, and *Juglans californica*. The southerly slopes are composed of *Malosma laurina, Adenostoma fasciculatum, Eriogonum fasciculatum*, *Salvia mellifera,* and grasses. The Eastern South Slope Area (Subregion 7D) is also mainly within Griffith Park and transitions to urbanization toward the south. It is composed of northerly *Heteromeles arbutifolia, Mimulus aurantiacus, Toxicodendron diversilobum, Sambucus mexicana, Ceanothus spinosus*, and *Quercus agrifolia*. The southerly slopes are composed of *Malosma laurina, Eriogonum fasciculatum,* grasses, *Salvia mellifera, Ceanothus megacarpus*, and *Adenostoma fasciculatum. Platanus racemosa, Quercus agrifolia*, and *Salix* spp. occupy many of the larger drainages. Exotic trees, mainly *Eucalyptus* spp. and *Pinus* spp., occur throughout the region as patchy stands or as open overstory to natives, and along some roads and trails.

III. SUMMARY OF THE MAPPING EFFORT AT SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA

The following section is a short outline, listed in chronological order, of the vegetation mapping effort at Santa Monica Mountains National Recreation Area (SAMO). For a detailed description of the tasks, refer to sections IV and V.

2001

June

Initial reconnaissance by the State Ecologist

Tentative list of vegetation types compiled by the State Ecologist based on initial reconnaissance

July
Aerial photography flown

November
Project kick-off meeting and Park tour
Tentative list of vegetation types updated by the State Ecologist based on Park tour

2002

March
First photo interpretation field reconnaissance
Tentative list of vegetation types further updated by the State Ecologist based on first field reconnaissance
Preliminary mapping classification for preliminary photo interpretation developed

April
Second photo interpretation field reconnaissance

May
Tentative list of vegetation types further updated by the State Ecologist based on second field reconnaissance

June
Preliminary mapping classification for preliminary photo interpretation revised

July
Third photo interpretation field reconnaissance

August
Preliminary photo interpretation of 180 photos commenced, to support classification development
SAMO field crew commenced field collection of Rapid Assessment (RA), releve, observation, and some Accuracy Assessment (AA) sites

September
Tentative list of vegetation types further updated by the State Ecologist based on third field reconnaissance
Preliminary mapping classification for preliminary photo interpretation revised

November
Fourth photo interpretation field reconnaissance
Tentative list of vegetation types further updated by the State Ecologist based on fourth field reconnaissance
Preliminary mapping classification for preliminary photo interpretation revised

2003

March
Fifth photo interpretation field reconnaissance
Tentative list of vegetation types further updated by the State Ecologist based on fifth field reconnaissance
Preliminary mapping classification for preliminary photo interpretation revised

May
Preliminary mapping classification for preliminary photo interpretation revised
AIS submitted Species Descriptions document to SAMO for review

June
Initial classification data analysis at SAMO

July
Preliminary mapping classification for preliminary photo interpretation, July 10 revision

August
Preliminary mapping classification for preliminary photo interpretation, August 15 revision

September
Preliminary mapping classification for preliminary photo interpretation, September 18 revision

October
Preliminary mapping classification for preliminary photo interpretation, October 3 revision

2004

January
AIS received reviewed Species Descriptions document from SAMO
Preliminary mapping classification for preliminary photo interpretation revised

May
Final comprehensive classification analysis at SAMO
Preliminary mapping classification for preliminary photo interpretation based on May MCV (Manual of California Vegetation)

June
Preliminary mapping classification for preliminary photo interpretation based on June MCV

July
Preliminary mapping classification for preliminary photo interpretation (June MCV), July 23 revision

August
Lower Malibu Creek Watershed Fast Track
Begin photo interpretation using June MCV Mapping Classification
Photo interpretation field verification
Preliminary photo interpretation for classification development ended
AIS submits final photo list for study area to SAMO

September
Preliminary mapping classification for preliminary photo interpretation based on September MCV

September 2004 –December 2005
SAMO field crew answered photo interpretation questions in field as needed

September 2004 – January 2005
Automation of Lower Malibu Creek Watershed Fast Track

October
SAMO field collection of RA's, releves and observations ended

November
Final phase-level classification analysis by the State Ecologist and NatureServe
Final mapping classification for final photo interpretation based on November MCV

2005

January
Final mapping classification for final photo interpretation based on November 2004 MCV, January 3 revision

January 2005 – February 2007
Photo interpretation of the remainder of the Park, commence implementing the November 2004 MCV mapping classification

February
Lower Malibu Creek Watershed Fast Track
Revision based on November 2004 MCV final mapping classification
Delivery

May 2005 to April 2007
Automation of the remainder of the Park

2006

July
First field verification

November
Second field verification

2007

January
Third and final field verification

April
Delivery of coverage and final report

IV. VEGETATION MAPPING AT SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA

One of the most important mandates of the Vegetation Mapping Program (VMP) is the consistent capture and classification of vegetation types through mapping and field sampling methods. Mapping criteria and procedures developed during the prototype parks are still being tested and revised. The first two parks mapped, Assateague Island National Seashore and Tuzigoot National Monument, used a vegetation layer mapping approach. Layer mapping consists of photo-interpretation of multiple canopies of vegetation that are visible on the aerial photography. Canopies are normally defined by the structure of the vegetation (trees, shrubs, or herbaceous growth). Where possible, individual plant species are interpreted for each layer of vegetation. These data layers are then aggregated up into the appropriate alliance or community as defined in the NVCS (National Vegetation Classification System).

The Program criteria and methodology have since evolved to the methods in use today. Mapping at subsequent parks, including the Scotts Bluff National Monument, Agate Fossil Beds National Monument, Fort Laramie National Historic Site, Rock Creek Park, Isle Royale National Park, Congaree Swamp National Monument, and Yosemite National Park, involves using an initial photo signature type describing multiple vegetation canopies. These photo signature types are then translated into a NVCS community type or alliance. Density, and in some parks, height and pattern, are additionally assigned to each polygon. In some instances photo interpretive mapping units are retained to further describe at a more detailed level the attributes visible on the aerial photography for each polygon. In other situations mapping units are used to address more general levels where an alliance or association is not discernable on the aerial photography.

Photo Interpretation Mapping Criteria

From the onset of the Vegetation Mapping Program, a standardized program-wide mapping criterion has been used. The mapping criterion contains a set of decision rules that are used to ensure accuracy and consistency of vegetation attributes including type, height, and density. This criterion assists the user in understanding the characteristics, definition and context for each vegetation community. Height was not a coded attribute for the SAMO project.

Minimum Mapping Unit

The minimum mapping unit (mmu) for SAMO conforms with the VMP standard of 1/2 hectare.

Aggregation

Aggregation of multiple vegetative classes is necessary when vegetation types present within a polygon are below mmu.

- Like life forms are aggregated together: tree dominated types are aggregated with other tree dominated types, shrub types with other shrub types, and herbaceous types with other herbaceous vegetation types.

- If possible, wetland vegetation types generally are not aggregated with upland types, even if they are in the same life form.

- If a unit that is below mmu is completely surrounded by another vegetation type, the unit is aggregated with the surrounding vegetation.

- If a unit that is below mmu is the same life form as two adjacent larger stands, and the adjacent stand types are very dissimilar in environment, the unit may be aggregated with the more similar adjacent type.

Density

Density, also referred to as vegetative cover, is a quantitative estimate of plant cover derived from viewing the aerial photography in stereo magnification. Photo interpreters assess the total density of vegetation associated with the life form of the alliance assigned to that polygon. Vegetation not visible on the aerial photograph is not considered part of the total plant density. For example, in a closed canopy forest the understory grasses and shrubs are not visible; therefore, only the tree overstory is visible and the density class is based on the total tree cover present. This implies that densities coded to polygons in the database may differ from assessments done on the ground by field crews.

The following criteria are used for making decisions about assigning density classes to vegetation polygons:

- Non-vegetated areas are not coded in the database unless they meet the minimum mapping resolution for the park and can be mapped as a stand-alone polygon. Otherwise, it is assumed that all vegetation polygons contain non-vegetated areas.

- To determine the density, percentages are assigned to the different life forms visible on the aerial photo, including non-vegetated areas. The total percent cover of trees, shrubs, herbaceous and non-vegetated should add up to 100%. Density percentages are converted into the appropriate density class.

- The coverage pattern of the life form is considered before assigning a density code to the polygon. Estimating densities is more straightforward when plants occupying the same strata are evenly distributed throughout the mapping unit. However, when polygons contain populations of plants that are clumped or occurring only in portions of the polygon, the photo interpreter considers the area that is not occupied by plant cover when determining coverage density. To ensure consistency, plants are counted in polygons with clumped and unevenly distributed vegetation and then are compared to similar sized polygons with an even distribution of plant cover.

- The date of the aerial photography influences the densities assigned to vegetation types, especially for herbaceous dominated vegetation types. Subsequent field verification and accuracy assessments must take into consideration the following factors that can cause apparent discrepancies between the densities evident on the photo and those visible in the field:

- Seasonality - the density of most herbaceous plants is variable due to their annual growth cycle. Depending on the season the aerial photography was taken, a mapped unit could show a different density on the aerial photographs than is observed during an on-site visit at a different time of the year. Another effect of seasonality is leaf on/off conditions. Photos of forest or woodland areas with leaf on conditions obscure the understory. Photos of leaf off conditions would allow photo interpretation of the understory, but make it difficult to identify the overstory species since there is no foliage present.

- Annual variability - the environmental conditions at the time of the photography (wet vs. drought years, flooding, etc.) may affect the densities seen during the on-site field visits.

Alliance/Association

The assignment of vegetation polygons to alliance and community association is based on NVCS criteria. Using the plot data collected by the SAMO field sampling crews, a final vegetation classification and key, along with vegetation descriptions for each alliance and association, was developed for SAMO.

SAMO Specific Mapping Protocols and Criteria

At the start of the project there are certain protocols, criteria, or other issues identified by the Park that are specific to the project.

Preliminary Photo Interpretation For Vegetation Classification Development

In VMP efforts, vegetation mapping begins with reference to either existing vegetation classifications, legacy plots, or past databases. Insufficient reference material existed for the Santa Monica Mountains NRA. Therefore, in order to develop the preliminary vegetation classification and subsequent preliminary mapping classification, a field sampling effort was needed. The field sampling information, input into a Microsoft Access database, underwent a classification analysis process, resulting in a final vegetation classification.

The Park, with the State Ecologist, determined that the use of preliminary photo interpretive delineations of vegetation stands from the aerial photography would make the field sampling more efficient. Therefore, as part of the mapping effort, AIS delineated vegetation stands for 180 aerial photos distributed throughout the study area. The 180 photos, chosen by AIS, represented the different geographic areas or regions within the study area and the diversity of general vegetation types and environments. The photos were also selected with an eye toward allowing the field crew to access sites more easily via roads and trails.

The photo interpreters tagged each delineated stand with a vegetation mapping type code. The code was based on a preliminary vegetation/mapping classification developed by the State Ecologist from field reconnaissance trips with the Park staff and the photo interpreters. Within a photo frame window, the photo interpreters identified potential polygon sites for the field crew to visit. The photo interpreters attempted to capture the widest range of variation for each potential vegetation type. The field crew had the option of visiting any of the identified potential sites, as well as any other stands within the photo window.

As the field crew gathered field sample data in the form of Rapid Assessment Plots (RAPs) and Releve plots, the information was input into an Access database. The information was available to the photo interpreters to further assist in the preliminary photo interpretive delineations and preliminary code assignments on subsequent photos. In addition to the RAP and Releve plots, the crew also gathered quick Observation plots for the benefit of the photo interpreters. The information for these sites was not input into the Access database.

At the culmination of the classification analysis, a final vegetation classification was formulated and RAP and Releve sites were assigned to a vegetation class. A final version of the mapping classification was compiled.

Urban Window

The aerial photography acquired for the SAMO vegetation mapping program included a total of 942 exposures. AIS was contracted to map vegetation on 712 photos, meaning that 230 photos were not to be interpreted. Many photos were excluded because they fell outside the study area boundary, but additional photos within the study area had to be eliminated to reach the contracted amount. To this end, AIS evaluated photos having the largest extent of urbanization and submitted a list of candidates to SAMO. After review from SAMO staff, the selected photos were excluded from the mapping effort. These unmapped areas are referred to as the urban window. The creation of the urban window ensured that the maximum extent of natural vegetation was mapped within the limits of the contracted terms.

Land Use

The Santa Monica Mountains NRA falls completely within the study area for a land use database compiled by AIS for the Southern California Association of Governments (SCAG). Photo interpreters on the SAMO project used SCAG database delineations from the year 2000 as a starting point for land use polygons in the SAMO database. SCAG land use boundaries were adjusted for SAMO due to improved resolution on the SAMO project imagery, more current conditions reflected on the SAMO aerial photos, and wildland-urban interface considerations (see below). Also, the SAMO mapping effort added land use polygons in the wildlands not present in the SCAG database due to the smaller minimum mapping resolution for NPS projects (.5 hectare, vs. 1.1 hectare). Urban areas were not subdivided in the SAMO effort, but some urban polygons were isolated from what had been coded as vacant in the SCAG effort.

Wildland-Urban Interface/Urban Tree Density

Because of the threat of fire hazard, there was a park-specific need for mapping tree density at the wildland-urban interface. The photo interpreters were instructed to observe clear-cutting or thinning of vegetation at the interface, which creates a disturbance buffer. The interface was mapped as herbaceous/clear, shrub, and/or as exotic tree or natural tree type. The photo interpreters then assigned a broad density code, distinct from the usual vegetation density codes, to polygons mapped as urban classes. For example, this code distinguishes an old tree-lined residential neighborhood as a high urban tree density from the low urban tree density of a new industrial area with few trees.

Project Materials

The following materials were used for the SAMO mapping project.

Hardcopy Aerial Imagery

The hardcopy aerial imagery was used as the basis for the vegetation photo interpretations and attribute coding. A general flight line index was provided by the Park. The index was used for quick reference to photo locations and as a tool to display the status of mapping and automation tasks.

The natural color photography is dated July 2001 and has a nominal scale of 1:12,000. Both diapositives and prints were provided as 9" x 9" stereopairs. Of the 942 exposures acquired during the overflight, AIS was contracted to photo interpret 712 photos.

Digital Orthophoto Base

Natural color digital orthophotos available from the 2000 SCAG land use mapping effort served as the base for the data rectification task. The imagery is from the EMERGE Corporation and is dated October and November 2000. The orthophotos were divided into the equivalents of digital ortho quarter quads (DOQQs), which serve as the fundamental unit of compilation for photo overlay delineations. There are a total of 52 DOQQs for the project area.

Ancillary Data

SAMO provided AIS with a number of hardcopy and digital files to assist in the photo interpretations.

- SAMO Field Data 2002-2004
    - Rapid Assessment Plots
    - Releve Plots
    - Accuracy Assessment Plots data (without location)
    - Observation Plots
- Southern California Association of Governments (SCAG) Land Use 2000
- U.S.G.S. 7.5 minute Quadrangle Topographic Sheets (hardcopy)
- Historic Vegetation
    - Weislander Maps 1930s (hardcopy, provided by AIS)
    - Calleguas Creek Watershed Vegetation 1999 (digital, provided by CDFG)
    - Forest Service Southern California Vegetation Mapping Project (LANDSAT Thematic Mapper)1997 (digital)
- Digital GIS Data
    - 2001 Aerial photo frame index
    - Fire History
    - Prescribed Burns
    - Weeds database
    - Geology
    - Thomas Brothers Cultural Features (AIS)
    - Land Ownership
    - Contours

Photo Interpretation Mapping Procedures

Three major tasks are associated with the photo interpretation phase of a NPS vegetation mapping project:

- Field Reconnaissance
- Photo Interpretation of Vegetation
- Field Verification

Field Reconnaissance

The field reconnaissance visit serves two major functions. First, the photo interpreter keys the signature on the aerial photos to the vegetation on the ground at each signature site. Second, the photo interpreter becomes familiar with the flora, vegetation assemblages and local ecology that occur in the study area. In the case of the SAMO project, the field reconnaissance also served to assist the State Ecologist in the observation and compilation of potential vegetation types for the preliminary vegetation classification. Park and/or field biologists who are familiar with the local vegetation and ecology of the park are present to help the photo interpreter understand these elements and their relationship with the geography of the Park.

Prior to the field reconnaissance, AIS staff performed several in-house preparations to facilitate a more organized trip. Field routes were planned to accommodate a variety of factors including: maximizing the number of vegetation communities and regional zones visited, responding to recommendations of Park staff, addressing time constraint considerations, and accessibility. The 9 x 9 aerial prints along the selected routes were prepared with a frosted mylar field overlay. Location features such as trails and place names were drafted onto the overlays to aid in navigation.

Each photo was reviewed under a stereoscope for representative signatures of different vegetation types, density, and abiotic factors such as percent slope, aspect, shape of the slope, elevation, etc. Field check sites and associated notations were drafted onto the field overlays. Multiple sites were chosen to provide alternatives if one or more sites proved inaccessible. The field photographs, overlays and associated topographic sheets were arranged in packets for the field team.

Field site numbers were annotated directly onto the photo field overlay, thereby correlating the field site to a specific location and photo signature. A field notebook was used to record pertinent information for each site visited. Later, these records were input into computer files for easy reference. Color ground photos were taken at selected locations and later compared to the aerial photographs and the field site notes. Additional field sites included areas encountered in transit between initially selected sites, areas of noteworthy or unusual significance, and other vegetation types the photo interpreter or ecologist deemed important. Five photo interpretation field reconnaissance trips were conducted by the State Ecologist, staff from AIS, and the Park to cover the seven SAMO regions.

Photo Interpretation of Vegetation

Photo interpretation is the process of identifying map units based on their photo signature. All land cover features have a photo signature. These signatures are defined by the color, texture, tone and pattern exhibited on the aerial photography. By observing the context and extent of the photo signatures associated with specific vegetation types, the photo interpreter is able to

identify and delineate the boundaries between plant communities or signature units. Environmental factors such as elevation, slope, and aspect also play an important part in the photo interpretation decision-making process. For the SAMO project the photo interpreters also gleaned information from the field reconnaissance notes, Rapid Assessment and Releve plots Access database, and Observation sites. The field crew attempted to answer photo interpretation questions in the field as the mapping progressed.

Each photo diapositive was prepared with a 9"x9" frosted mylar overlay for the photo signature delineations. After photo overlays were pin-registered to the photos, eight fiducial marks from the photo were traced onto the overlay. Project labels were affixed to each overlay, identifying the photo number, status of work, and photo interpreter responsible for that task. Photo frame windows were drafted onto each photo overlay, defining the area within the photograph to be interpreted. The window boundaries were edge-matched to those adjacent photo overlays to ensure complete coverage.

Using a mirror stereoscope with a 3X lens, photo signature units were delineated onto the mylar overlays. These initial photo delineations were based on a number of signature characteristics including color, tone, texture, relative height and density. Attribute codes (mapping classification types, density, urban tree density, and land use) were assigned to each polygon. The map units and codes were edge-matched to the adjoining photo overlays.

Land use activities within the study area were also identified and revised during the mapping of the vegetation units with reference to the 2000 SCAG land use database.

Fast Track Study Area – Lower Malibu Creek Watershed

The Lower Malibu Creek Watershed served as the fast track area to test the mapping criteria, classification, and mapping procedures. The fast track was done over a six-month period from August 2004 to delivery in February 2005. During the automation phase of the fast track, the vegetation classification was reviewed by NatureServe, resulting in significant hierarchical changes in the vegetation classification. As a result, before final delivery of the fast track area, AIS recoded polygons affected by the changes to the classification. The Park conducted a preliminary Accuracy Assessment of the fast track area. After the entire fast track mapping process was completed, the process was reviewed and revised by the Park and AIS prior to mapping the rest of the Park.

Quality Control of the Photo Interpretations

A separate quality control step was performed for each photo upon completion of the photo interpretation. A senior photo interpreter reviewed each photo for map unit delineation and the accuracy of the codes assigned to every polygon. Each photo overlay was checked for completeness, consistency, and adherence to the mapping criteria and guidelines.

Field Verification

The mapping was followed by final field verification trips by AIS designed to confirm that the vegetation units were mapped correctly. Any outstanding photo interpretation related questions were also addressed during the visits. Changes based on field verification observations were applied to polygons in the database for which the results were pertinent. Three field verification

trips for SAMO occurred in late 2006 and early 2007.

V. DATA CONVERSION

This section outlines data automation procedures required to convert the drafted vegetation map units to a digital format rectified to the Digital Orthophoto Quarter-Quad (DOQQ) base.

Data Automation

Data automation was conducted using Mono Digitizing Stereo Digitizing (MDSD) software. The first step of the procedure involved the creation of control points. Control points are locational points identified both on the DOQQ imagery and the aerial photography that are input into an ARC/INFO point coverage.

The MDSD software used to capture the vegetation linework automatically georeferences the data into real world coordinates. By using the control points generated in the previous step, each photo was registered to the DOQQ. Once each photo was georeferenced, the lines were digitized. The digitized lines were stored in an MDSD outfile format that were then converted to a coverage using ARC/INFO.

Data Rectification and Polygon Attribute Assignment

Coverage linework from each aerial photo was rectified to the corresponding DOQQ. The coverage is checked for open polygons, data registration, and spatial edge-match problems between photos. Registration quality depends on the accuracy, quantity, and distribution of the control points. Spatial refinement was performed in ARCEDIT sessions using various user-defined tools. Lines depicting boundaries representing minimal ecotones (for example, land use interface, water bodies, life-form interface) were refined. All linework coverages within a DOQQ were edge-matched for boundary and code consistency.

During the data rectification step, label points were created and coded for each map unit. The vegetation mapping type, density, urban tree density, and land use type codes were input for each polygon (see Appendix I for Mapping Classification). Automated quality control measures and code frequency programs were run to check for code validity.

Code Verification and Edit Plot Quality Assurance

A hard copy edit plot of the converted spatial data was produced for each DOQQ and compared to the interpreted aerial photo overlays. Each plot was checked for cartographic quality of the arcs defining the polygon features and the accuracy of the label assignments. Line and code changes were noted directly on the edit plot. All plots were edge-matched to verify line and code accuracy across map sheets. Processors conducted interactive ARCEDIT sessions to make the necessary corrections to the coverages.

Final Quality Assurance of the Vegetation Map

The individual coverages created for each DOQQ were then joined into a single seamless vegetation coverage for the Park. This final vegetation layer was examined by a senior photo interpreter. Final checks were conducted to test for invalid codes and code field correlations. Missing or extra lines were identified, as were edge-match problems. The registration of linework to the DOQQ base was verified, and the distribution of species mapped within the Park was reviewed.

VI. APPENDICES

APPENDIX I

SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA
FINAL MAPPING CLASSIFICATION
Revised 5-3-07

Codes appearing in **bold** text represent vegetation classes that were mappable from photo interpretation. Unbolded codes represent vegetation classes that were mapped only where RA locations were provided by the Park. Types of density values assigned agree with overarching category unless otherwise noted.

TREES (vegetation density only)

1010 = California Bay Woodland/Forest Alliance
- **1011 = California Bay-California Walnut/Greenbark Ceanothus Woodland/Forest Association**
- **1012 = California Bay/Hairy Leaf Ceanothus Woodland/Forest Association (Provisional)**
- **1013 = California Bay-White Alder Woodland/Forest Association**
- **1014 = California Bay-California Sycamore Woodland/Forest Association**

1110 = Coast Live Oak Woodland/Forest Alliance
- **1111 = Coast Live Oak/Annual Grass-Herb Woodland/Forest Association**
- **1113 = Coast Live Oak Superassociation**
- **1114 = Coast Live Oak-California Bay Woodland/Forest Association**
- 1115 = Coast Live Oak-California Walnut Woodland/Forest Association
- **1116 = Coast Live Oak/Purple Sage-California Sagebrush Woodland/Forest Association**
- 1117 = Coast Live Oak/Poison Oak Woodland/Forest Association
  - **6113 = Coast Live Oak/Bush Monkey Flower Phase**
- **1118 = Coast Live Oak/Greenbark Ceanothus Woodland/Forest Association**
- **1119 = Coast Live Oak-California Bay/Hairy Leaf Ceanothus Woodland/Forest Association**
- **6112 = Coast Live Oak/Scrub Oak Woodland/Forest Association**
- **6114 = Coast Live Oak-Arroyo Willow Woodland/Forest Association**
- **6115 = Coast Live Oak/Chamise Woodland/Forest Association**
- 6117 = Coast Live Oak/Toyon Woodland/Forest Association
- 6122 = Coast Live Oak South Coastal Woodland/Forest Association

1310 = California Walnut Woodland/Forest Alliance
- **1312 = California Walnut/Annual Grass-Herb Woodland/Forest Association**
- 1314 = California Walnut/Laurel Sumac Woodland/Forest Association
- **1315 = California Walnut/Greenbark Ceanothus Woodland/Forest Association**
- **1317 = California Walnut/California Sagebrush/Giant Wild Rye Woodland/Forest Association**
- 6312 = California Walnut/Toyon Woodland/Forest Association
- **6314 = California Walnut-(Coast Live Oak)/Tall Shrub Woodland/Forest Superassociation**

1320 = Valley Oak Woodland/Forest Alliance
- **1321 = Valley Oak/Annual Grass-Herb Woodland/Forest Association**
- **1323 = Valley Oak-Coast Live Oak/Annual Grass-Herb Woodland/Forest Association**
- **1324 = Valley Oak-Arroyo Willow Woodland/Forest Association (Provisional)**

1410 = Willow Woodland/Forest Superalliance
- **1411 = Willow/Giant Reed Woodland/Forest Mapping Unit**
- **1412 = Willow/Mule Fat Woodland/Forest Mapping Unit**
- **1414 = Willow scrubby-(California Sycamore scrubby)/Mule Fat Woodland/Forest Mapping Unit**

1420 = Red Willow Woodland/Forest Alliance
- 1413 = Red Willow-Arroyo Willow./Douglas Mugwort-California Blackberry/Annual Grass-Herb Woodland/Forest Association (Provisional)

1430 = Arroyo Willow Woodland/Forest Alliance
- 1432 = Arroyo Willow/Mule Fat Woodland/Forest Association
- 1433 = Arroyo Willow/Laurel Sumac Woodland/Forest Association

1440 = White Alder Woodland/Forest Alliance
- **1441 = White Alder-California Sycamore Woodland/Forest Association**

1450 = California Sycamore Woodland/Forest Alliance
- **1452 = California Sycamore-Coast Live Oak South Coast Woodland/Forest Association**
- **1456 = California Sycamore/Annual Grass-Herb Woodland/Forest Association**
- **1458 = California Sycamore-Coast Live Oak/Mule Fat South Coast Woodland/Forest Association**
- **6451 = California Sycamore South Coast Intermittent Stream Woodland/Forest Association**
- **6452 = California Sycamore-Coast Live Oak-Arroyo Willow Woodland/Forest Association**

SHRUBS (vegetation density only)

2002 = Big Pod Ceanothus & Greenbark Ceanothus & Birch Leaf Mountain Mahogany Shrubland Superalliance
2003 = (California Walnut)/Undifferentiated Tall Shrubs Shrubland Mapping Unit
2005 = Bush Monkey Flower & Poison Oak Shrubland Superalliance
2006 = Ceanothus & Birch Leaf Mountain Mahogany Shrubland Superalliance
2008 = Wedge Leaf Ceanothus & Chamise-Wedge Leaf Ceanothus Shrubland Superalliance
2009 = Ceanothus-Chamise Shrubland Mapping Unit
2010 = Chamise Shrubland Alliance
- **2011 = Chamise Shrubland Association**
- **2013 = Chamise-Laurel Sumac Shrubland Association**
- **2017 = Chamise-California Buckwheat Shrubland Association**
- **2018 = Chamise-Purple Sage Shrubland Association (Provisional)**
- **2019 = Chamise-Big Pod Ceanothus Shrubland Association**
- **7013 = Chamise-Bush Monkey Flower Shrubland Association**
- **7018 = Chamise-Laurel Sumac-Yerba Santa Shrubland Association**

2020 = Chamise-Eastwood Manzanita Shrubland Alliance
- **2021 = Chamise-Eastwood Manzanita Shrubland Association**

2030 = Chamise-Black Sage Shrubland Alliance
- **2035 = Chamise-Black Sage-Laurel Sumac Shrubland Association**
- **2036 = Chamise-Black Sage Shrubland Association**
- **2038 = Chamise-Black Sage-Sugar Bush Shrubland Association**

2040 = Chamise-Redshank Shrubland Alliance
- **2042 = Chamise-Redshank-Hoary Leaf Ceanothus Shrubland Association**

2050 = Redshank Shrubland Alliance

2060 = Hoary Leaf Ceanothus Shrubland Alliance
- **2063 = Hoary Leaf Ceanothus Shrubland Association**
- **2065 = Hoary Leaf Ceanothus-Laurel Sumac Shrubland Association**

2070 = Hairy Leaf Ceanothus Shrubland Alliance
- **2072 = Hairy Leaf Ceanothus Shrubland Association**
- 2076 = Hairy Leaf Ceanothus-Toyon-Sugar Bush Shrubland Association
- 2077 = Hairy Leaf Ceanothus-Scrub Oak Shrubland Association
- **2078 = Hairy Leaf Ceanothus-Redshank Shrubland Association**
- **7071 = Hairy Leaf Ceanothus-Tall Shrubs Shrubland Superassociation**

2080 = Big Pod Ceanothus Shrubland Alliance
- **2081 = Big Pod Ceanothus Shrubland Association**
- **2082 = Big Pod Ceanothus-Redshank Shrubland Association**
- **2083 = Big Pod Ceanothus-Chamise Shrubland Association**
- 2084 = Big Pod Ceanothus-Birch Leaf Mountain Mahogany Shrubland Association
- **2087 = Big Pod Ceanothus-Laurel Sumac Shrubland Association**
- **7085 = Big Pod Ceanothus-Black Sage Shrubland Association**

2090 = Greenbark Ceanothus Shrubland Alliance
- **2091 = Greenbark Ceanothus-Big Pod Ceanothus Shrubland Association**
- **2092 = Greenbark Ceanothus Shrubland Association**

2110 = Birch Leaf Mountain Mahogany Shrubland Alliance
- **2113 = Birch Leaf Mountain Mahogany-Greenbark Ceanothus Shrubland Association**
- **2114 = Birch Leaf Mountain Mahogany Shrubland Association**
- **2115 = Birch Leaf Mountain Mahogany-Chamise Shrubland Association**
- **2117 = Birch Leaf Mountain Mahogany-Laurel Sumac-California Sagebrush Shrubland Association**

2120 = Holly Leaf Cherry Shrubland Alliance
- **2121 = Holly Leaf Cherry-Toyon Shrubland Association**

2130 = Toyon Shrubland Alliance
- **2138 = Toyon-Laurel Sumac Shrubland Association**

2140 = Laurel Sumac Shrubland Alliance
- **2141 = Laurel Sumac-Ashy Buckwheat Shrubland Association**
  - **7141 = Laurel Sumac-Ashy Buckwheat-Black Sage Phase**
  - **7144 = Laurel Sumac-Ashy Buckwheat-Deerweed Phase**
  - **21413 = Laurel Sumac-Lemonade Berry-Ashy Buckwheat-California Sagebrush Phase**
- **2148 = Laurel Sumac-Black Sage Shrubland Association**
- **7142 = Laurel Sumac Shrubland Association**
  - **2145 = Laurel Sumac/Annual Grass-Herb Phase**
- **7148 = Laurel Sumac-California Sagebrush Shrubland Association**
- **21415 =Laurel Sumac-Sugar Bush-Big Pod Ceanothus Shrubland Association**
- **21423 =Laurel Sumac-California Buckwheat Shrubland Association**

2150 = Lemonade Berry Shrubland Alliance
- **2151 = Lemonade Berry-Coast Prickly Pear-Ashy Buckwheat Shrubland Association**
- **2153 = Lemonade Berry Shrubland Association**
- **7157 = Lemonade Berry-California Sagebrush-Ashy Buckwheat Shrubland Association**
  - **7155 = Lemonade Berry-Ashy Buckwheat-Chaparral Yucca-Giant Coreopsis Phase**

2160 = Scrub Oak Shrubland Alliance
2161 = Scrub Oak Shrubland Association
2167 = Scrub Oak-Greenbark Ceanothus Shrubland Association
2170 = Bush Monkey Flower Shrubland Alliance
2172 = Bush Monkey Flower Shrubland Association
2190 = Sugar Bush Shrubland Alliance
2192 = Sugar Bush-Purple Sage-California Sagebrush Shrubland Association
2193 = Sugar Bush Shrubland Association
2210 = Mule Fat Shrubland Alliance
2212 = Mule Fat Riparian Shrubland Association
2220 = Scale Broom Shrubland Alliance
2310 = Coyote Brush Shrubland Alliance
2311 = Coyote Brush/Annual Grass-Herb Shrubland Association
2313 = Coyote Brush-California Sagebrush Shrubland Association
2330 = Quail Bush Shrubland Alliance
2410 = Coast Prickly Pear Shrubland Alliance
2412 = Coast Prickly Pear-Mixed Coastal Sage Scrub Shrubland Association
2510 = Chamise-Wedge Leaf Ceanothus Shrubland Alliance
2511 = Chamise-Wedge Leaf Ceanothus-Black Sage-Laurel Sumac Shrubland Association
2520 = Wedge Leaf Ceanothus Shrubland Alliance
2521 = Wedge Leaf Ceanothus-Scrub Oak Shrubland Association
2530 = Chamise-Big Berry Manzanita Shrubland Alliance
2531 = Chamise-Big Berry Manzanita Shrubland Association (Provisional)
2540 = Big Berry Manzanita Shrubland Alliance
2550 = Eastwood Manzanita Shrubland Alliance
2560 = Scrub Interior Live Oak Shrubland Alliance
2570 = Chamise-Hoary Leaf Ceanothus Shrubland Alliance
2572 = Chamise-Hoary Leaf Ceanothus-Laurel Sumac Shrubland Association
2580 = Scrub Oak-Chamise Shrubland Alliance
2581 = Scrub Oak-Chamise Shrubland Association
2590 = Scrub Oak-Birch Leaf Mountain Mahogany Shrubland Alliance
2591 = Scrub Oak-Birch Leaf Mountain Mahogany Shrubland Association
3020 = Mexican Elderberry Shrubland Alliance
3021 = Mexican Elderberry/Giant Wild Rye-Annual Herb Shrubland Association
3022 = Mexican Elderberry-Toyon/Annual Grass-Herb Shrubland Association
3110 = Narrow Leaf Willow Shrubland Alliance
3210 = California Sagebrush Shrubland Alliance
3214 = California Sagebrush-Ashy Buckwheat Shrubland Association
3216 = California Sagebrush/Giant Wild Rye Shrubland Association
8213 = California Sagebrush Shrubland Association
8214 = California Sagebrush-Bush Monkey Flower Shrubland Association
3220 = California Encelia Shrubland Alliance
3221 = California Encelia-Laurel Sumac-Black Sage Shrubland Association
3222 = California Encelia Shrubland Association
3225 = California Encelia-Ashy Buckwheat Shrubland Association
3226 = California Encelia-Lemonade Berry Shrubland Association
3227 = California Encelia-California Sagebrush Shrubland Association
3228 = California Encelia (California Sagebrush-Ashy Buckwheat-California Buckwheat-Black Sage) Superassociation

3240 = California Buckwheat Shrubland Alliance
- **3241 = California Buckwheat Shrubland Association**
- **3248 = California Buckwheat-Black Sage-Laurel Sumac Shrubland Association**

3250 = Ashy Buckwheat Shrubland Alliance
- **3257 = Ashy Buckwheat Shrubland Association**

3260 = Sawtooth Goldenbush Shrubland Alliance
- **3262 = Sawtooth Goldenbush-California Sagebrush Shrubland Association**
- **3263 = Sawtooth Goldenbush/Purple Needlegrass-Clustered Tar Plant Shrubland Association**

3270 = Deerweed Shrubland Alliance

3280 = Bush Mallow Shrubland Alliance
- **3281 = Bush Mallow-Purple Sage Shrubland Association**
- **3282 = Bush Mallow-Black Sage Shrubland Association**
- **3286 = Bush Mallow-Laurel Sumac Shrubland Association**
- **3287 = Bush Mallow Shrubland Association**
- **3288 = Bush Mallow-Big Pod Ceanothus Shrubland Association**
- **3289 = Bush Mallow-Greenbark Ceanothus Shrubland Association**

3310 = Purple Sage Shrubland Alliance
- **3312 = Purple Sage-Ashy Buckwheat/Annual Grass-Herb Shrubland Association**
- **3316 = Purple Sage Shrubland Association**

3320 = Black Sage Shrubland Alliance
- 3323 = Black Sage-Ashy Buckwheat Shrubland Association
- 3324 = Black Sage Shrubland Association
- 8324 = Black Sage-Laurel Sumac Shrubland Association
- 8325 = Black Sage-Sugar Bush Shrubland Association
- **8328 = Black Sage-(Chamise-Ashy Buckwheat-California Buckwheat-Bush Mallow) Shrubland Superassociation**
- **8329 = Black Sage-(Laurel Sumac-Sugar Bush-Lemonade Berry) Shrubland Superassociation**

3330 = Poison Oak Shrubland Alliance
- **3331 = Poison Oak-California Sagebrush/Giant Wild Rye Shrubland Association**
- **3332 = Poison Oak-Bush Monkey Flower Shrubland Association**

3340 = Giant Coreopsis Shrubland Alliance
- 3342 = Giant Coreopsis-Dune Goldenbush-California Encelia Shrubland Association
- **3345 = Giant Coreopsis-California Sagebrush-Ashy Buckwheat Shrubland Association**

3350 = Bush Poppy Shrubland Alliance

3360 = Conejo Buckwheat Unique Stands Shrubland Mapping Unit

3370 = California Sagebrush-California Buckwheat Shrubland Alliance
- **3371 = California Sagebrush-California Buckwheat/Annual Grass-Herb Shrubland Association**
- **3372 = California Sagebrush-California Buckwheat-Purple Sage Shrubland Association**
- **3373 = California Sagebrush-California Buckwheat-Black Sage Shrubland Association**

3390 = Purple Sage-California Sagebrush Shrubland Suballiance
- 3391 = Purple Sage-California Sagebrush Shrubland Association
- **3396 = Purple Sage-California Sagebrush-Ashy Buckwheat/Needlegrass Shrubland Association**
- **3399 = Purple Sage-California Sagebrush Shrubland Superassociation**

3410 = California Buckwheat-White Sage Shrubland Alliance

3420 = Black Sage-California Sagebrush Shrubland Alliance
3421 = Black Sage-California Sagebrush Shrubland Association
3430 = Palmer's Goldenbush Unique Stands Shrubland Mapping Unit

HERBACEOUS (vegetation density only)
4040 = Giant Wild Rye Herbaceous Alliance
4041 = Giant Wild Rye Herbaceous Association
4060 = Fountain Grass Herbaceous Alliance
4061= Fountain Grass-Giant Coreopsis-Chaparral Yucca-Laurel Sumac Herbaceous Association
4310 = Giant Reed Herbaceous Alliance
4330 = Common Rush Herbaceous Alliance
4400 = Wetland Undifferentiated Superalliance
4410 = California Bulrush Herbaceous Alliance
4420 = Cattail Herbaceous Alliance
4500 = Marshland Superalliance
4510 = Salt Grass Herbaceous Alliance
4511 = Salt Grass-Dune Burweed Herbaceous Association
4513 = Salt Grass-Giant Reed Herbaceous Mapping Unit
4527 = Salt Grass-Pickleweed-Marsh Jaumea Herbaceous Association
4520 = Pickleweed Herbaceous Alliance
4524 = Pickleweed-Alkali Heath-Sea Blite Herbaceous Association
4526 = Pickleweed-Alkali Heath-Saltwort Phase
45201= Pickleweed-California Sea Blite Phase
4525 = Pickleweed-Parish's Glasswort Herbaceous Association
4528 = Pickleweed/Algae Herbaceous Association
4529 = Pickleweed-Black Mustard Herbaceous Association
4550 = Alkali Heath Herbaceous Alliance
4551 = Alkali Heath-California Sea Lavender-Shore Grass-Pickleweed Herbaceous Association
4750 = Canyon Sunflower Shrubland Alliance
4760 = Fennel Herbaceous Alliance
4810 = Bushy Spike Moss Herbaceous Alliance
4811 = Bushy Spike Moss/California Buckwheat Herbaceous Association
5000 = California Annual Grassland/Herbland Alliance

VEGETATION MISCELLANEOUS CLASSES
9000 = Sparsely vegetated to non-vegetated Mapping Unit (no vegetation density, no urban density)
9001 = Rock Outcrop Mapping Unit
90011= Rock Outcrop/Herbaceous Mapping Unit
9002 = Riverine, Lacustrine, and Tidal Mudflats Mapping Unit
9003 = Cleared Land Mapping Unit
9004 = Great Sand Dune Sparsely Vegetated Coastal Strand
9005 = Beach Sand Mapping Unit
9006 = Sand/Gravel Bar Mapping Unit
9007 = Rocky Streambed Mapping Unit
9008 = Saltpan Mapping Unit
9010 = Landslide Mapping Unit
9100 = Urban/Disturbed or Built-up Undifferentiated Mapping Unit (urban tree density only)
9109 = Urban Buffer Shrubs Mapping Unit (no vegetation density, no urban tree density)
9110 = Urban Coast Live Oak Mapping Unit
9114 = Urban California Sycamore Mapping Unit

9115 = Urban Valley Oak-Coast Live Oak Mapping Unit
9118 = Urban Buffer Herbaceous/Cleared Mapping Unit (no vegetation density, no urban tree density)
9120 = Urban Valley Oak Mapping Unit
9121 = Urban California Sycamore-Coast Live Oak Mapping Unit
9122 = Urban California Sycamore-Willow spp. Mapping Unit

9200 = Agriculture Mapping Unit (no vegetation density, no urban tree density)
9210 = Valley Oak in Agriculture Mapping Unit (vegetation density only)
9220 = Coast Live Oak in Agriculture Mapping Unit (vegetation density only)
9230 = Valley Oak-Coast Live Oak in Agriculture Mapping Unit (vegetation density only)

9300 = Post-fire and Post-clearance Shrub Regeneration Mapping Unit (vegetation density only)

9400 = Water Mapping Unit (no vegetation density, no urban tree density)

9500 = Undifferentiated Exotic Vegetation Mapping Unit (vegetation density only)
9510 = Eucalyptus spp. Woodland/Forest Mapping Unit
9520 = Conifer Woodland/Forest Mapping Unit
9530 = Other Exotic Woodland/Forest Mapping Unit
9540 = Undifferentiated Ornamental Shrubland Mapping Unit (no vegetation density, no urban tree density)
9541 = Prostrate Acacia Shrubland Mapping Unit
9542 = Spanish Broom Shrubland Mapping Unit
9543 = Iceplant Shrubland Mapping Unit
9544 = Pampas Grass Herbaceous Mapping Unit
9550 = Peruvian Peppertree Woodland/Forest Mapping Unit (vegetation density only)

9600 = Artificial Cuts/Embankments Undifferentiated Vegetation Mapping Unit (urban tree density only)
9630 = Sparsely Vegetated to Non-Vegetated Mapping Unit (no vegetation density, no urban tree density)
9640 = Undifferentiated Woodland/Forest Mapping Unit (urban tree density only)
9641 = Eucalyptus spp. Woodland/Forest Mapping Unit
9642 = Conifer Woodland/Forest Mapping Unit
9643 = Peruvian Peppertree Woodland/Forest Mapping Unit
9650 = Undifferentiated Shrubland/Herbaceous Mapping Unit (no vegetation density, no urban tree density)
9651 = Spanish Broom Shrubland Mapping Unit

9700 = Firebreak Early Seral Undifferentiated Vegetation Mapping Unit (vegetation density only)
9710 = Firebreak Early Seral Shrubland Mapping Unit
9711 = Firebreak Early Seral Herbaceous/Cleared Mapping Unit

VEGETATION DENSITY

1 = Greater than 60%
2 = 40-60%
3 = 25-40%
4 = 10-25%
5 = 2-10%
9 = Not applicable

URBAN TREE DENSITY

1 = High
2 = Medium
3 = Low
9 = Not Applicable

APPENDIX II

SCAG 1993 LAND USE CLASSIFICATION

Developed by Aerial Information Systems, Inc. as a Modified Anderson Land Use Classification.
Bold text indicates land use codes found in the database.

1000 *Urban or Built-Up*
- 1100 Residential
  - 1110 Single Family Residential
    - **1111** High-Density Single Family Residential
    - **1112** Low-Density Single Family Residential
  - 1120 Multi-Family Residential
    - **1121** Mixed Multi-Family Residential
    - **1122** Duplexes, Triplexes and 2-or 3-Unit Condominiums and Townhouses
    - **1123** Low-Rise Apartments, Condominiums, and Townhouses
    - **1124** Medium-Rise Apartments and Condominiums
    - **1125** High-Rise Apartments and Condominiums
  - 1130 Mobile Homes and Trailer Parks
    - **1131** Trailer Parks and Mobile Home Courts, High-Density
    - **1132** Mobile Home Courts and Subdivisions, Low-Density
  - **1140** Mixed Residential
  - 1150 Rural Residential
    - **1151** Rural Residential, High-Density
    - **1152** Rural Residential, Low-Density
- 1200 Commercial and Services
  - 1210 General Office Use
    - **1211** Low- and Medium-Rise Major Office Use
    - **1212** High-Rise Major Office Use
    - **1213** Skyscrapers
  - 1220 Retail Stores and Commercial Services
    - **1221** Regional Shopping Center
    - **1222** Retail Centers (Non-Strip With Contiguous Interconnected Off-Street Parking)
    - **1223** Modern Strip Development
    - **1224** Older Strip Development
  - 1230 Other Commercial
    - **1231** Commercial Storage
    - **1232** Commercial Recreation
    - **1233** Hotels and Motels
    - 1234 Attended Pay Public Parking Facilities
  - 1240 Public Facilities
    - **1241** Government Offices
    - ** **1242** Police and Sheriff Stations
    - ** **1243** Fire Stations
    - **1244** Major Medical Health Care Facilities
    - **1245** Religious Facilities
    - **1246** Other Public Facilities
    - **1247** Non-Attended Public Parking Facilities
  - 1250 Special Use Facilities
    - **1251** Correctional Facilities

1252 Special Care Facilities
1253 Other Special Use Facilities
1260 Educational Institutions
1261 Pre-Schools/Day Care Centers
** **1262** Elementary Schools
** **1263** Junior or Intermediate High Schools
** **1264** Senior High Schools
1265 Colleges and Universities
1266 Trade Schools and Professional Training Facilities
1270 Military Installations
1271 Base (Built-up Area)
1272 Vacant Area
1273 Air Field
1300 Industrial
1310 Light Industrial
1311 Manufacturing, Assembly, and Industrial Services
1312 Motion Picture and Television Studio Lots
1313 Packing Houses and Grain Elevators
1314 Research and Development
1320 Heavy Industrial
1321 Manufacturing
1322 Petroleum Refining and Processing
1323 Open Storage
1324 Major Metal Processing
1325 Chemical Processing
1330 Extraction
1331 Mineral Extraction - Other Than Oil and Gas
1332 Mineral Extraction - Oil and Gas
1340 Wholesaling and Warehousing
1400 Transportation, Communications, and Utilities
1410 Transportation
1411 Airports
1412 Railroads
1413 Freeways and Major Roads
1414 Park-and-Ride Lots
1415 Bus Terminals and Yards
1416 Truck Terminals
1417 Harbor Facilities
1418 Navigation Aids
1420 Communication Facilities
1430 Utility Facilities
1431 Electrical Power Facilities
1432 Solid Waste Disposal Facilities
1433 Liquid Waste Disposal Facilities
1434 Water Storage Facilities
1435 Natural Gas and Petroleum Facilities
1436 Water Transfer Facilities
1437 Improved Flood Waterways and Structures
1438 Mixed Utilities

- **1440** Maintenance Yards
- **1450** Mixed Transportation
- **1460** Mixed Transportation and Utility

1500 Mixed Commercial and Industrial
1600 Mixed Urban
1700 Under Construction
1800 Open Space and Recreation

- **1810** Golf Courses
- 1820 Local Parks and Recreation (1990 Database only)
  - **1821** Developed Local Parks and Recreation
  - **1822** Undeveloped Local Parks and Recreation
- 1830 Regional Parks and Recreation (1990 Database only)
  - **1831** Developed Regional Parks and Recreation
  - **1832** Undeveloped Regional Parks and Recreation
- **1840** Cemeteries
- **1850** Wildlife Preserves and Sanctuaries
- **1860** Specimen Gardens and Arboreta
- **1870** Beach Parks
- **1880** Other Open Space and Recreation

1900 Urban Vacant

2000 *Agriculture*

2100 Cropland and Improved Pasture Land

- **2110** Irrigated Cropland and Improved Pasture Land
- **2120** Non-Irrigated Cropland and Improved Pasture Land

2200 Orchards and Vineyards
2300 Nurseries
2400 Dairy, Intensive Livestock, and Associated Facilities
2500 Poultry Operations
2600 Other Agriculture
2700 Horse Ranches

3000 *Vacant*

3100 Vacant Undifferentiated
3200 Abandoned Orchards and Vineyards
3300 Vacant With Limited Improvements
3400 Beaches (Vacant)

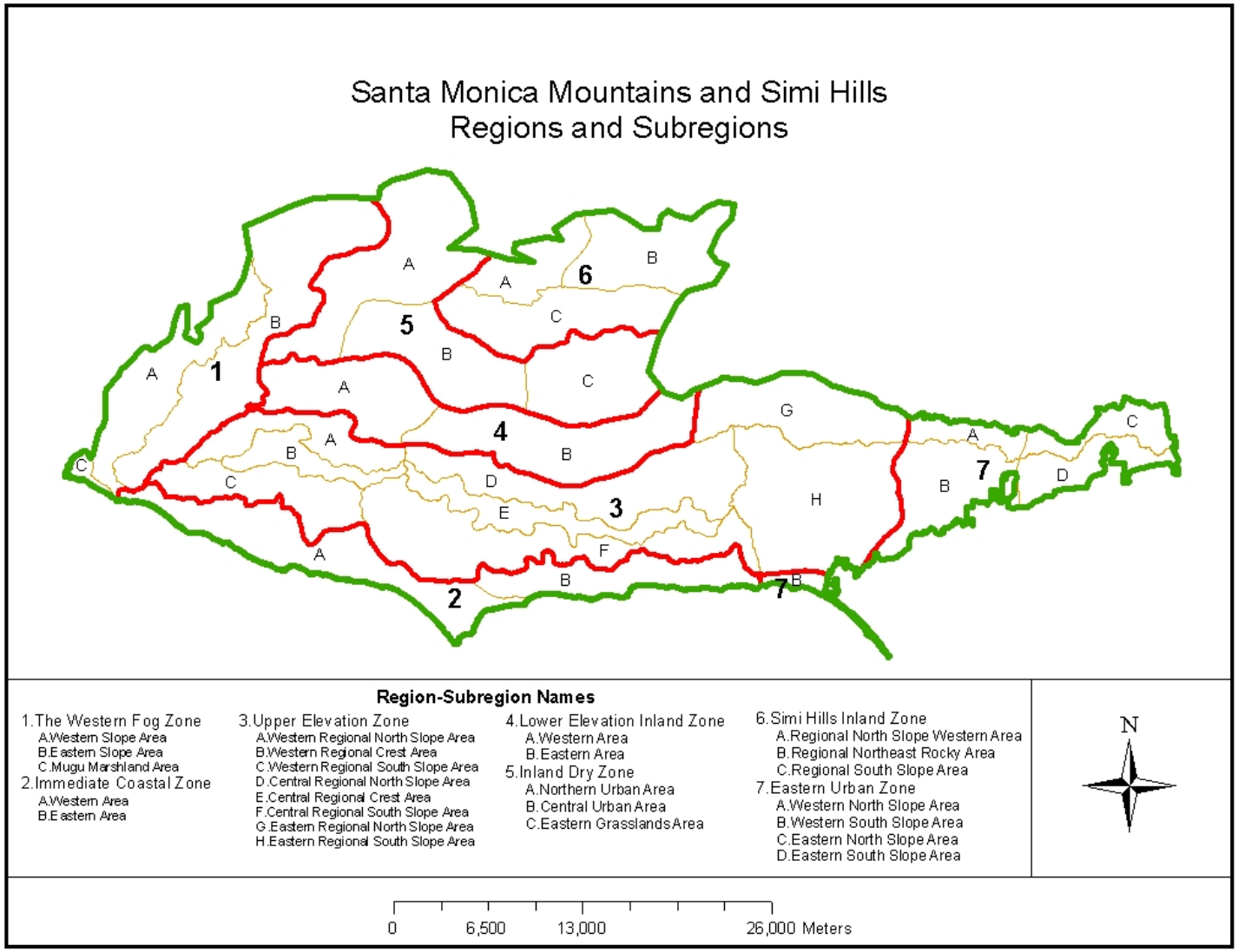
4000 *Water*

4100 Water, Undifferentiated
4200 Harbor Water Facilities
4300 Marina Water Facilities
4400 Water Within a Military Installation
4500 Area of Inundation (High Water) (1990 Database only)

9999 *No Photo Coverage/Not in Update Study Area*

****Critical Land Use** - All critical land uses are mapped down to a 1 acre minimum mapping resolution. Non-critical land uses are mapped to a 2.5 acre minimum mapping resolution.

APPENDIX III



APPENDIX IV

USGS-NPS VEGETATION MAPPING PROGRAM

SANTA MONICA MOUNTAINS NATIONAL RECREATION AREA
MAPPING DESCRIPTIONS

May 23, 2007

Aerial Information Systems, Inc.
112 First Street
Redlands, CA 92373

Environmental Systems Research Institute
380 New York Street
Redlands, CA 92373-8100

FOR

Santa Monica Mountains National Recreation Area
401 W. Hillcrest
Thousand Oaks, CA 91360

APPENDIX IV: MAPPING DESCRIPTIONS

TABLE OF CONTENTS

SECTION **PAGE**

California Bay Woodland/Forest Alliance 37
Coast Live Oak Woodland/Forest Alliance 48
California Walnut Woodland/Forest Alliance 77
Valley Oak Woodland/Forest Alliance 92
Willow Woodland/Forest Superalliance 101
Red Willow Woodland/Forest Alliance 110
Arroyo Willow Woodland/Forest Alliance 115
White Alder Woodland/Forest Alliance 122
California Sycamore Woodland/Forest Alliance 127
Miscellaneous Shrubland Superalliances 140
Chamise Shrubland Alliance 153
Chamise-Eastwood Manzanita Shrubland Alliance 170
Chamise-Black Sage Shrubland Alliance 175
Chamise-Redshank Shrubland Alliance 184
Redshank Shrubland Alliance 189
Hoary Leaf Ceanothus Shrubland Alliance 192
Hairy Leaf Ceanothus Shrubland Alliance 199
Big Pod Ceanothus Shrubland Alliance 212
Greenbark Ceanothus Shrubland Alliance 227
Birch Leaf Mountain Mahogany Shrubland Alliance 234
Holly Leaf Cherry Shrubland Alliance 245
Toyon Shrubland Alliance 250
Laurel Sumac Shrubland Alliance 255

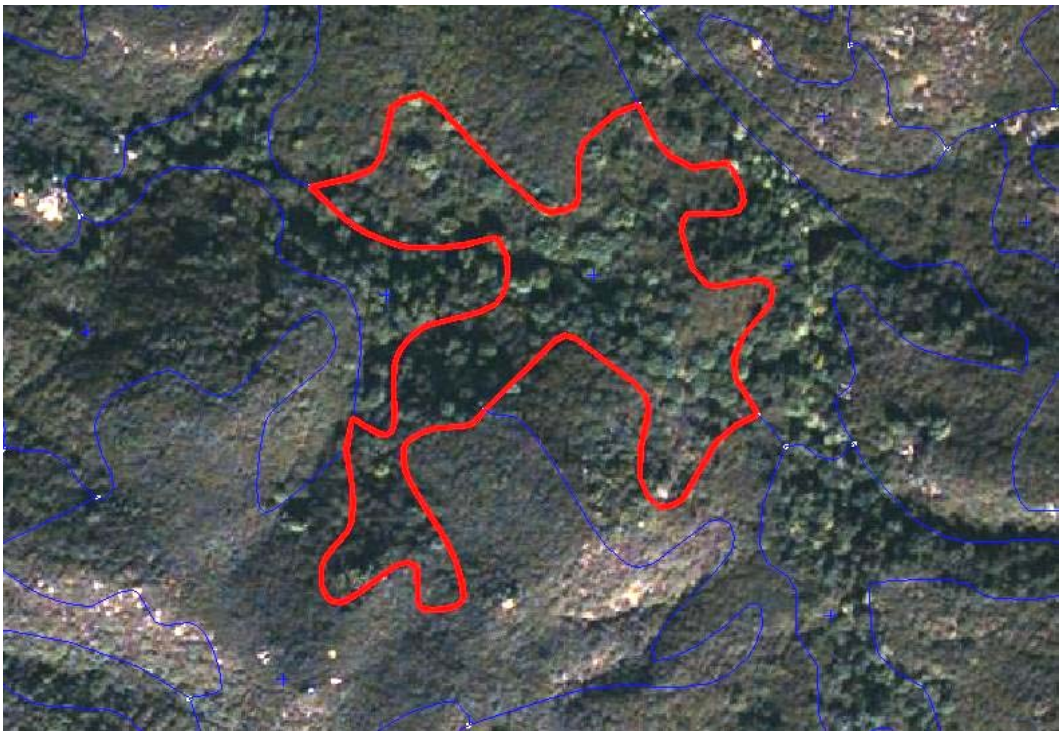
Lemonade Berry Shrubland Alliance 270
Scrub Oak Shrubland Alliance 279
Bush Monkey Flower Shrubland Alliance 286
Sugar Bush Shrubland Alliance 291
Mule Fat Shrubland Alliance 298
Scale Broom Shrubland Alliance 303
Coyote Brush Shrubland Alliance 306
Quail Bush Shrubland Alliance 313
Coast Prickly Pear Shrubland Alliance 316
Chamise-Wedge Leaf Ceanothus Shrubland Alliance 321
Wedge Leaf Ceanothus Shrubland Alliance 326
Chamise-Big Berry Manzanita Shrubland Alliance 331
Big Berry Manzanita Shrubland Alliance 336
Eastwood Manzanita Shrubland Alliance 339
Scrub Interior Live Oak Shrubland Alliance 342
Chamise-Hoary Leaf Ceanothus Shrubland Alliance 345
Scrub Oak-Chamise Shrubland Alliance 350
Scrub Oak-Birch Leaf Mountain-Mahogany Shrubland Alliance 355
Mexican Elderberry Shrubland Alliance 360
Narrowleaf Willow Shrubland Alliance 367
California Sagebrush Shrubland Alliance 370
California Encelia Shrubland Alliance 381
California Buckwheat Shrubland Alliance 396
Ashy Buckwheat Shrubland Alliance 403
Sawtooth Goldenbush Shrubland Alliance 408
Deerweed Shrubland Alliance 415
Bush Mallow Shrubland Alliance 418

Purple Sage Shrubland Alliance 433
Black Sage Shrubland Alliance 440
Poison Oak Shrubland Alliance 455
Giant Coreopsis Shrubland Alliance 462
Bush Poppy Shrubland Alliance 469
Conejo Buckwheat Shrubland Unique Stands Mapping Unit 472
California Sagebrush-California Buckwheat Shrubland Alliance 475
Purple Sage-California Sagebrush Shrubland Alliance 484
California Buckwheat-White Sage Shrubland Alliance 493
Black Sage-California Sagebrush Shrubland Alliance 496
Palmer's Goldenbush Shrubland Unique Stands Mapping Unit 501
Giant Wild Rye Herbaceous Alliance 504
Fountain Grass Herbaceous Alliance 509
Giant Reed Herbaceous Alliance 514
Common Rush Herbaceous Alliance 517
Wetland Undifferentiated Herbaceous Superalliance 520
Marshland Herbaceous Superalliance 527
Canyon Sunflower Shrubland Alliance 552
Fennel Herbaceous Alliance 555
Bushy Spike Moss Herbaceous Alliance 558
California Annual Grassland/Herbland Alliance 563
Vegetation Miscellaneous Classes 566

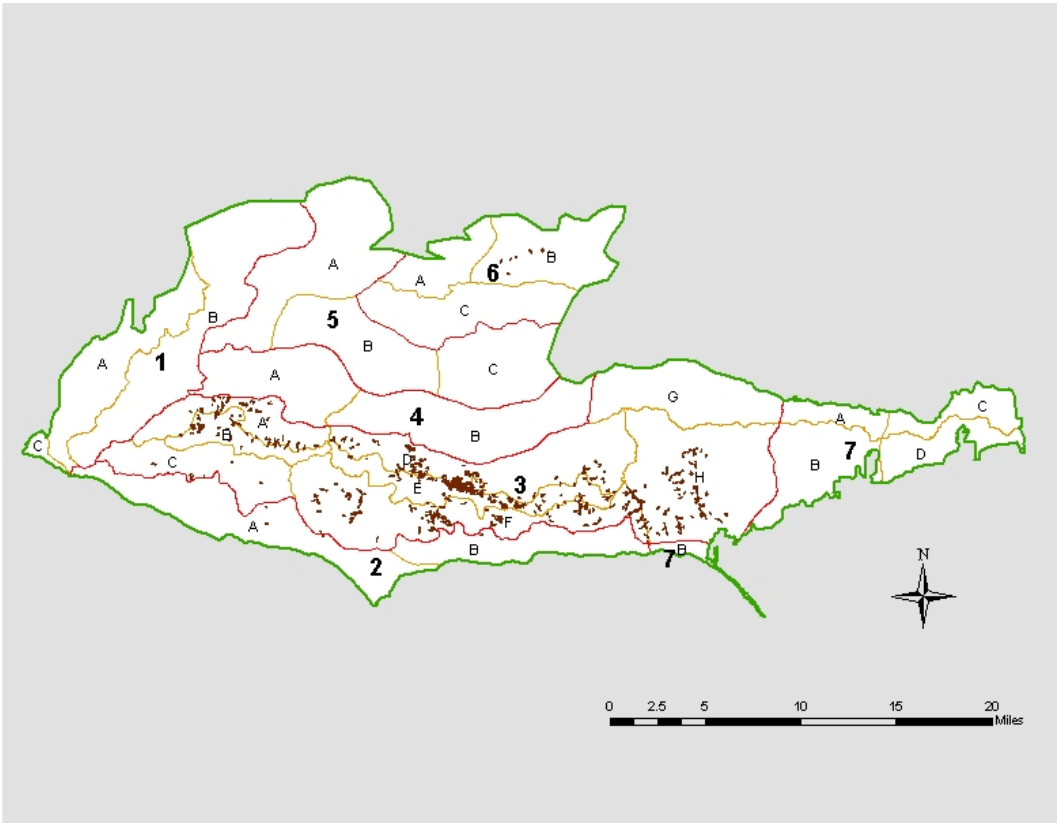
CALIFORNIA BAY WOODLAND/FOREST ALLIANCE



1010 – CALIFORNIA BAY WOODLAND/FOREST ALLIANCE
Umbellularia californica Woodland/Forest Alliance



DISTRIBUTION:



DESCRIPTION: *Umbellularia californica* Woodland/Forest Alliance represents the hierarchical class into which all *U. californica* association types are nested. Polygons mapped as this alliance typically have *U. californica* as the dominant tree species, which can occur in low to high cover. In some cases *U. californica* may co-dominate with *Alnus rhombifolia*, *Platanus racemosa*, or *Juglans californica*. *Ceanothus spinosus* and *Ceanothus oliganthus* may occur in the understory at low to high cover. Stands of this alliance may have an open to dense understory of shrubs. The stands are usually associated with a water source such as seeps or drainages below seeps. The alliance occurs on moist north-facing concave to neutral slopes and protected ravine and canyon bottoms, but can also occur on similar south facing situations. Steepness can vary from gently sloping to extremely steep on bottoms to upper slopes. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of subdominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *U. californica* as the dominant tree are included.

PHOTO INTERPRETATION SIGNATURE: The stands can have a mottled to uneven appearance due to the stature, color, and textural differences between the dominant species. *U. californica* appears as individual trees whose signature is typically bright green to medium green with a large rough-textured wide crown showing a pronounced bumpy surface; sometimes crowns are rounded with spiral tops. Crowns are usually taller than most tall shrubs. *J. californica* appears as individual or clumped trees, whose signature is typically a medium green rounded crown with a fine texture. The color may look similar to *U. californica* but it is a shorter tree with a more regular crown. Signature differences between the two may not be distinctive. *P. racemosa* appears as individual very tall trees with irregular open crowns whose signature is medium green. The signature for *P. racemosa* is similar to that of *Salix* spp. and *A. rhombifolia*, however *P. racemosa* appears as separate individuals rather than in continuous clumps or groups. *A. rhombifolia* appears as dense clumps of gray-green tree crowns with a homogeneous texture and signature. *C. spinosus* appears as clumps of tall shrub whose signature is dark to olive green with a relatively homogeneous fine texture. *C. oliganthus* is a tall shrub whose signature is very dark green to black with a relatively homogeneous fine texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

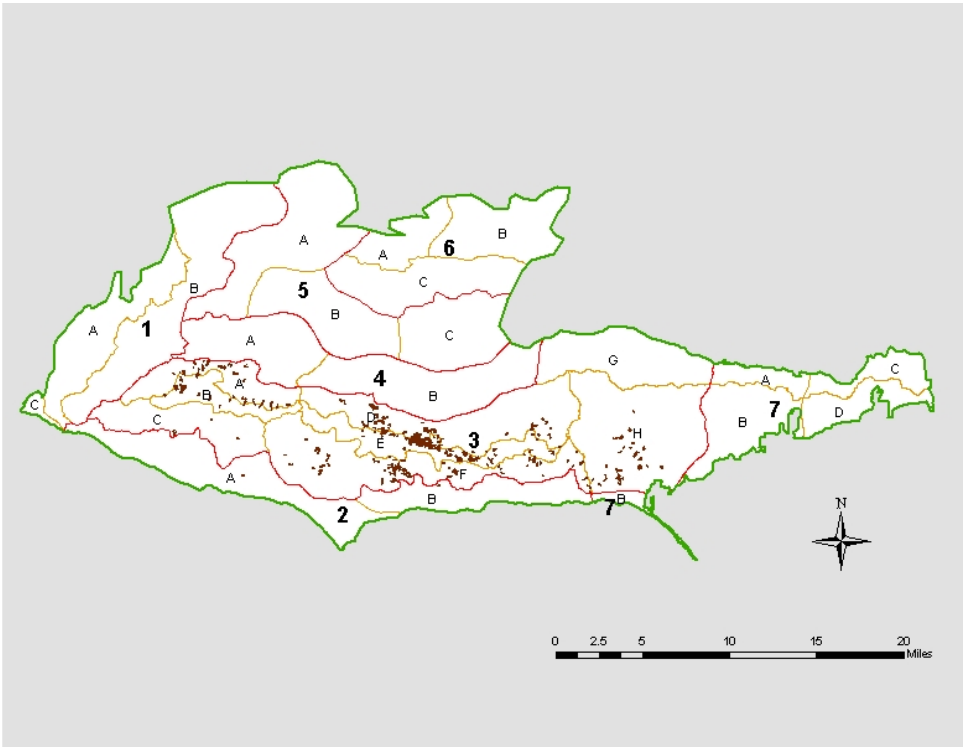
- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- *Juglans californica* Woodland/Forest Alliance (1310)
- *Salix* spp. Woodland/Forest Superalliance (1410)
- *Alnus rhombifolia* Woodland/Forest Alliance (1440)
- *Platanus racemosa* Woodland/Forest Alliance (1450)
- *Ceanothus spinosus* Shrubland Alliance (2090)

1011 – CALIFORNIA BAY–CALIFORNIA WALNUT/GREENBARK CEANOTHUS WOODLAND/FOREST ASSOCIATION

***Umbellularia californica–Juglans californica/Ceanothus spinosus* Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: *Umbellularia californica – Juglans californica* / *Ceanothus spinosus* Woodland/Forest Association occurs as sparse to intermittent stands of co-dominant *Umbellularia* and *Juglans*, with an understory consisting mainly of *Ceanothus spinosus*. *Umbellularia* and *Juglans* can vary greatly in co-dominance with each other. The relative cover of each can vary from low to high, with *Juglans* sometimes being absent from the stand. The overall density of trees varies from low, with an extensive high cover of *C. spinosus* understory, to high, with very limited tall shrub understory and low cover of *C. spinosus*. A low to very low cover of *Quercus agrifolia* can occur in the overstory. *Heteromeles arbutifolia* and *Prunus ilicifolia* can occur in the understory in very low cover. This type requires moist conditions and is associated with a water source, such as seeps or drainages below seeps. This association can be found on north-facing gently sloping ravines and canyon bottoms to steep upper slopes, but also can occur on south-facing ravines and canyon bottoms that are moist and protected.

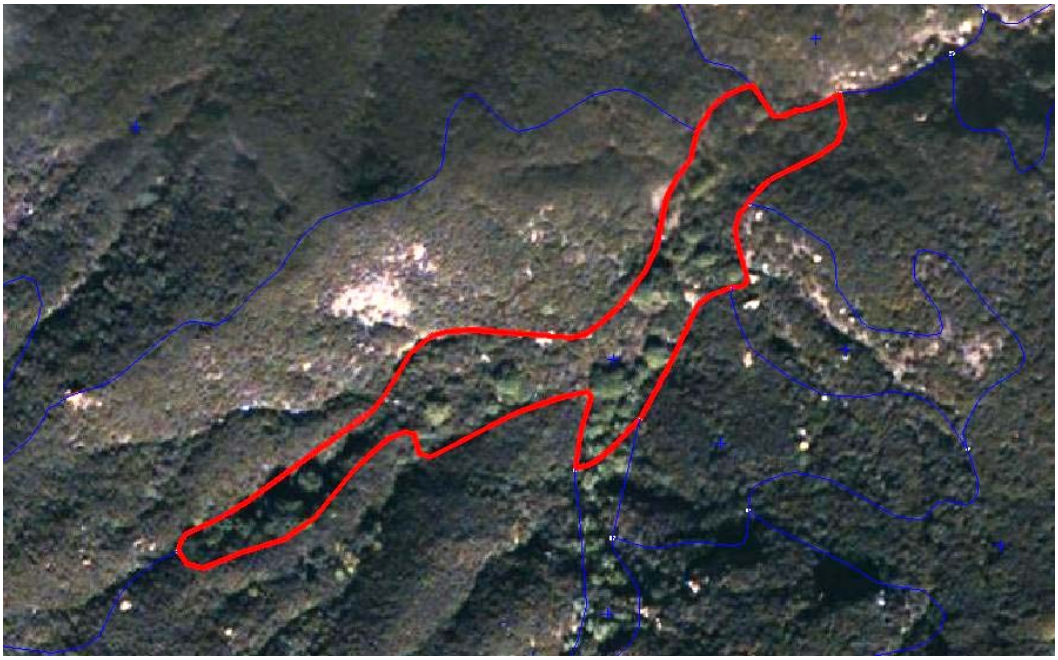
PHOTO INTERPRETATION SIGNATURE: The stand as a whole is uneven due to the trees over chaparral, sometimes with tall shrubs intermingled. *Umbellularia* appears as individual trees whose signature is typically bright green to medium green with large rough-textured wide crowns showing a pronounced bumpy surface; sometimes crowns are rounded with spiral tops. The crowns are usually taller than most tall shrubs. *Juglans* appears as individual or clumped trees, whose signature is typically medium green rounded crowns with a fine texture. The color may look similar to *Umbellularia,* but *Juglans* is a shorter tree with a more regular crown. Signature differences between the two may not be distinctive. *C. spinosus* appears as clumps of tall shrub whose signature is dark to olive green with a relatively homogeneous fine texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

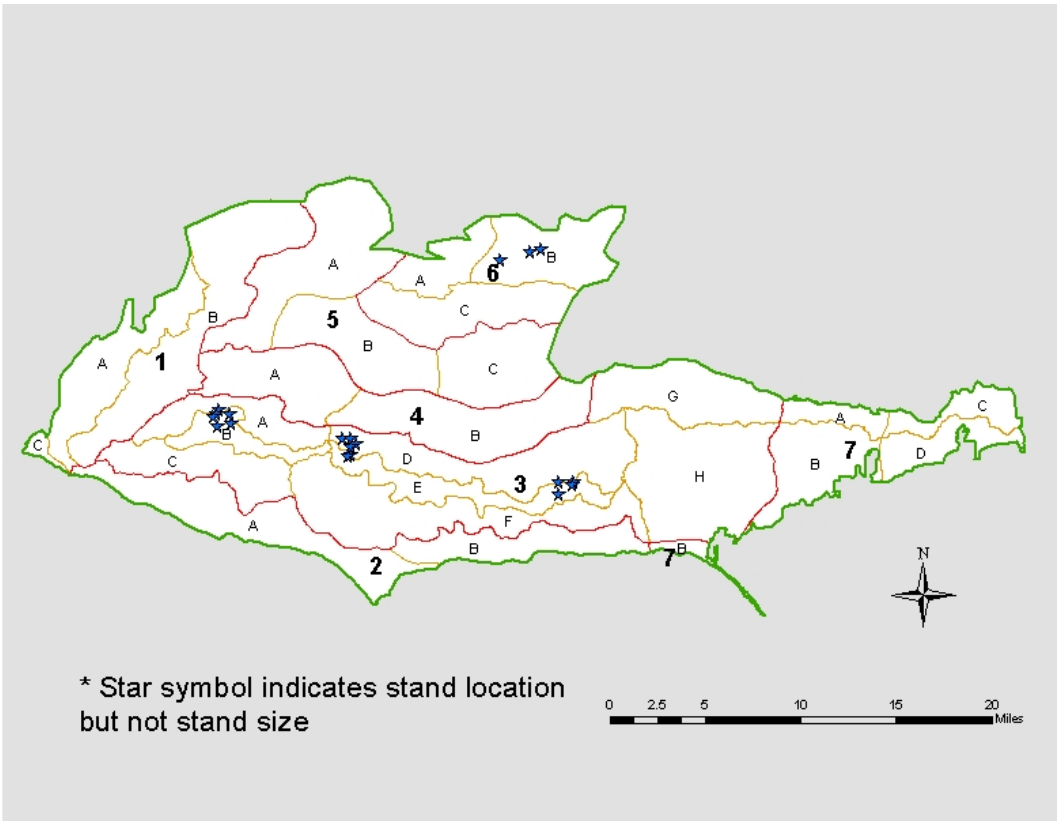
- *Quercus agrifolia–Umbellularia californica* Woodland/Forest Association (1114)
- *Quercus agrifolia/Ceanothus spinosus* Woodland/Forest Association (1118)
- *Juglans californica/Ceanothus spinosus* Woodland/Forest Association (1315)
- *Ceanothus spinosus* Shrubland Association (2092)

1012 – CALIFORNIA BAY/HAIRYLEAF CEANOTHUS WOODLAND/FOREST ASSOCIATION

***Umbellularia californica/Ceanothus oliganthus* Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: *Umbellularia californica/Ceanothus oliganthus* Woodland/Forest Association occurs as open to intermittent trees over open to intermittent shrubs. *Umbellularia* is at high to very high cover. *Quercus agrifolia* can be present at low cover. *C. oliganthus* is the dominant understory shrub, varying from very low to high cover. *Heteromeles arbutifolia* is typically present in very low to low cover. This type requires moist conditions, occupying protected drainages near a water source, north-facing concave gentle to moderate slopes below seeps, and can be south-facing in moist protected canyon bottoms and ravines. This association usually occurs only in the rocky higher elevation areas of the Santa Monica Mountains and in the northeast rocky portion of the Simi Hills.

PHOTO INTERPRETATION SIGNATURE: The stand has a mottled appearance from the color and textural differences between *Umbellularia* and *C. oliganthus*. *Umbellularia* appears as individual trees whose signature is typically bright green to medium green with large rough-textured wide crowns showing a pronounced bumpy surface; sometimes crowns are rounded with spiral tops. The crowns are usually taller than most tall shrubs. *C. oliganthus* is a tall shrub whose signature is very dark green to black with a relatively homogeneous fine texture.

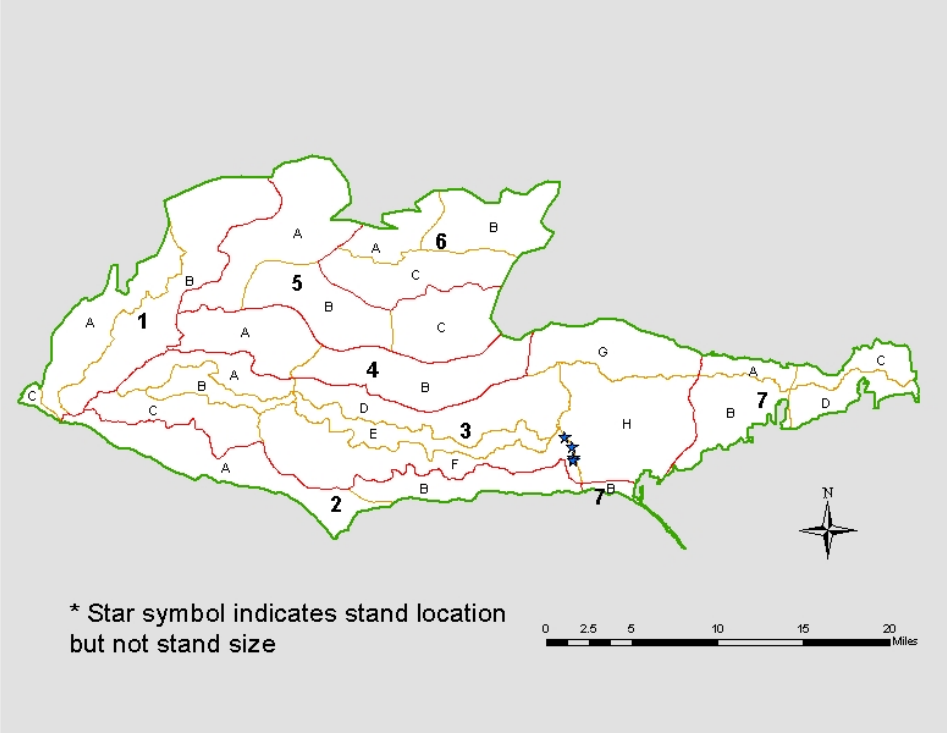
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia–Umbellularia californica* Woodland/Forest Association (1114)
- *Quercus agrifolia/Ceanothus spinosus* Woodland/Forest Association (1118)
- *Quercus agrifolia – Umbellularia californica / Ceanothus oliganthus* Woodland/Forest Association (1119)
- *Juglans californica/Ceanothus spinosus* Woodland/Forest Association (1315)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Ceanothus oliganthus* Shrubland Association (2072)
- *Ceanothus oliganthus*-Tall Shrubs Shrubland Superassociation (7071)

1013 – CALIFORNIA BAY–WHITE ALDER WOODLAND/FOREST ASSOCIATION
Umbellularia californica–Alnus rhombifolia Woodland/Forest Association



DISTRIBUTION:



DESCRIPTION: *Umbellularia californica-Alnus rhombifolia* Woodland/Forest Association occurs as intermittent to dense clumps of *Umbellularia* and *Alnus*. *U. californica* has a moderate to high cover, co-dominating with a moderate cover of *Alnus*. *Platanus racemosa, Salix* spp., and *Quercus agrifolia* are usually also in the overstory in very low to low cover. Understory shrubs are sparse with *Baccharis salicifolia* present in very low cover. This is a moist to wet riparian type, usually occurring in narrow shaded gorges/canyons with perennial stream floodplains (not urban run-off). Slopes are level to gently sloping. This association is rare and has a very limited extent. It occurs in lower canyons, primarily near the coastal margin of the Santa Monica Mountains.

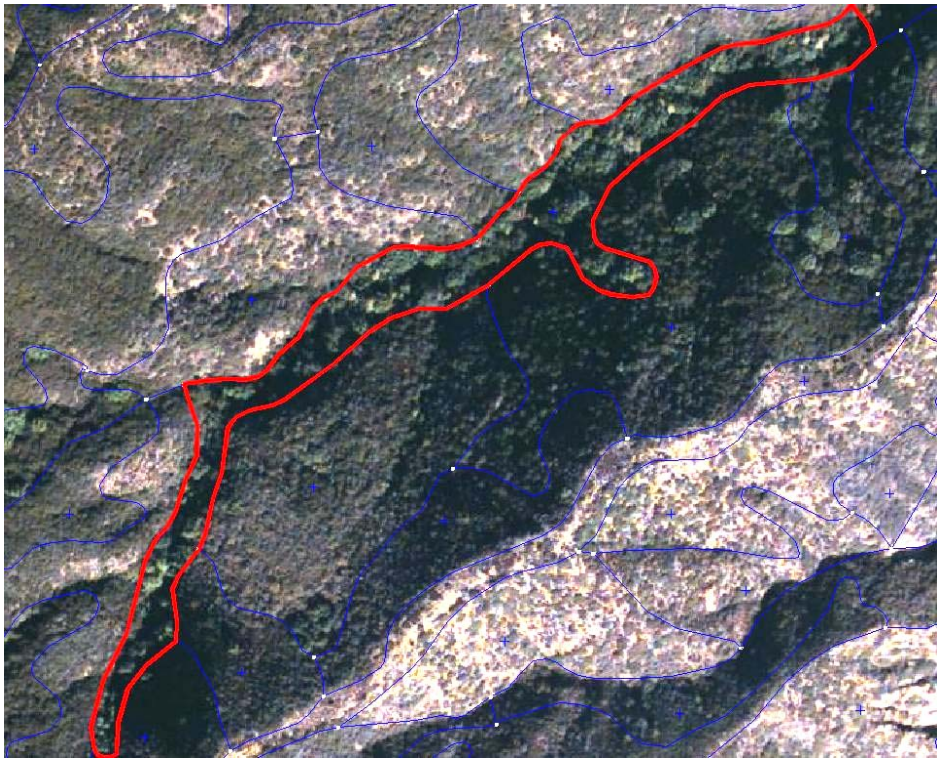
PHOTO INTERPRETATION SIGNATURE: The stand is coarse as a whole due to the varying textures of the trees and uneven crowns. *Umbellularia* appears as individual trees whose signature is typically bright green to medium green with large rough-textured wide crowns showing a pronounced bumpy surface; sometimes crowns are rounded with spiral tops. The crowns are usually taller than most tall shrubs. *Alnus* appears as dense clumps of gray-green tree crowns with a homogeneous texture and signature. The signature for *Alnus* can look very similar to *Platanus* and *Salix* spp. Mapping for this type relied on Rapid Assessment Plots, Observation sites, and subsequent field visitation.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

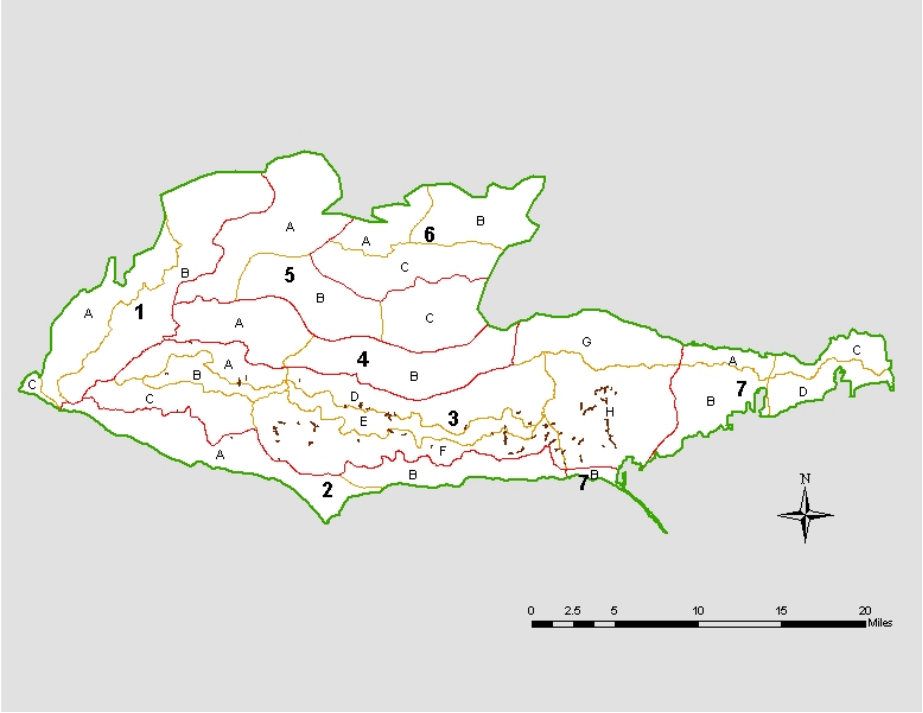
- *Umbellularia californica–Platanus racemosa* Woodland/Forest Association (1014)
- *Salix* spp. Woodland/Forest Superalliance (1410)
- *Alnus rhombifolia–Platanus racemosa* Woodland/Forest Association (1441)

1014 – CALIFORNIA BAY–CALIFORNIA SYCAMORE WOODLAND/FOREST ASSOCIATION

Umbellularia californica–Platanus racemosa Woodland/Forest Association



DISTRIBUTION:



DESCRIPTION: *Umbellularia californica-Platanus racemosa* Woodland/Forest Association occurs as open to continuous stands with *Umbellularia* and *Platanus* as the dominant trees. *Umbellularia* has a moderate to very high cover, dominating over low to very low cover of *Platanus*. *Quercus agrifolia* and *Juglans californica* may also be present in very low cover. Understory shrubs are sparse. This type occurs in low-lying valleys and steep narrow ravines, and is associated with perennial or ephemeral streams. This type is not common and has a very limited extent.

PHOTO INTERPRETATION SIGNATURE: The stand as a whole has an uneven appearance due to the stature and color differences of the two dominant species. *Umbellularia* appears as individual trees whose signature is typically bright green to medium green with large rough-textured wide crowns showing a pronounced bumpy surface; sometimes crowns are rounded with spiral tops. The crowns are usually taller than most tall shrubs. *Platanus* appears as individual very tall trees with irregular open crowns whose signature is medium green. The signature for *Platanus* is similar to that of *Salix* spp. and *Alnus rhombifolia*, however *Platanus* appears as separate individuals rather than in continuous clumps or groups.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Alnus rhombifolia* Woodland/Forest Alliance (1440)
- *Alnus rhombifolia–Platanus racemosa* Woodland/Forest Association (1441)
- *Salix* spp. Superalliance Mapping Unit (1410)
- *Umbellularia californica–Alnus rhombifolia* Woodland/Forest Association (1013)
- *Platanus racemosa–Quercus agrifolia–Salix lasiolepis* South Coast Woodland/Forest Association (6452)

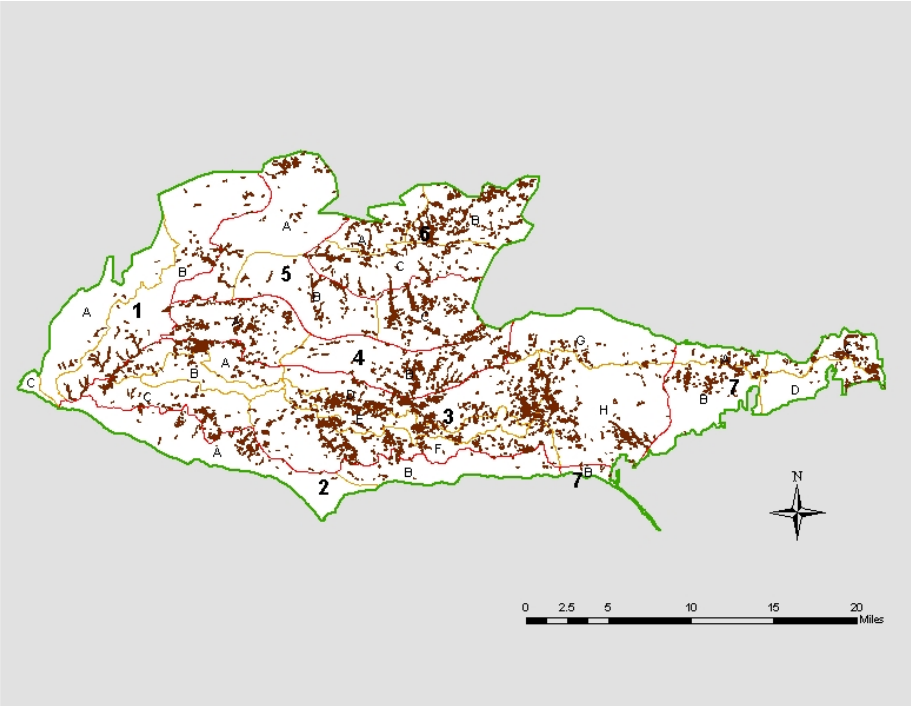
COAST LIVE OAK WOODLAND/FOREST ALLIANCE



1110 – COAST LIVE OAK WOODLAND/FOREST ALLIANCE
Quercus agrifolia Woodland/Forest Alliance



DISTRIBUTION:



DESCRIPTION: *Quercus agrifolia* Woodland/Forest Alliance is the hierarchical class into which all *Q. agrifolia* association types are nested. *Q. agrifolia* is typically the dominant tree species, and can occur at low to high cover. In some cases *Q. agrifolia* may co-dominate with either *Umbellularia californica*, *Salix* spp., or *Juglans californica*. Stands of this alliance may have a dense to open understory of shrubs. The *Q. agrifolia* Woodland/Forest Alliance occurs on dry, mesic, and riparian settings, usually on canyon bottoms, flats, valley bottoms, and lower slopes. South-facing aspect occurrences are in protected ravines or canyon bottoms. Slopes can vary from level to moderately steep. Slope position varies from valley and canyon bottoms to upper slopes. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *Q. agrifolia* as the dominant tree, are included.

PHOTO INTERPRETATION SIGNATURE: *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with coarse texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

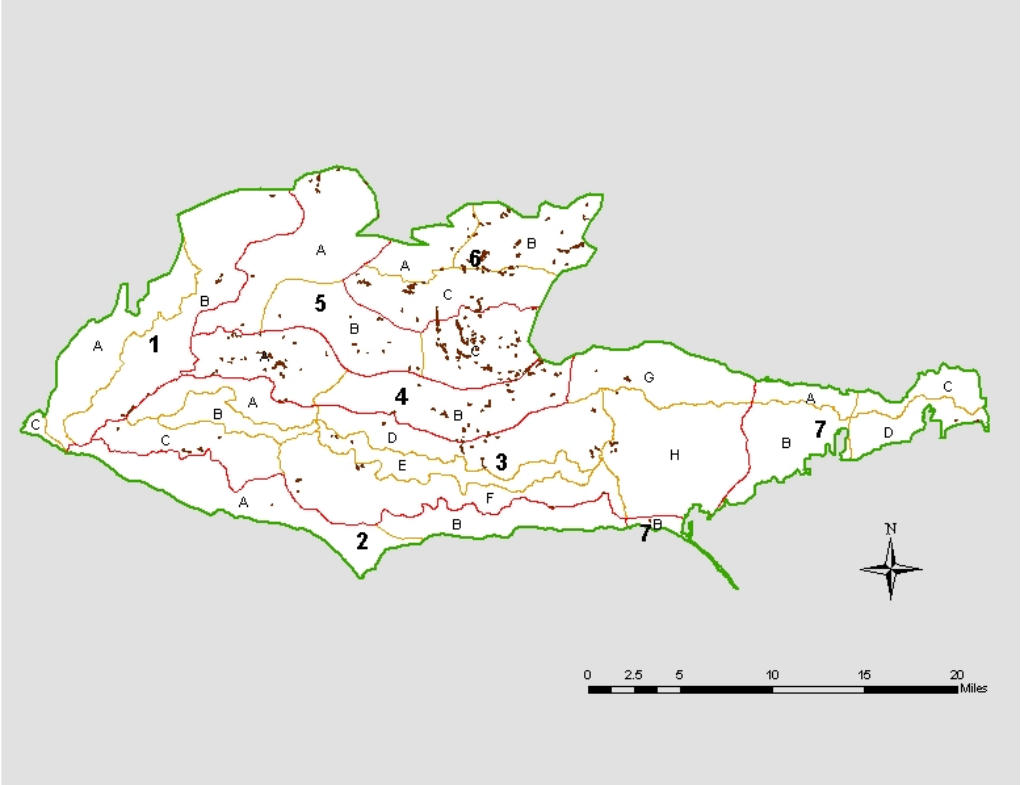
- *Umbellularia californica* Woodland/Forest Alliance (1010)
- *Juglans californica* Woodland/Forest Alliance (1310)
- *Salix* spp. Woodland/Forest Superalliance (1410)
- *Platanus racemosa* Woodland/Forest Alliance (1450)
- *Alnus rhombifolia* Woodland/Forest Alliance (1440)

1111 – COAST LIVE OAK/ANNUAL GRASS-HERB WOODLAND/FOREST ASSOCIATION

Quercus agrifolia/Annual Grass-Herb Woodland Forest Association



DISTRIBUTION:



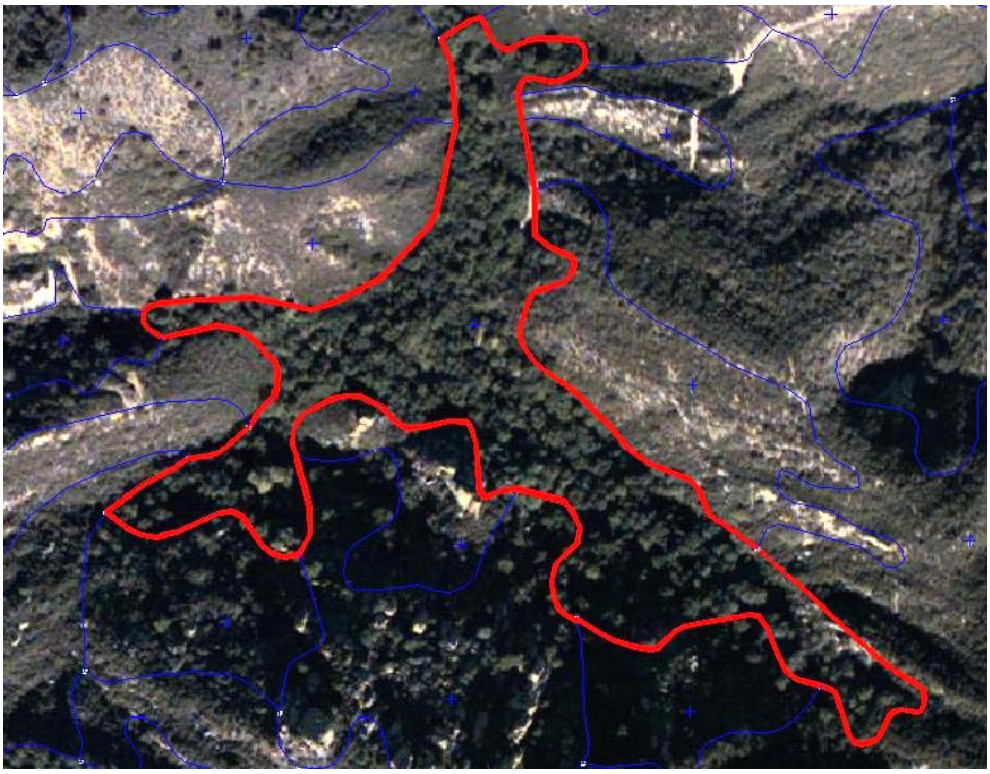
DESCRIPTION: *Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association occurs as sparse to open cover of *Q. agrifolia* over grasses and herbaceous plants in a dry savanna setting. *Q. agrifolia* is strongly dominant at low to very high cover. The grass-herb layer is moderate to very high cover. Other trees and shrubs are either present at very low cover or are absent. This association usually occurs on neutral to slightly undulating surfaces, on valley bottoms, flats, or on rolling hills.

PHOTO INTERPRETATION SIGNATURE: In the stand as a whole, the trees occur as coarse individuals or in groups over the smooth grassland. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with coarse texture. Grasslands are smooth textured, very short homogeneous to mosaicked or mottled carpets of light tan to brown shades.

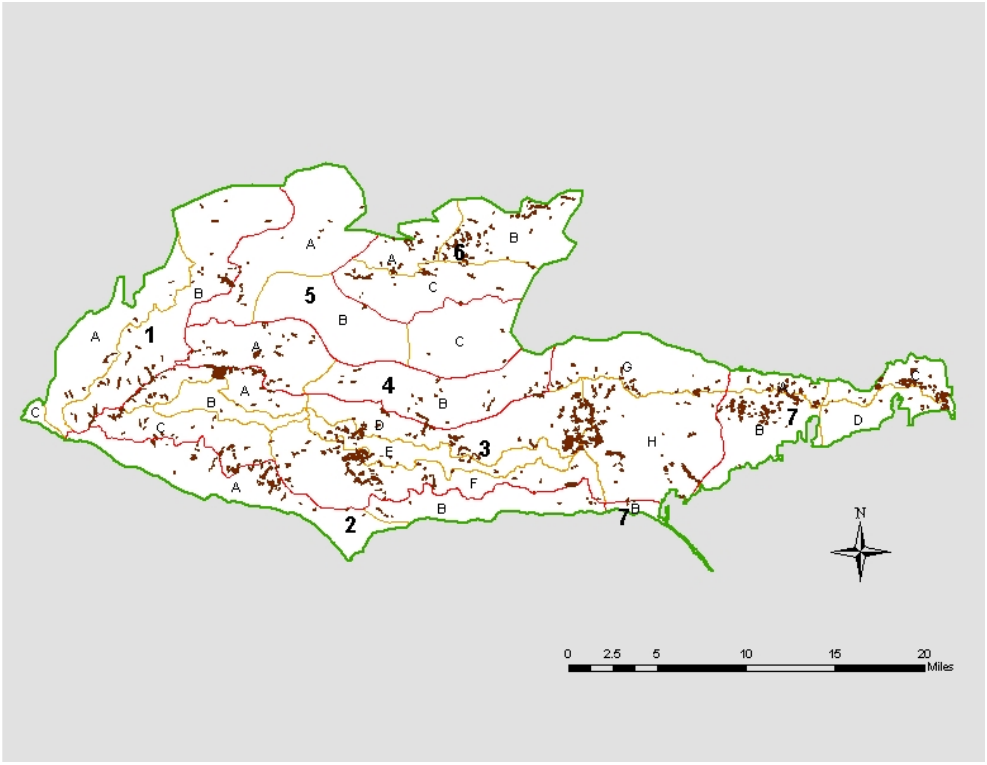
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Juglans californica* Annual Grass-Herb Woodland/Forest Association (1312)
- *Quercus lobata*/Annual Grass-Herb Woodland/Forest Association (1321)
- *Quercus lobata-Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association (1323)

1113 – COAST LIVE OAK WOODLAND/FOREST SUPERASSOCIATION
Quercus agrifolia Woodland/Forest Superassociation



DISTRIBUTION:



DESCRIPTION: *Quercus agrifolia* Woodland/Forest Superassociation occurs as an open to dense stand of trees, with *Q. agrifolia* as the dominant tree. Typically the cover of Q. *agrifolia* is high to very high, but it may range down to low. *Juglans californica* may be present in very low to high cover, and sometimes co-dominates. In stands with an open overstory, tall shrubs, including *Heteromeles arbutifolia* and *Malosma laurina*, may be present at very low to high cover. *Juglans* can be difficult to discern from tall shrub species. *Toxicodendron diversilobum* and *Mimulus aurantiacus* may also be present at very low to moderate cover. This type usually occurs on mesic to dry-mesic north-facing gentle to steep slopes. It can be found on variable surfaces on bottoms to upper slopes. Because the fairly dense overstory and similar signature of several *Q. agrifolia* types makes them difficult to distinguish during photo interpretation, they are combined into a superassociation. This mapping unit is a superassociation of *Quercus agrifolia-Juglans californica* Woodland/Forest Association (1115), *Quercus agrifolia/Toxicodendron diversilobum* Woodland/Forest Association (1117), *Quercus agrifolia/Heteromeles arbutifolia* Woodland/Forest Association (6117), and *Quercus agrifolia* Woodland/Forest Association (6122).

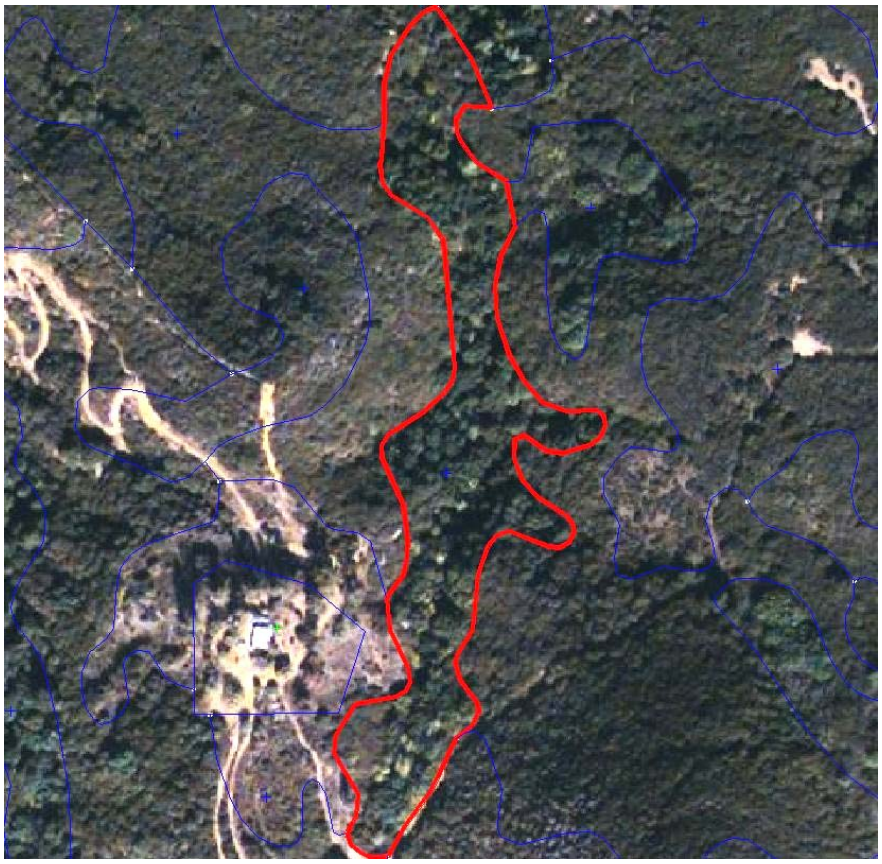
PHOTO INTERPRETATION SIGNATURE: The stand signature is usually a continuous very coarse cover of trees and tall shrubs, sometimes with openings. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with coarse texture. The tall shrubs (*Juglans*, *Heteromeles, Malosma*) are large round-crowned individuals, usually medium green to dark green to black in color. *Toxicodendron* varies in color from yellow to light green to dark dull green to reddish brown. *Mimulus* is reddish brown to orange-brown and can be confused with *Toxicodendron*. The tall shrubs have similar signatures and are difficult to distinguish from each other. In some areas *Q. agrifolia* and *Juglans* will have similar signatures and will be difficult to discern from each other. In stands with a continuous overstory of *Q. agrifolia* one cannot see nor determine the understory.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

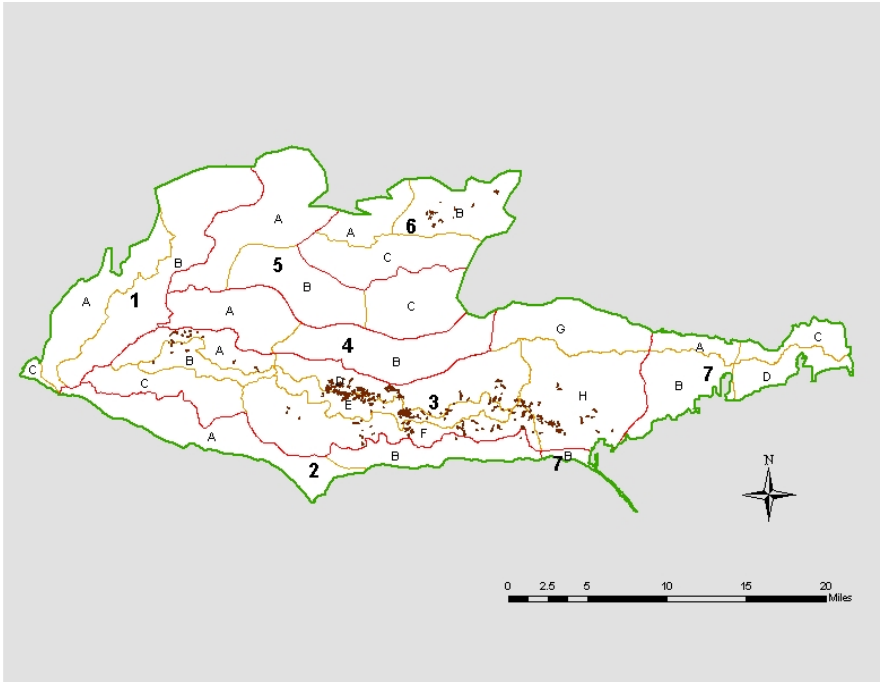
- *Quercus agrifolia–Umbellularia californica* Woodland/Forest Association (1114)
- *Quercus agrifolia-Ceanothus spinosus* Woodland/Forest Association (1118)
- *Juglans californica*–(*Quercus agrifolia*)/Tall Shrubs Woodland/Forest Superassociation (6314)
- *Quercus agrifolia–Juglans californica* Woodland/Forest Association (1115)
- *Quercus agrifolia/Toxicodendron diversilobum* Woodland/Forest Association (1117)
- *Quercus agrifolia/Heteromeles arbutifolia* Woodland/Forest Association (6117)
- *Quercus agrifolia* South Coastal Woodland/Forest Association (6122)

1114 – COAST LIVE OAK–CALIFORNIA BAY WOODLAND/FOREST ASSOCIATION

***Quercus agrifolia/Umbellularia californica* Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: The *Quercus agrifolia–Umbellularia californica* Woodland/Forest Association occurs as dense to open stands of trees with *Q. agrifolia* and *Umbellularia* co-dominating. *Q. agrifolia* is of low to high cover; *Umbellularia* is of very low to high cover. Cover of *Q. agrifolia* is normally greater than that of *Umbellularia*. The understory may include tall shrubs such as *Heteromeles arbutifolia* or *Ceanothus spinosus*, and short shrubs such as *Mimulus aurantiacus* and *Toxicodendron diversilobum*. Sometimes *Juglans californica* or *Platanus racemosa* may be present in very low cover. This type occurs on mesic north-facing slopes, canyons, and ravine bottoms, and can occur on protected south-facing ravines or canyons. Slope shape is usually concave or undulating, on gentle to very steep slopes. This association is common in the Santa Monica Mountains.

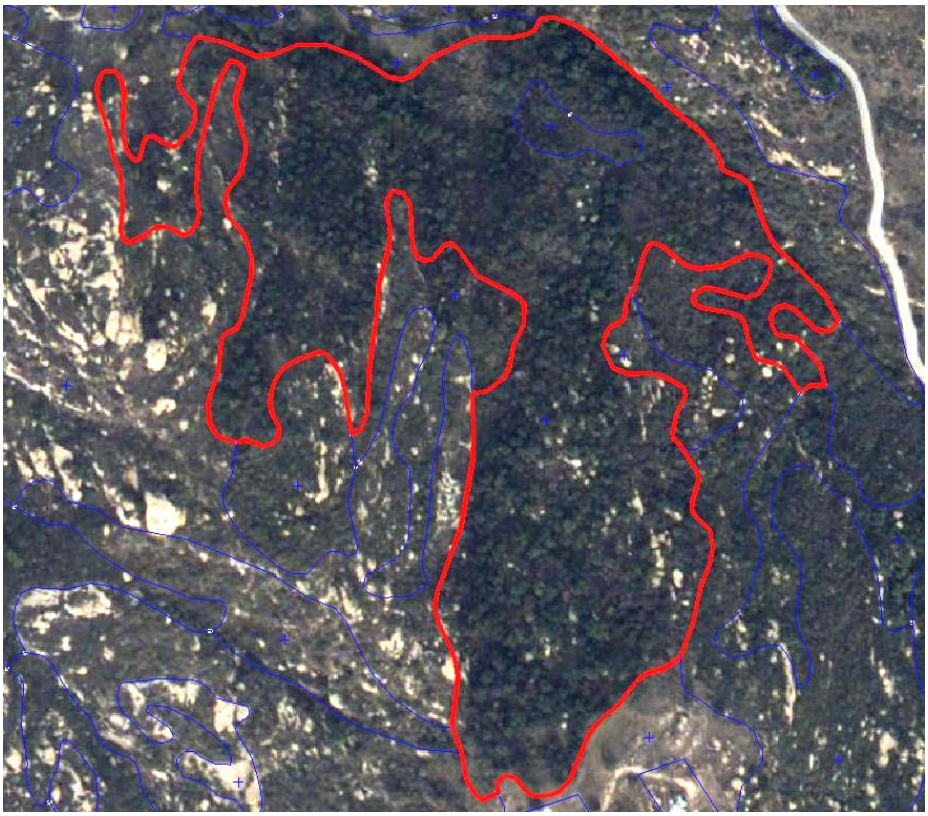
PHOTO INTERPRETATION SIGNATURE: The stands appear as open to continuous trees and tall shrubs with very coarse texture and color variations due to the dark *Q. agrifolia* and brighter *Umbellularia*. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with coarse texture. *Umbellularia* occurs as individual trees whose signature is typically bright green to medium green with large rough-textured wide crowns showing pronounced bumpy surfaces; sometimes crowns are rounded with spiral tops. The crowns are usually taller than most tall shrubs.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

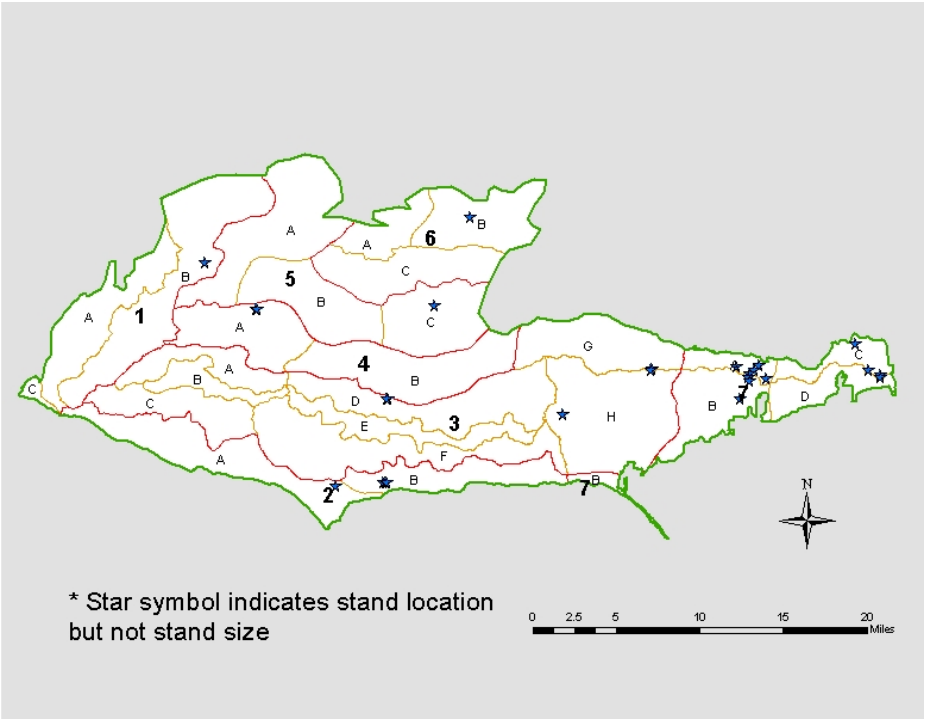
- *Quercus agrifolia* Woodland/Forest Superassociation (1113)
- *Quercus agrifolia/Ceanothus spinosus* Woodland/Forest Association (1118)
- *Quercus agrifolia-Umbellularia californica/Ceanothus oliganthus* Woodland/Forest Association (1119)
- *Umbellularia californica–Juglans californica/Ceanothus spinosus* Woodland/Forest Association (1011)

1115 – COAST LIVE OAK–CALIFORNIA WALNUT WOODLAND/FOREST ASSOCIATION

***Quercus agrifolia-Juglans californica* Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: *Quercus agrifolia-Juglans californica* Woodland/Forest Association occurs as sparse to intermittent cover of trees over a sparse to open shrub understory. In the overstory, *Q. agrifolia* and *Juglans* co-dominate, with *Q. agrifolia* at low to very high cover and *Juglans* at low to high cover. Tall and short shrubs may be present, usually each species at very low cover. *Toxicodendron diversilobum* may be present from very low to high cover. This association is found on mesic to dry-mesic north-facing gentle to steep slopes. The surface shape is usually concave to undulating, on bottoms to upper slopes. Because of the fairly dense overstory, this type is difficult to photo interpret, and can be confused with intermittent to dense tree canopy variations of other *Q. agrifolia* associations. In addition, *Juglans* can be difficult to distinguish from tall shrub species. This association was mapped only where Rapid Assessment Plot locations for this type were provided by the Park. Otherwise, this class was mapped as part of the *Quercus agrifolia* Woodland/Forest Superassociation (1113).

PHOTO INTERPRETATION SIGNATURE: The stand signature is usually a continuous very coarse cover of trees and tall shrubs, sometimes with openings. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with coarse texture. Tall shrubs (*Juglans, Heteromeles arbutifolia, Malosma laurina*) are large round-crowned individuals, usually medium green to dark green to black in color. *Toxicodendron* varies in color from yellow to light green to dark dull green to reddish brown. *Mimulus aurantiacus,* which is reddish brown to orange-brown, can be confused with *Toxicodendron*.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

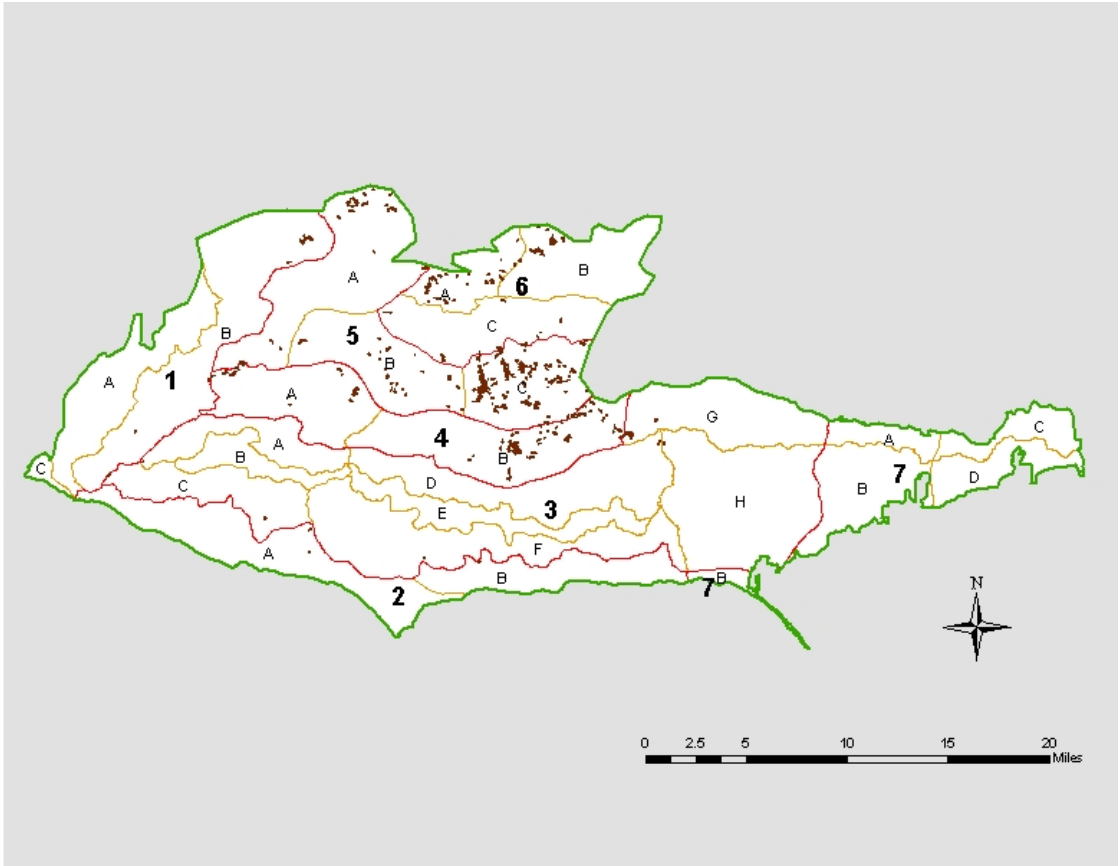
- *Quercus agrifolia* Woodland/Forest Superassociation (1113)
- *Quercus agrifolia–Umbellularia californica* Woodland/Forest Association (1114)
- *Quercus agrifolia/Toxicodendron diversilobum* Woodland/Forest Association (1117)
- *Quercus agrifolia/Ceanothus spinosus* Woodland/Forest Association (1118)
- *Quercus agrifolia/Heteromeles arbutifolia* Woodland/Forest Association (6117)
- *Quercus agrifolia* South Coast Woodland/Forest Association (6122)
- *Juglans californica–(Quercus agrifolia)*/Tall Shrubs Woodland/Forest Superassociation (6314)

1116 – COAST LIVE OAK/PURPLE SAGE–CALIFORNIA SAGEBRUSH WOODLAND/ FOREST ASSOCIATION

***Quercus agrifolia/Salvia leucophylla-Artemisia californica* Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: *Quercus agrifolia/Salvia leucophylla-Artemisia californica* Woodland/Forest Association occurs as open cover of *Q. agrifolia* over open to intermittent *S. leucophylla* and/or *A. californica* coastal sage scrub. *Q. agrifolia* is dominant at low to high cover. Either *S. leucophylla* or *A. californica* can be the dominant understory shrub, and can vary greatly in relative proportion. Both species can be very low to high cover. *Juglans californica* can be present at very low cover. Other shrubs, including *Malosma laurina*, *Salvia mellifera*, and *Malacothamnus fasciculatus,* may be present at very low to low cover. *Hazardia squarrosa* and *Leymus condensatus* may be present at very low cover. Other grasses and herbs may also be present. This association is found on dry-mesic north-facing, gentle to moderate slopes. It can occur on convex to undulating surfaces on bottoms to upper slopes.

PHOTO INTERPRETATION SIGNATURE: The stand can appear as individuals or groups of large coarse dark trees over uneven or mottled short shrubs. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with coarse texture. *A. californica* is a short shrub with purple-brown color that can vary to gray, tan or dark gray-brown. *A. californica* can occur as individuals with little texture, or as homogeneous carpets with some texture. *S. leucophylla* is a short shrub with white to silver gray color and can appear as smooth-textured carpets of homogeneous color. Very often *A. californica* and *S. leucophylla* occur together as a mixture, either in a smooth-textured dense carpet of purple-rose color, or as carpets of one species with individuals or clumps of the other species visible within. Sometimes *H. squarrosa* is present as very short, slightly open shrubs with gray-tan to yellowish tan color. *Malacothamnus* may also be present as a scattered to clumpy gray green short shrub emergent over the other short shrubs. *Malosma* may also be present as round-crowned individual dull green, dark green, or medium green tall shrubs. They are sparsely scattered and emergent over the short shrubs.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Juglans californica/Artemisia californica/Leymus condensatus* Woodland/Forest Association (1317)
- *Quercus lobata–Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association (1323)
- *Artemisia californica-Salvia leucophylla* Shrubland Superassociation (3399)

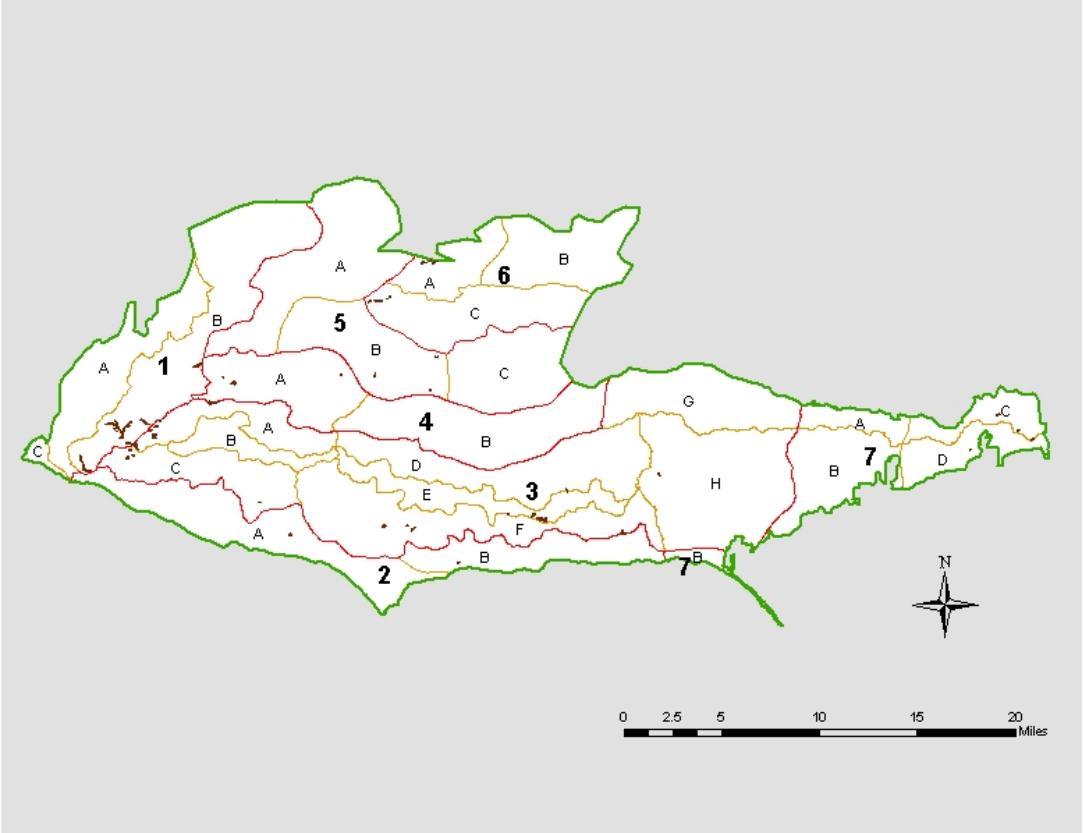
1117 – COAST LIVE OAK/POISON OAK WOODLAND/FOREST ASSOCIATION

***Quercus agrifolia/Toxicodendron diversilobum* Woodland/Forest Association**

6113 – *Quercus agrifolia/Mimulus aurantiacus* Phase



DISTRIBUTION:



DESCRIPTION: *Quercus agrifolia/Toxicodendron diversilobum* Woodland/Forest Association occurs as sparse to intermittent cover of trees over a sparse to open short shrub understory. In the overstory, *Q. agrifolia* is strongly dominant at moderate to very high cover. *Toxicodendron diversilobum* may approach high cover. *Mimulus aurantiacus* can be present and may approach moderate cover. This association is found on mesic to dry-mesic north-facing gentle to steep slopes. The surface shape is usually variable, on bottoms to upper slopes. Because of the fairly dense overstory, this type is difficult to photo interpret, and can be confused with intermittent to dense tree canopy of other *Q. agrifolia* associations. This association is mapped only where Rapid Assessment Plot locations for this type were provided by the Park. Otherwise, this class is mapped as part of the *Quercus agrifolia* Woodland/Forest Superassociation (1113). The *Quercus agrifollia/Mimulus aurantiacus* Phase is mapped where identifiable. The *Mimulus* phase is usually on rocky undulating to convex surfaces.

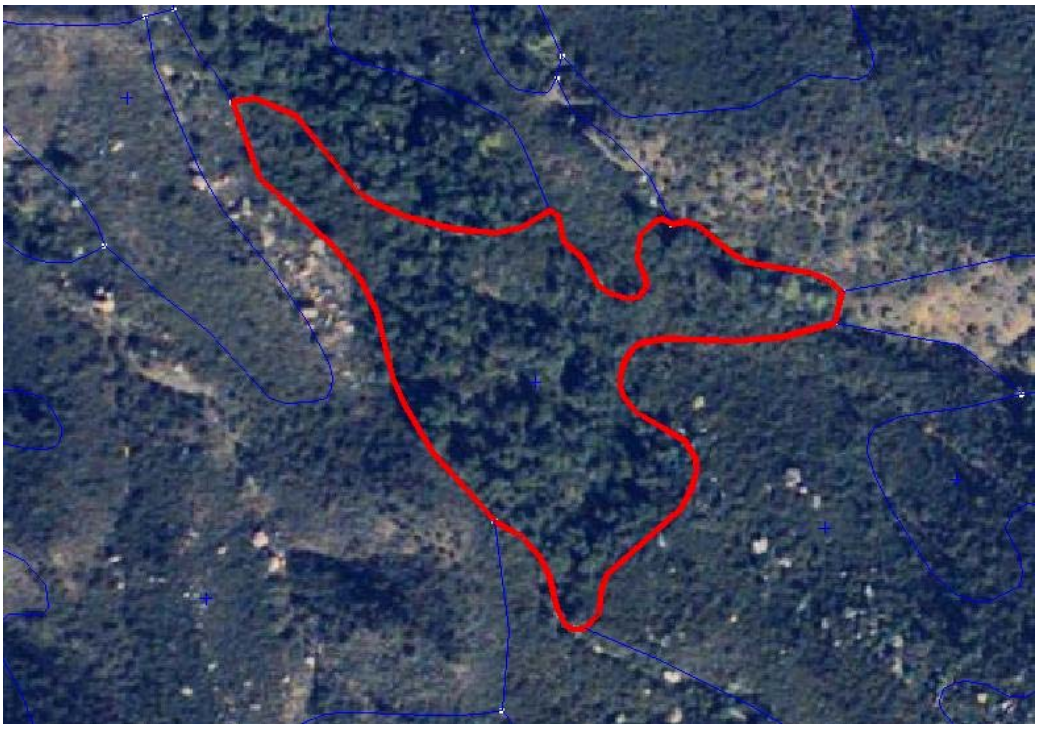
PHOTO INTERPRETATION SIGNATURE: The stand signature is usually a continuous very coarse cover of trees, sometimes with openings. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with coarse texture. *Toxicodendron* varies in color from yellow to light green to dark dull green to reddish brown. *Mimulus* is reddish brown to orange-brown and can be confused with *Toxicodendron*. Photo interpretation of the *Mimulus* phase is facilitated by its location on rockier upper slopes, as well as its distinctive color within an open tree overstory.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

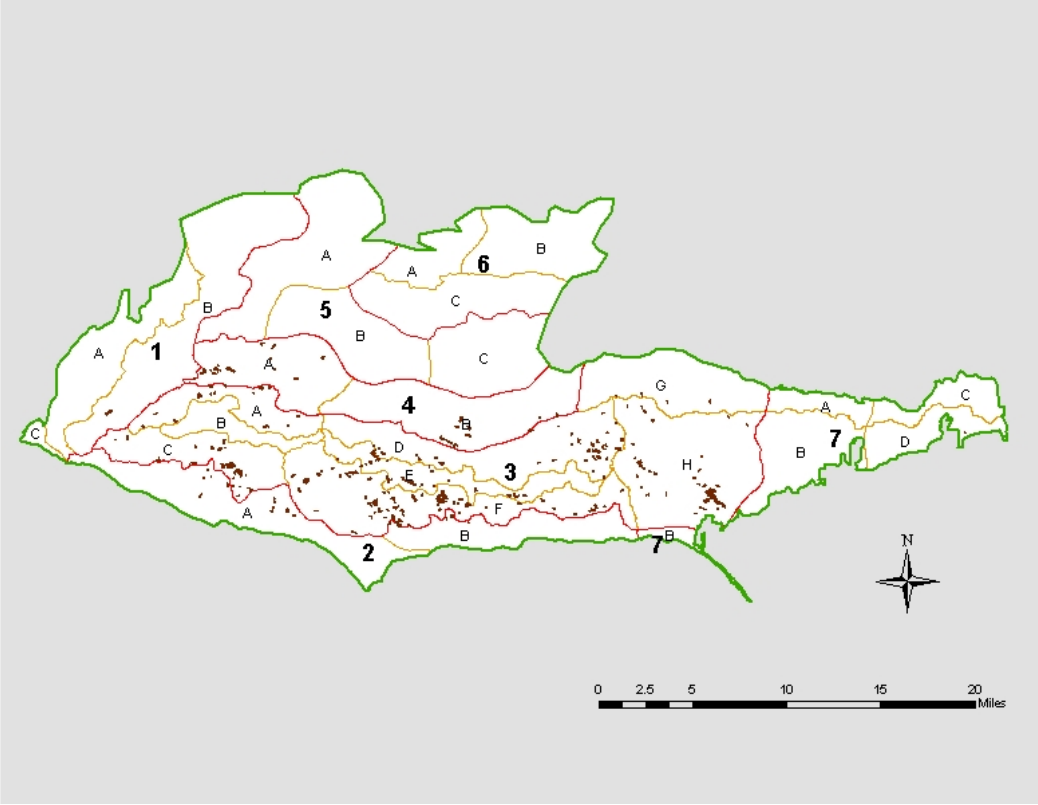
- *Quercus agrifolia* Woodland/Forest Superassociation (1113)
- *Quercus agrifolia–Umbellularia californica* Woodland/Forest Association (1114)
- *Quercus agrifolia/Juglans californica* Woodland/Forest Association (1115)
- *Quercus agrifolia/Ceanothus spinosus* Woodland/Forest Association (1118)
- *Quercus agrifolia/Heteromeles arbutifolia* Woodland/Forest Association (6117)
- *Quercus agrifolia* South Coast Woodland/Forest Association (6122)
- *Juglans californica–(Quercus agrifolia*)/Tall Shrubs Woodland/Forest Superassociation (6314)

1118 – COAST LIVE OAK/GREENBARK CEANOTHUS WOODLAND/FOREST ASSOCIATION

***Quercus agrifolia/Ceanothus spinosus* Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: *Quercus agrifolia/Ceanothus spinosus* Woodland/Forest Association typically appears as a sparse to open canopy of *Q. agrifolia* over an intermittent to dense understory of *C. spinosus*. *Q. agrifolia* has a moderate to high cover. *C. spinosus* has a moderate to very high cover. This association is found on mesic north-facing gentle to moderate slopes. It favors concave to undulating surfaces on bottoms to upper slopes.

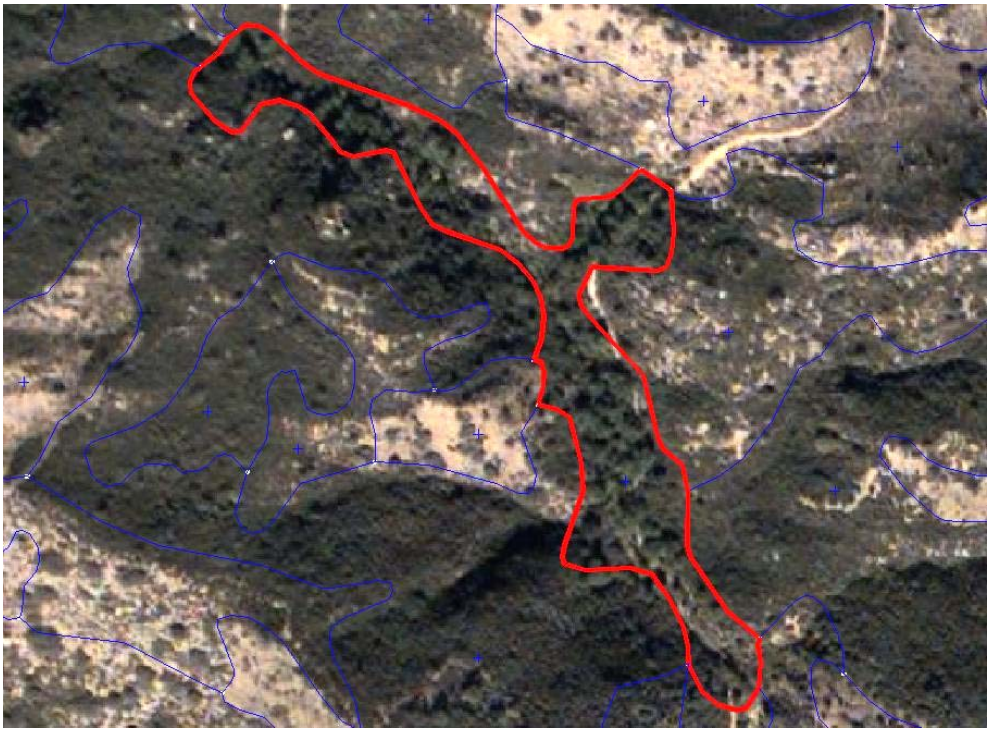
PHOTO INTERPRETATION SIGNATURE: The stand can appear as individuals or groups of large coarse dark trees over a homogeneous smoothly textured understory. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with some coarse texture. *C. spinosus* is typically dark green or olive green in color with a homogeneous texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

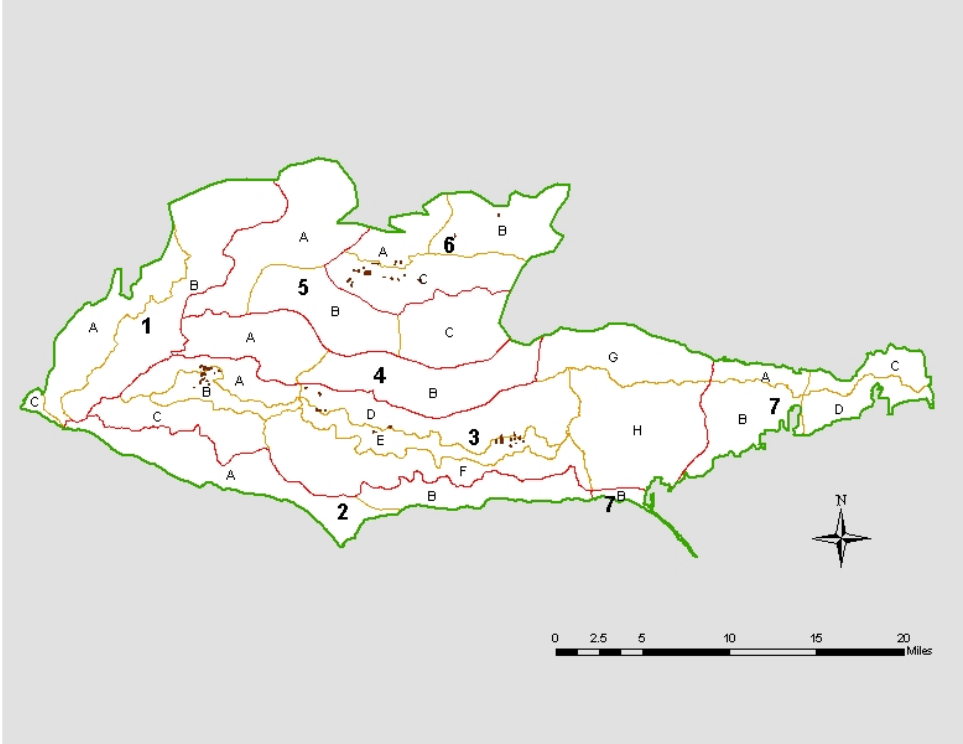
- *Juglans californica/Ceanothus spinosus* Woodland/Forest Association (1315)
- *Umbellularia californica–Juglans californica/Ceanothus spinosus* Woodland/Forest Association (1011)
- *Quercus agrifolia–Umbellularia californica/Ceanothus oliganthus* Woodland/Forest Association (1119)
- *Ceanothus spinosus* Shrubland Association (2092)

1119 – COAST LIVE OAK–CALIFORNIA BAY/HAIRYLEAF CEANOTHUS WOODLAND/FOREST ASSOCIATION

***Quercus agrifolia-Umbellularia californica/Ceanothus oliganthus* Woodland /Forest Association**



DISTRIBUTION:



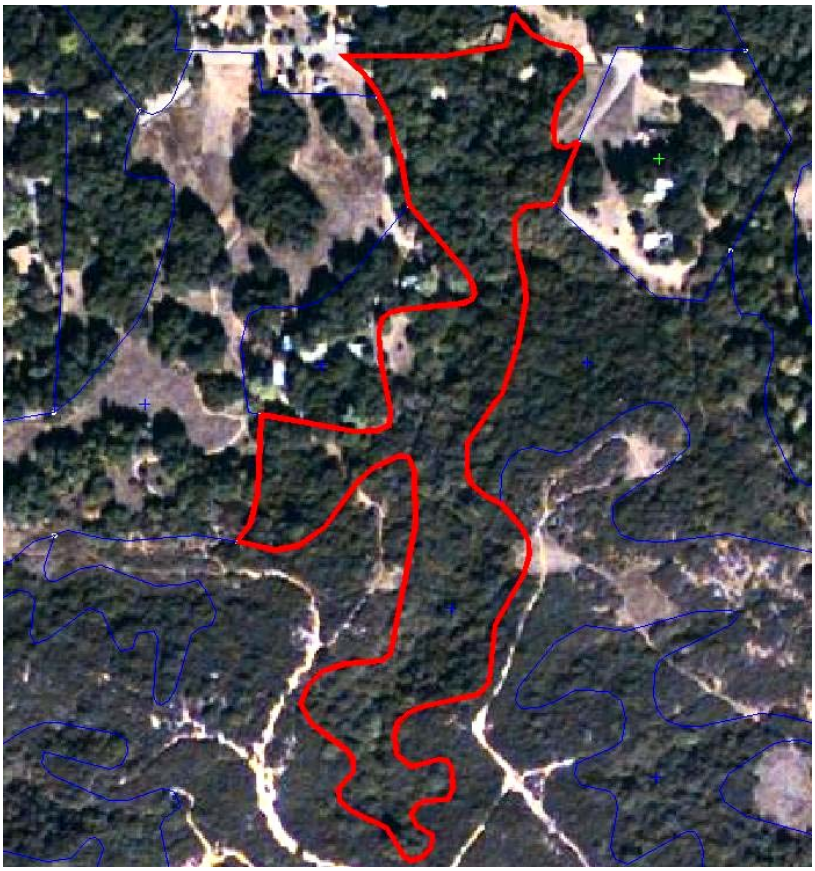
DESCRIPTION: *Quercus agrifolia - Umbellularia californica / Ceanothus oliganthus* Woodland/Forest Association occurs as open stands of *Q. agrifolia* over an open to dense understory of *C. oliganthus*, sometimes with other tall shrubs present. *Umbellularia* may be present in the overstory or understory, at very low to high cover. *Q. agrifolia* is of moderate to high cover. *C. oliganthus* is of low to high cover. This association typically occurs on dry-mesic north-facing gentle to moderate slopes. It favors concave to neutral surfaces on bottoms to upper slopes. This type is rare and forms small stands.

PHOTO INTERPRETATION SIGNATURE: The stand can appear as individuals or groups of large coarse dark trees over a homogeneous smoothly textured understory. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with some coarse texture. *Umbellularia* occurs as individual trees whose signature is typically bright green to medium green with large rough textured wide crowns showing pronounced bumpy surfaces; sometimes crowns are rounded with spiral tops. Their crowns are usually taller than most tall shrubs. *C. oliganthus* is dark brown-black or yellowish olive green, with fairly homogeneous texture.

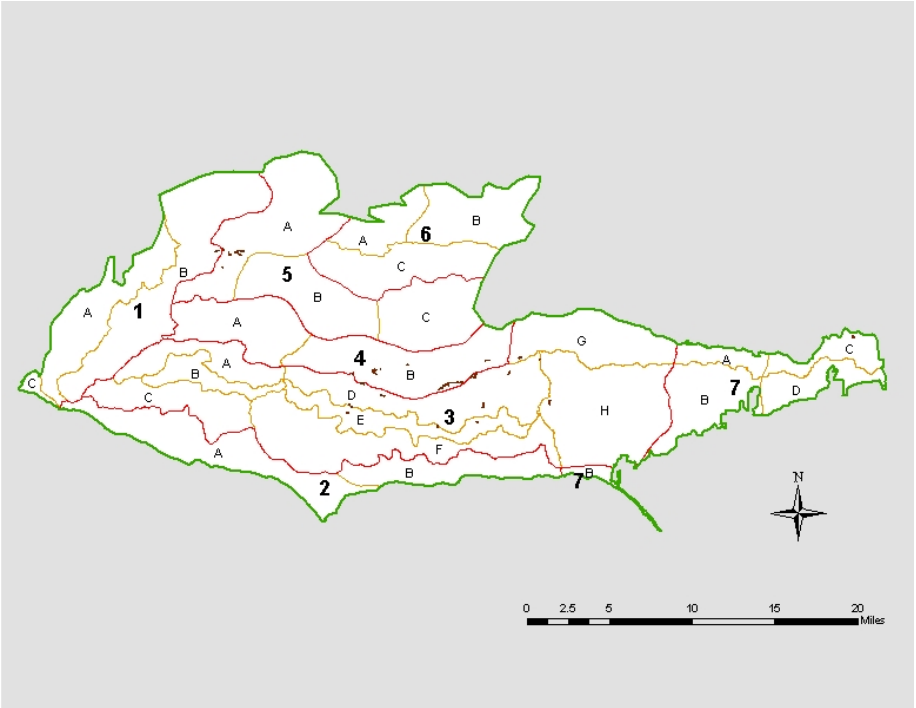
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia–Umbellularia californica* Woodland/Forest Association (1114)
- *Quercus agrifolia/Ceanothus spinosus* Woodland/Forest Association (1118)
- *Juglans californica/Ceanothus spinosus* Woodland/Forest Association (1315)
- *Ceanothus oliganthus* Shrubland Association (2072)
- *Ceanothus oliganthus*–Tall Shrubs Shrubland Superassociation (7071)

6112 – COAST LIVE OAK/SCRUB OAK WOODLAND/FOREST ASSOCIATION
Quercus agrifolia/Quercus berberidifolia Woodland/Forest Association



DISTRIBUTION:



DESCRIPTION: *Quercus agrifolia/Quercus berberidifolia* Woodland/Forest Association occurs as sparse to open stands of *Q. agrifolia* over open understory of *Q. berberidifolia*. *Q. agrifolia* is of moderate to high cover. *Q. berberidifolia* is of low to high cover. Other shrubs may be present in very low amounts. This association can be found on dry to dry-mesic north-facing bottoms and lower slopes of gentle to moderate steepness and undulating to concave surface shape. This type is sometimes adjacent to *Q. berberidifolia* shrubland. It is a rare type and of limited extent.

PHOTO INTERPRETATION SIGNATURE: The stand signature is usually an open very coarse cover of trees and tall shrubs. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with some coarse texture. The *Q. berberidifolia* signature is medium to dark green individuals with rounded crowns and a coarse texture.

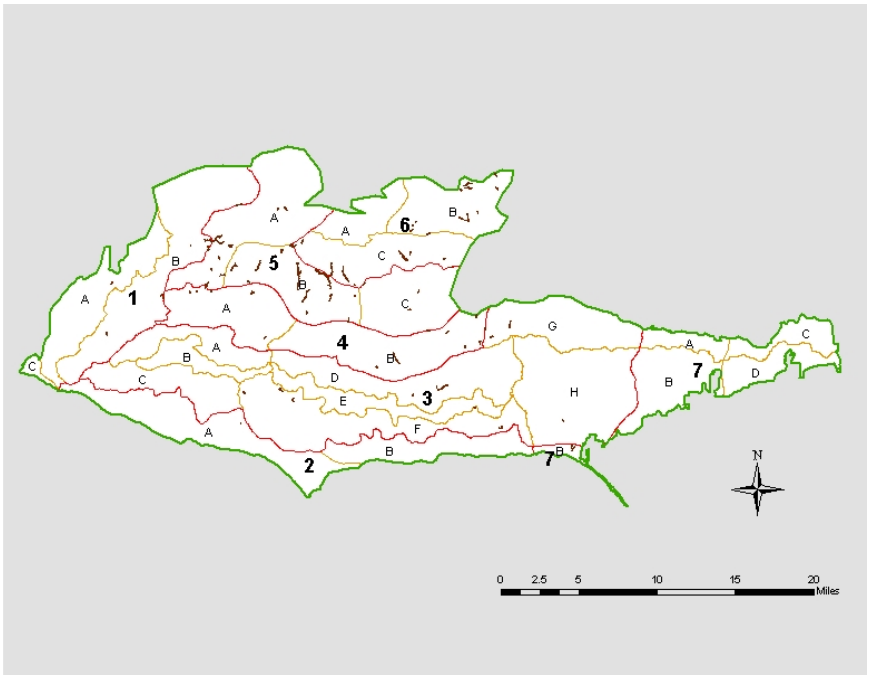
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia* Woodland/Forest Superassociation (1113)
- *Quercus agrifolia/Ceanothus spinosus* Woodland/Forest Association (1118)
- *Quercus agrifolia-Umbellularia californica* Woodland/Forest Association (1114)
- *Quercus agrifolia–Umbellularia californica/Ceanothus oliganthus* Woodland/Forest Association (1119)
- *Quercus berberidifolia* Shrubland Association (2161)
- *Quercus berberidifolia–Ceanothus spinosus* Shrubland Association (2167)

6114 – COAST LIVE OAK–ARROYO WILLOW WOODLAND/FOREST ASSOCIATION
Quercus agrifolia-Salix lasiolepis Woodland/Forest Association



DISTRIBUTION:



DESCRIPTION: *Quercus agrifolia-Salix lasiolepis* Woodland/Forest Association occurs as open to continuous stands of trees with *Q. agrifolia* dominant and *Salix* spp. sub-dominant to co-dominant. *Q. agrifolia* is of high to very high cover. *Salix* spp. are of low to high cover. Open to sparse shrubs or short trees may be visible in the openings of the tree canopy. This association is typically located in riparian corridors, and may be downstream from urban run-off. Slopes can be level to moderately steep.

PHOTO INTERPRETATION SIGNATURE: The stand appears as an uneven coarsely textured cover of trees with variable dark and light tones and occasional openings. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with some coarse texture. *Salix* spp. are gray-green to silver-highlighted green in tall dense clumps of variable to homogeneous texture.

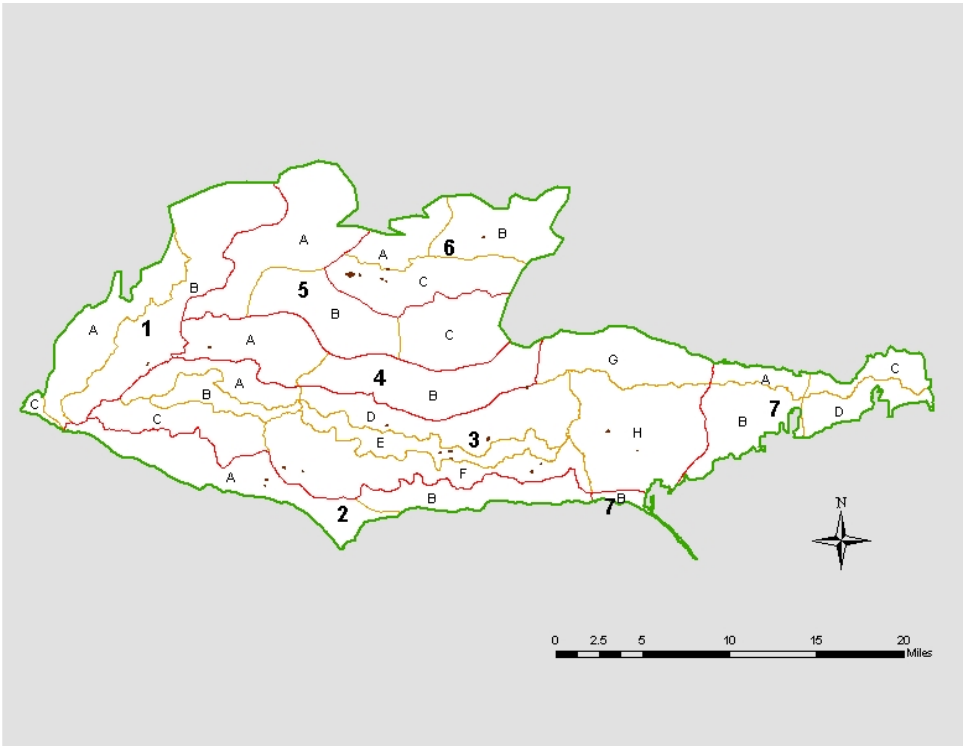
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia* Woodland/Forest Superassociation (1113)
- *Salix* spp. Woodland/Forest Superalliance (1410)
- *Platanus racemosa–Quercus agrifolia* South Coast Woodland/Forest Association (1452)
- *Platanus racemosa–Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6452)

6115 – COAST LIVE OAK/CHAMISE WOODLAND/FOREST ASSOCIATION
Quercus agrifolia/Adenostoma fasciculatum Woodland/Forest Association



DISTRIBUTION:



DESCRIPTION: *Quercus agrifolia/Adenostoma fasciculatum* Woodland/Forest Association occurs as sparse to open stands of *Q. agrifolia* over an understory of sparse to intermittent *A. fasciculatum*. *Q. agrifolia* is of moderate cover, while *A. fasciculatum* is of low to high cover. Other tall shrubs may also be present in the understory. Stands of other *A. fasciculatum* types may be adjacent. This association favors dry neutral to undulating surfaces on north-facing mid to upper slopes. Slopes can be moderately steep. This type has a rare occurrence with a limited areal extent.

PHOTO INTERPRETATION SIGNATURE: The stand signature is usually an open very coarse cover of trees over coarse open chaparral. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with some coarse texture. *A. fasciculatum* is red-brown to rusty red-brown, but can be dark reddish-brown. It usually occurs as individuals, with fine to slightly coarse edge texture.

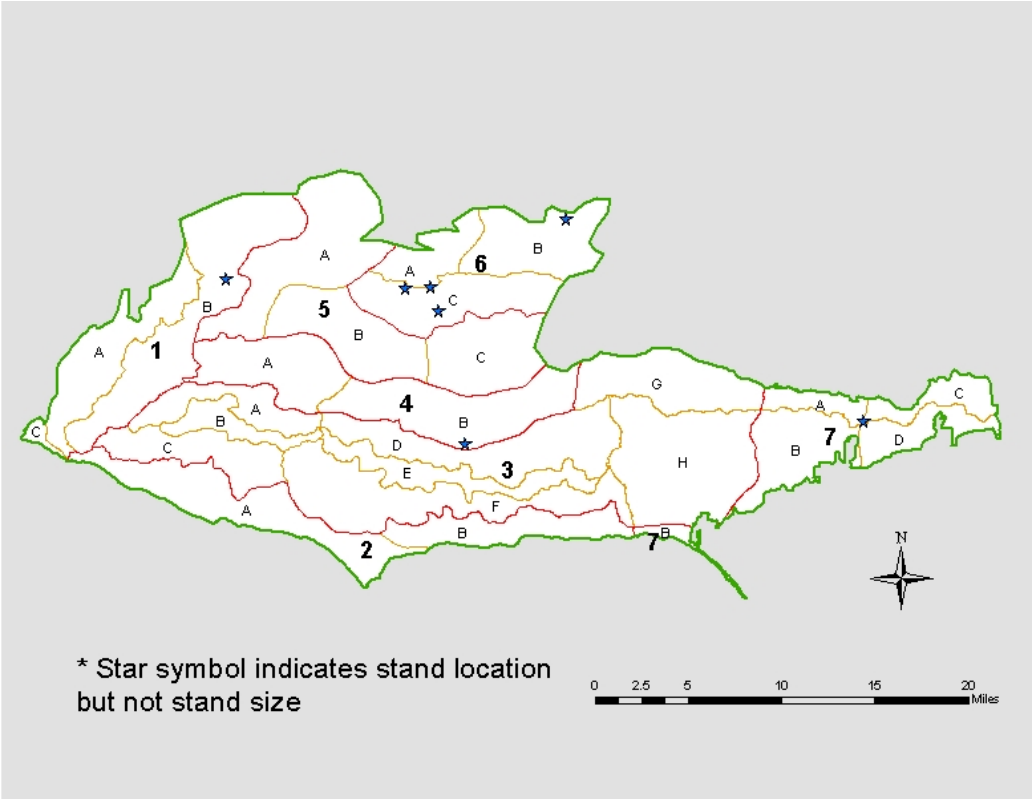
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum* Shrubland Association (2011)

6117 – COAST LIVE OAK/TOYON WOODLAND/FOREST ASSOCIATION
Quercus agrifolia/Heteromeles arbutifolia Woodland/Forest Association



DISTRIBUTION:



DESCRIPTION: *Quercus agrifolia/Heteromeles arbutifolia* Woodland/Forest Association occurs as sparse to intermittent cover of trees over a sparse to open tall shrub understory. In the overstory, *Q. agrifolia* is very dominant at moderate to high cover. Both *Heterormeles* and *Malosma laurina* can be present and may approach moderate cover. This association is found on dry-mesic north-facing moderate to steep slopes. The surface shape is usually undulating, on bottoms to upper slopes. Because of the fairly dense overstory, this type is difficult to photo interpret, and can be confused with dense tree canopy of other *Q. agrifolia* associations. In addition, the tall shrubs can be difficult to distinguish from *Juglans californica*. This association is mapped only where Rapid Assessment Plot locations for this type were provided by the Park. Otherwise, this class is mapped as part of the *Quercus agrifolia* Woodland/Forest Superassociation (1113).

PHOTO INTERPRETATION SIGNATURE: The stand signature is usually a continuous very coarse cover of trees and tall shrubs, sometimes with openings. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with some coarse texture. Tall shrubs (*Heteromeles* and *Malosma*) are large round-crowned individuals, usually medium green to dark green to black in color.

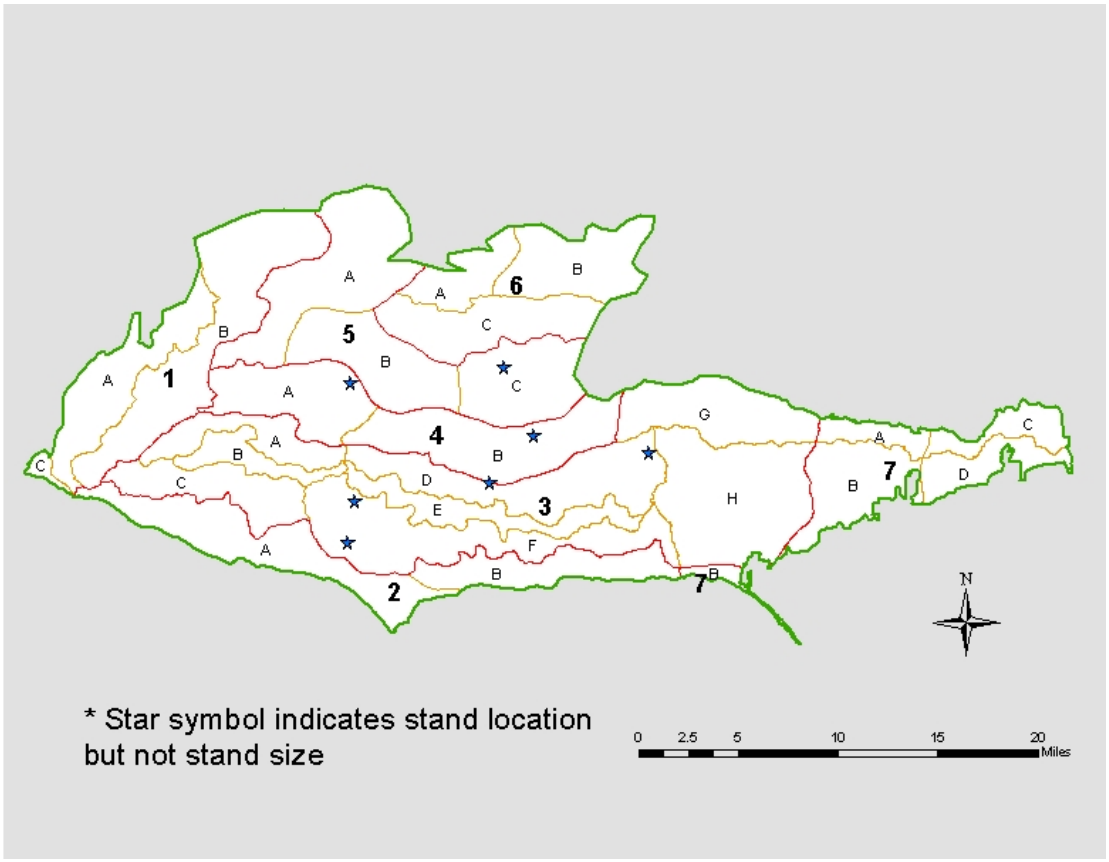
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia* Woodland/Forest Superassociation (1113)
- *Quercus agrifolia–Umbellularia californica* Woodland/Forest Association (1114)
- *Quercus agrifolia–Juglans californica* Woodland/Forest Association (1115)
- *Quercus agrifolia/Quercus berberidifolia* Woodland/Forest Association (6112)
- *Quercus agrifolia* South Coastal Woodland/Forest Association (6122)
- *Juglans californica–(Quercus agrifolia)*/Tall Shrubs Woodland/Forest Superassociation (6314)

6122 – COAST LIVE OAK SOUTH COASTAL WOODLAND/FOREST ASSOCIATION
Quercus agrifolia South Coastal Woodland/Forest Association



DISTRIBUTION:



DESCRIPTION: *Quercus agrifolia* South Coastal Woodland/Forest Association typically occurs as open to continuous cover of trees over sparse shrubs or herbaceous plants. *Q. agrifolia* is strongly dominant in the overstory at moderate to very high cover. Tall and/or short shrubs may be present at very low cover. This association is found on dry north-facing gentle to moderately steep slopes. The surface shape is typically concave, on bottoms to upper slopes. Because of the fairly dense overstory and sparse understory cover, this type is difficult to photo interpret, and can be confused with dense tree canopy of other *Q. agrifolia* associations. This association is mapped only where Rapid Assessment Plot locations for this type were provided by the Park. Otherwise, this class is mapped as part of the *Quercus agrifolia* Woodland/Forest Superassociation (1113).

PHOTO INTERPRETATION SIGNATURE: The stand signature is usually a continuous very coarse cover of trees. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with some coarse texture.

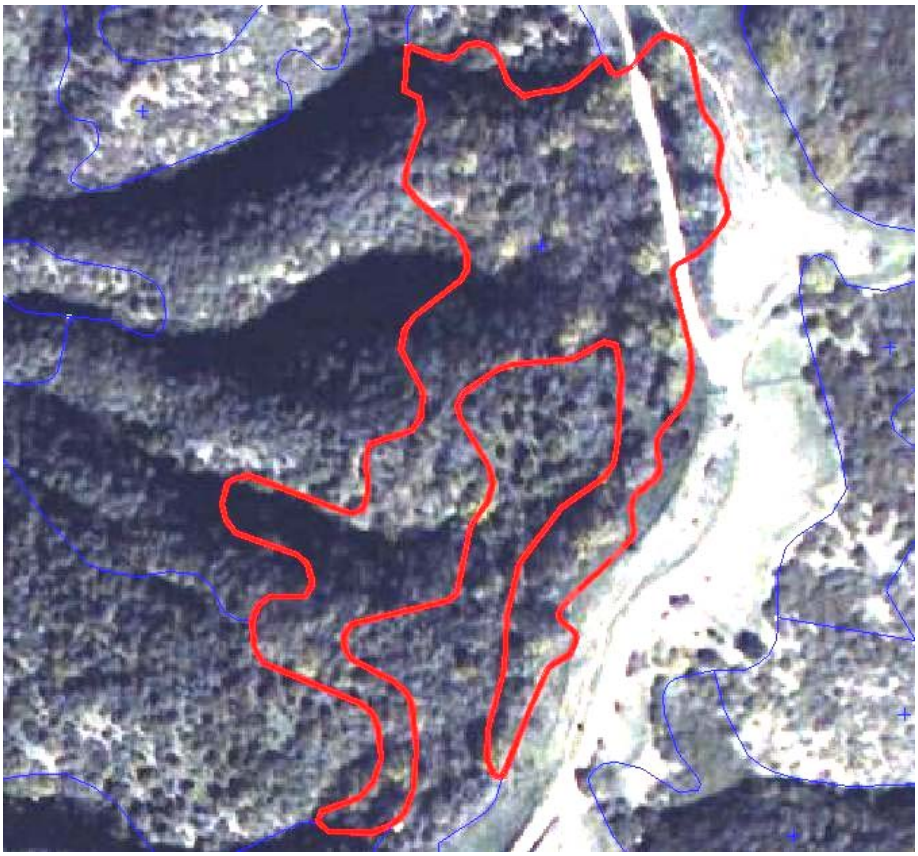
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia* Woodland/Forest Superassociation (1113)
- *Quercus agrifolia–Umbellularia californica* Woodland/Forest Association (1114)
- *Quercus agrifolia–Juglans californica* Woodland/Forest Association (1115)
- *Quercus agrifolia/Toxicodendron diversilobum* Woodland/Forest Association (1117)
- *Quercus agrifolia/Heteromeles arbutifolia* Woodland/Forest Association (6117)
- *Juglans californica–(Quercus agrifolia)*/Tall Shrubs Woodland/Forest Superassociation (6314)

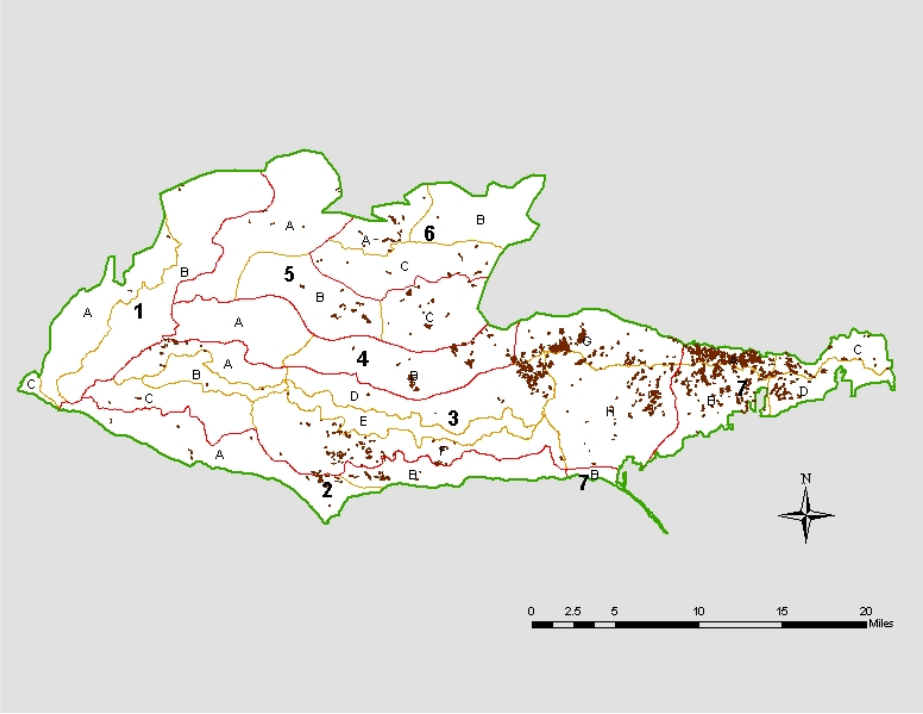
CALIFORNIA WALNUT WOODLAND/FOREST ALLIANCE



1310 – CALIFORNIA WALNUT WOODLAND/FOREST ALLIANCE
Juglans californica Woodland/Forest Alliance



DISTRIBUTION:



DESCRIPTION: *Juglans californica* Woodland/Forest Alliance represents the hierarchical class into which all *Juglans* association types are nested. This alliance is characterized by sparse to continuous stands of *Juglans* as the dominant tree in a sparse to intermittent canopy. *Quercus agrifolia* may also be present at very low to low cover. The understory can include tall shrubs, such as *Malosma laurina, Heteromeles arbutifolia*, or *Ceanothus spinosus*; or coastal sage scrub, including *Artemisia californica* and/or *Salvia leucophylla*. Other stands may have an understory of grasses. The alliance can occur on dry to mesic north-facing variable surfaces on gentle to steep slopes, occupying bottoms to upper slopes. Occurrences on southerly aspects are also possible. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *Juglans* as the dominant tree are included.

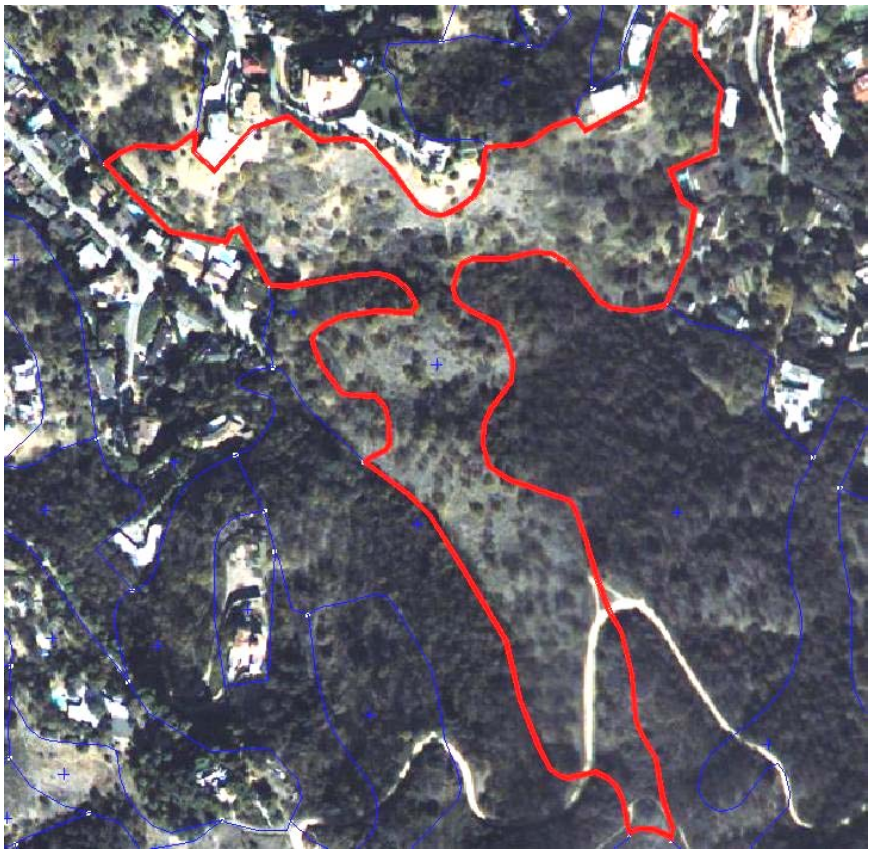
PHOTO INTERPRETATION SIGNATURE: Stands appear as coarsely textured uneven trees over tall or short shrubs or grass. *Juglans* is a round crowned short tree occurring in open to dense stands. The crown can have finely textured edges, with a dark green to medium green color. Tall shrubs appear as coarse individuals and vary in color from dark green to medium green. Short shrubs are continuous to clumpy with purple-brown to white-gray color. Grasslands are smooth with various shades of light tan to brown.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

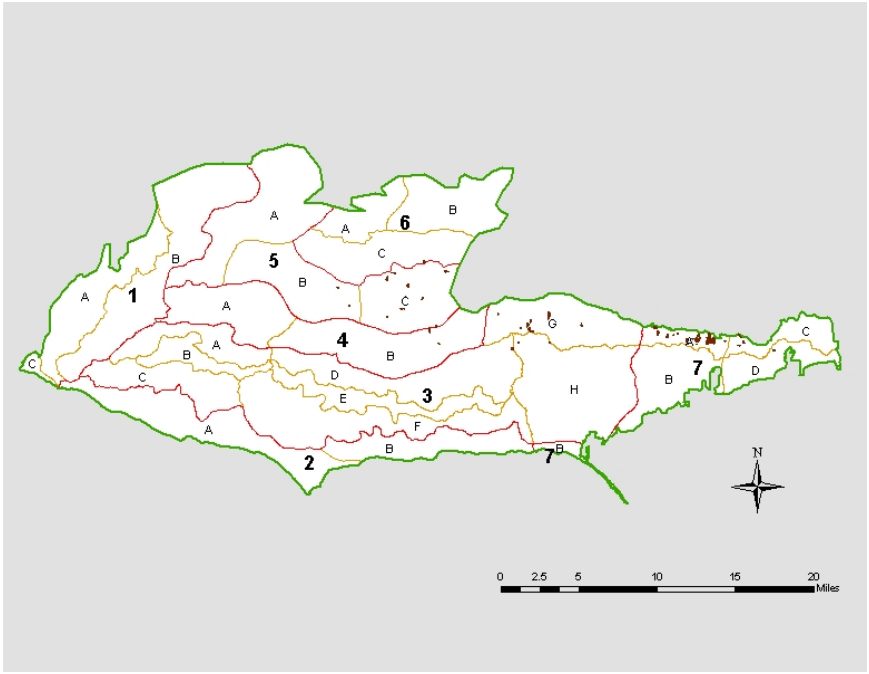
- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- *Umbellularia californica* Woodland/Forest Alliance (1010)
- *Salix* spp. Woodland/Forest Superalliance (1410)
- *Platanus racemosa* Woodland/Forest Alliance (1450)
- *Ceanothus spinosus* Shrubland Alliance (2090)

1312 – CALIFORNIA WALNUT/ANNUAL GRASS-HERB WOODLAND/FOREST ASSOCIATION

***Juglans californica*Annual Grass-Herb Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: *Juglans californica*/Annual Grass-Herb Woodland/Forest Association occurs as sparse to open stands of *Juglans* over grasses and herbaceous plants. *Juglans* is the dominant tree at moderate to high cover. Other trees or shrubs may be present at very low cover. The herbaceous layer is open to continuous. This association occupies dry moderate to steep lower to upper slopes with variable aspect.

PHOTO INTERPRETATION SIGNATURE: The stand appears as scattered trees or groups of coarse trees over smooth grassland. *Juglans* is a round crowned short tree. The crown can have finely textured edges, with a dark green to medium green color. Grasslands are smooth textured, very short homogeneous to mosaicked or mottled carpets of light tan to light brown shades.

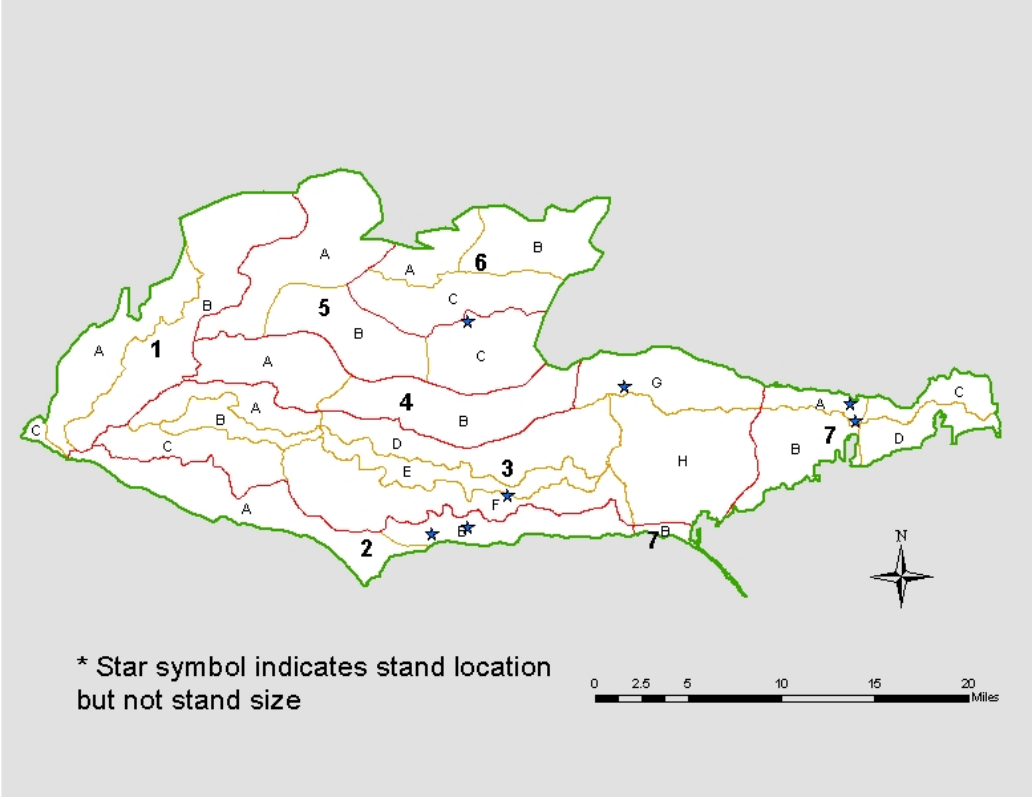
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association (1111)
- California Annual Grassland/Herbaceous Alliance (5000)

1314 – CALIFORNIA WALNUT/LAUREL SUMAC WOODLAND/FOREST ASSOCIATION
Juglans californica/Malosma laurina Woodland/Forest Association



DISTRIBUTION:



DESCRIPTION: *Juglans californica/Malosma laurina* Woodland/Forest Association occurs as open to continuous stands of *Juglans* over *Malosma* as the dominant shrub. *J. californica* is the dominant tree in an open canopy at low to moderate cover. *Malosma* is at low to high cover. This association occurs on mesic north-facing drainages and concave slopes. It can occupy gently sloping bottoms to steep upper slopes. In stands with a dense overstory it is difficult to determine the understory by photo interpretation. In addition, *M. laurina* may appear similar to *Heteromeles arbutifolia* and *Juglans*. In some areas, *Quercus agrifolia* and *Juglans* may also be confused with each other. Therefore, this class is mapped as part of the *Juglans californica-(Quercus agrifolia)*/Tall Shrubs Woodland/Forest Superassociation (6314) unless Rapid Assessment Plot locations for this type were provided by the Park.

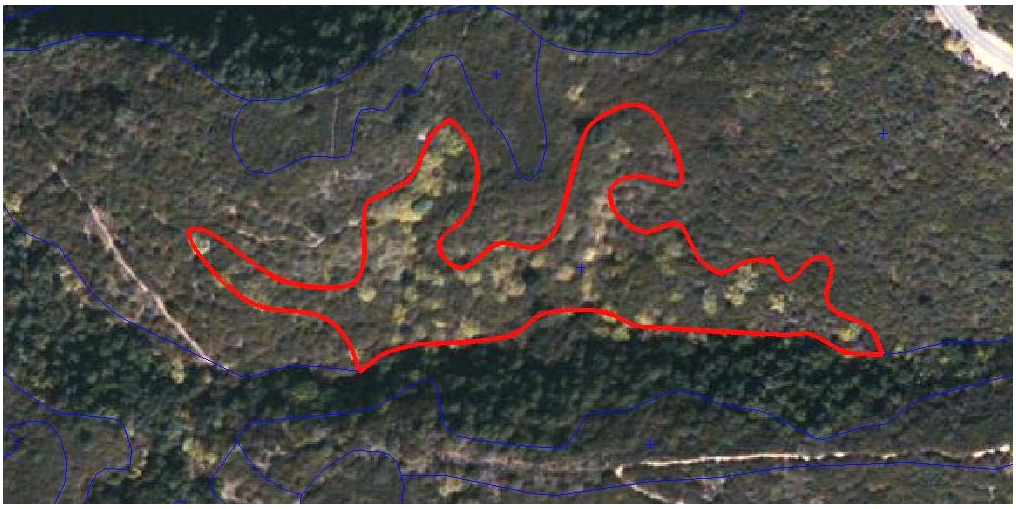
PHOTO INTERPRETATION SIGNATURE: The stand appears as coarse uneven trees over tall shrubs. *J. californica* is a round crowned short tree. The crown can have finely textured edges, with a dark green to medium green color. Tall shrubs (*Heteromeles and Malosma*) are large round crowned individuals, usually medium green to dark green to black in color.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

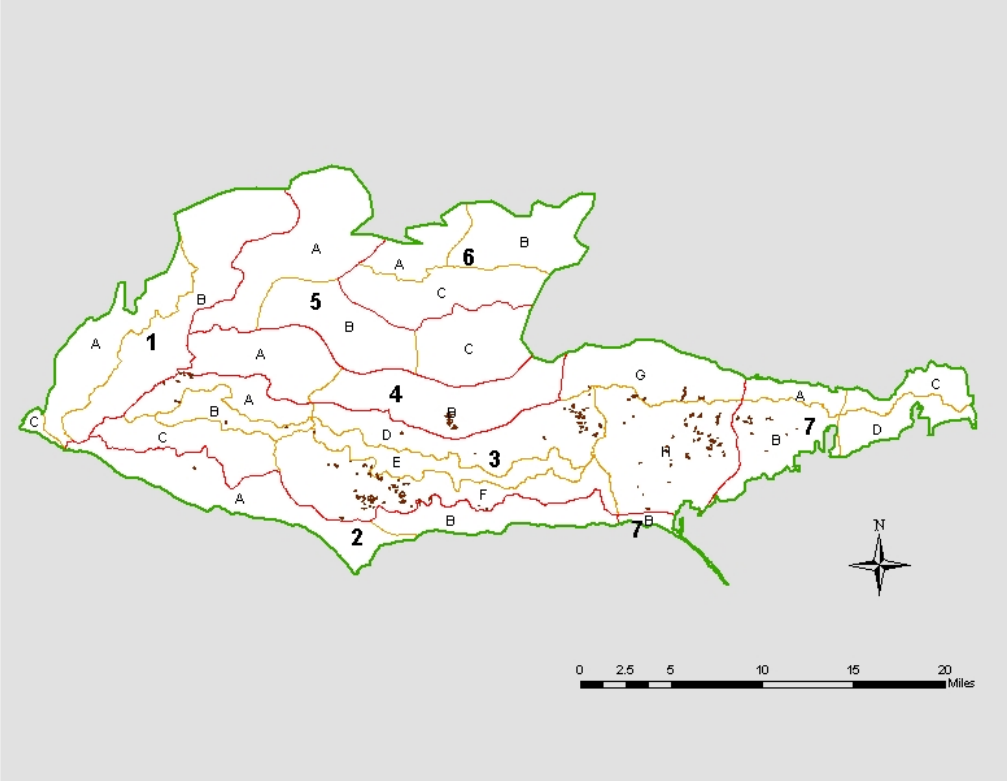
- *Juglans californica–(Quercus agrifolia)*/Tall Shrubs Woodland/Forest Superassociation (6314)
- *Malosma laurina* Shrubland Alliance (2140)
- *Quercus agrifolia* Woodland/Forest Superassociation (1113)
- *Juglans californica/Heteromeles arbutifolia* Woodland/Forest Association (6312)

1315 – CALIFORNIA WALNUT/GREENBARK CEANOTHUS WOODLAND/FOREST ASSOCIATION

***Juglans californica/Ceanothus spinosus* Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: *Juglans californica/Ceanothus spinosus* Woodland/Forest Association typically appears as a sparse to open canopy of *J. californica* over an intermittent to dense understory of *C. spinosus*. *Juglans* is the dominant tree with a low to high cover. *C. spinosus* is the dominant shrub and has a moderate to very high cover. This association is usually found on mesic north-facing moderate to steep slopes. It favors undulating to variable surfaces on bottoms to upper slopes.

PHOTO INTERPRETATION SIGNATURE: The stand usually appears as scattered trees or groups of coarse trees over a smooth understory of chaparral. *Juglans* is a round-crowned short tree. The crown can have finely textured edges, with a dark green to medium green color. *C. spinosus* is typically dark green or olive green in color with a homogeneous texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

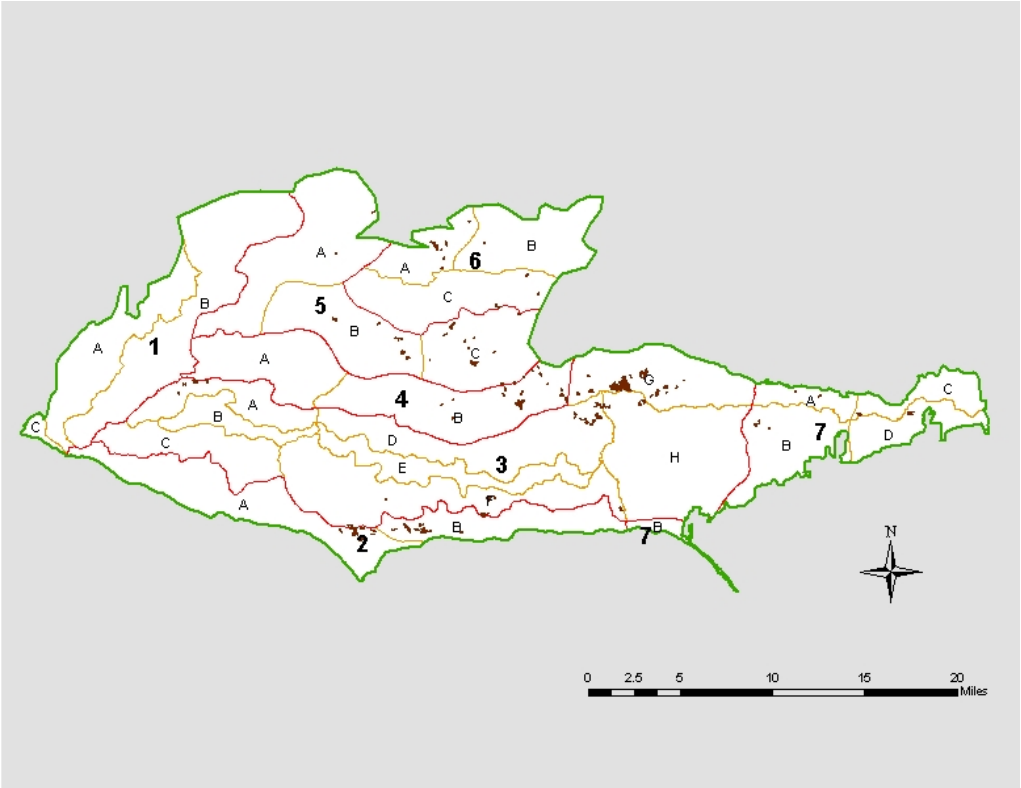
- *Quercus agrifolia/Ceanothus spinosus* Woodland/Forest Association (1118)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Umbellularia californica-Juglans californica/Ceanothus spinosus* Woodland/Forest Association (1011)

1317 – CALIFORNIA WALNUT/CALIFORNIA SAGEBRUSH/GIANT WILD RYE WOODLAND/FOREST ASSOCIATION

***Juglans californica/Artemisia californica/Leymus condensatus* Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: *Juglans californica/Artemisia californica/Leymus condensatus* Woodland/Forest Association occurs as open cover of *Juglans* over open to dense *Salvia leucophylla* and/or *A. californica* coastal sage scrub. *J. californica* is dominant at moderate to high cover. Either *S. leucophylla* and *A. californica* can be the dominant understory shrub, or can vary greatly in relative proportion. Both species can be very low to high cover. *L. condensatus* is usually present, while *Toxicodendron diversilobum, Malocothamnus fasciculatus,* and *Mimulus aurantiacus* may be present at very low to moderate cover. *Hazardia squarrosa*, *Malosma laurina*, grasses and herbs may also be present. This association is found on dry-mesic north-facing, gentle to steep slopes. It can occur on convex to undulating lower to upper slopes.

PHOTO INTERPRETATION SIGNATURE: The stand will appear as open coarse trees over coarse short shrubs. *Juglans* is a round crowned short tree. The crown can have finely textured edges, with a dark green to medium green color. *A. californica* is a short shrub with purple-brown color. *A. californica* can occur as individuals with little texture, or as homogeneous carpets with some texture. *S. leucophylla* is a short shrub with white to silver gray color and can occur as smooth textured carpets of homogeneous color. Very often *A. californica* and *S. leucophylla* occur together as a mixture in a smooth textured dense carpet of purple-rose color, or as carpets of one species with individuals or clumps of the other species visible within. Sometimes *Hazardia* is present as very short, slightly open shrubs with gray-tan to yellowish tan color. *Malacothamnus* may also be present as scattered to clumpy gray green short shrubs emergent over the other short shrubs. *Malosma* may also be present as round-crowned, individual dull green, dark green, or medium green tall shrubs sparsely scattered and emergent over the short shrubs.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

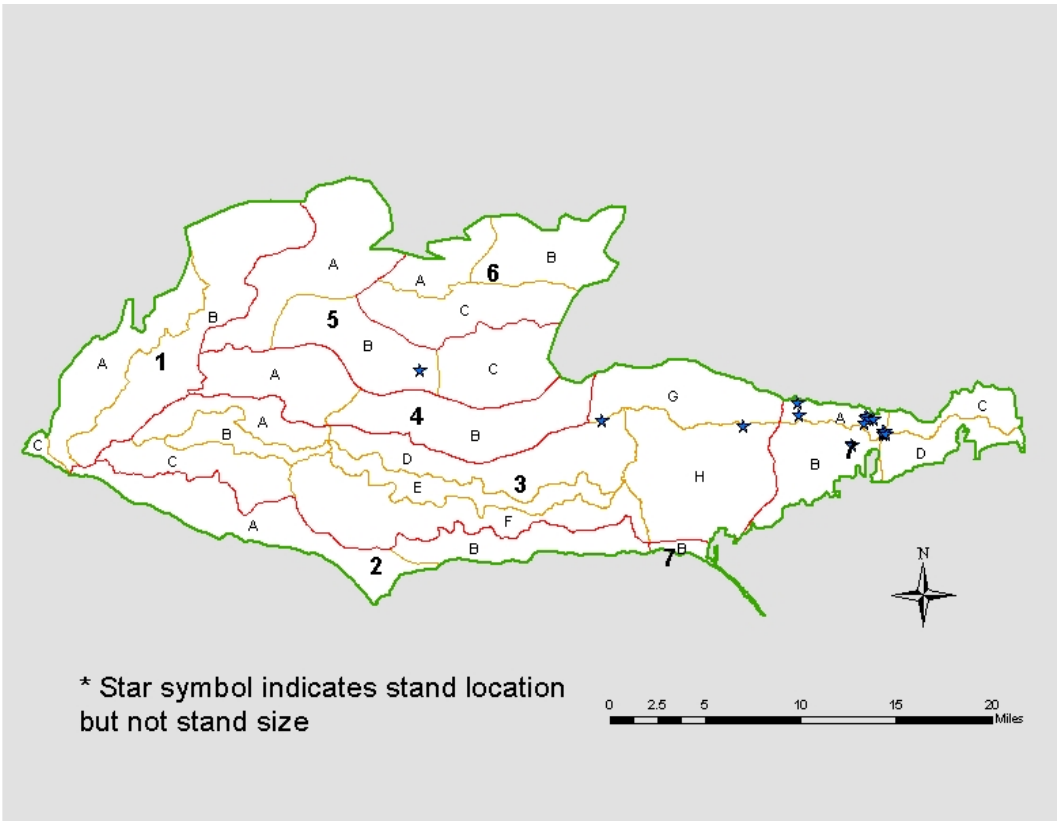
- *Quercus agrifolia/Salvia leucophylla–Artemisia californica* Woodland/Forest Association (1116)
- *Malosma laurina–Artemisia californica* Shrubland Association (7148)
- *Rhus ovata–Salvia leucophylla–Artemisia californica* Shrubland Association (2192)

6312 – CALIFORNIA WALNUT/TOYON WOODLAND/FOREST ASSOCIATION

***Juglans californica/Heteromeles arbutifolia* Woodland/Forest Association**



DISTRIBUTION:



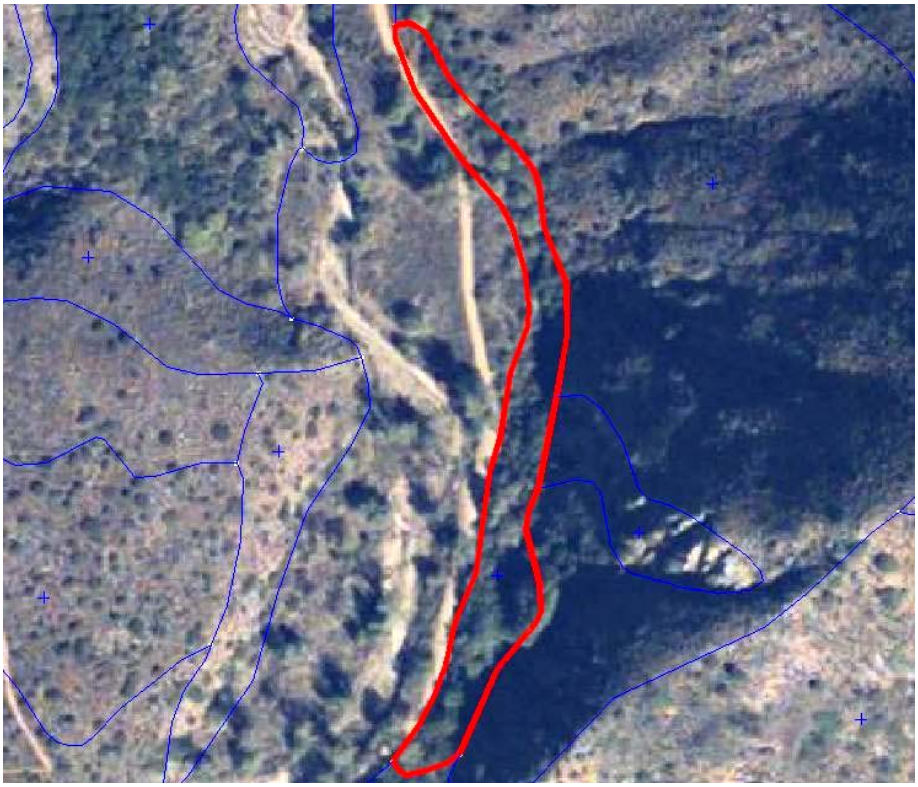
DESCRIPTION: *Juglans californica/Heteromeles arbutifolia* Woodland/Forest Association occurs as open to dense stands of *Juglans* over *Heteromeles* as the dominant shrub. *Juglans* is the dominant tree in an open canopy at low to high cover. *H. arbutifolia* is at low to high cover. Other tall shrubs, including *Malosma laurina, Rhus ovata,* and *Ceanothus spinosus,* may be present at very low to low cover. *Quercus agrifolia* may also be present at very low to low cover. This association occurs on mesic north-facing undulating surfaces on bottoms to upper slopes. In stands with a dense overstory it is difficult to discern the understory. In addition, *Malosma*, *Heteromeles* and *Juglans* may appear similar to each other. In some areas *Quercus agrifolia* and *Juglans* may also be confused with each other. Therefore, this class is mapped as part of the *Juglans californica-(Quercus agrifolia)*/Tall Shrubs Woodland/Forest Superassociation (6314) unless Rapid Assessment Plot locations for this type were provided by the Park.

PHOTO INTERPRETATION SIGNATURE: The stand appears as coarse uneven trees over tall shrubs. *J. californica* is a round crowned short tree. The crown can have finely textured edges, with a dark green to medium green color. Tall shrubs (*Heteromeles and Malosma*) are large round-crowned individuals, usually medium green to dark green to black in color. *R. ovata* is also a tall shrub, with a bright green color and rounded crown. *C. spinosus* is typically dark green or olive green in color with a homogeneous texture. *Q. agrifolia* has a dark green color with a rounded, thick, billowy crown.

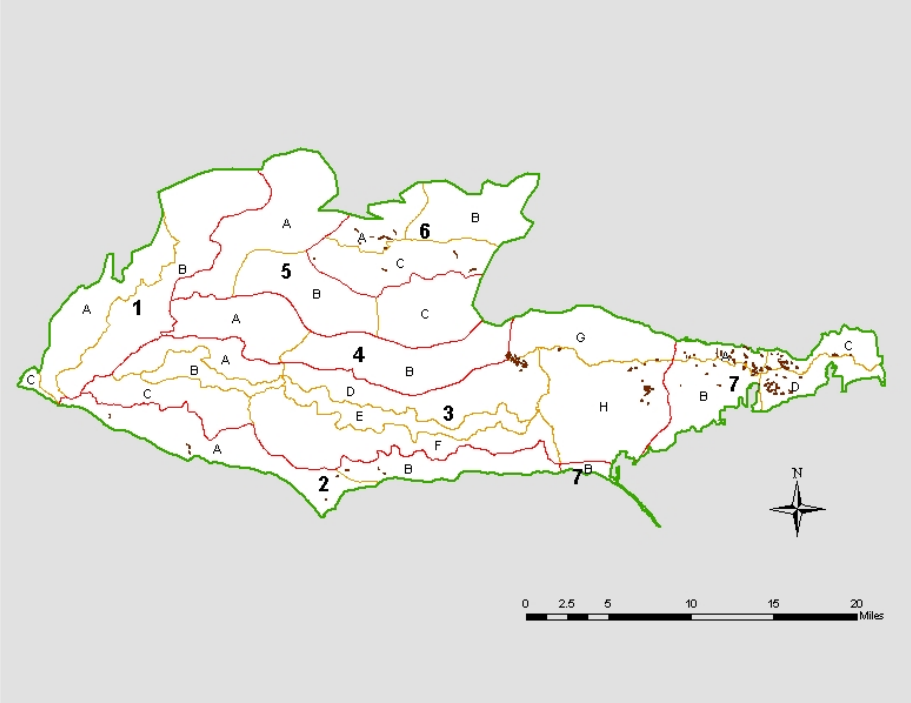
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Juglans californica–(Quercus agrifolia)*/Tall Shrubs Woodland/Forest Superssociation (6314)
- *Juglans californica/Malosma laurina* Woodland/Forest Association (1314)
- *Quercus agrifolia* Woodland/Forest Superassociation (1113)

6314 – CALIFORNIA WALNUT–(COAST LIVE OAK)/TALL SHRUBS WOODLAND/FOREST SUPERASSOCIATION
Juglans californica-(Quercus agrifolia)/Tall Shrubs Woodland/Forest Superassociation



DISTRIBUTION:



DESCRIPTION: *Juglans californica-(Quercus agrifolia)/*Tall Shrubs Woodland/Forest Superassociation occurs as open to dense stands of *Juglans* over tall shrubs, including *Malosma laurina* and *Heteromeles arbutifolia*. *Juglans* is the dominant tree in an open canopy at low to high cover. *Heteromeles* and *Malosma* each occur at low to high cover. Other tall shrubs, including *Rhus ovata* and *Ceanothus spinosus,* may be present at very low to low cover. *Quercus agrifolia* may also be present at very low to low cover. This superassociation occurs on mesic north-facing concave to undulating surfaces on bottoms to upper slopes. In stands with a dense overstory it is difficult to discern the understory. In addition, *Malosma*, *Heteromeles* and *Juglans* may appear similar to each other. In some areas *Q. agrifolia* and *Juglans* may also be confused with each other. This mapping unit is a superassociation of *Juglans californica/Malosma laurina* Woodland/Forest Association (1314), and *Juglans californica/Heteromeles arbutifolia* Woodland/Forest Association (6312).

PHOTO INTERPRETATION SIGNATURE: The stand appears as coarse uneven trees over tall shrubs. *Juglans* is a round crowned short tree. The crown can have finely textured edges, with a dark green to medium green color. Tall shrubs (*Heteromeles* and *Malosma*) are large round-crowned individuals, usually medium green to dark green to black in color. *R. ovata* is also a tall shrub, with a bright green color and rounded crown. *C. spinosus* is typically dark green or olive green in color with a homogeneous texture. *Q. agrifolia* has a dark green color with a rounded, thick, billowy crown.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Juglans californica/Malosma laurina* Woodland/Forest Association (1314)
- *Juglans californica/Heteromeles arbutifolia* Woodland/Forest Association (6312)
- *Quercus agrifolia* Woodland/Forest Superassociation (1113)

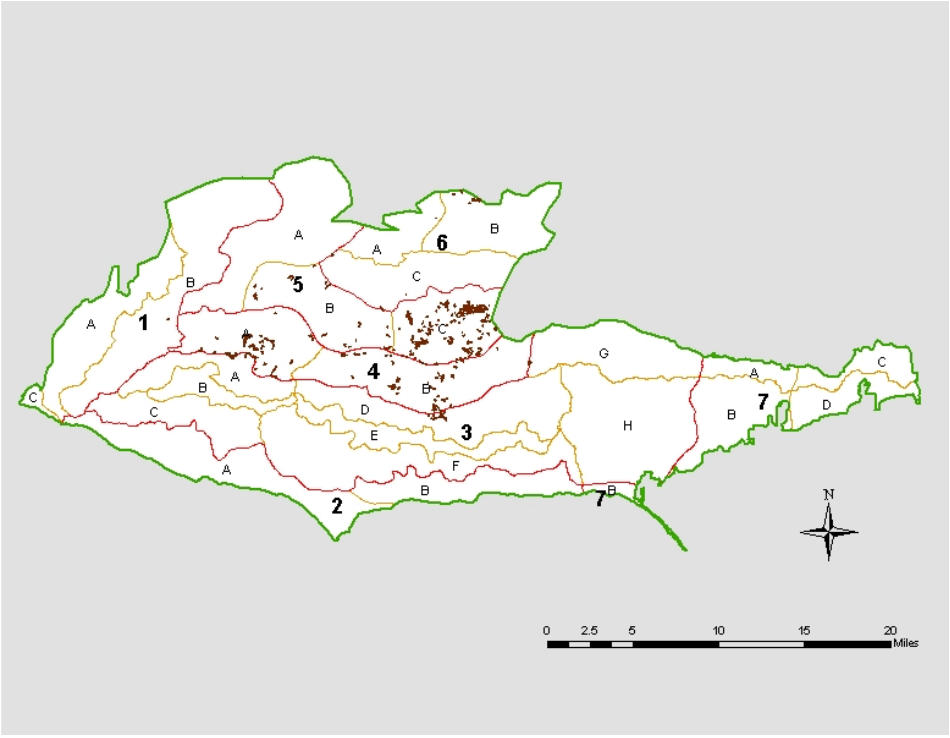
VALLEY OAK WOODLAND/FOREST ALLIANCE



1320 – VALLEY OAK WOODLAND/FOREST ALLIANCE
Quercus lobata Woodland/Forest Alliance



DISTRIBUTION:



DESCRIPTION: *Quercus lobata* Woodland/Forest Alliance represents the hierarchical class into which all *Q. lobata* association types are nested. The alliance is dominated by *Q. lobata,* which occurs at very low to moderate cover. In some instances, *Q. agrifolia* may co-dominate at very low to high cover. *Salix* spp. may also be sub-dominant to co-dominant at very low to moderate cover. This alliance occurs as sparse to intermittent stands on a variety of aspects and microclimates, ranging from dry to dry-mesic. Slope steepness may vary from level to steep, whereas slope shape can be concave, neutral, or convex. Stands of *Q. lobata* typically occur inland and at lower elevations, in savannas on lower slopes of rolling hills, valley bottoms, and upper terraces of floodplains. This alliance is a rare type and does not occur in extensive stands. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *Q. lobata* as the dominant tree are included.

PHOTO INTERPRETATION SIGNATURE: *Q. lobata* appears as tall, dark, gray-green individuals with large spreading irregular crowns. Small openings can be seen within the crown, which are more evident in older trees. *Q. agrifolia* has a dark green color with a rounded, thick, billowy crown. *Salix* spp. have a dark green color with a shiny undertone and often occur in clumps. *Salix* spp. are typically not as tall as *Q. lobata* and *Q. agrifolia,* though older *Salix* spp. stands can be as tall as the *Quercus* spp.

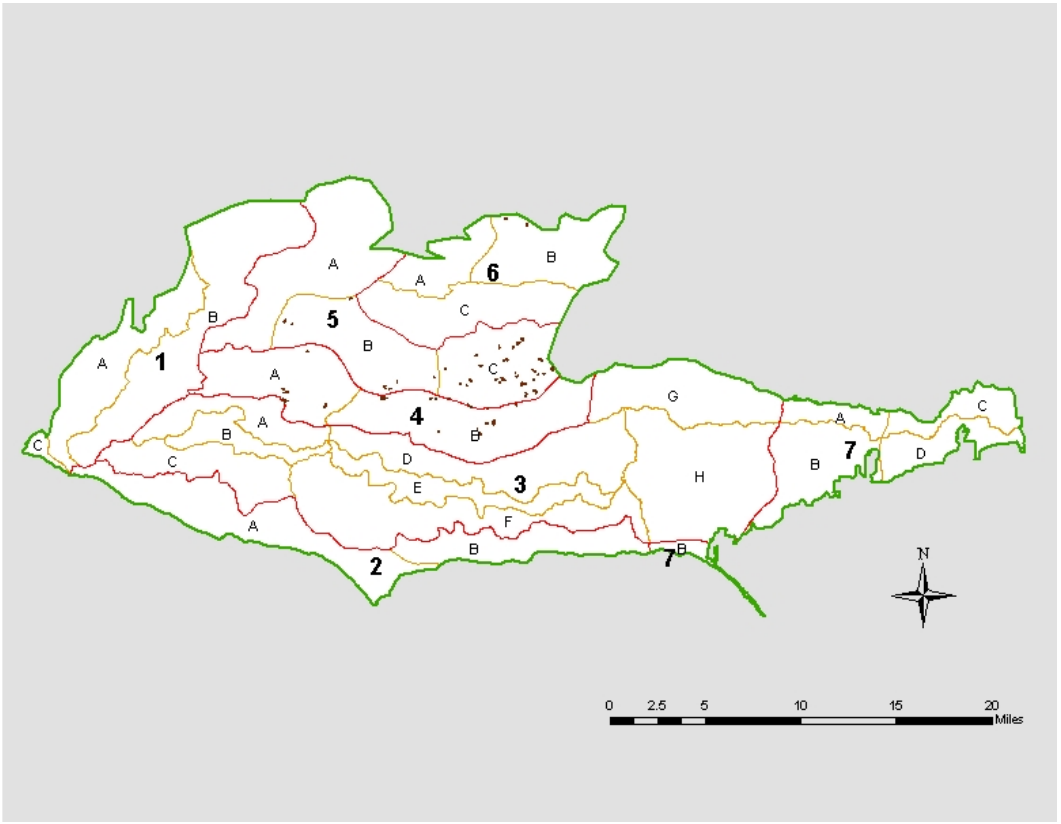
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- *Salix* spp. Woodland/Forest Superalliance (1410)

1321 – VALLEY OAK/ANNUAL GRASS-HERB WOODLAND/FOREST ASSOCIATION
Quercus lobata/Annual Grass-Herb Woodland/Forest Association



DISTRIBUTION:



DESCRIPTION: The *Quercus lobata*/Annual Grass-Herb Association is dominated by *Q. lobata* and occurs as a sparse to open stand of trees over an understory of herbs and grasses. *Q. lobata* may have very low to high cover. *Q. agrifolia* may be present at very low cover. Slope steepness varies from level to moderately steep, whereas slope shape can be concave, neutral, or convex. Stands of *Q. lobata* typically occur inland on drier slopes and at lower elevations, on various aspects in savannas on lower slopes of rolling hills, valley bottoms, and upper terraces of floodplains. Sparse or small clumps of shrubs may be treated as inclusions within a stand.

PHOTO INTERPRETATION SIGNATURE: The overall signature is of sparse to open coarse trees in homogeneous to mottled grassland. *Q. lobata* appears as tall, dark, gray-green individuals with large spreading irregular crowns. Many small openings can be seen within the crown, which are more evident in older trees. The understory grasses and herbs are shades of tan and brown.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

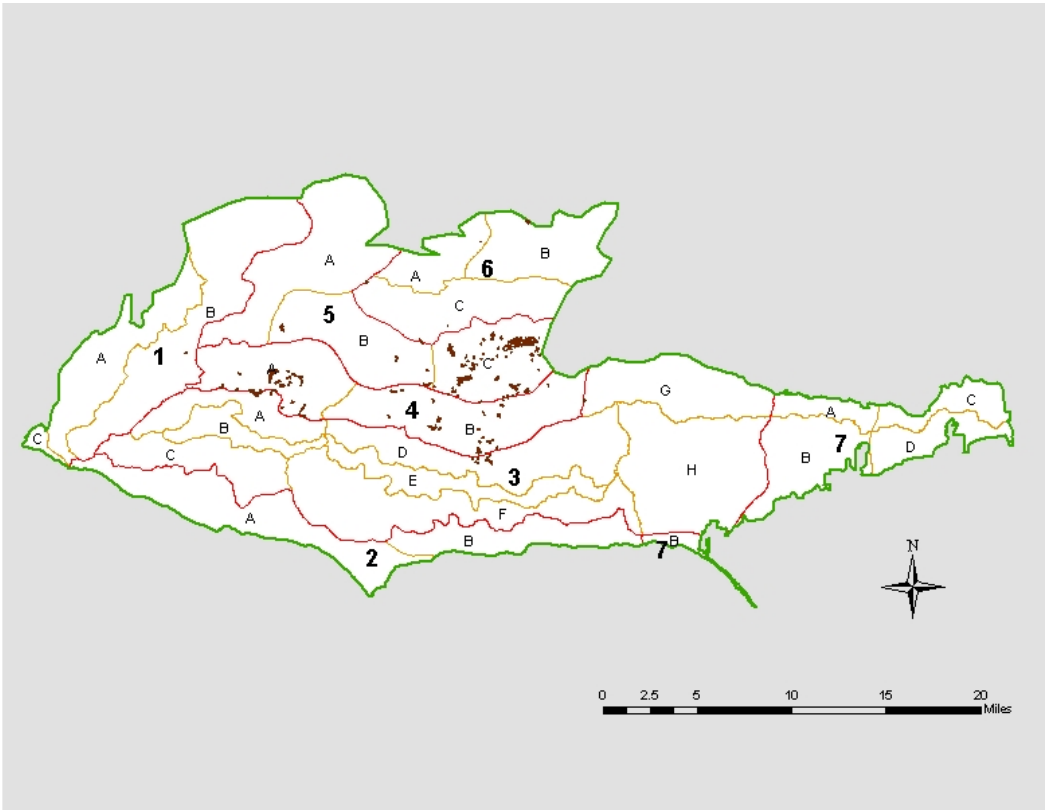
- *Quercus agrifolia*/Annual Grass–Herb Woodland/Forest Association (1111)
- *Quercus lobata-Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association (1323)

1323 – VALLEY OAK-COAST LIVE OAK/ANNUAL GRASS-HERB WOODLAND/FOREST ASSOCIATION

***Quercus lobata-Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: The *Quercus lobata-Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association is dominated by *Quercus* spp. and occurs as sparse to intermittent stands on a variety of aspects ranging from dry to dry-mesic situations. *Q. lobata* can be dominant at very low to moderate cover. *Q. agrifolia* may be co-dominant with or dominate over *Q. lobata. Juglans californica* may also be present at very low to low cover. The understory typically contains no shrubs or a very low cover of shrubs (usually *Artemisia californica* and/or *Salvia leucophylla*). Shrubs in the understory may range up to moderate cover, while herbs and grasses range from moderate to very high cover. Slope steepness may vary from level to steep, whereas slope shape can be concave, neutral, or convex. Stands of *Q. lobata* typically occur inland and at lower elevations, occuring in savannas on lower slopes of rolling hills, valley bottoms, and upper terraces of floodplains.

PHOTO INTERPRETATION SIGNATURE: The overall signature is of sparse to open coarse trees in homogeneous to mottled grassland and clumps of shrubs. *Q. lobata* appears as tall dark gray green individuals with large spreading irregular crowns. Many small openings within the crown are more evident in older trees. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregular shaped crowns with some coarse texture. The understory grasses and herbs are various shades of tan and brown. The shrubs range from a coarse to smooth texture of purple-brown *A. californica* to white to gray *S. leucophylla*, or appear as a purple to gray mottled mix.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

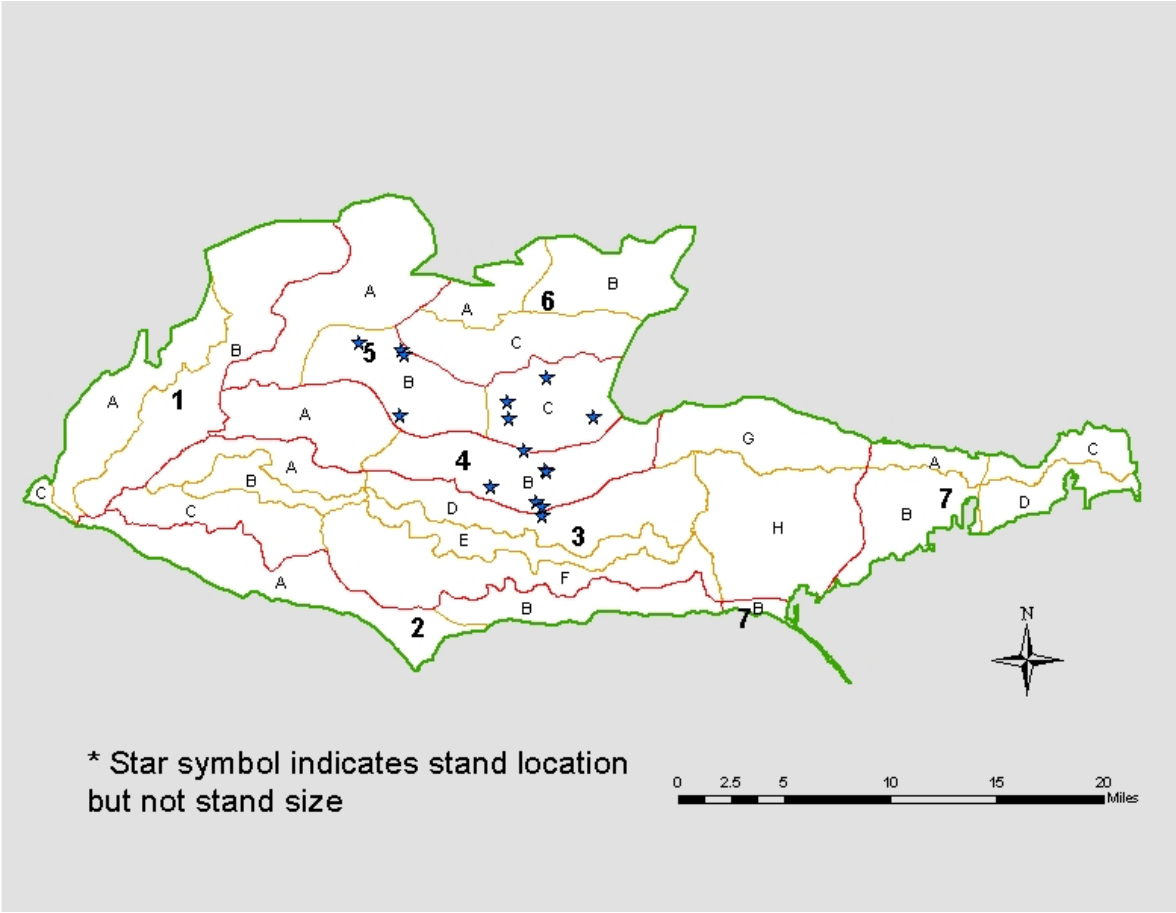
- *Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association (1111)
- *Quercus lobata*/Annual Grass-Herb Woodland/Forest Association (1321)
- *Juglans californica*/Annual Grass-Herb Woodland/Forest Association (1312)

1324 – VALLEY OAK–ARROYO WILLOW WOODLAND/FOREST ASSOCIATION (PROVISIONAL)

***Quercus lobata-Salix lasiolepis* Woodland/Forest Association (Provisional)**



DISTRIBUTION:



DESCRIPTION: The *Quercus lobata-Salix lasiolepis* Woodland/Forest Association is dominated by *Q. lobata* at very low to moderate cover. *Salix* spp. are sub-dominant to co-dominant at very low to high cover. *Baccharis salicifolia* may be present in the understory at low cover. This association occurs as open to continuous stands along stream channels and floodplains. Slope steepness may vary from level to gently sloping, whereas slope shape is typically concave. Stands of *Q. lobata* typically occur inland and at lower elevations.

PHOTO INTERPRETATION SIGNATURE: The overall stand signature is uneven from the differing textures and tones of the trees. *Q. lobata* appears as tall dark gray green individuals with large spreading irregular crowns. Many small openings within the crown are more evident in older trees. *Salix* spp. are tall gray green to green to silver green trees occurring in tall dense clumps or in continuous cover. Individual trees usually cannot be distinguished.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6114)
- *Salix* spp. Woodland/Forest Superalliance (1410)

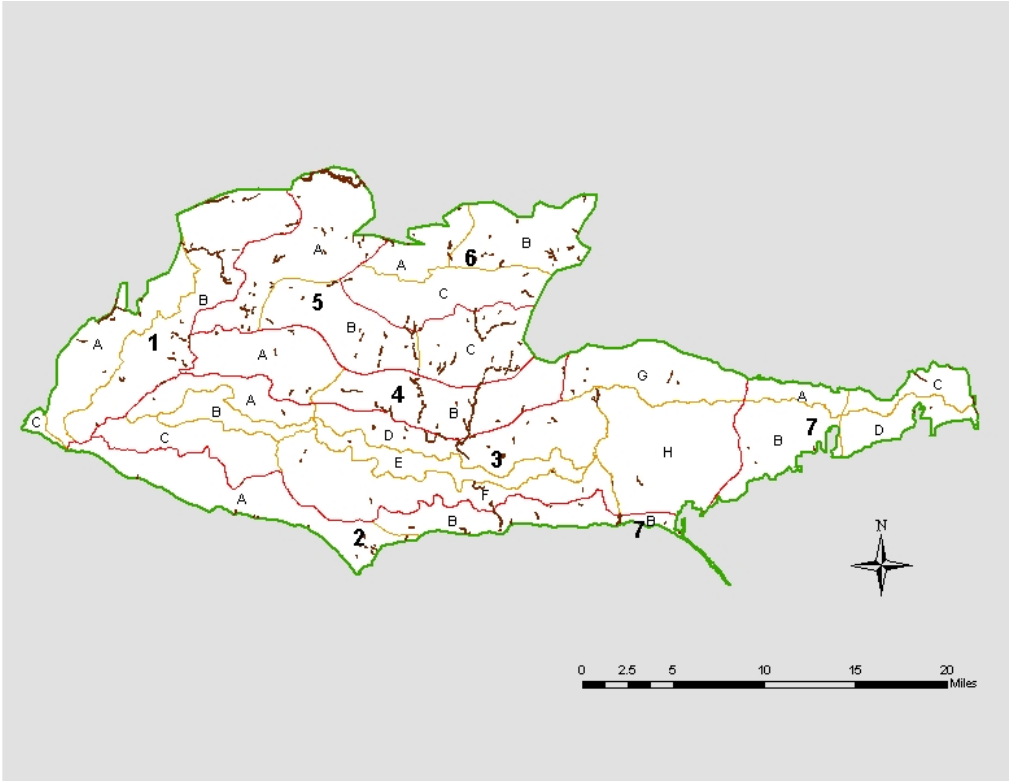
WILLOW WOODLAND/FOREST SUPERALLIANCE



1410 – WILLOW WOODLAND/FOREST SUPERALLIANCE
Salix spp. Woodland/Forest Superalliance



DISTRIBUTION:



DESCRIPTION: *Salix* spp. Woodland/Forest Superalliance represents the hierarchical class into which all *Salix* spp. *(Salix laevigata, Salix lasiolepis*, and/or *Salix exigua)* association types are nested. The superalliance occurs as open to dense stands of trees with *Salix* spp. as the dominant or very dominant tree. It is found on floodplains of perennial or seasonal streams, and is common in areas of urban runoff. It occupies level to moderately steep, neutral to concave surfaces, on bottoms to lower slopes. *Quercus agrifolia, Quercus lobata,* and *Platanus racemosa* may be present at very low cover. Because the *Salix* species have very similar signatures and cannot be consistently differentiated by photo interpretation, they are mapped as this superalliance. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *Salix* spp. as the dominant tree are included.

PHOTO INTERPRETATION SIGNATURE: The stands usually have a closed to open canopy of smooth to slightly coarse texture and a homogeneous color. Unevenness and color differences appear when other trees begin to mix in. *Salix* spp. are tall to short gray green to green to silver green trees occurring in tall dense clumps or in continuous cover. Individual trees usually cannot be distinguished.

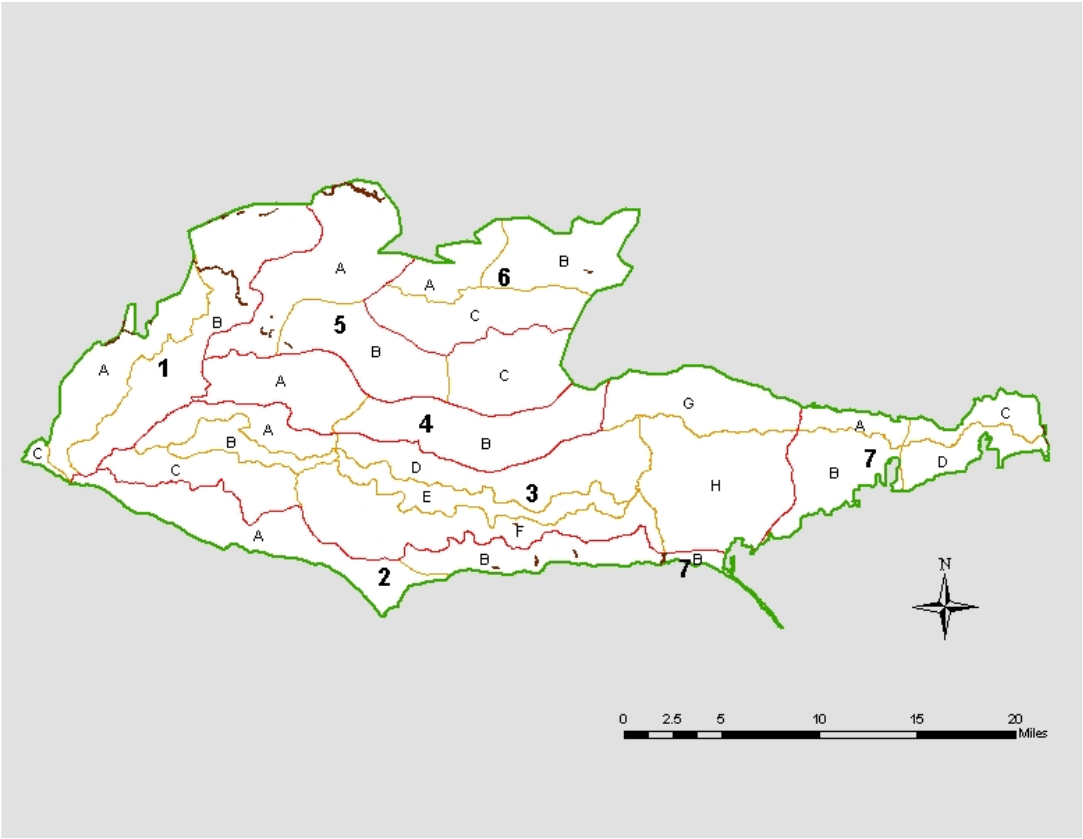
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Umbellularia californica-Platanus racemosa* Woodland/Forest Association (1014)
- *Quercus agrifolia-Salix lasiolepis* Woodland/Forest Association (6114)
- *Quercus lobata-Salix lasiolepis* Woodland/Forest Association (Provisional) (1324)
- *Salix* spp./*Arundo donax* Woodland/Forest Mapping Unit (1411)
- *Salix* spp./*Baccharis salicifolia* Woodland/Forest Mapping Unit (1412)
- *Salix laevigata-Salix lasiolepis*/*Artemisia douglasiana-Rubus ursinus*/Annual Grass-Herb Woodland/Forest Association (Provisional) (1413)
- *Salix* spp. scrubby-(*Platanus racemosa* scrubby)/*Baccharis salicifolia* Woodland/Forest Mapping Unit (1414)
- *Salix laevigata* Woodland/Forest Alliance (1420)
- *Salix lasiolepis* Woodland/Forest Alliance (1430)
- *Alnus rhombifolia* Woodland/Forest Alliance (1440)
- *Platanus racemosa-Quercus agrifolia-Salix lasiolepis* Woodland/Forest Association (6452)

1411 – WILLOW/GIANT REED WOODLAND/FOREST MAPPING UNIT
Salix spp./*Arundo donax* Woodland/Forest Mapping Unit



DISTRIBUTION:



DESCRIPTION: The *Salix* spp*./Arundo donax* Woodland/Forest Mapping Unit occurs as open to intermittent stands of *Salix* spp*.* with *Arundo* occurring within the stand. *Salix* spp. have a low to high cover, while *Arundo* may have a very low to moderate cover. This mapping unit occurs on floodplains of perennial or seasonal streams, and is common in areas of urban runoff. It is found on level to moderately steep, neutral to concave surfaces, on bottoms to lower slopes. *Quercus agrifolia, Quercus lobata,* and *Platanus racemosa* may be present at very low cover. Because *S. laevigata*, *S. lasiolepis* and *S. exigua* have very similar signatures and cannot be consistently differentiated by photo interpretation, they are mapped as *Salix* spp.

PHOTO INTERPRETATION SIGNATURE: The stands usually have a closed to open canopy of smooth to slightly coarse texture and a slightly mottled color from the mixing species. *Salix* spp*.* are tall gray green to green to silver green trees occurring in tall dense clumps or in continuous cover. Individual trees usually cannot be distinguished. *Arundo* appears as tall, light tan to light green, tight starburst-shaped plants. They appear as individuals or in groups.

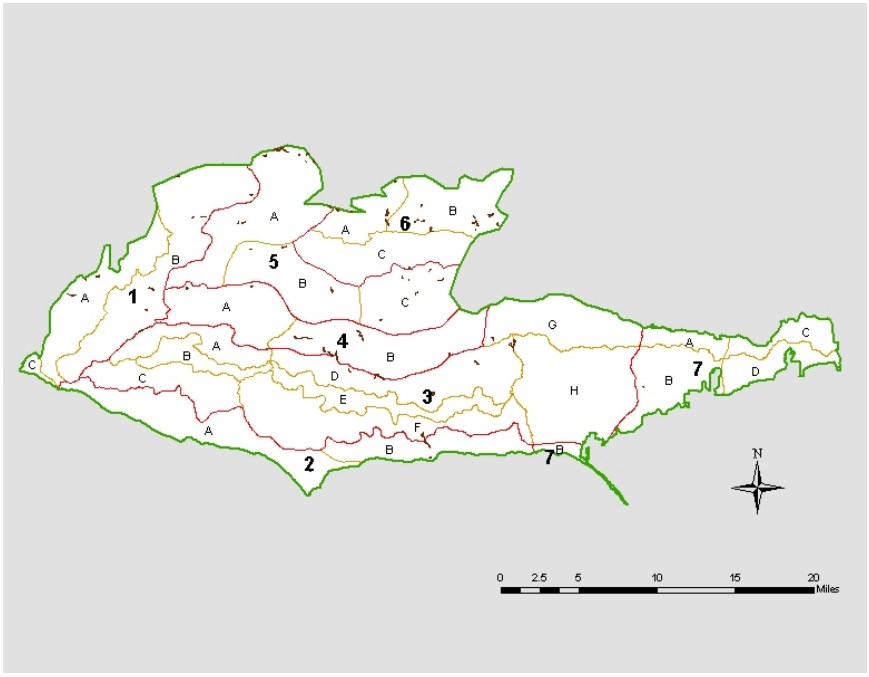
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia-Salix lasiolepis* Woodland/Forest Association (6114)
- *Quercus lobata-Salix lasiolepis* Woodland/Forest Association (Provisional) (1324)
- *Salix* spp*.* Woodland/Forest Superalliance (1410)
- *Salix* spp*./Baccharis salicifolia* Woodland/Forest Mapping Unit (1412)
- *Salix laevigata-Salix lasiolepis/Artemisia douglasiana-Rubus ursinus*/Annual Grass-Herb Woodland/Forest Association (Provisional) (1413)
- *Salix* spp. scrubby-(*Platanus racemosa* scrubby)/*Baccharis salicifolia* Woodland/Forest Mapping Unit (1414)
- *Salix laevigata* Woodland/Forest Alliance (1420)
- *Salix lasiolepis* Woodland/Forest Alliance (1430)
- *Alnus rhombifolia* Woodland/Forest Alliance (1440)
- *Platanus racemosa–Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6452)

1412 – WILLOW/MULE FAT WOODLAND/FOREST MAPPING UNIT
Salix spp./*Baccharis salicifolia* Woodland/Forest Mapping Unit



DISTRIBUTION:



DESCRIPTION: The *Salix* spp*./Baccharis salicifolia* Woodland/Forest Mapping Unit occurs as sparse to open stands of *Salix* spp. in the overstory with *B. salicifolia* and short *Salix* spp*.* appearing through the openings. *Salix* spp. have a low to very high cover, while *B. salicifolia* may have a low to high cover. This mapping unit occurs on floodplains of perennial or seasonal streams, and is common in areas of urban runoff. It is found on level to gentle, neutral to concave surfaces, on bottoms to lower slopes. *Quercus agrifolia, Quercus lobata,* and *Platanus racemosa* may be present at very low cover. Because *S. laevigata* and *S. lasiolepis* have very similar signatures and cannot be consistently differentiated by photo interpretation, they are mapped as *Salix* spp. This mapping unit includes the *Salix lasiolepis/Baccharis salicifolia* Woodland/Forest Association (1432).

PHOTO INTERPRETATION SIGNATURE: The stands have an uneven texture because of the open overstory with shorter trees and shrubs in the understory. Color may vary due to the different species present. *Salix* spp*.* are tall gray green to green to silver green trees occurring in tall dense clumps or in continuous cover. Individual trees usually cannot be distinguished. *Salix* spp. also occur in the understory as shorter trees and tall shrubs with a similar color and texture. *B. salicifolia* appears within the openings of the tree canopy, or as patches, and has a dull medium to dark green color with a low smooth texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

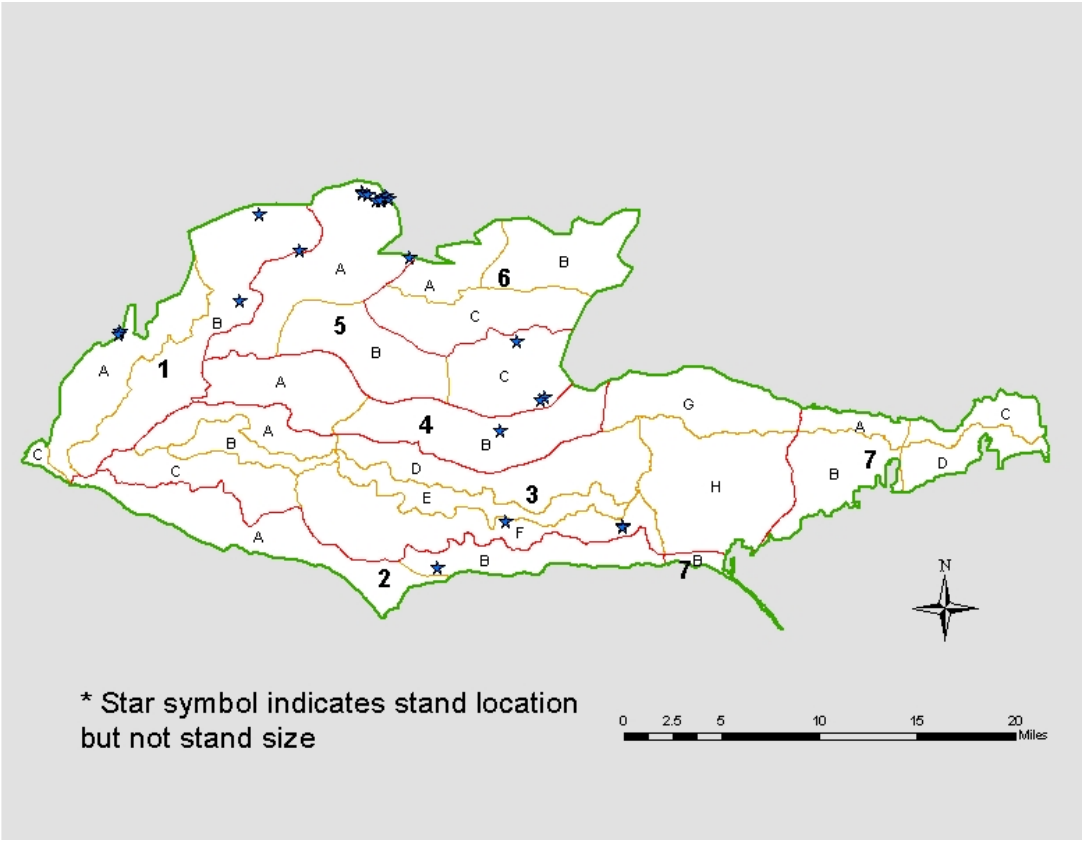
- *Quercus agrifolia-Salix lasiolepis* Woodland/Forest Association (6114)
- *Quercus lobata-Salix lasiolepis* Woodland/Forest Association (Provisional) (1324)
- *Salix* spp*.* Woodland/Forest Superalliance (1410)
- *Salix* spp*./Arundo donax* Woodland/Forest Mapping Unit (1411)
- *Salix laevigata-Salix lasiolepis/Artemisia douglasiana-Rubus ursinus*/Annual Grass-Herb Woodland/Forest Association (Provisional) (1413)
- *Salix* spp. scrubby-(*Platanus racemosa* scrubby)/*Baccharis salicifolia* Woodland/Forest Mapping Unit (1414)
- *Salix laevigata* Woodland/Forest Alliance (1420)
- *Salix lasiolepis* Woodland/Forest Alliance (1430)
- *Salix lasiolepis/Baccharis salicifolia* Woodland/Forest Association (1432)
- *Alnus rhombifolia* Woodland/Forest Alliance (1440)
- *Platanus racemosa-Quercus agrifolia-Salix lasiolepis* Woodland/Forest Association (6452)

1414 – WILLOW SCRUB-(CALIFORNIA SYCAMORE SCRUBBY)-MULE FAT WOODLAND/FOREST MAPPING UNIT

***Salix* spp. scrubby-*(Platanus racemosa* scrubby*)-Baccharis salicifolia* Woodland/Forest Mapping Unit**



DISTRIBUTION:



DESCRIPTION: The *Salix* spp. scrubby - *(Platanus racemosa* scrubby*)* - *Baccharis salicifolia* Woodland/Forest Mapping Unit occurs as sparse to intermittent stands of *Salix* spp. shrubs with *B. salicifolia. Salix* spp. have a low to very high cover, while *B. salicifolia* may have a low to high cover. *Platanus* saplings may also be present at very low cover. The *Platanus* saplings cannot be distinguished from *Salix* spp. scrub through photo interpretation. This mapping unit occurs on floodplains of perennial or seasonal streams, and is common in areas of urban runoff. It is found on level to gentle, neutral to concave surfaces, on bottoms to lower slopes. Emergent trees may be present at very low cover. Because *S. laevigata*, *S. lasiolepis*, and *S. exigua* have very similar signatures and cannot be consistently differentiated by photo interpretation, they are mapped as *Salix* spp.

PHOTO INTERPRETATION SIGNATURE: The stands have an uneven texture because of the variation in short tree and shrub size, and the openness of some of the stands. Color may vary due to the different species present. *Salix* spp. are gray green to green to silver green plants occurring in dense to open clumps. Individual plants usually cannot be distinguished. *Platanus* saplings will hide within the *Salix* spp. clumps. *B. salicifolia* appear within the openings of the *Salix* spp. as patches with dull medium to dark green color and a low smooth texture. Rockiness in the streambed may also be visible.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salix* spp. Woodland/Forest Superalliance (1410)
- *Salix* spp./*Arundo donax* Woodland/Forest Mapping Unit (1411)
- *Salix* spp./*Baccharis salicifolia* Woodland/Forest Mapping Unit (1412)
- *Salix laevigata-Salix lasiolepis*/*Artemisia douglasiana-Rubus ursinus*/Annual Grass-Herb Woodland/Forest Association (Provisional) (1413)
- *Salix laevigata* Woodland/Forest Alliance (1420)
- *Salix lasiolepis* Woodland/Forest Alliance (1430)
- *Salix lasiolepis/Baccharis salicifolia* Woodland/Forest Association (1432)
- *Platanus racemosa-Quercus agrifolia-Salix lasiolepis* Woodland/Forest Association (6452)

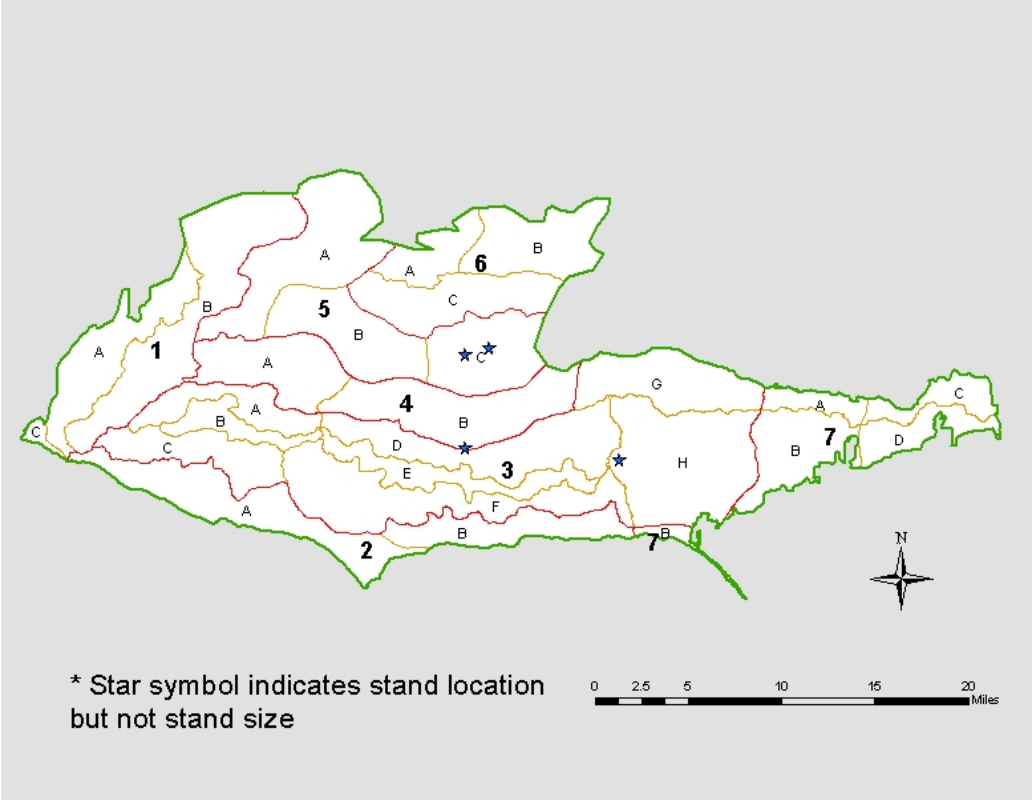
RED WILLOW WOODLAND/FOREST ALLIANCE



1420 – RED WILLOW WOODLAND/FOREST ALLIANCE
Salix laevigata Woodland/Forest Alliance



DISTRIBUTION:



DESCRIPTION: *Salix laevigata* Woodland/Forest Alliance represents the hierarchical class into which all *S. laevigata* association types are nested. This alliance occurs as open to dense stands of trees with *S. laevigata* as the dominant or very dominant tree. It is found on floodplains of perennial or seasonal streams, and is common in areas of urban runoff. It occupies level to gentle slopes, neutral to concave surfaces, on bottoms to lower slopes. *Quercus agrifolia, Quercus lobata,* and *Platanus racemosa* may be present at very low cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *S. laevigata* as the dominant tree are included. *S. laevigata* and *S. lasiolepis* have very similar signatures and cannot consistently be differentiated in photo interpretation. Therefore, this class is mapped as part of the *Salix* spp. Woodland/Forest Superalliance (1410) unless Rapid Assessment Plot locations for this type were provided by the Park.

PHOTO INTERPRETATION SIGNATURE: The stands usually have a closed to open canopy of smooth to slightly coarse texture and a homogeneous color. Unevenness and color differences appear when other trees begin to mix in. *Salix* spp. are tall to short gray green to green to silver green trees occurring in tall dense clumps or in continuous cover. Individual trees usually cannot be distinguished.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

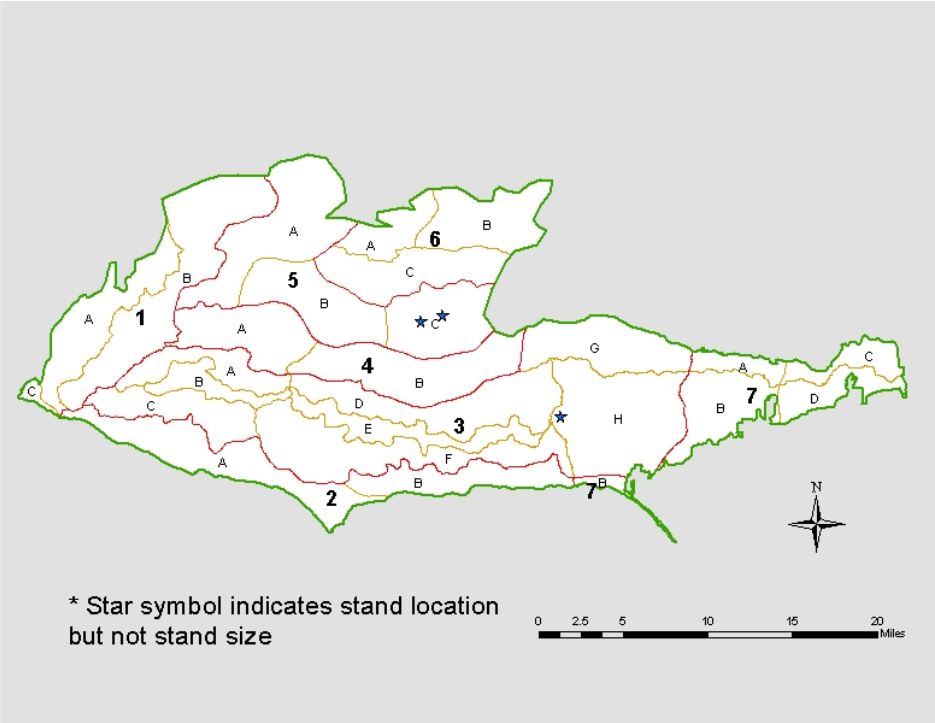
- *Umbellularia californica-Platanus racemosa* Woodland/Forest Association (1014)
- *Quercus agrifolia-Salix lasiolepis* Woodland/Forest Association (6114)
- *Quercus lobata-Salix lasiolepis* Woodland/Forest Association (Provisional) (1324)
- *Salix* spp. Woodland/Forest Superalliance (1410)
- *Salix* spp./*Arundo donax* Woodland/Forest Mapping Unit (1411)
- *Salix* spp./*Baccharis salicifolia* Woodland/Forest Mapping Unit (1412)
- *Salix laevigata-Salix lasiolepis*/*Artemisia douglasiana-Rubus ursinus*/Annual Grass-Herb Woodland/Forest Association (Provisional) (1413)
- *Salix* spp. scrubby-(*Platanus racemosa* scrubby)/*Baccharis salicifolia* Woodland/Forest Mapping Unit (1414)
- *Salix lasiolepis* Woodland/Forest Alliance (1430)
- *Alnus rhombifolia* Woodland/Forest Alliance (1440)
- *Platanus racemesa-Quercus agrifolia-Salix lasiolepis* Woodland/Forest Association (6452)

1413 – RED WILLOW-ARROYO WILLOW/DOUGLAS MUGWORT-CALIFORNIA BLACKBERRY/ANNUAL GRASS-HERB WOODLAND/FOREST ASSOCIATION (PROVISIONAL)

***Salix laevigata-Salix lasiolepis/Artemisa douglasiana-Rubus ursinus/* Annual Grass-Herb Woodland/Forest Association (Provisional)**



DISTRIBUTION:



DESCRIPTION: The *Salix laevigata - Salix lasiolepis / Artemisia douglasiana - Rubus ursinus /*Annual Grass-Herb Woodland/Forest Association (Provisional) occurs as open to intermittent stands of trees with *Salix* spp. as the dominant tree. It occurs on floodplains of perennial or seasonal streams and is common in areas of urban runoff. It is found on level, neutral to concave surfaces on bottoms to lower slopes. *Salix* spp. have high to very high cover. Other trees or shrubs may be present at very low cover. *S. laevigata* and *S. lasiolepis* have very similar signatures and cannot consistently be differentiated in photo interpretation. Therefore, this class is mapped as part of the *Salix* spp. Woodland/Forest Superalliance (1410) unless Rapid Assessment Plot locations for this type were provided by the Park.

PHOTO INTERPRETATION SIGNATURE: The stands usually have a closed to open canopy of smooth to slightly coarse texture and homogeneous color. Unevenness and color differences appear when other trees begin to mix in. *Salix* spp. are tall to short gray green to green to silver green trees occurring in tall dense clumps or in continuous cover. Individual trees usually cannot be distinguished.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6114)
- *Quercus lobata–Salix lasiolepis* Woodland/Forest Association (Provisional) (1324)
- *Salix* spp. Woodland/Forest Superalliance (1410)
- *Salix* spp./*Arundo donax* Woodland/Forest Mapping Unit (1411)
- *Salix* spp./*Baccharis salicifolia* Woodland/Forest Mapping Unit (1412)
- *Salix* spp. scrubby-(*Platanus racemosa* scrubby)/*Baccharis salicifolia* Woodland/Forest Mapping Unit (1414)
- *Salix laevigata* Woodland/Forest Alliance (1420)
- *Salix lasiolepis* Woodland/Forest Alliance (1430)
- *Salix lasiolepis/Baccharis salicifolia* Woodland/Forest Association (1432)
- *Alnus rhombifolia* Woodland/Forest Alliance (1440)
- *Platanus racemosa–Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6452)

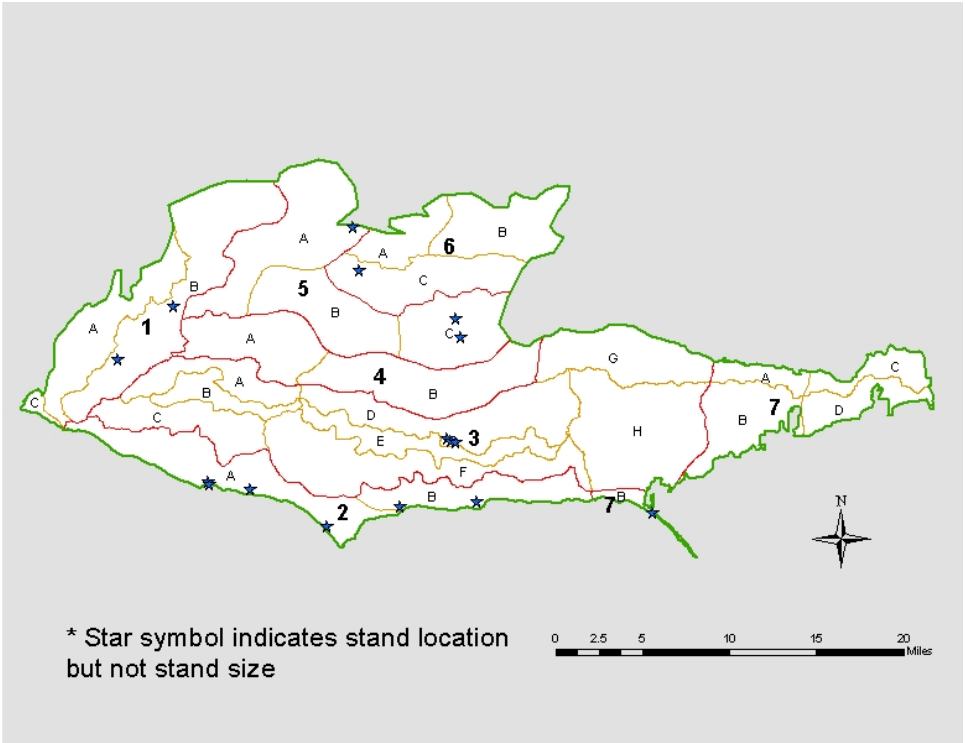
ARROYO WILLOW WOODLAND/FOREST ALLIANCE



1430 – ARROYO WILLOW WOODLAND/FOREST ALLIANCE
Salix lasiolepis Woodland/Forest Alliance



DISTRIBUTION:



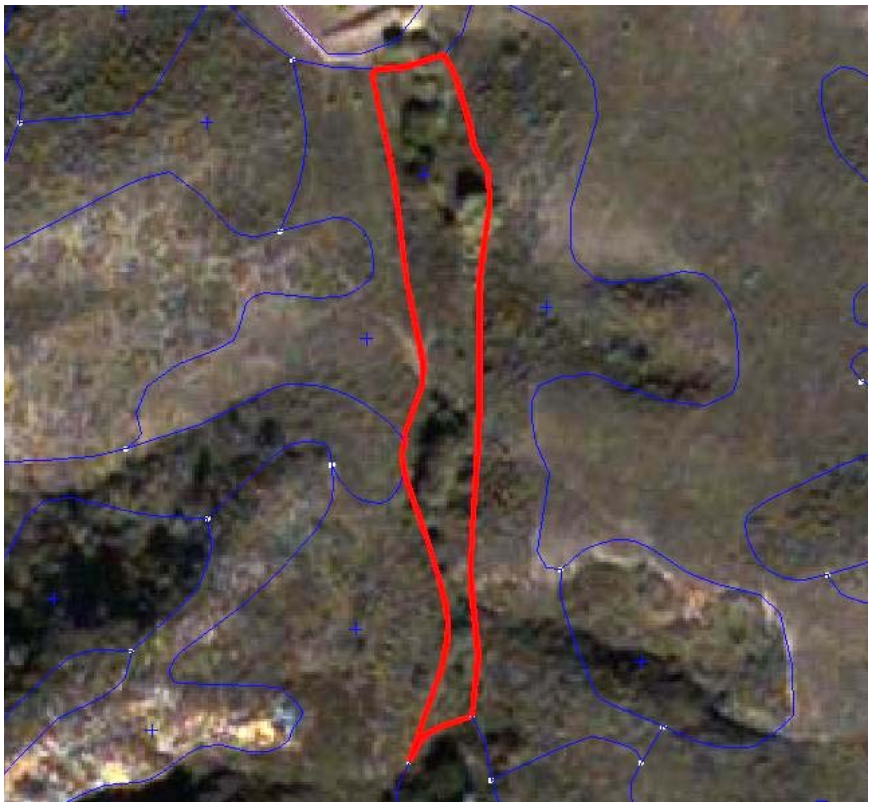
DESCRIPTION: *Salix lasiolepis* Woodland/Forest Alliance represents the hierarchical class into which *S. lasiolepis* association types are nested. This alliance occurs as open to dense stands of trees with *S. lasiolepis* as the dominant or very dominant tree. It occurs on floodplains of perennial or seasonal streams, and is common in areas of urban runoff. It is found on level to moderately steep neutral to concave surfaces, on bottoms to lower slopes. *Quercus agrifolia, Quercus lobata,* and *Platanus racemosa* may be present at very low cover. In some cases *Malosma laurina* is present up to high cover. *Baccharis salicifolia* may be present in other cases at up to moderate cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *S. laevigata* as the dominant tree are included. *S. laevigata* and *S. lasiolepis* have very similar signatures and cannot consistently be differentiated in photo interpretation. Therefore, this class is mapped as part of the *Salix* spp. Woodland/Forest Superalliance (1410) unless Rapid Assessment Plot locations for this type were provided by the Park.

PHOTO INTERPRETATION SIGNATURE: The stands have an uneven texture because of the open overstory with shorter trees and shrubs in the understory. Color may vary due to the different species present. *Salix* spp. are tall gray green to green to silver green trees occurring in tall dense clumps or in continuous cover. Individual trees usually cannot be distinguished. *Salix* spp. also occur in the understory as shorter trees and tall shrubs with a similar color and texture. *B. salicifolia* appears within the openings of the tree canopy, or as patches, dull medium to dark green in color with a low smooth texture.

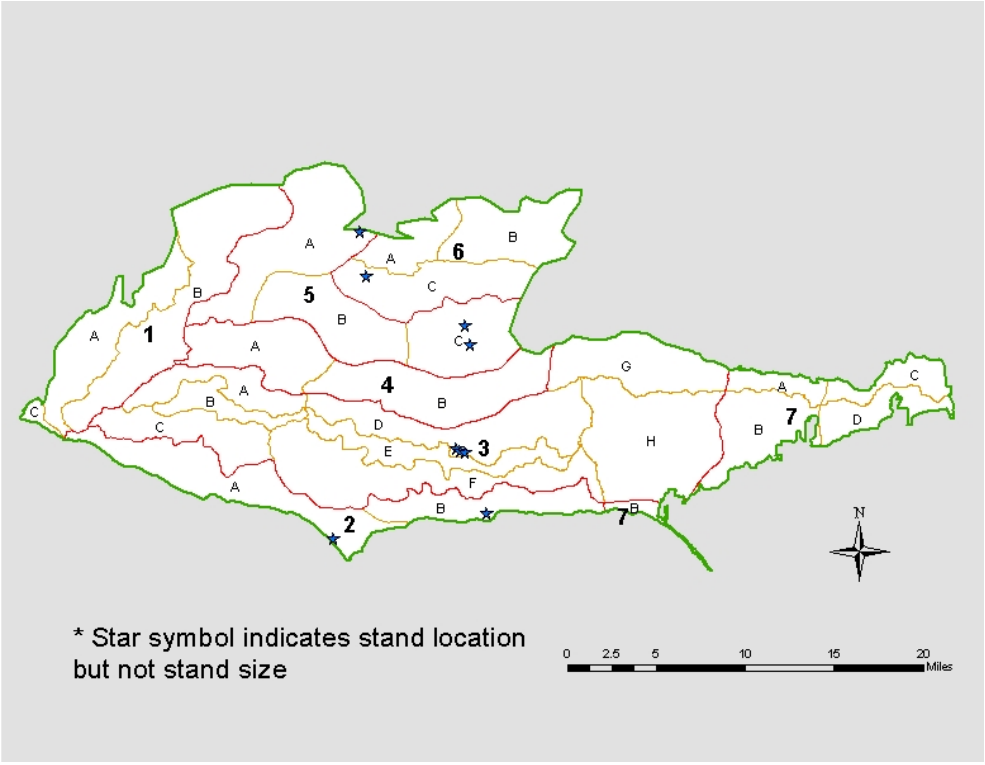
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Umbellularia californica-Platanus racemosa* Woodland/Forest Association (1014)
- *Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6114)
- *Quercus lobata-Salix lasiolepis* (Provisional) Woodland/Forest Association (1324)
- *Salix* spp. Woodland/Forest Superalliance (1410)
- *Salix* spp./*Arundo donax* Woodland/Forest Mapping Unit (1411)
- *Salix* spp./*Baccharis salicifolia* Woodland/Forest Mapping Unit (1412)
- *Salix laevigata-Salix lasiolepis/Artemisia douglasiana-Rubus ursinus*/Annual Grass-Herb Woodland/Forest Association (Provisional) (1413)
- *Salix* spp. scrubby-(*Platanus racemosa* scrubby)/*Baccharis salicifolia* Woodland/Forest Mapping Unit (1414)
- *Salix laevigata* Woodland/Forest Alliance (1420)
- *Alnus rhombifolia* Woodland/Forest Alliance (1440)
- *Platanus racemosa–Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6452)

1432 – ARROYO WILLOW/MULE FAT WOODLAND/FOREST ASSOCIATION
Salix lasiolepis/Baccharis salicifolia Woodland/Forest Association



DISTRIBUTION:



DESCRIPTION: The *Salix lasiolepis/Baccharis salicifolia* Woodland/Forest Mapping Unit occurs as sparse to intermittent stands of *S. lasiolepis* in the overstory, with *B. salicifolia* and short *Salix* spp. appearing through the openings. *S. lasiolepis* has a moderate to very high cover, while *B. salicifolia* may approach moderate cover. This mapping unit occurs on floodplains of perennial or seasonal streams, and is common in areas of urban runoff. It is found on level to moderately steep, neutral to concave surfaces on bottoms to lower slopes. *Quercus agrifolia, Quercus lobata,* and *Platanus racemosa* may be present at very low cover. *S. laevigata* and *S. lasiolepis* have very similar signatures and cannot consistently be differentiated in photo interpretation. Therefore, this class is mapped as part of the *Salix* spp./*Baccharis salicifolia* Woodland/Forest Mapping Unit (1412) unless Rapid Assessment Plot locations for this type were provided by the Park.

PHOTO INTERPRETATION SIGNATURE: The stands have an uneven texture because of the open overstory with shorter trees and shrubs in the understory. Color may vary due to the different species present. *Salix* spp. are tall gray green to green to silver green trees occurring in tall dense clumps or in continuous cover. Individual trees usually cannot be distinguished. They also occur in the understory as shorter trees and tall shrubs with a similar color and texture. *B. salicifolia* will appear within the openings of the tree canopy, or as patches of dull medium to dark green color with a low smooth texture.

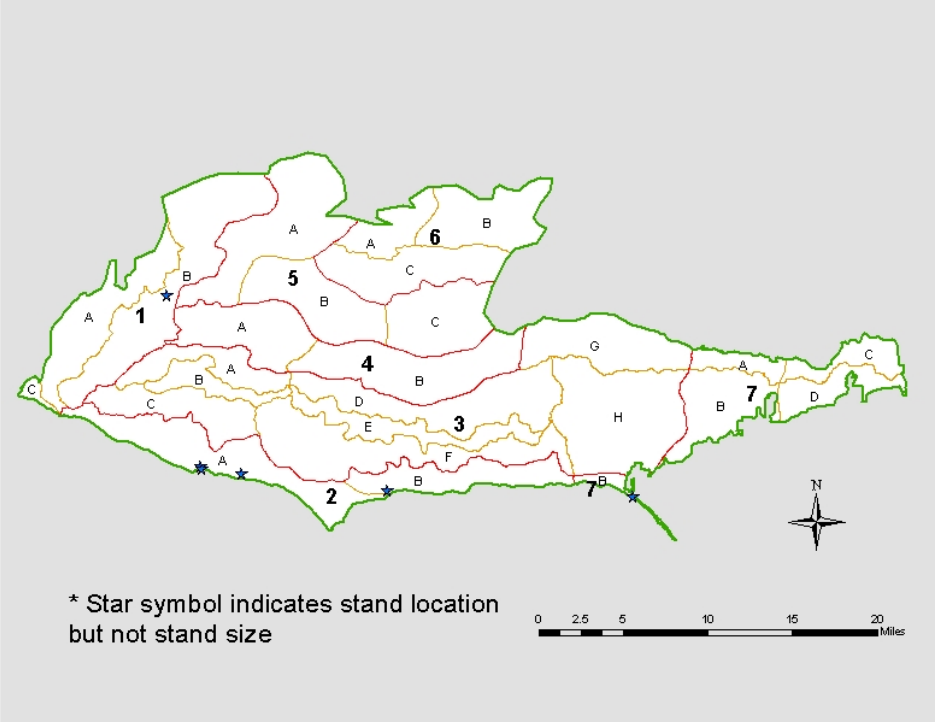
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6114)
- *Quercus lobata-Salix lasiolepis* Woodland/Forest Association (Provisional) (1324)
- *Salix* spp. Woodland/Forest Superalliance (1410)
- *Salix* spp./*Arundo donax* Woodland/Forest Mapping Unit (1411)
- *Salix* spp./*Baccharis salicifolia* Woodland/Forest Mapping Unit (1412)
- *Salix laevigata-Salix lasiolepis/Artemisia douglasiana-Rubus ursinus*/Annual Grass-Herb Woodland/Forest Association (Provisional) (1413)
- *Salix* spp. scrubby-(*Platanus racemosa* scrubby)/*Baccharis salicifolia* Woodland/Forest Mapping Unit (1414)
- *Salix laevigata* Woodland/Forest Alliance (1420)
- *Salix lasiolepis* Woodland/Forest Alliance (1430)
- *Alnus rhombifolia* Woodland/Forest Alliance (1440)
- *Platanus racemosa–Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6452)

1433 – ARROYO WILLOW/LAUREL SUMAC WOODLAND/FOREST ASSOCIATION
Salix lasiolepis/Malosma laurina Woodland/Forest Association



DISTRIBUTION:



DESCRIPTION: *Salix lasiolepis/Malosma laurina* Woodland/Forest Association occurs as sparse to open overstory of *S. lasiolepis* over sparse to intermittent shrubs composed primarily of co-dominant *Malosma* and *Salix* spp*. S. lasiolepis has* moderate to high cover. *Malosma* is present from very low to high cover. *Juglans californica* may also be present at very low to low cover. The association favors floodplains of perennial or seasonal streams, and is common in areas of urban runoff. It is usually found on south-facing level to moderately steep, neutral to concave surfaces, on bottoms to lower slopes. Because *S. laevigata* and *S. lasiolepis* have very similar signatures and cannot consistently be differentiated in photo interpretation, they are mapped as *Salix* spp. The Rapid Assessment Plots and other field surveys were used to extrapolate the location of this type.

PHOTO INTERPRETATION SIGNATURE: The stands have an uneven coarse texture because of the open overstory with shorter trees and shrubs in the understory. Color may vary due to the different species present. *Salix* spp*.* are tall gray green to green to silver green trees occurring in tall dense clumps. Individual trees usually cannot be distinguished. They also occur in the understory as shorter trees and tall shrubs with a similar color and texture. *Juglans and Malosma* have similar signatures and appear in groups within the openings of the tree canopy as tall rounded individuals with medium to dark green color and slightly coarse texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salix* spp*.* Woodland/Forest Superalliance (1410)
- *Salix* spp*./Arundo donax* Woodland/Forest Mapping Unit (1411)
- *Salix* spp*./Baccharis salicifolia* Woodland/Forest Mapping Unit (1412)
- *Salix laevigata-Salix lasiolepis/Artemisia douglasiana-Rubus ursinus*/Annual Grass-Herb Woodland/Forest Association (Provisional) (1413)
- *Salix* spp. scrubby-(*Platanus racemosa* scrubby)/*Baccharis salicifolia* Woodland/Forest Mapping Unit (1414)
- *Salix laevigata* Woodland/Forest Alliance (1420)
- *Salix lasiolepis* Woodland/Forest Alliance (1430)
- *Salix* spp*./Baccharis salicifolia* Woodland/Forest Association (1432)
- *Alnus rhombifolia* Woodland/Forest Alliance (1440)
- *Platanus racemosa–Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6452)

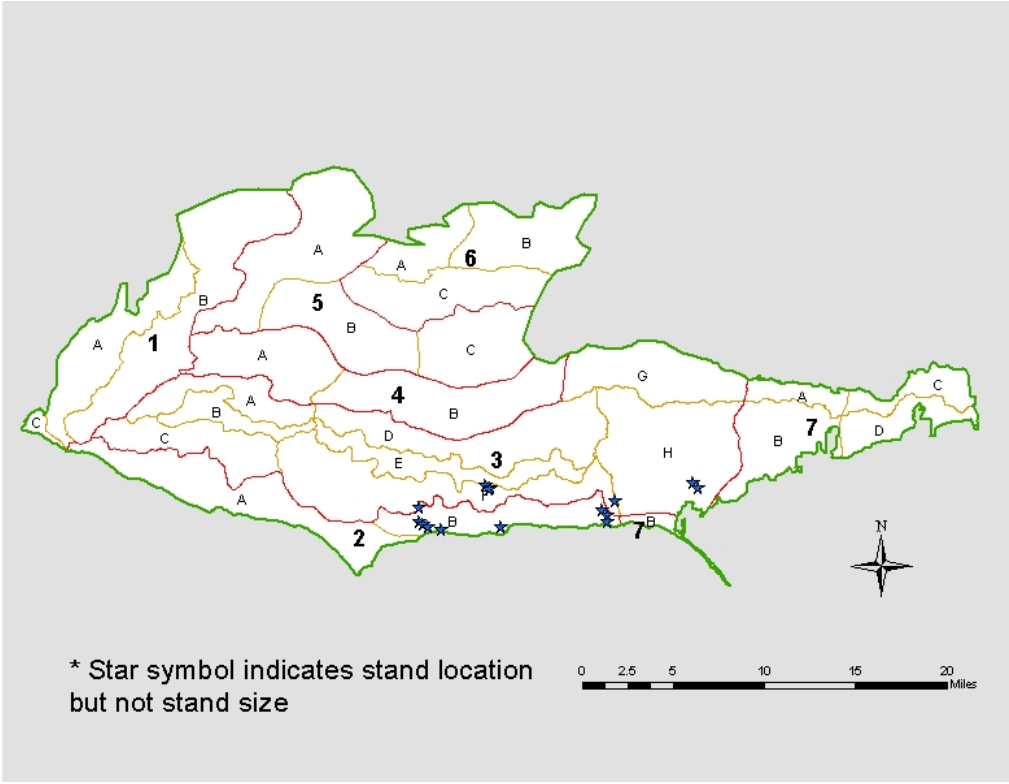
WHITE ALDER WOODLAND/FOREST ALLIANCE



1440 – WHITE ALDER WOODLAND/FOREST ALLIANCE



DISTRIBUTION:



DESCRIPTION: *Alnus rhombifolia* Woodland/Forest Alliance represents the hierarchical class into which *Alnus* association types are nested. This alliance occurs as open to dense stands with *Alnus* as the dominant tree. In some cases *Alnus* may co-dominate with *Platanus racemosa* or *Umbellularia californica*. *Quercus agrifolia* may also be present. This type is moist to wet, in a riparian setting, usually occurring in narrow shaded gorges/canyons with perennial stream floodplains (not urban run-off). Slopes are level to gently sloping, but sometimes moderately steep. This alliance has a rare occurrence and is of very limited extent. It occurs in lower canyons, mainly near the coastal margin of the Santa Monica Mountains. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *A. rhombifolia* as the dominant tree are included.

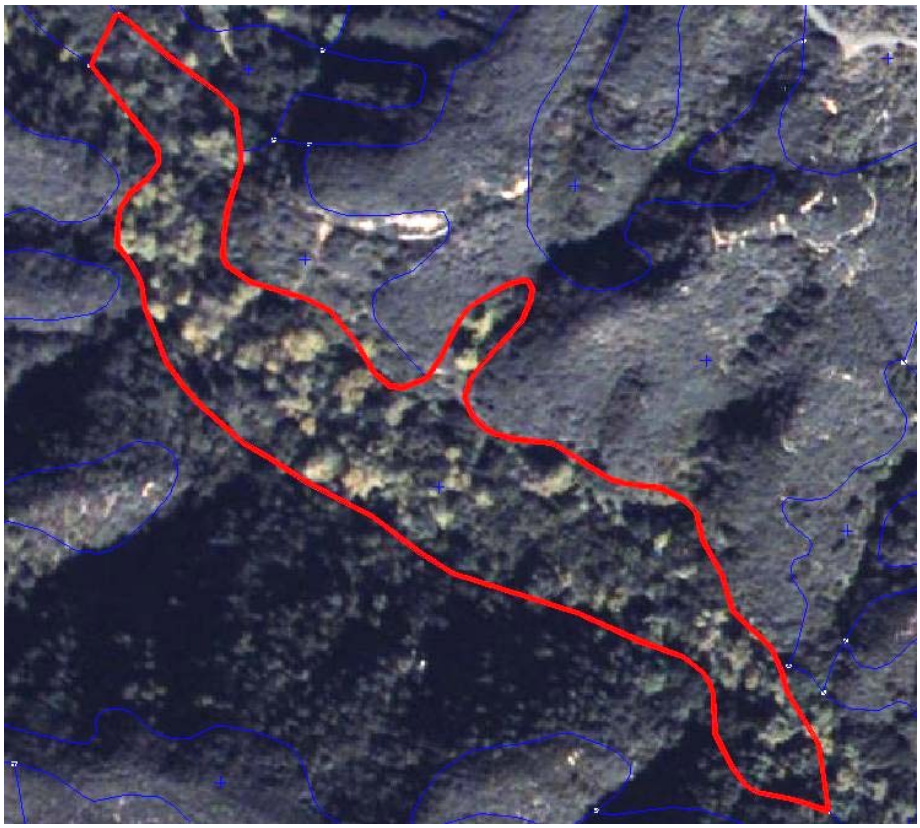
PHOTO INTERPRETATION SIGNATURE: The stand is coarse overall due to the varying textures of the trees and uneven crowns. *Alnus* appears as dense clumps of gray-green tree crowns with a homogeneous texture and signature. *P. racemosa* appears as individual trees whose signature is typically medium green with large rough-textured wide and open crowns that are usually taller than other trees. The signature for *Alnus* can look very similar to *Platanus* and *Salix* spp. *Q. agrifolia* has a large coarse irregular rounded crown with a dark green color. *Umbellularia* appears as individual trees whose signature is typically bright green to medium green with large rough-textured wide crowns showing a pronounced bumpy surface; sometimes crowns are rounded with spiral tops.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

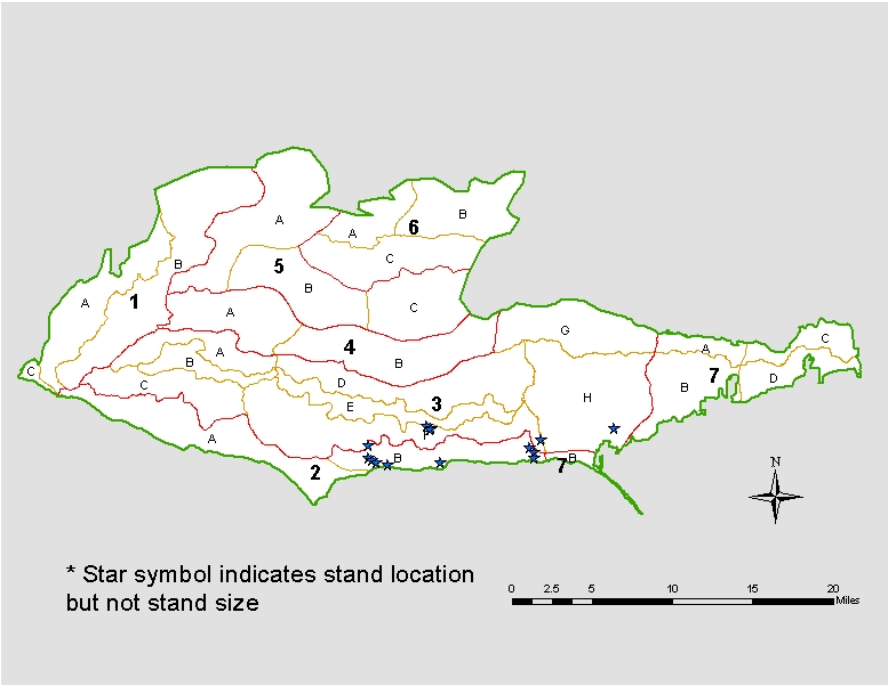
- *Umbellularia californica–Alnus rhombifolia* Woodland/Forest Association (1013)
- *Umbellularia californica–Platanus racemosa* Woodland/Forest Association (1014)
- *Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6114)
- *Quercus lobata–Salix lasiolepis* Woodland/Forest Association (Provisional) (1324)
- *Platanus racemosa–Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6452)

1441 – WHITE ALDER–CALIFORNIA SYCAMORE WOODLAND/FOREST ASSOCIATION

Alnus rhombifolia-Platanus racemosa Woodland/Forest Association



DISTRIBUTION:



DESCRIPTION: *Alnus rhombifolia-Platanus racemosa* Woodland/Forest Association occurs as intermittent to continuous stands of trees with *Alnus* and *Platanus* co-dominating. Both *Alnus* and *Platanus* vary from low to high cover. *Quercus agrifolia* may be present from very low to moderate cover. This type is moist to wet, in a riparian setting, usually occurring in narrow shaded gorges/canyons with perennial stream floodplains (not urban run-off). Slopes are level to gently sloping, but sometimes moderately steep. This association has a rare occurrence and is of very limited extent. It is found in lower canyons, mainly near the coastal margins of the Santa Monica Mountains. Mapping for this type relied on Rapid Assessment Plots, Observation sites, and subsequent field visitation.

PHOTO INTERPRETATION SIGNATURE: The stand is coarse overall due to the varying textures of the trees and uneven crowns. *Alnus* appears as dense clumps of gray-green tree crowns with a homogeneous texture and signature. *Platanus* appears as individual trees whose signature is typically medium green with large rough-textured wide and open crowns. The crowns are usually taller than other trees. The signature for *Alnus* can look very similar to *Platanus* and *Salix* spp. *Q. agrifolia* has a large coarse irregular rounded crown with a dark green color.

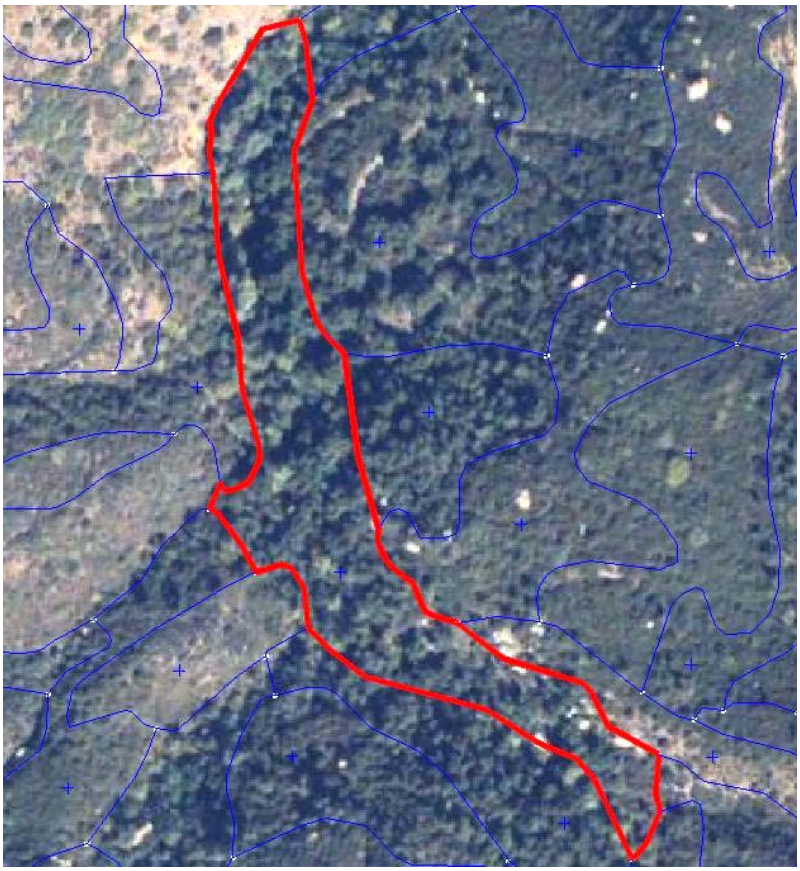
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Umbellularia californica–Alnus rhombifolia* Woodland/Forest Association (1013)
- *Umbellularia californica–Platanus racemosa* Woodland/Forest Association (1014)
- *Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6114)
- *Quercus lobata–Salix lasiolepis* Woodland/Forest Association (Provisional) (1324)
- *Platanus racemosa–Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6452)

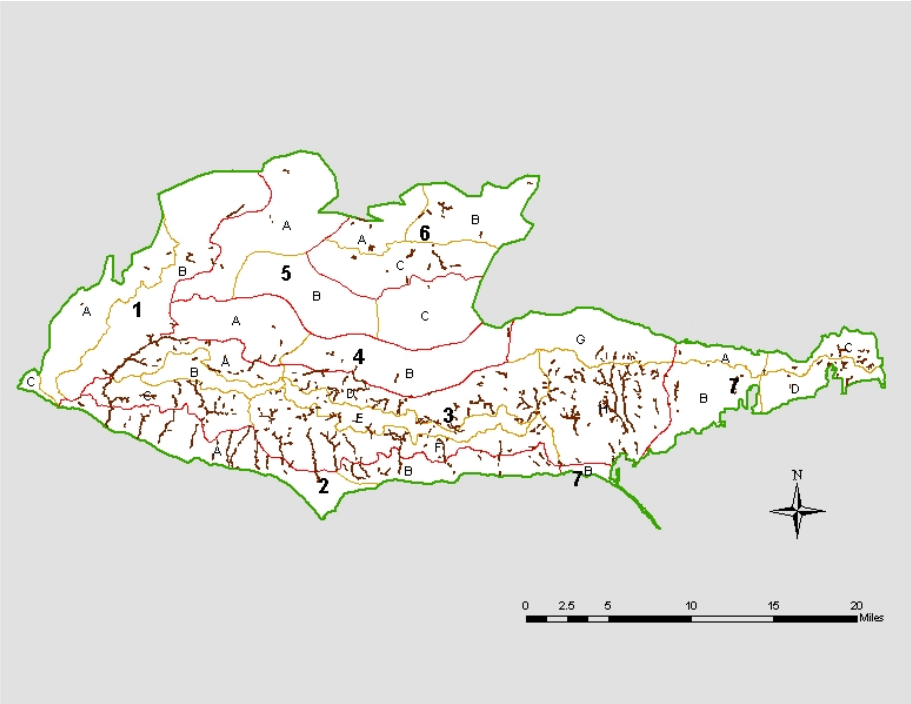
CALIFORNIA SYCAMORE WOODLAND/FOREST ALLIANCE



1450 – CALIFORNIA SYCAMORE WOODLAND/FOREST ALLIANCE
Platanus racemosa Woodland/Forest Alliance



DISTRIBUTION:



DESCRIPTION: *Platanus racemosa* Woodland/Forest Alliance represents the hierarchical class into which all *Platanus* association types are nested. *Platanus* typically dominates, but can co-dominate with *Quercus agrifolia* and *Salix* spp. in some cases. Stands vary from sparse to intermittent to dense canopy of trees over shrubs or grassland. This alliance characteristically occupies mesic ravines, riparian drainages, and their associated floodplains and terraces. Surfaces range from flat to concave bottoms, on level to moderately steep slopes. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *Platanus* as the dominant tree are included.

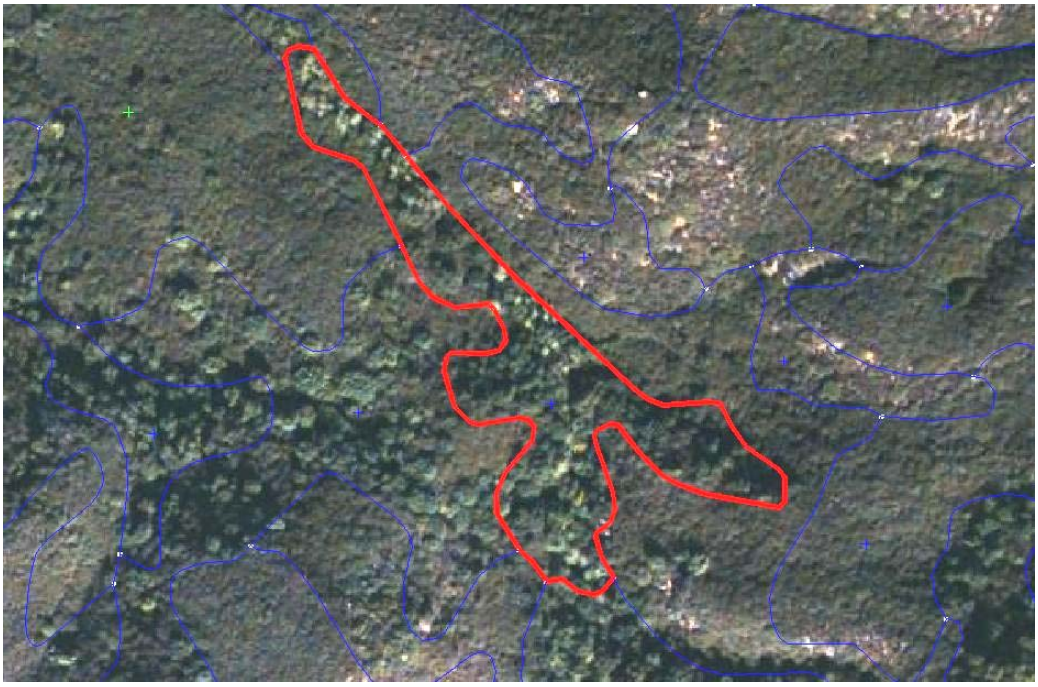
PHOTO INTERPRETATION SIGNATURE: The stand appearances vary from uneven to scattered with coarse trees as the overstory. *Platanus* appears as individual very tall trees with irregular open crowns whose color is medium green. *Q. agrifolia* appears as individuals or groups of trees whose signature is typically dark green with a large rough-textured wide crown. *Salix* spp. are gray green to silver-highlighted green in tall dense clumps of variable to homogeneous texture. The signature for *P. racemosa* is similar to that of *Salix* spp. and *Alnus rhombifolia*, however *Platanus* occurs as separate individuals rather than in continuous clumps or groups.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

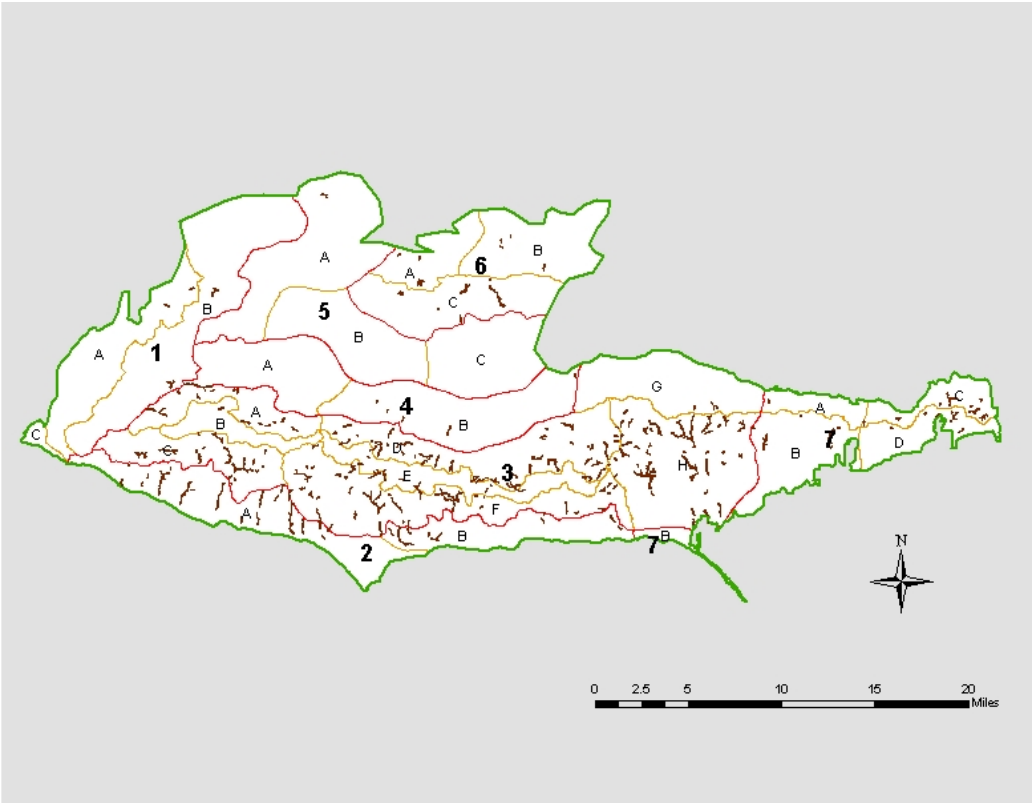
- *Umbellularia californica* Woodland/Forest Alliance (1010)
- *Quercus agrifolia* Woodland/Forest Allance (1110)
- *Quercus lobata* Woodland/Forest Alliance (1320)
- *Alnus rhombifolia* Woodland/Forest Alliance (1440)

1452 – CALIFORNIA SYCAMORE–COAST LIVE OAK SOUTH COASTAL WOODLAND/FOREST ASSOCIATION

***Platanus racemosa-Quercus agrifolia* South Coastal Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: *Platanus racemosa - Quercus agrifolia* South Coast Woodland/Forest Association occurs as an open to intermittent canopy of co-dominating *Platanus* and *Q. agrifolia*, with both species at low to high cover. This association occupies mesic ravines and drainage bottoms as well as moderate to steep mid slopes.

PHOTO INTERPRETATION SIGNATURE: The stand as a whole has an uneven appearance due to the stature and color differences of the two dominant species. *Q. agrifolia* appears as individuals or groups of trees whose signature is typically dark green with large rough-textured wide crowns. *Platanus* appears as individual, very tall trees with irregular open crowns whose color is medium green. The signature for *Platanus* is similar to that of *Salix* spp. and *Alnus rhombifolia;* however, *Platanus* occurs as separate individuals rather than in continuous clumps or groups.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

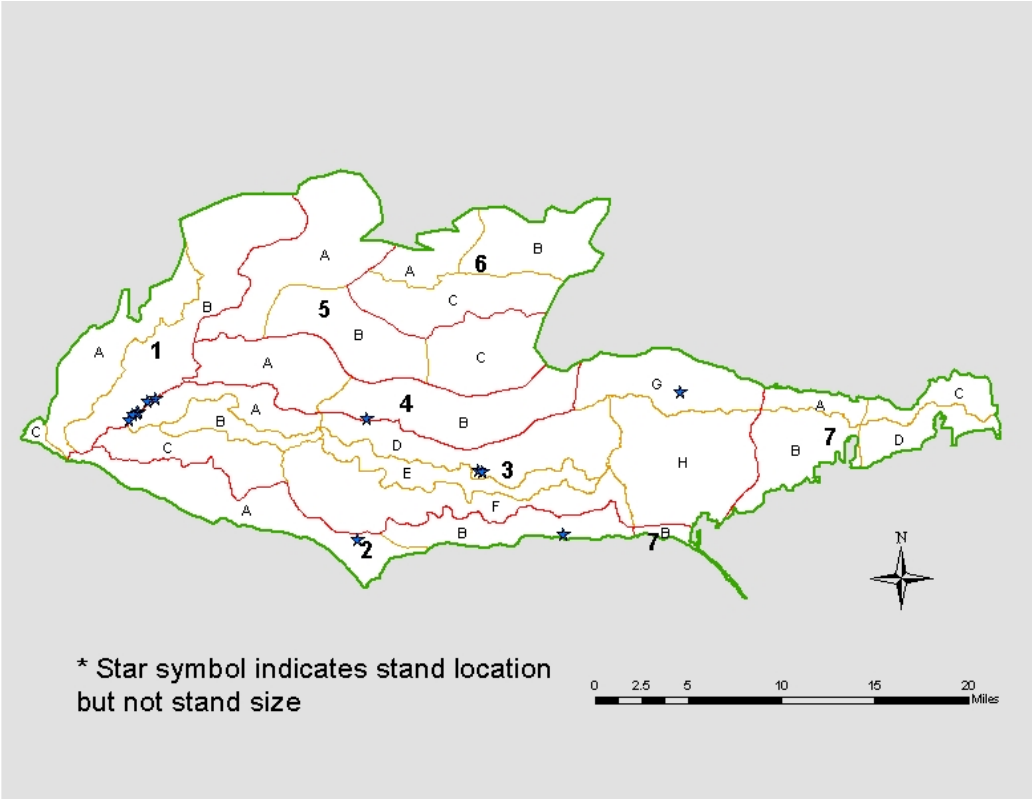
- *Umbellularia californica–Platanus racemosa* Woodland/Forest Association (1014)
- *Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6114)
- *Quercus lobata–Salix lasiolepis* Woodland/Forest Association (Provisional) (1324)
- *Alnus rhombifolia–Platanus racemosa* Association (1441)
- *Platanus racemosa-Quercus agrifolia/Baccharis salicifolia* South Coastal Woodland/Forest Association (1458)
- *Platanus racemosa–Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6452)

1456 – CALIFORNIA SYCAMORE/ANNUAL GRASS-HERB WOODLAND/FOREST ASSOCIATION

***Platanus racemosa*/Annual Grass-Herb Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: *Platanus racemosa*/Annual Grass-Herb Woodland/Forest Association occurs as a sparse to open canopy of *Platanus* over grassland. *Platanus* dominates at low to moderate cover. Other trees and shrubs can be present at very low cover. This association occupies mesic flat, level to gently sloping floodplains and terraces of major stream drainages.

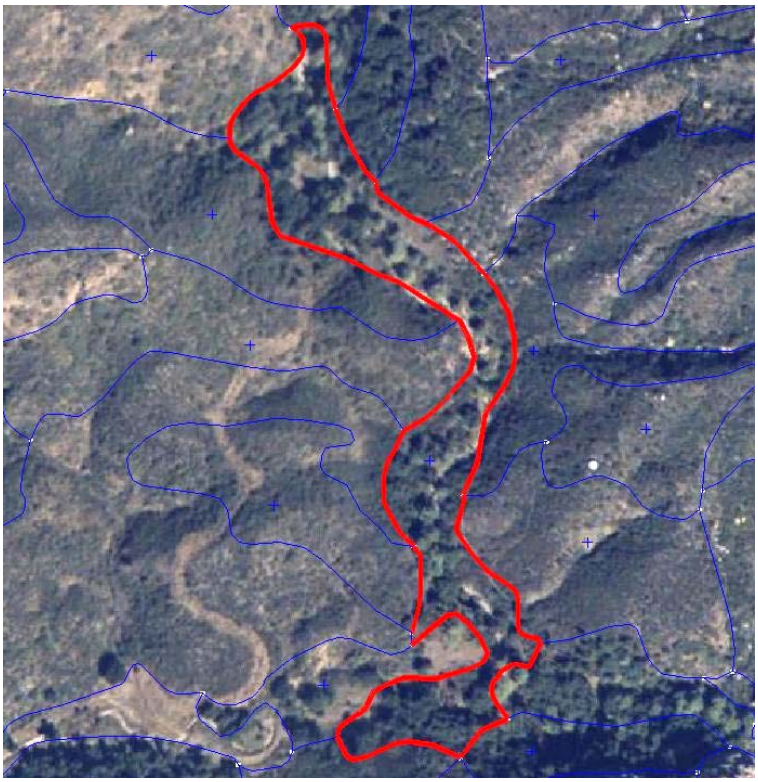
PHOTO INTERPRETATION SIGNATURE: The stand has a two-tiered appearance from scattered *Platanus* in the overstory over smooth grassland understory. *Platanus* appears as individual very tall trees with irregular open crowns whose color is medium green. The signature for *Platanus* is similar to that of *Salix* spp. and *Alnus rhombifolia*; however, *Platanus* occurs as separate individuals rather than in continuous clumps or groups. Grasslands are smooth textured, very short homogeneous to mosaicked or mottled carpets of light tan to light brown shades.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

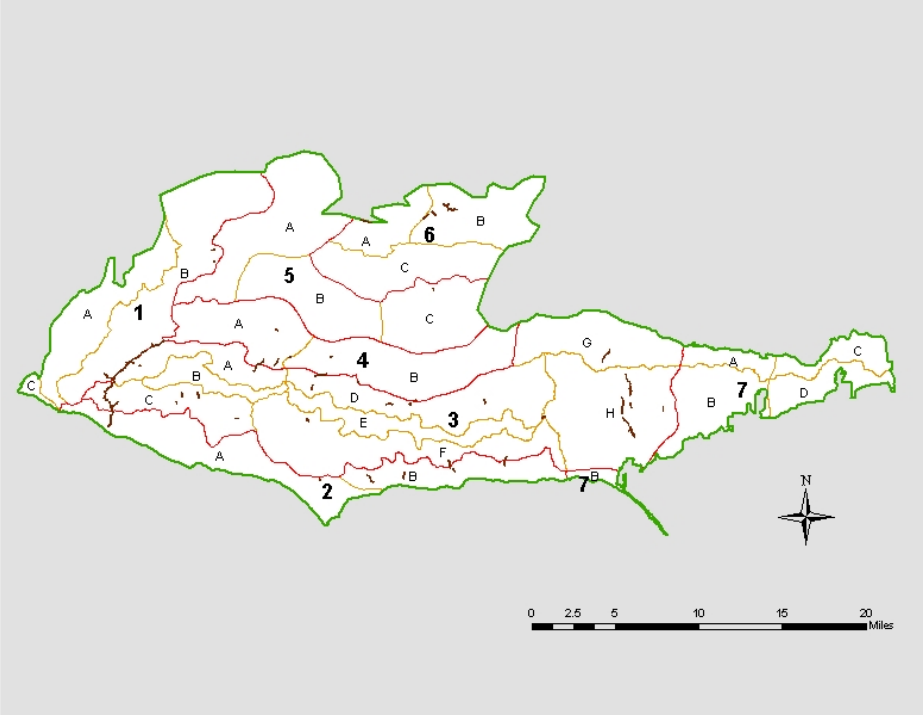
- *Platanus racemosa-Quercus agrifolia/Baccharis salicifolia* South Coastal Woodland/Forest Association (1458)

1458 – CALIFORNIA SYCAMORE-COAST LIVE OAK/MULE FAT–DOUGLAS MUGWORT SOUTH COASTAL WOODLAND/FOREST ASSOCIATION

Platanus racemosa-Quercus agrifolia/Baccharis salicifolia-Artemisia douglasiana **South Coastal Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: *Platanus racemosa - Quercus agrifolia/Baccharis salicifolia - Artemisia douglasiana* South Coastal Woodland/Forest Association occurs as sparse to open canopy of *Platanus* and *Q. agrifolia* co-dominating over mesic shrubs. *Platanus* has a low to high cover, while *Q. agrifolia* has a low to moderate cover. *Salix* spp. may be present at very low cover. *B. salicifolia* and *A. douglasiana* are present from very low to moderate cover. This association favors mesic flat to concave bottoms and lower slopes of level to gently sloping ravines and riparian drainages.

PHOTO INTERPRETATION SIGNATURE: The stand as a whole has an uneven appearance due to the stature and color differences of the two dominant trees. *Q. agrifolia* appears as individuals or groups of trees whose signature is typically dark green with large rough-textured wide crowns. *Platanus* appears as individual, very tall trees with irregular open crowns whose color is medium green. The signature for *Platanus* is similar to that of *Salix* spp. and *Alnus rhombifolia*; however, *Platanus* occurs as separate individuals rather than in continuous clumps or groups. *B. salicifolia* will appear within the openings of the tree canopy, or as patches, with dull medium to dark green color and a low smooth texture. *Artemisia douglasiana* is not discernible by photo interpretation.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

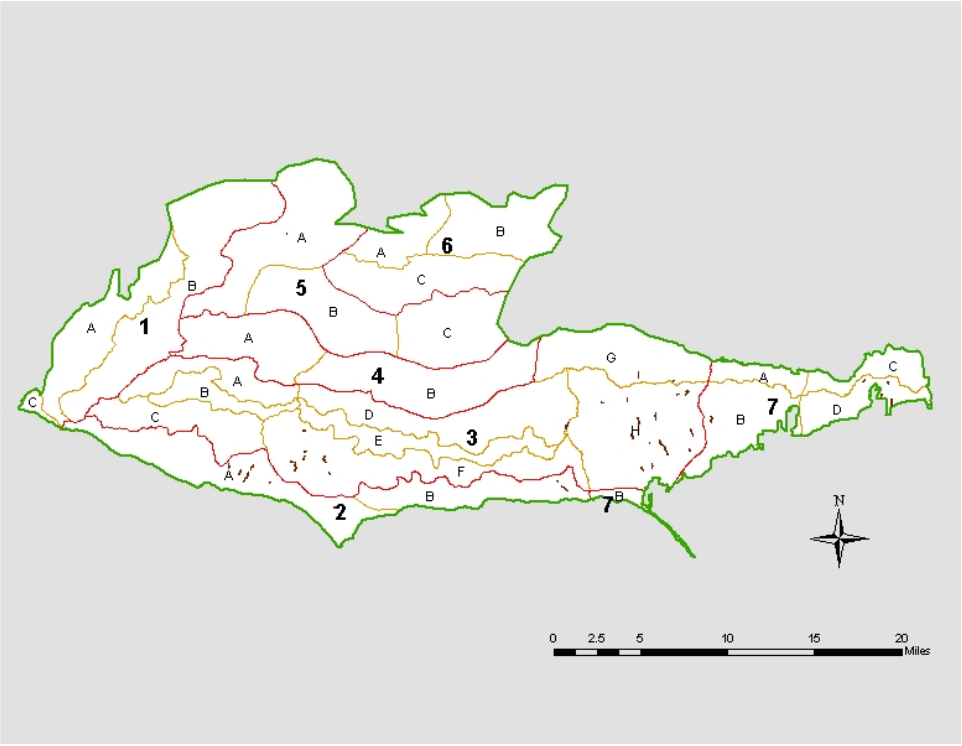
- *Umbellularia californica–Platanus racemosa* Woodland/Forest Association (1014)
- *Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6114)
- *Quercus lobata–Salix lasiolepis* Woodland/Forest Association (Provisional) (1324)
- *Alnus rhombifolia–Platanus racemosa* Association (1441)
- *Platanus racemosa–Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6452)

6451 – CALIFORNIA SYCAMORE SOUTH COASTAL INTERMITTENT STREAM WOODLAND/FOREST ASSOCIATION

***Platanus racemosa* South Coastal Intermittent Stream Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: *Platanus racemosa* South Coastal Intermittent Stream Woodland/Forest Association occurs as intermittent to continuous canopy of strongly dominant *Platanus* at moderate to very high cover. Any other trees and shrubs present are of very low cover. This association occupies mesic flat to concave, level to gently sloping bottoms to mid slopes of ravines and riparian drainages.

PHOTO INTERPRETATION SIGNATURE: The stand has a coarse yet fairly homogeneous appearance, being dominated by *Platanus* in the overstory. *Platanus* appears as individual very tall trees with irregular open crowns whose color is medium green. The signature for *Platanus* is similar to that of *Salix* spp. and *Alnus rhombifolia*; however, *Platanus* appears as separate individuals rather than in continuous clumps or groups.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

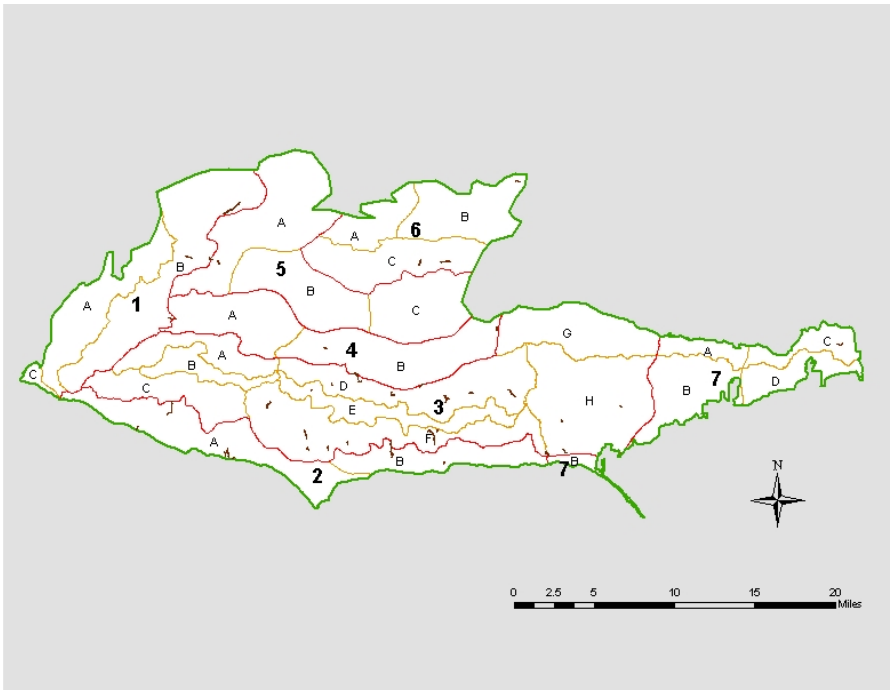
- *Umbellularia californica–Platanus racemosa* Woodland/Forest Association (1014)
- *Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6114)
- *Quercus lobata–Salix lasiolepis* Woodland/Forest Association (Provisional) (1324)
- *Alnus rhombifolia–Platanus racemosa* Association (1441)
- *Platanus racemosa–Quercus agrifolia–Salix lasiolepis* Woodland/Forest Association (6452)

6452 – CALIFORNIA SYCAMORE–COAST LIVE OAK–ARROYO WILLOW WOODLAND/FOREST ASSOCIATION

***Platanus racemosa-Quercus agrifolia-Salix lasiolepis* Woodland/Forest Association**



DISTRIBUTION:



DESCRIPTION: *Platanus racemosa - Quercus agrifolia - Salix lasiolepis* Woodland/Forest Association occurs as an open to intermittent canopy, with all or any two species co-dominating while the remaining species is sub-dominant. All three species range from very low to high cover. *Baccharis salicifolia, Juglans californica*, and *Umbellularia californica* may also be present. This association favors mesic concave, gently sloping to steep ravine and canyon bottoms to upper slopes.

PHOTO INTERPRETATION SIGNATURE: The stand overall has an uneven appearance due to the stature and color differences of the three dominant species. *Q. agrifolia* appears as individuals or groups of trees whose signature is typically dark green with large rough-textured wide crowns. *Platanus* appears as individual, very tall trees with irregular open crowns whose signature is medium green. *Salix* spp. are gray green to silver-highlighted green trees in tall dense clumps, with variable to homogeneous texture. The signature for *Platanus* is similar to that of *Salix* spp. and *Alnus rhombifolia*; however, *Platanus* occurs as separate individuals rather than in continuous clumps or groups.

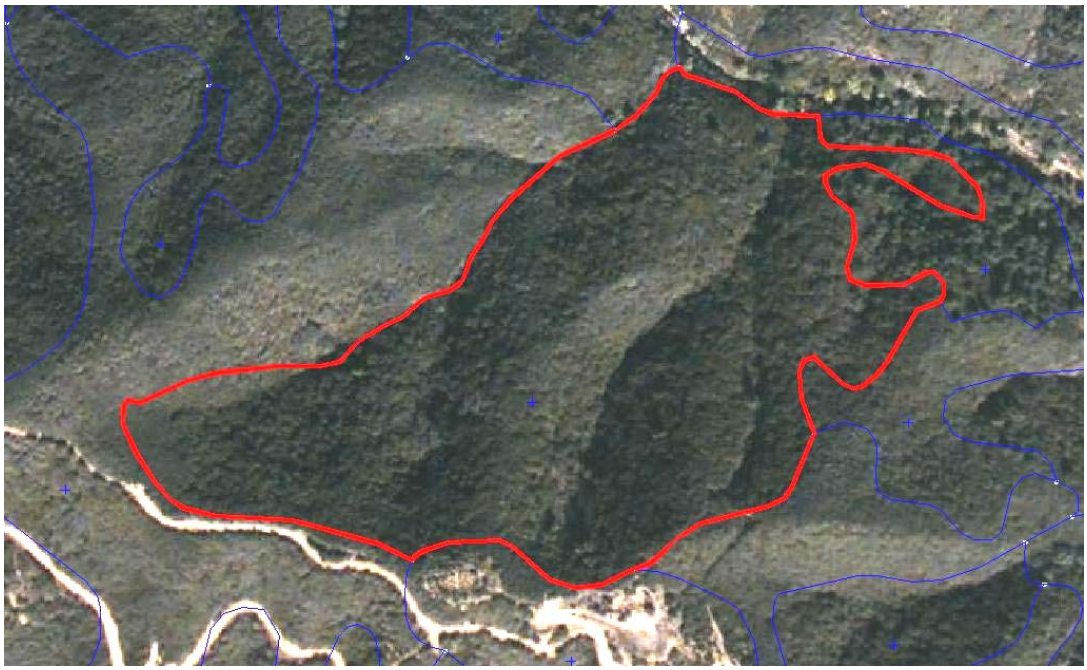
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Umbellularia californica-Platanus racemosa* Woodland/Forest Association (1014)
- *Quercus agrifolia-Salix lasiolepis* Woodland/Forest Association (6114)
- *Quercus lobata-Salix lasiolepis* Woodland/Forest Association (Provisional) (1324)
- *Alnus rhombifolia-Platanus racemosa* Association (1441)
- *Platanus racemosa-Quercus agrifolia/Baccharis salicifolia-Artemisia douglasiana* South Coast Woodland/Forest Association (1458)

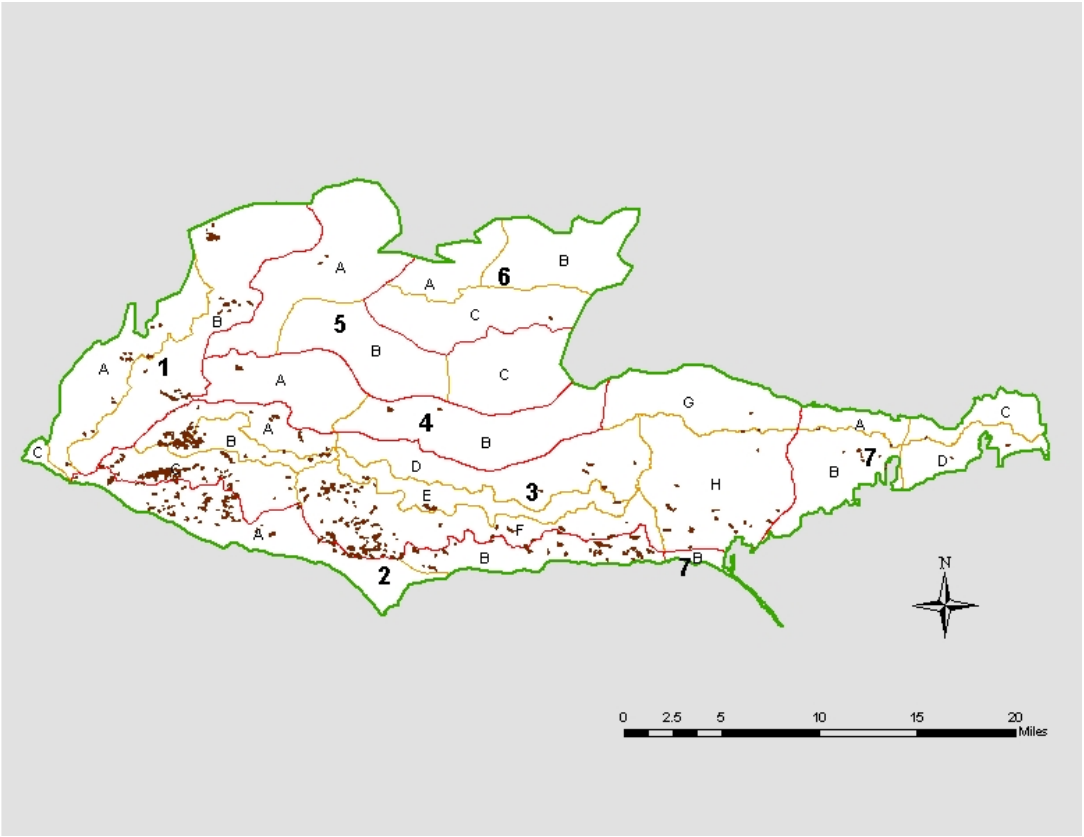
MISCELLANEOUS SHRUBLAND SUPERALLIANCES



2002 – BIG POD CEANOTHUS & GREENBARK CEANOTHUS & BIRCH LEAF MOUNTAIN MAHOGANY SHRUBLAND SUPERALLIANCE
***Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Shrubland Superalliance**



DISTRIBUTION:



DESCRIPTION: *Ceanothus megacarpus & Ceanothus spinosis & Cercocarpus betuloides* Shrubland Superalliance occurs as intermittent to continuous chaparral shrubs, and is found on mesic north-facing moderate to steep slopes. It favors neutral to concave surfaces on lower to upper slopes. It is mapped in areas where either one, two, or all three of the species or alliances may be present, but none of them is discernible for alliance mapping; or where all three species appear to be present as a mix or mosaic but the association/alliance cannot be determined. The environmental characteristics of the three alliances overlap, and therefore cannot be used to differentiate the alliances. *Ceanothus megacarpus* Shrubland Alliance (2080), *Ceanothus spinosus* Shrubland Alliance (2090), and *Cercocarpus betuloides* Shrubland Alliance (2110) are possible alliances present.

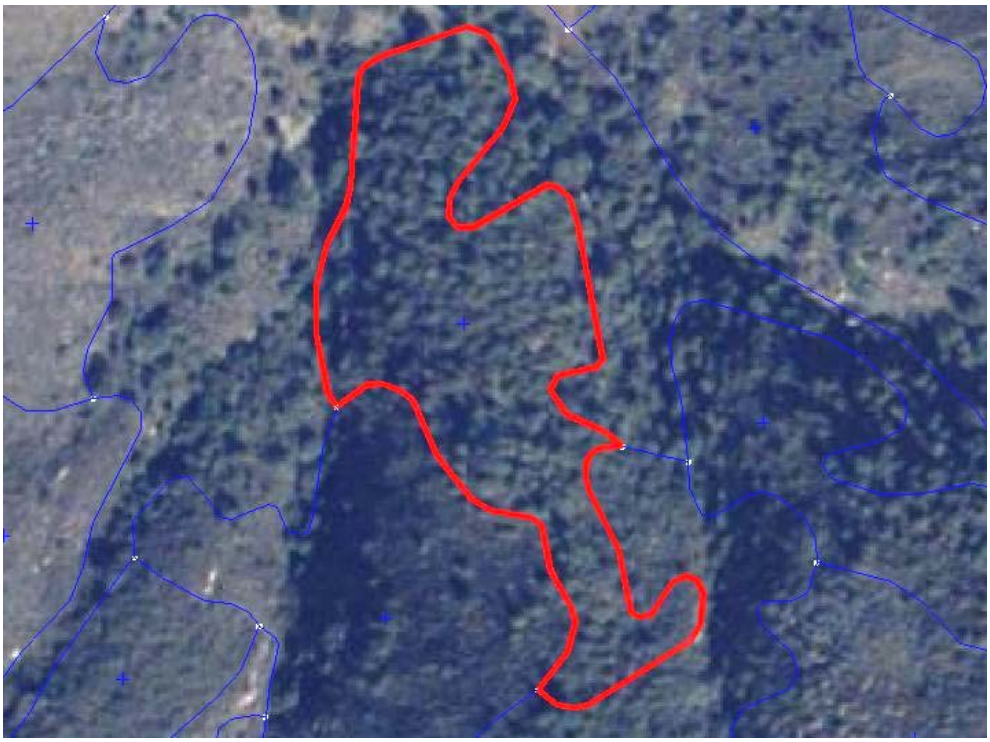
PHOTO INTERPRETATION SIGNATURE: The stand appears as smooth-textured chaparral shrubs with a dark green color. The signatures of the chaparral species are very similar in color and texture. *Ceanothus megacarpus* is typically dark gray to blue-gray. *Cercocarpus* is typically very dark green to dark gray with a smooth, bumpy or wispy texture. *Ceanothus spinosus* is typically medium green or olive green to dark green, and appears greener than *Ceanothus megacarpus* and *Cercocarpus* . When *Ceanothus megacarpus* or *Cercocarpus* is mixed with *Ceanothus spinosus* it will have a greener look to it, but may still retain its dull grayness. When *Ceanothus megacarpus* or *Ceanothus spinosus* are mixed with *Cercocarpus* the stand may appear dark and have a bumpy or wispy texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

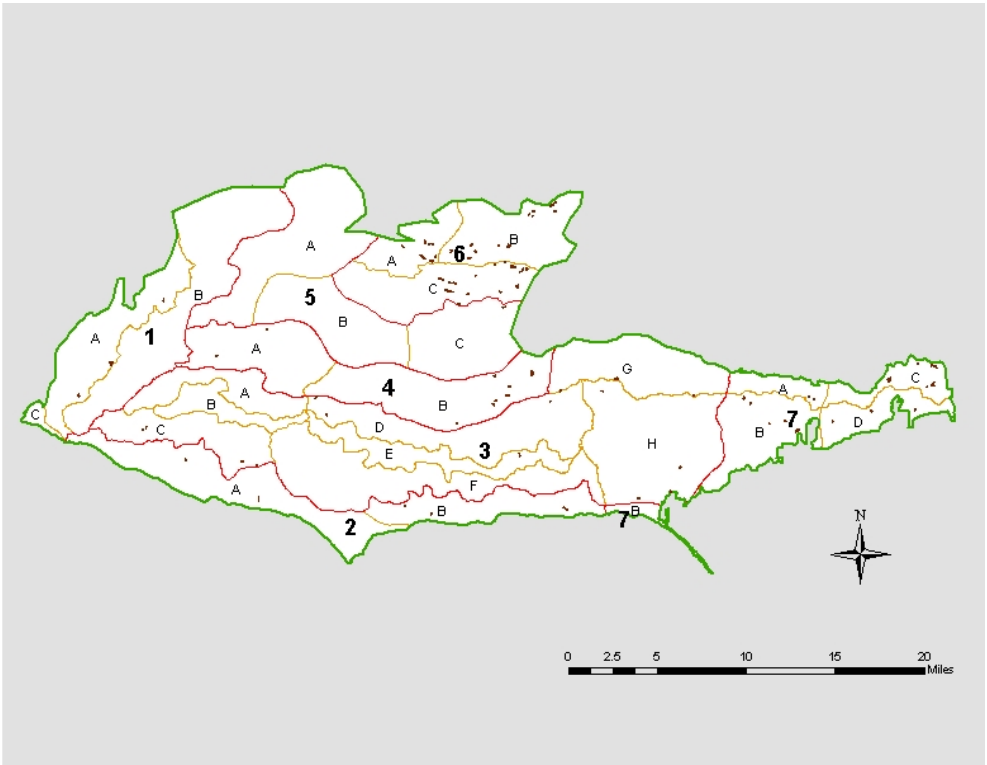
- *Ceanothus* spp. *& Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus cuneatus & Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance (2008)
- *Ceanothus* spp.*-Adenostoma fasciculatum* Shrubland Mapping Unit (2009)
- *Ceanothus megacarpus* Shrubland Alliance (2080)
- *Ceanothus spinosus* Shrubland Alliance (2090)
- *Cercocarpus betuloides* Shrubland Alliance (2110)

2003 – (CALIFORNIA WALNUT)/UNDIFFERENTIATED TALL SHRUBS SHRUBLAND SUPERALLIANCE

***(Juglans californica)*/Undifferentiated Tall Shrubs Shrubland Superalliance**



DISTRIBUTION:



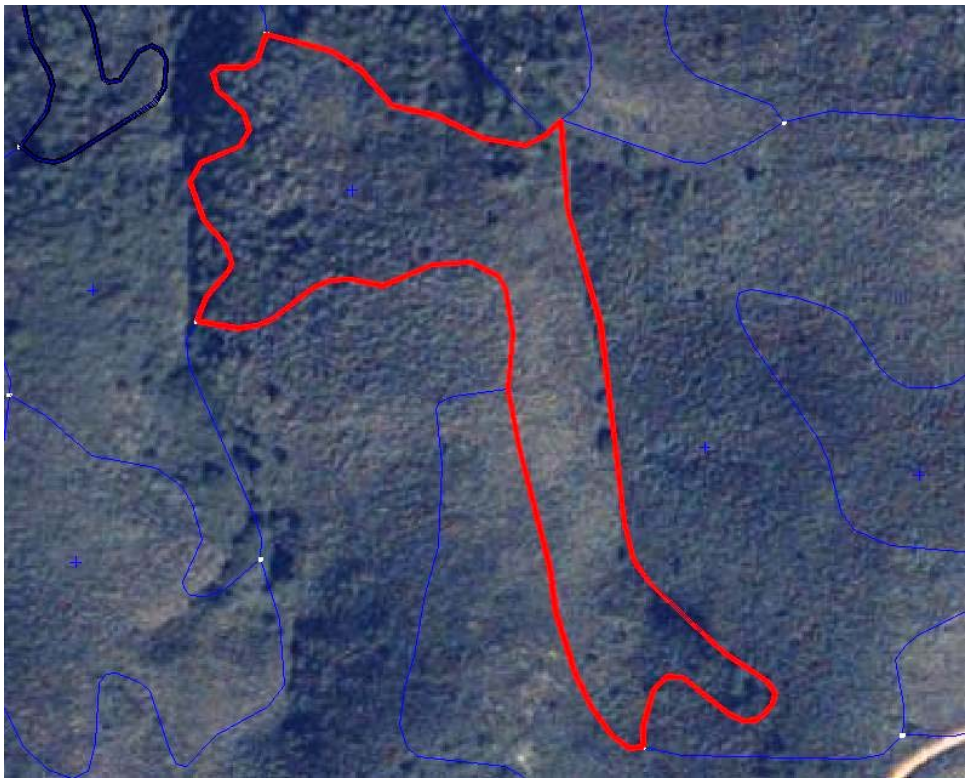
DESCRIPTION: *(Juglans californica)/*Undifferentiated Tall Shrubs Shrubland Mapping Unit occurs as open to intermittent tall shrubs and/or short trees, and is found on mesic north-facing, gentle to moderately steep slopes. It favors neutral to concave bottoms to mid slopes. It is mapped where *Juglans, Malosma laurina, Heteromeles arbutifolia, Rhus ovata, Prunus ilicifolia, Quercus berberidifolia*, and/or *Sambucus mexicana* may be present as a mixed stand, but none of them is discernible for dominance and the alliance cannot be determined; or because the similarity of species' signatures precludes determination of the species and therefore the alliance. Possible alliances present include *Juglans californica* Woodland/Forest Alliance (1310), *Malosma laurina* Shrubland Alliance (2140), *Heteromeles arbutifolia* Shrubland Alliance (2130), *Rhus ovata* Shrubland Alliance (2190), *Prunus ilicifolia* Shrubland Alliance (2120), *Quercus berberidifolia* Shrubland Alliance (2160), and *Sambucus mexicana* Shrubland Alliance (3020).

PHOTO INTERPRETATION SIGNATURE: The stand typically has a coarse texture due to the dominance of tall shrubs. Color is usually medium to dark green, but may vary in shades within the stand. *Juglans* is a short tree, medium green in color with a rounded crown and a smooth to fuzzy-edged texture. *Malosma* is round-crowned with a smooth to slightly coarse texture. Its color can vary from light green to dark green. *Heteromeles* is typically dark green to black in color, and usually has white overtones or highlights from its inflorescences. It has a rounded crown with a smooth to slightly coarse texture. *R. ovata* is usually bright green in color, but can sometimes be medium or dark green. It has a rounded crown with a smooth to slightly coarse texture. *Prunus* is bright green, but in some cases can be dark green. It has a narrow rounded crown with a smooth to slightly coarse texture. *Q. berberidifolia* is dark green to black in color with a rounded crown and a slightly coarse texture. *Sambucus* is typically gray or gray-green in color with a tall thin rounded crown and smooth texture.

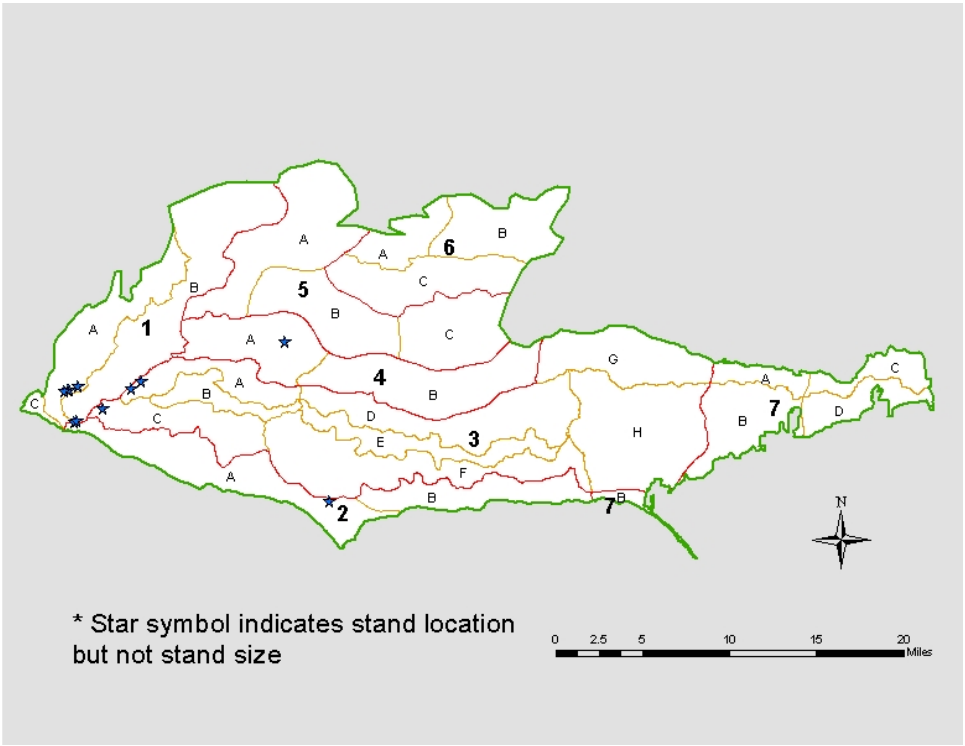
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Juglans californica* Woodland/Forest Alliance (1310)
- *Prunus illicifolia* Shrubland Alliance (2120)
- *Heteromeles arbutifolia* Shrubland Alliance (2130)
- *Malosma laurina* Shrubland Alliance (2140)
- *Quercus berberidifolia* Shrubland Alliance (2160)
- *Rhus ovata* Shrubland Alliance (2190)
- *Sambucus mexicana* Shrubland Alliance (3020)

2005 – BUSH MONKEY FLOWER & POISON OAK SHRUBLAND SUPERALLIANCE
***Mimulus aurantiacus & Toxicodendron diversilobum* Shrubland Superalliance**



DISTRIBUTION:



DESCRIPTION: *Mimulus aurantiacus & Toxicodendron diversilobum* Shrubland Superalliance occurs as open to continuous short shrubs, and is found on moist to mesic, north-facing, gentle to steep slopes. It favors concave to neutral surfaces on bottoms to upper slopes. It is mapped in areas where one or both alliances may be present, but because of signature similarity, neither is discernible for alliance mapping. The two species/alliances can occur in similar environments. *Leymus condensatus* may also be present. Possible alliances present are *Mimulus aurantiacus* Shrubland Alliance (2170), and *Toxicodendron diversilobum* Shrubland Alliance (3330).

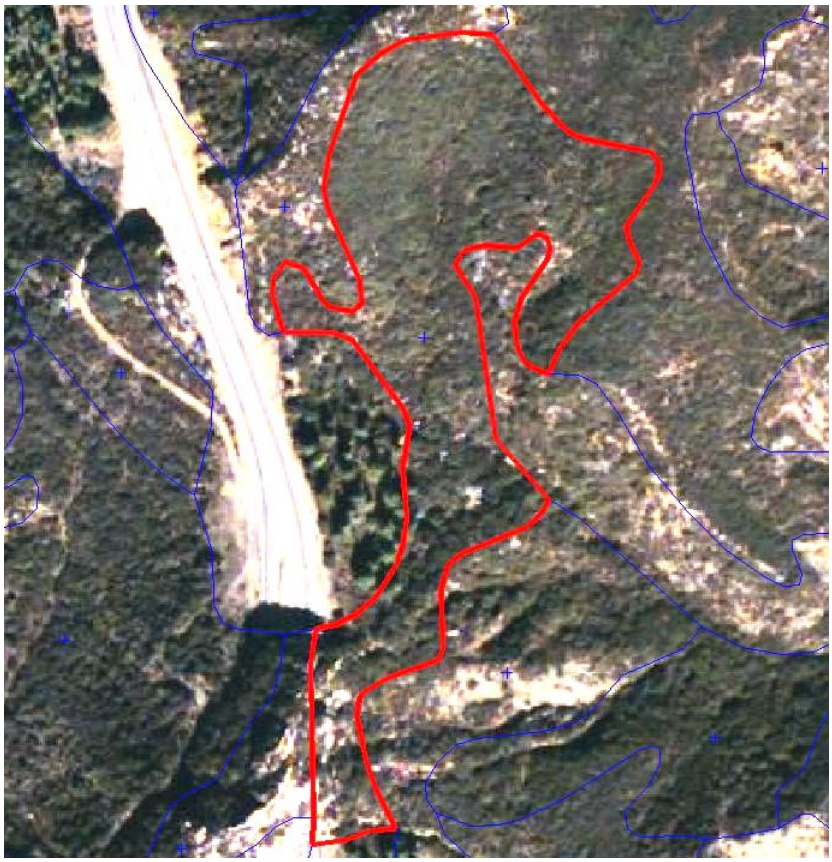
PHOTO INTERPRETATION SIGNATURE: The stand will usually have an orange-brown to reddish brown color with a slightly coarse texture. Because the signatures have variations that overlap, in some sites *Mimulus* and *Toxicodendron* are difficult to distinguish from each other. *Mimulus* has an orange-brown to reddish brown color with a slightly coarse texture, and occurs as individuals or in groups or clumps. *Toxicodendron* can be yellow, green, orange, or reddish brown in color, with a smooth to slightly coarse texture, and occurs as patches.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

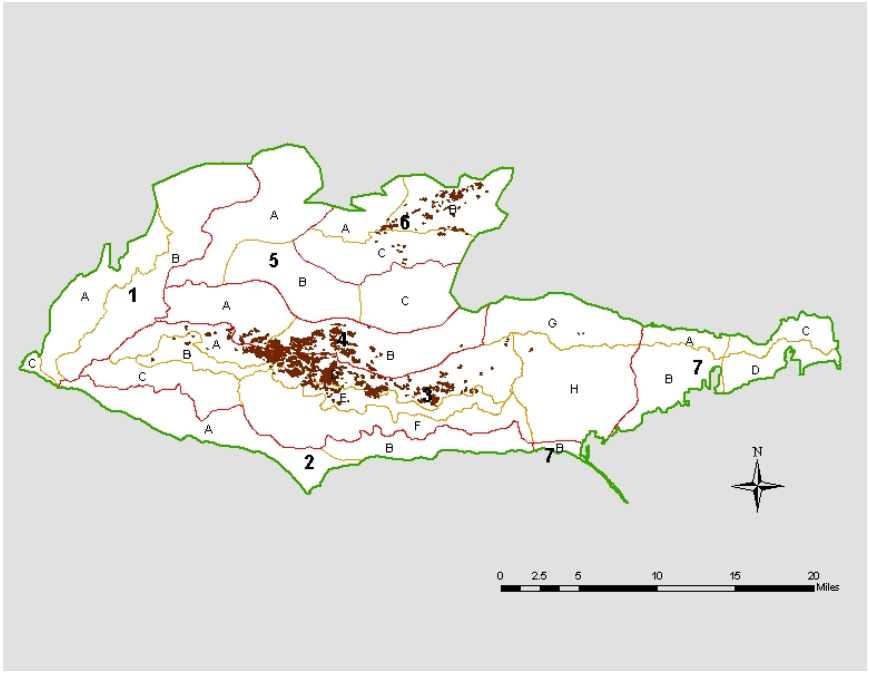
- *Mimulus aurantiacus* Shrubland Alliance (2170)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica/Leymus condensatus* Shrubland Association (3216)
- *Artemisia californica-Mimulus aurantiacus* Shrubland Association (8214)
- *Toxicodendron diversilobum* Shrubland Alliance (3330)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella* spp. Shrubland Association (3396)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)

2006 – CEANOTHUS SPP. & BIRCH LEAF MOUNTAIN MAHOGANY SHRUBLAND SUPERALLIANCE

***Ceanothus* spp. *& Cercocarpus betuloides* Shrubland Superalliance**



DISTRIBUTION:



DESCRIPTION*:* *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance occurs as intermittent to continuous chaparral shrubs, and is found on mesic north-facing moderate to steep slopes. It favors neutral to concave surfaces on lower to upper slopes. It is mapped in areas where *Ceanothus crassifolius, C. cuneatus, C. megacarpus, C. oliganthus, C. spinosus*, and/or *Cercocarpus* may be present, but none of them are discernible for alliance mapping; or two or more species appear to be present as a mix, mosaic, or hybridization in a stand and the species/association/alliance cannot be determined. This superalliance is also used where one *Ceanothus* alliance type transitions to a different *Ceanothus* alliance type. The six species/alliances can occur in similar environments. Possible alliances present include *Ceanothus crassifolius* Shrubland Alliance (2060), *Ceanothus oliganthus* Shrubland Alliance (2070), *Ceanothus megacarpus* Shrubland Alliance (2080), *Ceanothus spinosus* Shrubland Alliance (2090), *Cercocarpus betuloides* Shrubland Alliance (2110), *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Alliance (2510), *Ceanothus cuneatus* Shrubland Alliance (2520), and *Adenostoma fasciculatum-Ceanothus crassifolius* Shrubland Alliance (2570).

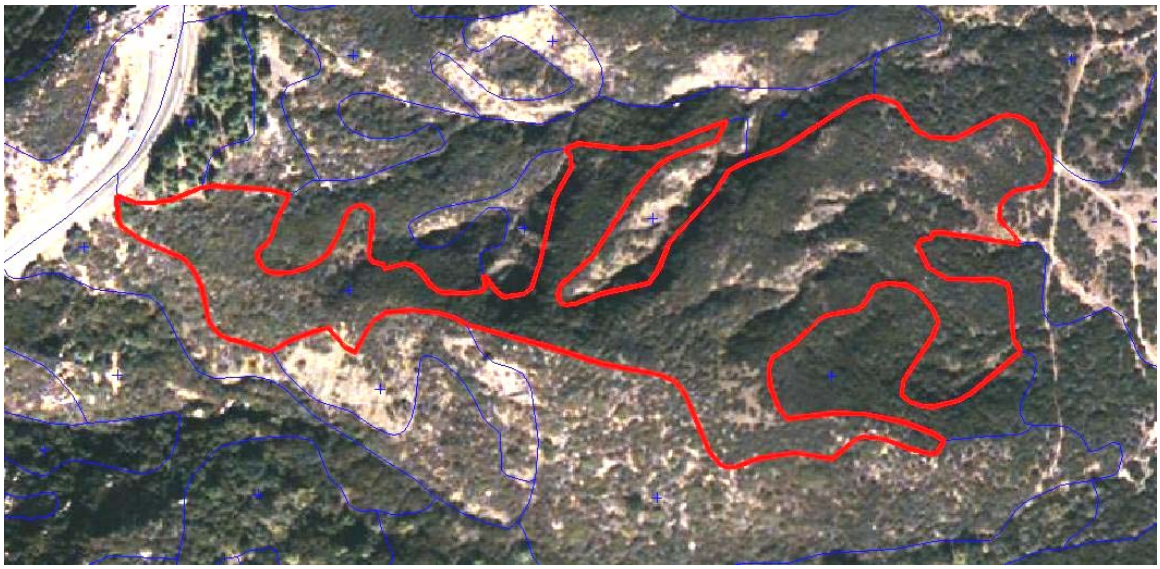
PHOTO INTERPRETATION SIGNATURE: The stand appears as smooth-textured chaparral shrubs with a dark green, dark gray, or dark brown color, sometimes with a dull tone. The signatures of the *Ceanothus* species can overlap in color and texture. *C. megacarpus* is typically dark gray to blue-gray. *C. spinosus* is medium green or olive green to dark green. *C. oliganthus* is usually dark green to black in color. *C. cuneatus* can be gray or brown or reddish brown. *C. crassifiolius* is dark gray or dull brown in color. *Cercocarpus* is typically very dark green to dark gray with a smooth, bumpy or wispy texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

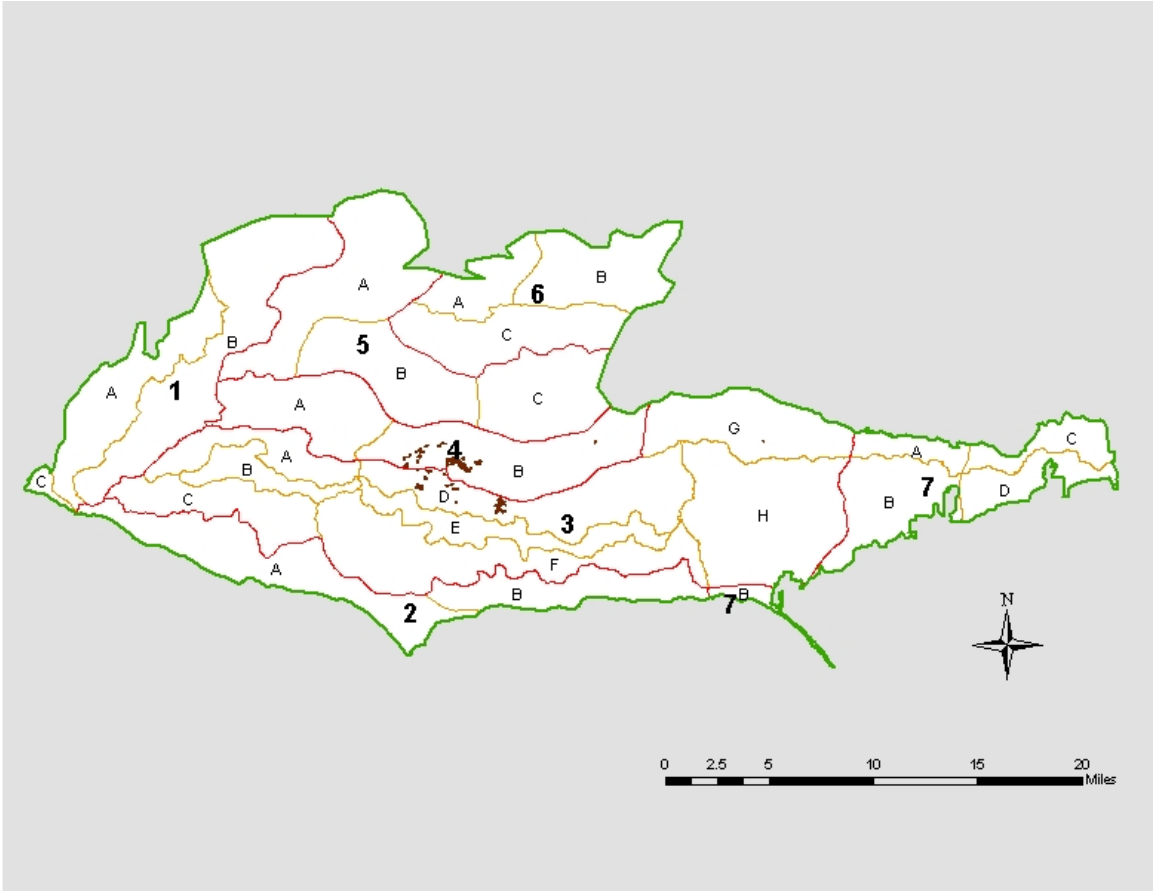
- *Ceanothus crassifolius* Shrubland Alliance (2060)
- *Ceanothus oliganthus* Shrubland Alliance (2070)
- *Ceanothus megacarpus* Shrubland Alliance (2080)
- *Ceanothus spinosus* Shrubland Alliance (2090)
- *Cercocarpus betuloides* Shrubland Alliance (2110)
- *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Alliance (2510)
- *Ceanothus cuneatus* Shrubland Alliance (2520)
- *Adenostoma fasciculatum-Ceanothus crassifolius* Shrubland Alliance (2570).

2008 – WEDGE LEAF CEANOTHUS & CHAMISE-WEDGE LEAF CEANOTHUS SHRUBLAND SUPERALLIANCE

***Ceanothus cuneatus & Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance**



DISTRIBUTION:



DESCRIPTION: *Ceanothus cuneatus & Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance occurs as sparse to intermittent chaparral shrubs, and is found on dry north- or south-facing gentle to steep slopes. It is mapped in areas where one or both alliances may be present, but because of signature similarity, neither is discernible for alliance mapping. The alliances can occur in similar environments. Possible alliances present include *Ceanothus cuneatus* Shrubland Alliance (2520), and *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Alliance (2510). This superalliance was mapped with the aid of Rapid Assessment Plots provided by the Park and extrapolated to nearby similar sites.

PHOTO INTERPRETATION SIGNATURE: The stand appears as smooth-textured chaparral shrubs with a dark green, dark gray, reddish brown, or dark brown color, sometimes with a dull tone. *Ceanothus cuneatus* can be gray or brown or reddish-brown. *Adenostoma fasciculatum* is reddish-brown in color with a slightly coarse texture and spiky edges.

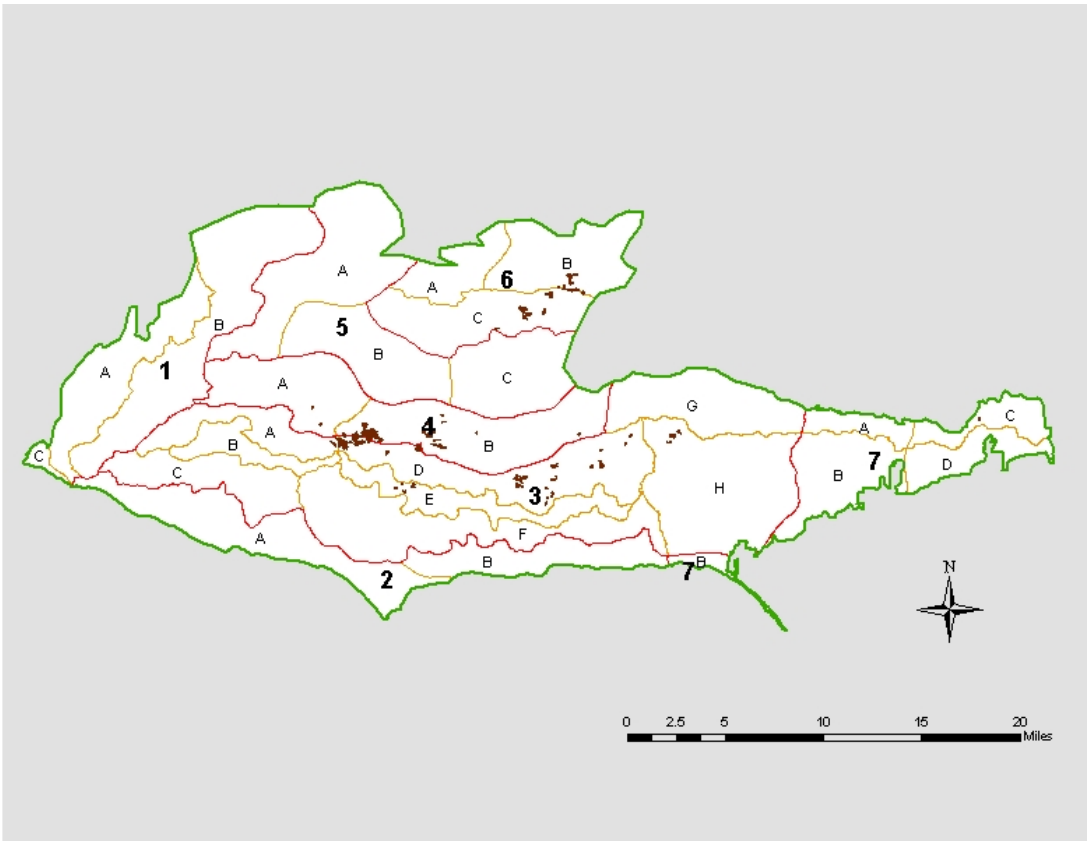
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus* spp. *& Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus* spp*.-Adenostoma fasciculatum* Shrubland Mapping Unit (2009)
- *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Alliance (2510)
- *Ceanothus cuneatus* Shrubland Alliance (2520)
- *Adenostoma fasciculatum-Ceanothus crassifolius* Shrubland Alliance (2570).

2009 – CEANOTHUS SPP.-CHAMISE SHRUBLAND MAPPING UNIT
Ceanothus spp.-*Adenostoma fasciculatum* Shrubland Mapping Unit



DISTRIBUTION:



DESCRIPTION: *Ceanothus* spp.*-Adenostoma fasciculatum* Shrubland Mapping Unit occurs as open to intermittent chaparral shrubs, and is found on dry south-facing moderate to steep slopes. It favors neutral, undulating or convex surfaces on lower to upper slopes and ridge tops. It is mapped in areas where *Ceanothus* spp. and *A. fasciculatum* are present, but the *Ceanothus* species (*C. crassifolius, C. cuneatus, or C. megacarpus*) cannot be determined. This mapping unit is also used where one *Ceanothus* alliance type transitions to a different *Ceanothus* alliance type. The species/alliances/associations can occur in similar environments. Possible associations present include *Ceanothus megacarpus-Adenostoma fasciculatum* Shrubland Association (2083), *Adenostoma fasciculatum-Ceanothus cuneatus-Salvia mellifera-Malosma laurina* Shrubland Association (2511), *Adenostoma fasciculatum-Ceanothus crassifolius-Malosma laurina* Shrubland Association (2572), and *Adenostoma fasciculatum-Ceanothus megacarpus* Shrubland Association (2019).

PHOTO INTERPRETATION SIGNATURE: The stand will usually have a mottled signature and coarse to uneven texture due to the dominant species present. The signature will have a dark green, dark gray, or dark brown color, sometimes with a dull tone, with reddish brown sprinkled throughout. The signatures of the chaparral shrubs overlap in color and texture. *Ceanothus megacarpus* is typically dark gray to blue-gray with. *C. cuneatus* can be gray or brown or reddish-brown. *C. crassifiolius* is dark gray or dull brown in color. The *Ceanothus* species have a fine texture. *Adenostoma fasciculatum* will be reddish brown with a coarse texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus* spp. *& Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus cuneatus & Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance (2008)
- *Adenostoma fasciculatum-Ceanothus megacarpus* Shrubland Association (2019)
- *Ceanothus megacarpus-Adenostoma fasciculatum* Shrubland Association (2083)
- *Cercocarpus betuloides-Adenostoma fasciculatum* Shrubland Association (2115)
- *Adenostoma fasciculatum-Ceanothus cuneatus-Salvia mellifera-Malosma laurina*-Shrubland Association (2511)
- *Adenostoma fasciculatum-Ceanothus crassifolius-Malosma laurina* Shrubland Association (2572)

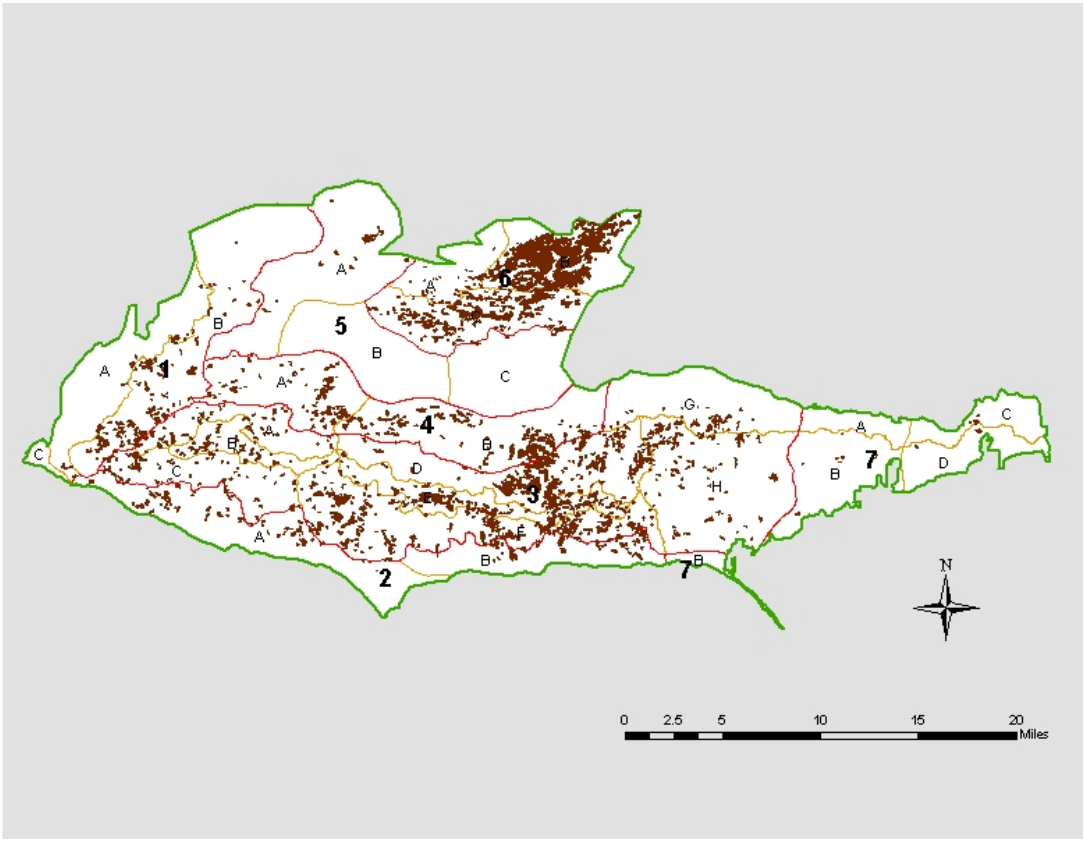
CHAMISE SHRUBLAND ALLIANCE



2010 – CHAMISE SHRUBLAND ALLIANCE
Adenostoma fasciculatum Shrubland Alliance



DISTRIBUTION:



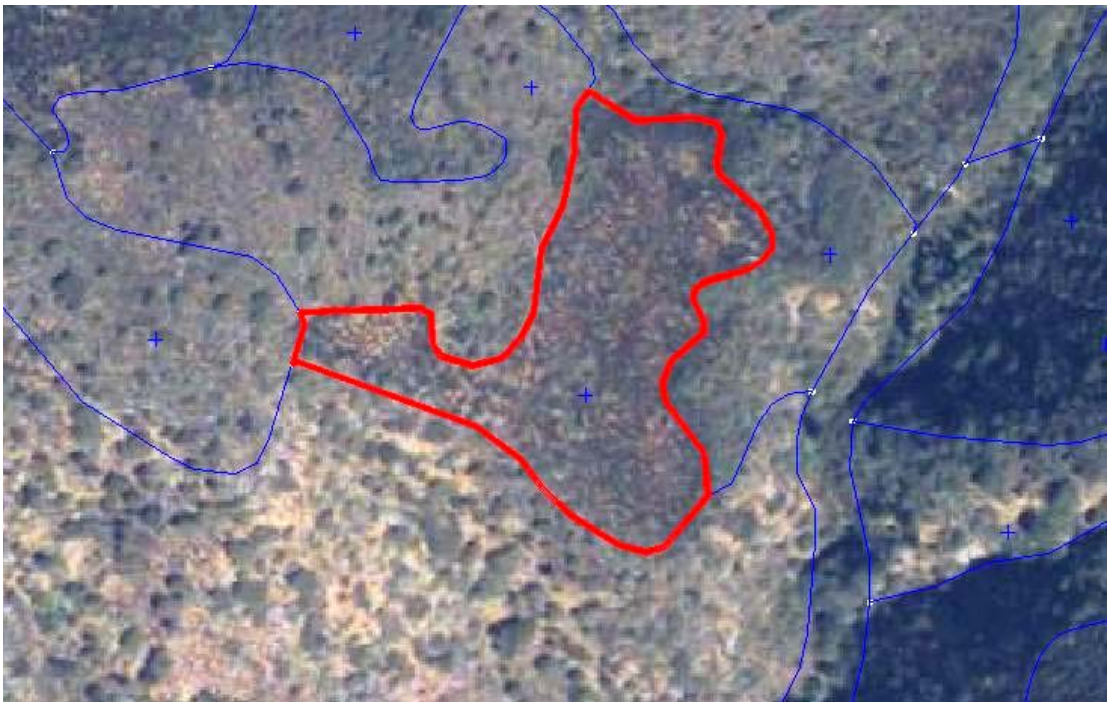
DESCRIPTION: *Adenostoma fasciculatum* Shrubland Alliance represents the hierarchical class into which all *A. fasciculatum* association types are nested. *A. fasciculatum* is the dominant shrub species in this alliance, and can occur at low to high cover. Stands of this alliance may have dense to sparse cover of shrubs. The stands are usually associated with dry or exposed conditions. The *A. fasciculatum* Shrubland Alliance typically occurs on dry ridge tops and dry south-facing slopes, but can also occur on north-facing slopes. Slope can vary from gentle on ridge tops, canyon bottoms and lower slopes to very steep side slopes. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *A. fasciculatum* as the dominant shrub are also included. In the northeast rocky portion of the Simi Hills, where *A. fasciculatum* occurs with *Artemisia californica* as the sub-dominant shrub, the stands are mapped as *Adenostoma fasciculatum* Shrubland Alliance.

PHOTO INTERPRETATION SIGNATURE: *Adenostoma fasciculatum* appears as individuals, in clumps, or in extensive stands with other shrubs. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. In some places the signature may be rusty red brown, purple brown, orange brown, or black. The crowns are usually shorter than most tall shrubs.

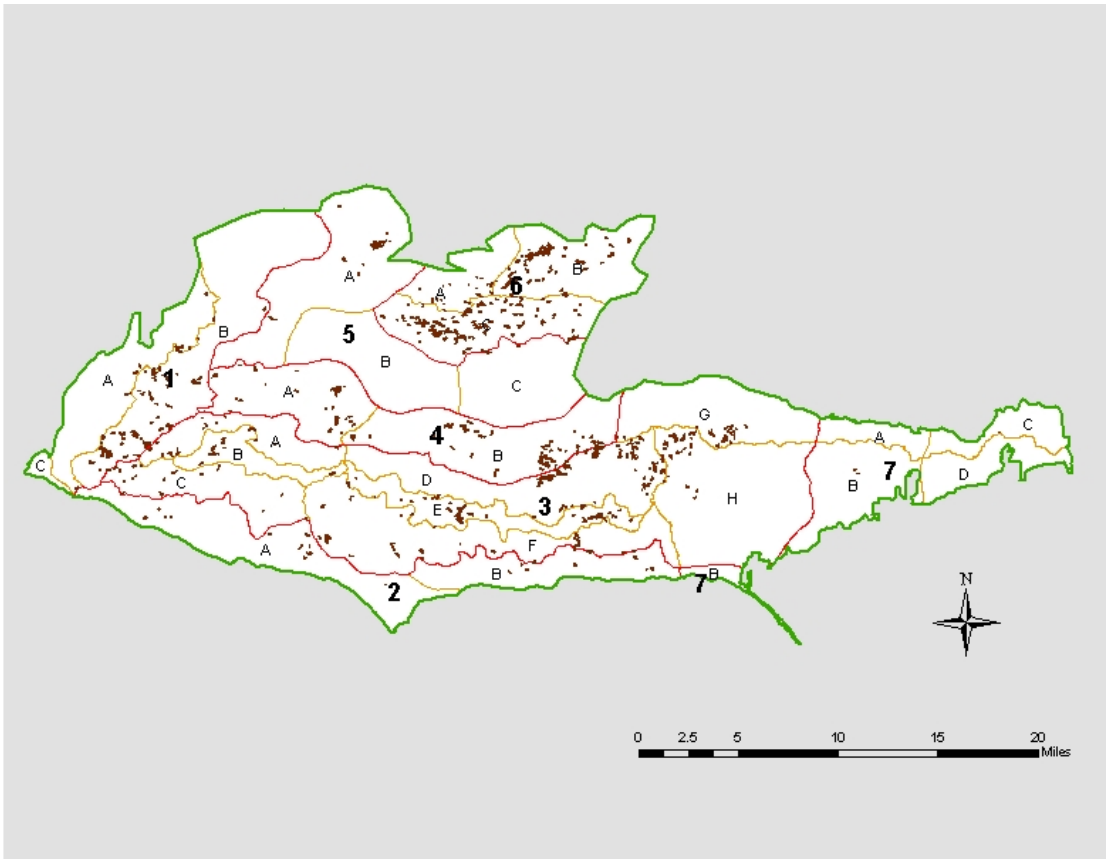
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum-Salvia mellifera* Shrubland Alliance (2030)
- *Adenostoma fasciculatum-Arctostaphylos glandulosa* Shrubland Alliance (2020)
- *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Alliance (2510)

2011 – CHAMISE SHRUBLAND ASSOCIATION
Adenostoma fasciculatum Shrubland Association



DISTRIBUTION:



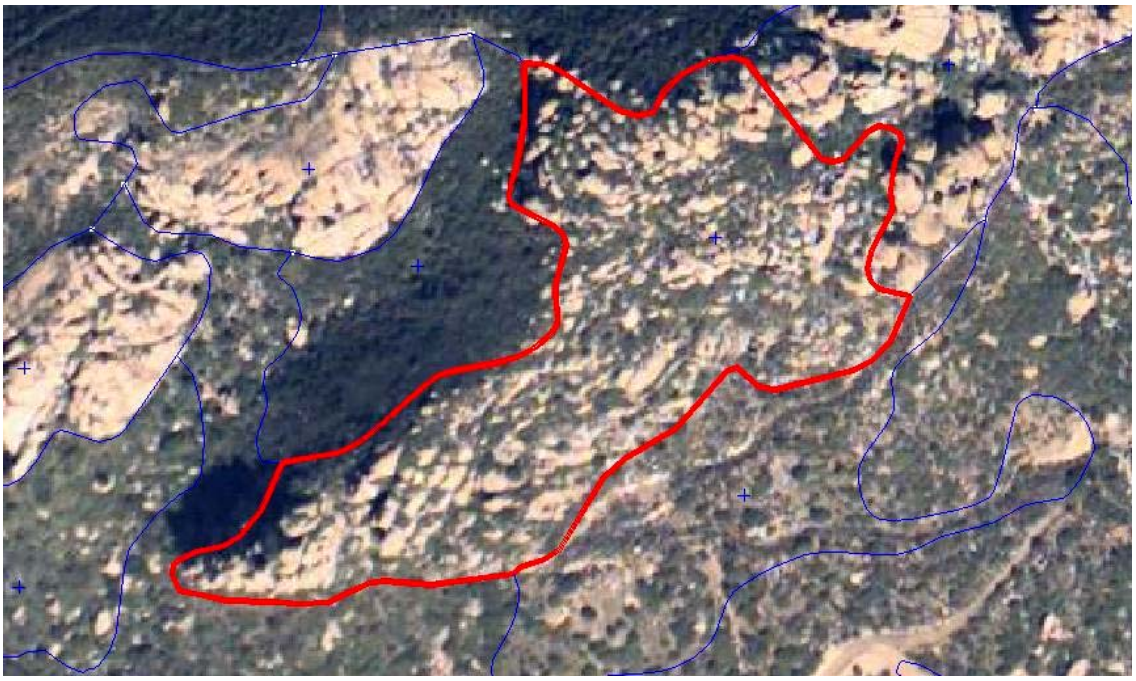
DESCRIPTION: *Adenostoma fasciculatum* Shrubland Association occurs as open to dense stands of shrubs on dry south-facing gentle to steep slopes on rocky or thin soils. This association is found on all types of surfaces, on lower to upper slopes and ridge tops. *A. fasciculatum* is strongly dominant at low to high cover.

PHOTO INTERPRETATION SIGNATURE: The stand is usually fairly homogeneous in color and texture. *A. fasciculatum* appears as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. In some places the signature may be rusty red-brown, purple brown, orange brown, or black. The crowns are usually shorter than most tall shrubs.

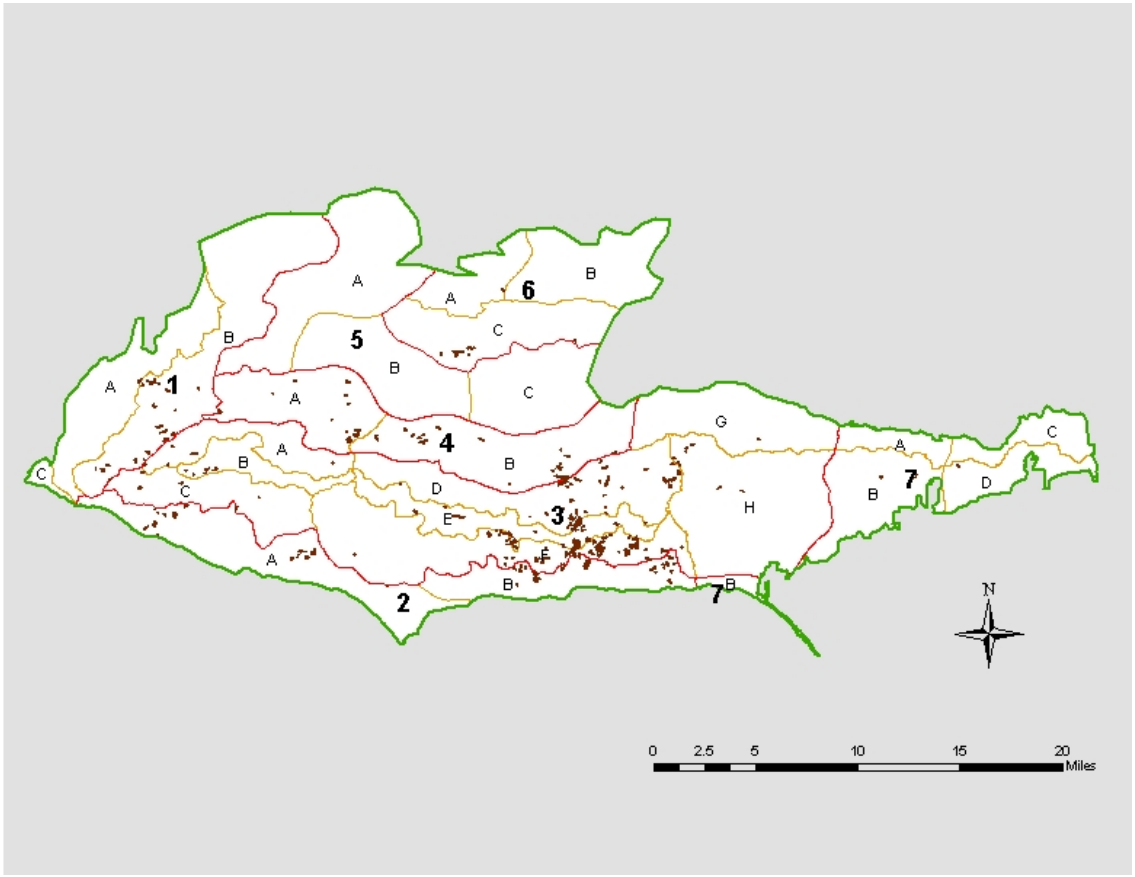
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum-Malosma laurina* Shrubland Association (2013)
- *Adenostoma fasciculatum-Eriogonum fasciculatum* Shrubland Associaton (2017)
- *Adenostoma fasciculatum-Ceanothus megacarpus* Shrubland Association (2019)
- *Adenostoma fasciculatum-Mimulus aurantiacus* Shrubland Association (7013)
- *Adenostoma fasciculatum-Malosma laurina-Eriodictyon crassifolium* Shrubland Association (7018)
- *Adenostoma fasciculatum-Arctostaphylos glandulosa* Shrubland Association (2021)
- *Adenostoma fasciculatum-Salvia mellifera* Shrubland Association (2036)
- *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Association (2511)
- *Adenostoma fasciculatum-Arctostaphyos glauca* Shrubland Alliance (2530)
- *Adeonstoma fasciculatum-Ceanothus crassifolius-Malosma laurina* Shrubland Association (2572)

2013 – CHAMISE-LAUREL SUMAC SHRUBLAND ASSOCIATION
Adenostoma fasciculatum-Malosma laurina Shrubland Association



DISTRIBUTION:



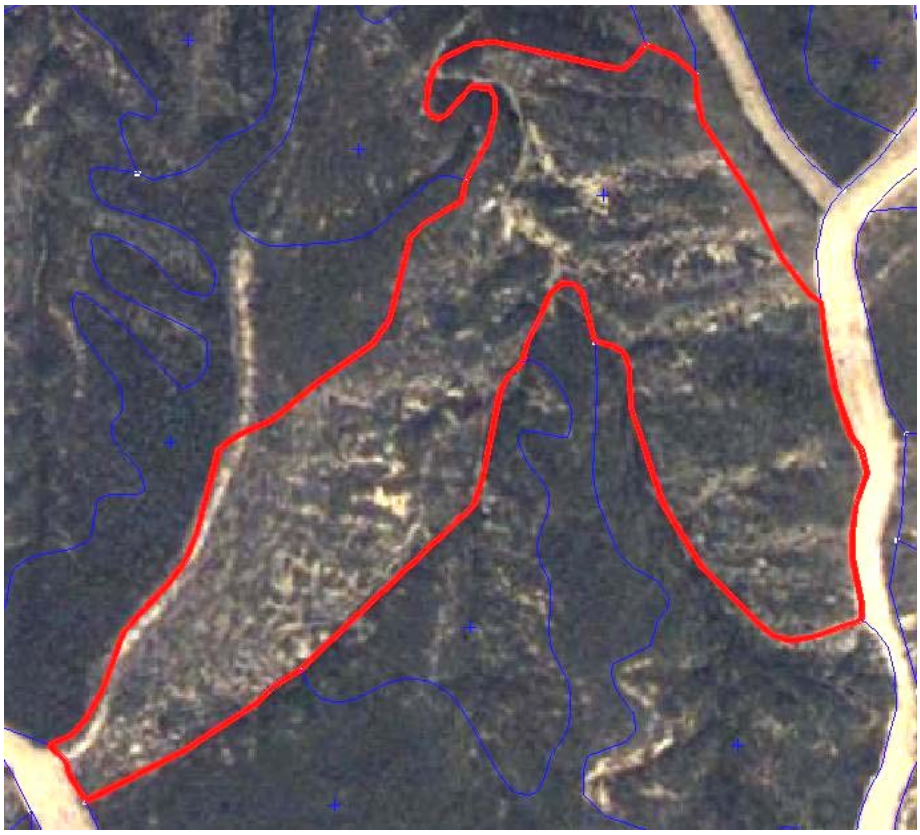
DESCRIPTION: *Adenostoma fasciculatum-Malosma laurina* Shrubland Association occurs as open to intermittent stands of shrubs on dry south-facing gentle to extremely steep slopes with rocky or thin soils. This association favors undulating surfaces on lower to upper slopes and ridge tops. *A. fasciculatum* is dominant at low to high cover. *Malosma* is sub-dominant at very low to moderate cover. *Salvia mellifera* and/or *Eriogonum fasciculatum* may be present at very low cover. In the Simi Hills the *Adenostoma. fasciculatum-Malosma laurina* Shrubland Association has been mapped as the *Adenostoma fasciculatum-Malosma laurina-Eriodictyon crassifolium* Shrubland Association (7018).

PHOTO INTERPRETATION SIGNATURE: The stand appears mottled in signature color and uneven in texture. *A. fasciculatum* appears as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. In some places the signature is rusty red-brown, purple brown, orange brown, or black. The crowns are usually shorter than most tall shrubs. *Malosma* is a tall shrub and typically appears as large individuals. Its signature is usually dull medium green but may vary in tone and shade from light green to dark green or black, even within a stand. The crowns are normally rounded with a smooth to slightly bumpy edge and texture.

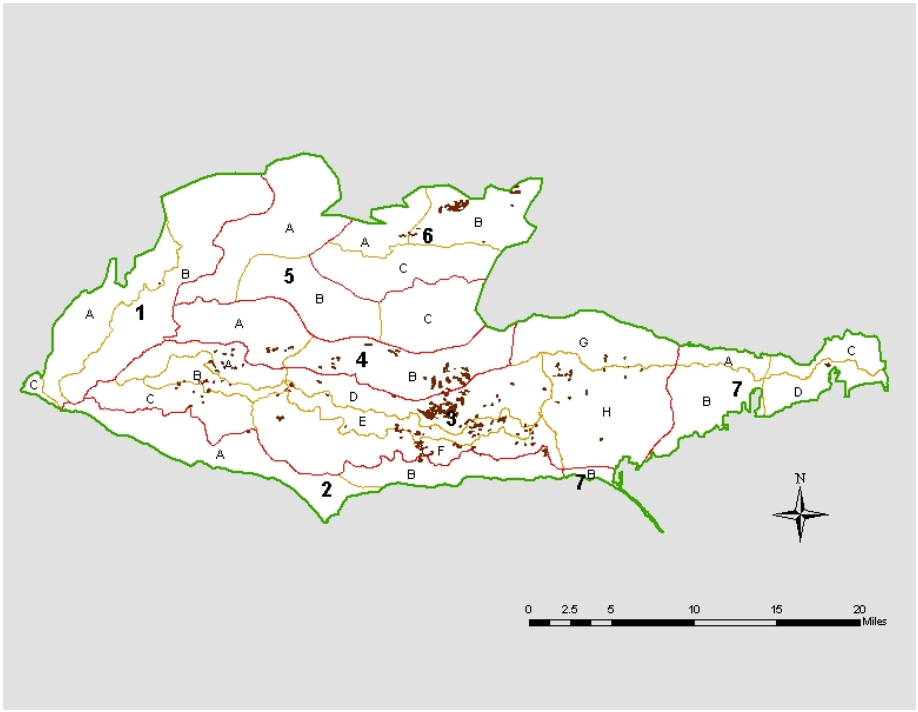
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum* Shrubland Association (2011)
- *Adenostoma fasciculatum-Eriogonum fasciculatum* Shrubland Associaton (2017)
- *Adenostoma fasciculatum-Ceanothus megacarpus* Shrubland Association (2019)
- *Adenostoma fasciculatum-Mimulus aurantiacus* Shrubland Association (7013)
- *Adenostoma fasciculatum-Malosma laurina-Eriodictyon crassifolium* Shrubland Association (7018)
- *Adenostoma fasciculatum-Arctostaphylos glandulosa* Shrubland Association (2021)
- *Adenostoma fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (2035)
- *Adenostoma fasciculatum-Salvia mellifera-Rhus ovata* Shrubland Association (2038)
- *Adenostoma fasciculatum-Adenostoma sparsifolium* Shrubland Alliance (2040)
- *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Association (2511)
- *Adenostoma fasciculatum-Arctostaphylos glauca* Shrubland Alliance (2530)
- *Adenostoma fasciculatum- Ceanothus crassifolius-Malosma laurina* Shrubland Association (2572)

2017 – CHAMISE-CALIFORNIA BUCKWHEAT SHRUBLAND ASSOCIATION
Adenostoma fasciculatum-Eriogonum fasciculatum Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Adenostoma fasciculatum-Eriogonum fasciculatum* Shrubland Association occurs as sparse to open stands of shrubs on dry south-facing gentle to extremely steep slopes on rocky or thin soil. It occurs on undulating surfaces on lower to upper slopes and ridge tops. It can also occur on north-facing slopes after a fire. *A. fasciculatum* is dominant at low to moderate cover, with *E. fasciculatum* sub-dominant at low to moderate cover. *Lotus scoparius* may be present in post-burn situations. *Malosma laurina* may be present at low cover.

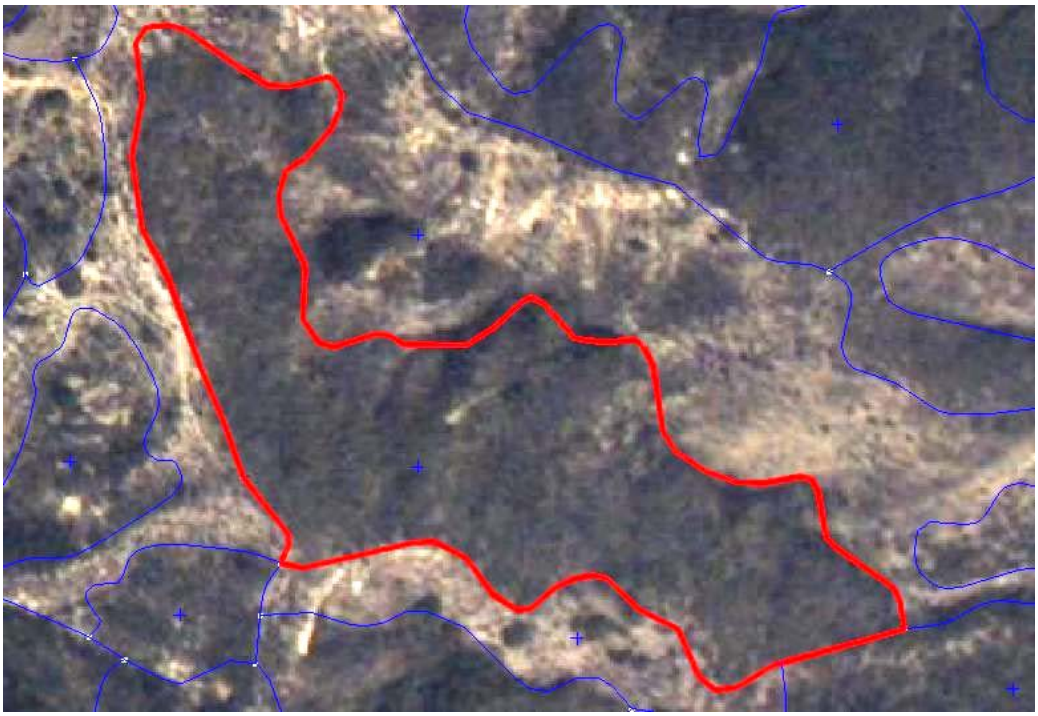
PHOTO INTERPRETATION SIGNATURE: The stand appears open with a coarse texture and uneven color of reddish and orange-brown or tan. *A. fasciculatum* occurs as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. The color may vary in some places to rusty red-brown, purple brown, orange brown, or black. The crown is usually shorter than most tall shrubs. *E. fasciculatum* is a short shrub and typically occurs as individuals. Its signature is usually orange-brown to reddish brown, but sometimes may be gray to tan. The texture can be slightly spiky. *L. scoparius* is a short shrub and occurs as individuals or in clumps. Its signature is typically orange-brown to reddish-brown to brown. The texture is fine. *Lotus* and *E. fasciculatum* can be confused with each other, as well as with *Artemisia californica*. Both can occur in post-disturbance areas, and in similar environments. *Lotus* is usually not associated with very steep rocky slopes, unless it is a post-fire situation, whereas *E. fasciculatum* often occurs on very steep rocky slopes. Young *Adenostoma fasciculatum* signature in a post-fire situation can look similar to *E. fasciculatum*, *Artemisia californica*, and *Lotus*.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

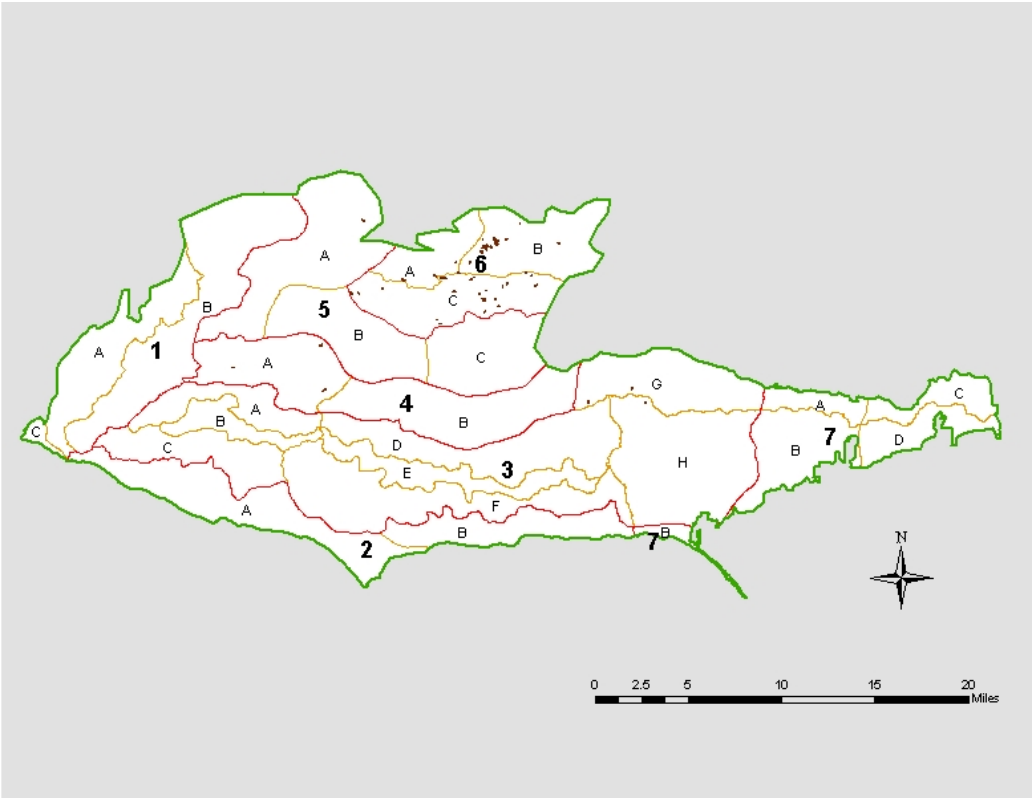
- *Adenostoma fasciculatum-Malosma laurina* Shrubland Association (2013)
- *Adenostoma fasciculatum-Mimulus aurantiacus* Shrubland Association (7013)
- *Adenostoma fasciculatum-Malosma laurina-Eriodictyon crassifolium* Shrubland Association (7018)
- *Adenostoma fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (2035)
- *Adenostoma fasciculatum-Salvia mellifera* Shrubland Association (2036)
- *Adenostoma fasciculatum-Salvia mellifera-Rhus ovata* Shrubland Association (2038)
- *Lotus scoparius* Shrubland Alliance (3270)

2018 – CHAMISE-PURPLE SAGE SHRUBLAND ASSOCIATION (PROVISIONAL)

***Adenostoma fasciculatum-Salvia leucophylla* Shrubland Association (Provisional)**



DISTRIBUTION:



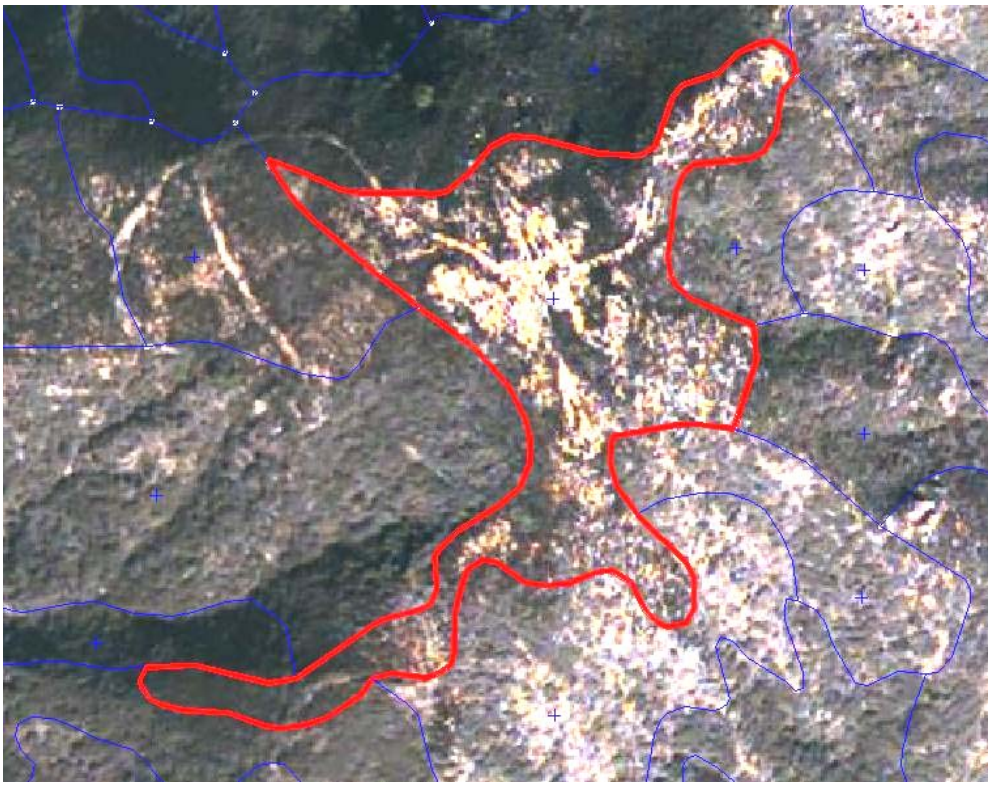
DESCRIPTION: *Adenostoma fasciculatum – Salvia leucophylla* Shrubland Association (Provisional) occurs as intermittent to continuous stands of shrubs on dry moderate to steep slopes. This association favors neutral surfaces on mid to upper slopes and ridge tops. *A. fasciculatum* and *S. leucophylla* co-dominate, each at moderate to high cover. Any other shrubs are of very low cover.

PHOTO INTERPRETATION SIGNATURE: The stand is mottled with the dark and light tones and textures of the component species. *A. fasciculatum* occurs as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. The color may vary in some places to rusty red-brown, purple brown, orange brown, or black. The crown is usually shorter than most tall shrubs. *S. leucophylla* is a short shrub and typically occurs as clumps or groups. Its signature is usually dull whitish-purple to dull whitish-gray. The crowns are usually in homogeneous groups rather than appearing individually, and have smooth fuzzy edges and texture.

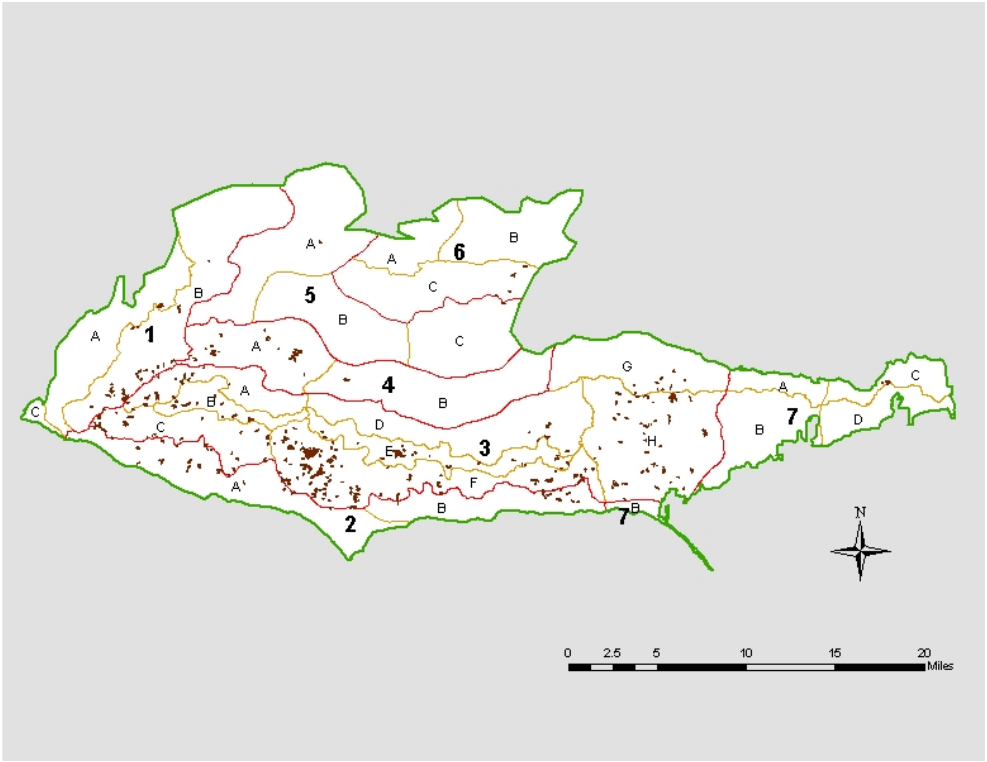
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum* Shrubland Association (2011)

2019 – CHAMISE-BIG POD CEANOTHUS SHRUBLAND ASSOCIATION
Adenostoma fasciculatum-Ceanothus megacarpus Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Adenostoma fasciculatum-Ceanothus megacarpus* Shrubland Association occurs as open to intermittent stands of shrubs on dry gentle to moderate slopes on rocky or thin oils. It favors convex and undulating surfaces on mid to upper slopes and ridge tops. *A. fasciculatum* is usually strongly dominant at low to very high cover, with *C*. *megacarpus* sub-dominant at very low to low cover. *Ceanothus* spp.*-Adenostoma fasciculatum* Shrubland Mapping Unit (2009) is mapped in areas where *Ceanothus* spp. and *A. fasciculatum* are present, but the *Ceanothus* species (*C. crassifolius, C. cuneatus, or C. megacarpus*) cannot be determined.

PHOTO INTERPRETATION SIGNATURE: The stand has a slightly mottled color with a coarse texture. *A. fasciculatum* occurs as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. The color may vary in some places to rusty red-brown, purple brown, orange brown, or black. The crown is usually shorter than most tall shrubs. *C*. *megacarpus* is a tall shrub and typically occurs as clumps or homogeneous groups. Its signature is usually dull dark gray to black, with a bluish undertone. In some stands the *C*. *megacarpus* signature is similar to the reddish-brown *A. fasciculatum* signature, such that the crowns are in homogeneous groups with fine texture. *C*. *megacarpus* signature can also be confused with *Ceanothus crassifolius* and *Cercocarpus betuloides*.

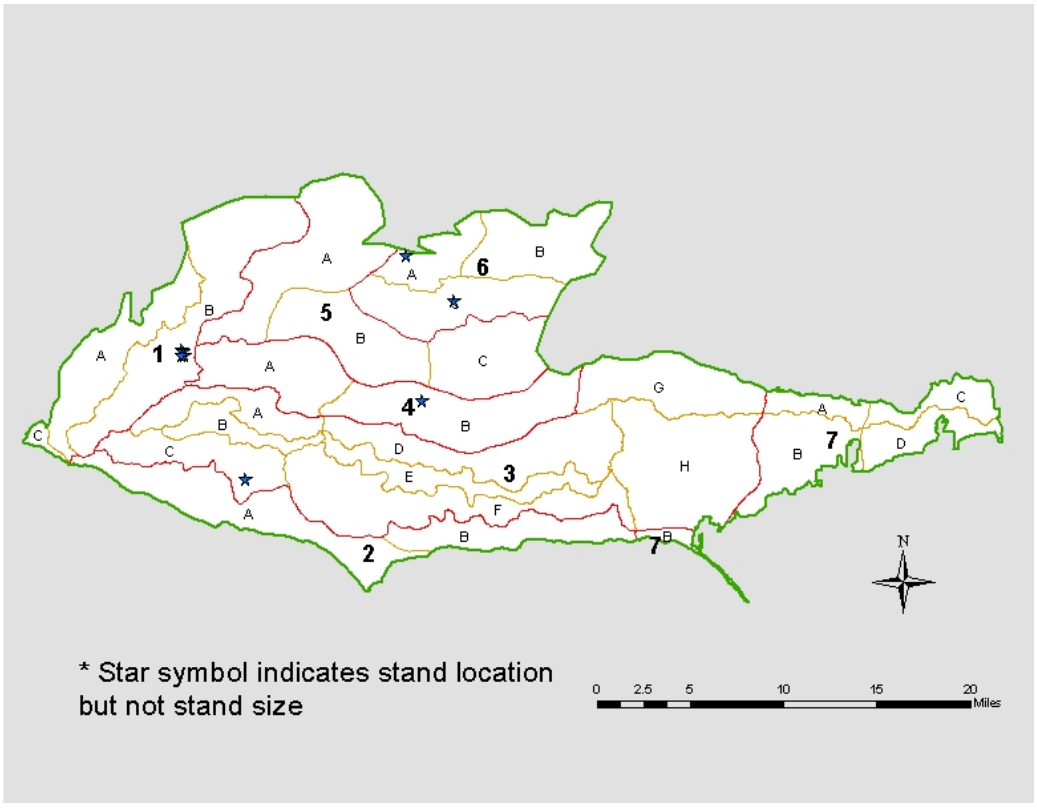
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus* spp.*-Adenostoma fasciculatum* Shrubland Mapping Unit (2009)
- *Adenostoma fasciculatum* Shrubland Association (2011)
- *Adenostoma fasciculatum-Malosma laurina-Eriodictyon crassifolium* Shrubland Association (7018)
- *Adenostoma fasciculatum-Arctostaphylos glandulosa* Shrubland Association (2021)
- *Adenostoma fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (2035)
- *Adenostoma fasciculatum-Salvia mellifera-Rhus ovata* Shrubland Association (2038)
- *Adenostoma fasciculatum-Adenostoma sparsifolium* Shrubland Alliance (2040)
- *Ceanothus megacarpus-Adenostoma fasciculatum* Shrubland Association (2083)
- *Adenostoma fasciculatum-Ceanothus cuneatus-Salvia mellifera-Malosma laurina* Shrubland Association (2511)
- *Adenostoma fasciculatum-Arctostaphylos glauca* Shrubland Alliance (2530)
- *Adenostoma fasciculatum-Ceanothus crassifolius* Shrubland Association (2572)

7013 – CHAMISE-BUSH MONKEY FLOWER SHRUBLAND ASSOCIATION
Adenostoma fasciculatum-Mimulus aurantiacus Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Adenostoma fasciculatum-Mimulus aurantiacus* Shrubland Association occurs as open to intermittent stands of shrubs on dry north-facing moderately to extremely steep slopes. This association is found on variable surface shapes on lower to upper slopes and ridge tops. *A. fasciculatum* is dominant at low to high cover, with *Mimulus* sub-dominant at low to moderate cover. All other shrubs are of very low cover.

PHOTO INTERPRETATION SIGNATURE: The stand has a coarse texture and a homogeneous to uneven color of reddish and orange-brown. *A. fasciculatum* occurs as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. The color may vary in some places to rusty red-brown, purple brown, orange brown, or black. The crown is usually shorter than most tall shrubs. *Mimulus* is a short shrub and typically occurs as individuals, clumps, or in dense closed-crown groups. Its signature is usually orange-brown to reddish-brown. The crowns are finely textured. The *Mimulus* signature can be confused with *Eriogonum fasciculatum*, *Lotus scoparius*, *Artemisia californica*, and *Salvia mellifera*.

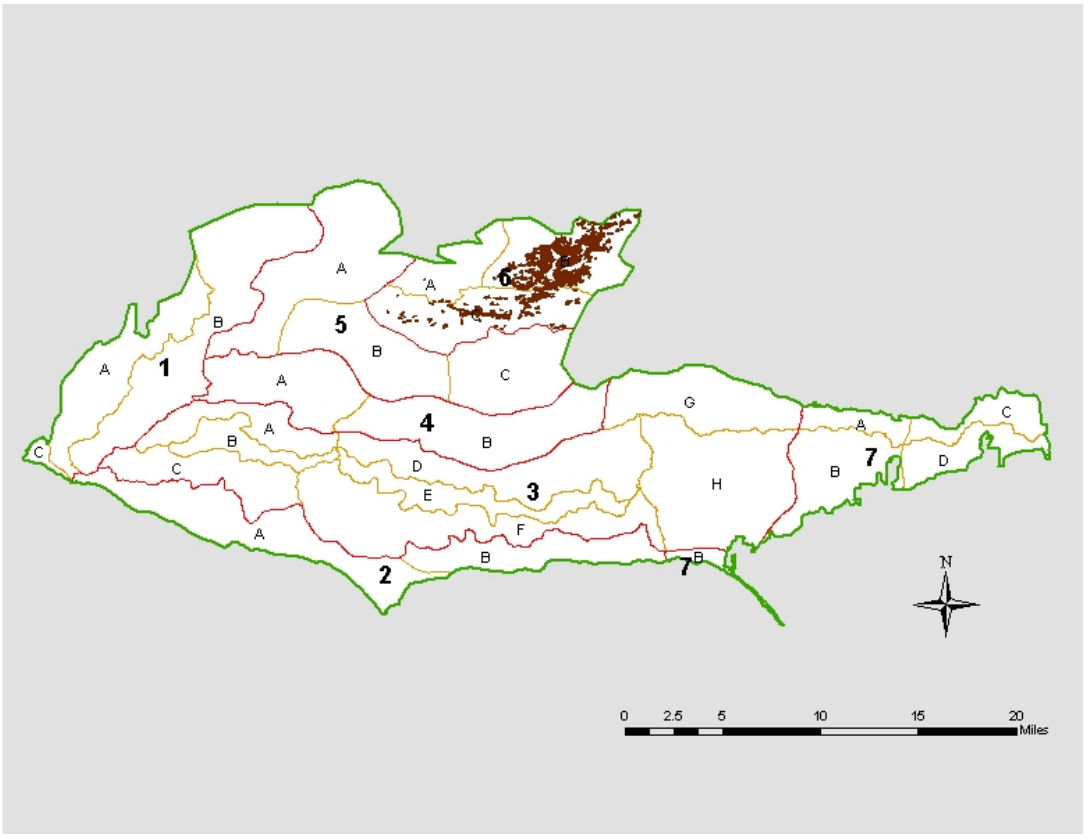
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum* Shrubland Association (2011)
- *Adenostoma fasciculatum-Malosma laurina* Shrubland Association (2013)
- *Adenostoma fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (2035)
- *Adenostoma fasciculatum-Salvia mellifera* Shrubland Association (2036)
- *Adenostoma fasciculatum-Salvia mellifera-Rhus ovata* Shrubland Association (2038)
- *Mimulus aurantiacus* Shrubland Association (2172)
- *Artemisia californica-Mimulus aurantiacus* Shrubland Association (8214)
- *Lotus scoparius* Shrubland Alliance (3270)

7018 – CHAMISE-LAUREL SUMAC-YERBA SANTA SHRUBLAND ASSOCIATION
***Adenostoma fasciculatum-Malosma laurina-Eriodictyon crassifolium* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Adenostoma fasciculatum-Malosma laurina-Eriodictyon crassifolium* Shrubland Association occurs as open to intermittent stands of shrubs on dry south-facing gentle to steep slopes, on rocky or thin soils. The association is found on concave, convex, or undulating surfaces on lower to upper slopes and ridge tops. *A. fasciculatum* is dominant or co-dominant at very low to moderate cover. *Malosma* is sub-dominant to co-dominant at very low to low cover. *Eriodictyon* usually occurs as a sub-dominant approaching low cover. In the Simi Hills the *Adenostoma fasciculatum-Malosma laurina* Shrubland Association (2013) has been mapped as the *Adenostoma fasciculatum-Malosma laurina-Eriodictyon crassifolium* Shrubland Association (7018).

PHOTO INTERPRETATION SIGNATURE: The stand appears mottled in color and uneven in texture. *A. fasciculatum* occurs as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. The color may vary in some places to rusty red-brown, purple brown, orange brown, or black. The crown is usually shorter than most tall shrubs. *Malosma* is a tall shrub and typically occurs as large individuals. Its signature is usually dull medium green but may vary in tone and shade from light green to dark green or black, even within a stand. The crown is normally rounded with a smooth to slightly bumpy edge and texture. *Eriodictyon* is a short shrub whose signature is dull gray to dark gray, occurring as individuals or in clumps or small groups. Individual shrubs are very tiny and cannot be seen well on the aerial photo unless they occur in tight groups. *Eriodictyon* cannot be seen in areas with very large boulders.

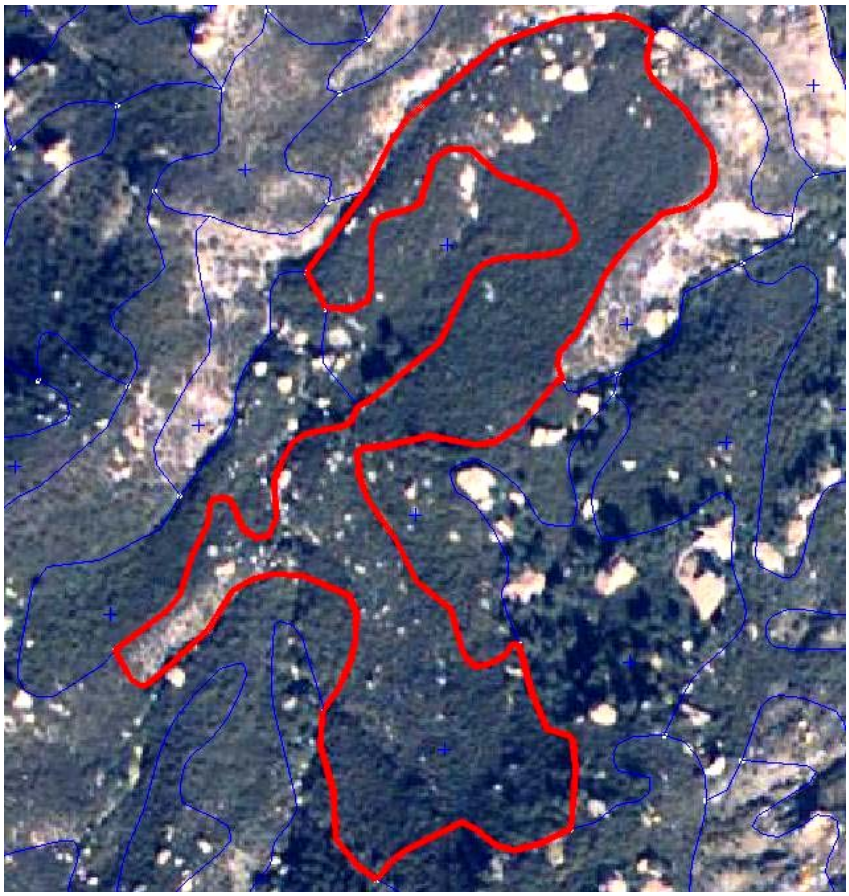
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum* Shrubland Association (2011)
- *Adenostoma fasciculatum-Malosma laurina* Shrubland Association (2013)
- *Adenostoma fasciculatum-Eriogonum fasciculatum* Shrubland Associaton (2017)
- *Adenostoma fasciculatum- Ceanothus megacarpus* Shrubland Association (2019)
- *Adenostoma fasciculatum-Arctostaphylos glandulosa* Shrubland Association (2021)
- *Adenostoma fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (2035)
- *Adenostoma fasciculatum-Salvia mellifera-Rhus ovata* Shrubland Association (2038)
- *Adenostoma fasciculatum- Ceanothus crassifolius-Malosma laurina* Shrubland Association (2572)

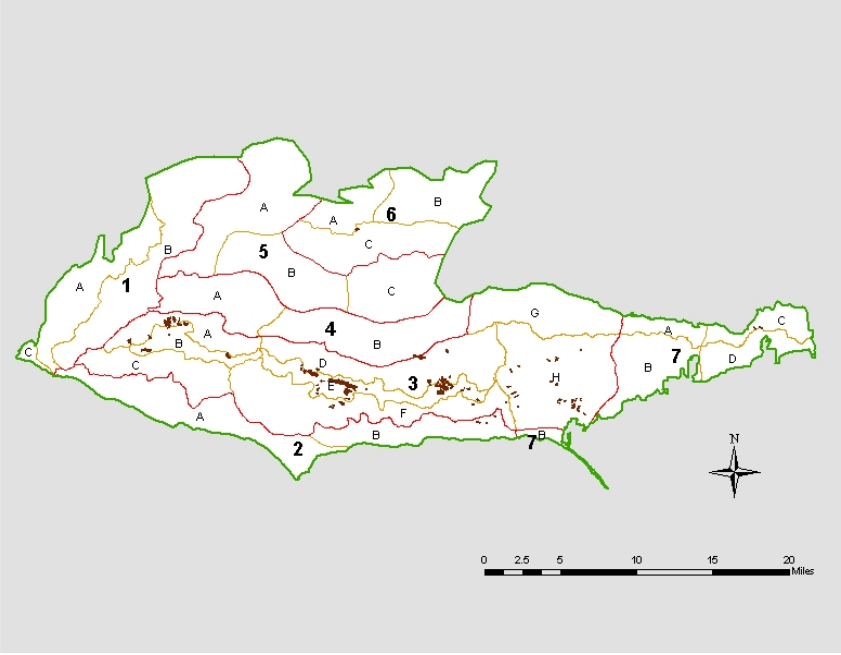
CHAMISE-EASTWOOD MANZANITA SHRUBLAND ALLIANCE



2020 – CHAMISE-EASTWOOD MANZANITA SHRUBLAND ALLIANCE
Adenostoma fasciculatum-Arctostaphlyos glandulosa Shrubland Alliance



DISTRIBUTION:



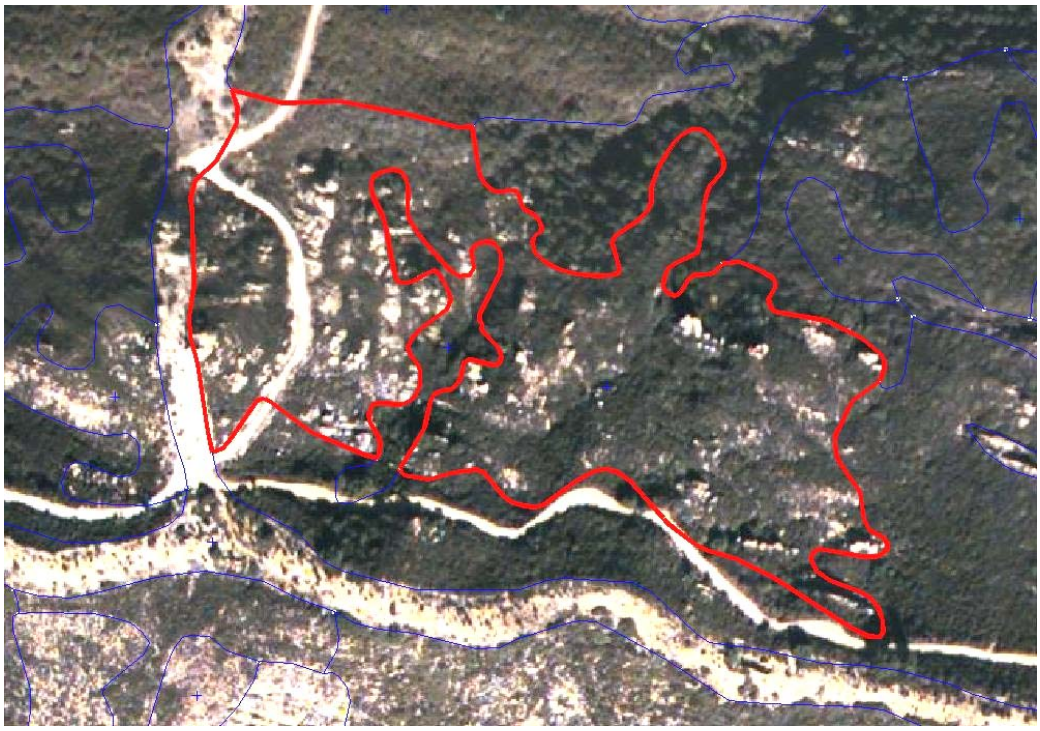
DESCRIPTION: *Adenostoma fasciculatum - Arctostaphlyos glandulosa* Shrubland Alliance represents the hierarchical class into which the *Adenostoma fasciculatum-Arctostaphlyos glandulosa* Shrubland Association is nested. *Adenostoma fasciculatum* and *Arctostaphlyos glandulosa* typically are co-dominant, and can occur in low to high cover. Stands of this alliance may have intermittent to dense cover of shrubs. This alliance typically occurs on dry northerly upper slopes and ridge tops. Slope can vary from moderate to steep. Slope position varies from lower slopes to upper slopes and ridge tops. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *Adenostoma fasciculatum* as the dominant shrub are also included. Because the *Arctostaphlyos glandulosa* signature is difficult to discern, the Rapid Assessment plots and other field surveys are used to extrapolate the location of this type.

PHOTO INTERPRETATION SIGNATURE: The association stand, as a whole, has a mottled appearance with a rather homogeneous stippled texture. *Adenostoma fasciculatum* occurs as individuals or in clumps. Its signature is typically dark reddish brown with a rather coarse texture, showing a hint of spikiness on its edges. The crown is usually shorter than most tall shrubs. *Arctostaphlyos glandulosa* is difficult to discern unless it is present in large groups. It is a tall shrub, similar in height to *Adenostoma fasciculatum*, and occurs as solitary individuals or groups within the stand. It will appear dull or pale gray-green with irregularly shaped crowns, and will have a coarser texture than *Adenostoma fasciculatum*.

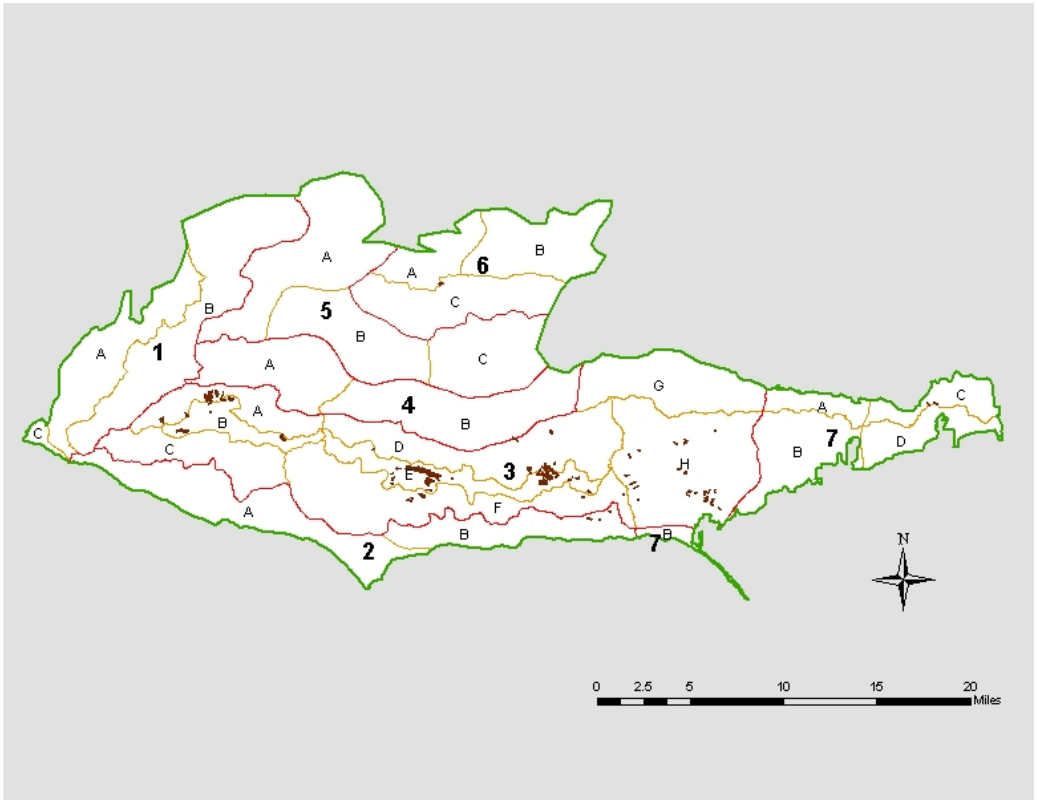
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Ceanothus megacarpus* Shrubland Alliance (2080)

2021 – CHAMISE-EASTWOOD MANZANITA SHRUBLAND ASSOCIATION
Adenostoma fasciculatum - Arctostaphlyos glandulosa Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Adenostoma fasciculatum - Arctostaphlyos glandulosa* Shrubland Association typically occurs in upper elevation chaparral as intermittent to dense stands on dry, northerly, moderate to steep slopes. Occurrences are also on undulating to convex surfaces on lower to upper slopes and ridge tops. *Adenostoma fasciculatum* and *Arctostaphlyos glandulosa* co-dominate with *Adenostoma fasciculatum* at moderate to high cover, and *Arctostaphlyos glandulosa* at low to high cover. *Ceanothus megacarpus* may also be present at very low to moderate cover. Because the *Arctostaphlyos glandulosa* signature is difficult to discern, the Rapid Assessment plots and other field surveys are used to extrapolate the location of this type.

PHOTO INTERPRETATION SIGNATURE: The association stand, as a whole, has a mottled appearance and a homogeneous stippled texture. *Adenostoma fasciculatum* occurs as individuals or in clumps. Its signature is typically dark reddish brown with a rather coarse texture, showing a hint of spikiness on its edges. The crown is usually shorter than most tall shrubs. *Arctostaphlyos glandulosa* is difficult to discern unless it is present in large groups. It is a tall shrub, similar in height to *Adenostoma fasciculatum*, and occurs as solitary individuals or groups within the stand. It will appear dull or pale gray-green with irregularly shaped crowns, and will have a coarser texture than *Adenostoma fasciculatum*. *C. megacarpus* is a tall shrub that may be intermixed as a minor component of the stand. Its signature is usually dull dark gray to black, usually with a bluish undertone. In some stands the *C. megacarpus* signature is similar to the *Adenostoma fasciculatum* signature of reddish-brown.

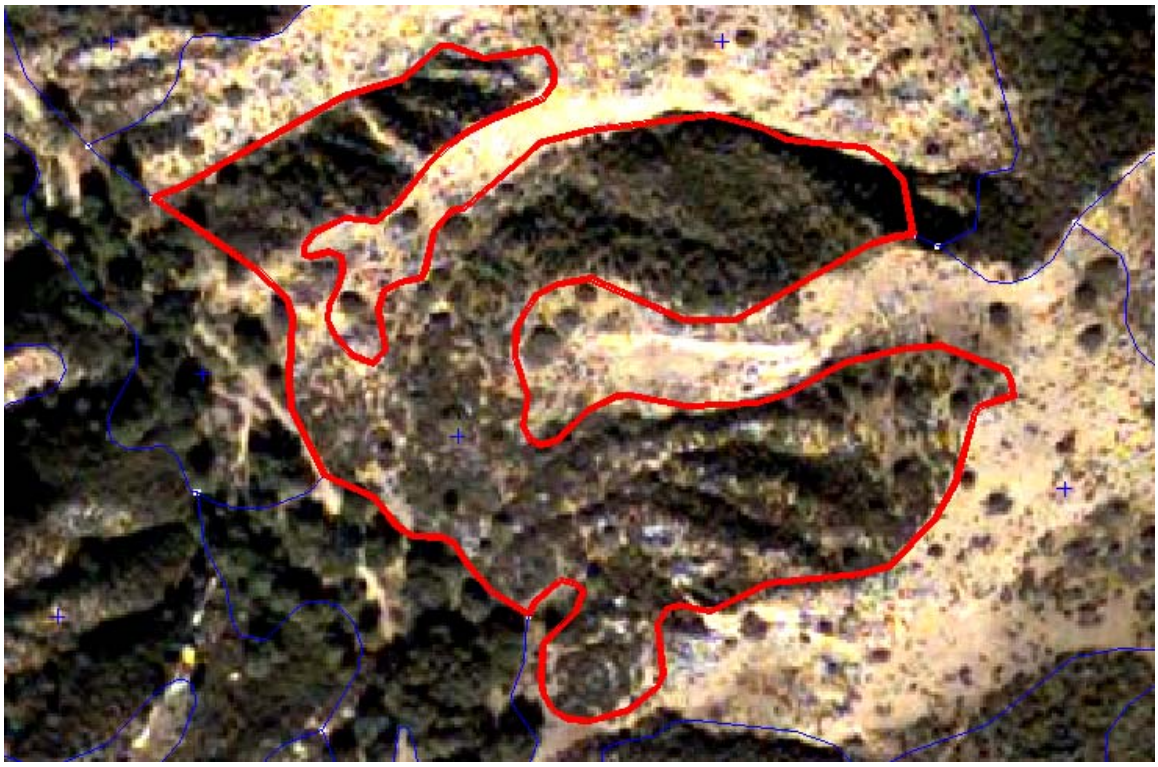
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum* Shrubland Association (2011)
- *Adenostoma fasciculatum-Ceanothus megacarpus* Shrubland Association (2019)
- *Ceanothus megacarpus-Adenostoma fasciculatum* Shrubland Association (2083)

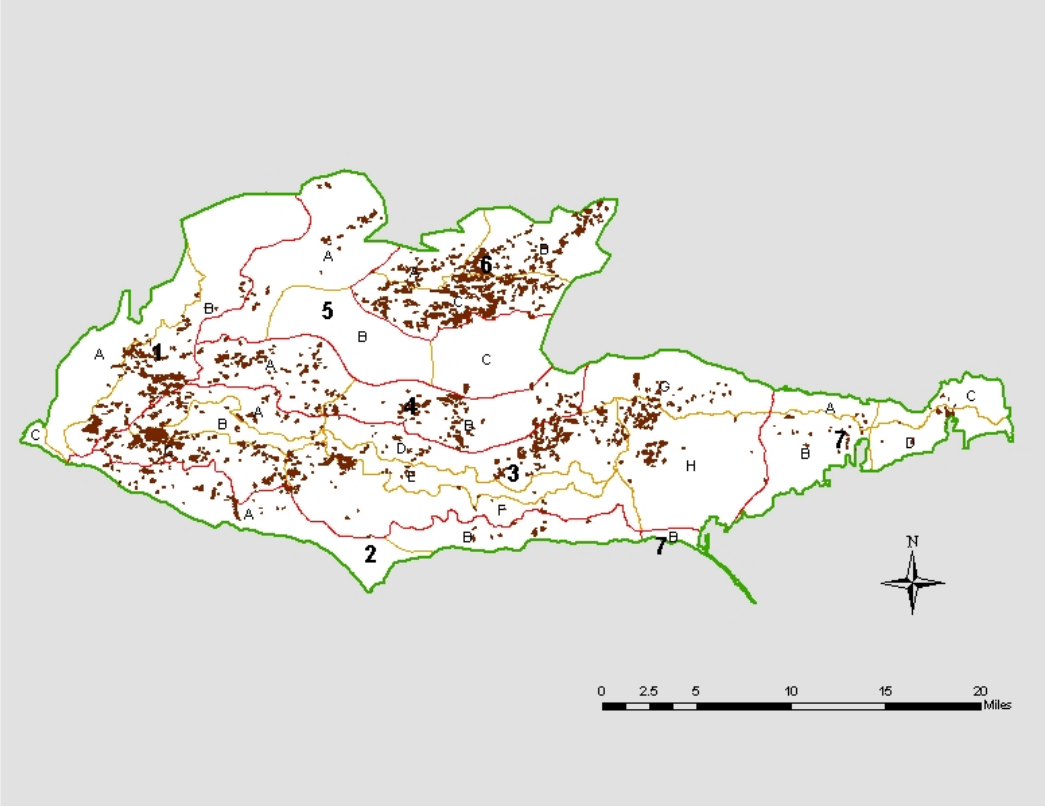
CHAMISE-BLACK SAGE SHRUBLAND ALLIANCE



2030 – CHAMISE-BLACK SAGE SHRUBLAND ALLIANCE
Adenostoma fasciculatum-Salvia mellifera Shrubland Alliance



DISTRIBUTION



DESCRIPTION: *Adenostoma fasciculatum-Salvia mellifera* Shrubland Alliance represents the hierarchical class into which all *A. fasciculatum-S. mellifera* association types are nested. *A. fasciculatum and S. mellifera* co-dominate. *Malosma laurina* and *Rhus ovata* can be sub-dominant. This alliance occurs as open to slightly open stands of shrubs on dry, south-facing, moderate to steep slopes. It favors undulating to convex mid to upper slopes and ridge tops. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *A. fasciculatum and S. mellifera* as the co-dominant shrubs are included.

PHOTO INTERPRETATION SIGNATURE: The stand as a whole is mottled, with a rather stippled texture. *A. fasciculatum* occurs as individuals or in clumps. Its signature is typically dark reddish brown with a rather coarse texture, showing a hint of spikiness on its edges. The crown is usually shorter than most tall shrubs. *S. mellifera* has a smooth texture with fuzzy edges. The color can vary from bright green in more mesic settings to reddish tan or tan in drier settings. Typically there will be a green overtone in the stand when it is present with other shrubs.

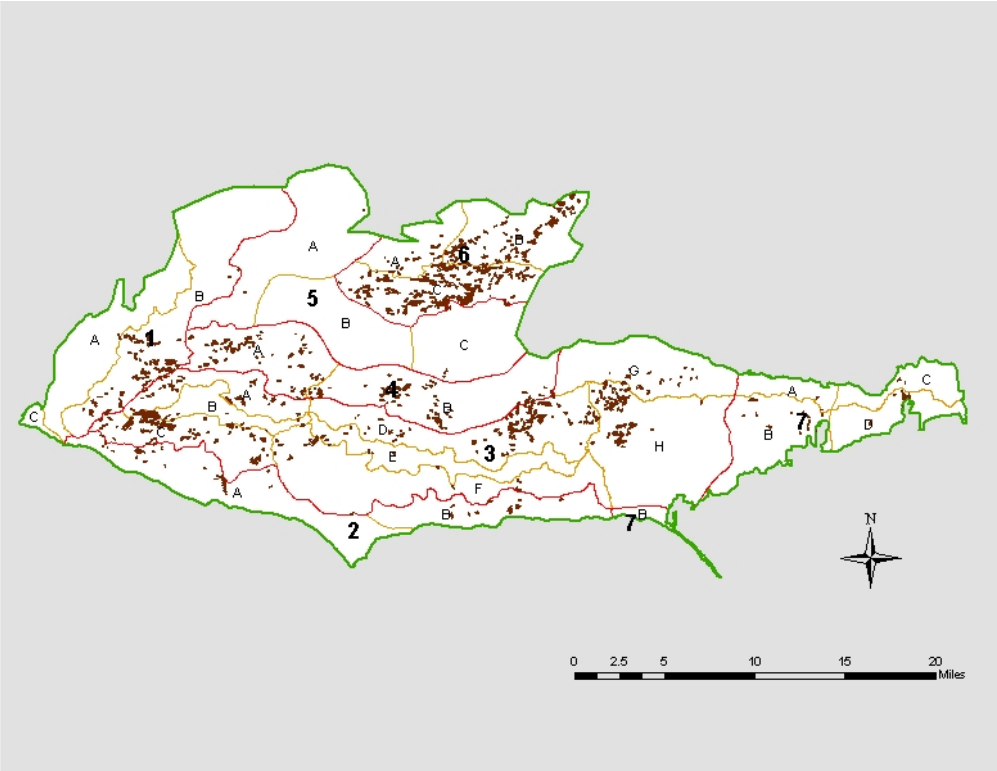
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Salvia mellifera* Shrubland Alliance (3320)

2035 – CHAMISE-BLACK SAGE-LAUREL SUMAC SHRUBLAND ASSOCIATION
Adenostoma fasciculatum-Salvia mellifera-Malosma laurina Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Adenostoma fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association occurs as open to intermittent stands of shrubs on dry, south-facing, moderate to steep slopes. It favors undulating to convex mid to upper slopes and ridge tops. *A. fasciculatum* and *S. mellifera* co-dominate, with *A. fasciculatum* at moderate to high cover and *S. mellifera* at low to moderate cover. *Malosma laurina* is present and may approach sub-dominance at very low to low cover.

PHOTO INTERPRETATION SIGNATURE: The stand as a whole for this association is mottled, with a rather stippled texture. *A. fasciculatum* occurs as individuals or in clumps. Its signature is typically dark reddish brown with a rather coarse texture, showing a hint of spikiness on its edges. The crown is usually shorter than most tall shrubs. *S. mellifera* has a smooth texture with fuzzy edges. The color can vary from bright green in more mesic settings to reddish-tan or tan in drier settings. Typically there will be a green overtone in the stand when it is present with other shrubs. *Malosma* is a tall shrub and typically occurs as large individuals. Its signature is usually dull medium green but may vary in tone and shade from light green to dark green or black, even within a stand. The crown is normally rounded with a smooth to slightly bumpy edge and texture. *Malosma* signature may be confused with *Rhus ovata*, *Heteromeles arbutifolia*, and *A. sparsifolium*.

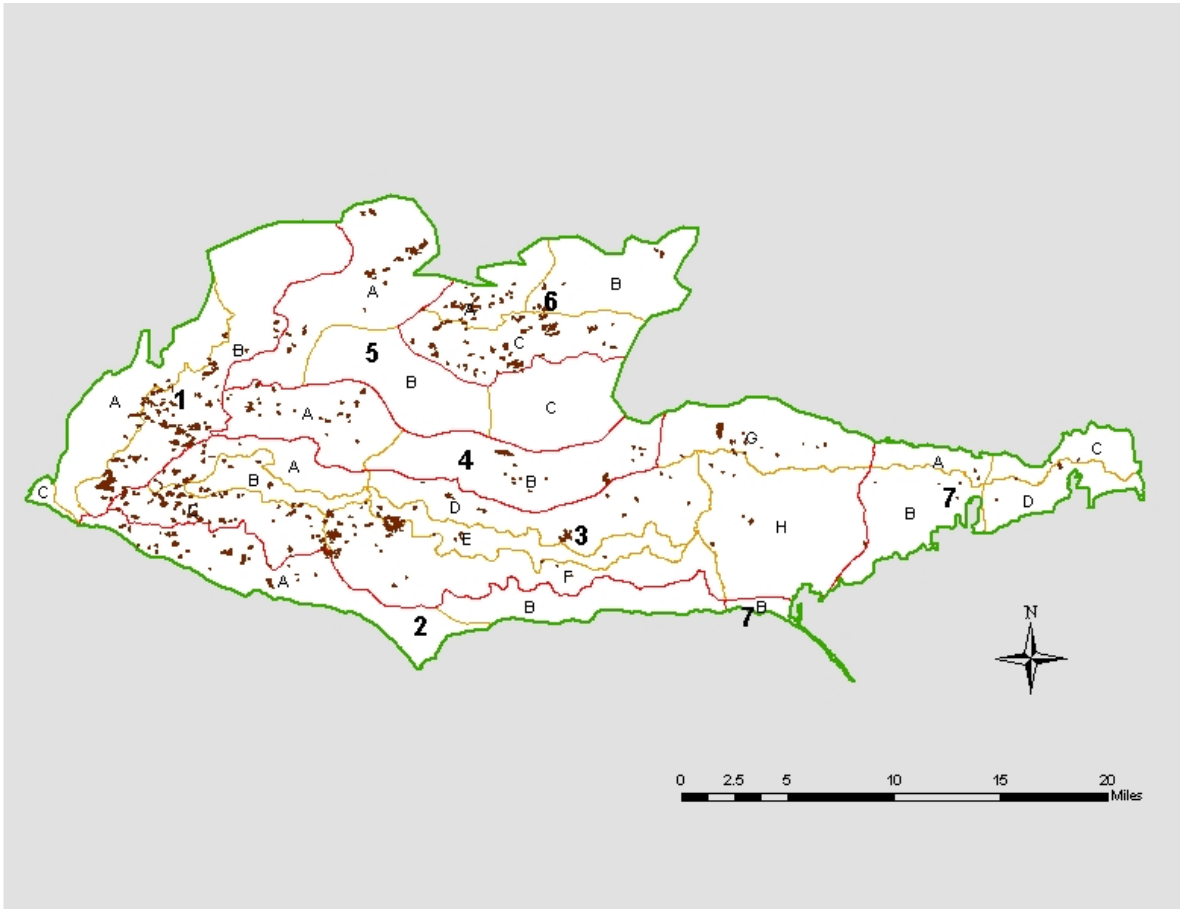
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum-Malosma laurina* Shrubland Association (2013)
- *Adenostoma fasciculatum-Malosma laurina-Eriodictyon crassifoium* Shrubland Association (7018)
- *Adenostoma fasciculatum-Salvia mellifera* Shrubland Association (2036)
- *Adenostoma fasciculatum-Salvia mellifera-Rhus ovata* Shrubland Association (2038)
- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)
- *Salvia mellifera-*(*Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)

2036 – CHAMISE-BLACK SAGE SHRUBLAND ASSOCIATION
Adenostoma fasciculatum-Salvia mellifera Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Adenostoma fasciculatum-Salvia mellifera* Shrubland Association occurs as open stands of shrubs on dry, south-facing, gentle to steep slopes. The association can be on undulating to convex, lower to upper slopes and sometimes ridge tops. *A. fasciculatum and S. mellifera* co-dominate, with each at low to high cover. Other shrubs may be present at very low cover.

PHOTO INTERPRETATION SIGNATURE: The stand as a whole for this association is mottled, with a rather stippled texture. *A. fasciculatum* occurs as individuals or in clumps. Its signature is typically dark reddish brown with a rather coarse texture, showing a hint of spikiness on its edges. The crown is usually shorter than most tall shrubs. *S. mellifera* has a smooth texture with fuzzy edges. The color can vary from bright green in more mesic settings to reddish-tan or tan in drier settings. Typically there will be a green overtone in the stand when it is present with other shrubs.

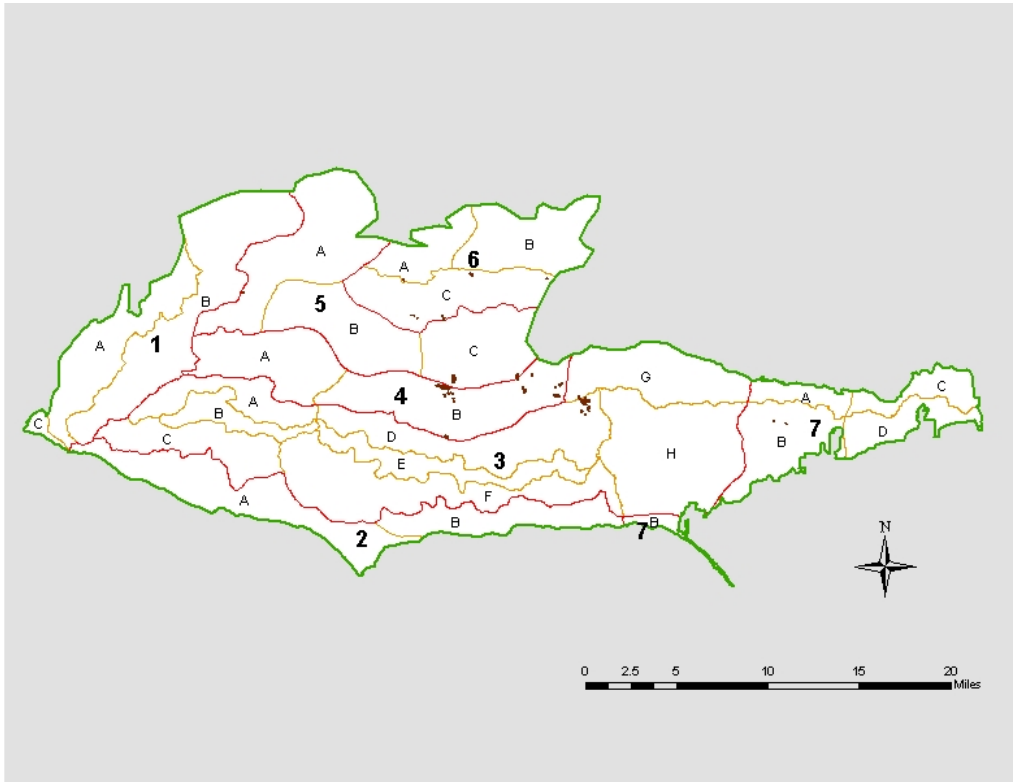
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum* Shrubland Association (2011)
- *Adenostoma fasciculatum-Malosma laurina* Shrubland Association (2013)
- *Adenostoma fasciculatum-Malosma laurina-Eriodictyon crassifolium* Shrubland Association (7018)
- *Adenostoma fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (2035)
- *Adenostoma fasciculatum-Salvia mellifera-Rhus ovata* Shrubland Association (2038)
- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)
- *Salvia mellifera*-(*Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)

2038 – CHAMISE-BLACK SAGE-SUGAR BUSH SHRUBLAND ASSOCIATION
Adenostoma fasciculatum-Salvia mellifera-Rhus ovata Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Adenostoma fasciculatum-Salvia mellifera-Rhus ovata* Shrubland Association occurs as open to slightly open stands of shrubs on dry, south-facing, moderately steep slopes. It favors undulating to convex, mid to upper slopes and ridge tops. *A. fasciculatum and S. mellifera* co-dominate, with *A. fasciculatum* at moderate to high cover and *S. mellifera* at low to moderate cover. *Rhus ovata* is present to sub-dominant at very low to moderate cover.

PHOTO INTERPRETATION SIGNATURE: The stand as a whole for this association is mottled, with a rather stippled texture. *A. fasciculatum* occurs as individuals or in clumps. Its signature is typically dark reddish brown with a rather coarse texture, showing a hint of spikiness on its edges. The crown is usually shorter than most tall shrubs. *S. mellifera* has a smooth texture with fuzzy edges. The color can vary from bright green in more mesic settings to reddish-tan or tan in drier settings. Typically there will be a green overtone in the stand when it is present with other shrubs. *R. ovata* is a tall shrub and typically occurs as large individuals. Its signature is usually bright green but may vary in tone and shade to dark green, even within a stand. The crown is normally rounded with a smooth to slightly bumpy edge and texture. *R. ovata* signature may be confused with *Malosma laurina*, *Heteromeles arbutifolia*, and *A. sparsifolium*.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum-Malosma laurina* Shrubland Association (2013)
- *Adenostoma fasciculatum-Malosma laurina-Eriodictyon crassifolium* Shrubland Association (7018)
- *Adenostoma fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (2035)
- *Adenostoma fasciculatum-Salvia mellifera* Shrubland Association (2036)
- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)
- *Salvia mellifera*-(*Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)

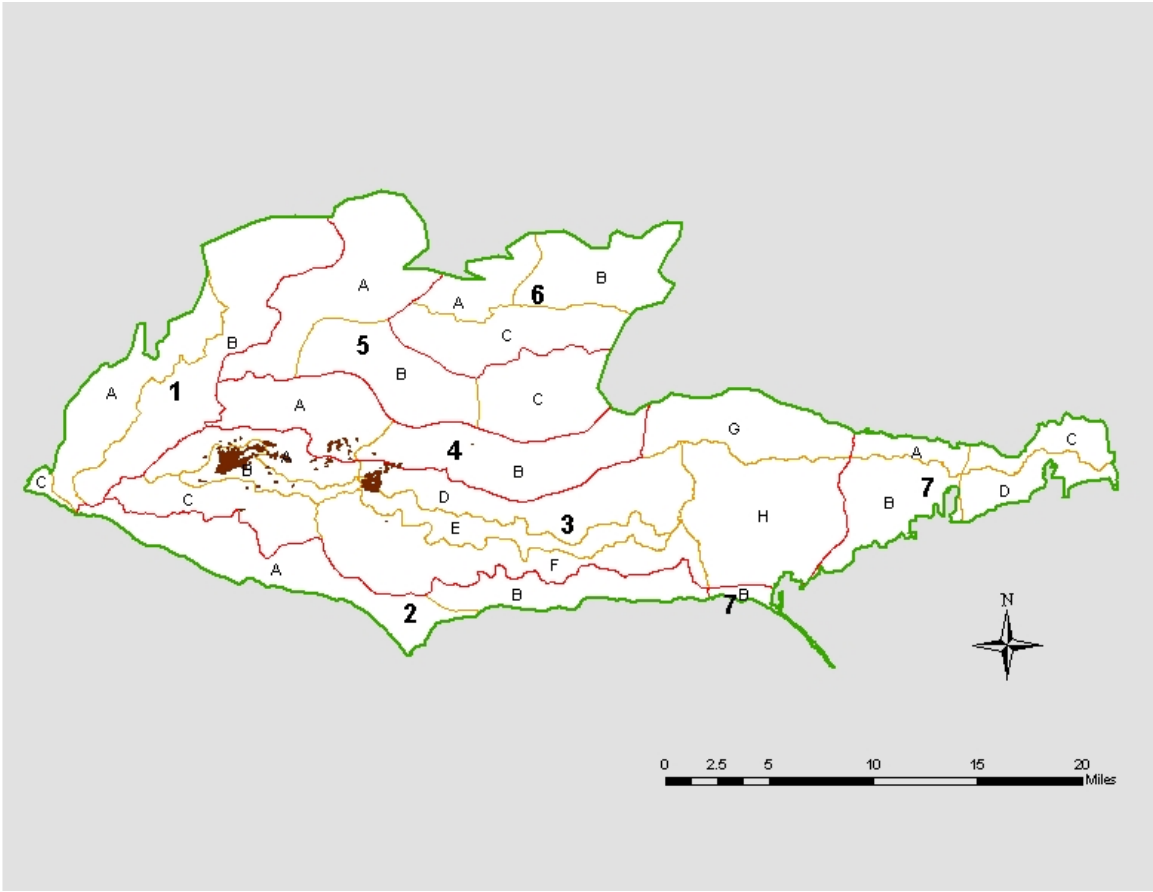
CHAMISE–REDSHANK SHRUBLAND ALLIANCE



2040 – CHAMISE–REDSHANK SHRUBLAND ALLIANCE
Adenostoma fasciculatum–Adenostoma sparsifolium Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Adenostoma fasciculatum–Adenostoma sparsifolium* Shrubland Alliance represents the hierarchical class into which *A. fasciculatum–A. sparsifolium* association types are nested. This alliance is characterized by co-dominance of *A. fasciculatum* and *A. sparsifolium,* and generally occurs as open to intermittent stands on dry gentle to steep slopes. The slopes are of variable aspect, on undulating to convex, lower to upper slopes. *Ceanothus crassifolius* may also co-dominate. *A. sparsifolium* is scattered through the stand or occurs in open groups while *A. fasciculatum* is continuous. This type is common at the higher elevations of the Santa Monica Mountains, and may cover large areas. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *A. fasciculatum* and *A. sparsifolium* as the co-dominant shrubs are included.

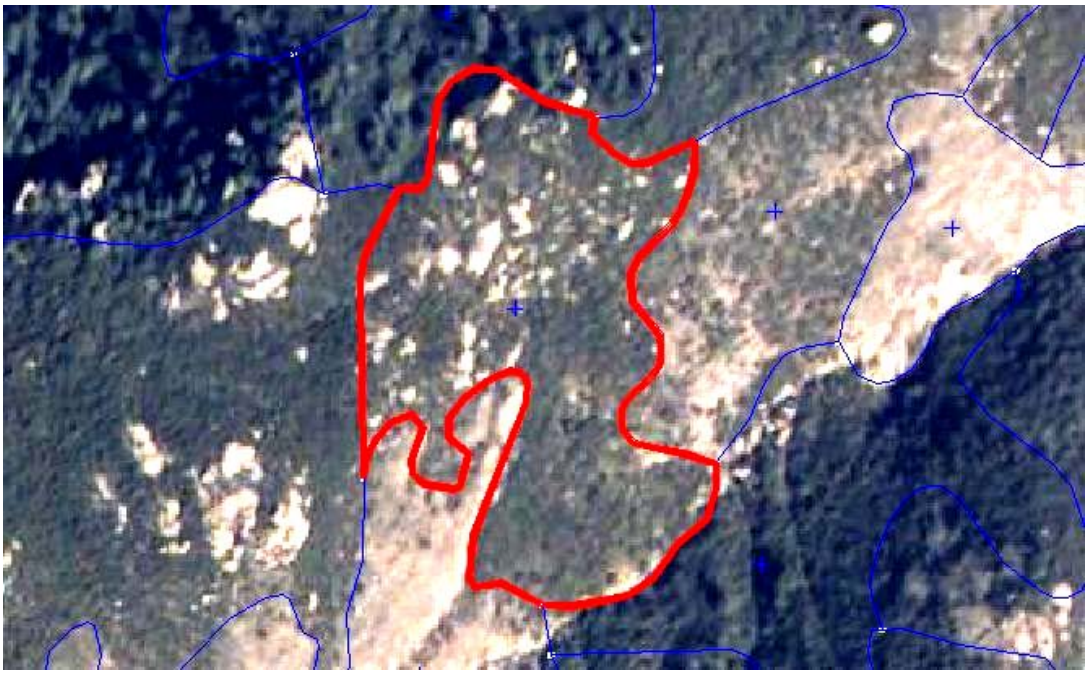
PHOTO INTERPRETATION SIGNATURE: The stand has a dull reddish-brown tone with scattered individuals or groups of coarse bright, light green taller shrubs of *A. sparsifolium*. *A. sparsifolium* is a tall shrub with an irregular crown and a coarse texture. *A. fasciculatum* appears as individuals or in clumps. Its signature is typically dark reddish-brown with a rough texture, showing a hint of spikiness on its edges. The crowns are usually shorter than most tall shrubs. *C. crassifolius* has a dull brown to gray color with a stippled texture and occurs in clumps or groups intermixed with the *A. fasciculatum*.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

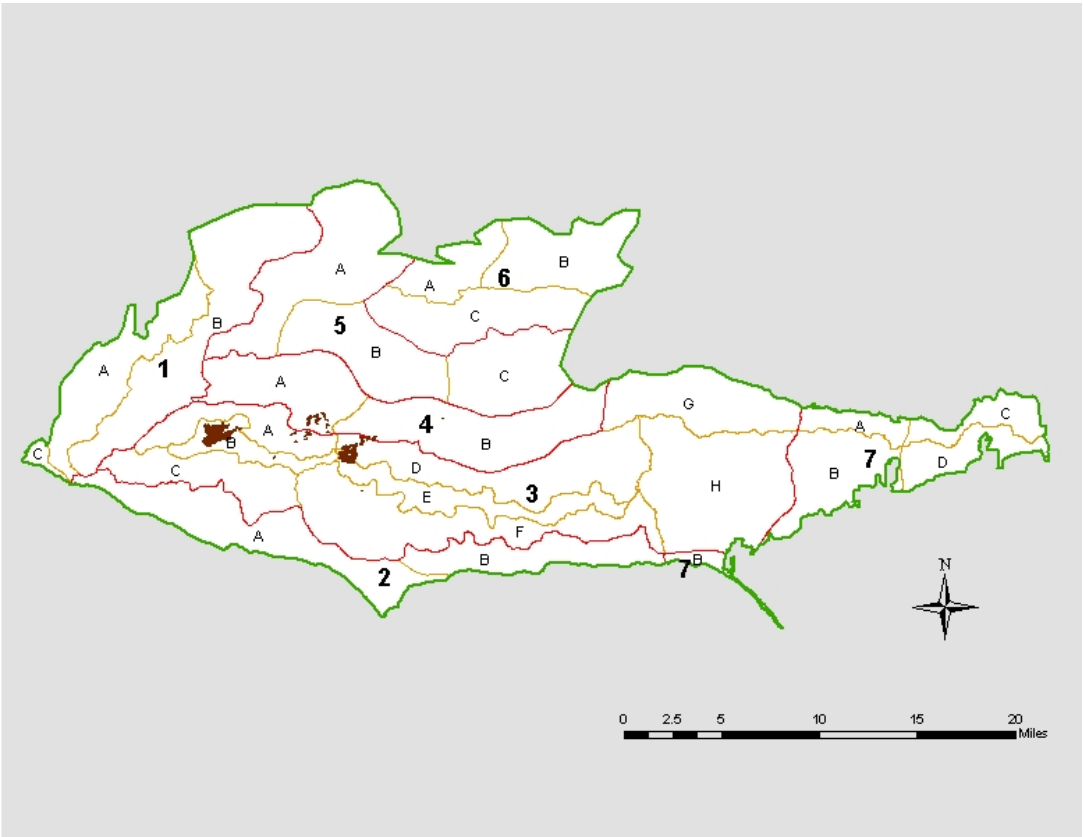
- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Adenostoma sparsifolium* Shrubland Alliance (2050)
- *Ceanothus megacarpus* Shrubland Alliance (2080)
- *Adenostoma fasciculatum–Ceanothus crassifolius* Shrubland Alliance (2570)

2042 – CHAMISE–REDSHANK–HOARY LEAF CEANOTHUS SHRUBLAND ASSOCIATION

***Adenostoma fasciculatum–Adenomstoma sparsifolium–Ceanothus crassifolius* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Adenostoma fasciculatum–Adenostoma sparsifolium–Ceanothus crassifolius* Shrubland Association occurs as open to intermittent stands on dry, gentle to steep slopes. The association is found on variable aspects, on undulating to convex surfaces, and on lower to upper slopes. *A. fasciculatum, A. sparsifolium* and *C. crassifolius* co-dominate, with all three species at very low to high cover. *A. fasciculatu*m and *C. crassifolius* tend to mix, with *A. sparsifolium* scattered through the stand or in open groups. This type is common at the higher elevations of the Santa Monica Mountains, and may cover large areas.

PHOTO INTERPRETATION SIGNATURE: The stand has a dull brown to gray tone with scattered individuals or groups of coarse bright, light green taller shrubs of *A. sparsifolium*. *A. sparsifolium* is a tall shrub with an irregular crown and a coarse texture. *A. fasciculatum* appears as individuals or in clumps. Its signature is typically dark reddish-brown with a rough texture, showing a hint of spikiness on its edges. The crowns are usually shorter than most tall shrubs. *C. crassifolius* has a dull brown to gray color with a stippled texture and occurs in clumps or groups intermixed with the *A. fasciculatum*. *C. crassifolius* may be confused with *C. megacarpus*, which can also occur with *A. sparsifolium. A. sparsifolium* may be confused with *Malosma laurina.*

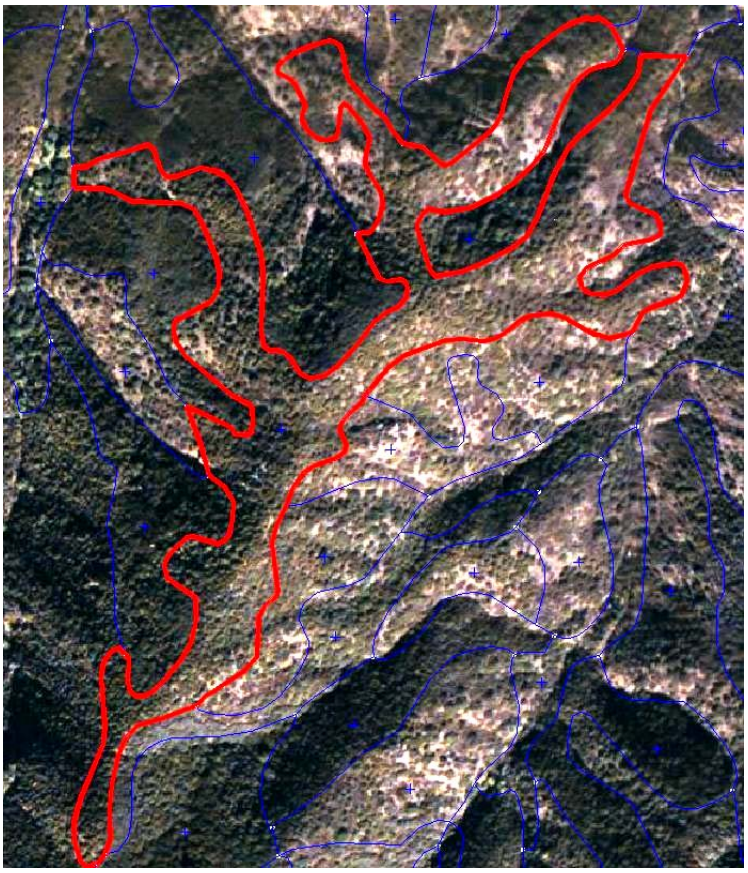
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum* Shrubland Association (2011)
- *Adenostoma fasciculatum–Ceanothus megacarpus* Shrubland Association (2019)
- *Adenostoma fasciculatum–Malosma laurina* Shrubland Association (2013)
- *Adenostoma sparsifolium* Shrubland Alliance (2050)
- *Ceanothus megacarpus–Adenostoma sparsifolium* Shrubland Association (2082)
- *Ceanothus megacarpus-Adenostoma fasciculatum* Shrubland Association (2083)
- *Ceanothus megacarpus–Malosma laurina* Shrubland Association (2087)
- *Adenostoma fasciculatum-Ceanothus crassifolius* Shrubland Association (2572)

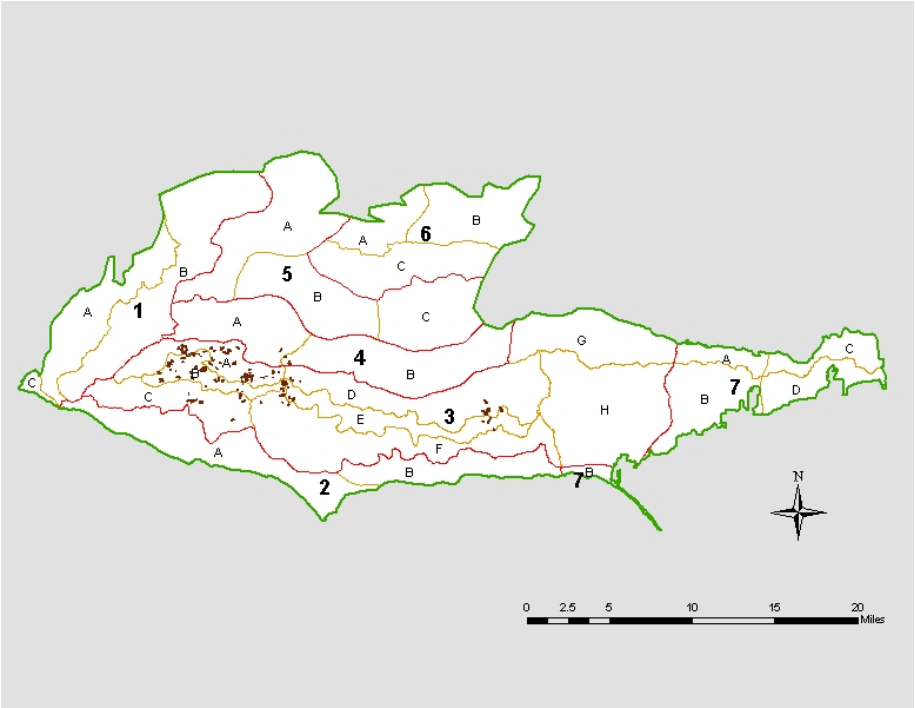
REDSHANK SHRUBLAND ALLIANCE



2050 – REDSHANK SHRUBLAND ALLIANCE
Adenostoma sparsifolium Alliance



DISTRIBUTION:



DESCRIPTION: *Adenostoma sparsifolium* Alliance occurs as intermittent to dense stands on dry, south-facing, moderate to steep slopes. It also favors concave to undulating surfaces on lower to upper slopes. *A. sparsifolium* dominates at low to high cover. Other shrubs may be present in varying amounts, and may approach sub-dominance. Stands of *Ceanothus spinosus* occurring with *A. sparsifolium* are included in this alliance. This type has an occasional occurrence at the higher elevations of the Santa Monica Mountains, and is of limited extent.

PHOTO INTERPRETATION SIGNATURE: The stand as a whole is mottled with a coarse texture. *A. sparsifolium* is a tall shrub, and appears as individuals or groups with a bright green tone and irregular crown with a coarse texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum–Adenostoma sparsifolium* Shrubland Association (2042)
- *Ceanothus megacarpus-Adenostoma sparsifolium* Shrubland Association (2082)

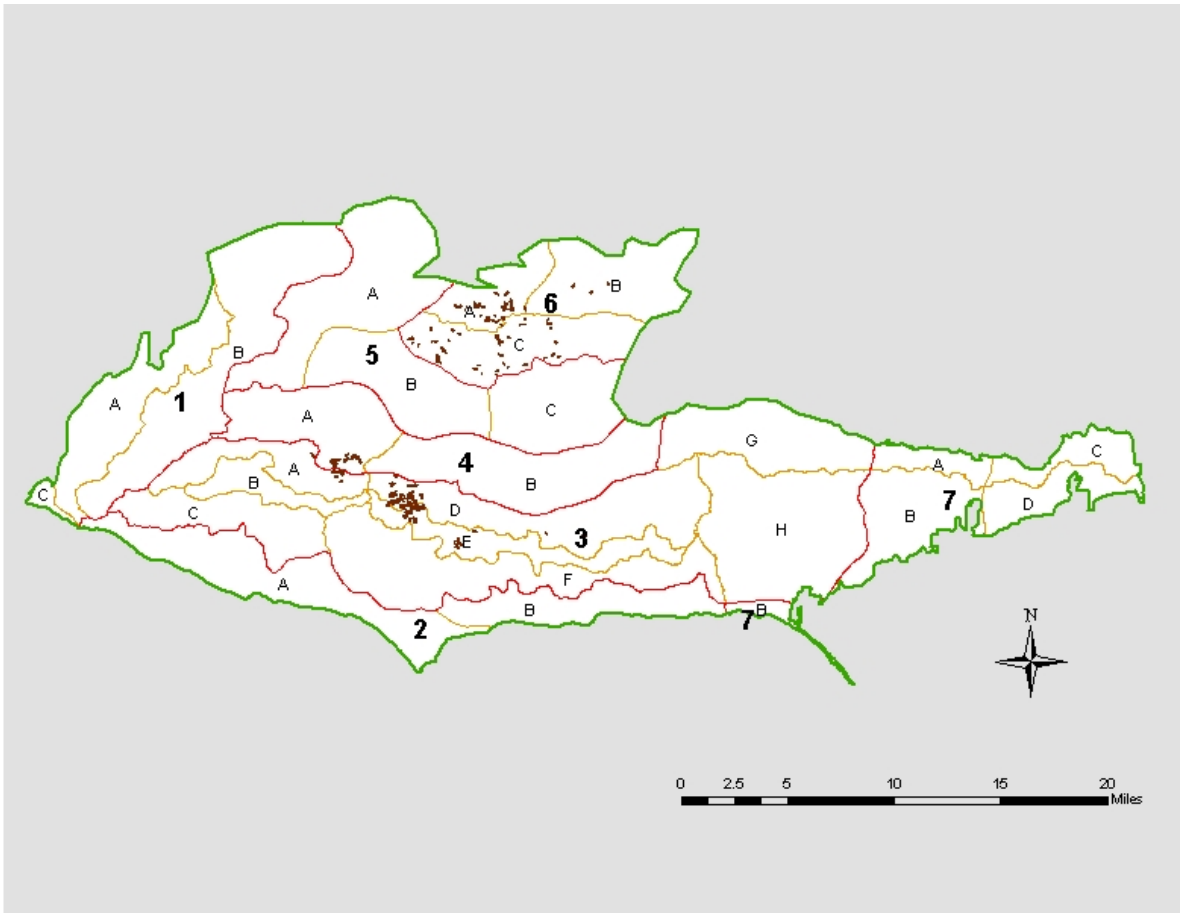
HOARY LEAF CEANOTHUS SHRUBLAND ALLIANCE



2060 – HOARY LEAF CEANOTHUS SHRUBLAND ALLIANCE
Ceanothus crassifolius Shrubland Alliance



DISTRIBUTION:



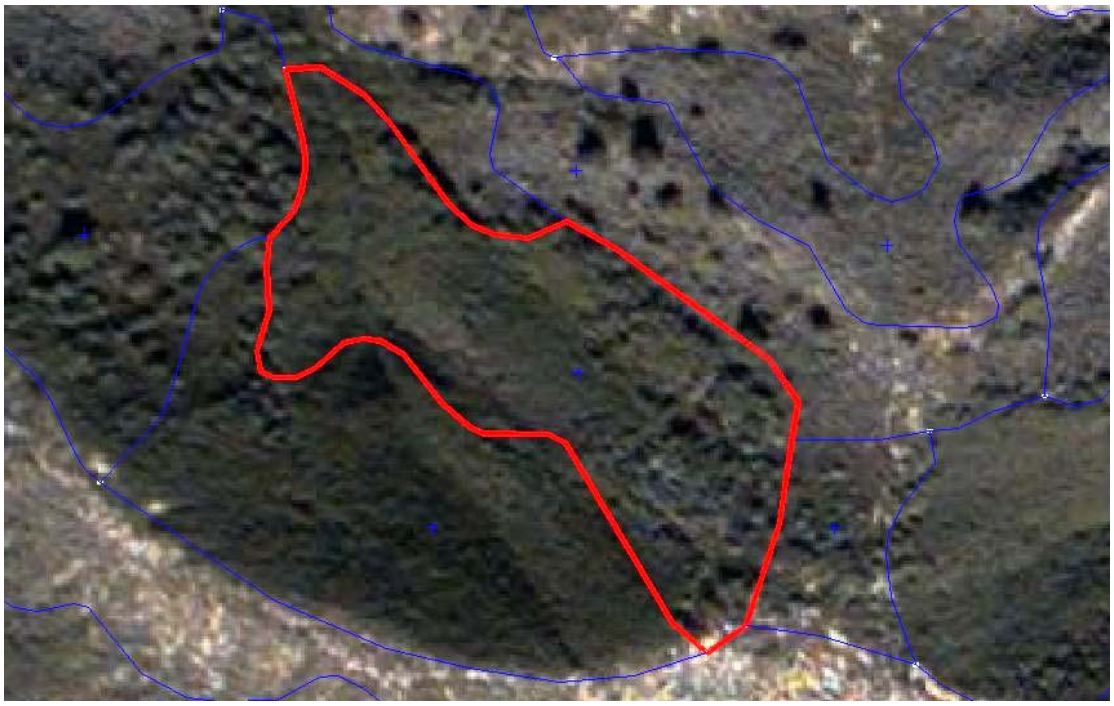
DESCRIPTION: *Ceanothus crassifolius* Shrubland Alliance represents the hierarchical class into which all *C. crassifolius* association types are nested. This alliance is dominated by *C. crassifolius* and generally occurs as open to continuous stands on dry north-facing or south-facing, moderate to steep slopes. The *C. crassifolius* Alliance can be found on lower to upper slopes. *C. crassifolius* is dominant at moderate to high cover. In some instances *C. megacarpus* may co-dominate at low to high cover. *Malosma laurina* and *Salvia mellifera* may also be present and can approach sub-dominance at very low to moderate cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of subdominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *C. crassifolius* as the dominant shrub are included. It primarily occurs at the higher elevations and more inland portions of the Santa Monica Mountains, and in the Simi Hills, where it may grade into the *C. megacarpus* Shrubland Alliance or the *C. cuneatus* Shrubland Alliance, which occupy similar environments at lower elevations. *C. crassifolius* will hybridize with *C. megacarpus* and *C cuneatus.* In chaparral environments where the signature is not distinctive and the stands potentially have *Cercocarpus betuloides* and/or other *Ceanothus* species, the *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006) is mapped.

PHOTO INTERPRETATION SIGNATURE: *Ceanothus crassifolius* has a dull brown to gray color with a fine texture and occurs in clumps or groups. When in a dense pure stand it can have a smoother texture. *C. crassifolius* may be confused with *C. megacarpus and C. cuneatus*. *C. crassifolius* tends to have a duller tone.

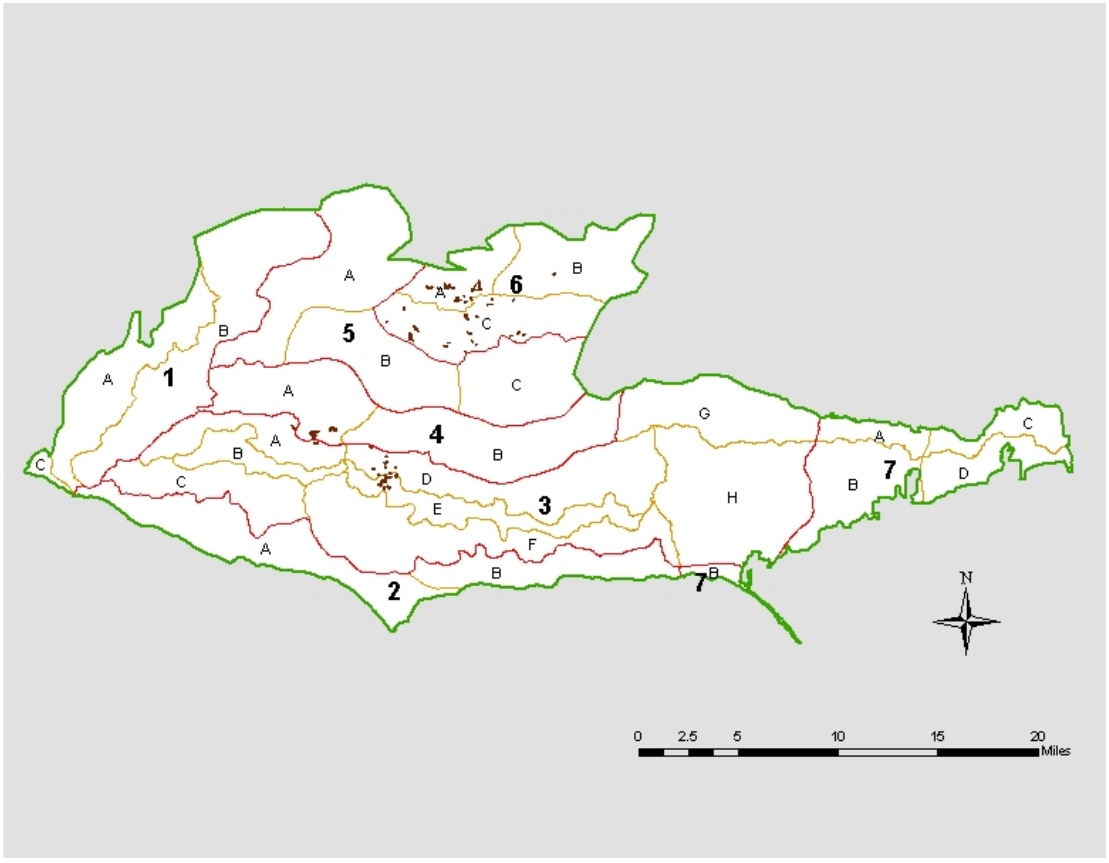
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus* spp.-*Adenostoma fasciculatum* Shrubland Mapping Unit (2009)
- *Ceanothus oliganthus* Shrubland Alliance (2070)
- *Ceanothus megacarpus* Shrubland Alliance (2080)
- *Cercocarpus betuloides* Shrubland Alliance (2110)
- *Ceanothus cuneatus* Shrubland Alliance (2520)
- *Adenostoma fasciculatum-Ceanothus crassifolius* Shrubland Alliance (2570)

2063 – HOARY LEAF CEANOTHUS SHRUBLAND ASSOCIATION
Ceanothus crassifolius Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Ceanothus crassifolius* Shrubland Association typically occurs as intermittent to dense stands on dry north-facing moderate to steep slopes. It tends to occur on undulating lower to middle slopes. *C. crassifolius* is very dominant and almost pure at high to very high cover. This type has a rare occurrence and forms small stands. It primarily occurs at the higher elevations and more inland portions of the Santa Monica Mountains, and in the Simi Hills, where it may grade into the *C. megacarpus* Shrubland Alliance or the *C. cuneatus* Shrubland Alliance, which occupy similar environments at lower elevations. *C. crassifolius* will hybridize with *C. megacarpus* and *C. cuneatus.* In chaparral environments where the signature is not distinctive and the stands potentially have *Cercocarpus betuloides* and/or other *Ceanothus* species, the *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006) is mapped.

PHOTO INTERPRETATION SIGNATURE: The stand usually has a dense homogeneous smooth appearance with a dull gray to brown color. *C. crassifolius* is dull brown to gray with a fine texture and occurs in clumps or groups. When in a dense pure stand it can have a smoother texture. *C. crassifolius* may be confused with *C. megacarpus* and *C. cuneatus*. *C. crassifolius* tends to have a duller tone.

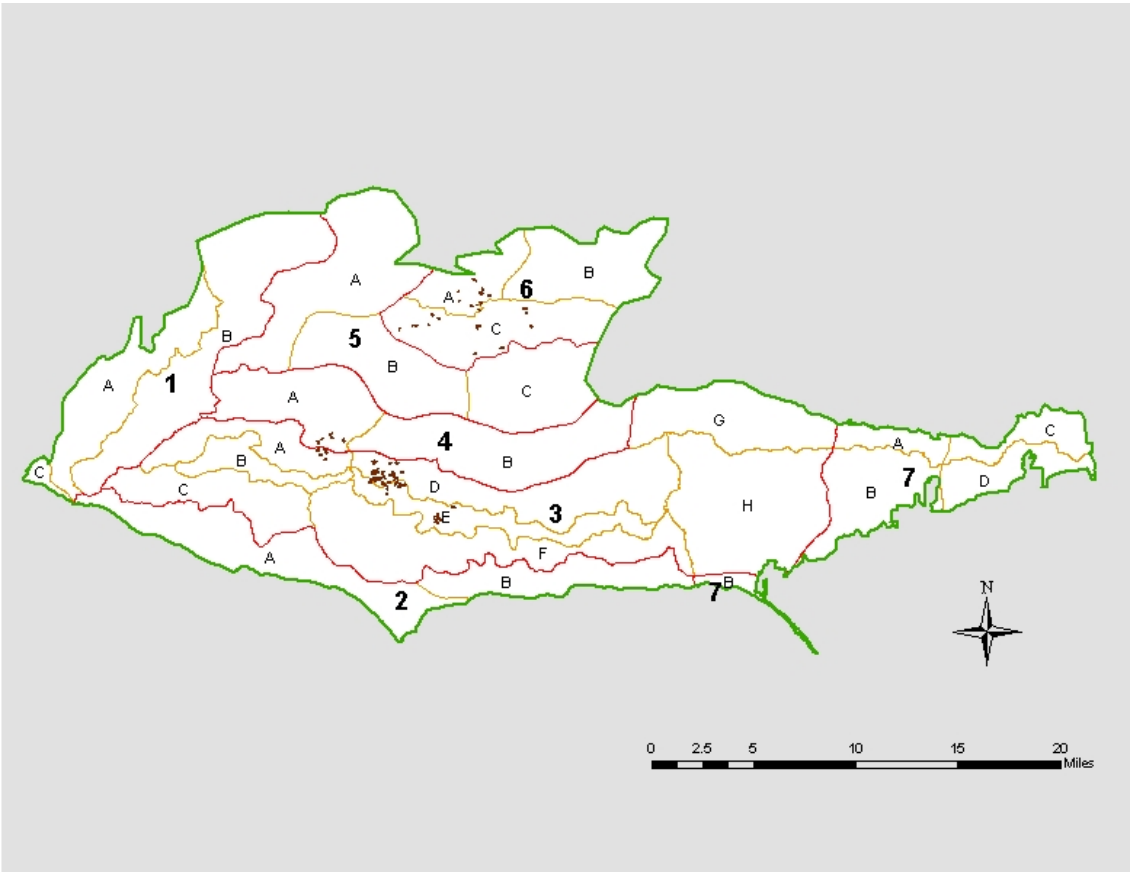
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus* spp*.-Adenostoma fasciculatum* Shrubland Mapping Unit (2009)
- *Ceanothus oliganthus* Shrubland Association (2072)
- *Ceanothus megacarpus* Shrubland Association (2081)
- *Cercocarpus betuloides* Shrubland Association (2114)
- *Ceanothus cuneatus* Shrubland Association (2521)
- *Adenostoma fasciculatum-Ceanothus crassifolius* Shrubland Association (2572)

2065 – HOARY LEAF CEANOTHUS–LAUREL SUMAC SHRUBLAND ASSOCIATION
***Ceanothus crassifolius–Malosma laurina* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Ceanothus crassifolius–Malosma laurina* Shrubland Association occurs as open to intermittent stands on dry moderate to steep slopes. The association favors undulating surfaces on lower to upper slopes. *C. crassifolius* is dominant at moderate to high cover. *Malosma* is sub-dominant at low to high cover. *Salvia mellifera* may be present or sub-dominant at very low to moderate cover. The type primarily occurs at the higher elevations and more inland portions of the Santa Monica Mountains, and in the Simi Hills, where it may grade into the *C. megacarpus* Shrubland Alliance or the *C. cuneatus* Shrubland Alliance, which occupy similar environments at lower elevations. *C. crassifolius* will hybridize with *C. megacarpus* and *C cuneatus.* In chaparral environments where the signature is not distinctive and the stands potentially have *Cercocarpus betuloides* and/or other *Ceanothus* species, the *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006) is mapped.

PHOTO INTERPRETATION SIGNATURE: The stand has a dull brown to dull gray appearance with coarse tall shrubs scattered within. *C*. *crassifolius* has a dull brown to gray color with a fine texture and occurs in clumps or groups. When in a dense pure stand it can have a smoother texture. *C. crassifolius* may be confused with *C. megacarpus and C. cuneatus*. *C. crassifolius* tends to have a duller tone. *Malosma* is a tall shrub that tends to occur as individuals with large rounded crowns. Its signature color is medium green, but can vary from light green to dark green, even within an area, and has a coarse texture. *S. mellifera* is a short shrub with a tan to green signature tone and a smooth texture with a fuzzy crown edge.

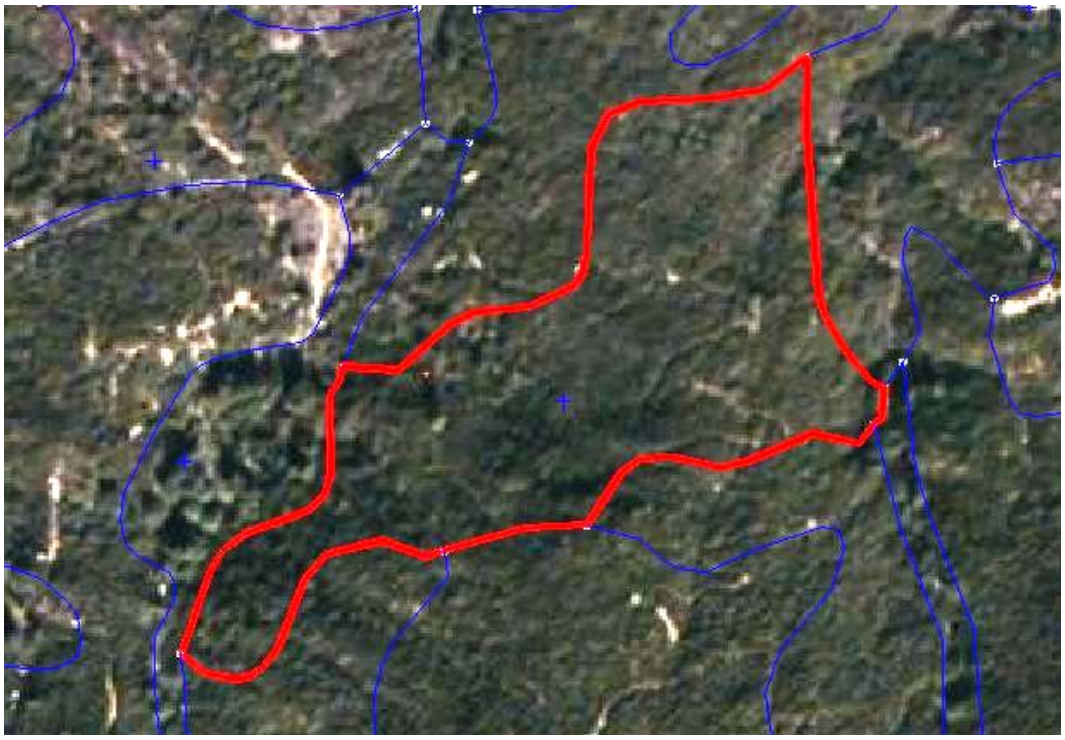
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus* spp*.-Adenostoma fasciculatum* Shrubland Mapping Unit (2009)
- *Adenostoma fasciculatum–Adenostoma sparsifolium–Ceanothus crassifolius* Shrubland Association (2042)
- *Ceanothus oliganthus* Shrubland Association (2072)
- *Ceanothus oliganthus*–Tall Shrubs Shrubland Superassociation (7071)
- *Ceanothus megacarpus* Shrubland Association (2081)
- *Ceanothus megacarpus–Malosma laurina* Shrubland Association (2087)
- *Ceanothus megacarpus–Salvia mellifera* Shrubland Association (7085)
- *Cercocarpus betuloides* Shrubland Association (2114)
- *Ceanothus cuneatus* Shrubland Association (2521)
- *Adenostoma fasciculatum–Ceanothus crassifolius* Shrubland Association (2572)

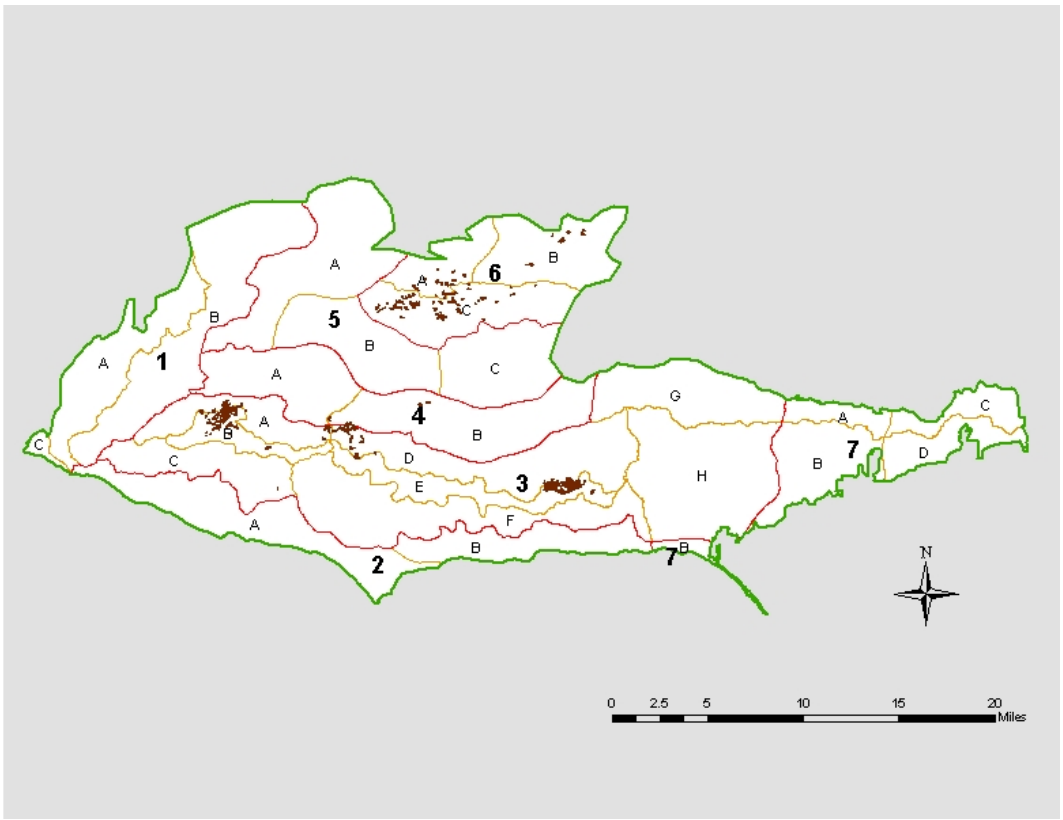
HAIRY LEAF CEANOTHUS SHRUBLAND ALLIANCE



2070 – HAIRY LEAF CEANOTHUS SHRUBLAND ALLIANCE
Ceanothus oliganthus Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Ceanothus oliganthus* Shrubland Alliance represents the hierarchical class into which all *C. oliganthus* association types are nested. This alliance is dominated by *C. oliganthus* at low to high cover and generally occurs as intermittent to continuous stands on mesic north-facing, gentle to moderately steep slopes. The *C. oliganthus* Shrubland Alliance can be found on protected concave lower to mid slopes. Other shrubs, such as *Quercus berberidifolia* or *Adenostoma sparsifolium,* may co-dominate at low to moderate cover. *Rhus ovata* and *Heteromeles arbutifolia* may also be present and can approach sub-dominance at very low to moderate cover. *Quercus agrifolia, Juglans californica*, and/or *Umbellularia californica* may be present as a very sparse overstory at very low cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *C. oliganthus* as the dominant shrub are included. This alliance is rare in occurrence and limited in extent. It occurs primarily at the higher elevations of the Santa Monica Mountains, and in the Simi Hills. In the Santa Monica Mountains it may grade into the *Ceanothus spinosus* Shrubland Alliance, which occupies similar environments at lower elevations. *C. spinosus* will hybridize with *C. oliganthus*. In north-facing chaparral environments where the signature is not distinctive and the stand potentially has *Cercocarpus betuloides* and/or other *Ceanothus* species, the *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006) is mapped.

PHOTO INTERPRETATION SIGNATURE: *C. oliganthus*, when rather pure and dense, has a homogeneous very dark brown to black appearance, with a fine texture. When mixed with other tall shrubs, the tone is mottled with bright green, yellow green, and dark green tones in a dark brown to black matrix. When mixed the stand texture is uneven and coarse.

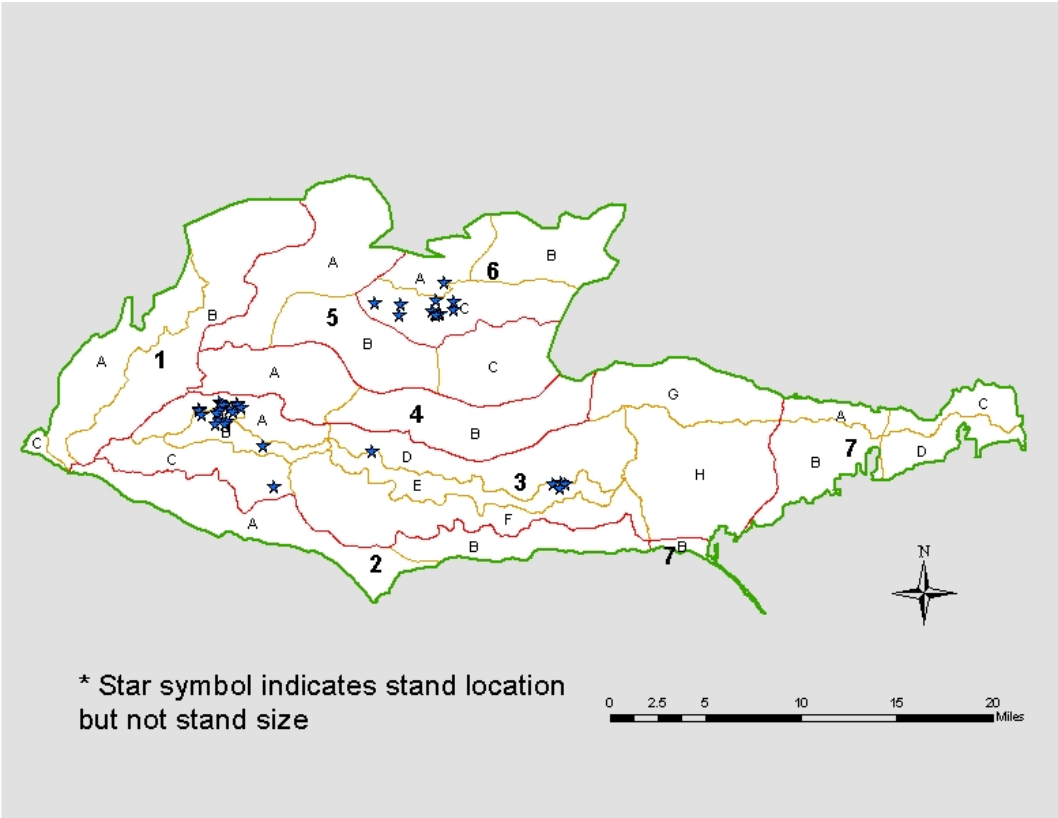
TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Umbellularia californica* Woodland/Forest Alliance (1010)
- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus spinosus* Shrubland Alliance (2090)
- *Cercocarpus betuloides* Shrubland Alliance (2110)
- *Prunus ilicifolia* Shrubland Alliance (2120)
- *Adenostoma fasciculatum–Ceanothus crassifolius* Shrubland Alliance (2570)

2072 – HAIRY LEAF CEANOTHUS SHRUBLAND ASSOCIATION
Ceanothus oliganthus Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Ceanoathus oliganthus* Shrubland Association occurs as an intermittent to continuous stand of shrubs on mesic, north-facing, gentle to moderately steep slopes. It tends toward protected concave to undulating surfaces on lower to upper slopes. *C. oliganthus* is very dominant at high to very high cover. *Quercus agrifolia, Juglans californica*, and/or *Umbellularia californica* may be present as a very sparse overstory at very low cover. This association is rare in occurrence and of limited extent. It occurs primarily at the higher elevations of the Santa Monica Mountains, and in the Simi Hills. In of the Santa Monica Mountains it may grade into the *Ceanothus spinosus* Shrubland Alliance, which occupies similar environments at lower elevations. *C. spinosus* will hybridize with *C. oliganthus*. In north-facing chaparral environments where the signature is not distinctive and the stand potentially has *Cercocarpus betuloides* and/or other *Ceanothus* species, the *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006) is mapped.

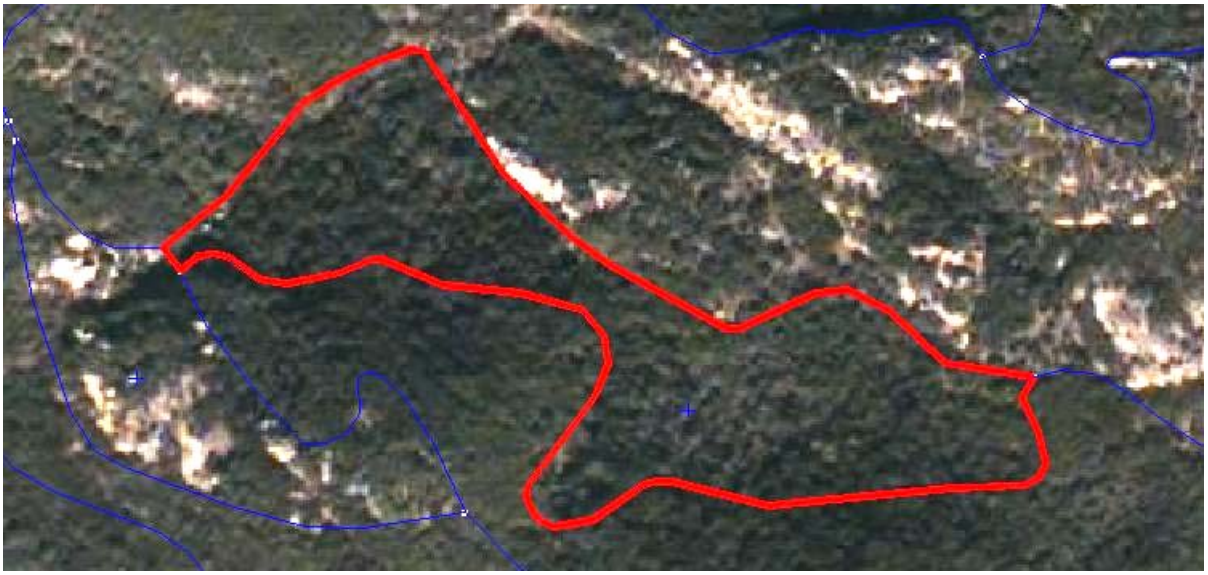
PHOTO INTERPRETATION SIGNATURE: *C. oliganthus* Shrubland Association, because it is rather pure and dense *C. oliganthus*, has a homogeneous very dark brown to black appearance, with a fine texture.

TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

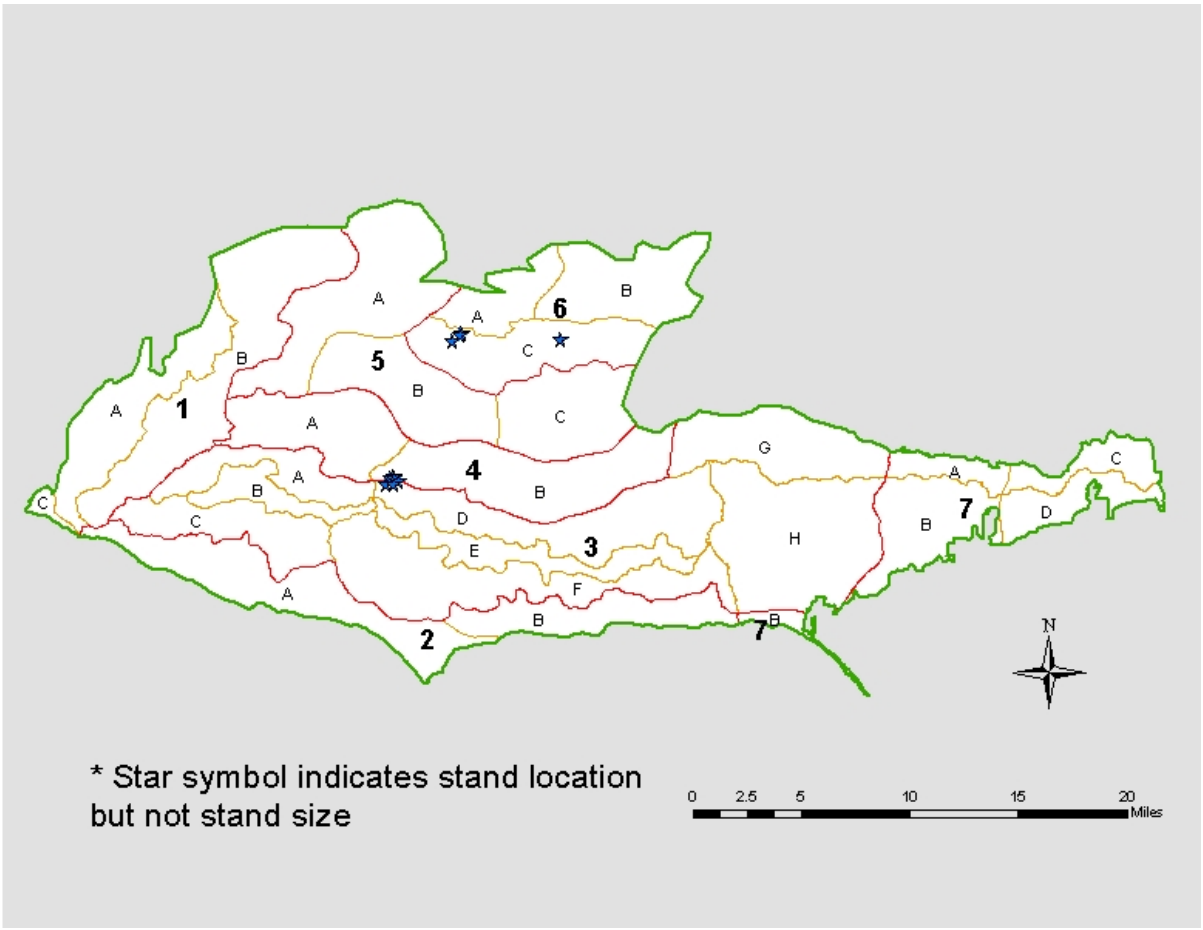
- *Umbellularia californica/Ceanothus oliganthus* Woodland/Forest Association (1012)
- *Quercus agrifolia-Umbellularia californica/Ceanothus oliganthus* Woodland/Forest Association (1119)
- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus spinosus-Ceanothus megacarpus* Shrubland Association (2091)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Cercocarpus betuloides* Shrubland Association (2114)
- *Adenostoma fasciculatum–Ceanothus crassifolius* Shrubland Association (2572)

2076 – HAIRY LEAF CEANOTHUS–TOYON–SUGAR BUSH SHRUBLAND ASSOCIATION

***Ceanothus oliganthus–Heteromeles arbutifolia–Rhus ovata* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Ceanothus oliganthus - Heteromeles arbutifolia - Rhus ovata* Shrubland Association occurs as intermittent stands of shrubs on mesic, north-facing, moderate to steep slopes. It tends toward protected concave to undulating surfaces on lower to upper slopes. *C. oliganthus* is dominant at moderate to high cover. *Heteromeles* is sub-dominant at low to moderate cover. *Rhus ovata* may be present and can approach sub-dominance at very low to moderate cover. *Quercus agrifolia* and/or *Juglans californica* may be present as a very sparse overstory at very low cover. At higher elevations of the Santa Monica Mountains this type may grade into the *Ceanothus spinosus* Shrubland Alliance, which occupies similar environments at lower elevations. *C. spinosus* will hybridize with *C. oliganthus*. *C. oliganthus-Heteromeles-R. ovata* Shrubland Association is mapped only where Rapid Assessment Plots were provided by the Park. Otherwise this type is mapped as part of the *C. oliganthus*-Tall Shrubs Shrubland Superassociation (7071).

PHOTO INTERPRETATION SIGNATURE: The stand typically has a mottled appearance due to the color variations of the tall shrubs, *R. ovata* and *Heteromeles*, within a matrix of *C. oliganthus*. *R. ovata* signature color is light green, and *Heteromeles* varies from medium green to dark green, usually with a white overtone representing the inflorescences. Both have large rounded crowns with billowy texture. *C. oliganthus* has a very dark brown to black appearance, with a fine texture.

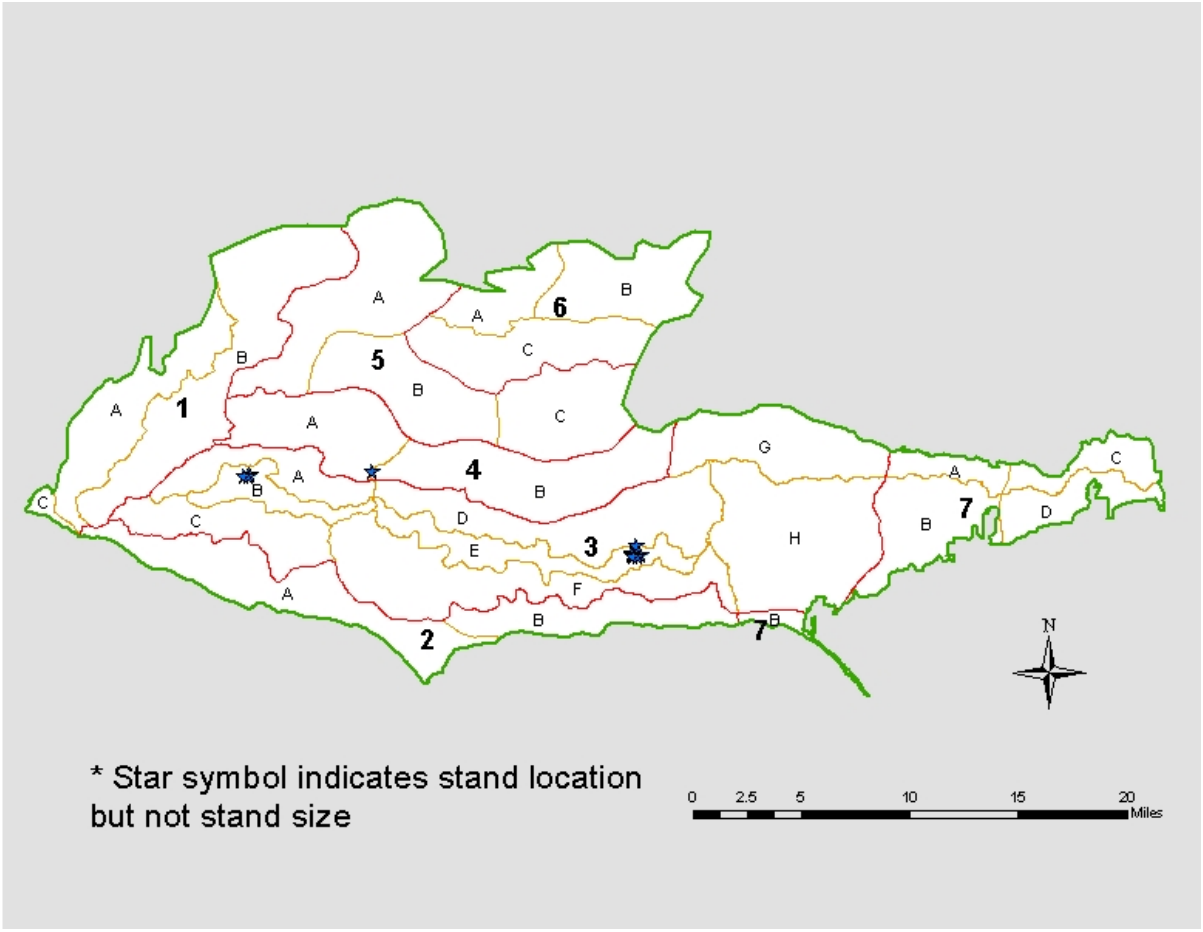
TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Umbellularia californica/Ceanothus oliganthus* Woodland/Forest Association (1012)
- *Quercus agrifolia-Umbellularia californica/Ceanothus oliganthus* Woodland/Forest Association (1119)
- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus oliganthus-Quercus berberidifolia* Shrubland Association (2077)
- *Ceanothus oliganthus-Adenostoma sparsifolium* Shrubland Association (2078)
- *Ceanothus oliganthus*-Tall Shrubs Shrubland Superassociation (7071)
- *Ceanothus spinosus* Shrubland Association (2092)

2077 – HAIRY LEAF CEANOTHUS–SCRUB OAK SHRUBLAND ASSOCIATION
***Ceanothus oliganthus-Quercus berberidifolia* Shrubland Association**



DISTRIBUTION:



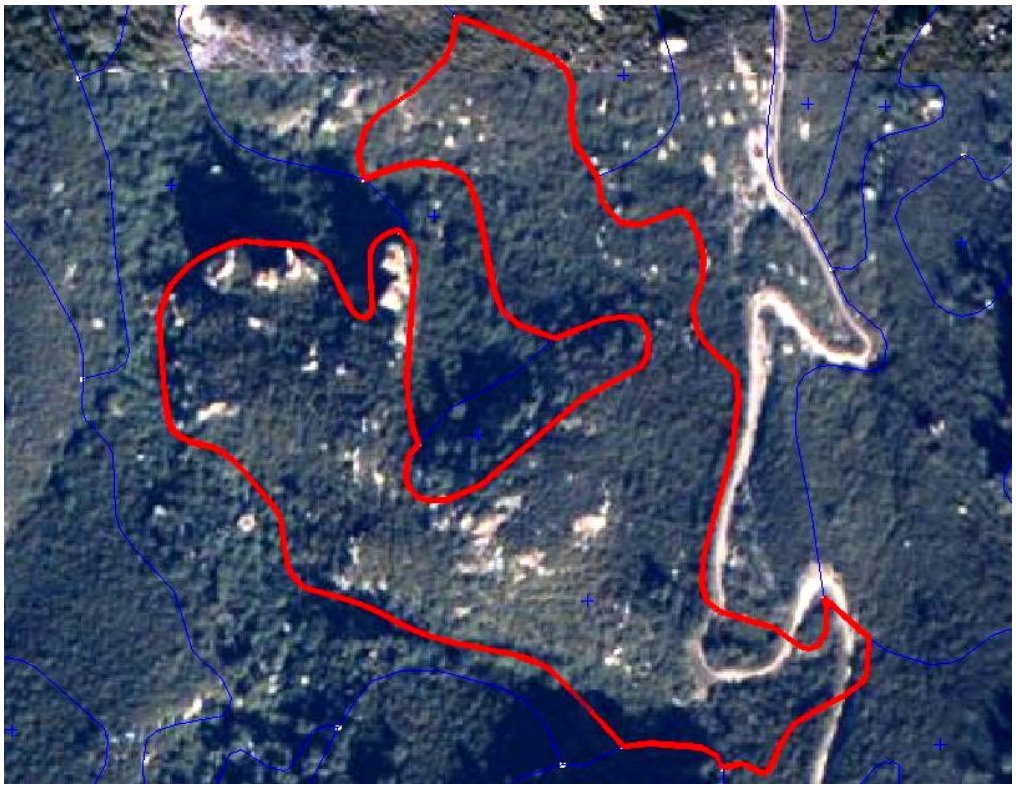
DESCRIPTION: *Ceanothus oliganthus-Quercus berberidifolia* Shrubland Association occurs as open to dense stands of shrubs on mesic, north-facing, gentle to steep slopes. It tends toward protected neutral surfaces on bottoms to middle slopes. *C. oliganthus* is dominant at moderate to high cover. *Q. berberidifolia* is sub-dominant, but can co-dominate, at very low to high cover. *Adenostoma fasciculatum and Heteromeles arbutifolia* may be present to sub-dominant at very low to moderate cover. At higher elevations of the Santa Monica Mountains this type may grade into the *Ceanothus spinosus* Shrubland Alliance, which occupies similar environments at lower elevations. *C. spinosus* will hybridize with *C. oliganthus*. *C. oliganthus-Q. berberidifolia* Shrubland Association is mapped only where Rapid Assessment Plots were provided by the Park. Otherwise this type is mapped as part of the *C. oliganthus*-Tall Shrubs Shrubland Superassociation (7071).

PHOTO INTERPRETATION SIGNATURE: The stand typically has a dark, mottled, uneven appearance due to the textural variations of the tall shrub *Q. berberidifolia* within a matrix of *C. oliganthus*. *Q. berberidifolia* signature color is very dark green with large rounded crowns and a billowy texture. *C. oliganthus* has a very dark brown to black appearance, with a fine texture.

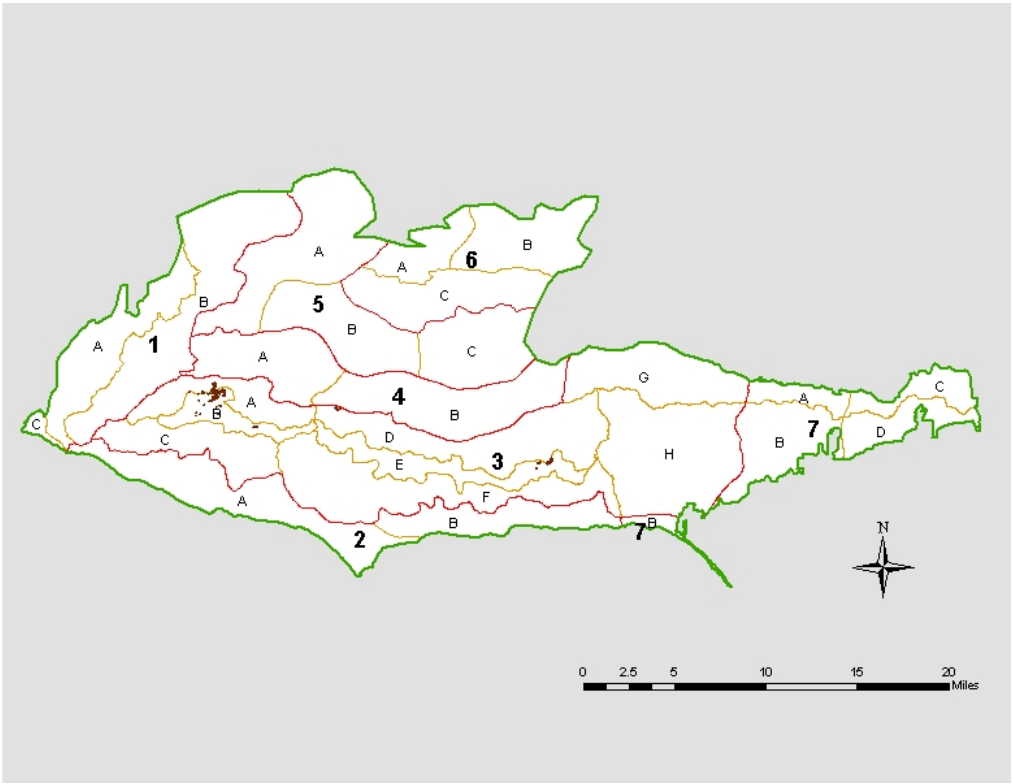
TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus oliganthus-Heteromeles arbutifolia-Rhus ovata* Shrubland Association (2076)
- *Ceanothus oliganthus*-Tall Shrubs Shrubland Superassociation (7071)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Quercus berberidifolia-Ceanothus spinosus* Shrubland Association (2167)

2078 – HAIRY LEAF CEANOTHUS-REDSHANK SHRUBLAND ASSOCIATION
***Ceanothus oliganthus–Adenostoma sparsifolium* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Ceanothus oliganthus-Adenostoma sparsifolium* Shrubland Association occurs as open to intermittent stands of shrubs on mesic, north-facing or south-facing, gentle to moderately steep slopes. It tends toward protected mid slopes to ridgetops. *C. oliganthus* and *A. sparsifolium* co-dominate, each from low to high cover. At higher elevations of the Santa Monica Mountains this type may grade into the *Ceanothus spinosus* Shrubland Alliance, which occupies similar environments at lower elevations. *C. spinosus* will hybridize with *C. oliganthus*. This association is rare and of limited extent. In north-facing chaparral environments where the signature is not distinctive and the stand potentially has *Cercocarpus betuloides* and/or other *Ceanothus* species, then *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006) is mapped. In areas where *C. megacarpus-A. sparsifolium* Shrubland Association may transition to *C. oliganthus-A. sparsifolium* Shrubland Association, an attempt is made to map the individual associations rather than mapping the superalliance.

PHOTO INTERPRETATION SIGNATURE: The stand typically has a mottled appearance due to the color variation of the tall shrub *A. sparsifolium* within a smoother matrix of *C. oliganthus*. *C. oliganthus* has a very dark brown to black appearance, with a fine texture. The *A. sparsifolium* signature color is bright green with irregularly shaped crowns having billowy texture.

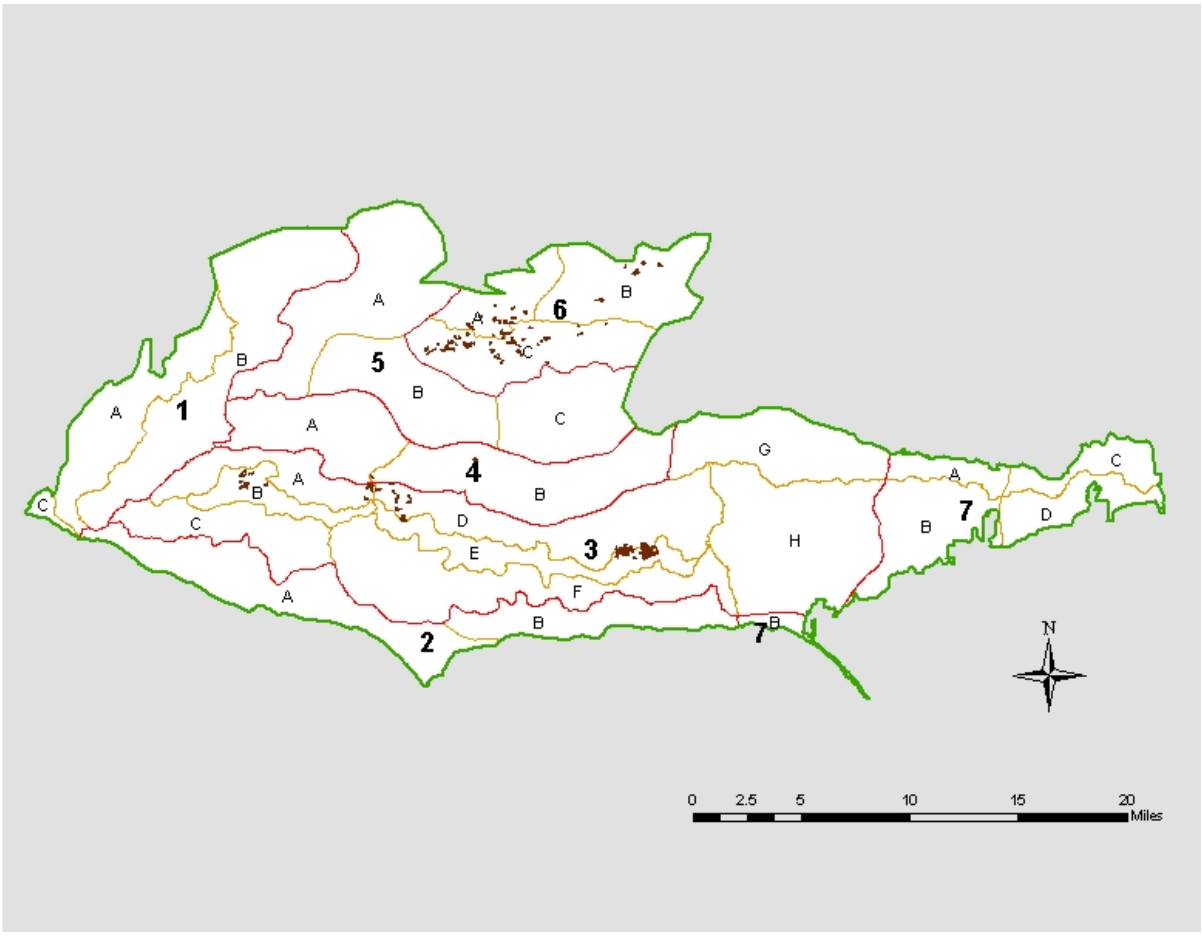
TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Adenostoma sparsifolium* Shrubland Alliance (2050)
- *Ceanothus oliganthus-Heteromeles arbutifolia-Rhus ovata* Shrubland Association (2076)
- *Ceanothus oliganthus*-Tall Shrubs Shrubland Superassociation (7071)
- *Ceanothus megacarpus–Adenostoma sparsifolium* Shrubland Association (2082)

7071 – HAIRY LEAF CEANOTHUS–TALL SHRUBS SHRUBLAND SUPERASSOCIATION
Ceanothus oliganthus-Tall Shrubs Shrubland Superassociation



DISTRIBUTION:



DESCRIPTION: *Ceanothus oliganthus*-Tall Shrubs Shrubland Superassociation is mapped as open to dense stands of shrubs on mesic, north-facing, gentle to steep slopes. It tends toward protected concave to undulating surfaces on bottoms to upper slopes. *C. oliganthus* is at moderate to high cover. *C. oliganthus* is co-dominant with tall shrubs consisting primarily of *Heteromeles arbutifolia, Rhus ovata, Quercus berberidifolia, Malosma laurina*, and/or *Prunus illicifolia*. Each tall shrub may be present at very low to moderate cover. *Quercus agrifolia* and/or *Juglans californica* may also be present as a very sparse overstory at very low cover. At higher elevations of the Santa Monica Mountains this type may grade into the *Ceanothus spinosus* Shrubland Alliance, which occupies similar environments at lower elevations. *C. spinosus* can hybridize with *C. oliganthus*. This superassociation is mapped in lieu of *C. oliganthus-Heteromeles-R. ovata* Shrubland Association (2076) and *C. oliganthus-Q. berberidifolia* Shrubland Association (2077) because the two associations are difficult to distinguish from each other in photo interpretation. The two associations are mapped only where Rapid Assessment Plots are provided by the Park. In north-facing chaparral environments where the signature is not distinctive and the stand potentially has *Cercocarpus betuloides* and/or other *Ceanothus* species, then *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006) is mapped.

PHOTO INTERPRETATION SIGNATURE: The stand typically has a mottled appearance due to the color and textural variations of the tall shrubs, *R. ovata, Q. berberidifolia, Prunus, Malosma* and *Heteromeles*, within a smoother matrix of *C. oliganthus*. The color signature of tall shrubs varies from light green to dark green, with large rounded crowns and billowy texture. *C. oliganthus* has a very dark brown to black appearance, with a fine texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Umbellularia californica/Ceanothus oliganthus* Woodland/Forest Association (1012)
- *Quercus agrifolia-Umbellularia californica/Ceanothus oliganthus* Woodland/Forest Association (1119)
- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus oliganthus-Heteromeles arbutifolia-Rhus ovata* Shrubland Association (2076)
- *Ceanothus oliganthus-Quercus berberidifolia* Shrubland Association (2077)
- *Ceanothus oliganthus-Adenostoma sparsifolium* Shrubland Association (2078)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Quercus berberidifolia-Ceanothus spinosus* Shrubland Association (2167)

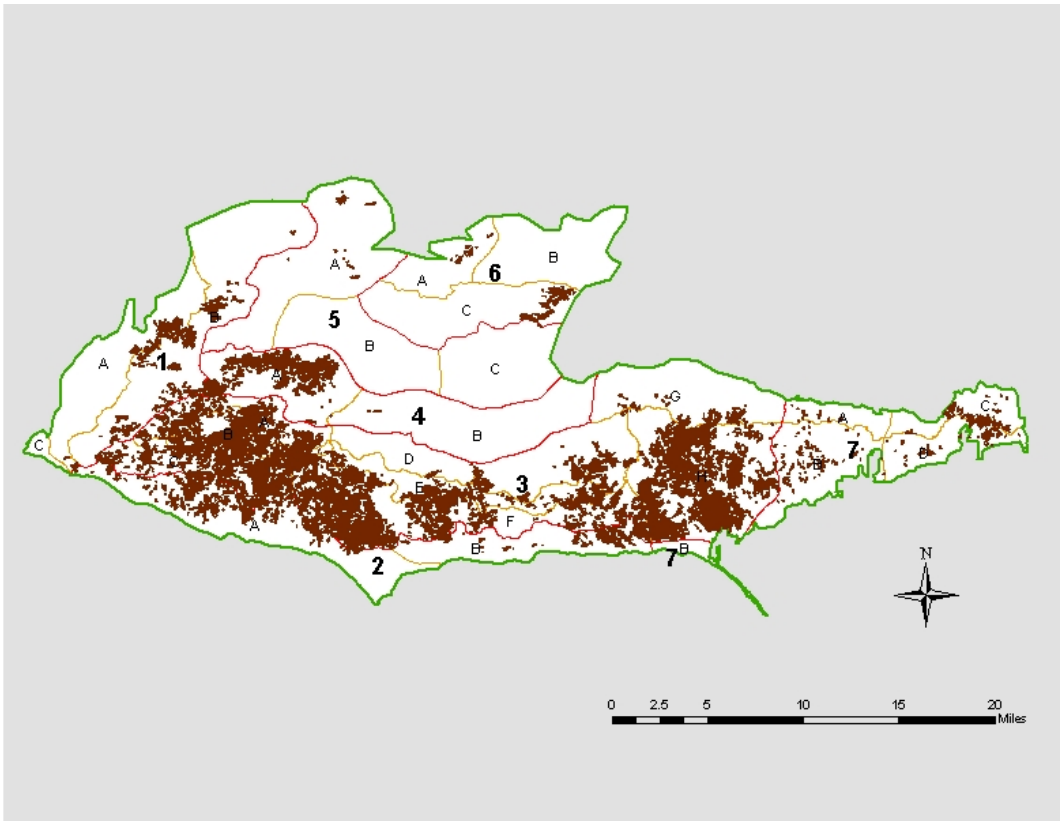
BIG POD CEANOTHUS SHRUBLAND ALLIANCE



2080 – BIG POD CEANOTHUS SHRUBLAND ALLIANCE
Ceanothus megacarpus Shrubland Alliance



DISTRIBUTION:



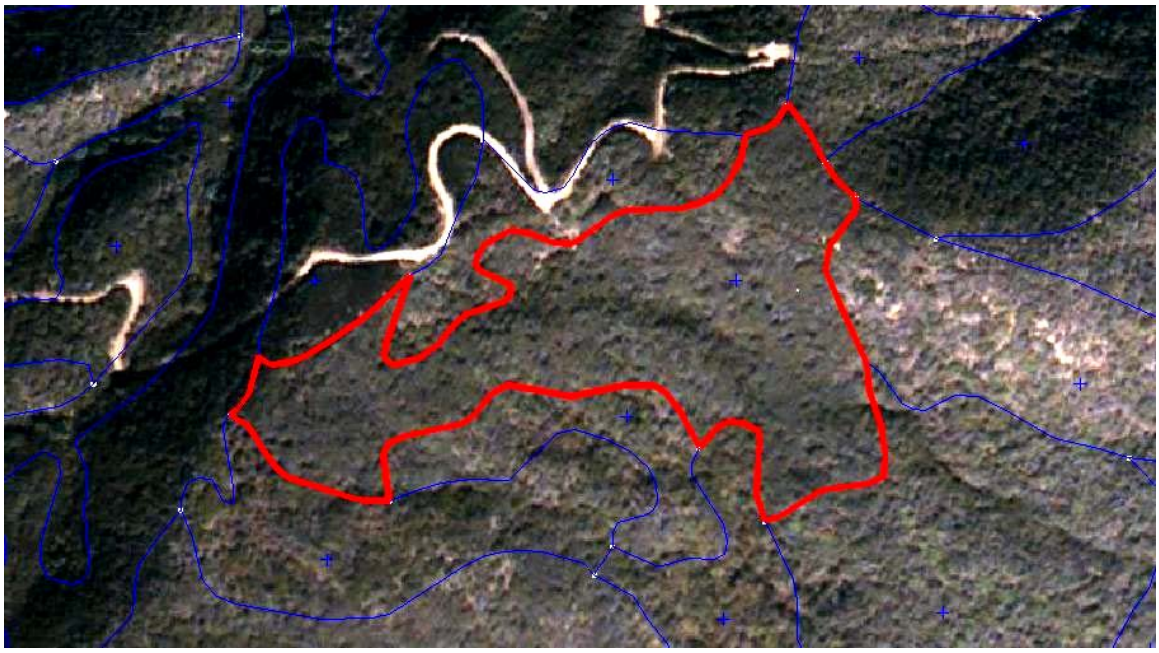
DESCRIPTION: *Ceanothus megacarpus* Shrubland Alliance represents the hierarchical class into which all *C. megacarpus* association types are nested. This alliance is dominated by *C. megacarpus* at moderate to high cover and generally occurs as open to continuous stands on dry north-facing or south-facing, gentle to extremely steep slopes. It occurs on neutral, convex, or undulating surfaces on bottoms to upper slopes and ridge tops. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *C. megacarpus* as the dominant shrub are included. This alliance is common in occurrence and stands are extensive.

PHOTO INTERPRETATION SIGNATURE: *C. megacarpus* is a tall shrub that typically occurs in clumps, homogeneous groups, or extensive stands, usually with other shrubs present. Its signature is usually dull dark gray to black, often with a bluish undertone. In some stands the *C. megacarpus* signature is similar to reddish–brown *Adenostoma fasciculatum* signature. The crowns are in homogeneous groups with fine texture. *C. megacarpus* signature can be confused with *C. crassifolius* and *Cercocarpus betuloides*.

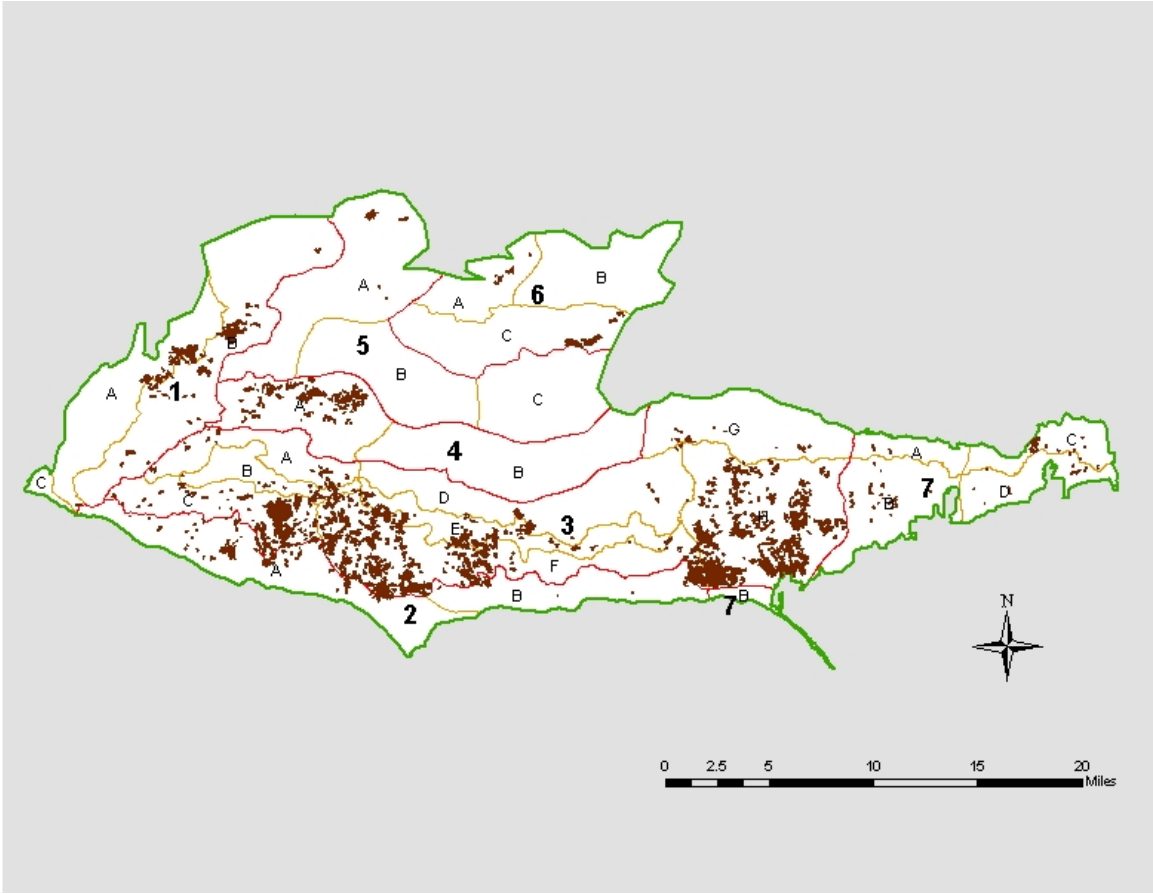
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Shrubland Superalliance (2002)
- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus cuneatus & Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance (2008)
- *Ceanothus* spp. *–Adenostoma fasciculatum* Shrubland Mapping Unit (2009)
- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Ceanothus crassifolius* Shrubland Alliance (2060)
- *Ceanothus spinosus* Shrubland Alliance (2090)
- *Cercocarpus betuloides* Shrubland Alliance (2110)
- *Adenostoma fasciculatum–Ceanothus cuneatus* Shrubland Alliance (2510)
- *Ceanothus cuneatus* Shrubland Alliance (2520)
- *Adenostoma fasciculatum–Ceanothus crassifolius–Malosma laurina* Shrubland Alliance (2572)

2081 – BIG POD CEANOTHUS SHRUBLAND ASSOCIATION
Ceanothus megacarpus Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Ceanothus megacarpus* Shrubland Association typically occurs as intermittent to dense stands on dry, north-facing or south-facing, gentle to steep slopes. It can occur on neutral, convex, or undulating surfaces on bottoms to upper slopes and ridge tops. *C. megacarpus* is strongly dominant at moderate to very high cover. Any other shrubs are of very low cover.

PHOTO INTERPRETATION SIGNATURE: The stand as a whole is usually homogeneous in color and texture, but in some cases may have a sprinkling of tall shrubs that make the color and texture uneven. *C. megacarpus* is a tall shrub that typically occurs as clumps, extensive stands, or homogeneous groups, usually with other shrubs present. Its signature is usually dull dark gray to black, often with a bluish undertone. In some stands stands the *C. megacarpus* signature is similar to reddish-brown *Adenostoma fasciculatum* signature. The crowns are in homogeneous groups with fine texture. The *C. megacarpus* signature can be confused with *C. crassifolius* and *Cercocarpus betuloides*.

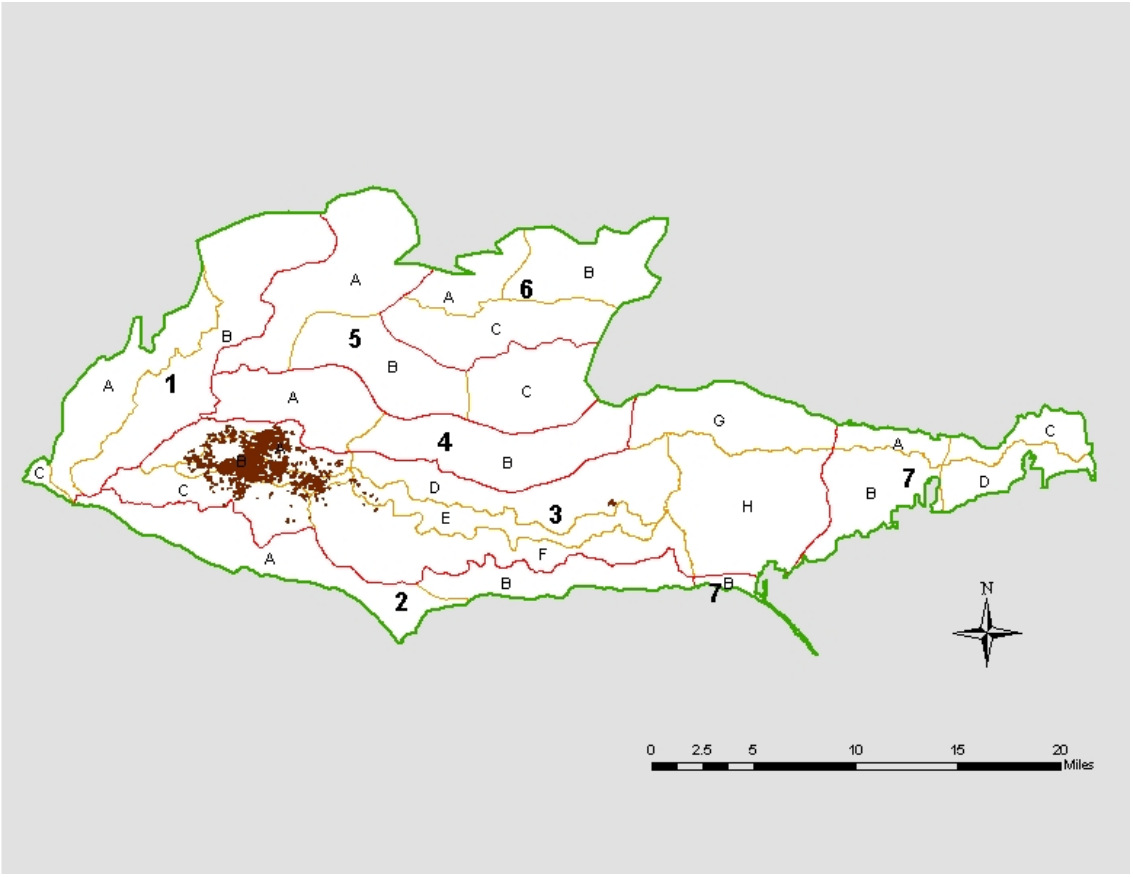
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Shrubland Superalliance (2002)
- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus crassifolius* Shrubland Association (2063)
- *Ceanothus megacarpus-Adenostoma fasciculatum* Shrubland Association (2083)
- *Ceanothus megacarpus–Cercocarpus betuloides* Shrubland Association (2084)
- *Ceanothus megacarpus–Malosma laurina* Shrubland Association (2087)
- *Ceanothus spinosus–Ceanothus megacarpus* Shrubland Association (2091)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Cercocarpus betuloides–Ceanothus spinosus* Shrubland Association (2113)
- *Cercocarpus betuloides* Shrubland Association (2114)
- *Ceanothus cuneatus* Shrubland Assciation (2521)
- *Adenostoma fasciculatum–Ceanothus crassifolius–Malosma laurina* Shrubland Association (2572)

2082 – BIG POD CEANOTHUS–REDSHANK SHRUBLAND ASSOCIATION
***Ceanothus megacarpus–Adenostoma sparsifolium* Shrubland Association**



DISTRIBUTION:



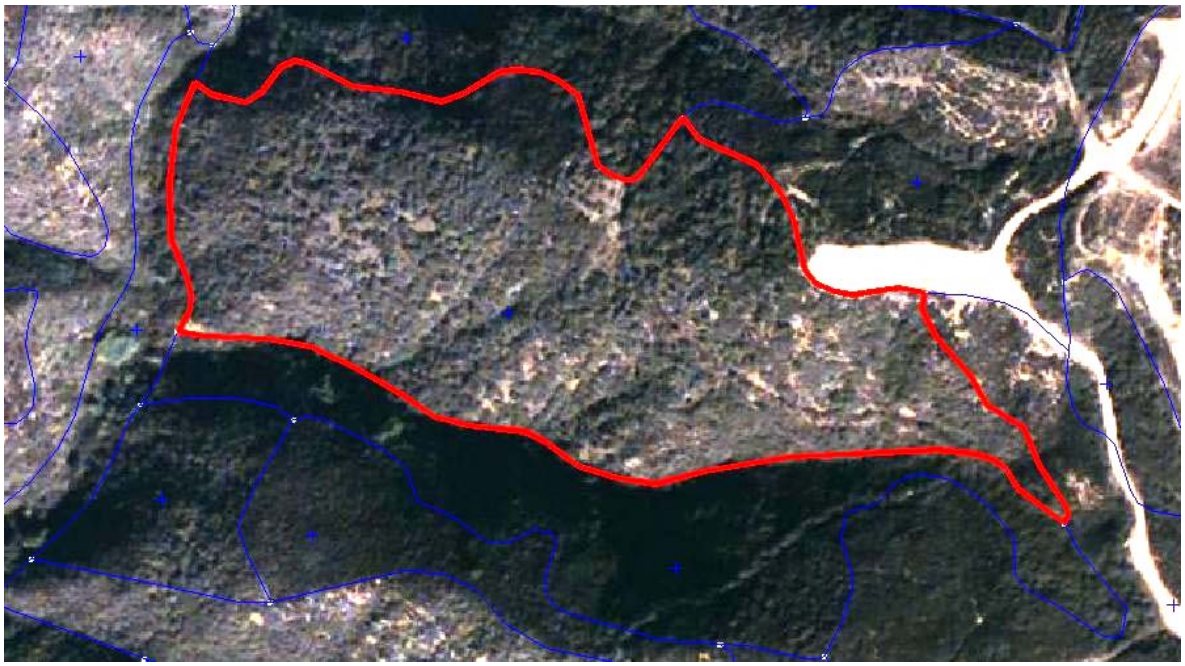
DESCRIPTION: *Ceanothus megacarpus-Adenostoma sparsifolium* Shrubland Association occurs as intermittent to dense stands of shrubs on dry, north-facing or south-facing, moderate to steep slopes. It favors neutral, convex, or undulating surfaces on lower to upper slopes and ridge tops. *C. megacarpus* dominates at moderate to high cover, while *A. sparsifolium* is sub-dominant approaching co-dominance at low to moderate cover. *A. fasciculatum* may be present and can approach sub-dominance in very low to moderate cover. *Malosma laurina* may also be present in very low to low cover. This type occurs at the higher elevations of the Santa Monica Mountains, as well as in the lower elevations of the Mountains in the Lake Eleanor area. In areas where *C. megacarpus-A. sparsifolium* Shrubland Association may transition to *C. oliganthus-A. sparsifolium* Shrubland Association, an attempt is made to map the individual associations rather than mapping as the *Ceanothus* spp.*-Cercocarpus betuloides* Shrubland Superalliance (2006).

PHOTO INTERPRETATION SIGNATURE: The stand usually has a mottled appearance in color and texture due to the dominant species present. *C. megacarpus* is a tall shrub and typically occurs as clumps or homogeneous groups. Its signature is usually dull dark gray to black, often with a bluish undertone. The crowns are in homogeneous groups with fine texture. The *C. megacarpus* signature can be confused with *C. crassifolius* and *Cercocarpus*. *A. sparsifolium* is a tall shrub that normally occurs as individuals in a matrix of other shrubs. Its signature is bright vivid green with an open to closed irregular crown and a coarse texture. *A. sparsifolium* can be confused with a brightly-colored *Malosma* .

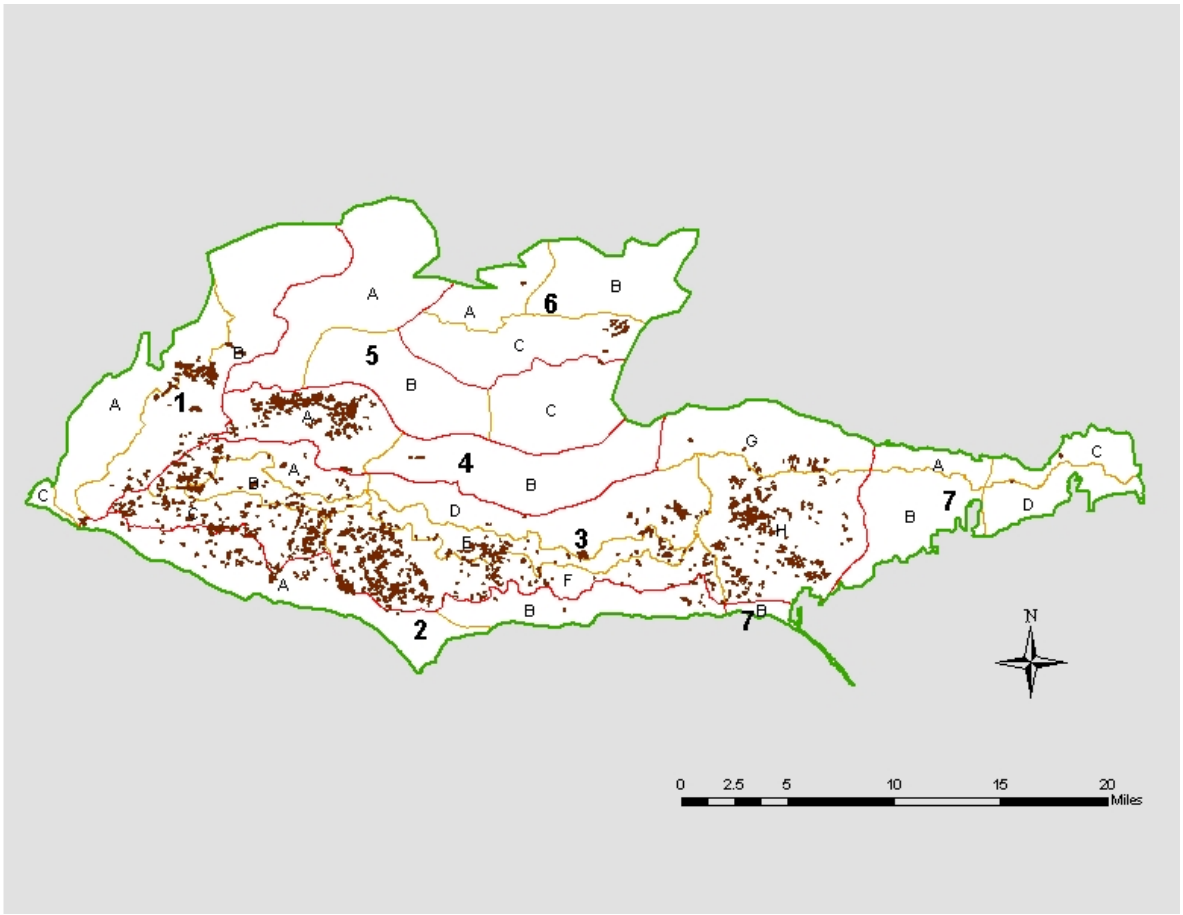
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Shrubland Superalliance (2002)
- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Adenostoma fasciculatum–Adenostoma sparsifolium–Ceanothus crassifolius* Shrubland Association (2042)
- *Ceanothus oliganthus–Adenostoma sparsifolium* Shrubland Association (2078)
- *Ceanothus megacarpus–Malosma laurina* Shrubland Association (2087)

2083 – BIG POD CEANOTHUS–CHAMISE SHRUBLAND ASSOCIATION
Ceanothus megacarpus–Adenostoma fasciculatum Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Ceanothus megacarpus–Adenostoma fasciculatum* Shrubland Association occurs as open to continuous stands of shrubs on dry south-facing gentle to steep slopes. It favors neutral, convex, and undulating surfaces on middle to upper slopes, and especially ridge tops. Occasionally it may be found on very dry north-facing slopes. *C. megacarpus* dominates at moderate to high cover, while *A. fasciculatum* is sub-dominant approaching co-dominance at low to high cover. *Salvia mellifera* may be present at very low to low cover. *Malosma laurina* may also be present at very low cover. *Ceanothus* spp.*-Adenostoma fasciculatum* Shrubland Mapping Unit (2009) is mapped in areas where *Ceanothus* spp. and *A. fasciculatum* are present, but the *Ceanothus* species (*C, crassifolius, C. cuneatus, or C. megacarpus*) cannot be determined.

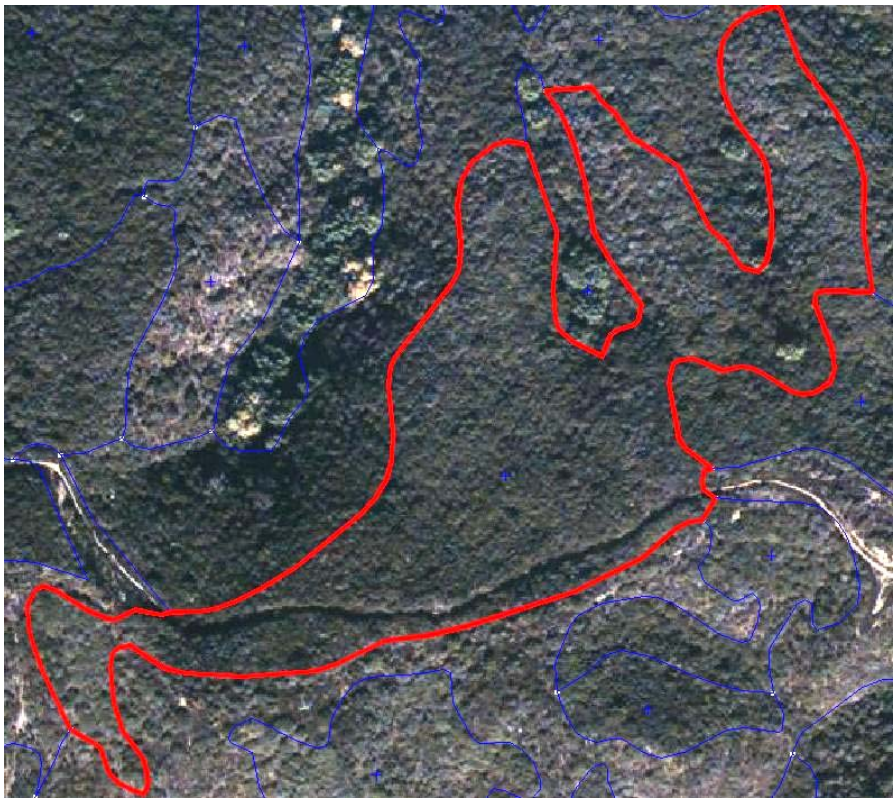
PHOTO INTERPRETATION SIGNATURE: The stand has a mottled color and coarse texture. *C. megacarpus* is a tall shrub and typically occurs as clumps or homogeneous groups. Its signature is usually dull dark gray to black, often with a bluish undertone. In some stands the *C. megacarpus* signature is similar to the reddish–brown *A. fasciculatum* signature. The crowns are in homogeneous groups with fine texture. *C. megacarpus* signature can be confused with *C. crassifolius* and *Cercocarpus betuloides*. *A. fasciculatum* occurs as individuals, or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. The color may vary in some places to rusty red-brown, purple brown, orange brown, or black. The crown is usually shorter than most tall shrubs.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

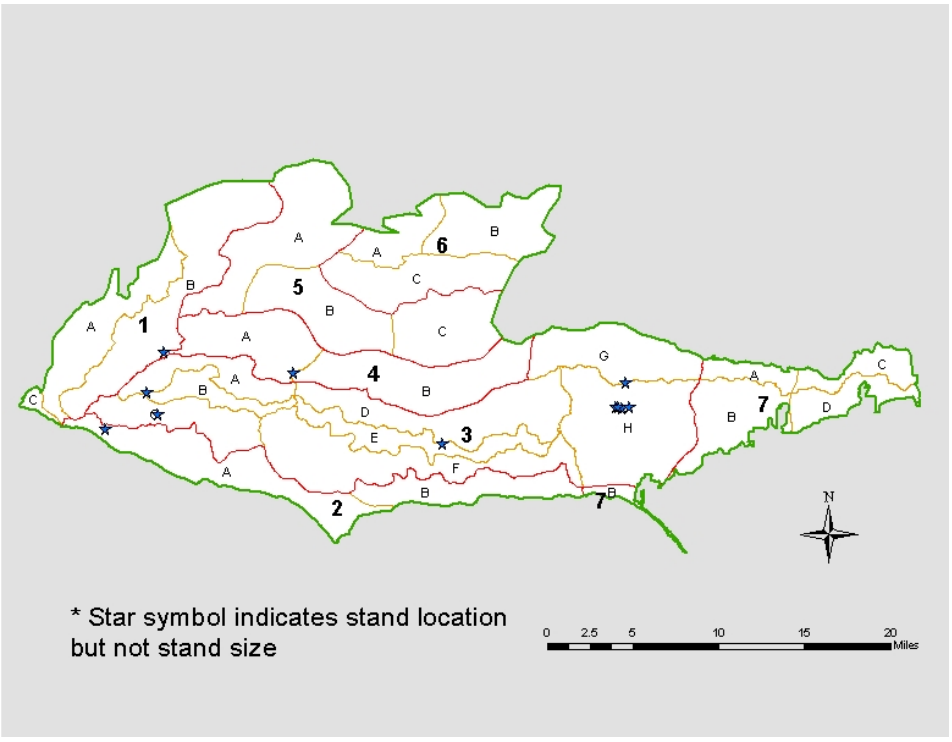
- *Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Shrubland Superalliance (2002)
- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus cuneatus & Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance (2008)
- *Ceanothus* spp*.-Adenostoma fasciculatum* Shrubland Mapping Unit (2009)
- *Adenostoma fasciculatum–Ceanothus megacarpus* Shrubland Association (2019)
- *Adenostoma fasciculatum–Arctostaphylos glandulosa* Shrubland Association (2021)
- *Cercocarpus betuloides–Adenostoma fasciculatum* Shrubland Association (2115)
- *Adenostoma fasciculatum–Ceanothus cuneatus* Shrubland Association (2511)
- *Adenostoma fasciculatum–Ceanothus crassifolius–Malosma laurina* Shrubland Association (2572)

2084 – BIG POD CEANOTHUS–BIRCHLEAF MOUNTAIN-MAHOGANY SHRUBLAND ASSOCIATION

***Ceanothus megacarpus–Cercocarpus betuloides* Shrubland Association**



DISTRIBUTION:



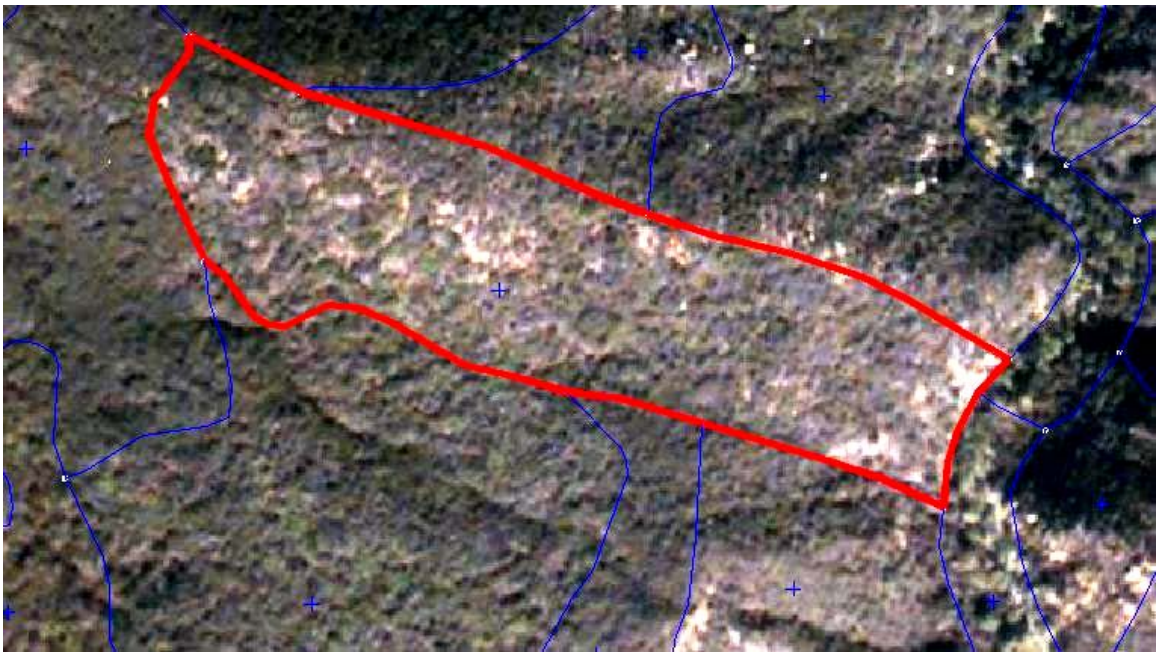
DESCRIPTION: *Ceanothus megacarpus–Cercocarpus betuloides* Shrubland Association occurs as dense stands of shrubs on mesic, steep to very steep north-facing slopes. Occasionally it may be found on mesic protected south-facing slopes. It favors undulating surfaces on lower to upper slopes. *Ceanothus megacarpus* dominates at moderate to very high cover. *Cercocarpus betuloides* is sub-dominant and approaches co-dominance at low to moderate cover. Very low cover of *Ceanothus spinosus* and *Heteromeles arbutifolia* may be present. *Quercus berberidifolia* may also be present in very low to high cover. This association was mapped only where Rapid Assessment Plot locations for this type were provided by the Park. Otherwise, this class was mapped as part of the *Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Shrubland Superalliance (2002).

PHOTO INTERPRETATION SIGNATURE: The stand will usually have a fairly homogeneous dark gray to black color and smooth texture. *Ceanothus megacarpus* is a tall shrub and typically occurs as clumps or homogeneous groups. Its signature is usually dull dark gray to black, often with a bluish undertone. The crowns are in homogeneous groups with fine texture. *C. megacarpus* signature can be confused with *C. crassifolius* and *Cercocarpus betuloides*. *Cercocarpus* is a tall shrub and typically occurs as homogeneous groups. Its signature is dull dark green to black. The crowns may appear wispy to coarsely textured, with a sheen to the surface of the stand. *Cercocarpus betuloides* can be confused with *Ceanothus megacarpus*, *C. crassifolius*, and *C. spinosus*.

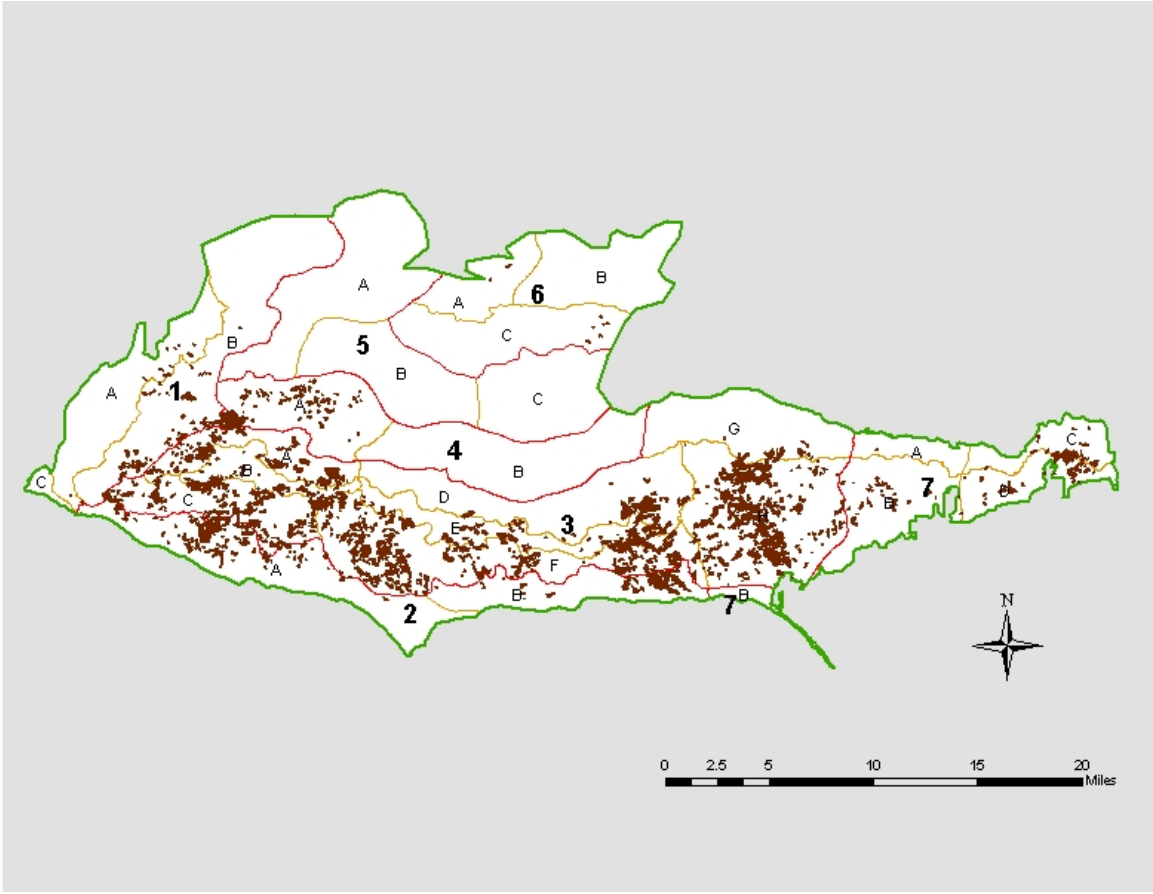
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Shrubland Superalliance (2002)
- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus megacarpus* Shrubland Association (2081)
- *Ceanothus spinosus–Ceanothus megacarpus* Shrubland Association (2091)
- *Cercocarpus betuloides–Ceanothus spinosus* Shrubland Association (2113)
- *Cercocarpus betuloides Shrubland* Association (2114)

2087 – BIG POD CEANOTHUS–LAUREL SUMAC SHRUBLAND ASSOCIATION
Ceanothus megacarpus–Malosma laurina Shrubland Association



DISTRIBUTION:



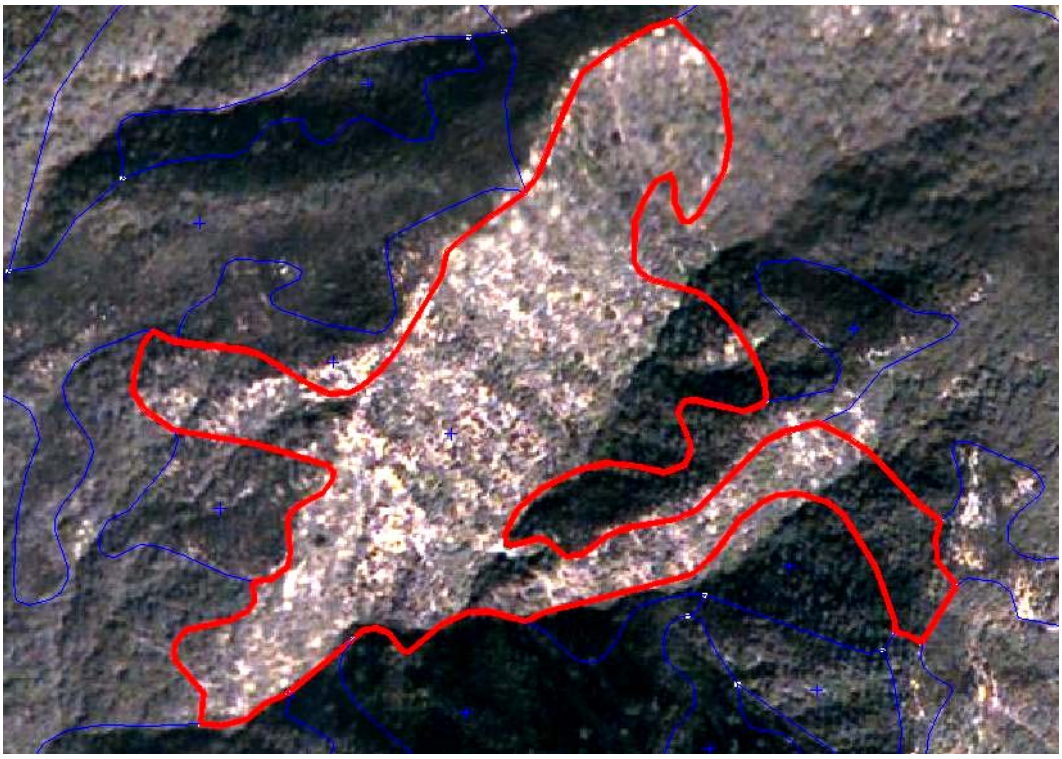
DESCRIPTION: *Ceanothus megacarpus–Malosma laurina* Shrubland Association occurs as dense to open stands of shrubs on dry, moderately to extremely steep slopes. It can be found on undulating surfaces of lower to upper slopes. *C. megacarpus* and *Malosma* co-dominate, both ranging from moderate to high cover. *Adenostoma fasciculatum* may be present in low to very low cover. Very low cover of other shrubs may be present.

PHOTO INTERPRETATION SIGNATURE: The stand has a mottled appearance with a coarse texture. *C. megacarpus* is a tall shrub and typically occurs as clumps or homogeneous groups. Its signature is usually dull dark gray to black, often with a bluish undertone. The crowns are in homogeneous groups with fine texture. *C. megacarpus* signature can be confused with *C. crassifolius* and *Cercocarpus betuloides*. *Malosma* is a tall shrub and typically occurs as large individuals. Its signature is usually dull medium green but may vary in tone and shade from light green to dark green or black, even within a stand. The crown is normally rounded with a smooth to slightly bumpy edge and texture. *Malosma* signature may be confused with *Rhus ovata*, *Heteromeles arbutifolia*, *Adenostoma sparsifolium*, and *Juglans californica*.

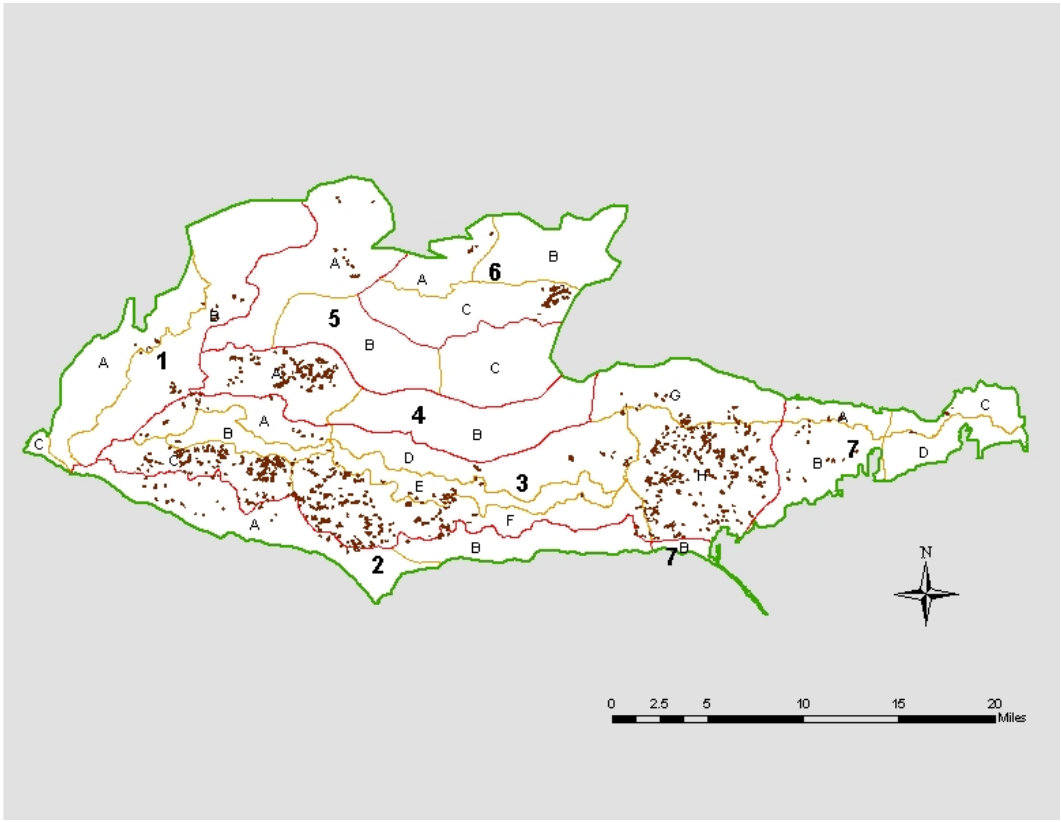
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Shrubland Superalliance (2002)
- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus crassifolius–Malosma laurina* Shrubland Association (2065)
- *Ceanothus megacarpus* Shrubland Association (2081)
- *Ceanothus megacarpus–Adenostoma sparsifolium* Shrubland Association (2082)
- *Ceanothus megacarpus–Salvia mellifera* Shrubland Association (7085)
- *Ceanothus spinosus–Ceanothus megacarpus* Shrubland Association (2091)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Cercocarpus betuloides–Malosma laurina–Artemisia californica* Shrubland Association (2117)
- *Adenostoma fasciculatum–Ceanothus crassifolius–Malosma laurina* Shrubland Association (2572)

7085 – BIG POD CEANOTHUS–BLACK SAGE SHRUBLAND ASSOCIATION
***Ceanothus megacarpus–Salvia mellifera* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Ceanothus megacarpus–Salvia mellifera* Shrubland Association occurs as open to continuous stands of shrubs on dry, south-facing, moderately to extremely steep slopes. The association favors all surface types, on middle to upper slopes. *C. megacarpus* and coastal sage scrub co-dominate. The coastal sage scrub is typically made up of *S. mellifera*, but may also contain *Eriogonum cinereum*, *Eriogonum fasciculatum*, *Encelia californica*, and *Artemisia californica* at varying amounts of cover. *C. megacarpus* ranges from low to moderate cover, while *S. mellifera* ranges from very low to moderate cover. The other coastal sage species, if present, may also range from very low to moderate cover. *Malosma laurina* may be present at very low to low cover. *Adenostoma fasciculatum* may be present at very low cover.

PHOTO INTERPRETATION SIGNATURE: The stand has an uneven appearance and mottled texture caused by the tall *C. megacarpus* over the shorter coastal sage scrub. *C. megacarpus* is a tall shrub and typically occurs as clumps or homogeneous groups. Its signature is usually dull dark gray to black, often with a bluish undertone, with a fine texture. The signature is fairly easy to discern. *C. megacarpus* signature can be confused with *C. crassifolius* and *Cercocarpus betuloides*. *S. mellifera* is a short shrub and typically occurs as individuals, as clumps, or mixed with other shrubs. Its signature is usually medium green. As it dries it can take on reddish overtones. In very dry areas it can become gray or tan. It can have smooth fine texture with fine fuzzy edges or the texture can be wispy. *Eriogonum cinereum* is a short shrub and tends to occur as individuals or in a mixture with other shrubs. Its signature is usually light gray to dark gray. *Eriogonum fasciculatum* is a short shrub and typically occurs as individuals. Its signature is usually orange-brown to reddish brown, but sometimes may be gray to tan. The texture can be slightly spiky. *Encelia californica* is reddish brown in color. *Artemisia californica* is purple brown, or gray or tan in drier settings. *Adenostoma fasciculatum* is reddish-brown in color with a coarse texture and spiky edges. *Malosma* is a tall shrub and typically occurs as large individuals. Its signature is usually dull medium green but may vary in tone and shade from light green to dark green or black, even within a stand. The crown is normally rounded with a smooth to slightly bumpy edge and texture. *Malosma* signature may be confused with *Rhus ovata*, *Heteromeles arbutifolia*, *Adenostoma sparsifolium*, and *Juglans californica*.

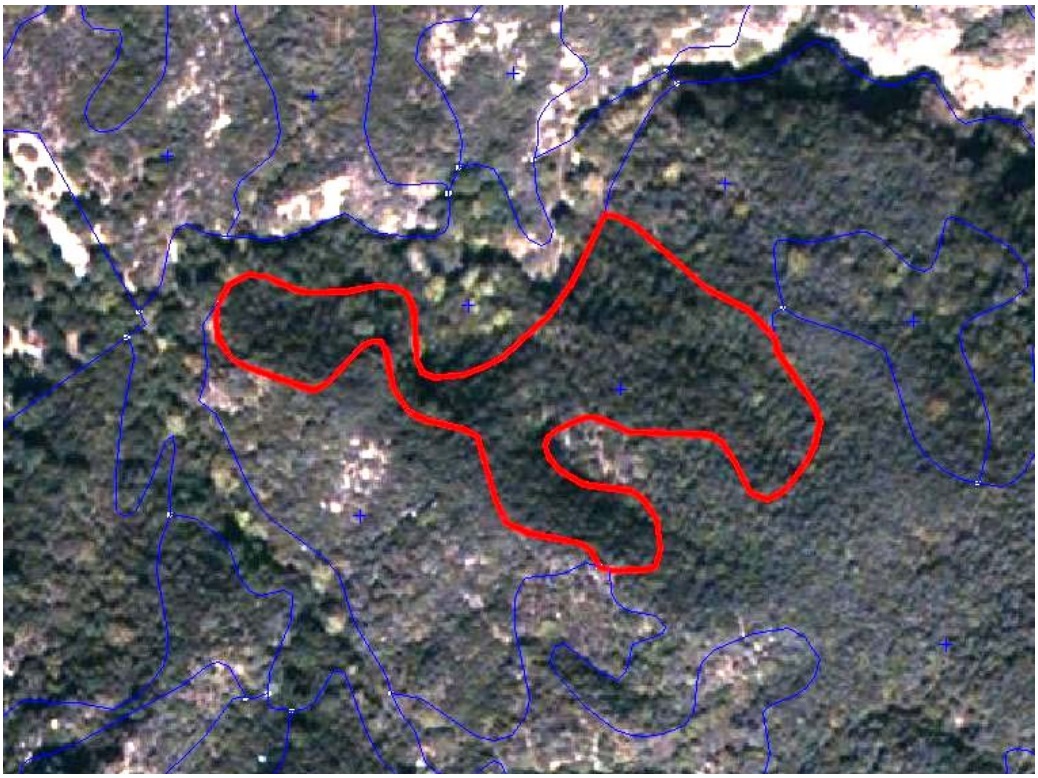
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Shrubland Superalliance (2002)
- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus megacarpus-Adenostoma fasciculatum* Shrubland Association (2083)
- *Ceanothus megacarpus–Malosma laurina* Shrubland Association (2087)
- *Salvia mellifera* Shrubland Alliance (3320)
- *Adenostoma fasciculatum-Ceanothus cuneatus-Salvia mellifera-Malosma laurina* Shrubland Association (2511)

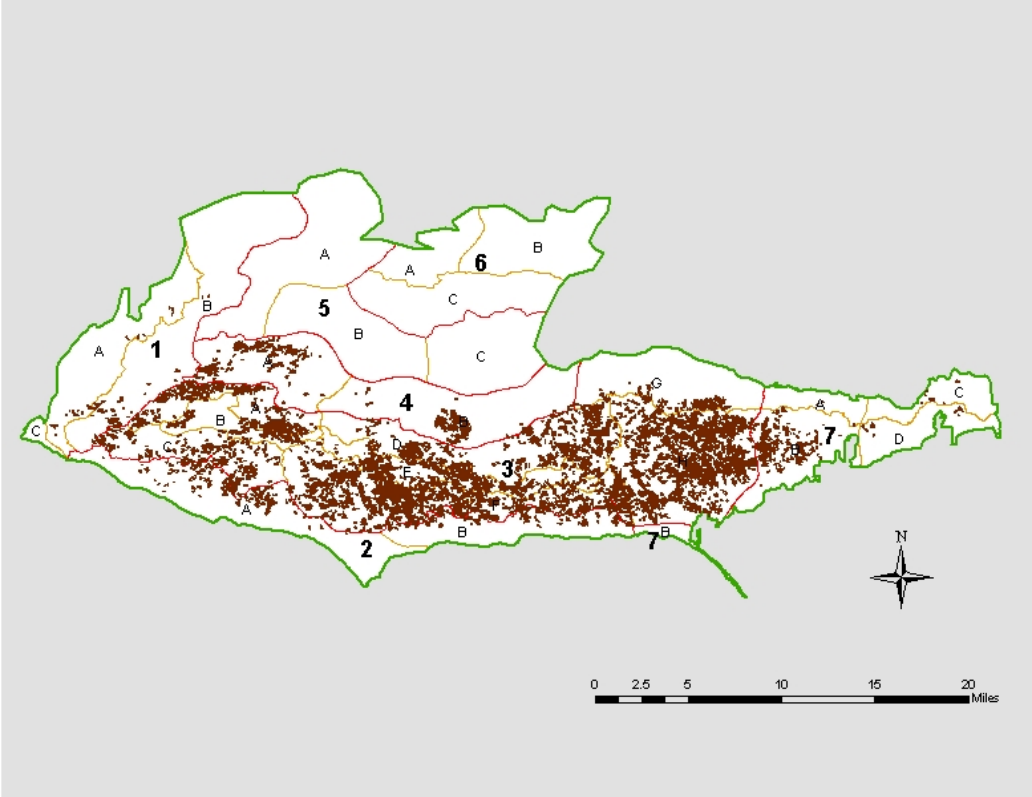
GREENBARK CEANOTHUS SHRUBLAND ALLIANCE



2090 – GREENBARK CEANOTHUS SHRUBLAND ALLIANCE
Ceanothus spinosus Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Ceanothus spinosus* Shrubland Alliance represents the hierarchical class into which all *C. spinosus* association types are nested. This alliance is dominated by *C. spinosus* and generally occurs as intermittent to continuous stands on mesic north-facing, gentle to steep slopes, but can occur in protected or cooler south-facing ravines and canyons. The *C. spinosus* Alliance can be found on concave to undulating, lower to upper slopes. *C. spinosus* can be dominant at moderate to high cover. In some instances *C. megacarpus* may co-dominate at low to high cover. *Malosma laurina, Prunus ilicifolia*, and *Heteromeles arbutifolia* may also be present and can approach sub-dominance at very low to moderate cover. *Quercus agrifolia, Juglans californica*, and/or *Umbellularia californica* may be present as a very sparse overstory at very low cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *C. spinosus* as the dominant shrub are included. This alliance is very common in occurrence and very extensive in size. It does not occur at the higher elevations of the Santa Monica Mountains, nor does it occur in the Simi Hills. In the Mountains it may grade into the *Ceanothus oliganthus* Shrubland Alliance, which occupies similar environments at higher elevations. *C. spinosus* will hybridize with *C. oliganthus*. In north-facing chaparral environments where the signature is not distinctive and the stands potentially have *Cercocarpus betuloides* and/or other *Ceanothus* species, then the *Ceanothus spinosus* & *Cercocarpus betuloides* & *Ceanothus megacarpus* Shrubland Superalliance (2002), *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006), or *Ceanothus* spp.-*Adenostoma fasciculatum* Shrubland Mapping Unit (2009) may be mapped. *C. spinosus* occurring with *A. sparsifolium* is mapped in the *Adenostoma sparsifolium* Shrubland Alliance.

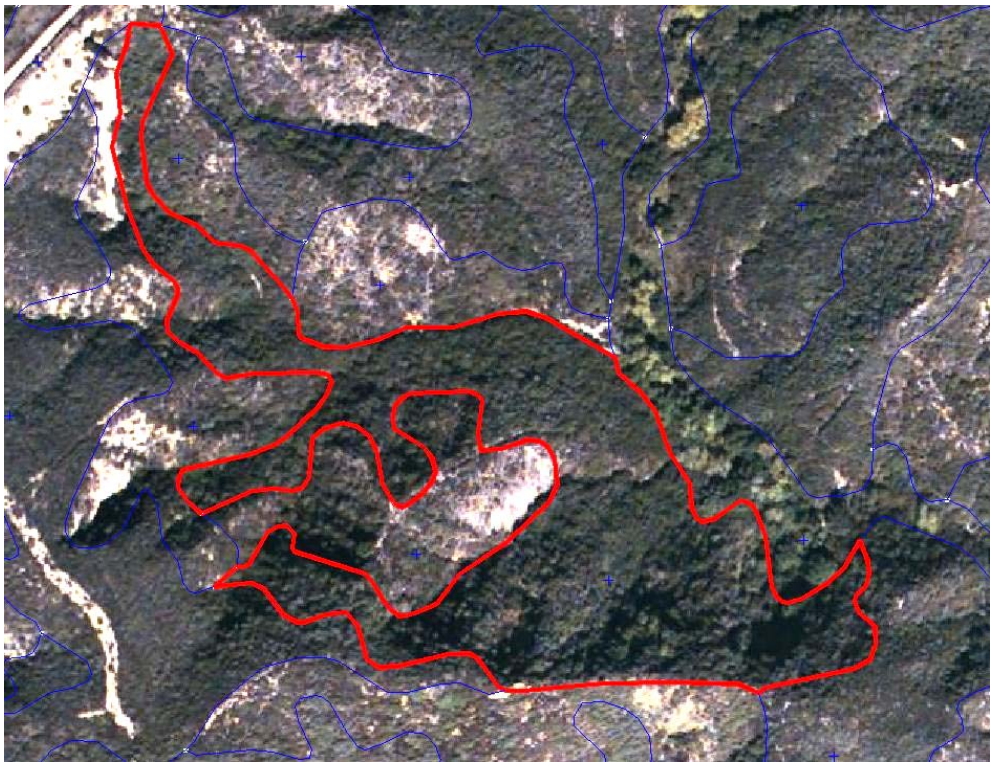
PHOTO INTERPRETATION SIGNATURE: *C. spinosus* Shrubland Alliance tends to occur as large stands with homogeneous color and texture. *C. spinosus* has a medium to dark green or olive green color, and *C. megacarpus* has a dull dark gray color. Both give the stand a fine homogeneous texture. Within the matrix of the *Ceanothus* species, individual or groups of tall shrubs composed of *Malosma*, *Prunus*, and/or *Hetermeles* may occur, each giving the stand a more mottled signature. All are round-crowned individuals with similar color tones and billowy textures. *Malosma* signature color varies from light green to dark green, *P. ilicifolia* is typically bright green, and *Heteromeles* varies from medium green to dark green, usually with a white overtone representing the inflorescences.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

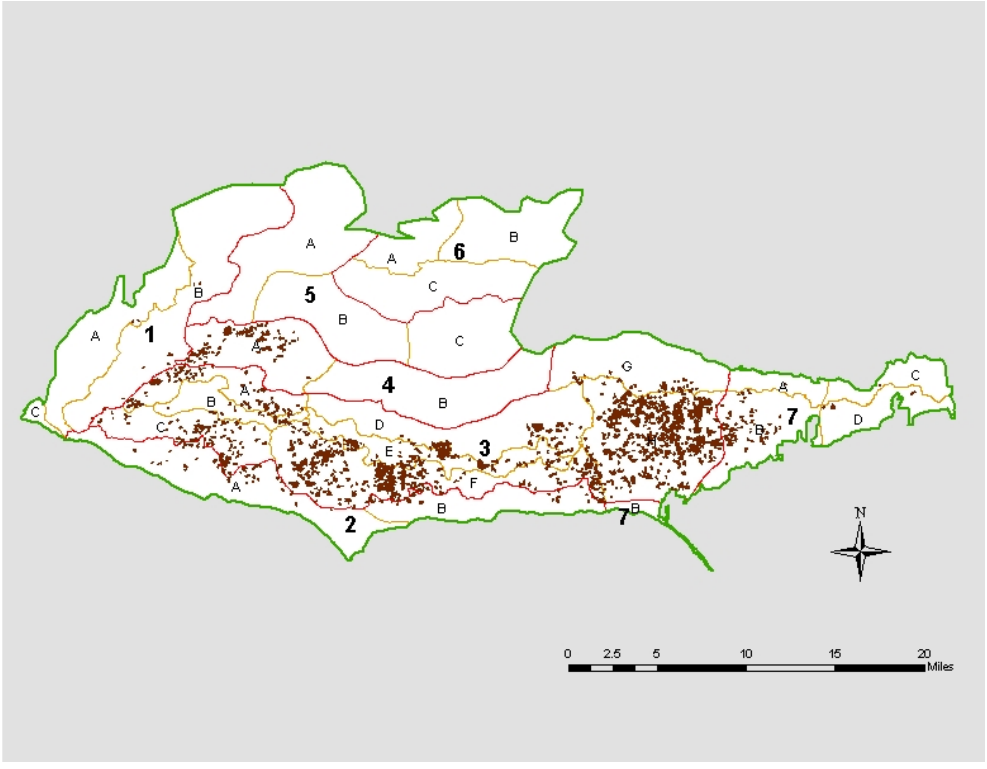
- *Umbellularia californica–Juglans californica/Ceanothus spinosus* Woodland/Forest Alliance (1011)
- *Quercus agrifolia/Ceanothus spinosus* Woodland/Forest Alliance (1118)
- *Juglans californica/Ceanothus spinosus* Woodland/Forest Alliance (1315)
- *Adenostoma sparsifolium* Shrubland Alliance (2050)
- *Ceanothus oliganthus* Shrubland Alliance (2070)
- *Ceanothus megacarpus* Shrubland Alliance (2080)
- *Cercocarpus betuloides* Shrubland Alliance (2110)
- *Quercus berberidifolia* Shrubland Alliance (2160)
- *Ceanothus cuneatus* Shrubland Alliance (2520)

2091 – GREENBARK CEANOTHUS – BIG POD CEANOTHUS SHRUBLAND ASSOCIATION

***Ceanothus spinosus – Ceanothus megacarpus* Shrubland Association**



DISTRIBUTION:



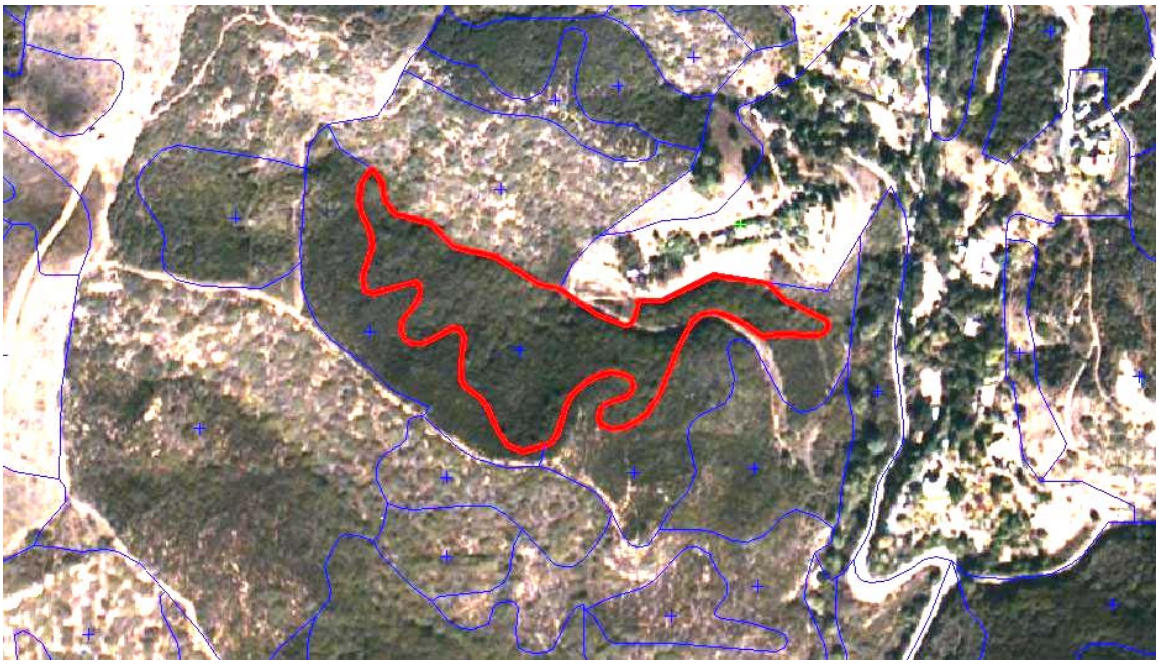
DESCRIPTION: *Ceanothus spinosus-C. megacarpus* Shrubland Association generally occurs as intermittent to continuous stands on mesic north-facing, gentle to steep slopes, but can occur in protected or cooler south-facing ravines and canyons. This association can be found on undulating surfaces of lower to upper slopes. *C. spinosus* can be dominant at moderate to high cover, while *C. megacarpus* co-dominates at low to high cover. The two *Ceanothus* species may intermix or may form mosaics with *C. spinosus* in concavities and *C. megacarpus* on convexities. *Malosma laurina* and *Heteromeles arbutifolia* may also be present at low to very low cover. The *C. spinosus–C. megacarpus* Shrubland Association is common in occurrence and can be extensive in size. It does not occur at the higher elevations of the Santa Monica Mountains, nor does it occur in the Simi Hills. *C. spinosus* will hybridize with *C. oliganthus*, while *C. megacarpus* will hybridize with *C. crassifolius* and *C. cuneatus.* In north-facing chaparral environments where the signature is not distinctive and the stands potentially have *Cercocarpus betuloides* and/or other *Ceanothus* species, then the *Ceanothus spinosus* & *Cercocarpus betuloides* & *Ceanothus megacarpus* Shrubland Superalliance (2002) or the *Ceanothus* spp*.* & *Cercocarpus betuloides* Shrubland Superalliance (2006) may be mapped.

PHOTO INTERPRETATION SIGNATURE: *Ceanothus spinosus–C. megacarpus* Shrubland Association tends to occur as large stands with homogeneous color and texture. *C. spinosus* has a medium to dark green or olive green color, and *C. megacarpus* a dull dark gray color. Both give the stand a stippled homogeneous texture. When the two *Ceanothus* species intermix, the stand has a combined blue-gray and green tone. When they mosaic, then the stand has separate green colors in concavities and blue-gray colors on convexities. Within the matrix of the *Ceanothus* there may be individual or groups of tall shrubs composed of *Malosma* and/or *Heteromeles*, each giving the stand a more mottled signature. Both are round-crowned individuals with similar color tones. *Malosma* signature color varies from light green to dark green. *Heteromeles* varies from medium green to dark green, usually with a white overtone representing the inflorescences.

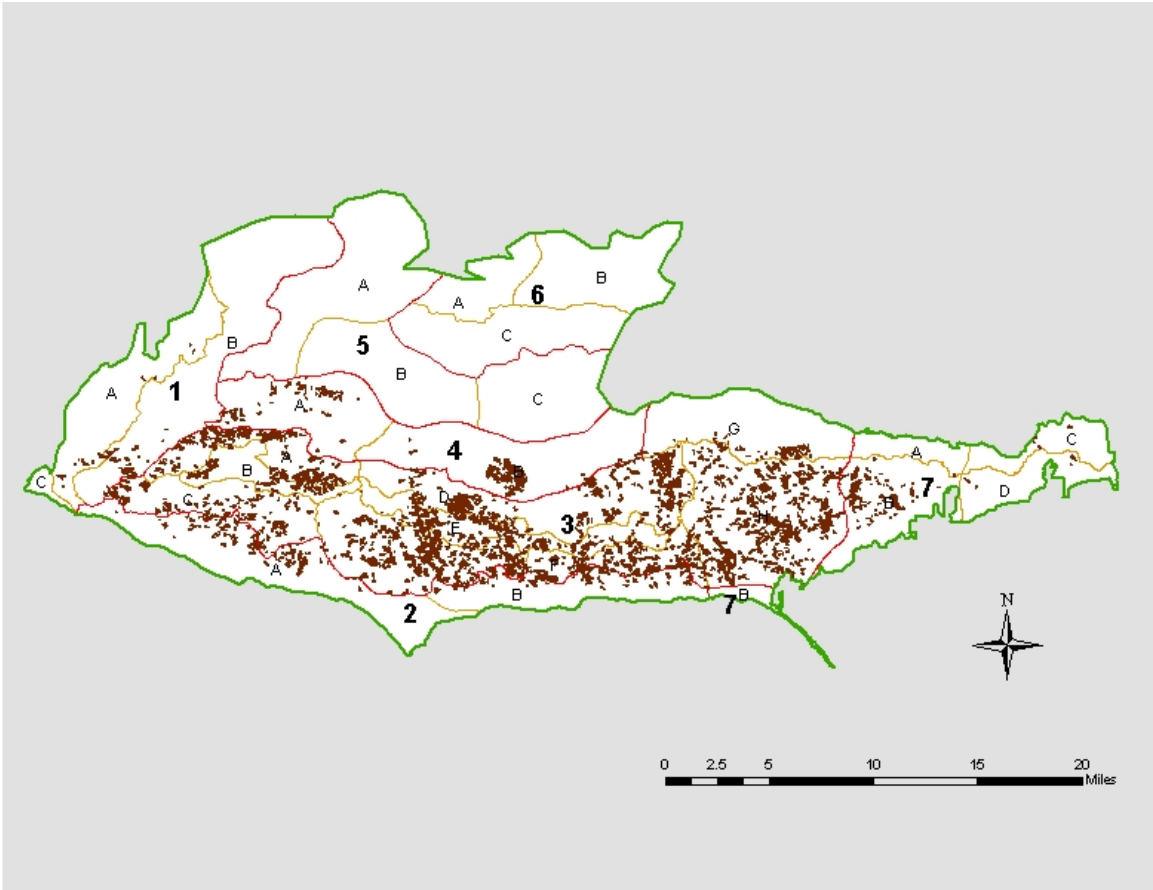
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus spinosus & Cercocarpus betuloides & Ceanothus megacarpus* Shrubland Superalliance (2002)
- *Ceanothus* spp. *& Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus crassifolius* Shrubland Association (2063)
- *Ceanothus crassifolius–Malosma laurina* Shrubland Association (2065)
- *Ceanothus oliganthus* Shrubland Association (2072)
- *Ceanothus oliganthus–Adenostoma sparsifolium* Shrubland Association (2078)
- *Ceanothus oliganthus*–(Tall Shrub) Shrubland Superassociation (7071)
- *Ceanothus megacarpus* Shrubland Association (2081)
- *Ceanothus megacarpus–Cercocarpus betuloides* Shrubland Association (2084)
- *Ceanothus megacarpus–Malosma laurina* Shrubland Association (2087)
- *Ceanothus spinosus–Ceanothus megacarpus* Shrubland Association (2091)
- *Cercocarpus betuloides–Ceanothus spinosus* Shrubland Association (2113)
- *Cercocarpus betuloides* Shrubland Association (2114)
- *Quercus berberidifolia* Shrubland Alliance (2160)
- *Ceanothus cuneatus* Shrubland Alliance (2520)

2092 – GREENBARK CEANOTHUS SHRUBLAND ASSOCIATION
Ceanothus spinosus Shrubland Association



DISTRIBUTION:



DESCRIPTION: *C. spinosus* Shrubland Association typically occurs as slightly open to continuous stands on mesic, north-facing, gentle to steep slopes, with *C. spinosus* as the dominant shrub at moderate to high cover. Slope shape is variable, on lower to upper slopes. This association can also be found in protected south-facing ravines and canyons. *Malosma laurina, Prunus illicifolia*, and *Heteromeles arbutifolia* are usually present and can approach sub-dominance at very low to moderate cover. *Quercus agrifolia, Juglans californica*, and/or *Umbellularia californica* may be present as a very sparse overstory at very low cover. The *C. spinosus* Shrubland Association is very common in occurrence and very extensive in size. It does not occur at the higher elevations of the Santa Monica Mountains, nor does it occur in the Simi Hills. In the Mountains it may grade into the associations of the *Ceanothus oliganthus* Shrubland Alliance, which occupy similar environments at higher elevations. *C. spinosus* will hybridize with *C. oliganthus*. In north-facing chaparral environments, where the signature is not distinctive and the stands potentially have *Cercocarpus betuloides* and/or other *Ceanothus* species, then the *Ceanothus spinosus* & *Cercocarpus betuloides* & *Ceanothus megacarpus* Shrubland Superalliance (2002) or the *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006) may be mapped.

PHOTO INTERPRETATION SIGNATURE: *C. spinosus* Shrubland Association tends to occur as large stands with homogeneous color and texture. *C. spinosus* has a medium to dark green or olive green color, and gives the stand a stipply homogeneous texture. Within the matrix of the *C. spinosus*, individual or groups of tall shrubs composed of *Malosma*, *Prunus*, and/or *Heteromeles* may occur, each giving the stand a more mottled signature. All are round-crowned individuals with similar color tones. *Malosma* signature color varies from light green to dark green, *Prunus* is typically bright green, and *Heteromeles* varies from medium green to dark green, usually with a white overtone representing the inflorescences.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Umbellularia californica–Juglans californica/Ceanothus spinosus* Woodland/Forest Alliance (1011)
- *Quercus agrifolia/Ceanothus spinosus* Woodland/Forest Alliance (1118)
- *Juglans californica/Ceanothus spinosus* Woodland/Forest Alliance (1315)
- *Ceanothus spinosus & Cercocarpus betuloides & Ceanothus megacarpus* Shrubland Superalliance (2002)
- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus oliganthus* Shrubland Association (2072)
- *Ceanothus oliganthus–Adenostoma sparsifolium* Shrubland Association (2078)
- *Ceanothus oliganthus*–(Tall Shrub) Shrubland Superassociation (7071)
- *Ceanothus megacarpus* Shrubland Association (2081)
- *Ceanothus megacarpus–Malosma laurina* Shrubland Association (2087)
- *Ceanothus spinosus–Ceanothus megacarpus* Shrubland Association (2091)
- *Cercocarpus betuloides–Ceanothus spinosus* Shrubland Association (2113)
- *Cercocarpus betuloides* Shrubland Association (2114)
- *Quercus berberidifolia* Shrubland Alliance (2160)
- *Ceanothus cuneatus* Shrubland Alliance (2520)

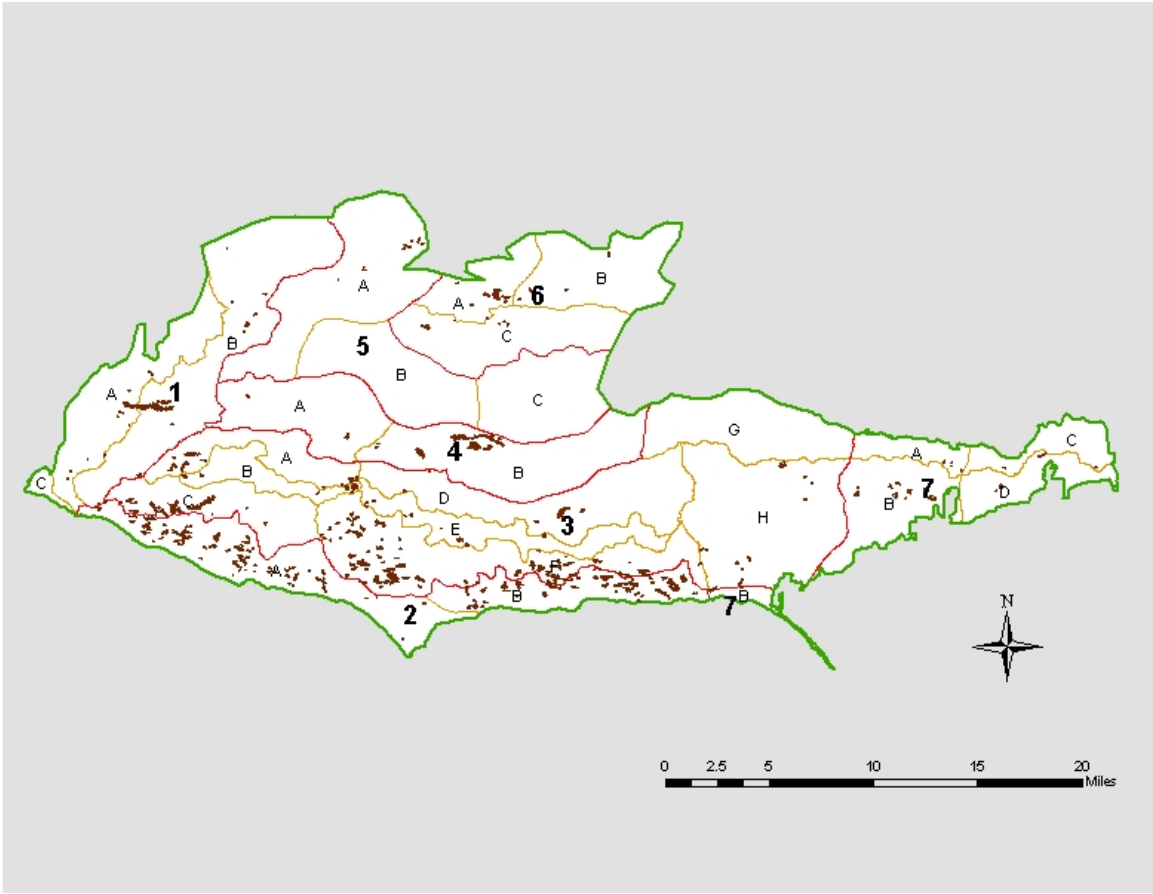
BIRCH LEAF MOUNTAIN-MAHOGANY SHRUBLAND ALLIANCE



2110 – BIRCH LEAF MOUNTAIN MAHOGANY SHRUBLAND ALLIANCE
Cercocarpus betuloides Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Cercocarpus betuloides* Shrubland Alliance represents the hierarchical class into which all *Cercocarpus* association types are nested. This type occurs on north-facing neutral surfaces on moderate to steep slopes. *Cercocarpus* usually dominates at moderate to high cover. *Ceanothus spinosus* is occasionally present from moderate to high cover. *Malosma laurina, Heteromeles arbutifolia, Artemisia californica,* and *Adenostoma fasciculatum* may be present at low cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *Cercocarpus* as the dominant shrub are included. In north-facing chaparral environments where the signature is not distinctive and there is a potential for presence of *Cercocarpus* and/or *Ceanothus* spp., then the *Ceanothus megacarpus & Ceanothus spinosus* & *Cercocarpus betuloides* Shrubland Superalliance (2002), *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006), or *Ceanothus* spp.-*Adenostoma fasciculatum* Shrubland Mapping Unit (2009) may be mapped.

PHOTO INTERPRETATION SIGNATURE: *Cercocarpus* has a dull, dark green appearance with a smooth, bumpy, or wispy texture. The signature is more discernable when *Cercocarpus* is in a cohesive, homogeneous stand.

TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

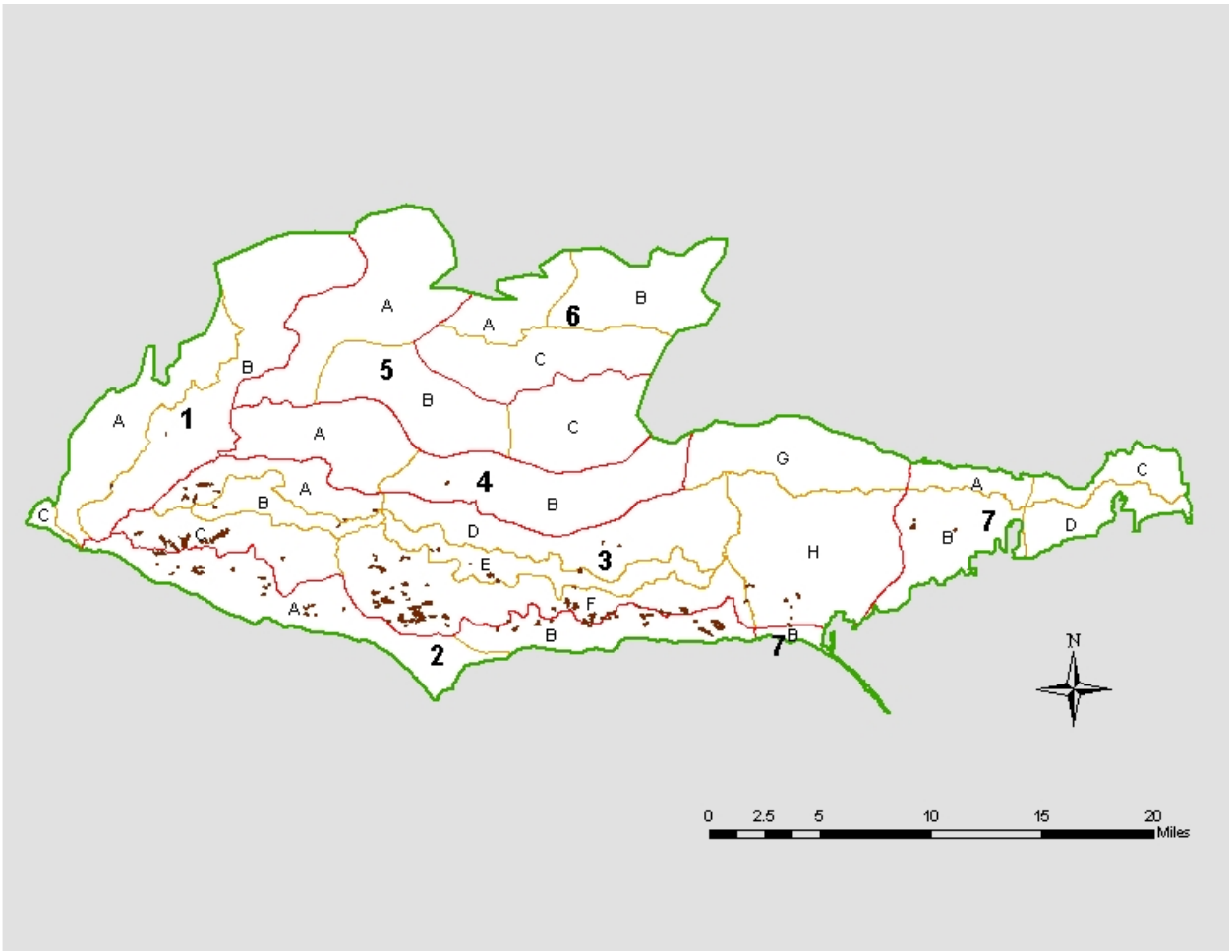
- *Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Shrubland Superalliance (2002)
- *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus* spp.-*Adenostoma fasciculatum* Shrubland Mapping Unit (2009)
- *Ceanothus crassifolius* Shrubland Alliance (2060)
- *Ceanothus oliganthus* Shrubland Alliance (2070)
- *Ceanothus megacarpus* Shrubland Alliance (2080)
- *Ceanothus spinosus* Shrubland Alliance (2090)
- *Adenostoma fasciculatum-Ceanothus crassifolius* Shrubland Alliance (2570)

2113 – BIRCH LEAF MOUNTAIN MAHOGANY-GREENBARK CEANOTHUS SHRUBLAND ASSOCIATION

***Cercocarpus betuloides-Ceanothus spinosus* Shrubland Association**



DISTRIBUTION:



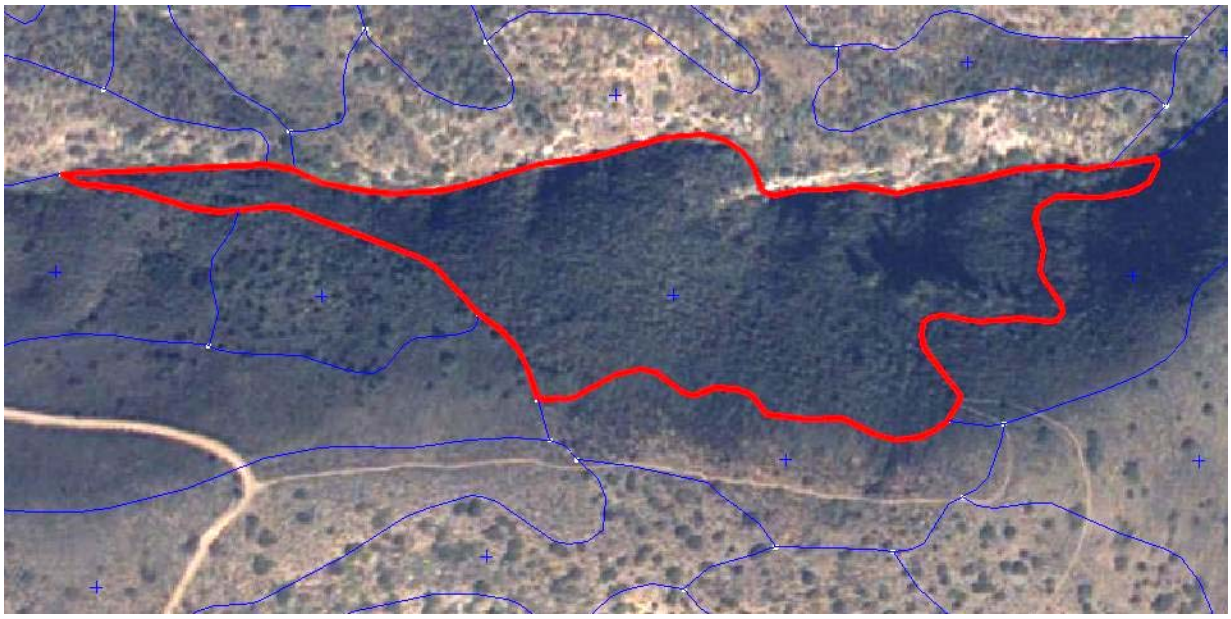
DESCRIPTION: *Cercocarpus betuloides-Ceanothus spinosus* Shrubland Association occurs as intermittent to dense stands on protected north-facing steep slopes. Surface shape can be concave, neutral or undulating on lower to upper slopes. Stands are characterized by a co-dominance of *Cercocarpus* and *Ceanothus spinosus*, both at medium to high cover. Steep and neutral slopes are more likely to contain larger amounts of *Cercocarpus*, while concave and less steep slopes have a greater potential for *Ceanothus spinosus*. When steepness and slope shape become variable within a stand, differences between the species' signatures become less distinctive, and may also be confused with *Ceanothus megacarpus*. In these situations the *Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Superalliance (2002) can be used.

PHOTO INTERPRETATION SIGNATURE: The stand has a rather dark green tone and smooth texture. *Cercocarpus* has a dull, dark green color and may have a smooth, bumpy, or wispy texture. The signature is more discernable when it is in a cohesive, homogeneous stand. *Ceanothus spinosus* is typically dark green, but brighter than *Cercocarpus betuloides*. It has a smooth texture.

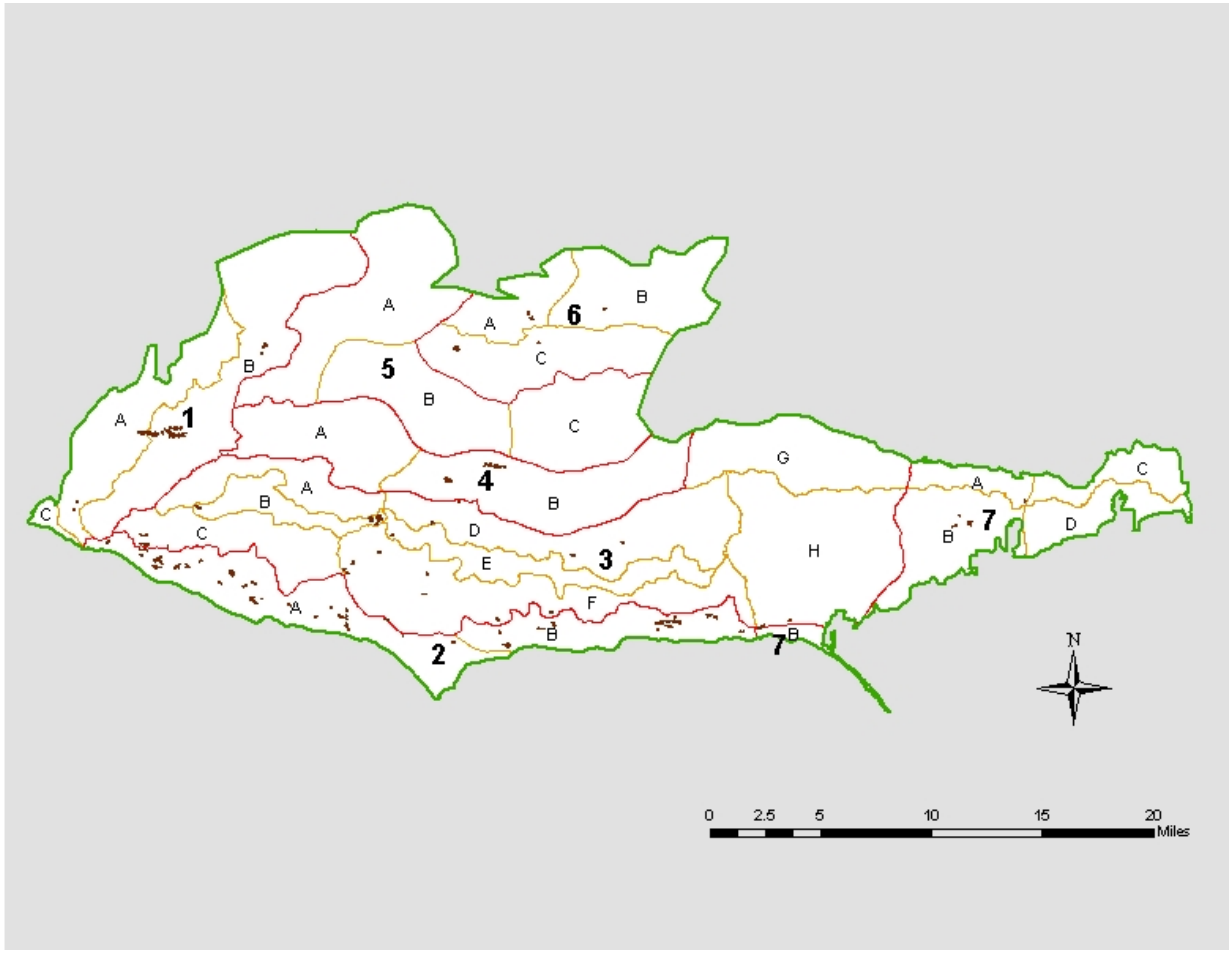
TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Shrubland Superalliance (2002)
- *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus spinosus-Ceanothus megacarpus* Shrubland Association (2091)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Cercocarpus betuloides* Shrubland Association (2114)

2114 – BIRCH LEAF MOUNTAIN MAHOGANY SHRUBLAND ASSOCIATION
Cercocarpus betuloides Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Cercocarpus betuloides* Shrubland Association occurs as an open to continuous stand on protected, north-facing, neutral, moderate to steep side slopes. The association is characterized by strongly dominant *Cercocarpus betuloides* at moderate to very high cover. Other shrubs are present at very low cover.

PHOTO INTERPRETATION SIGNATURE: *Cercocarpus betuloides* has a dull, dark green color and may have a smooth, bumpy, or wispy texture. The signature is more discernable when it is in a cohesive, homogeneous stand.

TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

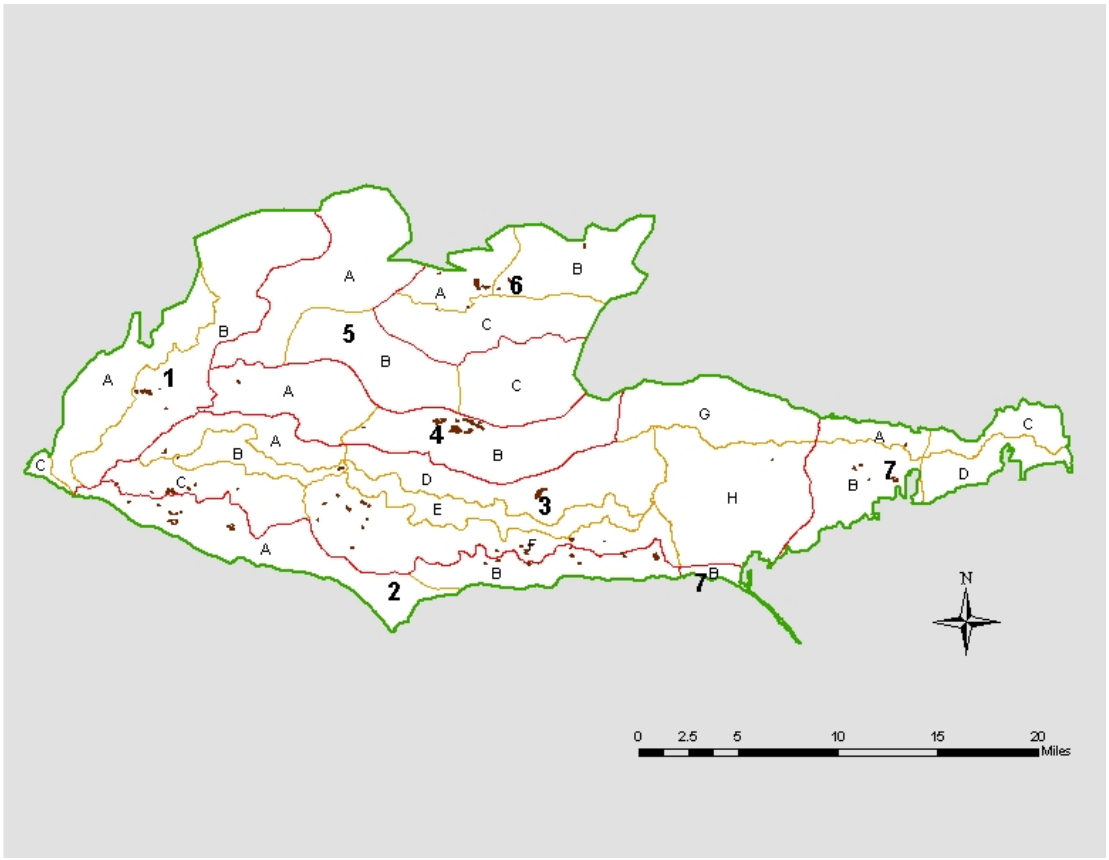
- *Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Shrubland Superalliance (2002)
- *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus oliganthus* Shrubland Association (2072)
- *Ceanothus megacarpus-Cercocarpus betuloides* Shrubland Association (2084)
- *Ceanothus spinosus-Ceanothus megacarpus* Shrubland Association (2091)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Cercocarpus betuloides-Ceanothus spinosus* Shrubland Association (2113)

2115 – BIRCH LEAF MOUNTAIN MAHOGANY-CHAMISE SHRUBLAND ASSOCIATION

***Cercocarpus betuloides-Adenostoma fasciculatum* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Cercocarpus betuloides-Adenostoma fasciculatum* Shrubland Association occurs as open to dense stands on mesic north-facing moderate to steep slopes. The association favors all surface shapes, on mid to upper slopes and ridge tops. Stands are characterized by a co-dominance of *Cercocarpus* and *A. fasciculatum*, each at low to high cover. *A. fasciculatum* tends to appear on more neutral or convex ridgelines and spurs, though it may become established on side slopes and in concavities. In north-facing upper slope chaparral environments *Cercocarpus* may be confused with *Ceanothus megacarpus.*

PHOTO INTERPRETATION SIGNATURE: Stands of this type tend to have a mottled signature representing the uneven shrub canopy and the color differences of the dominant shrubs. *Cercocarpus* has a dull, dark green appearance with a smooth, bumpy, or wispy texture. *A. fasciculatum* can appear as rusty-red to brown individuals or in clumps.

TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

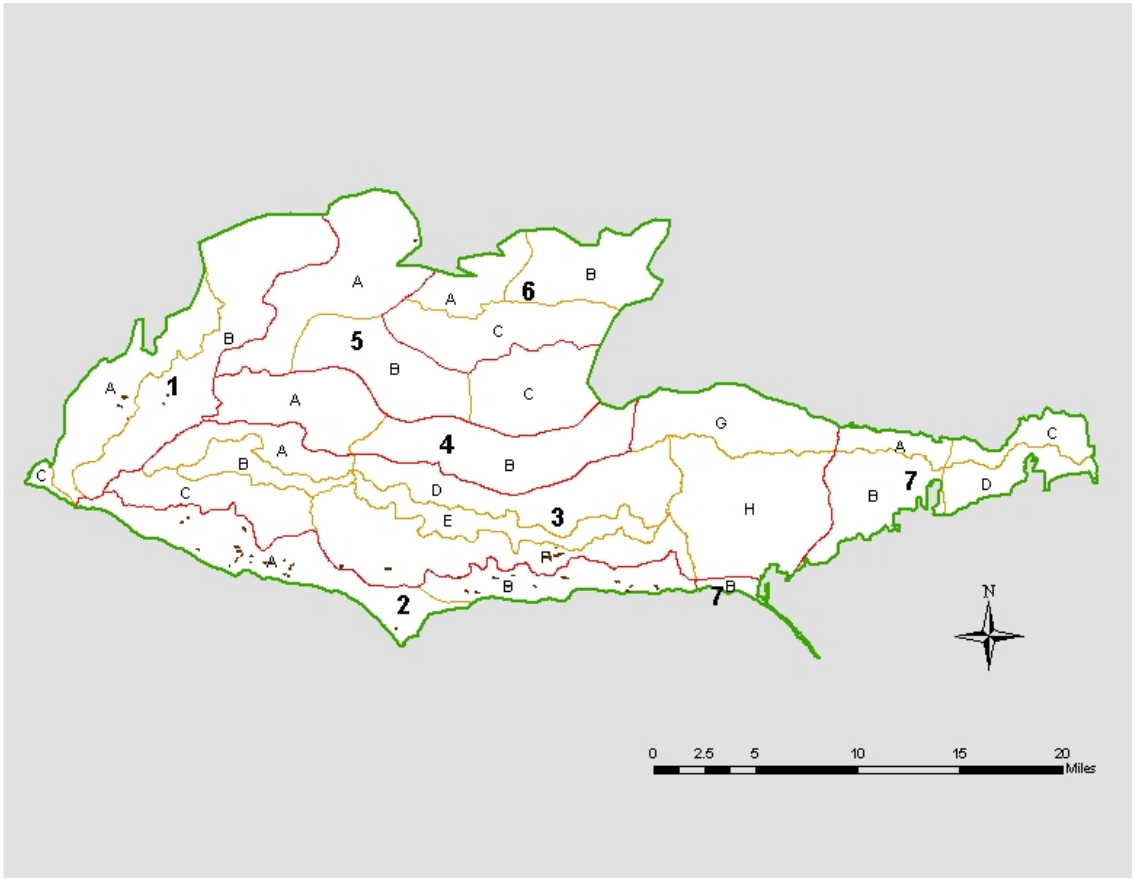
- *Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Shrubland Superalliance (2002)
- *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus* spp.-*Adenostoma fasciculatum* Shrubland Mapping Unit (2009)
- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Ceanothus megacarpus-Adenostoma fasciculatum* Shrubland Association (2083)
- *Ceanothus spinosus-Ceanothus megacarpus* Shrubland Association (2091)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Adenostoma fasciculatum-Ceanothus crassifolius-Malosma laurina* Shrubland Association (2572)

2117 – BIRCH LEAF MOUNTAIN MAHOGANY–LAUREL SUMAC–CALIFORNIA SAGEBRUSH SHRUBLAND ASSOCIATION

***Cercocarpus betuloides-Malosma laurina-Artemisia californica* Shrubland Alliance**



DISTRIBUTION:



DESCRIPTION: *Cercocarpus betuloides - Malosma laurina - Artemisia californica* Shrubland Association appears as open to intermittent shrubs on north-facing gentle to steep slopes. The association is found on neutral, convex, and undulating surfaces on lower to upper slopes. *Cercocarpus* usually dominates the tall shrub layer at low to moderate cover, but at times may co-dominate with *Malosma,* which can occur at low to moderate cover. In other cases *A. californica* may co-dominate with *Cercocarpus* at low to moderate cover.

PHOTO INTERPRETATION SIGNATURE: The stand has a mottled signature with a coarse texture. *Cercocarpus* has a dull, dark green appearance with a smooth, bumpy, or wispy texture. *Malosma* has a light green to dark green color with a rounded crown and coarse texture. *A. californica* is purple-brown to gray, smooth in texture, and can occur as individuals or in clumps.

TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Ceanothus megacarpus-Malosma laurina* Shrubland Association (2087)
- *Ceanothus megacarpus-Salvia mellifera* Shrubland Association (7085)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Cercocarpus betuloides* Shrubland Association (2114)

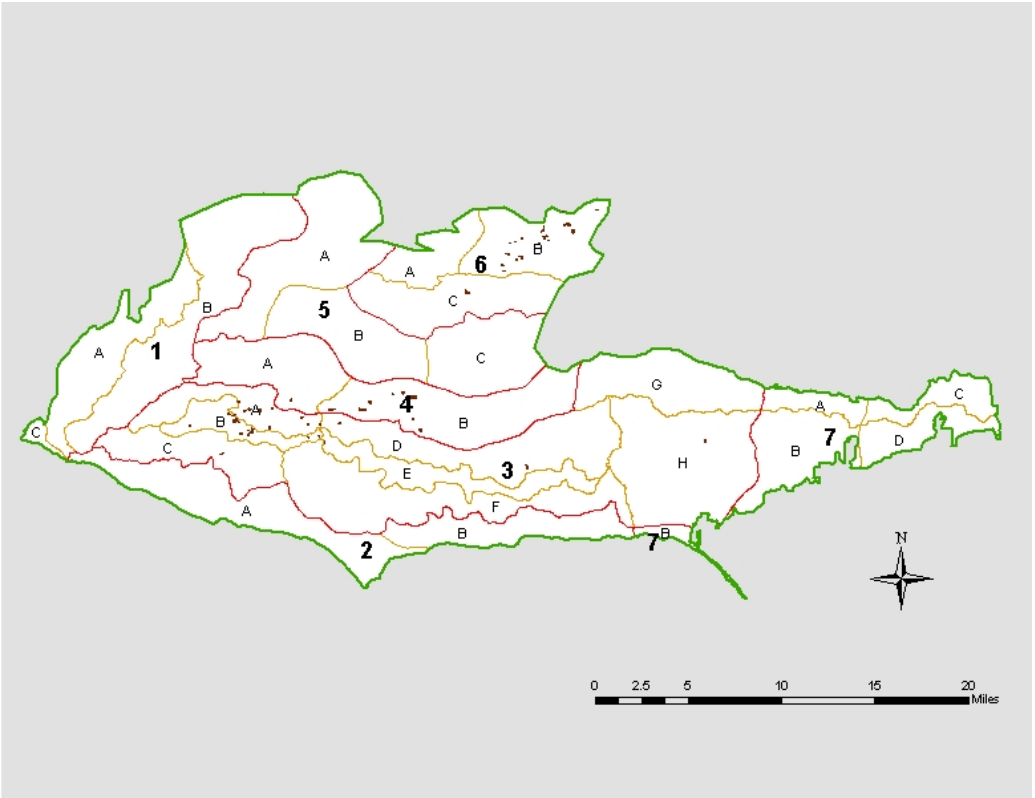
HOLLY LEAF CHERRY SHRUBLAND ALLIANCE



2120 – HOLLY LEAF CHERRY SHRUBLAND ALLIANCE
Prunus ilicifolia Shrubland Alliance



DISTRIBUTION:



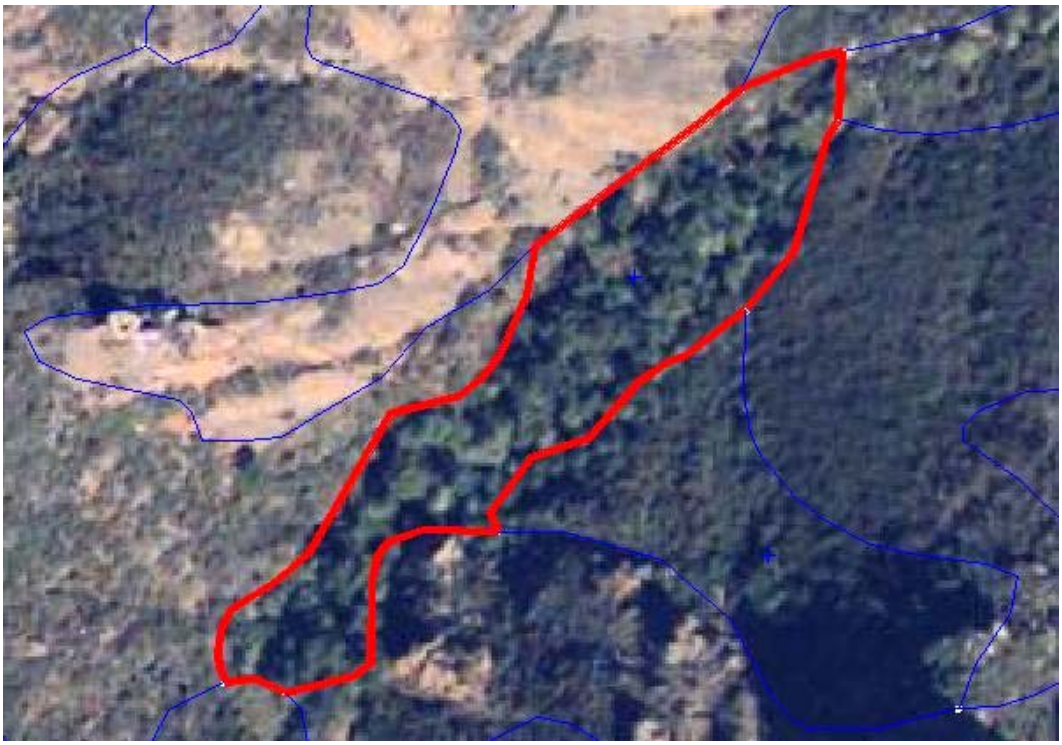
DESCRIPTION: *Prunus ilicifolia* Woodland/Forest Alliance represents the hierarchical class into which *Prunus* association types are nested. The alliance occurs as open to intermittent shrubs on moist to mesic north-facing moderate to steep slopes. It tends to favor concave to undulating surfaces on bottoms to upper slopes. *Prunus* is the dominant shrub at low to high cover. Other tall shrubs, such as *Heteromeles arbutifolia, Ceanothus* spp. and *Cercocarpus betuloides* may also be present in various amounts. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *Prunus* as the dominant shrub are included.

PHOTO INTERPRETATION SIGNATURE: The stand has a coarse appearance with color variations of the different species. *Prunus* is a tall shrub and is usually bright green with a coarse texture. It tends to stand out in contrast to the surrounding shrubs. It occurs as individuals, but is more visible when occurring in groups.

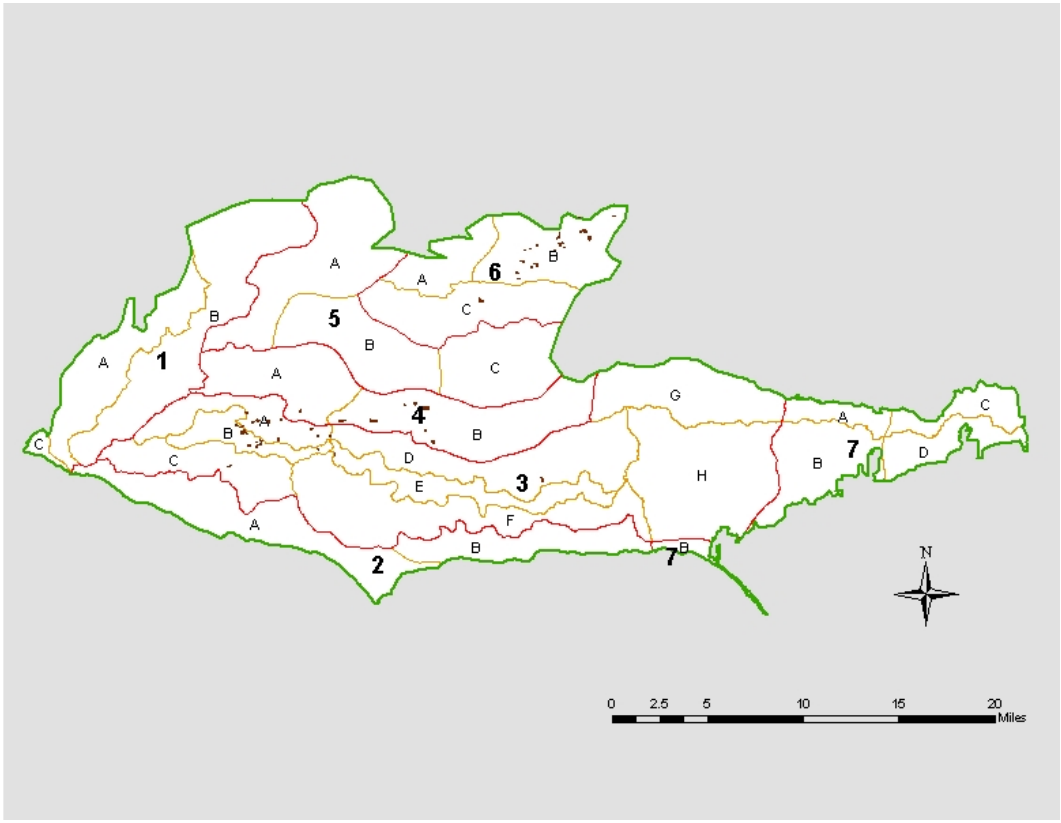
TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Ceanothus oliganthus* Shrubland Alliance (2070)
- *Ceanothus spinosus* Shrubland Alliance (2090)
- *Cercocarpus betuloides* Shrubland Alliance (2110)
- *Heteromeles arbutifolia* Shrubland Alliance (2130)

2121 – HOLLY LEAF CHERRY–TOYON SHRUBLAND ASSOCIATION
***Prunus ilicifolia-Heteromeles arbutifolia* Shrubland Association**



DISTRIBUTION:



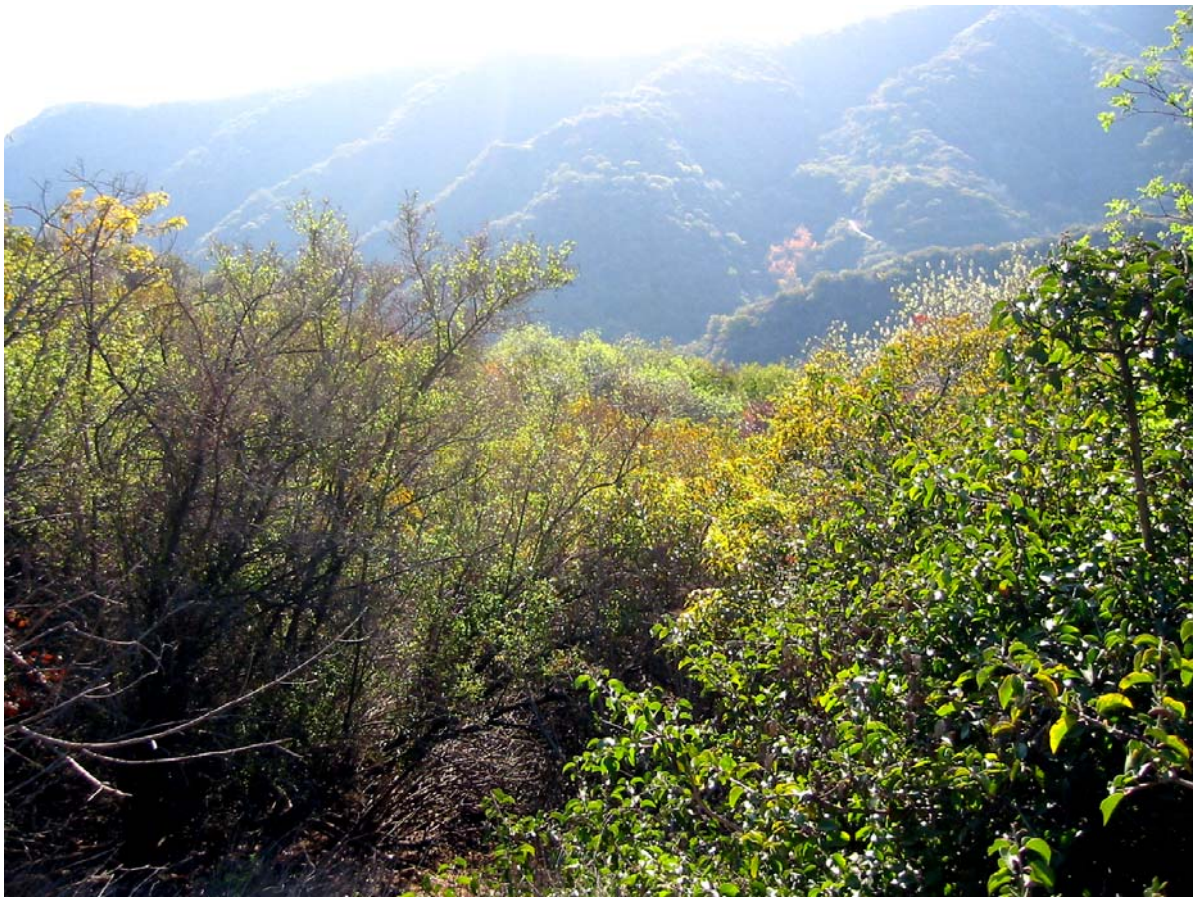
DESCRIPTION: *Prunus ilicifolia-Heteromeles arbutifolia* Shrubland Association occurs as open to intermittent shrubs on moist to mesic north-facing moderate to steep slopes. It tends to favor concave to undulating surfaces on bottoms to upper slopes. *Prunus* dominates at low to high cover. *Heteromeles* usually sub-dominates, but may co-dominate, at very low to moderate cover. Other chaparral shrubs, such as *Cercocarpus betuloides* and *Ceanothus* spp. may be present at very low to moderate cover, and occasionally may sub-dominate to co-dominate.

PHOTO INTERPRETATION SIGNATURE: The stand has a coarse appearance with color variations of the different species. *Prunus* is a tall shrub and is usually bright green with a coarse texture. It tends to stand out in contrast to the surrounding shrubs. It occurs as individuals, but is more visible when occurring in groups. *Heteromeles* is also a tall shrub, and is dark green in color with light highlights. It has a coarse texture.

TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Ceanothus oliganthus Shrubland* Association (2072)
- *Ceanothus oliganthus-Heteromeles arbutifolia-Rhus ovata* Shrubland Association (2076)
- *Ceanothus oliganthus*-Tall Shrubs Shrubland Superassociation (7071)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Cercocarpus betuloides-Ceanothus spinosus* Shrubland Association (2113)
- *Cercocarpus betuloides* Shrubland Association (2114)
- *Heteromeles arbutifolia-Malosma laurina* Shrubland Association (2138)

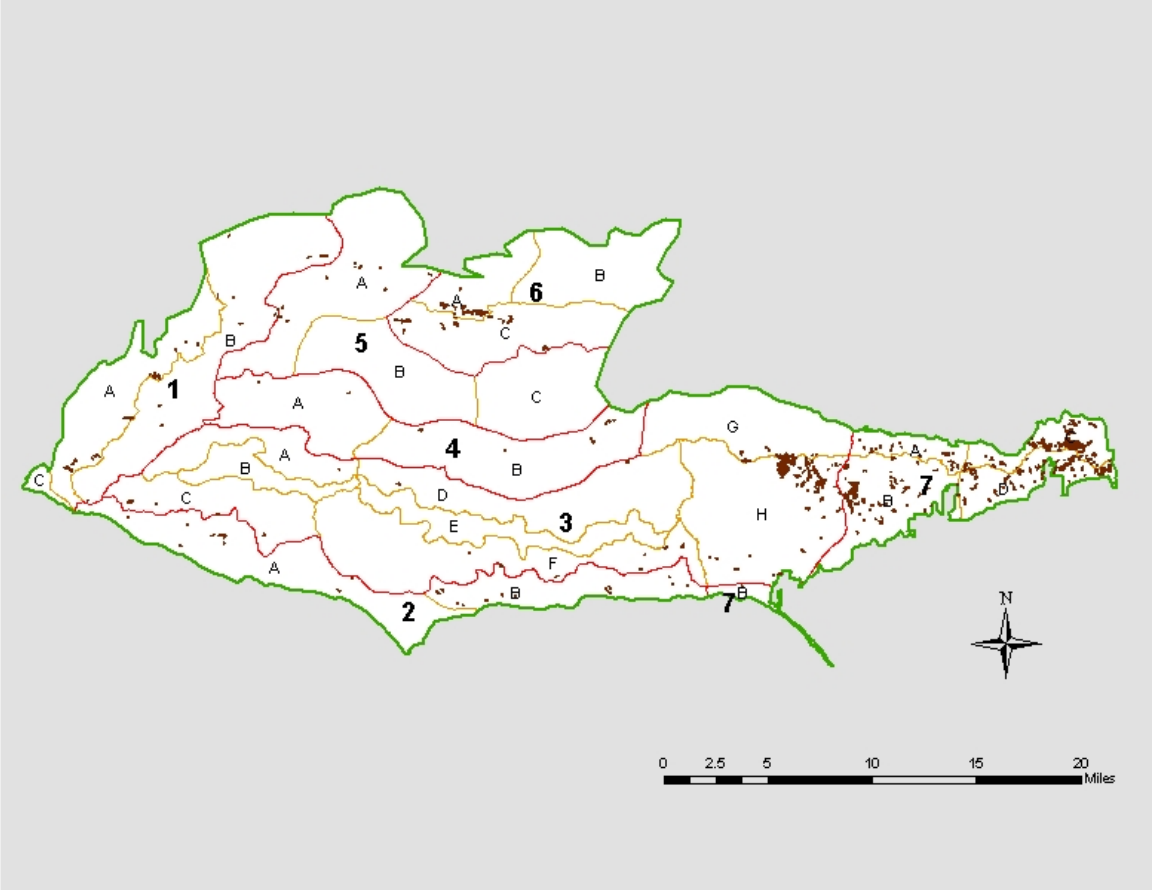
TOYON SHRUBLAND ALLIANCE



2130 – TOYON SHRUBLAND ALLIANCE
Heteromeles arbutifolia Shrubland Alliance



DISTRIBUTION:



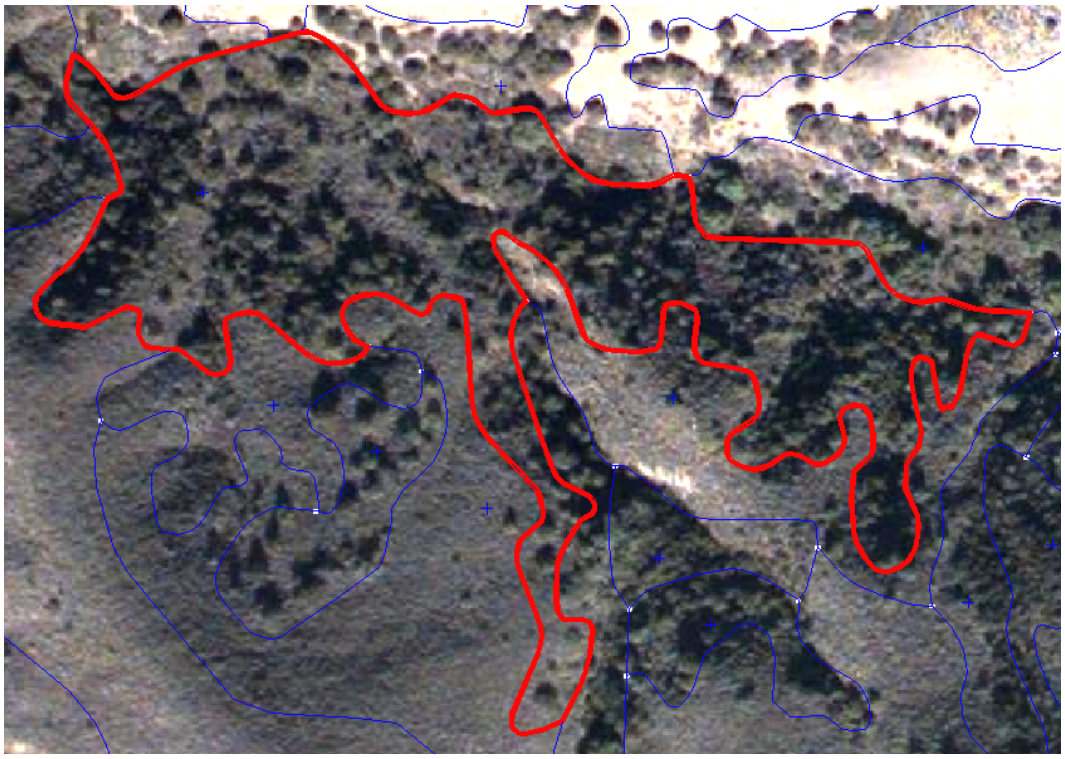
DESCRIPTION: *Heteromeles arbutifolia* Shrubland Alliance represents the hierarchical class into which *Heteromeles* association types are nested. This alliance occurs as open to continuous stands on mesic north-facing moderate to steep slopes, but can occur on southerly slopes. It can be found on neutral, convex, and undulating surfaces, on lower to upper slopes. *Heteromeles* usually dominates at very low to very high cover. Other shrubs that can sub-dominate to co-dominate with *Heteromeles* at very low to moderate cover include *Malosma laurina, Salvia mellifera, Rhus integrifolia, R. ovata, Artemisia californica, Mimulus aurantiacus,* and *Cercocarpus betuloides.* Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *H. arbutifolia* as the dominant shrub are included.

PHOTO INTERPRETATION SIGNATURE: The stand is usually mottled in appearance with uneven coarse textures due to the variations from the different species present. *Heteromeles* is a tall shrub with a rounded crown, occurring as individuals. It varies from medium green to dark green, usually with a white overtone representing the inflorescences, and has a coarse texture. All other tall shrubs can vary in color from bright green to dark green, and have a coarse texture.

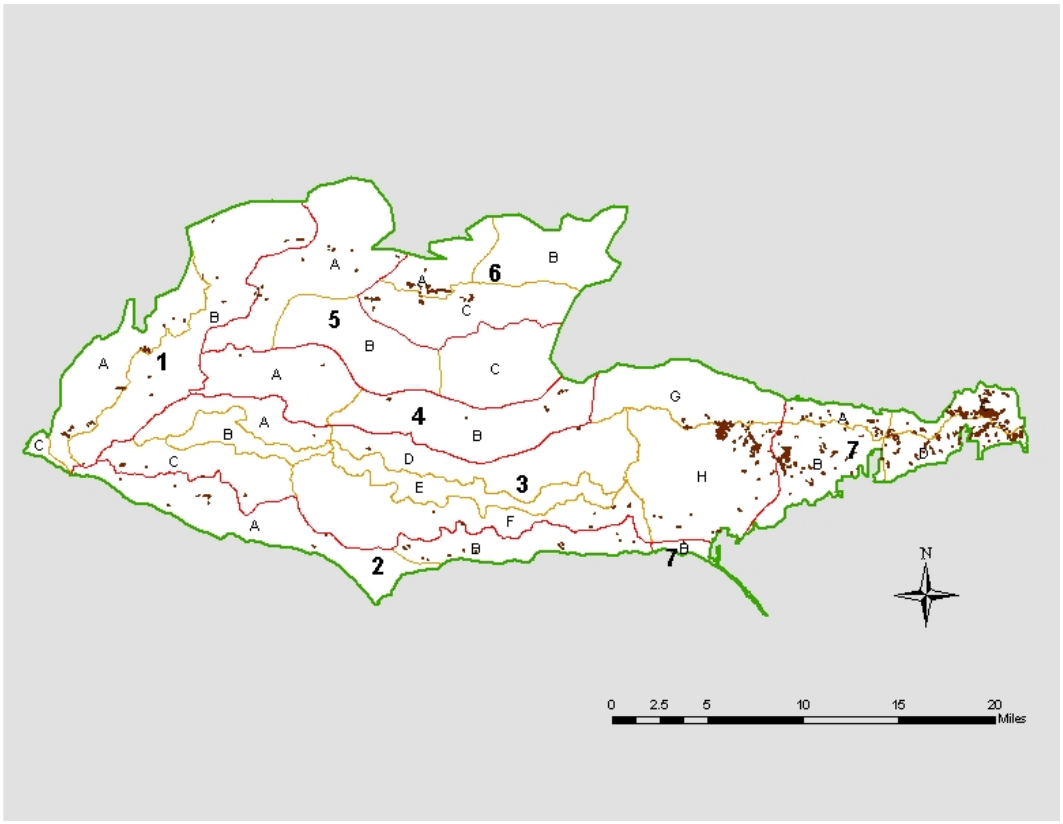
TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Ceanothus oliganthus* Shrubland Alliance (2070)
- *Ceanothus spinosus* Shrubland Alliance (2090)
- *Cercocarpus betuoides* Shrubland Alliance (2110)
- *Malosma laurina* Shrubland Alliance (2140*)*
- *Rhus integrifolia* Shrubland Alliance (2150)
- *Salvia mellifera* Shrubland Alliance (3320)

2138 – TOYON–LAUREL SUMAC SHRUBLAND ASSOCIATION
Heteromeles arbutifolia-Malosma laurina Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Heteromeles arbutifolia-Malosma laurina* Shrubland Association occurs as open to continuous stands on mesic north-facing moderate to steep slopes, but can occur on southerly slopes. It can be found on neutral, convex, and undulating surfaces, on lower to upper slopes. *H. arbutifolia* and *Malosma laurina* co-dominate, *H. arbutifolia* at very low to very high cover, *Malosma laurina* at very low to high cover. Other shrubs that can sub-dominate to co-dominate with *H.* arbutifolia at very low to moderate cover include *Salvia mellifera, Rhus. integrifolia, R. ovata, Artemisia californica, Mimulus aurantiacus,* and *Cercocarpus betuloides.*

PHOTO INTERPRETATION SIGNATURE: The stand is usually mottled in appearance with uneven coarse textures due to the variations from the different species present. *H. arbutifolia* is a tall shrub with a rounded crown, occurring as individuals. It varies from medium green to dark green, usually with a white overtone representing the inflorescences, and has a coarse texture. *Malosma laurina* is a tall shrub with a rounded crown and coarse texture, whose signature color varies from light green to dark green. *S. mellifera* is a short shrub occurring in patches or groups, with a fine texture and medium to dark green color. *R. integrifolia* is a short shrub with a low round to spreading crown with a black signature color and smooth texture. *R. ovata* is a tall shrub with a rounded crown and coarse texture, whose signature color is bright green. *C. betuloides* has a dull, dark green appearance with a smooth to coarse texture. *A. californica* is a short shrub with a purple-brown signature color and slightly coarse texture. *Mimulus aurantiacus* is a short shrub with an orange-brown to reddish brown color and smooth to coarse texture.

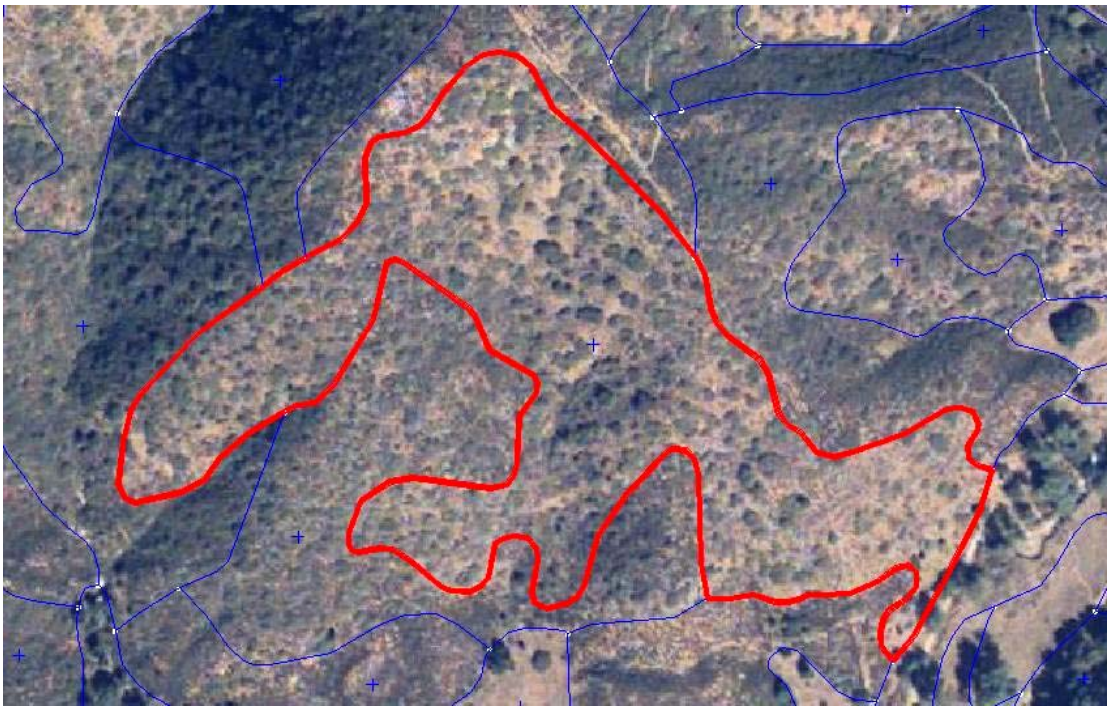
TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Ceanothus oliganthus-Heteromeles arbutifolia-Rhus ovata* Shrubland Association (2076)
- *Ceanothus oliganthus*-Tall Shrubs Shrubland Superassociation (7071)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Cercocarpus betuoides* Shrubland Association (2114)
- *Cercocarpus-Malosma laurina-Artemisia californica* Shrubland Association (2117)
- *Malosma laurina-Rhus ovata-Ceanothus megacarpus* Shrubland Association (21415)
- *Malosma laurina-Eriogonum fasciculatum* Shrubland Association (21423)
- *Rhus integrifolia* Shrubland Association (2153)
- *Salvia mellifera-Malosma laurina* Shrubland Association (8324)
- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)

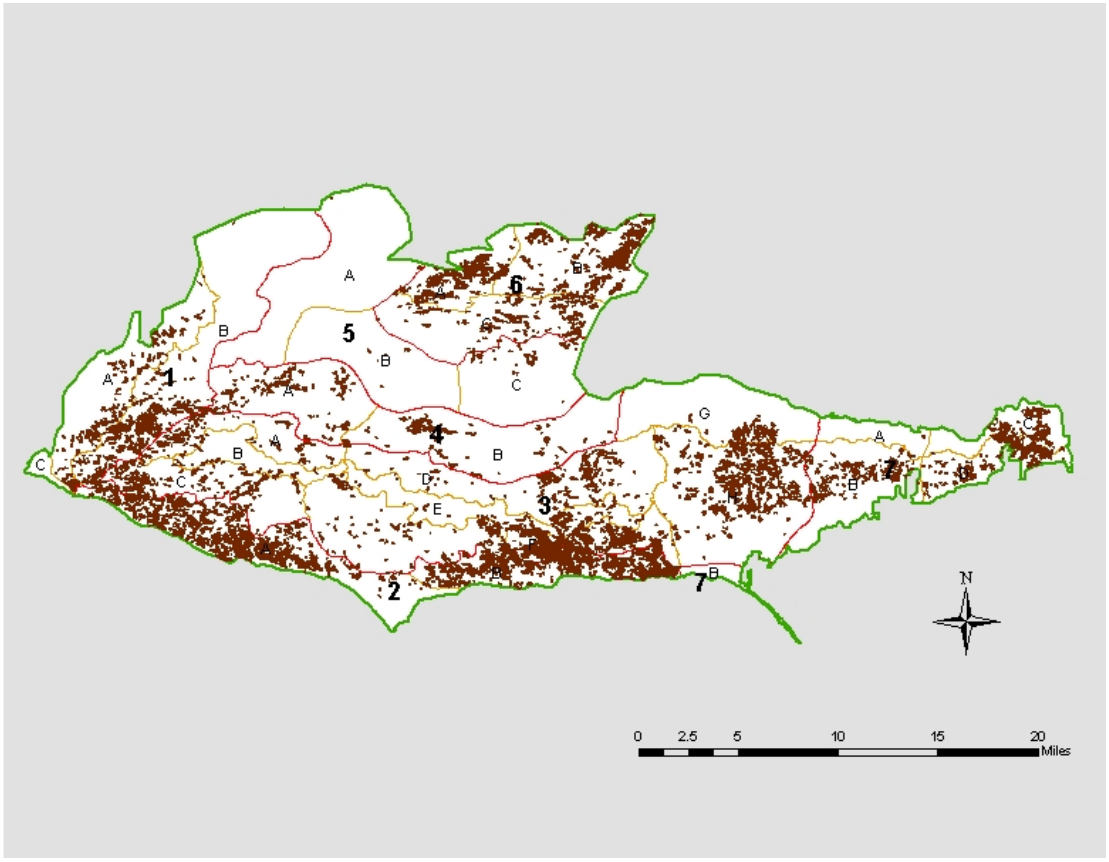
LAUREL SUMAC SHRUBLAND ALLIANCE



2140 – LAUREL SUMAC SHRUBLAND ALLIANCE
Malosma laurina Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Malosma laurina* Woodland/Forest Alliance represents the hierarchical class into which all *Malosma* association types are nested. The alliance occurs as sparse to continuous stands on dry to dry-mesic south-facing gentle to extremely steep slopes. It is found on all surface types on bottoms to upper slopes and ridge tops. It sometimes is on north-facing slopes and rocky or thin soils. *Malosma* is typically dominant, but can co-dominate with *Eriogonum cinereum, E. fasciculatum, Artemisia californica, Salvia mellifera, S. leucophylla, Rhus ovata*, and *R. integrifolia*. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *M. laurina* as the dominant shrub are included.

PHOTO INTERPRETATION SIGNATURE: The stands of this alliance will usually have coarse and uneven textures of tall shrubs over short shrubs, with different shades of green, tan or brown. *Malosma* is a light to medium green tall shrub with a rounded crown and slightly coarse texture, usually occurring as large individuals. *E. cinereum* appears as very small round individual shrubs whose color is typically gray. The texture is fine to slightly coarse. The *E. cinereum* signature is similar to that of *S. mellifera* and *S. leucophylla* when their signatures are gray. *S. mellifera* is typically medium to bright green in color with a smooth texture, but in drier sites can be tan or gray individuals, sometime with a splotchy shape and fuzzy edge. *R. integrifolia* is a short shrub with a low round to spreading crown with a black signature color and smooth texture. *R. ovata* typically appears as a coarse, round-crowned, bright green shrub. However, *R. ovata* may also have a duller or darker green tone, which makes it difficult to distinguish from the similar signatures of *Malosma* and *Heteromeles. arbutifolia*.

TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Juglans californica* Woodland/Forest Alliance (1310)
- *(Juglans californica)/*Undifferentiated Tall Shrubs Shrubland Mapping Unit (2003)
- *Ceanothus megacarpus* Shrubland Alliance (2080)
- *Ceanothus spinosus* Shrubland Alliance (2090)
- *Cercocarpus betuloides* Shrubland Alliance (2110)
- *Prunus ilicifolia* Shrubland Alliance (2120)
- *Heteromeles arbutifolia* Shrubland Alliance (2130)
- *Rhus integrifolia* Shrubland Alliance (2150)
- *Rhus ovata* Shrubland Alliance (2190)
- *Baccharis pilularis* Shrubland Alliance (2310)
- *Artemisia californica* Shrubland Alliance (3210)
- *Encelia californica* Shrubland Alliance (3220)
- *Eriogonum fasciculatum* Shrubland Alliance (3240)
- *Eriogonum cinereum* Shrubland Alliance (3250)
- *Malacothamnus fasciculatus* Shrubland Alliance (3280)
- *Salvia mellifera* Shrubland Alliance (3320)
- *Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance (3370)
- *Salvia leucophylla-Artemisia californica* Shrubland Suballiance (3390)
- *Salvia mellifera-Artemisia californica* Shrubland Alliance (3421)

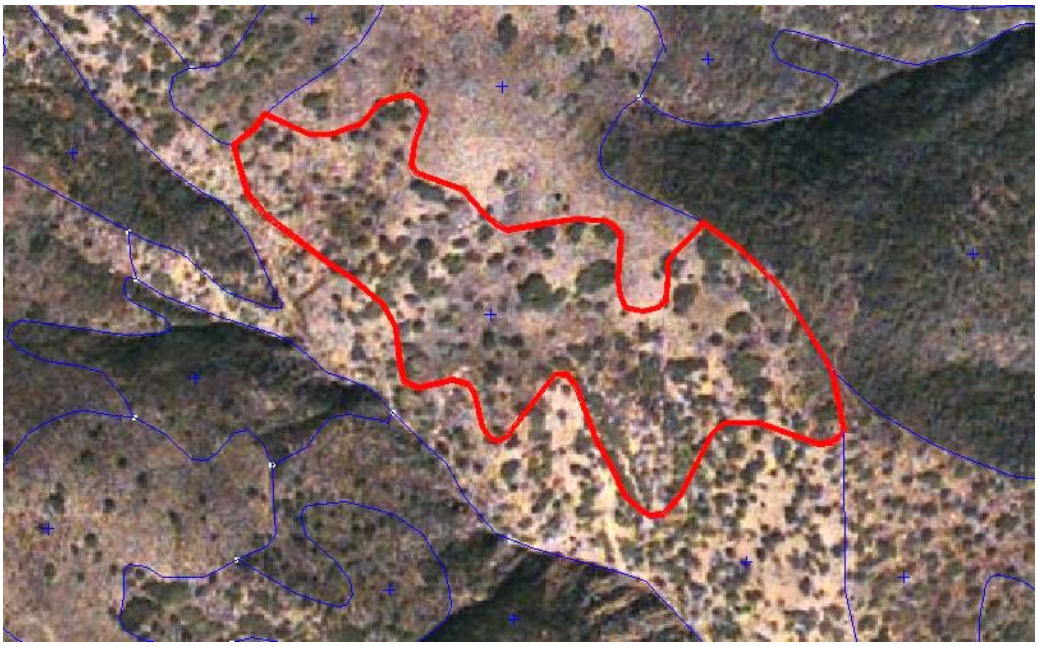
2141 – LAUREL SUMAC–ASHY BUCKWHEAT SHRUBLAND ASSOCIATION

***Malosma laurina-Eriogonum cinereum* Shrubland Association**

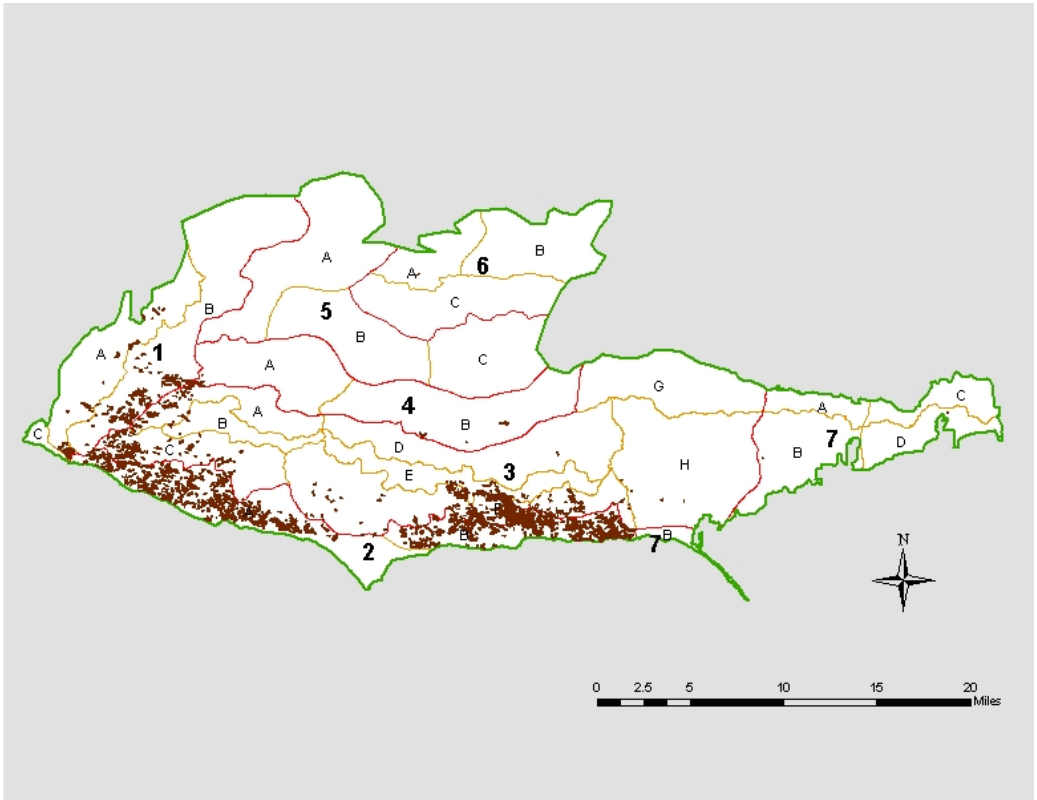
7141 - *Malosma laurina-Eriogonum cinereum-Salvia mellifera* Phase

7144 - *Malosma laurina-Eriogonum cinereum-Lotus scoparius* Phase

21413 - *Malosma laurina-Rhus integrifolia-Eriogonum cinereum-Artemisia californica* Phase



DISTRIBUTION:



DESCRIPTION: *Malosma laurina-Eriogonum cinereum* Shrubland Association generally occurs as sparse to open stands on dry, south-facing, gentle to extremely steep slopes. This association tends to favor undulating to convex surfaces on lower to upper slopes. Stands typically are found along the coast and may be on rocky or thin soils. *Malosma* co-dominates at low to high cover, while *E. cinereum* co-dominates at low to moderate cover. Sometimes, *Salvia mellifera* may co-dominate at low to moderate cover. The *Malosma laurina-Eriogonum cinereum-Salvia mellifera* Phase (7141) is mapped when the *S. mellifera* in the stand is distinctive on the photo. This can be due to a higher cover or denser patches of *S. mellifera*. *S. mellifera* can be sub-dominant, and at times can approach co-dominance. The *Malosma laurina-Eriogonum cinereum-Lotus scoparius* Phase (7144) is mapped only when the *Lotus* in the stand is confidently identified on the photography. *Lotus*, which indicates a disturbance (man, fire recovery, etc.) can approach co-dominance at very low to low cover. The *Malosma laurina-Rhus integrifolia-Eriogonum cinereum-Artemisia californica* Phase (21413) is characterized by the presence of *R. integrifolia* in the stand. *Malosma, R. integrifolia*, and *E. cinereum* co-dominate in various combinations from low to moderate cover. Stands of this phase may be found along the immediate coast on gentle to steep slopes.

PHOTO INTERPRETATION SIGNATURE: *Malosma* is a light to medium green tall shrub with a rounded crown and slightly coarse texture, usually occurring as large individuals. *E. cinereum* appears as very small round individual shrubs whose color is typically gray. The texture is fine to slightly coarse. The *E. cinereum* signature is similar to that of *S. mellifera* and *S. leucophylla* when their signatures are gray. *S. mellifera* is typically medium to bright green in color with a smooth texture, but in drier sites it can appear as tan or gray individuals, sometimes with a splotchy shape and fuzzy edge. *Lotus* appears as very small round individual shrubs whose signature is typically orange-brown to reddish-brown. The texture is fine to slightly coarse. The signature of *Lotus* is similar to *E. fasciculatum* and young *Adenostoma fasciculatum* when it is reddish-brown to orange-brown. *R. integrifolia* is a short shrub with a low round to spreading crown with a black signature color and smooth texture.

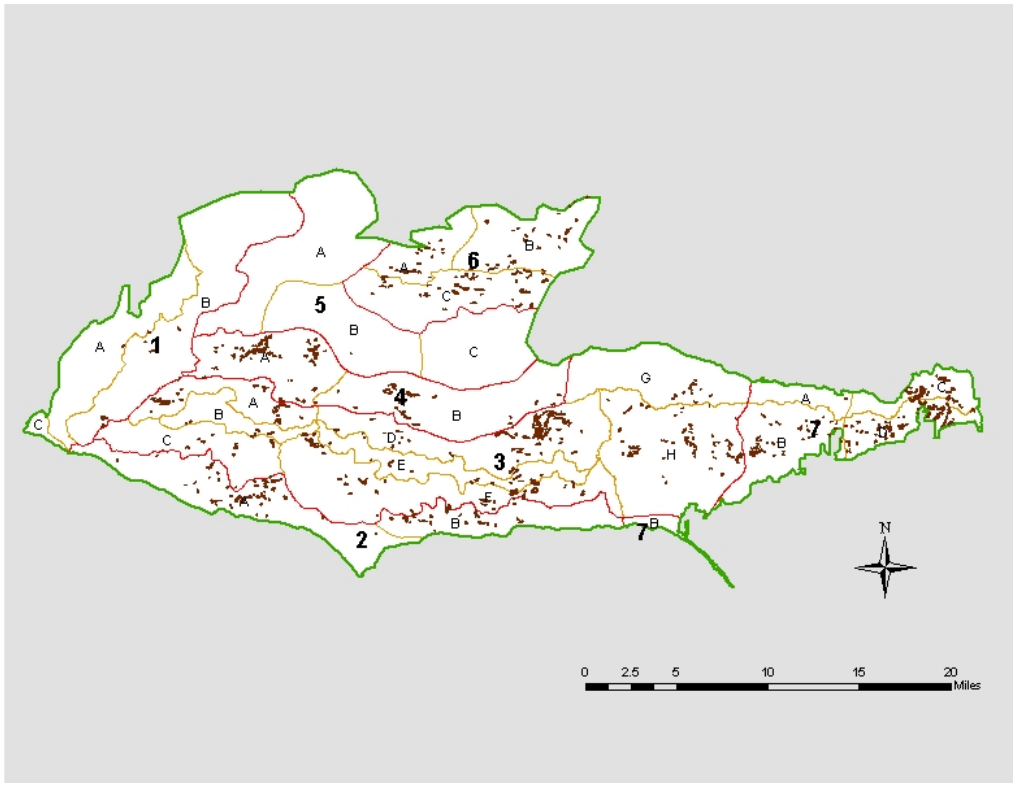
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Salvia mellifera* Shrubland Association (2148)
- *Malosma laurina-Artemisia californica* Shrubland Association (7148)
- *Rhus integrifolia-Opuntia* spp.*-Eriogonum cinereum* Shrubland Associaton (2151)
- *Rhus integrifolia* Shrubland Association (2153)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica/Leymus condensatus* Shrubland Association (3216)
- *Eriogonum cinereum* Shrubland Association (3257)
- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)
- *Salvia mellifera-Artemisia californica* Shrubland Association (3421)

2148 – LAUREL SUMAC–BLACK SAGE SHRUBLAND ASSOCIATION
***Malosma laurina-Salvia mellifera* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Malosma laurina-Salvia mellifera* Shrubland Association is mapped as sparse to intermittent stands on xeric to dry, south-facing, moderate to steep slopes. The association typically occurs on neutral to undulating surfaces on lower to upper slopes. *Malosma* and *S. mellifera* co-dominate at low to high cover. *Adenostoma fasciculatum* and *Eriogonum fasciculatum* may be present up to low cover. *Artemisia californica* may also be present up to very low cover.

PHOTO INTERPRETATION SIGNATURE: *Malosma* is a light to medium green tall shrub with a rounded crown and slightly coarse texture, usually occurring as large individuals. *S. mellifera* is typically medium to bright green in color with a smooth texture, but in drier sites it can occur as tan or gray individuals, sometimes with a splotchy shape and fuzzy edge.

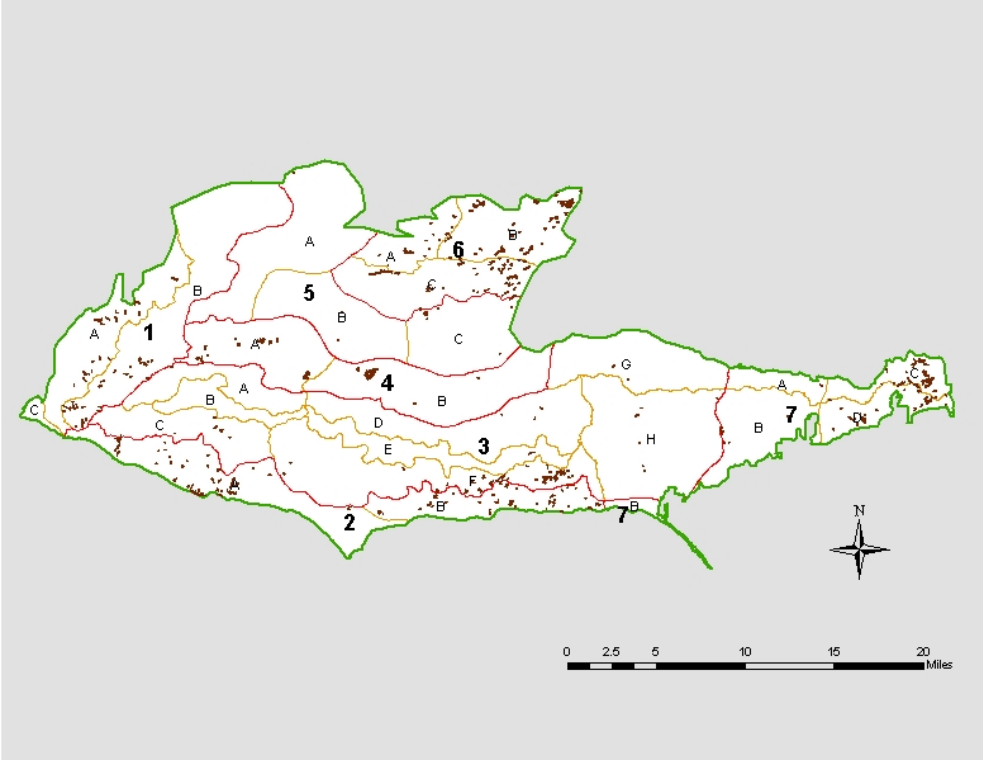
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Eriogonum cinereum* Shrubland Association (2141)
- *Malosma laurina-Eriogonum fasciculatum* Shrubland Association (21423)
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Encelia californica-(Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera)* Shrubland Superassociation (3228)
- *Eriogonum fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (3248)
- *Malacothamnus fasciculatus-Salvia mellifera* Shrubland Association (3282)
- *Malacothamnus fasciculatus-Malosma laurina* Shrubland Association (3286)
- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)
- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)
- *Salvia mellifera-Artemisia californica* Shrubland Association (3421)

7142 – LAUREL SUMAC SHRUBLAND ASSOCIATION
Malosma laurina Shrubland Association
2145- *Malosma laurinal* Annual Grass-Herb Phase



DISTRIBUTION:



DESCRIPTION: *Malosma laurina* Shrubland Association occurs as sparse to continuous stands on dry-mesic south- or north-facing gentle to extremely steep slopes. It is found on all surface types on bottoms to upper slopes and ridge tops. *Malosma* is strongly dominant at low to very high cover. The *Malosma laurina*/Annual Grass-Herb Phase (2145) is composed of sparse to open shrubs with a grass or herbaceous understory.

PHOTO INTERPRETATION SIGNATURE: *Malosma* is a light to medium green tall shrub with a rounded crown and slightly coarse texture, usually occurring as large individuals. Grass appears as shades of light tan to brown with a smooth texture.

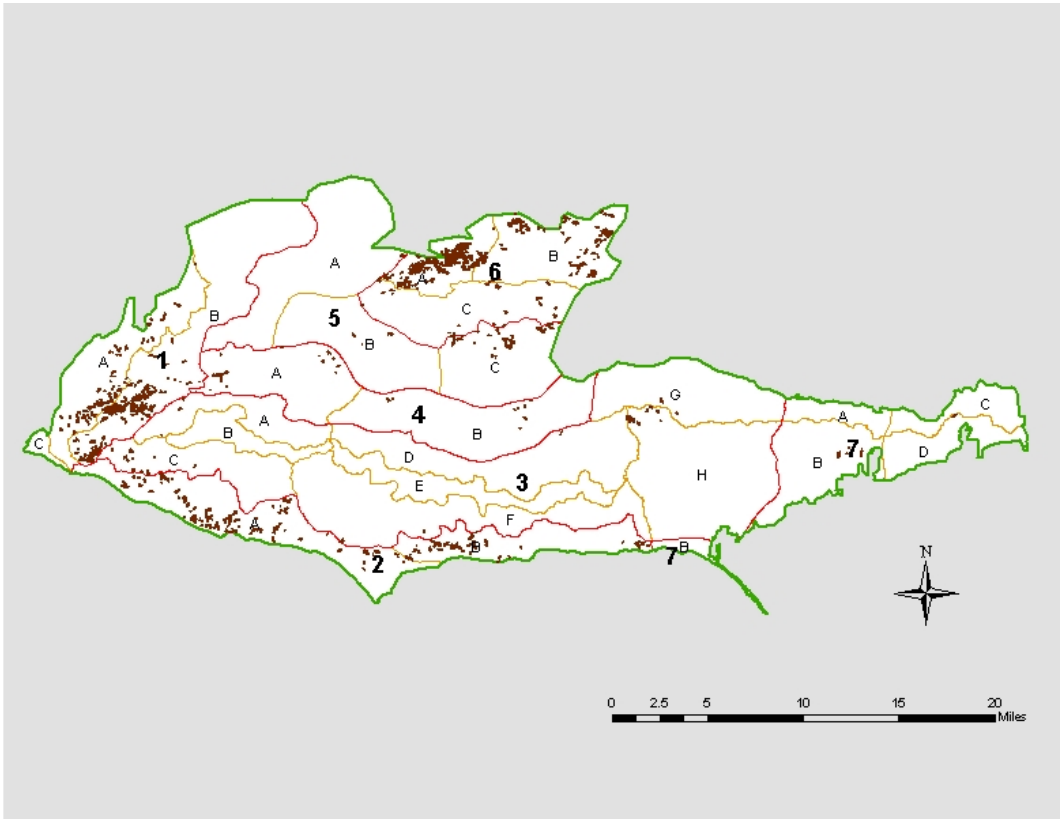
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Juglans californica*/Annual Grass-Herb Woodland/Forest Association (1312)
- *(Juglans californica)*/Undifferentiated Tall Shrubs Shrubland Superalliance (2003)
- *Prunus ilicifolia-Heteromeles arbutifolia* Shrubland Association (2121)
- *Heteromeles arbutifolia-Malosma laurina* Shrubland Association (2138)
- *Rhus ovata* Shrubland Association (2193)
- *Baccharis pilularis*/Annual Grass-Herb Shrubland Association (2311)
- Urban Buffer Shrubs Mapping Unit (9109)

7148 – LAUREL SUMAC–CALIFORNIA SAGEBRUSH SHRUBLAND ASSOCIATION
***Malosma laurina-Artemisia californica* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: The *Malosma laurina-Artemisia californica* Shrubland Association occurs as a sparse to intermittent stand on dry-mesic north-facing gentle to moderately steep slopes. It favors neutral to undulating surfaces on lower to upper slopes. *Malosma* and *A. californica* can co-dominate, with *Malosma* at low to very high cover and *A. californica* at very low to moderate cover. *Salvia leucophylla* can be present at very low to moderate cover and sometimes sub-dominate or co-dominate. Cover of coastal sage scrub can be greater than cover of *Malosma*.

PHOTO INTERPRETATION SIGNATURE: The stand has a mottled color and coarse texture reflecting the dominant shrubs present. *Malosma* is a light to medium green tall shrub with a rounded crown and slightly coarse texture, usually occurring as large individuals. *A. californica* can occur as individuals with little texture, or as homogeneous carpets with some texture. *S. leucophylla* is a short shrub with white to silver gray color and can occur as smooth-textured carpets of homogeneous color. Very often *A. californica* and *S. leucophylla* occur together as a mixture in a smooth-textured dense carpet of purple-rose color, or as one species dominating with individuals or clumps of the other species visible within.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

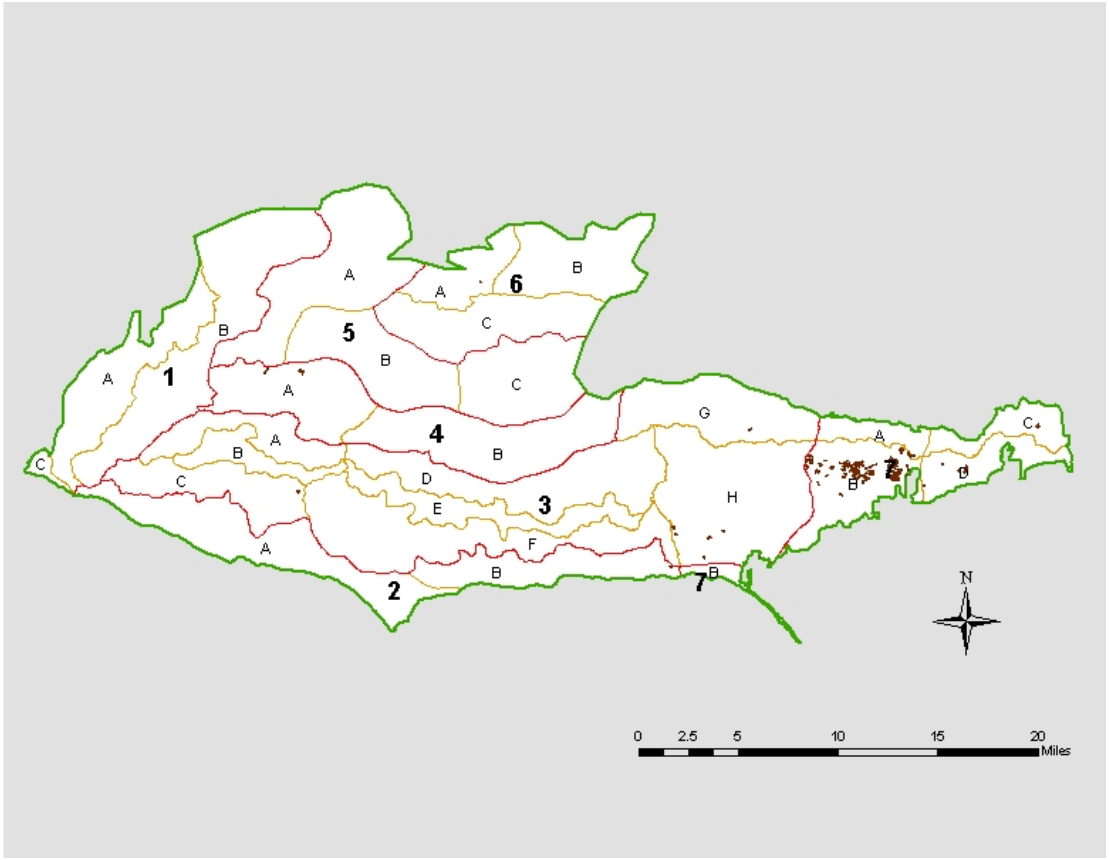
- *Juglans californica/Artemisia californica/Leymus condensatus* Woodland/Forest Association (1317)
- *Mimulus aurantiacus* Shrubland Association (2172)
- *Rhus ovata-Salvia leucophylla-Artemisia californica* Shrubland Association (2192)
- *Baccharis pilularis-Artemisia californica* Shrubland Association (2313)
- *Artemisia californica* Shrubland Association (8213)
- *Malacothamnus fasciculatus-Salvia leucophylla* Shrubland Association (3281)
- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella* spp. Shrubland Association (3396)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)
- *Salvia mellifera-Artemisia californica* Shrubland Association (3421)

21415 – LAUREL SUMAC–SUGAR BUSH–BIG POD CEANOTHUS SHRUBLAND ASSOCIATION

***Malosma laurina-Rhus ovata-Ceanothus megacarpus* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Malosma laurina-Rhus ovata-Ceanothus megacarpus* Shrubland Association occurs as open to intermittent stands on dry south-facing gentle to moderately steep slopes. It is found on neutral to undulating surfaces on lower to upper slopes. *Malosma* is typically dominant at low to high cover. *R. ovata* is sub-dominant, co-dominant or sometimes dominant at very low to high cover. *C. megacarpus* is present and may approach sub-dominance at very low to low cover.

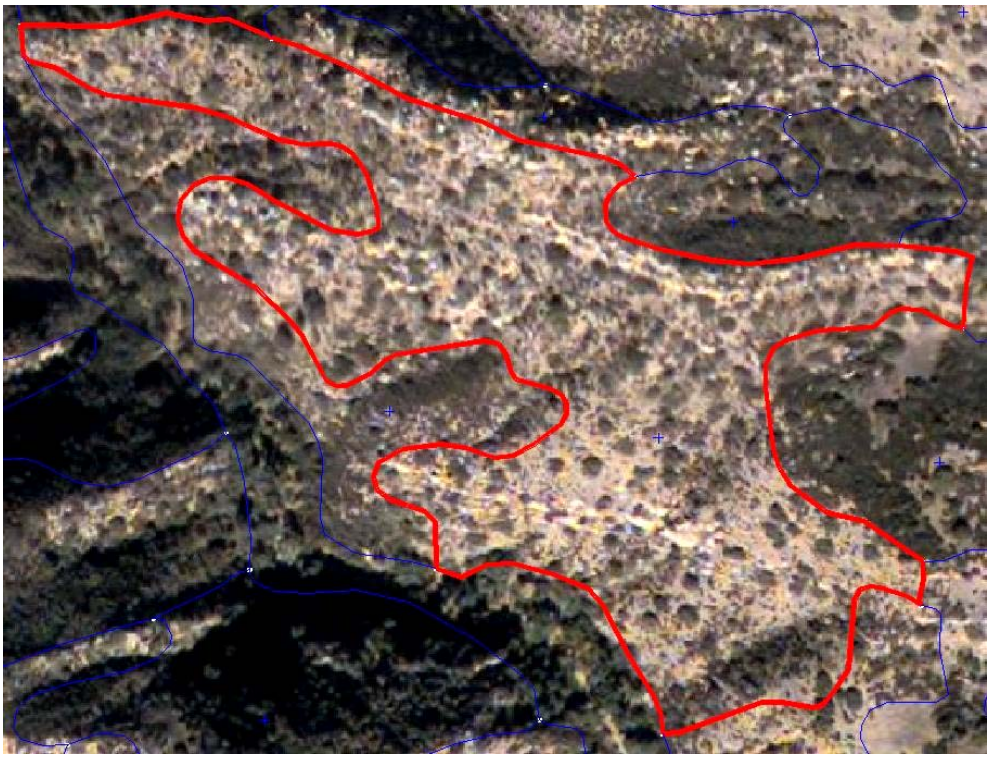
PHOTO INTERPRETATION SIGNATURE: The stand is mottled shades of green with a coarse texture. *Malosma* is a light to medium green tall shrub with a rounded crown and slightly coarse texture, usually occurring as large individuals. *R. ovata* typically appears as a coarse, round-crowned, bright green shrub. However, *R. ovata* may also have a duller or darker green tone, which makes it difficult to distinguish from the similar signatures of *Malosma* and *Heteromeles arbutifolia*. *C. megacarpus* is a tall shrub with a dull dark gray to black color, often with a bluish undertone, and a smooth texture. *C. megacarpus* can be confused with *C. spinosus* and *Cercocarpus betuloides.*

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

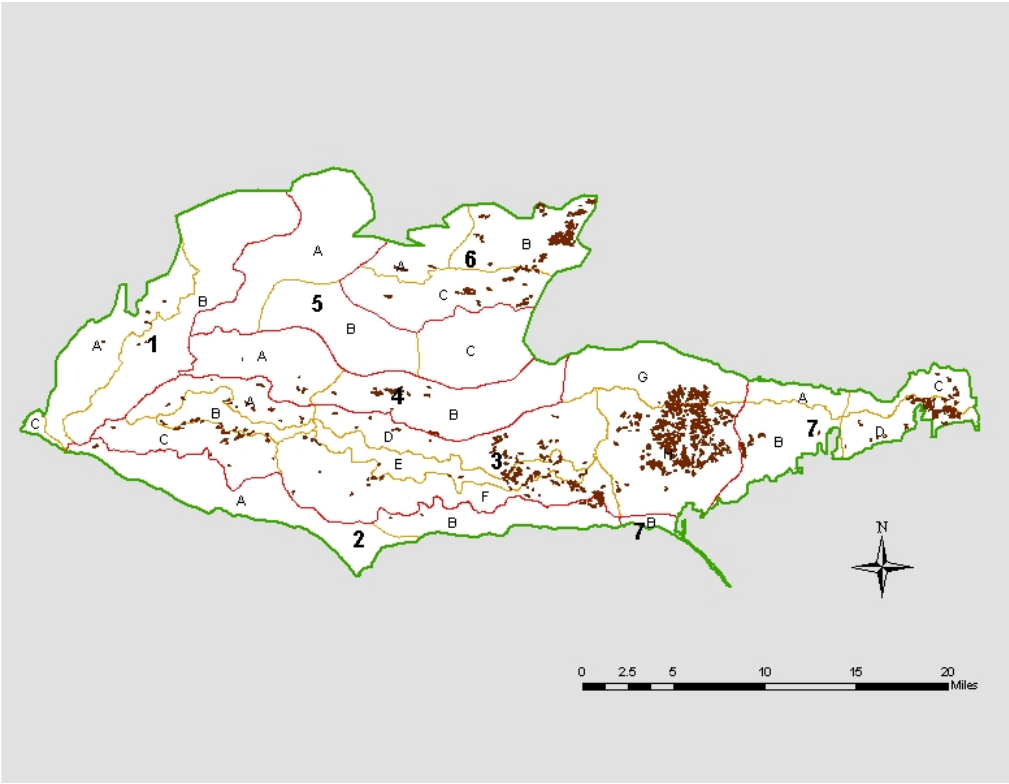
- *Ceanothus megacarpus-Malosma laurina* Shrubland Association (2087)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Cercocarpus betuloides-Malosma laurina-Artemisia californica* Shrubland Association (2117)
- *Heteromeles arbutifolia-Malosma laurina* Shrubland Association (2138)

21423 – LAUREL SUMAC–CALIFORNIA BUCKWHEAT SHRUBLAND ASSOCIATION

***Malosma laurina-Eriogonum fasciculatum* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Malosma laurina-Eriogonum fasciculatum* Shrubland Association occurs as sparse to intermittent stands on xeric to dry south-facing moderate to extremely steep slopes with rocky or thin soils. They are found on neutral, convex, and undulating surfaces on mid to upper slopes. *Malosma* and *E. fasciculatum* co-dominate, each at very low to moderate cover. Other shrubs, including *Ceanothus megacarpus, Heteromeles arbutifolia, Artemisia californica* and *Salvia mellifera* may be present at very low to low cover.

PHOTO INTERPRETATION SIGNATURE: The stand is mottled dark green and orange-brown with a coarse texture. *Malosma* is a light to medium green tall shrub with a rounded crown and slightly coarse texture, usually occurring as large individuals. *E. fasciculatum* is orange-brown to reddish-brown and appears as very small individuals. *C. megacarpus* is a tall shrub with a dull dark gray to black color, often with a bluish undertone, and a smooth texture. *Heteromeles* is a tall shrub with a rounded crown, occurring as individuals. It varies from medium green to dark green, usually with a white overtone representing the inflorescences, and has a coarse texture. *A. californica* typically has a purple-brown color with a fine texture. *S. mellifera* is typically medium to bright green with a smooth texture, but in drier sites can occur as tan or gray individuals, sometimes with a splotchy shape and fuzzy edge.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Heteromeles arbutifolia-Malosma laurina* Shrubland Association (2138)
- *Malosma laurina-Eriogonum cinereum* Shrubland Association (2141)
- *Malosma laurina-Salvia mellifera* Shrubland Association (2148)
- *Eriogonum fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (3248)
- *Artemisia californica-Eriogonum fasciculatum*/Annual Grass-Herb Shrubland Association (3371)

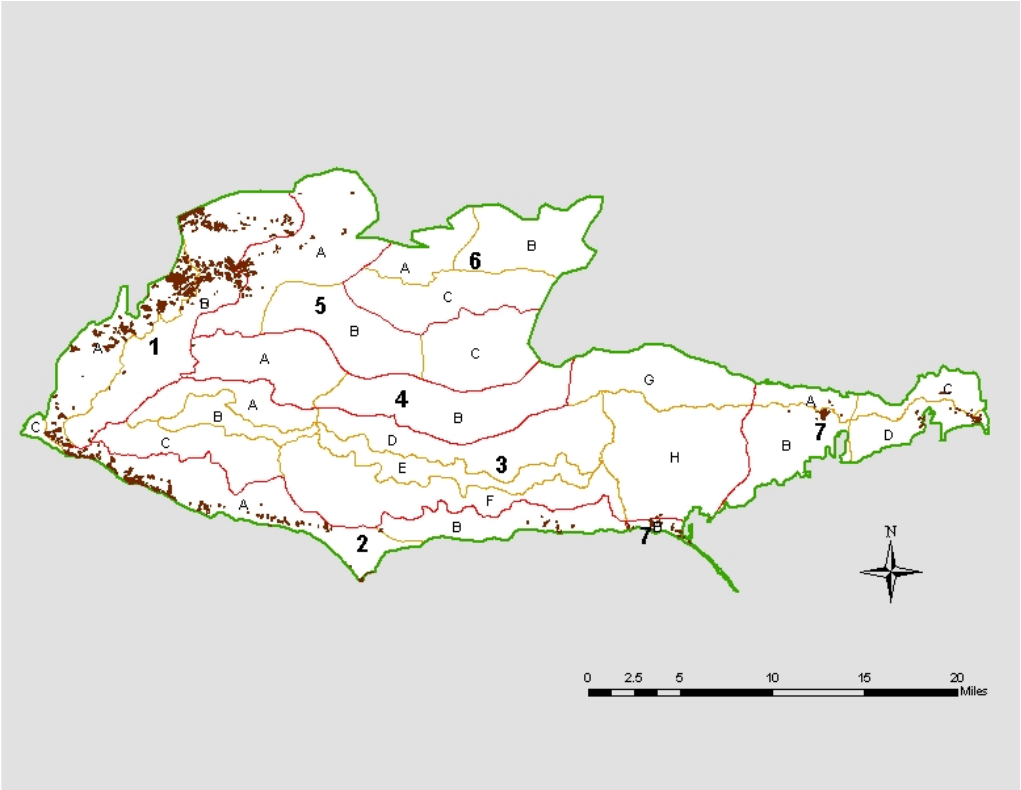
LEMONADE BERRY SHRUBLAND ALLIANCE



2150 – LEMONADE BERRY SHRUBLAND ALLIANCE
Rhus integrifolia Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Rhus integrifolia* Shrubland Alliance represents the hierarchical class into which all *R. integrifolia* association types are nested. The alliance occurs as sparse to continuous stands on mainly dry southerly moderate to extremely steep slopes. It can be found on various aspects and surface shapes, on lower to upper slopes. *R. integrifolia* is dominant. However, other shrubs, such as *Heteromeles arbutifolia, Malosma laurina, Artemisia californica, Salvia leucophylla,* and *Opuntia* spp. can sub-dominate to co-dominate. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *R. integrifolia* as the dominant shrub are included.

PHOTO INTERPRETATION SIGNATURE: Stands vary greatly in texture and color. *R. integrifolia* is a short shrub with a low round to spreading crown. It has a black signature color and smooth texture. *Heteromeles* is a tall shrub with a rounded crown, occurring as individuals. It varies from medium green to dark green, usually with a white overtone representing the inflorescences, and has a coarse texture. *Malosma* is a tall shrub with a rounded crown and coarse texture, whose signature color varies from light green to dark green. *A. californica* will appear purple brown to tan or gray with a smooth to slightly coarse texture. *S. leucophylla* will be white to light gray with a smooth texture. *Opuntia* spp. are very difficult to see when occurring as individuals. When in larger groups they will appear as a smooth textured, dull gray green color with slight iridescence.

TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

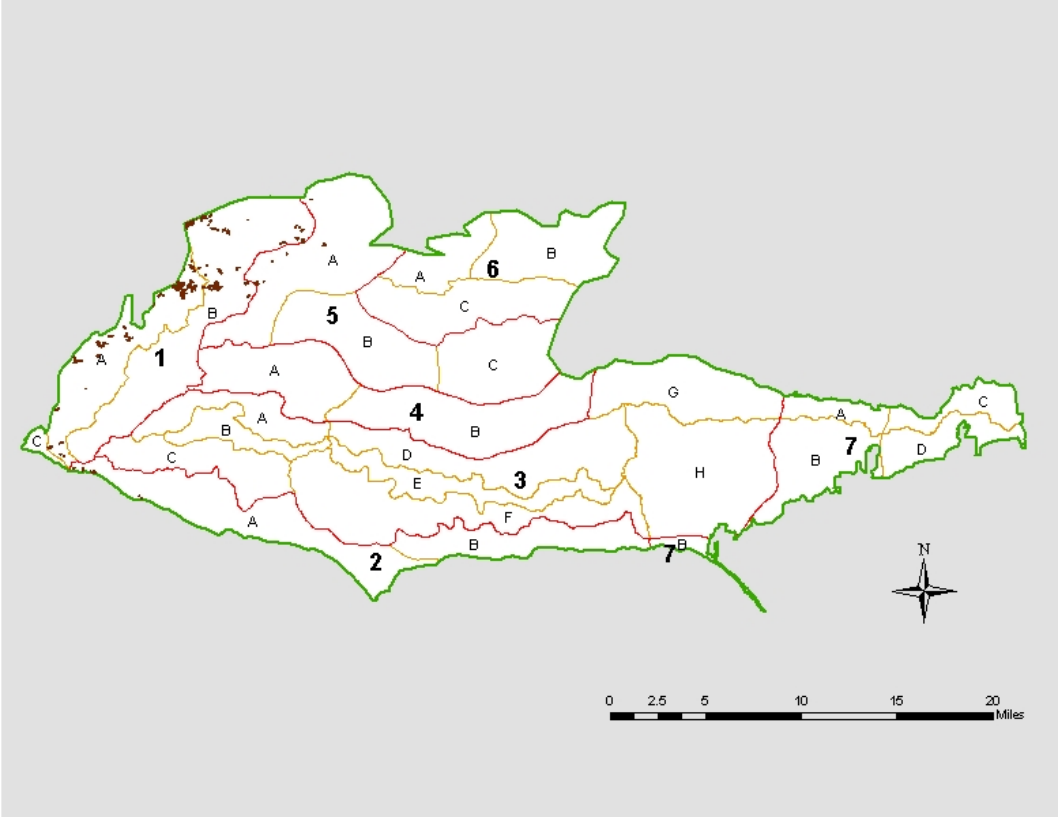
- *Heteromeles arbutifolia* Shrubland Alliance (2130)
- *Malosma laurina* Shrubland Alliance (2140)
- *Opuntia* spp. Shrubland Alliance (2410)
- *Encelia californica* Shrubland Alliance (3220)
- *Salvia leucophylla-Artemisia californica* Shrubland Suballiance (3390)

2151 – LEMONADE BERRY–PRICKLY PEAR–ASHY BUCKWHEAT SHRUBLAND ASSOCIATION

***Rhus integrifolia-Opuntia* spp.*-Eriogonum cinereum* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Rhus integrifolia-Opuntia* spp.*-Eriogonum cinereum* Shrubland Association occurs as open to intermittent stands of shrubs on coastal, xeric to dry, south-facing, rocky, moderate to extremely steep slopes. The association favors neutral to undulating surfaces on lower to upper slopes. *R. integrifolia* and *Opuntia* spp. (*Opuntia littoralis* and/or *Opuntia oricola)* co-dominate, each at very low to high cover. *E. cinereum* sub-dominates at very low to low cover. *Artemesia californica* may be present up to moderate cover.

PHOTO INTERPRETATION SIGNATURE: The stand appears as coarsely textured, slightly mottled tones of brown coastal sage, grass and rock. *R. integrifolia* is scattered or in coarse-textured groups over the smooth shorter shrub understory. *R. integrifolia* is black in color, and is a short shrub that emerges over the coastal sage scrub as round individuals with smooth texture. *Opuntia* spp. are very difficult to see when occurring as individuals. When in larger groups they will appear as a smooth-textured dull gray green color with slight iridescence. When larger patches are visible, it can be assumed that other individuals are also present in the stand, and possibly in nearby rocky areas. The coastal sage scrub species are usually mixed, and it is difficult to differentiate them from each other. As a whole they are usually tan or gray to brown or purple-brown in tone with a smooth to slightly coarse texture in a rocky setting.

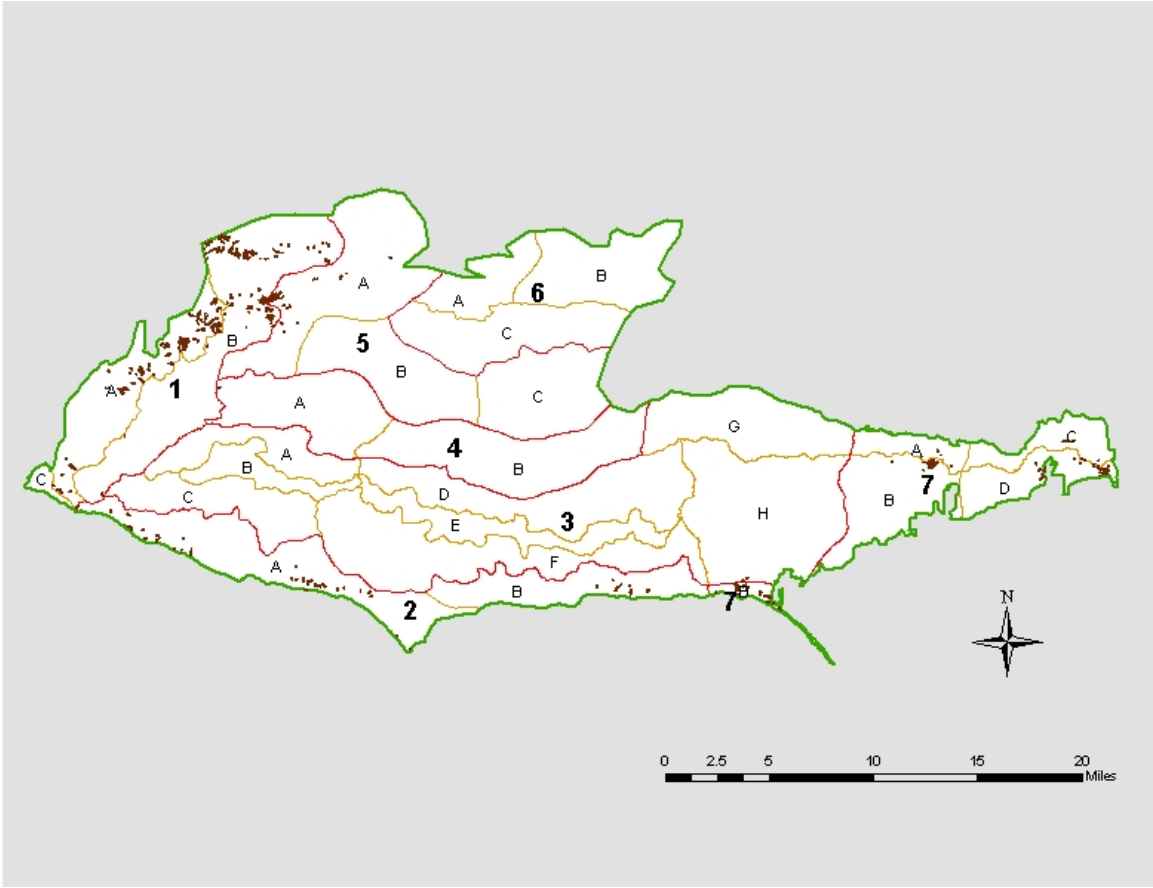
TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Malosma laurina-Eriogonum cinereum* Shrubland Association (2141)
- *Opuntia* spp.-Mixed Coastal Sage Scrub Shrubland Association (2412)

2153 – LEMONADE BERRY SHRUBLAND ASSOCIATION
Rhus integrifolia Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Rhus integrifolia* Shrubland Association occurs as a sparse to continuous stand on dry gentle to extremely steep slopes. It can be found on various aspects and surface shapes of lower to upper slopes. *R. integrifolia* is the dominant shrub at very low to very high cover. In some cases other tall shrubs can sub-dominate to co-dominate. *Heteromeles arbutifolia* can be at low to high cover. *Malacothamnus fasciculatus* and *Malosma laurina* can be present from very low to moderate cover. *Artemisia californica* can be present at very low to low cover.

PHOTO INTERPRETATION SIGNATURE: The stand has a coarse texture from the dominance of tall shrubs, with dark tone variations from the different species. *R. integrifolia* is a short shrub with a low round to spreading crown with a black signature color and smooth texture. *Heteromeles* is a tall shrub with a rounded crown, occurring as individuals. It varies from medium green to dark green, usually with a white overtone representing the inflorescences, and has a coarse texture. *Malosma* is a tall shrub with a rounded crown and coarse texture, whose signature color varies from light green to dark green. *Malacothamnus* appears as tall very thin individuals or in clumps with a coarse, sometimes wispy, texture and signature color of dull green to bright green.

TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Heteromeles arbutifolia-Malosma laurina* Shrubland Association (2138)
- *Malosma laurina-Eriogonum cinereum* Shrubland Association (2141)

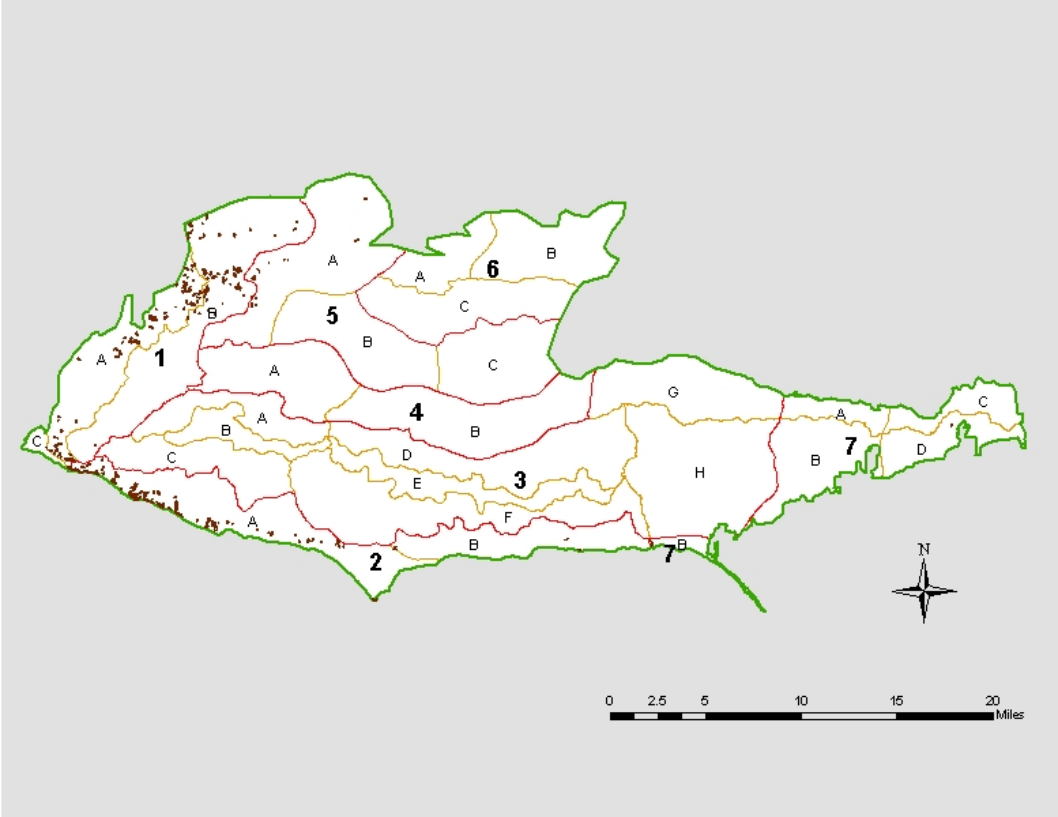
7157 – LEMONADE BERRY–CALIFORNIA SAGEBRUSH–ASHY BUCKWHEAT SHRUBLAND ASSOCIATION

***Rhus integrifolia-Artemisia californica-Eriogonum cinereum* Shrubland Association**

7155 – *Rhus integrifolia-Eriogonum cinereum-Yucca whipplei-Coreopsis gigantea* Phase



DISTRIBUTION:



DESCRIPTION: *Rhus integrifolia - Artemisia californica - Eriogonum cinereum* Shrubland Association occurs as very sparse to open stands on dry coastal moderately to extremely steep slopes. It can be found on variable surfaces of lower to upper slopes. In more dry-mesic settings *R. integrifolia* co-dominates with *A. californica* and *Salvia leucophylla*. *R. integrifolia* may occur at low to high cover, *S. leucophylla* at very low to high cover, and *A. californica* at very low to moderate cover. The *Rhus integrifolia-Eriogonum cinereum-Yucca whipplei-Coreopsis gigantea* Phase (7157) occurs on sparsely vegetated steep bluffs directly above the ocean. Here the *R. integrifolia* is usually of very low to low cover. Other xeric to dry shrubs, including *Eriogonum cinereum*, *Malosma laurina*, *Salvia mellifera*, and *Coreopsis* are also present from very low to low cover. The exotic grass *Pennisetum setaceum* will sometimes be present at very low to moderate cover.

PHOTO INTERPRETATION SIGNATURE: The less steep stands will appear as mottled variations of color and texture due to the different plant species present. *R. integrifolia* is a short shrub with a low round crown, a black signature color, and smooth texture. *A. californica* will appear purple brown to tan or gray with a smooth to slightly coarse texture. *S. leucophylla* will be white to light gray with a smooth texture. The coastal sage scrub species will intermix. The steep bluffs will appear as white to tan rocks dotted with sparse black *R. integrifolia* plants. Most other short shrubs will not be discernible due to sparseness. Tall shrubs such as *Malosma* will be visible, and are usually medium to dark green round-crowned individuals.

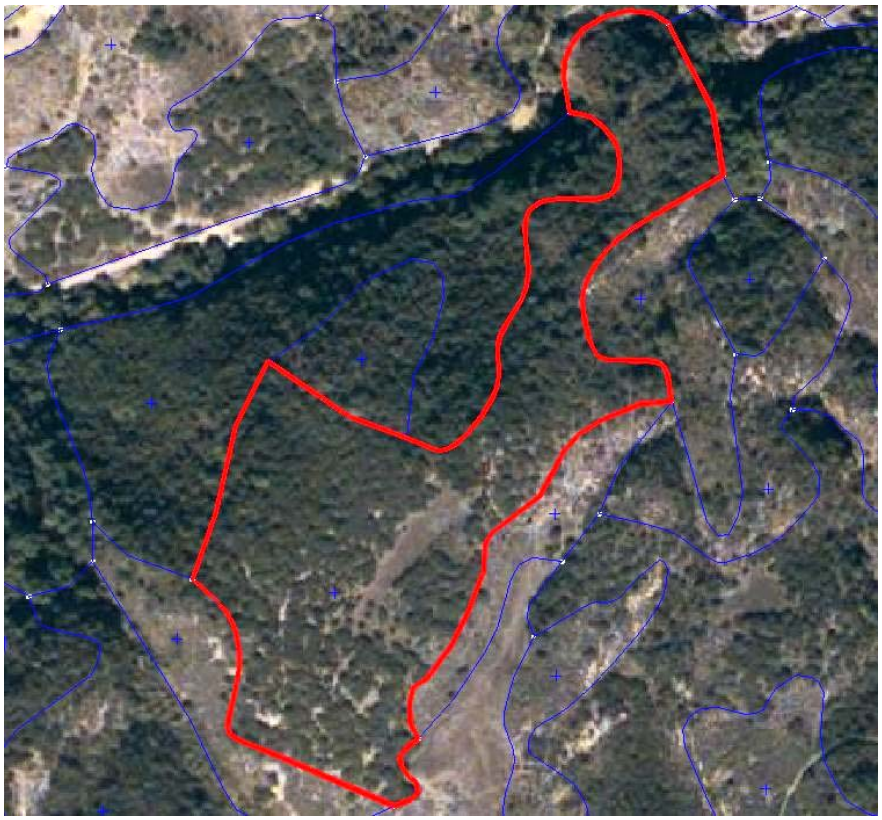
TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Malosma laurina-Eriongonum cinereum* Shrubland Association (2141)
- *Encelia californica-Rhus integrifolia* Shrubland Association (3226)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella* spp. Shrubland Association (3396)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)
- *Pennisetum setaceum* Herbaceous Alliance (4060)
- Rock Outcrop Mapping Unit (9001)
- Rock Outcrop/Herbaceous Mapping Unit (90011)

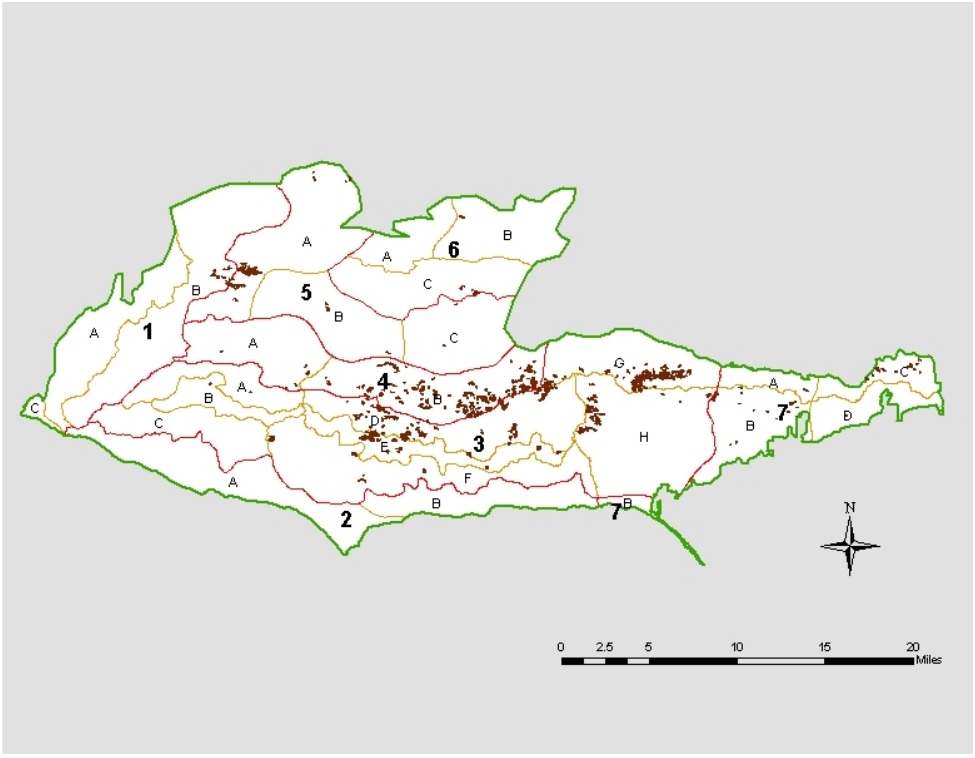
SCRUB OAK SHRUBLAND ALLIANCE



2160 – SCRUB OAK SHRUBLAND ALLIANCE
Quercus berberidifolia Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Quercus berberidifolia* Shrubland Alliance represents the hierarchical class into which *Q. berberidifolia* association types are nested. This alliance is dominated by *Q. berberidifolia* at moderate to high cover. This type generally occurs as open to continuous stands on dry-mesic, north-facing, moderate to steep slopes. Stands favor neutral to undulating surfaces and appear on bottoms to upper slopes. *Adenostoma fasciculatum* can be present and even co-dominate at low to moderate cover. *Ceanothus spinosus* may also be co-dominant at moderate to high cover. *Heteromeles arbutifolia* may sub-dominate at low to moderate cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit the association classes well. Very disturbed sites (man, fire recovery, etc.) with *Q. berberidifolia* as the dominant shrub are included.

PHOTO INTERPRETATION SIGNATURE: The stand usually has a coarse texture with fairly homogeneous dark green color when *Q. berberidifolia* dominates; otherwise it has a mottled color and uneven texture due to a mix of other shrubs. *Q. berberidifolia* appears as a tall, dark green shrub with an irregularly coarse crown and may occur as individuals or in dense groups. *Heteromeles* is observed as being light green with shiny, white tips. *A. fasciculatum* appears as coarse red individuals or clumps with a tight, round shape. *C. spinosus* can have a moderately tall crown with a smooth texture and green color. Dense stands of *Q. berberidifolia* may obscure the view of other shrubs that are present in the canopy.

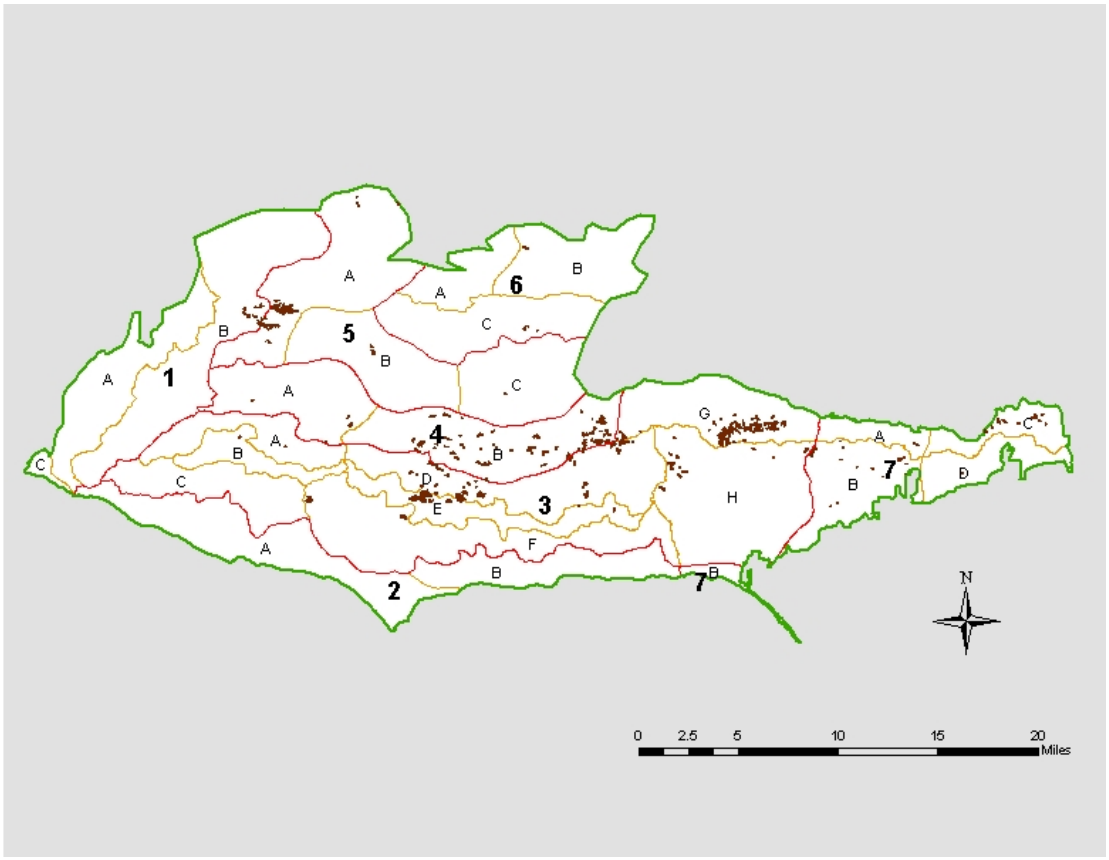
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- *Juglans californica* Woodland/Forest Alliance (1310)
- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Adenostoma fasciculatum-Arctostaphylos glandulosa* Shrubland Alliance (2020)
- *Ceanothus oliganthus* Shrubland Alliance (2070)
- *Ceanothus spinosus* Shrubland Alliance (2090)
- *Cercocarpus betuloides* Shrubland Alliance (2110)
- *Heteromeles arbutifolia* Shrubland Alliance (2130)
- *Ceanothus cuneatus* Shrubland Alliance (2520)
- *Quercus berberidifolia-Adenostoma fasciculatum* Shrubland Alliance (2580)
- *Quercus berberidifolia-Cercocarpus betuloides* Shrubland Alliance (2590)

2161 – SCRUB OAK SHRUBLAND ASSOCIATION
Quercus berberidifolia Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Quercus berberidifolia* Shrubland Association occurs as open to dense stands on dry to mesic, gentle to steep, north-facing slopes. The association favors concave to undulating surfaces on bottoms to upper slopes. *Q. berberidifolia* dominates at moderate to high cover. *Adenostoma fasciculatum* can be present, and sometimes co-dominates, at low to moderate cover. *Heteromeles arbutifolia* may sub-dominate at low to moderate cover.

PHOTO INTERPRETATION SIGNATURE: The stand usually has a coarse texture with fairly homogeneous dark green color when *Q. berberidifolia* dominates. A significant presence of *A. fasciculatum* produces a mottled color. *Q. berberidifolia* appears as a tall, dark green shrub with an irregularly coarse crown and may occur as individuals or in dense groups. Much of the time, *Heteromeles* is observed as being light green with shiny, white tips. *A. fasciculatum* appears as coarse red individuals or clumps with a tight, round shape. Dense stands of *Q. berberidifolia* may obscure the view of *A. fasciculatum*, *Heteromeles* or other shrubs that can mix in the canopy.

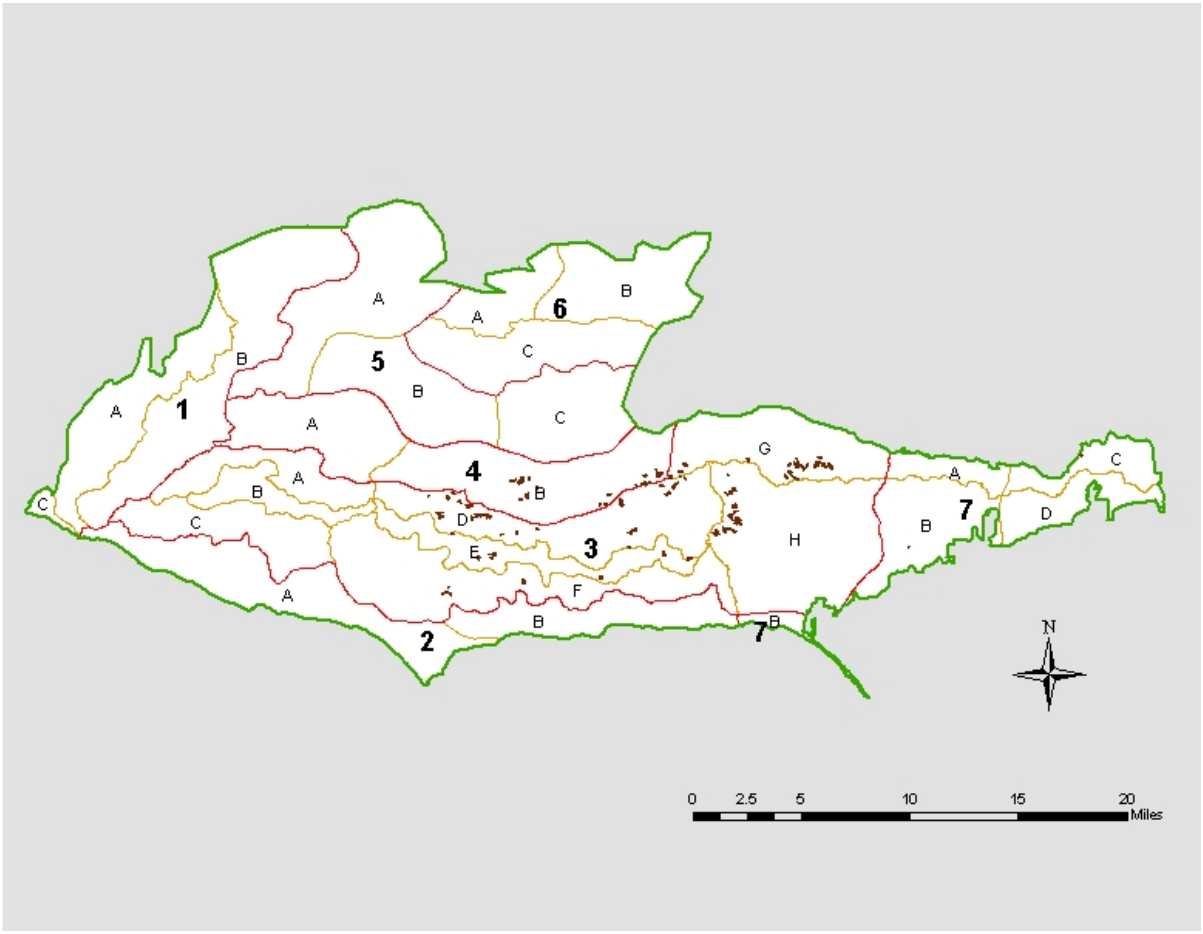
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia/Quercus berberidifolia* Woodland/Forest Association (6112)
- *Adenostoma fasciculatum-Malosma laurina* Shrubland Association (2013)
- *Adenostoma fasciculatum-Arctostaphylos glandulosa* Shrubland Association (2021)
- *Ceanothus oliganthus*-Tall Shrubs Shrubland Superassociation (7071)
- *Heteromeles arbutifolia-Malosma laurina* Shrubland Association (2138)
- *Quercus berberidifolia-Ceanothus spinosus* Shrubland Association (2167)
- *Ceanothus cuneatus-Quercus berberidifolia* Shrubland Association (2521)
- *Quercus berberidifolia-Adenostoma fasciculatum* Shrubland Association (2581)
- *Quercus berberidifolia-Cercocarpus betuloides* Shrubland Association (2591)

2167 – SCRUB OAK-GREENBARK CEANOTHUS SHRUBLAND ASSOCIATION
***Quercus berberidifolia-Ceanothus spinosus* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Quercus berberidifolia-Ceanothus spinosus* Shrubland Association occurs as intermittent to continuous stands on dry-mesic, moderate to steep north-facing slopes. The association favors neutral to undulating surfaces on bottoms to upper slopes. *Q. berberidifolia* co-dominates stands at moderate to very high cover, while *C. spinosus* may be co-dominant at moderate to high cover. *Heteromeles arbutifolia* and *Adenostoma fasciculatum* can be present at low to moderate cover.

PHOTO INTERPRETATION SIGNATURE: Stands usually have an uneven texture with taller rounded shrubs over smoother shrubs, with slight color contrast between the species. *Q. berberidifolia* appears as a tall, dark green shrub with an irregularly coarse rounded crown and may occur as individuals or in dense groups. *C. spinosus* can have a moderately tall crown with a smooth texture and green color. *C. spinosus* may be difficult to see if *Q. berberidifolia* has a higher cover in a stand. Dense stands of *Q. berberidifolia* and *C. spinosus* may hide *H. arbutifolia* or *A. fasciculatum* that can mix within the canopy. Much of the time, *Heteromeles* is observed as being light green with shiny, white tips. *A. fasciculatum* appears as coarse red individuals or clumps with a tight, round shape.

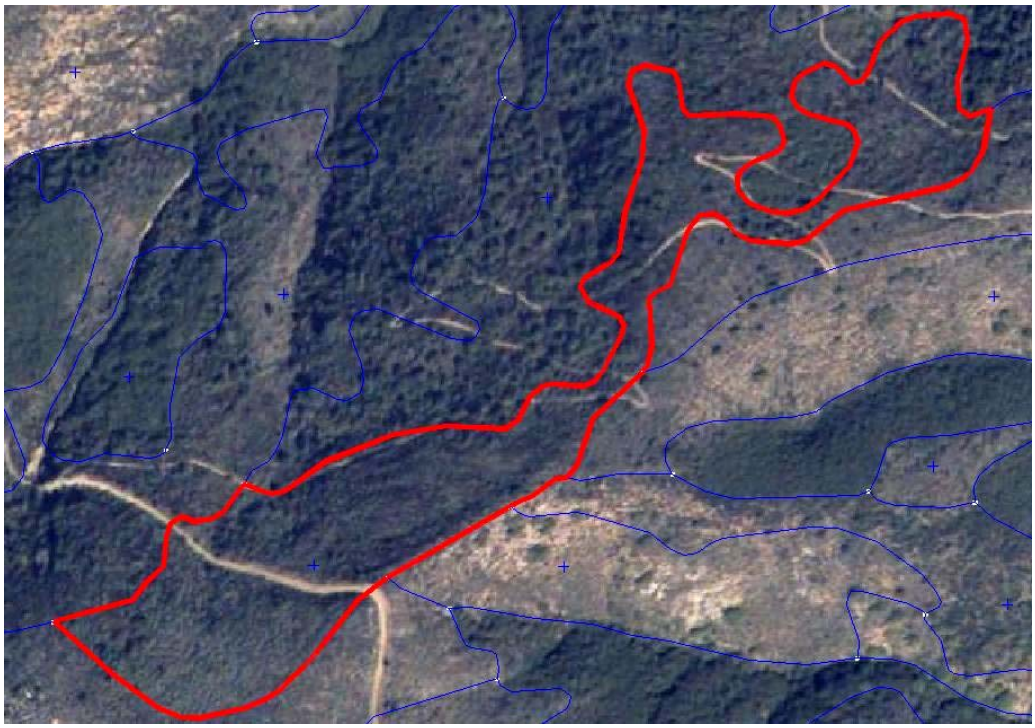
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Juglans californica/Ceanothus spinosus* Woodland/Forest Association (1315)
- *Juglans californica-(Quercus agrifolia)*/Tall Shrubs Woodland Forest Superassociation (6314)
- *Ceanothus oliganthus*-Tall Shrub Shrubland Superassociation (7071)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Cercocarpus betuloides-Ceanothus spinosus* Shrubland Association (2113)
- *Heteromeles arbutifolia-Malosma laurina* Shrubland Association (2138)
- *Quercus berberidifolia* Shrubland Association (2161)
- *Ceanothus cuneatus-Quercus berberidifolia* Shrubland Association (2521)
- *Quercus berberidifolia-Adenostoma fasciculatum* Shrubland Association (2581)
- *Quercus berberidifolia-Cercocarpus betuloides* Shrubland Association (2591)

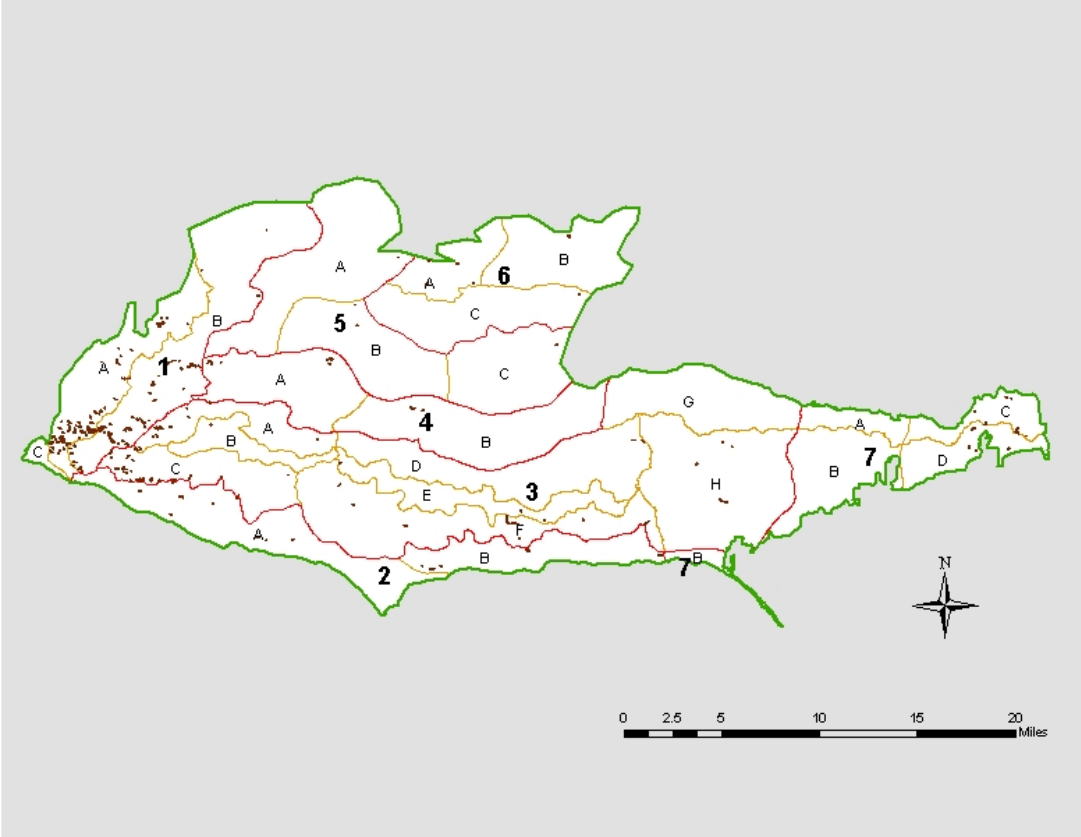
BUSH MONKEY FLOWER SHRUBLAND ALLIANCE



2170 – BUSH MONKEY FLOWER SHRUBLAND ALLIANCE
Mimulus aurantiacus Shrubland Alliance



DISTRIBUTION:



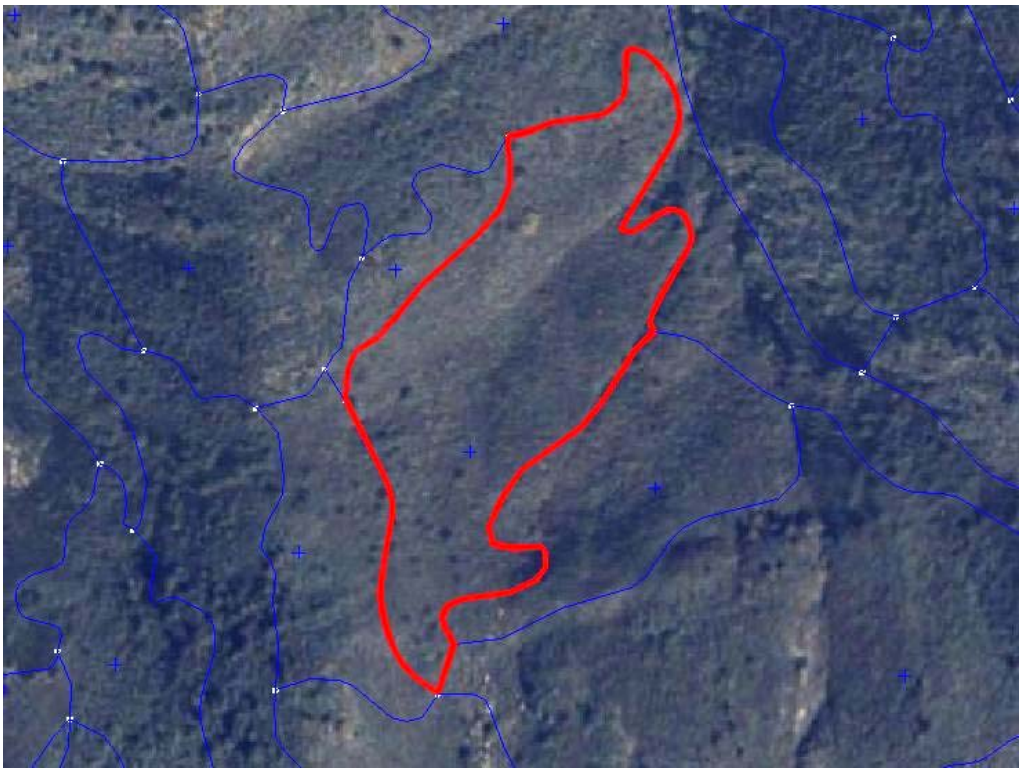
DESCRIPTION: *Mimulus aurantiacus* Shrubland Alliance represents the hierarchical class into which *Mimulus* association types are nested. This alliance is dominated by *Mimulus* at low to high cover. Other dry-mesic shrubs may be present at low cover. This type is found in open to intermittent stands on dry-mesic, north-facing, moderate to steep slopes. The association occurs on neutral or undulating surfaces on lower to upper slopes. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit the association classes well. Very disturbed sites (man, fire recovery, etc.) with *Mimulus* as the dominant shrub are included.

PHOTO INTERPRETATION SIGNATURE: Overall, stands can appear as fine-textured with a wide range of colors. Many species overlap in color signature. This variety of color makes it difficult to identify the individuals comprising a stand. *Mimulus* appears as low growing splotchy clumps, with colors ranging between orange, brown, or reddish brown. Many times *Artemisia californica* is present, but the signature is masked by the variety of other dry-mesic shrubs that occur in this type. *A. californica* typically appears as individuals or in groups with a tan to purple-brown color and a fine texture. *Salvia leucophylla* shrubs are usually obvious white individuals or small patches within the stand. *Toxicodendron diversilobum* has a smooth, clumpy signature, displaying a wide range of colors varying from bright yellow, red, or light green. *Leymus condensatus* is green with a smooth, wispy appearance. However, when dry it can appear tan or brown, sometimes in swarms of brown clumps. When green, it can be confused with *Toxicodendron*, *S. mellifera*, or *Malacothamnus fasciculatus. Malosma laurina* appears as rounded, dark green to light green individuals or small clumps scattered about in stands.

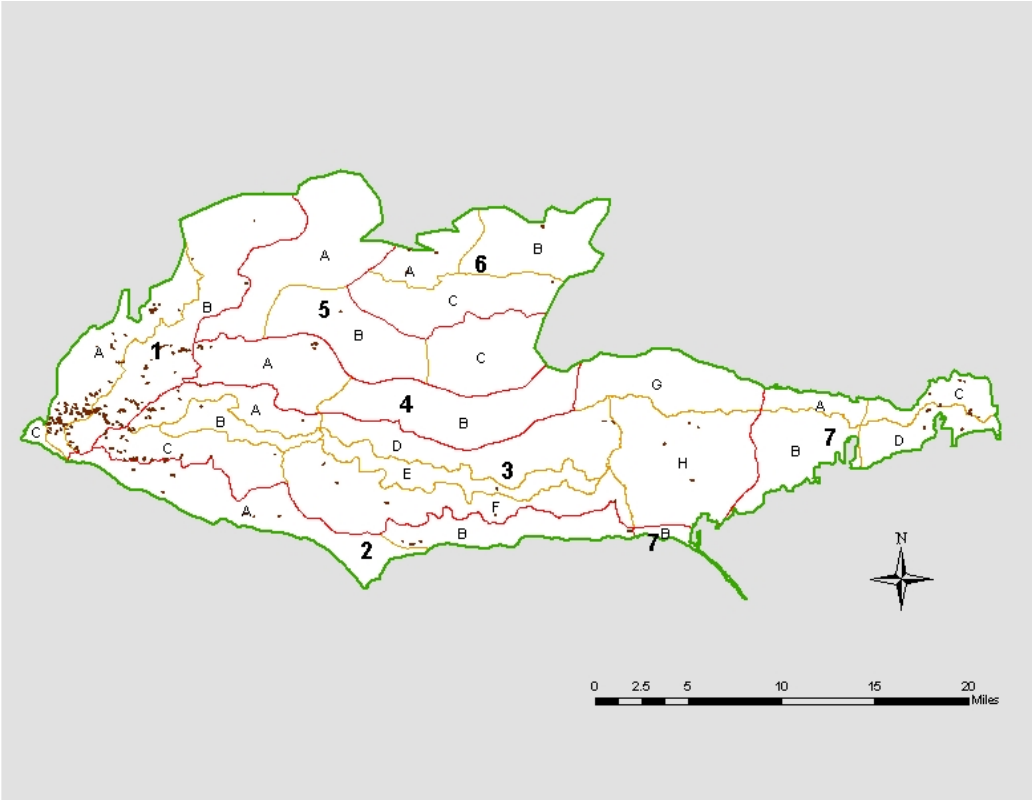
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina* Shrubland Alliance (2140)
- *Artemisia californica* Shrubland Alliance (3210)
- *Salvia leucophylla* Shrubland Alliance (3310)
- *Toxicodendron diversilobum* Shrubland Alliance (3330)
- *Salvia leucophylla-Artemisia californica* Shrubland Suballiance (3390)
- *Leymus condensatus* Herbaceous Alliance (4040)

2172 – BUSH MONKEY FLOWER SHRUBLAND ASSOCIATION
Mimulus aurantiacus Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Mimulus aurantiacus* Shrubland Association is found in open to intermittent, dry-mesic, north-facing stands on moderate to steep slopes. The association occurs on neutral or undulating surfaces on lower to upper slopes. The class is characterized by a dominance of *Mimulus* at low to high cover. *Artemisia californica*, *Salvia leucophylla*, *Toxicodendron diversilobum*, and *Leymus condensatus* may be present at low cover. *Malosma laurina* can occur within the stand at low to moderate cover.

PHOTO INTERPRETATION SIGNATURE: Overall, stands can appear as fine-textured with a wide range of colors. Many species overlap in color signature. This variety of color makes it difficult to identify the individuals comprising a stand. *Mimulus* appears as low growing, splotchy clumps, with colors ranging between orange, brown, or reddish brown. Many times *A. californica* is present, but the signature is masked by the variety of other dry-mesic shrubs that occur in this type. *A. californica* typically appears as individuals or in groups with a tan to purple-brown color and a fine texture. *S. leucophylla* shrubs are usually obvious white individuals or small patches within the stand. *Toxicodendron* has a smooth, clumpy signature, displaying a wide range of colors varying from bright yellow, reddish-orange, or light green. *Leymus* is green with a smooth, wispy appearance. However, when dry it can appear tan or brown, sometimes in swarms of brown clumps. When green, it can be confused with *Toxicodendron*, *S. mellifera*, or *Malacothamnus fasciculatus. Malosma* appears as round, dark green to light green individuals or small clumps scattered about in stands.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Artemisia californica* Shrubland Association (7148)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica/Leymus condensatus* Shrubland Association (3216)
- *Artemisia californica* Shrubland Association (8213)
- *Artemisia californica-Mimulus aurantiacus* Shrubland Association (8214)
- *Malacothamnus fasciculatus-Salvia leucophylla* Shrubland Association (3281)
- *Salvia leucophylla* Shrubland Association (3316)
- *Toxicodendron diversilobum-Artemisia californica/Leymus condensatus* Shrubland Association (3331)
- *Toxicodendron diversilobum-Mimulus aurantiacus* Shrubland Association (3332)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella spp.* Shrubland Association (3396)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)
- *Leymus condensatus* Herbaceous Association (4041)

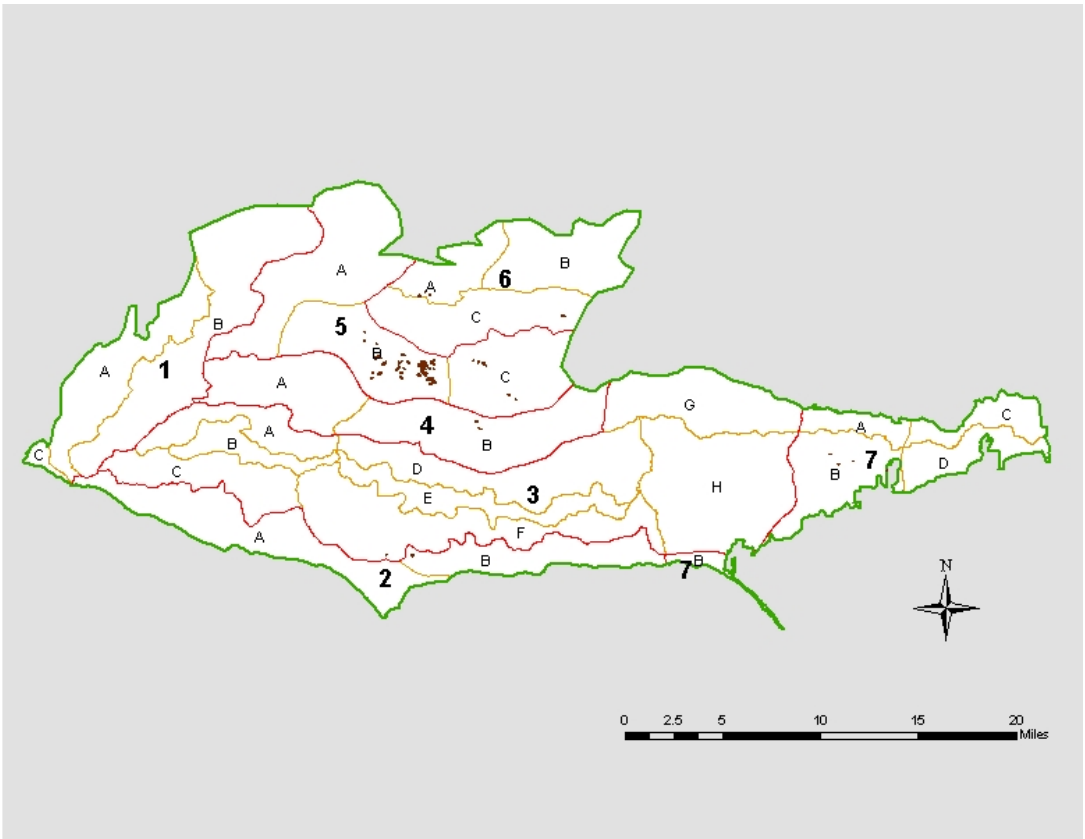
SUGAR BUSH SHRUBLAND ALLIANCE



2190 – SUGAR BUSH SHRUBLAND ALLIANCE
Rhus ovata Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Rhus ovata* Shrubland Alliance represents the hierarchical class into which *R. ovata* association types are nested. This alliance is characterized by a dominance of *R. ovata* at low to high cover. This type occurs as sparse to continuous stands on dry to dry-mesic, gentle to steep slopes. Stands can be north- or south-facing, on concave, neutral, or convex surfaces, and on lower to upper slopes. *Artemisia californica* and *Salvia leucophylla* can co-dominate stands at low to high cover. *Heteromeles arbutifolia* may be present at low to moderate cover and sometimes approaches co-dominance. *Malacothamnus fasciculatus* is usually present at low cover. *Juglans californica* and *Quercus agrifolia* can be present at low cover. *R. ovata* can be difficult to distinguish from other tall shrubs and short trees. Therefore, this alliance is mapped where Rapid Assessment data are provided by the Park and extrapolated to similar polygons near these field sites. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit the association classes well. Very disturbed sites (man, fire recovery, etc.) with *R. ovata* as the dominant shrub are included.

PHOTO INTERPRETATION SIGNATURE: Stands have an uneven texture from coarse tall shrubs over smoother short shrubs, with mottled color due to tone variations of the different species. *R. ovata* typically appears as a coarse, round-crowned, bright green shrub. However, *R. ovata* may also have a duller or darker green tone, which makes it difficult to distinguish from the similar signatures of *Malosma laurina* and *Heteromeles*. *Malosma* and *Heteromeles* both have rounded, coarse crowns, and vary greatly from light to dark green. *A. californica* may appear as purple-brown individuals and sometimes casts a purple overtone on small, white splotches of *S. leucophylla*. In dense stands, this purple undertone blends into the white *S. leucophylla* and can make it difficult for the photo interpreter to discern the cover of *A. californica*. *Malacothamnus fasciculatus* has a wispy, light green appearance that sticks up above the low shrub layer. *Juglans* appears as a tall, bright green round-crowned short tree, while *Q. agrifolia* has a coarse, dark green irregular crown.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

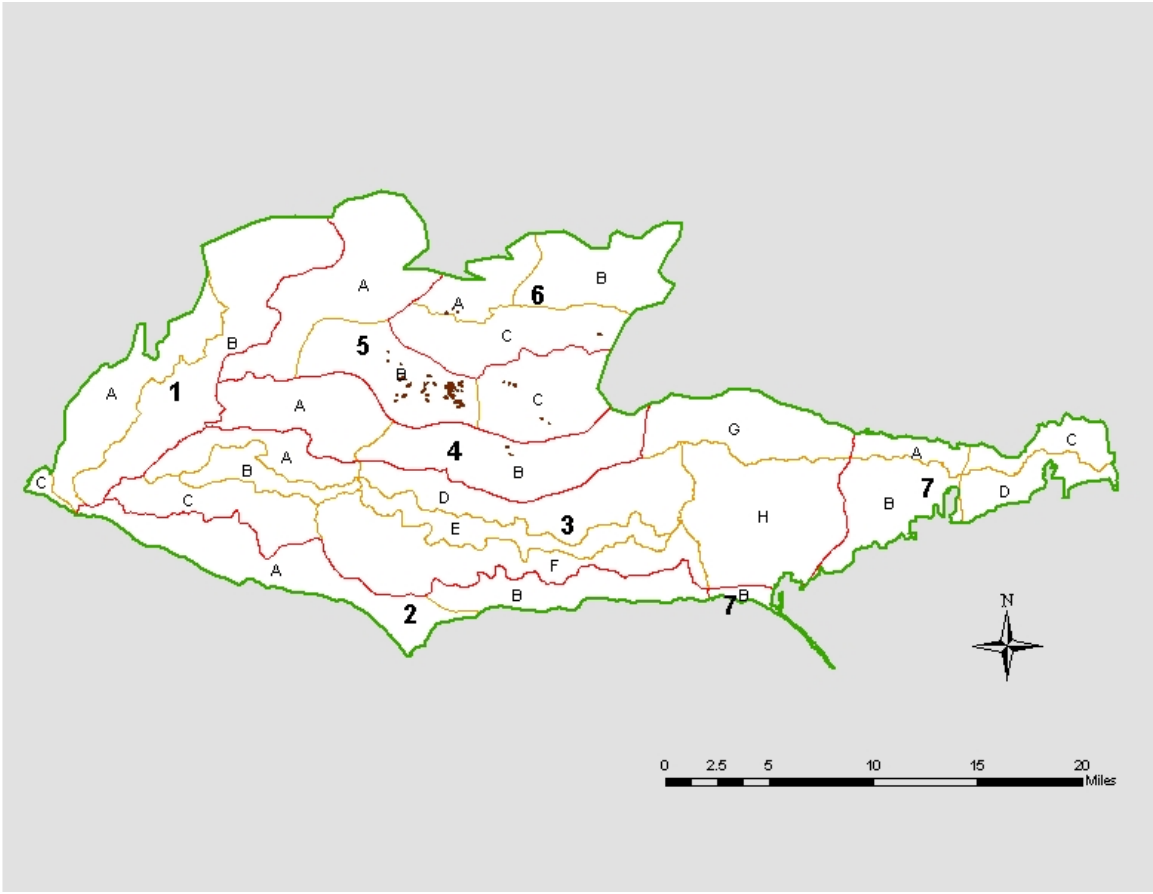
- *Juglans californica* Woodland/Forest Alliance (1310)
- *(Juglans californica)*/Undifferentiated Tall Shrubs Shrubland Mapping Unit (2003)
- *Heteromeles arbutifolia* Shrubland Alliance (2130)
- *Malosma laurina* Shrubland Alliance (2140)
- *Artemisia californica* Shrubland Alliance (3210)
- *Salvia leucophylla-Artemisia californica* Shrubland Suballiance (3390)

2192 – SUGAR BUSH-PURPLE SAGE-CALIFORNIA SAGEBRUSH SHRUBLAND ASSOCIATION

***Rhus ovata-Salvia leucophylla-Artemisia californica* Shrubland Association**



DISTRIBUTION:



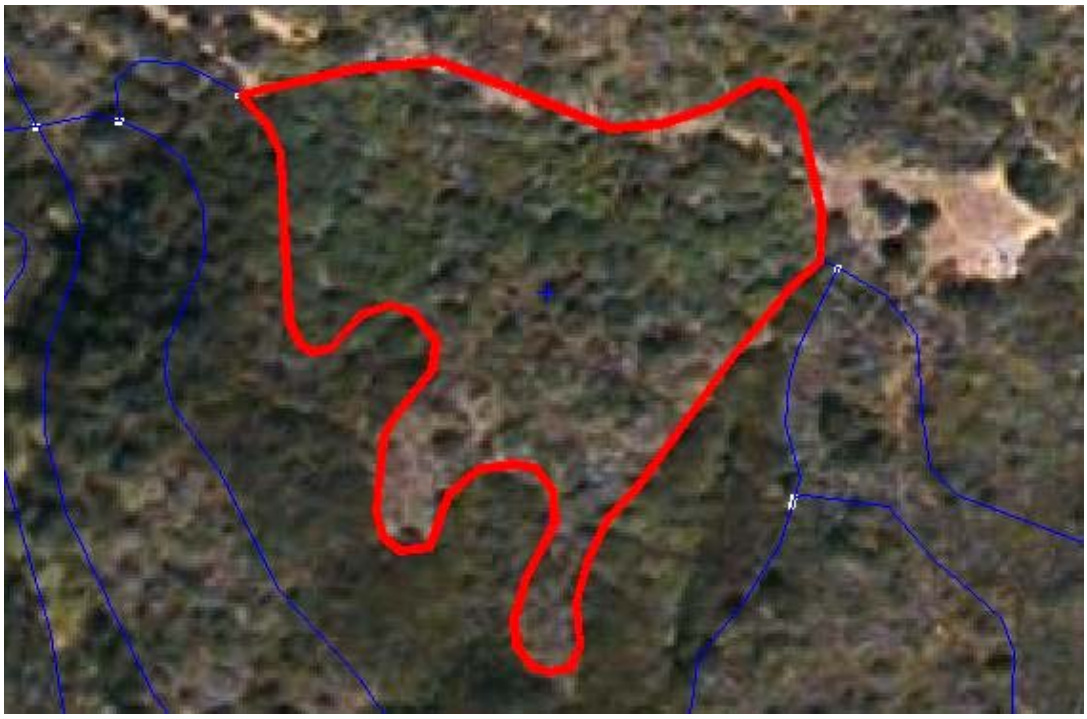
DESCRIPTION: *Rhus ovata-Salvia leucophylla-Artemisia californica* Shrubland Association is found in open to continuous stands on dry-mesic, north-facing, gentle to steep slopes. This association can occur on neutral to undulating surfaces on lower to upper slopes. The class is characterized by the co-dominance of *R. ovata*, *S. leucophylla*, and *A. californica,* with all three ranging from low to high cover. *Malacothamnus fasciculatus* is usually present at low cover. *Heteromeles arbutifolia* may be present at low to moderate cover and sometimes approaches co-dominance. *Juglans californica* and *Quercus agrifolia* can be present at low cover. Because of similarity of signature, *R. ovata* may be difficult to distinguish from other tall shrubs and short trees. Therefore, this alliance is mapped where Rapid Assessment data are provided by the Park and extrapolated to similar polygons near these field sites.

PHOTO INTERPRETATION SIGNATURE: Stands have an uneven texture from coarse tall shrubs over smoother short shrubs, with mottled color due to tone variations of the different species. *R. ovata* typically appears as a coarse, round-crowned, bright green tall shrub. However, *R. ovata* may also have a duller or darker green tone, which makes it difficult to distinguish from the similar signatures of *Malosma* and *Heteromeles*. *Malosma* and *Heteromeles* both have rounded, coarse crowns, and vary greatly from light to dark green. *A. californica* may appear as purple-brown individuals and sometimes cast a purple overtone on small, white splotches of *S. leucophylla*. In dense stands, this purple undertone blends into the white *S. leucophylla* and can make it difficult for the photo interpreter to discern the cover of *A. californica*. *Malacothamnus* has a wispy, light green appearance that is emergent above the shorter shrub layer. *Juglans* appears as a bright green round-crowned short tree, while *Q. agrifolia* has a coarse dark green irregular crown.

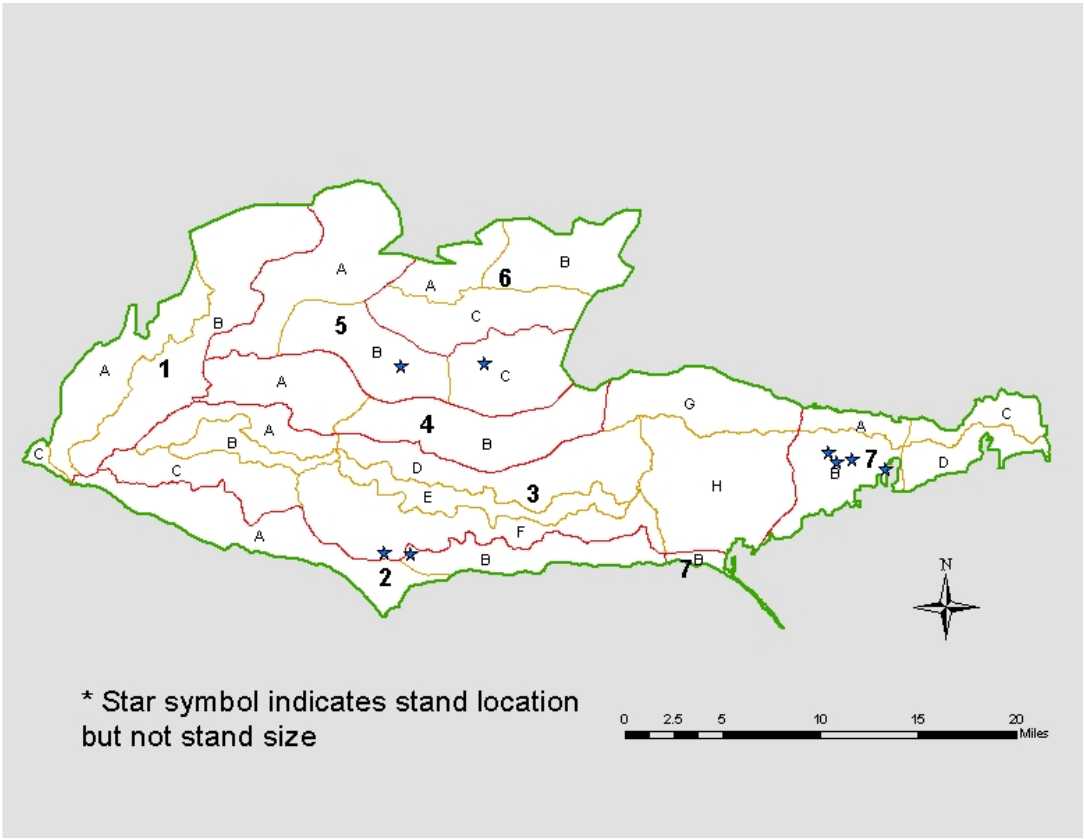
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Juglans californica/Artemisa californica/Leymus condensatus* Woodland/Forest Association (1317)
- *Juglans californica-(Quercus agrifolia)*/Tall Shrub Woodland/Forest Superassociation (6314)
- *(Juglans californica)/*Undifferentiated Tall Shrubs Shrubland Mapping Unit (2003)
- *Heteromeles arbutifolia-Malosma laurina* Shrubland Association (2138)
- *Malosma laurina-Artemisia californica* Shrubland Association (7148)
- *Rhus ovata* Shrubland Association (2193)
- *Artemisia californica* Shrubland Association (8213)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)

2193 – SUGAR BUSH SHRUBLAND ASSOCIATION
Rhus ovata Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Rhus ovata* Shrubland Association occurs as sparse to continuous stands on dry to dry-mesic, gentle to steep slopes. Stands are variable in aspect, can occur on convex, neutral or concave surfaces, and may be on lower to upper slopes. This class is characterized by a strong dominance of *R. ovata* at moderate to high cover. Other species present include *Heteromeles arbutifolia*, *Malacothamnus fasciculatus*, and *Juglans californica*, all at low cover. Because of similarity of signature, *R. ovata* may be difficult to distinguish from other tall shrubs and short trees. Therefore, this alliance is mapped where Rapid Assessment data are provided by the Park and extrapolated to similar polygons near these field sites.

PHOTO INTERPRETATION SIGNATURE: Stands typically appear as coarse-textured green shrubs. *R. ovata* individuals are coarse, round-crowned, and usually bright green. However, *R. ovata* may also have a duller or darker green tone, which makes it difficult to distinguish from the similar signatures of *Malosma laurina* and *Heteromeles*. *Malosma* and *Heteromeles* both have rounded, coarse crowns, and vary greatly from light to dark green. *Malacothamnus* has a wispy, light green appearance that sticks up above the low shrub layer. *Juglans* appears as a tall, bright green tree, while *Q. agrifolia* has a coarse, dark green crown.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Juglans californica-(Quercus agrifolia)*/Tall Shrub Woodland/Forest Superassociation (6314)
- *(Juglans californica)/*Undifferentiated Tall Shrubs Shrubland Mapping Unit (2003)
- *Heteromeles arbutifolia-Malosma laurina* Shrubland Association (2138)
- *Malosma laurina* Shrubland Association (7142)
- *Malosma laurina-Rhus ovata-Ceanothus megacarpus* Shrubland Association (21415)
- *Rhus ovata-Salvia leucophylla-Artemisia californica* Shrubland Association (2192)

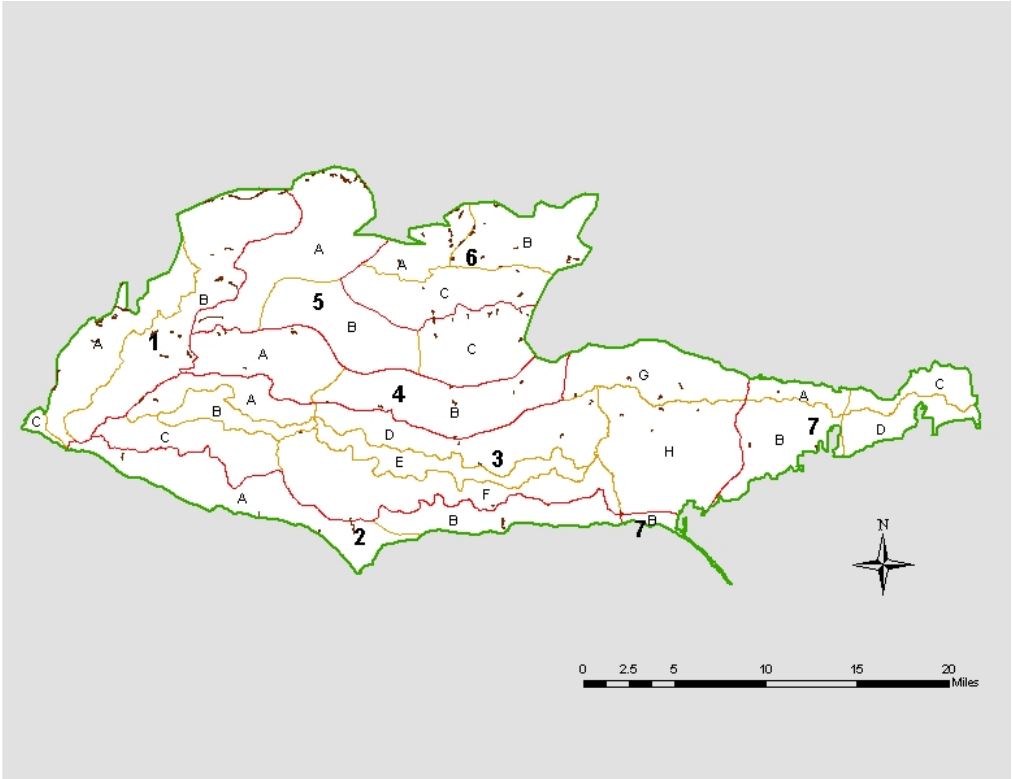
MULE FAT SHRUBLAND ALLIANCE



2210 – MULE FAT SHRUBLAND ALLIANCE
Baccharis salicifolia Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Baccharis salicifolia* Shrubland Alliance represents the hierarchical class into which *B. salicifolia* association types are nested. This alliance occurs as sparse to intermittent stands in mesic to wet steam bottoms and terraces. This association may vary in aspect and is typically found on flat or concave surfaces. *B. salicifolia* dominates this class at low to high cover with *Salix* spp., *Platanus racemosa*, and *Quercus agrifolia* occurring as emergent trees at very low cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *B. salicifolia* as the dominant shrub are included.

PHOTO INTERPRETATION SIGNATURE: *B. salicifolia* appears as dark green to brown, rounded-crowned shrubs that can occur in clumps or as individuals. Dense patches have a smooth texture. *Salix* spp. appear as tall, wispy, round-crowned shrubs with a shiny green color and a fine texture. *Platanus* is a tall tree with a bright green color, irregular crown, and a coarse texture. *Q. agrifolia* is a tall tree with a dark green color, coarse texture, and a billowy crown.

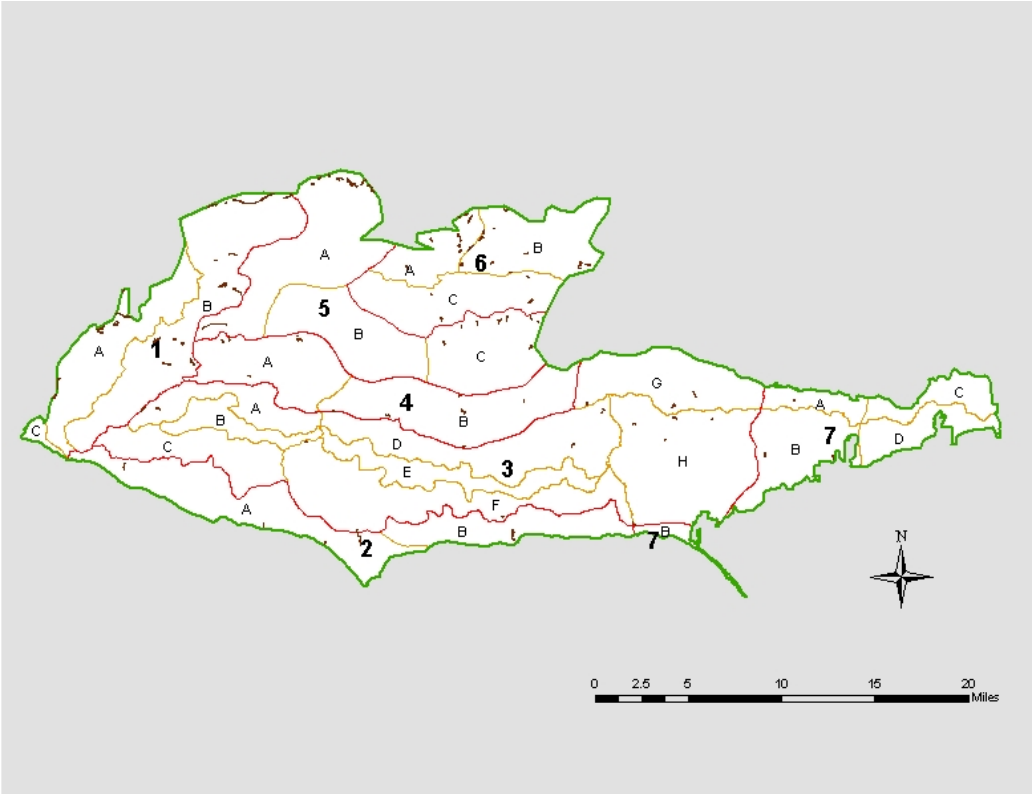
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salix* spp. Woodland/Forest Superalliance (1410)
- *Platanus racemosa* Woodland/Forest Alliance (1450)
- *Lepidospartum squamatum* Shrubland Alliance (2220)
- *Baccharis pilularis* Shrubland Alliance (2310)

2212 – MULE FAT RIPARIAN SHRUBLAND ASSOCIATION
Baccharis salicifolia Riparian Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Baccharis salicifolia* Riparian Shrubland Association occurs as sparse to intermittent stands in mesic to wet steam bottoms and terraces. This association may vary in aspect and is typically found on flat or concave surfaces. *B. salicifolia* dominates this class at low to high cover. *Salix* spp., *Platanus racemosa*, and *Quercus agrifolia* may be emergent at very low cover.

PHOTO INTERPRETATION SIGNATURE: The stand can be homogeneous in color with a smooth texture when dense and uninterrupted. Otherwise it will have an uneven texture and mottled color. *B. salicifolia* appears as a short, dark green to brown shrub that can occur in clumps or as individuals. *Salix* spp. appear as tall, wispy, round-crowned shrubs with a shiny green color. *Platanus* is a tall tree with a bright green color, irregular crown and a coarse texture. *Q. agrifolia* is a tall tree with a dark green color, coarse texture, and a billowy crown.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

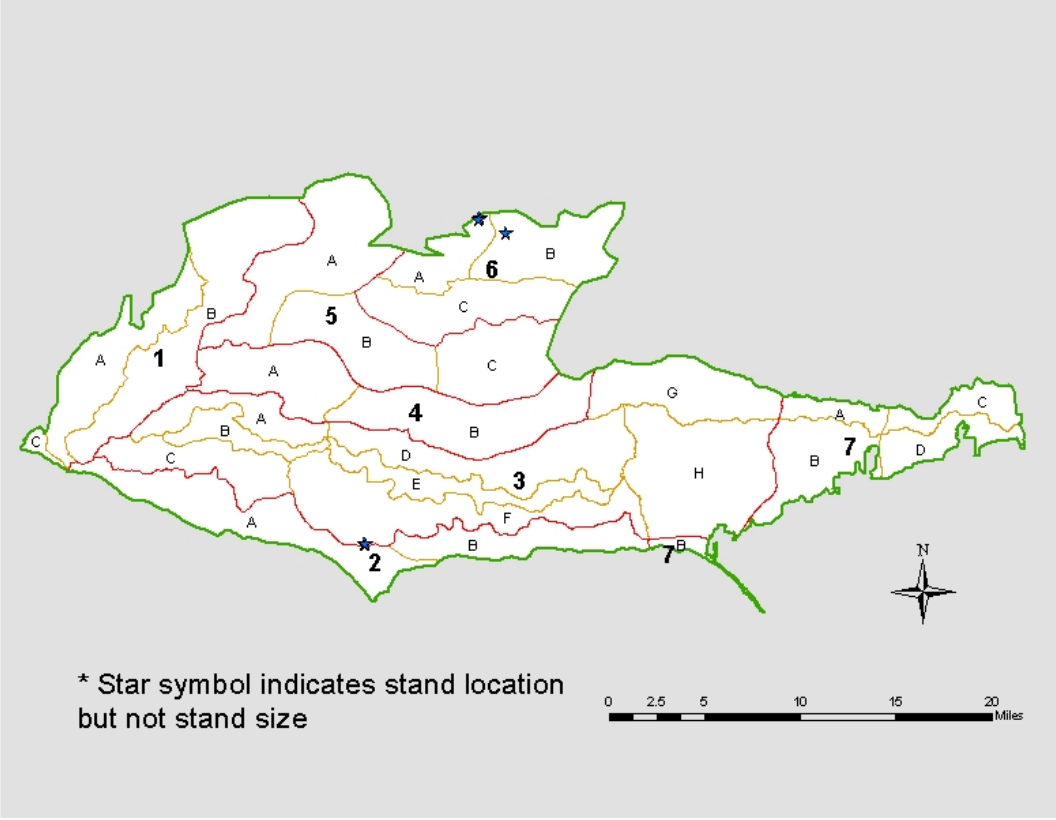
- *Salix* spp./*Baccharis salicifolia* Woodland/Forest Mapping Unit (1412)
- *Salix* spp. scrubby-(*Platanus racemosa* scrubby)/*Baccharis salicifolia* Woodland/Forest Mapping Unit (1414)
- *Platanus racemosa-Quercus agrifolia/Baccharis salicifolia* South Coast Woodland/Forest Association (1458)
- *Lepidospartum squamatum* Shrubland Alliance (2220)
- *Baccharis pilularis*/Annual Grass-Herb Shrubland Association (2311)

SCALE BROOM SHRUBLAND ALLIANCE

2220 – SCALE BROOM SHRUBLAND ALLIANCE
Lepidospartum squamatum Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Lepidospartum squamatum* Shrubland Alliance occurs as sparse to intermittent stands in mesic to wet stream bottoms and terraces. This alliance may vary in aspect and is typically found on flat or concave surfaces. *L. squamatum* dominates this class at low to moderate cover. *Baccharis salicifolia* may be present in the shrub layer at low cover. *Salix* spp., *Platanus racemosa*, and *Quercus agrifolia* and may be emergent at very low cover. This alliance is a rare type within the region and is mapped where Rapid Assessment Plots are provided by the Park.

PHOTO INTERPRETATION SIGNATURE: The *L. squamatum* signature is very similar to that of *B. salicifolia.* It appears as a short, dark green to brown shrub that can occur in clumps or as individuals. *Salix* spp. appear as tall, wispy, rounded-crowned shrubs with a shiny green color. *P. racemosa* is a tall tree with bright green color, irregular crown, and coarse texture. *Q. agrifolia* is a tall tree with a dark green color, coarse texture, and a billowy crown.

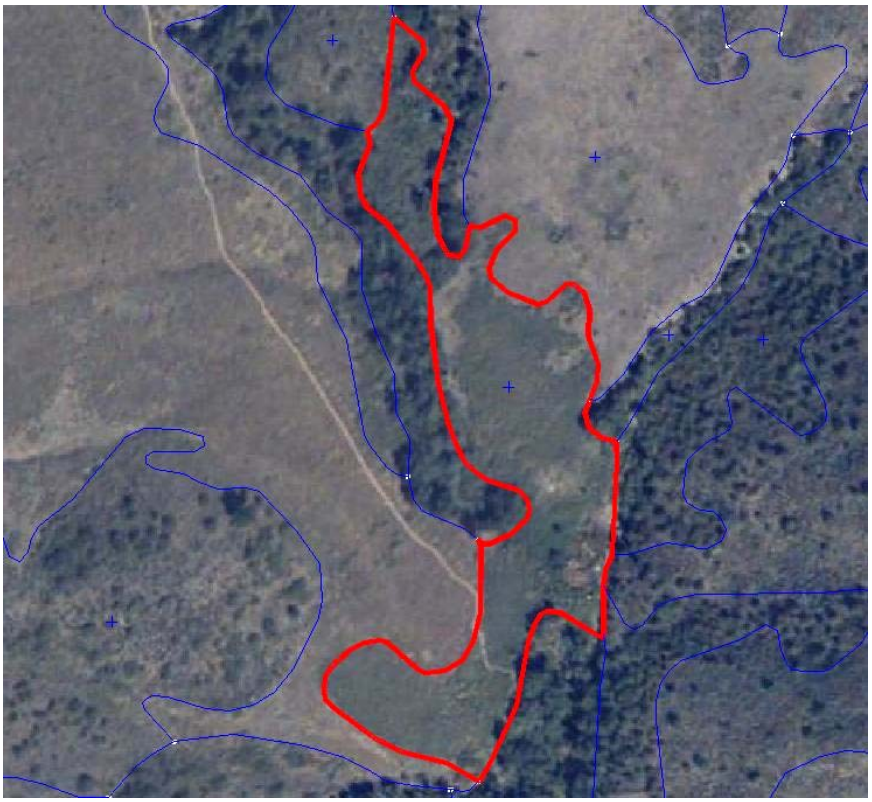
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salix* spp. Woodland/Forest Superalliance (1410)
- *Platanus racemosa* Woodland/Forest Alliance (1450)
- *Baccharis salicifolia* Shrubland Alliance (2210)
- *Baccharis pilularis* Shrubland Alliance (2310)

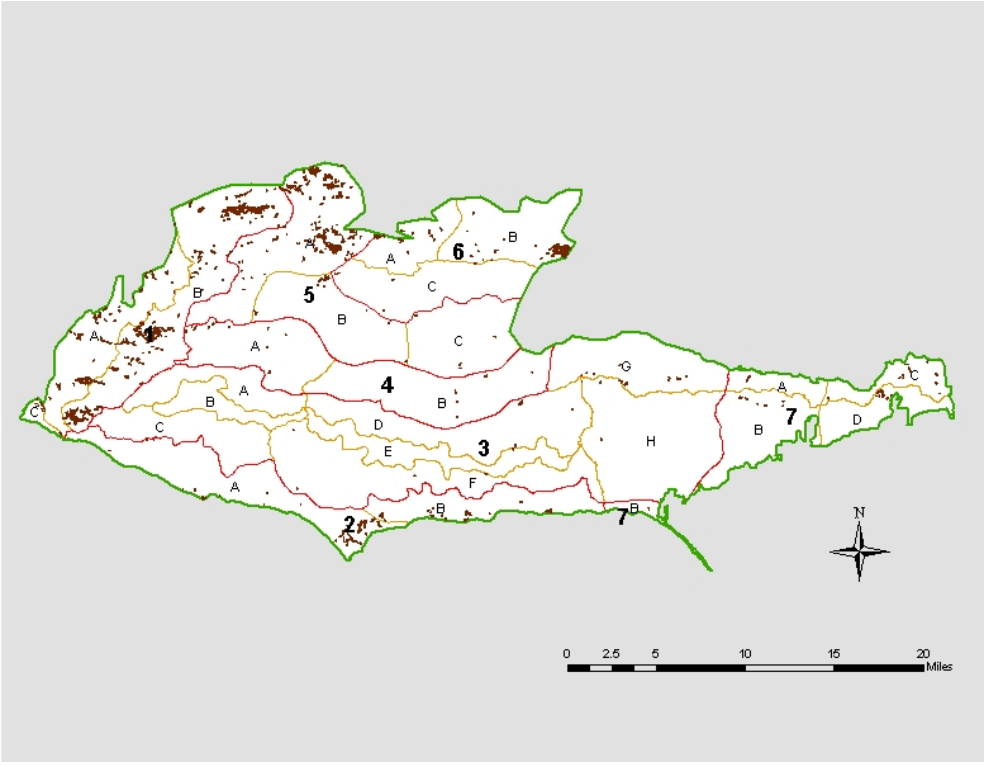
COYOTE BRUSH SHRUBLAND ALLIANCE



2310 – COYOTE BRUSH SHRUBLAND ALLIANCE
Baccharis pilularis Shrubland Alliance



DISTRIBUTION:



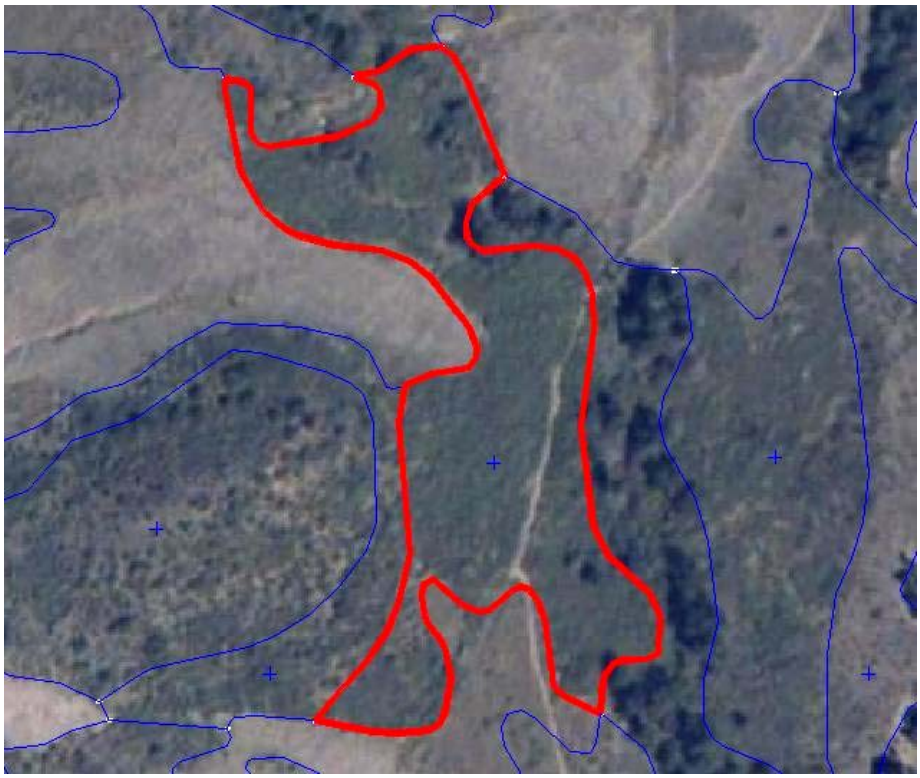
DESCRIPTION: *Baccharis pilularis* Shrubland Alliance represents the hierarchical class into which *B. pilularis* association types are nested. The alliance is found in sparse to intermittent stands on dry-mesic, gentle to moderately steep slopes. Stands vary in aspect, but occur on neutral to undulating surfaces on bottom to mid slopes. *B. pilularis* typically dominates stands at low to high cover. However, *B. pilularis* may co-dominate with *Artemisia californica*, each at low to high cover. *Malosma laurina* and *Salvia leucophylla* can sub-dominate, and may also approach co-dominance. Each has a very low to moderate cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *B. pilularis* as the dominant shrub are included.

PHOTO INTERPRETATION SIGNATURE: The stand can be homogeneous or mottled in appearance. A mottled appearance is due to the tall shrubs over the short shrubs and herbaceous layers. *B. pilularis* appears as short green dots or splotches that may occur in clumps or as individuals. It has a fine texture when in homogeneous patches. *A. californica* typically has a purple-brown color. It appears as individuals or in clumps or groups, and has a fine texture. *Malosma* is a tall shrub occurring as scattered light to dark green individuals with a rounded crown. *S. leucophylla* is a short shrub with white to silver gray color and a smooth texture. The herbaceous layer varies in color from light tan to dark brown, with a smooth texture.

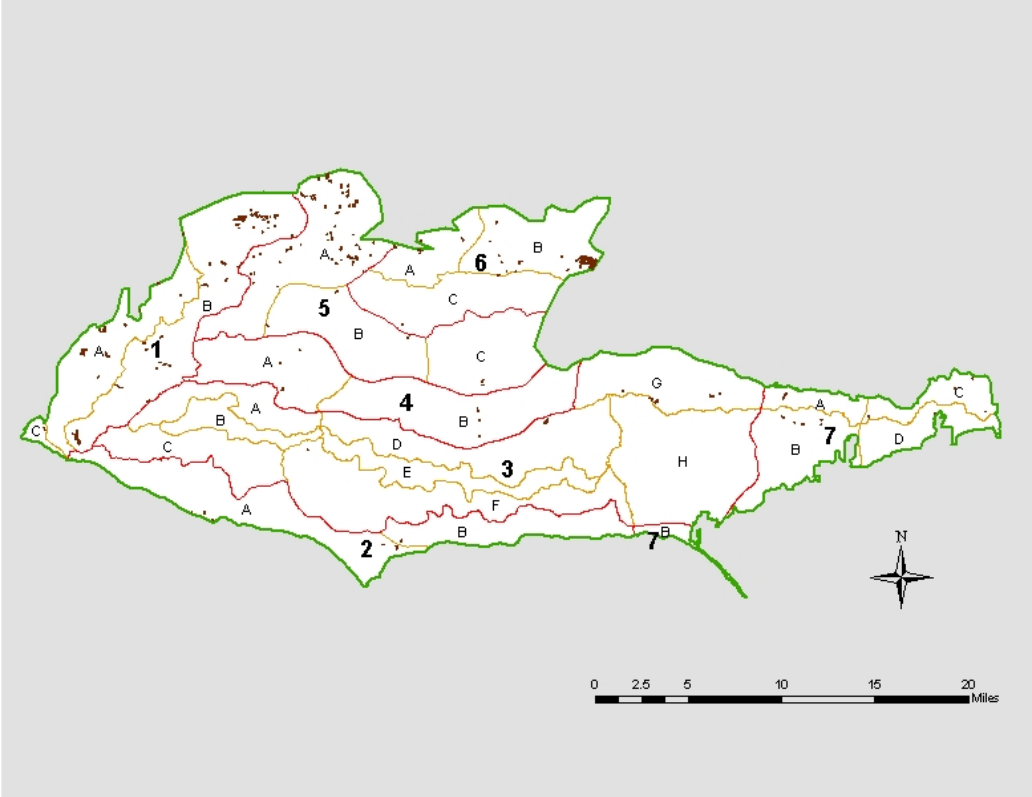
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Baccharis salicifolia* Shrubland Alliance (2210)
- *Artemisia californica* Shrubland Alliance (3210)
- *Malacothamnus fasciculatus* Shrubland Alliance (3280)
- *Salvia mellifera* Shrubland Alliance (3320)
- *Foeniculum vulgare* Herbaceous Alliance (4760)
- California Annual Grassland/Herbland Alliance (5000)

2311 – COYOTE BRUSH/ANNUAL GRASS-HERB SHRUBLAND ASSOCIATION
Baccharis pilularis/Annual Grass-Herb Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Baccharis pilularis*/Annual Grass-Herb Shrubland Association is found in sparse to intermittent stands on dry-mesic, gentle to moderately steep slopes. This association varies in aspect and occurs on neutral to undulating surfaces on bottoms to middle slopes. *B. pilularis* strongly dominates the shrub layer at low to high cover, typically with a low to high cover herbaceous understory.

PHOTO INTERPRETATION SIGNATURE: When *B. pilularis* occurs in dense homogenous patches, it has a fine texture. When mixed with grassland, it is mottled in color with an uneven texture. *B. pilularis* appears as short green dots or splotches that may occur in clumps or as individuals. The herbaceous layer varies in color from light tan to dark brown, with a smooth texture.

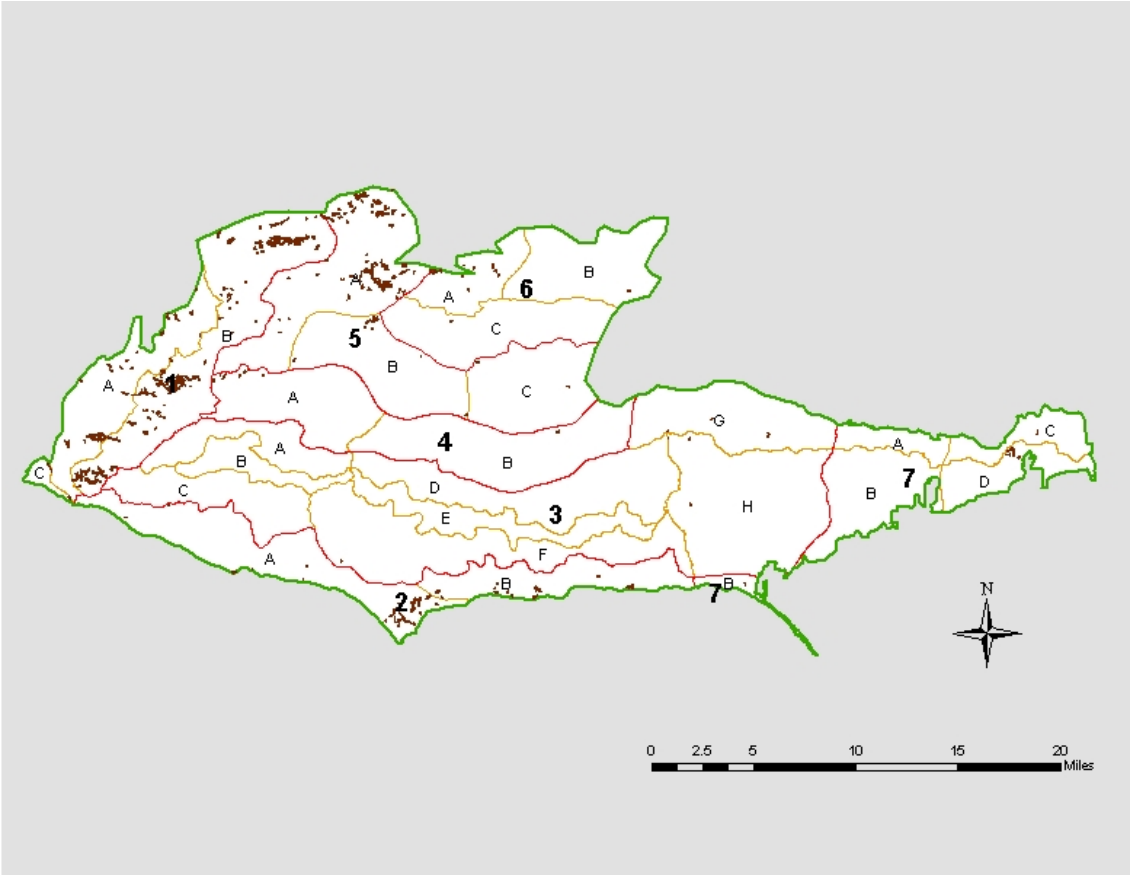
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Baccharis salicifolia* Riparian Shrubland Association (2212)
- *Malacothamnus fasciculatus* Shrubland Association (3287)
- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)
- *Foeniculum vulgare* Herbaceous Alliance (4760)
- California Annual Grassland/Herbland Alliance (5000)

2313 – COYOTE BRUSH-CALIFORNIA SAGEBRUSH SHRUBLAND ASSOCIATION
***Baccharis pilularis-Artemisia californica* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Baccharis pilularis-Artemisia californica* Shrubland Association occurs as sparse to intermittent stands on dry-mesic, gentle to moderately steep slopes. This association varies in aspect and occurs on neutral to undulating surfaces on bottom to mid slopes. *B. pilularis* and *A. californica* each can dominate or co-dominate at low to high cover. In some instances, *Malosma laurina* and *Salvia leucophylla* may sub-dominate, and at times can approach co-dominance. Each can range from very low to moderate cover.

PHOTO INTERPRETATION SIGNATURE: The stand is typically mottled in appearance with an uneven texture reflecting the tall shrubs over the short shrubs and herbaceous layers. *B. pilularis* appears as short, green dots or splotches that may occur in clumps or as individuals. It has a fine texture when in homogeneous patches. *A. californica* typically has a purple-brown color. It appears as individuals or in clumps or groups, and has a fine texture. *Malosma* is a tall shrub occurring as scattered individuals with a rounded crown. Its signature color is light to dark green. *S. leucophylla* is a short shrub with white to silver gray color with a smooth texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Baccharis pilularis*/Annual Grass-Herb Shrubland Association (2311)
- *Artemisia californica* Shrubland Association (8213)
- *Malacothamnus fasciculatus-Salvia leucophylla* Shrubland Association (3281)
- *Malacothamnus fasciculatus-Malosma laurina* Shrubland Association (3286)
- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)

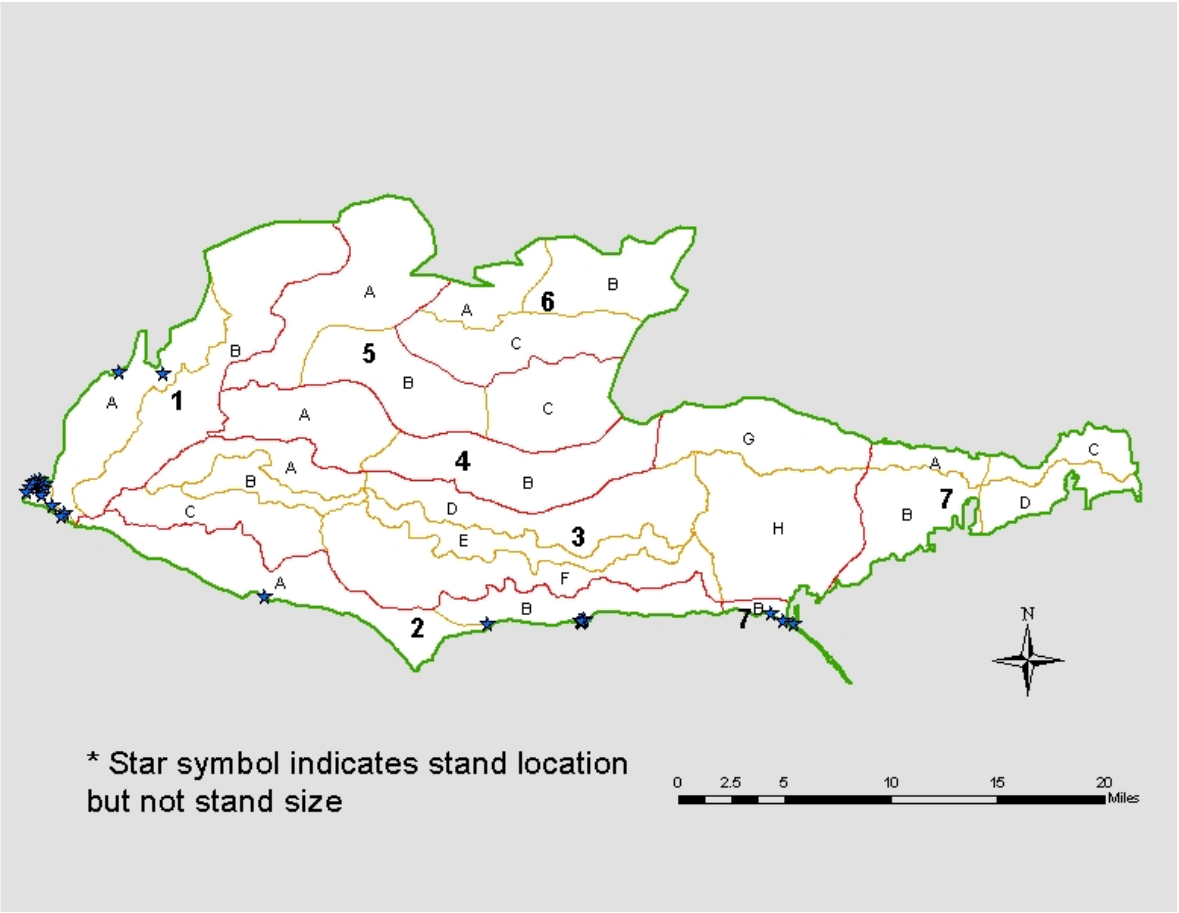
QUAIL BUSH SHRUBLAND ALLIANCE



2330 – QUAIL BUSH SHRUBLAND ALLIANCE
Atriplex lentiformis Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: The *Atriplex lentiformis* Shrubland Alliance occurs in sparse to open stands of shrubs on disturbed coastal embankments along Highway 1, upper margins of the Mugu Marshland, and at Malibu Lagoon. It favors flat dry sites along the coast and in the marsh.

PHOTO INTERPRETATION SIGNATURE: *A. lentiformis* is gray-green in color with a rounded crown and coarse texture, occurring as individuals. In the marshlands the stand is mottled with *A. lentiformis* emergent over marsh herbaceous vegetation.

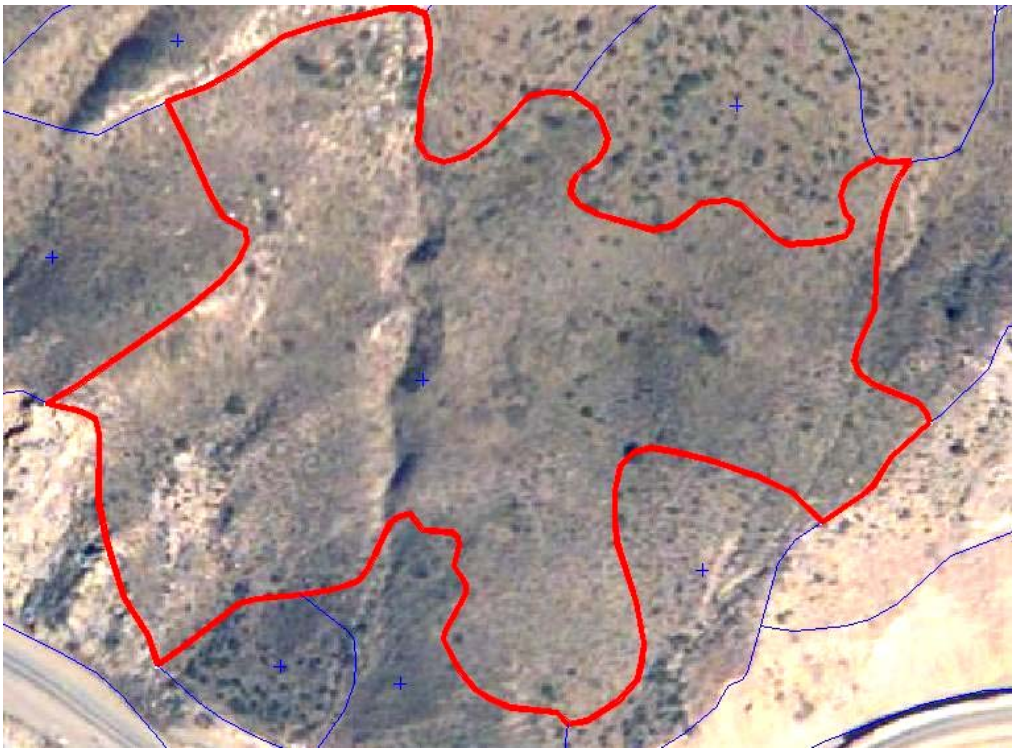
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salicornia virginica-Brassica nigra* Herbaceous Association (4529)

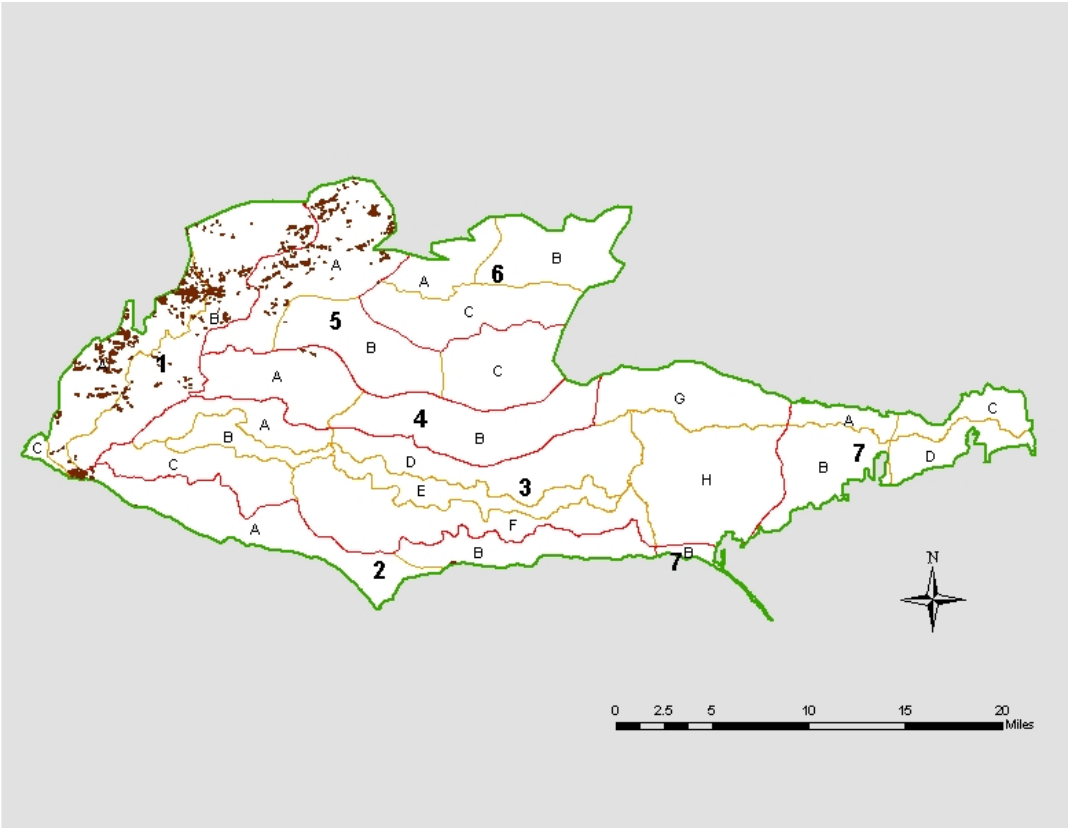
COAST PRICKLY PEAR SHRUBLAND ALLIANCE



2410 – PRICKLY PEAR SHRUBLAND ALLIANCE
Opuntia spp. Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Opuntia* spp. Shrubland Alliance represents the hierarchical class into which *Opuntia* spp. association types are nested. The alliance is found in sparse to dense stands on dry, south-facing, moderate to steep slopes. Some stands occur on cooler, dry-mesic, north-facing slopes. The alliance favors neutral, concave, convex, and undulating surfaces on lower to upper slopes and ridge tops. *Opuntia* spp. may dominate a stand at low to high cover. Other coastal sage scrub species including *Artemisia californica, Encelia californica, Eriogonum fasciculatum, Malosma laurina,* and *Salvia mellifera* can co-dominate with the *Opuntia* spp. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *Opuntia spp.* as the dominant shrub are included.

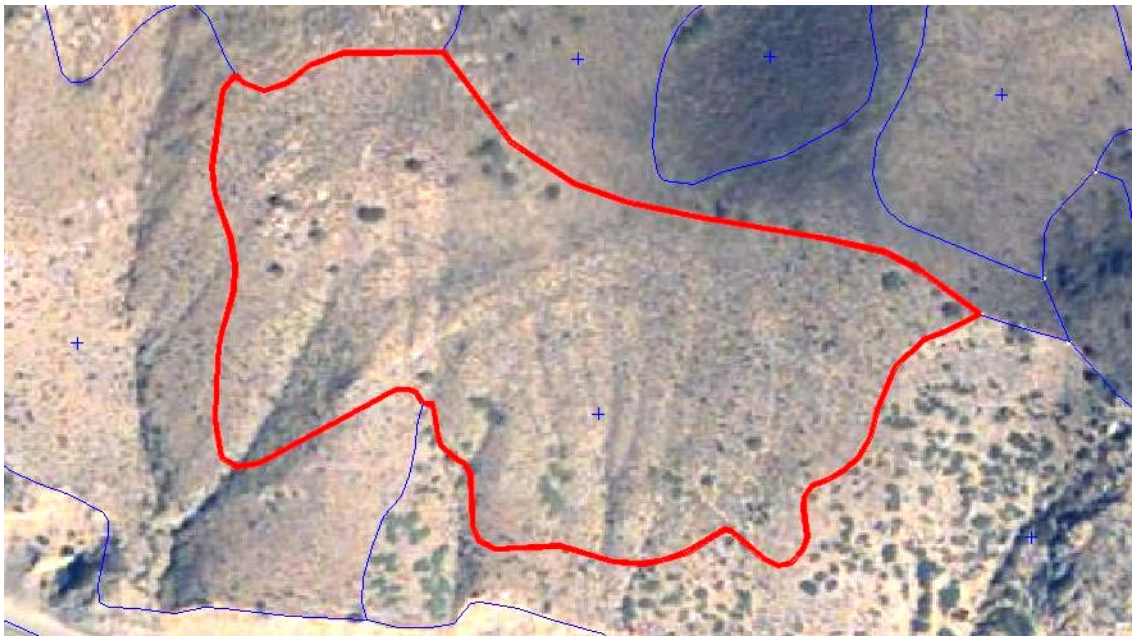
PHOTO INTERPRETATION SIGNATURE: Typically, the stand has a mottled appearance. *Opuntia* spp. have an iridescent to almost transparent yellow-green to gray-green splotchy appearance and are more easily photo interpreted when they occur as dense patches. The plants are short with an open crown, which allows isolated individual plants to hide among the other shrubs in the stand. The individual coastal sage scrub species are not easily identifiable because they tend to intermix and are similar in signature under the dry conditions of this alliance's environment. *A. californica* has a tan to purple-brown color and a fine texture. *Encelia* has a reddish-brown color, with a short, smooth texture. *Eriogonum fasciculatum* appears as very small round individual shrubs whose signature is typically reddish-brown to orange-brown. The signature in some areas may also be gray to tan with a fine to slightly coarse texture. *Malosma* is a tall shrub occurring as scattered individuals with a rounded crown. Its signature color is light to dark green. *S. mellifera* appears as tan to green individuals or patches, with a fine texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

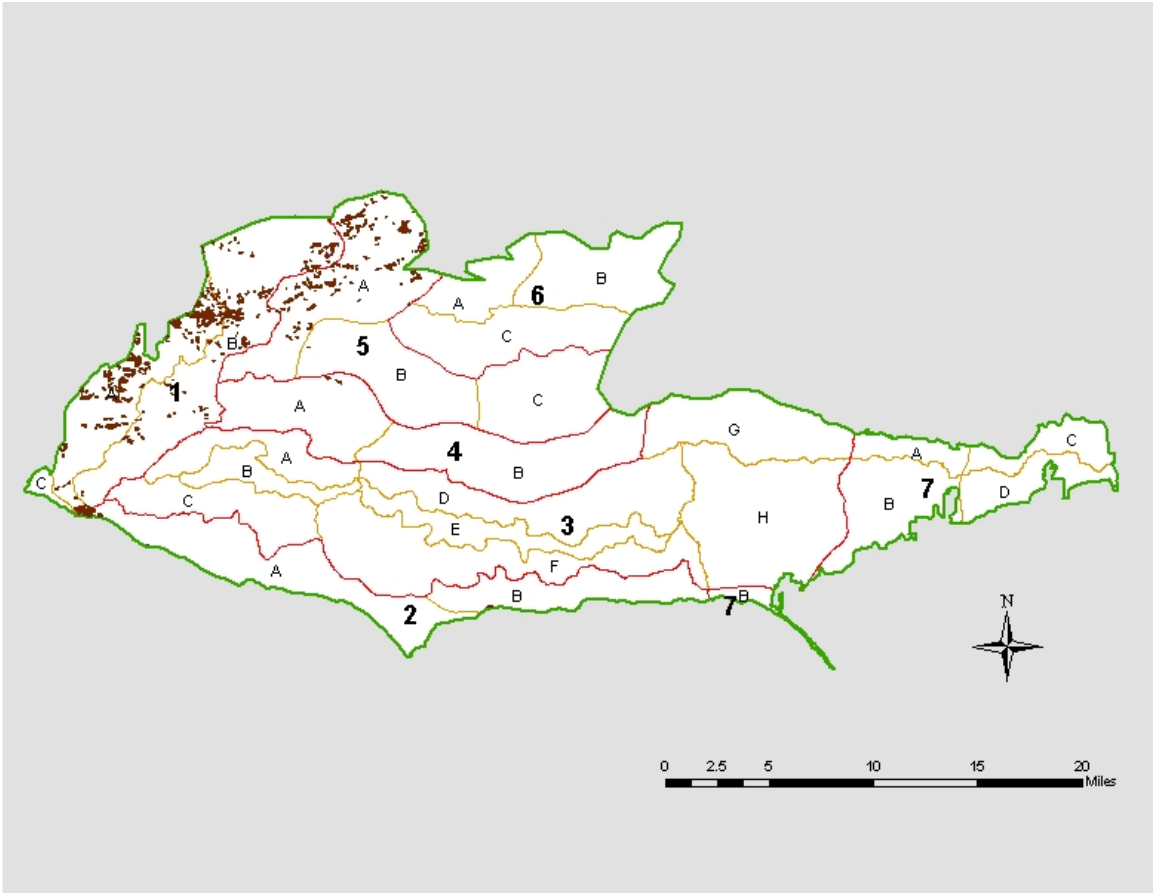
- *Malosma laurina* Shrubland Alliance (2140)
- *Rhus integrifolia* Shrubland Alliance (2150)
- *Artemisia californica* Shrubland Alliance (3210)
- *Encelia californica* Shrubland Alliance (3220)
- *Malacothamnus fasciculatus* Shrubland Alliance (3280)
- *Salvia mellifera* Shrubland Alliance (3320)
- *Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance (3370)

2412 – PRICKLY PEAR-MIXED COASTAL SAGE SCRUB SHRUBLAND ASSOCIATION

Opuntia spp.-Mixed Coastal Sage Scrub Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Opuntia* spp.-Mixed Coastal Sage Scrub Shrubland Association typically occurs as sparse to dense stands on dry, south-facing, moderate to steep slopes. Some stands occur on cooler, dry-mesic, north-facing slopes. The association favors neutral, concave, convex, and undulating surfaces on lower to upper slopes and ridge tops. *Opuntia* spp. may dominate a stand at low to very high cover. Other coastal sage scrub species including *Artemisia californica, Encelia californica, Eriogonum fasciculatum, Malosma laurina,* and *Salvia mellifera* can co-dominate with the *Opuntia* spp.

PHOTO INTERPRETATION SIGNATURE: Typically, the stand has a mottled appearance. *Opuntia* spp. has an iridescent to almost transparent, yellow-green to gray-green splotchy appearance and is more easily photo interpreted when they occur as dense patches. The plants are short with an open crown, which allows isolated individual plants to hide among other shrubs in the stand. The individual coastal sage scrub species are not easily identifiable because they tend to intermix and are similar in signature under the dry conditions of this association's environment. *A. californica* has a tan to purple-brown color and a fine texture. *Encelia* has a reddish-brown color, with a short, smooth texture. *Eriogonum fasciculatum* appears as very small round individual shrubs whose signature is typically reddish-brown to orange-brown. The signature in some areas may also be gray to tan with a fine to slightly coarse texture. *Malosma* is a tall shrub occurring as scattered individuals with a rounded crown. Its signature color is light to dark green. *S. mellifera* appears as tan to green individuals or patches, with a fine texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Eriogonum cinereum* Shrubland Association (2141)
- *Malsoma laurina-Salvia mellifera* Shrubland Association (2148)
- *Malosma laurina-Artemisia californica* Shrubland Association (7148)
- *Malosma laurina-Eriogonum fasciculatum* Shrubland Association (21423)
- *Rhus integrifolia-Opuntia* spp.*-Eriogonum fasciculatum* Shrubland Association (2151)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica* Shrubland Association (8213)
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Encelia californica-(Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera)* Shrubland Superassociation (3228)
- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonumfasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)
- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Association(8329)
- *Artemisia californica-Eriogonum fasciculatum*/Annual Grass-Herb Shrubland Association (3371)

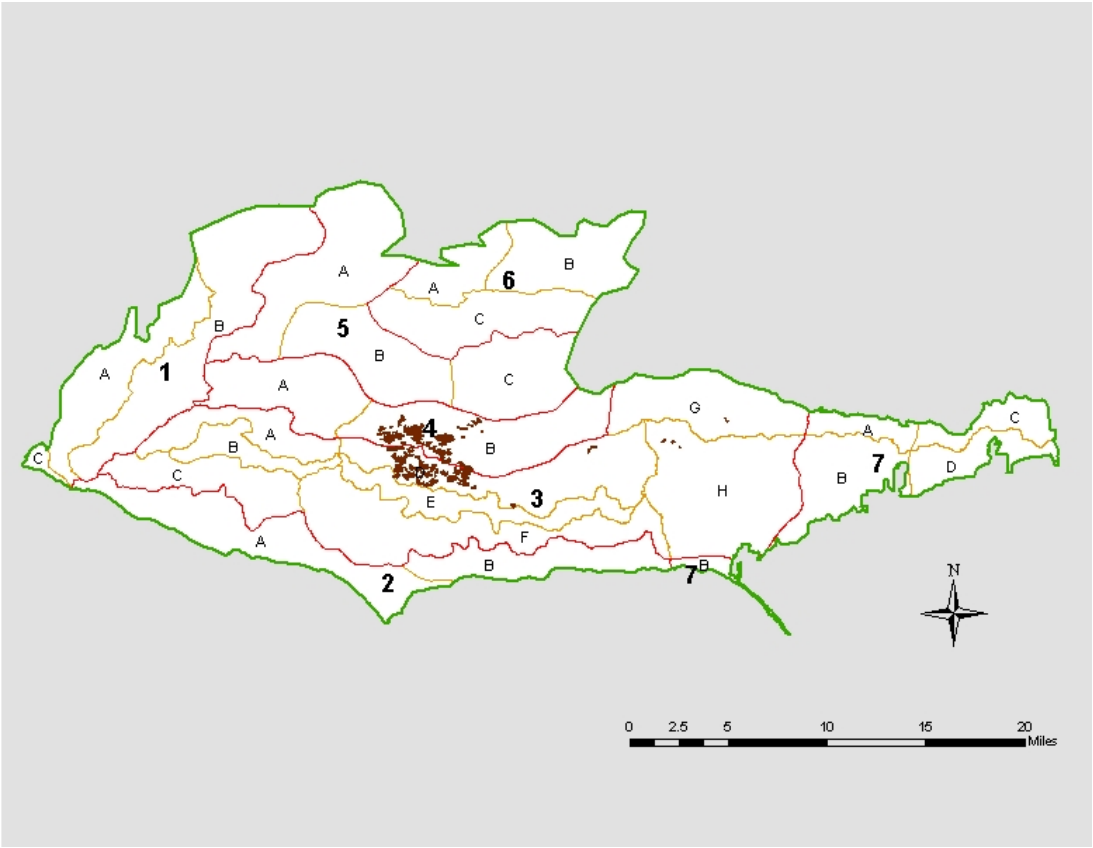
CHAMISE-WEDGE LEAF CEANOTHUS SHRUBLAND ALLIANCE



2510 – CHAMISE-WEDGE LEAF CEANOTHUS SHRUBLAND ALLIANCE
Adenostoma fasciculatum-Ceanothus cuneatus Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Alliance represents the hierarchical class into which *Adenostoma fasciculatum-Ceanothus cuneatus* association types are nested. This class is characterized by a co-dominance of *A. fasciculatum* and *C. cuneatus*. Cover of *A. fasciculatum* ranges from low to high cover, while *C. cuneatus* ranges from low to moderate cover. The alliance occurs as open to continuous stands on dry-mesic, moderately steep to steep slopes. Stands are variable in aspect and favor convex to undulating surfaces on lower to upper slopes and ridge tops. *Salvia mellifera* and *Eriogonum fasciculatum* may be minor components of the stand at low cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *A. fasciculatum* and *C. cuneatus* as the dominant shrubs are included. *Ceanothus cuneatus & Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance (2008) is mapped in areas where one or both *Ceanothus cuneatus* alliances (2510/2520) may be present, but because of signature and environmental similarity, neither is discernible for alliance mapping. In chaparral environments where the signature is not distinctive and the stands potentially contain *Cercocarpus betuloides* and/or other *Ceanothus* species, the *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006) is mapped. *Ceanothus* spp.-*Adenostoma fasciculatum* Shrubland Mapping Unit (2009) is mapped in areas where *Ceanothus* spp. and *A. fasciculatum* are present, but the *Ceanothus* species (*C. crassifolius, C. cuneatus,* or *C. megacarpus*) cannot be determined.

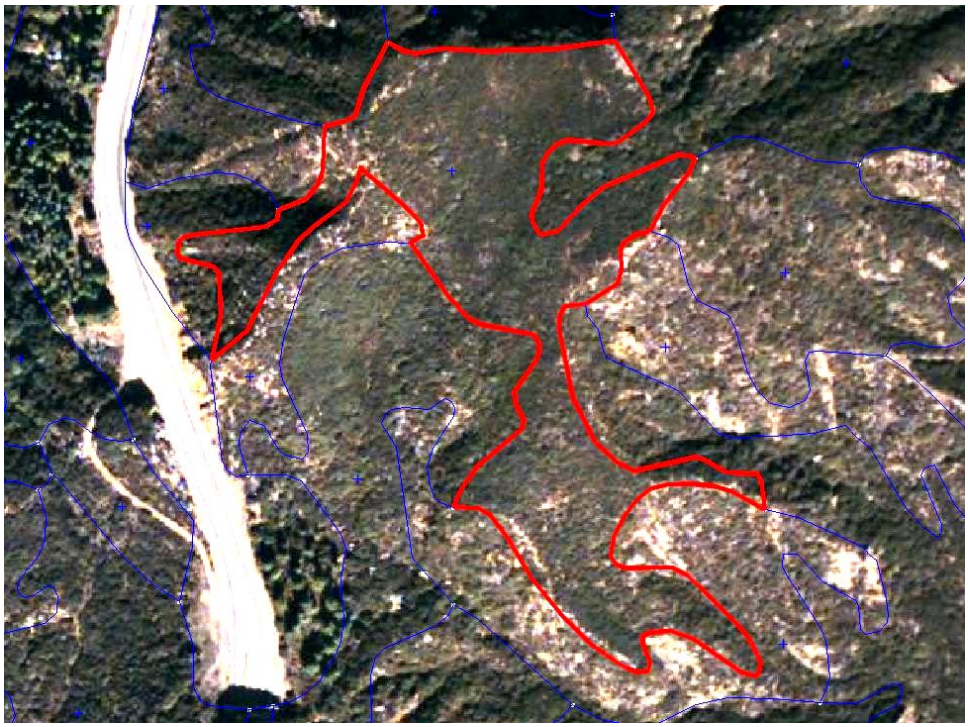
PHOTO INTERPRETATION SIGNATURE: In some cases the overall signature will be mottled with the two tones of the dominant species. In other cases, A*. fasciculatum* and *Ceanothus cuneatus* blend together in a coarse, dull, red-brown signature. *A. fasciculatum* appears as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. In some places the signature may be rusty red-brown, purple brown, orange brown, or black. *C. cuneatus* has a dull gray or brown or reddish brown appearance. When in a dense pure stand it can have a smoother texture. *C. cuneatus* may be confused with *C. megacarpus* and *C. crassifolius* in transitional areas. *S. mellifera* is a short shrub with a tan to green signature tone, and a smooth texture with a fuzzy crown edge. *E. fasciculatum* appears as very small round individual shrubs whose signature is typically reddish-brown to orange-brown, and sometimes may be gray to tan. The texture is fine to slightly coarse.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

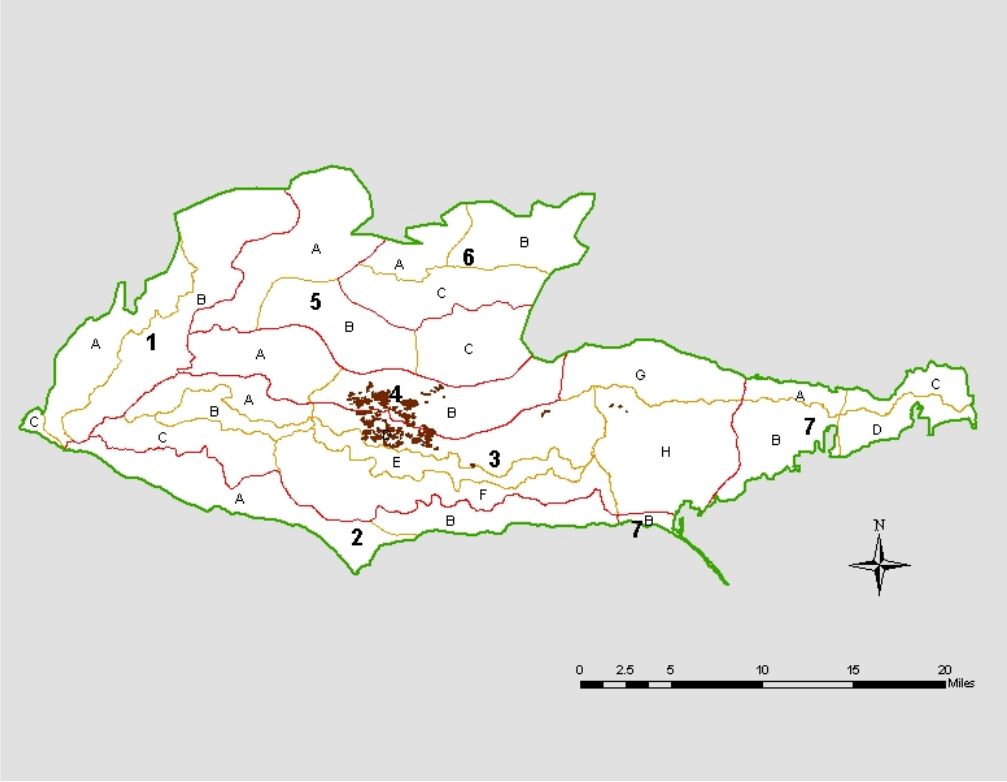
- *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus cuneatus* & *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance (2008)
- *Ceanothus* spp.-*Adenostoma fasciculatum* Shrubland Mapping Unit (2009)
- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Ceanothus crassifolius* Shrubland Alliance (2060)
- *Ceanothus megacarpus* Shrubland Alliance (2080)
- *Cercocarpus betuloides* Shrubland Alliance (2110)
- *Ceanothus cuneatus* Shrubland Alliance (2520)
- *Adenostoma fasciculatum-Ceanothus crassifolius* Shrubland Alliance (2570)

2511 – CHAMISE-WEDGE LEAF CEANOTHUS-BLACK SAGE-LAUREL SUMAC SHRUBLAND ASSOCIATION

***Adenostoma faciculatum-Ceanothus cuneatus-Salvia mellifera-Malosma laurina* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Adenostoma fasciculatum - Ceanothus cuneatus - Salvia mellifera - Malosma laurina* Shrubland Association occurs as open to continuous stands on dry-mesic, moderately steep to steep slopes. Stands are variable in aspect and favor convex to undulating surfaces on lower to upper slopes and ridge tops. This class is characterized by a co-dominance of *A. fasciculatum* and *C. cuneatus*. Cover of *A. fasciculatum* ranges from low to high cover, while *C. cuneatus* ranges from low to moderate cover. *Malosma*, *S. mellifera* and *Eriogonum fasciculatum* may be minor components of the stand at low cover. *Ceanothus cuneatus & Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance (2008) is mapped in areas where one or both *Ceanothus cuneatus* alliances (2510/2520) may be present, but because of signature and environmental similarity, neither is discernible for alliance mapping. In chaparral environments where the signature is not distinctive and the stands can potentially contain significant cover of *Cercocarpus betuloides* and/or other *Ceanothus* species, the *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006) is mapped. *Ceanothus* spp.*-Adenostoma fasciculatum* Shrubland Mapping Unit (2009) is mapped in areas where *Ceanothus* spp. and *A. fasciculatum* are present, but the *Ceanothus* species (*C. crassifolius, C. cuneatus,* or *C. megacarpus*) cannot be determined.

PHOTO INTERPRETATION SIGNATURE: In some cases the overall signature will be mottled with the two tones of the dominant species. In other cases, A*. fasciculatum* and *C. cuneatus* blend together in a coarse, dull, red-brown signature. *A. fasciculatum* appears as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. In some places the signature may be rusty red-brown, purple brown, orange brown, or black. *C. cuneatus* has a dull gray or brown or reddish brown appearance. When in a dense pure stand it can have a smoother texture. *C. cuneatus* may be confused with *C. megacarpus* and *C. crassifolius* in transitional areas. *Malosma* is a tall shrub that tends to occur as individuals with large rounded crowns. Its color is medium green, but can vary from light green to dark green and has a coarse texture. *S. mellifera* is a short shrub with a tan to green signature tone, and a smooth texture with a fuzzy crown edge. *E. fasciculatum* appears as very small round individual shrubs whose signature is typically reddish-brown to orange-brown, and sometimes may be gray to tan. The texture is fine to slightly coarse.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus cuneatus* & *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance (2008)
- *Ceanothus* spp.-*Adenostoma fasciculatum* Shrubland Mapping Unit (2009)
- *Adenostoma fasciculatum* Shrubland Association (2011)
- *Adenostoma fasciculatum-Ceanothus megacarpus* Shrubland Association (2019)
- *Ceanothus crassifolius* Shrubland Association (2063)
- *Ceanothus crassifolius-Malosma laurina* Shrubland Association (2065)
- *Ceanothus megacarpus-Adenostoma fasciculatum* Shrubland Association (2083)
- *Cercocarpus betuloides-Adenostoma fasciculatum* Shrubland Association (2115)
- *Ceanothus cuneatus-Quercus berberidifolia* Shrubland Association (2521)
- *Adenostoma fasciculatum-Ceanothus crassifolius-Malosma laurina* Shrubland Association (2572)

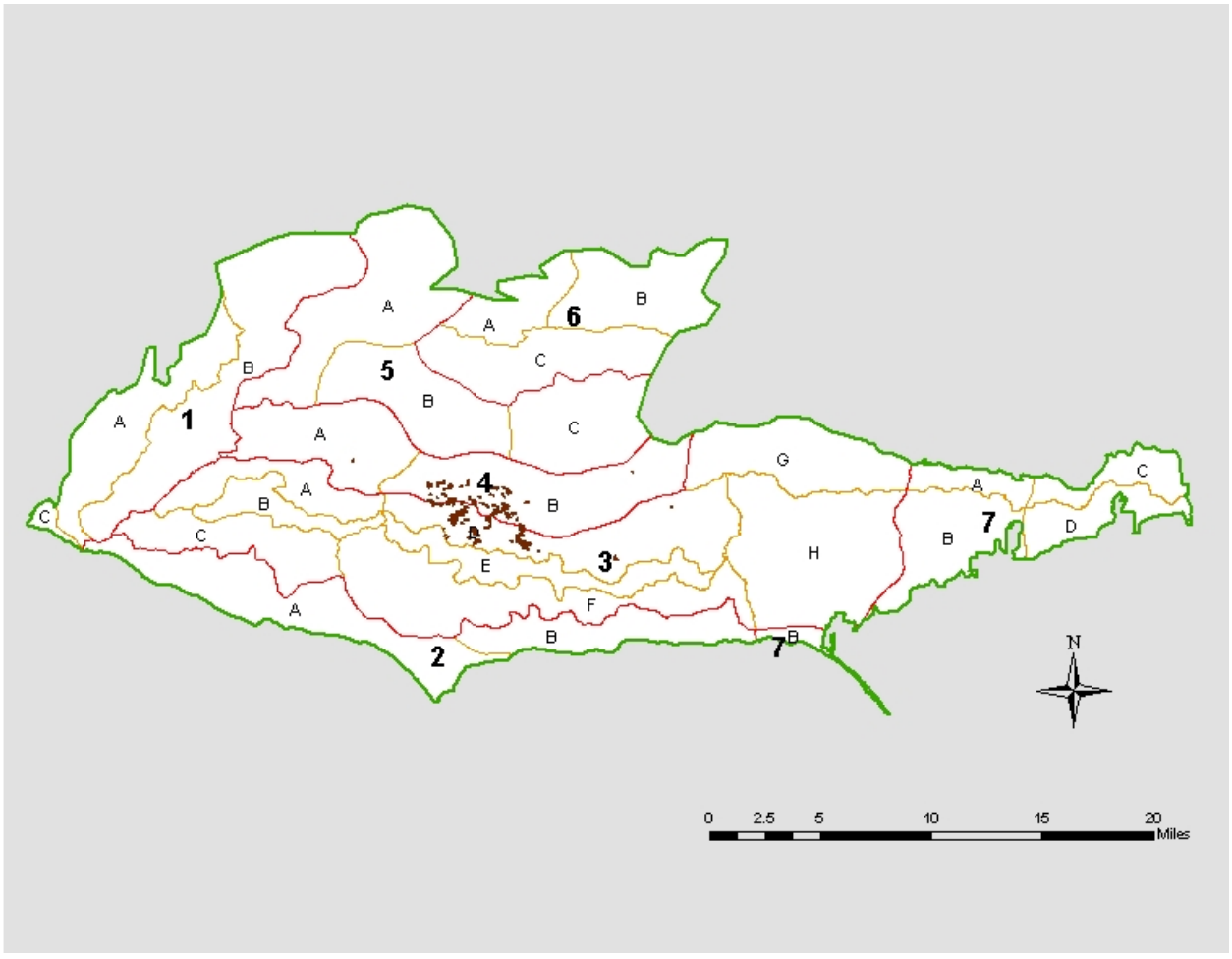
WEDGE LEAF CEANOTHUS SHRUBLAND ALLIANCE



2520 – WEDGE LEAF CEANOTHUS SHRUBLAND ALLIANCE
Ceanothus cuneatus Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: The *Ceanothus cuneatus* Shrubland Alliance is the hierarchical class into which *C. cuneatus* associations are nested. This alliance occurs as open to continuous stands on dry-mesic, gentle to steep slopes. Stands may vary in aspect, and are found on concave, neutral, or convex surfaces on lower to upper slopes and ridge tops. *C. cuneatus* typically dominates at low to high cover. In some instances, *Quercus berberidifolia* co-dominates at low to moderate cover. *Adenostoma fasciculatum* may be present at low cover. *Cercocarpus betuloides* can be present at low to moderate cover. Stands that have been mapped at the alliance level rather than the association level typically will have an unusual combination of sub-dominant plants that do not fit very well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *C. cuneatus* as the dominant shrub are included. In chaparral environments where the signature is not distinctive and the stands potentially contain *Cercocarpus* and/or other *Ceanothus* species, the *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006) is mapped. *Ceanothus cuneatus & Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance (2008) is mapped in areas where one or both *C. cuneatus* alliances (2510/2520) may be present, but because of signature and environmental similarity, neither is discernible for alliance mapping.

PHOTO INTERPRETATION SIGNATURE: *C. cuneatus* has a dull gray, brown, or reddish brown appearance. When in a dense pure stand it can have a smoother texture. *C. cuneatus* may be confused with *C. megacarpus* and *C. crassifolius* in transitional areas. *Q. berberidifolia* appears as a tall, dark green shrub with an irregular coarse crown and may occur as individuals or in dense groups. When *Q. berberidifolia* mixes with *C. cuneatus*, the signature has an uneven texture due to the taller and shorter shrub layers. *A. fasciculatum* appears as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. In some places the signature may be rusty red-brown, purple brown, orange brown, or black. *Cercocarpus* has a dull, dark green appearance with a smooth to coarse texture. Its signature is more discernable when *Cercocarpus* is in a cohesive, homogeneous stand. Both *A. fasciculatum* and *Cercocarpus* are difficult to identify when their covers are low and they intermix with *C. cuneatus* and *Q. berberidifolia*.

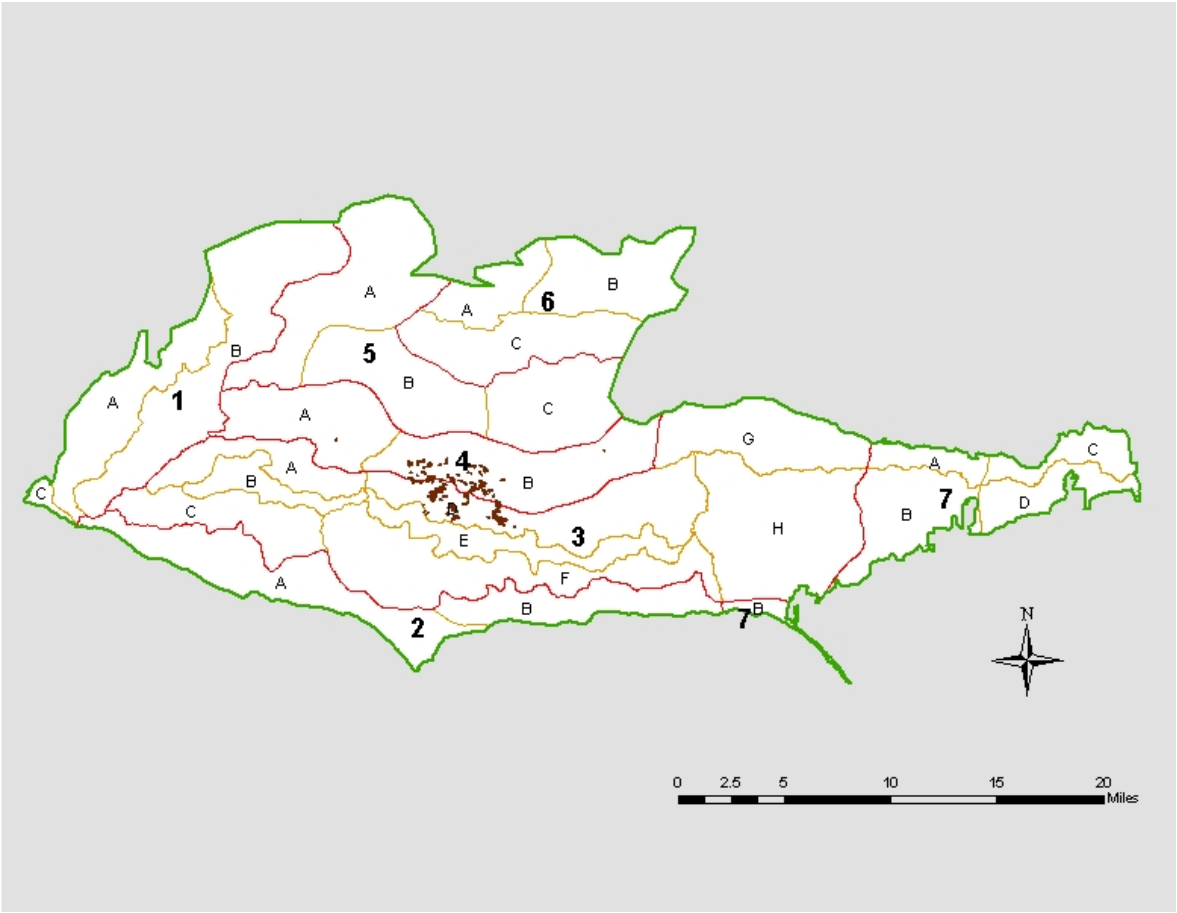
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus cuneatus* & *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance (2008)
- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Ceanothus crassifolius* Shrubland Alliance (2060)
- *Ceanothus megacarpus* Shrubland Alliance (2080)
- *Cercocarpus betuloides* Shrubland Alliance (2110)
- *Quercus berberidifolia* Shrubland Alliance (2160)
- *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Alliance (2510)
- *Adenostoma fasciculatum-Ceanothus crassifolius* Shrubland Alliance (2570)
- *Quercus berberidifolia-Adenostoma fasciculatum* Shrubland Alliance (2580)

2521 – WEDGE LEAF CEANOTHUS-SCRUB OAK SHRUBLAND ASSOCIATION
Ceanothus cuneatus-Quercus berberidifolia Shrubland Association



DISTRIBUTION:



DESCRIPTION: The *Ceanothus cuneatus-Quercus berberidifolia* Shrubland Association occurs as open to continuous stands on dry-mesic, gentle to steep slopes. Stands may vary in aspect, occur on concave, neutral, or convex surfaces, and appear on lower to upper slopes and ridge tops. *C. cuneatus* typically dominates at low to high cover. *Q. berberidifolia* co-dominates at low to moderate cover. *Adenostoma fasciculatum* may be present at low cover. *Cercocarpus betuloides* can be present at low to moderate cover. In chaparral environments where the signature is not distinctive and the stands potentially contain *Cercocarpus* and/or other *Ceanothus* species, or one *Ceanothus* alliance is transitioning to another *Ceanothus* alliance, then the *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006) is mapped. *Ceanothus cuneatus & Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance (2008) is mapped in areas where one or both *C. cuneatus* alliances (2510/2520) may be present, but because of signature and environmental similarity, neither is discernible for alliance mapping.

PHOTO INTERPRETATION SIGNATURE: *C. cuneatus* has a dull gray, brown, or reddish brown appearance. When in a dense pure stand it can have a smoother texture. *C. cuneatus* may be confused with *C. megacarpus* and *C. crassifolius* in transitional areas. *Q. berberidifolia* appears as a tall, dark green shrub with an irregular coarse crown and may occur as individuals or in dense groups. When *Q. berberidifolia* mixes with the *C. cuneatus*, the signature has an uneven texture due to the taller and shorter shrub layers. *A. fasciculatum* appears as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. In some places the signature may be rusty red-brown, purple brown, orange brown, or black. *Cercocarpus* has a dull, dark green appearance with a smooth to coarse texture. Its signature is more discernable when *Cercocarpus* is in a cohesive, homogeneous stand. Both *A. fasciculatum* and *Cercocarpus* are difficult to identify when their covers are low and they intermix with *C. cuneatus* and *Q. berberidifolia*.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus cuneatus* & *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance (2008)
- *Adenostoma fasciculatum-Ceanothus megacarpus* Shrubland Association (2019)
- *Ceanothus crassifolius* Shrubland Association (2063)
- *Ceanothus crassifolius-Malosma laurina* Shrubland Association (2065)
- *Ceanothus megacarpus* Shrubland Association (2081)
- *Ceanothus megacarpus-Adenostoma fasciculatum* Shrubland Association (2083)
- *Cercocarpus betuloides-Adenostoma fasciculatum* Shrubland Association (2115)
- *Quercus berberidifolia* Shrubland Association (2161)
- *Adenostoma fasciculatum-Ceanothus cuneatus-Salvia mellifera-Malosma laurina* Shrubland Association (2511)
- *Adenostoma fasciculatum-Ceanothus crassifolius-Malosma laurina* Shrubland Association (2572)
- *Quercus berberidifolia-Adenostoma fasciculatum* Shrubland Association (2581)

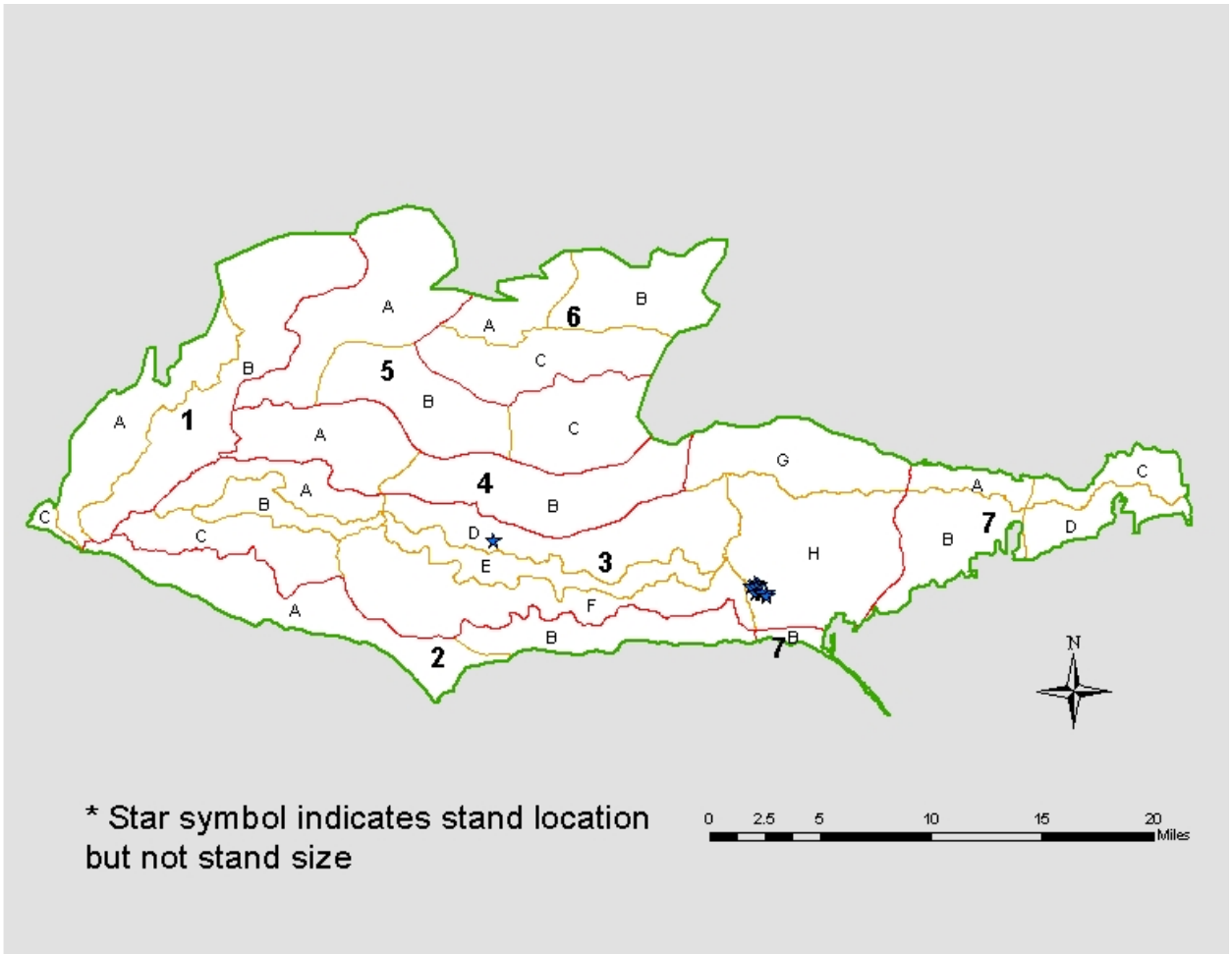
CHAMISE-BIG BERRY MANZANITA SHRUBLAND ALLIANCE



2530 – CHAMISE-BIG BERRY MANZANITA SHRUBLAND ALLIANCE
Adenostoma fasciculatum-Arctostaphylos glauca Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: The *Adenostoma fasciculatum-Arctostaphylos glauca* Shrubland Alliance occurs as intermittent to continuous stands on dry north-facing moderate to steep slopes. They are found on neutral, undulating, and convex surfaces on mid to upper slopes and ridge tops. *Adenostoma fasciculatum* and *Arctostaphylos glauca* co-dominate, *Adenostoma fasciculatum* at moderate to high cover, and *Arctostaphylos glauca* at moderate cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *Adenostoma fasciculatum* and *Arctostaphylos glauca* as the co-dominant shrubs are included. Because the signatures for *Arctostaphylos glauca* and *Arctostaphylos glandulosa* are similar, stands are mapped using information from Rapid Assessment Plots, and the signatures are extrapolated to nearby areas.

PHOTO INTERPRETATION SIGNATURE: *Adenostoma fasciculatum* appears as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. In some places the signature may be rusty red-brown, purple brown, orange brown, or black. *Arctostaphylos glauca* appears as a medium-sized shrub with an irregularly shaped, pale green crown. Stands have a dark red undertone.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

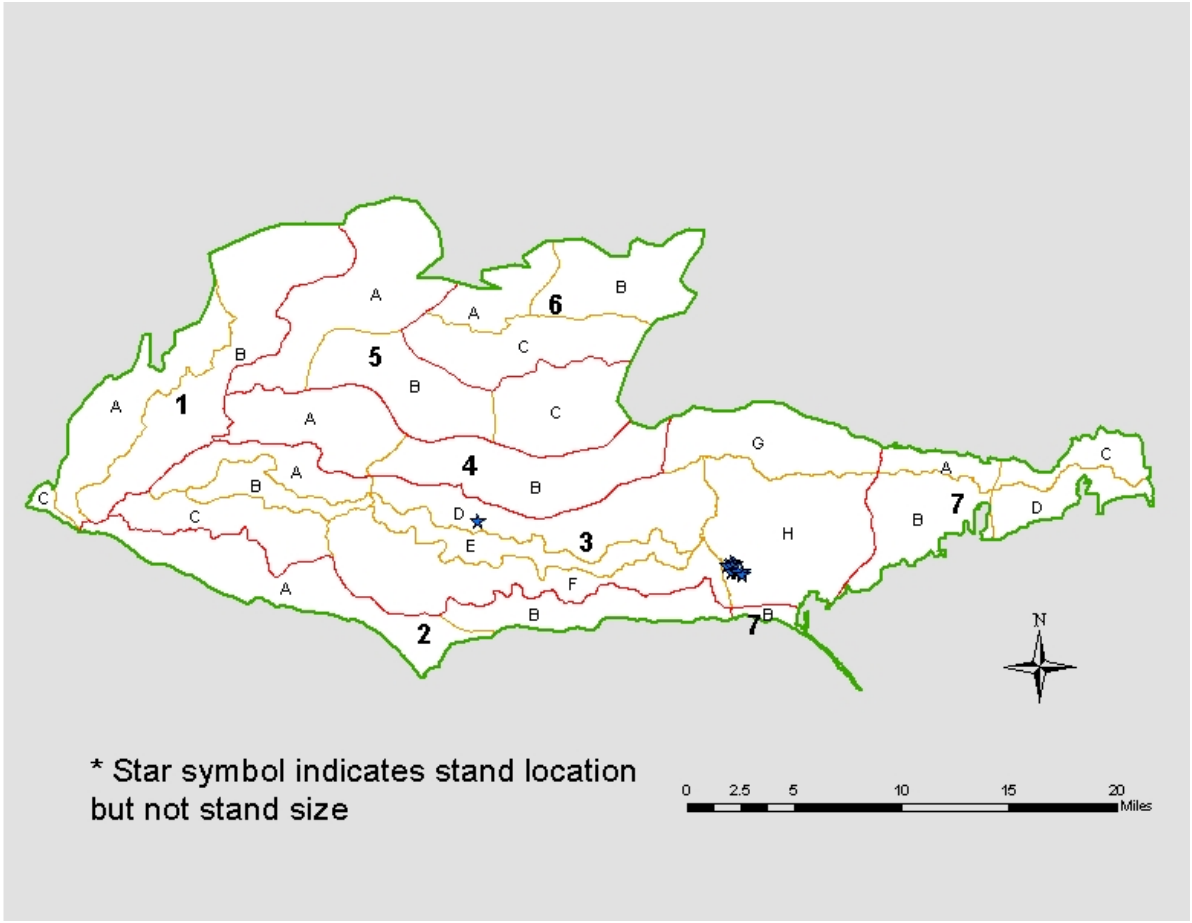
- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Adenostoma fasciculatum-Arctostaphylos glandulosa* Shrubland Alliance (2020)

2531 – CHAMISE-BIG BERRY MANZANITA SHRUBLAND ASSOCIATION (PROVISIONAL)

***Adenostoma fasciculatum-Arctostaphylos glauca* Shrubland Association (Provisional)**



DISTRIBUTION:



DESCRIPTION: The *Adenostoma fasciculatum-Arctostaphylos glauca* Shrubland Association (Provisional) occurs as intermittent to continuous stands on dry north-facing moderate to steep slopes. They are found on neutral, undulating, and convex surfaces on mid to upper slopes and ridge tops. *Adenostoma fasciculatum* and *Arctostaphylos glauca* co-dominate, *Adenostoma fasciculatum* at moderate to high cover, and *Arctostaphylos glauca* at moderate cover. *Ceanothus megacarpus* is also present at very low to moderate cover. Because the signatures for *Arctostaphylos glauca* and *Arctostaphylos glandulosa* are similar, stands are mapped using information from Rapid Assessment Plots, and the signatures are extrapolated to nearby areas.

PHOTO INTERPRETATION SIGNATURE: *Adenostoma fasciculatum* appears as individuals or in clumps. Its signature is typically dark reddish-brown with a coarse texture, showing a hint of spikiness on its edges. *Arctostaphylos glauca* appears as a medium-sized shrub with an irregularly shaped, pale green crown. Stands have a dark red undertone

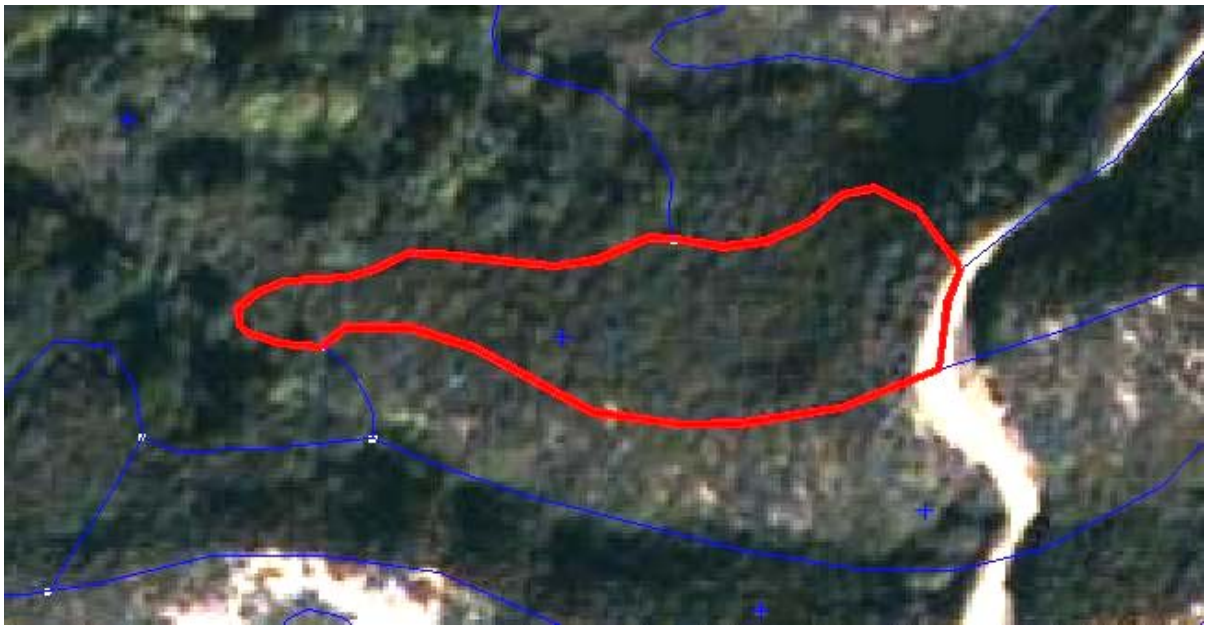
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Adenostoma fasciculatum-Arctostaphylos glandulosa* Shrubland Association (2021)
- *Ceanothus megacarpus-Adenostoma fasciculatum* Shrubland Association (2083)

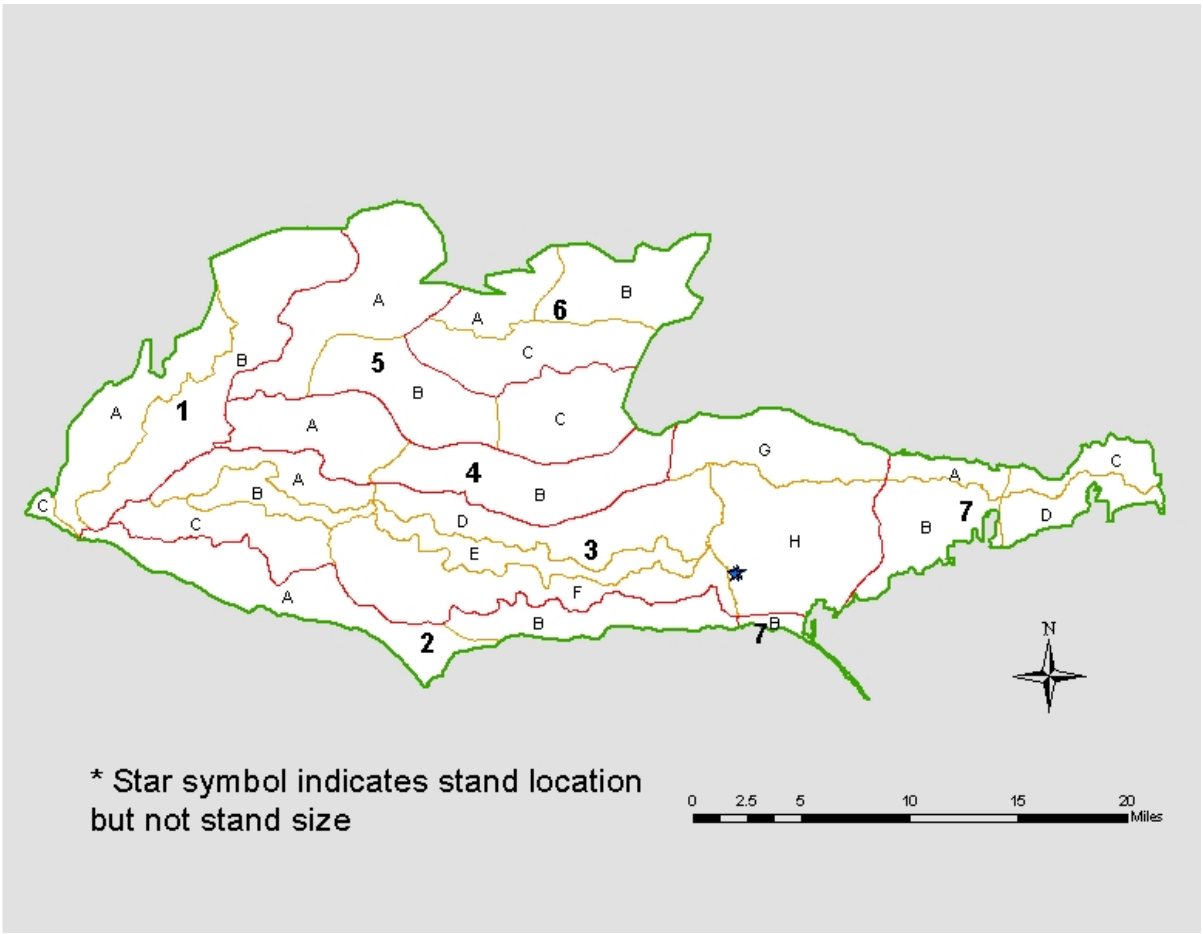
BIG BERRY MANZANITA SHRUBLAND ALLIANCE



2540 – BIG BERRY MANZANITA SHRUBLAND ALLIANCE
Arctostaphylos glauca Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: The *Arctostaphylos glauca* Shrubland Alliance occurs as intermittent stands on dry north-facing moderately steep slopes. They are found on neutral surfaces on mid to upper slopes. *A. glauca* dominates at high cover. Because the signatures for *A. glauca* and *A. glandulosa* are similar, stands are mapped using information from Rapid Assessment Plots, and then the signatures are extrapolated to nearby areas.

PHOTO INTERPRETATION SIGNATURE: *A. glauca* appears as a medium-sized shrub with an irregularly shaped, pale green to dark green or blue-green crown and a coarse texture.

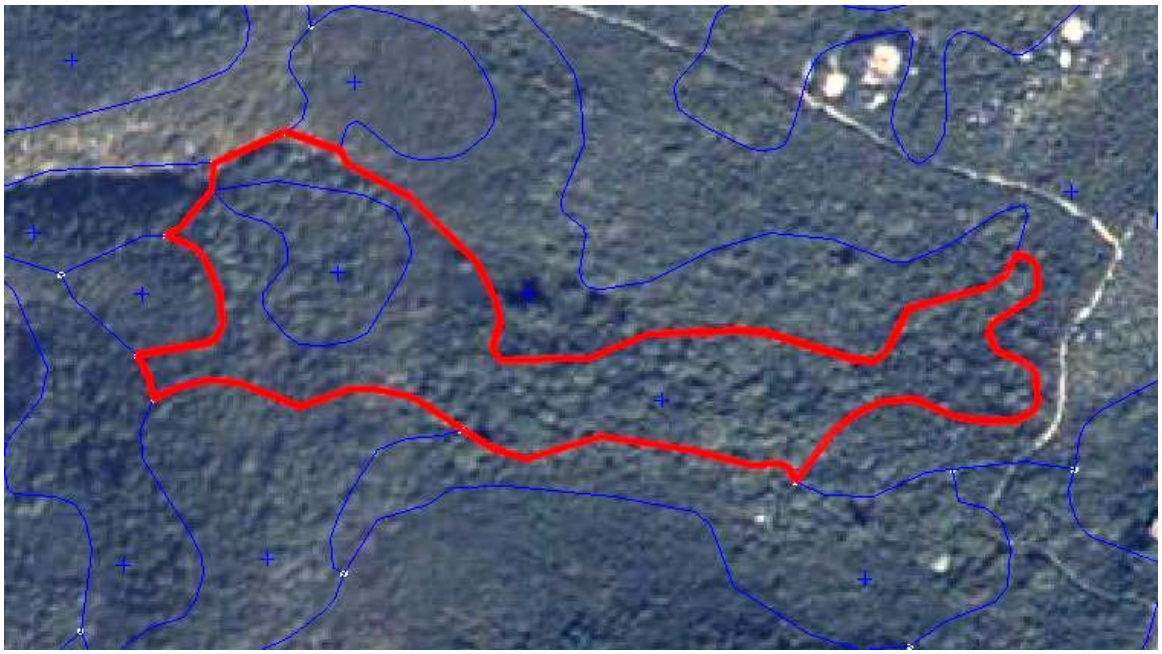
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Adenostoma fasciculatum-Arctostaphylos glandulosa* Shrubland Alliance (2020)
- *Adenostoma fasciculatum-Arctostaphylos glauca* Shrubland Alliance (2530)
- *Arctostaphylos glandulosa* Shrubland Alliance (2550)

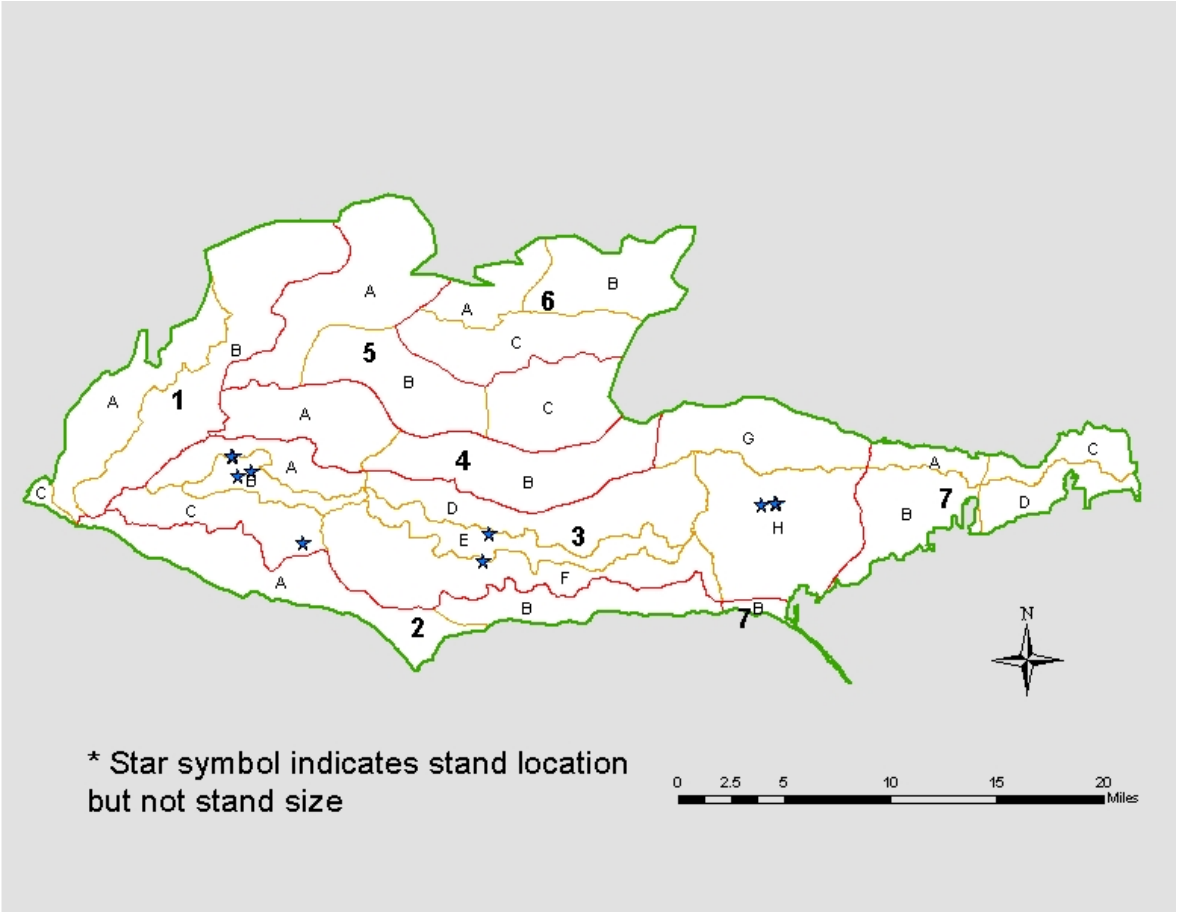
EASTWOOD MANZANITA SHRUBLAND ALLIANCE



2550 – EASTWOOD MANZANITA SHRUBLAND ALLIANCE
Arctostaphylos glandulosa Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: The *Arctostaphylos glandulosa* Shrubland Alliance occurs as open to continuous stands on dry north-facing moderate to steep slopes. They are found on concave and undulating surfaces on mid to upper slopes and ridge tops. *Arctostaphylos glandulosa* dominates at high cover. *Adenostoma sparsifolium* may be present at low to high cover. Because the signatures for *Arctostaphylos glauca* and *Arctostaphylos glandulosa* are similar, stands are mapped using information from Rapid Assessment Plots, and the signatures are extrapolated to nearby areas.

PHOTO INTERPRETATION SIGNATURE: *Arctostaphylos glandulosa* appears as a medium-sized shrub with a dark green to blue-green rounded crown and a slightly coarse or stippled texture. *Adenostoma sparsifolium* is light green with an irregular crown and slightly coarse texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum-Arctostaphylos glandulosa* Shrubland Alliance (2020)
- *Adenostoma sparsifolium* Shrubland Alliance (2050)
- *Ceanothus oliganthus-Adenostoma sparsifolium* Shrubland Alliance (2078)
- *Adenostoma fasciculatum-Arctostaphylos glauca* Shrubland Alliance (2530)
- *Arctostaphylos glauca* Shrubland Alliance (2540)

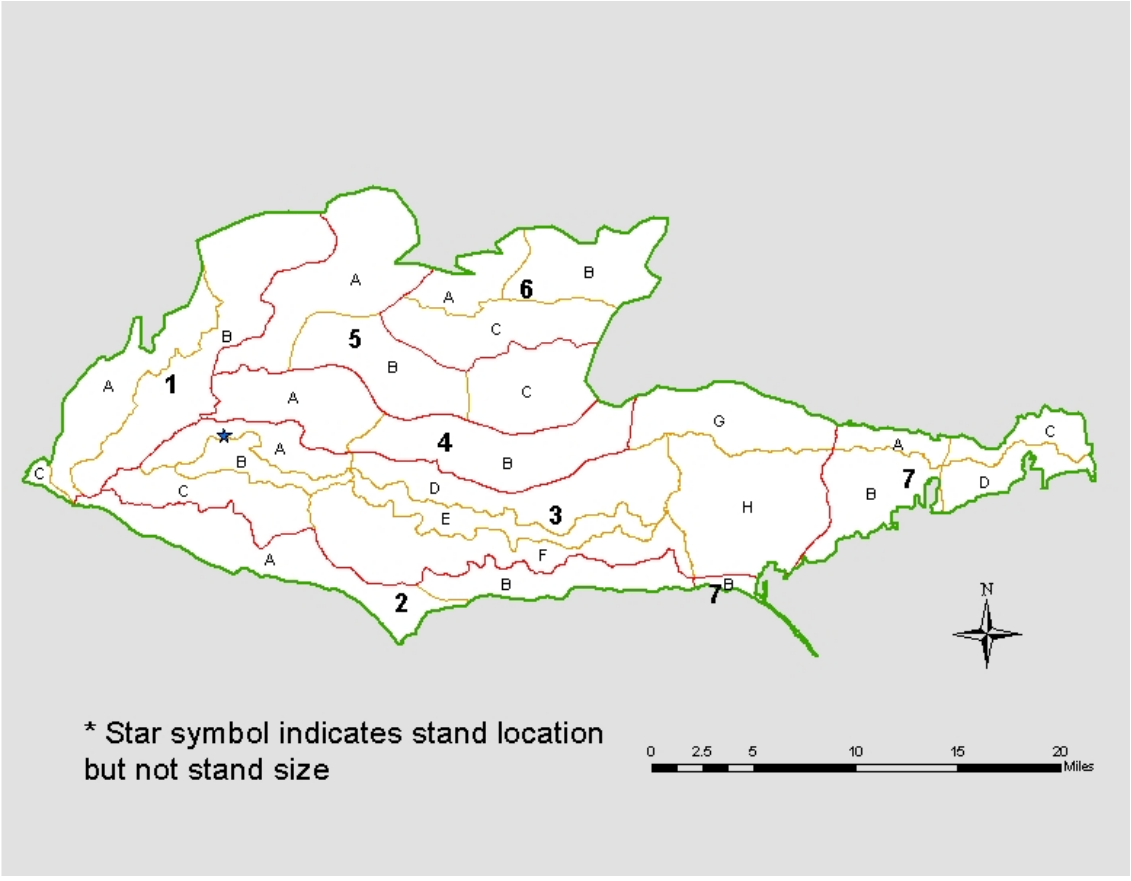
SCRUB INTERIOR LIVE OAK SHRUBLAND ALLIANCE



2560 – SCRUB INTERIOR LIVE OAK SHRUBLAND ALLIANCE
Quercus wislizenii var. frutescens Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: The *Quercus wislizenii var. frutescens* Shrubland Alliance occurs as sparse to intermittent stands on dry north-facing moderate to steep slopes. They are found on concave or convex surfaces on upper slopes. *Q. wislizenii* dominates at moderate to high cover.

PHOTO INTERPRETATION SIGNATURE: *Q. wislizenii* is a dark green to blue-green short tree or tall shrub with an irregularly shaped crown and a coarse texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus oliganthus* Shrubland Alliance (2070)
- *Arctostaphylos glauca* Shrubland Alliance (2540)
- *Arctostaphylos glandulosa* Shrubland Alliance (2550)

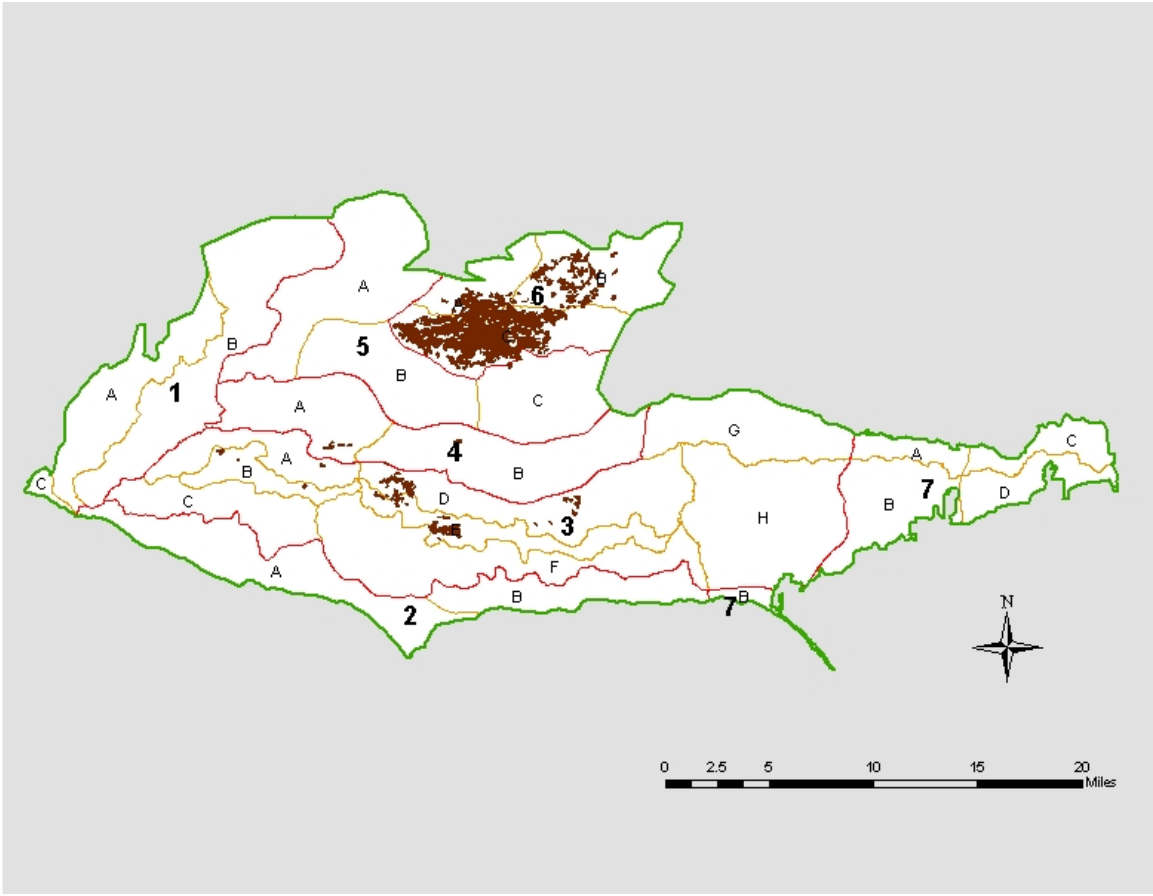
CHAMISE-HOARY LEAF CEANOTHUS SHRUBLAND ALLIANCE



2570 – CHAMISE-HOARY LEAF CEANOTHUS SHRUBLAND ALLIANCE
Adenostoma fasciculatum-Ceanothus crassifolius Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: The *Adenostoma fasciculatum-Ceanothus crassifolius* Shrubland Alliance is the hierarchical class into which *A. fasciculatum-Ceanothus crassifolius* associations are nested. This alliance occurs as open to continuous stands with variable aspects and occurs on dry-mesic, gentle to steep slopes. Stands can be found on convex, neutral, or concave surfaces on lower to upper slopes and ridge tops. This association is characterized by a co-dominance of *A. fasciculatum* and *C. crassifolius*, either of which can be at low to high cover. *Malosma laurina* and *Heteromeles arbutifolia* can also be present at low cover. *Salvia mellifera* can be at low to moderate cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *A. fasciculatum and C. crassifolius* as the co-dominant shrubs are included. In chaparral environments where the signature is not distinctive and the stands potentially contain *Cercocarpus betuloides* and/or other *Ceanothus* species, the *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006) may be mapped. *Ceanothus* spp.*-Adenostoma fasciculatum* Shrubland Mapping Unit (2009) is mapped in areas where *Ceanothus* spp. and *A. fasciculatum* are present, but the *Ceanothus* species (*C. crassifolius, C. cuneatus*, or *C. megacarpus*) cannot be determined. Both the superalliance and mapping unit are also used where one *Ceanothus* alliance type transitions to a different *Ceanothus* alliance type.

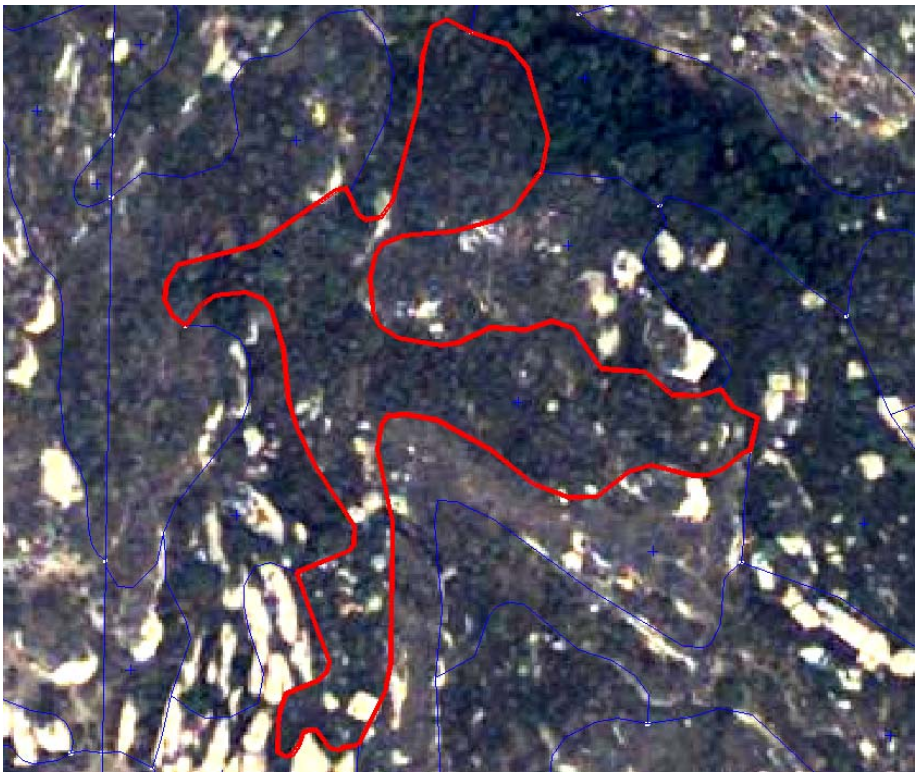
PHOTO INTERPRETATION SIGNATURE: The stand has a dull red-brown to dull gray appearance with coarse tall shrubs scattered within. In many cases, the *A. fasciculatum* and *C. crassifolius* signatures blend together, making it difficult to estimate their proportions. *C. crassifolius* has a dull brown to gray color with a fine texture and occurs in clumps or groups. When in a dense pure stand it can have a smoother texture. *A. fasciculatum* appears as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. In some places the signature may be rusty red-brown, purple brown, orange brown, or black. *C. crassifolius* may be confused with *C. megacarpus* and *C. cuneatus*. *C. crassifolius* tends to have a duller tone. *Malosma* is a tall shrub that tends to occur as individuals with large rounded crowns. Its signature color is medium green, but can vary from light green to dark green, even within an area, and has a coarse texture. Much of the time, *Heteromeles* is observed as being light green with shiny white highlights representing the inflorescences. *S. mellifera* is a short shrub with a tan to green signature tone and a smooth texture with a fuzzy crown edge.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

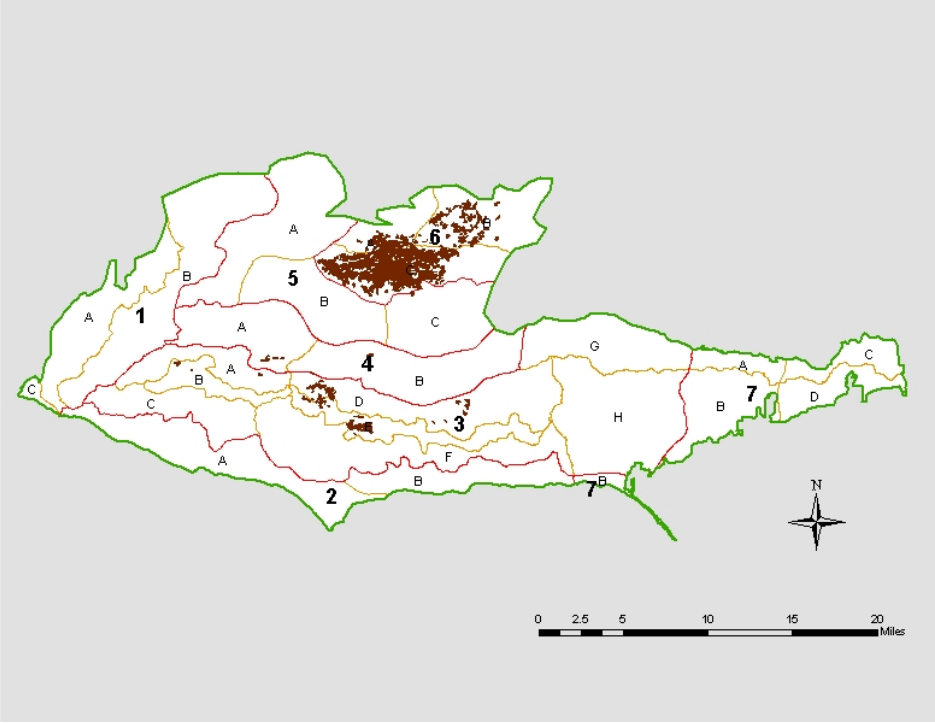
- *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus cuneatus* & *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance (2008)
- *Ceanothus* spp.*-Adenostoma fasciculatum* Shrubland Mapping Unit (2009)
- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Ceanothus crassifolius* Shrubland Alliance (2060)
- *Ceanothus megacarpus* Shrubland Alliance (2080)
- *Ceanothus cuneatus* Shrubland Alliance (2520)

2572 – CHAMISE-HOARY LEAF CEANOTHUS-LAUREL SUMAC SHRUBLAND ASSOCIATION

***Adenostoma fasciculatum-Ceanothus crassifolius-Malosma laurina* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: The *Adenostoma fasciculatum-Ceanothus crassifolius-Malosma laurina* Shrubland Associaton occurs as open to continuous stands with variable aspects on dry-mesic, gentle to steep slopes. Stands can be found on convex, neutral, or concave surfaces and lower to upper slopes and ridge tops. This association is characterized by a co-dominance of *A. fasciculatum* and *C. crassifolius*, either of which can be at low to high cover. *Malosma* and *Heteromeles arbutifolia* can also be present at low cover. *Salvia mellifera* can be at low to moderate cover. In chaparral environments where the signature is not distinctive and the stands potentially have *Cercocarpus betuloides* and/or other *Ceanothus* species, the *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006) may be mapped. *Ceanothus* spp.*-Adenostoma fasciculatum* Shrubland Mapping Unit (2009) is mapped in areas where *Ceanothus* spp. and *A. fasciculatum* are present, but the *Ceanothus* species (*C. crassifolius, C. cuneatus,* or *C. megacarpus*) cannot be determined. Both the superalliance and mapping unit are also used where one *Ceanothus* alliance type transitions to a different *Ceanothus* alliance type.

PHOTO INTERPRETATION SIGNATURE: The stand has a dull red-brown to dull gray appearance with coarse tall shrubs scattered within. In many cases, the *A. fasciculatum* and *C. crassifolius* signatures blend together, making it difficult to estimate their proportions. *C. crassifolius* has a dull brown to gray color with a fine texture and occurs in clumps or groups. When in a dense pure stand it can have a smoother texture. *A. fasciculatum* appears as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. In some places the signature may be rusty red-brown, purple brown, orange brown, or black. *C. crassifolius* may be confused with *C. megacarpus* and *C. cuneatus*. *C. crassifolius* tends to have a duller tone. *Malosma* is a tall shrub that tends to occur as individuals with large rounded crowns. Its signature color is medium green, but can vary from light green to dark green, even within an area, and has a coarse texture. Much of the time, *Heteromeles* is observed as being light green with shiny white highlights representing the inflorescences. *S. mellifera* is a short shrub with a tan to green signature tone and a smooth texture with a fuzzy crown edge.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus* spp. & *Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Ceanothus cuneatus* & *Adenostoma fasciculatum-Ceanothus cuneatus* Shrubland Superalliance (2008)
- *Ceanothus* spp.*-Adenostoma fasciculatum* Shrubland Mapping Unit (2009)
- *Adenostoma fasciculatum* Shrubland Association (2011)
- *Adenostoma fasciculatum-Ceanothus megacarpus* Shrubland Association (2019)
- *Ceanothus crassifolius* Shrubland Association (2063)
- *Ceanothus crassifolius-Malosma laurina* Shrubland Association (2065)
- *Ceanothus megacarpus-Adenostoma fasciculatum* Shrubland Association (2083)
- *Adenostoma fasciculatum-Ceanothus cuneatus-Salvia mellifera-Malosma laurina* Shrubland Association (2511)
- *Ceanothus cuneatus-Quercus berberidifolia* Shrubland Association (2521)

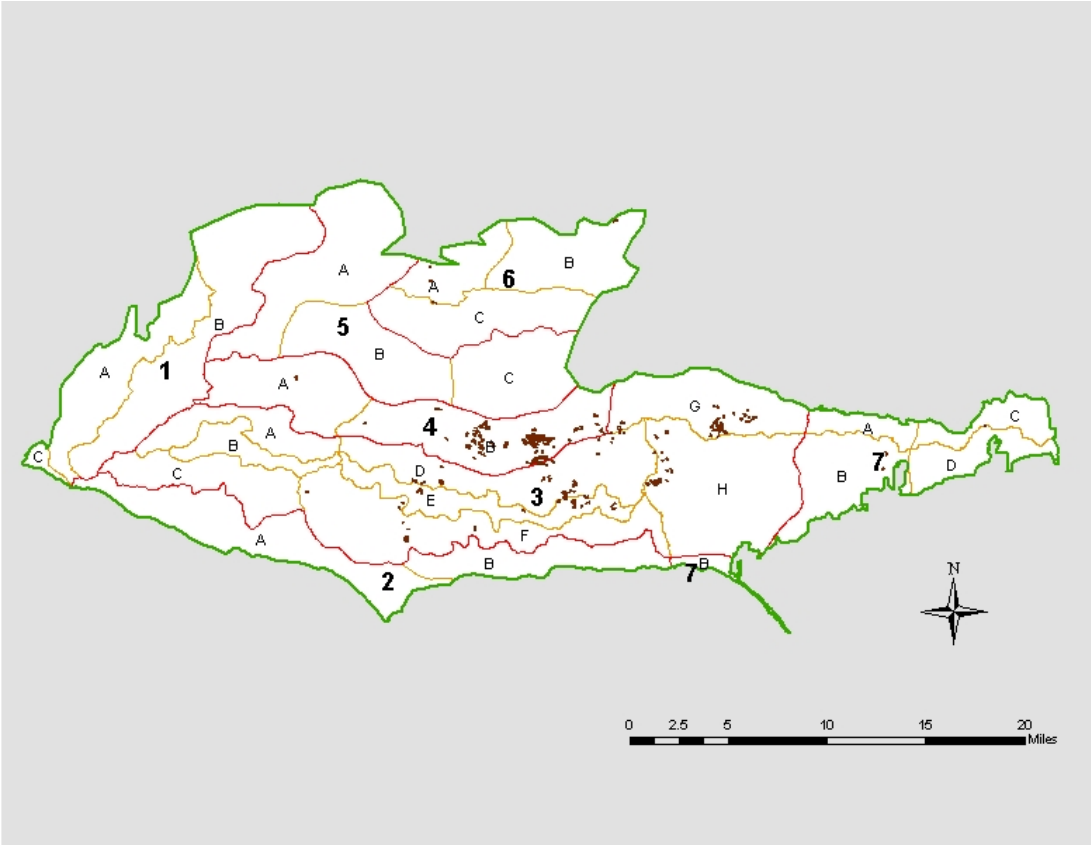
SCRUB OAK-CHAMISE SHRUBLAND ALLIANCE



2580 – SCRUB OAK-CHAMISE SHRUBLAND ALLIANCE
Quercus berberidifolia-Adenostoma fasciculatum Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: The *Quercus berberidifolia-Adenostoma fasciculatum* Shrubland Alliance is the hierarchical class into which *Q. berberidifolia-A. fasciculatum* associations are nested. This association can occur as sparse to intermittent stands on dry-mesic, gentle to steep slopes. Stands may vary in aspect, occur on concave, neutral, or convex surfaces, and are found on mid to upper slopes and ridge tops. *A. fasciculatum* dominates the association at low to high cover. *Q. berberidifolia* and *Salvia mellifera* sub-dominate at low to moderate cover. *Heteromeles arbutifolia* and *Malosma laurina* may also be present at low cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *Q. berberidifolia* and *A. fasciculatum* as the dominant shrubs are included.

PHOTO INTERPRETATION SIGNATURE: The stand usually has a coarse texture due to the mixing of tall shrubs with the shorter *A. fasciculatum*. *A. fasciculatum* appears as individuals or in clumps. Its signature is typically dark reddish-brown with a rough texture, showing a hint of spikiness on its edges. In some places the signature may be rusty red-brown, purple-brown, orange-brown, or black. *Q. berberidifolia* appears as a tall, dark green shrub with an irregular coarse crown and may occur as individuals or in dense groups. *S. mellifera* is a short shrub with a tan to green signature tone and a smooth texture with a fuzzy crown edge. Much of the time, *Heteromeles* is observed as being light green with shiny white highlights representing the inflorescences. *Malosma* is a tall shrub that tends to occur as individuals with large rounded crowns. Its signature color is medium green, but can vary from light green to dark green, even within an area, and has a coarse texture.

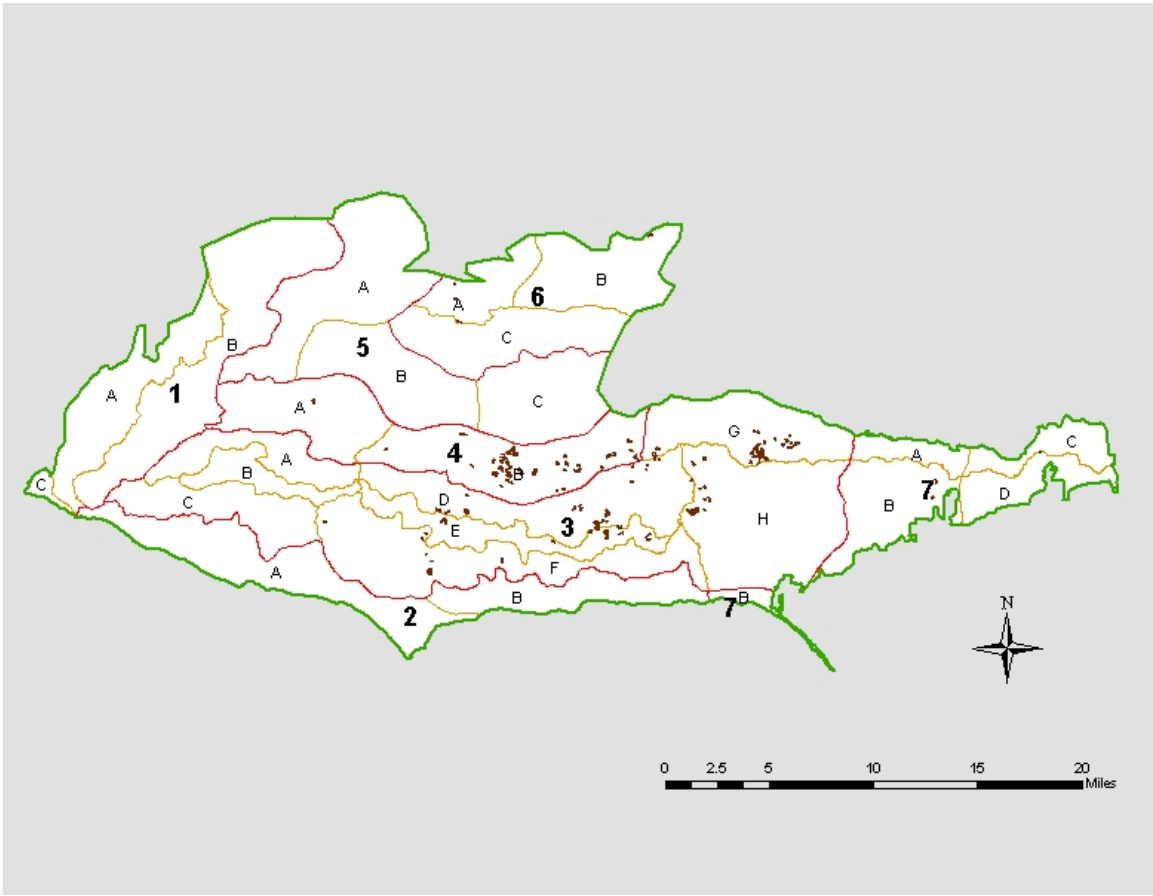
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *(Juglans californica)*/Undifferentiated Tall Shrubs Shrubland Mapping Unit (2003)
- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Quercus berberidifolia* Shrubland Alliance (2160)
- *Ceanothus cuneatus* Shrubland Alliance (2520)

2581 – SCRUB OAK-CHAMISE SHRUBLAND ASSOCIATION
Quercus berberidifolia-Adenostoma fasciculatum Shrubland Association



DISTRIBUTION:



DESCRIPTION: The *Quercus berberidifolia-Adenostoma fasciculatum* Shrubland Association occurs as sparse to intermittent stands on dry-mesic, gentle to steep slopes. Stands may vary in aspect, occur on concave, neutral, or convex surfaces, and are found on mid to upper slopes and ridge tops. *A. fasciculatum* dominates the association at low to high cover. *Q. berberidifolia* and *Salvia mellifera* sub-dominate at low to moderate cover. *Heteromeles arbutifolia* and *Malosma laurina* may also be present at low cover.

PHOTO INTERPRETATION SIGNATURE: The stand usually has a coarse texture due to the mixing of tall shrubs with the shorter A*. fasciculatum*. *A. fasciculatum* appears as individuals or in clumps. Its signature is typically dark reddish brown with a rough texture, showing a hint of spikiness on its edges. In some places the signature may be rusty red-brown, purple-brown, orange-brown, or black. *Q. berberidifolia* appears as a tall, dark green shrub with an irregular coarse crown and may occur as individuals or in dense groups. *S. mellifera* is a short shrub with a tan to green signature tone, and a smooth texture with a fuzzy crown edge. Much of the time, *Heteromeles* is observed as being light green with shiny white highlights representing the inflorescences. *Malosma* is a tall shrub that tends to occur as individuals with large rounded crowns. Its signature color is medium green, but can vary from light green to dark green, even within an area, and has a coarse texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum* Shrubland Association (2011)
- *Adenostoma fasciculatum-Malosma laurina* Shrubland Association (2013)
- *Quercus berberidifolia* Shrubland Association (2161)
- *Ceanothus cuneatus-Quercus berberidifolia* Shrubland Association (2521)

SCRUB OAK-BIRCH LEAF MOUNTAIN MAHOGANY SHRUBLAND ALLIANCE

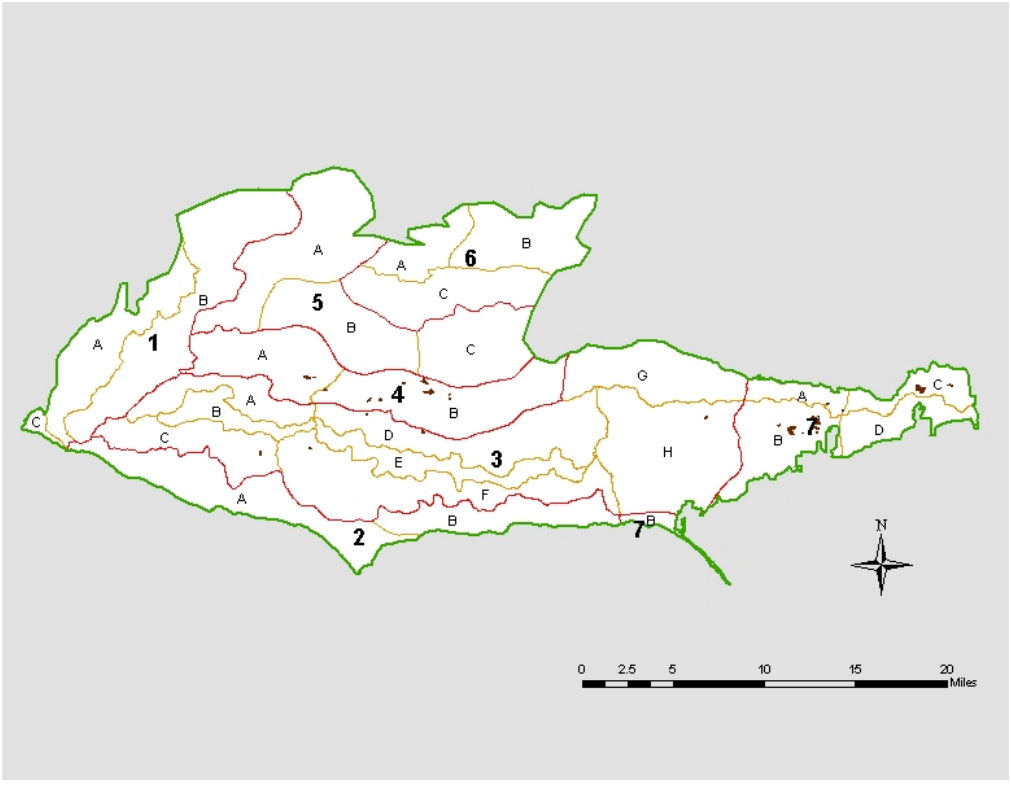


2590 – SCRUB OAK-BIRCH LEAF MOUNTAIN MAHOGANY SHRUBLAND ALLIANCE

***Quercus berberidifolia-Cercocarpus betuloides* Shrubland Alliance**



DISTRIBUTION:



DESCRIPTION: The *Quercus berberidifolia-Cercocarpus betuloides* Shrubland Alliance is the hierarchical class into which *Q. berberidifolia-Cercocarpus betuloides* associations are nested. The alliance occurs as intermittent to continuous stands on north-facing, dry-mesic, moderate to steep slopes. Stands are found on undulating or flat surfaces on lower to upper slopes. The alliance is characterized by dominance to co-dominance of *Q. berberidifolia,* with sub-dominance to co-dominance of *Cercocarpus*. *Q. berberidifolia* may be at moderate to high cover and *Cercocarpus* can be at low to moderate cover. Other tall shrubs, such as *Heteromeles arbutifolia*, *Rhus ovata*, and *Ceanothus cuneatus,* may be present at low cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *Q. berberidifolia* and *Cercocarpus* as the co-dominant shrubs are included.

PHOTO INTERPRETATION SIGNATURE: *Q. berberidifolia* appears as a tall, dark green shrub with an irregular coarse crown and may occur as individuals or in dense groups. *Cercocarpus* has a dull, dark green appearance with a smooth to coarse texture. This signature is most obvious when *Cercocarpus* is in a cohesive, homogeneous stand. Stands have an uneven texture resulting from coarse tall shrubs over smoother short shrubs, with mottled color due to tone variations of the different species. Much of the time, *Heteromeles* is observed as being light green with shiny white highlights representing the inflorescences. *R. ovata* typically appears as a coarse, round-crowned, bright green tall shrub. *C. cuneatus* has a dull gray, brown, or reddish brown appearance.

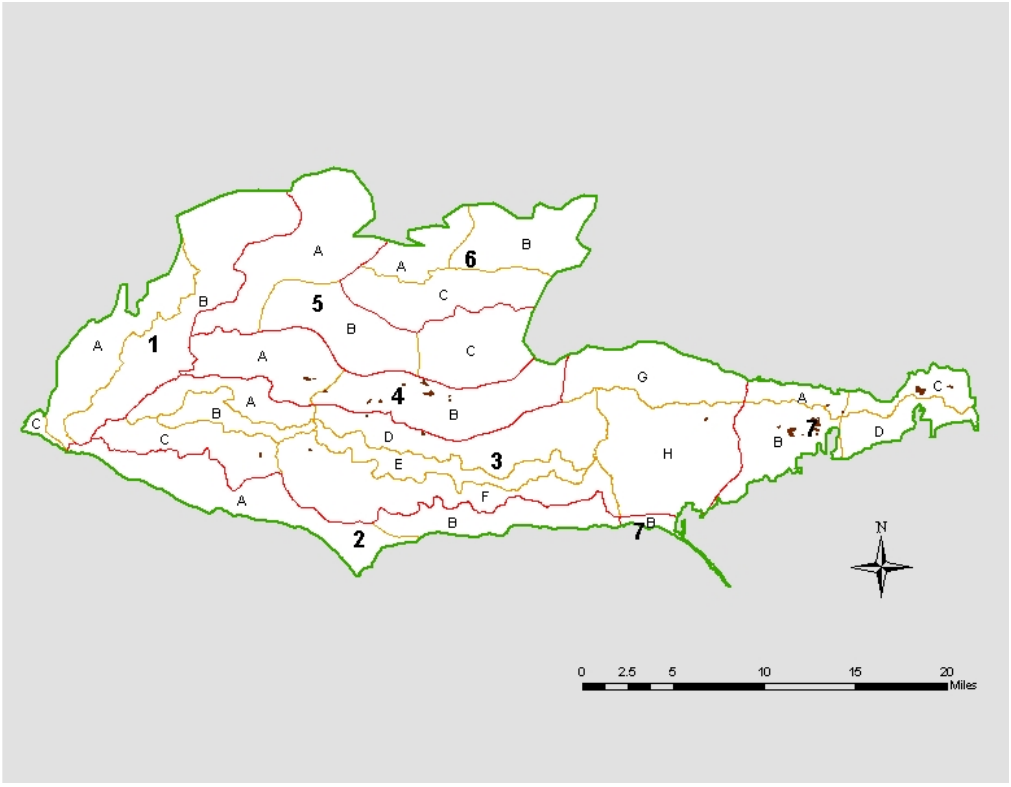
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus oliganthus* Shrubland Alliance (2070)
- *Cercocarpus betuloides* Shrubland Alliance (2110)
- *Quercus berberidifolia* Shrubland Alliance (2160)
- *Ceanothus cuneatus* Shrubland Alliance (2520)
- *Quercus berberidifolia-Adenostoma fasciculatum* Shrubland Alliance (2580)

2591 – SCRUB OAK-BIRCH LEAF MOUNTAIN MAHOGANY SHRUBLAND ASSOCIATION
Quercus berberidifolia-Cercocarpus betuloides Shrubland Association



DISTRIBUTION:



DESCRIPTION: The *Quercus berberidifolia-Cercocarpus betuloides* Shrubland Association occurs as intermittent to continuous stands of north-facing, dry-mesic, moderate to steep slopes. Stands are found on undulating or flat surfaces on lower to upper slopes. The association is characterized by dominance to co-dominance of *Q. berberidifolia,* with sub-dominance to co-dominance of *Cercocarpus* . *Q. berberidifolia* may be at moderate to high cover and *Cercocarpus* can be at low to moderate cover. Other tall shrubs may be present at low cover, such as *Heteromeles arbutifolia*, *Rhus ovata*, and *Ceanothus cuneatus*.

PHOTO INTERPRETATION SIGNATURE: *Q. berberidifolia* appears as a tall, dark green shrub with an irregular coarse crown and may occur as individuals or in dense groups. *Cercocarpus* has a dull, dark green appearance with a smooth to coarse texture. This signature is most obvious when *Cercocarpus* is in a cohesive, homogeneous stand. Stands have an uneven texture resulting from coarse tall shrubs over smoother short shrubs, with mottled color due to tone variations of the different species. Much of the time, *Heteromeles* is observed as being light green with shiny white highlights representing the inflorescences. *R. ovata* typically appears as a coarse, round-crowned, bright green, tall shrub. *C. cuneatus* has a dull gray, brown, or reddish-brown appearance.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus oliganthus*-Tall Shrubs Shrubland Superassociation (7071)
- *Cercocarpus betuloides-Ceanothus spinosus* Shrubland Association (2113)
- *Ceanothus betuloides* Shrubland Association (2114)
- *Quercus berberidifolia-Ceanothus spinosus* Shrubland Association (2167)
- *Ceanothus cuneatus-Quercus berberidifolia* Shrubland Association (2521)
- *Quercus berberidifolia-Adenostoma fasciculatum* Shrubland Association (2581)

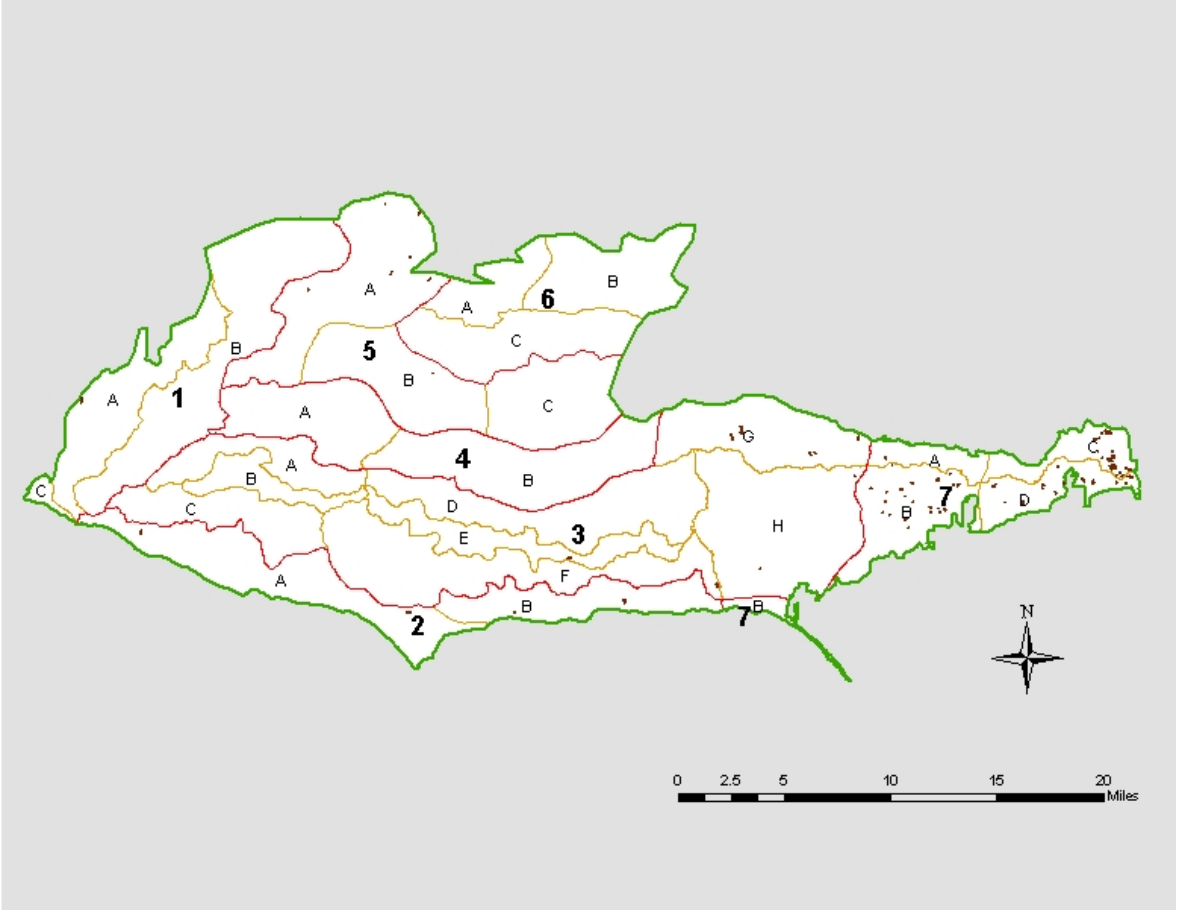
MEXICAN ELDERBERRY SHRUBLAND ALLIANCE



3020 – MEXICAN ELDERBERRY SHRUBLAND ALLIANCE
Sambucus mexicana Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Sambucus mexicana* Shrubland Alliance is the hierarchical class into which all *S. mexicana* association types are nested. The alliance occurs as very sparse to open stands of tall shrubs over an intermittent herbaceous layer, on mesic to moist, north-facing, gentle to steep slopes. This association favors neutral to concave or undulating surfaces on bottoms to upper slopes. *Sambucus* is dominant at low to high cover. *Heteromeles arbutifolia* can be present at very low to moderate cover. Other shrub species may be present at very low cover. The herbaceous understory has a very high cover, which may include *Leymus condensatus*. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *Sambucus* as the dominant shrub are included.

PHOTO INTERPRETATION SIGNATURE: The stand has an uneven texture due to open tall shrubs, and sometimes short shrubs, over the herbaceous layer. *Sambucus* is a tall shrub with a tall thin rounded crown and a rather coarse texture. It is typically gray-green in color. *Heteromeles* is a tall shrub with a coarse rounded crown. Its color ranges from dark green to black, and usually has a white overtone from inflorescences. The herb layer has a smooth texture and varies in color from mottled tan and green. *Leymus* has a green or tan color. It has a smooth even texture when dense and a stippled texture when in bunches.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

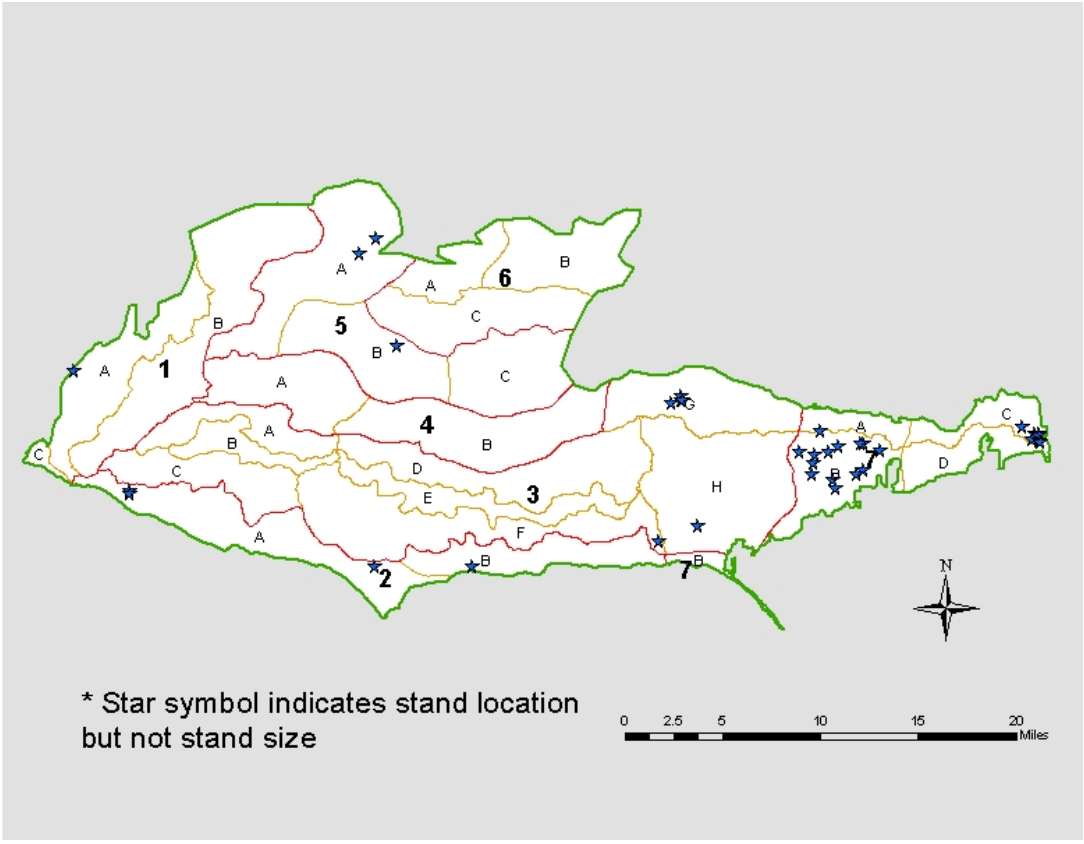
- *Heteromeles arbutifolia* Shrubland Alliance (2130)
- *Rhus ovata* Shrubland Alliance (2190)

3021 – MEXICAN ELDERBERRY/GIANT WILD RYE–ANNUAL HERB SHRUBLAND ASSOCIATION

***Sambucus mexicana/Leymus condensatus*-Annual Herb Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Sambucus mexicana/Leymus condensatus*-Annual Herb Shrubland Association occurs as very sparse to open stands of tall shrubs over a dense herbaceous layer, on mesic to moist, north-facing, gentle to moderately steep slopes. This association favors neutral to concave or undulating surfaces on bottoms to middle slopes. *Sambucus* is dominant at low to high cover. Other shrubs species may be present at very low cover. The herbaceous understory has a very high cover.

PHOTO INTERPRETATION SIGNATURE: The stand has an uneven texture due to open tall shrubs over dense herbaceous plants. *Sambucus* is a tall shrub with a tall thin rounded crown and a rather coarse texture. It is typically gray-green in color. The herb layer has a smooth texture and varies in color from mottled tan and green to a more homogeneous green. *Leymus* has a green or tan color. It has a smooth even texture when dense and a stippled texture when in bunches.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

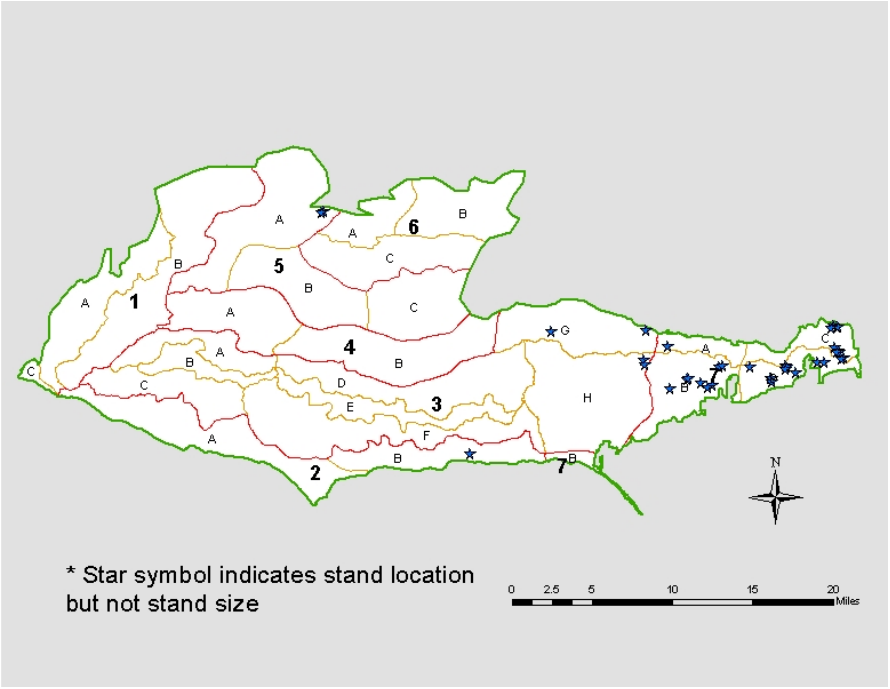
- *Heteromeles arbutifolia-Malosma laurina* Shrubland Association (2138)
- *Rhus ovata* Shrubland Association (2193)
- *Sambucus mexicana-Heteromeles arbutifolia*/Annual Grass-Herb Shrubland Association (3022)

3022 – MEXICAN ELDERBERRY–TOYON/ANNUAL GRASS-HERB SHRUBLAND ASSOCIATION

***Sambucus mexicana-Heteromeles arbutifolia*/Annual Grass-Herb Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Sambucus mexicana-Heteromeles arbutifolia/*Annual Grass-Herb Shrubland Association occurs as sparse to open stands of shrubs over a dense herbaceous layer, on mesic, north-facing, moderate to steep slopes. This association favors undulating surfaces on mid to upper slopes. *Sambucus* is dominant at moderate cover. *Heteromeles* is present at very low to moderate cover. Other shrubs species are usually present at very low to low cover. The herbaceous understory has a moderate cover. *Leymus condensatus* may be present at very low to high cover.

PHOTO INTERPRETATION SIGNATURE: The stand has an uneven texture due to open tall shrubs and some short shrubs over the herbaceous layer. *Sambucus* is a tall shrub with a tall thin rounded crown and a rather coarse texture. It is typically gray-green in color. *Heteromeles* is a tall shrub with a coarse rounded crown. Its color ranges from dark green to black, and usually has a white overtone from inflorescences. The herb layer has a smooth texture and varies in color from mottled tan and green.

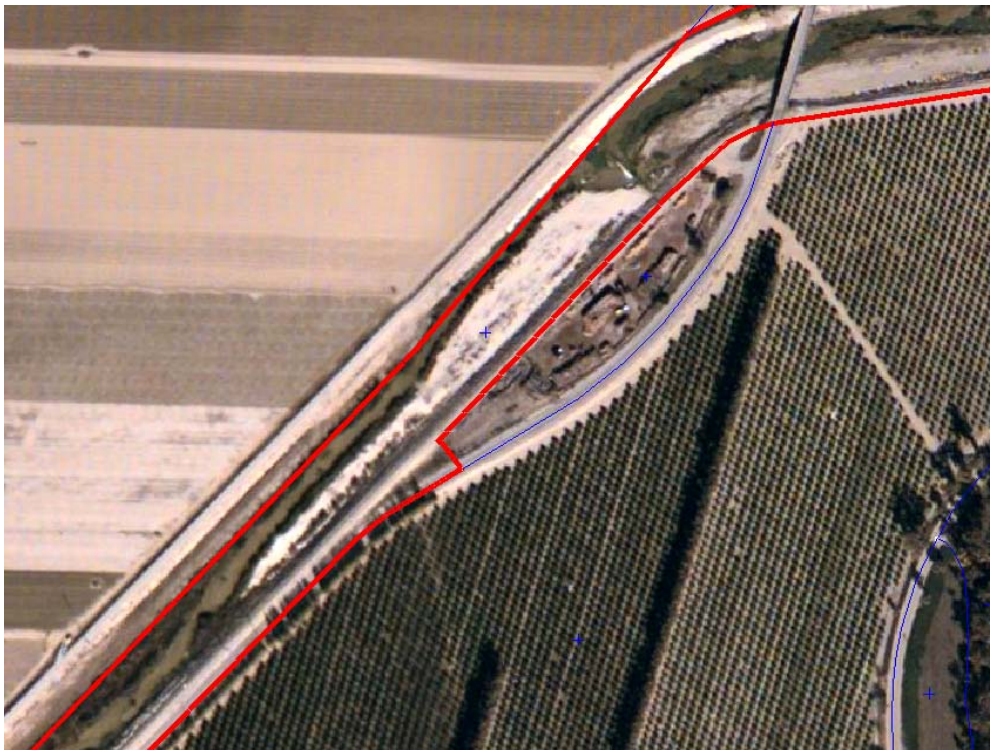
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Heteromeles arbutifolia-Malosma laurina* Shrubland Association (2138)
- *Rhus ovata* Shrubland Association (2193)
- *Sambucus mexicana*/*Leymus condensatus*-Annual Herb Shrubland Association (3021)

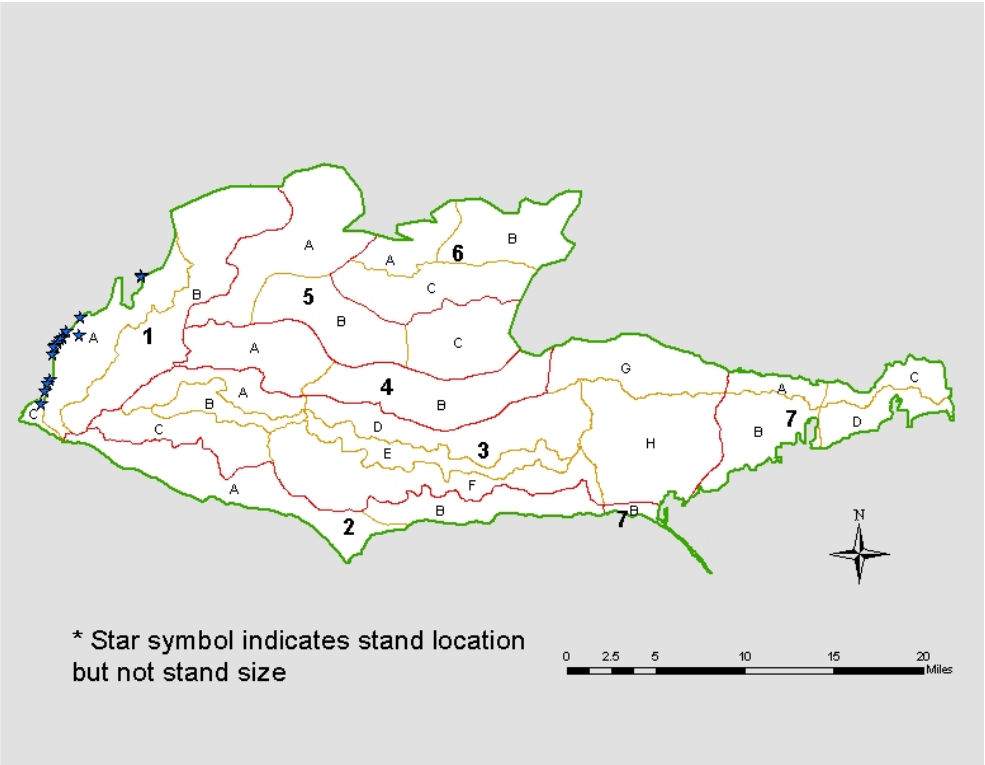
NARROWLEAF WILLOW SHRUBLAND ALLIANCE



3110 – NARROWLEAF WILLOW SHRUBLAND ALLIANCE
Salix exigua Shrubland Alliance



DISTRIBUTION:



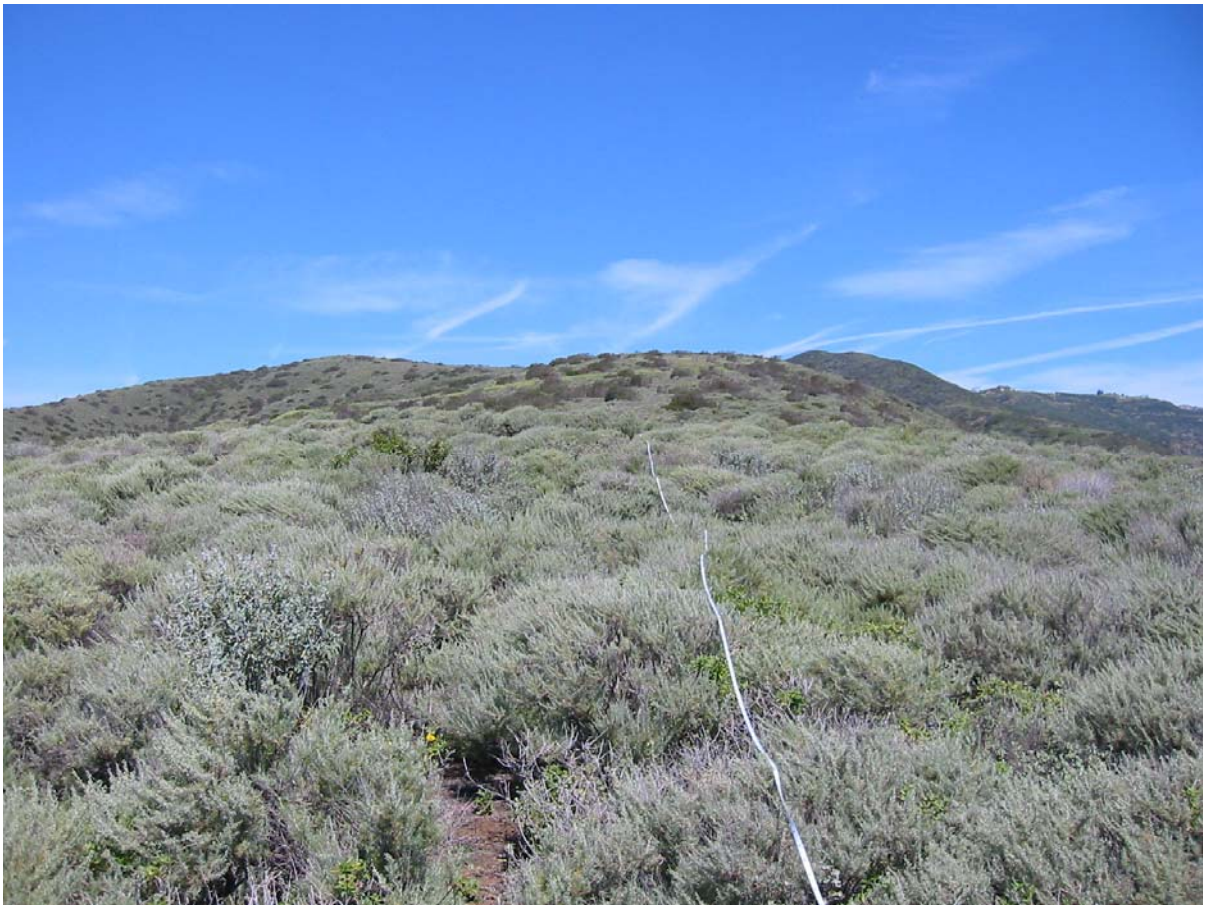
DESCRIPTION: *Salix exigua* Shrubland Alliance was mapped only where Rapid Assessment plots were provided by the Park. It is mapped as very sparse stands in wet neutral, level, floodplains. *S. exigua* is co-dominant with *S. lasiolepis*. Both species can have very low to low cover.

PHOTO INTERPRETATION SIGNATURE: The stand has a short gray signature with an uneven texture. *S. exigua* is difficult to distinguish from *S. lasiolepis*. Both will have a gray color and will occur in sparse to open clumps on sandbars and along creek edges.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salix* spp. Woodland/Forest Superalliance (1410)
- *Salix lasiolepis* Woodland/Forest Alliance (1430)

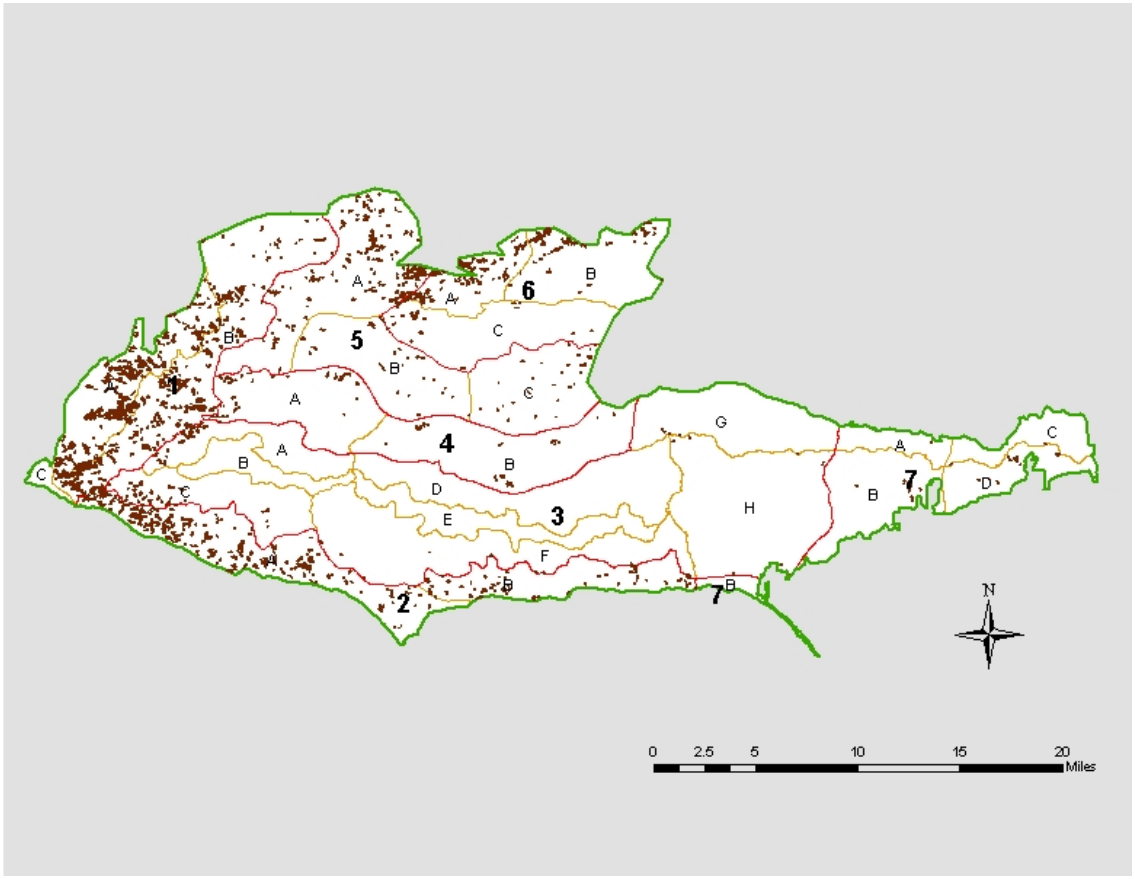
CALIFORNIA SAGEBRUSH SHRUBLAND ALLIANCE



3210 – CALIFORNIA SAGEBRUSH SHRUBLAND ALLIANCE
Artemisia californica Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Artemisia californica* Shrubland Alliance is the hierarchical class into which all *A. californica* association types are nested. This alliance occurs as sparse to intermittent shrubs on dry to dry-mesic north-facing or south-facing gentle to steep slopes. Some stands can have a high cover of herbaceous plants. Dry-mesic stands may have *Mimulus aurantiacus* and/or *Leymus condensatus* in varying amounts. Dry stands may contain *Eriogonum cinereum*, *Malosma laurina,* and *Salvia leucophylla* in low cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *A. californica* as the dominant shrubs are included.

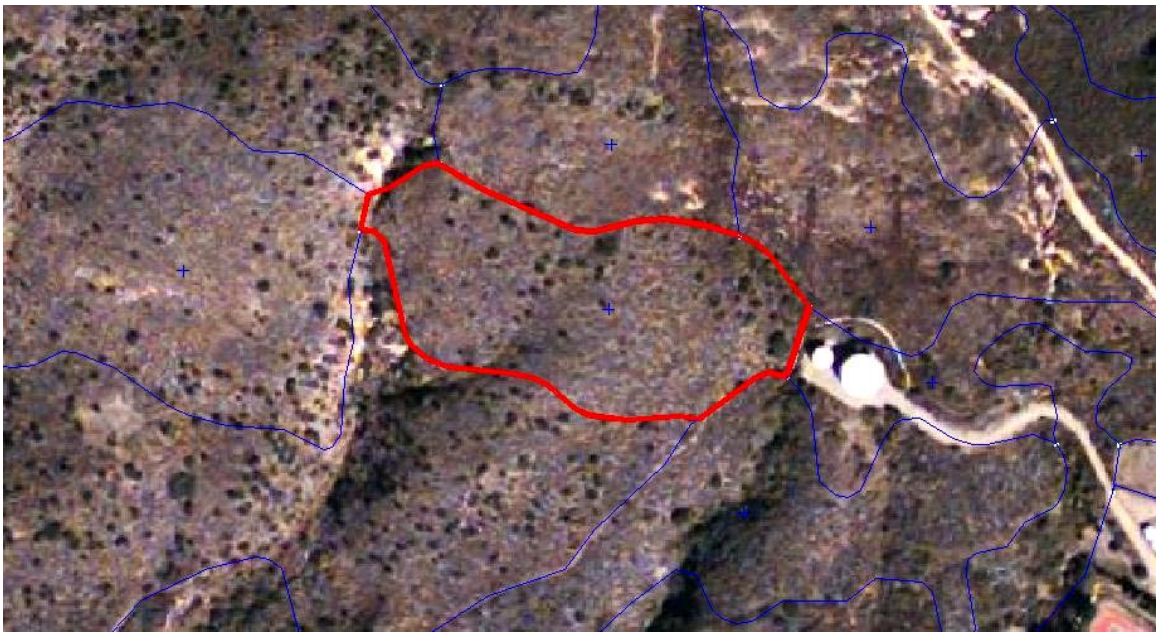
PHOTO INTERPRETATION SIGNATURE: Stands tend to be mottled in color and texture due to the variation of species and density of the shrubs. *A. californica* occurs as individuals or groups with a tan to purple-brown color and a fine texture. *E. cinereum* occurs as individuals or groups with a light to medium gray color and a fine texture. It can be difficult to discern when at low cover, but can be inferred on dry steep thin-soiled south-facing coastal slopes. *S. mellifera* appears as individuals or in groups with a fine texture. Its color ranges from tan to green. When *S. mellifera* is green and at a higher cover than *A. californica*, it can mask the other shrubs, making it difficult to differentiate this type from *S. mellifera* types. *Mimulus* is reddish- to orange-brown in color and usually occurs as individuals, with a fine texture. *L. condensatus* appears brown to green in color, occurring as wispy, low clumps. Both *Mimulus* and *Leymus* can be difficult to discern when in low cover, inhibiting the photo interpreter's ability to differentiate this type from other north-facing *A. californica* types. *Malosma* is a tall shrub occurring as scattered individuals with a rounded crown. Its signature color is light to dark green. The herbaceous layer varies in color from light tan to dark brown, and has a smooth texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

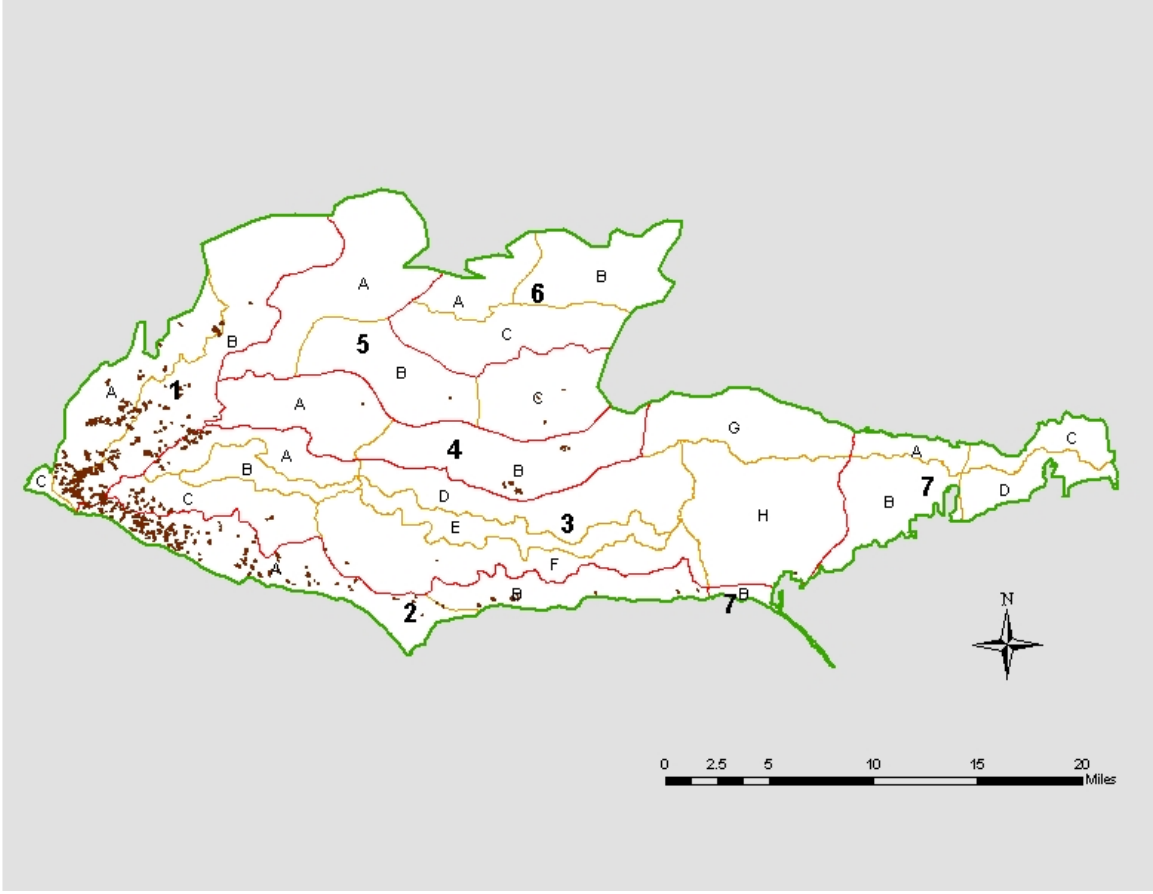
- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- *Juglans californica* Woodland/Forest Alliance (1310)
- *Malosma laurina* Shrubland Alliance (2140)
- *Mimulus aurantiacus* Shrubland Alliance (2170)
- *Encelia californica* Shrubland Alliance (3220)
- *Salvia leucophylla-Artemisia californica* Shrubland Suballliance (3390)
- *Salvia mellifera* Shrubland Alliance (3320)
- *Toxicodendron diversilobum* Shrubland Alliance (3330)
- *Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance (3370)
- *Artemisia californica-Salvia mellifera* Shrubland Alliance (3420)

3214 – CALIFORNIA SAGEBRUSH–ASHY BUCKWHEAT SHRUBLAND ASSOCIATION

***Artemisia californica-Eriogonum cinereum* Shrubland Association**



DISTRIBUTION:



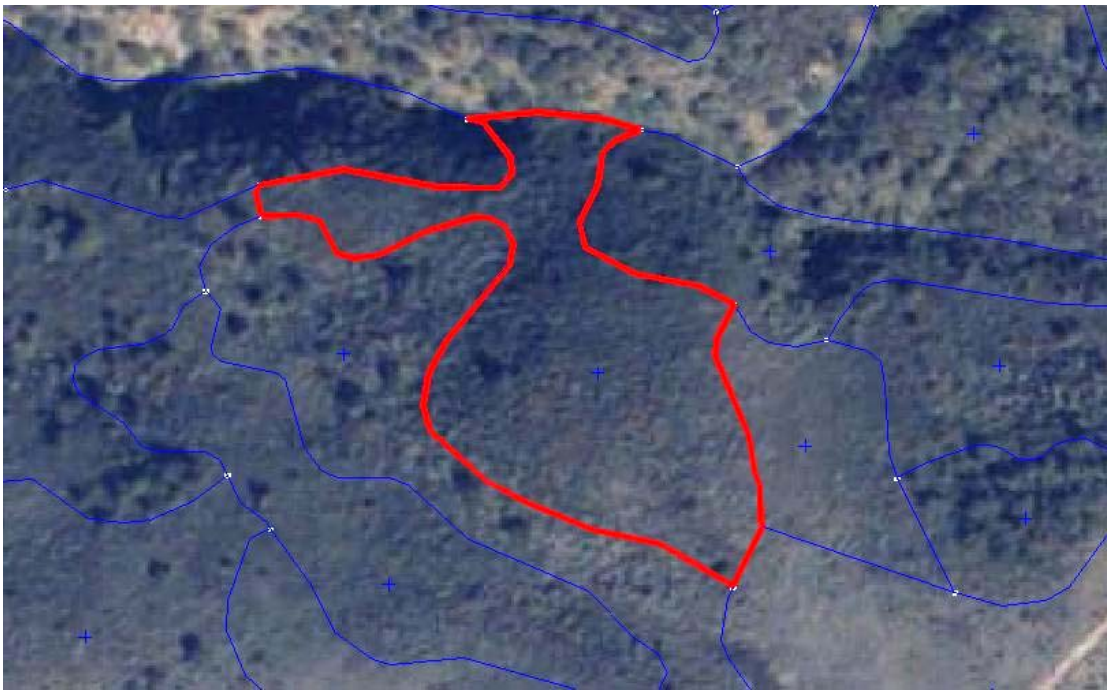
DESCRIPTION: *Artemisia californica-Eriogonum cinereum* Shrubland Association is mapped as sparse to open shrubs on coastal, dry, south-facing, moderate to steep slopes, but can occur on dry-mesic north-facing gentler slopes. It tends to favor neutral to convex surfaces on lower to upper slopes, but can also occur on ridge tops. *A. californica* and *E. cinereum* co-dominate, with *A. californica* at low to moderate cover, and *E. cinereum* at very low to moderate cover. On south-facing slopes *S. mellifera* may be present at very low to moderate cover, and can also co-dominate. Tall shrubs, including *Malosma laurina* and *Rhus integrifolia*, may be present at very low cover. On north-facing slopes *Mimulus aurantiacus* may be present at very low to moderate cover. Other shrubs may be present at very low to low cover.

PHOTO INTERPRETATION SIGNATURE: The stand of intermixed short shrubs typically has a smooth texture with a slightly variable color. *A. californica* occurs as individuals or groups with a tan to purple-brown color and a fine texture. *E. cinereum* occurs as individuals or groups with a light to medium gray color and a fine texture. It can be difficult to discern when at low cover, but can be inferred on dry steep thin-soiled south-facing coastal slopes. *S. mellifera* appears as individuals or in groups with a fine texture. Its color ranges from tan to green. When *S. mellifera* is green and at a higher cover than *A. californica*, it can mask the other shrubs, making it difficult to differentiate this type from *S. mellifera* types. *Mimulus* is reddish- to orange-brown in color and usually occurs as individuals, with a fine texture. It can be difficult to discern when in low cover, inhibiting the photo interpreter's ability to differentiate this type from the *Artemisia californica-Mimulus aurantiacus* Shrubland Association (8214).

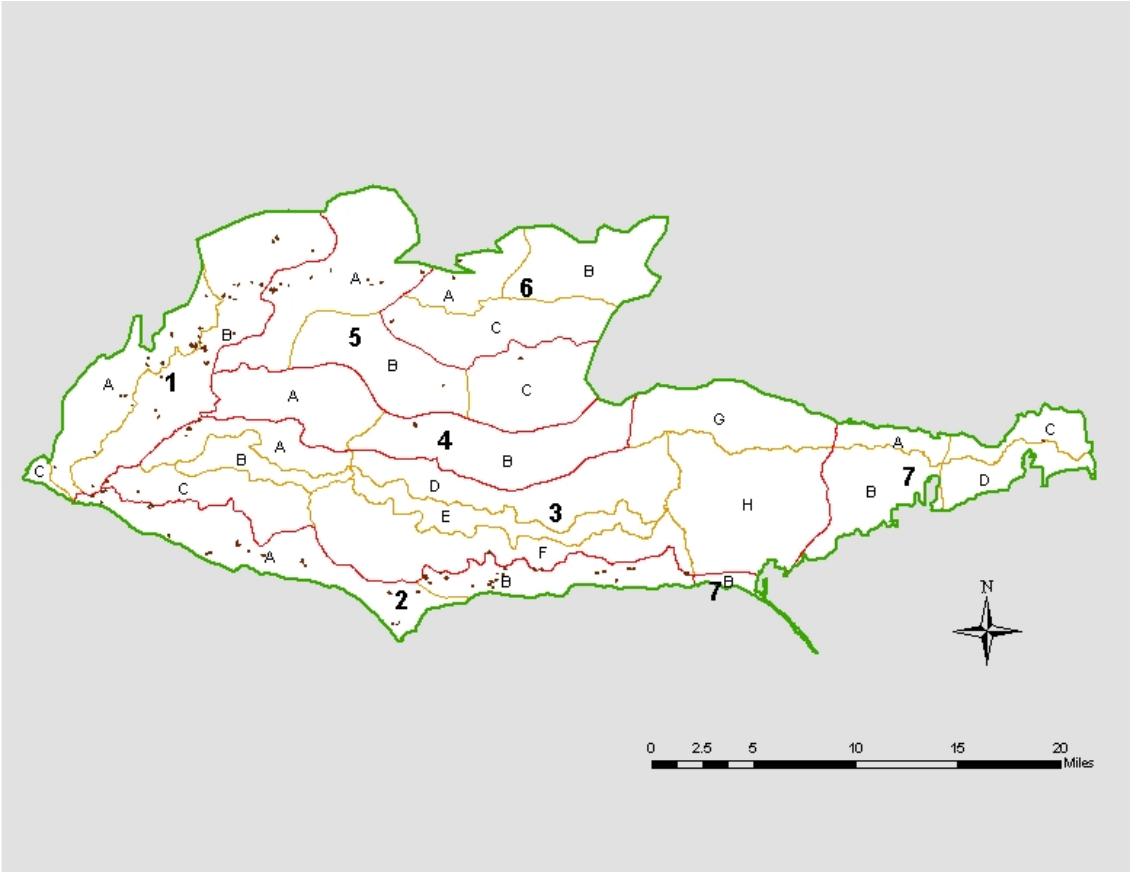
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Eriogonum cinereum* Shrubland Association (2141)
- *Mimulus aurantiacus* Shrubland Association (2172)
- *Artemisia californica*/*Leymus condensatus* Shrubland Association (3216)
- *Artemisia californica* Shrubland Association (8213)
- *Artemisia californica-Mimulus aurantiacus* Shrubland Association (8214)
- *Encelia californica*-(*Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera*) Shrubland Superassociaiton (3228)
- *Eriogonum cinereum* Shrubland Association (3257)
- *Salvia mellifera-Eriogonum cinereum* Shrubland Association (3323)
- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)
- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)
- *Toxicodendron diversilobum-Artemisia californica/Leymus condensatus* Shrubland Association (3331)
- *Toxicodendron diversilobum-Mimulus aurantiacus* Shrubland Association (3332)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum*/*Nassella* spp. Shrubland Association (3396)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)
- *Artemisia californica-Salvia mellifera* Shrubland Association (3421)

3216 – CALIFORNIA SAGEBRUSH/GIANT WILD RYE SHRUBLAND ASSOCIATION
***Artemisia californica/Leymus condensatus* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Artemisia californica/Leymus condensatus* Shrubland Association occurs as sparse to open shrubs over herbs, on mesic, north-facing, gentle to steep, lower to upper slopes. *A. californica* is the dominant shrub at moderate to high cover. *Leymus* is sub-dominant to co-dominant at very low to high cover. Other mesic shrubs may be present at very low to low cover.

PHOTO INTERPRETATION SIGNATURE: The stand tends to have a smooth homogeneous texture but may have some slight color variation within it. *A. californica* occurs as individuals or groups with a tan to purple-brown color and a fine texture. *Leymus* appears brown to green in color, occurring as wispy, low clumps. It can be difficult to discern when in low cover, inhibiting the photo interpreter's ability to differentiate this type from other north-facing *A. californica* types.

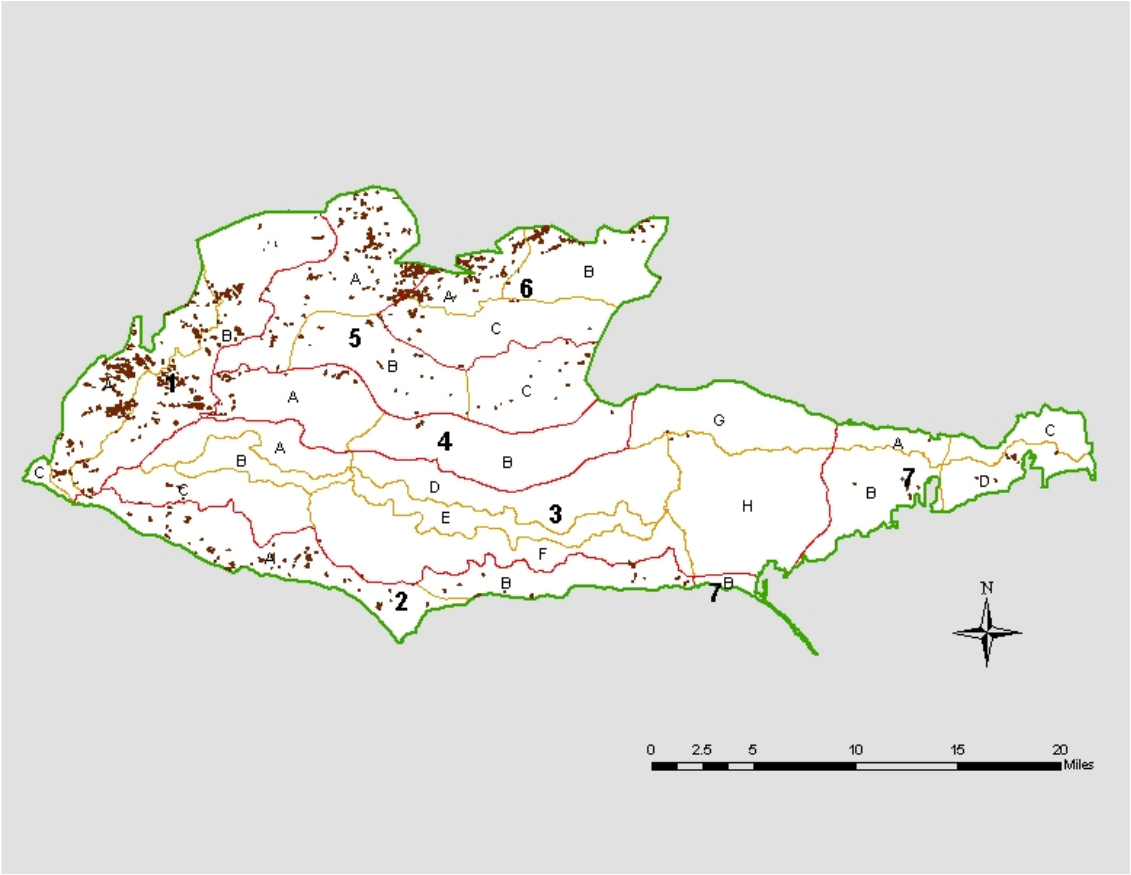
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica-Mimulus aurantiacus* Shrubland Association (8214)
- *Toxicodendron diversilobum-Artemisia californica/Leymus condensatus* Shrubland Association (3331)
- *Salvia leucophylla-Artemisia californica* Shrubland Association (3391)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum*/*Nassella* spp. Shrubland Association (3396)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)

8213 – CALIFORNIA SAGEBRUSH SHRUBLAND ASSOCIATION
Artemisia californica Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Artemisia californica* Shrubland Association occurs as sparse to open stands of shrubs. This association is usually found on dry northerly gentle to steep slopes, but can be southerly in aspect. It can reside on neutral, convex or undulating surfaces on lower slopes to ridge tops. *A. californica* is highly dominant at low to high cover. *Malosma laurina* can be present and sometimes approaches sub-dominance at very low to moderate cover. *Salvia leucophylla* can be present at very low to low cover. In some stands the herbaceous understory as a whole can sub-dominate.

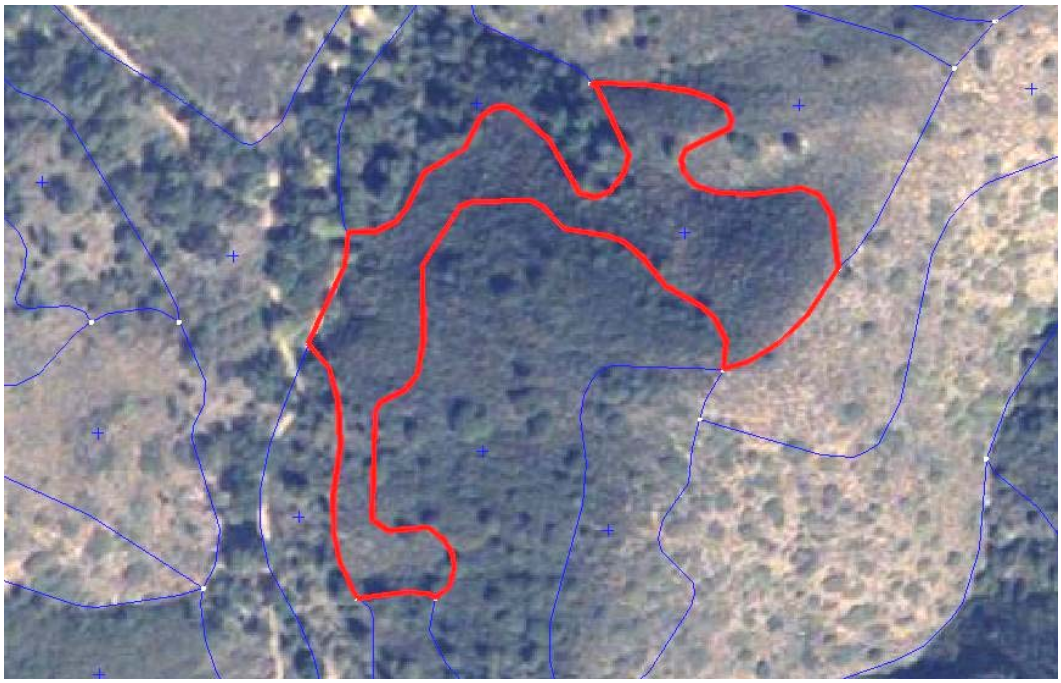
PHOTO INTERPRETATION SIGNATURE: The stands tend to have an uneven texture reflecting the emergent tall shrubs over the short shrubs and herbaceous layers. *A. californica* typically has a purple-brown color. It appears as individuals or in clumps or groups, and has a fine texture. *M. laurina* is a tall shrub occurring as scattered individuals with a rounded crown. Its signature color is light to dark green. The herbaceous layer varies in color from light tan to dark brown, and has a smooth texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

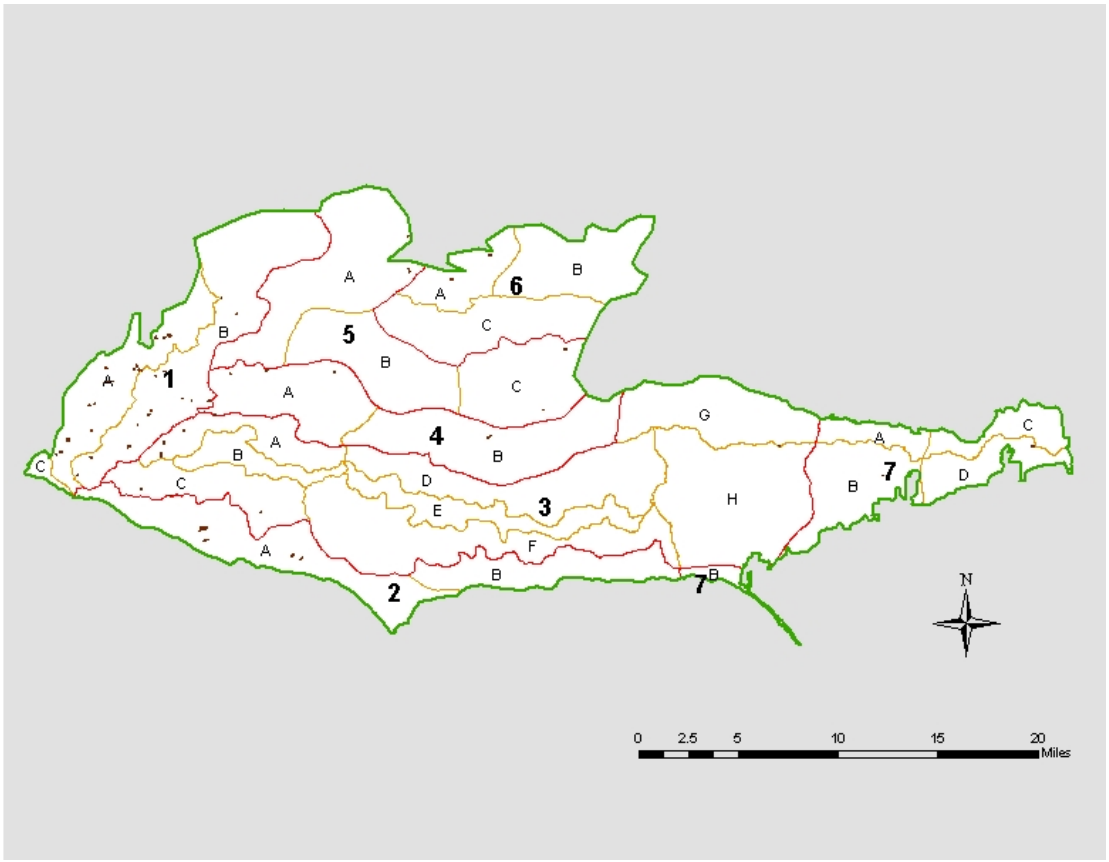
- *Malosma laurina-Artemisia californica* Shrubland Association (7148)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica/Leymus condensatus* Shrubland Association (3216)
- *Artemisia californica-Mimulus aurantiacus* Shrubland Association (8214)
- *Artemisia californica-Eriogonum fasciculatum*/Annual Grass-Herb Shrubland Association (3371)
- *Salvia leucophylla-Artemisia californica* Shrubland Association (3391)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum*/*Nassella* spp. Shrubland Association (3396)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)

8214 - CALIFORNIA SAGEBRUSH–BUSH MONKEY FLOWER SHRUBLAND ASSOCIATION

***Artemisia californica-Mimulus aurantiacus* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Artemisia californica-Mimulus aurantiacus* Shrubland Association occurs as sparse to intermittent shrubs, on dry-mesic, north-facing, moderate to steep slopes. It favors neutral to convex mid to upper slopes. *A. californica* and *Mimulus* co-dominate at low to moderate cover. Other mesic shrubs may be present at very low to low cover.

PHOTO INTERPRETATION SIGNATURE: The stand has a smooth to uneven texture varying with the color and openness of the shrubs. *A. californica* typically has a purple-brown color. It appears as individuals or in clumps or groups, and has a fine texture. *Mimulus* is reddish-to orange-brown in color and usually occurs as individuals, with a fine texture. It can be difficult to discern when in low cover, inhibiting the photo interpreter's ability to differentiate this type from other north-facing *A. californica* types.

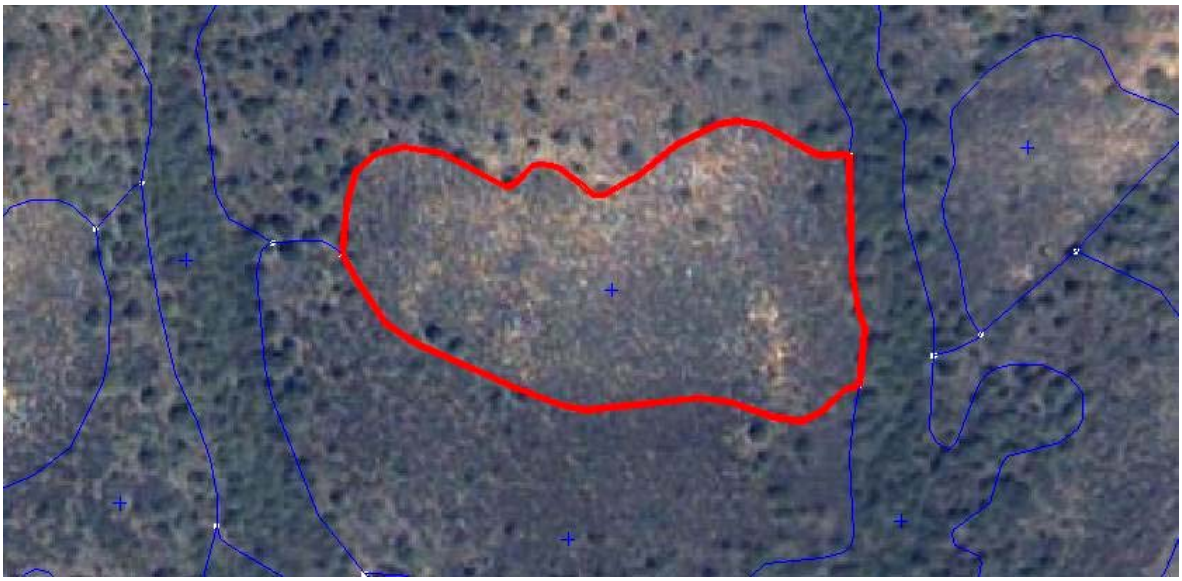
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Mimulus aurantiacus* Shrubland Association (2172)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica/Leymus condensatus* Shrubland Association (3216)
- *Toxicodendron diversilobum-Artemisia californica/Leymus condensatus* Shrubland Association (3331)
- *Toxicodendron diversilobum-Mimulus aurantiacus* Shrubland Association (3332)
- *Salvia leucophylla-Artemisia californica* Shrubland Association (3391)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella* spp. Shrubland Association (3396)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)

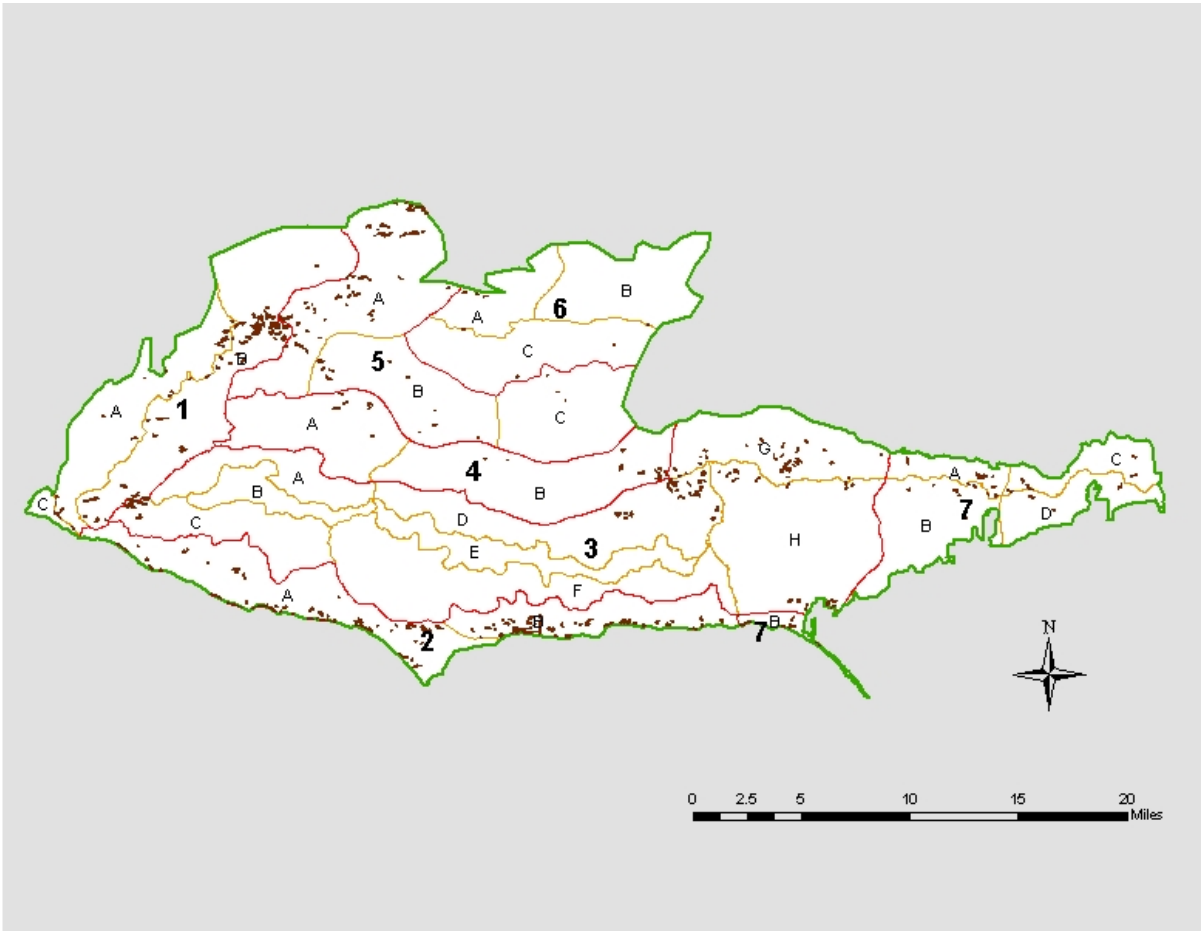
CALIFORNIA ENCELIA SHRUBLAND ALLIANCE



3220 – CALIFORNIA ENCELIA SHRUBLAND ALLIANCE
Encelia californica Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Encelia californica* Shrubland Alliance is the hierarchical class into which all *Encelia* association types are nested. This alliance typically forms stands of sparse to intermittent shrubs on dry neutral south-facing moderate to steep slopes with a thin cover of soil. *Encelia* co-dominates with other coastal sage scrub plants, including *Artemisia californica, Eriogonum cinereum, Eriogonum fasciculatum* and *Salvia mellifera*. Cover of *Encelia* can range from low to high cover. Other sub-dominant coastal scrub plants range from very low to moderate cover. *Malosma laurina* and *Rhus integrifolia* can also co-dominate at low to moderate cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *E. californica* as the dominant shrubs are included.

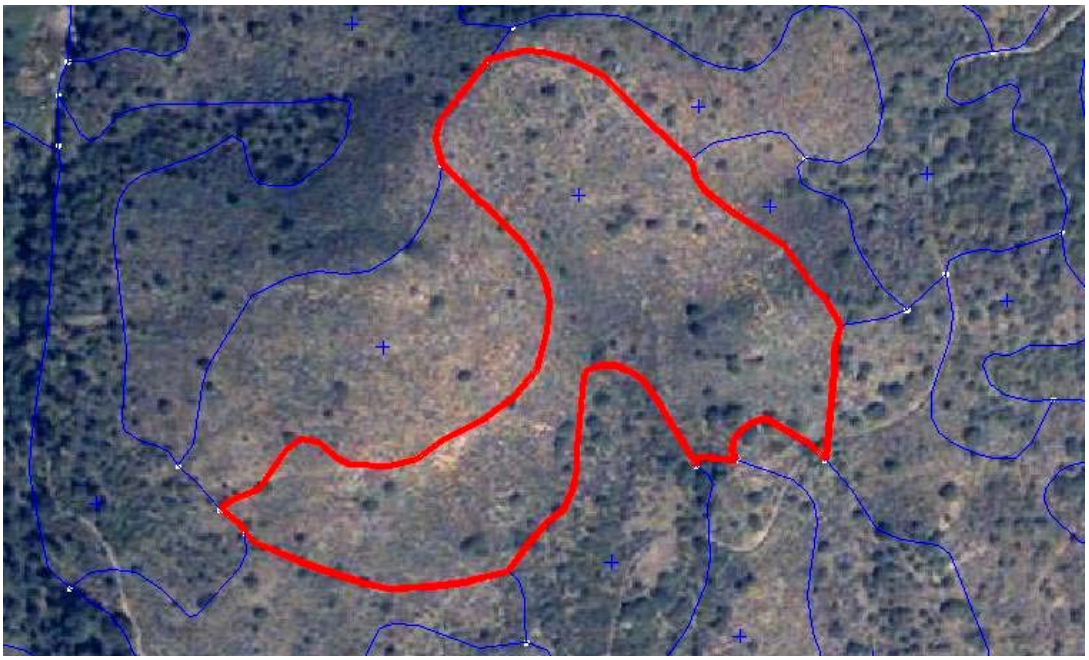
PHOTO INTERPRETATION SIGNATURE: Stands typically are homogeneous in color and texture. When tall shrubs are present they are scattered or in coarse-textured groups over the smooth, shorter shrub understory. The stands are typically rusty reddish-brown in color, influenced by the summertime color of *Encelia*. The individual coastal sage scrub species are not usually distinct from each other. At times, *S. mellifera* may be visible as a green overtone in concavities. One may see a white veining appearance throughout the stand. *Malosma* is a tall shrub with a variable green tone that appears as individuals with a large rounded crown and a smooth to coarse texture. *R. integrifolia* is black in color. It is a short shrub that emerges over the coastal sage scrub as round individuals with smooth texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

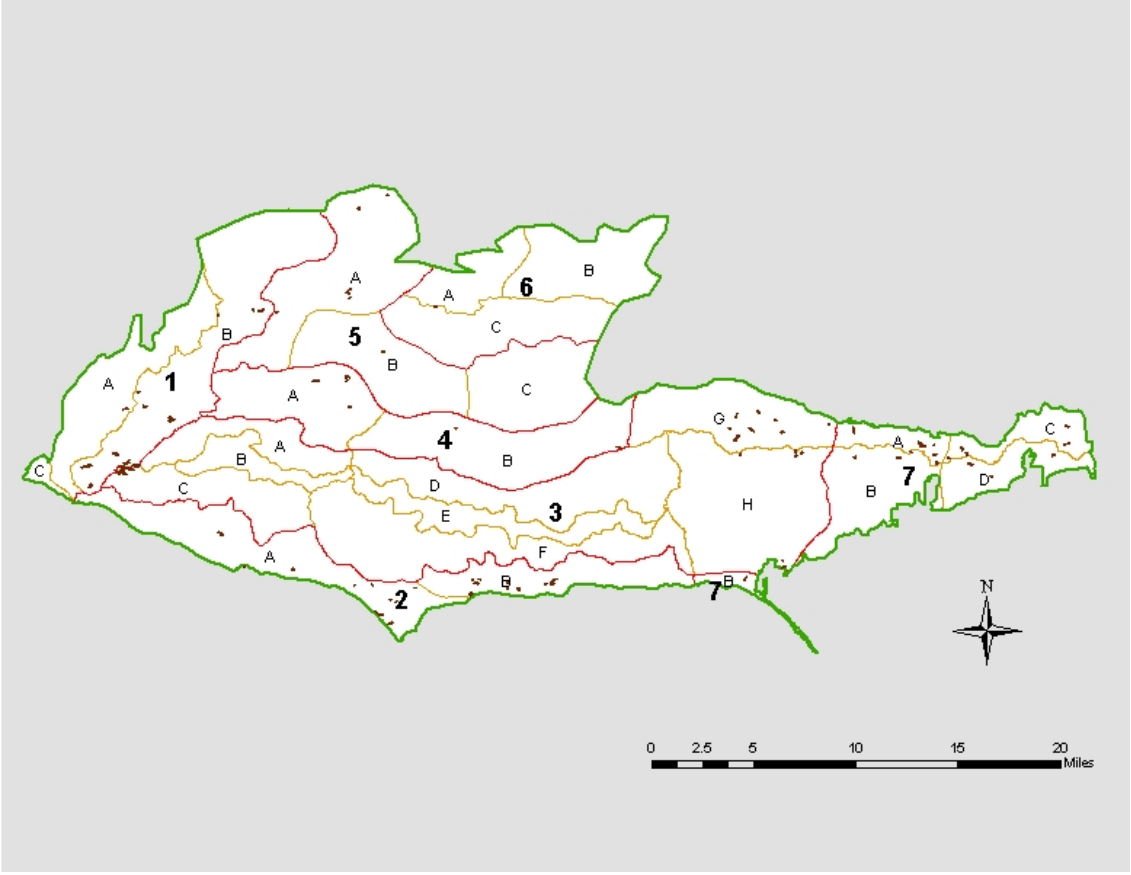
- *Malosma laurina* Shrubland Alliance (2140)
- *Rhus integrifolia* Shrubland Alliance (2150)
- *Artemisia californica* Shrubland Alliance (3210)
- *Salvia mellifera* Shrubland Alliance (3320)
- *Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance (3370)
- *Salvia mellifera-Artemisia californica* Shrubland Alliance (3420)

3221 – CALIFORNIA ENCELIA–LAUREL SUMAC–BLACK SAGE SHRUBLAND ASSOCIATION

***Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Encelia californica-Malosma laurina-Salvia melllifera* Shrubland Association occurs as open to intermittent shrub stands on coastal dry southerly moderate to steep slopes with thin cover of soil. It is found on neutral to undulating surfaces on lower to upper slopes. It can also occur inland at the edge of the fog influence. *Encelia* and *S. mellifera* co-dominate, with both species at low to moderate cover. *Malosma* is usually present and may approach sub-dominance or even co-dominance at moderate cover. Because the coastal sage species in the *Encelia* associations tend to co-dominate and occupy similar environments, and because the signatures of each species in the types overlap or are very similar, it is difficult to distinguish one *Encelia* type from another in photo interpretation. Therefore, when *Malosma* is not present or in very low cover, and *S. mellifera* is also in very low cover without a distinct signature, then *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association is mapped as the *Encelia californica*-(*Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera*) Shrubland Superassociation (3228), unless Rapid Assessment plot locations were provided by the Park.

PHOTO INTERPRETATION SIGNATURE: Stands typically are homogeneous in color and texture. The stands are typically rusty reddish-brown in color, influenced by the summertime color of *Encelia*. The individual coastal sage scrub species are not usually distinct from each other. At times, *S. mellifera* may be visible as a green overtone in concavities. One may see a white veining appearance throughout the stand. When *Malosma* is present it is scattered or in coarse-textured groups over the smooth, shorter shrub understory. It is a tall shrub with a variable green tone that appears as individuals with a large rounded crown and a smooth to coarse texture.

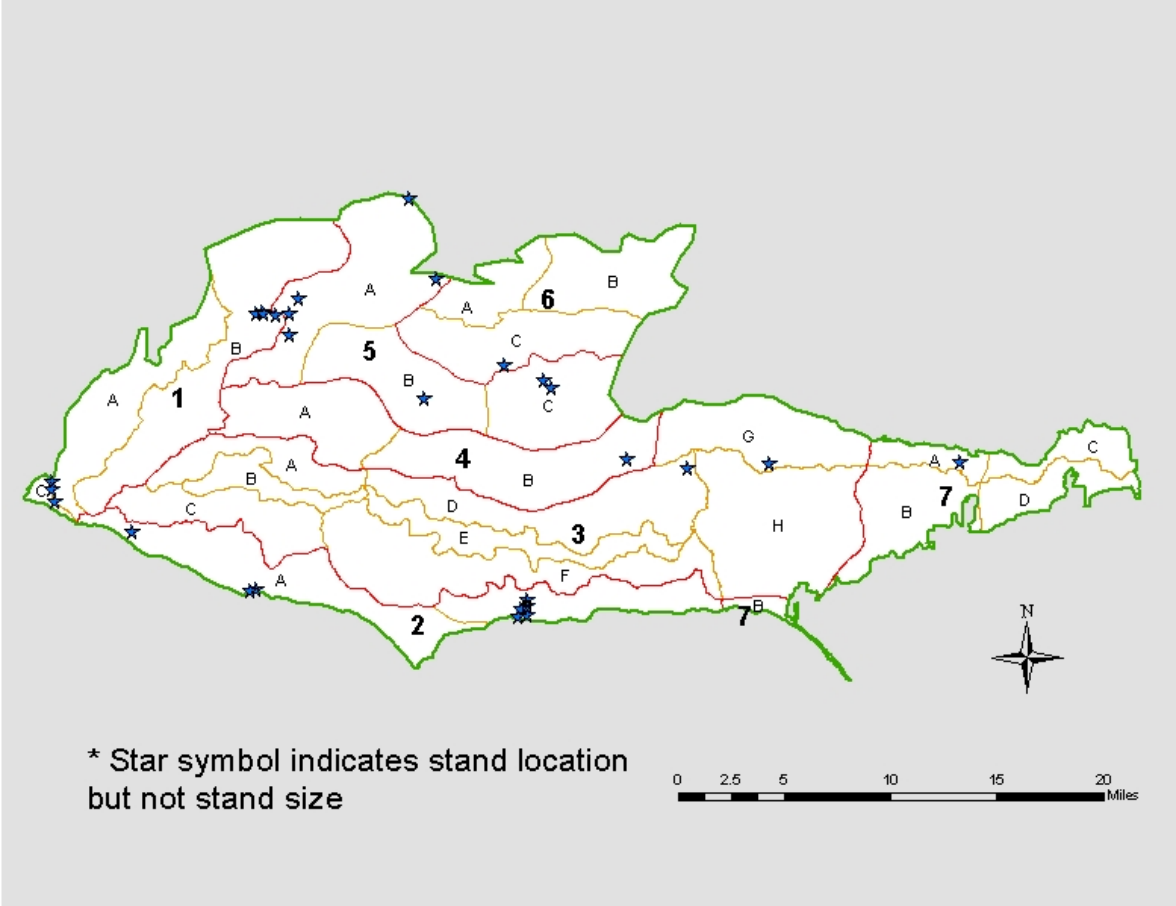
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Salvia mellifera* Shrubland Association (2148)
- *Encelia californica* Shrubland Association (3222)
- *Encelia californica-Eriogonum cinereum* Shrubland Association (3225)
- *Encelia californica-Rhus integrifolia* Shrubland Association (3226)
- *Encelia californica-Artemisia californica* Shrubland Association (3227)
- *Encelia californica*-(*Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera*) Shrubland Superassociation (3228)
- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)
- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)
- *Salvia mellifera-Artemisia californica* Shrubland Association (3421)

3222 – CALIFORNIA ENCELIA SHRUBLAND ASSOCIATION
Encelia californica Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Encelia californica* Shrubland Association occurs as sparse to intermittent shrubs on dry coastal southerly neutral surfaces and on gentle to steep, lower to upper slopes with thin cover of soil. It can also occur inland at the edge of the fog influence. *Encelia* is dominant at low to high cover. *Eriogonum fasciculatum* may be present at low to moderate cover, and may reach sub-dominance to co-dominance. Other shrubs may be present at very low cover. Because the coastal sage species in the *Encelia* associations tend to co-dominate and occupy similar environments, and because the signatures of each species in the types overlap or are very similar, it is difficult to distinguish one *Encelia* type from another in photo interpretation. Therefore, *Encelia californica* Shrubland Association is mapped as the *Encelia californica*-(*Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera*) Shrubland Superassociation (3228). Otherwise it is mapped only where Rapid Assessment plot locations for this type were provided by the Park.

PHOTO INTERPRETATION SIGNATURE: Stands typically are homogeneous in color and texture. The stands are typically rusty reddish-brown in color, influenced by the summertime color of *Encelia*. The other individual coastal sage scrub species are not distinct from each other. One may see a white veining appearance throughout the stand.

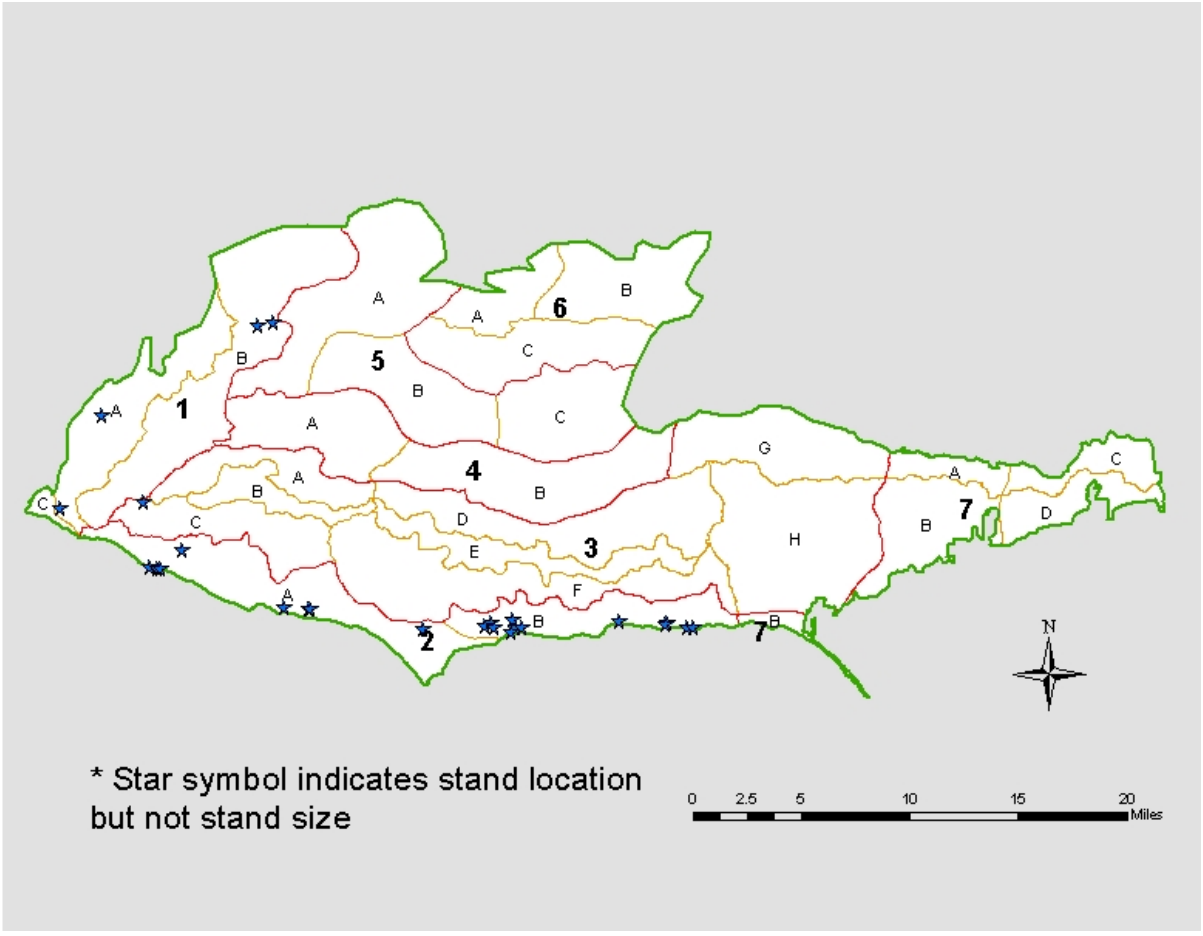
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Salvia mellifera* Shrubland Association (2148)
- *Artemisia californica* Shrubland Association (8213)
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Encelia californica-Eriogonum cinereum* Shrubland Association (3225)
- *Encelia californica-Rhus integrifolia* Shrubland Association (3226)
- *Encelia californica-Artemisia californica* Shrubland Association (3227)
- *Encelia californica*-(*Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera*) Shrubland Superassociation (3228)
- *Artemisia californica-Eriogonum fasciculatum*/Annual Grass-Herb Shrubland Association (3371)

3225 – CALIFORNIA ENCELIA–ASHY BUCKWHEAT SHRUBLAND ASSOCIATION
Encelia californica-Eriogonum cinereum Shrubland Association



DISTRIBUTION:



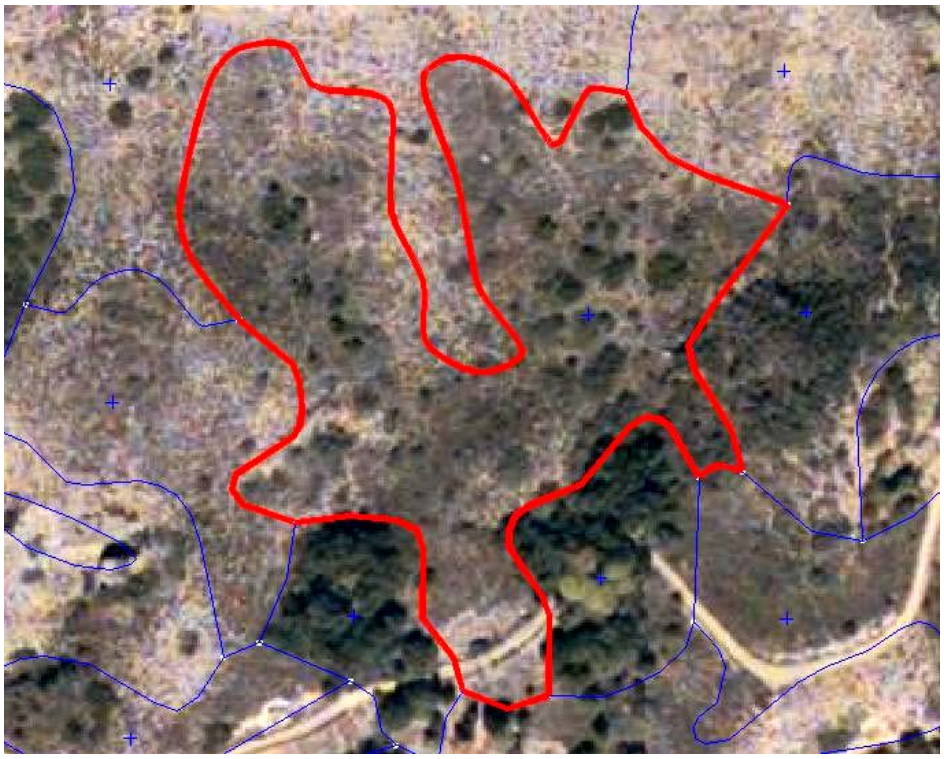
DESCRIPTION: *Encelia californica-Eriogonum cinereum* Shrubland Association occurs as sparse shrubs on coastal dry southerly neutral surfaces on moderate to steep, lower to upper slopes with thin cover of soil. It can also occur inland at the edge of the fog influence. *Encelia* and *Eriogonum cinereum* co-dominate, with both species at very low to moderate cover. Other shrubs may be present at very low cover. Because the coastal sage species in the *Encelia* associations tend to co-dominate and occupy similar environments, and because the signatures of each species in the types overlap or are very similar, it is difficult to distinguish one *Encelia* type from another in photo interpretation. Therefore, *Encelia californica-Eriogonum cinereum* Shrubland Association is mapped as the *Encelia californica*-(*Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera*) Shrubland Superassociation (3228). Otherwise it is mapped only where Rapid Assessment plot locations for this type were provided by the Park.

PHOTO INTERPRETATION SIGNATURE: Stands typically are homogeneous in color and texture. The stands are typically rusty reddish-brown in color, influenced by the summertime color of *Encelia*. The other individual coastal sage scrub species are not usually distinct from each other. One may see a white veining appearance throughout the stand.

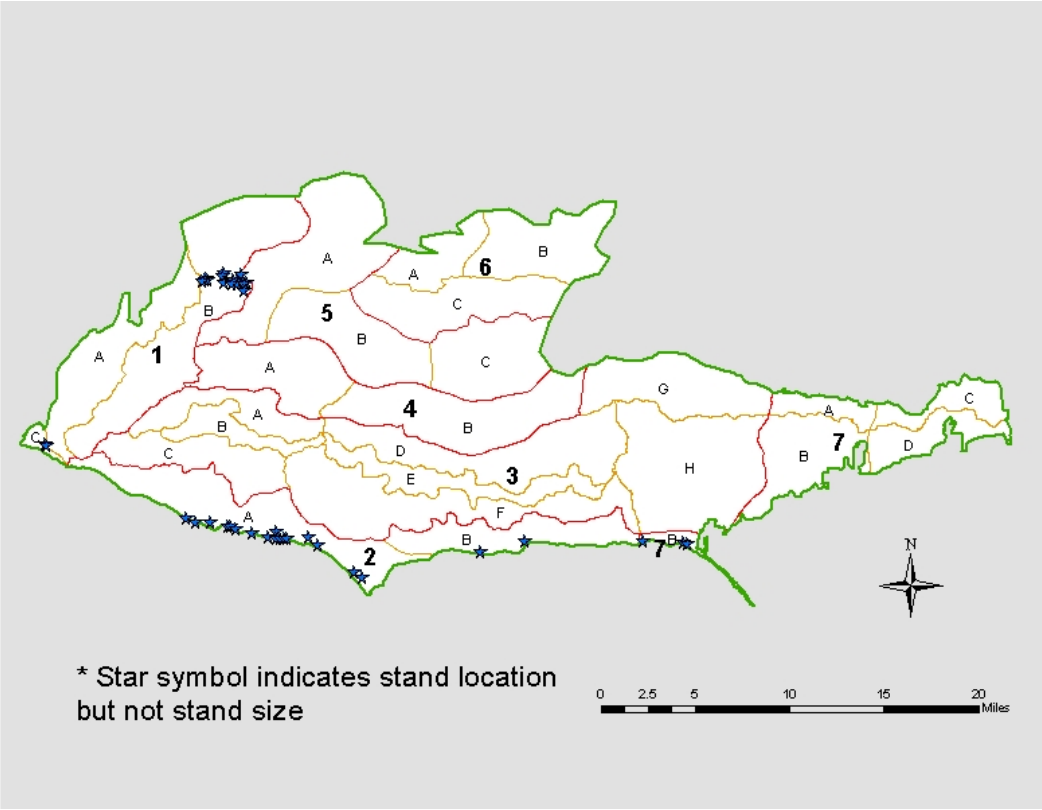
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Salvia mellifera* Shrubland Association (2148)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Encelia californica* Shrubland Association (3222)
- *Encelia californica-Rhus integrifolia* Shrubland Association (3226)
- *Encelia californica-Artemisia californica* Shrubland Association (3227)
- *Encelia californica*-(*Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera*) Shrubland Superassociation (3228)

3226 – CALIFORNIA ENCELIA-LEMONADE BERRY SHRUBLAND ASSOCIATION
Encelia californica-Rhus integrifolia Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Encelia californica-Rhus integrifolia* Shrubland Association occurs as sparse to intermittent shrubs on dry coastal, southerly, moderate to extremely steep slopes with thin cover of soil. It can be found on undulating lower to upper slopes. *Encelia* and *R. integrifolia* co-dominate, with both species at low to moderate cover. *Eriogonum cinereum* is usually present and at times may reach co-dominance at moderate cover.

PHOTO INTERPRETATION SIGNATURE: Stands typically are homogeneous in color and texture. The stands are typically rusty reddish-brown in color, influenced by the summertime color of *Encelia*. The individual coastal sage scrub species are not usually distinct from each other. One may see a white veining appearance throughout the stand. *R. integrifolia* is scattered or in coarse-textured groups over the smooth shorter shrub understory. *R. integrifolia* is black in color. It is a short shrub that emerges over the coastal sage scrub as round individuals with smooth texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

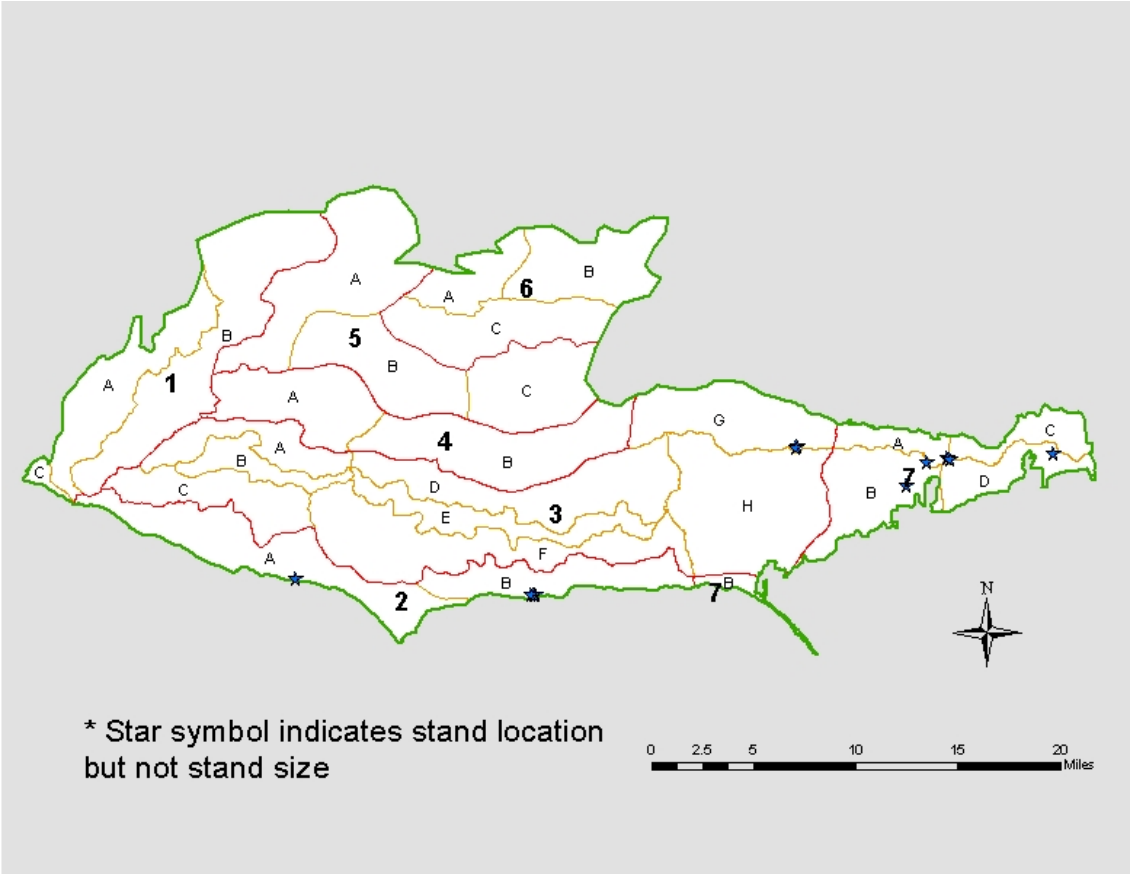
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Encelia californica* Shrubland Association (3222)
- *Encelia californica-Eriogonum cinereum* Shrubland Association (3225)
- *Encelia californica-Artemisia californica* Shrubland Association (3227)
- *Encelia californica*-(*Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera*) Shrubland Superassociation (3228)

3227 – CALIFORNIA ENCELIA–CALIFORNIA SAGEBRUSH SHRUBLAND ASSOCIATION

***Encelia californica-Artemisia californica* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Encelia californica-Artemisia californica* Shrubland Association occurs as sparse to open shrubs on coastal dry southerly, gentle to steep slopes, with thin cover of soil. It favors variable surface shapes on middle to upper slopes. It can also occur inland at the edge of the fog influence. *Encelia* and *A. californica* co-dominate, with both species at low to high cover. Other shrubs may be present at very low cover. Because the coastal sage species in the *Encelia* associations tend to co-dominate and occupy similar environments, and because the signatures of each species in the types overlap or are very similar, it is difficult to distinguish one *Encelia* type from another in photo interpretation. Therefore, *Encelia californica-Artemisia californica* Shrubland Association is mapped as the *Encelia californica*-(*Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera*) Shrubland Superassociation (3228). Otherwise it is mapped only where Rapid Assessment plot locations for the type were provided by the Park.

PHOTO INTERPRETATION SIGNATURE: Stands typically are homogeneous in color and texture. The stands are typically rusty reddish-brown in color, influenced by the summertime color of *Encelia*. The individual coastal sage scrub species are not usually distinct from each other. One may see a white veining appearance throughout the stand.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

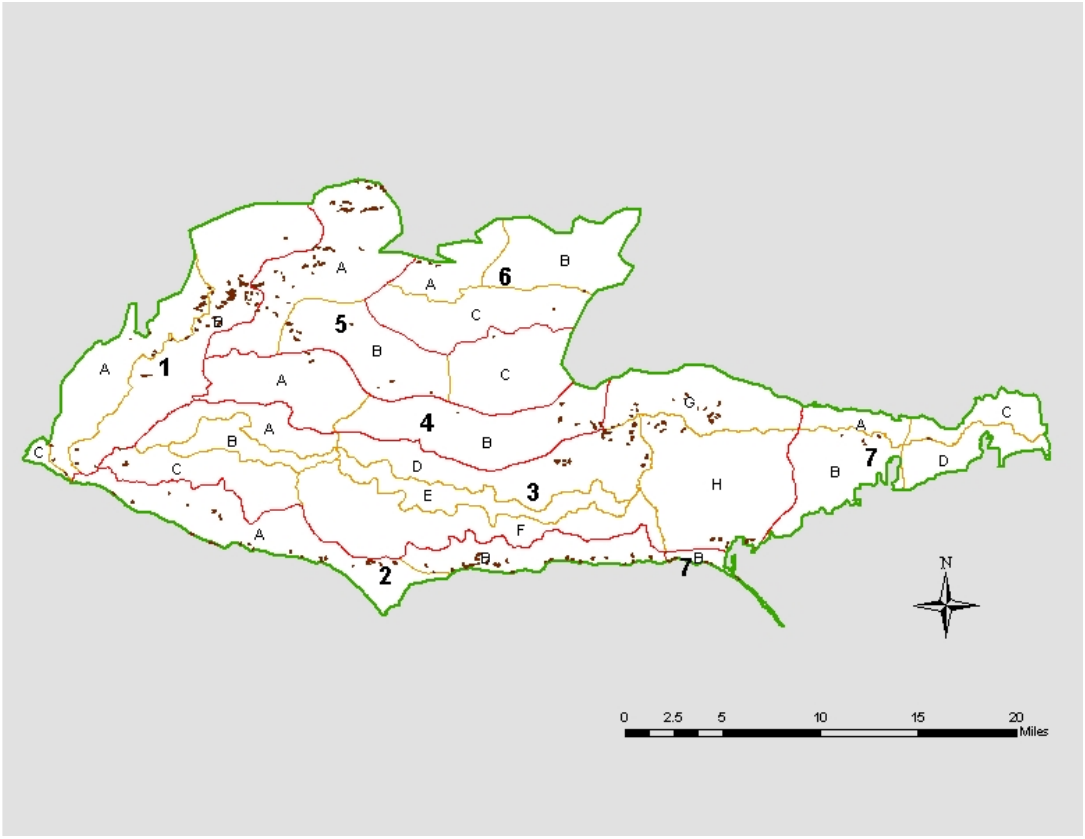
- *Malosma laurina-Salvia mellifera* Shrubland Association (2148)
- *Artemisa californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica* Shrubland Association (8213)
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Encelia californica* Shrubland Association (3222)
- *Encelia californica-Eriogonum cinereum* Shrubland Association (3225)
- *Encelia californica-Rhus integrifolia* Shrubland Association (3226)
- *Encelia californica*-(*Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera*) Shrubland Superassociation (3228)

3228 – CALIFORNIA ENCELIA (CALIFORNIA SAGEBRUSH-ASHY BUCKWHEAT-CALIFORNIA BUCKWHEAT-BLACK SAGE) SHRUBLAND SUPERASSOCIATION

***Encelia californica (Artemisa californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera)* Shrubland Superassociation**



DISTRIBUTION:



DESCRIPTION: *Encelia californica (Artemisa californica - Eriogonum cinereum - Eriogonum fasciculatum-Salvia mellifera)* Shrubland Superassociation occurs as sparse to intermittent stands of shrubs on coastal dry neutral to undulating surfaces, on gentle to steep, lower to upper slopes. It can also occur inland at the edge of the fog influence. Because the coastal sage species in the *Encelia* associations tend to co-dominate and occupy similar environments, and because the signatures of each species in the types overlap or are very similar, it is difficult to distinguish one *Encelia* type from another in photo interpretation. Therefore, this superassociation is used to map *Encelia californica* Shrubland Association (3222), *Encelia californica-Eriogonum cinereum* Shrubland Association (3225), and *Encelia californica-Artemisia californica* Shrubland Association (3227). *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221) is mapped as the superassociation when *Malosma* is not present or in very low cover, and *S. mellifera* is also in very low cover without a distinct signature. Otherwise the four associations are mapped where Rapid Assessment plot locations for those types were provided by the Park.

PHOTO INTERPRETATION SIGNATURE: Stands typically are homogeneous in color and texture. The stands are typically reddish-brown in color, influenced by the summertime color of *Encelia*. The individual coastal sage scrub species are not usually distinct from each other. One may see a white veining appearance throughout the stand.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Salvia mellifera* Shrubland Association (2148)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Encelia californica* Shrubland Association (3222)
- *Encelia californica-Eriogonum cinereum* Shrubland Association (3225)
- *Encelia californica-Rhus integrifolia* Shrubland Association (3226)
- *Encelia californica-Artemisia californica* Shrubland Association (3227)
- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)
- *Artemisia californica-Eriogonum fasciculatum*/Annual Grass-Herb Shrubland Association (3371)
- *Salvia mellifera-Artemisia californica* Shrubland Association (3421)

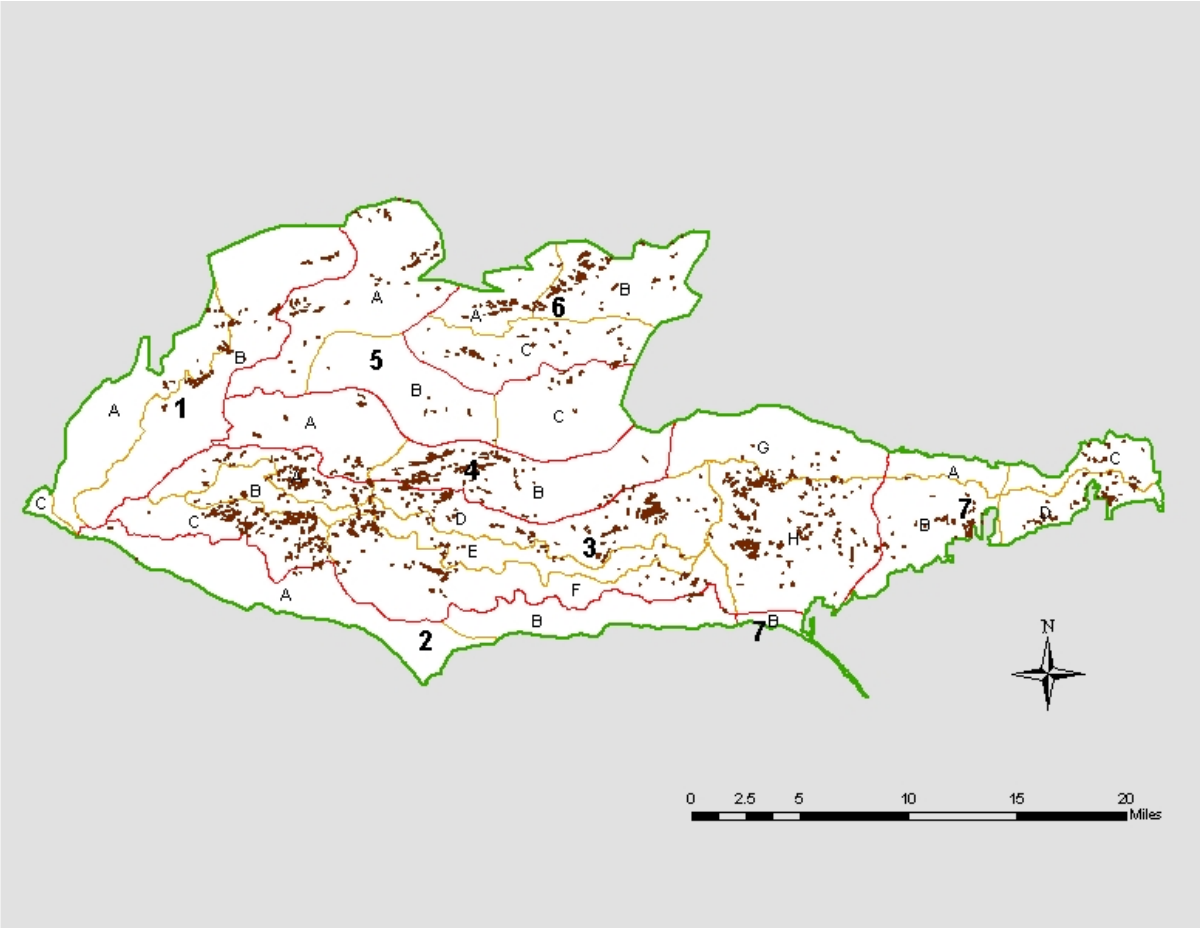
CALIFORNIA BUCKWHEAT SHRUBLAND ALLIANCE



3240 – CALIFORNIA BUCKWHEAT SHRUBLAND ALLIANCE
Eriogonum fasciculatum Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: The *Eriogonum fasciculatum* Shrubland Alliance is the hierarchical class into which all *E. fasciculatum* associations are nested. This alliance generally occurs inland as open to sparse stands on dry, steep to very steep, very thin-soiled to rocky south-facing slopes. It tends to occur on mid to upper convex to undulating slopes. *E. fasciculatum* is the dominant shrub species, and can occur in low to high cover. In some cases *Salvia mellifera* may co-dominate. This alliance can also occur on post-burn recovery areas and disturbed sites such as firebreaks, road edges, recovering graded areas, and road cuts. However, firebreaks with shrubs will be mapped as Firebreak Early Seral - Predominantly Shrubs (code 9710), and road cuts with shrubs will be mapped as Artificial Cuts/Embankments – Predominantly Shrubs/Herb (code 9650). Road-edge stands of *E. fasciculatum* are normally well below minimum mapping size. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well.

PHOTO INTERPRETATION SIGNATURE: *E. fasciculatum* appears as very small round individual shrubs whose signature is typically reddish-brown to orange-brown. The signature in some areas may also be gray to tan. The texture is fine to slightly coarse. The signature of *E. fasciculatum* is similar to *Lotus scoparius* and young *Adenostoma fasciculatum* when it is reddish-brown to orange-brown, and is similar to *S. mellifera*, *Artemisia californica*, and *Eriogonum cinereum* when it is gray to tan.

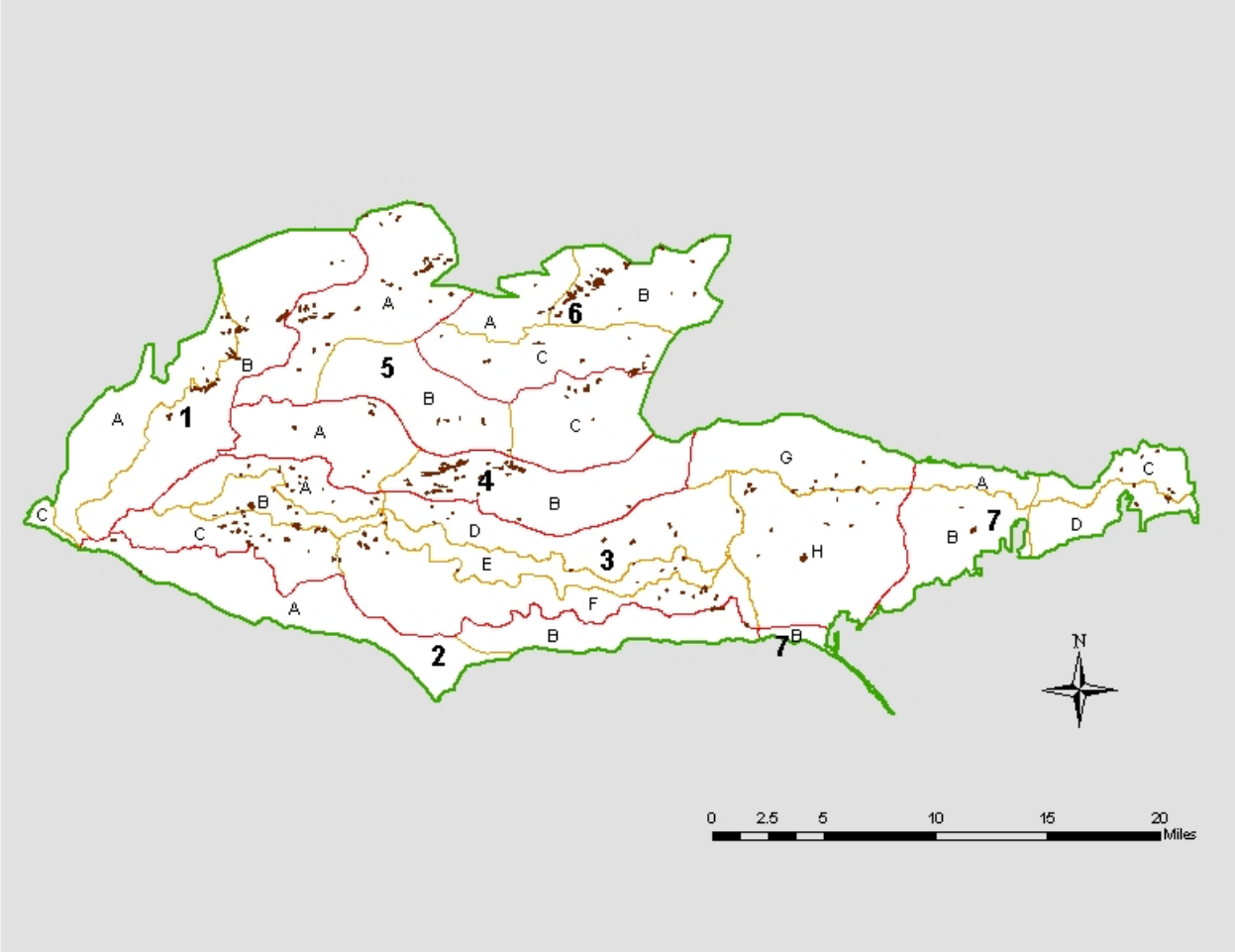
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Encelia californica* Shrubland Alliance (3220)
- *Eriogonum cinereum* Shrubland Alliance (3250)
- *Lotus scoparius* Shrubland Alliance (3270)
- *Salvia mellifera* Shrubland Alliance (3320)

3241 – CALIFORNIA BUCKWHEAT SHRUBLAND ASSOCIATION
Eriogonum fasciculatum Shrubland Association



DISTRIBUTION:



DESCRIPTION: The *Eriogonum fasciculatum* Shrubland Association occurs inland as open to sparse stands of shrubs on dry, south-facing, thin-soiled to rocky, mid to upper slopes. The steepness of slope varies. This type occupies surfaces that typically are convex to neutral. *E. fasciculatum* dominates at low to moderate cover, and can be high cover. *Lotus scoparius* can be present and may approach sub-dominance in low to very low cover. The *Eriogonum fasciculatum* Shrubland Association can also be found on man- or naturally-disturbed sites. It can occur on post burn recovery areas and disturbed sites such as firebreaks, road edges, recovering graded areas, and road cuts. However, firebreaks with shrubs will be mapped as Firebreak Early Seral - Predominantly Shrubs (code 9710), and road cuts with shrubs will be mapped as Artificial Cuts/Embankments – Predominantly Shrubs/Herb (code 9650). Road-edge stands of *E. fasciculatum* are normally well below minimum mapping size.

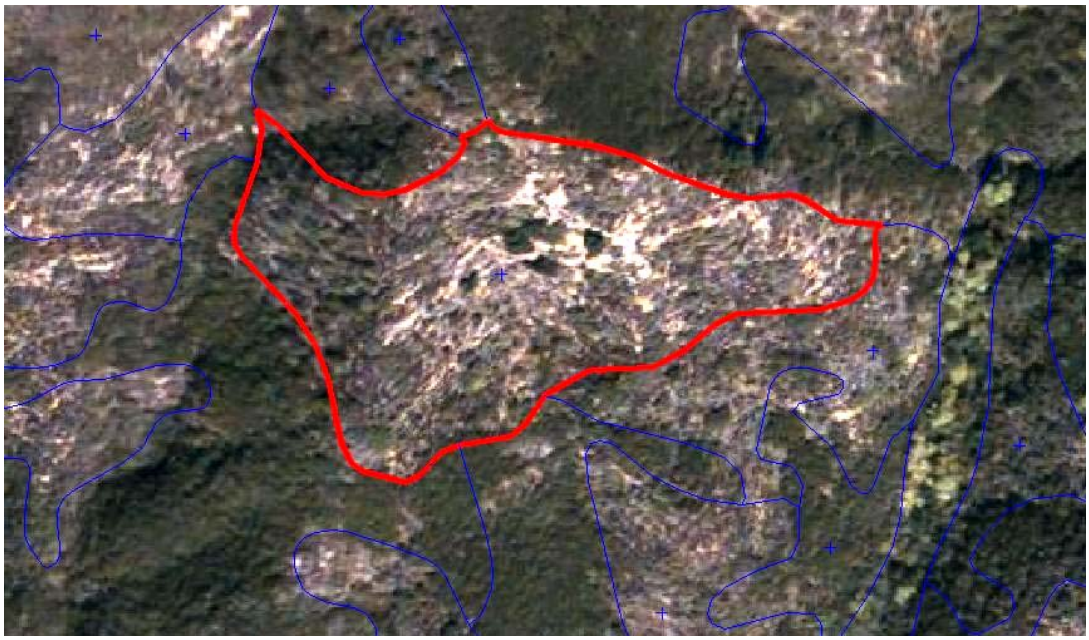
PHOTO INTERPRETATION SIGNATURE: The stand can be open and homogeneous in texture and color. *E. fasciculatum* appears as very small round individual shrubs whose signature is typically reddish-brown to orange-brown. The signature in some areas may also be gray to tan. The texture is fine to slightly coarse. The signature of *E. fasciculatum* is similar to *Lotus* and young *Adenostoma fasciculatum* when it is reddish-brown to orange-brown, and is similar to *S. mellifera*, *Artemisia californica*, and *Eriogonum cinereum* when it is gray to tan.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

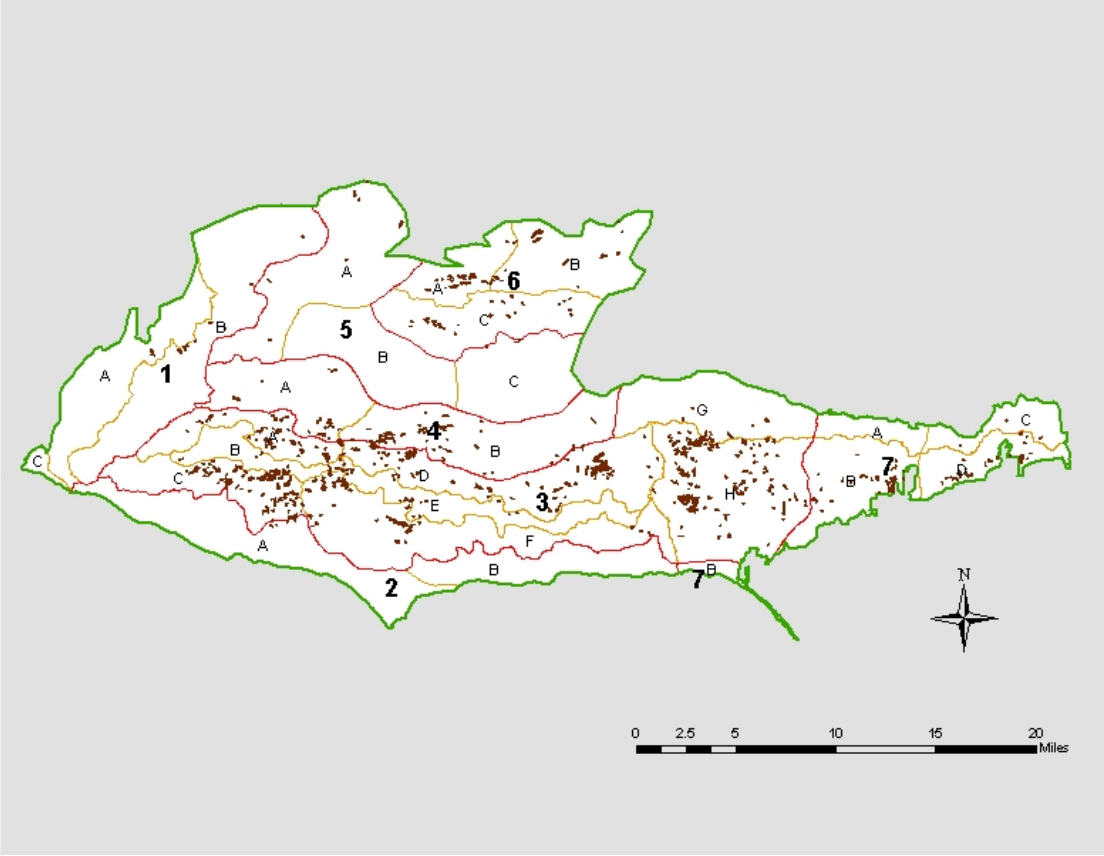
- *Encelia californica-(Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera)* Shrubland Superassociation (3228)
- *Eriogonum fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (3248)
- *Lotus scoparius* Shrubland Alliance (3270)
- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)

3248 – CALIFORNIA BUCKWHEAT–BLACK SAGE–LAUREL SUMAC SHRUBLAND ASSOCIATION

Eriogonum fasciculatum–Salvia mellifera–Malosma laurina Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Eriogonum fasciculatum – Salvia mellifera – Malosma laurina* Shrubland Association occurs inland as open to slightly open stands of shrubs on dry, south-facing, thin-soiled to rocky, moderate to extremely steep slopes. It occupies mid to upper slopes on undulating to neutral surfaces. *E. fasciculatum*, *S. mellifera*, and *Malosma* co-dominate, with *Malosma* of less cover than the other two combined. All three species can vary from very low to moderate cover. Other shrubs may be present in very low cover. *S. mellifera* favors concave and lower slopes (cooler places). This type has a common occurrence, and is of limited extent. This association can also occur on dry to mesic post burn recovery areas.

PHOTO INTERPRETATION SIGNATURE: The stand will be mottled with color variations reflecting the different species. *E. fasciculatum* appears as very small round individual shrubs whose signature is typically reddish-brown to orange-brown. The signature in some areas may also be gray to tan. The texture is fine to slightly coarse. *S. mellifera* appears as small round to irregularly shaped shrubs. In this type it occurs as clumps or groups. *S. mellifera* has a flat smooth texture with fuzzy edges. The color can vary from bright green in more mesic settings to reddish tan or tan in drier settings. Typically there will be a green overtone in the stand when present with other shrubs. The signature of *E. fasciculatum* is similar to *Lotus scoparius* and young *Adenostoma fasciculatum* when it is reddish-brown to orange-brown, and is similar to *S. mellifera*, *Artemisia californica*, and *Eriogonum cinereum* when it is gray to tan. The signature of *S. mellifera* is similar to *Malacothamnus fasciculatus*, *Toxicodendron diversilobum*, and *Leymus condensatus* when it is green. The latter two, however, are more mesic. The emergent *Malosma* is a tall shrub and typically occurs as large individuals. Its signature is usually dull medium green but may vary in tone and shade from light green to dark green or black, even within a stand. The crown is normally rounded with a smooth to slightly bumpy edge and texture. The *Malosma* signature may be confused with *Rhus ovata*, *Heteromeles arbutifolia*, *Adenostoma sparsifolium*, and *Juglans californica*.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Salvia mellifera* Shrubland Association (2148)
- *Malosma laurina-Eriogonum fasciculatum* Shrubland Association (21423)
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Encelia californica-(Artemisia californica-Eriogonum cinereum-Eriiogonum fasciculatum-Salvia mellifera)* Shrubland Superassociation (3228)
- *Eriogonum fasciculatum* Shrubland Association (3241)
- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)

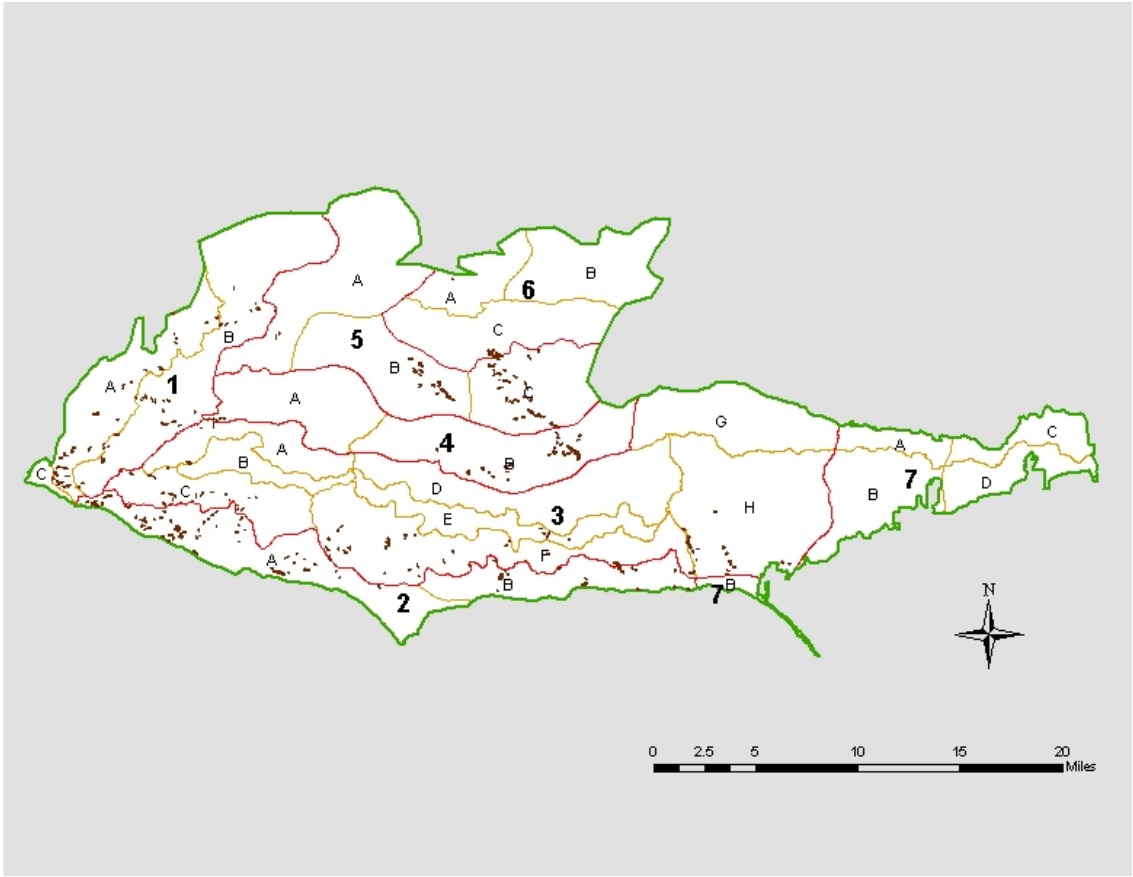
ASHY BUCKWHEAT SHRUBLAND ALLIANCE



3250 – ASHY BUCKWHEAT SHRUBLAND ALLIANCE
Eriogonum cinereum Shrubland Alliance



DISTRIBUTION:



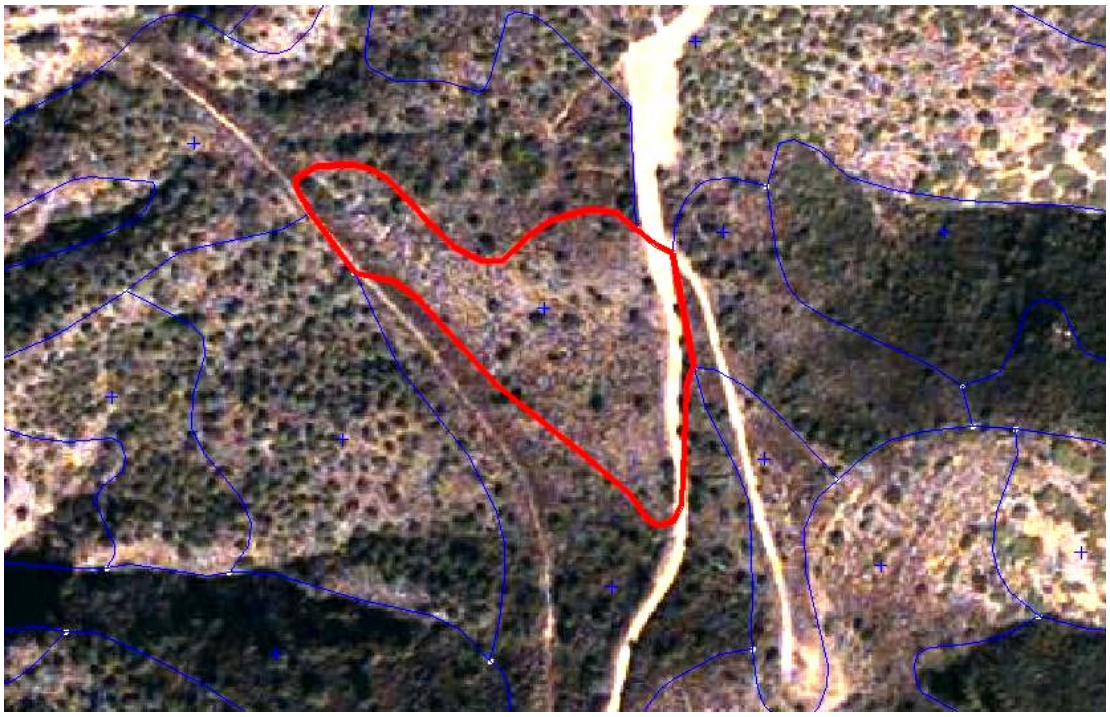
DESCRIPTION: The *Eriogonum cinereum* Shrubland Alliance is the hierarchical class into which all *E. cinereum* association types are nested. This alliance usually occurs as sparse to open stands on coastal, dry, rocky, south-facing, moderately to extremely steep slopes. It favors convex to undulating surfaces on lower to upper slopes. *E. cinereum* is the dominant shrub species, and can occur in low to moderate cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *E. cinereum* as the dominant shrub are included.

PHOTO INTERPRETATION SIGNATURE: The stand has an uneven tone and texture due to the open shrub cover and rock exposure. *E. cinereum* appears as very small round individual shrubs whose signature is typically gray. The texture is fine to slightly coarse. The *E. cinereum* signature is similar to that of *Salvia mellifera* and *S. leucophylla* when their signatures are gray.

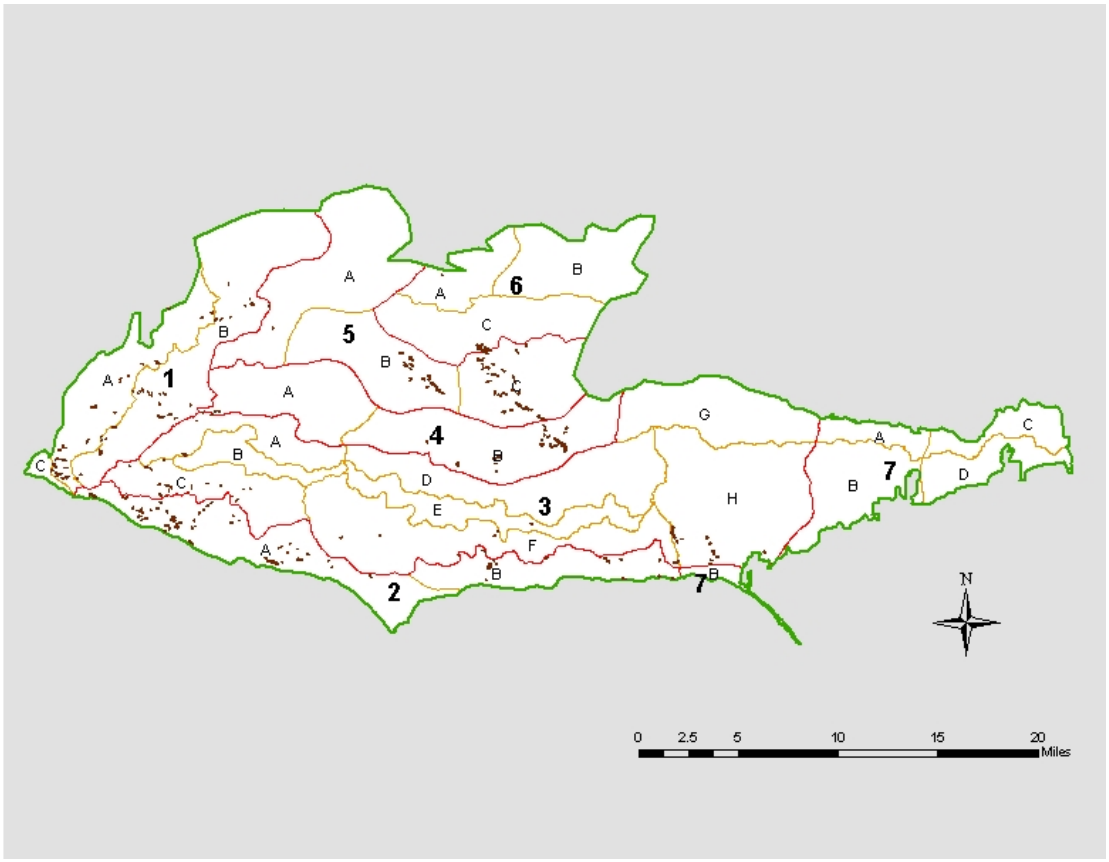
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salvia leucophylla* Shrubland Alliance (3310)

3257 – ASHY BUCKWHEAT SHRUBLAND ASSOCIATION
Eriogonum cinereum Shrubland Association



DISTRIBUTION:



DESCRIPTION: The *Eriogonum cinereum* Shrubland Association occurs as sparse to open stands of shrubs on coastal, dry, rocky, south-facing, moderately to extremely steep slopes. It occupies convex to undulating surfaces on lower to upper slopes. *E. cinereum* dominates at very low to moderate cover, with other shrubs at very low cover. *Malosma laurina* may be present at very low cover.

PHOTO INTERPRETATION SIGNATURE: The stand has an uneven tone and texture due to the open shrub cover and rock exposure. *E. cinereum* appears as very small round individual shrubs whose signature is typically gray. The texture is fine to slightly coarse. The *E. cinereum* signature is similar to that of *Salvia mellifera* and *S. leucophylla* when their signatures are gray.

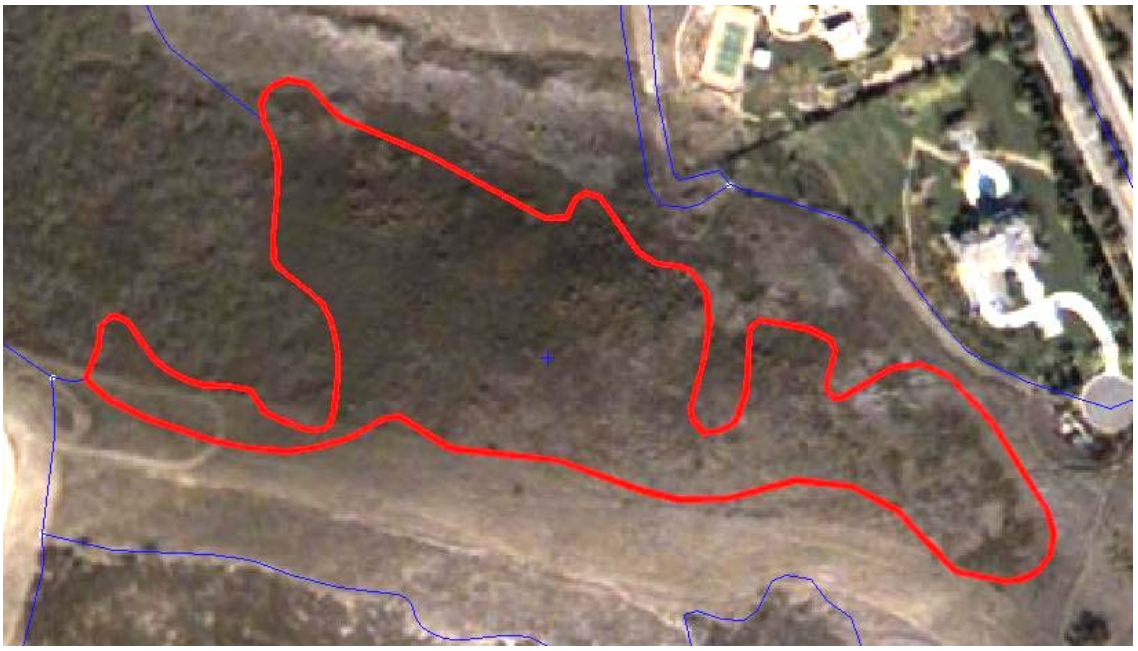
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Eriogonum cinereum* Shrubland Association (2141)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Salvia leucophylla–Eriogonum cinereum* Shrubland Association (3312)
- *Salvia leucophylla* Shrubland Association (3316)

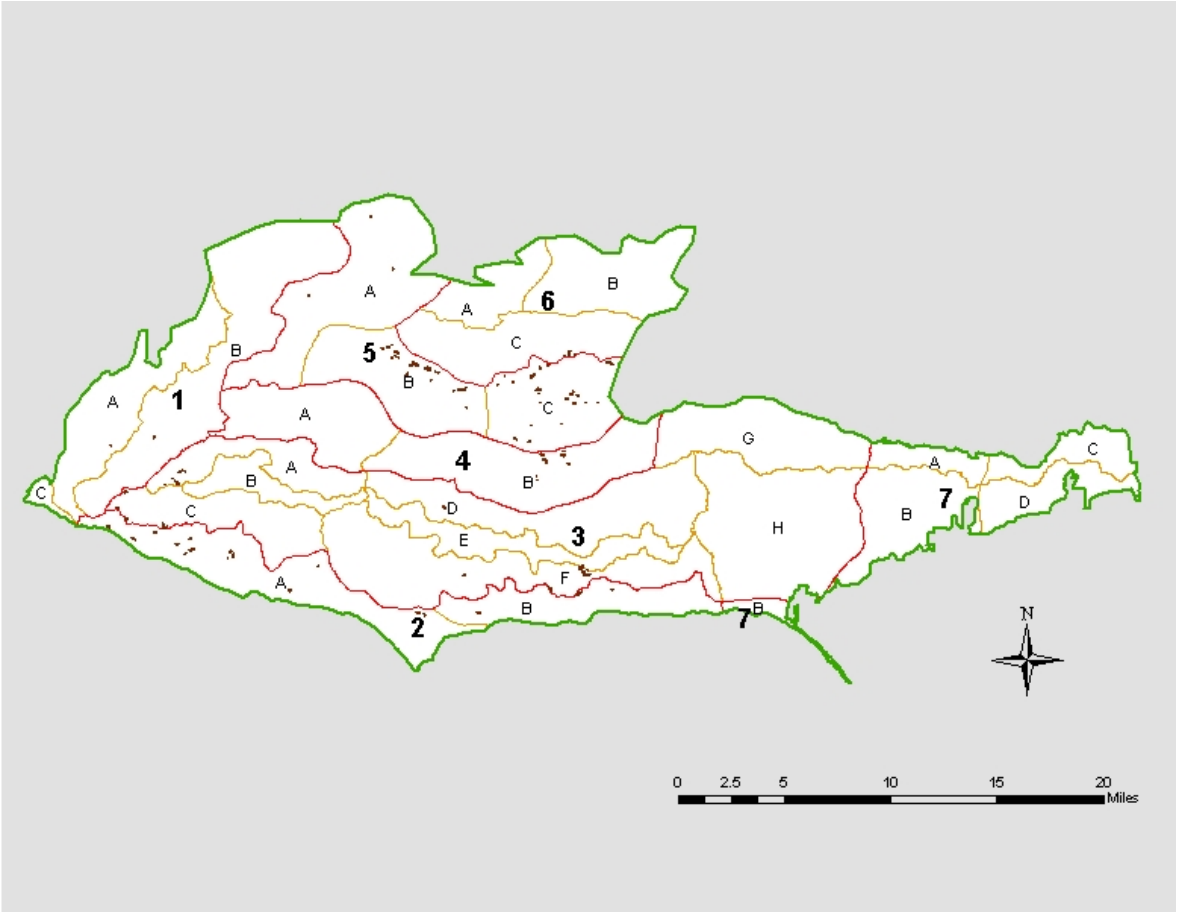
SAWTOOTH GOLDENBUSH SHRUBLAND ALLIANCE



3260 – SAWTOOTH GOLDENBUSH SHRUBLAND ALLIANCE
Hazardia squarrosa Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: The *Hazardia squarrosa* Shrubland Alliance is the hierarchical class into which all *Hazardia* association types are nested. This alliance generally occurs as open to sparse stands of shrubs on dry, gently sloping to moderately steep slopes. It occurs on flat, convex or undulating surfaces on lower to upper slopes and wide ridgetops or spurs. *Hazardia* is the dominant shrub species, and can occur in low to high cover. *Artemisia californica* and *Leymus condensatus* may also be present in very low to moderate cover. Herbaceous cover may be moderate to high. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *Hazardia* as the dominant shrub are included.

PHOTO INTERPRETATION SIGNATURE: *Hazardia* appears as very short individuals or as clumps or groups of homogeneous shrubs with a smooth texture. The color is light brown to tan. There may be a yellow overtone to the stand at flowering. The signature of *Hazardia* is similar to that of *Leymus* and some herbaceous forbs.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

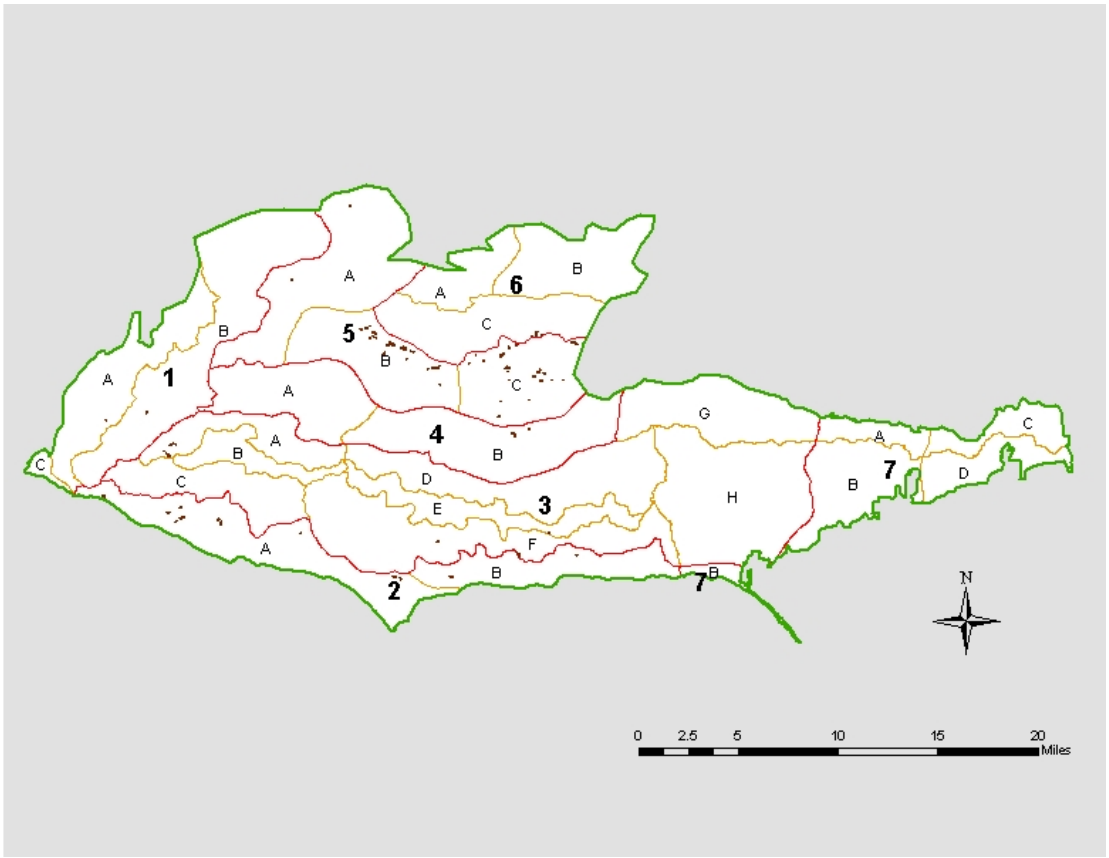
- *Artemisia californica* Shrubland Alliance (3210)
- *Leymus condensatus* Herbaceous Alliance (4040)

3262 – SAWTOOTH GOLDENBUSH–CALIFORNIA SAGEBRUSH/ANNUAL GRASS–HERB SHRUBLAND ASSOCIATION

Hazardia squarrosa-Artemisia californica/Annual Grass–Herb Shrubland Association



DISTRIBUTION:



DESCRIPTION: The *Hazardia squarrosa–Artemisia californica*/Annual Grass–Herb Shrubland Association usually occurs as open stands of shrubs over herbaceous forbs and grasses on dry, north-facing, gentle to moderately steep slopes. It occupies flat, convex or undulating surfaces on lower to upper slopes and wide ridgetops or spurs. *Hazardia* is dominant at low to high cover. *A. californica* can be present in very low to moderate cover. *Leymus condensatus* may also be present in low to very low cover.

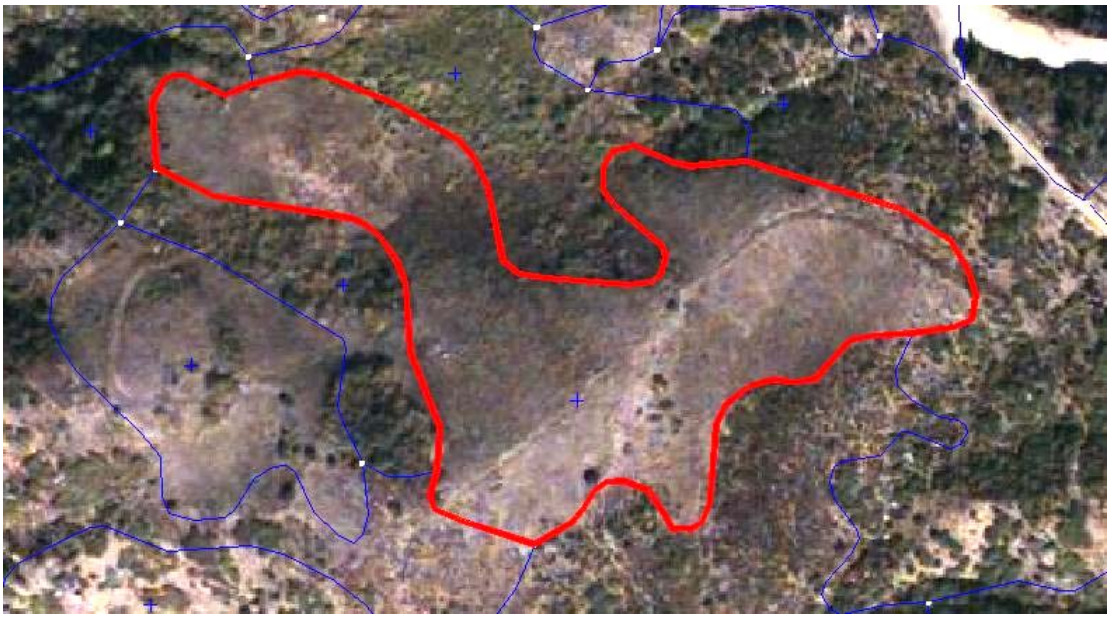
PHOTO INTERPRETATION SIGNATURE: *Hazardia* appears as very short individuals or as clumps or groups of homogeneous shrubs with a smooth texture. The color is light brown to tan. There may be a yellow overtone to the stand at flowering. The signature of *Hazardia* is similar to that of *Leymus* and some herbaceous forbs. *A. californica* is a short shrub and appears as individuals or as clumps or groups. The individuals have a slightly coarse texture. The signature color is purple-brown, but can be tan in some areas. The *A. californica* signature can be similar to *Salvia mellifera* and *Eriogonum fasciculatum* when their signatures are tan.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

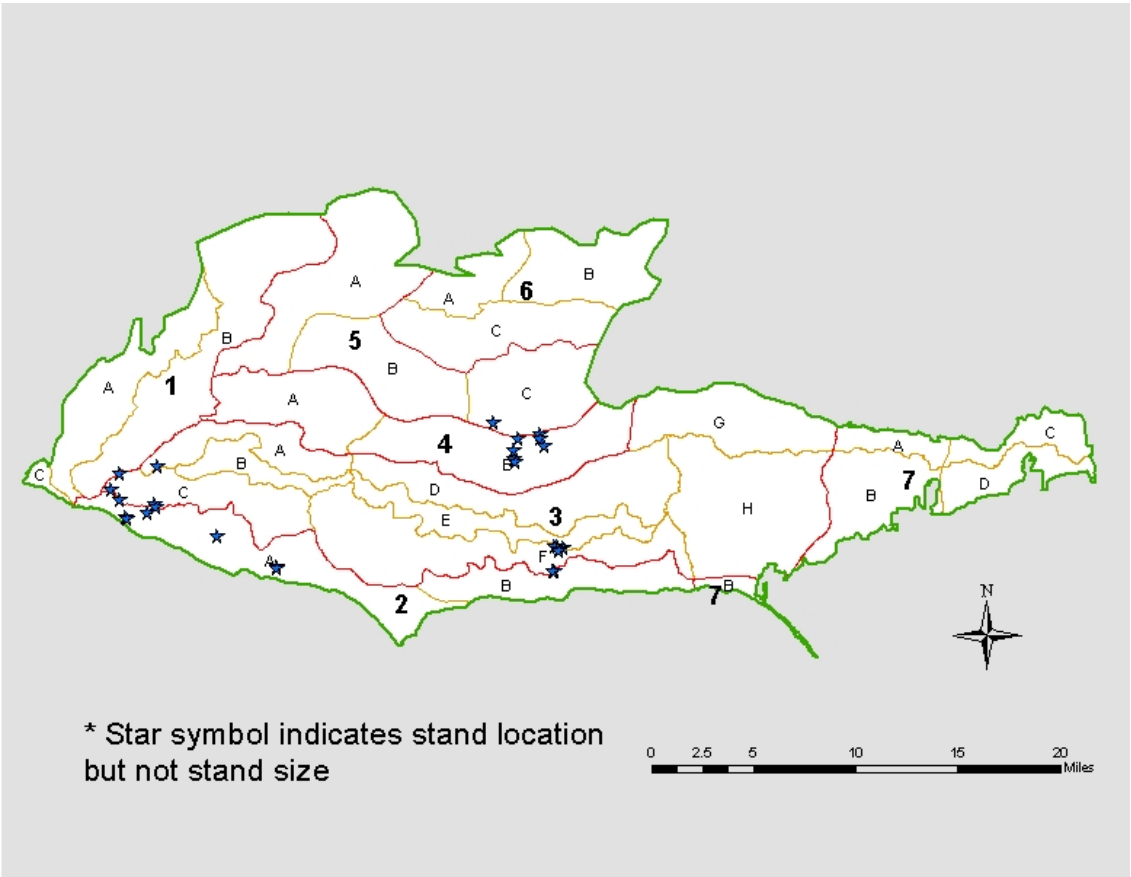
- *Artemisia californica/Leymus condensatus* Shrubland Association (3216)
- *Artemisia californica* Shrubland Association (8213)
- *Leymus condensatus* Herbaceous Association (4041)
- California Annual Grassland/Herbaceous Association (5000)

3263 – SAWTOOTH GOLDENBUSH/PURPLE NEEDLEGRASS–CLUSTERED TARPLANT SHRUBLAND ASSOCIATION

Hazardia squarrosa/Nassella pulchra–Hemizonia fasciculata Shrubland Association



DISTRIBUTION:



DESCRIPTION: The *Hazardia squarrosa*/*Nassella pulchra–Hemizonia fasciculata* Shrubland Association occurs as open stands of shrubs over herbaceous forbs and grasses usually on dry, north-facing, gentle to moderately steep slopes. It occurs on flat, convex or undulating surfaces on lower to upper slopes and wide ridgetops or spurs. *Hazardia* is dominant at low to high cover.

PHOTO INTERPRETATION SIGNATURE: *Hazardia* appears as very short individuals or as clumps or groups of homogeneous shrubs, with a smooth texture. The color is light brown to tan. There may be a yellow overtone to the stand at flowering. The signature of *Hazardia* is similar to that of *Leymus condensatus* and some herbaceous forbs.

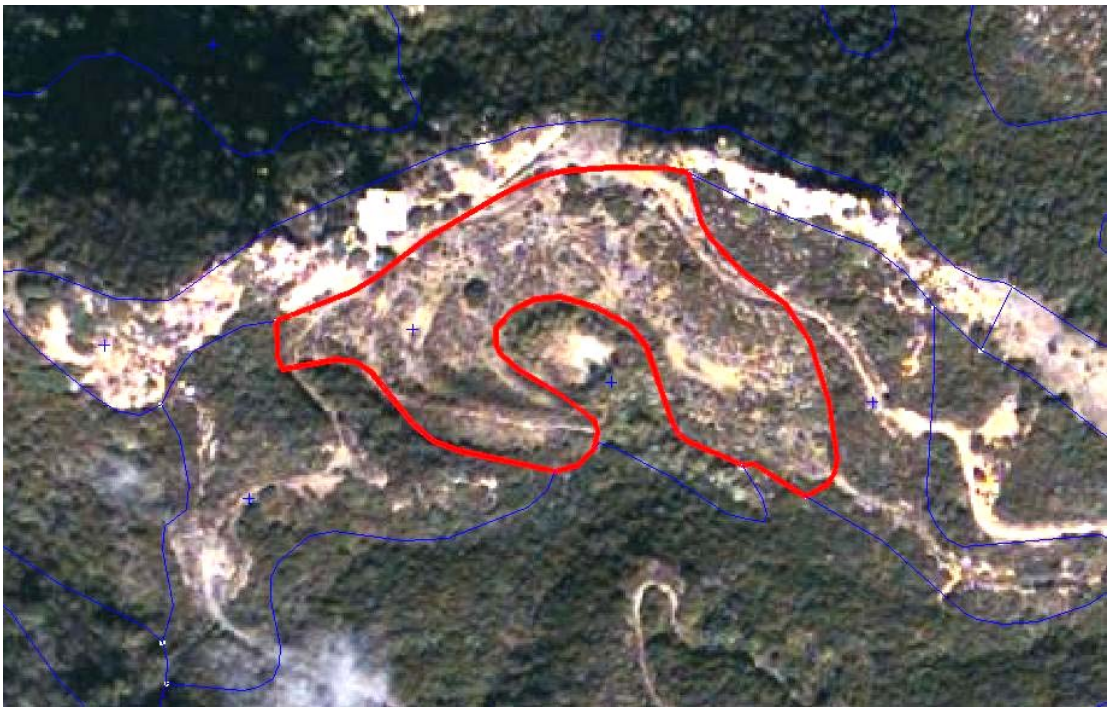
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Artemisa californica/Leymus condensatus* Shrubland Association (3216)
- *Artemisia californica* Shrubland Association (8213)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)
- *Leymus condensatus* Herbaceous Association (4041)
- California Annual Grassland/Herbaceous Association (5000)

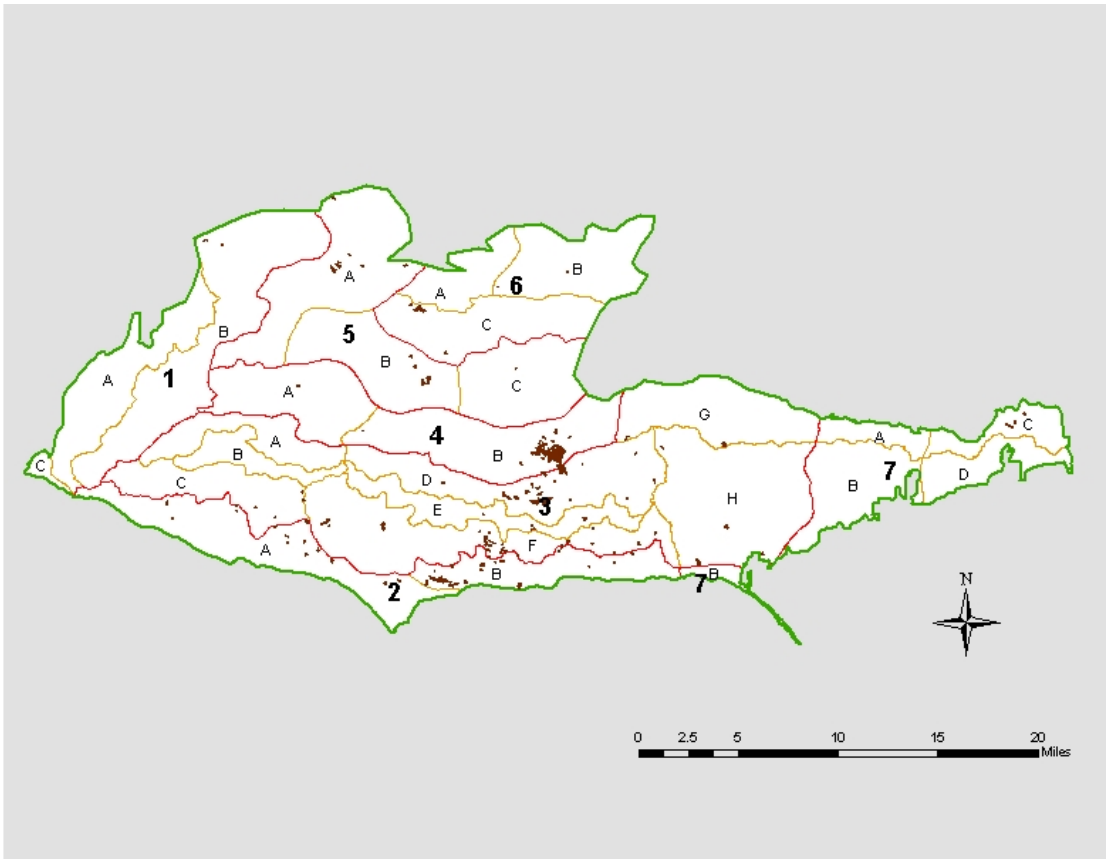
DEERWEED SHRUBLAND ALLIANCE



3270 – DEERWEED SHRUBLAND ALLIANCE
Lotus scoparius Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: The *Lotus scoparius* Shrubland Alliance occurs as open stands of shrubs on dry, gentle to very steep slopes and ridgetops. It occupies neutral to undulating surfaces of variable aspect. *Lotus* is the dominant shrub, typically at low to high cover. Other shrubs may be present at very low cover. The *L. scoparius* Shrubland Alliance typically occurs on post-burn recovery areas and disturbed sites such as firebreaks, road edges, recovering graded areas, and road cuts. However, firebreaks with shrubs will be mapped as Firebreak Early Seral - Predominantly Shrubs (code 9710), and road cuts with shrubs will be mapped as Artificial Cuts/Embankments – Predominantly Shrubs/Herb (code 9650). Road-edge stands of *Lotus* are normally well below minimum mapping size. Five to ten years after disturbance *Lotus* will gradually die off.

PHOTO INTERPRETATION SIGNATURE: The stand usually has a mottled appearance from disturbance and mixture of plants. *Lotus* appears as very small round individual shrubs whose signature is typically orange-brown to reddish-brown. The texture is fine to slightly coarse. The signature of *Lotus* is similar to *Eriogonum fasciculatum* and young *Adenostoma fasciculatum* when it is reddish-brown to orange-brown.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Encelia californica* Alliance (3220)
- *Eriogonum fasciculatum* Alliance (3241)

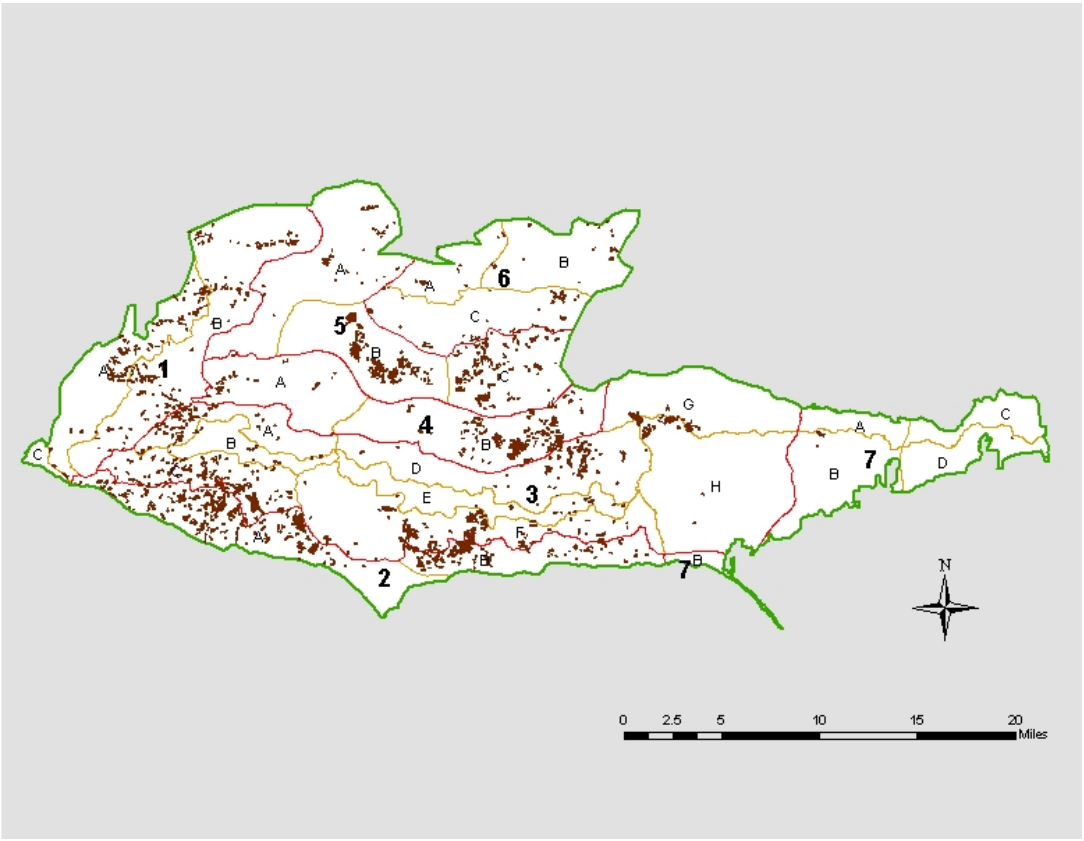
BUSH MALLOW SHRUBLAND ALLIANCE



3280 – BUSH MALLOW SHRUBLAND ALLIANCE
Malacothamnus fasciculatus Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: The *Malacothamnus fasciculatus* Shrubland Alliance is the hierarchical class into which all *Malacothamnus* association types are nested. This alliance usually occurs as dense to open stands of shrubs on dry to mesic, gentle to steep slopes of variable aspect. *Malacothamnus* tends to favor concave slopes, but can also occupy neutral to convex surfaces. *Malacothamnus* is the dominant shrub species in this alliance, and can occur at low to high cover. In some cases *Malacothamnus* may co-dominate with other shrubs, including *Artemisia californica*, *Salvia leucophylla*, *Malosma laurina*, *Salvia mellifera*, *Ceanothus megacarpus*, and *Ceanothus spinosus*. This alliance can also occur on post-burn recovery areas and disturbed sites. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *Malacothamnus* as the dominant shrub are included.

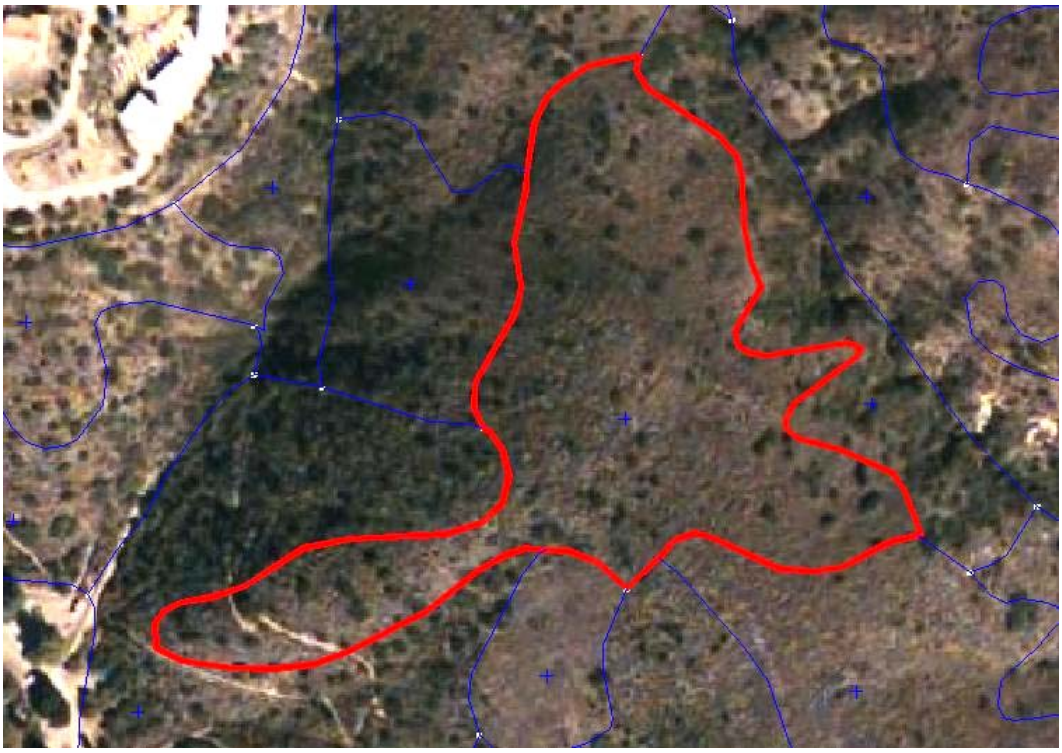
PHOTO INTERPRETATION SIGNATURE: *Malacothamnus* appears as tall, very thin individuals or in clumps or groups. The texture is coarse with individual thin crowns visible. The signature may also have a wispy appearance. The color varies from dull green to bright green. The signature can be confused with *Salvia mellifera*, *Leymus condensatus*, or *Toxicodendron diversilobum* when it is bright green.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

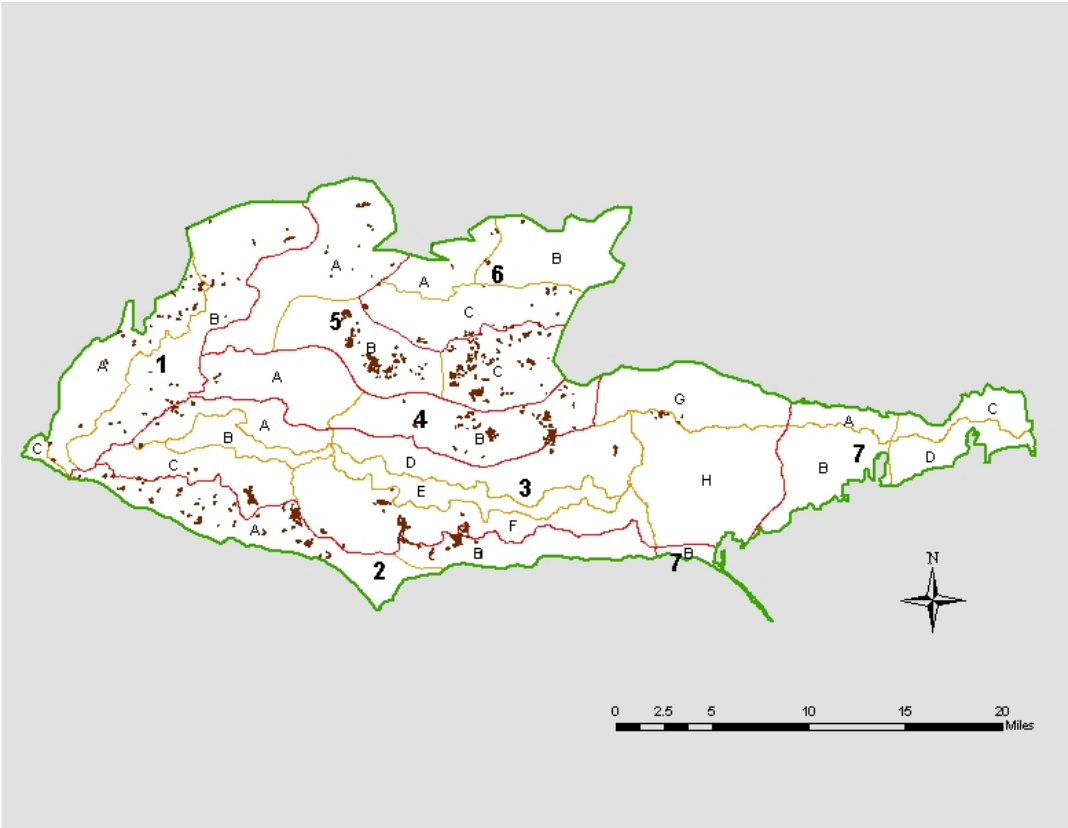
- *Salvia mellifera* Shrubland Alliance (3320)
- *Toxicodendron diversilobum* Shrubland Alliance (3330)
- *Leymus condensatus* Herbaceous Alliance (4040)

3281 – BUSH MALLOW–PURPLE SAGE SHRUBLAND ASSOCIATION

Malacothamnus fasciculatus–Salvia leucophylla Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Malacothamnus fasciculatus–Salvia leucophylla* Shrubland Association occurs as dense to slightly open stands of shrubs on dry to mesic, north-facing, gentle to steep, lower to upper slopes and ridgetops. This type occupies neutral to undulating or convex surfaces. *Malacothamnus* is the dominant shrub at low to high cover. *Artemisia californica* and/or *S. leucophylla* are sub-dominant to co-dominant, each at very low to moderate cover. Combined cover of *A. californica* and *S. leucophylla* may be greater than that of *Malaothamnus*. *Malacothamnus fasciculatus–Salvia leucophylla* Shrubland Association is typically a post-fire situation in dry to mesic coastal sage scrub. After five to ten years *Malacothamnus* will gradually die off within the coastal sage scrub.

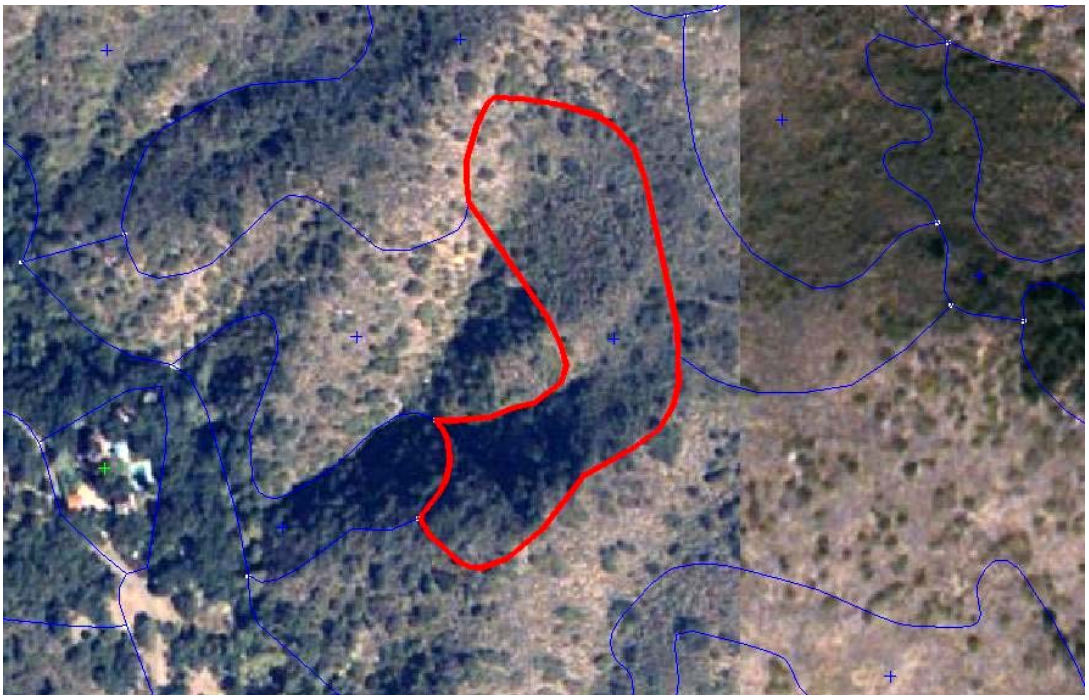
PHOTO INTERPRETATION SIGNATURE: The stand has a mottled appearance due to the color and textural variations of the different plant species. *Malacothamnus* appears as tall, very thin individuals or in clumps or groups. The texture is coarse with individual thin crowns visible. The signature may also have a wispy appearance. The color varies from dull green to bright green. The signature can be confused with *S. mellifera*, *Leymus condensatus*, or *Toxicodendron diversilobum* when it is bright green. *A. californica* is a short shrub and appears as individuals or as clumps or groups. The individuals have a slightly coarse texture. The signature color is purple-brown. *S. leucophylla* is a short shrub and appears as clumps or groups, with a smooth texture and fuzzy edges. The signature color is white to light gray, at times with a slight purple undertone. The *S. leucophylla* signature can be confused with that of *Eriogonum cinereum*.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

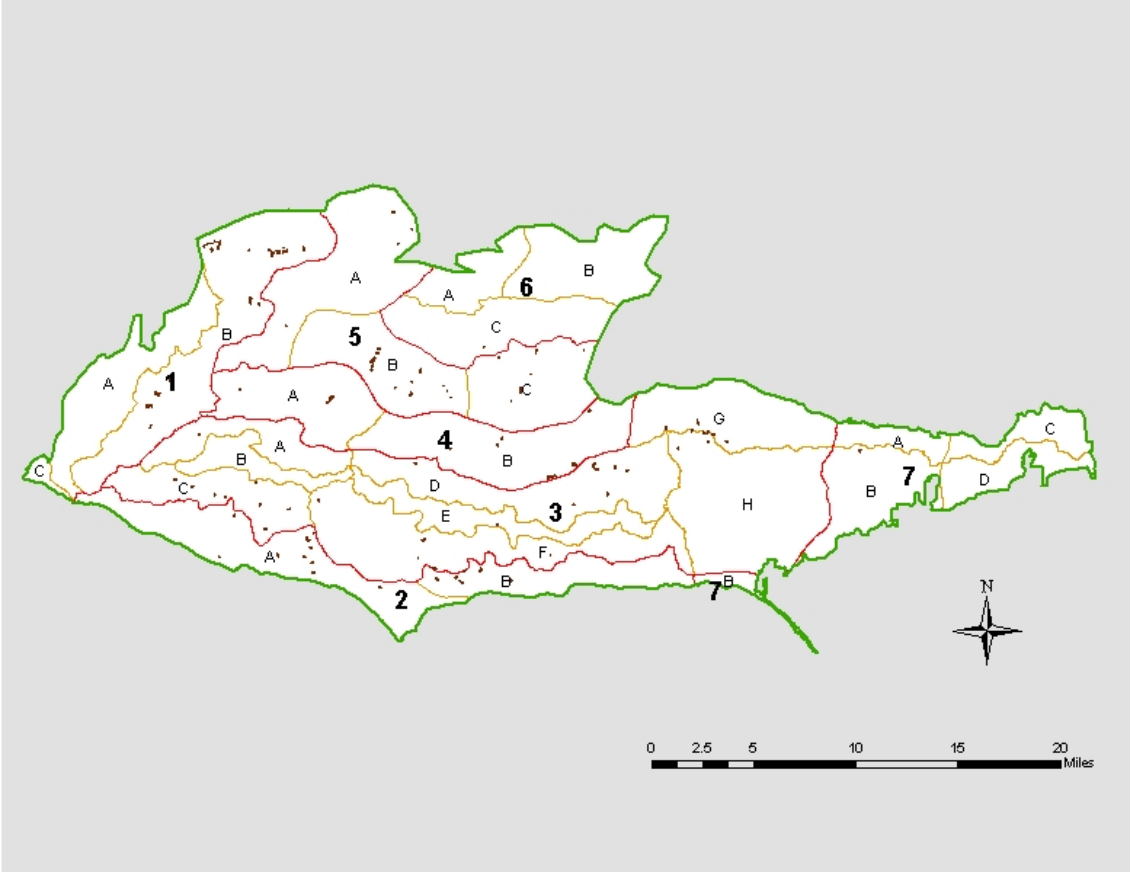
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica/Leymus condensatus* Shrubland Association (3216)
- *Artemisia californica* Shrubland Association (8213)
- *Salvia leucophylla-Eriogonum cinereum* Shrubland Association (3312)
- *Salvia leucophylla* Shrubland Association (3316)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella* spp. Shrubland Association (3396)
- *Salvia leucophylla-Artemisa californica* Shrubland Superassociation (3399)
- *Toxicodendron diversilobum-Artemisia californica/Leymus condensatus* Shrubland Association (3331)
- *Salvia mellifera-Artemisia californica* Shrubland Association (3421)

3282 – BUSH MALLOW – BLACK SAGE SHRUBLAND ASSOCIATION

Malacothamnus fasciculatus – Salvia mellifera Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Malacothamnus fasciculatus – Salvia mellifera* Shrubland Association occurs as dense to open stands of shrubs on dry, south-facing, gentle to steep, lower to upper slopes and canyon bottoms. It occupies concave to undulating surfaces. *Malacothamnus* co-dominates at low to high cover with *S. mellifera,* which occurs at low to moderate cover. *Malosma laurina* may be present at low cover. *Malacothamnus fasciculatus–Salvia mellifera* Shrubland Association is typically a post-fire situation in dry coastal sage scrub. After five to ten years *Malacothamnus* will gradually die off within the coastal sage scrub.

PHOTO INTERPRETATION SIGNATURE: The stand may have an uneven coarse texture due to height differences of the plants, and sometimes may appear homogeneous in color. *Malacothamnus* appears as tall, very thin individuals or in clumps or groups. The texture is coarse with individual thin crowns visible. The signature may also have a wispy appearance. The color varies from dull green to bright green. The signature can be confused with *S. mellifera*, *Leymus condensatus*, or *Toxicodendron diversilobum* when it is bright green. *S. mellifera* appears as small round to irregularly-shaped shrubs. In this type it occurs as clumps or groups. *S. mellifera* has a flat smooth texture with fuzzy edges. The color can vary from bright green in more mesic settings to reddish tan or tan in drier settings. Typically there will be a green overtone in the stand when present with other shrubs. *S. mellifera* can be confused with *Malacothamnus, Toxicodendron*, and *Leymus* when their signature color is green.

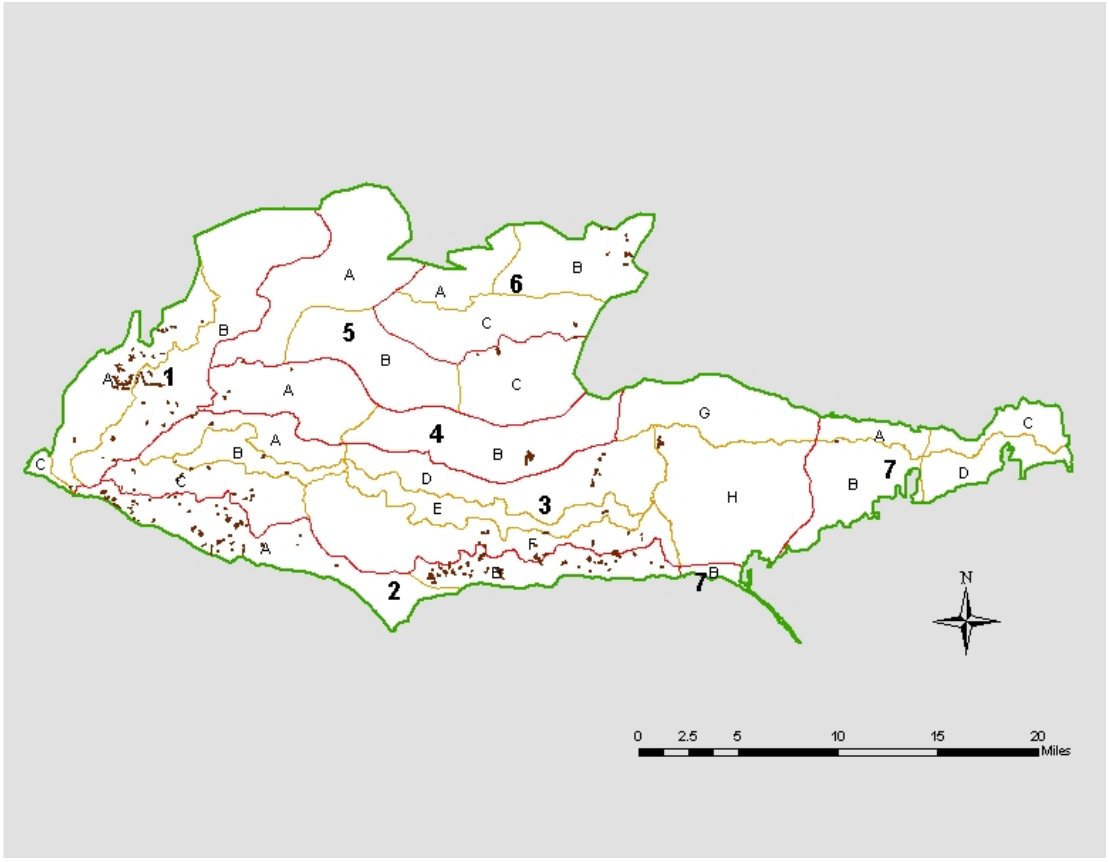
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)
- *Malacothamnus fasciculatus-Malosma laurina* Shrubland Association (3286)
- *Malacothamnus fasciculatus* Shrubland Association (3287)

3286 – BUSH MALLOW–LAUREL SUMAC SHRUBLAND ASSOCIATION
Malacothamnus fasciculatus–Malosma laurina Shrubland Association



DISTRIBUTION:



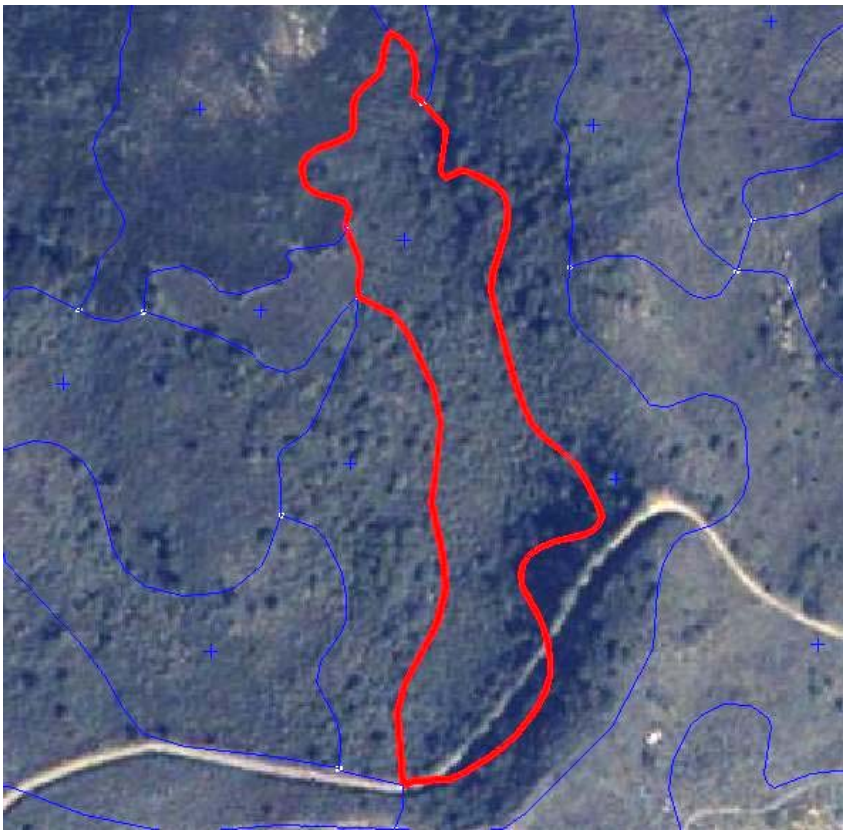
DESCRIPTION: *Malacothamnus fasciculatus–Malosma laurina* Shrubland Association occurs as dense to slightly open stands of shrubs on dry to mesic, gentle to steep, canyon bottoms and lower to middle slopes. This type occupies concave to undulating surfaces with variable aspect. *Malacothamnus* and *Malosma* co-dominate, each at low to high cover. *Malacothamnus fasciculatus–Malosma laurina* Shrubland Association is typically a post-fire situation. After five to ten years *Malacothamnus* will gradually die off.

PHOTO INTERPRETATION SIGNATURE: The stand is a mix of coarse and wispy textures with dark green and lighter green colors. *Malacothamnus* appears as tall, very thin individuals or in clumps or groups. The texture is coarse with individual thin crowns visible. The signature may also have a wispy appearance. The color varies from dull green to bright green. The signature can be confused with *Salvia mellifera*, *Leymus condensatus*, or *Toxicodendron diversilobum* when it is bright green. *Malosma* is a tall shrub and typically occurs as large individuals. Its signature is usually dull medium green but may vary in tone and shade from light green to dark green or black, even within a stand or area. The crown is normally rounded with a smooth to slightly bumpy edge and texture. The *Malosma* signature may be confused with *Rhus ovata*, *Heteromeles arbutifolia*, *Adenostoma sparsifolium*, and *Juglans californica*.

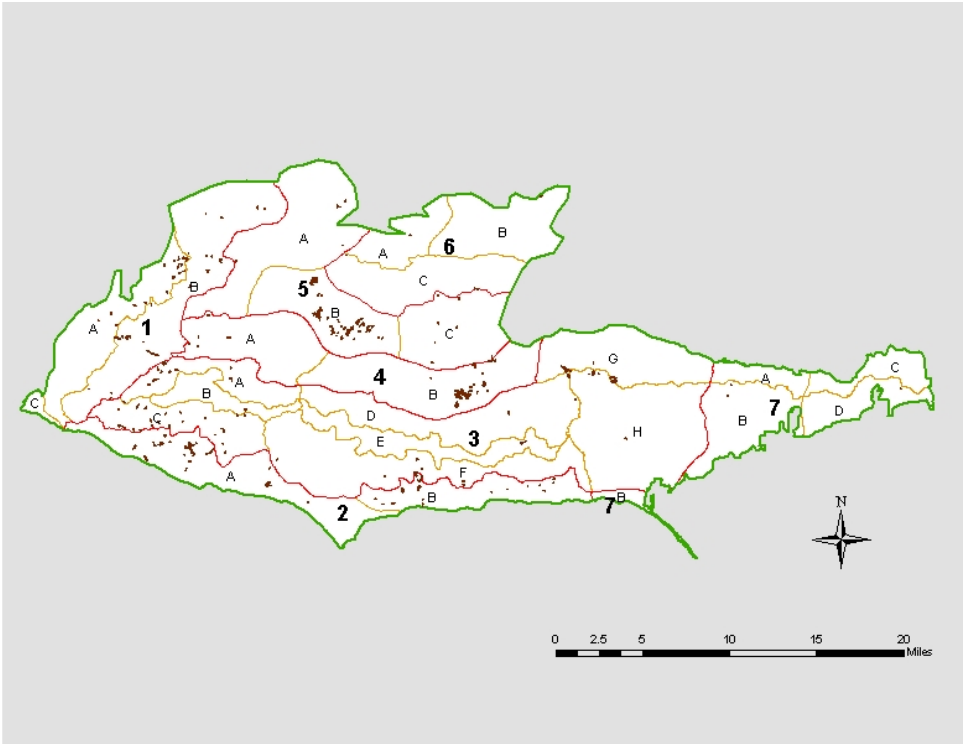
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)
- *Malacothamnus fasciculatus-Salvia mellifera* Shrubland Association (3282)
- *Malacothamnus fasciculatus* Shrubland Association (3287)

3287 – BUSH MALLOW SHRUBLAND ASSOCIATION
Malacothamnus fasciculatus Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Malacothamnus fasciculatus* Shrubland Association occurs as open to slightly open stands of shrubs on dry, south-facing, gentle to steep slopes, canyon bottoms, and ridgetops. It occupies concave to undulating surfaces. *Malacothamnus* dominates at moderate to high cover. This association is typically a post-fire situation. After five to ten years *Malacothamnus* will gradually die off.

PHOTO INTERPRETATION SIGNATURE: The stand tends to have a homogeneous coarse to wispy texture and light to medium green color. *Malacothamnus* appears as tall, very thin individuals or in clumps or groups. The texture is coarse with individual thin crowns visible. The signature may also have a wispy appearance. The color varies from dull green to bright green. The signature can be confused with *Salvia mellifera*, *Leymus condensatus*, or *Toxicodendron diversilobum* when it is bright green.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

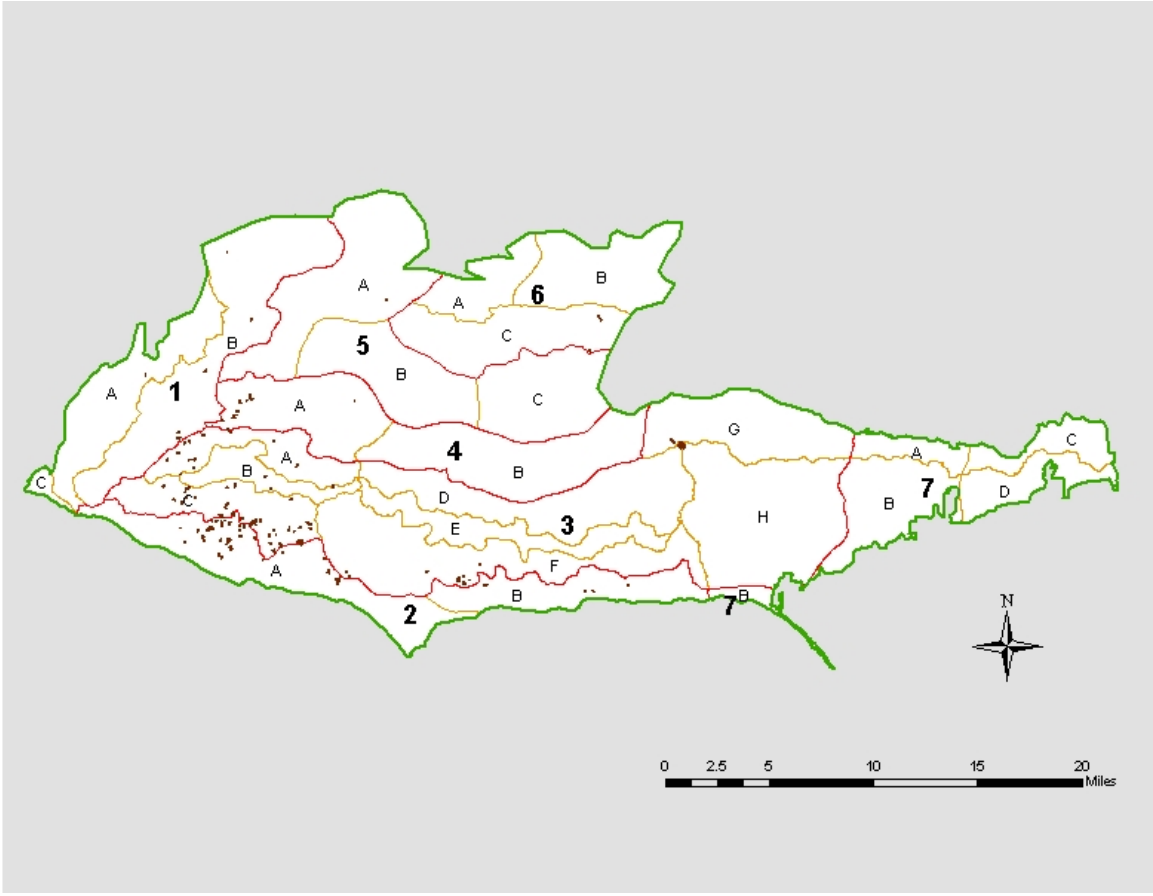
- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)
- Salvia mellifera-(*Malosma lauriina-Rhus ovata-Rhus integrifolia*) Shrubland Superassociation (8329)
- *Malacothamnus fasciculatus-Salvia mellifera* Shrubland Association (3282)
- *Malacothamnus fasciculatus-Malosma laurina* Shrubland Association (3286)

3288 – BUSH MALLOW–BIG POD CEANOTHUS SHRUBLAND ASSOCIATION

Malacothamnus fasciculatus–Ceanothus megacarpus Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Malacothamnus fasciculatus–Ceanothus megacarpus* Shrubland Association occurs as dense to slightly open stands of shrubs on dry, gentle to steep, lower to middle slopes. Aspect and slope shape are variable. *Malacothamnus* and *C. megacarpus* co-dominate, each at low to high cover. *Malacothamnus fasciculatus–Ceanothus megacarpus* Shrubland Association is typically a post-fire situation. After five to ten years *Malacothamnus* will gradually die off.

PHOTO INTERPRETATION SIGNATURE: The stand has a mottled light green and dark gray color, with fairly homogeneous smooth texture. *Malacothamnus* appears as tall, very thin individuals or in clumps or groups. The texture is coarse with individual thin crowns visible. The signature may also have a wispy appearance. The color varies from dull green to bright green. The signature can be confused with *Salvia mellifera*, *Leymus condensatus*, or *Toxicodendron diversilobum* when it is bright green. *C. megacarpus* is a tall shrub that typically occurs as clumps or extensive stands or homogeneous groups, usually with other shrubs present. Its signature is usually dull dark gray to black, often with a bluish undertone. On some occasions the *C. megacarpus* signature can be similar to the *Adenostoma fasciculatum* signature of reddish-brown. The crowns are in homogeneous groups with fine texture. The *C. megacarpus* signature can be confused with *C. crassifolius, C. spinosus* and *Cercocarpus betuloides*.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

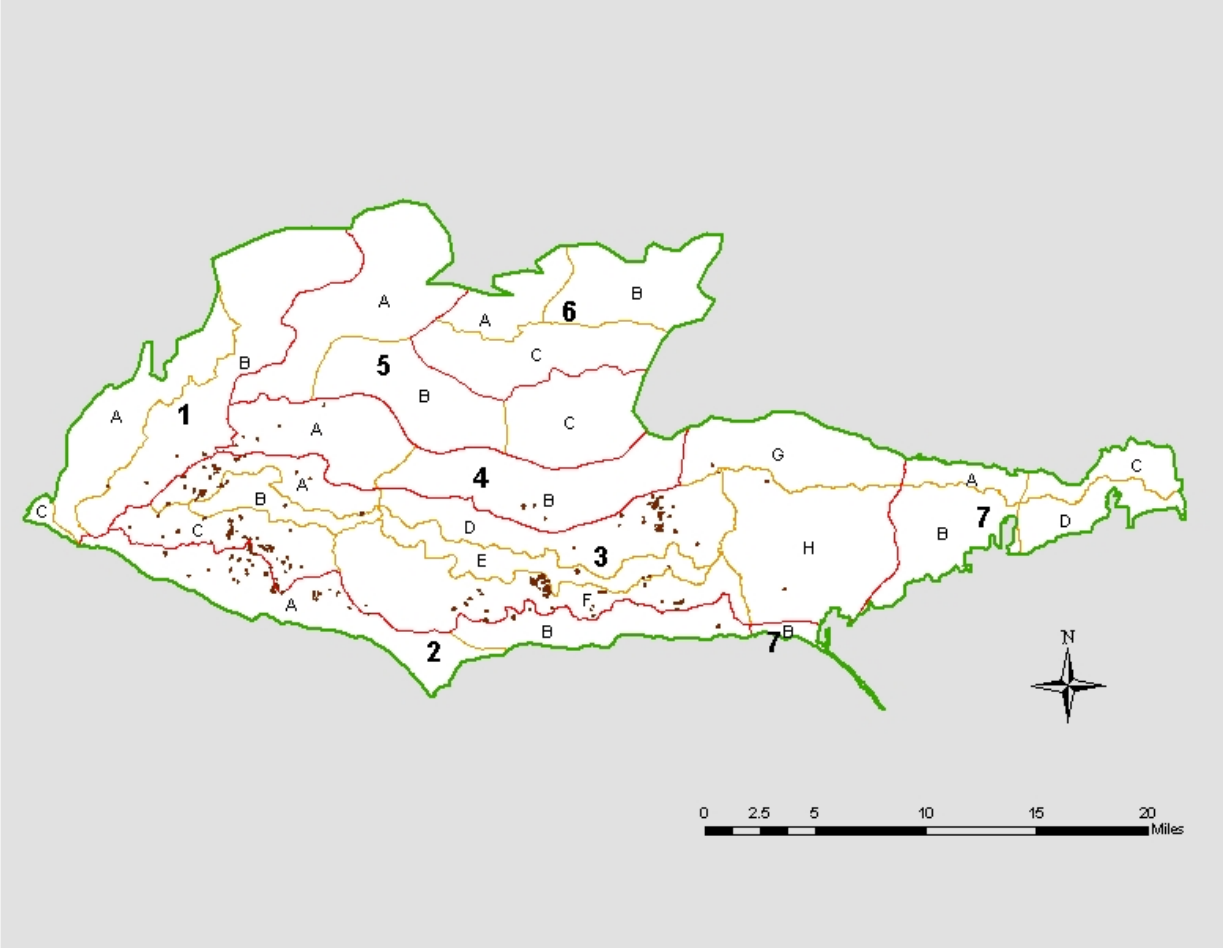
- *Ceanothus megacarpus* Association Shrubland Association (2081)
- *Ceanothus spinosus-Ceanothus megacarpus* Shrubland Association (2091)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Malacothamnus fasciculatus-Ceanothus spinosus* Shrubland Association (3289)

3289 – BUSH MALLOW–GREENBARK CEANOTHUS SHRUBLAND ASSOCIATION

Malacothamnus fasciculatu-Ceanothus spinosus Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Malacothamnus fasciculatus–Ceanothus spinosus* Shrubland Association occurs as dense to slightly open stands of shrubs on mesic, north-facing, gentle to steep, lower to upper slopes. It can occupy concave to undulating surfaces. *Malacothamnus* and *C. spinosus* co-dominate, each at low to high cover. *Malacothamnus fasciculatus–Ceanothus spinosus* Shrubland Association is typically a post-fire situation. After five to ten years *Malacothamnus* will gradually die off. This type has an occasional occurrence with limited areal extent.

PHOTO INTERPRETATION SIGNATURE: The stand has a mottled light and dark green color, with fairly homogeneous smooth texture. *Malaothamnus* appears as tall, very thin individuals or in clumps or groups. The texture is coarse with individual thin crowns visible. The signature may also have a wispy appearance. The color varies from dull green to bright green. The signature can be confused with *Salvia mellifera*, *Leymus condensatus*, or *Toxicodendron diversilobum* when it is bright green. *C. spinosus* is a tall shrub that typically occurs as extensive stands or homogeneous groups, usually with other shrubs present. Its signature is usually medium or olive green to dark green. The crowns are in homogeneous groups with fine texture. The *C. spinosus* signature can be confused with *C. crassifolius, C. megacarpus* and *Cercocarpus betuloides.*

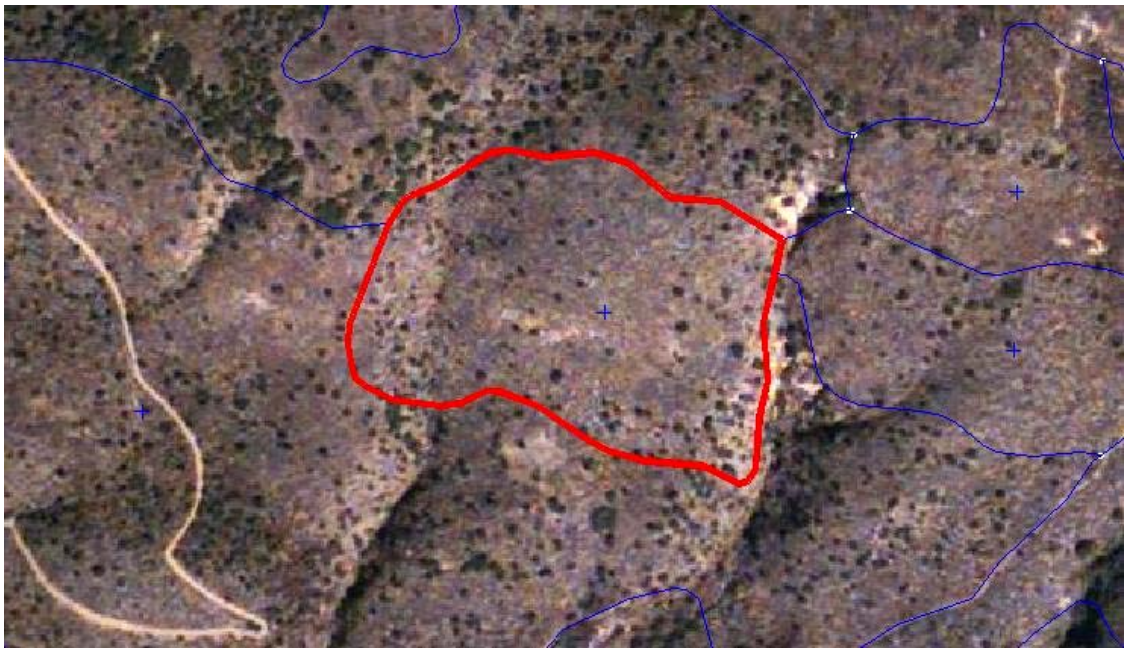
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus megacarpus* Association Shrubland Association (2081)
- *Ceanothus spinosus-Ceanothus megacarpus* Shrubland Association (2091)
- *Ceanothus spinosus* Shrubland Association (2092)
- *Malacothamnus fasciculatus-Ceanothus megacarpus* Shrubland Association (3288)

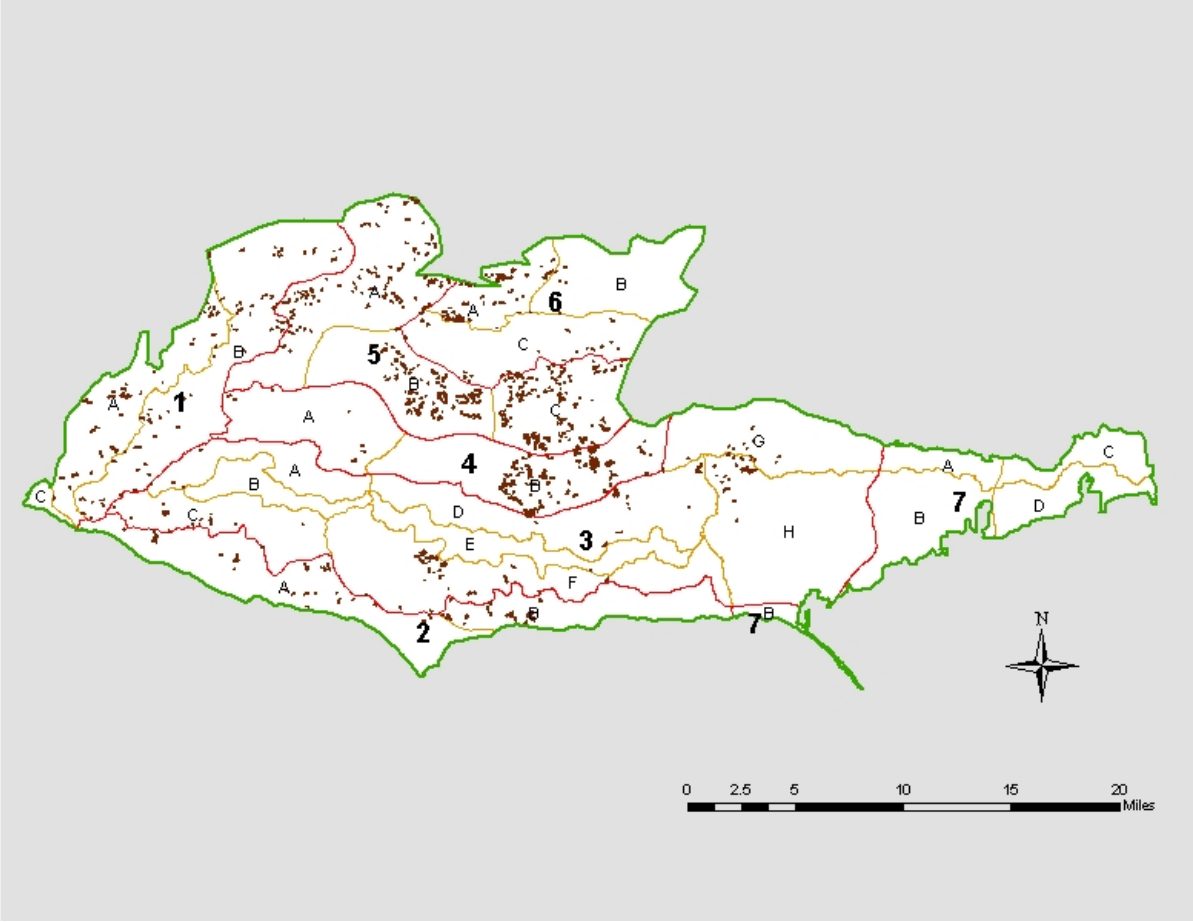
PURPLE SAGE SHRUBLAND ALLIANCE



3310 – PURPLE SAGE SHRUBLAND ALLIANCE
Salvia leucophylla Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Salvia leucophylla* Shrubland Alliance represents the hierarchical class into which *S. leucophylla* association types are nested. The alliance is dominated by *S. leucophylla* and generally occurs as sparse to continuous stands on dry to dry-mesic, gentle to steep slopes. It can be found on neutral, undulating, or convex surfaces, on lower to upper slopes with variable aspects. *S. leucophylla* may dominate at low to high cover. *Artemisia californica* is at very low to low cover. *Eriogonum cinereum* can be at very low to moderate cover. *Malacothamnus fasciculatus* may occur at low cover. *Leymus condensatus* can be present at very low to high cover. Stands that have been mapped at the alliance level rather than the association level typically will have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *S.leucophylla* as the dominant shrub are also included.

PHOTO INTERPRETATION SIGNATURE: Stands may appear as sparse individuals with grasses between, scattered white clumps, or a smooth, dense, whitish-gray mass of short shrubs. On steep, drier slopes, *E. cinereum* appears as small, grayish specks compared to the larger, white appearance of *S. leucophylla*. *A. californica* may appear as purple-brown individuals and sometimes cast a purple undertone on the *S. leucophylla*-dominated stand. In dense stands, this purple undertone blends into the white *S. leucophylla* and can make it difficult for the photo interpreter to discern the cover of *A. californica*. *Malacothamnus* has a wispy to slightly coarse, light green appearance that sticks up above the low shrub layer.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

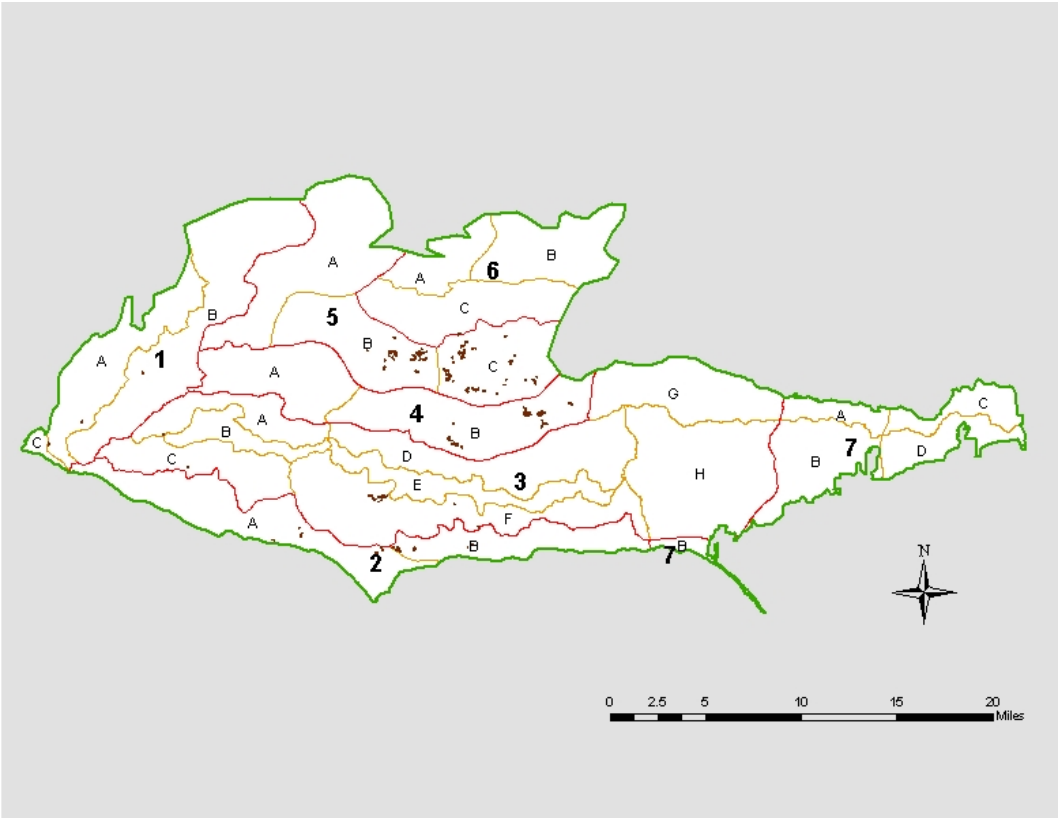
- *Malosma laurina* Shrubland Alliance (2140)
- *Artemisia californica* Shrubland Alliance (3210)
- *Eriogonum cinereum* Shrubland Alliance (3250)
- *Malacothamnus fasciculatus* Shrubland Alliance (3280)
- *Salvia leucophylla-Artemisia californica* Shrubland Suballiance (3390)

3312 – PURPLE SAGE-ASHY BUCKWHEAT/ANNUAL GRASS-HERB SHRUBLAND ASSOCIATION

***Salvia leucophylla-Eriogonum cinereum*/Annual Grass-Herb Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Salvia leucophylla-Eriogonum cinereum*/Annual Grass-Herb Shrubland Association occurs as sparse to intermittent stands on dry, south-facing, moderately steep to steep slopes. This association may be found on undulating and convex surfaces on lower to upper slopes. *S. leucophylla* dominates at low to high cover. *E. cinereum* typically is sub-dominant at very low to moderate cover, although it can approach co-dominance.

PHOTO INTERPRETATION SIGNATURE: Stands of this association appear open, with bare ground between short whitish-gray *S. leucophylla* and small gray specks of *E. cinereum*. Intermittent stands composed of these intermixed short shrubs typically have a smooth texture with a slightly variable color. *E. cinereum* can be difficult to discern when at low cover, but can be inferred on dry steep, thin-soiled, south-facing coastal slopes. If *S. leucophylla* dominates in high cover, it may mask the signature of *E. cinereum*.

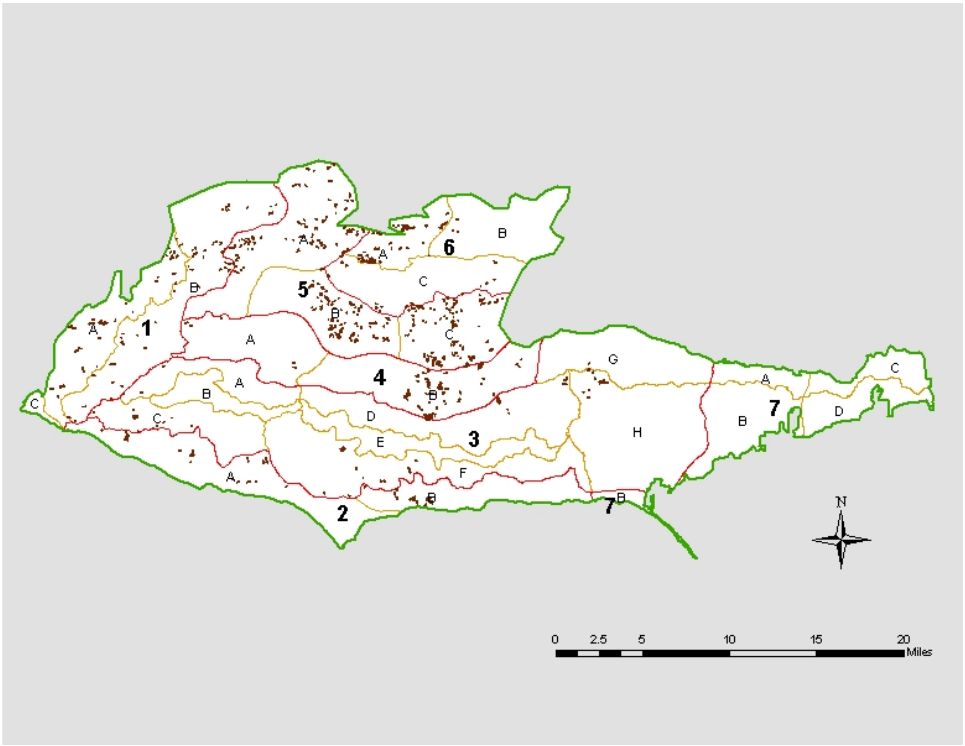
TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Eriogonum cinereum* Shrubland Association (3257)
- *Salvia leucophylla* Shrubland Association (3316)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella* spp. Shrubland Association (3396)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)

3316 – PURPLE SAGE ASSOCIATION
Salvia leucophylla Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Salvia leucophylla* Shrubland Association occurs as sparse to continuous stands on dry-mesic, gentle to steep slopes. This association may appear on neutral, undulating, and convex surfaces, and on lower to upper slopes with variable aspects. Stands are characterized by a strong dominance of *S. leucophylla* at moderate to high cover. *Artemisia californica* can be present at very low to low cover. *Malacothamnus fasciculatus* may be present at low cover. *Leymus condensatus* is sub-dominant, but can approach co-dominance at moderate to high cover.

PHOTO INTERPRETATION SIGNATURE: Overall stand typically appears grayish-white with a smooth texture. *S. leucophylla* is whitish-gray with a smooth texture and fuzzy edges. *A. californica* may appear as purple-brown individuals and sometimes cast a purple undertone on the *S. leucophylla*-dominated stand. In dense stands, this purple undertone blends into the white *S. leucophylla* and can make it difficult for the photo interpreter to discern the cover of *A. californica*. *Malacothamnus* has a wispy to slightly coarse, light green appearance that emerges above the low shrub layer.

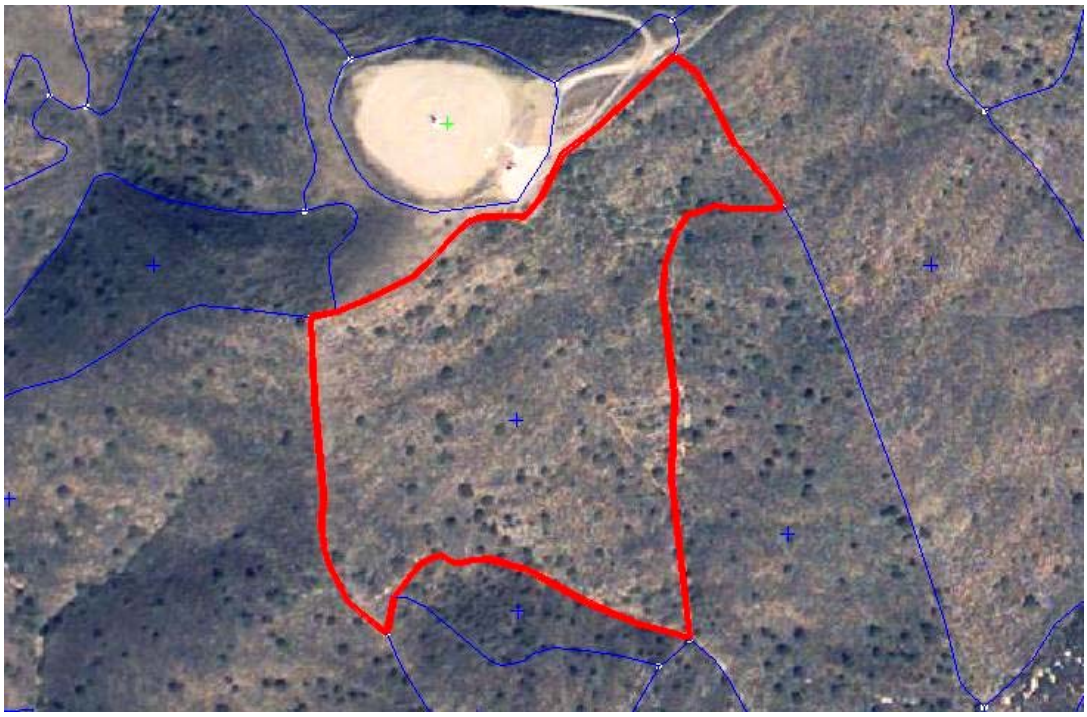
TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Malacothamnus fasciculatus-Salvia leucophylla* Shrubland Association (3281)
- *Salvia leucophylla-Eriogonum cinereum*/Annual Grass-Herb Shrubland Association (3312)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella* spp. Shrubland Association (3396)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)

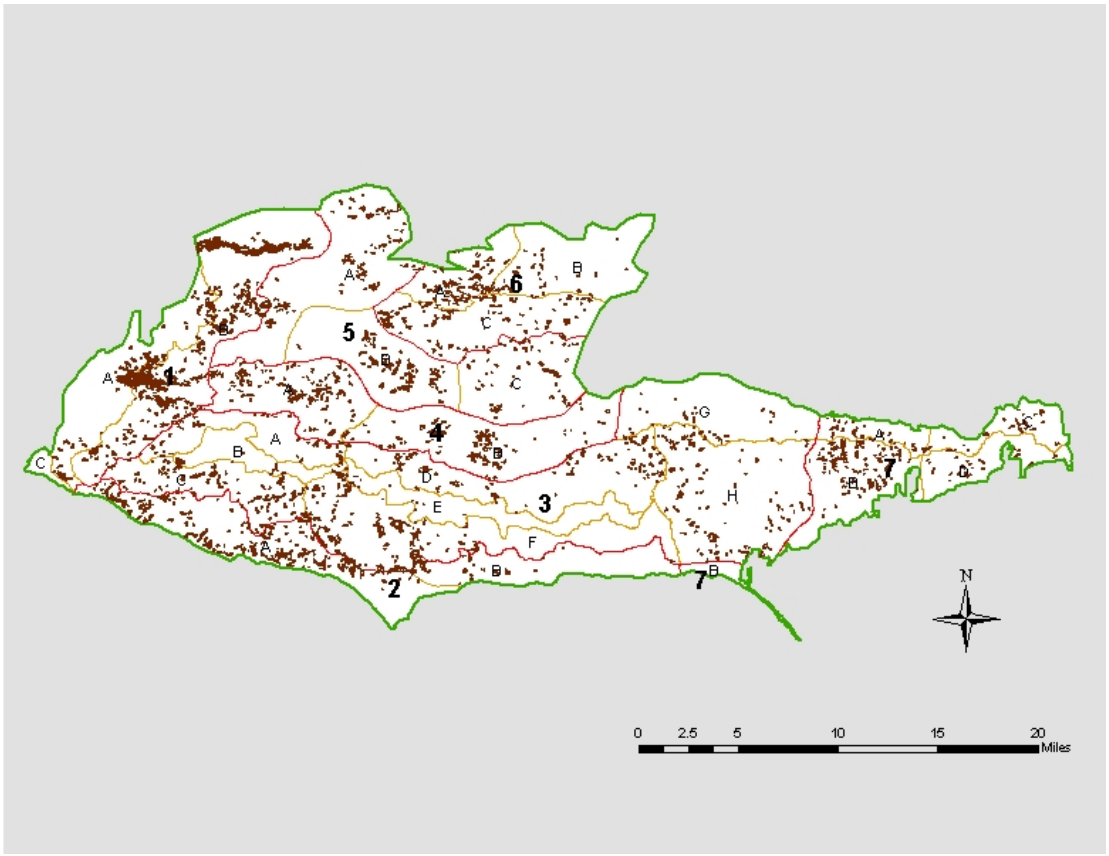
BLACK SAGE SHRUBLAND ALLIANCE



3320 – BLACK SAGE SHRUBLAND ALLIANCE
Salvia mellifera Shrubland Alliance



DISTRIBUTION:



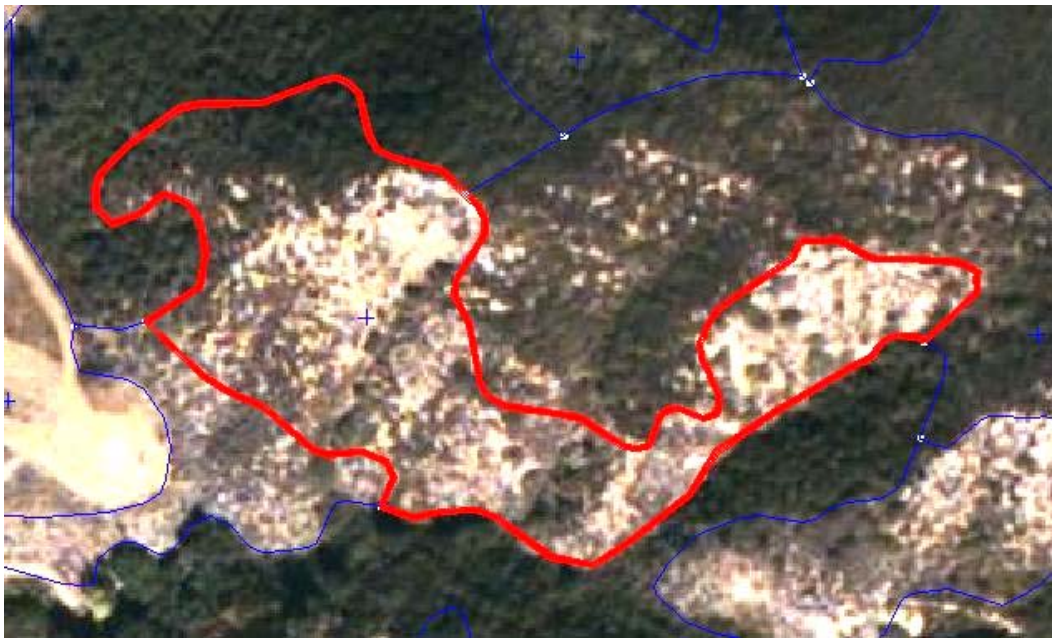
DESCRIPTION: *Salvia mellifera* Shrubland Alliance is the hierarchical class into which all *S. mellifera* association types are nested. This alliance typically forms stands of open to intermittent shrubs on dry south-facing gentle to steep slopes, sometimes with a thin cover of soil. It favors neutral, undulating, or convex surfaces on lower to upper slopes. *S. mellifera* usually dominates over other coastal sage scrub plants and tall shrubs, including *Adenostoma fasciculatum*, *Artemisia californica, Eriogonum cinereum, E. fasciculatum, Malacothamnus fasciculatus, Malosma laurina, Rhus ovata,* and *R. integrifolia*. Cover of *S. mellifera* can range from low to very high cover. The other sub-dominant coastal scrub and tall shrub plants range from very low to moderate cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *S. mellifera* as the dominant shrubs are included.

PHOTO INTERPRETATION SIGNATURE: Stands typically have homogeneous green color and smooth texture. There will be scattered shrubs or groups of emergent tall shrubs with coarse texture and darker or lighter green color. *S. mellifera* is typically medium to bright green in color with a smooth texture. Other coastal sage scrub plants (*A. californica, E. cinereum, E. fasciculatum*) will not be as visible among the taller and stronger signature of *S. mellifera*. The tall shrubs (*Malosma* and *R. ovata*) will range from bright green to medium or dark green in color with a coarse texture and a large rounded crown, and will occur as individuals or in groups. *R. integrifolia* is black in color, and is a short shrub that emerges over the coastal sage scrub as round individuals with smooth texture. *A. fasciculatum* is a tall chaparral shrub emergent above the *S. mellifera*. It has a reddish-brown color and a coarse texture. *Malacothamnus* is a tall post-fire shrub with a dull green color and coarse texture. It may be difficult to see among the denser *S. mellifera*.

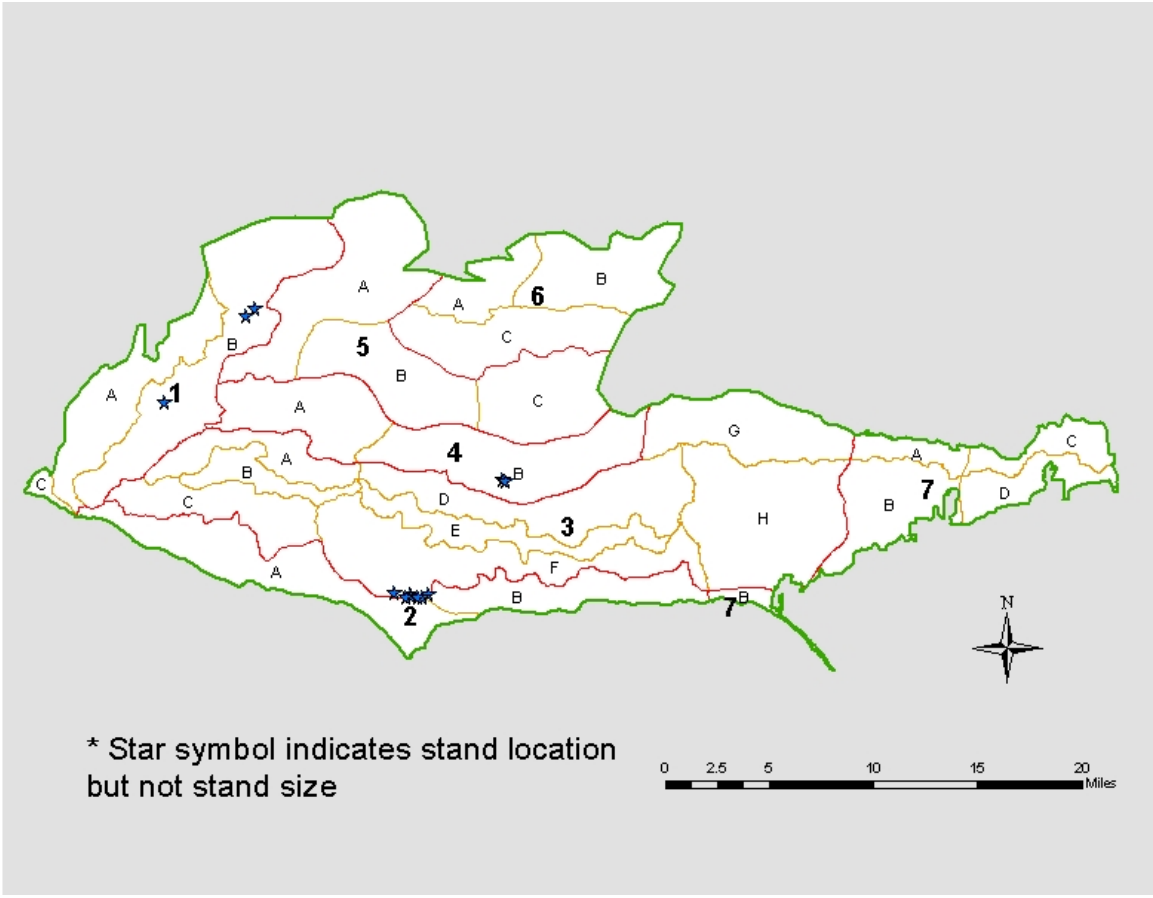
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum-Salvia mellifera* Shrubland Alliance (2030)
- *Malosma laurina* Shrubland Alliance (2140)
- *Artemisia californica* Shrubland Alliance (3210)
- *Encelia californica* Shrubland Alliance (3220)
- *Eriogonum fasciculatum* Shrubland Alliance (3240)
- *Salvia mellifera-Artemisia californica* Shrubland Alliance (3420)

3323 – BLACK SAGE–ASHY BUCKWHEAT SHRUBLAND ASSOCIATION
Salvia mellifera-Eriogonum cinereum Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Salvia mellifera-Eriogonum cinereum* Shrubland Association occurs as open to intermittent shrubs on coastal dry southerly moderate to steep slopes. It favors undulating to convex surfaces on lower to upper slopes, sometimes with thin soil. *S. mellifera* and *E. cinereum* co-dominate, with *S. mellifera* at low to high cover and *E. cinereum* at low cover. *Malosma laurina* or *Rhus ovata* may be present at very low cover. Because the *S. mellifera* signature can dominate that of other coastal sage species in *S. mellifera* associations, and because they occupy similar environments, it is difficult to distinguish one *S. mellifera* type from another in photo interpretation. Therefore, *Salvia mellifera-Eriogonum cinereum* Shrubland Association is mapped only where Rapid Assessment plot locations for this type were provided by the Park. Otherwise it is mapped as the *Salvia mellifera* - (*Adenostoma fasciculatum - Eriogonum cinereum - Eriogonum fasciculatum - Malacothamnus fasciculatus*) Shrubland Superassociation (8328).

PHOTO INTERPRETATION SIGNATURE: Stands typically have homogeneous green color and smooth texture, but sometimes may be green with gray intermixed. *S. mellifera* is typically medium to bright green in color. *E. cinereum* will be tan to gray in color, and may not be visible among the *S. mellifera*. It also has a smooth texture.

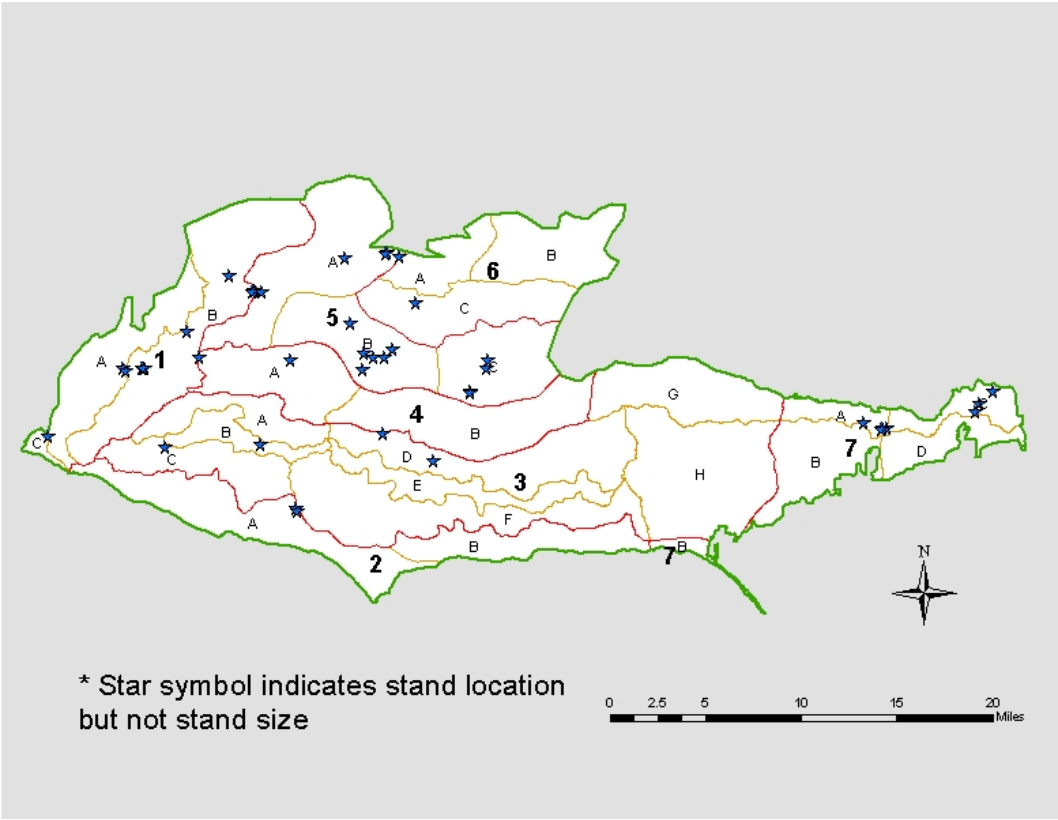
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Eriogonum cinereum* Shrubland Association (2141)
- *Malosma laurina-Salvia mellifera* Shrubland Association (2148)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Eriogonum fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (3248)
- *Salvia mellifera* Shrubland Association (3324)
- *Salvia mellifera-Malosma laurina* Shrubland Association (8324)
- *Salvia mellifera*-(*Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus*) Shrubland Superassociation (8328)
- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)

3324 – BLACK SAGE SHRUBLAND ASSOCIATION
Salvia mellifera Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Salvia mellifera* Shrubland Association occurs as open to intermittent shrubs on dry southerly gentle to steep slopes. It favors neutral, undulating, or convex surfaces on lower to upper slopes, sometimes with thin soil. *S. mellifera* dominates at moderate to very high cover. *Eriogonum fasciculatum, Malacothamnus fasciculatus,* and *Adenostoma fasciculatum* can be present at very low to low cover. Because the *S. mellifera* signature can dominate that of other coastal sage species in *S. mellifera* associations, and because they occupy similar environments, it is difficult to distinguish one *S. mellifera* type from another in photo interpretation. Therefore, *Salvia mellifera* Shrubland Association is mapped only where Rapid Assessment plot locations for this type were provided by the Park. Otherwise it is mapped as the *Salvia mellifera* - (*Adenostoma fasciculatum - Eriogonum cinereum - Eriogonum fasciculatum - Malacothamnus fasciculatus*) Shrubland Superassociation (8328).

PHOTO INTERPRETATION SIGNATURE: Stands typically have homogeneous green color and smooth texture. Sometimes there will be scattered coarse texture and color differences due to the presence of *A. fasciculatum* or *Malacothamnus*. *S. mellifera* is typically medium to bright green in color with a smooth texture. *E. fasciculatum* will be reddish-brown in color with a smooth texture, and may not be visible among the *S. mellifera*. *A. fasciculatum* is a tall chaparral shrub emergent above the *S. mellifera*. It has a reddish-brown color and a coarse texture. *Malacothamnus* is a tall post-fire shrub with a dull green color and coarse texture. It may be difficult to see among the denser *S. mellifera*.

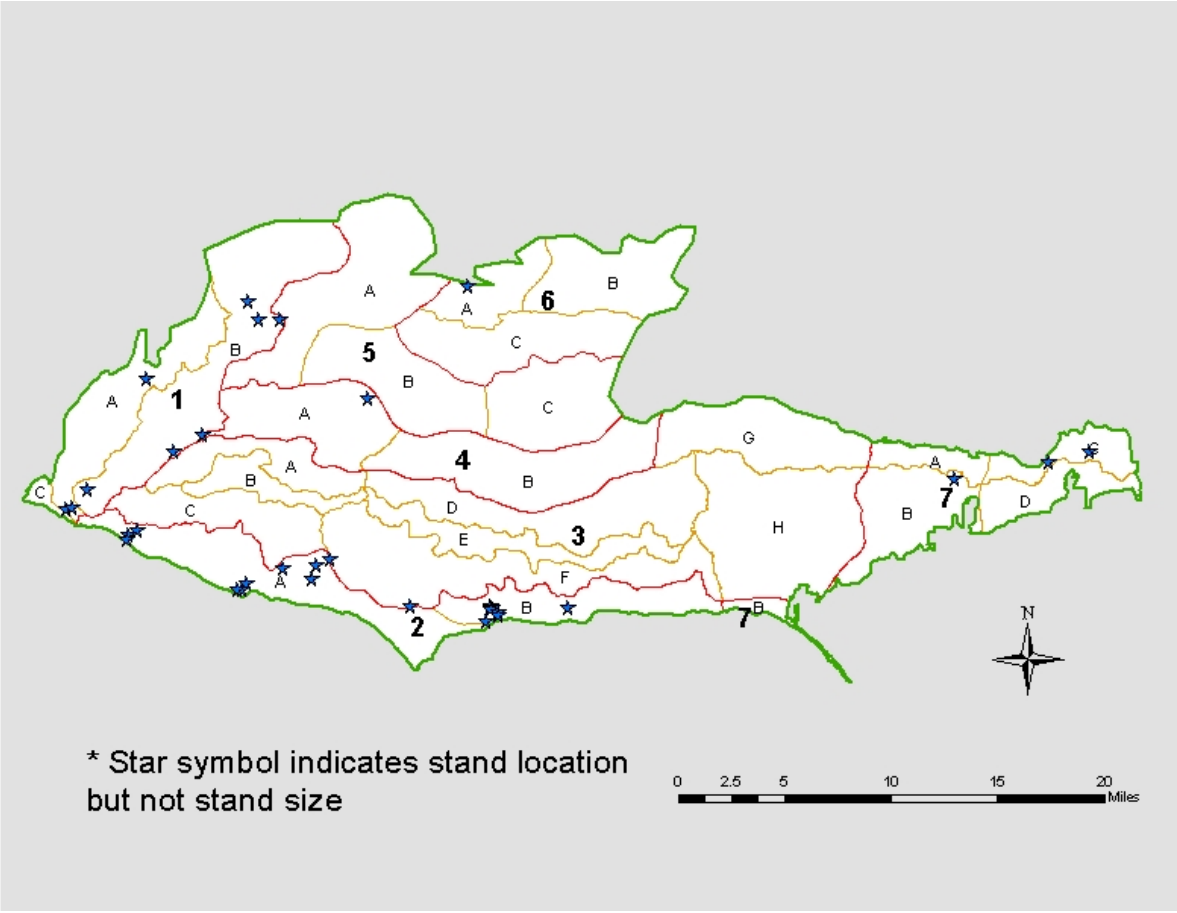
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Adenostoma fasciculatum-Salvia mellilfera* Shrubland Association (2036)
- *Adenostoma fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (2035)
- *Malosma laurina-Eriogonum cinereum* Shrubland Association (2141)
- *Malosma laurina-Salvia mellifera* Shrubland Association (2148)
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Eriogonum fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (3248)
- *Malacothamnus fasciculatus-Salvia mellifera* Shrubland Association (3282)
- *Malacothamnus fasciculatus* Shrubland Association (3287)
- *Salvia mellifera-Eriogonum cinereum* Shrubland Association (3323)
- *Salvia mellifera-Malosma laurinia* Shrubland Association (8324)
- *Salvia mellifera*-(*Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus*) Shrubland Superassociation (8328)
- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)

8324 – BLACK SAGE-LAUREL SUMAC SHRUBLAND ASSOCIATION
***Salvia mellifera-Malosma laurina* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Salvia mellifera-Malosma laurina* Shrubland Association occurs as open to intermittent shrubs on dry southerly gentle to steep slopes. It favors neutral, undulating, or convex surfaces on lower to upper slopes. *S. mellifera* dominates at moderate to high cover. Tall shrubs *Malosma* and *Rhus integrifolia* sub-dominate at low to moderate cover. When *R. integrifolia* is present, *Artemisia californica* may also be present at very low to low cover. Because the *Malosma* and *R. ovata* signature can be similar, and because they occupy similar environments, it is difficult to distinguish one *S. mellifera*-tall shrub type from another in photo interpretation. Therefore, *Salvia mellifera-Malosma laurina* Shrubland Association is mapped only where Rapid Assessment plot locations for this type were provided by the Park. Otherwise it is mapped as the *Salvia mellifera* - (*Malosma laurina - Rhus ovata - Rhus integrifolia*) Shrubland Superassociation (8329).

PHOTO INTERPRETATION SIGNATURE: Stands dominated by *S, mellifera* typically have a homogeneous medium to bright green color and smooth texture. This association will have emergent tall shrubs, scattered or in groups, with coarse texture and darker green color, over the smooth shorter shrub understory. *Malosma* is a tall shrub with a variable green tone. Individuals have a large rounded crown with a smooth to coarse texture. *R. integrifolia* is black in color, and is a short shrub that emerges over the coastal sage scrub as round individuals with smooth texture.

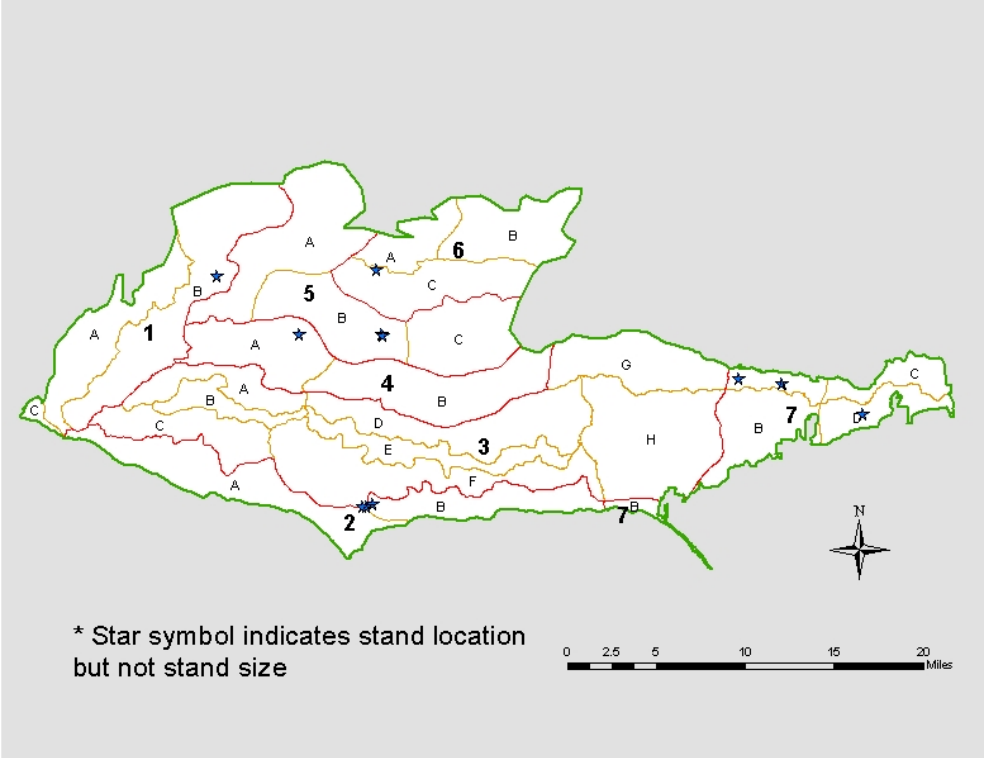
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Eriogonum cinereum* Shrubland Association (2141)
- *Malosma laurina-Salvia mellifera* Shrubland Association (2148)
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Eriogonum fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (3248)
- *Malacothamnus fasciculatus-Salvia mellifera* Shrubland Association (3282)
- *Malacothamnus fasciculatus-Malosma laurina* Shrubland Association (3286)
- *Malacothamnus fasciculatus* Shrubland Association (3287)
- *Salvia mellifera-Eriogonum cinereum* Shrubland Association (3323)
- *Salvia mellifera* Shrubland Association (3324)
- *Salvia mellifera-Rhus ovata* Shrubland Association (8325)
- *Salvia mellifera*-(*Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus*) Shrubland Superassociation (8328)
- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)
- *Salvia mellifera-Artemisia californica* Shrubland Association (3421)

8325 – BLACK SAGE-SUGAR BUSH SHRUBLAND ASSOCIATION
Salvia mellifera-Rhus ovata Shrubland Association



DISTRIBUTION:



DESCRIPTION: *Salvia mellifera-Rhus ovata* Shrubland Association occurs as open to intermittent shrubs on dry southerly and northerly gentle to steep slopes. It favors undulating to convex surfaces on lower to upper slopes. *S. mellifera* dominates at moderate to high cover. *R. ovata* sub-dominates at very low to moderate cover. Because the *Malosma laurina* and *R. ovata* signature can be similar, and because they occupy similar environments, it is difficult to distinguish one *S. mellifera*-tall shrub type from another in photo interpretation. Therefore, *Salvia mellifera-Rhus ovata* Shrubland Association is mapped only where Rapid Assessment plot locations for this type were provided by the Park. Otherwise it is mapped as the *Salvia mellifera* - (*Malosma laurina - Rhus ovata - Rhus integrifolia*) Shrubland Superassociation (8329).

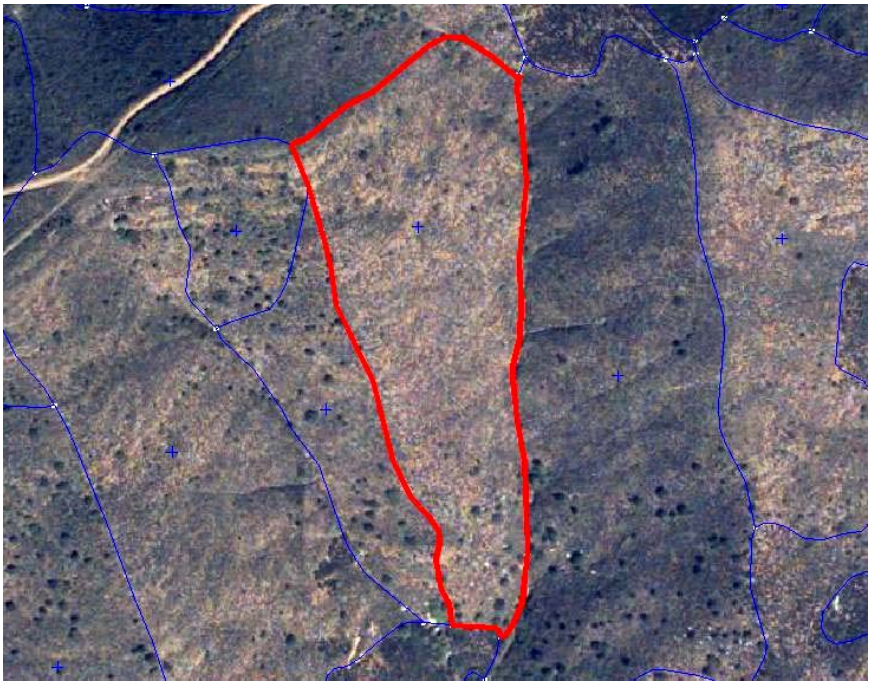
PHOTO INTERPRETATION SIGNATURE: Stands dominated by *S, mellifera* typically have a homogeneous medium to bright green color and smooth texture. This association will have emergent tall shrubs, scattered or in groups, with coarse texture and darker or lighter green color, over the smooth shorter shrub understory. *R. ovata* is usually bright green, but sometimes medium or dark green. The individual tall shrubs have a large rounded crown with a smooth to coarse texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

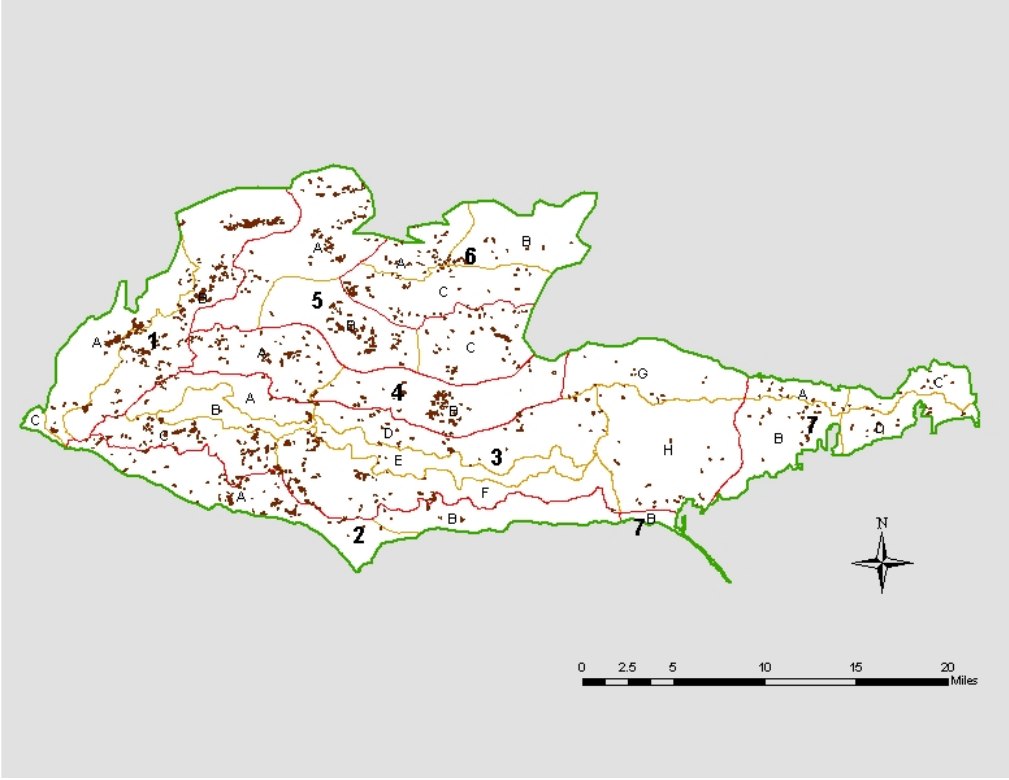
- *Malosma laurina-Eriogonum cinereum* Shrubland Association (2141)
- *Malosma laurina-Salvia mellifera* Shrubland Association (2148)
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Eriogonum fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (3248)
- *Malacothamnus fasciculatus-Salvia mellifera* Shrubland Association (3282)
- *Malacothamnus fasciculatus-Malosma laurina* Shrubland Association (3286)
- *Malacothamnus fasciculatus* Shrubland Association (3287)
- *Salvia mellifera-Eriogonum cinereum* Shrubland Association (3323)
- *Salvia mellifera* Shrubland Association (3324)
- *Salvia mellifera-Malosma laurina* Shrubland Association (8324)
- *Salvia mellifera*-(*Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus*) Shrubland Superassociation (8328)
- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)
- *Salvia mellifera-Artemisia californica* Shrubland Association (3421)

8328 – BLACK SAGE-(CHAMISE-ASHY BUCKWHEAT-CALIFORNIA BUCKWHEAT-BUSH MALLOW) SHRUBLAND SUPERASSOCIATION

Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus) **Shrubland Superassociation**



DISTRIBUTION:



DESCRIPTION: *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation occurs as open to intermittent shrubs on dry southerly gentle to steep slopes. It favors neutral, undulating, or convex surfaces on lower to upper slopes, sometimes with thin soil. *S. mellifera* usually dominates at low to very high cover. *E. fasciculatum, Malacothamnus,* and *A. fasciculatum* can be present at very low to low cover. *E. cinereum* can co-dominate at low cover. Because the *S. mellifera* signature can obscure that of other coastal sage species in *S. mellifera* associations, and because they occupy similar environments, it is difficult to distinguish one *S. mellifera* type from another in photo interpretation. Therefore, this Superassociation is used to map occurrences of *Salvia mellifera-Eriogonum cinereum* Shrubland Association (3323) and *Salvia mellifera* Shrubland Association (3324) except where rapid assessment plot locations for these types were provided by the Park.

PHOTO INTERPRETATION SIGNATURE: Stands dominated by *S. mellifera* typically have a homogeneous medium to bright green color and smooth texture. Sometimes there will be scattered coarse texture and color differences due to the presence of *A. fasciculatum* and *Malacothamnus*. *A. fasciculatum* is a tall chaparral shrub emergent above the *S. mellifera*. It has a reddish-brown color and a coarse texture. *Malacothamnus* is a tall post-fire shrub with a dull green color and coarse texture. It may be difficult to see among the denser *S. mellifera*. *E. fasciculatum* will be reddish-brown in color with a smooth texture, and may not be visible among the *S. mellifera*.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

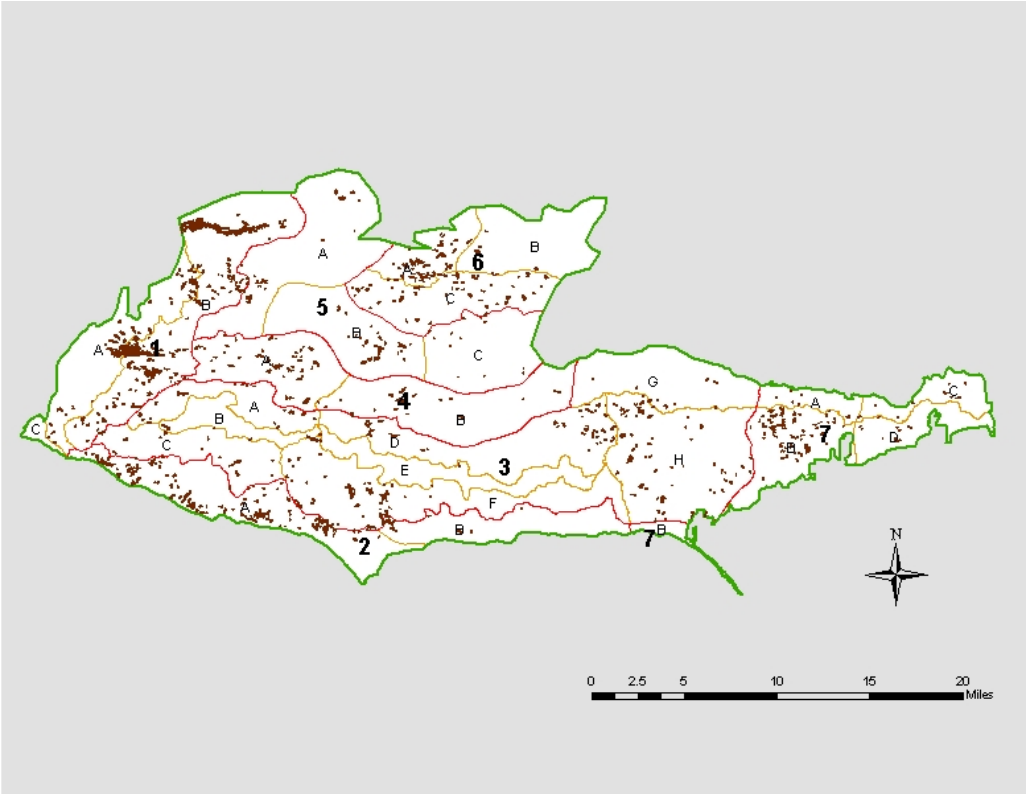
- *Adenostoma fasciculatum-Salvia mellilfera* Shrubland Association (2036)
- *Adenostoma fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (2035)
- *Malosma laurina-Eriogonum cinereum* Shrubland Association (2141)
- *Malosma laurina-Salvia mellifera* Shrubland Association (2148)
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Eriogonum fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (3248)
- *Malacothamnus fasciculatus-Salvia mellifera* Shrubland Association (3282)
- *Malacothamnus fasciculatus* Shrubland Association (3287)
- *Salvia mellifera-Eriogonum cinereum* Shrubland Association (3323)
- *Salvia mellifera* Shrubland Association (3324)
- *Salvia mellifera-Malosma laurinia* Shrubland Association (8324)
- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)

8329 – BLACK SAGE-(LAUREL SUMAC-SUGAR BUSH-LEMONADE BERRY) SHRUBLAND SUPERASSOCIATION

***Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation**



DISTRIBUTION:



DESCRIPTION: *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation occurs as open to intermittent shrubs on dry southerly or northerly gentle to steep slopes. It favors neutral, undulating, or convex surfaces on lower to upper slopes. *S. mellifera* dominates at moderate to high cover. Tall shrubs *Malosma* and *R. integrifolia* sub-dominate at low to moderate cover, while *R. ovata* sub-dominates at very low to moderate cover. When *R. integrifolia* is present *Artemisia californica* may also be present at very low to low cover. Because the *Malosma* and *R. ovata* signature can be similar, and because they occupy similar environments, it is difficult to distinguish one *S. mellifera*-tall shrub type from another in photo interpretation. Therefore, this superassociation is used to map occurrences of *Salvia mellifera-Malosma laurina* Shrubland Association (8324) and the *Salvia mellifera-Rhus ovata* Shrubland Association (8325) except where rapid assessment plot locations for this type were provided by the Park.

PHOTO INTERPRETATION SIGNATURE: Stands dominated by *S, mellifera* typically have a homogeneous medium to bright green color and smooth texture. This association will have emergent tall shrubs, scattered or in groups, with coarse texture and darker or lighter green color, over the smooth shorter shrub understory. *Malosma* is a tall shrub with a variable green tone. *R. ovata* is usually bright green, but sometimes medium or dark green. Both *Malosma* and *R.ovata* individuals have large rounded crowns with a smooth to coarse texture. *R. integrifolia* is black in color, and is a short shrub that emerges over the coastal sage scrub as round individuals with smooth texture.

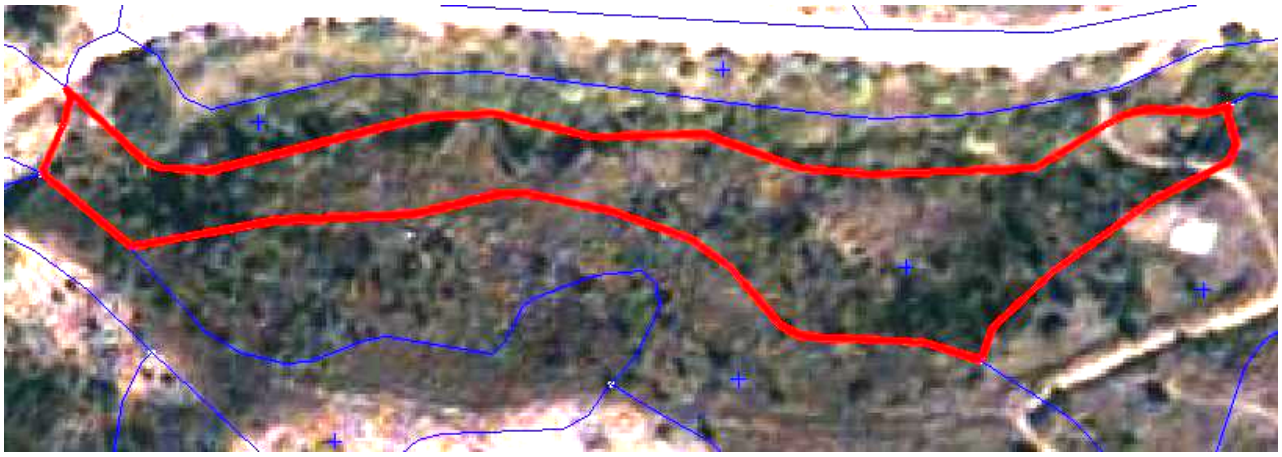
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Eriogonum cinereum* Shrubland Association (2141)
- *Malosma laurina-Salvia mellifera* Shrubland Association (2148)
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Eriogonum fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (3248)
- *Malacothamnus fasciculatus-Salvia mellifera* Shrubland Association (3282)
- *Malacothamnus fasciculatus-Malosma laurina* Shrubland Association (3286)
- *Malacothamnus fasciculatus* Shrubland Association (3287)
- *Salvia mellifera-Eriogonum cinereum* Shrubland Association (3323)
- *Salvia mellifera* Shrubland Association (3324)
- *Salvia mellifera-Malosma laurina* Shrubland Association (8324)
- *Salvia mellifera-Rhus ovata* Shrubland Association (8325)
- *Salvia mellifera*-(*Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus*) Shrubland Superassociation (8328)
- *Salvia mellifera-Artemisia californica* Shrubland Association (3421)

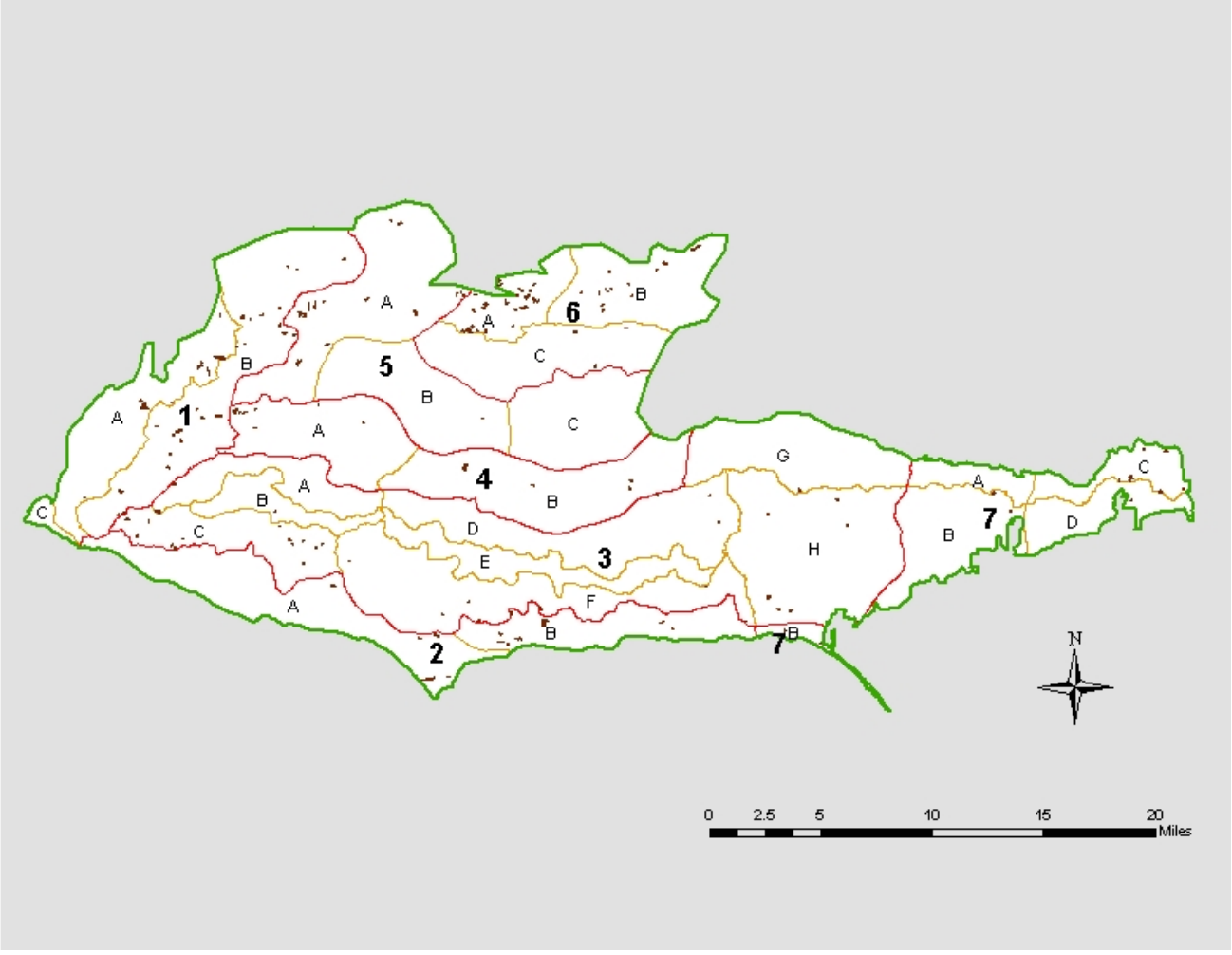
POISON OAK SHRUBLAND ALLIANCE



3330 – POISON OAK SHRUBLAND ALLIANCE
Toxicodendron diversilobum Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Toxicodendron diversilobum* Shrubland Alliance is the hierarchical class into which *Toxicodendron* association types are nested. This alliance occurs as open to intermittent shrubs on dry-mesic to mesic north-facing moderate to extremely steep slopes. It favors all surface types on lower to upper slopes. *Toxicodendron* can dominate at a low to very high cover. *Mimulus aurantiacus* can co-dominate at low to high cover. *Leymus condensatus* can be present at very low to moderate cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *Toxicodendron* as the dominant shrubs are included.

PHOTO INTERPRETATION SIGNATURE: The stand tends to have a smooth homogeneous texture, but may have some color variation within it. *Toxicodendron* appears green, yellow, or reddish to orange brown in color, depending on whether it is drying out. It has a smooth to slightly coarse texture. Its signature can be confused with that of *Venegasia carpesioides* (yellow to green), *Mimulus* (red to orange-brown), and *Leymus* (green to brown). *Mimulus* is reddish to orange-brown in color and usually occurs as individuals with a fine texture. *Leymus* appears brown to green in color, occurring as wispy, low clumps. All species can be difficult to discern when low in cover.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

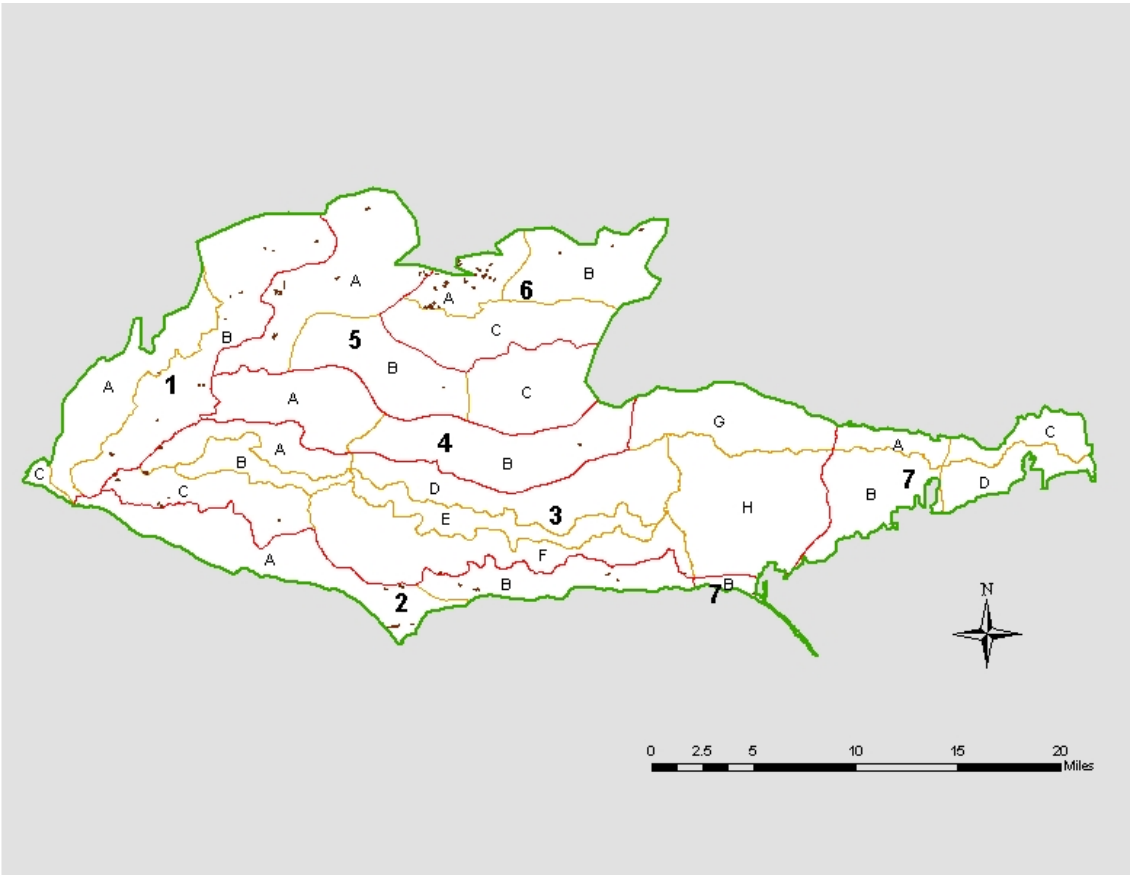
- *Mimulus aurantiacus* Shrubland Alliance (2170)
- *Artemisia californica* Shrubland Alliance (3210)
- *Salvia leucophylla-Artemisia californica* Shrubland Suballliance (3390)
- *Leymus condensatus* Herbaceous Alliance (4040)

3331 – POISON OAK-CALIFORNIA SAGEBRUSH/GIANT WILD RYE SHRUBLAND ASSOCIATION

***Toxicodendron diversilobum-Artemisia californica/Leymus condensatus* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Toxicodendron diversilobum - Artemisia californica / Leymus condensatus* Shrubland Association occurs in open to continuous stands on mesic, north-facing, moderate to steep slopes. It favors all surface types, on lower to upper slopes. *Toxicodendron* is the dominant shrub at moderate to very high cover. *A. californica* is present at very low to low cover. *Leymus* is present at very low to moderate cover. *Mimulus aurantiacus* may be present approaching low cover.

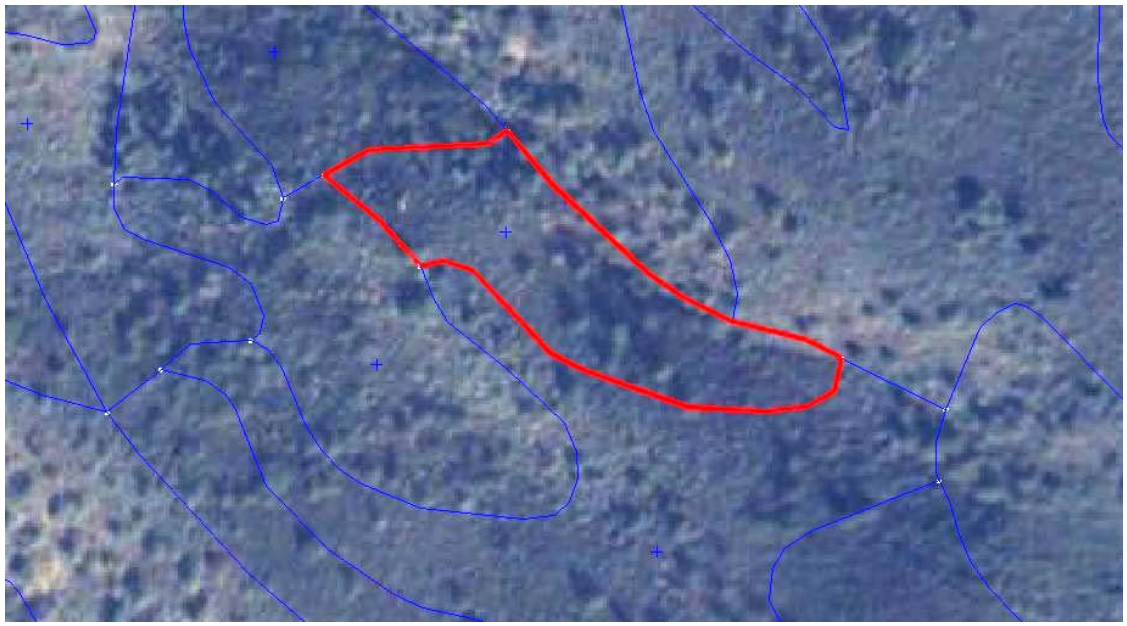
PHOTO INTERPRETATION SIGNATURE: The stand tends to have a smooth homogeneous texture, but may have some color variation within it. *Toxicodendron* appears green, yellow, or reddish to orange brown in color, depending on whether it is drying out. It has a smooth to slightly coarse texture. Its signature can be confused with that of *Venegasia carpesioides* (yellow to green), *Mimulus* (red to orange-brown), and *Leymus* (green to brown). *Mimulus* is reddish to orange-brown in color and usually occurs as individuals with a fine texture. *Leymus* appears brown to green in color, occurring as wispy, low clumps. It can be difficult to discern when in low cover. *A. californica* occurs as individuals or groups with a tan to purple-brown color and a fine texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

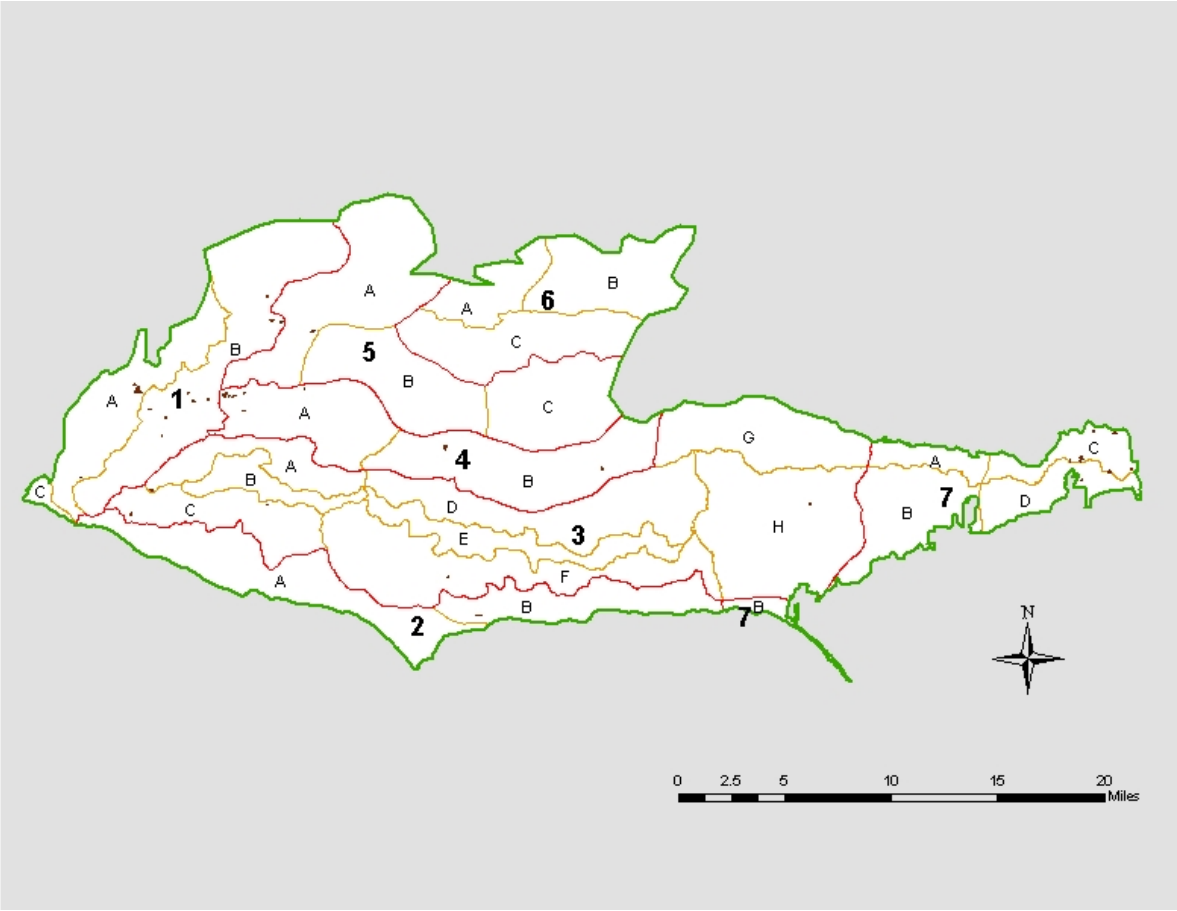
- *Mimulus aurantiacus* Shrubland Association (2172)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica/Leymus condensatus* Shrubland Association (3216)
- *Artemisia californica-Mimulus aurantiacus* Shrubland Association (8214)
- *Toxicodendron diversilobum-Mimulus aurantiacus* Shrubland Association (3332)
- *Salvia leucophylla-Artemisia californica* Shrubland Association (3391)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum*/*Nassella* spp. Shrubland Association (3396)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)
- *Leymus condensatus* Herbaceous Association (4041)

3332 – POISON OAK–BUSH MONKEY FLOWER SHRUBLAND ASSOCIATION

***Toxicodendron diversilobum-Mimulus aurantiacus* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Toxicodendron diversilobum-Mimulus aurantiacus* Shrubland Association occurs in open to intermittent stands, on dry-mesic, north-facing, moderately to extremely steep slopes. It favors neutral, undulating, or convex lower to upper slopes. *Toxicodendron* and *Mimulus* co-dominate, with *Toxicodendron* at moderate cover, and *Mimulus* at low to high cover.

PHOTO INTERPRETATION SIGNATURE: The stand tends to have a smooth homogeneous texture, but may have some color variation within it. *Toxicodendron* appears green, yellow, or reddish to orange brown in color, depending on whether it is drying out. It has a smooth to slightly coarse texture. Its signature can be confused with that of *Venegasia carpesioides* (yellow to green), *Mimulus* (red to orange-brown), and *Leymus condensatus* (green to brown). *Mimulus* is reddish to orange-brown in color and usually occurs as individuals with a fine texture. It can be difficult to discern when low in cover.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Mimulus aurantiacus* Shrubland Association (2172)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica/Leymus condensatus* Shrubland Association (3216)
- *Artemisia californica-Mimulus aurantiacus* Shrubland Association (8214)
- *Toxicodendron diversilobum-Artemisia californica/Leymus condensatus* Shrubland Association (3331)
- *Salvia leucophylla-Artemisia californica* Shrubland Association (3391)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella* spp. Shrubland Association (3396)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)
- *Leymus condensatus* Herbaceous Association (4041)

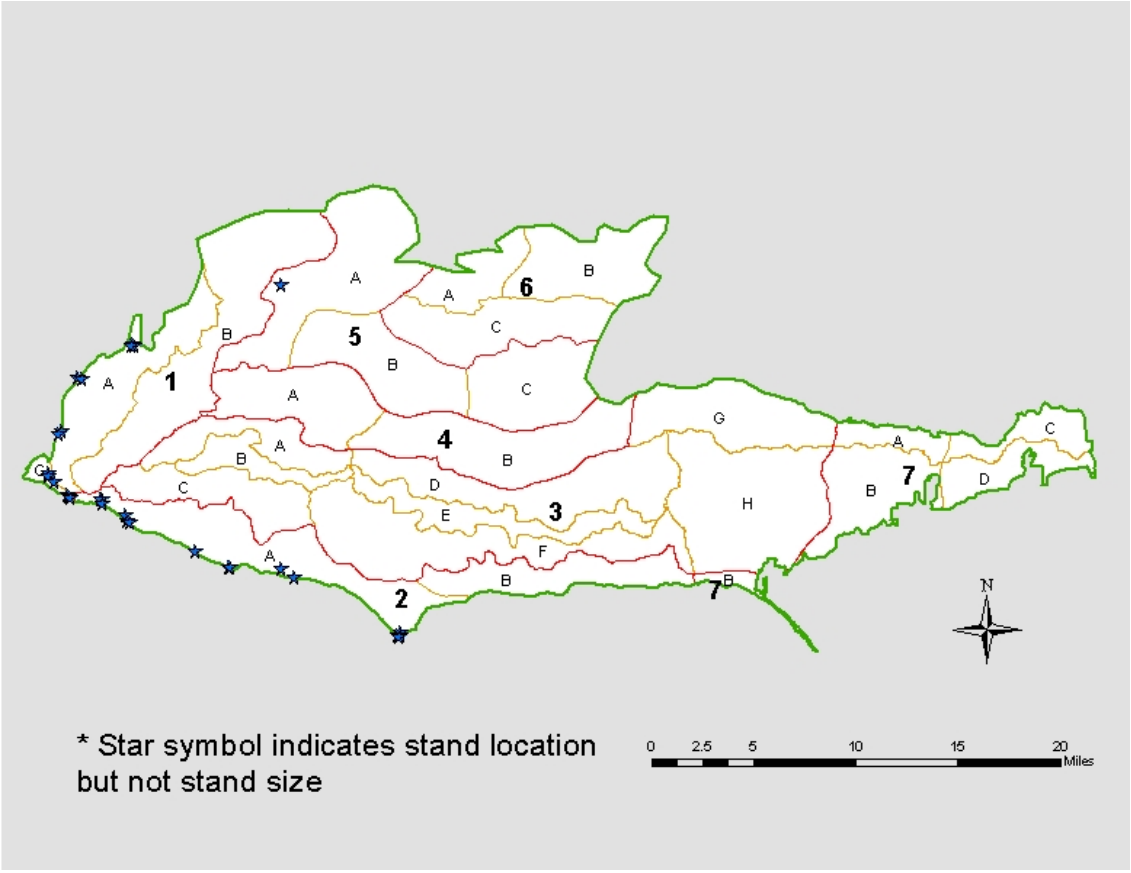
GIANT COREOPSIS SHRUBLAND ALLIANCE



3340 – GIANT COREOPSIS SHRUBLAND ALLIANCE
Coreopsis gigantea Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Coreopsis gigantea* Shrubland Alliance is the hierarchical class into which *C. gigantea* association types are nested. This alliance occurs as sparse to intermittent stands of shrubs on dry coastal north- or south-facing level to extremely steep slopes. It is found on all surface types from bottoms to upper slopes. Sometimes this type is found on sandy soils and dunes. In some instances *Coreopsis, Ericameria ericoides*, and *Encelia californica* may co-dominate. In other cases *Coreopsis*, *Artemisia californica*, and *Eriogonum cinereum* co-dominate. All can be at very low to moderate cover. *Rhus integrifolia* may be present at very low to low cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *Coreopsis* as the dominant shrub are included. This alliance is mapped from Rapid Assessment plots provided by the Park, and then extrapolated to nearby similar stands.

PHOTO INTERPRETATION SIGNATURE: Stands typically are mottled with a reddish-brown to gray smooth signature where densely vegetated, tan where grassy, and white to gray where sparsely vegetated. *Coreopsis* is not visible on the aerial photos. *Ericameria ericoides* has a gray signature, while *Encelia californica* will appear reddish brown. *A. californica* will appear as purple-brown to tan or gray individuals or groups with a smooth texture. *Eriogonum cinereum* will appear gray in color, if visible at all, with a smooth texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

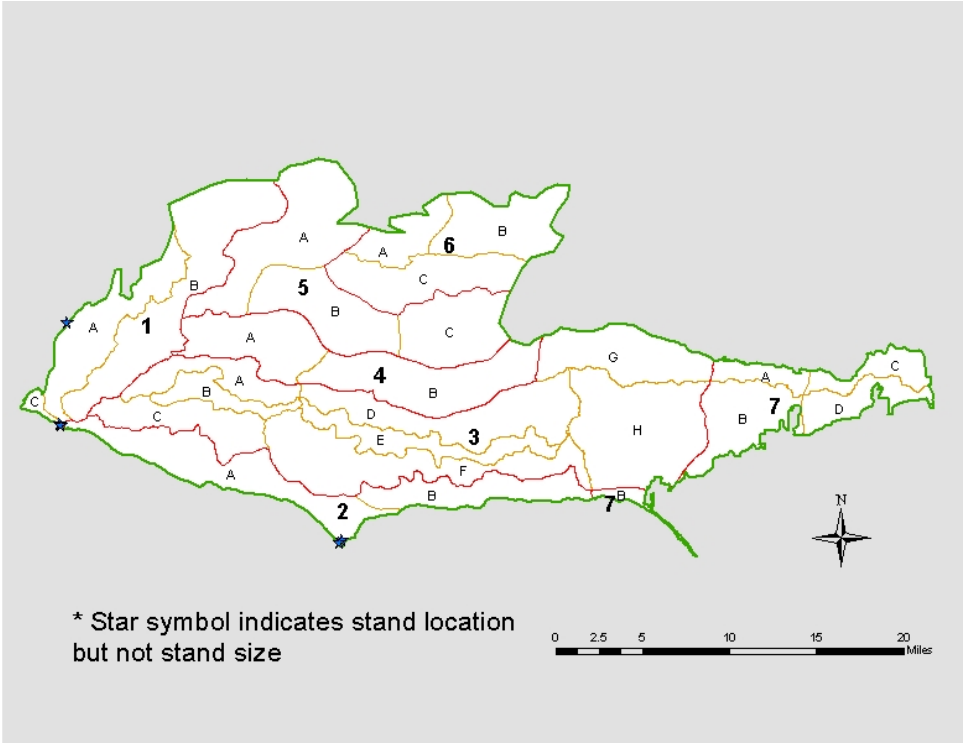
- *Rhus integrifolia* Shrubland Alliance (2150)
- *Artemisia californica* Shrubland Alliance (3210)
- *Encelia californica* Shrubland Alliance (3220)
- *Eriogonum cinereum* Shrubland Alliance (3250)
- *Salvia leucophylla-Artemisia californica* Shrubland Suballiance (3390)

3342 – GIANT COREOPSIS–DUNE GOLDENBUSH–CALIFORNIA ENCELIA SHRUBLAND ASSOCIATION

***Coreopsis gigantea-Ericameria ericoides-Encelia californica* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Coreopsis gigantea-Ericameria ericoides-Encelia californica* Shrubland Association occurs as sparse to open stands of shrubs on dry coastal north-facing gentle to moderately steep slopes on sandy soil or dunes. It is found on neutral to undulating surfaces and lower to upper slopes at close proximity to the coastline. *Coreopsis, Ericameria ericoides*, and *Encelia californica* co-dominate, each species at very low to moderate cover. *Mesembryanthemum* spp*. or Carpobrotus edulis* and grasses may be present. This association is mapped from Rapid Assessment plots provided by the Park, and then extrapolated to nearby similar stands.

PHOTO INTERPRETATION SIGNATURE: Stands typically are mottled with a reddish-brown to gray smooth signature where densely vegetated, tan where grassy, and white to gray where sparsely vegetated. *Coreopsis* is not visible on the aerial photos. *Ericameria ericoides* has a gray signature, while *Encelia californica* will appear reddish brown.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

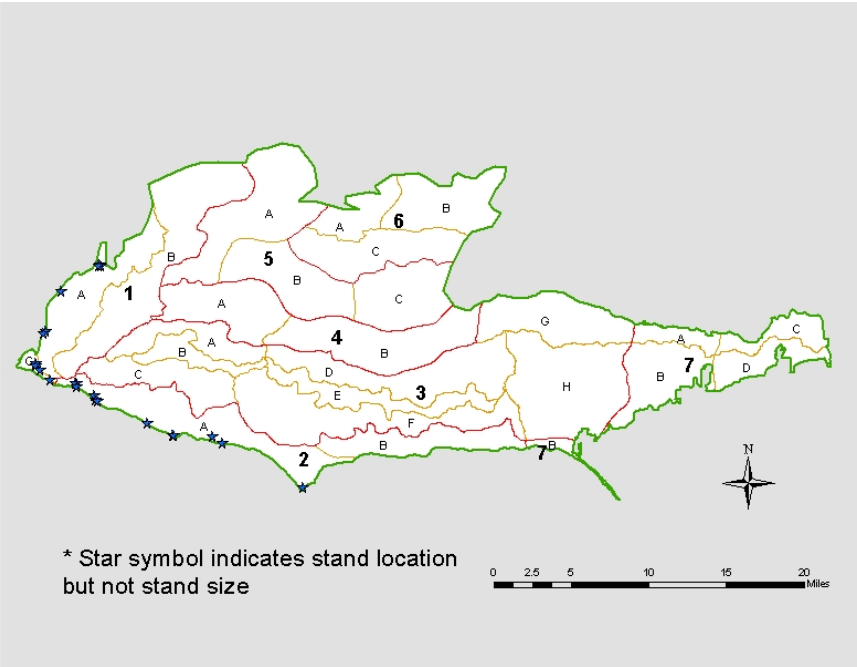
- *Encelia californica-Rhus integrifolia* Shrubland Association (3226)
- *Encelia californica (Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera)* Shrubland Superassociation (3228)
- *Coreopsis gigantea-Artemisia californica-Eriogonum cinereum* Shrubland Association (3345)
- *Mesembryantemum* spp*.-Carpobrotus edulis* Shrubland Mapping Unit (9543)

3345 – GIANT COREOPSIS-CALIFORNIA SAGEBRUSH-ASHY BUCKWHEAT SHRUBLAND ASSOCIATION

***Coreopsis gigantea-Artemisia californica-Eriogonum cinereum* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Coreopsis gigantea-Artemisia californica-Eriogonum cinereum* Shrubland Association occurs as sparse to open stands of shrubs on dry coastal north- or south-facing level to extremely steep slopes. It is found on all surface types and on bottoms to upper slopes. *Coreopsis*, *A. californica*, and *E. cinereum* co-dominate. *Coreopsis* and *A. californica* are at very low to moderate cover. *E. cinereum* is at very low to low cover. *Rhus integrifolia* may be present at very low to low cover. This association is mapped from Rapid Assessment plots provided by the Park, and then extrapolated to nearby similar stands.

PHOTO INTERPRETATION SIGNATURE: Stands typically are gray to light brown in color with a smooth texture. *Coreopsis* is not visible on the aerial photos. *A. californica* will appear as purple-brown to tan or gray individuals or groups with a smooth texture. *E. cinereum* will appear gray in color, if visible at all, with a smooth texture.

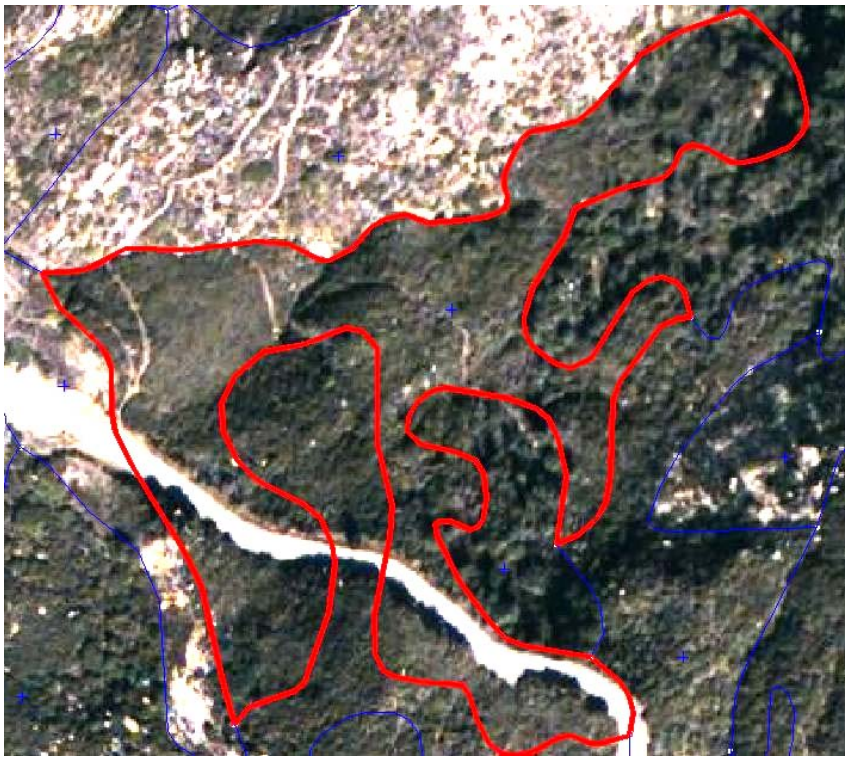
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Rhus integrifolia-Artemisia californica-Eriogonum cinereum* Shrubland Association (7157)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica/Leymus condensatus* Shrubland Association (3216)
- *Artemisia californica* Shrubland Association (8213)
- *Eriogonum cinereum* Shrubland Association (3257)
- *Coreopsis gigantea-Ericameria ericoides-Encelia californica* Shrubland Association (3342)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella* spp. Shrubland Association (3396)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)

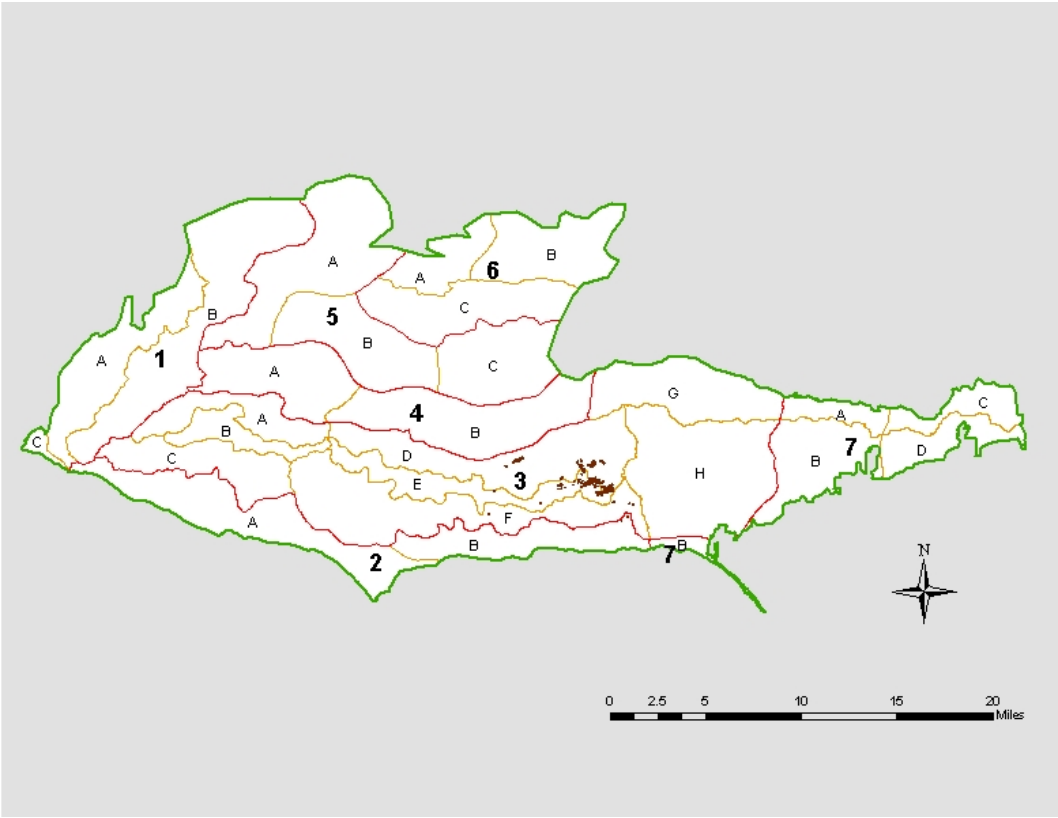
BUSH POPPY SHRUBLAND ALLIANCE



3350 – BUSH POPPY SHRUBLAND ALLIANCE
Dendromecon rigida Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Dendromecon rigida* Shrubland Alliance occurs in open to intermittent stands in post-fire chaparral situations, with *Dendromecon* as the dominant shrub. *Dendromecon* is of moderate to high cover. Other shrubs can sub-dominate up to moderate cover. It occurs primarily on mesic northerly gentle to moderately steep slopes, with variable surface shape, on mid to upper slopes and ridge tops. It can occur on some south-facing slopes also.

PHOTO INTERPRETATION SIGNATURE: The stand can have a smooth white to gray homogeneous appearance when primarily composed of *Dendromecon*. When mixed with other shrubs it will have a marbled mottled appearance with white specks or streaks throughout the stand, again with a homogeneous smooth texture. *Dendromecon* is white to light gray in color with a tall thin stature and a wispy appearance.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Ceanothus megacarpus & Ceanothus spinosus & Cercocarpus betuloides* Shrubland Superalliance (2002)
- *Ceanothus* spp*. & Cercocarpus betuloides* Shrubland Superalliance (2006)
- *Adenostoma fasciculatum* Shrubland Alliance (2010)
- *Ceanothus megacarpus* Shrubland Alliance (2080)
- *Ceanothus spinosus* Shrubland Alliance (2090)
- *Cercocarpus betuloides* Shrubland Alliance (2110)

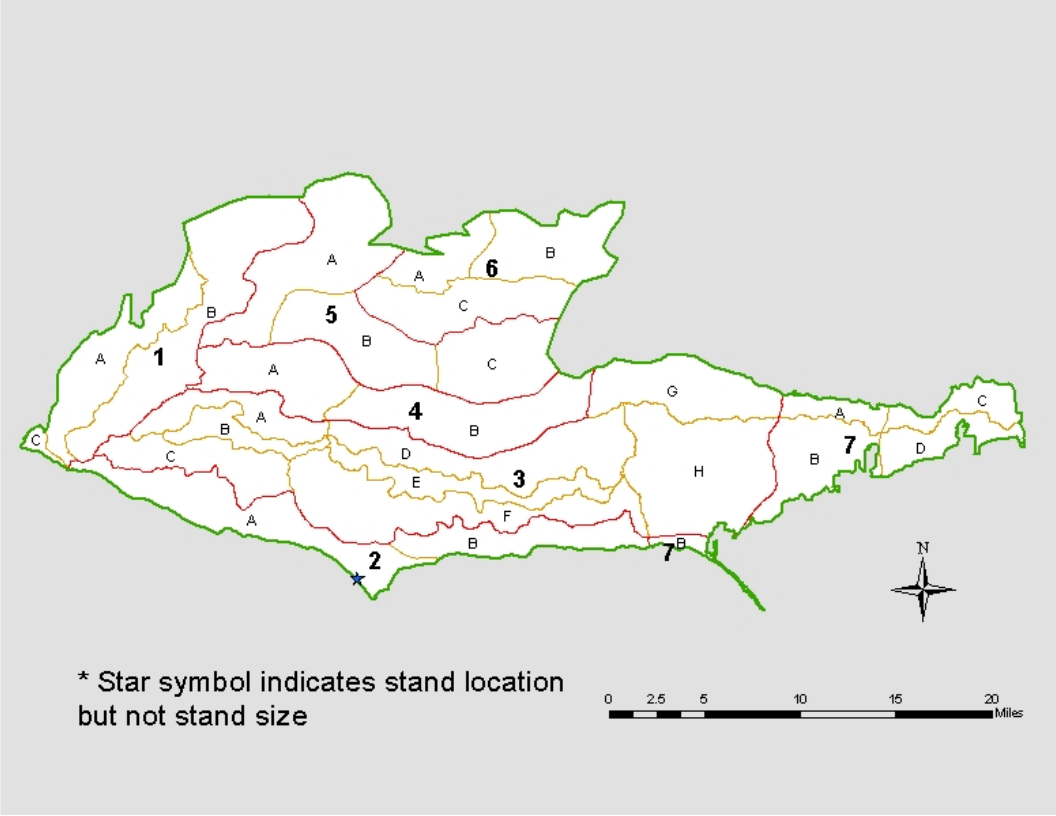
CONEJO BUCKWHEAT SHRUBLAND UNIQUE STANDS MAPPING UNIT



3360 – CONEJO BUCKWHEAT SHRUBLAND UNIQUE STANDS MAPPING UNIT
Eriogonum crocatum Shrubland Unique Stands Mapping Unit



DISTRIBUTION:



DESCRIPTION: *Eriogonum crocatum* Shrubland Unique Stands Mapping Unit is typically not discernable on an aerial photo. It is mapped at only one site in the database from a Rapid Assessment Plot location. The occurrence is a possible restoration site on a sand dune by the Zuma Beach lagoon. It consists of open short shrubs on a neutral to undulating surface.

PHOTO INTERPRETATION SIGNATURE: The *E. crocatum* appears as brown round-crowned individuals with a smooth texture. The white sandy substrate can be seen between the shrubs.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Artemisia californica* Shrubland Alliance (3210)

CALIFORNIA SAGEBRUSH–CALIFORNIA BUCKWHEAT SHRUBLAND ALLIANCE

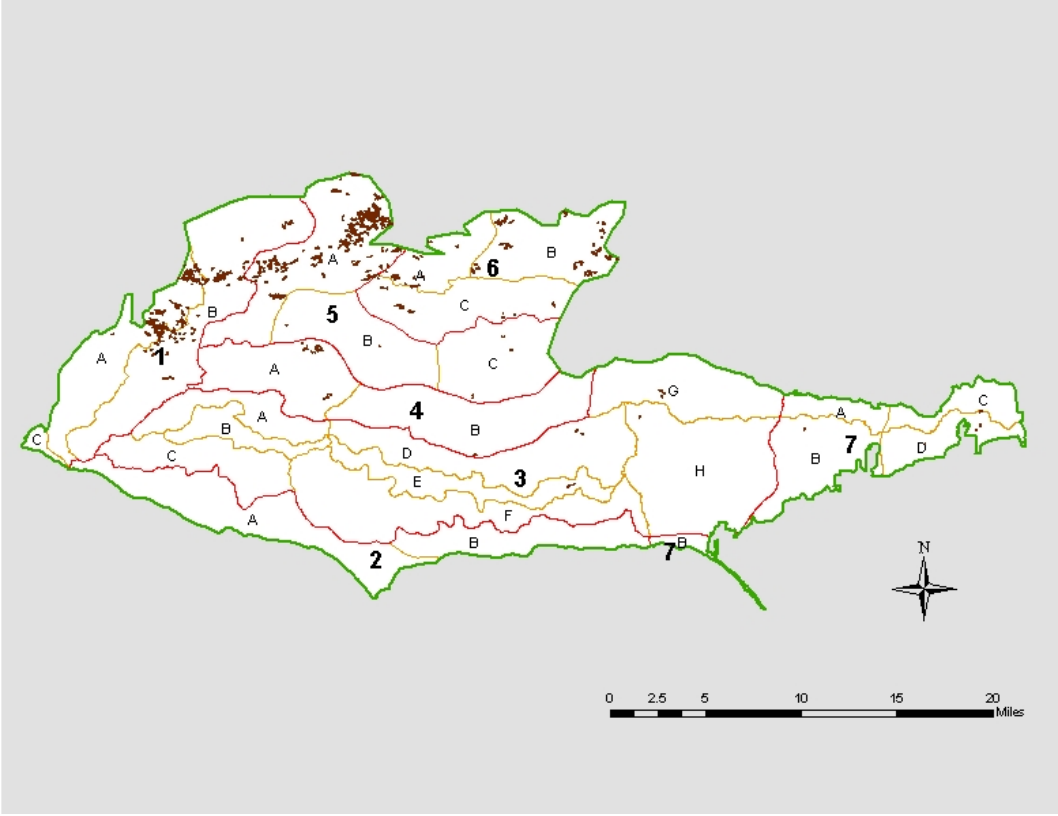


3370 – CALIFORNIA SAGEBRUSH–CALIFORNIA BUCKWHEAT SHRUBLAND ALLIANCE

***Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance**



DISTRIBUTION:



DESCRIPTION: *Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance represents the hierarchical class into which all *A. californica-E. fasciculatum* association types are nested. This alliance occurs as sparse to open shrubs with *A. californica* and *E. fasciculatum* co-dominating. It is found on dry, south-facing, gentle to steep slopes with undulating surfaces, on thin to rocky soil, and on lower to upper slopes. *Salvia leucophylla* and *S. mellifera* may also be present to sub-dominant. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of subdominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *A. californica* and *E. fasciculatum* as the co-dominant shrubs are also included. Where the *Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance occurs on rocky road cuts it is mapped as the Artificial Cuts/Embankments – Undifferentiated Shrubland/Herbaceous Mapping Unit (9650).

PHOTO INTERPRETATION SIGNATURE: The stand as a whole has a tan to reddish-brown homogeneous tone and variable smooth to coarse texture, sometimes with small rocks or larger outcrops visible through the vegetation. *A. californica* occurs as individuals or groups with a tan to purple-brown color and a slightly coarse texture. *E. fasciculatum* appears as very small round individual shrubs whose signature is typically reddish-brown to orange-brown, but can be gray to tan. The texture is fine to slightly coarse.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

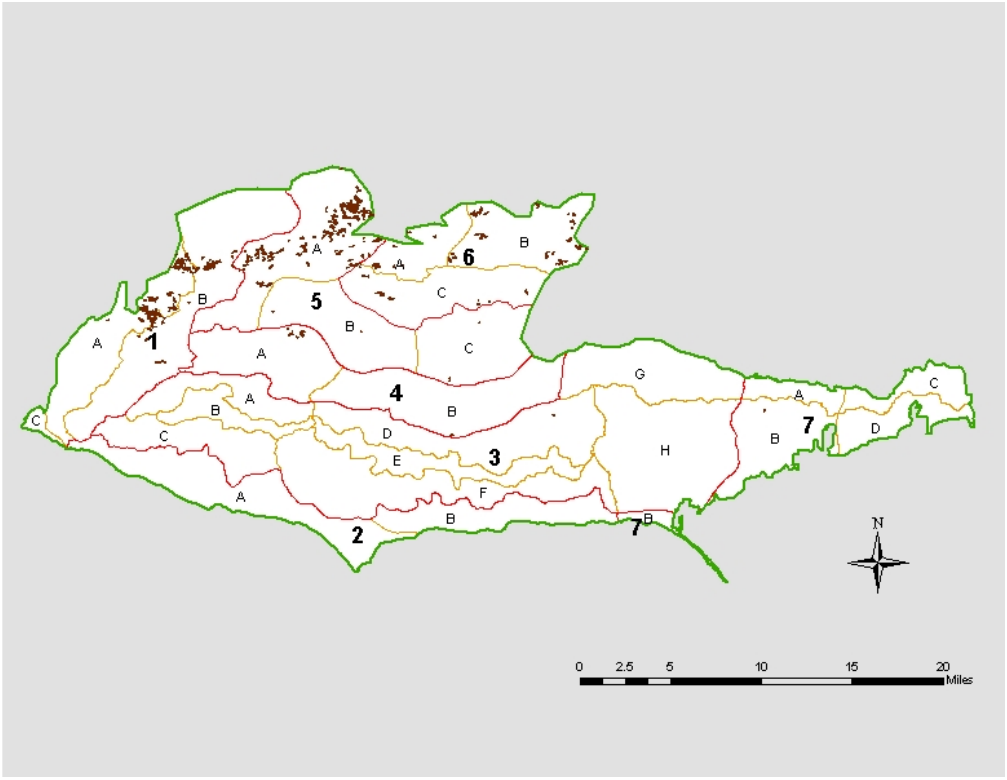
- *Opuntia* spp. Shrubland Alliance (2410)
- *Artemisia californica* Shrubland Alliance (3210)
- *Encelia californica* Shrubland Alliance (3220)
- *Eriogonum fasciculatum* Shrubland Alliance (3240)

3371 – CALIFORNIA SAGEBRUSH-CALIFORNIA BUCKWHEAT/ANNUAL GRASS-HERB SHRUBLAND ASSOCIATION

***Artemisia californica-Eriogonum fasciculatum*/Annual Grass-Herb Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Artemisia californica-Eriogonum fasciculatum*/Annual Grass-Herb Shrubland Association occurs as sparse to open shrubs over a sparse to intermittent herbaceous layer. It is found on dry, south-facing, gentle to moderately steep slopes, with undulating thin-soiled to rocky surfaces, on lower to upper slopes. *A. californica* and *E. fasciculatum* co-dominate, each at low cover.

PHOTO INTERPRETATION SIGNATURE: The stand as a whole has a tan to reddish-brown homogeneous tone and variable smooth to coarse texture, sometimes with small rocks or larger outcrops visible through the vegetation. *A. californica* occurs as individuals or groups with a tan to purple-brown color and a slightly coarse texture. *E. fasciculatum* appears as very small round individual shrubs whose signature is typically reddish-brown to orange-brown, but can be gray to tan. The texture is fine to slightly coarse. The grasses between the shrubs blend in well with a tan to brown color, but may be smoother in texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

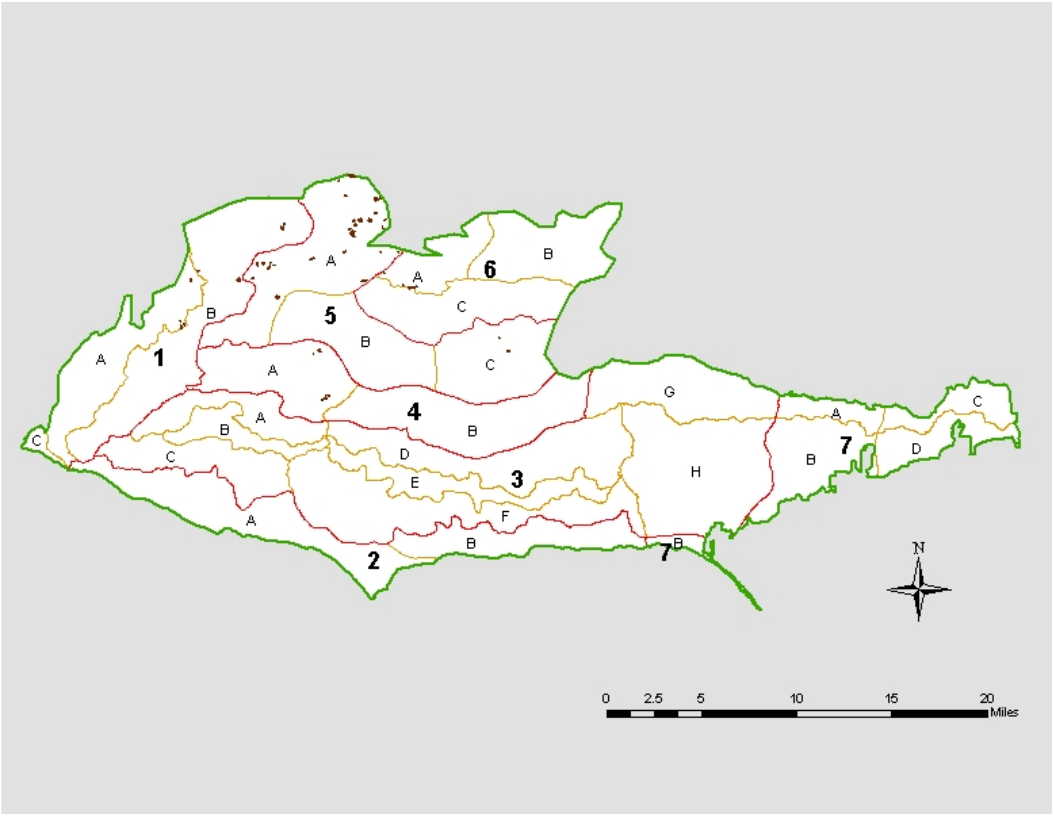
- *Opuntia* spp.-Mixed Coastal Sage Scrub Shrubland Association (2412)
- *Artemisia californica* Shrubland Association (8213)
- *Encelia californica-(Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera)* Shrubland Superassociation (3228)
- *Eriogonum fasciculatum* Shrubland Association (3241)

3372 – CALIFORNIA SAGEBRUSH–CALIFORNIA BUCKWHEAT–PURPLE SAGE SHRUBLAND ASSOCIATION

***Artemisia californica-Eriogonum fasciculatum-Salvia leucophylla* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Artemisia californica-Eriogonum fasciculatum-Salvia leucophylla* Shrubland Association occurs as sparse to open shrubs on dry, south-facing, moderate to steep slopes. It is found on convex to undulating thin-soiled to rocky surfaces, on lower to upper slopes. *A. californica* and *E. fasciculatum* co-dominate, each at low to moderate cover. *S. leucophylla* is usually sub-dominant at low cover, but can sometimes co-dominate up to moderate cover.

PHOTO INTERPRETATION SIGNATURE: The stand as a whole has a tan to reddish-brown homogeneous tone and variable smooth to coarse texture, sometimes with small rocks or larger outcrops visible through the vegetation. *A. californica* occurs as individuals or groups with a tan to purple-brown color and a slightly coarse texture. *E. fasciculatum* appears as very small round individual shrubs whose signature is typically reddish-brown to orange-brown, but can be gray to tan. The texture is fine to slightly coarse. *S. leucophylla* will appear as white to gray specks or patches within the stand, which can be confused with small rocks.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

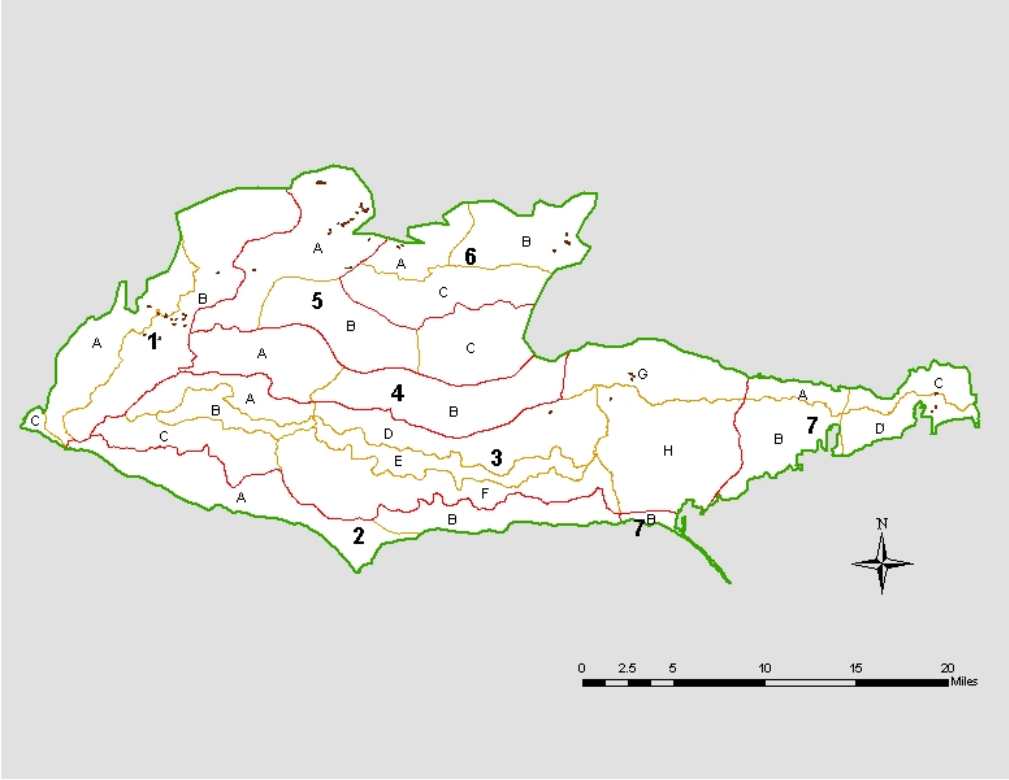
- *Opuntia* spp.-Mixed Coastal Sage Scrub Shrubland Association (2412)
- *Artemisia californica* Shrubland Association (8213)
- *Encelia californica-(Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera)* Shrubland Superassociation (3228)
- *Eriogonum fasciculatum* Shrubland Association (3241)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)

3373 – CALIFORNIA SAGEBRUSH–CALIFORNIA BUCKWHEAT–BLACK SAGE SHRUBLAND ASSOCIATION

***Artemisia californica-Eriogonum fasciculatum-Salvia mellifera* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Artemisia californica-Eriogonum fasciculatum-Salvia mellifera* Shrubland Association occurs as sparse to open shrubs on dry, south-facing, gentle to moderately steep slopes. It favors convex to undulating thin-soiled to rocky surfaces, on lower to upper slopes and ridge tops. *A. californica* and *E. fasciculatum* co-dominate, each at very low to moderate cover. *S. mellifera* typically sub-dominates at very low to low cover.

PHOTO INTERPRETATION SIGNATURE: The stand as a whole has a tan to reddish-brown homogeneous tone and variable smooth to coarse texture, sometimes with small rocks or larger outcrops visible through the vegetation. *A. californica* occurs as individuals or groups with a tan to purple-brown color and a slightly coarse texture. *E. fasciculatum* appears as very small round individual shrubs whose signature is typically reddish-brown to orange-brown, but can be gray to tan. The texture is fine to slightly coarse. *S. mellifera* appears as small round to irregularly shaped shrubs. The color can vary from subtle green overtones to tan, making it difficult to discern from the other shrubs through photo interpretation.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Opuntia* spp.-Mixed Coastal Sage Scrub Shrubland Association (2412)
- *Artemisia californica* Shrubland Association (8213)
- *Encelia californica-(Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera)* Shrubland Superassociation (3228)
- *Eriogonum fasciculatum* Shrubland Association (3241)
- *Eriogonum fasciculatum-Salvia mellifera-Malosma laurina* Shrubland Association (3248)

PURPLE SAGE-CALIFORNIA SAGEBRUSH SHRUBLAND SUBALLIANCE

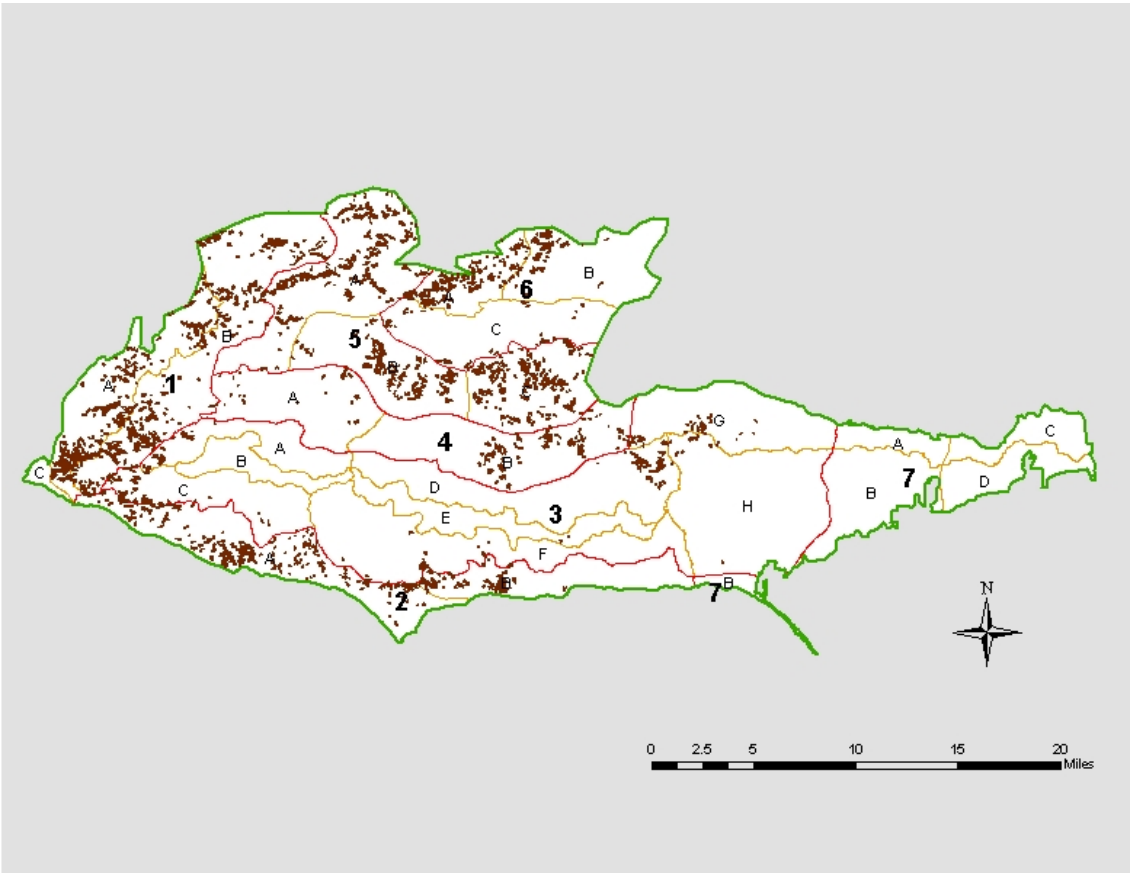


3390 – PURPLE SAGE-CALIFORNIA SAGEBRUSH SHRUBLAND SUBALLIANCE

***Salvia leucophylla-Artemisia californica* Shrubland Suballiance**



DISTRIBUTION:



DESCRIPTION: *Salvia leucophylla-Artemisia californica* Shrubland Suballiance represents the hierarchical class into which *S. leucophylla-A. californica* association types are nested. The suballiance is co-dominated by *Salvia leucophylla* and *Artemisia californica,* with both species ranging from very low to high cover. Other shrubs, including *Malosma laurina*, *Mimulus aurantiacus*, *Leymus condensatus*, and *Eriogonum cinereum* may be present. The alliance occurs as sparse to continuous stands on dry to mesic, gentle to steep slopes. Stands may be found on all aspects and slope shapes on lower to upper slopes. Stands that have been mapped at the suballiance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *S. leucophylla and A. californica* as the dominant shrubs are also included.

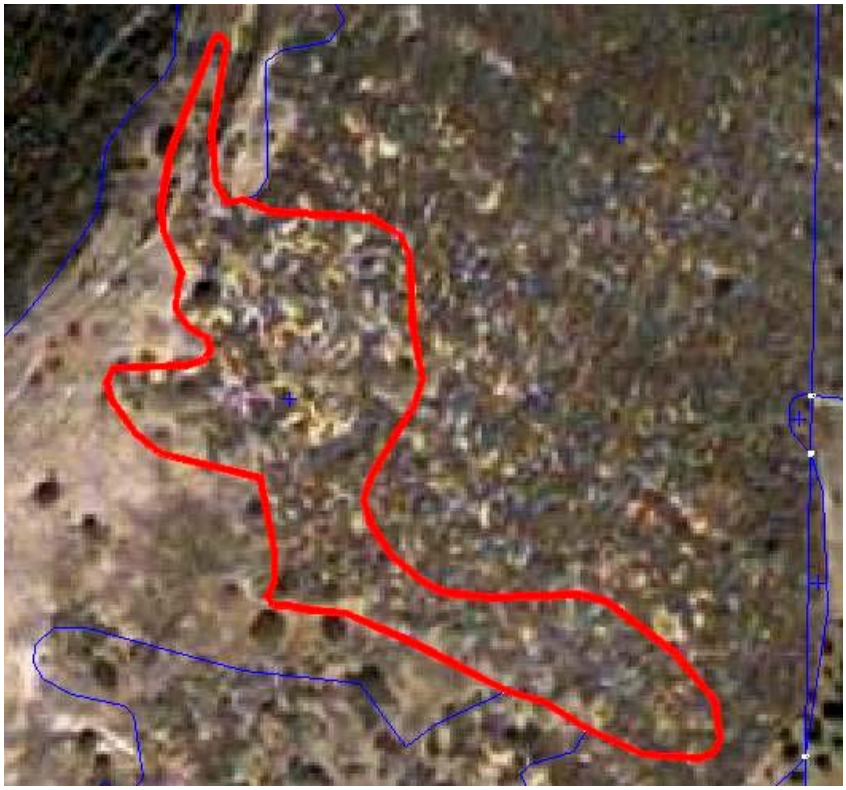
PHOTO INTERPRETATION SIGNATURE: *S. leucophylla-A. californica* Shrubland Suballiance, when rather pure and dense, has an overall stand color that varies between a gray-purple to white with a smooth texture. When open, the stand may have bare ground showing between the purple-brown *A. californica* individuals, short whitish-gray *S. leucophylla*, and small gray specks of *E. cinereum*.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

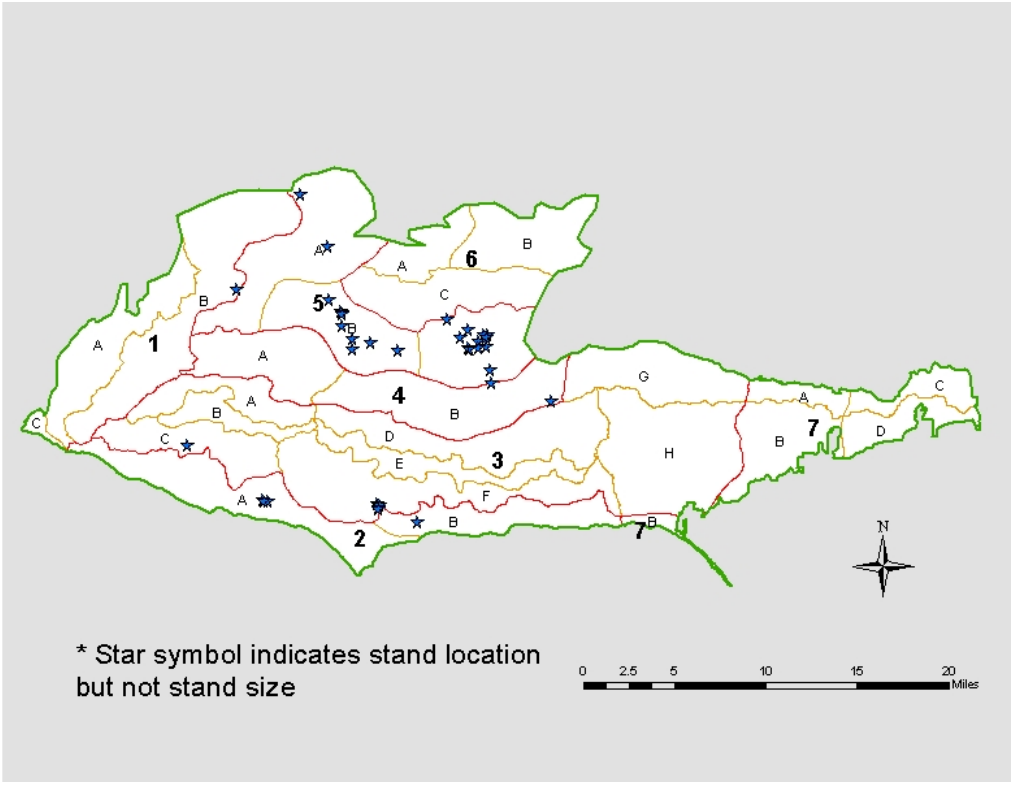
- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- *Juglans californica* Woodland/forest Alliance(1310)
- *Malosma laurina* Shrubland Alliance (2140)
- *Artemisia californica* Shrubland Alliance (3210)
- *Malacothamnus fasciculatus* Shrubland Alliance (3280)
- *Salvia leucophylla* Shrubland Alliance (3310)
- *Toxicodendron diversilobum* Shrubland Alliance (3330)

3391 – PURPLE SAGE-CALIFORNIA SAGEBRUSH SHRUBLAND ASSOCIATION

***Salvia leucophylla-Artemisia californica* Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Salvia leucophylla-Artemisia californica* Shrubland Association occurs as sparse to continuous stands on dry to mesic, gentle to moderately steep slopes. This association is found on convex to concave surfaces on lower to upper slopes. *S. leucophylla* and *A. californica* co-dominate, with both species at very low to high cover. *Juglans californica, Quercus agrifolia, and Malosma laurina* may be present as a very sparse overstory. *Leymus condensatus* may be present at very low to high cover and tends to occur on mesic, north-facing slopes. When *L. condensatus* is present, it indicates a mesic environment, similar to a variant of the *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella* spp. Shrubland Association (3396). Because the signatures, species, and environments overlap across both associations, differentiation of the associations by ecological inferences is difficult. Therefore, the *Salvia leucophylla-Artemisia californica* Shrubland Association is mapped only where Rapid Assessment Plots are provided by the Park. Otherwise this type is mapped as part of the *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399).

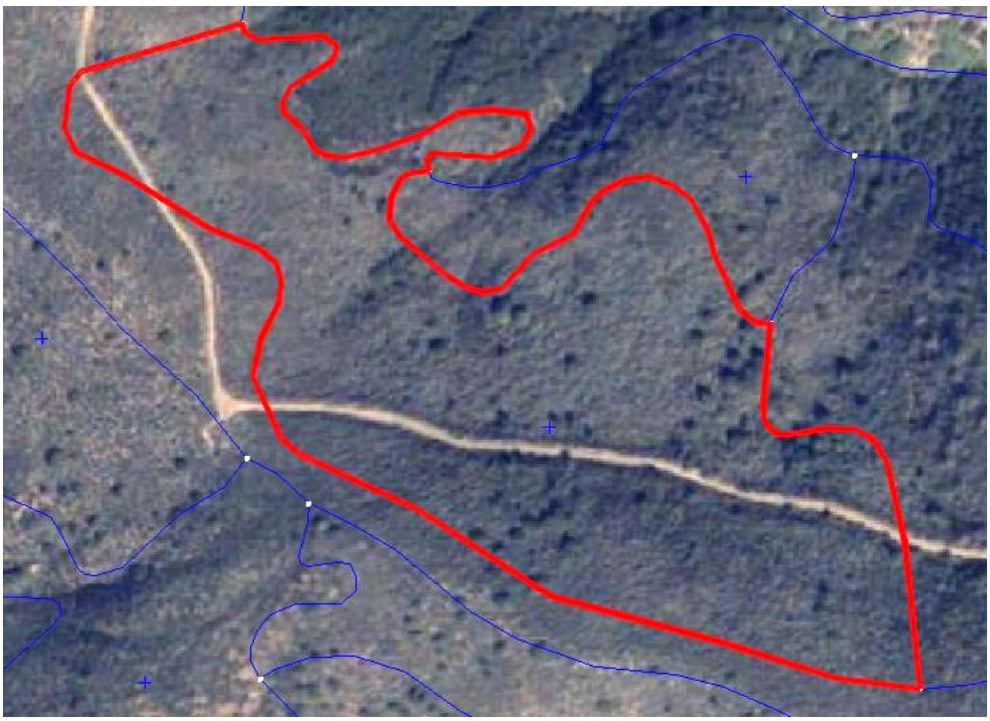
PHOTO INTERPRETATION SIGNATURE: Overall stand color varies between a gray-purple to white with a smooth texture. In many instances, the homogeneity of color and texture inhibits the photo interpreter's ability to assess the cover of species within a stand. Stands of this association appear homogeneous in color due to the intermixing of light gray to white *S. leucophylla* and purple-brown *A. californica* individuals. *Leymus* appears brown to green in color, occurring as wispy or low growing clumps. *Leymus* is distinguishable when it dominates a stand at high cover and/or when it occurs by itself within grasslands.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

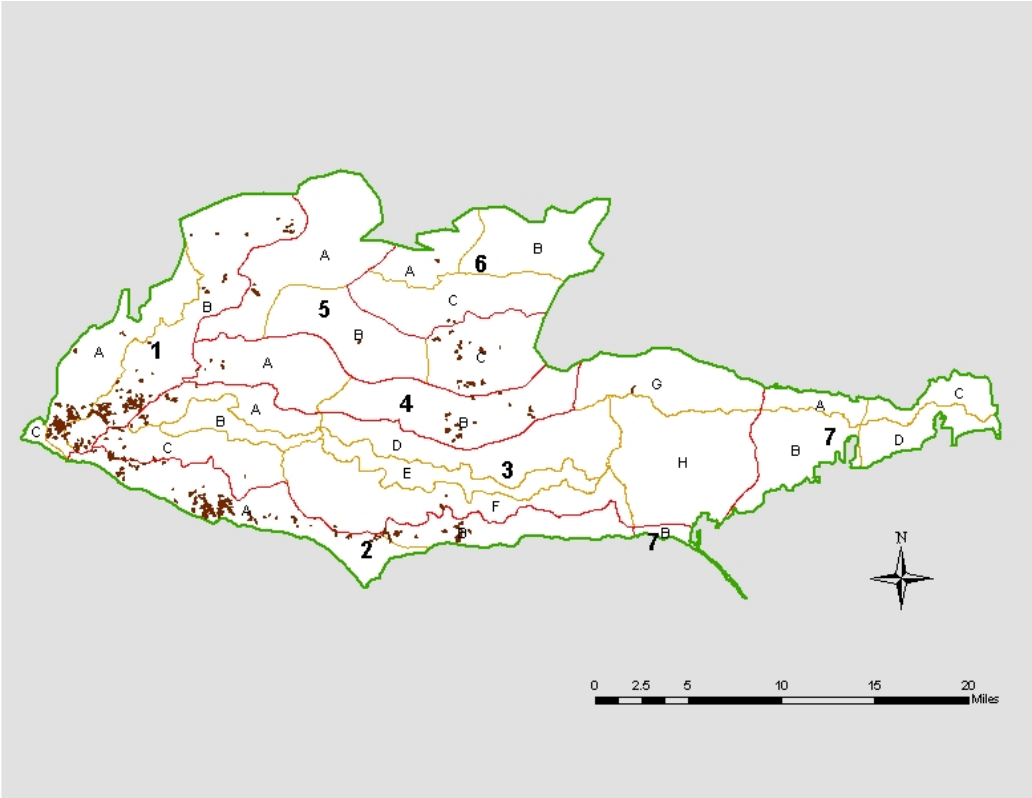
- *Quercus agrifolia/Salvia leucophylla-Artemisia californica* Woodland/Forest Association (1116)
- *Juglans californica/Artemisia californica/Leymus condensatus* Woodland/Forest Association (1317)
- *Malosma laurina-Artemisia californica* Shrubland Association (7148)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica/Leymus condensatus* Shrubland Association (3216)
- *Artemisia californica* Shrubland Association (8213)
- *Malacothamnus fasciculatus-Salvia leucophylla* Shrubland Association (3281)
- *Salvia leucophylla-Eriiogonum cinereum/*Annual Grass-Herb Shrubland Association (3312)
- *Salvia leucophylla* Shrubland Association (3316)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella* spp. Shrubland Association (3396)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)

3396 – PURPLE SAGE-CALIFORNIA SAGEBRUSH-ASHY BUCKWHEAT/ NEEDLEGRASS SHRUBLAND ASSOCIATION

***Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella* spp. Shrubland Association**



DISTRIBUTION:



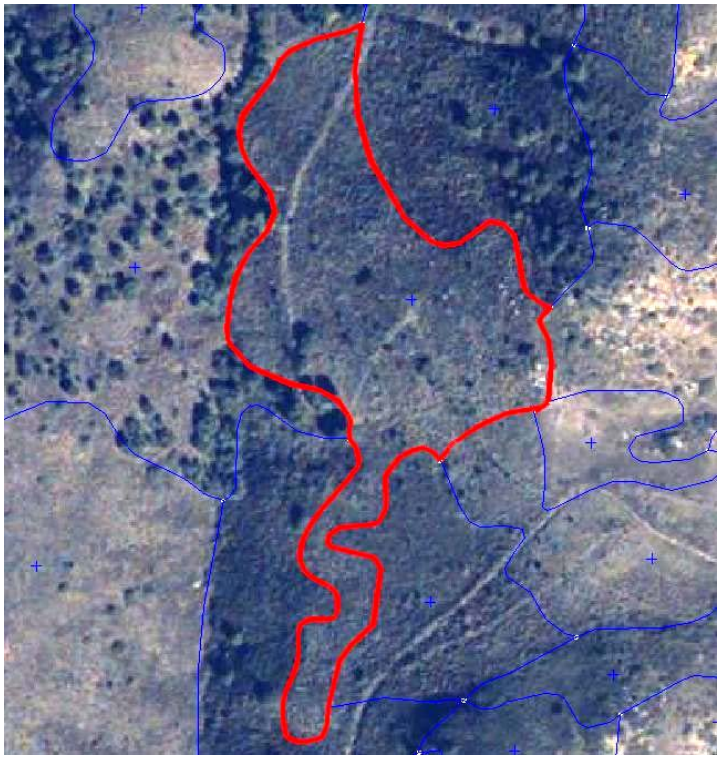
DESCRIPTION: *Salvia leucophylla-Artemisia calfornica-Eriogonum cinereum/Nassella* spp. Shrubland Association occurs along the coast as open to intermittent stands on dry, south-facing, moderate to very steep slopes. This association is generally found on neutral to convex surfaces on lower to upper slopes. *S. leucophylla and A. californica* co-dominate, with both species at very low to moderate cover. *E. cinereum* typically sub-dominates, but can co-dominate at very low to moderate cover. *Malosma laurina* may be present at very low to moderate cover. This association also includes stands on more mesic and north-facing slopes, with *Mimulus aurantiacus* present. This cooler, more mesic variation has environmental similarities with the *Salvia leucophylla-Artemisia californica* Shrubland Association (3391). Because the signatures, species, and environments overlap across both associations, differentiation of the associations by ecological inferences is difficult. Therefore, the *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella spp.* Shrubland Association is mapped only where Rapid Assessment Plots are provided by the Park. Otherwise this type is mapped as part of the *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399).

PHOTO INTERPRETATION SIGNATURE: Stands of this association appear open, with bare ground between purple-brown *A. californica* individuals, short whitish-gray *S. leucophylla*, and small gray specks of *E. cinereum*. *E. cinereum* may be difficult to discern if the *S. leucophylla* and *A. californica* are in intermittent or dense stands. *E. cinereum* is inferred in steep thin-soiled sites along the coast. *Mimulus* is short and has a reddish-brown to orange-brown color which appears as a mottled undertone.

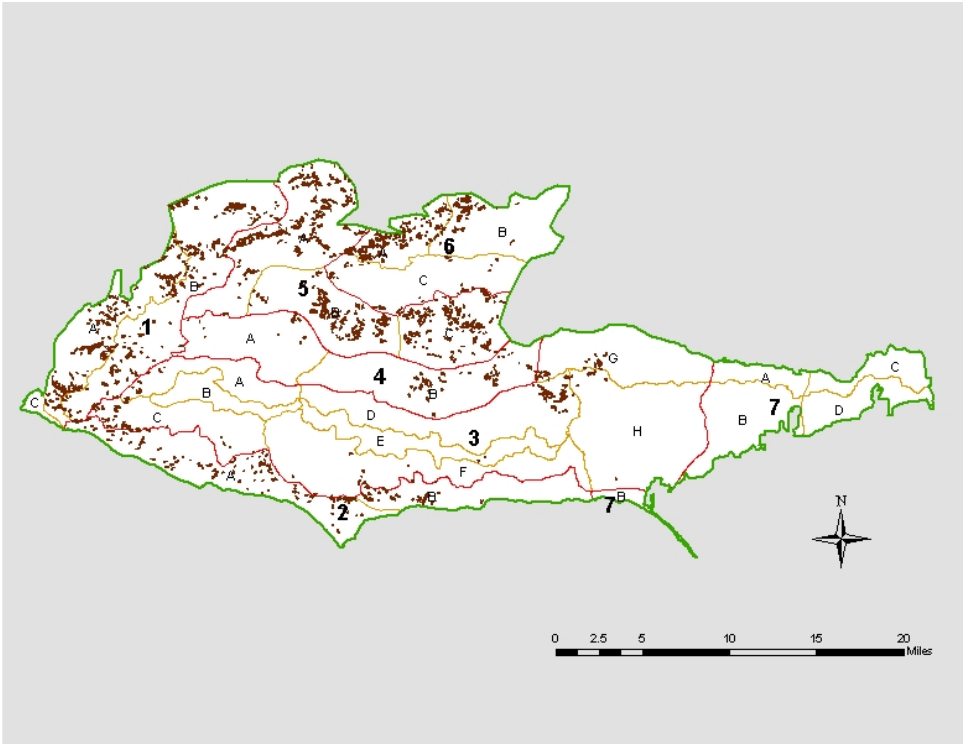
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malosma laurina-Eriogonum cinereum* Shrubland Association (2141)
- *Malosma laurina-Artemisia calfornica* Shrubland Association (7148)
- *Mimulus aurantiacus* Shrubland Association (2172)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica/Leymus condensatus* Shrubland Association (3216)
- *Artemisia californica-Mimulus aurantiacus* Shrubland Association (8214)
- *Salvia leucophylla-Eriogonum cinereum*/Annual Grass-Herb Shrubland Association (3312)
- *Toxicodendron californica-Artemisia californica/Leymus condensatus* Shrubland Association (3331)
- *Salvia leucophylla-Artemisia californica* Shrubland Superassociation (3399)

3399 – PURPLE SAGE-CALIFORNIA SAGEBRUSH SHRUBLAND SUPERASSOCIATION
Salvia leucophylla-Artemisia californica Shrubland Superassociation



DISTRIBUTION:



DESCRIPTION: *Salvia leucophylla-Artemisia californica* Shrubland Superassociation is co-dominated by *S. leucophylla* and *A. californica,* with both species ranging from very low to high cover. The superassociation occurs as sparse to continuous stands on dry to mesic, gentle to steep slopes. Stands may be found on all aspects, slope shapes, and on lower to upper slopes. *Juglans californica, Quercus agrifolia,* and *Malosma laurina* may be present as a sparse overstory. Mesic stands of this superassociation can appear with species such as *Mimulus aurantiacus* and *Leymus condensatus*. Drier stands of this type include *Eriogonum cinereum*. This superassociation is used in non-coastal areas to map the *Salvia leucophylla-Artemisia californica* Shrubland Association (3391) and *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella* spp. Shrubland Association (3396) since they overlap in environmental characteristics and have similar species and signatures, making differentiation of the associations by ecological inferences difficult.

PHOTO INTERPRETATION SIGNATURE: Overall stand color varies between gray-purple to white with a smooth texture. In many instances, cover of species is difficult to determine because of the homogeneity of color and texture within a stand. Stands appear homogeneous in color due to the intermixing of light gray to white *S. leucophylla* and purple-brown *A. californica* individuals. Open stands of this association display rocky, bare ground underneath purple-brown *A. californica* individuals, short whitish-gray *S. leucophylla*, and small gray specks of *E. cinereum*. *E. cinereum* may be difficult to discern in intermittent or dense stands.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

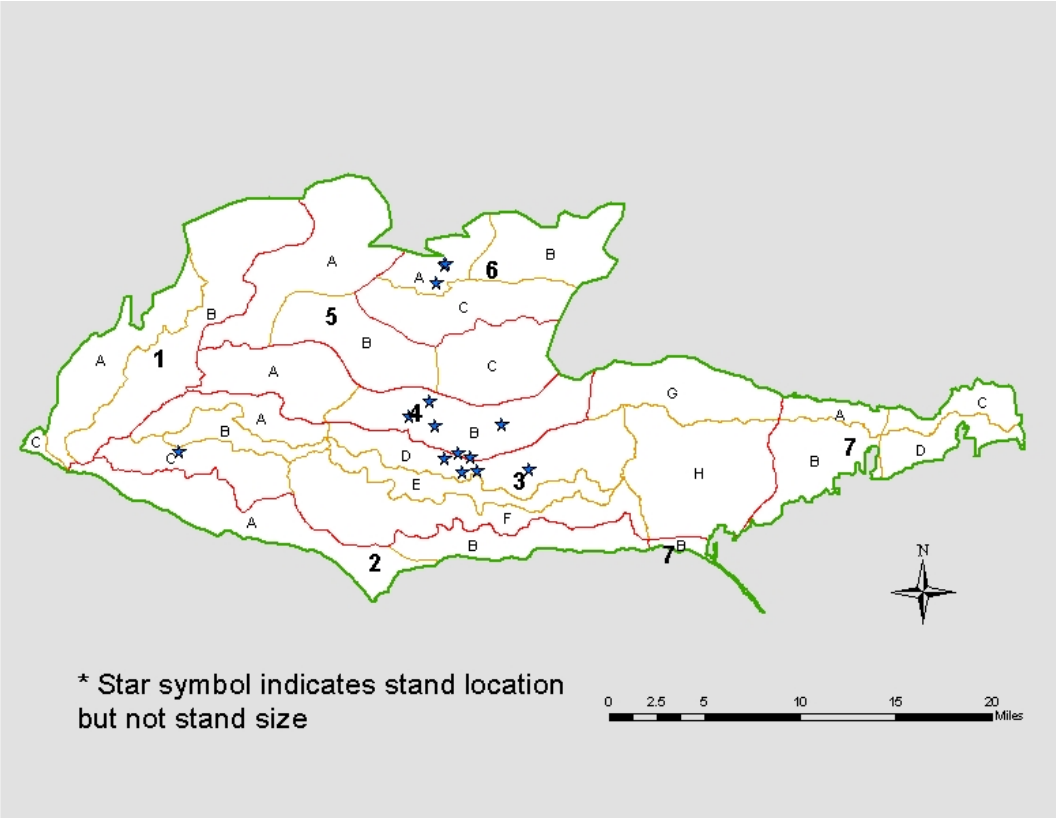
- *Quercus agrifolia/Salvia leucophylla-Artemisia californica* Woodland/Forest Association (1116)
- J*uglans californica/Artemisia californica/Leymus condensatus* Woodland/Forest Assoication (1317)
- *Malosma laurina-Artemisia californica* Shrubland Association (7148)
- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica/Leymus condensatus* Shrubland Associaion (3216)
- *Artemisia californica* Shrubland Association (8213)
- *Malacothamnus fasciculatus-Salvia leucophylla* Shrubland Association (3281)
- *Salvia leucophylla-Eriogonum cinereum*/Annual Grass-Herb Shrubland Association (3312)
- *Salvia leucophylla* Shrubland Association (3316)
- *Salvia leucophylla-Artemisia californica* Shrubland Association (3391)
- *Salvia leucophylla-Artemisia californica-Eriogonum cinereum/Nassella* spp. Shrubland Association (3396)

CALIFORNIA BUCKWHEAT–WHITE SAGE SHRUBLAND ALLIANCE

3410 – CALIFORNIA BUCKWHEAT–WHITE SAGE SHRUBLAND ALLIANCE
Eriogonum fasciculatum-Salvia apiana Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Eriogonum fasciculatum-Salvia apiana* Shrubland Alliance occurs as very sparse to open shrubs on xeric south-facing rocky moderately to extremely steep slopes. It can be found on undulating surfaces of lower to middle slopes. *E. fasciculatum* and *S. apiana* co-dominate, each at very low to moderate cover. Any other shrubs are typically of very low cover.

PHOTO INTERPRETATION SIGNATURE: Stands may have a white to tan signature of very sparse vegetation on rock outcrops, or a reddish-pink to gray signature on very thin-soiled rock. *E. fasciculatum* appears as very small round individual shrubs whose signature is typically reddish-brown to orange-brown, but can be gray to tan. The texture is fine to slightly coarse. *S. apiana* is difficult to discern from photo interpretation. It can have a white to gray signature. Both species are difficult to see due to the sparseness of the vegetation.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Eriognum fasciculatum* Shrubland Alliance (3240)
- Rock Outcrop Mapping Unit (9001)
- Rock Outcrop/Herbaceous Mapping Unit (90011)

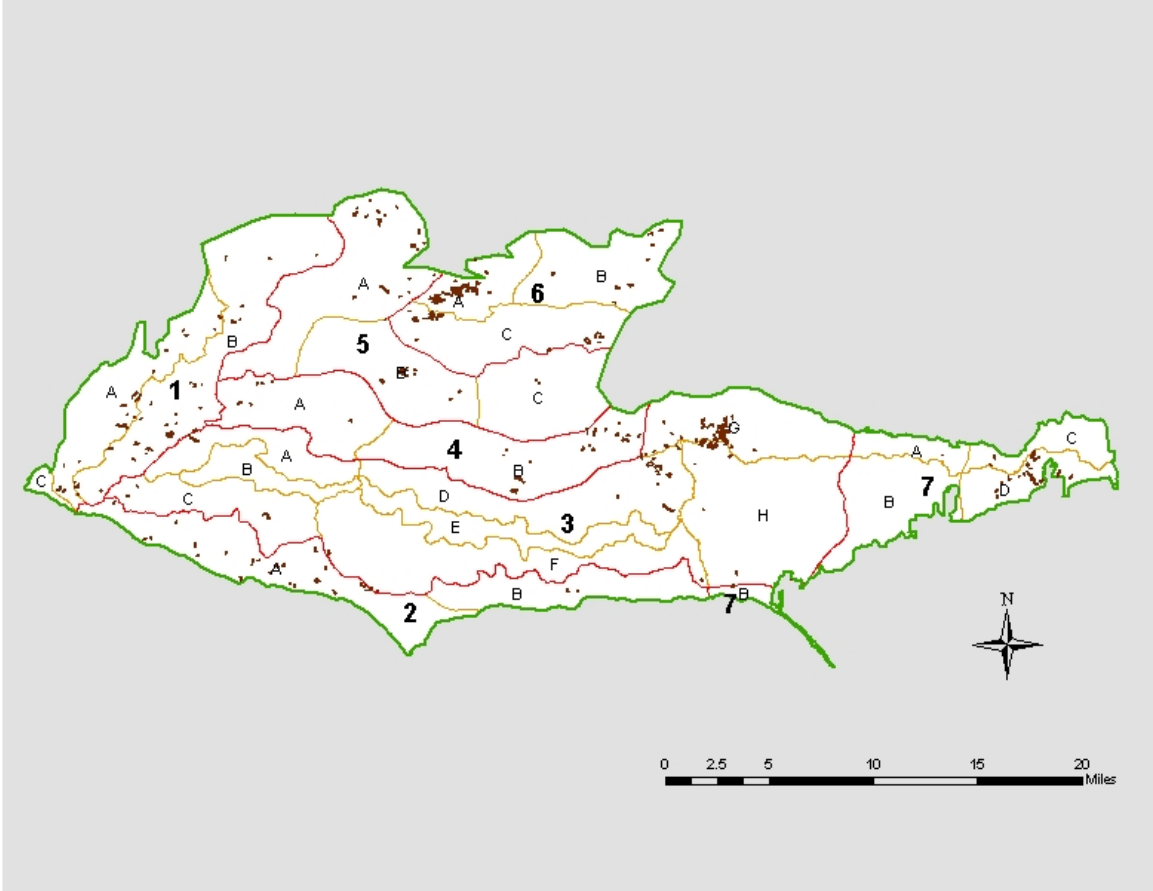
BLACK SAGE-CALIFORNIA SAGEBRUSH SHRUBLAND ALLIANCE



3420 – BLACK SAGE-CALIFORNIA SAGEBRUSH SHRUBLAND ALLIANCE
Salvia mellifera-Artemisia californica Shrubland Alliance



DISTRIBUTION:



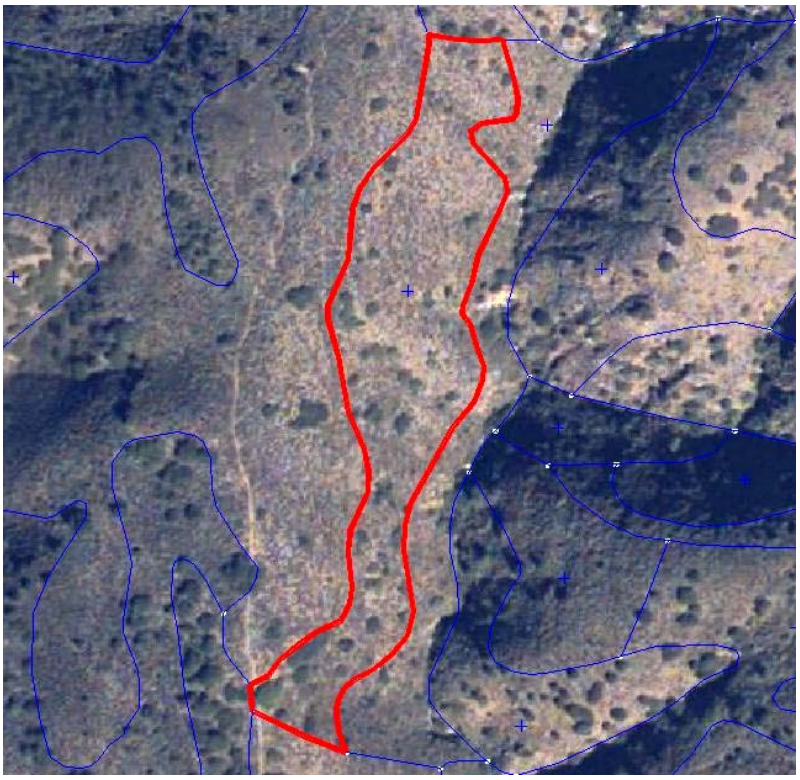
DESCRIPTION: *Salvia mellifera-Artemisia californica* Shrubland Alliance represents the hierarchical class into which *S. mellifera-A. californica* association types are nested. The alliance is co-dominated by *S. mellifera* at moderate cover and *A. californica* at low to moderate cover. This alliance occurs as open to continuous stands of shrubs on dry to mesic, gentle to steep slopes. The association may vary in aspect, and is found on neutral to convex surfaces on lower to upper slopes. Along the coast, this alliance is generally mapped on east- and west-facing slopes, where *S. mellifera* is coming over from the south side and *A. californica* is mixing in from the north side. Inland, *A. californica* and *S. mellifera* do not correlate with aspect, and may be found occurring together on a broad range of slopes. *Malosma laurina* can be present at low cover. The variable signatures and microclimates make it difficult to discern and predict where this association occurs. Therefore, Rapid Assessment Plots and Observation sites are used to extrapolate and infer these general trends. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit well into the association classes. Very disturbed sites (man, fire recovery, etc.) with *S. mellifera and A. californica* as the co-dominant shrubs are also included.

PHOTO INTERPRETATION SIGNATURE: Along the coast, stands of *A. californica* and *S. mellifera* generally appear as a light tan to gray with a green undertone. Inland, the plants tend to have a thick, dark brown look with a green overtone mixed in. In both situations, color and texture blend together into a smooth mosaic of colors with *S. mellifera* ranging from brown to green, and *A. californica* from purple brown to grayish-tan.

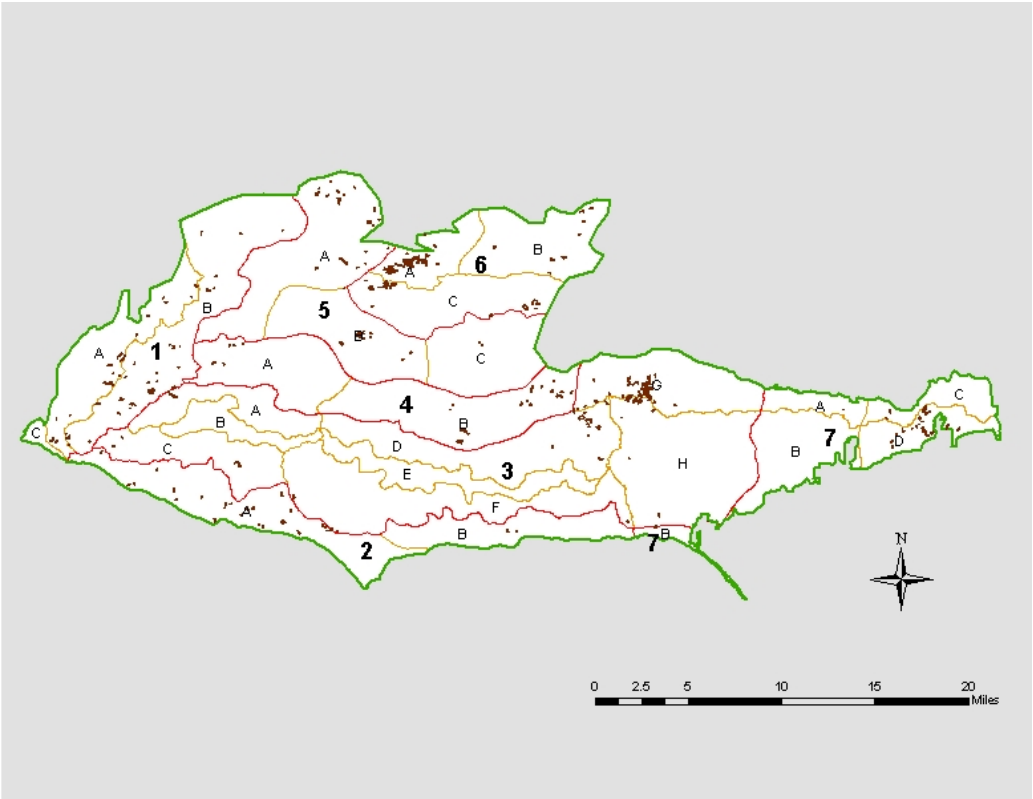
TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Artemisia californica* Shrubland Alliance (3210)
- *Encelia californica* Shrubland Alliance (3220)
- *Salvia mellifera* Shrubland Alliance (3320)
- *Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance (3370)

3421 – BLACK SAGE-CALIFORNIA SAGEBRUSH SHRUBLAND ASSOCIATION
Salvia mellifera-Artemisia californica **Shrubland Association**



DISTRIBUTION:



DESCRIPTION: *Salvia mellifera-Artemisia californica* Shrubland Association occurs as open to continuous stands of shrubs on dry to mesic, gentle to steep slopes. The association may vary in aspect, and is found on neutral to convex surfaces on lower to upper slopes. Along the coast, this association is generally mapped on east- and west-facing slopes, where *S. mellifera* is coming over from the south side and *A. californica* is mixing in from the north side. Inland, *A. californica* and *S. mellifera* do not correlate with aspect, and may be found occurring together on a broad range of slopes. The association is co-dominated by *S. mellifera* at moderate cover and *A. californica* at low to moderate cover. *Malosma laurina* can be present at low cover. The variable signatures and microclimates make it difficult to discern and predict where this association occurs. Therefore Rapid Assessments Plots and Observation sites are used to extrapolate and infer these general trends.

PHOTO INTERPRETATION SIGNATURE: Along the coast, stands of *A. californica* and *S. mellifera* generally appear as a light tan to gray color with a green undertone. Inland, the plants tend to have a thick, dark brown look with a green overtone mixed in. In both situations, color and texture blend together into a smooth mosaic of colors with *S. mellifera* ranging from brown to green, and *A. californica* from purple brown to grayish-tan.

TYPES WITH SIMILAR PHOTOINTERPRETATION SIGNATURES:

- *Artemisia californica-Eriogonum cinereum* Shrubland Association (3214)
- *Artemisia californica* Shrubland Association (8213)
- *Encelia californica-Malosma laurina-Salvia mellifera* Shrubland Association (3221)
- *Encelia californica-(Artemisia californica-Eriogonum cinereum-Eriogonum fasciculatum-Salvia mellifera)* Shrubland Superassociation (3228)
- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)
- *Salvia mellifera-(Malosma laurina-Rhus ovata-Rhus integrifolia)* Shrubland Superassociation (8329)
- *Artemisia californica-Eriogonum fasciculatum*/Annual Grass-Herb Shrubland Association (3371)
- *Artemisia californica-Eriogonum fasciculatum-Salvia mellifera* Shrubland Association (3373)

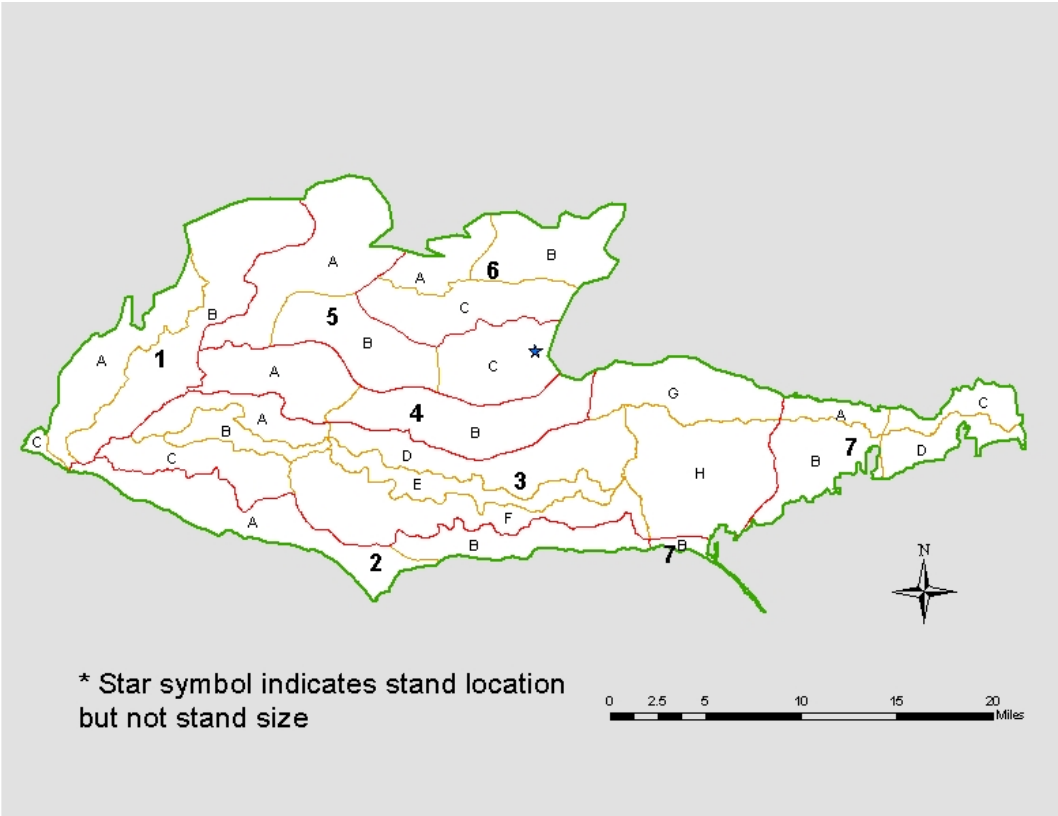
PALMER'S GOLDENBUSH SHRUBLAND UNIQUE STANDS MAPPING UNIT

3430 – PALMER'S GOLDENBUSH SHRUBLAND UNIQUE STANDS MAPPING UNIT

Ericameria palmeri Shrubland Unique Stands Mapping Unit



DISTRIBUTION:



DESCRIPTION: The *Ericameria palmeri* Shrubland Unique Stands Mapping Unit was mapped at only one site using field information. It delineates a stand of *E. palmeri* which is not a type in the vegetation classification. It is an open stand of shrubs in grassland on a south-facing gentle upper slope of a rolling hill with a neutral to convex surface shape. *E. palmeri* dominates at moderate cover.

PHOTO INTERPRETATION SIGNATURE: The stand is mottled in color and texture. *E. palmeri* is a short shrub with a round crown, greenish-brown to purple-brown color, and a slightly coarse texture. The grassland is tan to brown with a smooth texture.

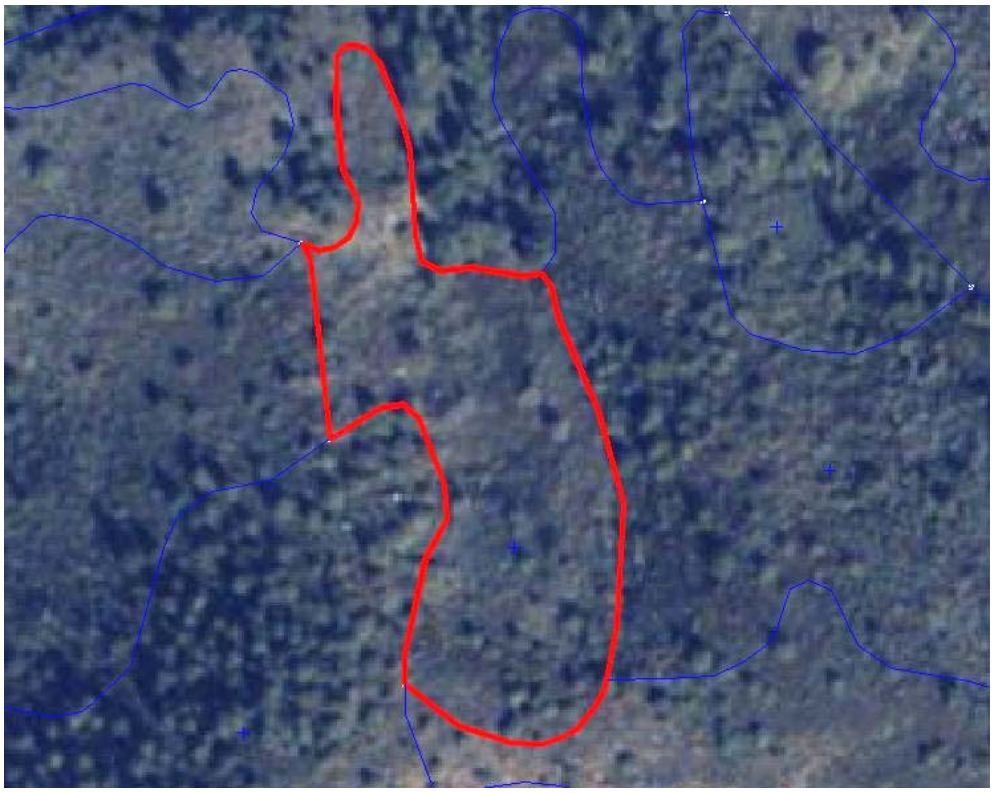
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Artemisia californica* Shrubland Alliance (3210)

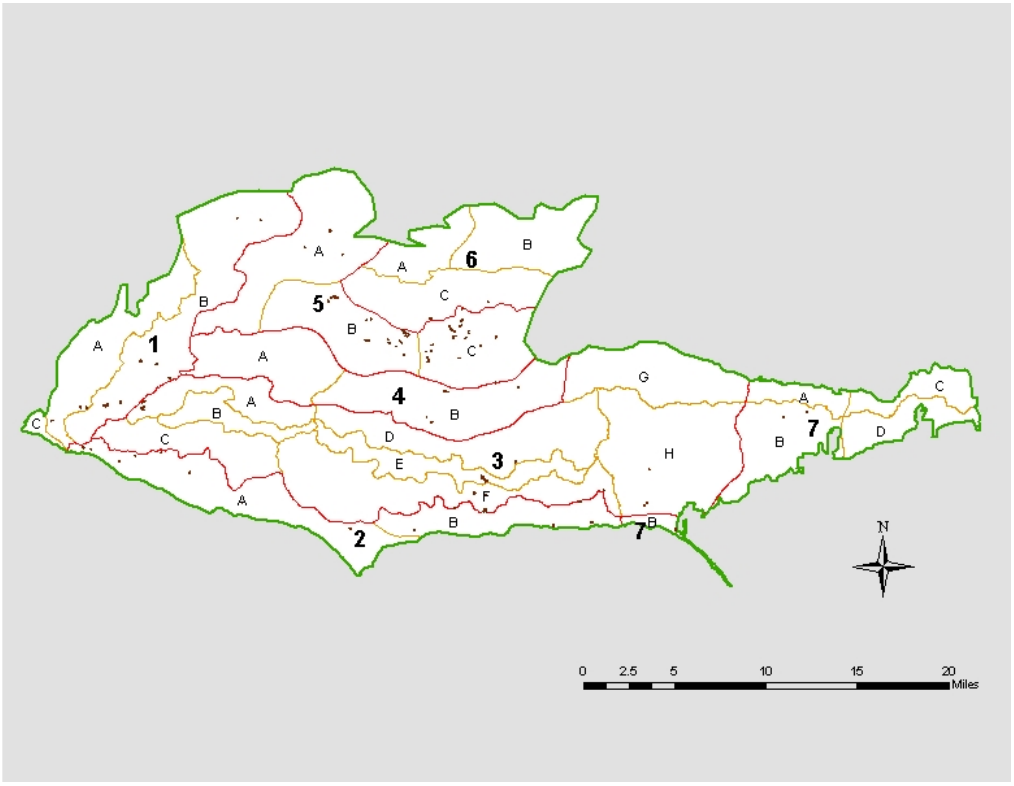
GIANT WILD RYE HERBACEOUS ALLIANCE



4040 – GIANT WILD RYE HERBACEOUS ALLIANCE
Leymus condensatus Herbaceous Alliance



DISTRIBUTION:



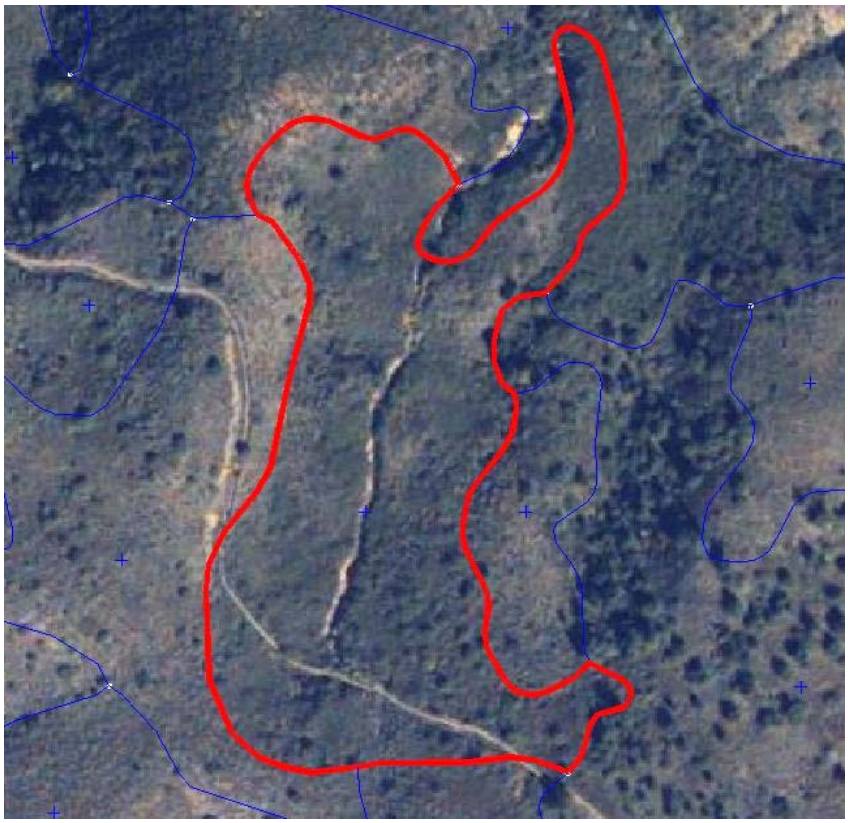
DESCRIPTION: *Leymus condensatus* Herbaceous Alliance is the hierarchical class into which *Leymus* association types are nested. This alliance occurs as open to intermittent tall herbaceous plants on dry-mesic north-facing gentle to moderate slopes. It is found on variable surface shapes on lower to upper slopes. *Leymus* is strongly dominant at low to very high cover. Some shrubs may be present at very low cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *Leymus* as the dominant herb are included.

PHOTO INTERPRETATION SIGNATURE: The stand can have either a smooth homogeneous green signature or a dull brown coarse appearance. *Leymus* is green with a smooth wispy appearance. However, when dry it can appear tan or brown, sometimes in swarms of round clumps. When green, it can be confused with *Toxicodendron diversilobum*, *Salvia mellifera*, and *Malacothamnus fasciculatus*.

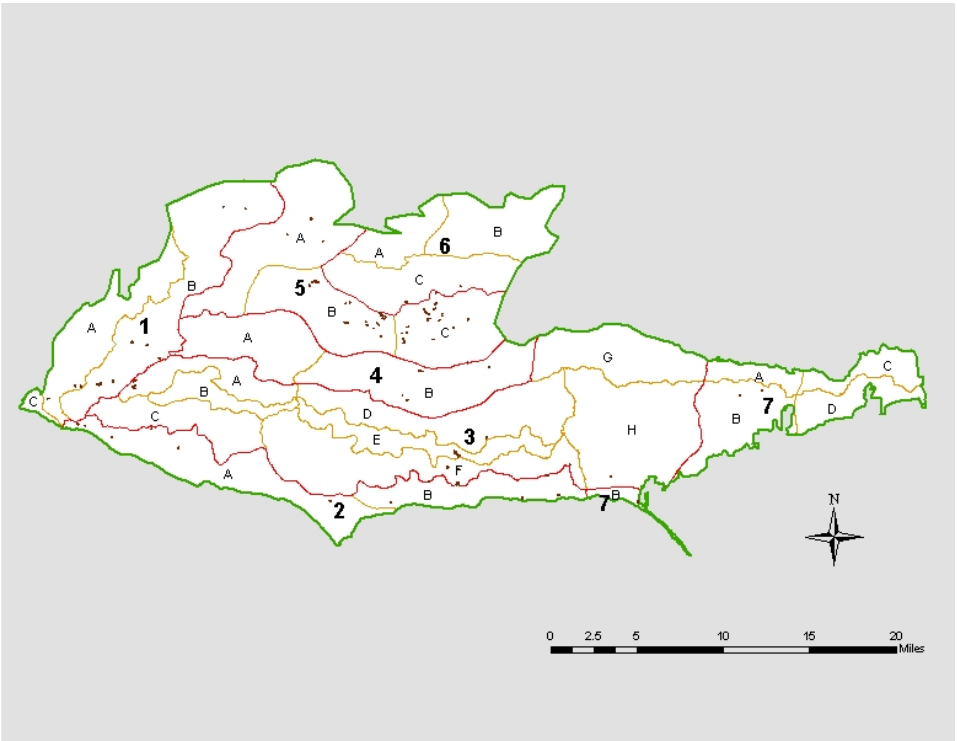
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malacothamnus fasciculatus* Shrubland Alliance (3280)
- *Salvia mellifera* Shrubland Alliance (3320)
- *Toxicodendron diversilobum* Shrubland Alliance (3330)

4041 – GIANT WILD RYE HERBACEOUS ASSOCIATION
Leymus condensatus Herbaceous Association



DISTRIBUTION:



DESCRIPTION: *Leymus condensatus* Herbaceous Association occurs as open to intermittent tall herbaceous plants on dry-mesic north-facing gentle to moderate slopes. It is found on variable surface shapes on lower to upper slopes. *Leymus* is strongly dominant at low to very high cover. Some shrubs may be present at very low cover.

PHOTO INTERPRETATION SIGNATURE: The stand can have either a smooth homogeneous green signature or a dull brown coarse appearance. *Leymus* is green with a smooth wispy appearance. However, when dry it can appear tan or brown, sometimes in swarms of round clumps. When green, it can be confused with *Toxicodendron diversilobum*, *Salvia mellifera*, and *Malacothamnus fasciculatus*.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Malacothamnus fasciculatus-Salvia mellifera* Shrubland Association (3282)
- *Malacothamnus fasciculatus* Shrubland Association (3287)
- *Salvia mellifera-(Adenostoma fasciculatum-Eriogonum cinereum-Eriogonum fasciculatum-Malacothamnus fasciculatus)* Shrubland Superassociation (8328)
- *Toxicodendron diversilobum-Artemisia californica/Leymus condensatus* Shrubland Association (3331)

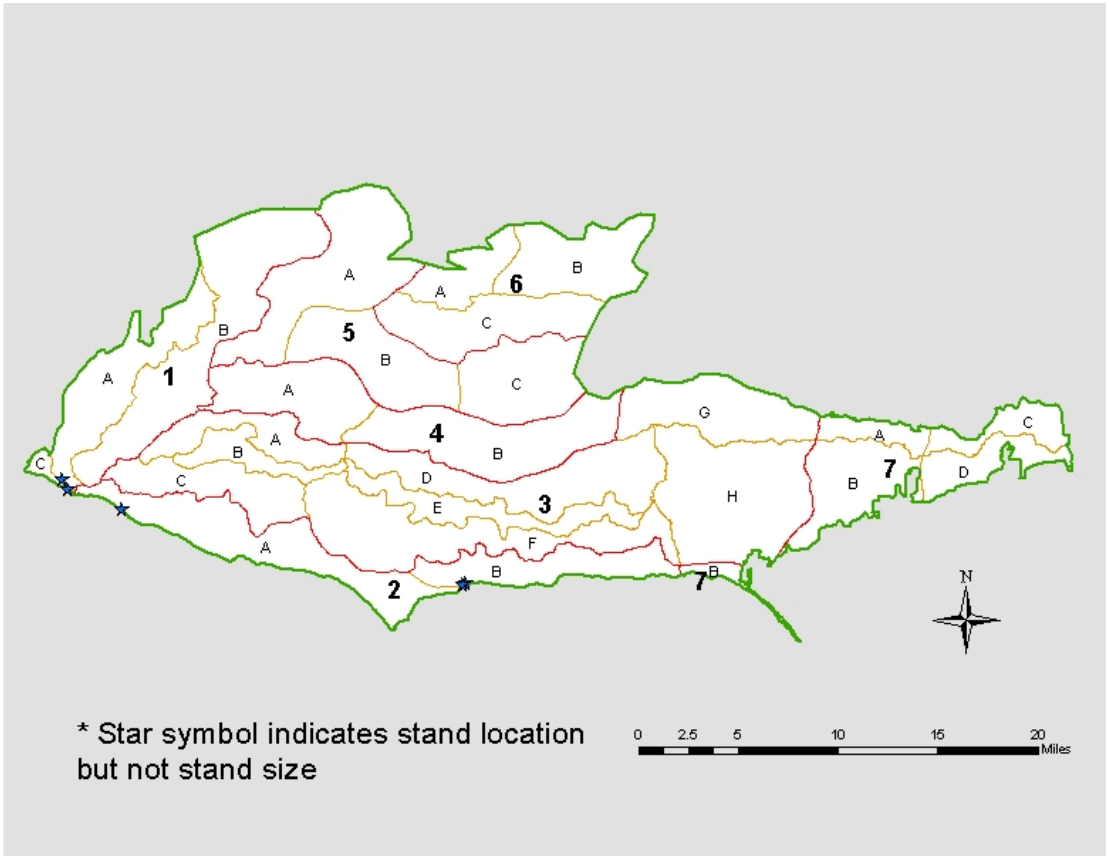
FOUNTAIN GRASS HERBACEOUS ALLIANCE



4060 – FOUNTAIN GRASS HERBACEOUS ALLIANCE
Pennisetum setaceum Herbaceous Alliance



DISTRIBUTION:



DESCRIPTION: *Pennisetum setaceum* Herbaceous Alliance occurs as open to intermittent herbaceous plants on dry coastal south-facing gentle to extremely steep slopes. It can be found on neutral to undulating bottoms to upper slopes. It is common on coastal bluffs, road cuts, and some sand dunes. *Pennisetum* is dominant at moderate to very high cover. Some shrubs may be present at very low cover. Road cuts are mapped as Artificial Cuts/Embankments – Undifferentiated Shrubland/Herbaceous Mapping Unit (9650) or Artificial Cuts/Embankments – Sparsely Vegetated to Non-vegetated Mapping Unit (9630).

PHOTO INTERPRETATION SIGNATURE: The stand has a smooth texture, which can appear to be sparsely to non-vegetated. The *Pennisetum* signature is light yellow and is only visible in denser patches. If plants are intermittent or open, the stand will appear to be rock outcrop or sand.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

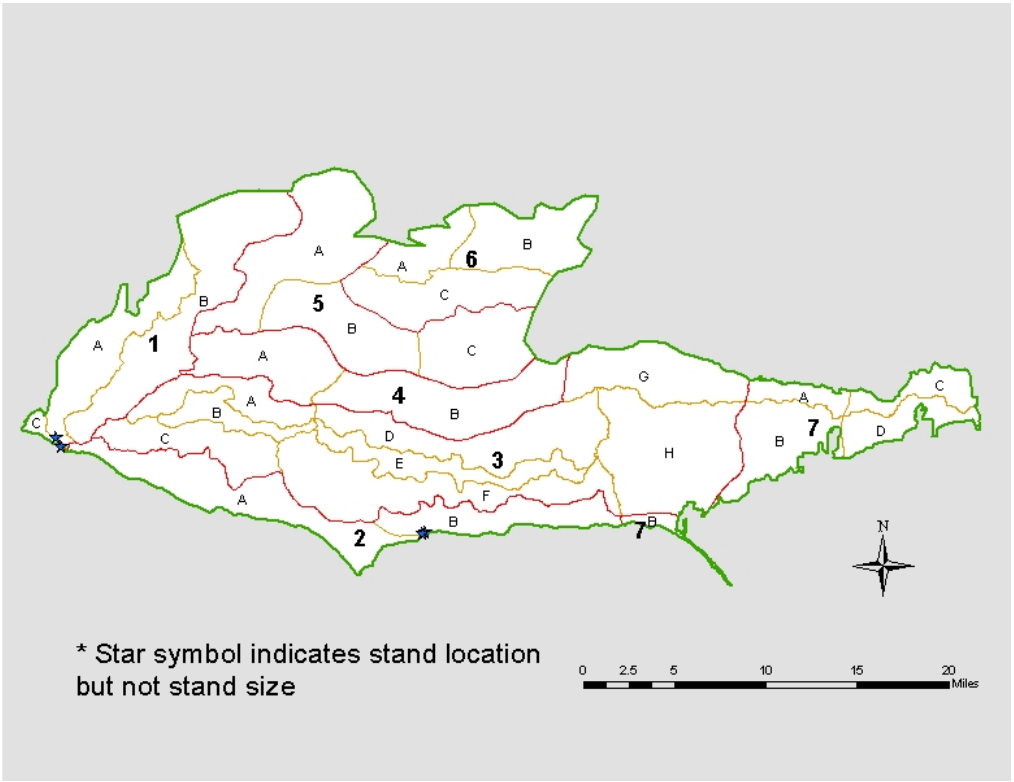
- *Rhus integrifolia* Shrubland Alliance (2150)
- *Coreopsis gigantea* Shrubland Alliance (3340)
- Rock Outcrop Mapping Unit (9001)
- Rock Outcrop/Herbaceous Mapping Unit (90011)

4061 – FOUNTAIN GRASS-GIANT COREOPSIS-CHAPARRAL YUCCA-LAUREL SUMAC HERBACEOUS ASSOCIATION

***Pennisetum setaceum-Coreopsis gigantea-Yucca whipplei-Malosma laurina* Herbaceous Association**



DISTRIBUTION:



DESCRIPTION: *Pennisetum setaceum-Coreopsis gigantea-Yucca whipplei-Malosma laurina* Herbaceous Association occurs as open to intermittent herbaceous plants on dry coastal south-facing gentle to extremely steep slopes. It can be found on neutral to undulating bottoms to upper slopes. It is common on coastal bluffs, road cuts, and some sand dunes. *Pennisetum* is dominant at moderate to very high cover. Some shrubs, including *Coreopsis, Malosma*, and *Rhus integrifolia,* may be present at very low cover. Road cuts are mapped as Artificial Cuts/Embankments – Predominantly Shrubs/Herbs Mapping Unit (9650) or Artificial Cuts/Embankments – Sparsely Vegetated to Non-vegetated Mapping Unit (9630).

PHOTO INTERPRETATION SIGNATURE: The stand has a smooth texture, which can appear to be sparsely vegetated to non-vegetated. The *Pennisetum* signature is light yellow and is only visible in denser patches. If plants are intermittent or open, the stand will appear to be rock outcrop. *Malosma* will appear as light to dark green round-crowned coarse tall shrubs. *Coreopsis* and *Yucca* are not visible on the aerial photos. *R. integrifolia* will appear as black round short shrubs.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Rhus integrifolia-Artemisia californica-Eriogonum cinereum* Shrubland Association (7157)
- *Coreopsis gigantea-Artemisia californica-Eriogonum cinereum* Shrubland Association (3345)
- Rock Outcrop Mapping Unit (9001)
- Rock Outcrop/Herbaceous Mapping Unit (90011)

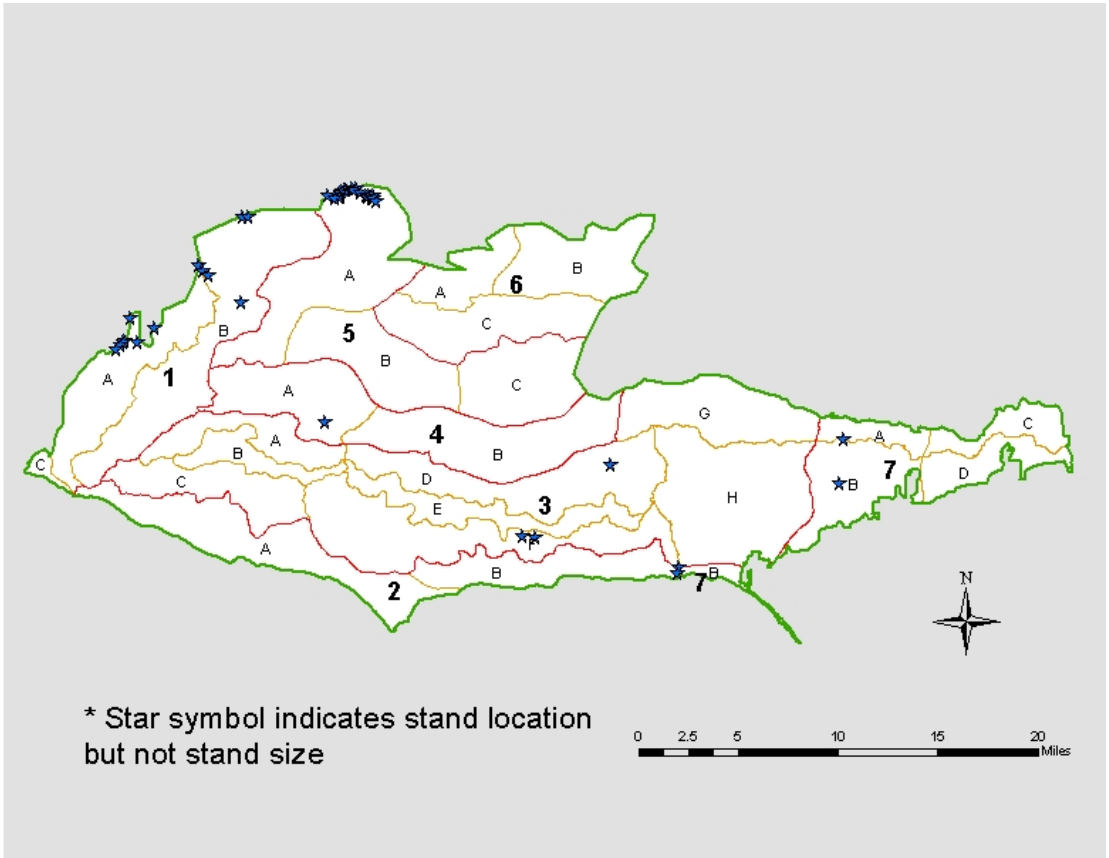
GIANT REED HERBACEOUS ALLIANCE



4310 – GIANT REED HERBACEOUS ALLIANCE
Arundo donax Herbaceous Alliance



DISTRIBUTION:



DESCRIPTION: *Arundo donax* Herbaceous Alliance occurs as sparse to intermittent tall herbaceous plants along riparian drainages on gentle to moderate slopes. *Arundo* is strongly dominant at moderate to very high cover. Some trees and/or shrubs may be present at very low cover.

PHOTO INTERPRETATION SIGNATURE: The stand has a coarse texture and can be open. *Arundo* is a gray to white starburst-shaped clump of offshoots occurring as individuals or groups along a drainage.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

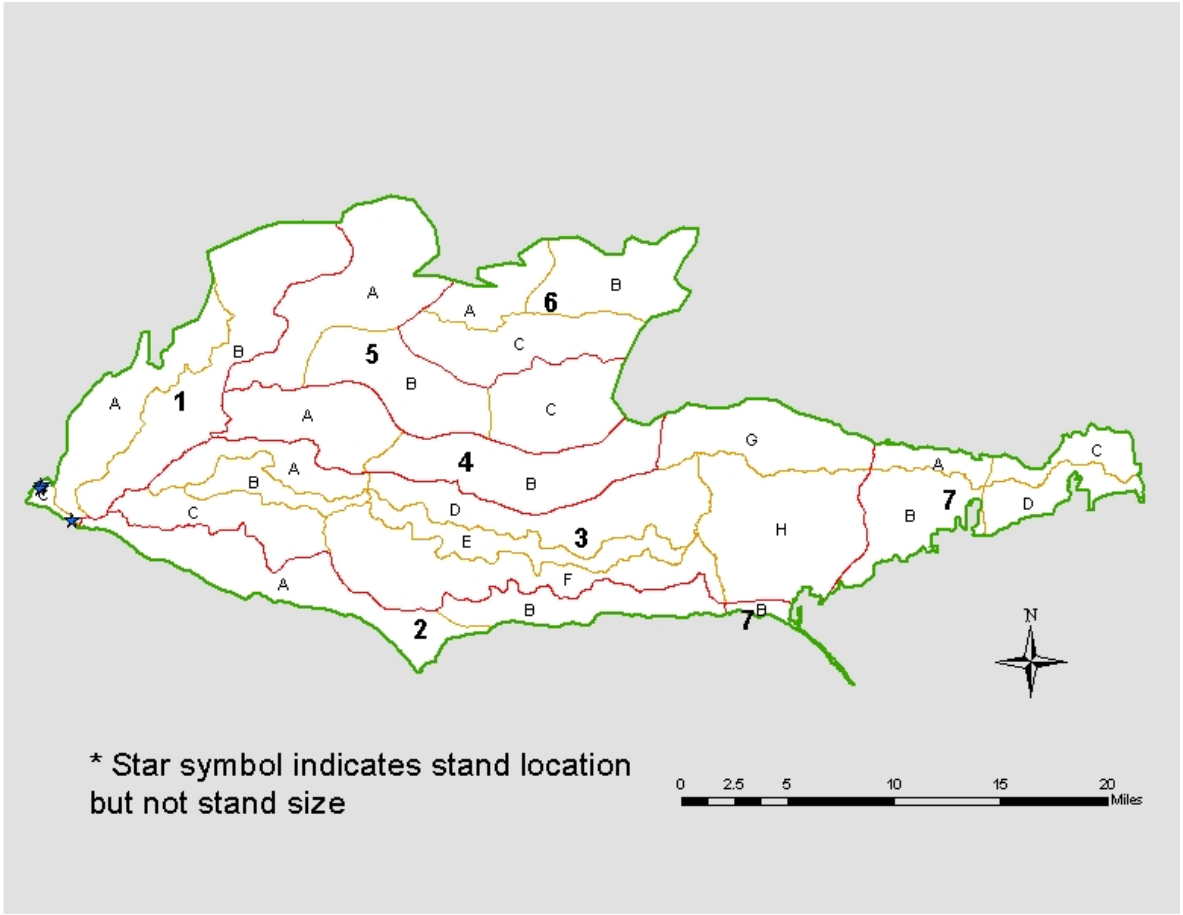
- *Malacothamnus fasciculatus* Shrubland Alliance (3280)
- *Salvia mellifera* Shrubland Alliance (3320)
- *Toxicodendron diversilobum* Shrubland Alliance (3330)

COMMON RUSH HERBACEOUS ALLIANCE

4330 – COMMON RUSH HERBACEOUS ALLIANCE
Juncus effusus Herbaceous Alliance



DISTRIBUTION:



DESCRIPTION: Only one site of *Juncus effusus* Shrubland Alliance was mapped, where a Rapid Assessment plot was provided by the Park.. It occurs as an intermittent stand of dominant *J. effusus* on a coastal dune. *Juncus* is of very high cover.

PHOTO INTERPRETATION SIGNATURE: The stand has a mottled stippled dull green and dull brown signature. Plants of *Juncus* appear as dull brown individual round tufts or clumps.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Distichlis spicata* Herbaceous Alliance (4510)

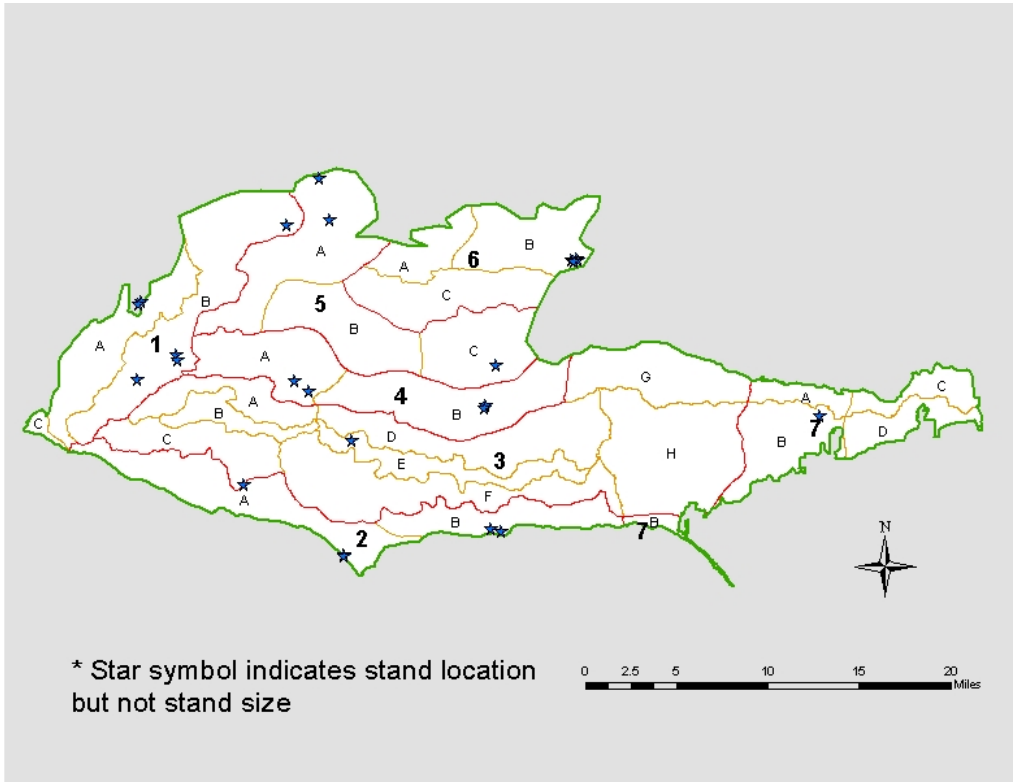
WETLAND UNDIFFERENTIATED HERBACEOUS SUPERALLIANCE



4400 – WETLAND UNDIFFERENTIATED HERBACEOUS SUPERALLIANCE



DISTRIBUTION:



DESCRIPTION: Only a few sites of Wetland Undifferentiated Herbaceous Superalliance were mapped. It occurs as dense to intermittent herbaceous vegetation in wet soil or shallow standing water, usually at the edge of a water body. Herbs are of very high cover.

PHOTO INTERPRETATION SIGNATURE: The stand has a very smooth flat texture. The color can range from uniform to mottled tones of brown, including medium brown, dark brown and purple-brown. The species composing the superalliance could not be determined through photo interpretation.

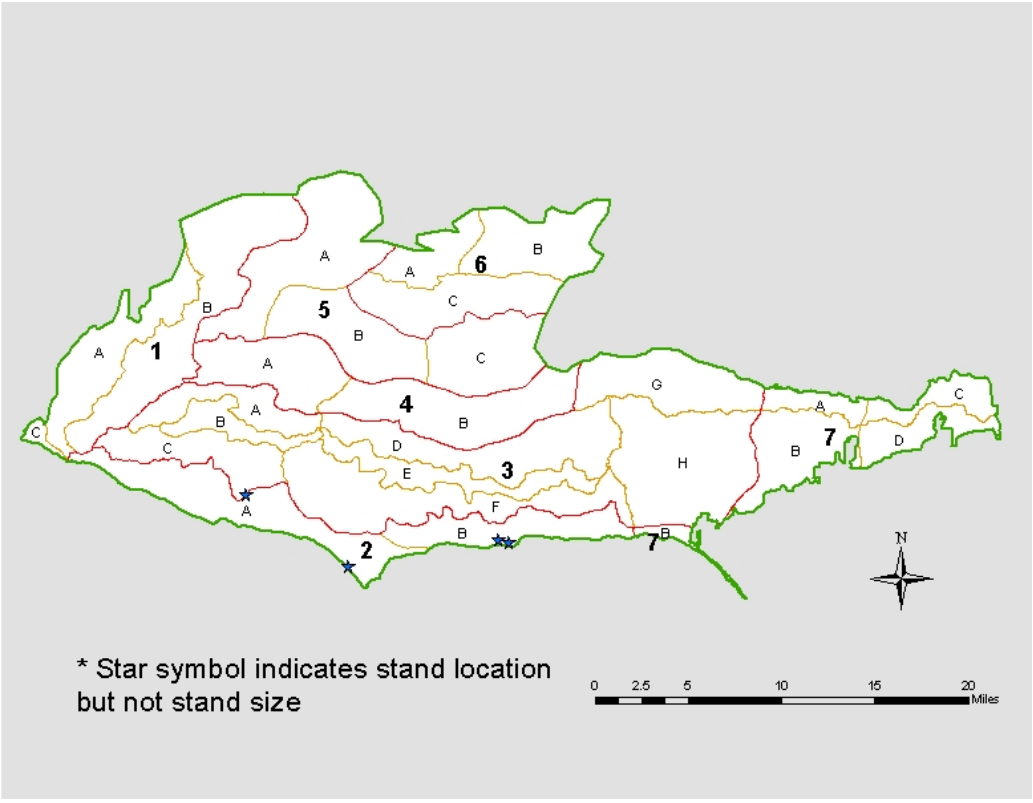
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Scirpus acutus-Scirpus californicus* Herbaceous Alliance (4410)
- *Typha* sp. Herbaceous Alliance (4420)
- Marshland Superalliance (4500)
- *Distichlis spicata* Herbaceous Alliance (4510)

4410 – CALIFORNIA BULRUSH HERBACEOUS ALLIANCE
Scirpus acutus-Scirpus californicus Herbaceous Alliance



DISTRIBUTION:



DESCRIPTION: Only a few sites of *Scirpus acutus - Scirpus californicus* Herbaceous Alliance were mapped. It occurs as dense to intermittent herbaceous vegetation in wet soil or shallow standing water, usually at the edge of a water body. *S. californicus* is of very high cover; *S. acutus* can be present and may approach moderate cover. This alliance was only mapped where a Rapid Assessment plot was provided by the Park, or through field observation.

PHOTO INTERPRETATION SIGNATURE: The stand has a very smooth flat texture. The color can range from uniform to mottled tones of brown, including medium brown, dark brown and purple-brown. The species composing the alliance could not be determined through photo interpretation.

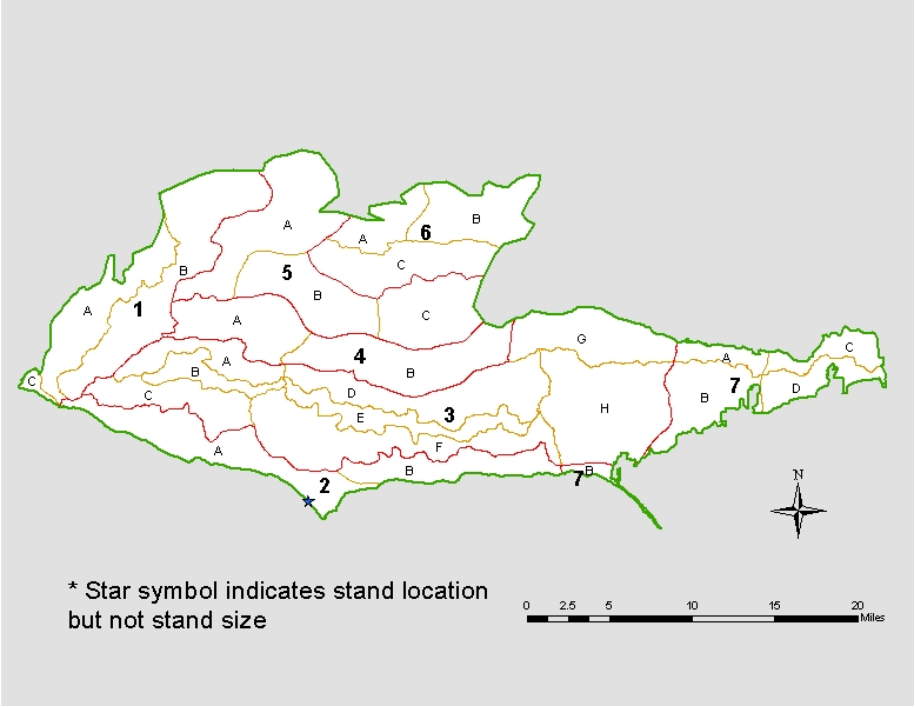
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Wetland Undifferentiated Herbaceous Superalliance (4400)
- *Typha* sp. Herbaceous Alliance (4420)
- Marshland Superalliance (4500)
- *Distichlis spicata* Herbaceous Alliance (4510)

4420 – CATTAIL HERBACEOUS ALLIANCE
Typha sp. Herbaceous Alliance



DISTRIBUTION:



DESCRIPTION: Only one site of *Typha* sp. Herbaceous Alliance was mapped at the Zuma Beach lagoon from a Rapid Assessment Plot. It occurs as dense herbaceous vegetation in shallow standing water at the edge of a water body. *Typha* sp. is of very high cover. The configuration of the site can change over time.

PHOTO INTERPRETATION SIGNATURE: The stand is very homogeneous and has a very smooth flat texture. The color is a dull olive green. The species composing the alliance could not be determined through photo interpretation.

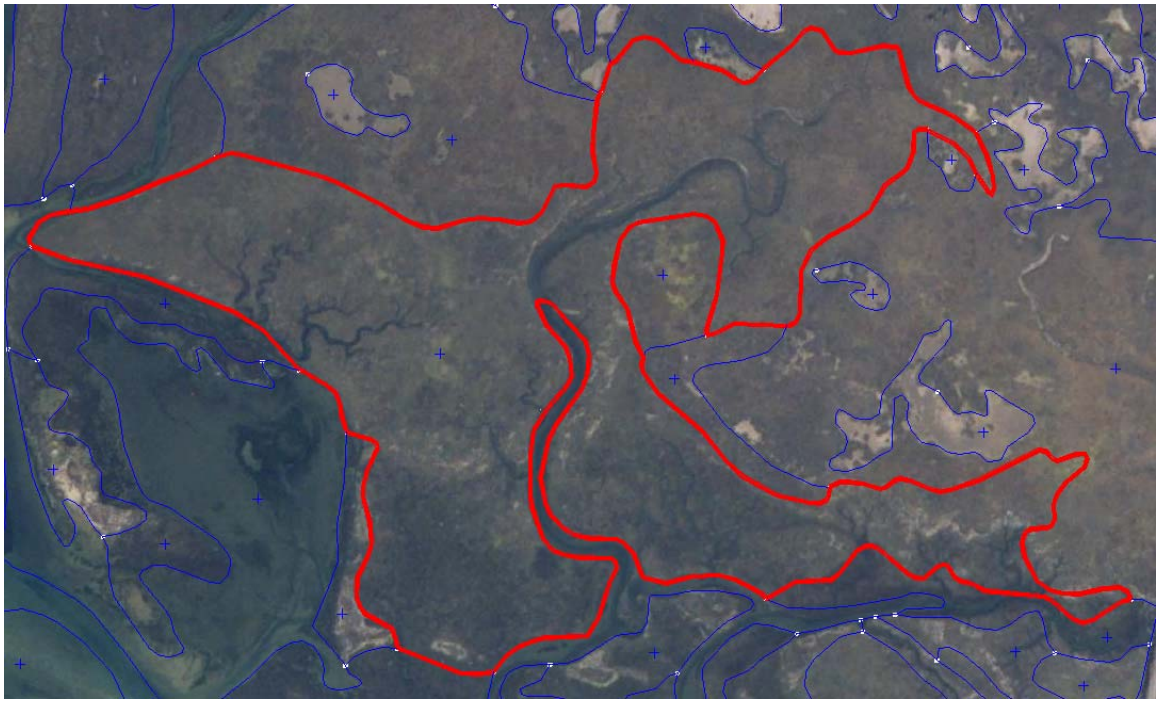
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Wetland Undifferentiated Herbaceous Superalliance (4400)
- *Scirpus acutus-Scirpus californicus* Herbaceous Alliance (4420)
- Marshland Superalliance (4500)
- *Distichlis spicata* Herbaceous Alliance (4510)

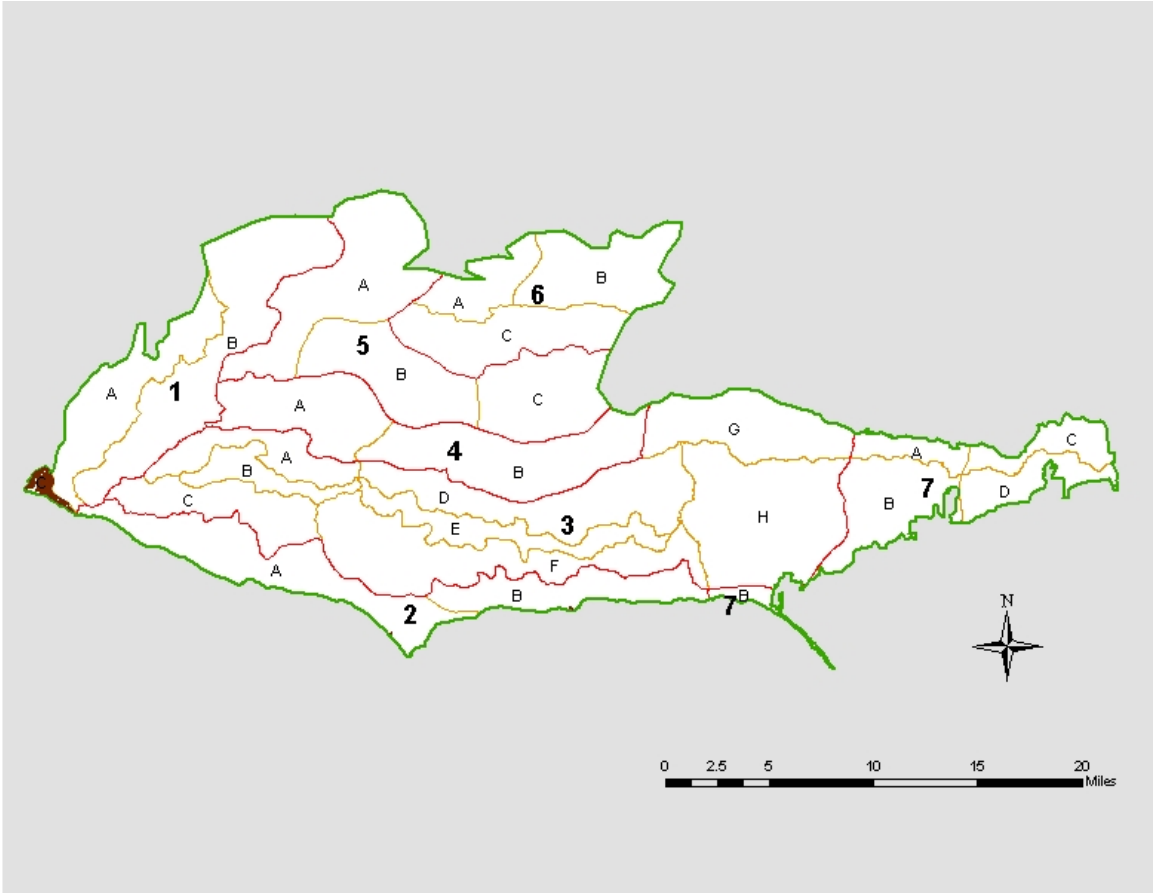
MARSHLAND HERBACEOUS SUPERALLIANCE



4500 – MARSHLAND HERBACEOUS SUPERALLIANCE



DISTRIBUTION:



DESCRIPTION: Marshland Herbaceous Superalliance occurs as sparse to intermittent herbaceous plants on beach sand, coastal sand dunes, and salt marshland, on level to gentle, and sometimes moderate slopes. Dominating species include *Distichlis spicata, Salicornia virginica, Salicornia subterminalis, Frankenia salina, Jaumea carnosa,* and *Batis maritima.*

PHOTO INTERPRETATION SIGNATURE: The stand has a wide range of signatures. It can be a mottled smooth signature with various tones of brown; a mottled mix of browns, yellowish-brown, and light to medium green with a smooth texture; and a predominately mottled mix of green shades with a little brown. The species are difficult to distinguish from each other.

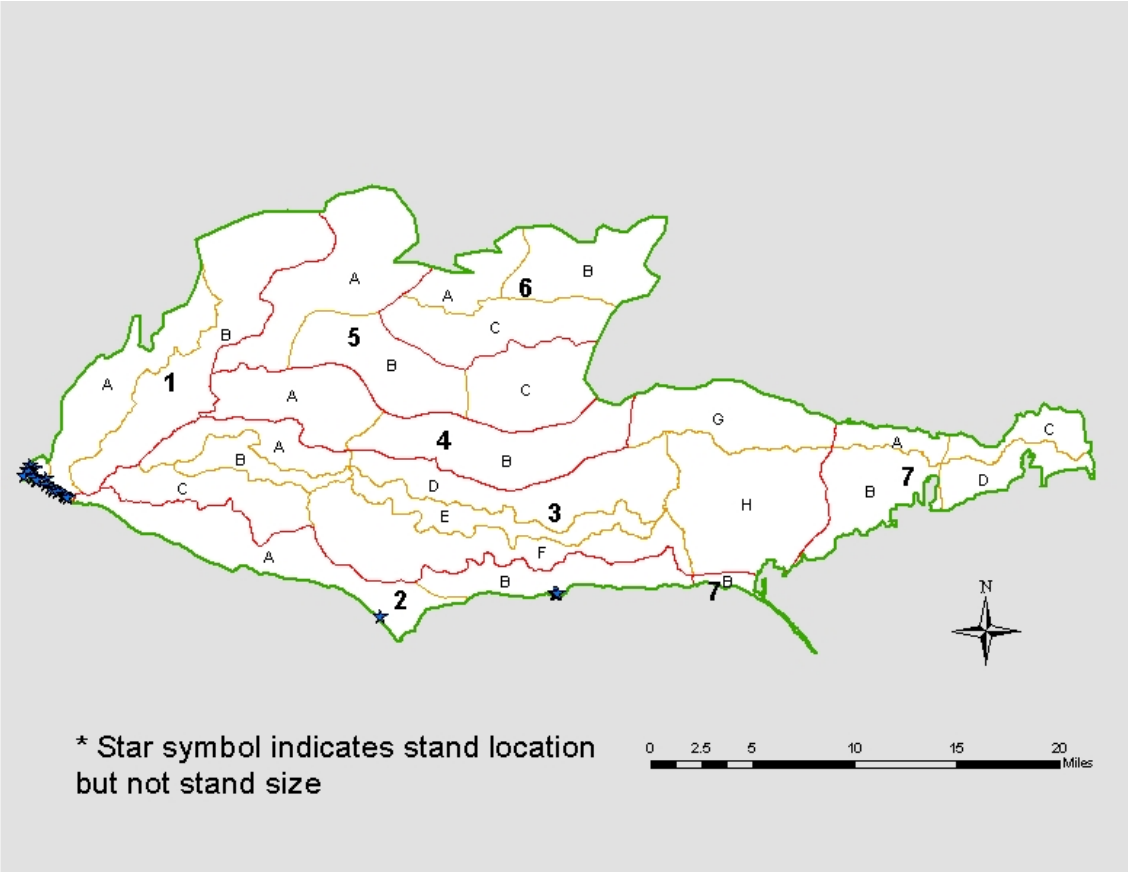
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Juncus effusus* Herbaceous Alliance (4330)
- *Distichlis spicata* Herbaceous Alliance (4510)
- *Salicornia virginica* Herbaceous Alliance (4520)
- *Frankenia salina* Herbaceous Alliance (4550)
- Riverine, Lacustrine, and Tidal Mudflats Mapping Unit (9002)
- Beach Sand Mapping Unit (9005)
- Saltpan Mapping Unit (9008)

4510 – SALT GRASS HERBACEOUS ALLIANCE
Distichlis spicata Herbaceous Alliance



DISTRIBUTION:



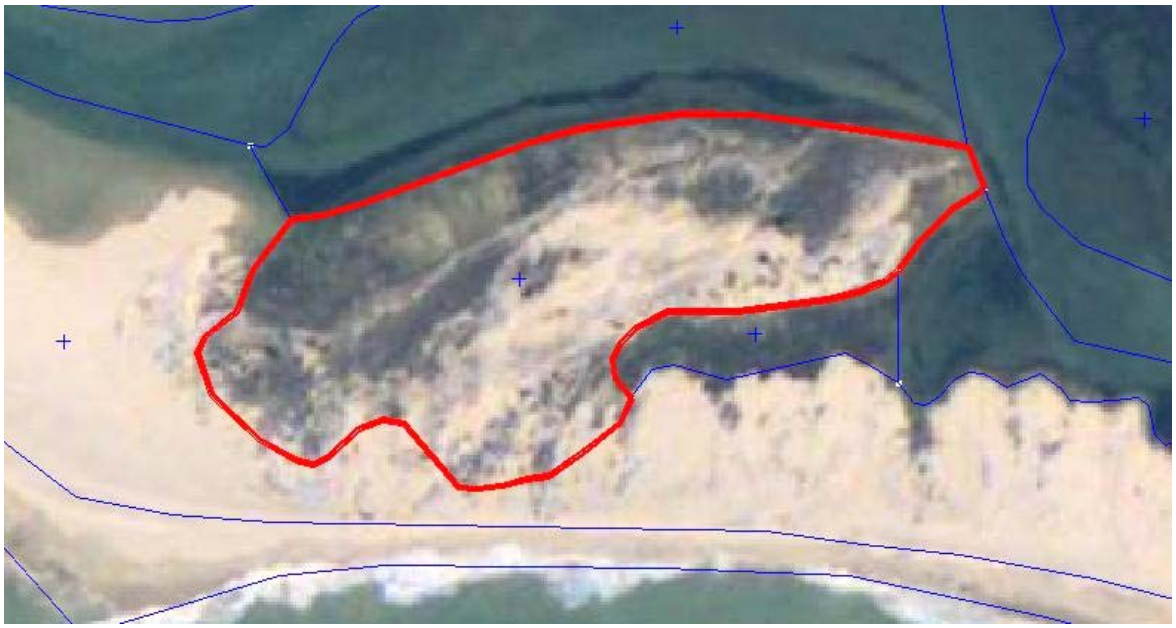
DESCRIPTION: *Distichlis spicata* Herbaceous Alliance occurs as very sparse to intermittent herbaceous plants on beach sand, coastal sand dunes, and upper salt marshland. *D. spicata* is usually dominant, however, *Ambrosia chamissonis, Salicornia virginica, or Jaumea carnosa* can also dominate or co-dominate with *Distichlis*. *Arundo donax* may be present on beach sand. This alliance is mapped where Rapid Assessment plots have been provided by the Park, and then extrapolated to similar polygons in nearby areas.

PHOTO INTERPRETATION SIGNATURE: The stand has a coarse texture and can be open. *Arundo* is a gray to white starburst-shaped clump of offshoots occurring as individuals or groups along a drainage.

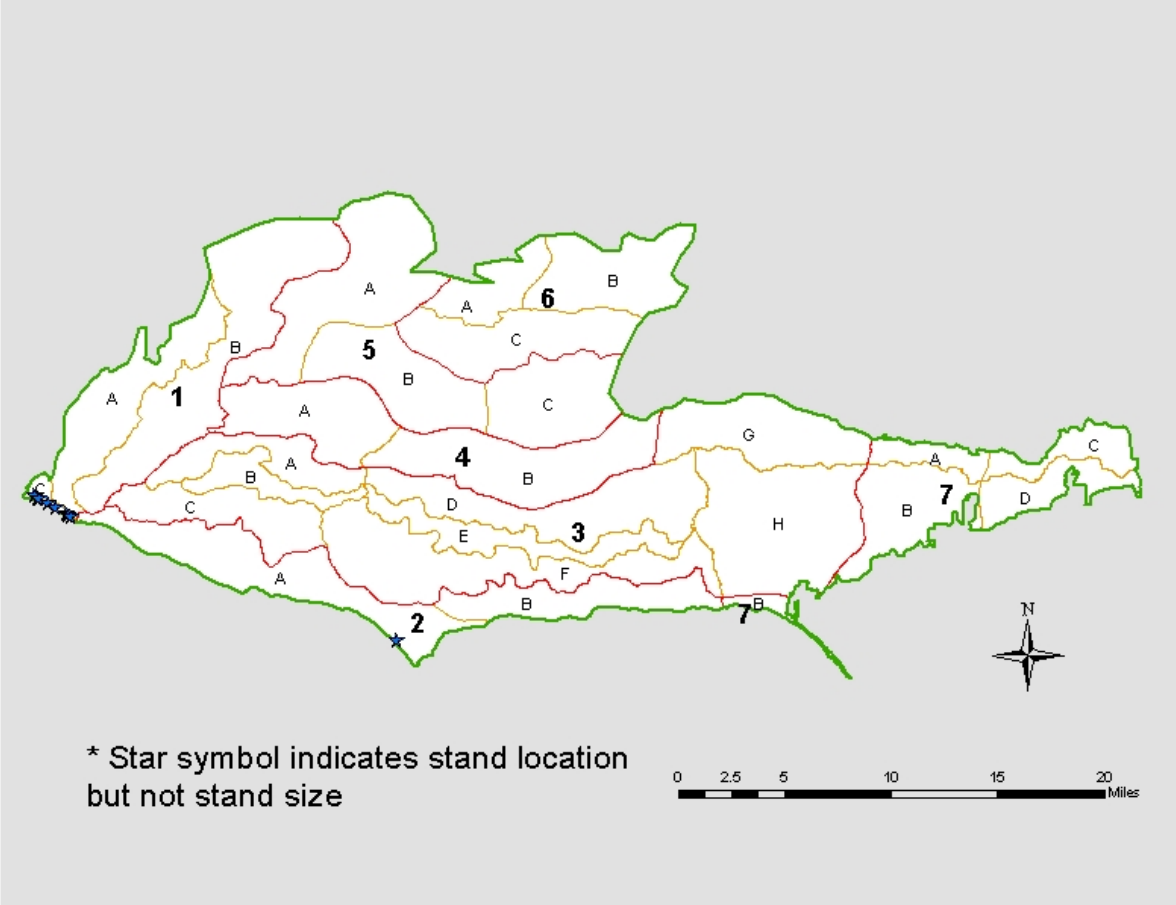
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Juncus effusus* Herbaceous Alliance (4330)
- Beach Sand Mapping Unit (9005)

4511 – SALT GRASS-DUNE BURRWEED HERBACEOUS ASSOCIATION
***Distichlis spicata-Ambrosia chamissonis* Herbaceous Association**



DISTRIBUTION:



DESCRIPTION: *Distichlis spicata-Ambrosia chamissonis* Herbaceous Association occurs as very sparse to open herbaceous plants on beach sand and coastal sand dunes, usually just landward from the non-vegetated active beach. Either *Distichlis* or *Ambrosia* can be dominant. *Distichlis* is at very low to very high cover, while *A. chamissonis* is at very low to moderate cover. This association is mapped where Rapid Assessment plots have been provided by the Park, and then extrapolated to similar polygons in nearby areas.

PHOTO INTERPRETATION SIGNATURE: The stand has a mottled smooth signature with shades of tan to brown vegetation on white sand. The species are difficult to distinguish from each other.

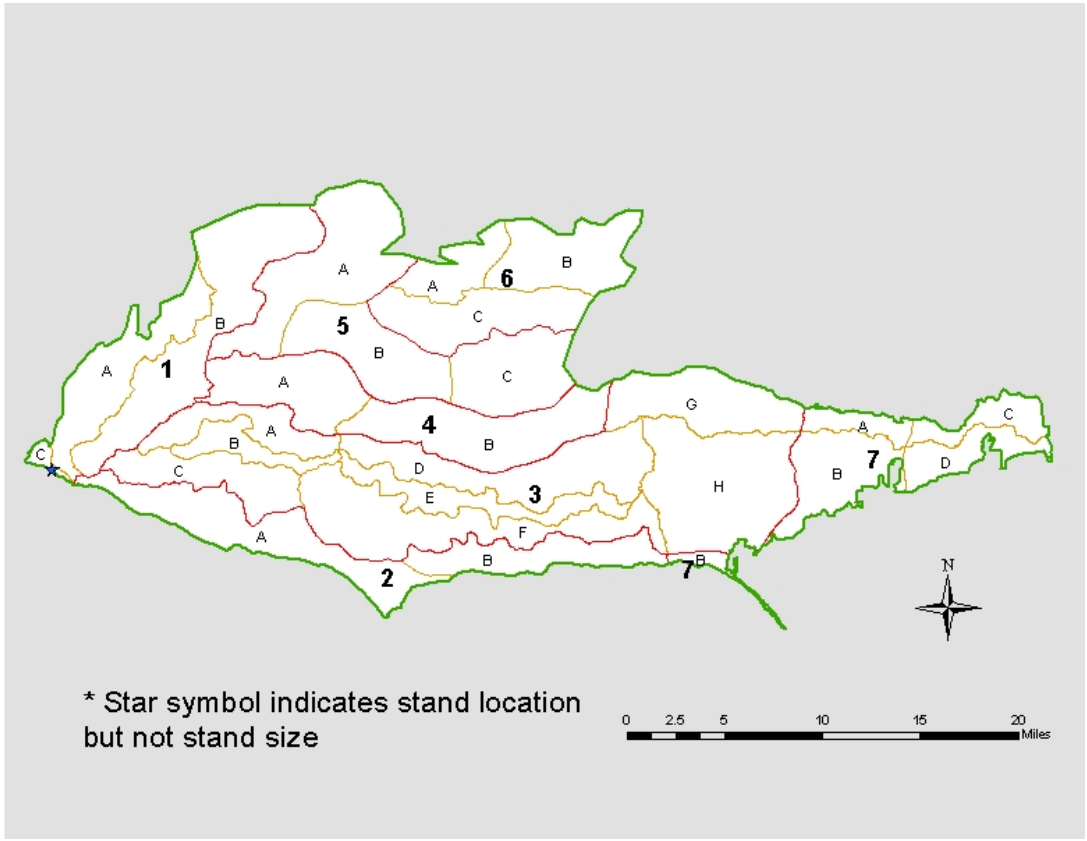
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Distichlis spicata-Arundo donax* Herbaceous Association (4513)
- *Juncus effusus* Herbaceous Alliance (4330)
- Beach Sand Mapping Unit (9005)

4513 – SALT GRASS-GIANT REED HERBACEOUS MAPPING UNIT
***Distichlis spicata-Arundo donax* Herbaceous Mapping Unit**



DISTRIBUTION:



DESCRIPTION: *Distichlis spicata-Arundo donax* Herbaceous Mapping Unit occurs as very sparse to open herbaceous plants on beach sand and coastal sand dunes, usually just landward from the non-vegetated active beach. *Distichlis* is present at low to moderate cover. *Arundo* may be present in various amounts. This class was mapped from field observation.

PHOTO INTERPRETATION SIGNATURE: The stand has a mottled smooth signature with shades of tan to dark brown vegetation on white sand. The species are difficult to distinguish from each other. Because the *Arundo* is very short and sparse it appears as scattered dark brown small rounded plants slightly higher in height from the surrounding plants, unlike its signature in inland drainages.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

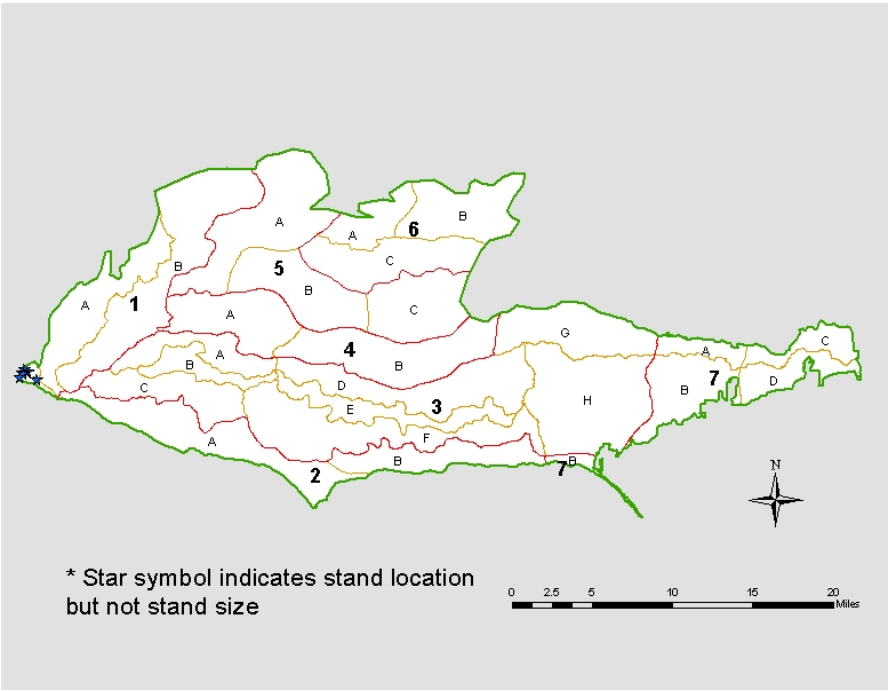
- *Distichlis spicata-Ambrosia chamissonis* Herbaceous Association (4511)
- *Juncus effusus* Herbaceous Alliance (4330)
- Beach Sand Mapping Unit (9005)

4527 – SALT GRASS-PICKLEWEED-MARSH JAUMEA HERBACEOUS ASSOCIATION

***Distichlis spicata-Salicornia virginica-Jaumea carnosa* Herbaceous Association**



DISTRIBUTION:



DESCRIPTION: *Distichlis spicata-Salicornia virginica-Jaumea carnosa* Herbaceous Association occurs as open to intermittent herbaceous plants on the upper edges of salt marshland on level to gentle slopes. *Distichlis* and *Jaumea* co-dominate, with *S. virginica* as sub-dominant to co-dominant. This association is mapped where Rapid Assessment plots have been provided by the Park, and then extrapolated to similar polygons in nearby areas.

PHOTO INTERPRETATION SIGNATURE: The stand has mottled, light to medium green and brown color with a smooth texture. Some green patches have rounded edges and shapes. The species are difficult to distinguish from each other.

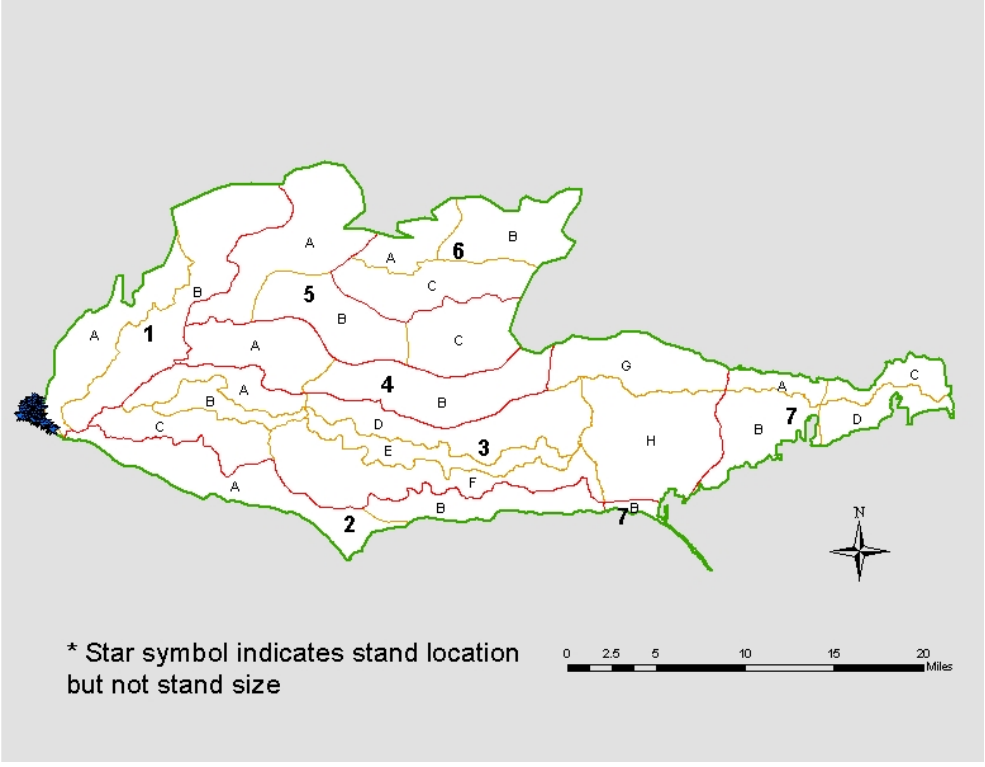
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salicornia virginica-Frankenia salina-Suaeda taxifolia* Herbaceous Association (4524)
- *Frankenia salina-Limonium californicum-Monanthochloe littoralis-Salicornia virginica* Herbaceous Association (4551)

4520 – PICKLEWEED HERBACEOUS ALLIANCE
Salicornia virginica Herbaceous Alliance



DISTRIBUTION:



DESCRIPTION: *Salicornia virginica* Herbaceous Alliance occurs as sparse to intermittent herbaceous plants on low through upper salt marshland. *S. virginica* is usually dominant, however *Frankenia salina, Batis maritima*, or Algae can also dominate or co-dominate with *S. virginica*. *Brassica nigra* and *S. subterminalis* may also be present from low to moderate cover. This alliance is mapped where Rapid Assessment plots have been provided by the Park, and then extrapolated to similar polygons in nearby areas.

PHOTO INTERPRETATION SIGNATURE: The stand has a wide range of signatures. It can be a mottled smooth signature with various tones of brown; rusty brown; a mottled mix of browns, yellowish-brown, and light to medium green with a smooth texture; and a predominately mottled mix of green shades with a little brown. The species are difficult to distinguish from each other.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Distichlis spicata* Herbaceous Alliance (4510)
- Riverine, Lacustrine, and Tidal Mudflats Mapping Unit (9002)
- Saltpan Mapping Unit (9008)

4524 – PICKLEWEED-ALKALI HEATH-CALIFORNIA SEA BLIGHT HERBACEOUS ASSOCIATION

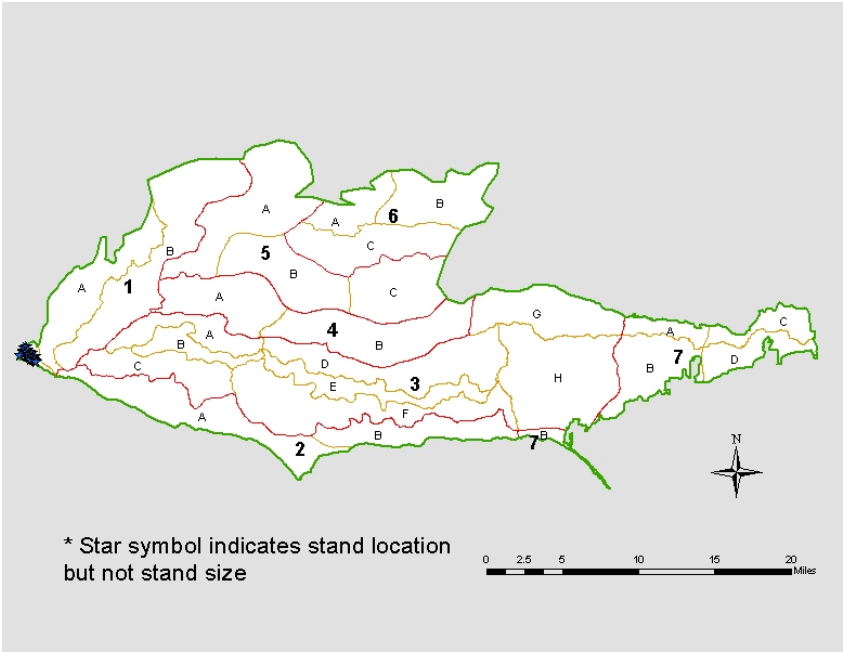
***Salicornia virginica-Frankenia salina-Suaeda taxifolia* Herbaceous Association**

4526 – *Salicornia virginica-Frankenia salina-Batis maritima* Phase

45201 – *Salicornia virginica-Suaeda taxifolia* Phase



DISTRIBUTION:



DESCRIPTION: *Salicornia virginica-Frankenia salina-Suaeda taxifolia* Herbaceous Association occurs as sparse to continuous stands of shrubs and herbaceous plants on low marshland. *S*. *virginica* is usually strongly dominant. *Frankenia* and *Batis maritima* can be sub-dominant. *S. virginica* is at high to very high cover, while *Frankenia and Batis* are at very low to moderate cover. *Suaeda taxifolia* is usually of very low cover. This association, as well as the *Salicornia virginica-Frankenia salina-Batis maritima* Phase (4526) and *Salicornia virginica-Suaeda taxifolia* Phase (45201) of this association, is mapped where Rapid Assessment plots have been provided by the Park, and then extrapolated to similar polygons in nearby areas.

PHOTO INTERPRETATION SIGNATURE: The stand has a wide range of signatures. It can be a mottled smooth signature with various tones of brown; a mottled mix of browns, yellowish-brown, and light to medium green with a smooth texture; and a predominantly mottled mix of green shades with a little brown. The species are difficult to distinguish from each other.

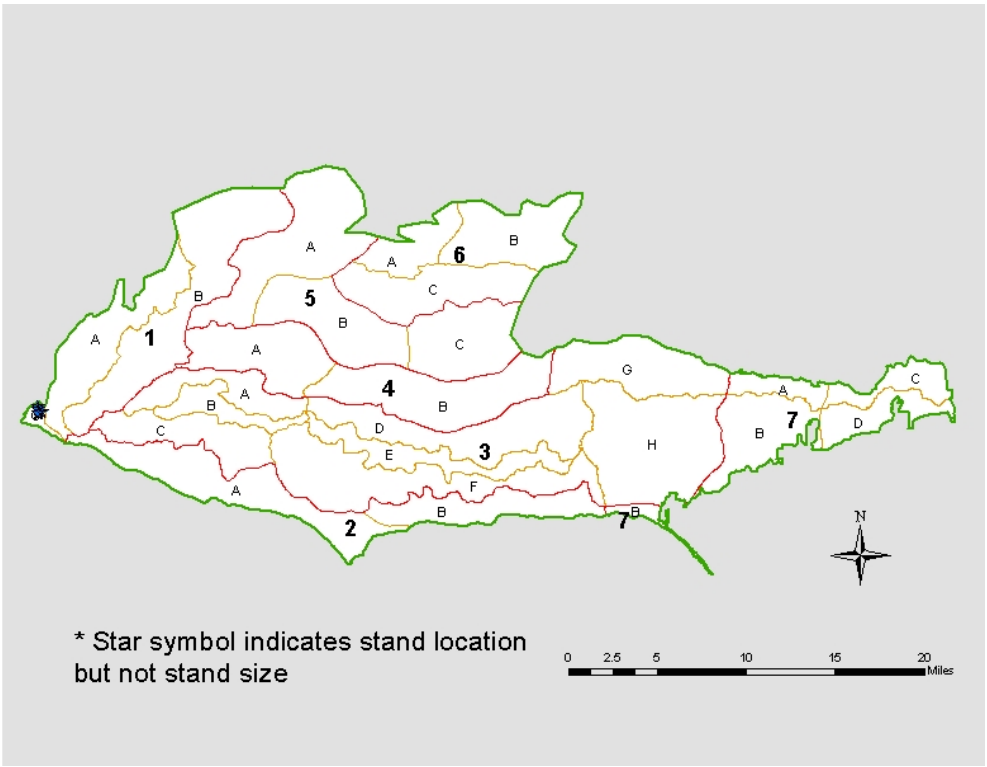
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Distichlis spicata-Salicornia virginica-Jaumea carnosa* Herbaceous Association (4527)
- *Frankenia salina-Limonium californicum-Monanthochloe littoralis-Salicornia virginica* Herbaceous Association (4551)

4525 – PICKLEWEED-PARISH'S GLASSWORT HERBACEOUS ASSOCIATION
Salicornia virginica-Salicornia subterminalis Herbaceous Association



DISTRIBUTION:



DESCRIPTION: *Salicornia virginica-Salicornia subterminalis* Herbaceous Association occurs as sparse to open herbaceous plants on low marshland. *S. virginica* and *S. subterminalis* co-dominate or sub-dominate each other, each at very low to moderate cover. This association is mapped where Rapid Assessment plots have been provided by the Park, and then extrapolated to similar polygons in nearby areas.

PHOTO INTERPRETATION SIGNATURE: The stand has a mottled smooth signature with shades of tan to dark brown vegetation and small openings of white salt pans intermixed within. The species are difficult to distinguish from each other.

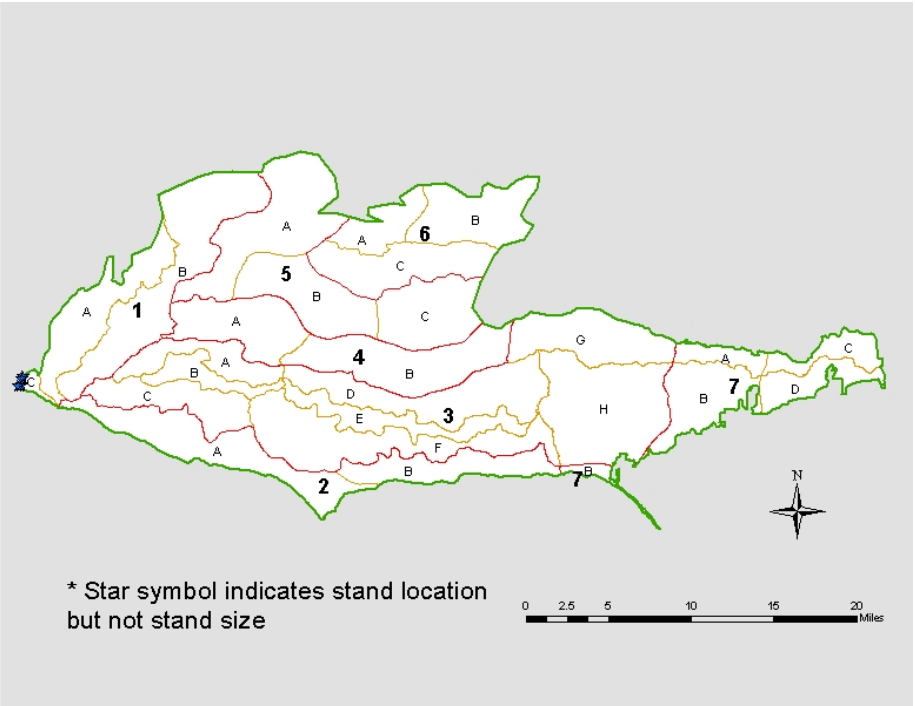
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salicornia virginica-Brassica nigra* Herbaceous Association (4529)
- Saltpan Mapping Unit (9008)

4528 – PICKLEWEED/ALGAE HERBACEOUS ASSOCIATION
Salicornia virginica/Algae Herbaceous Association



DISTRIBUTION:



DESCRIPTION: *Salicornia virginica*/Algae Herbaceous Association occurs as open to intermittent herbaceous plants on the lowest and wettest portion of salt marshland, usually in standing water. Algae usually dominates at very high cover, while *S. virginica* sub-dominates and sometimes co-dominates, at low to high cover. This association is mapped where Rapid Assessment plots have been provided by the Park, and then extrapolated to similar polygons in nearby areas.

PHOTO INTERPRETATION SIGNATURE: The stand has lightly mottled light brown to dark brown and dark green color with a smooth texture. The species are difficult to distinguish from each other.

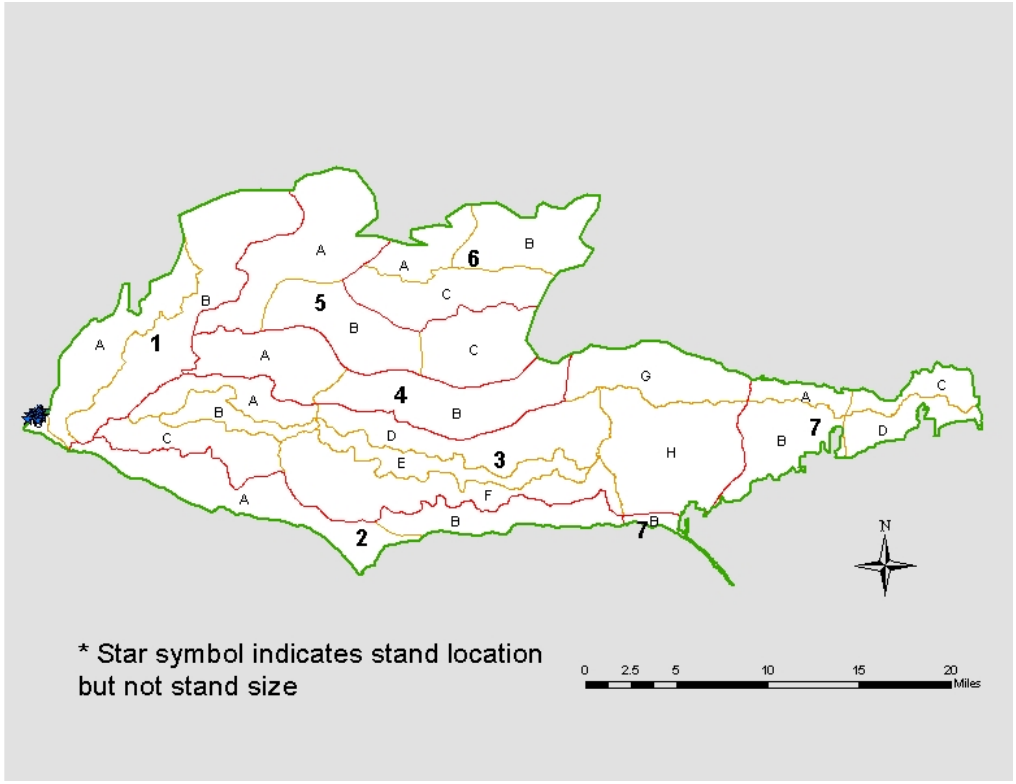
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salicornia virginica-Frankenia salina-Suaeda taxifolia* Herbaceous Association (4524)
- Riverine, Lacustrine, and Tidal Mudflats Mapping Unit (9002)

4529 – PICKLEWEED-BLACK MUSTARD HERBACEOUS ASSOCIATION
***Salicornia virginica-Brassica nigra* Herbaceous Association**



DISTRIBUTION:



DESCRIPTION: *Salicornia virginica/Brassica nigra* Herbaceous Association occurs as open to intermittent herbaceous plants on the upper edges of salt marshland on level to gentle slopes. *S. virginica* usually dominates at moderate to high cover. *Brassica* is present and may approach moderate cover. This association is mapped where Rapid Assessment plots have been provided by the Park, and then extrapolated to similar polygons in nearby areas.

PHOTO INTERPRETATION SIGNATURE: The stand has a mottled light to dark rusty brown color with a smooth texture. The species are difficult to distinguish from each other.

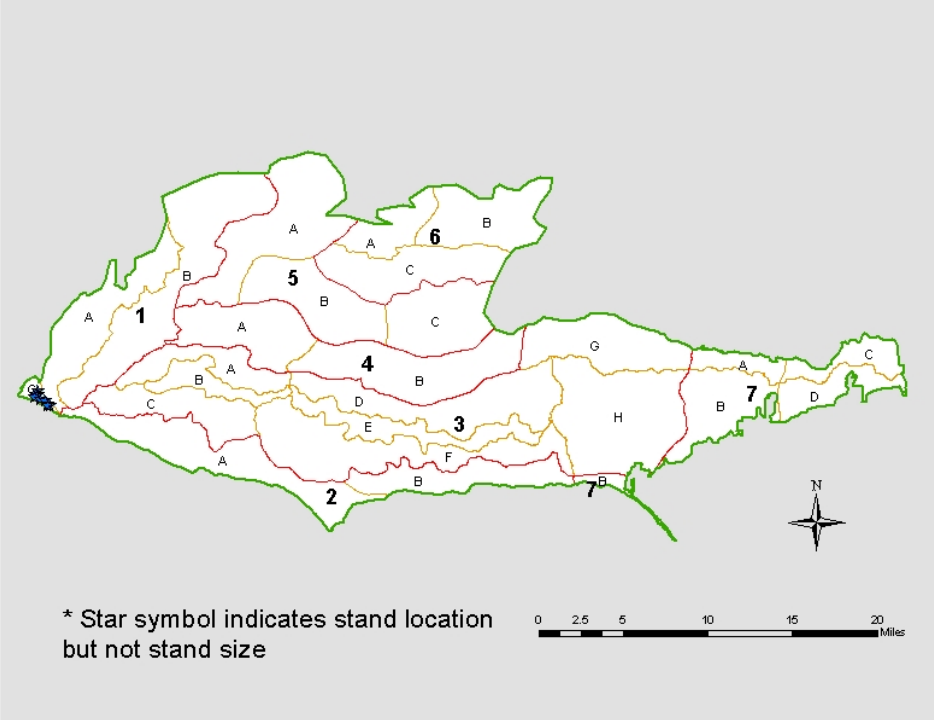
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salicornia virginica-Salicornia subterminalis* Herbaceous Association (4525)

4550 – ALKALI HEATH HERBACEOUS ALLIANCE
Frankenia salina Herbaceous Alliance



DISTRIBUTION:



DESCRIPTION: *Frankenia salina* Herbaceous Alliance occurs as open to continuous stands of shrubs and herbaceous plants on the margins of low marshland. *Frankenia* is usually dominant at moderate cover. *Salicornia virginica and Monanthochloe littoralis* can be present at low to moderate cover, and sometimes will sub-dominate or co-dominate. *Limonium californicum* is usually present at very low cover. This association is mapped where Rapid Assessment plots have been provided by the Park, and then extrapolated to similar polygons in nearby areas

PHOTO INTERPRETATION SIGNATURE: The stand can be a mottled smooth signature of dark brown to rusty brown with hints of green mixed in; or it can be mainly light to medium green with a smooth texture and dark brown patches. The species are difficult to distinguish from each other.

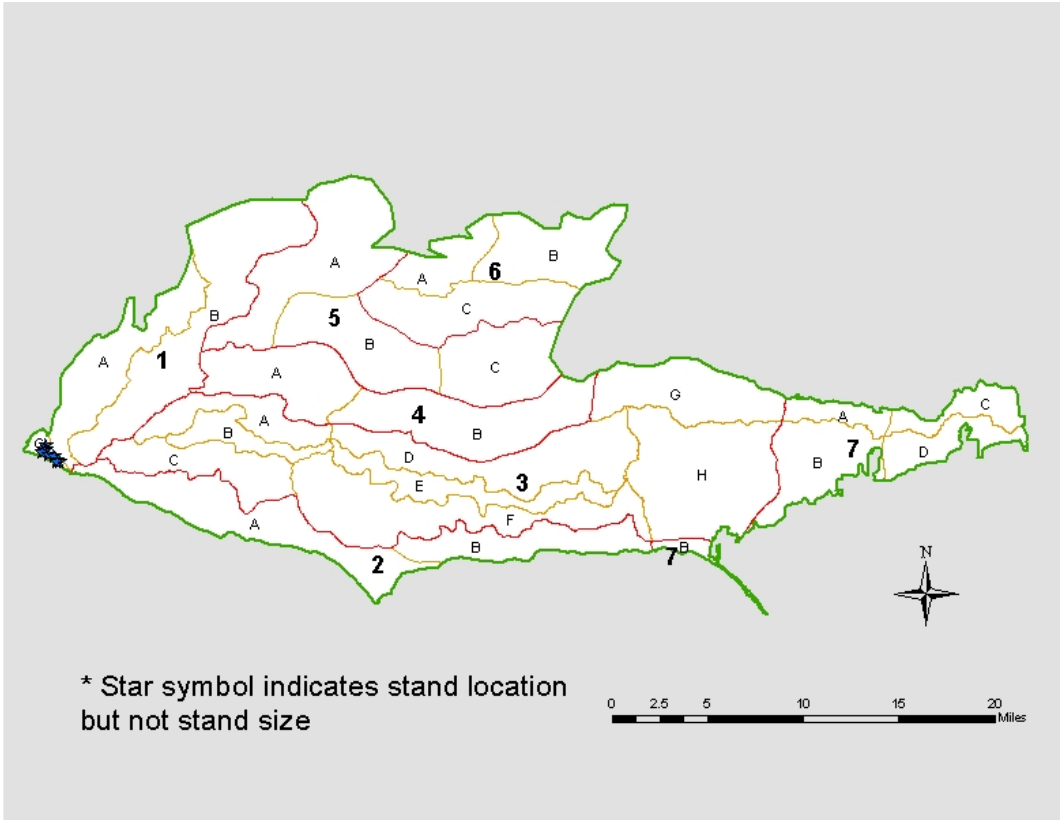
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Distichlis spicata* Herbaceous Alliance (4510)
- *Salicornia virginica* Herbaceous Alliance (4520)

4551 – ALKALI HEATH-CALIFORNIA SEA LAVENDER-SHORE GRASS-PICKLEWEED HERBACEOUS ASSOCIATION
***Frankenia salina-Limonium californicum-Monanthochloe littoralis-Salicornia virginica* Herbaceous Association**



DISTRIBUTION:



DESCRIPTION: *Frankenia salina-Limonium californicum-Monanthochloe littoralis-Salicornia virginica* Herbaceous Association occurs as open to continuous stands of shrubs and herbaceous plants on the margins of low marshland. *Frankenia* is usually dominant at moderate cover. *S. virginica and Monanthochloe* are present at low to moderate cover, and sometimes will sub-dominate or co-dominate. *Limonium* is usually present at very low cover. This association is mapped where Rapid Assessment plots have been provided by the Park, and then extrapolated to similar polygons in nearby areas.

PHOTO INTERPRETATION SIGNATURE: The stand can be a mottled smooth signature of dark brown to rusty brown with hints of green mixed in; or it can be mainly light to medium green with a smooth texture and dark brown patches. The species are difficult to distinguish from each other.

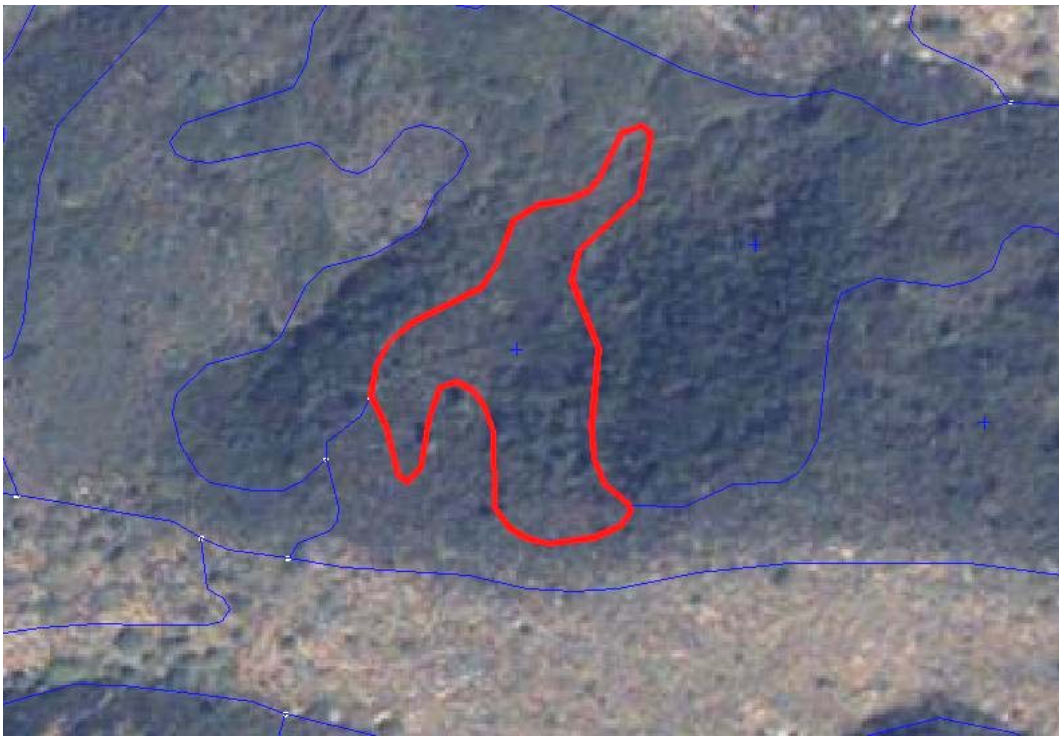
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salicornia virginica-Frankenia salina-Suaeda taxifolia* Herbaceous Association (4524)
- *Distichlis spicata-Salicornia virginica-Jaumea carnosa* Herbaceous Association (4527)

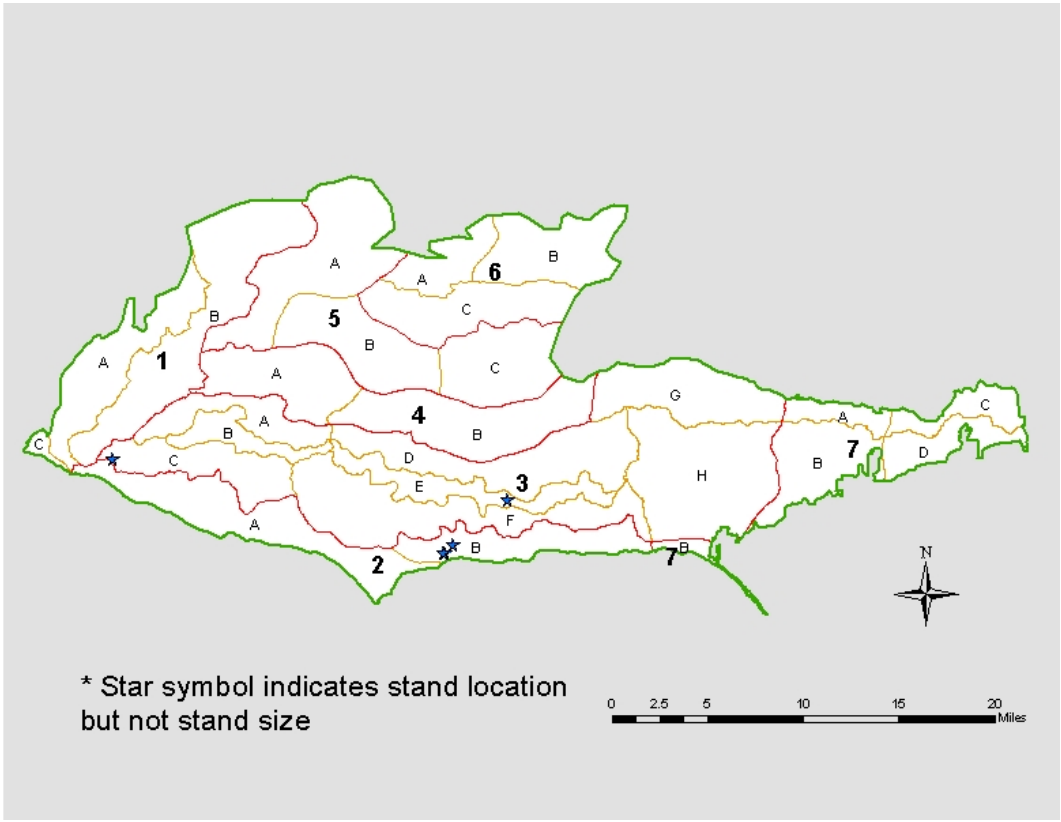
CANYON SUNFLOWER SHRUBLAND ALLIANCE



4750 – CANYON SUNFLOWER SHRUBLAND ALLIANCE
Venegasia carpesioides Shrubland Alliance



DISTRIBUTION:



DESCRIPTION: *Venegasia carpesioides* Shrubland Alliance occurs as an intermittent to continuous stand on dry-mesic north-facing moderate to steep slopes. The alliance favors concave, convex, and undulating surfaces on mid to upper slopes. *Venegasia* is strongly dominant at low to high cover. *Malosma laurina, Heteromeles arbutifolia*, and *Leymus condensatus* may be present approaching low cover.

PHOTO INTERPRETATION SIGNATURE: The stand is typically light to medium green, sometimes yellowish-green or brown, and has a smooth or slightly bumpy texture. The stand is mottled when other shrubs are present. The signature of *Venegasia* is very similar to *Toxicodendron diversilobum, Leymus,* and *Malacothamnus fasciculatus*,

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Baccharis salicifolia* Shrubland Alliance (2210)
- *Baccharis pilularis* Shrubland Alliance (2310)
- *Malacothamnus fasciculatus* Shrubland Alliance (3280)
- *Salvia mellifera* Shrubland Alliance (3320)
- *Toxicodendron diversilobum* Shrubland Alliance (3330)
- *Leymus condensatus* Herbaceous Alliance (4040)

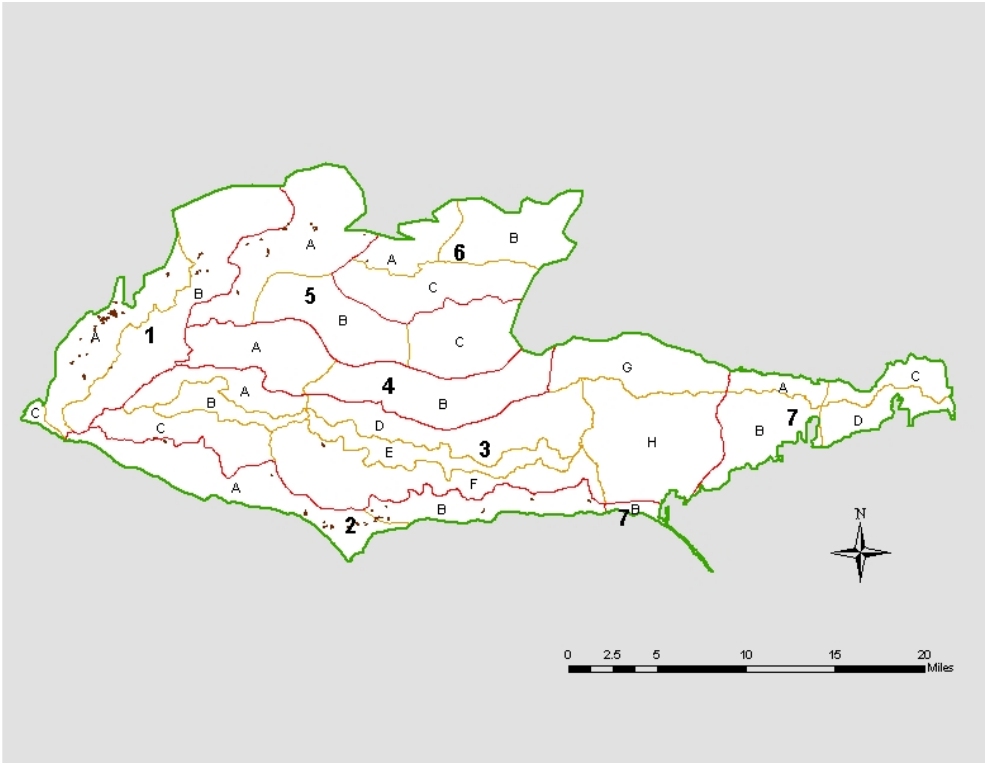
FENNEL HERBACEOUS ALLIANCE



4760 – FENNEL HERBACEOUS ALLIANCE
Foeniculum vulgare Herbaceous Alliance



DISTRIBUTION:



DESCRIPTION: *Foeniculum vulgare* Herbaceous Alliance occurs as open to continuous tall herbaceous plants on level to moderate slopes. The alliance favors all aspects and surface shapes and is found on bottoms to middle slopes. *Foenicumlum* is strongly dominant at low to very high cover.

PHOTO INTERPRETATION SIGNATURE: The stand is typically yellowish green to green and has a smooth wispy texture. *Foeniculum* is tall and thin, occurring in groups.

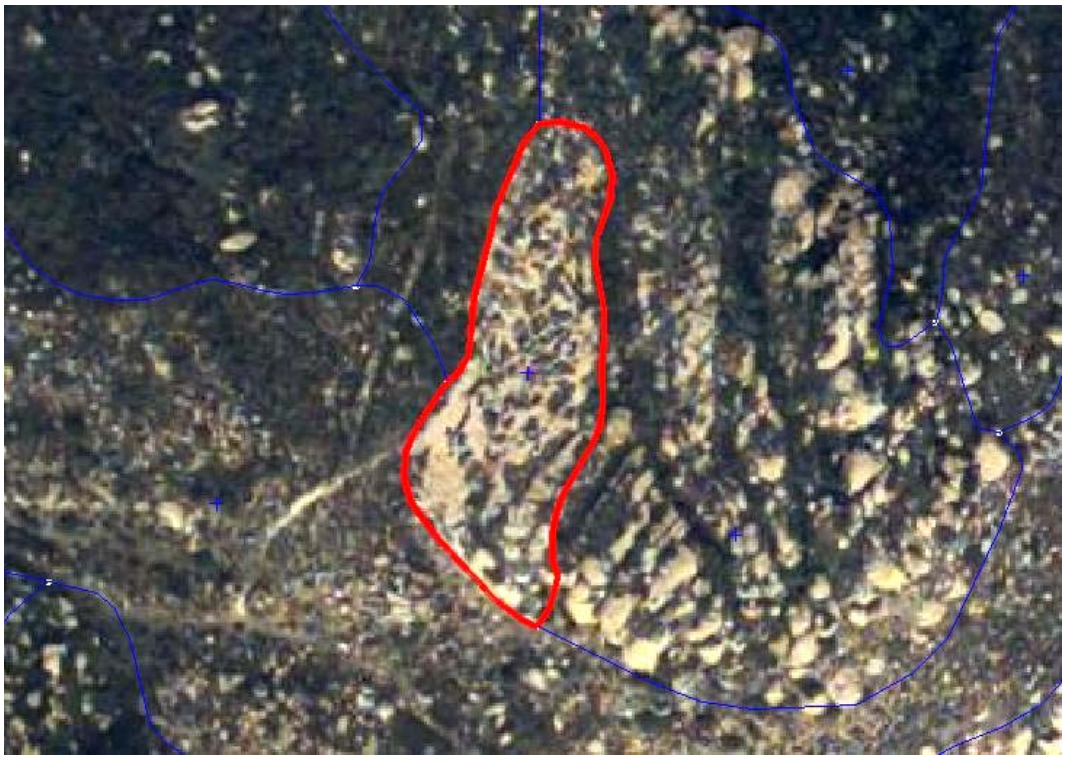
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Baccharis salicifolia* Shrubland Alliance (2210)
- *Baccharis pilularis* Shrubland Alliance (2310)
- *Malacothamnus fasciculatus* Shrubland Alliance (3280)
- *Salvia mellifera* Shrubland Alliance (3320)
- *Toxicodendron diversilobum* Shrubland Alliance (3330)

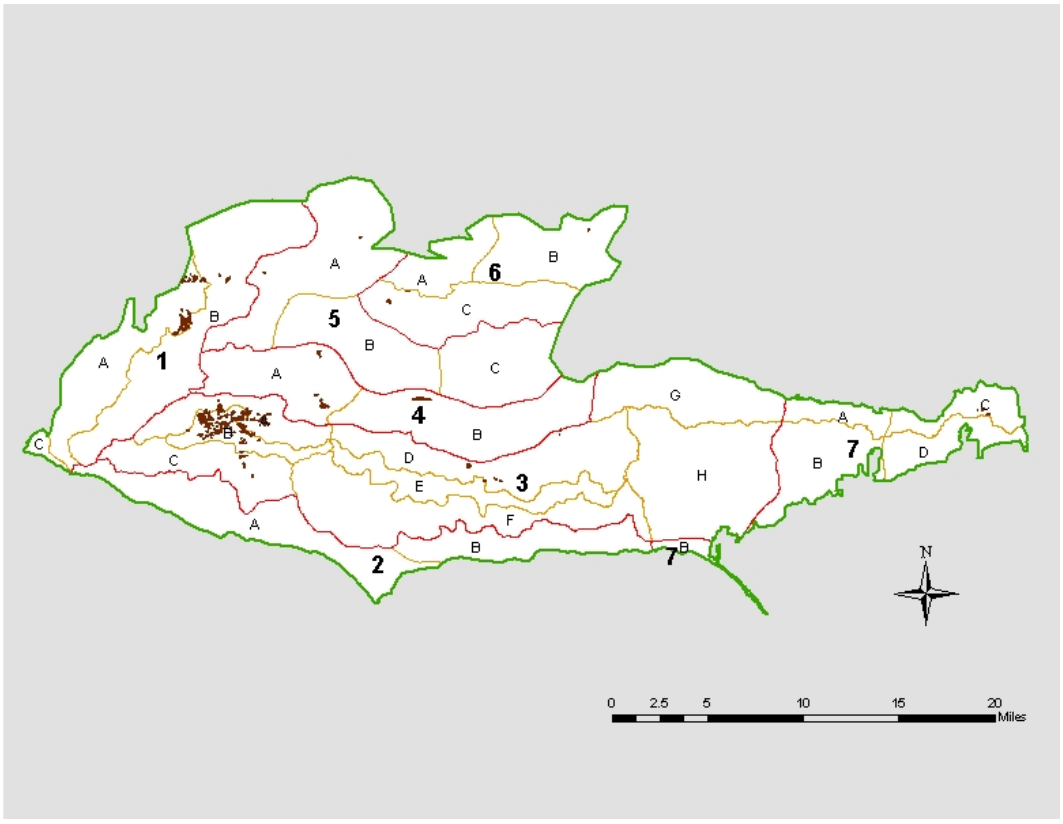
BUSHY SPIKE MOSS HERBACEOUS ALLIANCE



4810 – BUSHY SPIKE MOSS HERBACEOUS ALLIANCE
Selaginella bigelovii Herbaceous Alliance



DISTRIBUTION:



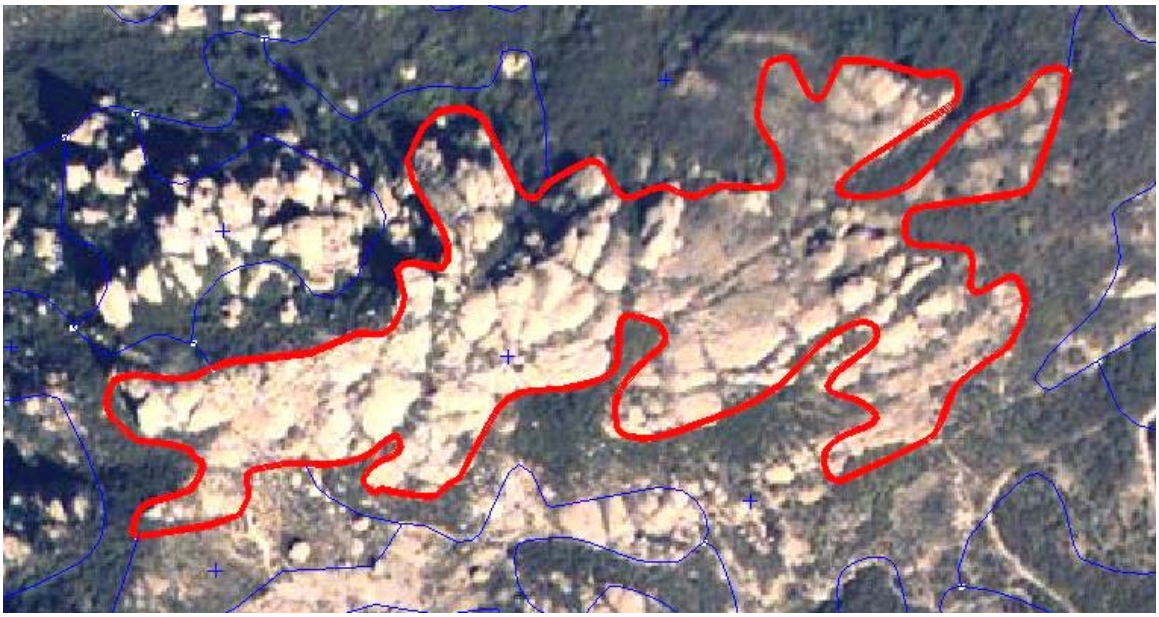
DESCRIPTION: *Selaginella bigelovii* Herbaceous Alliance occurs as very sparse to sparse shrubs over very sparse to open herbaceous plants on dry gentle to extremely steep slopes, on rocky to thin soils. It is found on variable surface shapes on lower to upper slopes and ridge tops. *Selaginella* is at very low to high cover. Sometimes *Eriogonum fasciculatum* may co-dominate at very low to low cover. Other shrubs and grasses may be present at very low cover. Stands that have been mapped at the alliance level rather than the association level typically have an unusual combination of sub-dominant plants that do not fit into the association classes well. Very disturbed sites (man, fire recovery, etc.) with *Selaginella* as the dominant plant are included.

PHOTO INTERPRETATION SIGNATURE: The stand can have a smooth multi-tone streaked appearance with tan or brown and white colors. *Selaginella* will be tan to pinkish-brown or brown with a smooth texture. *E. fasciculatum* will be small reddish brown individuals, with a slightly coarse texture. Rock outcrop will be white to gray with a smooth to uneven texture, peeking through the herbaceous vegetation, usually as linear streaks or areas.

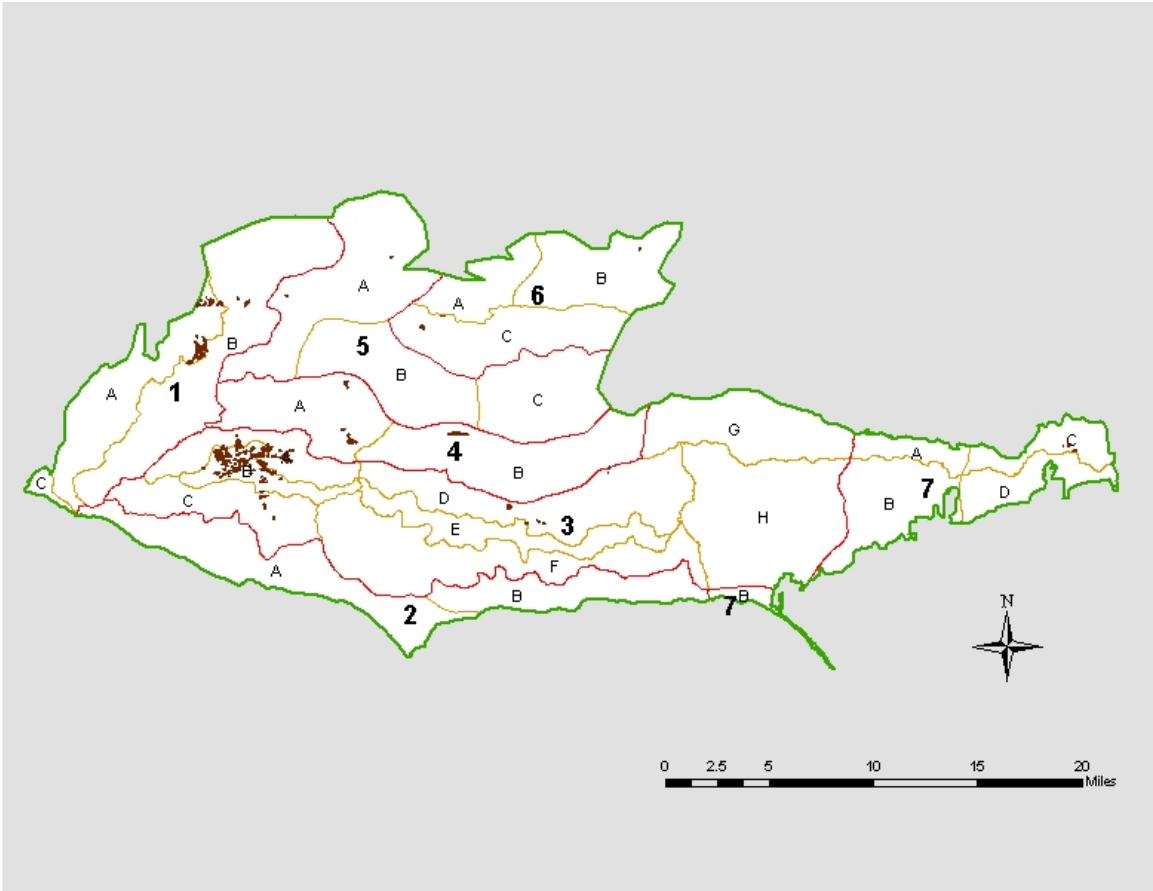
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance (3370)
- *Eriogonum fasciculatum-Salvia apiana* Shrubland Alliance (3410)
- California Annual Grassland/Herbaceous Alliance (5000)
- Rock Outcrop Mapping Unit (9001)
- Rock Outcrop/Herbaceous Mapping Unit (90011)

4811 – BUSHY SPIKE MOSS/CALIFORNIA BUCKWHEAT HERBACEOUS ASSOCIATION
Selaginella bigelovii/Eriogonum fasciculatum Herbaceous Association



DISTRIBUTION:



DESCRIPTION: *Selaginella bigelovii/Eriogonum fasciculatum* Herbaceous Association occurs as very sparse to sparse shrubs over very sparse to open herbaceous plants on dry gentle to extremely steep slopes, on rocky to thin soils. It is found on variable surface shapes on lower to upper slopes and ridge tops. *Selaginella* and *E. fasciculatum* co-dominate, *Selaginella* at very low to high cover, and *E. fasciculatum* at very low to low cover. Other shrubs and grasses may be present at very low cover.

PHOTO INTERPRETATION SIGNATURE: The stand can have a smooth multi-tone streaked appearance with tan or brown and white colors. *Selaginella* will be tan to pinkish-brown or brown with a smooth texture. *E. fasciculatum* will be small reddish brown individuals, with a slightly coarse texture. Rock outcrop will be white to gray with a smooth to uneven texture, peeking through the herbaceous vegetation, usually as linear streaks or areas.

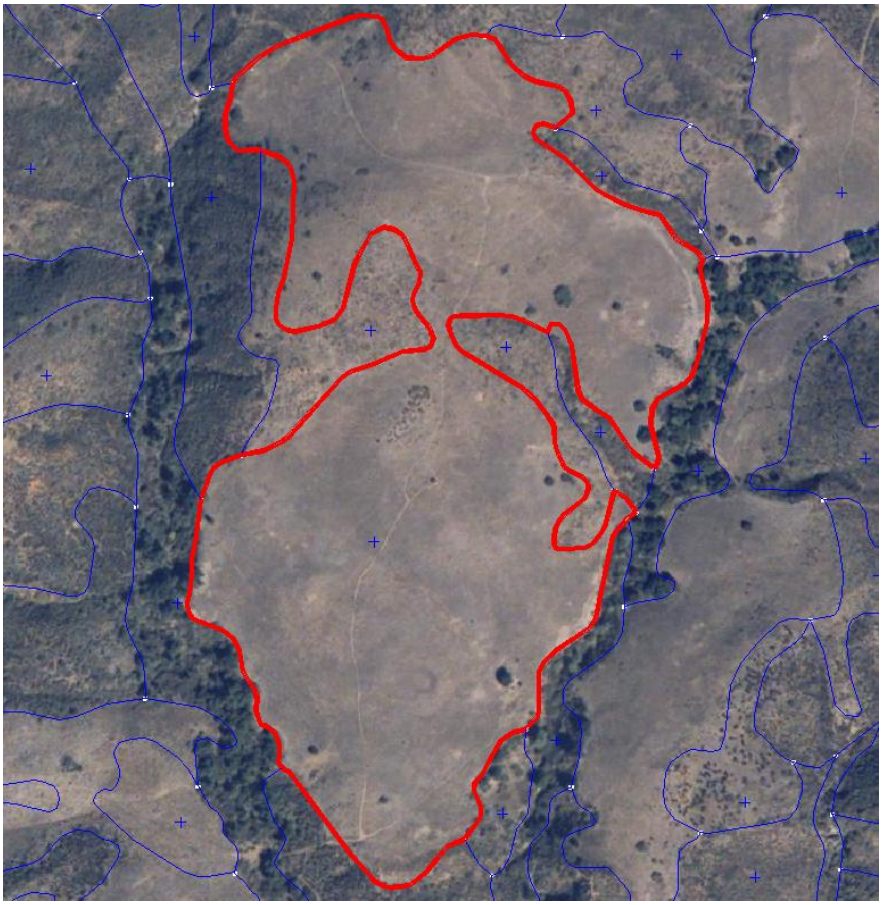
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Artemisia californica-Eriogonum fasciculatum*/Annual Grass-Herb Shrubland Association (3371)
- *Eriogonum fasciculatum-Salvia apiana* Shrubland Alliance (3410)
- California Annual Grassland/Herbaceous Alliance (5000)
- Rock Outcrop Mapping Unit (9001)
- Rock Outcrop/Herbaceous Mapping Unit (90011)

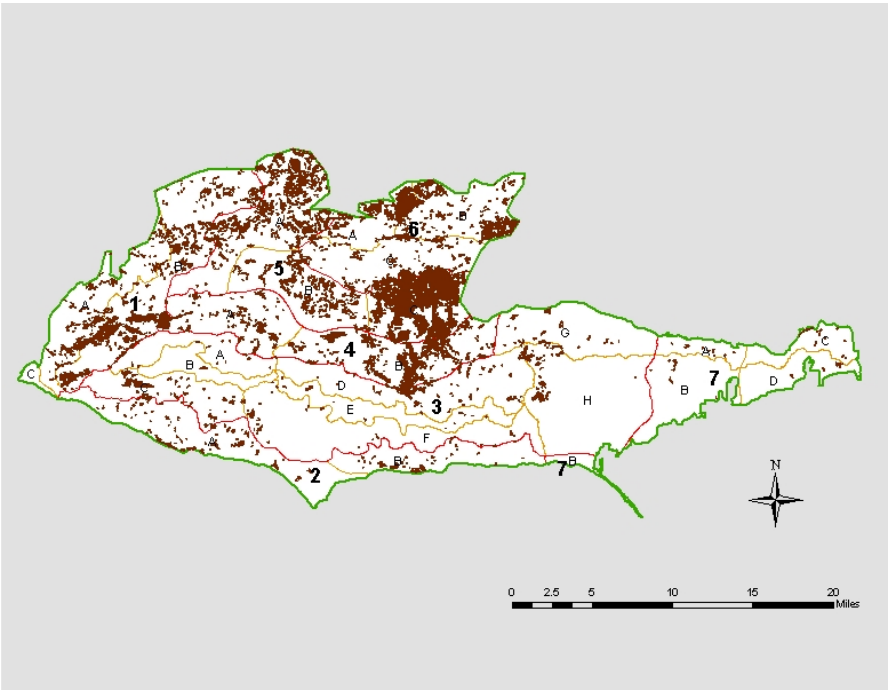
CALIFORNIA ANNUAL GRASSLAND/HERBLAND ALLIANCE



5000 – CALIFORNIA GRASSLAND/HERBLAND ALLIANCE



DISTRIBUTION:



DESCRIPTION: California Annual Grassland/Herbland Alliance occurs as sparse to continuous stands of grassland, sometimes with an emergent shrub or tree layer. It is found on dry level to moderately steep slopes. This association favors neutral, convex, or undulating surfaces on bottoms to upper slopes and wide ridge tops. Grasses and herbs dominate at moderate to very high cover.

PHOTO INTERPRETATION SIGNATURE: The stand typically has an even homogeneous smooth texture. Color can be homogeneous, mosaicked, or mottled tones of tans and browns. Grass and herb species are difficult to identify from photo interpretation. Occasionally, emergent trees or shrubs may dot the stand.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association (1111)
- *Juglans californica*/Annual Grass-Herb Woodland/Forest Association (1312)
- *Quercus lobata*/Annual Grass-Herb Woodland/Forest Association (1321)
- *Quercus lobata-Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association (1323)
- *Platanus racemosa*/Annual Grass-Herb Woodland/Forest Association (1456)
- *Malosma laurina* Shrubland Association (7142)
- *Baccharis pilularis*/Annual Grass-Herb Shrubland Association (2311)
- *Artemisia californica* Shrubland Association (8213)
- *Hazardia squarrosa-Artemisia californica* Shrubland Association (3262)
- *Artemisa californica-Eriogonum fasciculatum*/Annual Grass-Herb Shrubland Association (3371)
- *Leymus condensatus* Herbaceous Association (4041)
- *Selaginella bigelovii/Eriogonum fasciculatum* Herbaceous Association (4811)
- Cleared Land Mapping Unit (9003)
- Urban – Herbaceous/Cleared Mapping Unit (9118)
- Agriculture Mapping Unit (9200)
- Post-fire and Post-clearance Shrub Regeneration Mapping Unit (9300)
- Artificial Cuts/Embankments – Sparsely Vegetated to Non-vegetated Mapping Unit (9630)
- Artificial Cuts/Embankments – Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)
- Firebreak Early Seral Herbaceous/Cleared Mapping Unit (9711)

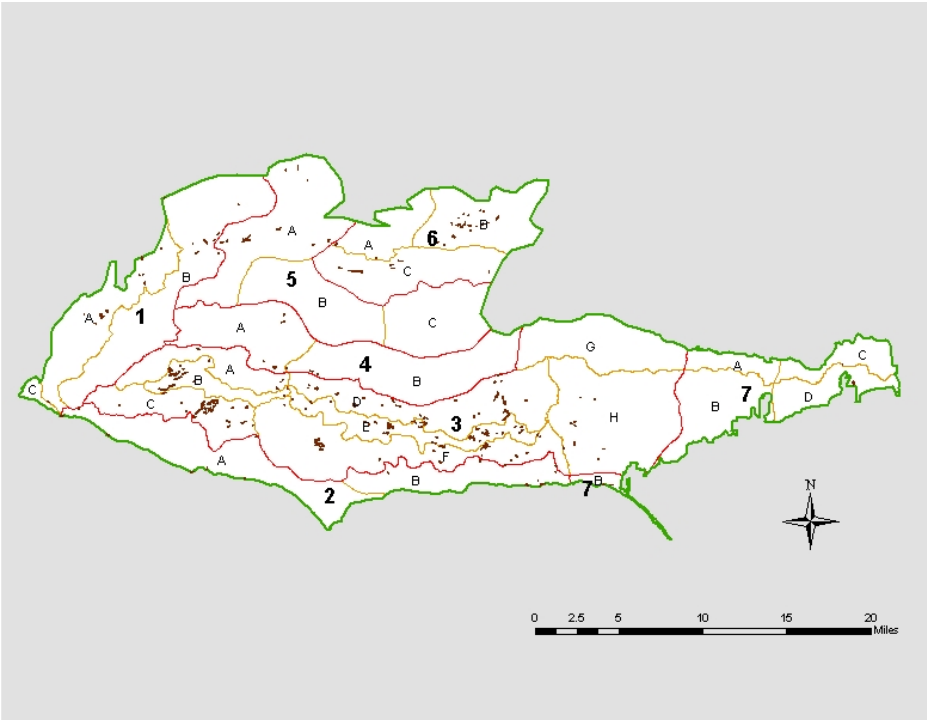
VEGETATION MISCELLANEOUS CLASSES



9001 – ROCK OUTCROP MAPPING UNIT



DISTRIBUTION:



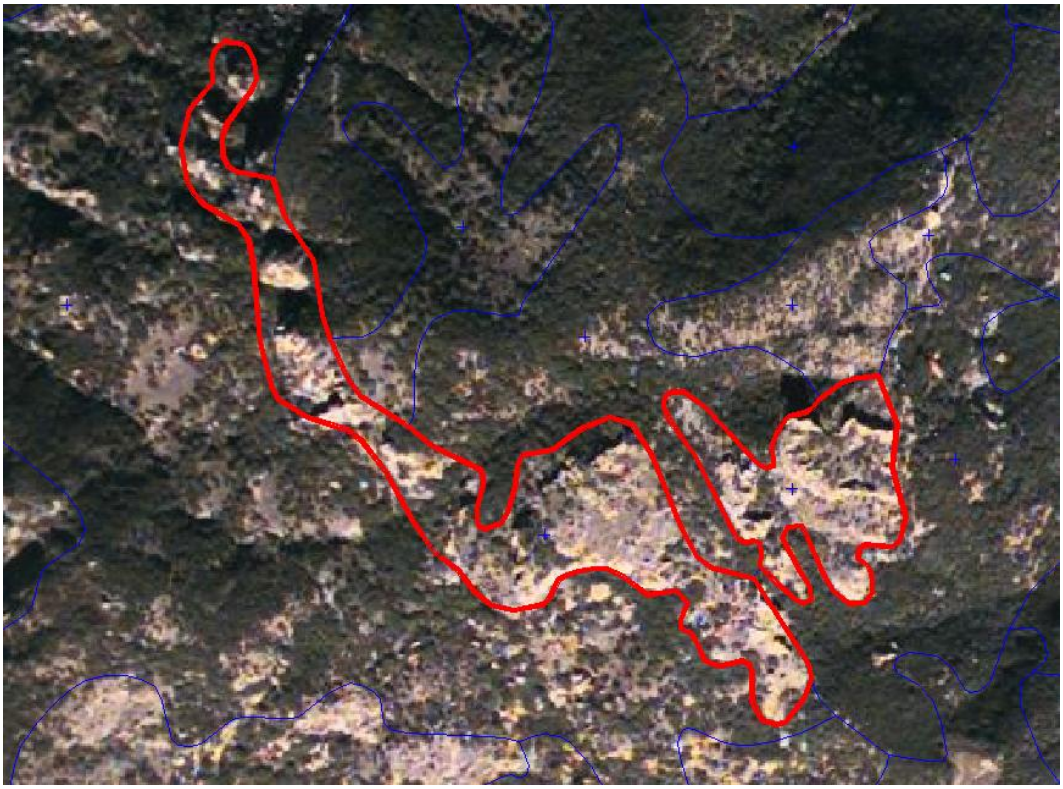
DESCRIPTION: Rock Outcrop Mapping Unit occurs as sparsely vegetated to non-vegetated rock on gentle to extremely steep slopes. It can be on neutral, undulating, or convex surfaces, on lower to upper slopes and ridge tops.

PHOTO INTERPRETATION SIGNATURE: The stand appears as a white to light tan color with a smooth texture. Rock tends to be white, gray or tan in color and can have an uneven smooth surface. Scattered tall or short shrubs or trees may occur within or on the edges of the stand, or as inclusions.

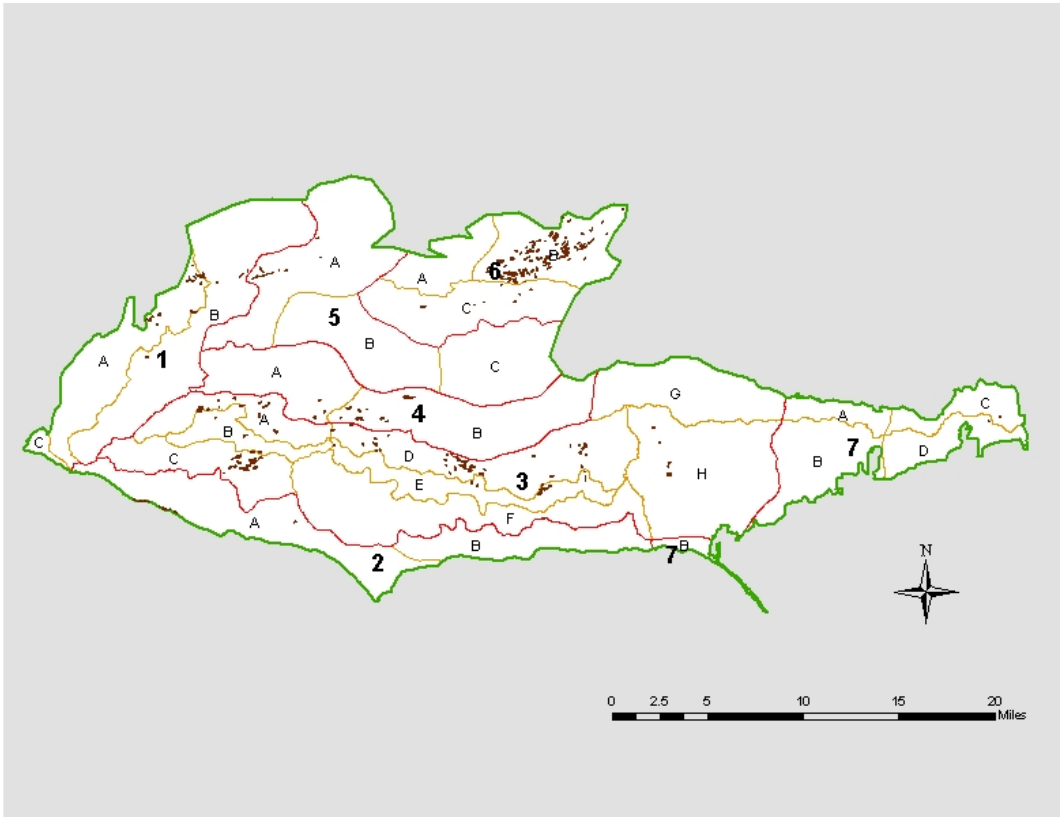
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Eriogonum fasciculatum-Salvia apiana* Shrubland Alliance (3410)
- *Selaginella bigelovii-Eriogonum fasciculatum* Herbaceous Association (4811)
- Rock Outcrop/Herbaceous Mapping Unit (90011)
- Landslide Mapping Unit (9010)

90011 – ROCK OUTCROP/HERBACEOUS MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Rock Outcrop/Herbaceous Mapping Unit occurs as sparsely vegetated rock with some herbaceous vegetation. It can be on neutral, undulating or convex surfaces, on lower to upper slopes and ridge tops. It is mapped in areas where herbaceous vegetation is present on rock outcrops, or where it is possible that *Selaginella bigelovii* Herbaceous Alliance (4810) is present but is not discernible from other herbaceous vegetation.

PHOTO INTERPRETATION SIGNATURE: The stand appears as a white to light tan color with a smooth texture. Rock tends to be white, gray or tan in color and can have an uneven smooth surface. Herbaceous vegetation can be light tan to dark brown in color. Scattered tall or short shrubs or trees may occur within or on the edges of the stand, or as inclusions.

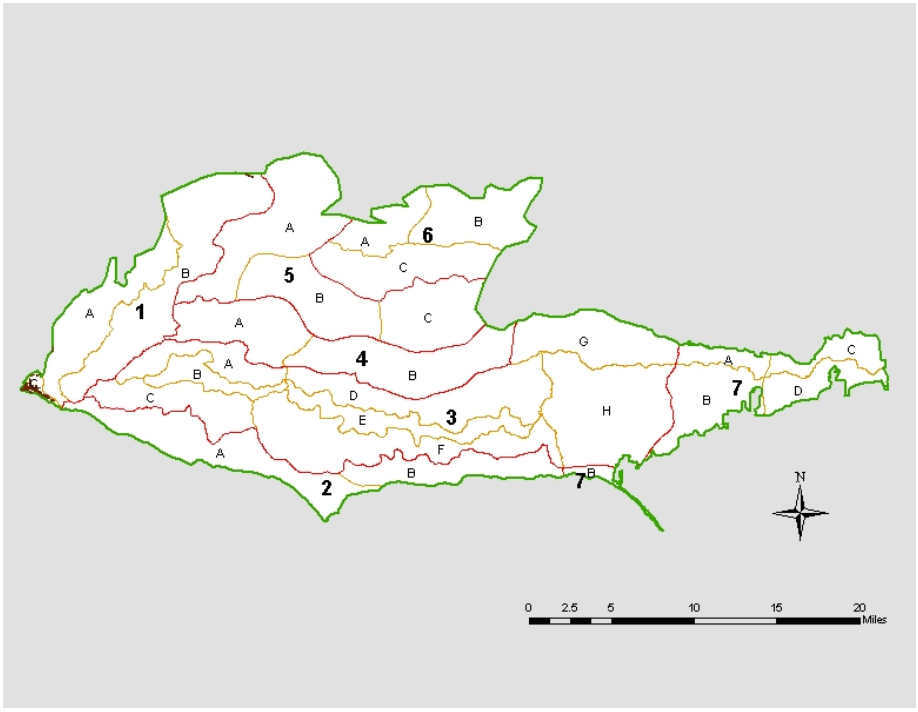
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Eriogonum fasciculatum-Salvia apiana* Shrubland Alliance (3410)
- *Selaginella bigelovii-Eriogonum fasciculatum* Herbaceous Association (4811)
- Rock Outcrop Mapping Unit (9001)
- Landslide Mapping Unit (9010)

9002 – RIVERINE, LACUSTRINE, AND TIDAL MUDFLATS MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: The Riverine, Lacustrine, and Tidal Mudflats Mapping Unit occurs as sparsely vegetated to non-vegetated mudflats occurring along streams, lake edges, or tidal marsh channels. Mud is flat, temporarily flooded land in the channel or edge of a water body that was exposed at the time that the aerial photo was taken. It is saturated at or slightly above water level.

PHOTO INTERPRETATION SIGNATURE: Mudflats tend to be light tan to dark brown in color reflecting the color of the wet substrate. They have a very smooth texture.

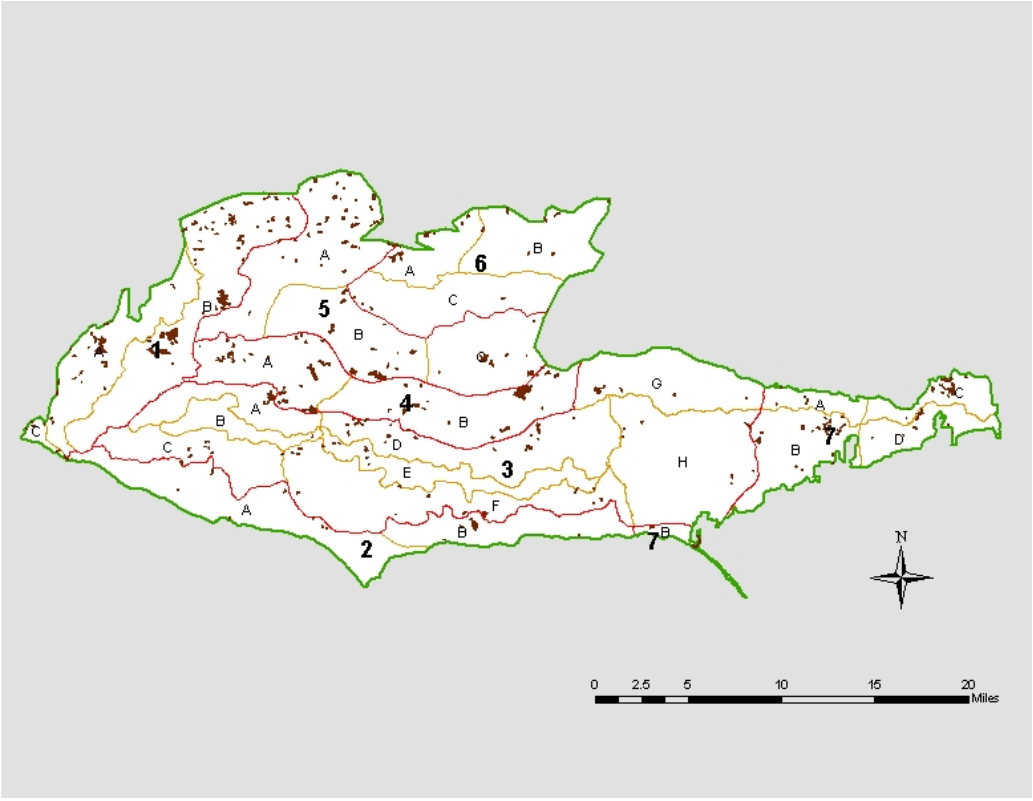
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Sand/Gravel Bar Mapping Unit (9006)
- Water Mapping Unit (9400)

9003 – CLEARED LAND MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Cleared Land Mapping Unit occurs as sparsely vegetated to non-vegetated disturbed land. It is usually graded land that is not vegetated or has begun to re-vegetate. Typical situations are graded lands that are under construction, and isolated house pad lots.

PHOTO INTERPRETATION SIGNATURE: Cleared Land is typically white or light tan in color with a smooth texture. However, if some herbaceous re-vegetation is beginning to occur, it may have mottled light tan and brown tones. Short shrubs will be small dark round individuals.

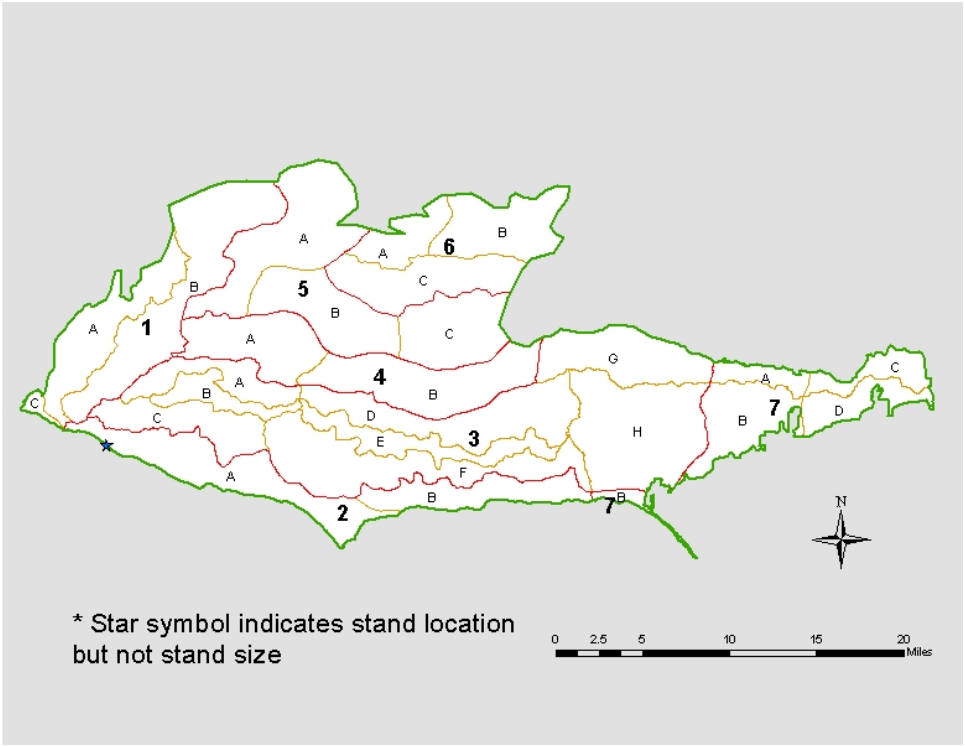
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- California Annual Grassland/Herbaceous Alliance (5000)
- Urban Buffer Herbaceous/Cleared Mapping Unit (9118)
- Post-fire and Post-clearance Shrub Regeneration Mapping Unit (9300)
- Sparsely Vegetated to Non-Vegetated Mapping Unit (9630)
- Firebreak Early Seral Herbaceous/Cleared Mapping Unit (9711)

9004 – GREAT SAND DUNE SPARSELY VEGETATED COASTAL STRAND MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: The Great Sand Dune Sparsely Vegetated Coastal Strand Mapping Unit is mapped at only one site from a Rapid Assessment Plot. It occurs on the landward side of the Pacific Coast Highway and hugs the coastal bluff. It is south-facing, flat to steep, with an undulating surface on a lower slope.

PHOTO INTERPRETATION SIGNATURE: The signature is white from the sand, with a smooth texture. There are patches of slight tan or brown tones from the sparse vegetation.

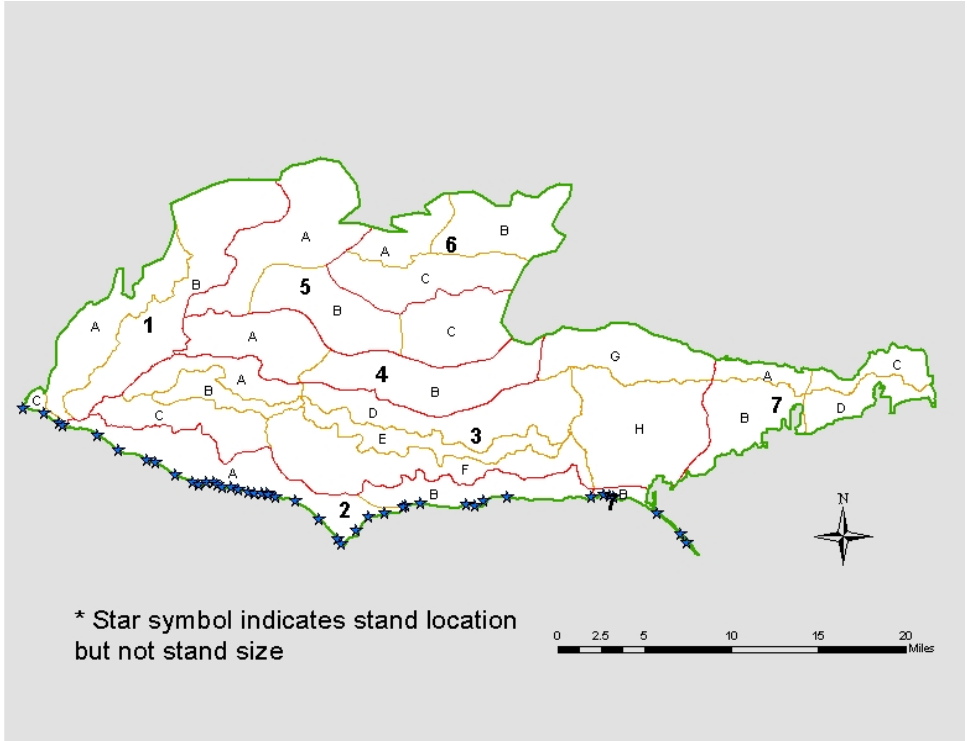
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Beach Sand Mapping Unit (9005)

9005 – BEACH SAND MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Beach Sand Mapping Unit occurs as the sparsely vegetated to non-vegetated sandy or cobble-covered beach area along the ocean coastline that occupies vacant land or a beach park. The ocean-ward extent of beach sand varies seasonally. The land is usually a level or gently sloping flat surface.

PHOTO INTERPRETATION SIGNATURE: Beach Sand is bright white in color with a very smooth texture, representing the substrate of which it is composed.

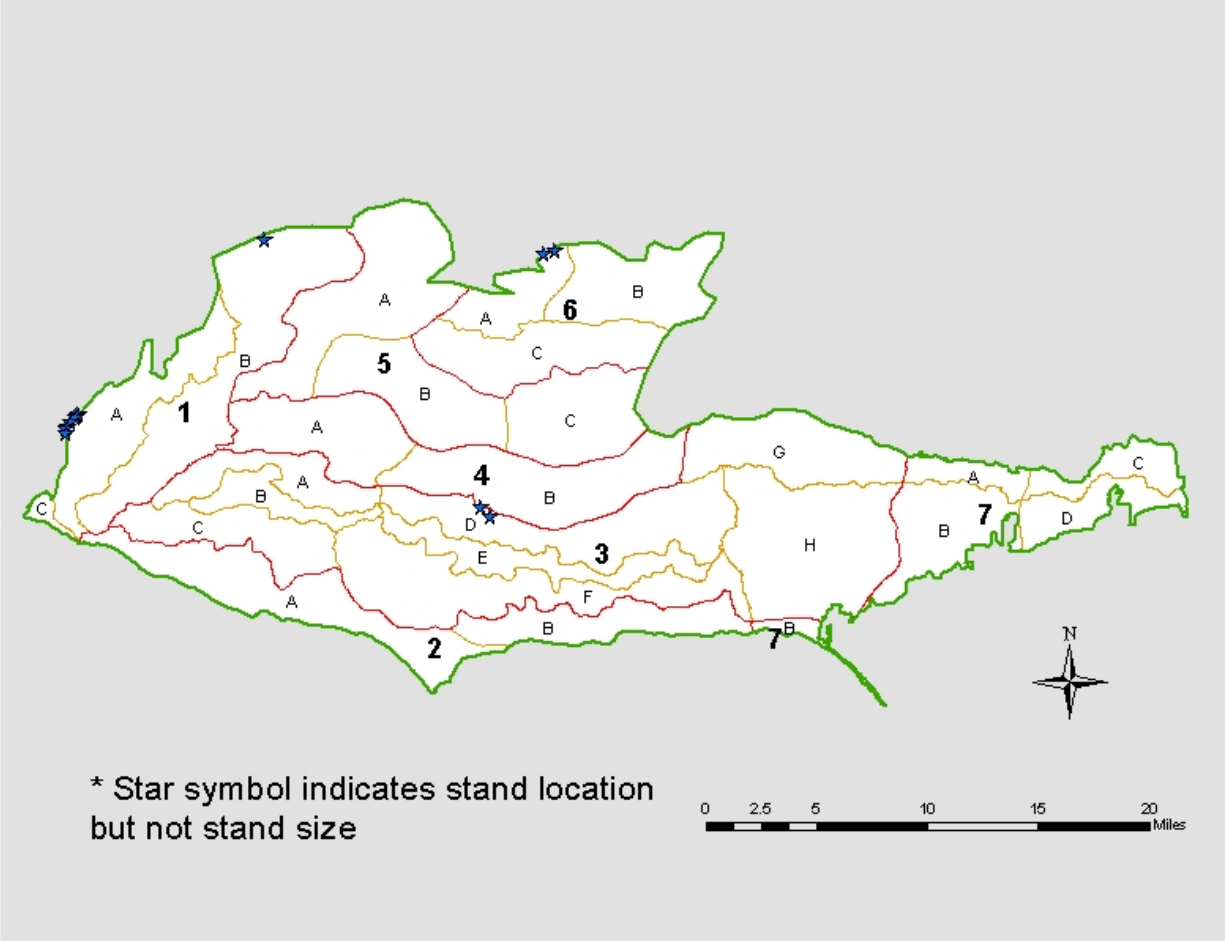
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Distichlis spicata-Ambrosia chamissonis* Herbaceous Association (4511)
- *Distichlis spicata-Arundo donax* Mapping Unit (4513)
- Great Sand Dune Sparsely Vegetated Coastal Strand Mapping Unit (9004)

9006 – SAND/GRAVEL BAR MAPPING UNIT



DISTRIBUTION:



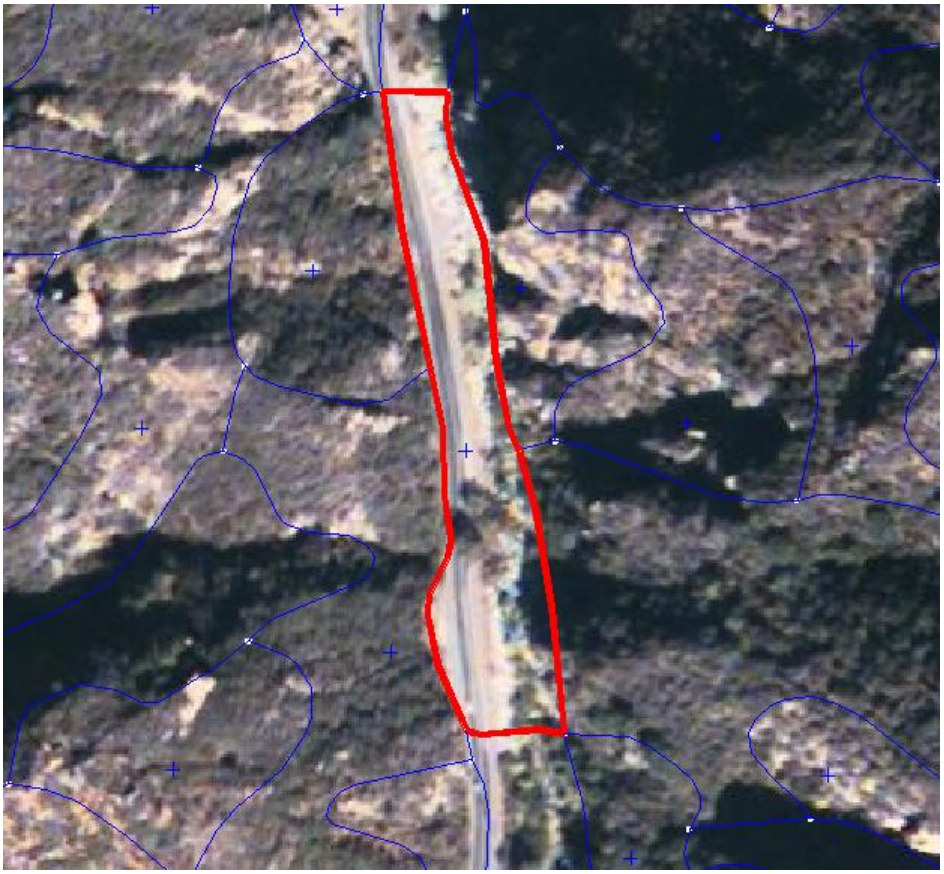
DESCRIPTION: Sand/Gravel Bar Mapping Unit occurs as the sparsely vegetated to non-vegetated sandy, cobble-covered, or gravelly area within a stream floodplain. A bar is a level flat surface that may be a transitory feature.

PHOTO INTERPRETATION SIGNATURE: Sand/Gravel Bars will be white to light tan or light gray in color with a smooth texture, reflecting the substrate of which it is composed. However, if some herbaceous re-vegetation is occurring, it may have mottled light tan and brown tones. Short shrubs will be small dark dots of various sizes. Shrub and herbaceous vegetation inclusions may be present within the unit.

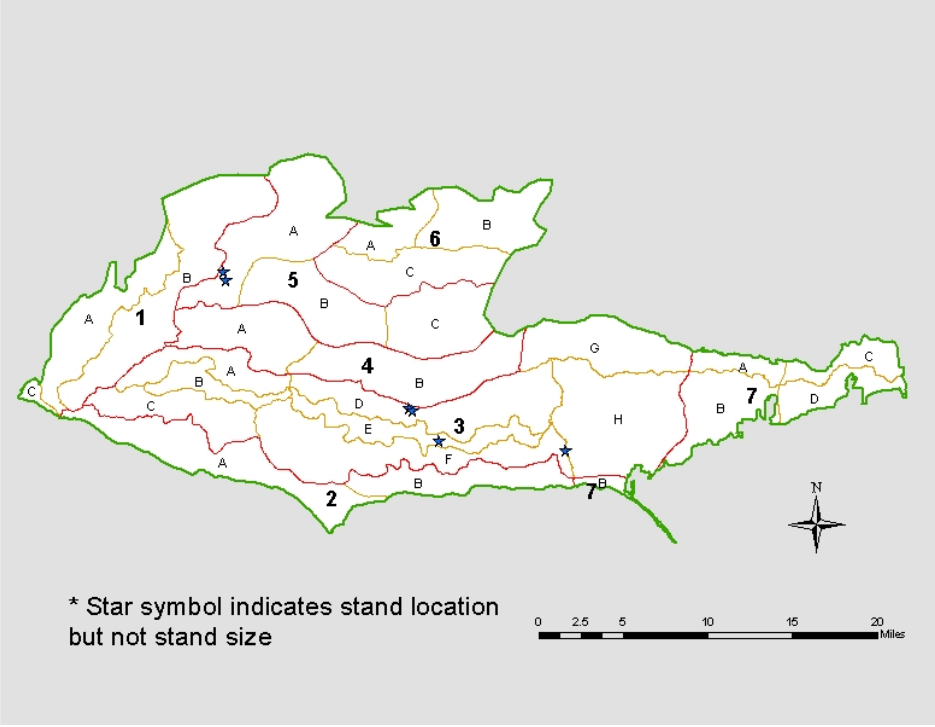
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salix* spp. scrubby-(*Platanus racemosa* scrubby)/*Baccharis salicifolia* Woodland/Forest Mapping Unit (1414)
- *Baccharis salicifolia* Riparian Shrubland Association (2212)
- *Lepidospartum squamatum* Shrubland Alliance (2220)
- *Salix exigua* Shrubland Alliance (3110)
- Riverine, Lacustrine, and Tidal Mudflats Mapping Unit (9002)
- Cleared Land Mapping Unit (9003)
- Rocky Streambed Mapping Unit (9007)

9007 – ROCKY STREAMBED MAPPING UNIT



DISTRIBUTION:



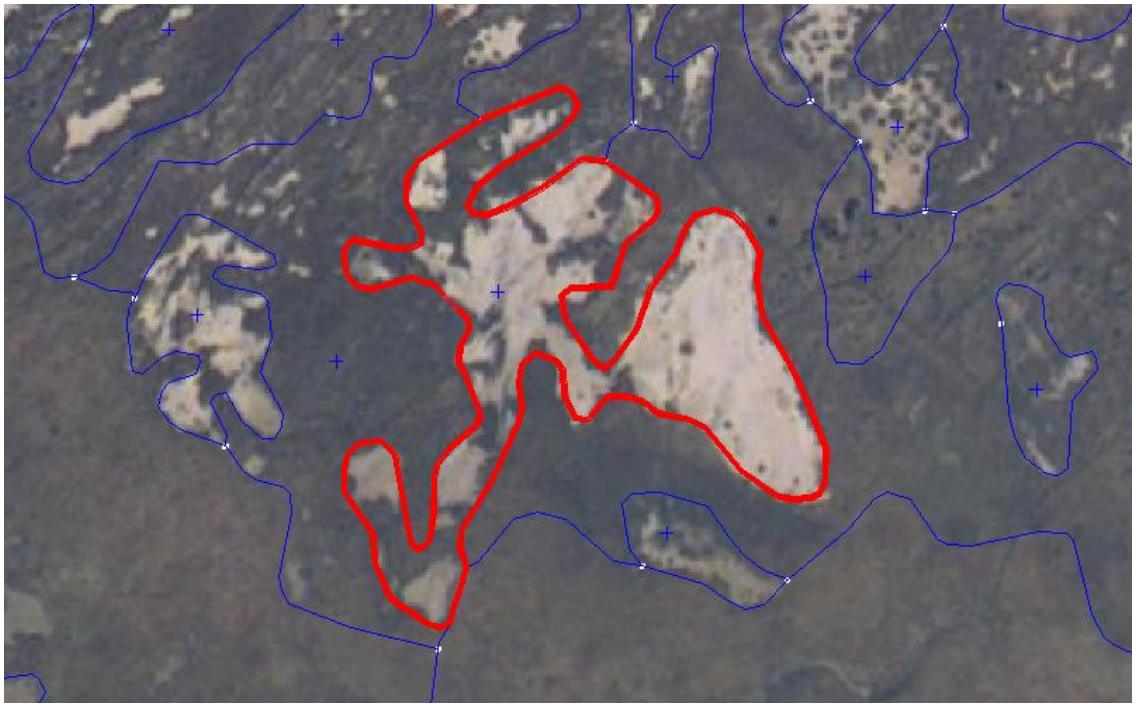
DESCRIPTION: Rocky Streambed Mapping Unit occurs on stream drainages where rock outcrops and loose rocks are exposed on the streambed/floodplain. The unit may be sparsely vegetated with riparian plants.

PHOTO INTERPRETATION SIGNATURE: Rocky Streambeds are typically white or gray in color with a smooth signature. A narrow vegetated drainage line or braided paths may be visible within the unit.

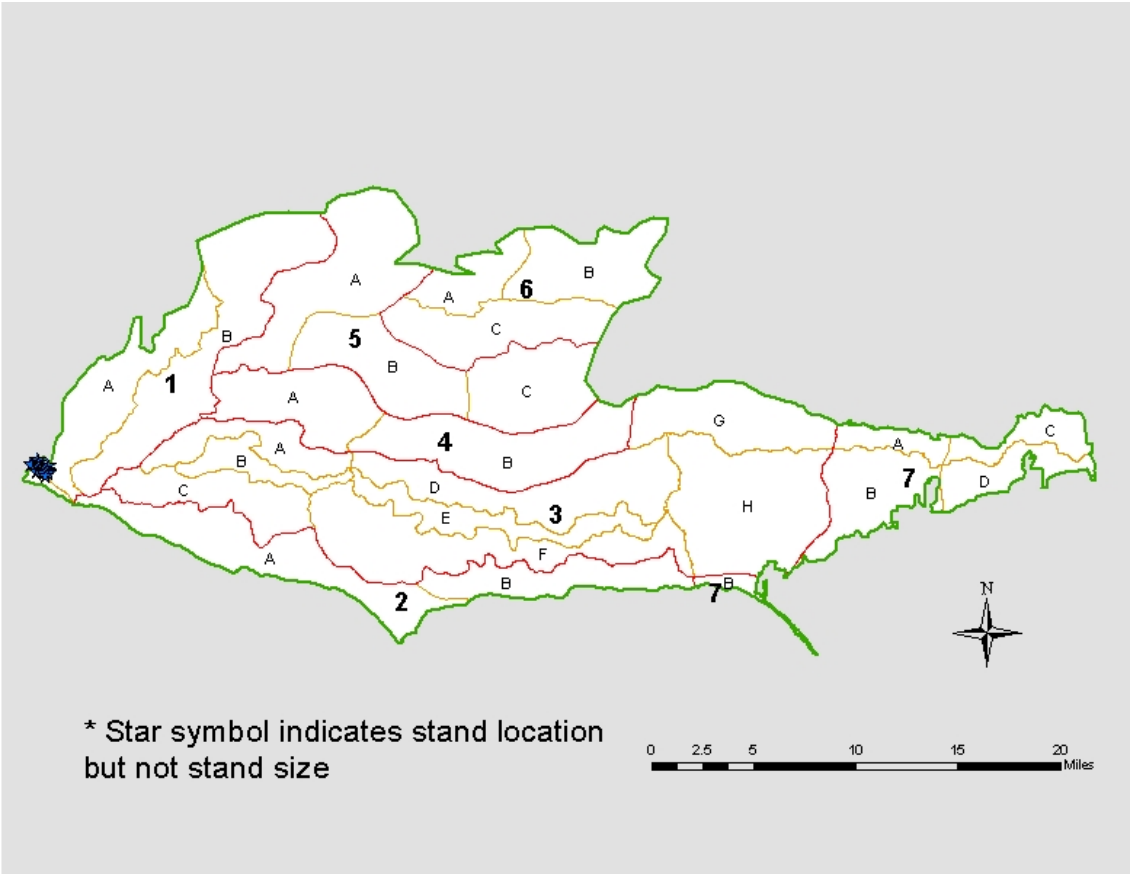
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salix* spp. scrubby-*(Platanus racemosa* scrubby*)/Baccharis salicifolia* Woodland/Forest Mapping Unit
- *Baccharis salicifolia* Riparian Shrubland Association (2212)
- Sand/Gravel Bar Mapping Unit (9006)

9008 – SALTPAN MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Saltpan Mapping Unit occurs as the sparsely vegetated to non-vegetated saltpan within a marshland area. The saltpan is usually a level, flat surface.

PHOTO INTERPRETATION SIGNATURE: Saltpans are usually white in color with a smooth texture. If slightly vegetated with herbaceous plants, they can be light tan.

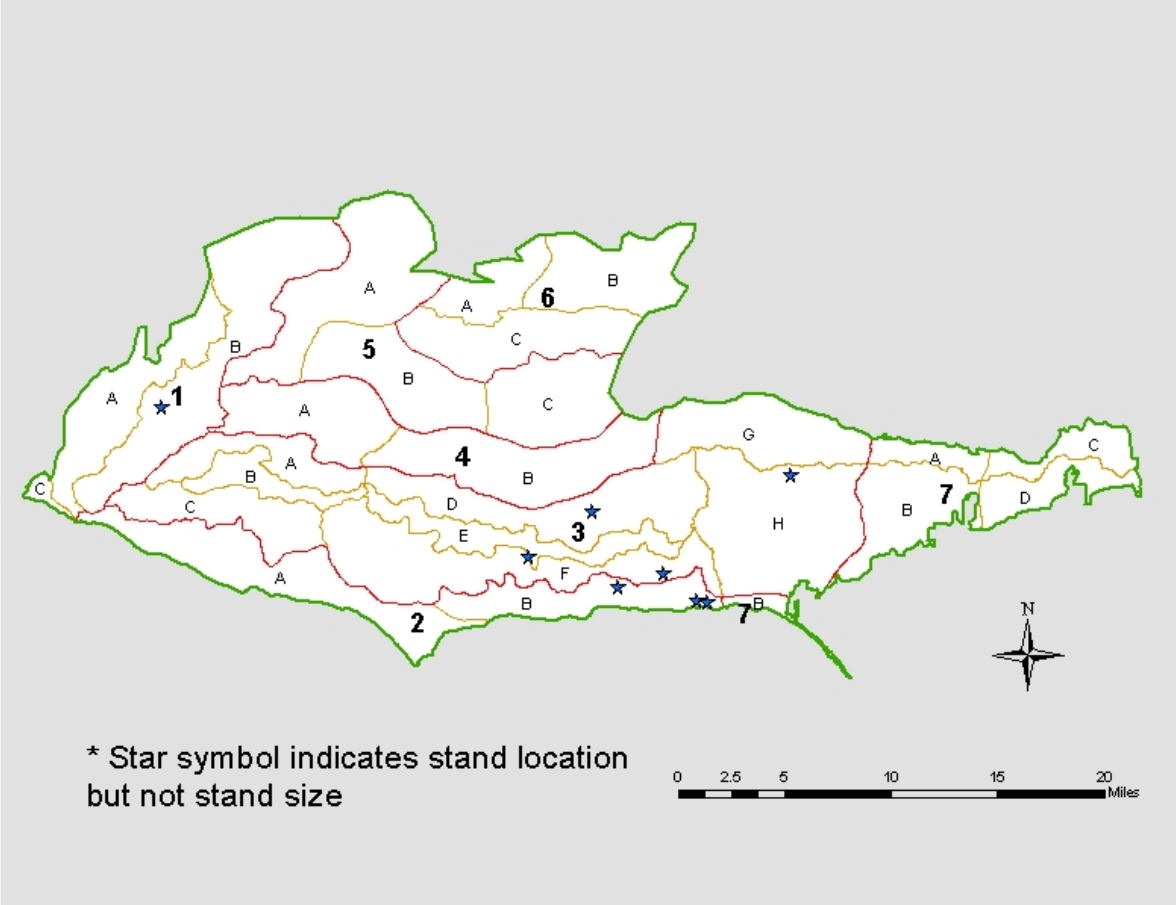
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salicornia virginica-Salicornia subterminalis* Herbaceous Association (4525)
- Cleared Land Mapping Unit (9003)

9010 – LANDSLIDE MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Landslide Mapping Unit is used to map major land slumping or sliding and rock-fall areas on extremely steep slopes. Landslide slumps may have remnant vegetation on some portions of the slide. Headwalls and rock-fall areas are usually sparsely vegetated to non-vegetated.

PHOTO INTERPRETATION SIGNATURE: Landslide headwalls and rock-fall areas tend to be white or light gray in color. They can have an uneven texture, reflecting the broken land surface. Sometimes there are shrub or herbaceous inclusions within the unit. Vegetated slumps contain remnants of the original pre-slide vegetation.

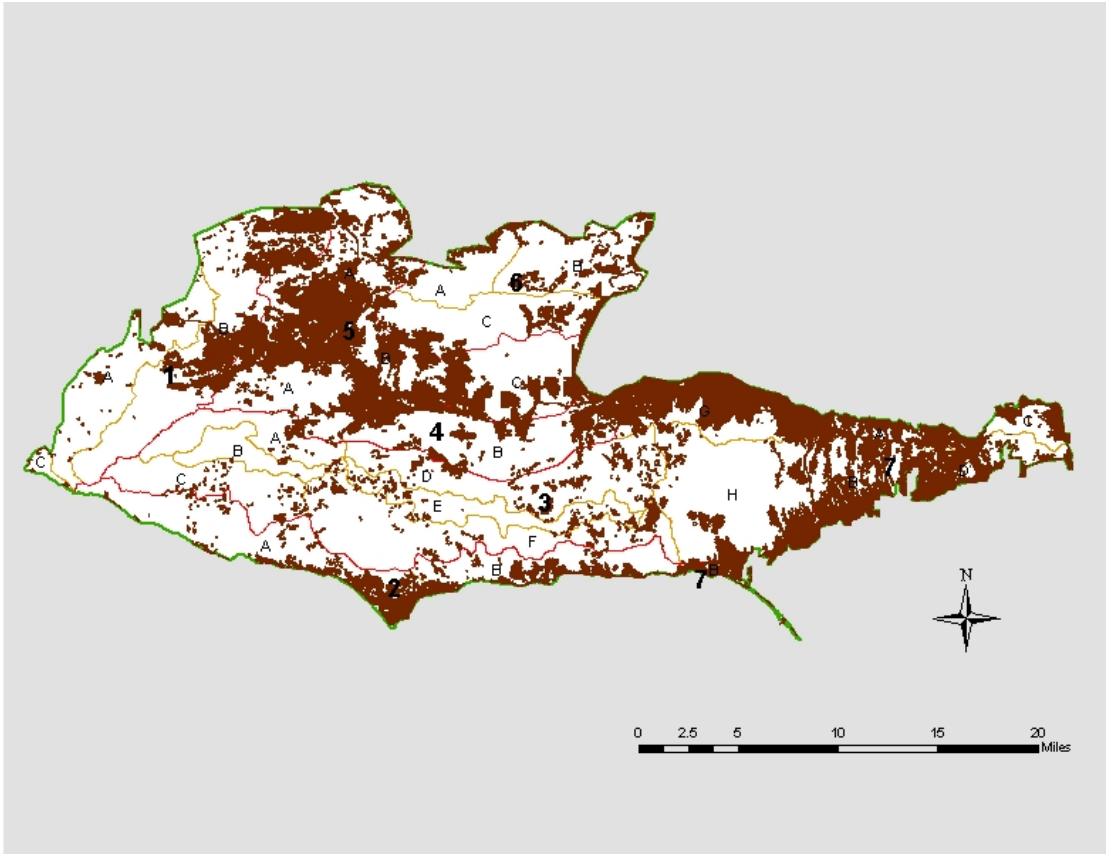
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Rock Outcrop Mapping Unit (9001)
- Rock Outcrop/Herbaceous Mapping Unit (90011)
- Cleared Land Mapping Unit (9003)

9100 – URBAN/DISTURBED OR BUILT-UP UNDIFFERENTIATED MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Urban/Disturbed or Built-Up Undifferentiated Mapping Unit is mapped where urban or built-up non-vacant land use is present. The overstory can be composed of exotic (horticultural/ornamental) trees or a mix of exotic and native trees.

PHOTO INTERPRETATION SIGNATURE: Urban/Disturbed or Built-Up areas usually contain man-made structures and associated impervious surfaces and landscaped grounds. The signature is a highly diverse mixture of uneven textures and colors typical of urbanization.

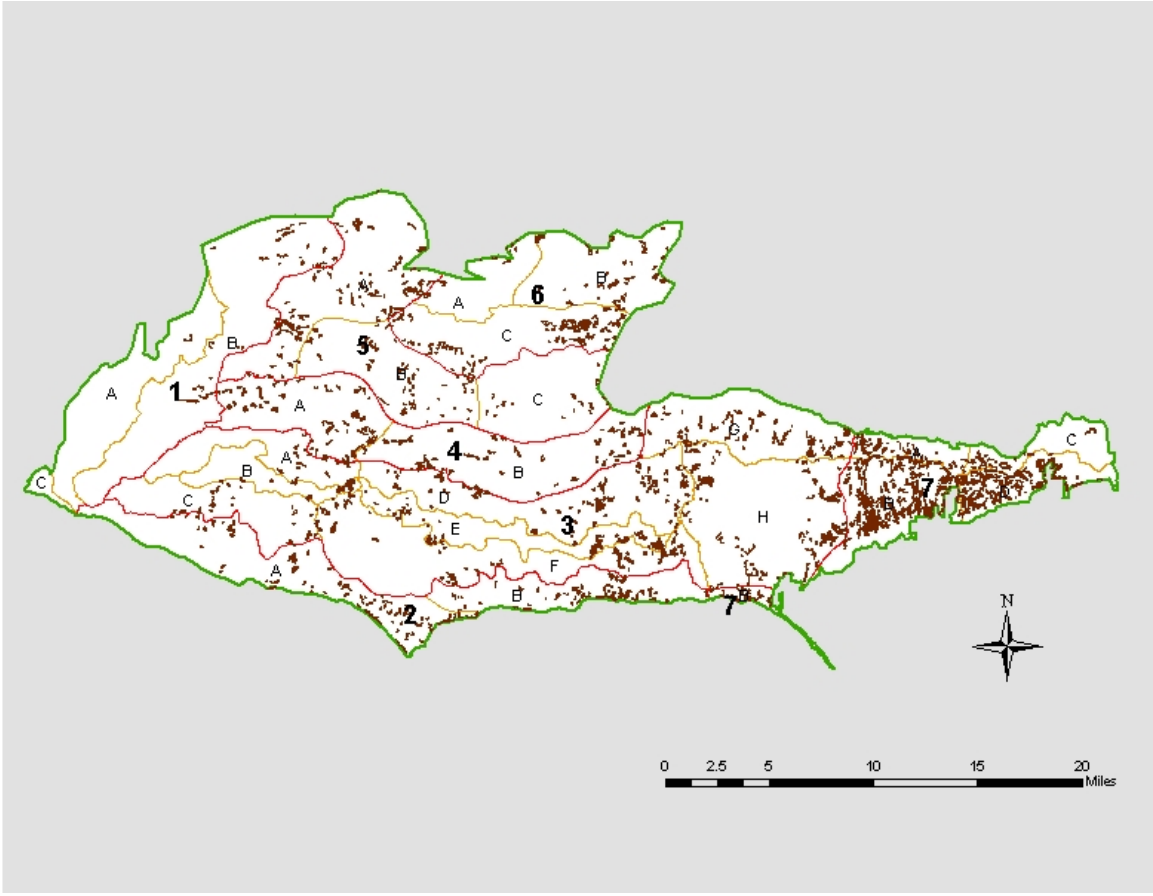
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Urban Buffer Shrubs Mapping Unit (9109)
- Urban *Quercus agrifolia* Mapping Unit (9110)
- Urban *Platanus racemosa* Mapping Unit (9114)
- Urban *Quercus lobata-Quercus agrifolia* Mapping Unit (9115)
- Urban Buffer Herbaceous/Cleared Mapping Unit (9118)
- Urban *Quercus lobata* Mapping Unit (9120)
- Urban *Platanus racemosa-Quercus agrifolia* Mapping Unit (9121)
- Urban *Platanus racemosa-Salix* spp. Mapping Unit (9122)

9109 – URBAN BUFFER SHRUBS MAPPING UNIT



DISTRIBUTION:



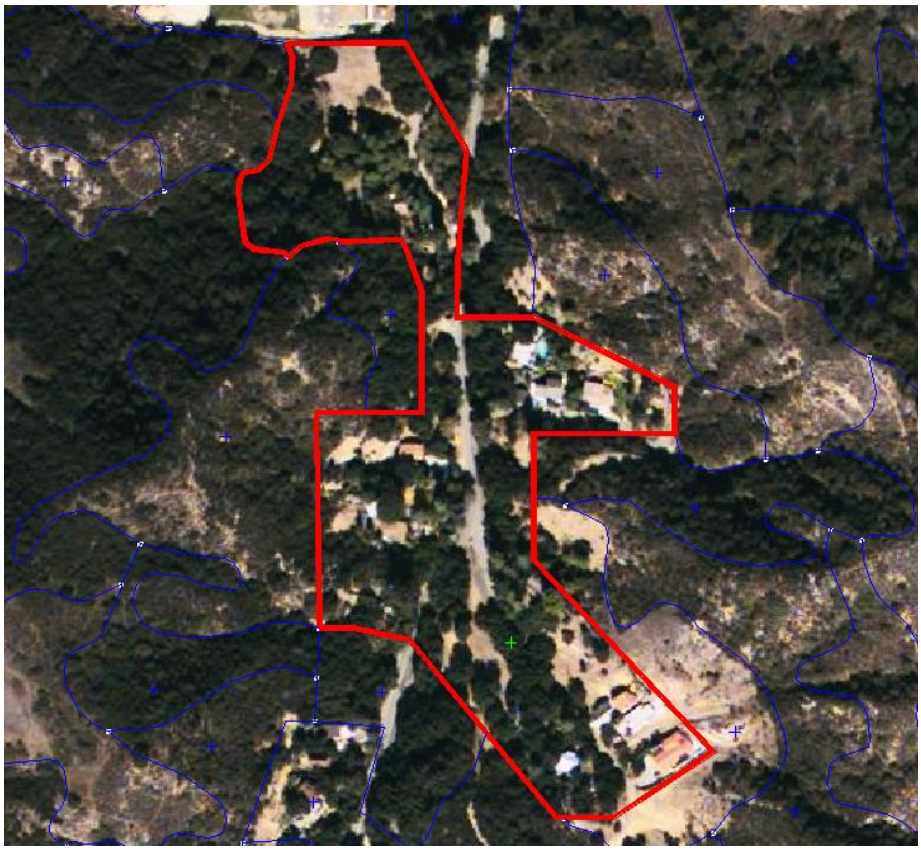
DESCRIPTION: Urban Buffer Shrubs Mapping Unit is typically used to map the transitional area between relatively undisturbed natural vegetation and built-up areas that can be classified as non-vacant and non-agricultural land use. It is composed of sparse to intermittent native and/or exotic shrubs, sometimes with herbaceous vegetation and emergent native and/or non-native trees. The area has usually been cleared or thinned at some point in time, sometimes repeatedly, and can be in various stages of re-vegetation. This mapping unit occupies all aspects, surface shapes, slope inclines, and slope placements.

PHOTO INTERPRETATION SIGNATURE: The Urban Buffer Shrubs can have a wide variety of signatures. It can have mottled colors and various textures reflecting tall and short shrubs, the different species present, and the openness of the stand.

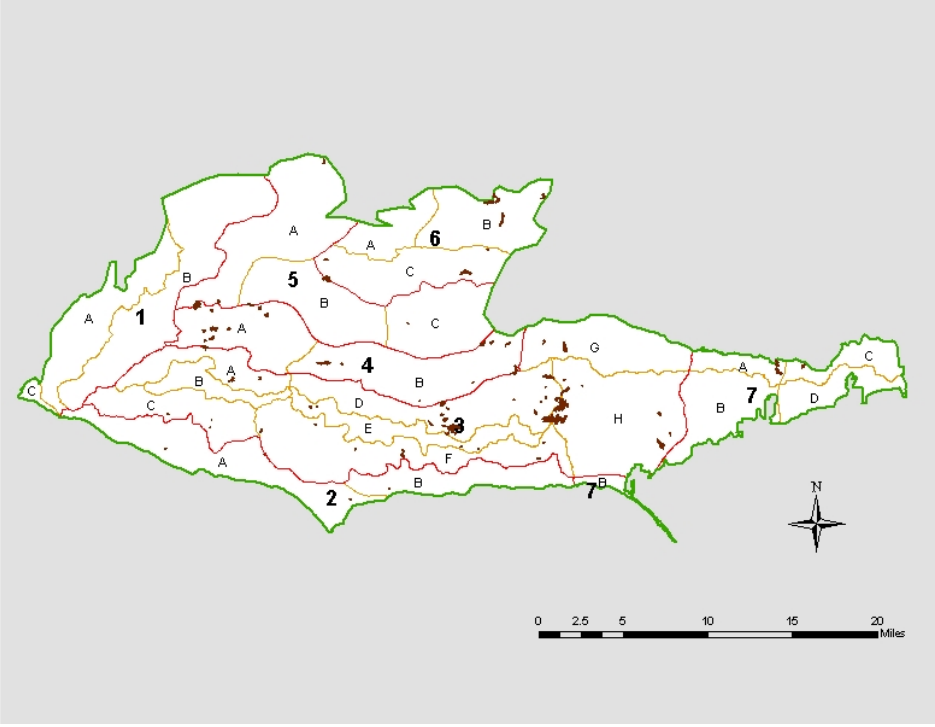
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Post-fire and Post-clearance Shrub Regeneration Mapping Unit (9300)
- Undifferentiated Ornamental Shrubland Mapping Unit (9540)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)
- Firebreak Early Seral Shrubland Mapping Unit (9710)

9110 – URBAN COAST LIVE OAK MAPPING UNIT
Urban *Quercus agrifolia* Mapping Unit



DISTRIBUTION:



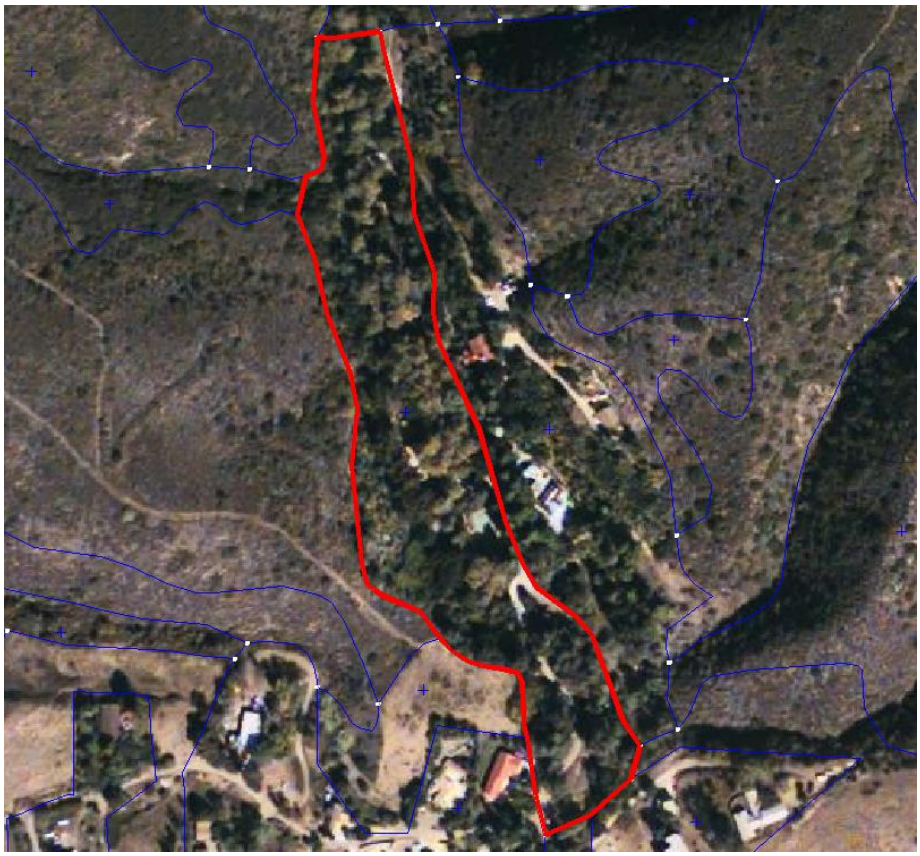
DESCRIPTION: Urban *Quercus agrifolia* Mapping Unit is mapped where urban or built-up non-vacant and non-agricultural land use is present with an overstory predominantly composed of *Q. agrifolia*. Some exotic or other native trees may be present. The mapping unit occupies all aspects and surface shapes, on gentle to steep bottoms to upper slopes. Disturbed *Q. agrifolia* stands within the urban buffer have been mapped as *Quercus agrifolia* Woodland/Forest Alliance (1110).

PHOTO INTERPRETATION SIGNATURE: Urban *Q. agrifolia* areas contain man-made structures and associated impervious surfaces and landscaped grounds, with a vegetated overstory of coarse-textured dark green trees rising high above the structures. The urban uses are a highly diverse mixture of uneven textures and colors, typical of urbanization. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with coarse texture.

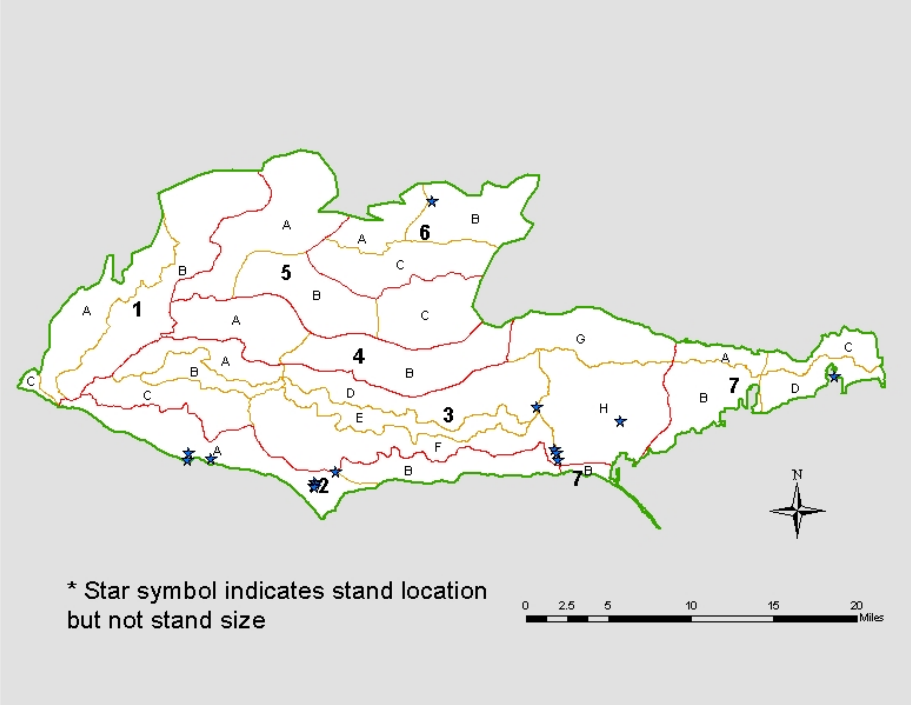
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- Urban/Disturbed or Built-up Undifferentiated Mapping Unit (9100)
- Urban *Quercus lobata-Quercus agrifolia* Mapping Unit (9115)
- Urban *Platanus racemosa-Quercus agrifolia* Mapping Unit (9121)
- *Quercus agrifolia* Woodland/Forest Mapping Unit (9644)

9114 – URBAN CALIFORNIA SYCAMORE MAPPING UNIT
Urban *Platanus racemosa* Mapping Unit



DISTRIBUTION:



DESCRIPTION: Urban *Platanus racemosa* Mapping Unit is mapped where urban or built-up non-vacant and non-agricultural land is present with an overstory predominantly composed of *Platanus*. Some exotic or other native trees may be present. It occupies primarily gently sloping neutral to concave bottoms and lower slopes along formerly riparian drainages.

PHOTO INTERPRETATION SIGNATURE: Urban *Platanus* areas contain man-made structures and associated impervious surfaces and landscaped grounds, with a vegetated overstory of coarse-textured green trees rising high above the structures. The urban uses are a highly diverse mixture of uneven textures and colors typical of urbanization. *Platanus* appears as individual very tall trees with irregular open crowns whose signature is medium green. The signature for *Platanus* is similar to that of *Salix* spp.; however, *Platanus* appears as separate individuals rather than in continuous clumps or groups.

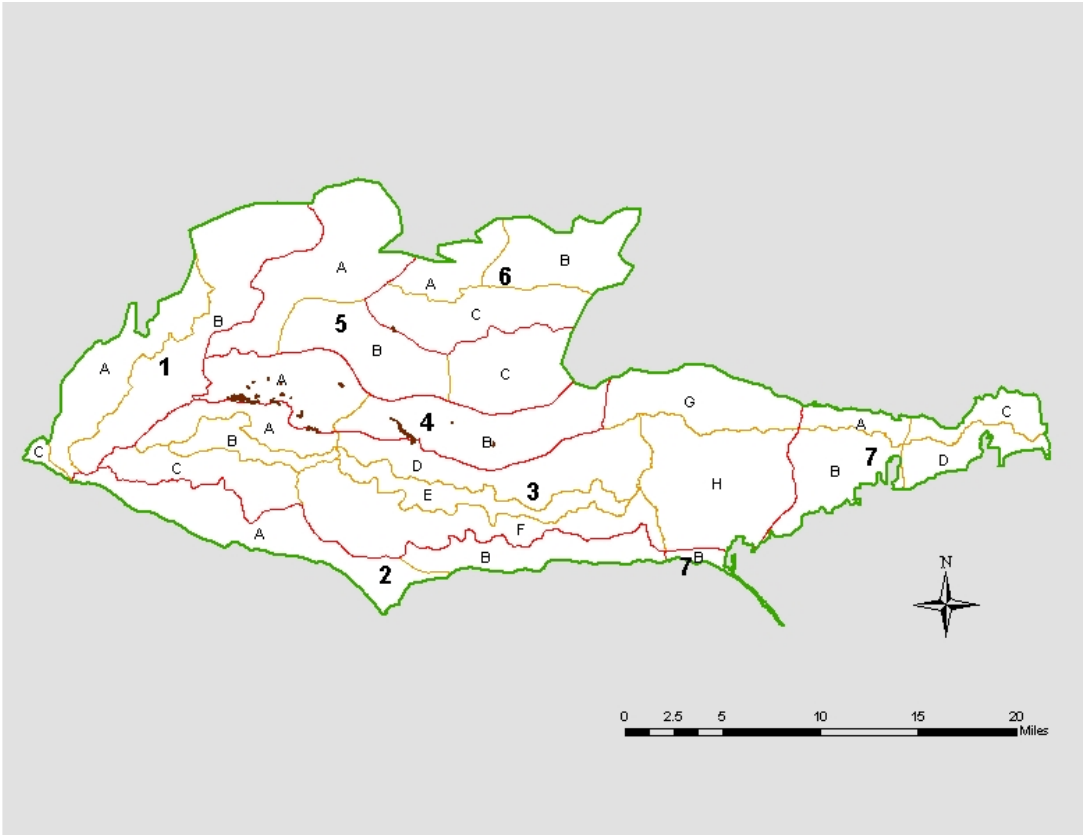
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Platanus racemosa* Woodland/Forest Alliance (1450)
- Urban/Disturbed or Built-up Undifferentiated Mapping Unit (9100)
- Urban *Platanus racemosa-Quercus agrifolia* Mapping Unit (9121)
- Urban *Platanus racemosa-Salix* spp. Mapping Unit (9122)

9115 – URBAN VALLEY OAK-COAST LIVE OAK MAPPING UNIT
Urban *Quercus lobata-Quercus agrifolia* Mapping Unit



DISTRIBUTION:



DESCRIPTION: Urban *Quercus lobata-Quercus agrifolia* Mapping Unit is mapped where urban or built-up non-vacant and non-agricultural land is present with an overstory composed of co-dominant *Q. lobata* and *Q. agrifolia.* Some exotic or other native trees may be present. It occupies all aspects and surface shapes on gentle to moderately steep bottoms to middle slopes.

PHOTO INTERPRETATION SIGNATURE: Urban *Q. lobata-Q. agrifolia* areas contain man-made structures and associated impervious surfaces and landscaped grounds, with a vegetated overstory of coarse-textured dark green and gray-green trees rising high above the structures. The urban uses are a highly diverse mixture of uneven textures and colors typical of urbanization. *Q. lobata* appears as tall, dark, gray-green individuals with large spreading irregular crowns. Small openings can be seen within the crown, which is more evident in older trees. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with coarse texture.

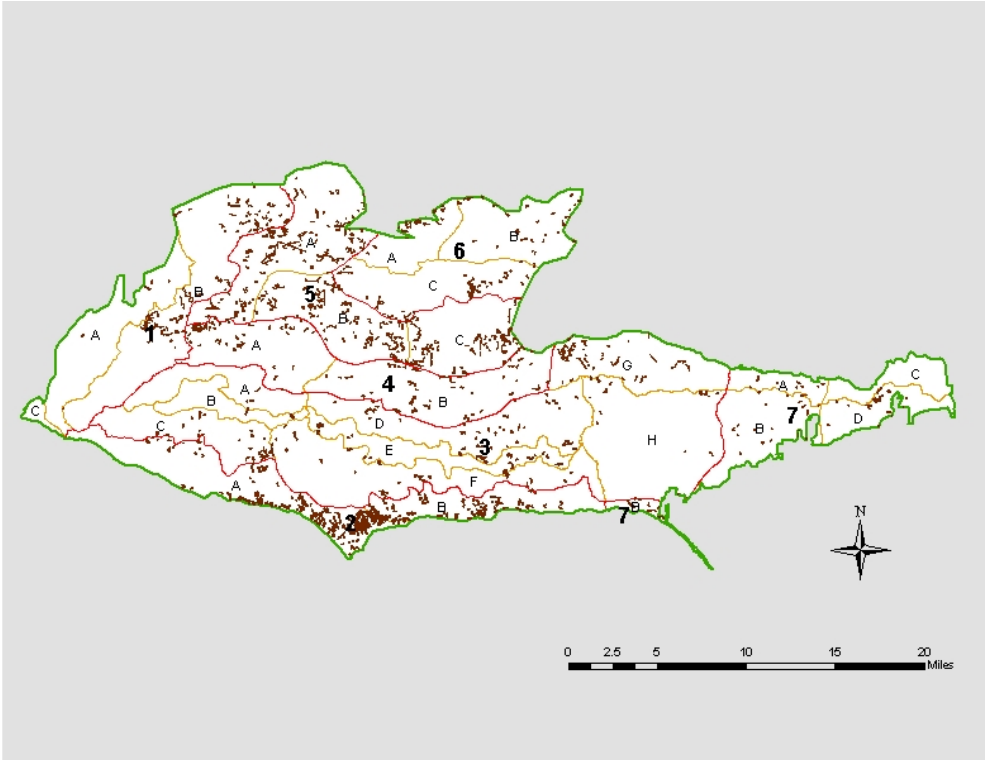
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- *Quercus lobata*/Annual Grass-Herb Woodland/Forest Association (1321)
- *Quercus lobata-Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association (1323)
- Urban/Disturbed or Built-up Undifferentiated Mapping Unit (9100)
- Urban *Quercus agrifolia* Mapping Unit (9110)
- Urban *Quercus lobata* Mapping Unit (9120)

9118 – URBAN BUFFER HERBACEOUS/CLEARED MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Urban Buffer Herbaceous/Cleared Mapping Unit is typically used to map the transitional area between relatively undisturbed natural vegetation and built-up areas that can be classified as non-vacant and non-agricultural land use. It is also used to map non-vegetated to grassy vacant lots within the urban area. It is composed of a sparse to continuous cover of herbaceous plants and, in some instances, has been graded. The area has usually been cleared at some point, sometimes repeatedly, and can be in various stages of herbaceous re-vegetation. A very low cover of shrubs or emergent trees may also be present. This mapping unit occupies all aspects, surface shapes, slope inclinations, and slope placements.

PHOTO INTERPRETATION SIGNATURE: Urban Buffer Herbaceous/Cleared is typically white or tan to brown in signature, with a smooth texture. Cleared or graded land tends to be white or light gray. Herbaceous vegetation is tan to brown in color. The coarse texture of emergent shrubs or trees, the colors depending on the species, may be present.

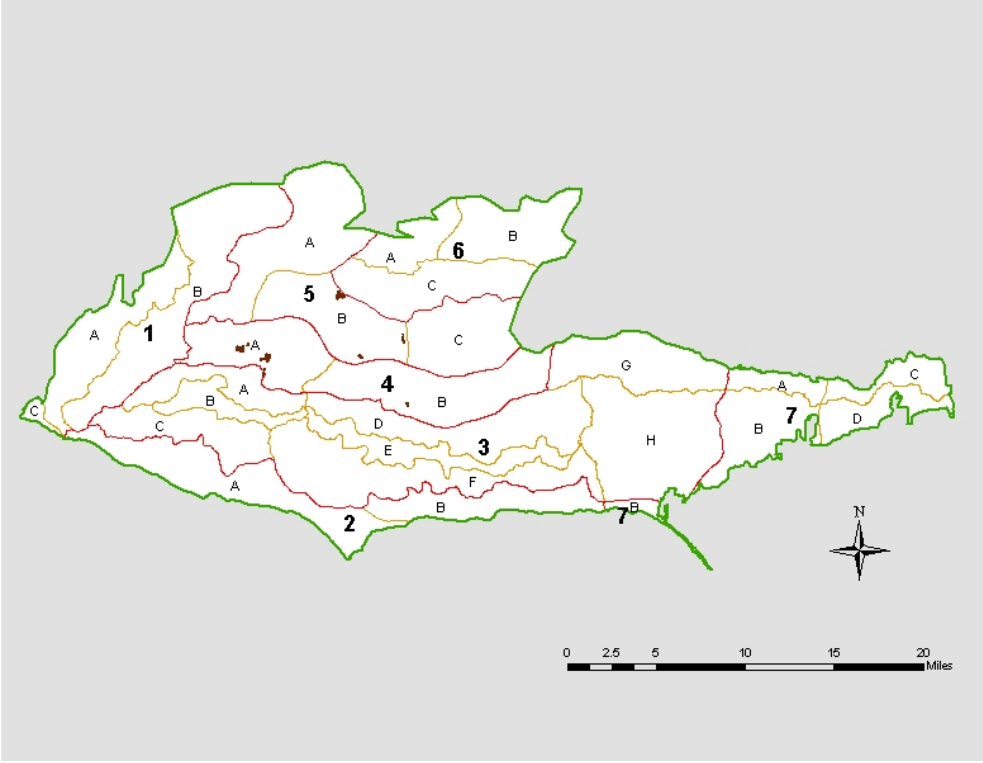
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- California Annual Grassland/Herbaceous Alliance (5000)
- Rock Outcrop Mapping Unit (9001)
- Rock Outcrop/Herbaceous Mapping Unit (90011)
- Cleared Land Mapping Unit (9003)
- Urban/Disturbed or Built-up Undifferentiated Mapping Unit (9100)
- Urban Buffer Shrubs Mapping Unit (9109)
- Post-fire and Post-clearance Shrub Regeneration Mapping Unit (9300)
- Artificial Cuts/Embankments: Sparsely Vegetated to Non-Vegetated Mapping Unit (9630)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)
- Firebreak Early Seral Shrubland Mapping Unit (9710)
- Firebreak Early Seral Herbaceous/Cleared Mapping Unit (9711)

9120 – URBAN VALLEY OAK MAPPING UNIT
Urban *Quercus lobata* Mapping Unit



DISTRIBUTION:



DESCRIPTION: Urban *Quercus lobata* Mapping Unit is mapped where urban or built-up non-vacant and non-agricultural land is present with an overstory predominantly composed of *Q. lobata*. Some exotic or other native trees may be present. It occupies all aspects and surface shapes on gentle to moderately steep bottoms to mid slopes.

PHOTO INTERPRETATION SIGNATURE: Urban *Q. lobata* areas contain man-made structures and associated impervious surfaces and landscaped grounds, with a vegetated overstory of coarse-textured gray-green trees rising high above the structures. The urban uses are a highly diverse mixture of uneven textures and colors typical of urbanization. *Q. lobata* appears as tall, dark, gray-green individuals with large spreading irregular crowns. Small openings can be seen within the crown, which is more evident in older trees.

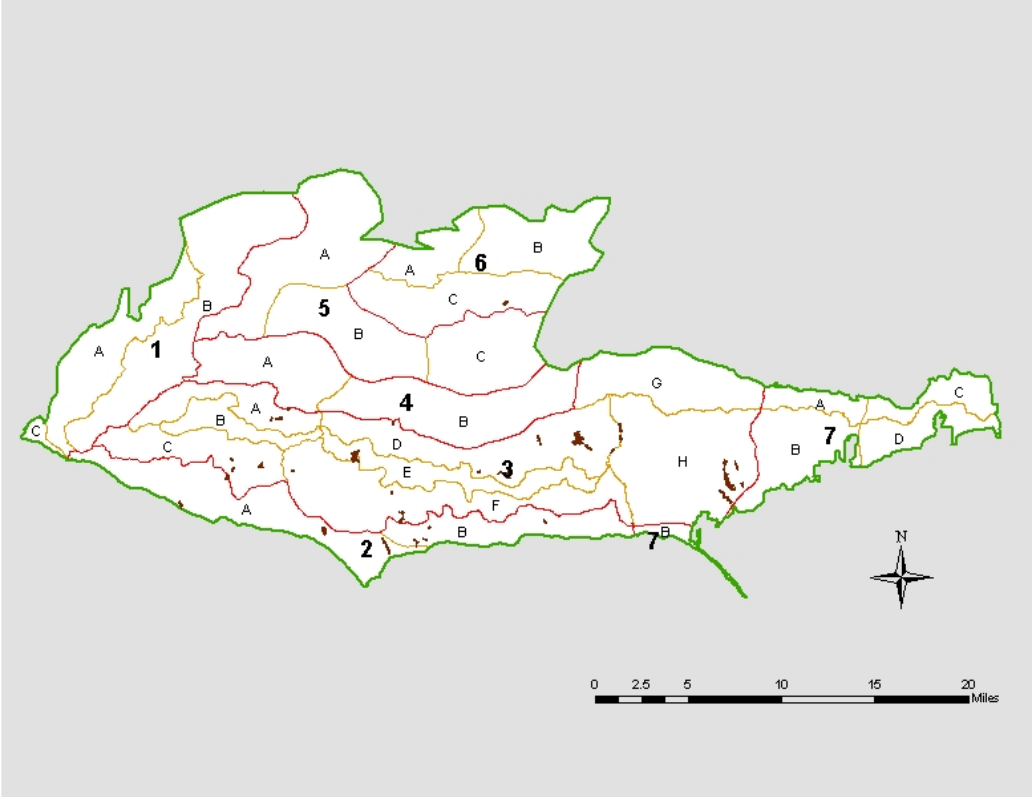
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus lobata*/Annual Grass-Herb Woodland/Forest Association (1321)
- *Quercus lobata-Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association (1323)
- Urban/Disturbed or Built-up Undifferentiated Mapping Unit (9100)
- Urban *Quercus agrifolia* Mapping Unit (9110)
- Urban *Quercus lobata-Quercus agrifolia* Mapping Unit (9115)

9121 – URBAN CALIFORNIA SYCAMORE-COAST LIVE OAK MAPPING UNIT
Urban *Platanus racemosa-Quercus agrifolia* Mapping Unit



DISTRIBUTION:



DESCRIPTION: Urban *Platanus racemosa-Quercus agrifolia* Mapping Unit is mapped where urban or built up non-vacant and non-agricultural land is present with an overstory composed of co-dominant *Platanus* and *Q. agrifolia.* Some exotic or other native trees may be present. It occupies primarily gently sloping neutral to concave bottoms and lower slopes along formerly riparian drainages.

PHOTO INTERPRETATION SIGNATURE: Urban *Platanus-Q. agrifolia* areas contain man-made structures and associated impervious surfaces and landscaped grounds, with a vegetated overstory of coarse-textured green and dark green trees rising high above the structures. The urban uses are a highly diverse mixture of uneven textures and colors typical of urbanization. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with coarse texture. *Platanus* appears as individual very tall trees with irregular open crowns whose signature is medium green. The signature for *Platanus* is similar to that of *Salix* spp.; however, *Platanus* appears as separate individuals rather than in continuous clumps or groups.

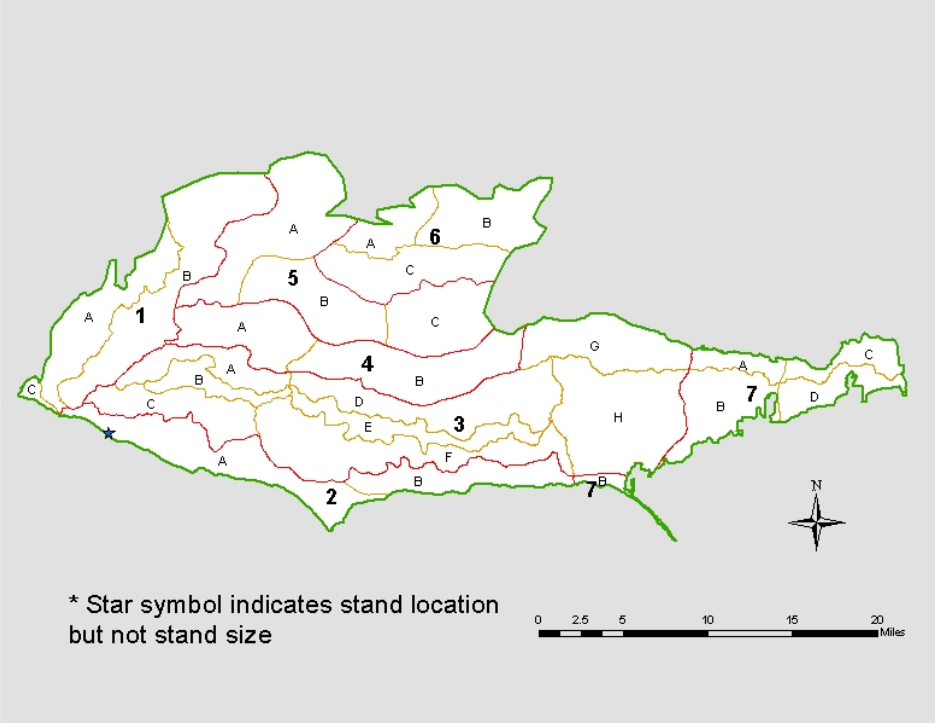
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- *Platanus racemosa-Quercus agrifolia* South Coast Woodland/Forest Association (1452)
- *Platanus racemosa-Quercus agrifolia/Baccharis salicifolia* South Coast Woodland/Forest Association (1458)
- *Platanus racemosa-Quercus agrifolia-Salix lasiolepis* Woodland/Forest Association (6452)
- Urban/Disturbed or Built-up Undifferentiated Mapping Unit (9100)
- Urban *Quercus agrifolia* Mapping Unit (9110)
- Urban *Platanus racemosa* Mapping Unit (9114)
- Urban *Quercus lobata-Quercus agrifolia* Mapping Unit (9115)
- Urban *Platanus racemosa-Salix* spp. Mapping Unit (9122)

9122 – URBAN CALIFORNIA SYCAMORE-WILLOW MAPPING UNIT
Urban *Platanus racemosa-Salix* spp. Mapping Unit



DISTRIBUTION:



DESCRIPTION: Urban *Platanus racemosa-Salix* spp. Mapping Unit is mapped where urban or built-up non-vacant and non-agricultural land is present with an overstory composed of co-dominant *Platanus* and *Salix* spp. Some exotic or other native trees may be present. It occupies primarily gently sloping neutral to concave bottoms and lower slopes along formerly riparian drainages. This mapping unit was mapped at only one site in the database, Sycamore Cove Campground.

PHOTO INTERPRETATION SIGNATURE: Urban *Platanus-Salix* spp. areas contain man-made structures and associated impervious surfaces and landscaped grounds, with a vegetated overstory of coarse-textured dark green trees rising high above the structures. The urban uses are a highly diverse mixture of uneven textures and colors typical of urbanization. *Platanus* appears as individual very tall trees with irregular open crowns whose signature is medium green. The signature for *Platanus* is similar to that of *Salix* spp.; however, *Platanus* appears as separate individuals rather than in continuous clumps or groups. *Salix* spp. are green to gray-green to silver-highlighted green in tall dense clumps, with variable to homogeneous texture.

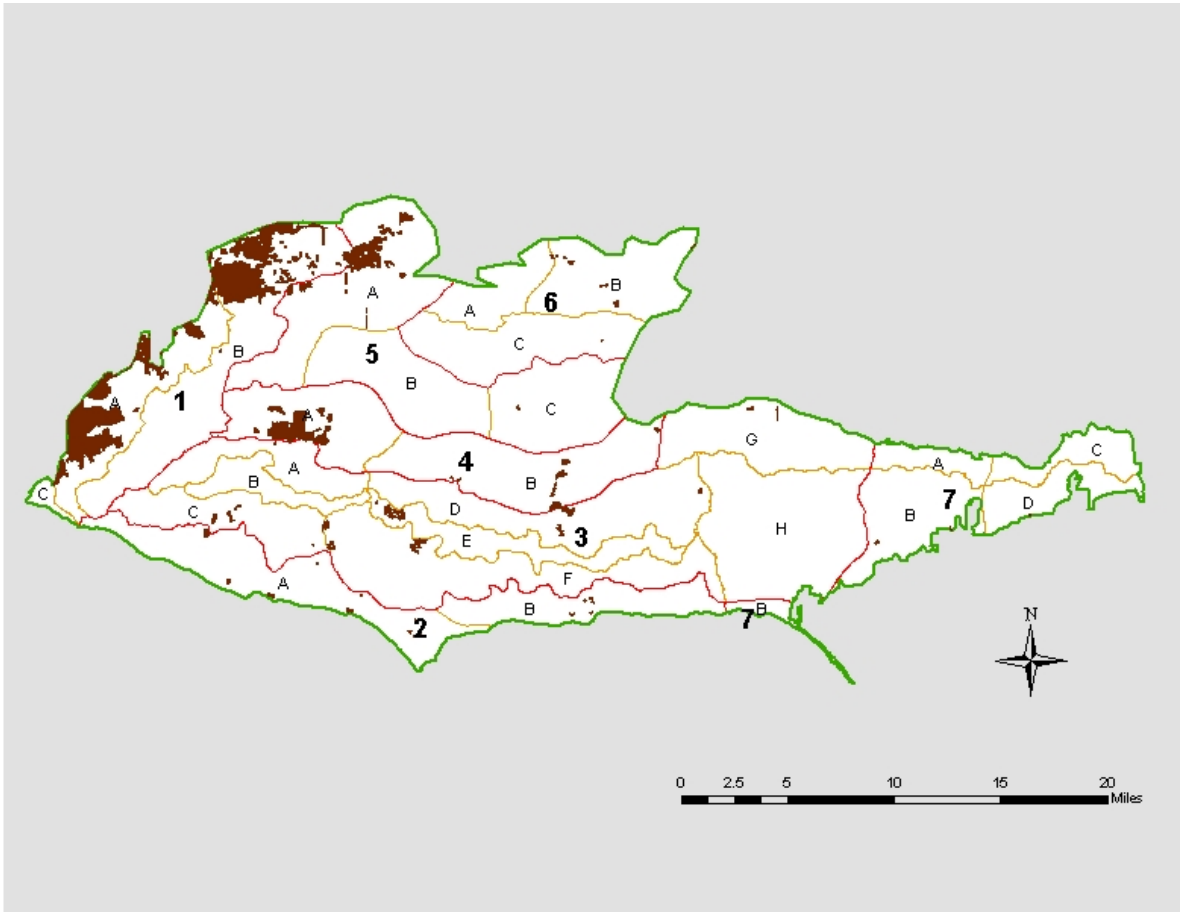
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Salix* spp. Woodland/Forest Superalliance (1410)
- *Platanus racemosa-Quercus agrifolia-Salix lasiolepis* Woodland/Forest Association (6452)
- Urban/Disturbed or Built-up Undifferentiated Mapping Unit (9100)
- Urban *Platanus racemosa* Mapping Unit (9114)
- Urban *Platanus racemosa-Quercus agrifolia* Mapping Unit (9121)

9200 – AGRICULTURE MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Agriculture Mapping Unit is mapped where non-built up agricultural land use is present. Agricultural uses include field crops, orchards, nursery fields, and pastures.

PHOTO INTERPRETATION SIGNATURE: The signature for Agriculture varies widely. Field crops can vary from a smooth flat light tan to brown signature of graded, tilled or fallow fields and pastures, to a green homogeneous smooth texture of field crops and pastures, or parallel green coarse strips of row crops and nursery fields. Orchards and vineyards can be an array of green coarse individual trees or large shrubs, or in parallel linear thin rows.

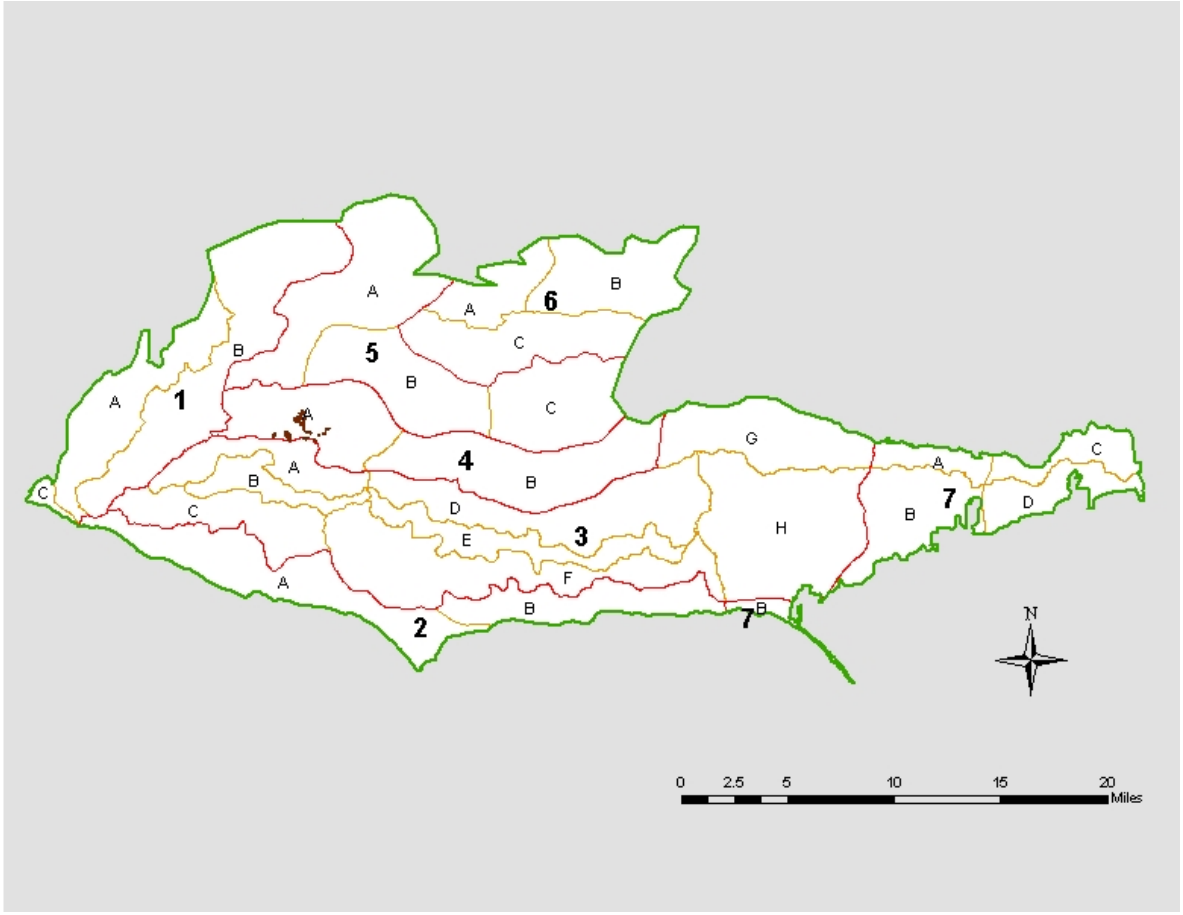
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- California Annual Grassland/Herbaceous Alliance (5000)
- Cleared Land Mapping Unit (9003)
- *Quercus lobata* in Agriculture Mapping Unit (9210)
- *Quercus agrifolia* in Agriculture Mapping Unit (9220)
- *Quercus lobata-Quercus agrifolia* in Agriculture Mapping Unit (9230)

9210 – VALLEY OAK IN AGRICULTURE MAPPING UNIT
Quercus lobata in Agriculture Mapping Unit



DISTRIBUTION:



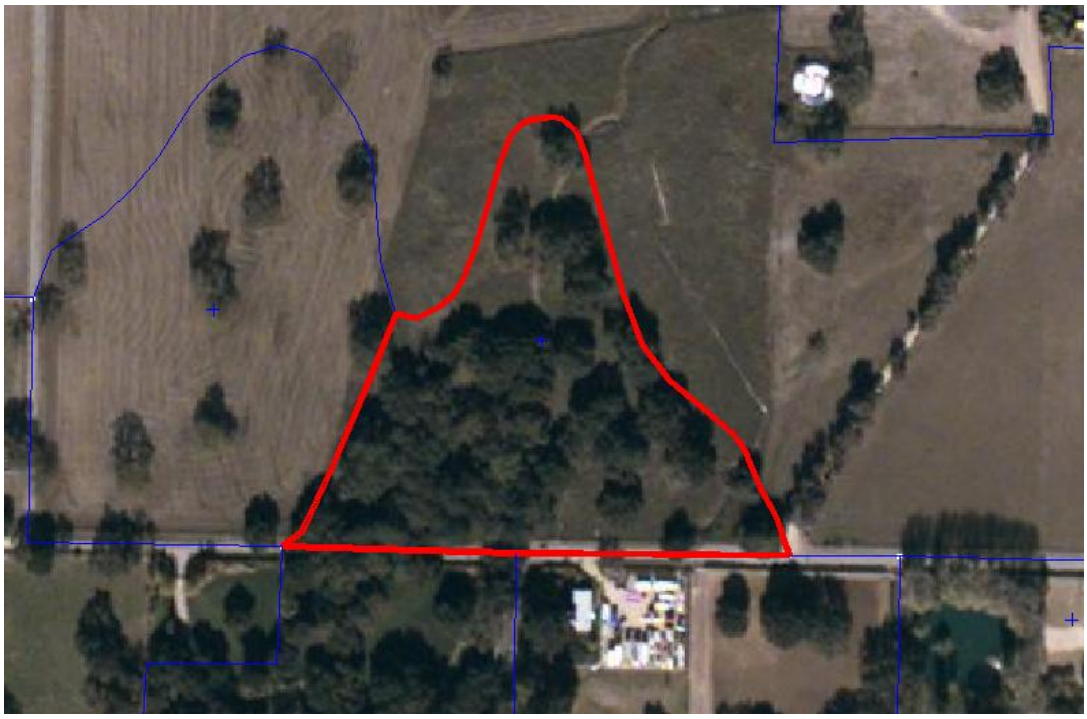
DESCRIPTION: *Quercus lobata* in Agriculture Mapping Unit is mapped where there is canopy of *Q. lobata* over agricultural land use. Agricultural uses include field crops and pastures.

PHOTO INTERPRETATION SIGNATURE: *Quercus lobata* in Agriculture has a smooth flat tan to brown signature of graded, tilled or fallow fields and pastures with an overstory of scattered trees or groups of tall coarse individual trees. *Q. lobata* appears as tall, dark, gray-green individuals with large spreading irregular crowns. Small openings can be seen within the crown, which is more evident in older trees.

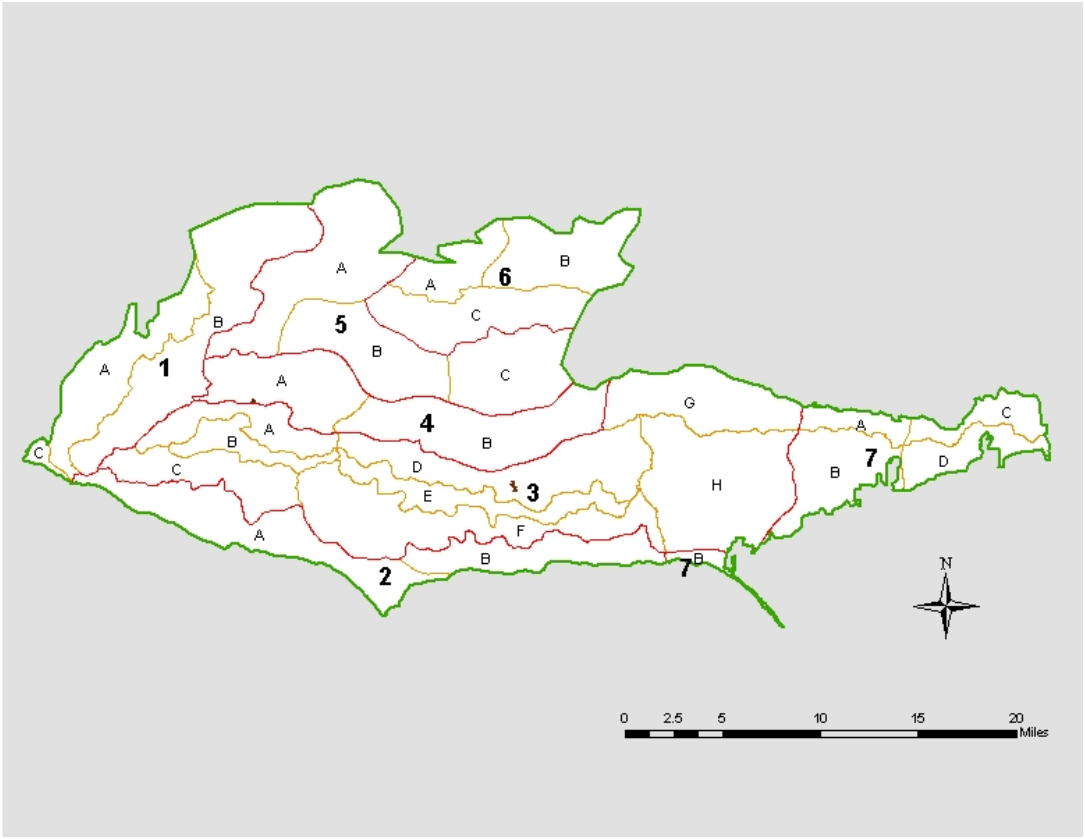
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- *Quercus lobata*/Annual Grass-Herb Woodland/Forest Association (1321)
- *Quercus lobata*-*Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association (1323)
- California Annual Grassland/Herbaceous Alliance (5000)
- Agriculture Mapping Unit (9200)
- *Quercus agrifolia* in Agriculture Mapping Unit (9220)
- *Quercus lobata*-*Quercus agrifolia* in Agriculture Mapping Unit (9230)

9220 – COAST LIVE OAK IN AGRICULTURE MAPPING UNIT
Quercus agrifolia in Agriculture Mapping Unit



DISTRIBUTION:



DESCRIPTION: *Quercus agrifolia* in Agriculture Mapping Unit is mapped where there is canopy of *Q. agrifolia* over agricultural land use. Agricultural uses include field crops and pastures.

PHOTO INTERPRETATION SIGNATURE: *Quercus agrifolia* in Agriculture has a smooth flat tan to brown signature of graded, tilled or fallow fields and pastures with an overstory of scattered trees or groups of tall coarse individual trees. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with coarse texture.

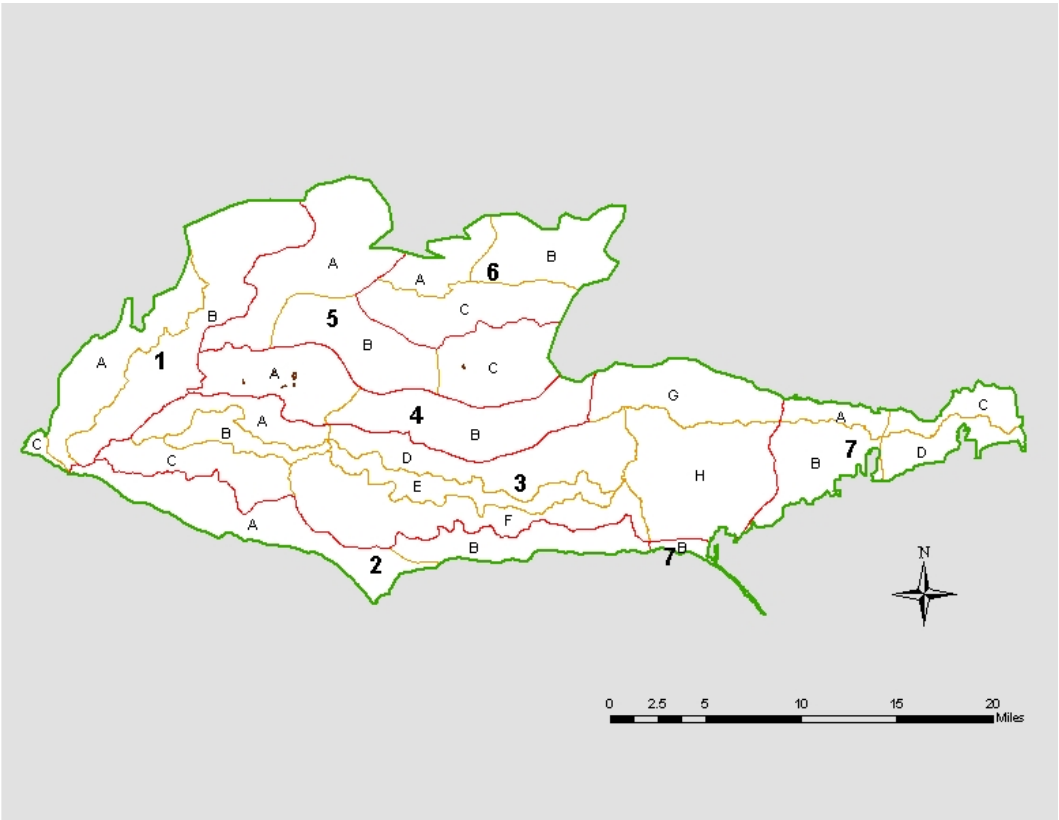
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- *Quercus lobata*/Annual Grass-Herb Woodland/Forest Association (1321)
- *Quercus lobata-Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association (1323)
- California Annual Grassland/Herbaceous Alliance (5000)
- Agriculture Mapping Unit (9200)
- *Quercus lobata* in Agriculture Mapping Unit (9210)
- *Quercus lobata-Quercus agrifolia* in Agriculture Mapping Unit (9230)

9230 – VALLEY OAK-COAST LIVE OAK IN AGRICULTURE MAPPING UNIT
***Quercus lobata-Quercus agrifolia* in Agriculture Mapping Unit**



DISTRIBUTION:



DESCRIPTION: *Quercus lobata-Quercus agrifolia* in Agriculture Mapping Unit is mapped where there is canopy of co-dominant *Q. lobata* and *Q. agrifolia* over agricultural land use. Agricultural uses include field crops and pastures.

PHOTO INTERPRETATION SIGNATURE: *Quercus lobata-Quercus agrifolia* in Agriculture has a smooth flat tan to brown signature of graded, tilled or fallow fields and pastures with an overstory of scattered trees to groups of tall coarse individual trees. *Q. lobata* appears as tall, dark, gray-green individuals with large spreading irregular crowns. Small openings can be seen within the crown, which is more evident in older trees. *Q. agrifolia* appears as tall dark green to black individuals or groups of trees which have large irregularly-shaped crowns with coarse texture.

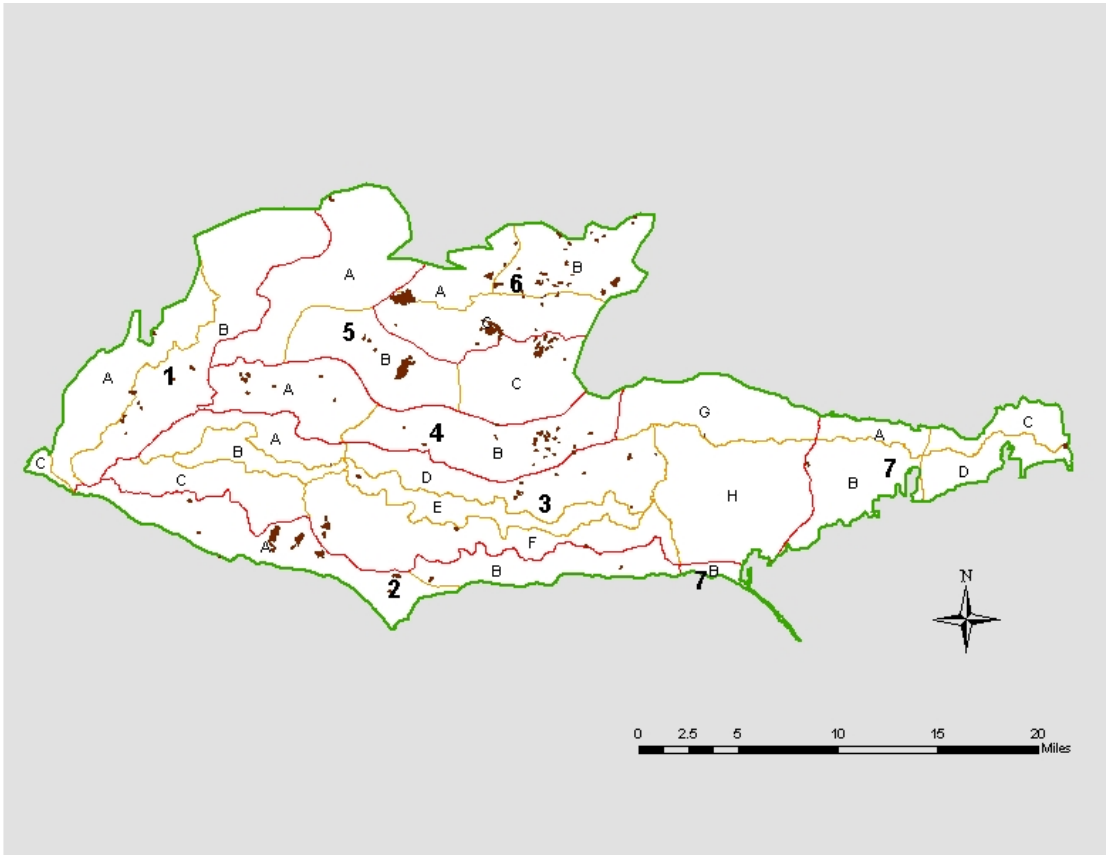
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- *Quercus lobata*/Annual Grass-Herb Woodland/Forest Association (1321)
- *Quercus lobata-Quercus agrifolia*/Annual Grass-Herb Woodland/Forest Association (1323)
- California Annual Grassland/Herbaceous Alliance (5000)
- Agriculture Mapping Unit (9200)
- *Quercus lobata* in Agriculture Mapping Unit (9210)
- *Quercus agrifolia* in Agriculture Mapping Unit (9220)

9300 – POST-FIRE AND POST-CLEARANCE SHRUB REGENERATION MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Post-fire and Post-clearance Shrub Regeneration Mapping Unit is mapped where shrubs have begun to re-vegetate after a fire, grading or clearing, resulting in very short and/or sparse vegetation.

PHOTO INTERPRETATION SIGNATURE: Post-fire and Post-clearance Shrub Regeneration Mapping Unit has a smooth to stippled texture. Colors may be homogeneous or mottled, depending on the different species present and the substrate color. The stand is difficult to photo interpret for species and type.

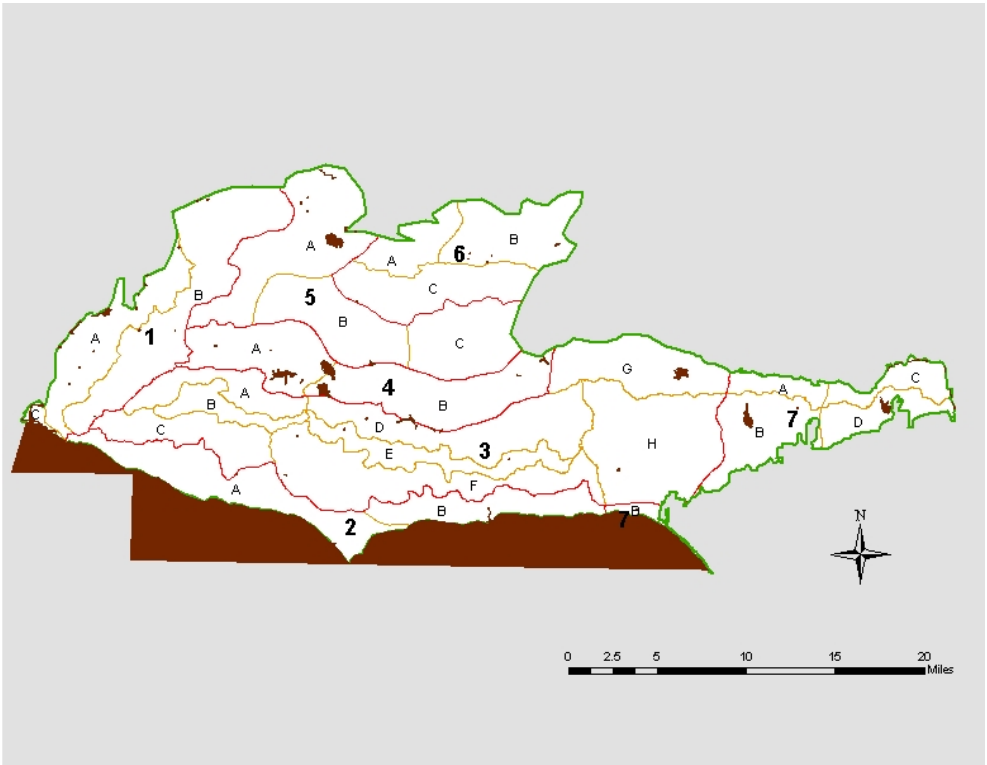
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Cleared Land Mapping Unit (9003)
- Sparsely Vegetated to Non-Vegetated Mapping Unit (9630)
- Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)
- Firebreak Early Seral Shrubland Mapping Unit (9710)
- Firebreak Early Seral Herbaceous/Cleared Mapping Unit (9711)

9400 – WATER MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Water Mapping Unit is mapped for all natural and man-made water bodies, including creeks, ponds, lakes, open reservoirs, estuaries, and ocean.

PHOTO INTERPRETATION SIGNATURE: Water is typically dark blue to black with a very smooth texture. Light reflecting on the surface may give it a bright white to silver appearance. Shallow water may be lighter shades of blue. Coastline water will show as white linear strips of breaking waves. Tan to brown wet sand at the coastline is included with the ocean water.

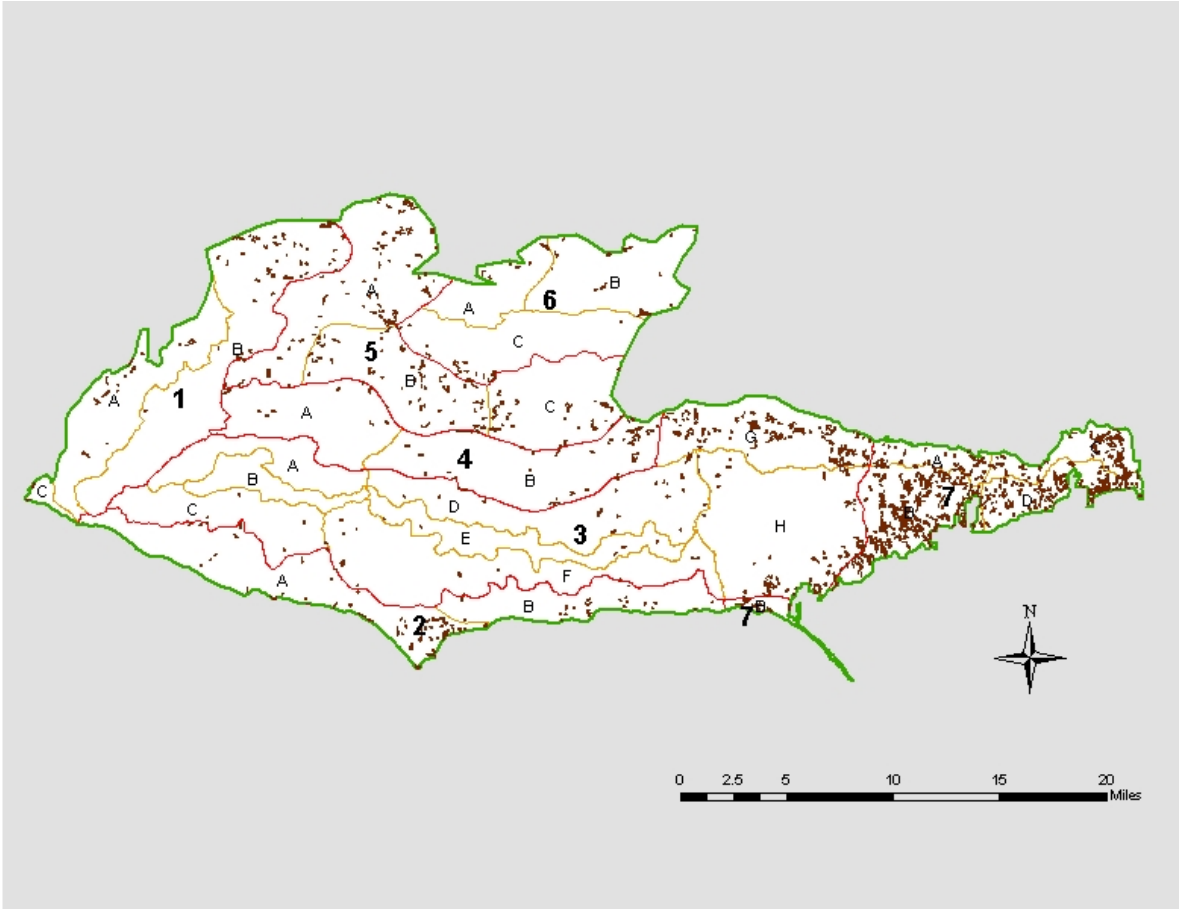
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Riverine, Lacustrine, and Tidal Mudflats Mapping Unit (9002)

9500 – UNDIFFERENTIATED EXOTIC VEGETATION MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Undifferentiated Exotic Vegetation Mapping Unit is mapped where non-native trees and/or shrubs occupy the landscape. They are usually found adjacent to urban land use, but may also occur within the wildlands.

PHOTO INTERPRETATION SIGNATURE: The stand is typically coarse in texture with dark vegetation. The trees are usually tall to short with rounded to irregular crowns and are dark green in color. Shrubs may be coarse and dark green in color. Some species of exotic trees and shrubs have brighter tones and other colors.

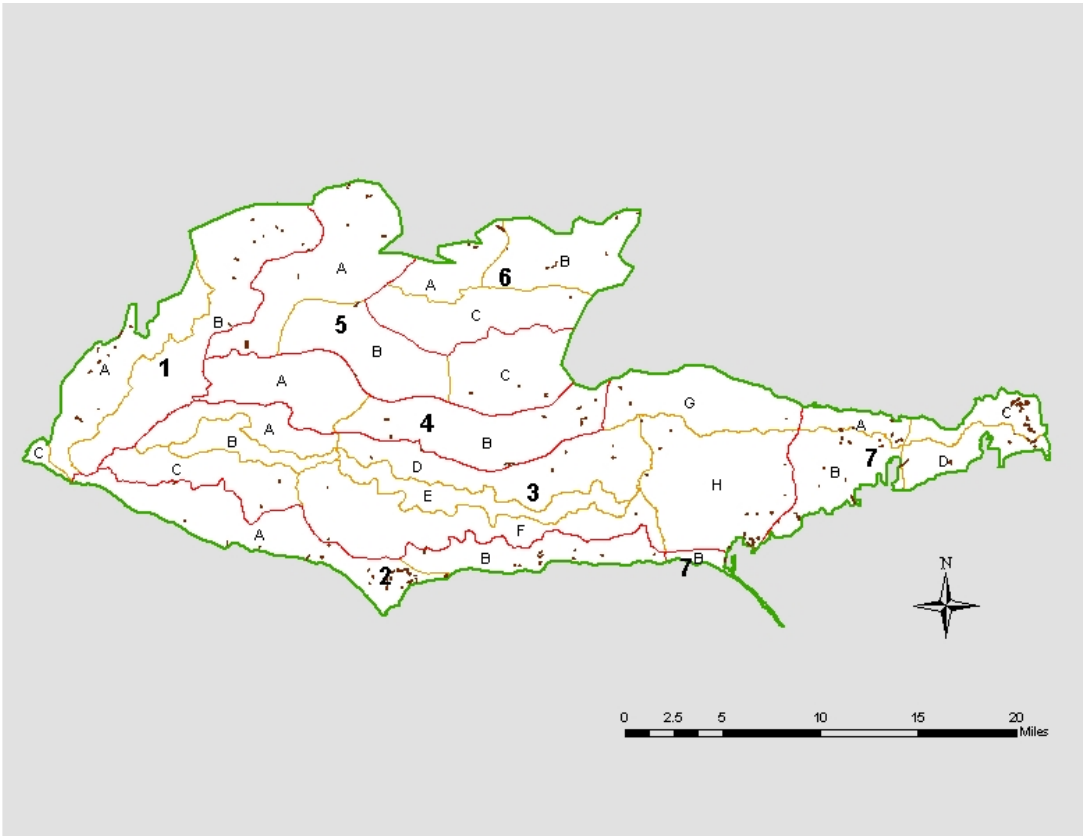
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- *Juglans californica* Woodland/Forest Alliance (1310)
- *Quercus lobata* Woodland/Forest Alliance (1320)
- Urban Buffer Shrubs Mapping Unit (9109)
- *Eucalyptus* spp. Woodland/Forest Mapping Unit (9510)
- Conifer Woodland/Forest Mapping Unit (9520)
- Other Exotic Woodland/Forest Mapping Unit (9530)
- Undifferentiated Ornamental Shrubland Mapping Unit (9540)
- *Acacia redolens* Shrubland Mapping Unit (9541)
- *Spartium junceum* Shrubland Mapping Unit (9542)
- *Mesembryanthemum* spp.*-Carpobrotus* spp. Shrubland Mapping Unit (9543)
- *Cortaderia selloana* Herbaceous Mapping Unit (9544)
- *Schinus molle* Woodland/Forest Mapping Unit (9550)
- Artificial Cuts/Embankments: Undifferentiated Woodland/Forest Mapping Unit (9640)
- Artificial Cuts/Embankments: *Eucalyptus* spp. Woodland/Forest Mapping Unit (9641)
- Artificial Cuts/Embankments: Conifer Woodland/Forest Mapping Unit (9642)
- Artificial Cuts/Embankments: *Schinus molle* Woodland/Forest Mapping Unit (9643)
- Artificial Cuts/Embankments: *Quercus agrifolia* Woodland/Forest Mapping Unit (9644)
- Artificial Cuts/Embankments: Other Woodland/Forest Mapping Unit (9645)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)
- Artificial Cuts/Embankments: *Spartium junceum* Shrubland Mapping Unit (9651)

9510 – EUCALYPTUS WOODLAND/FOREST MAPPING UNIT
Eucalyptus spp. Woodland/Forest Mapping Unit



DISTRIBUTION:



DESCRIPTION: *Eucalyptus* spp. Woodland/Forest Mapping Unit is mapped where *Eucalyptus* spp. dominate a stand of trees. They are usually found adjacent to urban land use, but may also occur within the wildlands.

PHOTO INTERPRETATION SIGNATURE: The stand appears as having coarse texture with dark brown to dark gray color. *Eucalyptus* spp. have tall irregularly-shaped billowy crowns with a coarse texture. Small openings can be seen within the crown, which is more evident in older trees.

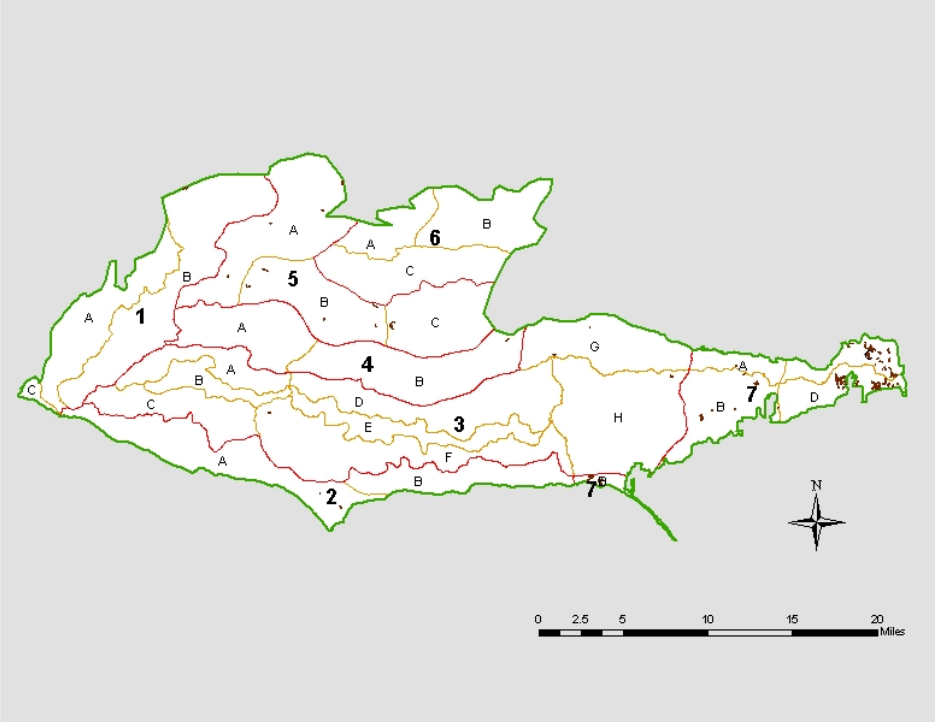
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Urban Buffer Shrubs Mapping Unit (9109)
- Undifferentiated Exotic Vegetation Mapping Unit (9500)
- Conifer Woodland/Forest Mapping Unit (9520)
- Other Exotic Woodland/Forest Mapping Unit (9530)
- *Schinus molle* Woodland/Forest Mapping Unit (9550)
- Artificial Cuts/Embankments: Undifferentiated Woodland/Forest Mapping Unit (9640)
- Artificial Cuts/Embankments: *Eucalyptus* spp. Woodland/Forest Mapping Unit (9641)
- Artificial Cuts/Embankments: Conifer Woodland/Forest Mapping Unit (9642)
- Artificial Cuts/Embankments: *Schinus molle* Woodland/Forest Mapping Unit (9643)
- Artificial Cuts/Embankments: *Quercus agrifolia* Woodland/Forest Mapping Unit (9644)
- Artificial Cuts/Embankments: Other Woodland/Forest Mapping Unit (9645)

9520 – CONIFER WOODLAND/FOREST MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Conifer Woodland/Forest Mapping Unit is mapped where conifers, such as *Pinus* spp., dominate a stand of trees. They are usually found adjacent to urban land use, but may also occur within the wildlands.

PHOTO INTERPRETATION SIGNATURE: The stand appears as dark green with coarse texture. Some conifers have tall and narrow crowns with a dark green color and coarse texture, while others have a wider irregular crown.

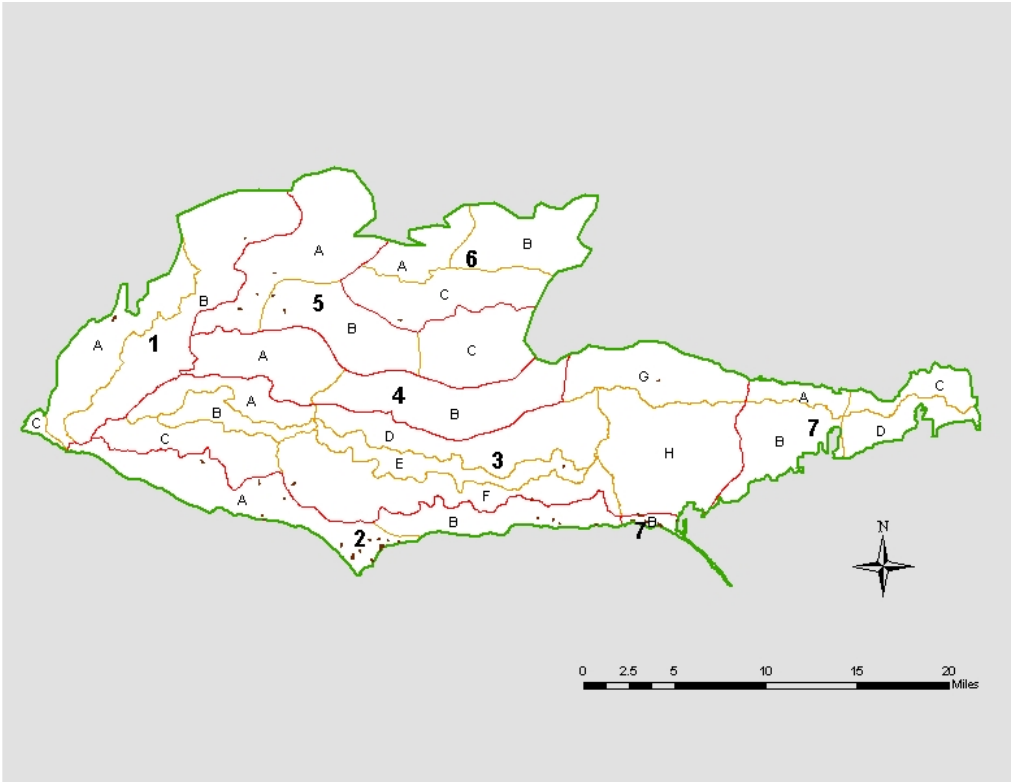
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Urban Buffer Shrubs Mapping Unit (9109)
- Undifferentiated Exotic Vegetation Mapping Unit (9500)
- *Eucalyptus* spp. Woodland/Forest Mapping Unit (9510)
- Other Exotic Woodland/Forest Mapping Unit (9530)
- *Schinus molle* Woodland/Forest Mapping Unit (9550)
- Artificial Cuts/Embankments: Undifferentiated Woodland/Forest Mapping Unit (9640)
- Artificial Cuts/Embankments: *Eucalyptus* spp. Woodland/Forest Mapping Unit (9641)
- Artificial Cuts/Embankments: Conifer Woodland/Forest Mapping Unit (9642)
- Artificial Cuts/Embankments: *Schinus molle* Woodland/Forest Mapping Unit (9643)
- Artificial Cuts/Embankments: *Quercus agrifolia* Woodland/Forest Mapping Unit (9644)
- Artificial Cuts/Embankments: Other Woodland/Forest Mapping Unit (9645)

9530 – OTHER EXOTIC WOODLAND/FOREST MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Other Exotic Woodland/Forest Mapping Unit is mapped where there is a stand of exotic trees that are not dominated by *Eucalyptus* spp., conifers, or *Schinus molle*. They are usually found adjacent to urban land use, but may also occur within the wildlands.

PHOTO INTERPRETATION SIGNATURE: The stand is typically coarse in texture with dark green to black vegetation, sometimes with brighter colors of some exotic trees. The trees are usually tall to short with rounded to irregular crowns and are dark green in color.

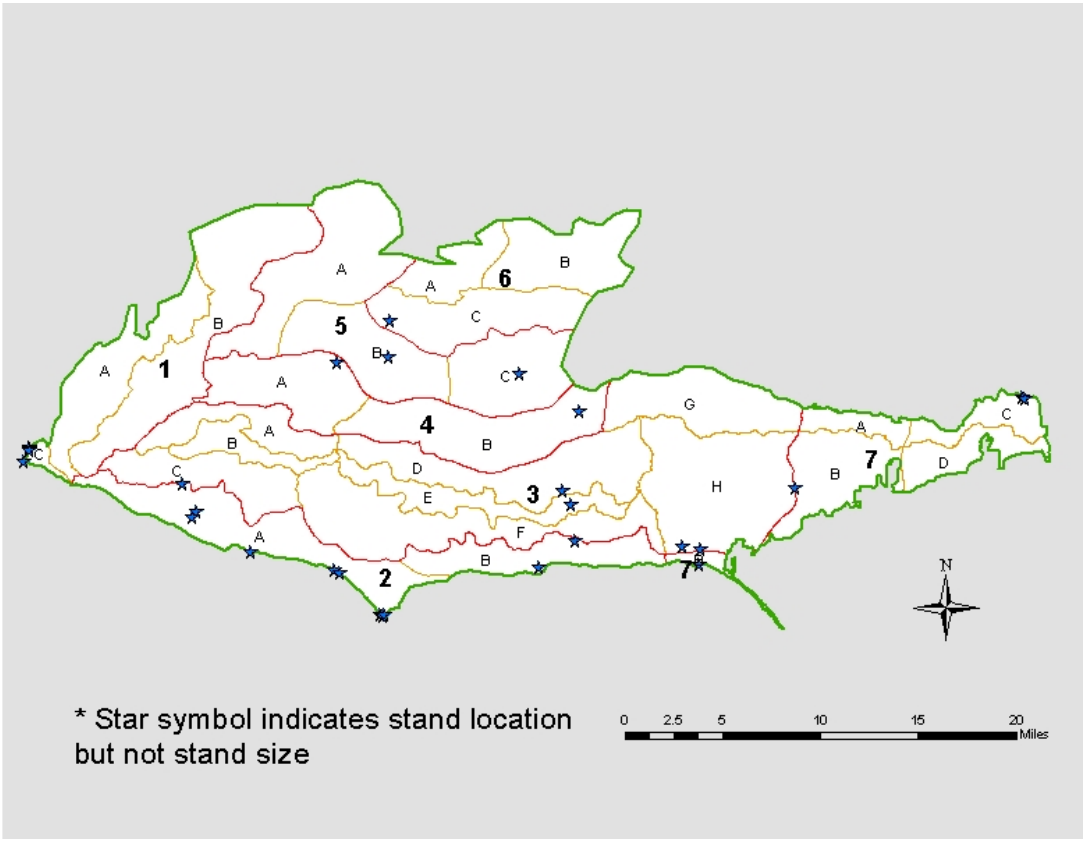
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Urban Buffer Shrubs Mapping Unit (9109)
- Undifferentiated Exotic Vegetation Mapping Unit (9500)
- *Eucalyptus* spp. Woodland/Forest Mapping Unit (9510)
- Conifer Woodland/Forest Mapping Unit (9520)
- *Schinus molle* Woodland/Forest Mapping Unit (9550)
- Artificial Cuts/Embankments: Undifferentiated Woodland/Forest Mapping Unit (9640)
- Artificial Cuts/Embankments: *Eucalyptus* spp. Woodland/Forest Mapping Unit (9641)
- Artificial Cuts/Embankments: Conifer Woodland/Forest Mapping Unit (9642)
- Artificial Cuts/Embankments: *Schinus molle* Woodland/Forest Mapping Unit (9643)
- Artificial Cuts/Embankments: *Quercus agrifolia* Woodland/Forest Mapping Unit (9644)
- Artificial Cuts/Embankments: Other Woodland/Forest Mapping Unit (9645)

9540 – UNDIFFERENTIATED ORNAMENTAL SHRUBLAND MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Undifferentiated Ornamental Shrubland Mapping Unit is mapped where there is a stand of ornamental shrubs of undetermined type. They are found adjacent to urban land use, but may also occur within the wildlands.

PHOTO INTERPRETATION SIGNATURE: The stand is typically coarse in texture with dark green to black vegetation. Shrubs may be coarse and dark green in color, or may have brighter colors.

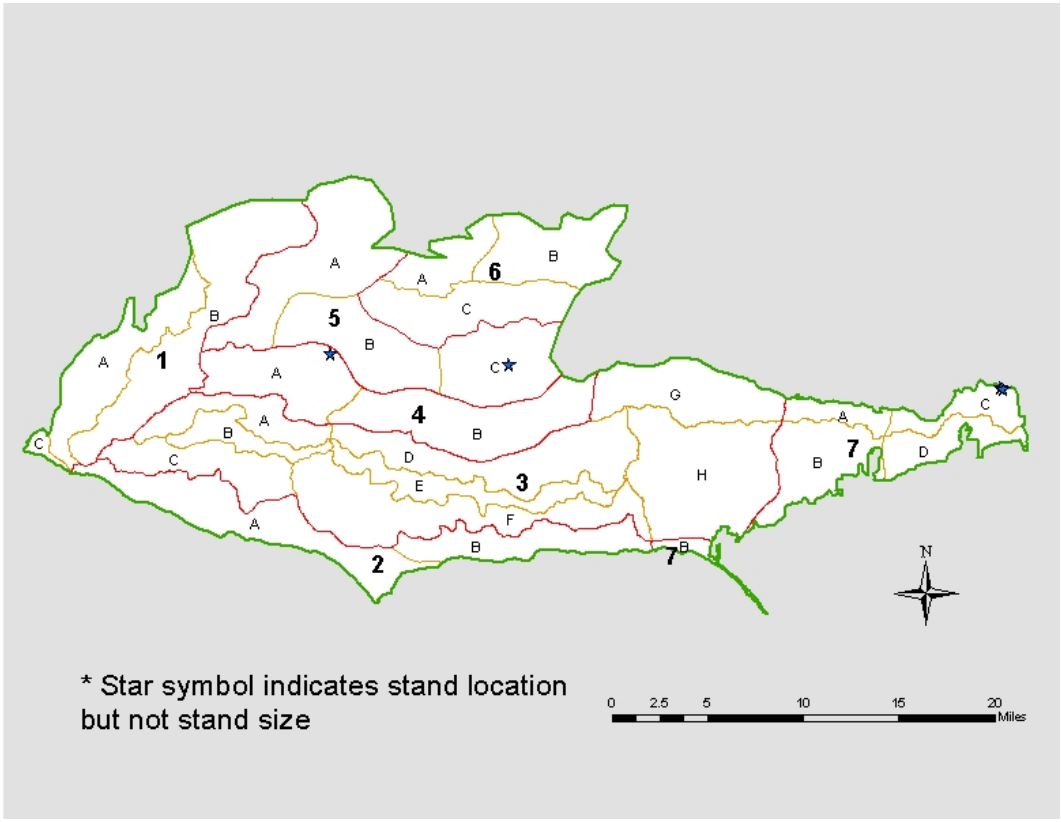
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Urban Buffer Shrubs Mapping Unit (9109)
- Undifferentiated Exotic Vegetation Mapping Unit (9500)
- *Acacia redolens.* Shrubland Mapping Unit (9541)
- *Spartium junceum* Shrubland Mapping Unit (9542)
- *Mesembryanthemum* spp.*-Carpobrotus* spp. Shrubland Mapping Unit (9543)
- *Cortaderia selloana* Herbaceous Mapping Unit (9544)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)
- Artificial Cuts/Embankments: *Spartium junceum* Shrubland Mapping Unit (9651)

9541 – PROSTRATE ACACIA SHRUBLAND MAPPING UNIT
Acacia redolens Shrubland Mapping Unit



DISTRIBUTION:



DESCRIPTION: *Acacia redolens* Shrubland Mapping Unit is mapped where *Acacia* dominates a stand of shrubs. They are found adjacent to urban land use, but may also occur within the wildlands.

PHOTO INTERPRETATION SIGNATURE: *Acacia* typically appears continuous to intermittent with a very smooth homogeneous texture and dark brown color.

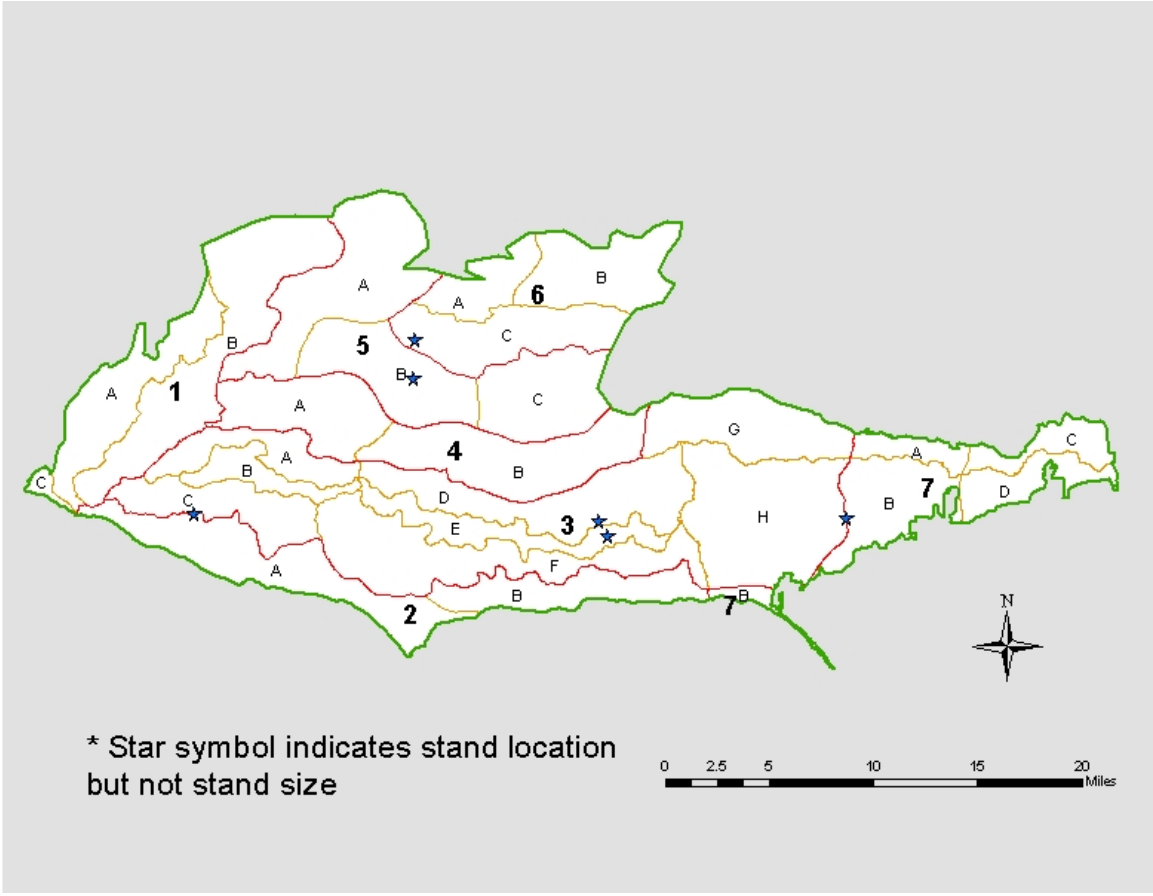
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Urban Buffer Shrubs Mapping Unit (9109)
- Undifferentiated Exotic Vegetation Mapping Unit (9500)
- Undifferentiated Ornamental Shrubland Mapping Unit (9540)
- *Mesembryanthemum* spp.-*Carpobrotus* spp. Shrubland Mapping Unit (9543)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)

9542 – SPANISH BROOM SHRUBLAND MAPPING UNIT
Spartium junceum Shrubland Mapping Unit



DISTRIBUTION:



DESCRIPTION: *Spartium junceum* Shrubland Mapping Unit is mapped where *Spartium* dominates a stand of shrubs. They are found adjacent to urban land use, but may also occur within the wildlands. Some stands are open to continuous. When found on road embankments, *Spartium* is mapped as 9651.

PHOTO INTERPRETATION SIGNATURE: The stand appears gray to gray-green with a stippled or slightly coarse texture. *Spartium* is a short to medium sized shrub with a gray to gray-green color and a slightly coarse texture. The signature may have a hint of yellow representing the inflorescences.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

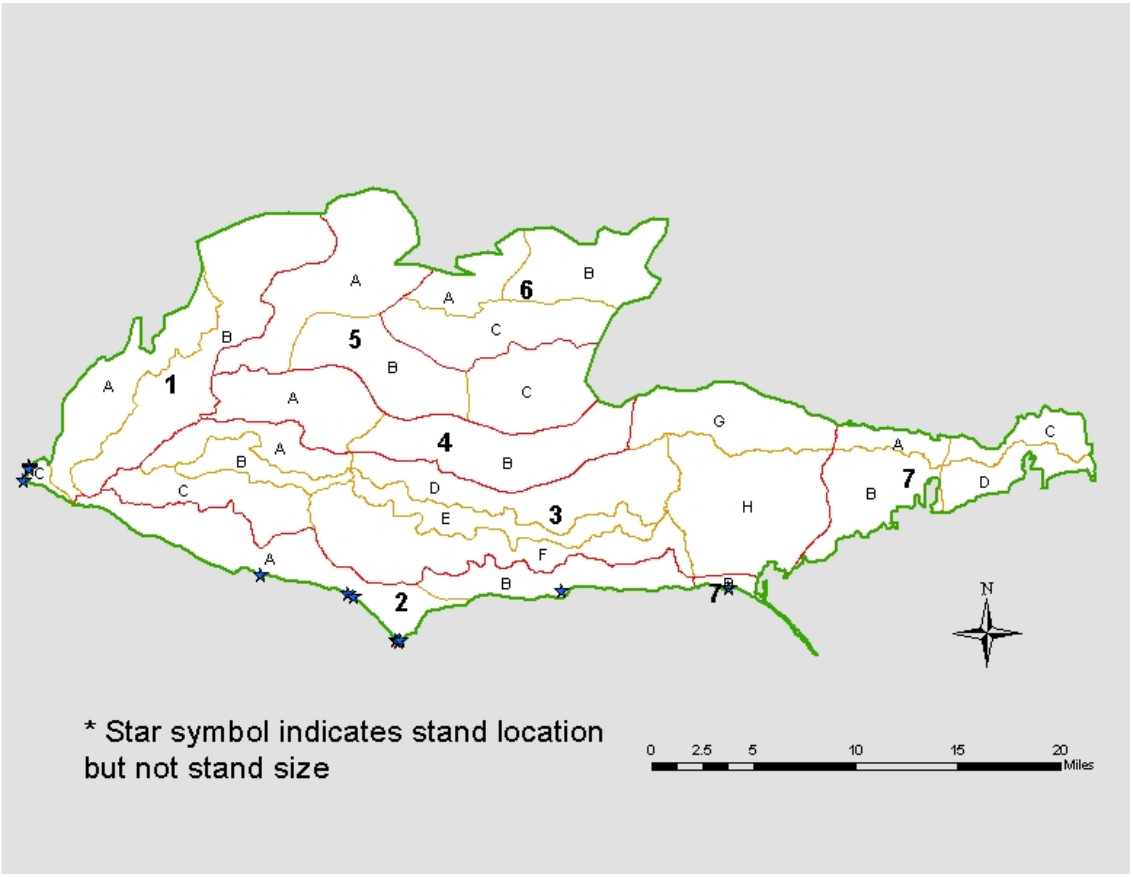
- Urban Buffer Shrubs Mapping Unit (9109)
- Undifferentiated Exotic Vegetation Mapping Unit (9500)
- Undifferentiated Ornamental Shrubland Mapping Unit (9540)
- *Cortaderia selloana* Herbaceous Mapping Unit (9544)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)
- Artificial Cuts/Embankments: *Spartium junceum* Shrubland Mapping Unit (9651)

9543 – ICEPLANT SHRUBLAND MAPPING UNIT

***Mesembryanthemum* spp.-*Carpobrotus* spp. Shrubland Mapping Unit**



DISTRIBUTION:



DESCRIPTION: *Mesembryanthemum* spp.-*Carpobrotus* spp. Shrubland Mapping Unit is mapped where *Mesembryantemum* spp. and/or *Carpobrotus* spp. dominates a stand. They are found adjacent to urban land use, but may also occur within the wildlands.

PHOTO INTERPRETATION SIGNATURE: Stands of *Mesembryanthemum* spp.-*Carpobrotus* spp. typically appear intermittent to continuous with a very smooth homogeneous texture and dark brown or dark green color.

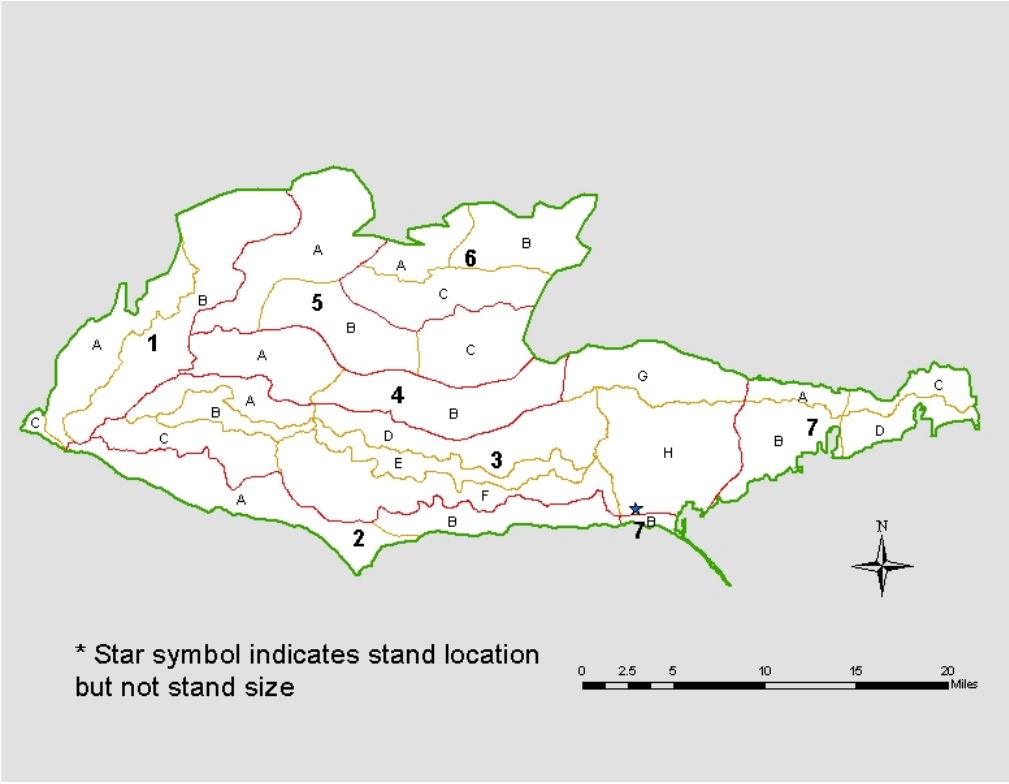
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Urban Buffer Shrubs Mapping Unit (9109)
- Undifferentiated Exotic Vegetation Mapping Unit (9500)
- Undifferentiated Ornamental Shrubland Mapping Unit (9540)
- *Acacia redolens* Shrubland Mapping Unit (9541)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)

9544 – PAMPAS GRASS HERBACEOUS MAPPING UNIT
Cortaderia selloana Herbaceous Mapping Unit



DISTRIBUTION:



DESCRIPTION: *Cortaderia selloana* Herbaceous Mapping Unit is mapped at only one site in the database, from field reconnaissance. This mapping unit typically would be found adjacent to urban land use, but may also occur on disturbed sites within the wildlands. This stand is open to intermittent on a northeast to southeast aspect, on an undulating surface, gentle to steep middle to upper slope, with a ledge area.

PHOTO INTERPRETATION SIGNATURE: *Cortaderia* occurs as a stand with stippled texture and light green color. It can also be mixed with other plants that have a brown color. The underlying rocky substrate is white.

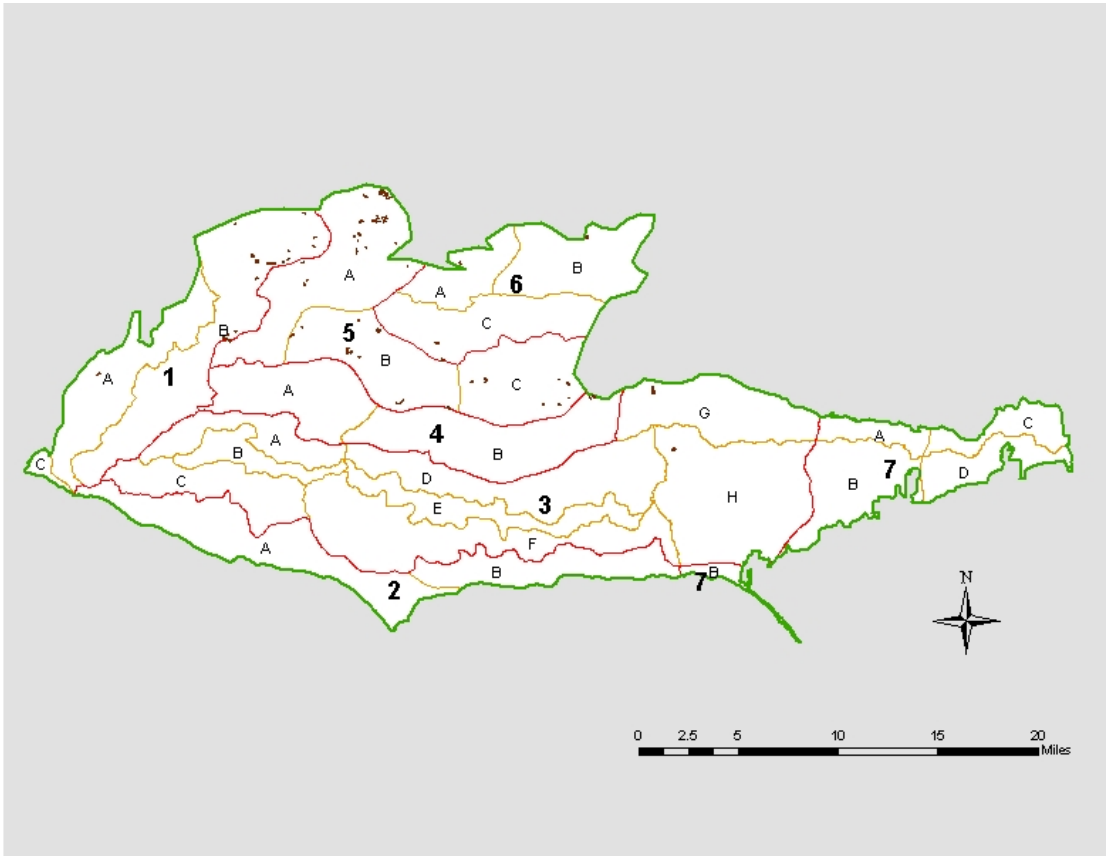
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Opuntia* spp. Shrubland Alliance (2410)
- Urban Buffer Shrubs Mapping Unit (9109)
- Undifferentiated Exotic Vegetation Mapping Unit (9500)
- Undifferentiated Ornamental Shrubland Mapping Unit (9540)
- *Spartium junceum* Shrubland Mapping Unit (9542)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)
- Artificial Cuts/Embankments: *Spartium junceum* Shrubland Mapping Unit (9651)

9550 – PERUVIAN PEPPERTREE WOODLAND/FOREST MAPPING UNIT
Schinus molle Woodland/Forest Mapping Unit



DISTRIBUTION:



DESCRIPTION: *Schinus molle* Woodland/Forest Mapping Unit is mapped where *Schinus* dominates a stand of trees. They are usually found adjacent to urban land use, but may also occur within the wildlands.

PHOTO INTERPRETATION SIGNATURE: The stand is characterized by an uneven texture due to trees over a shrub or grass understory. *Schinus* has an irregular billowy crown with a coarse texture and medium green color. It is usually scattered over short shrubs or grassland.

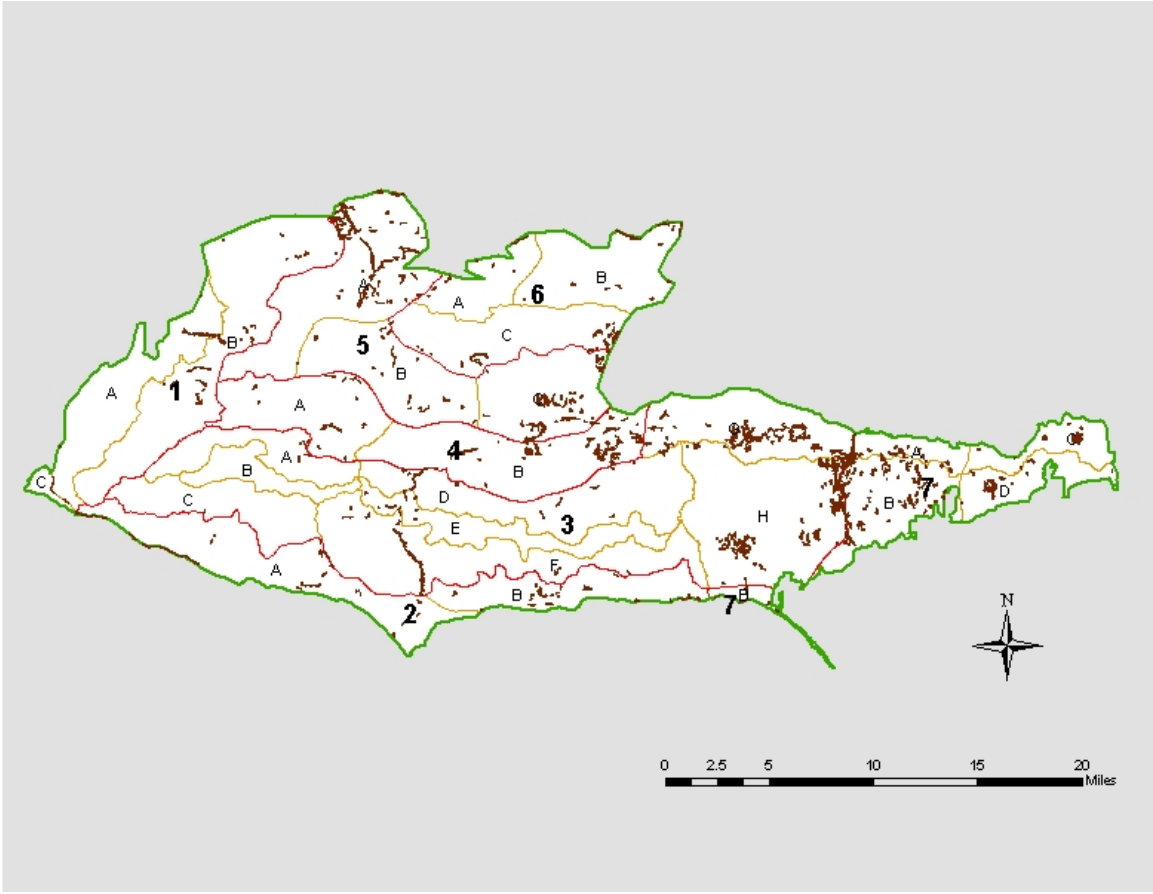
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Quercus agrifolia* Woodland/Forest Alliance (1110)
- *Quercus lobata* Woodland/Forest Alliance (1320)
- *Eucalyptus* spp. Woodland/Forest Mapping Unit (9510)
- Conifer Woodland/Forest Mapping Unit (9520)
- Other Exotic Woodland/Forest Mapping Unit (9530)
- Artificial Cuts/Embankments: Undifferentiated Woodland/Forest Mapping Unit ((9640)
- Artificial Cuts/Embankments: *Eucalyptus* spp. Woodland/Forest Mapping Unit (9641)
- Artificial Cuts/Embankments: Conifer Woodland/Forest Mapping Unit (9642)
- Artificial Cuts/Embankments: *Schinus molle* Woodland/Forest Mapping Unit (9643)
- Artificial Cuts/Embankments: *Quercus agrifolia* Woodland/Forest Mapping Unit (9644)
- Artificial Cuts/Embankments: Other Woodland/Forest Mapping Unit (9645)

9600 – ARTIFICIAL CUTS/EMBANKMENTS: UNDIFFERENTIATED VEGETATION MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Artificial Cuts/Embankments: Undifferentiated Vegetation Mapping Unit is mapped where the land has been modified and is vegetated with native and/or non-native plants. Artificial features include road and railroad cuts and embankments, as well as hillside cuts and fill for urban developments.

PHOTO INTERPRETATION SIGNATURE: Artificial Cuts are on the uphill side of roads, railroads or developments, where part of the hill has been carved out. Parallel white drainage ways may be seen on individual tiers on the cut. Embankments are steep smooth fill that are on the downhill side of a development or on one or both sides of a road or railroad where it is elevated above the land, usually above a canyon or drainage. The tree overstory may be coarse with dark green color. The shrubs may be a smooth to slightly coarse texture with tan, brown, or gray color. Grasses may be tan to brown in color. Sometimes rock is exposed in the cuts and will appear white to light tan or light gray.

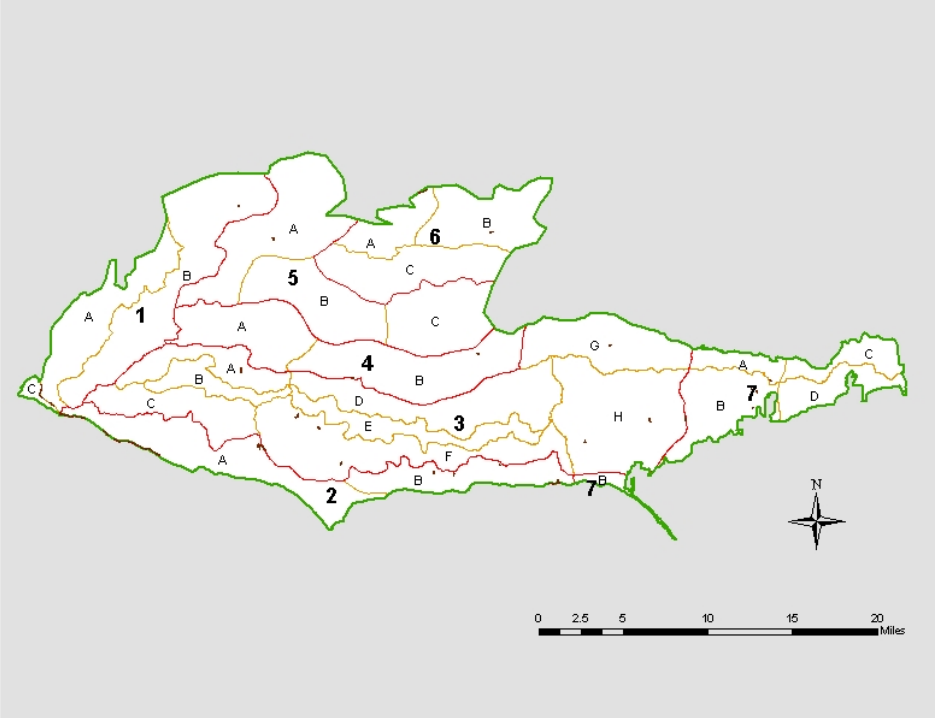
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Urban Buffer Shrubs Mapping Unit (9109)
- Urban Buffer Herbaceous/Cleared Mapping Unit (9118)
- *Eucalyptus* spp. Woodland/Forest Mapping Unit (9510)
- Conifer Woodland/Forest Mapping Unit (9520)
- Other Exotic Woodland/Forest Mapping Unit (9530)
- Undifferentiated Ornamental Shrubland Mapping Unit (9540)
- *Acacia redolens* Shrubland Mapping Unit (9541)
- *Spartium junceum* Shrubland Mapping Unit (9542)
- *Mesembryanthemum* spp.-*Carpobrotus* spp. Shrubland Mapping Unit (9543)
- *Cortaderia selloana* Herbaceous Mapping Unit (9544)
- *Schinus molle* Woodland/Forest Mapping Unit (9550)
- Sparsely Vegetated to Non-Vegetated Mapping Unit (9630)
- Artificial Cuts/Embankments: Undifferentiated Woodland/Forest Mapping Unit (9640)
- Artificial Cuts/Embankments: *Eucalyptus* spp. Woodland/Forest Mapping Unit (9641)
- Artificial Cuts/Embankments: Conifer Woodland/Forest Mapping Unit (9642)
- Artificial Cuts/Embankments: *Schinus molle* Woodland/Forest Mapping Unit (9643)
- Artificial Cuts/Embankments: *Quercus agrifolia* Woodland/Forest Mapping Unit (9644)
- Artificial Cuts/Embankments: Other Woodland/Forest Mapping Unit (9645)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)
- Artificial Cuts/Embankments: *Spartium junceum* Shrubland Mapping Unit (9651)

9630 – ARTIFICIAL CUTS/EMBANKMENTS: SPARSELY VEGETATED TO NON-VEGETATED MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Artificial Cuts/Embankments: Sparsely Vegetated to Non-vegetated Mapping Unit is mapped where land has been modified and is sparsely vegetated to non-vegetated. Artificial features include road and railroad cuts and embankments, as well as hillside cuts and fill for urban developments.

PHOTO INTERPRETATION SIGNATURE: Artificial Cuts are on the uphill side of roads, railroads or developments, where part of the hill has been carved out. Parallel white drainage ways may be seen on individual tiers on the cut. Embankments are steep smooth fill that are on the downhill side of a development or on one or both sides of a road or railroad where it is elevated above the land, usually above a canyon or drainage. Sparsely Vegetated to Non-vegetated cuts are usually recently cut or graded so that there is a lack of vegetation, or the vegetation has recently begun to re-vegetate. New or recently graded cuts and embankments will appear white and smooth on the photo. Rock that is exposed in older cuts will appear white to light tan or light gray.

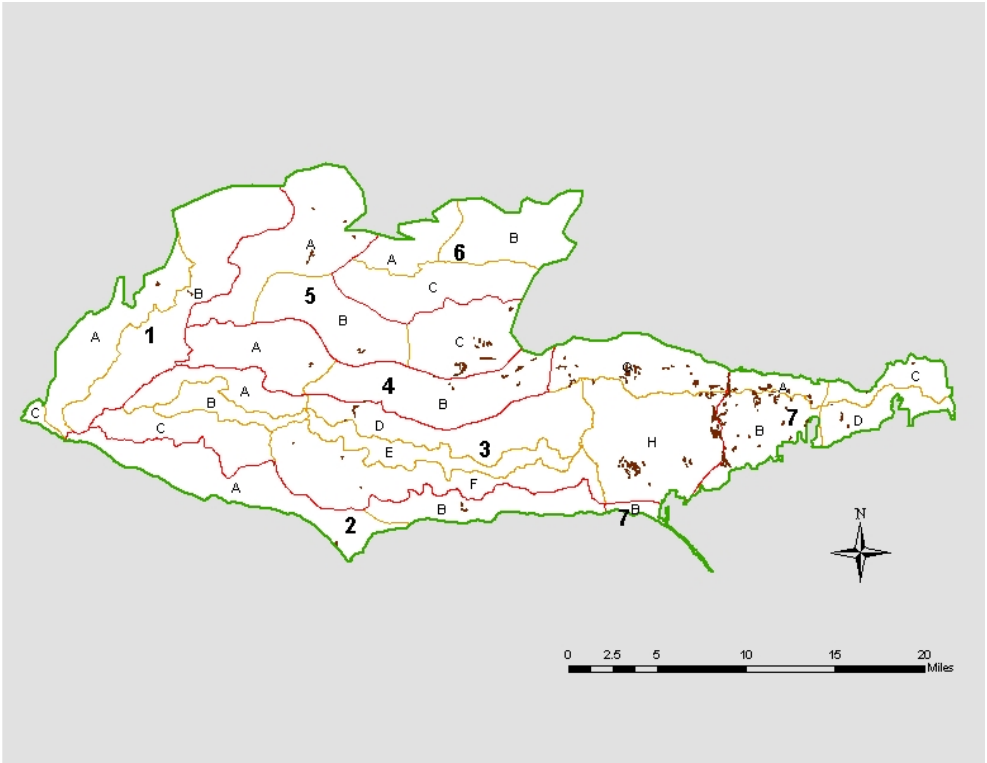
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Rock Outcrop Mapping Unit (9001)
- Rock Outcrop/Herbaceous Mapping Unit (90011)
- Cleared Land Mapping Unit (9003)
- Urban Buffer Shrubs Mapping Unit (9109)
- Urban Buffer Herbaceous/Cleared Mapping Unit (9118)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)

9640 – ARTIFICIAL CUTS/EMBANKMENTS: UNDIFFERENTIATED WOODLAND/FOREST MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Artificial Cuts/Embankments: Undifferentiated Woodland/Forest Mapping Unit is mapped where the land has been modified and is vegetated with native and/or non-native trees. The species of trees have not been determined. Artificial features include road and railroad cuts and embankments, as well as hillside cuts and fill for urban developments.

PHOTO INTERPRETATION SIGNATURE: Artificial Cuts are on the uphill side of roads, railroads or developments, where part of the hill has been carved out. Parallel white drainage ways may be seen on individual tiers on the cut. Embankments are steep smooth fill that are on the downhill side of a development or on one or both sides of a road or railroad where it is elevated above the land, usually above a canyon or drainage. The tree overstory is usually medium to dark green in color with a coarse texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

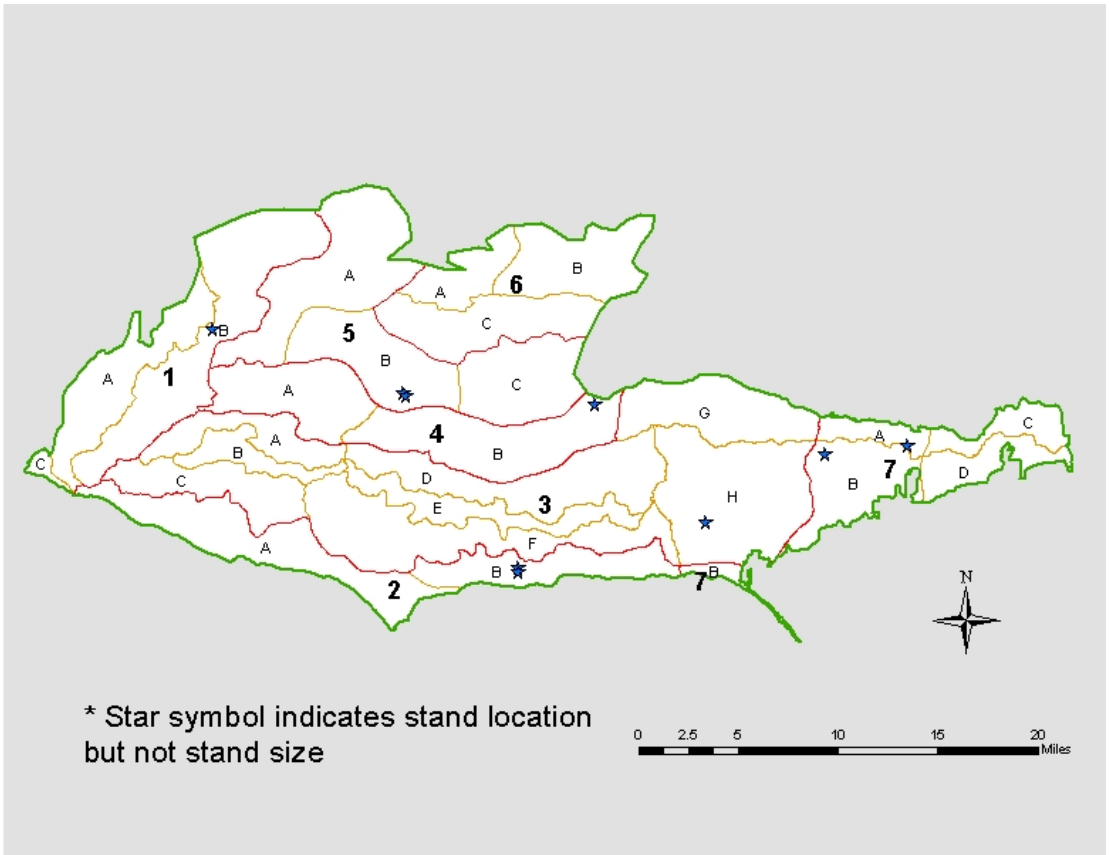
- *Eucalyptus* spp. Woodland/Forest Mapping Unit (9510)
- Conifer Woodland/Forest Mapping Unit (9520)
- Other Exotic Woodland/Forest Mapping Unit (9530)
- *Schinus molle* Woodland/Forest Mapping Unit (9550)
- Artificial Cuts/Embankments: Undifferentiated Woodland/Forest Mapping Unit (9640)
- Artificial Cuts/Embankments: *Eucalyptus* spp. Woodland/Forest Mapping Unit (9641)
- Artificial Cuts/Embankments: Conifer Woodland/Forest Mapping Unit (9642)
- Artificial Cuts/Embankments: *Schinus molle* Woodland/Forest Mapping Unit (9643)
- Artificial Cuts/Embankments: *Quercus agrifolia* Woodland/Forest Mapping Unit (9644)
- Artificial Cuts/Embankments: Other Woodland/Forest Mapping Unit (9645)

9641 – ARTIFICIAL CUTS/EMBANKMENTS: EUCALYPTUS WOODLAND/FOREST MAPPING UNIT

Artificial Cuts/Embankments: *Eucalyptus* spp. Woodland/Forest Mapping Unit



DISTRIBUTION:



DESCRIPTION: Artificial Cuts/Embankments: *Eucalyptus* spp. Woodland/Forest Mapping Unit is mapped where the land has been modified and is vegetated with a dominance of *Eucalyptus* spp. Artificial features include road and railroad cuts and embankments, as well as hillside cuts and fill for urban developments.

PHOTO INTERPRETATION SIGNATURE: Artificial Cuts are on the uphill side of roads, railroads or developments, where part of the hill has been carved out. Parallel white drainage ways may be seen on individual tiers on the cut. Embankments are steep smooth fill that are on the downhill side of a development or on one or both sides of a road or railroad where it is elevated above the land, usually above a canyon or drainage. The stand of trees has coarse texture with dark brown to dark gray color. *Eucalyptus* spp. have a tall irregularly shaped billowy crown with a coarse texture. Small openings can be seen within the crown, which is more evident in older trees.

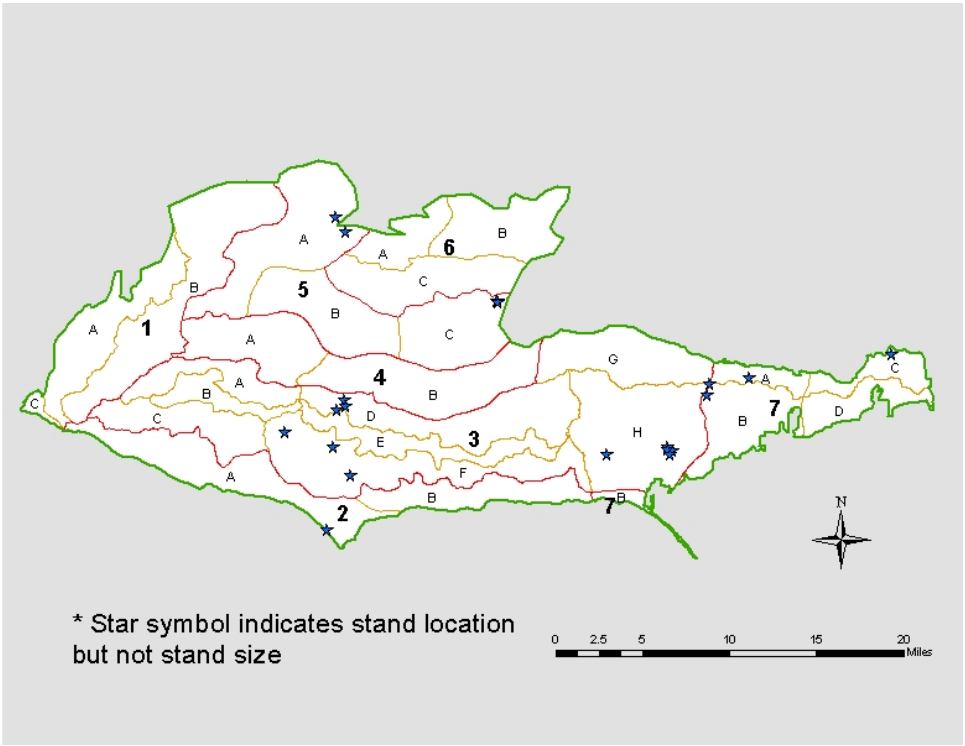
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Eucalyptus* spp. Woodland/Forest Mapping Unit (9510)
- Conifer Woodland/Forest Mapping Unit (9520)
- Other Exotic Woodland/Forest Mapping Unit (9530)
- *Schinus molle* Woodland/Forest Mapping Unit (9550)
- Artificial Cuts/Embankments: Undifferentiated Woodland/Forest Mapping Unit (9640)
- Artificial Cuts/Embankments: Conifer Woodland/Forest Mapping Unit (9642)
- Artificial Cuts/Embankments: *Schinus molle* Woodland/Forest Mapping Unit (9643)
- Artificial Cuts/Embankments: *Quercus agrifolia* Woodland/Forest Mapping Unit (9644)
- Artificial Cuts/Embankments: Other Woodland/Forest Mapping Unit (9645)

9642 – ARTIFICIAL CUTS/EMBANKMENTS: CONIFER WOODLAND/FOREST MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Artificial Cuts/Embankments: Conifer Woodland/Forest Mapping Unit is mapped where the land has been modified and is vegetated with a dominance of conifers, such as *Pinus* spp. Artificial features include road and railroad cuts and embankments, as well as hillside cuts and fill for urban developments.

PHOTO INTERPRETATION SIGNATURE: Artificial Cuts are on the uphill side of roads, railroads or developments, where part of the hill has been carved out. Parallel white drainage ways may be seen on individual tiers on the cut. Embankments are steep smooth fill that are on the downhill side of a development or on one or both sides of a road or railroad where it is elevated above the land, usually above a canyon or drainage. The stand of trees has a dark green color with a coarse texture. Some conifers have a tall and narrow crown with a dark green color and coarse texture, while others have a wider irregular crown.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

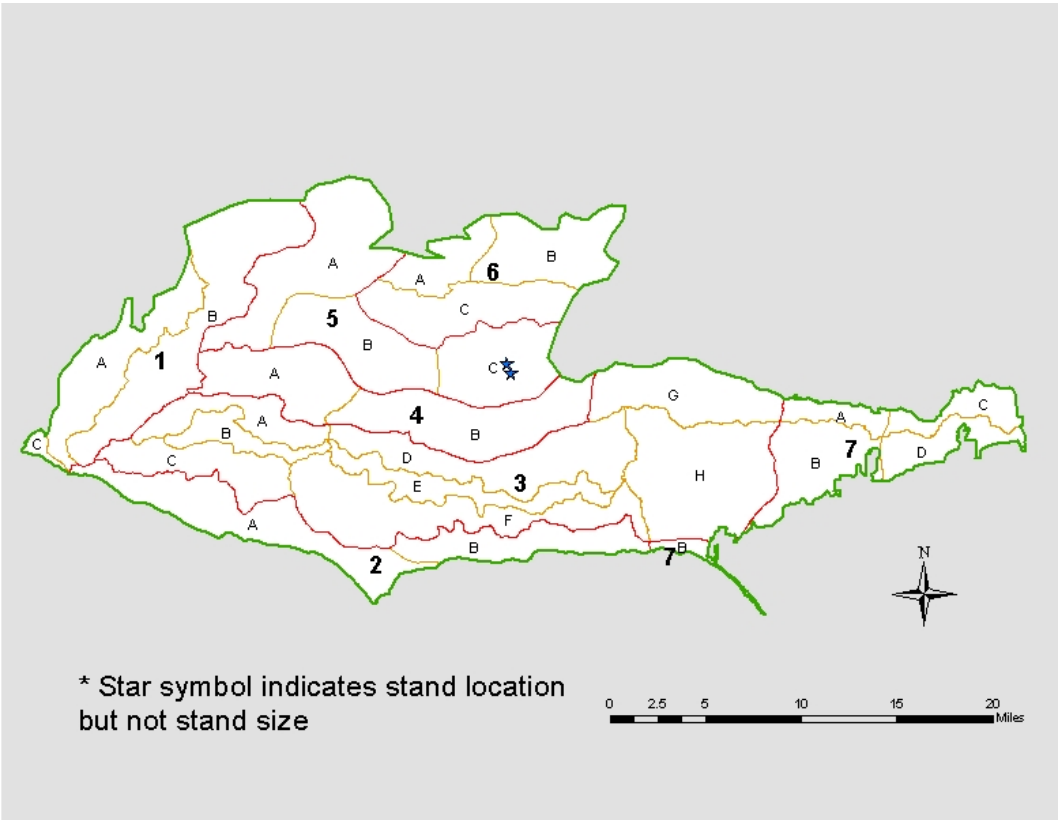
- *Eucalyptus* spp. Woodland/Forest Mapping Unit (9510)
- Conifer Woodland/Forest Mapping Unit (9520)
- Other Exotic Woodland/Forest Mapping Unit (9530)
- *Schinus molle* Woodland/Forest Mapping Unit (9550)
- Artificial Cuts/Embankments: Undifferentiated Woodland/Forest Mapping Unit (9640)
- Artificial Cuts/Embankments: *Eucalyptus* spp. Woodland/Forest Mapping Unit (9641)
- Artificial Cuts/Embankments: *Schinus molle* Woodland/Forest Mapping Unit (9643)
- Artificial Cuts/Embankments: *Quercus agrifolia* Woodland/Forest Mapping Unit (9644)
- Artificial Cuts/Embankments: Other Woodland/Forest Mapping Unit (9645)

9643 – ARTIFICIAL CUTS/EMBANKMENTS: PERUVIAN PEPPERTREE WOODLAND/FOREST MAPPING UNIT

Artificial Cuts/Embankments: *Schinus molle* Woodland/Forest Mapping Unit



DISTRIBUTION:



DESCRIPTION: Artificial Cuts/Embankments: *Schinus molle* Woodland/Forest Mapping Unit is mapped where the land has been modified and is vegetated with a dominance of *Schinus.* Artificial features include road and railroad cuts and embankments, as well as hillside cuts and fill for urban developments.

PHOTO INTERPRETATION SIGNATURE: Artificial Cuts are on the uphill side of roads, railroads or developments, where part of the hill has been carved out. Parallel white drainage ways may be seen on individual tiers on the cut. Embankments are steep smooth fill that are on the downhill side of a development or on one or both sides of a road or railroad where it is elevated above the land, usually above a canyon or drainage. *Schinus* has an irregular billowy crown with a coarse texture and medium green color.

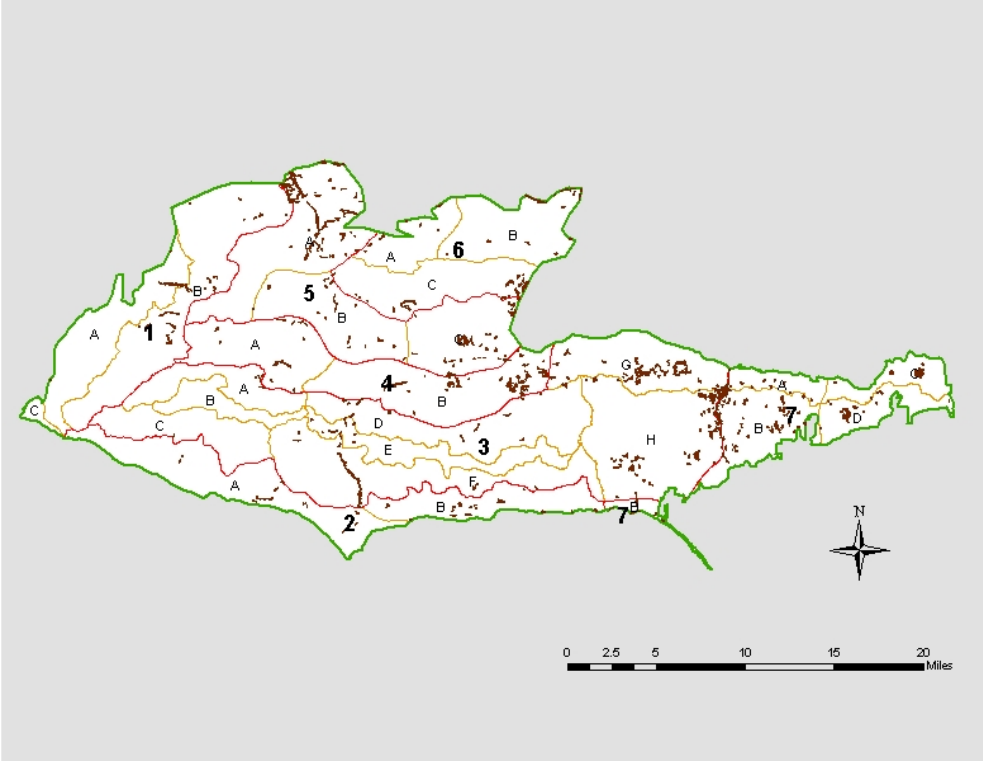
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Eucalyptus* spp. Woodland/Forest Mapping Unit (9510)
- Conifer Woodland/Forest Mapping Unit (9520)
- Other Exotic Woodland/Forest Mapping Unit (9530)
- *Schinus molle* Woodland/Forest Mapping Unit (9550)
- Artificial Cuts/Embankments: Undifferentiated Woodland/Forest Mapping Unit (9640)
- Artificial Cuts/Embankments: *Eucalyptus* spp. Woodland/Forest Mapping Unit (9641)
- Artificial Cuts/Embankments: Conifer Woodland/Forest Mapping Unit (9642)
- Artificial Cuts/Embankments: *Quercus agrifolia* Woodland/Forest Mapping Unit (9644)
- Artificial Cuts/Embankments: Other Woodland/Forest Mapping Unit (9645)

9650 – ARTIFICIAL CUTS/EMBANKMENTSS: UNDIFFERENTIATED SHRUBLAND/HERBACEOUS MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit is mapped where the land has been modified and is vegetated with native and/or non-native shrubs or herbs. Artificial features include road and railroad cuts and embankments, as well as hillside cuts and fill for urban developments. *Artemisia californica* and *Eriogonum fasciculatum* are common on road cuts.

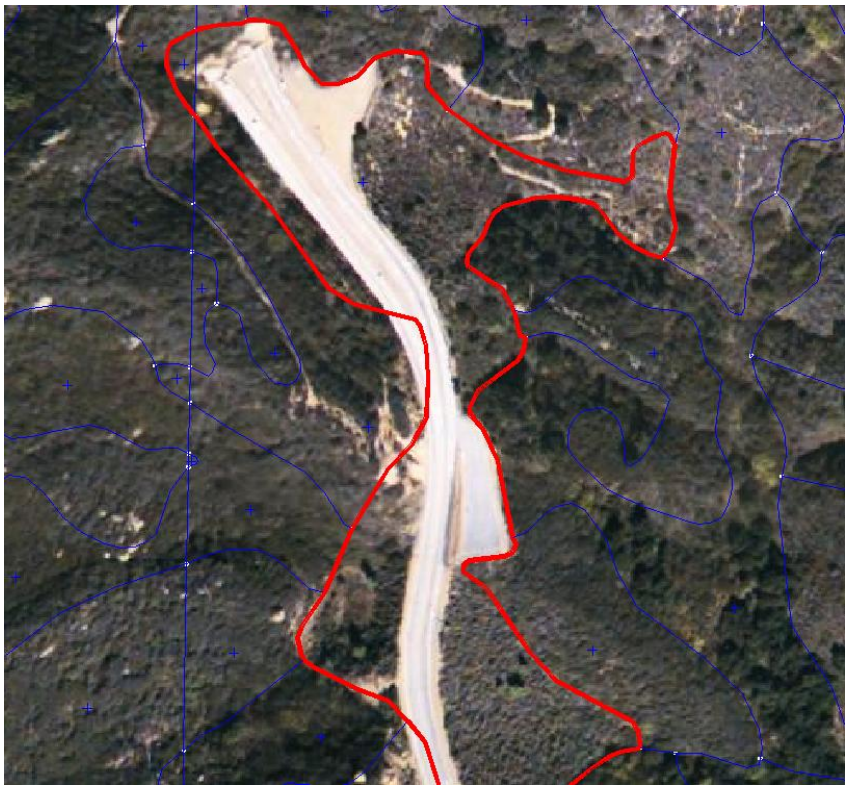
PHOTO INTERPRETATION SIGNATURE: Artificial Cuts are on the uphill side of roads, railroads or developments, where part of the hill has been carved out. Parallel white drainage ways may be seen on individual tiers on the cut. Embankments are steep smooth fill that are on the downhill side of a development or on one or both sides of a road or railroad where it is elevated above the land, usually above a canyon or drainage. The stand is typically coarse in texture with dark green vegetation, sometimes with brighter colors of certain exotic plants. *A. californica* tends to be purple-brown to tan or gray. *E. fasciculatum* commonly occurs as reddish-brown small individuals.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

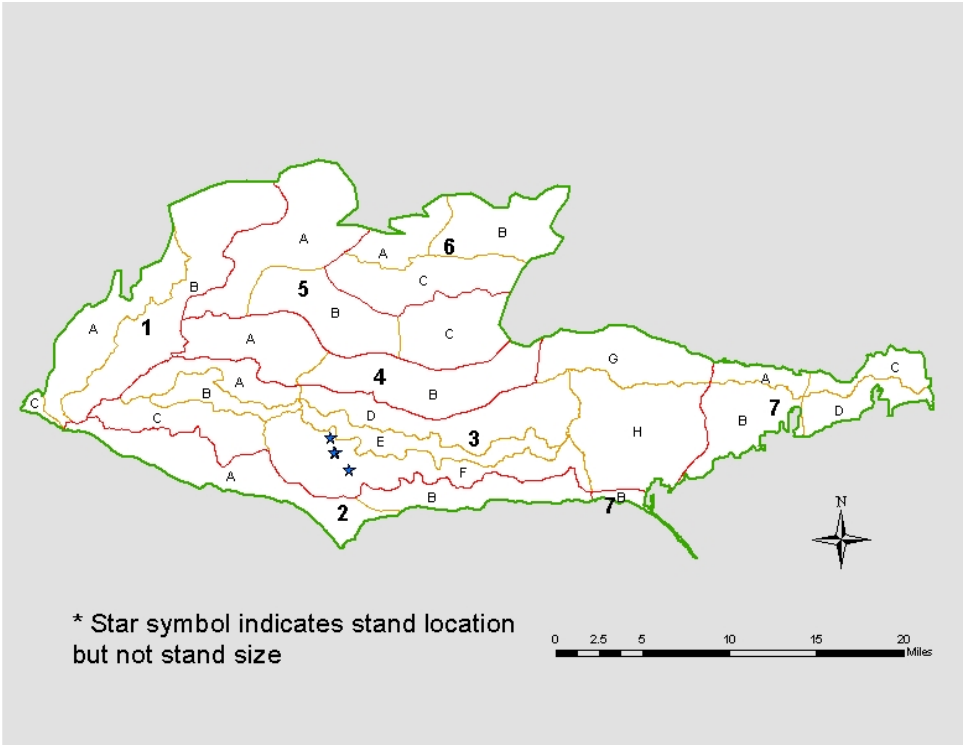
- Urban Buffer Shrubs Mapping Unit (9109)
- Urban Buffer Herbaceous/Cleared Mapping Unit (9118)
- Undifferentiated Ornamental Shrubland Mapping Unit (9540)
- *Acacia redolens* Shrubland Mapping Unit (9541)
- *Spartium junceum* Shrubland Mapping Unit (9542)
- *Mesembryanthemum* spp.-*Carpobrotus* spp. Shrubland Mapping Unit (9543)
- *Cortaderia selloana* Herbaceous Mapping Unit (9544)
- Artificial Cuts/Embankments: Sparsely Vegetated to Non-Vegetated Mapping Unit (9630)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)
- Artificial Cuts/Embankments: *Spartium junceum* Shrubland Mapping Unit (9651)

9651 – ARTIFICIAL CUTS/EMBANKMENTS: SPANISH BROOM SHRUBLAND MAPPING UNIT

Artificial Cuts/Embankments: *Spartium junceum* Shrubland Mapping Unit



DISTRIBUTION:



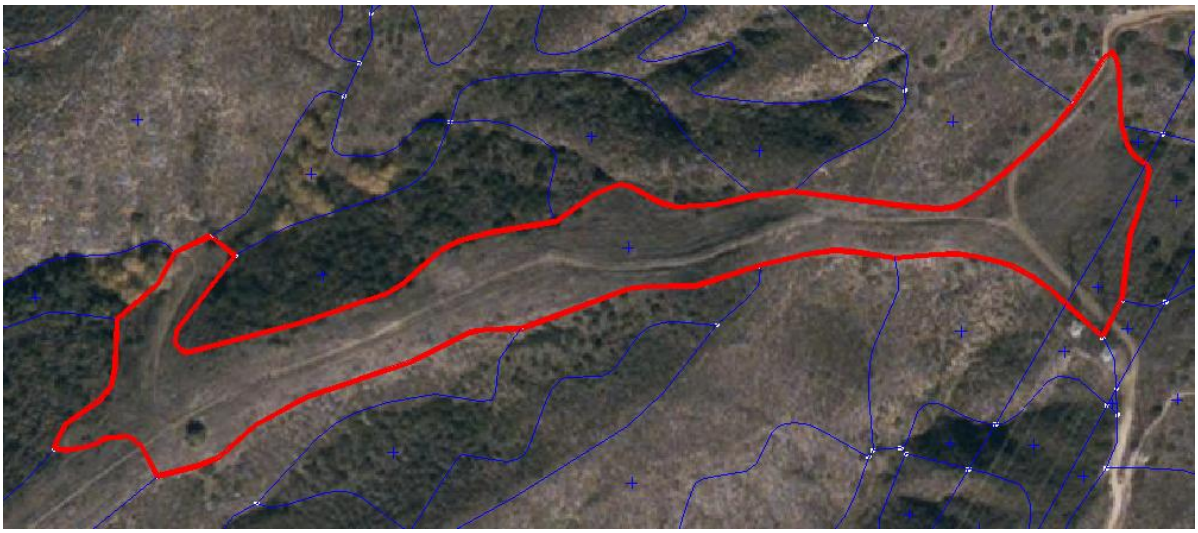
DESCRIPTION: Artificial Cuts/Embankments: *Spartium junceum* Shrubland Mapping Unit is mapped where the land has been modified and is vegetated with a dominance of *Spartium*. Artificial features include road and railroad cuts and embankments, as well as hillside cuts and fill for urban developments. *Spartium* is usually found on fill embankments.

PHOTO INTERPRETATION SIGNATURE: Artificial Cuts are on the uphill side of roads, railroads or developments, where part of the hill has been carved out. Parallel white drainage ways may be seen on individual tiers on the cut. Embankments are steep smooth fill that are on the downhill side of a development or on one or both sides of a road or railroad where it is elevated above the land, usually above a canyon or drainage. *Spartium* is a short to medium sized shrub with a gray to gray-green color and a slightly coarse texture. The signature may have a hint of yellow representing the inflorescences.

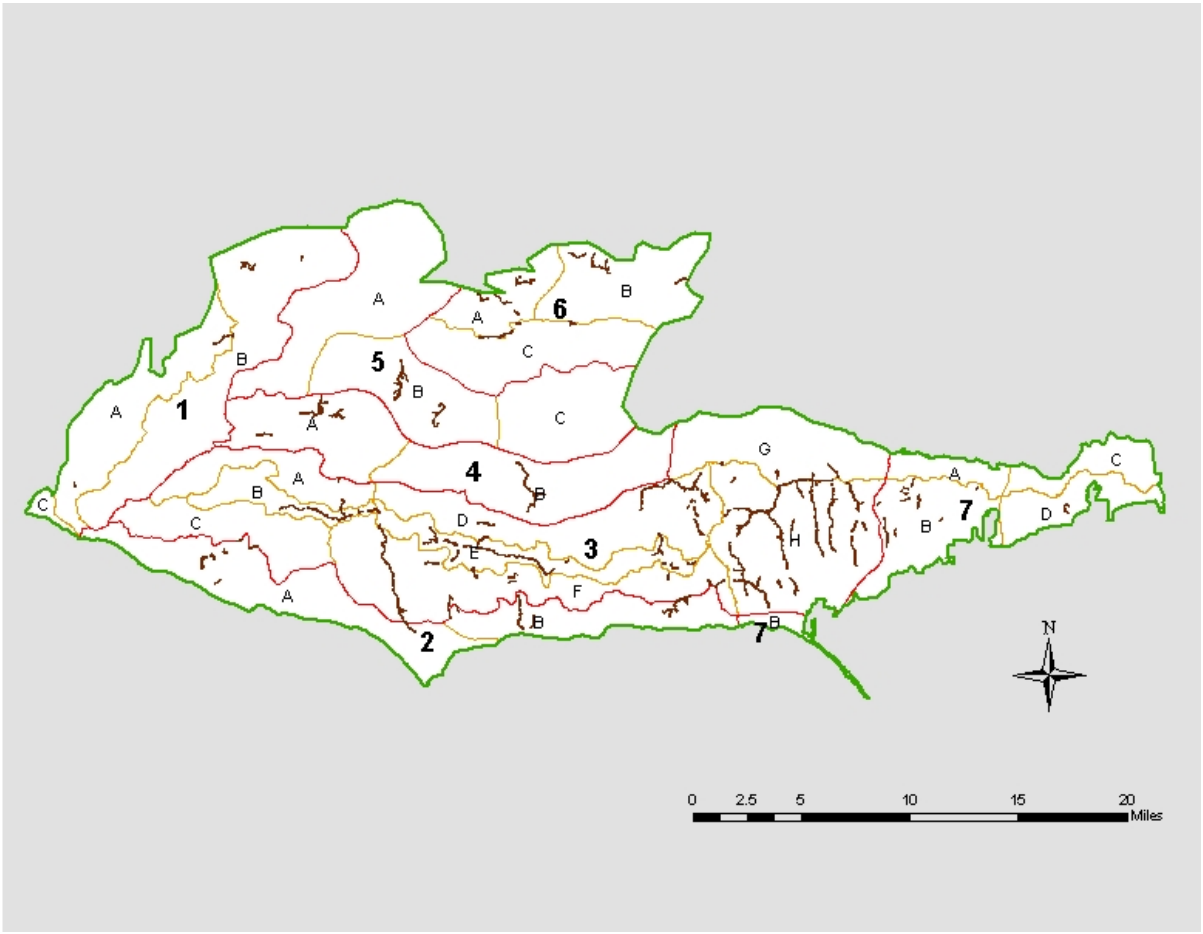
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- Urban Buffer Shrubs Mapping Unit (9109)
- Undifferentiated Ornamental Shrubland Mapping Unit (9540)
- *Spartium junceum* Shrubland Mapping Unit (9542)
- *Cortaderia selloana* Herbaceous Mapping Unit (9544)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)
- Artificial Cuts/Embankments: *Spartium junceum* Shrubland Mapping Unit (9651)

9700 – FIREBREAK EARLY SERAL UNDIFFERENTIATED VEGETATION MAPPING UNIT



DISTRIBUTION:



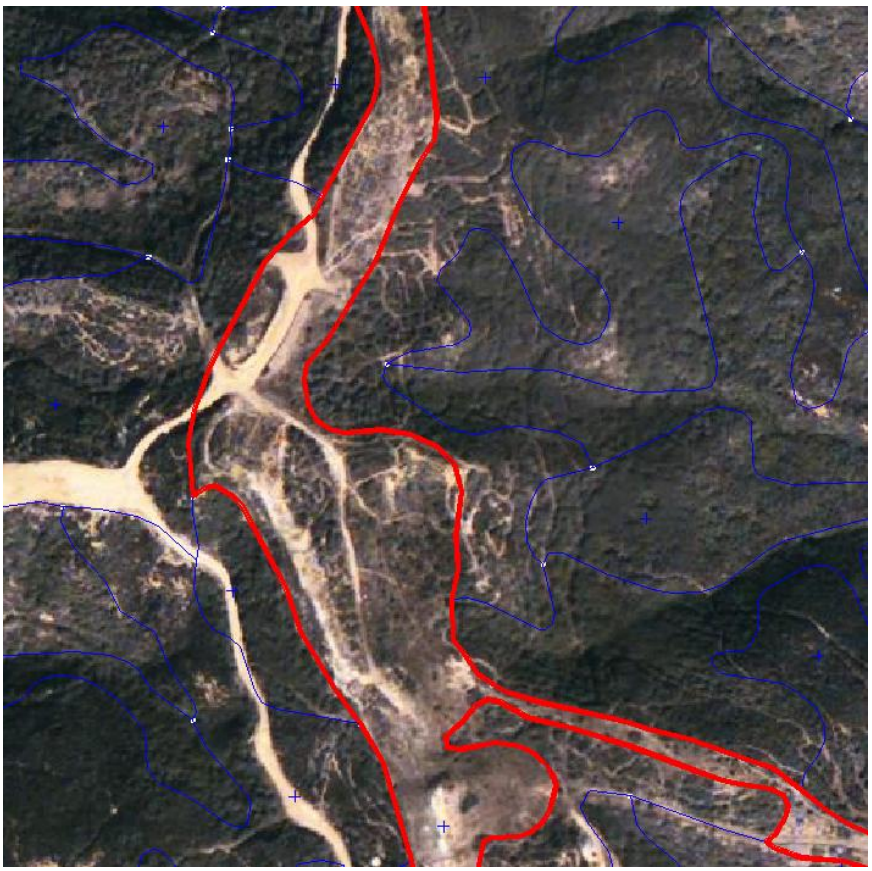
DESCRIPTION: Firebreak Early Seral Undifferentiated Vegetation Mapping Unit is mapped where the land has been graded for a wildland firebreak and is becoming re-vegetated with shrubs and/or herbs. Firebreaks usually follow ridge tops.

PHOTO INTERPRETATION SIGNATURE: The stand is uneven and mottled due to the combination of shrubs, herbaceous vegetation and cleared areas. Shrubs are usually short and occur as individuals or in patches. They tend to be red-brown to tan in color. The grasses tend to be shades of tan or brown with a smooth texture. Cleared areas are white or tan with a smooth texture.

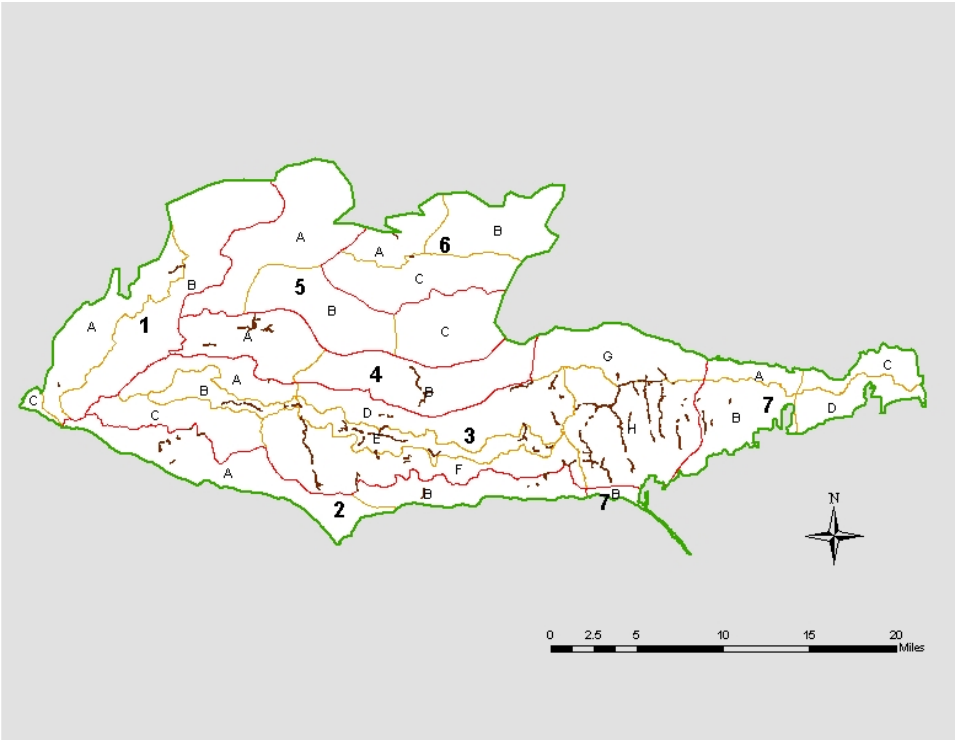
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- California Annual Grassland/Herbaceous Alliance (5000)
- Urban Buffer Shrubs Mapping Unit (9109)
- Urban Buffer Herbaceous/Cleared Mapping Unit (9118)
- Undifferentiated Ornamental Shrubland Mapping Unit (9540)
- Artificial Cuts/Embankments: Sparsely Vegetated to Non-Vegetated Mapping Unit (9630)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)

9710 – FIREBREAK EARLY SERAL SHRUBLAND MAPPING UNIT



DISTRIBUTION:



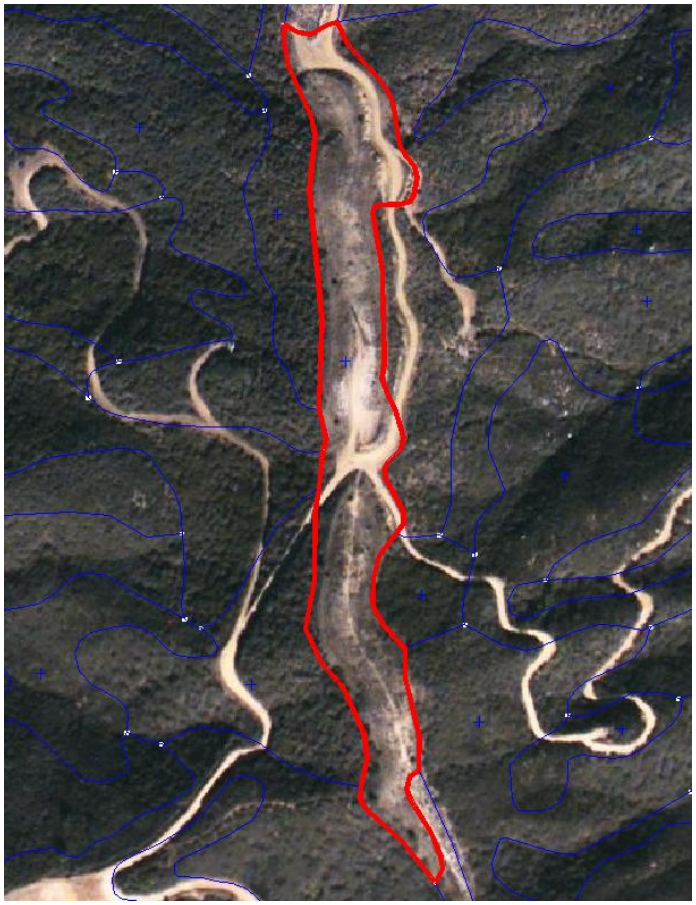
DESCRIPTION: Firebreak Early Seral Shrubland Mapping Unit is mapped where the land has been graded for a wildland firebreak and is becoming re-vegetated with a dominance of shrubs. Herbaceous vegetation may be present in the firebreak. Firebreaks usually follow ridge tops. Common firebreak shrubs include *Lotus scoparius, Eriogonum fasciculatum, Artemisia californica*, and *Salvia mellifera*.

PHOTO INTERPRETATION SIGNATURE: The stand is uneven and mottled due to a combination of shrubs, herbaceous vegetation and cleared areas. Shrubs are usually short and occur as individuals or in patches. They tend to be red-brown to tan in color. The grasses tend to be shades of tan or brown with a smooth texture. Cleared areas are white or tan with a smooth texture.

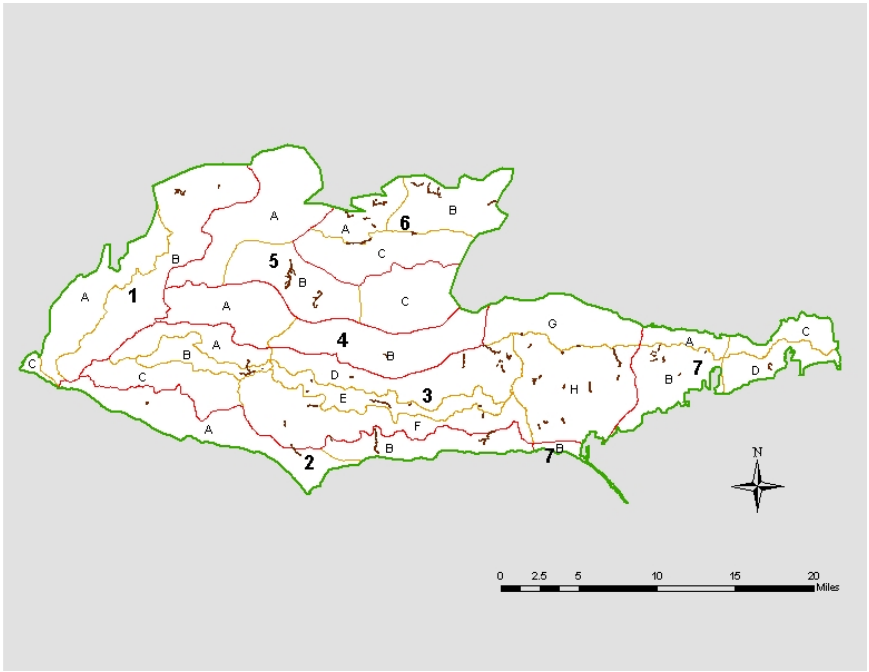
TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- *Eriogonum fasciculatum* Shrubland Alliance (3240)
- *Lotus scoparius* Shrubland Alliance (3270)
- *Salvia mellifera* Shrubland Alliance (3320)
- *Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance (3370)
- California Annual Grassland/Herbaceous Alliance (5000)
- Urban Buffer Shrubs Mapping Unit (9109)
- Urban Buffer Herbaceous/Cleared Mapping Unit (9118)
- Undifferentiated Ornamental Shrubland Mapping Unit (9540)
- Artificial Cuts/Embankments: Sparsely Vegetated to Non-Vegetated Mapping Unit (9630)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)

9711 – FIREBREAK EARLY SERAL HERBACEOUS/CLEARED MAPPING UNIT



DISTRIBUTION:



DESCRIPTION: Firebreak Early Seral Herbaceous/Cleared Mapping Unit is mapped where the land has been graded for a wildland firebreak and is becoming re-vegetated with a dominance of herbaceous vegetation or has been cleared with little or no re-vegetation. Scattered shrubs may be present in the firebreak. Firebreaks usually follow ridge tops.

PHOTO INTERPRETATION SIGNATURE: The stand may be mottled or fairly homogeneous in color and texture depending on the consistency of the vegetation. Grasses tend to be shades of tan or brown with a smooth texture. Cleared areas are white or tan with a smooth texture. Shrubs may be scattered or form inclusions of red-brown to tan color with coarse texture.

TYPES WITH SIMILAR PHOTO INTERPRETATION SIGNATURES:

- California Annual Grassland/Herbaceous Alliance (5000)
- Urban Buffer Shrubs Mapping Unit (9109)
- Urban Buffer Herbaceous/Cleared Mapping Unit (9118)
- Undifferentiated Ornamental Shrubland Mapping Unit (9540)
- Artificial Cuts/Embankments: Sparsely Vegetated to Non-Vegetated Mapping Unit (9630)
- Artificial Cuts/Embankments: Undifferentiated Shrubland/Herbaceous Mapping Unit (9650)