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Educational Materials

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Native Plants and Habitats of the UC Santa Barbara Campus

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NATIVE PLANTS & HABITATS OF THE UCSB CAMPUS



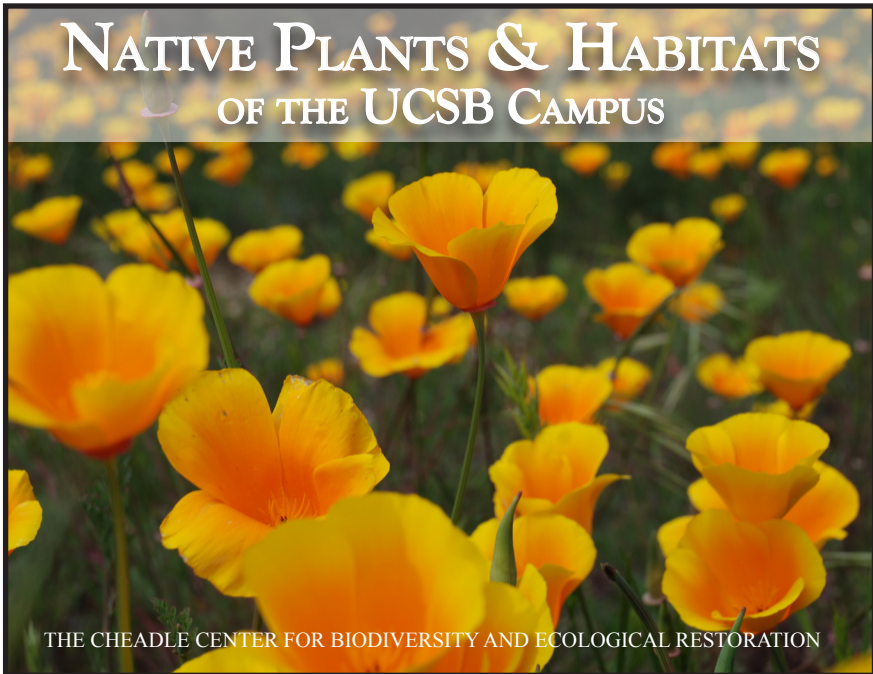
THE CHEADLE CENTER FOR BIODIVERSITY AND ECOLOGICAL RESTORATION

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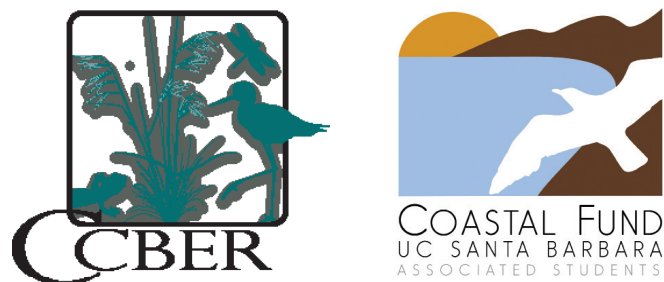
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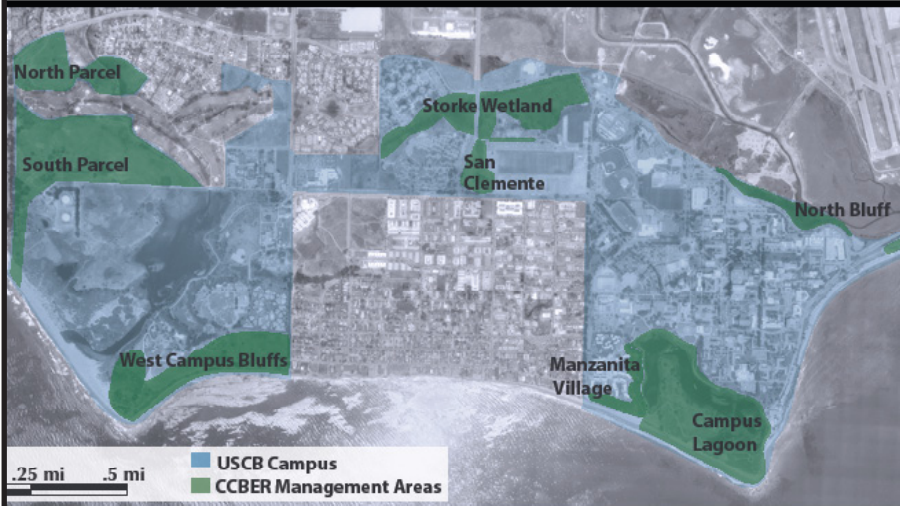
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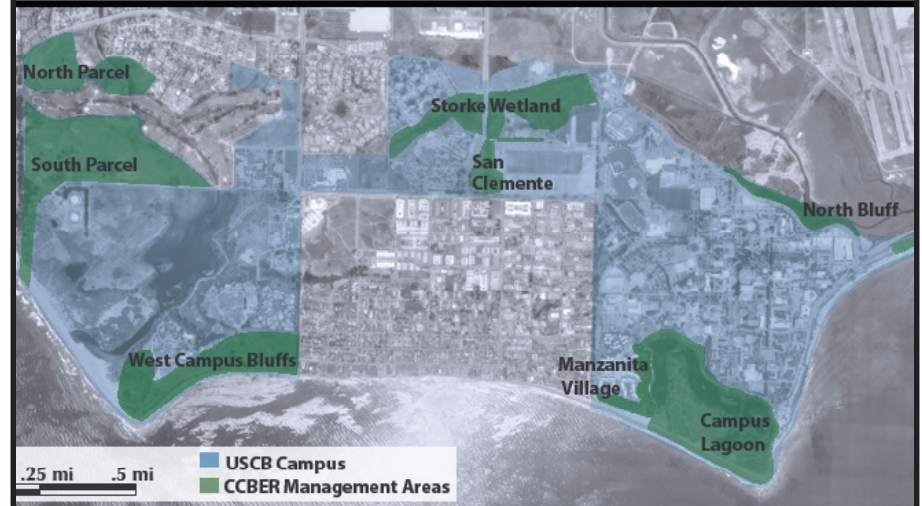
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CCBER Management Areas



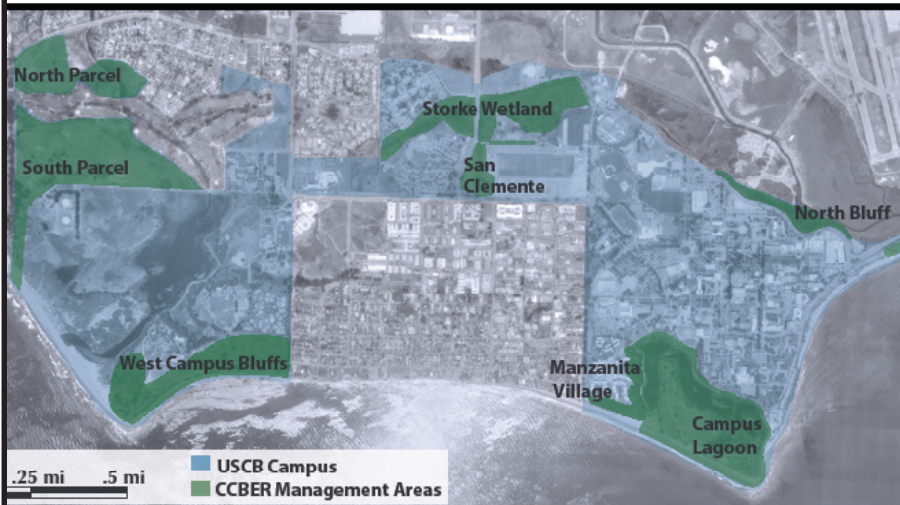
Native plant communities can be found in all of these protected open space areas around campus.

CCBER Management Areas



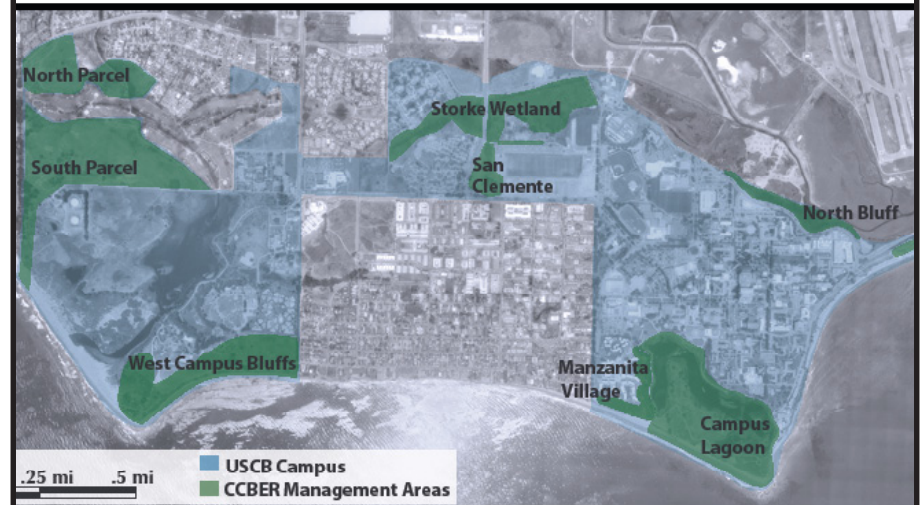
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Introduction

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About the Book

This book is meant to serve as a guide to help users identify the most common California native plants found on and around the UCSB campus. It is divided into different habitats that are found both on campus and in the local area. Each section begins with a general description of the habitat including its range within California, the types of plants and animals typically associated with it, characteristics and conservation status. Following the habitat descriptions, the prominent native plants found in these areas are featured. The species are arranged alphabetically by scientific name and include a photograph of the plant, common name, plant family, general description of growth form and information about cultural and wildlife use.

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This book also focuses on the cultural uses of the plants because, historically, large populations of Chumash people lived on the land that is now UCSB campus as well as the surrounding area. The Chumash and other Native American tribes throughout California used many native plant species in their day-to-day lives for food, medicine and material goods. It is important to understand the ecological benefits of these plants and to acknowledge and share information about their cultural uses.

Disclaimer *

In many of the plant descriptions, information on food sources and medicinal uses are included. DO NOT ingest any plants or plant parts without first checking with a qualified professional. Even edible and medicinal plants can be highly toxic if not prepared properly.

Nomenclature: The plant names in this book are sourced from the Jepson Online Interchange California Floristics (<http://ucjeps.berkeley.edu/interchange.html>) as of January 3, 2011.

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COAST LIVE OAK WOODLAND



Coast live oak woodland, occurring in the coastal ranges just north of San Francisco down to Baja California, occupies shaded ravines and north-facing slopes with deep soils *Quercus agrifolia* (Coast Live Oak), the dominant species, reaches a height of up to 25 m (82 ft). The coast live oak is the second largest acorn producer in California and its thick bark makes it fire tolerant. The understory is composed of shade-tolerant shrubs, arborescent shrubs, herbaceous plants and ferns. This plant community has been significantly reduced in size due to land conversion for agriculture, grazing and urban development. Its complex structure supports a wide variety of birds, insects, reptiles and amphibians, mammals and fungi. Oak woodlands are now facing serious threats from invasive weeds such as Italian thistle and cape ivy.

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9



Common Name: Coast Live Oak

Plant Species: *Quercus agrifolia*

Family: Fagaceae (Oak Family)

Comments: Broad-crowned tree, 8-25 m (26-82 ft), with evergreen, holly-like leaves. Widespread throughout the coastal region. The acorns from coast live oak were probably the single most important plant food of the coastal Chumash, after being processed to rid them of their toxic tannins. In addition, the wood was used for bowls, fuel, and medicine. Some Chumash continue to harvest acorns for food today. The acorns are also a valuable food source for bears, deer, birds, and many other forms of wildlife. The key feature that distinguishes *Quercus agrifolia* from other live oaks is the tomentose region (circled) between the primary and secondary veins on the underside of the leaf.



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Common Name: Toyon, Christmas Berry

Plant Species: *Heteromeles arbutifolia*

Family: Rosaceae (Rose Family)

Comments: Shrub/small tree, to 7.6 m (25 ft). Found in oak woodland and cooler areas of chaparral and coastal sage scrub. The berries mature in winter and support many bird species including the California Thrasher, Hermit Thrush, Cedar Waxwing, American Robin and Northern Mockingbird. Although mealy in texture, the berries constituted a traditional food plant of the Chumash and the branches were made into bows, arrows and other material tools. Toyon berries contain cyanide and should only be prepared by a professional.



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Common Name: California Coffee Berry

Plant Species: *Frangula [Rhamnus] californica*

Family: Rhamnaceae (Buckthorn Family)

Comments: Evergreen shrub, 1.5-4.5 m (5-15 ft), with reddish-purple stems. The flowers are white and star-shaped; the berries are reddish-brown and are eaten by birds, bears, foxes, raccoons and other wildlife. A similar species found farther north is marketed as an herbal diuretic, called Cascara Sagrada. The bark of both species naturally contains cyanide and must be processed correctly to make it safe for consumption.

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Common Name: Lemonade Berry

Plant Species: *Rhus integrifolia*

Family: Anacardiaceae (Sumac Family)

Comments: Shrub/small tree, 2-8 m (7-26 ft). Common on coastal bluffs and canyons in the foothills. The ripe berries (inset) are coated in a lemon-flavored substance and can be soaked in water to make a tasty drink, though there is no indication that the Chumash historically did so.

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17





Common Name: Bitter Gooseberry

Plant Species: *Ribes amarum* var. *hoffmannii*

Family: Grossulariaceae (Gooseberry Family)

Comments: Semi-deciduous shrub, to 2 m (6 ft), with red and white hanging flowers and spines on branches. Scattered about oak woodland, coastal sage scrub and chaparral. The fruit is spiny and edible. Hummingbirds feed on the nectar from the flowers. A red-flowered species, the fuchsia-flowered gooseberry (*Ribes speciosum*), also occurs in our foothills. Currants, by contrast, have no spines.

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Comments: Semi-deciduous shrub, to 2 m (6 ft), with red and white hanging flowers and spines on branches. Scattered about oak woodland, coastal sage scrub and chaparral. The fruit is spiny and edible. Hummingbirds feed on the nectar from the flowers. A red-flowered species, the fuchsia-flowered gooseberry (*Ribes speciosum*), also occurs in our foothills. Currants, by contrast, have no spines.

19



Common Name: Bitter Gooseberry

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19





Common Name: California Wild Rose

Plant Species: *Rosa californica*

Family: Rosaceae (Rose Family)

Comments: Rhizomatous shrub, 0.8-2.5 m (3-8 ft), often forming thickets. Found along canyon creeks and low-lying areas. Thickets of this spiny-stemmed plant serve as protection for the California Quail and other wildlife. The fruits are high in vitamin C and can be made into a jelly, eaten raw or made into a tea. They were eaten raw by the Chumash. Rose was considered to be a valuable medicinal plant for children suffering from various ailments.

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21



Common Name: Hummingbird Sage

Plant Species: *Salvia spathacea*

Family: Lamiaceae (Mint Family)

Comments: Rhizomatous, herbaceous perennial, 0.3-1 m (1-3 ft), with reddish-pink flowers. This plant is commonly found in dappled shade in chaparral, coastal sage scrub and oak woodland, especially under or near coast live oak trees. Tea made from this plant may be useful as a decongestant and has been used by the Chumash for pulmonary ailments. Brewed with lemon, mint and spearmint for a flavorful beverage, the tea is slightly antimicrobial and may be gargled or swallowed to soothe a sore throat. The leaves are sometimes chewed to alleviate thirst.



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Common Name: Blue Elderberry

Plant Species: *Sambucus nigra [mexicana] ssp. caerulea*

Family: Adoxaceae (Elderberry Family)

Comments: Shrub/small tree, to 8 m (26 ft). Found in oak woodland, coastal sage scrub and chaparral from the coast to higher mountain regions. It is one of the most productive local plants for birds, with an abundance of berries available during the breeding season. The Chumash used the wood for bows, fire drills and tools; hollow stems can be made into musical instruments such as flutes and clapper sticks. While fresh berries have an unpleasant taste, cooked berries make excellent pies, wine and jelly and are an effective natural laxative.



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Common Name: Poison Oak

Plant Species: *Toxicodendron diversilobum*

Family: Anacardiaceae (Sumac Family)

Comments: Shrub or climbing vine, 1-4 m (3-14 ft), with three lobed leaflets that turn red as they mature. Found in oak woodland, canyons, chaparral and stabilized dunes. Oil produced in the leaves and stems can cause skin irritation and an itchy rash. When the stems or leaves of poison oak are broken, the plant produces a black sap that was once used by Chumash as a cure for skin cancers and warts. Other medicinal uses of poison oak were also recorded.

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COASTAL SAND DUNE

Coastal sand dunes are scattered along the California coastline from the Oregon border south to San Diego. They are dynamic habitats that are affected by wave action, tides and wind. Dunes develop where there is a substantial amount of blown, dry sand. Their formation is often aided by pioneer dune species such as beach saltbush (*Atriplex leucophylla*). Plants found on coastal sand dunes are mostly prostrate herbs with creeping stems and long fleshy taproots. The leaves are usually small, somewhat succulent, and often hairy and grayish in color. These features aid the plants in tolerating drought, blowing sand, salt stress and intense sunlight. The southern California coastal sand dunes support the rare Globose Dune Beetle and the California Legless Lizard. Dunes have been greatly reduced by development, off road vehicle use and exotic species invasions.



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Common Name: Red Sand Verbena (left)
Plant Species: *Abronia maritima*
Family: Nyctaginaceae (Four O’Clock Family)
Comments: Prostrate perennial, stems 0.2-1m (8-40 in), with thick succulent leaves and dark red to magenta flowers. Grows in mounds on stabilized dunes along the coast. Red sand verbena is nearly extirpated from southern California.



Common Name: Beach Sand Verbena (right)
Plant Species: *Abronia umbellata*
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Common Name: Beach-bur

Plant Species: *Ambrosia chamissonis*

Family: Asteraceae (Sunflower Family)

Comments: Prostrate perennial mat or mound, up to 3 m (10 ft) wide and .3 m (1 ft) high, with grayish-silver foliage and spiny fruits. The inflorescence is composed of separate male and female flowers. The male flower is yellowish-green and the female flower, usually below the male, is whitish-green.

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Common Name: Beach Saltbush

Plant Species: *Atriplex leucophylla*

Family: Chenopodiaceae (Goosefoot Family)

Comments: Prostrate perennial, stems 30-50 cm (12-18 in) long, with whitish-blue foliage. *Atriplex* species tolerate saline conditions by removing excess salt with bladders on the surface of the leaf. The bladders act as salt sinks by keeping the salt from accumulating to toxic levels in the plant's cells. During extreme storm events, many plants may be destroyed. Seeds will germinate and re-colonize foredunes during more favorable conditions.

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Common Name: Beach Evening Primrose

Plant Species: *Camissonia cheiranthifolia*

Family: Onagraceae (Evening Primrose Family)

Comments: Prostrate perennial, stems to 60 cm (24 in), with greenish-gray leaves and yellow flowers that fade to reddish-orange. Several other species of primrose occur locally.

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COASTAL SAGE SCRUB



Coastal sage scrub, also referred to as soft chaparral, occurs primarily in dry but foggy areas along the coastal zone and inland areas where the marine layer reaches into the foothills and canyons. At higher elevations, this community is typically larger and woodier. Average precipitation throughout the range is 25 cm (10 inches). Shrubs reach an average height of two meters and are often aromatic due to secondary leaf compounds that reduce herbivory. These shallow-rooted species are capable of capturing water from light rain and fog events and some species respond to summer drought by losing their leaves (drought deciduous). Coastal sage scrub plants are not adapted to frequent fire and can degrade to non-native annual grasslands. These plant communities support a wide variety of insects and birds, including the state endangered Belding's Savannah Sparrow and the Coastal California Gnatcatcher.

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Common Name: California Sagebrush

Plant Species: *Artemisia californica*

Family: Asteraceae (Sunflower Family)

Comments: Semi-deciduous shrub, 0.6-2.5 m (2–8 ft), with aromatic gray-green foliage and some leaves dying back in summer. *Artemisia californica* is abundant in coastal sage scrub plant communities. This plant smells strongly and is a familiar odor to many Californians. Chumash Indians historically used this species for medicine, arrow construction, fire making, and several rituals involving purification.

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Common Name: Mugwort

Plant Species: *Artemisia douglasiana*

Family: Asteraceae (Sunflower Family)

Comments: Rhizomatous, perennial subshrub, 1-2.5 m (3-8 ft), with leaves that are green on top and white underneath. Found in cool, moist regions of canyons, creeks and ditches in coastal areas. Traditionally, Chumash Indians used this plant medicinally in a number of ways, such as igniting dry, rolled "cones" of leaves and placing them on the skin. The most common herbal association today is to prevent or cure poison oak rashes, though full-blooded Chumash probably did not suffer from this allergy.



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Common Name: Saltbush

Plant Species: *Atriplex lentiformis*

Family: Chenopodiaceae (Goosefoot Family)

Comments: Shrub, 1-3 m (3-10 ft), with gray-green triangular leaves. Saltbush can tolerate growing in alkaline and saline conditions and is common along coastal bluffs. Native Americans ground the seeds into a meal to make bread or a mush-like dish. Spanish settlers would burn the whole bush and use the ashes for lye in soap-making. Its abundant fruits ripen in the fall and provide food for birds including the California Quail and doves.

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Comments: Shrub, 1-3 m (3-10 ft), with gray-green triangular leaves. Saltbush can tolerate growing in alkaline and saline conditions and is common along coastal bluffs. Native Americans ground the seeds into a meal to make bread or a mush-like dish. Spanish settlers would burn the whole bush and use the ashes for lye in soap-making. Its abundant fruits ripen in the fall and provide food for birds including the California Quail and doves.

45



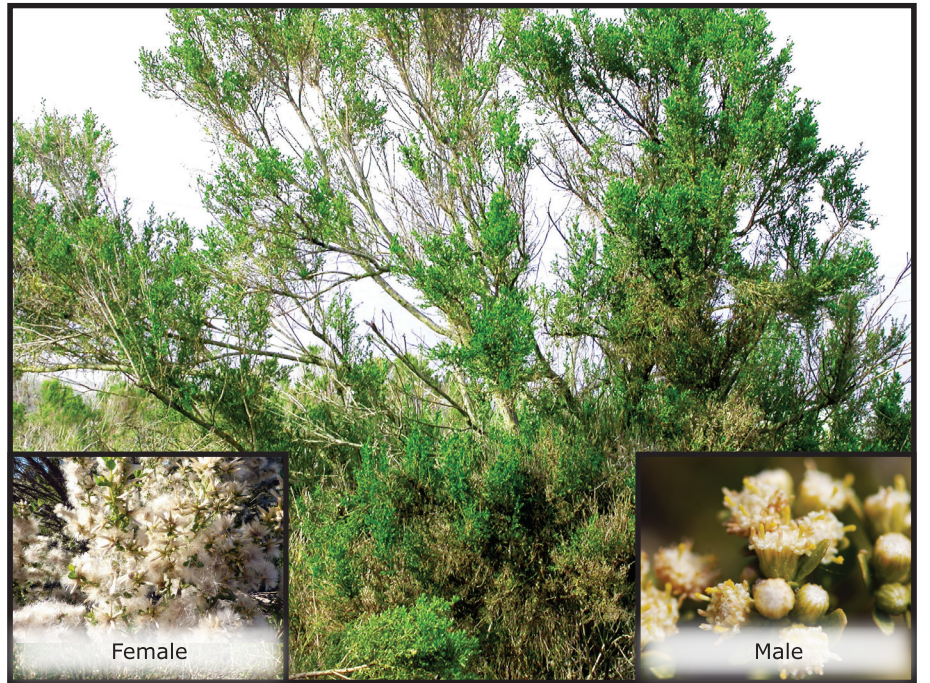
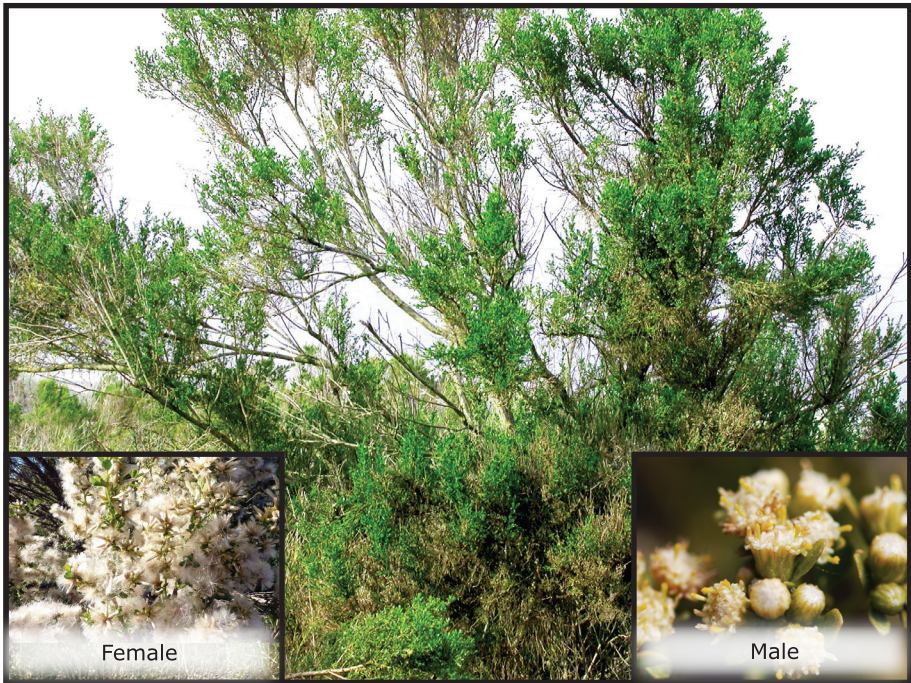
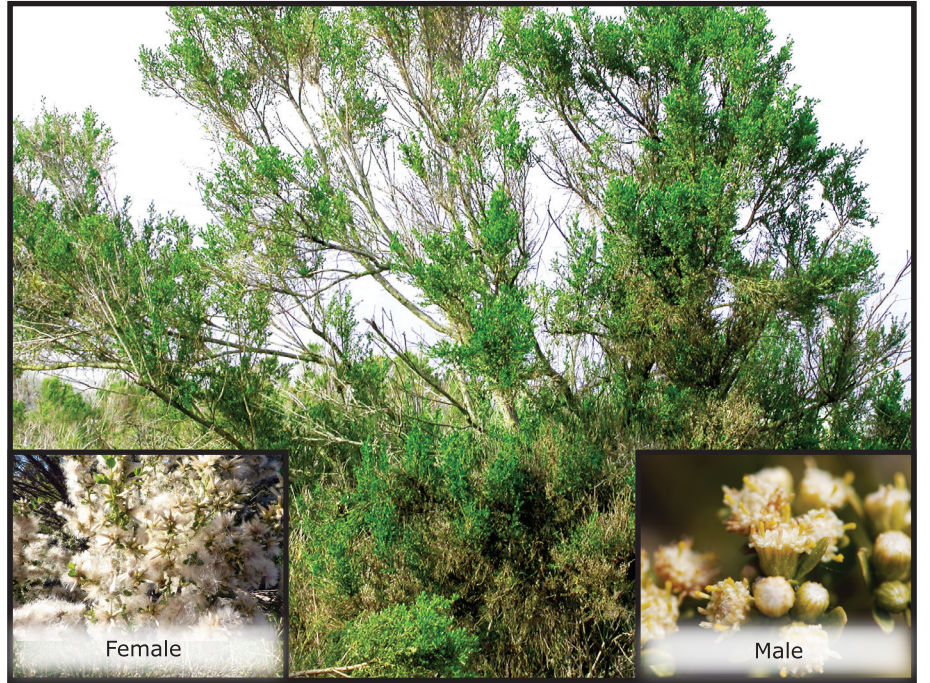
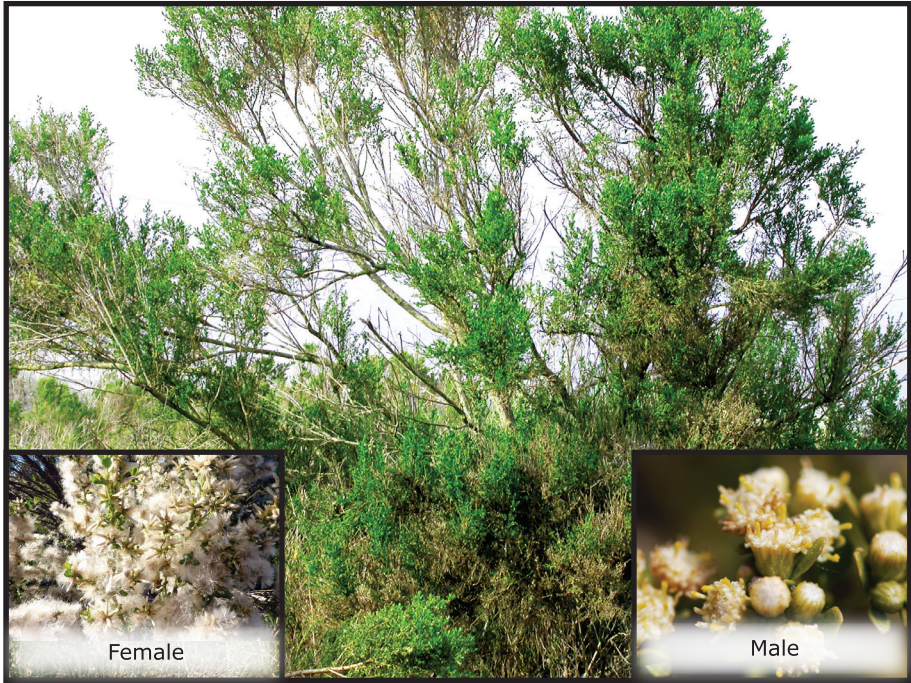
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Common Name: Coyote Brush

Plant Species: *Baccharis pilularis*

Family: Asteraceae (Sunflower Family)

Comments: Shrub, to 3 m (10 ft). Found mainly from the coast up to elevations just below the chaparral. Used year-round by many bird species because it attracts insects and spiders. An aggressive colonizer of disturbed soils, coyote brush is often found in dense stands. An iridescent green beetle called the Baccharis beetle lays eggs on the foliage.

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Common Name: Jimson Weed, Toloache

Plant Species: *Datura wrightii*

Family: Solanaceae (Nightshade Family)

Comments: Herbaceous perennial, to 1.5 m (5 ft), with large white to purple funnel-shaped flowers. Foliage is dark green and sticky with an unpleasant odor when crushed. The heaviest flowering occurs in late summer. Common in disturbed places from washes to roadsides. This relative of tobacco and tomatoes holds an important place in Chumash mythology, healing and culture. This plant is highly toxic and should not be ingested in any way, as experimental use has resulted in blindness and even death.



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Common Name: California Sunflower

Plant Species: *Encelia californica*

Family: Asteraceae (Sunflower Family)

Comments: Shrub, 1-1.5 m (3-5 ft), with yellow ray flowers surrounding red-purple disk flowers. Common on bluffs and slopes in coastal sage scrub. *Encelia californica* is an example of what many coastal sage scrub species do during the dry season: go drought deciduous. During this stage, most leaves die, but flush with growth when days shorten and winter rains resume. Its seeds resemble domestic sunflower seeds and are eaten by many bird species, especially finches.

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Common Name: California Fuchsia

Plant Species: *Epilobium canum*

Family: Onagraceae (Evening Primrose Family)

Comments: Subshrub, to 1 m (3 ft), with whitish, gray-green leaves and reddish-pink flowers that are pollinated by hummingbirds. Usually found on steep, rocky banks and slopes.

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Common Name: Seacliff Buckwheat

Plant Species: *Eriogonum parvifolium*

Family: Polygonaceae (Buckwheat Family)

Comments: Low-growing shrub, .3-1 m (1-3 ft). The upper surface of the leaves are green and shiny while the underside is white. Commonly found throughout the coastal zone. *Eriogonum* is the largest genus in Santa Barbara County, with over 30 species on the mainland and Channel Islands. Several of the Island endemics are very attractive and have been introduced into the horticultural trade. This species and others are well used by native pollinators.

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Common Name: Golden Yarrow

Plant Species: *Eriophyllum confertiflorum*

Family: Asteraceae (Sunflower Family)

Comments: Grayish subshrub, 0.3-1 m (1-3 ft), with golden yellow flowers that have obvious petals and cobwebby hairs on the stems and leaves. Found on open slopes and outcrops throughout the coast.

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Common Name: Coastal Goldenbush

Plant Species: *Isocoma menziesii*

Family: Asteraceae (Sunflower Family)

Comments: Shrub, .3-1.5 m (1-5 ft), with toothed or entire leaves and flowers that lack obvious petals. Sometimes common throughout the coastal zone, it typically flowers in the summer. The wandering skipper and western pygmy blue butterflies feed on nectar from the flowers.

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Common Name: Giant Rye

Plant Species: *Elymus [Leymus] condensatus*

Family: Poaceae (Grass Family)

Comments: One of the largest, perennial, native grasses, 1.2-3.5 m (4-10 ft). Usually found in clusters, it is common in well-drained soils in coastal woodlands, canyons and ocean bluffs. After a fire or heavy pruning, *Elymus* re-sprouts vigorously from the base. Chumash traditionally used the stems for lightweight arrows, tobacco pipes, paintbrush handles, and thatching.



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Common Name: Deerweed

Plant Species: *Acmispon glaber* [*Lotus scoparius*]

Family: Fabaceae (Pea Family)

Comments: Bushy subshrub, 0.6-2 m (2-6.5 ft). Commonly found on stabilized dunes, ocean bluffs, coastal sage scrub, and dry disturbed areas of the coastal region. This legume is a common fire-follower in coastal sage scrub and chaparral habitats.

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Malacothrix saxatilis ssp. tenuifolia



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Common Name: Cliff Aster, Cliff Malacothrix

Plant Species: *Malacothrix saxatilis*

Family: Asteraceae (Sunflower Family)

Comments: Herbaceous perennial, to 1 m (3 ft), with white flowers and milky sap. Scattered around coastal bluffs and canyon mouths. Several varieties of this species occur. Variety *tenuifolia* (left) has thinner leaves than the closely-related var. *saxatilis*. Hybridization can also occur. A rarer but related species, called the dunedelion (*M. incana*), once occurred on the dunes around UCSB, but has gone locally extinct. Initial efforts to reintroduce it failed.



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Common Name: Monkeyflower

Plant Species: *Mimulus aurantiacus*

Family: Phrymaceae (Lopseed Family)

Comments: Shrub, 0.6-1.5 m (2-5 ft), with white to orange tubular flowers. The foliage is slender and pointed. The plant is coated with a sticky resin that helps prevent desiccation. Over 20 species of *Mimulus* occur in Santa Barbara County, some of which are endangered. *Mimulus aurantiacus* is the most common species of monkeyflower on campus.

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Common Name: California Figwort

Plant Species: *Scrophularia californica*

Family: Scrophulariaceae (Figwort Family)

Comments: Erect herbaceous perennial, 0.6-1.5 m (2-5 ft). Found throughout woodland, coastal sage scrub and chaparral habitats along the coast. The small, maroon flowers contain sweet nectar consumed by hummingbirds and other pollinators. An uncommon darker-flowered species, *Scrophularia atrata*, sometimes occurs in the area.

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GRASSLAND



California grasslands are found throughout the Central Valley, interior valleys of the Coast Ranges and on terraces along the California coastline. There is much debate about the original vegetative composition of California grasslands. Overgrazing by livestock brought by Spanish colonists, the introduction of annual exotic grasses adapted to our Mediterranean climate, droughts and a change in wildfire frequency drastically altered the original composition of California grasslands. Historically, many California coastal grasslands most likely consisted of perennial bunchgrasses such as purple needlegrass (*Stipa pulchra*), mixed with an abundance of annual and perennial wildflowers (or forbs). Today, more than 99% of native California grasslands have been converted to a mix of non-native annual grasses and forbs, resulting in one of the most dramatic invasions by exotic plants in world history! Remnant patches of native grasslands remain today. They provide insight into the original composition of California grasslands, create spectacular wildflower displays in the springtime and sustain rare species.

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Common Name: Narrow-leaf Milkweed

Plant Species: *Asclepias fascicularis*

Family: Apocynaceae (Dogbane Family)

Comments: Rhizomatous, herbaceous perennial, 0.3-1 m (1-3 ft). Found in grasslands, cultivated fields, and woodlands along the coast. Monarch butterflies lay their eggs on this plant and the larvae feed on its leaves. When digested, a toxin found in the leaves of milkweed makes the larvae and butterflies unpalatable to predators. Strong cordage can be made from the fine fibrous stems. Another species, *Asclepias eriocarpa*, has coarser fibers and occurs in the Santa Ynez Mountains and the Santa Ynez Valley.

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Comments: Rhizomatous, herbaceous perennial, 0.3-1 m (1-3 ft). Found in grasslands, cultivated fields, and woodlands along the coast. Monarch butterflies lay their eggs on this plant and the larvae feed on its leaves. When digested, a toxin found in the leaves of milkweed makes the larvae and butterflies unpalatable to predators. Strong cordage can be made from the fine fibrous stems. Another species, *Asclepias eriocarpa*, has coarser fibers and occurs in the Santa Ynez Mountains and the Santa Ynez Valley.

73



Common Name: Narrow-leaf Milkweed

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73





Common Name: California Aster

Plant Species: *Corethrogyne filaginifolia*

Family: Asteraceae (Sunflower Family)

Comments: Spindly subshrub, 0.3-1 m (1-3 ft), with small, lavender flowers and small leaves covered in white hairs. Scattered throughout the coastal zone to inland mountains. The last remaining population of this species in the Goleta Valley occurred at the site of the present Costco shopping center. CCBER staff collected plants and seeds before development began, and it is from those collections that all of the campus populations are descended.

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Common Name: California Poppy (coastal form)

Plant Species: *Eschscholzia californica*

Family: Papaveraceae (Poppy Family)

Comments: Annual/perennial forb, 15-60 cm (6-25 in), with yellow to orange flowers. *Eschscholzia californica* is recognized as the state flower of California. Our coastal form is unique compared to the store-bought, orange-flowered variety. Some distinguishing characteristics are its yellowish flowers, resistance to powdery mildew, and the ability to survive through rainless summers using coastal fog, making it a perennial. Excessive sowing of non-local, poorly adapted, store-bought varieties has led to genetic introgression.



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Common Name: Gum Plant

Plant Species: *Grindelia camporum*

Family: Asteraceae (Sunflower Family)

Comments: Subshrub, .6-1.2 m (2-4 ft), with yellow flowers that are coated with a white, sticky film when immature. Gum plant likes heavy, wet soils, and is sometimes found on the edges of vernal pools in Isla Vista. This plant has been used as a Chumash remedy for bronchial asthma and thought to relax the muscles of smaller bronchial passages.

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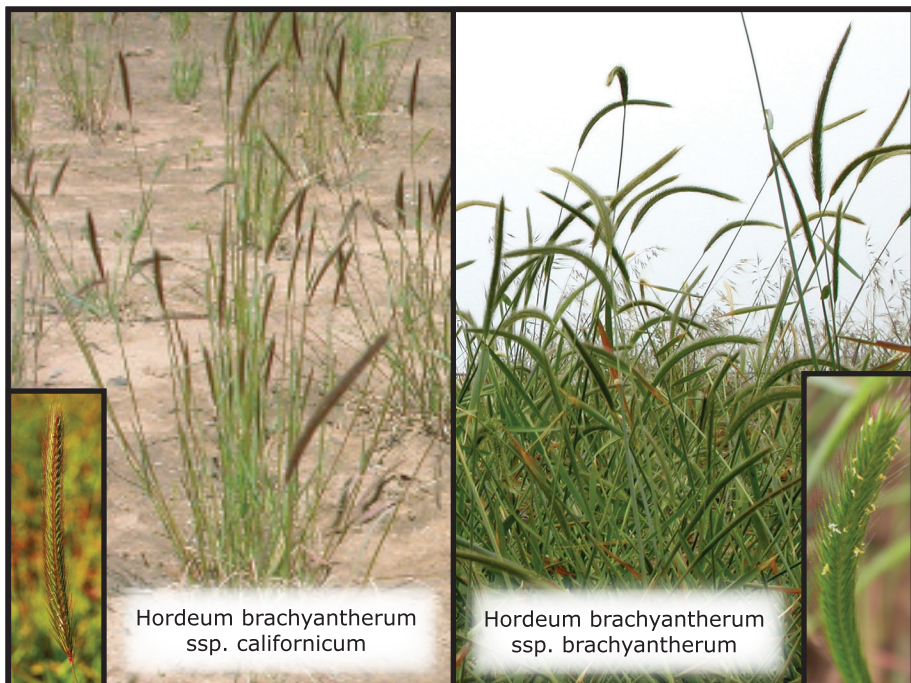
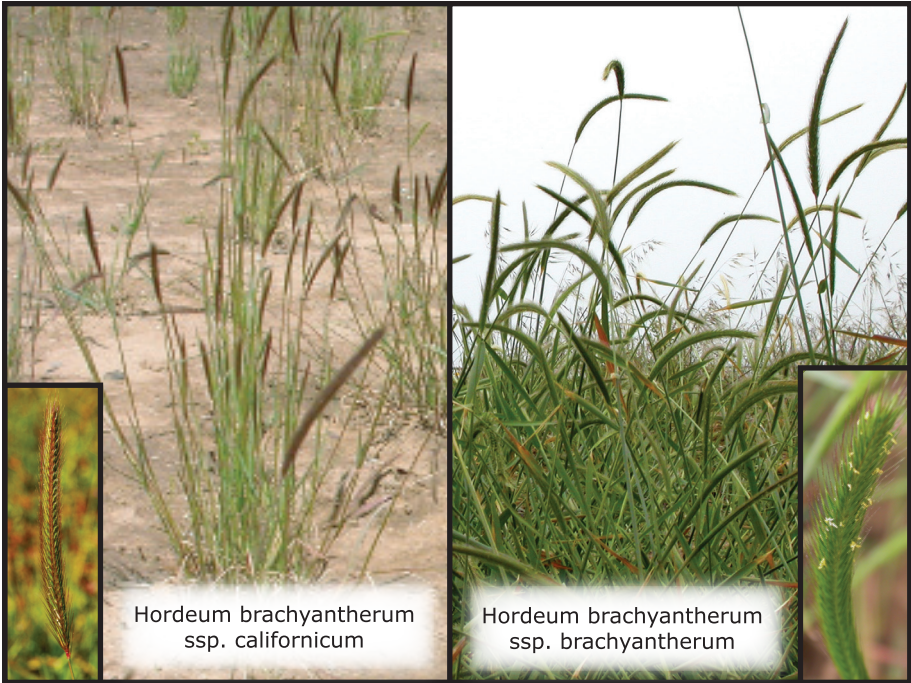
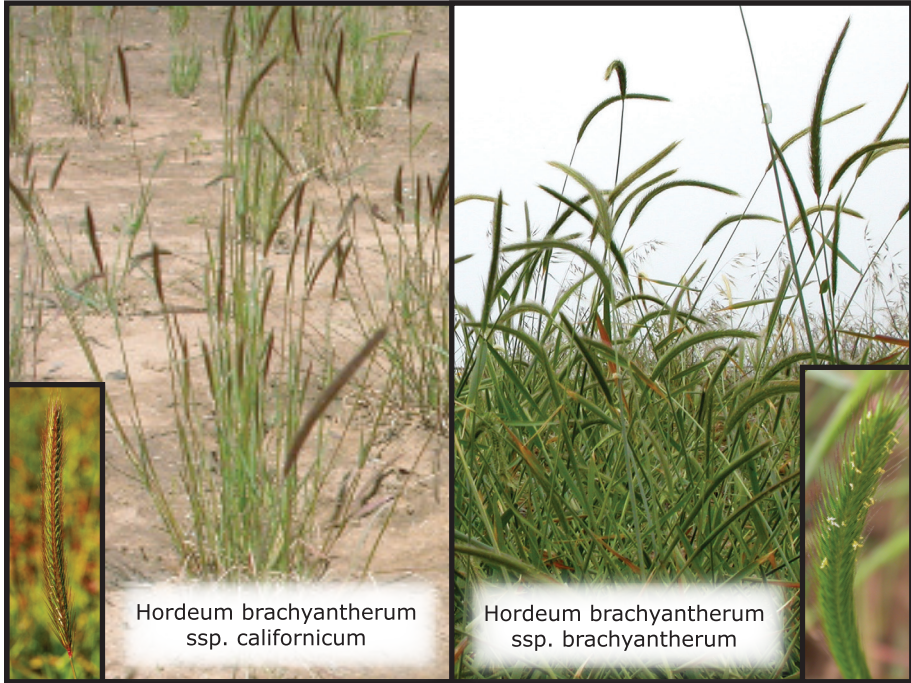
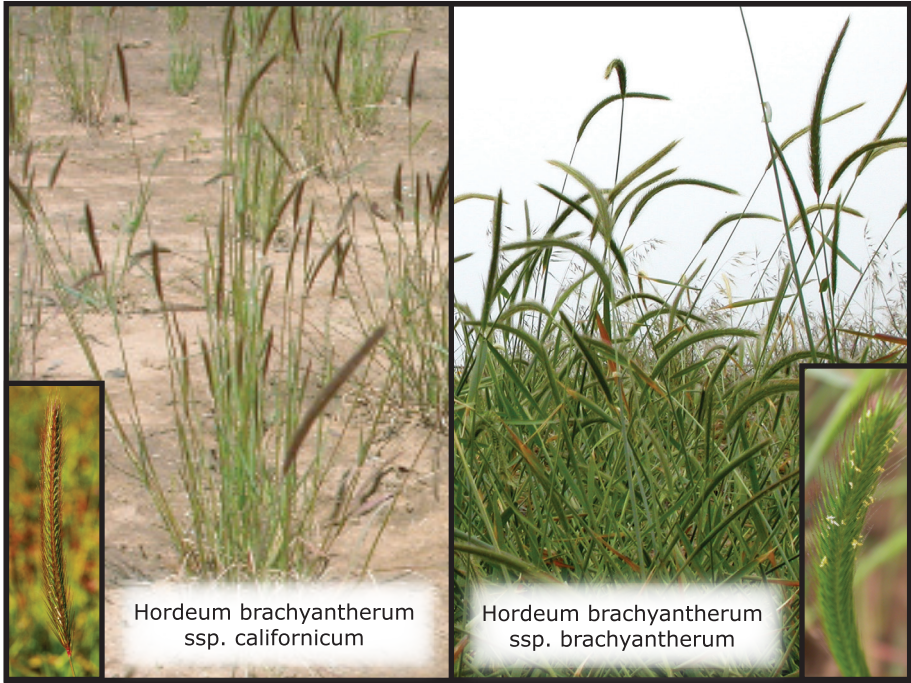
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Common Name: California Barley

Plant Species: *Hordeum brachyantherum* ssp. *californicum*

Family: Poaceae (Grass Family)

Comments: Perennial grass, 20-65 cm (8-26 in), with hairs on the leaves and a reddish flowering stalk. Found in moist areas along grassy mesas and ocean bluffs. The closely related subspecies *brachyantherum* occurs in saturated grassland areas and wetlands. Its inflorescence is brownish-green and the leaves are relatively hairless compared to subspecies *californicum*.



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Common Name: Miniature Lupine

Plant Species: *Lupinus bicolor*

Family: Fabaceae (Pea Family)

Comments: Annual forb, 8-40 cm (3-16 in), with blue and white flowers. Common throughout grasslands, woodlands, ocean bluffs and canyons of the coastal region. This is one of the few native annual wildflowers that persists in the local area. *Lupinus* is derived from the Latin word for wolf, lupus. They were given this name because they were once thought to rob soils of their fertility; in fact, they are legumes, and actually enrich soils by fixing nitrogen.

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Common Name: Purple Needlegrass

Plant Species: *Stipa [Nassella] pulchra*

Family: Poaceae (Grass Family)

Comments: Perennial bunchgrass, 0.3-1 m (1-3 ft). Common in grasslands and open woodlands along the coast and inland. Roots can extend down 7 m (20 ft) and plants can live to be over 200 years old. *Stipa pulchra* is the state grass of California. Perennial grasses are valued for their ability to conserve topsoil. Its species name, *pulchra*, is Latin for beautiful.

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Common Name: Blue-eyed Grass

Plant Species: *Sisyrinchium bellum*

Family: Iridaceae (Iris Family)

Comments: Perennial forb, 20-50 cm (8-20 in), that goes dormant in the summer. The growth form is similar to an iris with purple-blue flowers. Commonly found in moist, grassy places in grasslands and woodlands along the coast. The plant's common name is misleading, as it is not a grass, has purple instead of blue flowers and, of course, has no eyes.

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COASTAL SALT MARSH



Coastal salt marshes are found in scattered locations along the California coastline. They occur in estuaries, where freshwater wetlands meet the sea, and in nontidal wetlands that have high soil salinity as a result of historic tidal flows. Plants and animals in this community are adapted to withstand high salt concentrations, low oxygen levels and periodic water-level fluctuations from changing ocean tides. Most plants have small, succulent leaves and specialized mechanisms that enable them to isolate and expel excess salt while spongy stems move oxygen to submerged roots. Coastal salt marshes provide nursery habitat to marine fishes, such as halibut, and serve as important refuges and feeding grounds for migratory and resident birds, such as the state endangered Belding's Savannah Sparrow. About 90% of coastal salt marsh habitat has been eliminated from the California landscape due to agriculture, filling, dredging, pollution and urban development, and much of the remaining salt marsh is degraded, making them good candidates for restoration work.

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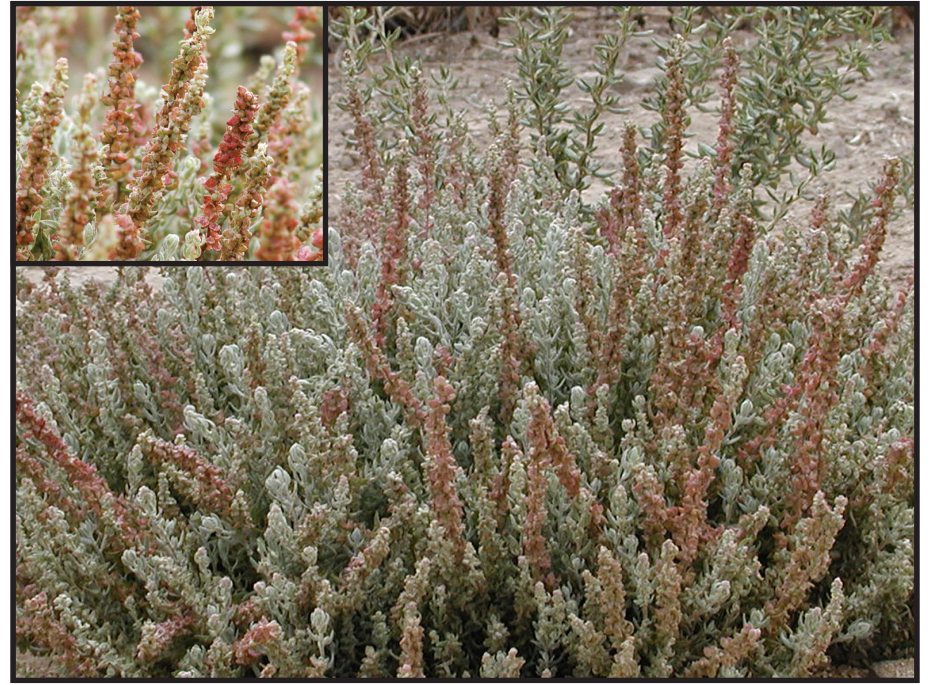


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Common Name: California Saltbush

Plant Species: *Extriplex californica*

Family: Chenopodiaceae (Goosefoot Family)

Comments: Low-lying, prostrate perennial, to 30 cm (12 in), with silvery-blue leaves. Found along ocean bluffs, stabilized dune systems and coastal salt marshes. The root of the plant was used in soaps; seeds were ground into a meal for porridge or bread. Favored by pygmy-blue butterflies.

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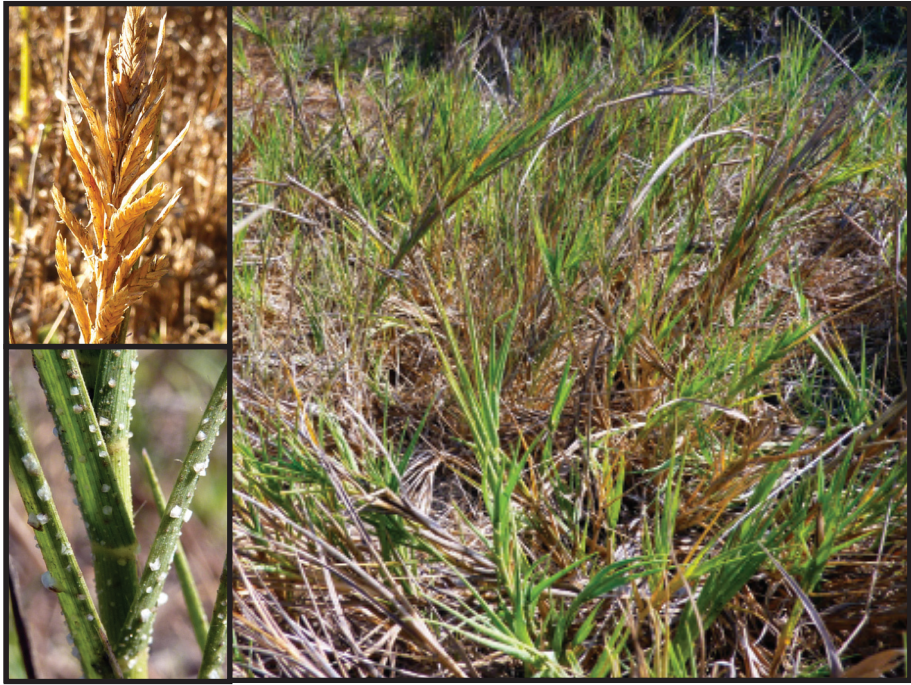
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Common Name: Saltgrass

Plant Species: *Distichlis spicata*

Family: Poaceae (Grass Family)

Comments: Rhizomatous, perennial grass, 10-50 cm (4-20 in). Abundant around salt marshes and coastal bluffs. Tolerates saline conditions by secreting salt from small glands on its leaves. The blades of the grass can be threshed and the salt-like spice can be used as a seasoning. The leaves are similar to the weedy Bermuda Grass, but the two are easily distinguished by their flowers. The less common *Distichlis littoralis* also occurs in the area. Serves as the host plant for larvae of the wandering skipper butterfly.

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Common Name: Alkali Heath

Plant Species: *Frankenia salina*

Family: Frankeniaceae (Frankenia Family)

Comments: Bushy, mat-forming subshrub, to 45 cm (18 in), with small, hairy leaves and pink flowers. Found in and around salt marshes and alkali flats. Excess salt is secreted out of the leaves through salt glands.

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Common Name: Jaumea

Plant Species: *Jaumea carnosa*

Family: Asteraceae (Sunflower Family)

Comments: Succulent perennial, to 0.3 m (1 ft), with bluish-green leaves and yellow flowers that bloom from May to October. Common in salt marshes, estuaries and sloughs. The wandering skipper, a rare California butterfly feeds on the nectar produced by the flowers.

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Common Name: Pickleweed

Plant Species: *Salicornia pacifica [virginica]*

Family: Chenopodiaceae (Goosefoot Family)

Comments: Succulent, mat forming perennial, 20-70 cm (8-28 in). Pickleweed is often the dominant species in coastal salt marsh vegetation. It provides important habitat for salt marsh birds and is a major food source for detritivores (organisms that feed on organic debris). The larvae of the smallest butterfly in the western United States, the western pygmy blue, rely on pickleweed as their main food source, while the adult butterflies rely on adjacent coastal sage scrub and dune vegetation.



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Common Name: Saltmarsh Dodder

Plant Species: *Cuscuta salina*

Family: Convolvulaceae (Morning-glory Family)

Comments: Orange, leafless, parasitic plant with small white flowers; it produces no chlorophyll. An outgrowth from this plant, called a haustorium, enables it to absorb water and nutrients from host plants such as jaumea, pickleweed (left) and alkali heath. The seeds of this plant drop to the ground and will germinate the following growing season if a suitable host is present. Seedlings must attach to a host within a few days of germination or they will die. Several other species of parasitic dodder occur elsewhere in the county; this one is specific to salt marshes.



101

Common Name: Saltmarsh Dodder

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FRESHWATER MARSH



Freshwater marshes are found throughout California, occurring in many different climates and elevations. They typically occur in nutrient-rich mineral soils that drain slowly and are waterlogged or saturated for most or all of the year. Freshwater marsh plant communities are characterized by the presence of emergent hydrophytes (plants adapted to growing in saturated soils and standing water) including rushes, sedges, cattails and grasses. Many of these species are rhizomatous (spreading from underground horizontal stems) and can tolerate growing in low oxygen conditions characteristic of saturated soils. Some freshwater marshes are vernal, filling with winter and spring rains and drying out in the summer. Freshwater marshes reduce destructive flooding, decrease waterborne pollution and support many species of resident and migratory animals. Despite these benefits to society and the environment, more than 90% of freshwater marshes in California have been destroyed due to filling with soil, draining, overgrazing or conversion to non-native species.

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103





Common Name: Yerba Mansa

Plant Species: *Anemopsis californica*

Family: Saururaceae (Lizard's-Tail Family)

Comments: Sprawling, stoloniferous plant, 15-45 cm (6-18 in), with white flowers and showy bracts. Found in marshes and seeps along the coast. Can tolerate saline or alkaline soils. The only member of its family native to California. Yerba is Spanish for herb, and mansa means tranquil or calm. Yerba mansa was highly valued by the Chumash for its many healing properties, and is still in use today. It has a long history of use among Southwestern Native American groups that have shared its range.

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105



Common Name: Alkali Bulrush

Plant Species: *Bolboschoenus maritimus*

Family: Cyperaceae (Sedge Family)

Comments: Rhizomatous perennial, 0.8-1.2 m (2.5-4 ft), often growing in dense stands. Scattered around brackish marshes along the coast and in freshwater habitats inland. This plant has triangular stems and groups of flowers at the tip of the stem surrounded by three leafy bracts. *Bolboschoenus robustus* also occurs in the area and may be locally endemic. Sedges in the genus *Bolboschoenus* form small, underground tubers on their rhizomes. The processed tubers and possibly the seeds served as food for some Native American tribes.



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107





Common Name: Western Goldenrod

Plant Species: *Euthamia occidentalis*

Family: Asteraceae (Sunflower Family)

Comments: Rhizomatous perennial, 0.6-2 m (2-6.5 ft), sends up single stalks every year, with golden-yellow flowers that only bloom for about three weeks of the entire year. Found in salt marshes along the coast and in freshwater marshes and creeks inland. Monarch butterflies and many other species use this plant as a nectar source.

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Common Name: Common Rush

Plant Species: *Juncus patens*

Family: Juncaceae (Rush Family)

Comments: Clump forming perennial, 30-90 cm (11-35 in), with bluish-green stems. Seeds form at the upper end of stems in brownish-red capsules. Can be found scattered about damp places in coastal grasslands and foothills.

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Common Name: Brown-headed Rush

Plant Species: *Juncus phaeocephalus*

Family: Juncaceae (Rush Family)

Comments: Rhizomatous perennial, 25-76 cm (10-30 in), with flat, iris-like leaves. The leaves are ribbed with internal horizontal walls (or septa), which help support the plant. These septa can be felt if you pinch a stem and run your fingers along its length, or if the leaves are held up to the light.

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Common Name: Basket Rush

Plant Species: *Juncus textilis*

Family: Juncaceae (Rush Family)

Comments: Rhizomatous perennial, 0.6-2.5 m (2-8 ft), with blue-green stems and flowers in loose groups toward the end of the stem. The Chumash weavers along the coast were unique in that they used only this species for their beautiful baskets, while the Chumash of other regions employed other species. Chumash weavers continue to use this plant today.

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Common Name: Alkali Rye

Plant Species: *Elymus [Leymus] triticoides*

Family: Poaceae (Grass Family)

Comments: Rhizomatous perennial, 0.3-1.2 m (1-4 ft), with blue-green leaf blades. Found in thick colonies about salt marshes, meadows and moist areas of grassy fields. Alkali Rye naturally hybridizes with giant rye (*Elymus condensatus*) to form *Elymus x multiflorus*. The hybrid is rhizomatous, like *E. triticoides*, but its leaves are greener and the plant is somewhat larger.

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Common Name: California Bulrush

Plant Species: *Schoenoplectus californicus*

Family: Cyperaceae (Sedge Family)

Comments: Rhizomatous perennial, 2-3.6 m (6.5-12 ft), with a triangular stem. Found in colonies around brackish (mix of salt and fresh water) and fresh water marshes. *Schoenoplectus acutus* also occurs in the area. The Chumash traditionally used the stems in tule boats, house thatching, mats and water bottles, which were coated with asphaltum. The processed rhizomes and seeds may have been used as a food source.

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119



VERNAL POOL



Vernal pools occur on coastal terraces in southern California, alluvial deposits in the Central Valley and eroded lava flows throughout the state. They are seasonal wetlands that occur in depressions where there is an underlying impermeable layer that becomes saturated during the winter rains and ponds through the spring. Vernal pools dry up by early to late spring, depending on the rainfall pattern. As the water recedes, rings of vernal pool adapted species become apparent. Pools stay desiccated through the summer and early fall and associated species go dormant. Statewide, a unique suite of both plant and animal species are adapted to this cyclical wetting and drying, including coyote thistle, dwarf woollyheads, fairy shrimp, clam shrimp and Tiger Salamanders. Vernal pools also provide important resting and feeding places for migratory waterfowl. Vernal pool habitat is becoming increasingly rare: more than 90% of vernal pools in California have been destroyed due to agriculture, over-grazing and urban development. Ecologically, the Isla Vista vernal pools are unlike any others in the state of California.

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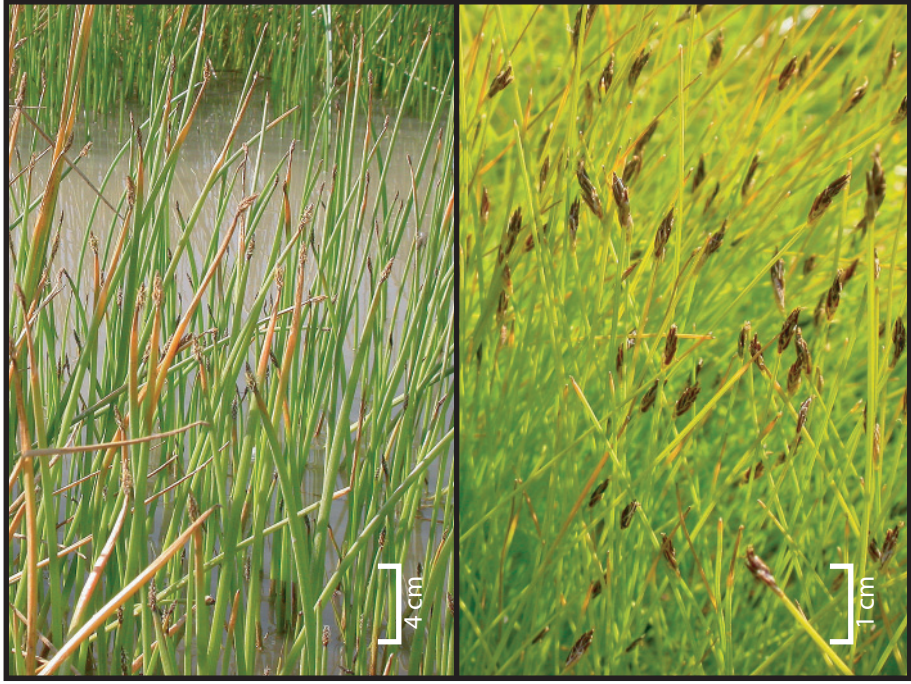
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Common Name: Common Spikerush (left)
Plant Species: *Eleocharis macrostachya*
Family: Cyperaceae (Sedge Family)
Comments: Rhizomatous perennial, 15-60 cm (6-24 in). Found in more saturated areas of wetlands compared to needle spikerush. Brown spikelets form at the top (terminal end) of each stem.



Common Name: Needle Spikerush (right)
Plant Species: *Eleocharis acicularis*
Family: Cyperaceae (Sedge Family)
Comments: Rhizomatous, grass-like perennial, 10-15 cm (3-6 in). Forms mats of thin flowering stems. Found on the edges of shallow wetlands.
Eleocharis montivedensis and *Eleocharis parishii*, two similar species, also occur on the campus.

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Common Name: Vasey's Coyote Thistle

Plant Species: *Eryngium vaseyi*

Family: Apiaceae (Carrot Family)

Comments: Prostrate, low-lying perennial, to 30 cm (12 in), with spiny seed bracts. The leaves are hollow during flooding to allow oxygen to pass to the roots. As the pool dries, the leaves become solid and prickly. Found in vernal pools and shallow depressions.

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Plant Species: *Eryngium vaseyi*

Family: Apiaceae (Carrot Family)

Comments: Prostrate, low-lying perennial, to 30 cm (12 in), with spiny seed bracts. The leaves are hollow during flooding to allow oxygen to pass to the roots. As the pool dries, the leaves become solid and prickly. Found in vernal pools and shallow depressions.

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Common Name: Vasey's Coyote Thistle

Plant Species: *Eryngium vaseyi*

Family: Apiaceae (Carrot Family)

Comments: Prostrate, low-lying perennial, to 30 cm (12 in), with spiny seed bracts. The leaves are hollow during flooding to allow oxygen to pass to the roots. As the pool dries, the leaves become solid and prickly. Found in vernal pools and shallow depressions.

125





Common Name: Lemmon's Canary grass

Plant Species: *Phalaris lemmonii*

Family: Poaceae (Grass Family)

Comments: Annual, 20-76 cm (8-30 in). Colonizes vernal pools and other moist habitats. This species is only rarely found in local vernal pool habitats.

127



Common Name: Lemmon's Canary grass

Plant Species: *Phalaris lemmonii*

Family: Poaceae (Grass Family)

Comments: Annual, 20-76 cm (8-30 in). Colonizes vernal pools and other moist habitats. This species is only rarely found in local vernal pool habitats.

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Common Name: Lemmon's Canary grass

Plant Species: *Phalaris lemmonii*

Family: Poaceae (Grass Family)

Comments: Annual, 20-76 cm (8-30 in). Colonizes vernal pools and other moist habitats. This species is only rarely found in local vernal pool habitats.

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Common Name: Lemmon's Canary grass

Plant Species: *Phalaris lemmonii*

Family: Poaceae (Grass Family)

Comments: Annual, 20-76 cm (8-30 in). Colonizes vernal pools and other moist habitats. This species is only rarely found in local vernal pool habitats.

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Common Name: Dwarf Woollyheads

Plant Species: *Psilocarphus brevissimus*

Family: Asteraceae (Sunflower Family)

Comments: Annual, to 5 cm (2 in), with gray- green, hairy leaves. Seed heads resemble wool-like balls. Found in vernal pools and vernal flats.

129



Common Name: Dwarf Woollyheads

Plant Species: *Psilocarphus brevissimus*

Family: Asteraceae (Sunflower Family)

Comments: Annual, to 5 cm (2 in), with gray- green, hairy leaves. Seed heads resemble wool-like balls. Found in vernal pools and vernal flats.

129



Common Name: Dwarf Woollyheads

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Family: Asteraceae (Sunflower Family)

Comments: Annual, to 5 cm (2 in), with gray- green, hairy leaves. Seed heads resemble wool-like balls. Found in vernal pools and vernal flats.

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Common Name: Dwarf Woollyheads

Plant Species: *Psilocarphus brevissimus*

Family: Asteraceae (Sunflower Family)

Comments: Annual, to 5 cm (2 in), with gray- green, hairy leaves. Seed heads resemble wool-like balls. Found in vernal pools and vernal flats.

129





Common Name: Popcorn Flower

Plant Species: *Plagiobothrys undulatus*

Family: Boraginaceae (Borage Family)

Comments: Low-lying annual, 8-30 cm (3-12 in), with small white flowers. Found in vernal pools and wet areas. Sometimes, concentric rings of this species can be seen flowering around the margins of vernal pools as the water dries. Several other species of *Plagiobothrys* occur in the county, and several occur in moist meadows. This is the only true vernal pool species in the genus *Plagiobothrys*.

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Common Name: Popcorn Flower

Plant Species: *Plagiobothrys undulatus*

Family: Boraginaceae (Borage Family)

Comments: Low-lying annual, 8-30 cm (3-12 in), with small white flowers. Found in vernal pools and wet areas. Sometimes, concentric rings of this species can be seen flowering around the margins of vernal pools as the water dries. Several other species of *Plagiobothrys* occur in the county, and several occur in moist meadows. This is the only true vernal pool species in the genus *Plagiobothrys*.

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