

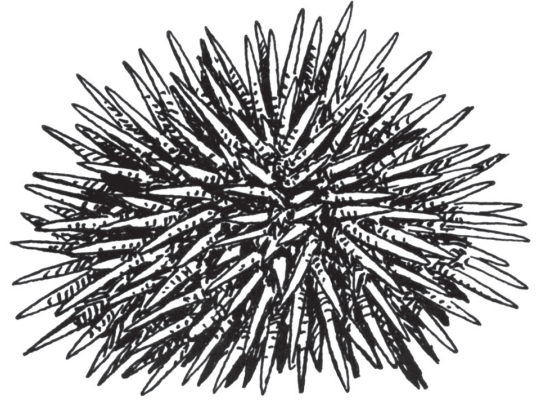
Giant Kelp

Macrocystis pyrifera



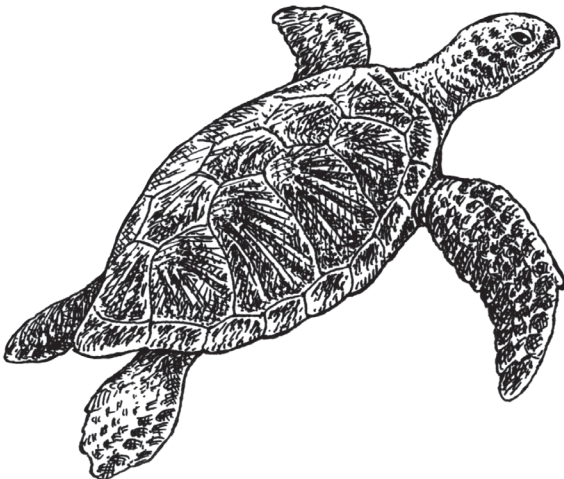
Brown Sea Urchin

Strongylocentrotus purpuratus



Green Turtle

Chelonia mydas (=agassizii)



Brandt's Cormorant

Phalacrocorax penicillatus



Brown Sea Urchin

Strongylocentrotus purpuratus

HABITAT/RANGE: Commonly found in splash zones with moderate to strong surf. These animals inhabit depressions in the rocks. As they grow, they use their teeth to enlarge these depressions. They also live everywhere on sea bottoms down to a depth of 8,200 ft. (2,500 m.).

DESCRIPTION: Globe-shaped, lacking arms. They have an internal skeleton covered by the epidermis, comprised of rigidly united calcareous plates that form a carapace. Their spines facilitate orientation. They project podia ("feet") through the calcium carbonate covering of the spines. The feet function in locomotion, capture of food, respiration, etc.

REPRODUCTION: Reproduction is sexual, and the sexes are in separate individuals.

ECOLOGICAL RELATIONSHIPS: Brown Sea Urchins are herbivorous, and control overgrowth of seaweed and many small fish. Organisms classified as equinoderms represent a potential food resource for future generations. For this reason it is important to increase studies about their biology in order to harvest them sustainably.

Brandt's Cormorant

Phalacrocorax penicillatus

HABITAT/RANGE: West coast of the United States, Baja California, and the Gulf of California.

DESCRIPTION: Adults are all black with a patch of beige feathers on the chin. The bare throat pouch turns bright blue during breeding. Immature are all dark brown.

REPRODUCTION: Nests in colonies. Saucer-like nest of seaweed and other marine vegetation, placed on cliff ledge or rocky ground.

ECOLOGICAL RELATIONSHIPS: Feeds by diving and swimming underwater, eating small saltwater fish.

Giant Kelp

Macrocystis pyrifera

HABITAT/RANGE: Found along the Pacific coast from central California to Baja California and in the sub-antarctic waters of South America. It inhabits the areas from the intertidal zone to a depth of 100 ft. (30 m.) and can form submarine forests.

DESCRIPTION: It has a root-like holdfast that fixes to rocky surfaces; a long slender stalk or stipe; and long, leaf-like blades or fronds, which are the major site of photosynthetic activity. The kelp plant is supported in the water by gas-filled bladders on each frond called nematocysts. In favorable conditions giant kelp can grow to over 100 ft. (30 m.) long.

REPRODUCTION: Giant Kelp reproduction is very complex. It has alternate generations that each take different forms. In the final stage, microscopic plants on the sea floor fertilize to give rise to the long leaf-like blades.

ECOLOGICAL RELATIONSHIPS: Giant Kelp releases oxygen through photosynthesis. Abalone and sea urchins eat this alga. Kelp is the primary producer in the food chains of various communities of microbes and invertebrates.

Green Turtle

Chelonia mydas (=agassizii)

HABITAT/RANGE: Gulf of California and Pacific coast. These turtles have been seen along the Pacific coast as far north as Alaska and as far south as Chile.

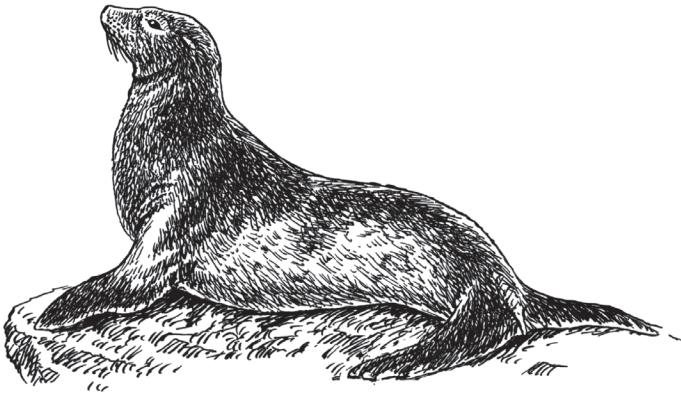
DESCRIPTION: Some authors consider the Pacific form of *Chelonia mydas* a species separate from the Gulf form *Chelonia agassizii*. Black and Green Turtles are not recognized as separate species. However, there are significant differences. The Black Turtle's head is black, and the turtle is medium-sized (smaller than the Green Turtle), with a flattened carapace. The jaws are serrated along the edge. The legs and feet are predominately black or greyish. The carapace measures 3 to 3.5 ft. (90–100 cm.) and weighs an average of 155 lbs. (70 kg.). The young have a black carapace; in adults it can be black or with black blotches over a greyish background. The plastron is white in the young, grey in adults.

REPRODUCTION: The nesting period is from August to January. Female turtles lay an average of three nests at two- to three-year intervals. Incubation is 48 to 55 days.

ECOLOGICAL RELATIONSHIPS: Adults feed on seaweed and juveniles on invertebrates.

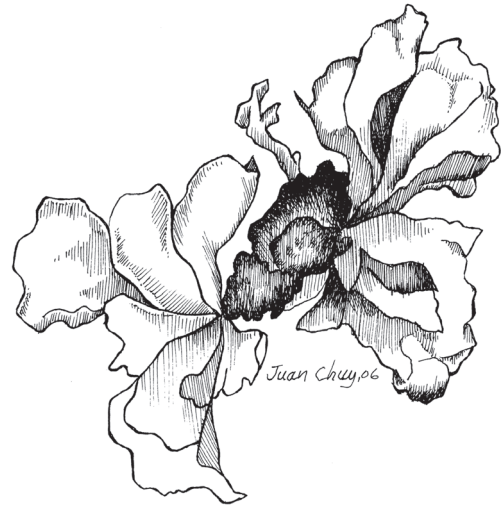
California Sea Lion

Zalophus californicus



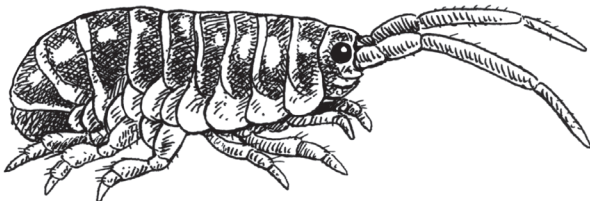
Sea Lettuce

Ulva sp.



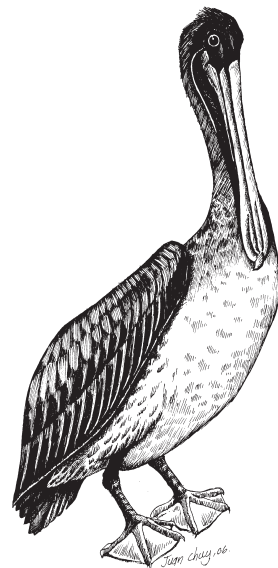
Beach Hopper

Orchestoidea californiana



Brown Pelican

Pelecanus occidentalis



Sea Lettuce

Ulva sp.

HABITAT/RANGE: Intertidal in tidepools and rocks or down to a depth of 65 ft. (20 m.). Able to tolerate low salinity and found in estuaries and in areas where there is a high level of nitrogen.

DESCRIPTION: A bright green alga composed of lobed, ruffle-edged leaves formed by two layers of cells. Leaves are coarse and sheet-like and resemble a leaf of lettuce. Sea Lettuce may be found attached to rocks and shells by a holdfast, and it is also commonly found free floating. Leaves can be up to 6 in. (15 cm.) long.

REPRODUCTION: A dioecious (sexes in separate plants) species. Male and female leaves can be distinguished by the color of their edges: yellow-green in males and dark green in females.

ECOLOGICAL RELATIONSHIPS: This species produces oxygen and serves as food for many fish and herbivorous mollusks. It can actually thrive in areas where there is nutrient loading (high nitrogen levels), and is used as an indicator species to monitor pollution. It can be used in salads and soups, and to make ice cream, other foods products, and medicines.

Brown Pelican

Pelecanus occidentalis

HABITAT/RANGE: Marine bird, awkward on the ground, agile when flying and capturing prey.

DESCRIPTION: In the adult, the head and neck are white, frequently mixed with yellow. The body is grey to brown. Pelicans have a brown neck pouch that turns bright red during breeding season.

REPRODUCTION: Breeding is in winter and spring.

ECOLOGICAL RELATIONSHIPS: They eat fish, and their guano fertilizes the ocean.

California Sea Lion

Zalophus californicus

HABITAT/RANGE: Coastlines along both sides of the Pacific Ocean.

DESCRIPTION: Color ranges from chocolate brown in males to a lighter, golden brown in females. Males average 850 lbs. (390 kg.) and 7 ft. (2.1 m.) in length. Females are smaller. They have a dog-like face, and at around five years of age, males develop a bony bump on top of their skull called a sagittal crest. They have external ear flaps and large flippers that they use to “walk” on land.

REPRODUCTION: California Sea Lions are found from Vancouver Island, British Columbia, to the southern tip of Baja California. They breed mainly on offshore islands. Most pups are born in June or July and weigh 13 to 20 lbs. (6–9 kg.).

ECOLOGICAL RELATIONSHIPS: California Sea Lions are opportunistic eaters, feeding on squid, octopus, herring, rockfish, mackerel, and small sharks. In turn, sea lions are preyed upon by orcas (killer whales) and great white sharks.

Beach Hopper

Orchestoidea californiana

HABITAT/RANGE: Beaches with fine sand and backed by dunes along the west coast of North America, from Vancouver Island, British Columbia, south into Baja California.

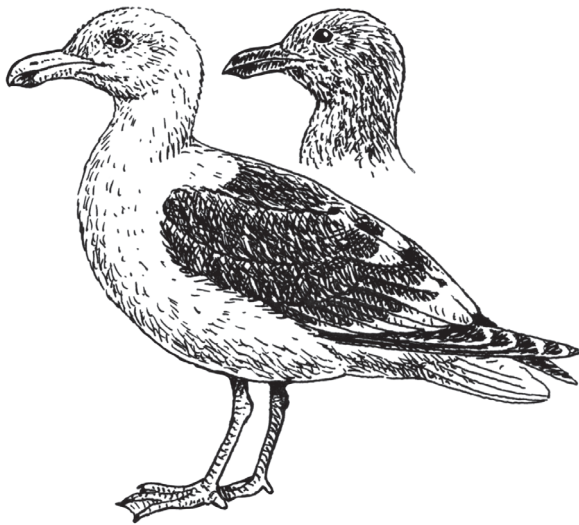
DESCRIPTION: Beach Hoppers can be up to 1 in. (28 mm.) long. They have curved bodies that are flat from side to side. Their compound eyes are very small. The long second pair of antennae is bright orange to rosy red.

REPRODUCTION: Adults mate in their burrows from June until November. The male deposits a jelly-like mass of sperm on the underside of the female and soon leaves the burrow. The dark blue eggs are brooded inside a pouch made by broad, leaf-like appendages on the thorax. Newly hatched juveniles closely resemble the adults.

ECOLOGICAL RELATIONSHIPS: Beach Hoppers eat seaweed that has washed up on the shore. During the day, they escape heat and predators by burrowing into the sand.

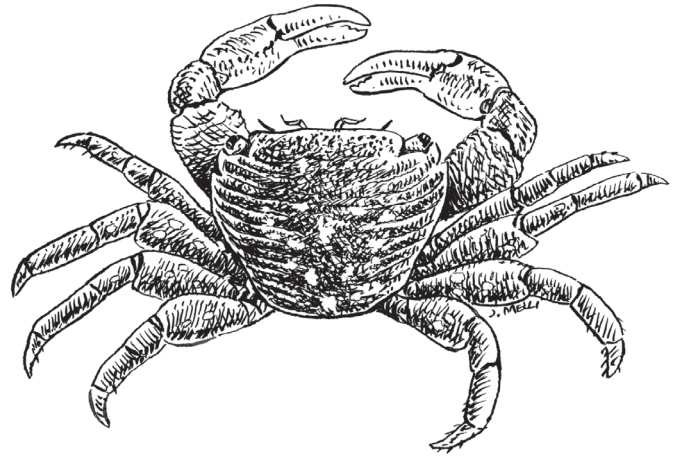
Western Gull

Larus occidentalis



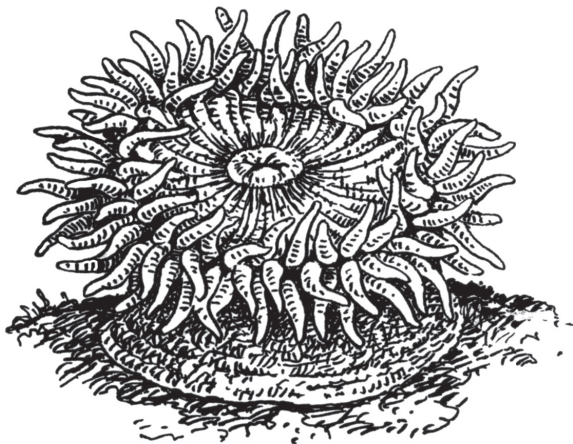
Striped Shore Crab

Pachygrapsus crassipes



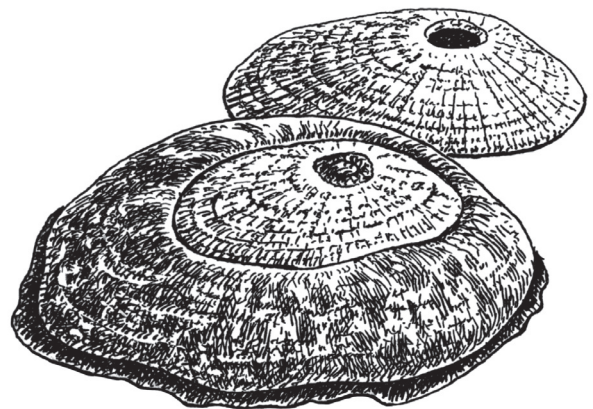
Giant Green Anemone

Anthopleura xanthogrammica



Giant Limpet

Megathura crenulata



Striped Shore Crab

Pachygrapsus crassipes

HABITAT/RANGE: Lives in crevices, under rocks, in tidepools and sometimes on muddy beaches and estuaries from Oregon to Baja California, and in the Gulf of California.

DESCRIPTION: Transverse lines on its carapace characterize this crab in the Grapsoidea family. Striped shore crabs are sexually dimorphic; the males and females look different. They feed on algae and diatoms that they scrape from the rocks or mud with their mouth parts. They occasionally eat dead animals and small, intertidal invertebrates, especially limpets.

REPRODUCTION: Mating occurs after the female molts, while she is still soft-shelled. The male rolls over on his back and the female walks above him. He inserts his sperm into the oviducts of the female. Mating season is from March to September, with maximum reproduction being in June and July.

ECOLOGICAL RELATIONSHIPS: The most semi-terrestrial of all the shore crabs. It spends half its time out of the water, and returns periodically to the tidepools. Predators include gulls, raccoons, anemones, and fish.

Giant Limpet

Megathura crenulata

HABITAT/RANGE: Giant Limpets anchor themselves to rocks and pilings. They live in costal zones exposed to low tides. They are benthic animals, associated with the sea bottom.

DESCRIPTION: Limpets are the simplest gastropods. They typically have a well-defined head with two or four sensory tentacles and a muscular ventral foot, from which they get their name (gastropod, from the Greek gaster, "stomach," and poda, "foot"). They have a one-piece dorsal shell.

REPRODUCTION: Spawning occurs once a year, usually during winter, and is triggered by rough seas which disperse the eggs and sperm. Larvae float around for a couple of weeks before settling onto a hard substrate.

ECOLOGICAL RELATIONSHIPS: Giant Limpets are herbivores, using the tip of their rough tongues, called radulas. Limpets scrape rocks to obtain their food, consisting of algae, sponges and other invertebrates. They breathe through branquias.

Western Gull

Larus occidentalis

HABITAT/RANGE: West coast of the United States and Baja California.

DESCRIPTION: Adult is the only common dark-backed, white-bodied gull on the Pacific coast. Massive bill is yellow with red spot near lower tip; legs pink. Young birds are all heavily mottled dark-grey-brown.

REPRODUCTION: Nests in colonies. Nest of sticks and grasses, on ground or rocky ledge.

ECOLOGICAL RELATIONSHIPS: Eats fish, shrimp, and eggs of other nesting seabirds and garbage.

Giant Green Anemone

Anthopleura xanthogrammica

HABITAT/RANGE: Coastal zones exposed to low tides. When they're exposed to air, they fold in their tentacles and fill their cavities with water to avoid drying out. They can attach themselves to the sandy bottom, but the majority anchor themselves on rocks or pilings.

DESCRIPTION: Anemones look more like plants than animals. Giant Green Anemones measure up to 2.75 in. (7 cm.) tall and 10 in. (25.4 cm.) in diameter. They have radial symmetry, like the spokes of a wheel, and an opening to their central cavity. They possess nematocysts, or stinging cells, that project poison darts on contact. These paralyze small fish, which the anemone passes to its central cavity with its tentacles. There are more than 800 species of anemones.

REPRODUCTION: Giant Green Anemones release brownish eggs and sperm into the sea. When the larvae are formed, they swim or float for a period of time and become dispersed. Breeding season is late spring and summer.

ECOLOGICAL RELATIONSHIPS: Giant Green Anemones get their bright green color from symbiotic, microscopic green algae living in their column. Anemones that live in the shade of piers or rocks are white because their algae die.

Black Sage

Salvia mellifera



California Sagebrush

Artemisia californica



California Buckwheat

Eriogonum fasciculatum



Eastwood Manzanita

Arctostaphylos glandulosa



California Sagebrush

Artemisia californica

HABITAT/RANGE: Found in dry sunny locations in coastal sage scrub and chaparral communities from sea level to 2,600 ft. (800 m.). Native to California and Baja California. In our region, this species is found mostly in northwestern Baja California, but is distributed south on the peninsula into the northern Central Desert.

DESCRIPTION: California Sagebrush is a strongly aromatic, densely branched shrub that grows to 8 ft. (2.5 m.) tall. It is dominant and representative of coastal sage scrub of southern California and northwestern Baja California. The light green to grey, thread-like leaves and tiny, green flowering heads give this shrub a distinctive appearance and make it easy to recognize.

REPRODUCTION: By seed

ECOLOGICAL RELATIONSHIPS: Provides excellent cover for small birds and other animals, which can live in its branches and provides seeds for birds. It has been used as a treatment for colds and cough. This species is drought-deciduous, losing its leaves in hot weather to prevent water loss.

Eastwood Manzanita

Arctostaphylos glandulosa

HABITAT/RANGE: Occurs in northwestern Baja California in chaparral and in the high Sierras, and north into California and southern Oregon.

DESCRIPTION: This highly variable species is represented in Baja California with six different subspecies, two of which are endemic and were recently named and described. Eastwood Manzanita is a shrub, 3 to 8 ft. (1 to 2.5 m.) tall, usually with a large, wide, flat-topped, basal burl that allows it to regenerate quickly following a fire.

REPRODUCTION: The fruits of this species are usually depressed globose, .25 to .4 in. (6–10 mm.) wide, and often sticky on the outer surface

ECOLOGICAL RELATIONSHIPS: Manzanitas sprout from the crown (just above the ground) after a fire.

Black Sage

Salvia mellifera

HABITAT/RANGE: Native to southwest California and northwestern Baja California. Found on sunny dry slopes.

DESCRIPTION: Black Sage is a strongly aromatic shrub that grows to 6 ft. (2 m.) tall. Oblong leaves, 1 to 2.75 in. (2.5 to 7 cm.), dark green above, lighter beneath, with a slightly warty upper surface. The flowers are two-lipped with pale blue to lavender or white corollas. This species is common and dominant in coastal sage scrub and lower chaparral in extreme northwestern Baja California and north into southwestern California.

REPRODUCTION: Pollination is by bees and butterflies. New plants grow from seed.

ECOLOGICAL RELATIONSHIPS: Most *Salvia* species are excellent sources of nectar and have edible seeds. Butterflies and hummingbirds sip its nectar. Quail love the seed. A tea made from the leaves of some species is used for stomach trouble.

California Buckwheat

Eriogonum fasciculatum

HABITAT/RANGE: Found in coastal sage scrub, succulent sage scrub and chaparral plant communities, mountain woodlands, and the desert from central California to Baja California.

DESCRIPTION: A small shrub with leaves in bundles (fascicles). The small pink or white flowers are in groups.

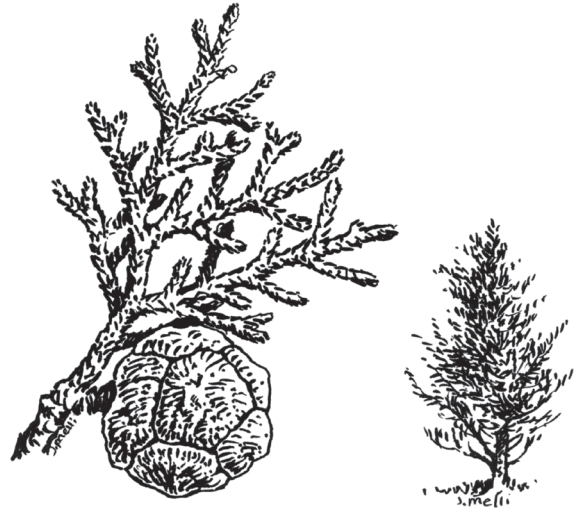
REPRODUCTION: By seed. This species quickly colonizes cleared or disturbed terrain.

ECOLOGICAL RELATIONSHIPS: California Buckwheat is an important nectar plant visited by a wide variety of insects, especially the blue butterflies. Birds eat the seeds and Native Americans harvested them. The genus *Eriogonum* is one of the largest and most diverse genera in the southern California and northwest Baja California region.

Ramona Lilac
Ceanothus tomentosus



Tecate Cypress
Callitropsis forbesii



Golden Eardrops
Dicentra chrysantha



Otay Mesa Mint
Pogogyne nudiuscula



Tecate Cypress

Callitropsis forbesii

HABITAT/RANGE: Occurs in northern Baja California on the Pacific slopes of the Sierra Juárez and the west of Valle San Vicente, between Ensenada and San Quintín, and north to Orange County, California. An extensive population is found on Otay Mountain (U.S. side) and Mt. Cuchumá (Mexican side), also known as Tecate Peak.

DESCRIPTION: A short, shrubby, multi-stemmed, evergreen tree that grows up to 30 ft. (10 m.) tall. Leaves are small, scale-like, and light to dull green. The bark peels off in narrow shreds.

REPRODUCTION: This species has serotinous cones, meaning they usually open only after fires.

ECOLOGICAL RELATIONSHIPS: Tecate Cypress is used as windbreaks and hedges in hot, dry, interior locations. The species is fire-adapted, but populations can be completely destroyed by frequent fires. The Tecate Cypress is of conservation concern due to its restricted distribution, threats of habitat loss by urbanization, and the increase in fire frequency effecting its reproduction.

Otay Mesa Mint

Pogogyne nudiuscula

HABITAT/RANGE: Found in vernal pools on Otay Mesa in California and in extreme northern Baja California. Vernal pools are shallow depressions that fill with winter and spring rains, and then dry up in late spring.

DESCRIPTION: Plants are less than 6 in. (5 cm.) tall and have a strong fragrance and purple flowers.

REPRODUCTION: Bee- and butterfly-pollinated

ECOLOGICAL RELATIONSHIPS: The plant is highly restricted in distribution and endangered due to loss of habitat. It is estimated that approximately 95% of all vernal pools are gone in our region.

Ramona Lilac

Ceanothus tomentosus

HABITAT/RANGE: Native to San Diego County in chaparral environments.

DESCRIPTION: A perennial evergreen plant that grows to a height of 6.5 to 10 ft. (2 to 3 m.) and a width of 3 to 6 ft. (1 to 2 m.). The flowers are azure-blue to nearly white and appear in early spring. The stems are erect and reddish-brown. The Ramona Lilac is also called the Woolly-leaf Mountain Lilac.

REPRODUCTION: Seed, especially following fires

ECOLOGICAL RELATIONSHIPS: When rubbed together in a little water, the flowers produce suds.

Golden Eardrops

Dicentra chrysantha

HABITAT/RANGE: Foothill chaparral and pine woodlands in California and northern Baja California up to 5,000 ft. (1524 m.).

DESCRIPTION: Bushy plants grow to 6 ft. (2 m.) tall and have finely divided blue-green basal leaves and many tall, naked stems. Bright yellow flowers are narrow with four petals, the outer pair with pouched bases.

REPRODUCTION: By seed.

ECOLOGICAL RELATIONSHIPS: Seeds remain in the soil until they are scarified by wildfire heat. This plant is a great example of a "fire-follower." Plants are abundant on burned areas and small pockets may remain long after wildfires have burned an area.

Red Brome, Foxtail

Bromus rubens



Black Mustard

Brassica nigra



Giant Reed

Arundo donax



Quino Checkerspot

Euphydryas editha quino



Black Mustard

Brassica nigra

HABITAT/RANGE: Native to the Mediterranean region, but has naturalized in a good part of the world. Wild mustards grow in meadows, vacant lots, along roadsides, or any sunny and somewhat dry location.

DESCRIPTION: An annual plant, erect, with a branched stem. It can grow up to 8 ft. (2.5 m.) high. The flowers are terminal, small and showy. The fruit can be .75 in. (2 cm.) long, with conical points; it contains numerous reddish-brown tiny seeds, covered with a network of veins.

REPRODUCTION: By seed.

ECOLOGICAL RELATIONSHIPS: The ingredient that gives mustard seeds their flavor is similar to that found in white mustard, radishes and wasabi. The plant produces the chemical to defend itself from herbivores. Unfortunately, the mustard family has many species that are non-native, weedy, and invasive to many natural areas of our region such as Black Mustard (*Brassica nigra*), Sahara Mustard (*B. tournefortii*), Wild Radish (*Raphanus sativus*), and London Rocket (*Sisymbrium irio*).

Quino Checkerspot

Euphydryas editha quino

HABITAT/RANGE: Once widespread throughout coastal sage scrub in Southern California and Northern Baja California. It inhabits openings on clay soils within or in the vicinity of scrublands, grasslands, meadows, vernal pools, and lake margins. Its presence is closely tied to its larval host plant, dwarf plantain (*Plantago erecta*) or owl's clover (*Orthocarpus purpureus*).

DESCRIPTION: A medium-sized butterfly with a wingspan of about 1 in. (3 cm.). The wings are a patchwork of brown, red and yellow spots.

REPRODUCTION: Females lay egg masses ranging from 20 to 180 eggs, which hatch in seven to 10 days. Larvae feed on *Plantago erecta* and other plants. When their host plants die, larvae go into a dormant phase that lasts until it rains in late fall or winter. (This phase can last for years in times of drought.) Adults emerge in two weeks.

ECOLOGICAL RELATIONSHIPS: An endangered species in the U.S. due to loss of habitat. In addition, the October 2003 fires in San Diego County and the ensuing disruption of its habitat may have had a devastating impact on this butterfly.

Red Brome, Foxtail

Bromus rubens

HABITAT/RANGE: Red Brome is an annual grass introduced from Europe that has become naturalized throughout Baja California and southern California and can be quite invasive in disturbed areas of coastal sage scrub and succulent sage scrub.

DESCRIPTION: A grass to 18 in. (46 cm.) high with short, hairy leaves. The inflorescence is dense like a foxtail.

REPRODUCTION: By seed.

ECOLOGICAL RELATIONSHIPS: This species is one of the exotic, annual grass species that is contributing to an increase in fire frequency in arid regions. Many of the non-native grasses (e.g., Red Brome and Buffalo grass) that have naturalized in Upper and Lower California are invasive and not only compete with and exclude native plants, but can alter the entire vegetation of an area by changing ecological factors like fire frequency.

Giant Reed

Arundo donax

HABITAT/RANGE: Permanent or seasonal wetlands. Seems to be native to India and has colonized Mediterranean areas.

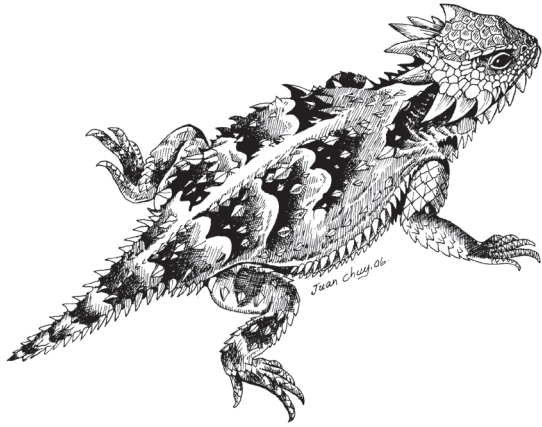
DESCRIPTION: A non-native, invasive grass that reaches from 6 to 43 ft. (2 to 13 m.) tall with thick, hollow stems. The bright green leaves wrap around the stem-like sheaths. The flowers appear on violet or yellow spikes 1 to 2.5 in. (3–6 cm.) long. Each spike has one or two flowers, flowering in late summer and fall.

REPRODUCTION: Vegetative by rhizomes.

ECOLOGICAL RELATIONSHIPS: Grows very rapidly, especially during floods, because it reproduces vegetatively. The root balls become so large they act as small dams that worsen flood damage by directing water out of river courses. It absorbs a lot of water, reducing water tables in semi-arid aquifers. Giant Reed threatens riparian habitats, particularly willows, which are nesting sites of the endangered Least Bell's Vireo.

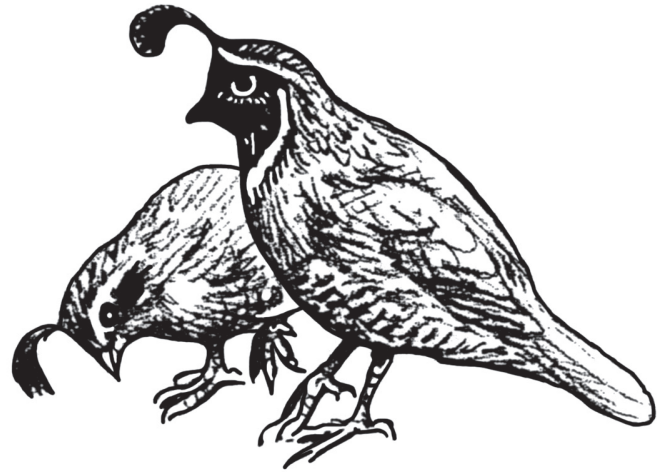
Coast Horned Lizard

Phrynosoma coronatum blainvillii



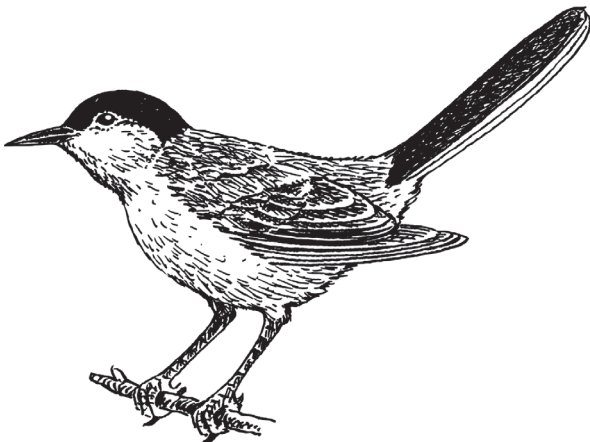
California Quail

Callipepla californica



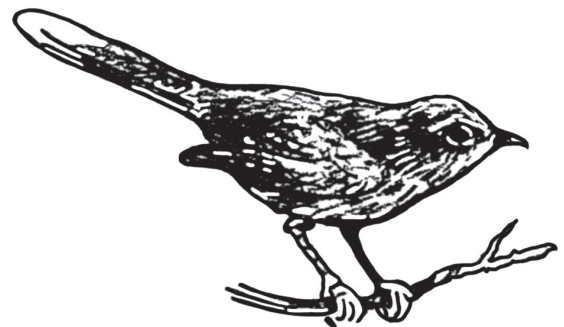
California Gnatcatcher

Polioptila californica



Wrentit

Chamaea fasciata



California Quail

Callipepla californica

HABITAT/RANGE: Open woodlands or shrubby areas with patches of bare ground, usually near water, in the western U.S. and Baja California. Also occur in the desert.

DESCRIPTION: Black plume on forehead curls forward. The male's plume is larger than the female's. Males have a dark brown cap, black face, grey back, and a blue-grey chest. Females are mainly brownish grey. Both sexes have a scaly pattern on the belly and neck.

REPRODUCTION: Concealed nest lined with grasses and dead leaves, placed in a scraped depression near a log, rock, or stump, or in the low fork of a tree.

ECOLOGICAL RELATIONSHIPS: Eats seeds (especially those of legumes), other vegetable matter, and insects (especially chicks). Primary predators are birds of prey, especially Cooper's Hawks.

Coast Horned Lizard

Phrynosoma coronatum blainvillii

HABITAT/RANGE: Extends from northern California to the tip of Baja California. The subspecies *blainvillii*, is distributed throughout the foothills and coastal plains from the Los Angeles, California, area to northern Baja California. It lives on the ground in areas with abundant, open vegetation such as chaparral or coastal sage scrub.

DESCRIPTION: Relatively large and less rounded than other horned lizards. An individual's snout-to-vent length can reach four inches (10.16 cm.). Numerous pointed scales stick out along the sides of the body and over the back, though only the horns around the head are rigid.

REPRODUCTION: Produces clutches of 6 to 49 eggs from April to July. Hatching occurs in August and September.

ECOLOGICAL RELATIONSHIPS: Native ants are the favorite food of Coast Horned Lizards, making up most of their diet. The lizards also eat termites and a variety of other insects.

Wrentit

Chamaea fasciata

HABITAT/RANGE: Chaparral, tangled brush, and dense shrubs in western Oregon, California, and northwestern Baja California

DESCRIPTION: Plain greyish-brown bird, tinged tawny on under parts. Long tail (often cocked), pale eye, faint streaking on breast.

REPRODUCTION: Nest of spider web, bark, and grasses lined with fine fibers and hair placed in the twigs of a shrub or bush 1 to 15 ft. (.3 to 5 m.) above the ground.

ECOLOGICAL RELATIONSHIPS: Gleans food from trees and shrubs. Eats insects and small fruits and berries.

California Gnatcatcher

Polioptila californica

HABITAT/RANGE: Sage scrub and coastal scrub in southern California and northern Baja California; desert scrub in central and southern Baja California.

DESCRIPTION: Male has a black cap during breeding. Otherwise, upperparts all dark grey; back brownish in female. Tail long and black with thin white edges and small white patch on outermost feather.

REPRODUCTION: Nest of plant down, leaves, and fibers lined with fine materials. Placed in the branches of shrubs 1 to 4 ft. (.3 to 1.2 m.) above the ground.

ECOLOGICAL RELATIONSHIPS: Gleans insects and spiders from foliage. Moves about very actively, constantly flicking its tail. Endangered in the U.S. due to loss of habitat.

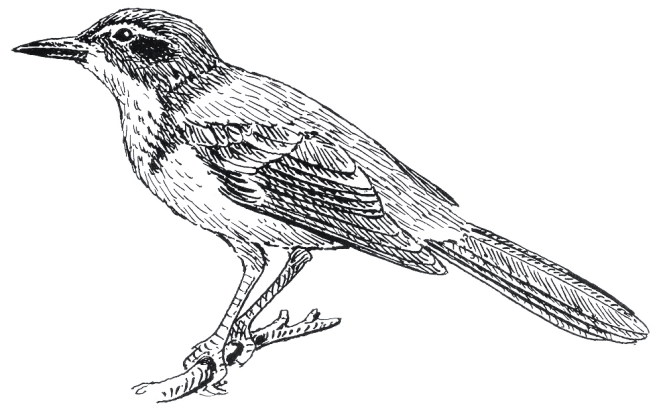
Anna's Hummingbird

Calypte anna



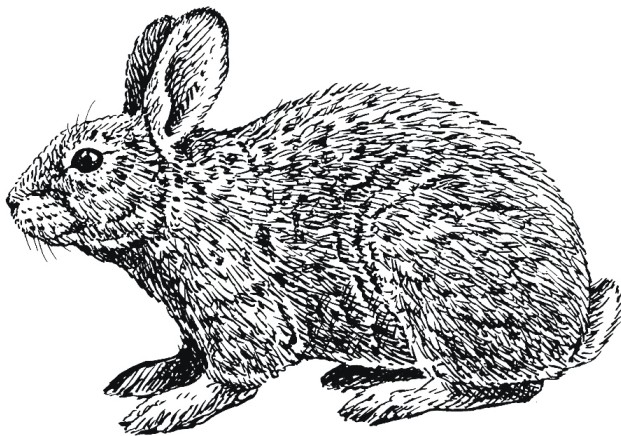
Western Scrub Jay

Aphelocoma californica



Western Brush Rabbit

Sylvilagus bachmani



Canyon Live Oak

Quercus chrysolepis



Western Scrub Jay

Aphelocoma californica

HABITAT/RANGE: Chaparral and oak woodland in the western U.S., mainland Mexico, and northwestern Baja California; desert scrub in central Baja California.

DESCRIPTION: Blue head, wings and tail, grey back and belly, throat streaked white.

REPRODUCTION: Bowl-shaped nest of twigs, grass, lined with fibers, rootlets, placed in a shrub or tree.

ECOLOGICAL RELATIONSHIPS: Eats insects, acorns, pine seeds, invertebrates, eggs and nestlings of birds, frogs, berries, and fruit. Stores food to eat at a later time when food is scarce.

Anna's Hummingbird

Calypte anna

HABITAT/RANGE: Chaparral, woodlands, parks, and gardens in western U.S. and northern Baja California

DESCRIPTION: Male has glittering rose-red crown and throat, green back, and mottled grey chest and belly. Female has no red on the crown and less red on the throat.

REPRODUCTION: Female constructs nest of bits of plant matter, bound together with spiders' silk and decorated with flakes of lichen. Nest is placed in a tree or shrub usually 5 to 10 ft. (1 to 3 m.) high.

ECOLOGICAL RELATIONSHIPS: Hovers and takes nectar from flowers. Eats small insects, spiders. Male and female defend separate territories and mate on neutral ground.

Canyon Live Oak

Quercus chrysolepis

HABITAT/RANGE: Occurs on the mountain slopes of California and Baja California, often near creeks and drainages in moist, cool microhabitats.

DESCRIPTION: An evergreen shrub or tree with a spreading crown to 60 ft. (20 m) tall and smooth to scaly grey bark. The thick, leathery, oblong leaves are shiny dark green above with a lower surface that is golden hairy or white waxy.

REPRODUCTION: Flowers April to May. Acorns are about 1 in. (2–3 cm.) long. After forest fires, Canyon Live Oak regenerates vigorously by basal sprouting.

ECOLOGICAL RELATIONSHIPS: The oak gall wasp lays its eggs in the bark tissue of small branches, causing the oak to form a protective gall. Various moths and butterflies eat young buds and leaves. Other insects found in the oak include tree hoppers, juice-sucking scale insects, yellow jackets, ichneumon wasps, wood borers, and termites. Other organisms that feed, nest, hang, or bore into oak trees include squirrels, jays, woodpeckers, spiders, mistletoe, fungi, and lichens. Indigenous peoples and wild animals prized the acorns of various oak species as a food source.

Western Brush Rabbit

Sylvilagus bachmani

HABITAT/RANGE: Found in the western coastal regions from Oregon to the tip of the Baja California peninsula. Inhabits dense, brushy cover, most commonly in chaparral vegetation. It also occurs in oak and conifer habitats, and it will live in brush or grassland and form networks of runways through the vegetation.

DESCRIPTION: The upper side of the Brush Rabbit's fur varies from light brown to grey in color, while the underside is usually always white. The desert cottontail (*Sylvilagus audubonii*) is very similar in appearance. The Western Brush Rabbit has a thick dark line on the outer edge of the ear and is slightly larger. Adult rabbits measure anywhere from 10 to 14 in. (25 to 35 cm.) long and rarely weigh over two pounds.

REPRODUCTION: Peak breeding seasons are between February and August. Two to three litters per year are common. The average number born per litter is three.

ECOLOGICAL RELATIONSHIPS: The Brush Rabbit feeds mainly on grasses and forbs (herbs that are not grasses), especially green clover, though it will also take berries and browse from bushes. Its predators include the mountain lion, coyote, fox, bobcat, weasel, and various raptors and snakes. Its survival strategies include remaining immobile when in brushy areas, and zigzag running when found in open spaces.

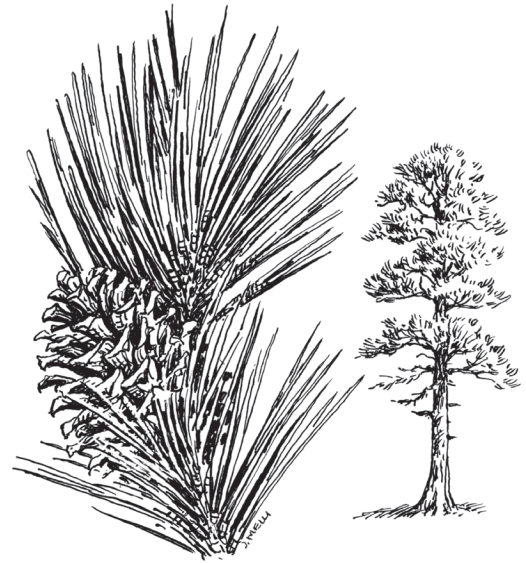
Nuttall's Scrub Oak

Quercus dumosa



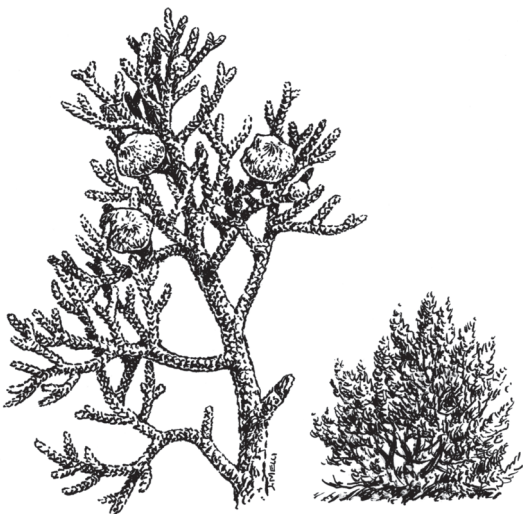
Jeffrey Pine

Pinus jeffreyi



California Juniper

Juniperus californica



Deer Grass

Muhlenbergia rigens



Jeffrey Pine

Pinus jeffreyi

HABITAT/RANGE: Found in the San Pedro Mártir and Sierra de Juárez mountains, in Baja California, and throughout California to Oregon. In Baja California it grows from 4,500 to 6,000 ft. (1,500 to 3,000 m.) tall. The farther north it is found, the larger it grows.

DESCRIPTION: A large symmetric pine that grows from 60 to 150 ft. (20 to 50 m) tall with blue-green needles bundled in groups of three. The sweet pineapple-vanilla fragrance of Jeffrey Pine sap helps to identify this species, especially on warm days.

REPRODUCTION: The reddish-brown cones appear in May and June.

ECOLOGICAL RELATIONSHIPS: Squirrels eat the seeds from the cones. The Jeffrey Pine was formerly logged in the Sierra Juárez and is used in the U.S. for construction. An important chemical, abietin (nearly pure heptane), has been isolated from Jeffrey Pine and was used to assay gasoline to obtain an octane rating.

Nuttall's Scrub Oak

Quercus dumosa

HABITAT/RANGE: A rare species that is threatened by coastal development because it only occurs in a few populations along the immediate Pacific coast below 60 ft. (200 m.).

DESCRIPTION: Densely branched, evergreen shrub growing up to 15 ft. (5 m.) tall. Leaves are about an inch (1 to 3 cm.) long, grey-green, and curly with short, irregular spines on the margin. The undersurface is covered with short, pale green hairs.

REPRODUCTION: Flowers March to May. Acorns are about 1 inch (1 to 3 cm.) long, pointed or egg-shaped with thin caps.

ECOLOGICAL RELATIONSHIPS: The Native Americans did not like the acorns, and only used them when there weren't sufficient Live Oak acorns. This species is often confused with other scrub oaks such as *Q. berberidifolia*, and *Q. acutidens* that are more common in chaparral vegetation at higher elevations in southern California and northwestern Baja California.

Deer Grass

Muhlenbergia rigens

HABITAT/RANGE: Found in sandy or well-drained soil below 7,000 ft. (2,150 m.) in grassland, riparian, chaparral, mixed conifer, and oak woodland communities. Its range extends from central California to Baja California.

DESCRIPTION: Large bunch grass that makes masses of leaves to 3 ft. (1 m.) tall and thin spikes of flowers to 5 ft. (1.75 m.).

REPRODUCTION: By seed.

ECOLOGICAL RELATIONSHIPS: Deer graze on the leaves and take cover in areas of Deer Grass during fawning season. Many species of butterflies and lady bird beetles over-winter in the tall leaves. Other insects and birds eat the seeds. The Native Americans made baskets from the leaves.

California Juniper

Juniperus californica

HABITAT/RANGE: Occurs on dry slopes and flats mostly below 5,100 ft. (1,700 m.) in Piñon-Juniper woodlands and chaparral in California and Baja California.

DESCRIPTION: A resinous, fragrant, evergreen shrub, 12 ft. (305 m.) tall, with ashy-grey, thin, shredding bark and a rounded crown. The scale-like leaves are .15 in. (3–4 mm.) and mostly occur in whorls of three. The cones are globe-shaped; young cones with tightly closed scales resemble bluish berries.

REPRODUCTION: Seed cones are dispersed by birds.

ECOLOGICAL RELATIONSHIPS: Natives ate the bitter berries after drying and grinding them, forming the meal into a mush or cake. The leaves can be used to make a soothing tea. The wood is soft and fine-grained and is often used by ranchers to make fence posts.

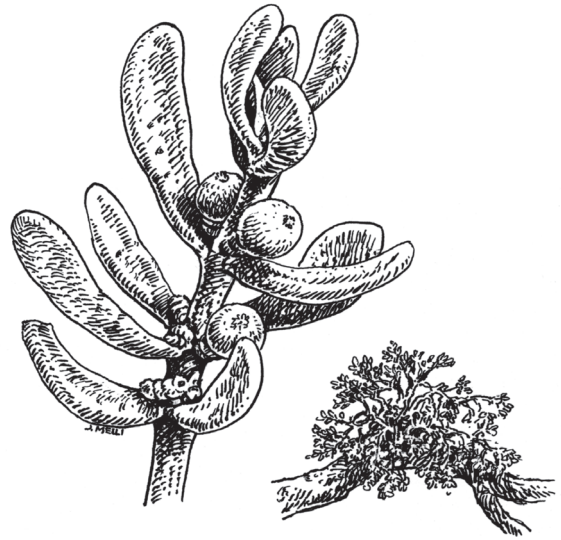
Quaking Aspen

Populus tremuloides



Mistletoe

Phoradendron bolleanum



White Fir

Abies concolor



Acorn Woodpecker

Melanerpes formicivorus



Mistletoe

Phoradendron bolleanum

HABITAT/RANGE: Found on juniper and cypress trees. Other species are found on oak, pine and mesquite trees.

DESCRIPTION: True mistletoes are parasitic, flowering plants with clumps of aerial shoots that are easily visible on the host plant. Shoots vary in length from several inches to several feet.

REPRODUCTION: When a seed germinates on its host plant, the Mistletoe penetrates the host directly. The parasitic Mistletoe plant develops inside its host for about two years before producing aerial shoots. Mistletoe shoots and leaves contain chlorophyll and carry on photosynthesis but depend on their host plant for carbohydrates as well as water and mineral nutrients.

ECOLOGICAL RELATIONSHIPS: Seeds are disseminated by birds that eat or transport berries and deposit the seeds on host plants. All parts of the plant in most species of this family are toxic and have been known to cause death.

Acorn Woodpecker

Melanerpes formicivorus

HABITAT/RANGE: Woodland and forest containing oak trees from the western U.S. south to Panama.

DESCRIPTION: Clear black back, red on crown, white eye surrounded by black. White forehead and cheek and yellowish throat. Male's red crown touches white forehead. On the female the red on back half of crown is separated from white forehead by black. In flight, note white rump and white patch near wingtip.

REPRODUCTION: Nests in colonies. Excavates nesting cavity in dead or live tree 6 to 25 ft. (2 to 8 m.) above ground.

ECOLOGICAL RELATIONSHIPS: Lives in communal groups and breeds cooperatively in parts of range. Acorn Woodpeckers drill holes in the trunks of mature pines and cedars, as well as trunks and branches of dead trees. They collect acorns, find holes that are just the right size to fit an individual acorn, and jam the acorn in. As they dry out, the acorns are moved by the woodpeckers to smaller holes. Up to 50,000 acorns may be stored in a single dead tree, and the woodpeckers spend a significant amount of their time maintaining their "granary."

Quaking Aspen

Populus tremuloides

HABITAT/RANGE: Grows above 7,000 ft. (2,300 m.) in California and Baja California in full sun.

DESCRIPTION: Smooth white- to cream-colored bark with black markings and a long narrow trunk. Grows 25 to 60 ft. (20 m.) tall. Leaves are dark green with dull green undersides and serrated edges. The leaves tremble in a light breeze because of their flattened petioles (stems).

REPRODUCTION: Typically grows in large clonal colonies derived from a single seedling, and spreads by means of root suckers. New stems in the colony may appear from 10 to 13 ft. (30 to 40 m.) or less distant from the parent tree. Each individual tree can live for 40 to 150 years above ground, and the root system of the colony is long-lived. In some cases, this is for thousands of years, sending up new trunks as the older trunks die off above ground.

ECOLOGICAL RELATIONSHIPS: Deer and other mammals browse the leaves. Re-colonizes burned or disturbed areas quickly. This is a sky- island species that is separated from more northern populations in the U.S.

White Fir

Abies concolor

HABITAT/RANGE: Found above 6,000 ft. (2,000 m.) in juniper-pine forests of the San Pedro Mártir and in the southwestern U.S., ranging north to Oregon and south to Arizona and New Mexico, also in Sonora.

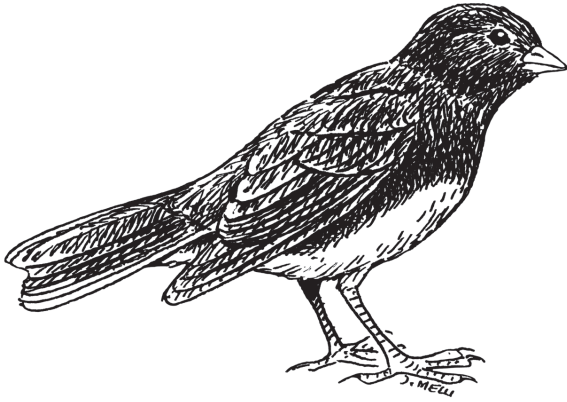
DESCRIPTION: It has a root-like holdfast that fixes to rocky surfaces; a long slender stalk or stipe; and long, leaf-like blades or fronds, which are the major site of photosynthetic activity. The kelp plant is supported in the water by gas-filled bladders on each frond called pneumatocysts. In favorable conditions giant kelp can grow to over 100 ft. (30 m.) long.

REPRODUCTION: The brown, oblong cones stand erect on the ends of upper branches.

ECOLOGICAL RELATIONSHIPS: Local ranchers use the resin from young bark to dress cuts and abrasions on both humans and livestock.

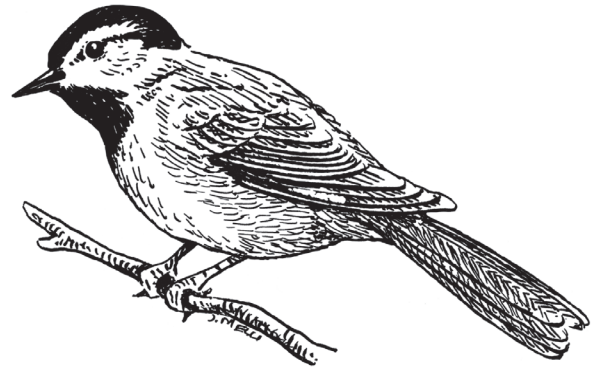
Dark-eye Junco

Junco hyemalis



Mountain Chickadee

Poecile gambeli



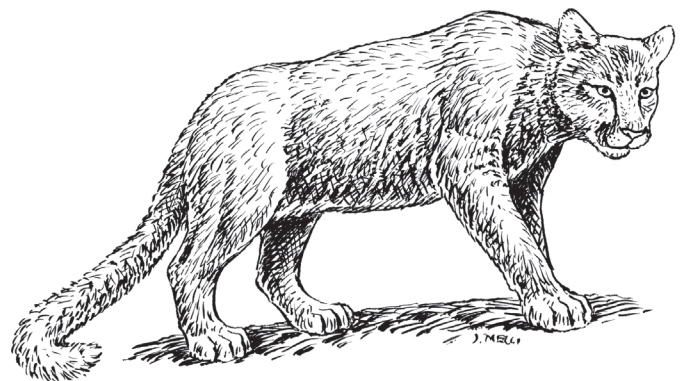
Mule deer

Odocoileus hemionus



Mountain Lion

Puma concolor



Mountain Chickadee

Poecile gambeli

HABITAT/RANGE: Open coniferous forests in mountains of the western U.S., western Canada, and northern Baja California.

DESCRIPTION: Black cap and bib, white cheek, thin white line over eye, grey back and flanks.

REPRODUCTION: Nest of wood chips, hair, feathers, placed in natural or excavated cavity

ECOLOGICAL RELATIONSHIPS: Mountain Chickadees cling to the undersides of branches and to tree trunks, searching for insects in the bark or breaking seeds open by hammering them with their beaks.

Dark-eye Junco

Junco hyemalis

HABITAT/RANGE: Widespread in Canada, the U.S., and northern Baja California in forests. More northern birds are migratory and invade our region in winter, when they are found in chaparral and areas of scattered trees as well as in mountain forests.

DESCRIPTION: Pale bill, dark eye. Plumage varies by region; in our area head usually blackish in male, grey in female, contrasting with a salmon-colored back and sides and whitish belly. Tail dark with white outer feathers conspicuous when bird flies.

REPRODUCTION: Cuplike nest of grasses, moss, and pine needles, lined with rootlets and placed in a depression in ground within the forest

ECOLOGICAL RELATIONSHIPS: Feeds mostly on the ground, eating weed and grass seeds. Flocks return to same areas each winter.

Mountain Lion

Puma concolor

HABITAT/RANGE: This animal ranges throughout the Americas, from British Columbia to Patagonia. In San Diego County, Mountain Lions can be found wherever there are deer and bighorn sheep populations. They den in any concealed or sheltered spot. Wooded and rocky terrain is prime Mountain Lion habitat.

DESCRIPTION: The Mountain Lion is tawny or reddish brown to a dusky or slate grey. Its undersides and inside the ears are white. Dark- brown coloration appears on the tip of the tail, backs of the ears, and sides of the nose. It has claws that retract into protective coverings in its paws.

REPRODUCTION: Mountain Lions begin to breed between two and three years old, then every two to three years thereafter. They may breed at anytime during the year. A litter usually consists of three spotted kittens. Their eyes open about ten days after birth.

ECOLOGICAL RELATIONSHIPS: The primary food of Mountain Lions is deer, but they will also take bighorn sheep, coyote, fox, skunk, rabbits, rodents, and sometimes livestock. Mountain Lion will hide uneaten meat and return to eat it when they are hungry.

Mule deer

Odocoileus hemionus

HABITAT/RANGE: Throughout the western United States, including the deserts. It may migrate in response to rainfall.

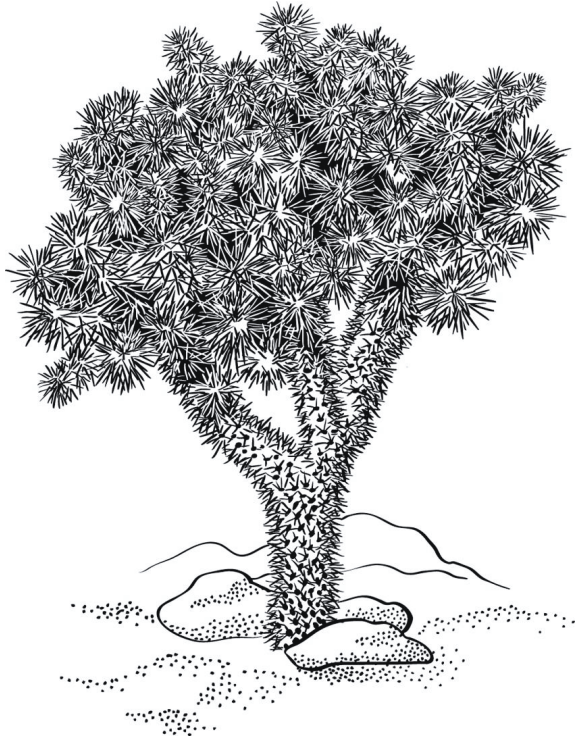
DESCRIPTION: Dark-grey-brown with a black-tipped white tail. Generally 4 to 6.5 ft. (1 to 2 m.) long and 3 to 3.5 ft. (1 m.) high at the shoulder. Its large ears are able to move constantly and independently from each other. The antlers begin growing in spring and are shed in December and January.

REPRODUCTION: Mule Deer mate in November and December with the antlered males fighting for possession of the females. Fawns are born from April through July. Twins are common.

ECOLOGICAL RELATIONSHIPS: Mule Deer have a multi-part stomach that helps them digest plant matter. They browse on fresh green leaves, twigs, grasses, herbs, weeds, berries, vines, grapes, mistletoe, mushrooms, ferns, and cactus fruit. Natural predators include coyote, mountain lion, and bobcat.

Silver Cholla, Chain-link Cholla

Cylindropuntia cholla



Creosote Bush

Larrea tridentata



Ocotillo

Fouquieria splendens



Desert Sand Verbena

Abronia villosa var. *villosa*



Creosote Bush

Larrea tridentata

HABITAT/RANGE: Deserts through the southwest U.S. and Baja California

DESCRIPTION: A many-branched evergreen, growing as tall as 12 ft. (4 m.). The small leaves vary in size according to the amount of moisture available. During hot periods the leaves turn their edges toward the sun to reduce heat effects. Under certain conditions the leaves are covered with a varnish-like substance that makes them shiny and sticky. They give off a resinous, musty odor during and after rain. This resin retards water loss and reflects light to help keep the leaf's surface temperature down.

REPRODUCTION: Clones new bushes in the form of rings that widen as they age. One ring is estimated to be about 11,700 years old, making it the oldest living organism on earth.

ECOLOGICAL RELATIONSHIPS: Can survive years without rain. It is distasteful to animals, which helps to reduce browsing. The creosote gall-midge lays its eggs in the plant tissue. As the eggs hatch and larvae develop, the stem swells into a growth that houses the larval stage.

Desert Sand Verbena

Abronia villosa var. *villosa*

HABITAT/RANGE: Desert sand dunes and washes of the Mojave and Sonoran Deserts, the Lower Colorado Desert and Central Desert.

DESCRIPTION: A showy, low, desert plant, prostrate, with many branches. Leaves are sticky and hairy, and leaves and stems are somewhat succulent. Many small, pink to magenta flowers appear in clusters.

REPRODUCTION: Seeds can wait decades in the sand for the next rain.

ECOLOGICAL RELATIONSHIPS: Pollinated by insects.

Silver Cholla, Chain-link Cholla

Cylindropuntia cholla

HABITAT/RANGE: Valley floors, bajadas, or rocky slopes in the desert. Withstands high temperatures and is often the only cactus seen growing in an area.

DESCRIPTION: A bush from 2 to 5 ft. (.70–1.5 m.) tall. The short 1–3 in. (2.5–7.5 cm.) stem joints give it a brushy appearance. The small tubercles account for the crowding of the spines, which hide the pale green stem surface. The flowers are yellowish-green. The spines produce a sheath covering which, when new, gives the plant a golden look. When the sheaths fall off the white-to-grey spines give the plant a silvery look.

REPRODUCTION: From seeds.

ECOLOGICAL RELATIONSHIPS: The nectar of the flowers is food for small beetles and bees. The stamens are thigmotropic, meaning they move in response to being touched. This assures that the pollenizers carry away a maximum load of pollen.

Ocotillo

Fouquieria splendens

HABITAT/RANGE: Found up to 3,000 ft. (1,000 m.) on desert slopes and plains in southern California, Arizona, Texas and Mexican deserts, including in Baja California.

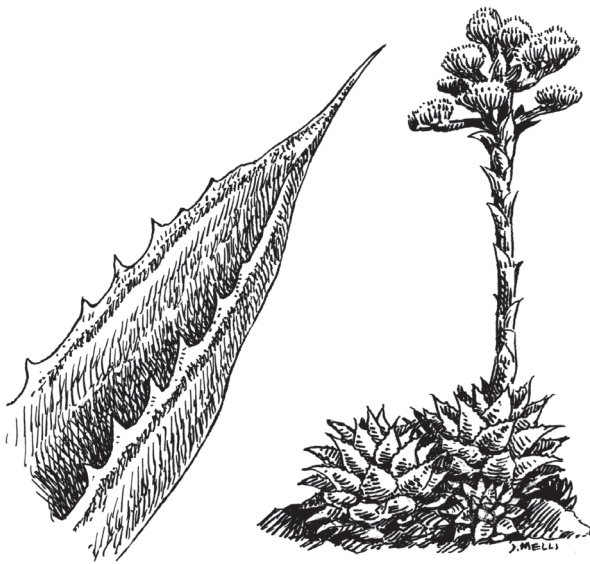
DESCRIPTION: No main trunk, but many slender, 9 to 12 ft. (3–4 m.) long, whip-like branches that spread fan-like from the base. Spines cover the grey-to-green barked, stiff stems. Small leaves appear after rains and fall off when the soil is dry between rains. Red, tubular flowers appear in spring.

REPRODUCTION: By seed. Flowers are pollinated by hummingbirds and bees.

ECOLOGICAL RELATIONSHIPS: Native Americans used it to wash clothes and prepared a tea by soaking the flowers and seeds in water. "Living" fences are often made from Ocotillo stems planted in the ground, which then take root. Powder made from the roots is reported to alleviate painful swellings and relieve fatigue when added to a bath.

Shaw's Agave

Agave shawii



White Bursage, Burroweed

Ambrosia dumosa



Thurber's Stemsucker

Pilostyles thurberi



Salt Cedar

Tamarix ramosissima



White Bursage, Burroweed

Ambrosia dumosa

HABITAT/RANGE: This species is one of the most common plants in our desert regions, especially in the Lower Colorado Desert and south on the eastern side of the peninsula to the Gulf Coast ecoregion and on several islands. Found on arid plains, mesas, slopes and arroyos.

DESCRIPTION: A low, rounded, grey-green shrub 6 to 12 ft. (2 to 6 m.) high. Grey-white stiff branches intertwine and become spiny with age. The leaves have rounded lobes and grey, hairy surfaces. Leaves appear in spring with the rains and persist on the plant after they die. Small white to slightly purplish flowers.

REPRODUCTION: The small bur-like fruit is armed with sharp pointed spines that cling to animals and clothing.

ECOLOGICAL RELATIONSHIPS: This species is a favorite food of horses, burros, and sheep. White Bursage and Creosote Bush (*Larrea tridentata*) are the dominant species of the Lower Colorado Desert, often comprising nearly 90% of the total vegetation. Ecological research has demonstrated that the growth of White Bursage roots is inhibited by secretions from the roots of Creosote Bush thus creating a rather even-spaced appearance across the desert landscape.

Salt Cedar

Tamarix ramosissima

HABITAT/RANGE: A shrub or tree from the Mediterranean that has become naturalized in arid regions of Baja California and California.

DESCRIPTION: Bark is a dark-reddish-brown, and the green leaves are scaly and thread-like.

REPRODUCTION: Flowers bloom in spring in a pink catkin-like arrangement.

ECOLOGICAL RELATIONSHIPS: Planted in the desert for windbreaks. Often takes over along desert stream beds. Uses large amount of moisture, lowering the water table and robbing desert streams, native vegetation and farmers of irrigation water.

Shaw's Agave

Agave shawii

HABITAT/RANGE: Pacific coastal areas and desert plains.

DESCRIPTION: Many large, glossy, green leaves are thick and fleshy with rigid marginal spines and spine-like tips. Leaves are borne in a basal rosette and may be 6 ft. (2 m.) long. The 3 to 12 ft. (1 to 4 m.) flower stalk has a mass of brilliant greenish-yellow, tubular flowers crowded toward the tip.

REPRODUCTION: Blooms September to May. Grows very slowly for years, then produces a towering stalk of flowers and dies.

ECOLOGICAL RELATIONSHIPS: Due to its dominant and widespread distribution in Baja California, this species probably provided the most accessible and abundant food available in this region for Native Americans. Although unpopular because of the bland taste, it was often the only food available during much of the year. Cattle also eat the flowering stalks, but not the leaves.

Thurber's Stemsucker

Pilostyles thurberi

HABITAT/RANGE: Sonoran and Central deserts.

DESCRIPTION: A tiny stem parasite. It is rarely seen because it lives completely embedded within the stems of a small, leguminous desert shrub called Dyeweed. The tiny, 2 to 3 mm. reddish-brown flowers appear once a year and are either male or female. It is unknown if both sexes are found on the same plant. The blooming flowers resemble a fungus infection. Each minute flower produces a cluster of at least 100 tiny seeds.

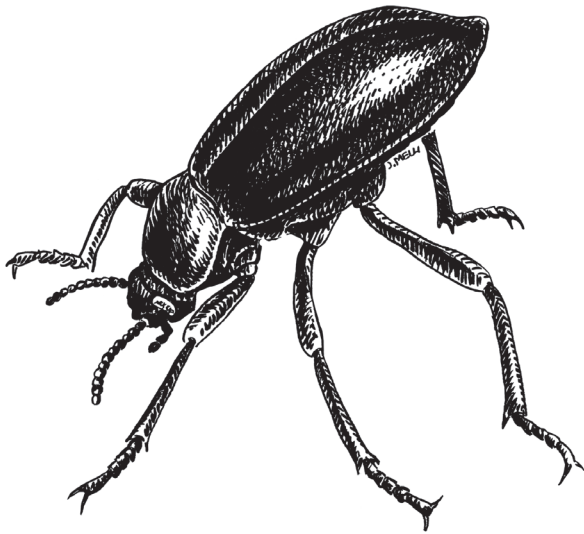
REPRODUCTION: No one knows how the plants are pollinated but some believe it could be harvester ants or other crawling insects that walk over the male and female flowers on their way to the branch tips for the Dyeweed flowers.

ECOLOGICAL RELATIONSHIPS: Harvester ants are often found living near Dyeweed plants. The ants carry the Dyeweed flowers back to their nest and new plants can come from seeds that have germinated in the nest. The Thurber's Stemsucker seeds are sticky and stick to the Dyeweed branches easily.

This tiny flower is related by family to the largest flower in the world, the parasitic "Stinking Corpse Flower" which grows only (and rarely) in the rain forests of Borneo and Sumatra. Its tiny seeds are dispersed by many animals ranging in size from ants to squirrels to wild pigs and Asian elephants.

Darkling Beetle

Eleodes



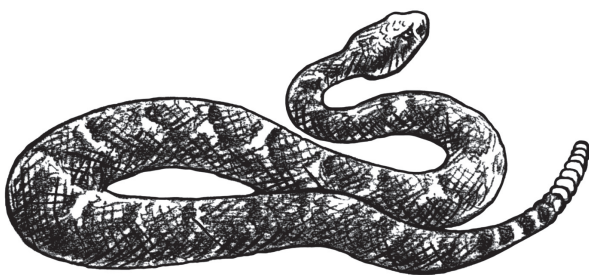
Cactus Bee

Diadasia rinconis



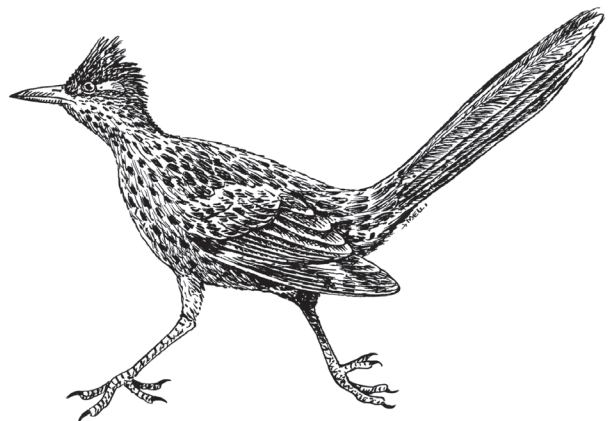
Sidewinder

Crotalus cerastes



Greater Roadrunner

Geococcyx californianus



Cactus Bee

Diadasia rinconis

HABITAT/RANGE: Occurs wherever you can find *Opuntia* cactus but is most common in the desert in Texas, New Mexico, Arizona, California and Baja California.

DESCRIPTION: These robust bees are about .6 in (1.5 cm.) long. Their bodies are black with amber hairs covering their head and thorax. The abdomen has bands of pale hairs, making them look striped.

REPRODUCTION: The males emerge from their underground nests before the females. When a female emerges, the males fight each other to get access to her. Sometimes this results in a ball of males surrounding the female.

ECOLOGICAL RELATIONSHIPS: Cactus Bees specialize in collecting cactus pollen to feed their young. They alight first on the flared, over-size, green stigma that is borne above the stamens, thus depositing some grains of pollen from the last-visited flower. Finally, they push down through the forest of stamens to get at the nectar deep inside. Their hairy bodies gather more pollen and their long tongues lap the nectar. They are solitary bees; they do not live in hives.

Greater Roadrunner

Geococcyx californianus

HABITAT/RANGE: On the ground in broken chaparral, sage scrub, and desert scrub.

DESCRIPTION: Long legs and tail, streaked brown. Tail feathers have green gloss. Blue and red streak behind eye. When stopped, often raises crest and tail.

REPRODUCTION: Platform nest of sticks lined with roots, feathers, grasses, snake skins, and mesquite pods, placed in a low cactus, tree or bush 3 to 15 ft. (1 to 5 m.) high.

ECOLOGICAL RELATIONSHIPS: Can run up to 15 miles per hour in pursuit of lizards or insects. Pair lives on its territory year round.

Darkling Beetle

Eleodes

HABITAT/RANGE: Darkling Beetles are found throughout the world in a wide range of habitat types.

DESCRIPTION: Also known as stinkbugs, these beetles are dark brown to black with hardened front wings that are not used in flight. The antennae, which arise from under a ridge near the eyes, have many segments and are enlarged near the tip. Darkling Beetles are about 1 in. (2.5 cm.) long. The larvae are a type of mealworm. They average 1 in. (2.5 cm.) in length and have a tough, yellowish-brown exoskeleton.

REPRODUCTION: Females lay their eggs in soil.

ECOLOGICAL RELATIONSHIPS: Darkling Beetles eat dead and decaying plants that have fallen to the ground. A stinky fluid exuded from their rear deters predators.

Sidewinder

Crotalus cerastes

HABITAT/RANGE: The Sidewinder's range extends through the sandy desert habitats of southern Nevada, to northeastern Baja California and northern Sonora, Mexico, east into central Arizona, and west to the base of the desert side of California's mountains.

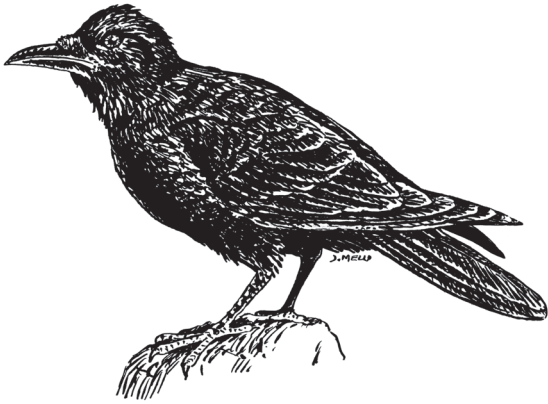
DESCRIPTION: The Sidewinder rarely measures more than 2.5 ft. (75 cm.) in length. Its back is patterned with small, dark, square-shaped blotches. A dark stripe extends from the outer corner of the eye to the corner of the mouth. A horn-like process protruding over the eye is characteristic of the Sidewinder.

REPRODUCTION: The female Sidewinder gives birth to 2 to 18 live young.

ECOLOGICAL RELATIONSHIPS: Early in the spring the Sidewinder may be active during the day, but as soon as the weather warms up, it becomes nocturnal. Sidewinding is an adaptation for moving over soft sand. When sidewinding, the snake applies vertical pressure to the ground, which minimizes slippage, and leaves a distinctive parallel series of "J" shaped tracks. Sidewinders are venomous.

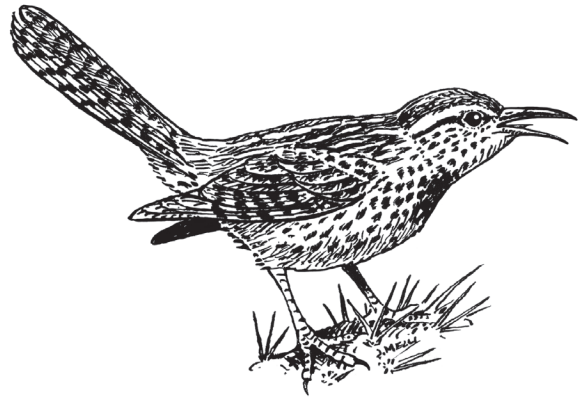
Common Raven

Corvus corax



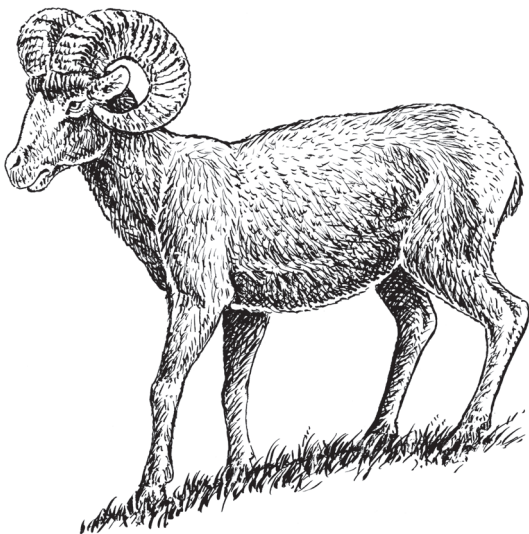
Cactus Wren

Campylorhynchus brunneicapillus



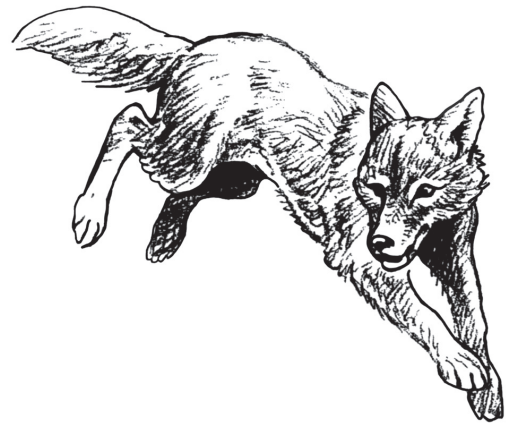
Bighorn Sheep

Ovis canadensis



Coyote

Canis latrans



Cactus Wren

Campylorhynchus brunneicapillus

HABITAT/RANGE: Deserts and semi-deserts with cactus, such as prickly pear and cholla, throughout the southwestern U.S., Baja California, and northern and central mainland Mexico.

DESCRIPTION: Dark crown, wide white eyebrow, heavily spotted breast (and belly, in Baja California), barred wings. Long tail prominently barred black and white underneath.

REPRODUCTION: Large football-shaped nest of plant stems and grasses has side entrance leading through small passage to inner chamber lined with feathers. Nest is placed in a thorny plant, in our region cholla or prickly pear cactus, almost exclusively.

ECOLOGICAL RELATIONSHIPS: Forages on ground or in shrubs. Eats insects, spiders, small lizards, berries, and seeds. Threatened in our region by urban development and increasingly frequent fires.

Common Raven

Corvus corax

HABITAT/RANGE: Diverse habitats in both Eurasia and North America, including deserts.

DESCRIPTION: Large, all black, with massive bill. Tip of tail is wedge-shaped. Long shaggy feathers on the chin and throat.

REPRODUCTION: Nest is bulky mass of trigs, branches, earth, lined with roots, moss, hair, placed mostly on cliffs but also in trees and on buildings.

ECOLOGICAL RELATIONSHIPS: Eats carrion, shellfish, rodents, insects, seeds, fruit, food scraps, bird eggs and nestlings. Hides food.

Coyote

Canis latrans

HABITAT/RANGE: Currently found across most of the continental United States and Canada, and southward to the Isthmus of Panama in a wide range of habitats

DESCRIPTION: The color of the Coyote's pelt varies from greyish brown to yellowish grey on the upper parts, while the throat and belly tend to have a buff or white color. The black-tipped tail has a scent gland located on its dorsal base.

REPRODUCTION: Coyotes form pair bonds that last for years. They prepare a den for the pups, which are born in the spring. Litters consist of 5 to 10 pups.

ECOLOGICAL RELATIONSHIPS: When hunting, Coyotes often work in pairs to procure their prey. One animal will set off in pursuit of a rabbit, or other prey item, while the other animal cuts the prey off as it attempts to flee. This tactic is repeated until the prey animal becomes exhausted and is readily subdued. In addition to hunting rabbits and rodents, which comprise the majority of the Coyotes' diet, they will consume whatever they can catch. Coyote readily consume carrion, and also eat vegetable material and invertebrates.

Bighorn Sheep

Ovis canadensis

HABITAT/RANGE: Occurs in deserts of the southwest U.S. and Mexico.

DESCRIPTION: Stocky, heavy-bodied sheep weighing from 125 to 200 lbs. (57–90.7 kg.) Older rams have impressive sets of curling horns measuring over 3 ft. (91.4 cm.) long with more than 1 ft. (30 cm.) of circumference at the base. Due to their unique padded hooves, Bighorn are able to climb the steep, rocky terrain of the desert mountains with speed and agility.

REPRODUCTION: Lambs are usually born in late winter.

ECOLOGICAL RELATIONSHIPS: Bighorn rely on their keen eyesight to detect potential predators such as mountain lion, coyotes and bobcat, and they use their climbing ability to escape. Southern Desert Bighorn Sheep are typically found in small, scattered bands adapted to a desert mountain environment with little or no permanent water. Some of the Bighorn may go without visiting water holes for weeks or months, sustaining their body moisture from food and from rainwater collected in temporary rock pools. They may have the ability to lose up to 30% of their body weight and still survive. After drinking water, they quickly recover from their dehydrated condition.

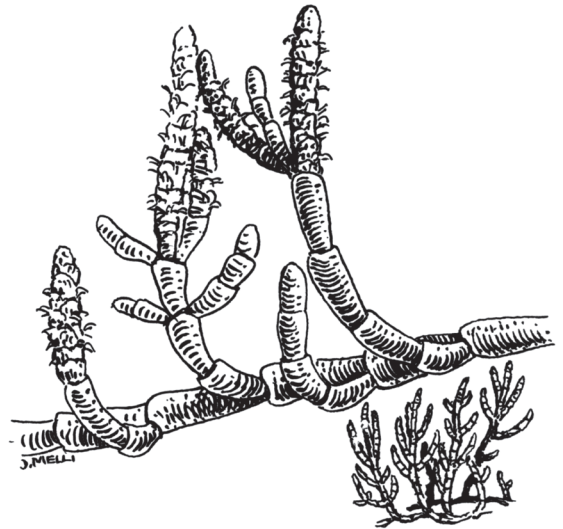
California Cordgrass

Spartina foliosa



Pacific Pickleweed

Sarcocornia pacifica



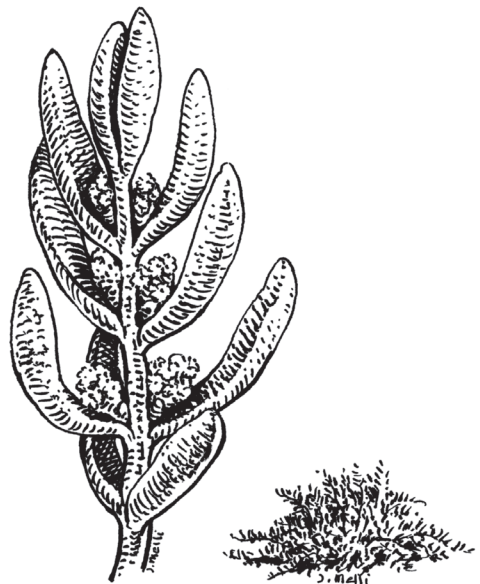
Orcutt's Bird's Beak

Cordylanthus orcuttianus



Saltwort

Batis maritima



Pacific Pickleweed

Sarcocornia pacifica

HABITAT/RANGE: Pacific Pickleweed is a widespread shrub that grows to 11 in. (50 cm.) tall, with erect to ascending stems that grow from creeping rootstocks. It occurs in saline habitats on both coasts along the Baja California peninsula, on several adjacent islands, and on both the east and west coasts of the U.S. and Mexico.

DESCRIPTION: Opposite, scale-like leaves on fleshy or succulent stems that are mostly vegetative and have an opposite branching pattern. The stems look like a little chain of pickles.

REPRODUCTION: The small flowers are wind-pollinated and have no colorful petals.

ECOLOGICAL RELATIONSHIPS: Frequently, Pickleweed is the commonest plant in the salt marsh. It provides shelter and food for invertebrates.

California Cordgrass

Spartina foliosa

HABITAT/RANGE: Grows in the low salt marsh where the roots are continually bathed in ocean water.

DESCRIPTION: A tall grass that is higher than the other plants in the salt marsh.

REPRODUCTION: All grasses are wind-pollinated. Cordgrass has straw-colored spikes of densely packed flowers. Male flowers have pollen, and the female flowers show graceful, waving stigmas to catch the pollen.

ECOLOGICAL RELATIONSHIPS: Cordgrass is home for the endangered bird, the Lightfooted Clapper Rail. A spider lives its entire life inside the blades. It is important food for grazing animals.

Saltwort

Batis maritima

HABITAT/RANGE: Most frequently found in the low salt marsh. Grows with cordgrass and pickleweed.

DESCRIPTION: Saltwort is a light-green to yellow-green, low-growing woody perennial with prostrate or ascending branches that grows in salt marshes along both coasts and on many adjacent islands. The leaves are opposite, succulent, and .5 to 1 in. (1 to 2 cm.) long.

REPRODUCTION: This species is dioecious, meaning there are separate male and female plants. The flowers (male flowers on the male plants, and female flowers on the female plants) are arranged in small cone-like structures. The fruits, which look like little potatoes with bumps, are dispersed by water. Late in summer thousands of the bright green fruits can be found in the high-tide-line debris.

ECOLOGICAL RELATIONSHIPS: It is reported that Native Americans used this species as a food with stems or leaves eaten raw, cooked, or pickled, and the roots were chewed or boiled into a beverage.

Orcutt's Bird's Beak

Cordylanthus orcuttianus

HABITAT/RANGE: Seasonally dry drainages and upland adjacent to riparian habitats. Populations are found in San Diego County and south as far as Rosarito, Baja California.

DESCRIPTION: Annual, 6 to 30 in. (15–75 cm.) tall with green- or red-tinged, stiff, hairy stems. The flowers are clustered at the head of the stem with pinnately dissected bracts. The small flowers are white with yellow-tipped stamens. If you pinch the flower between your fingers it opens like a bird's beak.

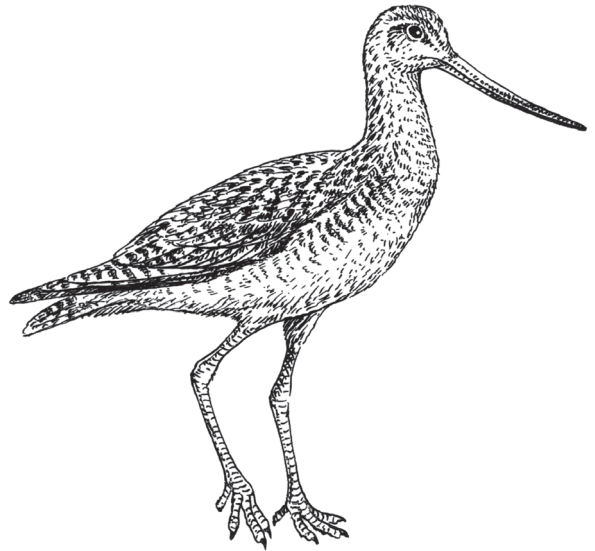
REPRODUCTION: Pollinated by ground-nesting bees that build their individual nests in the loose soil found in trails that are seldom used.

ECOLOGICAL RELATIONSHIPS: This is a rare plant due to a limited distributional range and habitat loss from agricultural and urban development. *Cordylanthus* are root parasites (called hemiparasites) with green leaves, meaning that they are capable of photosynthesis but also tap into the roots of neighboring plants for water and nutrients.

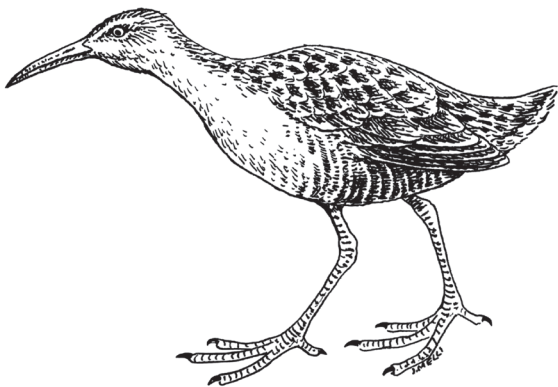
Saltgrass
Distichlis spicata



Marbled Godwit
Limosa fedoa



Clapper Rail
Rallus longirostris



Savannah Sparrow
Passerculus sandwichensis



Marbled Godwit

Limosa fedoa

HABITAT/RANGE: Overwinters in salt marshes and on beaches and mudflats of central and southern California, the Baja California peninsula, and the Gulf of California. Nests in meadows near lakes and ponds in the northern central U.S. and southern central Canada.

DESCRIPTION: A large bird (18 in. or 46 cm.) with a downcurved, bicolor beak. Its body is a mottled brown with black on its back. Its wings are cinnamon colored.

REPRODUCTION: Breeding season begins in May. Marbled Godwits nest in dispersed colonies.

ECOLOGICAL RELATIONSHIPS: Eats whole animals buried in the mud, mainly worms, small clams, and crustaceans. Usually found in small groups.

Saltgrass

Distichlis spicata

HABITAT/RANGE: Coasts and saline and alkaline soils below 4,600 ft. (1550 m.).

DESCRIPTION: A single row of leaves on opposite sides of the main stem.

REPRODUCTION: A dioecious grass with male and female flowers on different plants.

ECOLOGICAL RELATIONSHIPS: Insects live between its leaves, taking advantage of this excellent refuge. This plant helps stabilize the sand. It can survive in salty habitats because it is able to excrete salt.

Savannah Sparrow

Passerculus sandwichensis

HABITAT/RANGE: Widespread in North America; some populations migratory. Year-round resident in southern California and Baja California, breeding in the salt marshes.

DESCRIPTION: Streaked breast and back, variable yellowish eyebrow, thin white central stripe in brown crown, short, notched tail.

REPRODUCTION: Builds small cup-like nest of grasses and stems lined with hair or finer grasses, placed in or under pickleweed.

ECOLOGICAL RELATIONSHIPS: Feeds on the ground, eating mostly seeds but also insects, spiders, and snails in summer. Endangered in our region.

Clapper Rail

Rallus longirostris

HABITAT/RANGE: Year-round resident of coastal salt marshes from San Francisco Bay and New England south to South America, also along the lower Colorado River

DESCRIPTION: Large rail (14 in. or 36 cm.) with slightly downcurved bill. Back feathers dark-centered with broad grey edges, giving a greyish look. Breast color in our region is reddish brown. Chicks are all black.

REPRODUCTION: Builds a domed platform nest of grasses and aquatic plants that is attached to cordgrass and floats up and down with the tide.

ECOLOGICAL RELATIONSHIPS: Feeds in shallow water and on mudflats, eating crabs, crayfish, small fish, insects and some plants. Endangered in our region.

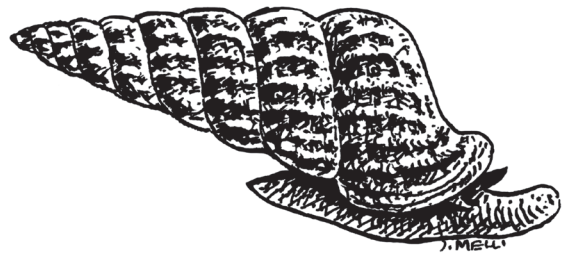
Snowy Egret

Egretta thula



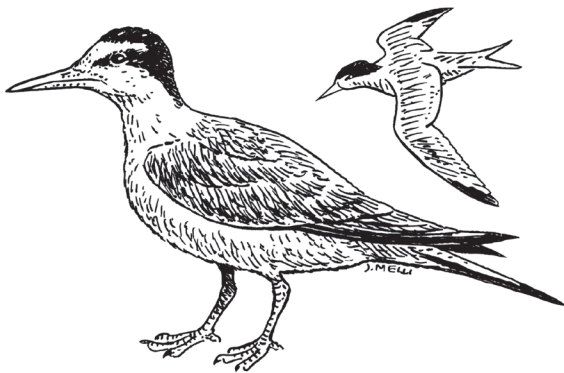
California Horned Snail

Cerithidea californica



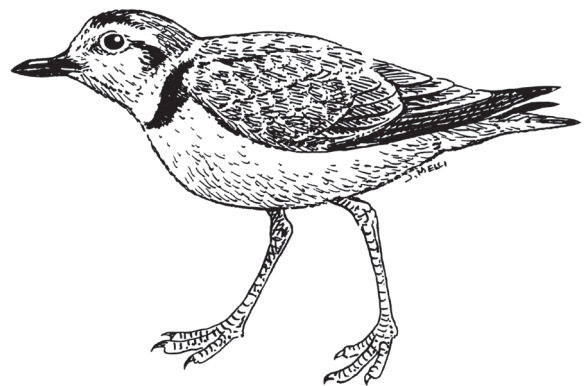
Least Tern

Sterna antillarum



Snowy Plover

Charadrius alexandrinus



California Horned Snail

Cerithidea californica

HABITAT/RANGE: Benthic invertebrates associated with a muddy substrate. Inhabits the coastal zone exposed to low tides, such as coastal lagoons and estuaries.

DESCRIPTION: The California Horned Snail is a gastropod with a spiral-shaped shell, giving it the appearance of a cone. The body is soft with a muscular ventral foot, and it has a feeding organ called a radula. When it retracts into its shell, it covers the entrance with a structure called the operculum.

REPRODUCTION: They are hermaphrodites, with male and female organs in the same individuals. However, they cannot fertilize themselves and need to copulate.

ECOLOGICAL RELATIONSHIPS: They have many natural predators, including other species of snails, turtles, fish and birds, such as rails, and other aquatic birds. Humans can also cause harm by stepping on them.

Snowy Egret

Egretta thula

HABITAT/RANGE: Resident in coastal areas, marshes, river valleys, and lake edges through most of the Americas.

DESCRIPTION: White egret with a thin black beak, black legs and bright yellow feet. Elegant feathers grace the head, neck and back of breeding adults.

REPRODUCTION: Nests in large colonies of thousands, singly, or with other herons in small colonies. Builds a platform of sticks and twigs on the ground or in a tree or shrub 5 to 10 ft. (1.5 to 3 m.) high.

ECOLOGICAL RELATIONSHIPS: Active feeding habits. Walks slowly, or quickly runs and hops through shallow water and uses its feet to stir up food from the bottom.

Snowy Plover

Charadrius alexandrinus

HABITAT/RANGE: Widespread in the world's temperate and tropical zones, in our region it overwinters primarily coastal on beaches, mudflats, and salt flats. Migrates to northern Canada and Alaska for breeding season.

DESCRIPTION: Upper parts the color of dry sand; under parts white. Dark patches on crown, sides of head, and sides of breast vary with age and sex. Dark bill and legs.

REPRODUCTION: The nest is just a scrape in the sand.

ECOLOGICAL RELATIONSHIPS: Feeds on small worms, insects, crustaceans, and mollusks picked from the surface of the sand or mud. Often fly and roost in flocks but scatter when feeding.

Least Tern

Sterna antillarum

HABITAT/RANGE: Warmer parts of the Americas. In our region primarily coastal, ranging north to San Francisco Bay and south to the tip of the Baja California peninsula. Present for breeding season from April to September only. It overwinters along the coasts of Mexico, Central America, and northern South America.

DESCRIPTION: Very small (9 in. or 23 cm.), black cap, white forehead, yellow bill with tiny black tip. Narrow wings, rapid wing beats, black leading edge of outer wing, short, shallowly forked tail.

REPRODUCTION: Colonial on beaches and dry salt flats. The nest is a shallow scrape in the sand.

ECOLOGICAL RELATIONSHIPS: Catches small fish by plunge-diving into water.

Willow

Salix sp



Coast Live Oak

Quercus agrifolia



Sycamore

Platanus racemosa



Fremont Cottonwood

Populus fremontii



Coast Live Oak

Quercus agrifolia

HABITAT/RANGE: Found on well-drained soils of coastal hills and plains, often near year-round or perennial streams below 6,500 ft (1,981 m.).

DESCRIPTION: A picturesque evergreen tree 30 to 75 ft. (9.14–22.86 m.) tall with spreading stout branches, forming a broad-headed crown. The leaves are oblong to oval, 1 to 3 in. long, stiff, leathery, frequently convex on the upper surface. The under surface is paler.

REPRODUCTION: Flowers are male and female catkins (see Willow). The fruit is a slender reddish-brown acorn .78–1.37 in. (2–3.5 cm.) long and .39–.59 in. (1–1.5 cm.) broad, with the basal quarter enclosed in a cupule. The acorns mature seven to eight months after pollination.

ECOLOGICAL RELATIONSHIPS: The California Oak Moth (*Phryganidia californica*) caterpillar subsists entirely on living and fallen leaves of the Coast Live Oak. Acorn woodpeckers excavate nests in dead trees and collect and store acorns in holes drilled, usually in conifers whose wood is less dense than oak.

Fremont Cottonwood

Populus fremontii

HABITAT/RANGE: Moist mountain and desert slopes along stream banks of beds and in moist places below 6,500 ft (1,981 m.).

DESCRIPTION: A tree 40–90 ft. (12–27 m.) tall with a broad open crown. Leaves are yellowish green on the upper surface, lighter on the under surface. They measure 1.5 to 3.5 in. (3.8–8.9 cm.) long, and are broadly heart-shaped at the base, tapering to a point at the apex. Leaves fall off in the fall. The bark is light grey and deeply furrowed with flat-topped ridges.

REPRODUCTION: Flowers are two- to four-inch male and female catkins (see Willow). The fruit is a light brown, small egg-shaped capsule that splits (three parts) to dis-seminate numerous, small, cottony seeds. New trees grow from seeds or from pieces that fall on wet ground.

ECOLOGICAL RELATIONSHIPS: Supports insects that birds eat; provides shelter and nesting places for birds. Roots stabilize stream banks and prevent erosion.

Willow

Salix sp

HABITAT/RANGE: Along stream banks and in wet soil below 2,000 feet (609.6 mm.).

DESCRIPTION: A tree from 6 to 30 feet (1.8–9.14 m.) tall. Leaves are lance-shaped, from two to four inches long. Leaves fall off in the fall and winter.

REPRODUCTION: Flowers are male and female catkins. A catkin is a slender cluster of flowers that don't have petals. (The tree is wind- pollinated, so it doesn't need showy flowers to attract pollinators.) The catkins appear on the branch tips before the leaves. Willows can grow from seeds or from pieces that fall on wet ground.

ECOLOGICAL RELATIONSHIPS: Birds nest, gather food, hide from enemies and rest among its leaves. Insect galls grow on the leaves and stems. The roots help to keep the stream bank stable and prevent soil erosion. Willows are host plants for the Mourning Cloak butterfly.

Sycamore

Platanus racemosa

HABITAT/RANGE: Abundant at elevations below 4,000 ft. (1,219 m.) along streams and near springs, or in moist gullies where water from streams or ground-water supplies are perennial or intermittent.

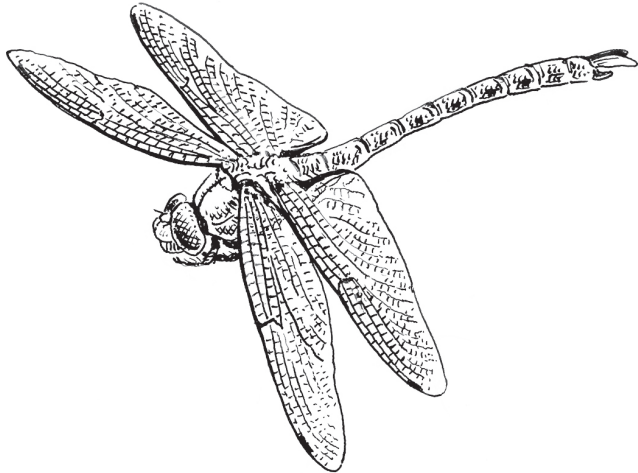
DESCRIPTION: Tree growing 40–90 ft. 12.19–27.43 m.) tall, with thick, barrel-shaped trunks that support a massive crown of wide-spreading limbs. Leaves turn a beautiful golden color in the fall and fall off. Leaves are broad, 5 to 11 in. (12.7–27.9 cm.) long, and wide. The bark is ash white with greenish-grey patches.

REPRODUCTION: The tiny, unisexual wind-pollinated flowers appear in a ball-like cluster on the same tree. The large, globular fruit breaks up at maturity, releasing numerous small nutlets that drift on the wind in fall.

ECOLOGICAL RELATIONSHIPS: Birds eat the small fruits, glean insects from the leaves and branches and nest in this tree. Sycamores provide shade over streambeds and their roots stabilize the banks.

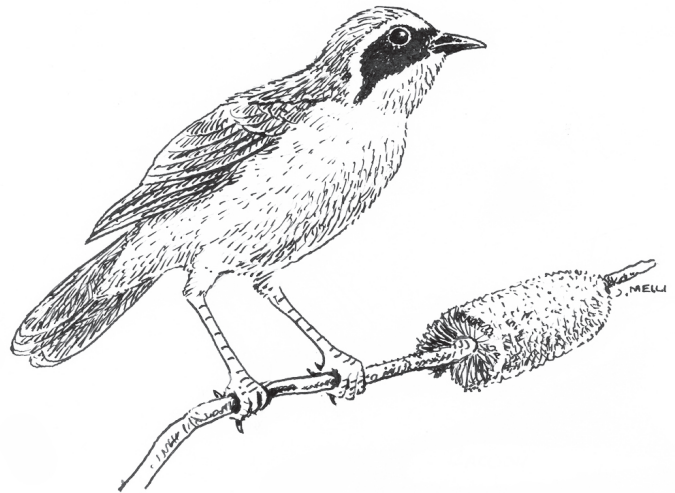
Common Green Darner-

Anax junius



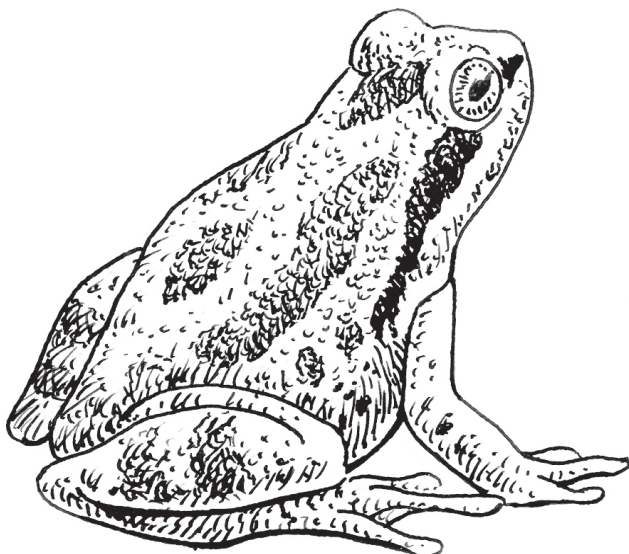
Common Yellowthroat

Campylorhynchus brunneicapillus



Pacific Tree Frog

Pseudacris regilla



Raccoon

Procyon lotor



Common Yellowthroat

Campylorhynchus brunneicapillus

HABITAT/RANGE: Brushy habitats near wet areas. They are one of the most common birds in riparian habitat. Their range extends along the Pacific coast into northern California, and they winter in the Baja California peninsula.

DESCRIPTION: Male: Yellow throat and upper breast; black mask with greyish-white border. Female: Yellow throat and breast; olive-brown face and upperparts, whitish eye ring.

REPRODUCTION: Common Yellowthroats build their nests in dense, low undergrowth, sometimes on the ground. The nest is made of coarse grasses, dead leaves and lined with fine grasses or hair. They lay three to four eggs.

ECOLOGICAL RELATIONSHIPS: Eat insects, spiders and seeds gleaned from the ground or shrubs.

Raccoon

Procyon lotor

HABITAT/RANGE: Usually found along watercourses or lakes that are near wooded areas. A raccoon may den in caves or crevices, in hollow trees or under rock piles. While it may wander far from the water during the hunt, most of its life is spent near the water.

DESCRIPTION: The raccoon is a short, stout animal, with a pointed muzzle and small, erect ears. Its most easily recognized features are the black mask across its eyes, and the alternating black and grey strips that completely encircle its tail. A raccoon can weigh between 5.4 and 15.8 kg. (12–35 pounds).

REPRODUCTION: Raccoons may breed any time during the late fall into early spring. The gestation period lasts about two months, and an average of four young are born between December and April. The mother cares for her young for almost a year.

ECOLOGICAL RELATIONSHIPS: Raccoons feed mostly along streams and lakes, finding food under rocks and in the mud. Their diet includes crayfish, fish, lizards, frogs, small mammals, birds, eggs, various fruits, nuts and grains. They are nocturnal.

Common Green Darner

Anax junius

HABITAT/RANGE: The Common Green Darner is a type of dragonfly. They prefer permanent and temporary ponds, lakes, bays, estuaries and slow-moving streams and riparian areas.

DESCRIPTION: Green Darners are about 3 inches (7.6 cm.) long with a wingspan of 4.5 inches (11.4 cm.). They have a green head and thorax. The abdomen is yellow and brown on females and bluish on males. They have large, compound eyes, strong jaws, and spiny legs. Their wings are clear with a yellowish tint toward the tips and are strongly veined with a net-like pattern. They are able to fly up to 53 miles per hour.

REPRODUCTION: Eggs laid in aquatic vegetation hatch in the spring. The nymphs (aquatic larvae) pass through 11 to 12 stages before metamorphosing into dragonflies. The adults immediately begin the cycle again. Green Darners spend a few years in larval form, and only live four to seven weeks as adults.

ECOLOGICAL RELATIONSHIPS: Larvae eat fish eggs, tadpoles and other small aquatic animals. Adults eat wasps, butterflies, mosquitoes, and other flying insects (including other dragonflies). Fish, turtles, frogs, and wading birds eat the larvae. Birds, fish and frogs eat the adults.

Pacific Tree Frog

Pseudacris regilla

HABITAT/RANGE: Found in a wide range of habitats: grasslands, chaparral, woodland, desert oases, agricultural regions and residential areas. Ranges from British Columbia, Canada, to the tip of the Baja California peninsula.

DESCRIPTION: Small .75 to 1 in. (1.9–2.5 cm.) with a highly variable color pattern on the back, ranging from unicolor to mottled greens, tans, reds, greys browns or blacks. They can change from light to dark. The throat is dusky colored and wrinkled. When calling, the vocal sac expands the throat into a round, balloon-like membranous pouch. This is the most common frog, and the call is the “rib bit” that you may hear singly or in a chorus. Tadpoles have a round body, eyes slightly protruding. Larger tadpoles are mottled with a white belly.

REPRODUCTION: Breeds from November to July. Egg clusters are attached to the bottom of marshes, ponds, lakes, etc., or to sticks or vegetation. Tadpoles, or larvae, hatch within a week and metamorphosis may take up to 2.5 months.

ECOLOGICAL RELATIONSHIPS: The Pacific Tree Frog eats a wide variety of arthropods. A number of predators rely on the Pacific Tree Frog as a food source, garter snakes being the most noteworthy.