

Invertebrates

Ghost Shrimp (*Callinassa stimpsoni*)

Habitat: Burrows in mudflats

Diet: Bacteria, diatoms, and detritus

Size: ½ " in length

Description: A crustacean, but covered with a flexible cuticle rather than a hard shell.

PLANTS OF THE REFUGE

UPLAND PLANTS

Acacia (*Acacia longfolia*)

Origin: Australia

Plant Size: 6' tall tree with short trunk

Leaf Description: Oblong, curved leaves with smooth edges.

Flower Description: Bright yellow flowers bloom in January through March.

Did you know? Its long, narrow leaves are actually flattened leaf stems. Only new growth has true leaves.



Bull Thistle (*Cirsium vulgare*)

Origin: European

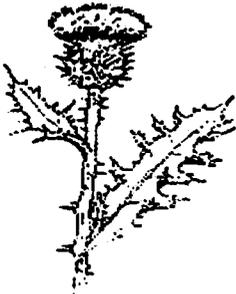
Plant Size: 1' - 2' tall with a long central stalk

Leaf Description: Long, wing-like leaves with painfully sharp edges.

Flower Description: Bright purple bristles compounded into a bell shape.

Seed: The flowers mature into a fluff that contains the seed and is dispersed by the wind.

Did you know? Bull Thistle is in the sunflower family.



California Buckwheat (*Eriogonum fasciculatum*)

Origin: Native

Plant Size: 1' - 2' tall stalk like shrub

Leaf Description: Small course leaves attached to long branching stems. The underside of the leaves are covered in a soft, white fuzz.

Flower Description: Large compound head with white flowers. Blooms from March to October.

Did you know? Buckwheat is one of the few acceptable food plants for the Acmon Blue Butterfly.

California Poppy (*Eschscholzia Californica*)

Origin: Native

Plant Size: 4" - 6" tall, small plant

Leaf Description: Small and thin, branch-like leaves.

Flower: Four petals which may be orange, yellow or yellow with orange at the base. Blooms from March to October.

Did you know? The California Poppy is California's State flower.



California Sagebrush (*Artemisia californica*)

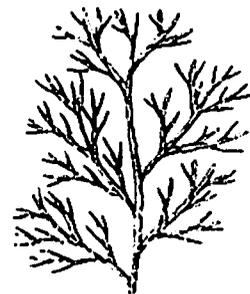
Origin: Native

Plant Size: 2' - 4' tall, medium size shrub

Leaf Description: Smooth needle shaped leaves that are grey in color.

Flower Description: Brownish grey disc flowers. Blooms from July to December.

Did you know? This plant is very aromatic. It's small leaves allow it to lose very little water during the long, dry, California summers.



Coyote Brush (*Baccharis pilularis*)

Origin: Native

Plant Size: 10' tall, large size shrub

Leaf Description: Numerous small leaves.

Flower Description: Numerous, small, yellowish white tufts. Blooms from September to December.

Seeds: Seeds are attached to the tufts and are dispersed by the wind

Did you know? This plant was named accordingly because the female brush has white fluffy flowers that look like Coyote fur.



Eucalyptus Tree (*Eucalyptus sp.*)

Origin: Australia

Plant Size: 50' tall, tree

Leaf Description: Olive green blades are three times as long as they are wide, have one aromatic vein, the leaves sit in clusters at the end of the branch.

Flower Description: White flowers that bloom from December to May

Seed: Cone shaped seeds with 1/4" star shape on the top.

Did you know? At night, Snowy Egrets are found roosting in the tree tops at the Refuge.



Field Mustard (*Brassica rapa*)

Origin: Europe

Plant Size: 8" - 39" tall with a long central stalk and multiple branches. This plant starts to grow after the first rain, in the summer only the brown and dry branches remain.

Leaf Description: Large wavy leaves around the base of the long stalk.

Flower Description: Bright yellow flower clusters at the end of the branches. Blooms from January to May.

Did you know? It is said that missionaries scattered the field mustard seeds so that the paths that connected the California missions were easier to locate and follow.



Gum Plant (*Grindelia stricta*)

Origin: Native

Plant Size: 20" tall, medium size bush

Leaf Description: Large toothed leaves that alternate up the stem.

Flower Description: Yellow in color, tiny flowerettes in the center of the large flower.

Did you know? This plant gets its name from the sticky substance it secretes around the flower head. It is found just above the pickleweed on the drier slopes of the salt marsh.





Horehound (*Marrubium vulgare*)

Origin: Eurasia

Plant Size: 1' - 2' tall, small size bush

Leaf Description: Mint green leaves are sprout opposite from each other on a square stem.

Flower Description: White flowers spiraled around the upper part of the stem.

Did you know? This plant is in the mint family.



Monkey Flower (*Mimulus spp.*)

Origin: Native

Plant Size: Up to 2 ½" tall, small shrubby plant

Leaf Description: Flat, fingerlike dark green leaves that are sticky to the touch.

Flower Description: Orange flowers that bloom from May to August.

Did you know? If you look close the flowers look like the face of a monkey.



Quail Bush or Big Saltbush (*Atriplex lentiformis*)

Origin: Native

Plant Size: Up to 7' tall, wide-spreading shrub

Leaf Description: Pale green, leathery leaves with an arrowhead shape.

Flower Description: Yellow-green flower clusters; flower parts are thick and round, roughly resembling lentils.

Seeds: Very small brown seed.

Did You Know? This plant is an important food source for the Western Pygmy Blue Butterfly.



Scarlet Pimpernel (*Anagallis Arvensis*)

Origin: Native

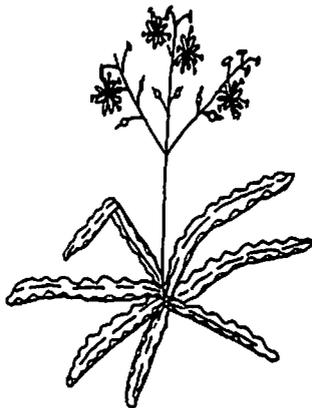
Plant Size: 4" - 6" tall, low growing

Leaf Description: Shiny leaves opposite each other.

Flower Description: Five orange red petals in a cuplike shape with a splash of pink in the center. Blooms from February - November.

Fruit: Small, dry fruit with many seeds.

Did you know? The flowers are open only on bright days and are closed at night:



Soaproot Plant (*Chlorogalum pomeridianum*)

Origin: Native

Plant Size: 1' - 2' wide, low growing plant

Leaf Description: Long, narrow, wavy dark green leaves that grow close to the ground and wither in the summer heat.

Flower Description: Tall stem with many small white flowers scattered on many branches.

Seed: Bulb

Did you know? The bulb of this herb was used by the Ohlone Indians; the bulbs or used them uncooked in water as soap.

Sweet Fennel (*Foeniculum vulgare*)

Origin: Europe

Plant Size: Up to 5' tall. In the spring and summer, it has one stalk with an umbrella of flowers at the top. In late summer and fall, only the dried stalk remains until the first rains. The new growth resembles a small bush.

Leaf Description: Finely divided, thread like leaves which give off a licorice odor.

Flower Description: Umbrella shaped clusters of bright yellow flowers.

Seeds: Small brown seeds that give off a licorice odor.

Did you know? The seed, root, and stem of Sweet Fennel are all edible and very aromatic, but be sure not to confuse this plant with Poison Hemlock.



Wild Oat (*Avena fatua*)

Origin: European

Plant Size: Up to 2 ½' tall, grass

Leaf Description: Solitary spikelets at the ends of branches. Leaves attached to one main stem.

Seeds: Spike like seeds grow in bunches at the top of the stalk. Grows and produces seeds from February to July.

Did you know? This plant produces seeds before the long California dry season.



SALT MARSH, SLOUGH, AND MUDFLAT PLANTS

Alkali Heath (*Frankenia salina*)

Origin: Native

Plant Size: 6" - 12" tall, low growing

Leaf Description: Small oval shaped grow in bundles.

Flower Description: Small pink flowers found among the leaves. Blooms from May to November.

Did you know? This plant grows best in the drier parts of the salt marsh.



Australian Saltbush (*Atriplex semibaccata*)

Origin: Australia

Plant Size: 8" - 15" tall, low growing

Leaf Description: Many small oblong shape, greyish-green leaves with toothed edges.

Flower Description: Small inconspicuous green flowers that bloom from April to December.

Fruit: Red, fleshy fruit attached to flower.

Did you know? The fruit provides food for the larvae of the Pygmy Blue Butterfly.





Cordgrass (*Spartina foliosa*)

Origin: Native

Plant Size: 1' - 4' tall

Leaf Description: Tall grass like leaves which grow at the edge of the mudflats between the slough and the salt marsh.

Flower Description: An arrangement of flower clusters on the flower axis-dense and colorless.

Did you know? Cordgrass can be submerged in salt water for up to 22 hours at a time because of its ability to move oxygen from its leaves to its roots.

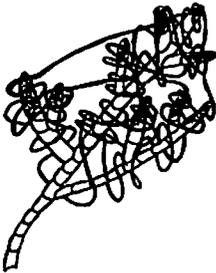


Diatoms

Origin: Native

Plant Size: Microscopic

Did you know? This is a single celled algae that is a type of phytoplankton in a "Pillbox" shaped case of silicon.



Dodder (*Cuscuta Salina*)

Origin: Native

Plant Size: 0.01" wide, form dense mats from small to very large patches in the salt marsh.

Leaf Description: Stringlike bright orange stems that often form a dense mat.

Flower Description: Small, white flower that blooms from May to September.

Did you know? Dodder is a parasitic plant that grows on pickleweed.



Fat Hen (*Atriplex Triangularis*)

Origin: Native

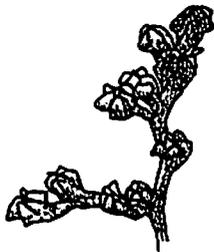
Plant Size: 12" - 40" tall, small bush

Leaf Description: Broad triangular leaves located on this multi branched plant.

Flower Description: Small greenish flowers with no petals that blooms in June to November.

Did you know? Ground squirrels and mice love to eat the leaves. Look closely for white salt crystals on the leaves.

Gum Plant (see upland plants)



Ice Plant (*Mesembryanthemum nodiflorum*)

Origin: Africa

Plant Size: 8" - 24" long branches, low lying

Leaf Description: Fleshy round leaves that sparkle in the sun.

Did you know? The seeds of this plant turn red in the fall and sparkle like rubies.

Pickleweed (*Salicornia virginica*)

Origin: Native

Plant Size: Low growing plant that spreads out across the salt marsh, branches grow 8" - 25" tall.

Leaf Description: The compressed leaves look like a series of pickles attached end to end.

Flower Description: Tiny white flowers that bloom from April to September.

Did you know? Pickleweed takes salt water up through the roots and stores excess salt in the top "pickles." In the fall, the pickles turn red and fall off, ridding the plant of the extra salt. Pickleweed is the main food for the salt marsh harvest mouse.

Phytoplankton (*various species*)

Description: Drifting plants primarily single celled algae and diatoms.

Did you know? Phytoplankton is at the base of the food chain for the ocean, bay, slough, and mudflat food webs.

Salt Grass (*Distichlis spicata*)

Origin: Native

Plant Size: 8" - 12" tall, low growing grass

Leaf Description: Stiff and wiry grass like leaves.

Flower Description: Inflorescence in bloom from April to July.

Did you know? This plant often has noticeable salt crystals that have been sweated out onto the leaves.

Sea lavender (*Limonium californicum*)

Origin: Native

Plant Size: 8" - 20" tall, small bush of leaves, with long stalks

Leaf Description: Broad, flat oval leaves often covered with excreted salt crystals.

Flower Description: Pale violet flowers found on the many branched spikes that protrude from the stalks. Blooms from July to December.

Did you know? This plant often has noticeable salt crystals that have been "sweated" out onto the leaves.

SALT POND PLANTS

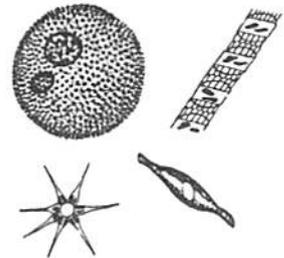
Green Algae

Origin: Native

Plant size: Microscopic

Leaf Description: Single cell in salt ponds; various shapes; green in color.

Did you know? Green algae is food for Brine Shrimp and Brine Flies.



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