

ANIMALS OF THE REFUGE AT THE ENVIRONMENTAL EDUCATION CENTER

UPLAND ANIMALS

Birds

Anna's Hummingbird (*Calypte anna*)

Diet: Feeds on nectar, water, spiders, and tree sap

Size: 3 1/2" - 4" in length

Description: Male has a deep rose red head and throat; female's throat has reddish flecks; both have grayish underparts washed with green.

Did You Know? This is the only hummingbird in this area that does not migrate.



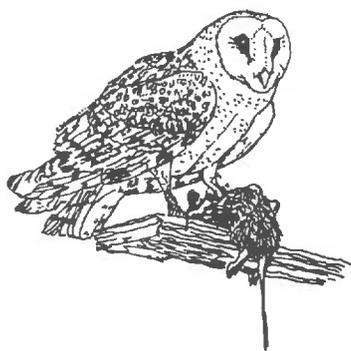
Barn Owl (*Tyto alba*)

Diet: Small mammals

Size: 14" - 20" in length

Description: Pale face with dark eyes; heart-shaped outline around the face; rusty brown upper parts; underparts vary from white to cinnamon.

Did you know? The barn owl nests and roosts in dark cavities in buildings, cliffs, and trees in the upland, they hunt at night for small mammals in the salt marsh.



Barn Swallow (*Hirundo rustica*)

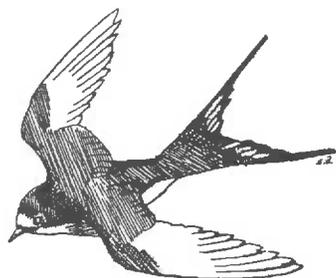
Migratory: migrates to South America in the winter.

Diet: Insects

Size: 5 3/4" - 7 3/4" in length

Description: Iridescent blue back, with a cinnamon colored belly and throat. Most distinctive is a long, deeply forked tail.

Did you know? The barn swallow builds its open cup shaped nest under bridges, or on building walls with mud collected from the salt marsh and mudflats. These birds drink, eat, and bathe while flying.



Cliff Swallow (*Hirundo pyrrhonota*)

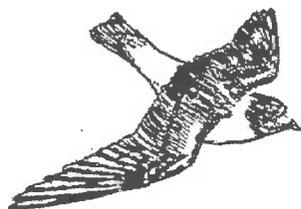
Migratory: Breeds in the spring and summer in North America. Migrates south in the fall to winter in South America, from Paraguay to coastal and southeast Brazil.

Diet: Insects and berries

Size: 5 1/2" in length

Description: Identified by its square tail with buff orange colored rump and blackish throat.

Did you know? The cliff swallow nests in colonies, building gourd-shaped mud nests with a small tunnel entrance. They typically build these nests under bridges or on cliff sides.



Peregrine Falcon (*Falco peregrinus*)

Federal Status: Delisted in the Fall 1999 from Endangered Species Status. The Peregrine Falcon made a comeback after being listed as an endangered species due to the use of DDT, a pesticide that accumulated in the food chain and weakened eggshells.

Diet: small to medium sized birds

Size: 16" - 20" long

Description: A powerful raptor with a black "helmet" head; long, pointed wings, mostly brown in color.

Did you know? The peregrine falcon is the fastest bird in the world. It can reach speeds of up to 200 miles per hour, diving from above to kill its prey. They hunt for prey in the upland, salt marsh and salt pond habitats.

(For more information see Endangered Species of the SFBNWR Complex p. 5)



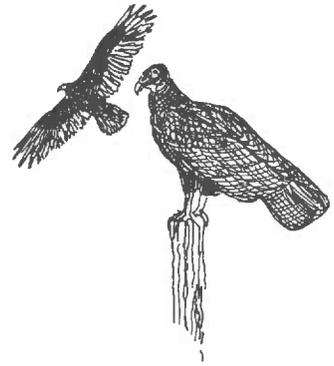
Turkey Vulture (*Cathartes aura*)

Diet: Carrion (dead animals) and refuse.

Size: 27" in length

Description: Seen from below, two-toned wings (flight feathers dark silver - grey, linings black). In flight, wings are often held in an upward in a shallow "V" shape, they seldom flap their wings, but usually rock from side to side.

Did you know? Evidence suggests that the turkey vulture finds its food by sight and scent. They will virtually eat any dead animal down to the size of a tadpole.



Western Meadowlark (*Sturnella neglecta*)

Diet: Beetles, grasshoppers, and similar insects.

Size: 9 1/2" in length

Description: Black, V-shaped band on their bright yellow breast, dark colors on the upper part of its wings that is surrounded by lighter edges.

Did you know? Meadow larks are often heard before they are seen because of their distinct call which is a melody of 6 to 7 notes. These notes mimic the sounds of a flute and become hurried toward the end of the birds call.



Insects

Acmon Blue (*Icaricia acmon*)

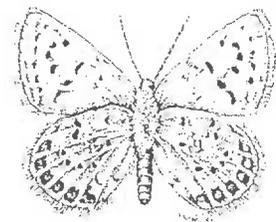
Nonmigratory: Adults seen spring through fall

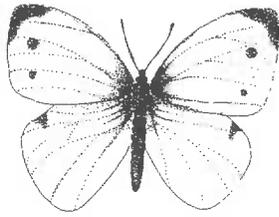
Larval Diet: Buckwheat, lupine, clover and many kinds of legumes.

Size: 3/4" - 1"

Description: Bluish-purple in color; orange edge at the base of hind wing; large orange spots under the hind wing. Adults seen in many communities.

Did You Know? Eggs are laid on the host plant from January onward, and the butterflies pupate in leaf litter beneath the plants.





Cabbage White Butterfly (*Pieris rapae*)

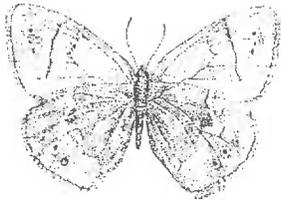
Nonmigratory. Nonnative

Larval Diet: Many members of the mustard family

Size: 1 1/4" - 1 7/8"

Description: White with gray wing tips and a few black spots on the wings. Most commonly found in cultivated areas and open spaces.

Did You Know? It can be found in all but the most extreme environments. It is ubiquitous!



California Ringlet (*Coenonympha californica*)

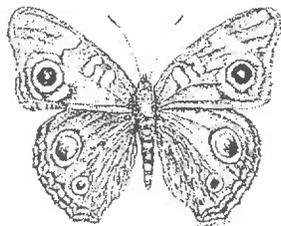
Nonmigratory: Adults seen everywhere in the Bay region from spring to fall.

Size: forewing length: 14-18 mm

Larval Diet: **Purple Needlegrass** and other grasses

Description: White; eyespots on front and hind wings. Caterpillars are pale green.

Did You Know? Females lay eggs singly on the ground. The lightest ringlet, it is known for its whitish color.



Common Buckeye (*Junonia coenia*)

Nonmigratory: Observed year-round

Larval Diet: **Monkey flower** and other snapdragon-type plants.

Size: 2" - 2 1/2"

Description: Light brown with several large eyespots; two orange bars at the top of each wing. Found in grassland and oak woodland habitats.

Did You Know? The buckeye butterfly is able to produce many generations per year. An aggressive species, it is often seen chasing other butterflies



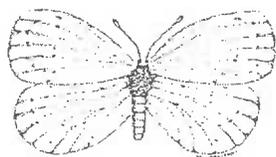
Dragonfly (Suborder: anisoptera)

Diet: other insects

Size: 1" - 3 1/2" in length

Description: Two pairs of multi-veined wings which are usually outstretched, even in rest; males have three terminal abdominal appendages, and females only have two terminal dorsal appendages.

Did You Know? Dragonflies often fly in tandem, and the male usually carries the female on its appendages. They are seen near ponds and marshes.



Echo Blue (*Celastrina ladon echo*)

Nonmigratory: It's range extends from Alaska to Central America

Larval Diet: Many different plants, including **wild lilac/ceanothus**, buckeye, chamise, lotus and

huckleberry. Caterpillars eat buds, flowers, leaves and young fruit.

Size: 7/8" - 1 1/4"

Description: Light purple; front wing tips bordered in black; hind wings bordered in white. Can live in all local communities

Did You Know? Larvae are often cared for by ants.

Monarch Butterfly (*Danus Plexippus*)

Migratory: Flies to areas in South America and Mexico in the fall and returns north in the spring.

Larval Diet: Milkweed

Size: 4 1/8" - 4 5/8" in length

Description: Large orange wings with black borders; included in the borders of the upper wings are small white circular markings; wings are attached to its solid black body.

Did You Know? The larvae of this species are poisonous to birds. They advertise their presence with yellow, black, and white vertical bands along their bodies in order to remind predators that the last time they ate a monarch larvae, they vomited.

Narrow-winged Damselfly (*Suborder: zygoptera*)

Diet: small insects

Size: 1" - 2" in length

Description: Clear slender wings; body is a variety of colors; male is more brightly colored than the female.

Did you know? Damselflies lay their eggs in the water of ponds and marshes. The nymphs develop in the water until their skin splits and the adult fly emerges and flies away.

Painted Lady (*Vanessa cardui*)

Migratory in some years: When populations build up rapidly, adults undergo extensive northerly migrations, from which they do not return.

Larval Diet: Common yarrow, California aster, mallow, and many other native plants.

Size: 2" - 2 3/4"

Description: Orange; front wings are tipped with black and spotted with white; four black spots across hind wing. Lives and travels in many different communities.

Did You Know? This species has been introduced to many different areas and is now established worldwide, except for Australia and New Zealand.

West Coast Lady (*Vanessa annabella*)

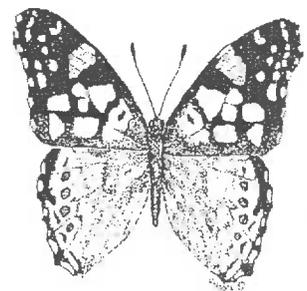
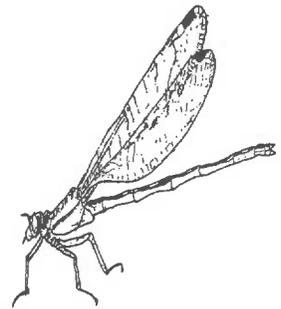
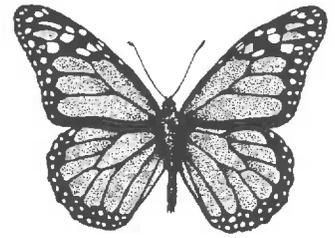
Nonmigratory: Adults abundant all year

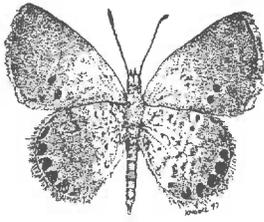
Larval Diet: Mallow, nettle

Size: 1 1/2 - 2"

Description: Orange; front wings mottled with black; white spots apparent on the front wing tips; four blue spots on each hind wing. Lives and travels in many different communities.

Did You Know? Single eggs are laid on the leaves of plants; larvae live in a nest made of a rolled leaf.





Western Pygmy Blue Butterfly (*Brephidium exilis*)

Nonmigratory: May winter as a pupa

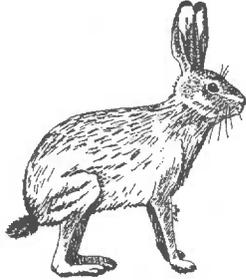
Larval Diet: Saltbush, fat hen and pickleweed; eats all parts of plant

Size: 0.2 - 0.3"

Description: Brown wings with a white fringe and blue near its body.

Did You Know? The Western pygmy blue is the smallest butterfly in North America! It produces many generations each year up to December.

Mammals



Black-Tail Jackrabbit (*Lepus californicus*)

Diet: Grasses, nuts, and seeds

Size: 17" - 21" in length

Description: Brown fur with a black colored tail.

Did you know? The black-tail jackrabbit has long ears that help keep it cool during the hot weather.



California Ground Squirrel (*Spermophilus citellus*)

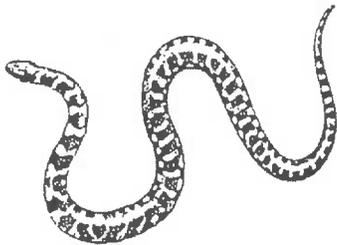
Diet: Nuts, seeds, fruit, grasses, some insects, and carrion

Size: 9" - 11" in length (head to tail tip)

Description: Brown fur; long bushy tail; short ears.

Did you know? The California ground squirrel lives in burrows that it digs itself. It is found on hillsides and on salt pond levees. It is eaten by owls, hawks, and foxes.

Reptiles



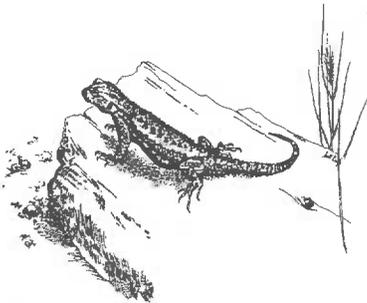
Gopher Snake (*Pituophis melanoleucus*)

Diet: Mice, rats, gophers, squirrels, rabbits and birds.

Size: 36" - 100" in length

Description: Yellow or cream in color; brown, black, or reddish- brown markings on its back.

Did you know? The gopher snake is similar in markings and actions of the rattle snake, but it is harmless to humans. They hunt in the upland and in the salt marsh.



Western Fence Lizard (*Sceloporus occidentalis*)

Diet: Insects and spiders

Size: 2 1/4" - 3 1/2" in length

Description: Black, gray, or brown lizards with blotched patterns; undersides have blue patches on the throat and belly of the male; female lacks throat patches and her belly patches are not as bright as the males.

Did you know? This lizard got its name because it was commonly seen sitting on fence posts.

SALT MARSH AND NONTIDAL SLOUGH ANIMALS

Birds

American Avocet (see salt pond birds)

American Coot (see tidal slough birds)

Black-necked Stilt (see salt pond birds)

Great Blue Heron (*Ardea herodias*)

Diet: Small vertebrates and aquatic vertebrates (spears fish and flips them upwards, catching them in midair)

Size: 46" in length and 72" wing span

Description: Large, gray-blue heron; black stripe extends above eye; white foreneck is streaked with black; yellow bill.

Did you know? This heron has one of the widest ranges of any North American heron and is one of the largest wading birds in California. They feed in the salt marsh, slough, and mudflats.

Great Egret (*Casmerodius albus*)

Diet: Small vertebrates and aquatic invertebrates

Size: 39" in length and 51" wing span

Description: Large white heron; heavy yellow bill; blackish legs and feet; breeding adults have long plumes which trail from back and extend beyond the tail.

Did you know? This bird stalks its prey slowly and methodically, and you can often see the great egret hunting in the uplands, salt marsh, mudflats, and sloughs.

Killdeer (see salt pond birds)

Mallard (*Anas platyrhynchos*)

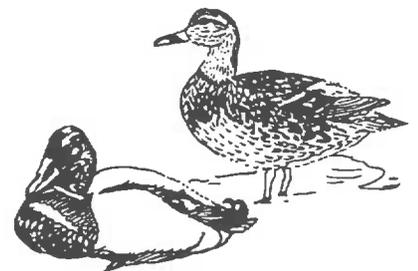
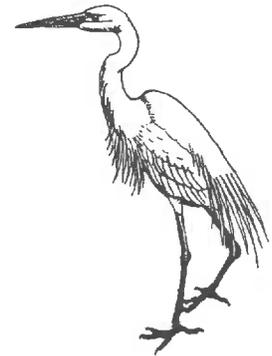
Migratory: Mallards are migratory birds that migrate south from regions as far north as Alaska; however, they are found in locations throughout the United States all year long.

Diet: aquatic plants and aquatic invertebrates

Size: 23" in length

Description: Dull brown body; white tail; white underwings; bright blue speculum with both sides bordered in white; male can be identified by his metallic green head and neck

Did you know? Mallards are seasonally monogamous, switching mates each year. They nest and raise their young in the salt marsh. They are a "puddle duck" that feeds with its tail in the air and head underwater in the slough.





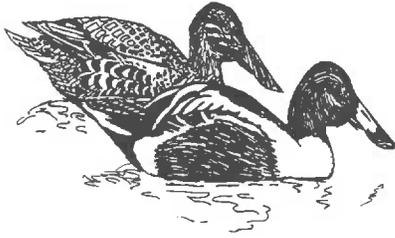
Northern Harrier (*Circus cyaneus*)

Diet: Males prey more on birds, while females eat more mammals. This raptor has been reported to drown waterfowl.

Size: 16 ½" in length, 42" wing span

Description: Obvious white rump patch. Male has gray back, throat and breast, white belly marked with brown, tail with black bars. Female is brown-streaked on breast; brown above.

Did you know? The Northern harrier flies close to the ground searching for its prey in the upland, salt marsh and salt pond habitats.



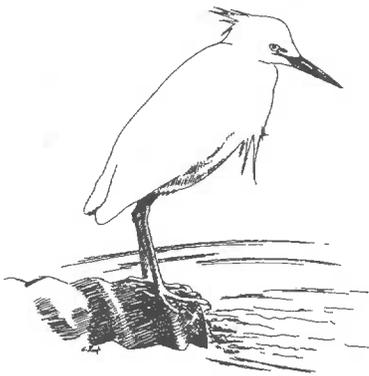
Northern Shoveler (*Anas clypeata*)

Diet: phytoplankton, snails, clams, and aquatic insects

Size: 19" in length

Description: Male has green head, white breast, and brown sides; female is a mottled brown and has a grayish bill tinged with orange on cutting edges; both male and female show blue forewing patch.

Did you know? Northern shovelers have a spatulate bill that is actually longer than their head! They are found feeding in the sloughs, mudflats, and salt ponds.



Snowy Egret (*Egretta thula*)

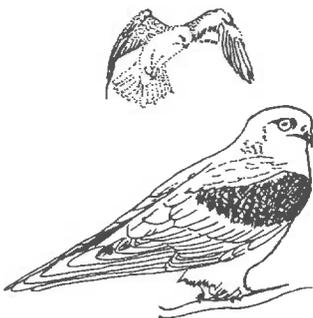
Migratory: In the summer, post breeding wanderers reach far north into Oregon, Nebraska, the Great Lakes and Atlantic Canada.

Diet: Fish, insects, and other aquatic organisms

Size: 22"-26" high

Description: White feathers, black bill, black legs with bright yellow feet. Fluffy plumes curve upward from the back of the head and neck.

Did you know? Their yellow feet are commonly called "golden slippers." They are used as lures to attract fish in the slough. They roost and nest in trees, shrubs, and tule.



White-tailed Kite (*Elanus Caeruleus*)

Diet: Rodents, large insects, birds, snakes, lizards, and frogs

Size: 16" in length, 42" wing span

Description: Long pointed wings; long tail; white underparts and mostly white tail; black feathered shoulders.

Did you know? This is the only North American kite that hovers over its potential prey while hunting and then dives downward to catch it. They hunt over the salt marsh and uplands.

Fish

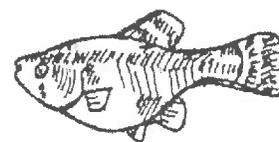
Mosquitofish (*Cambusia affinis*)

Diet: Mosquito larvae

Size: 1 to 2 ½" in length

Description: A small silver fish. Females can be twice as large as males.

Did You Know? Mosquitofish are very effective at controlling mosquito populations and helping to prevent mosquito outbreaks. An introduced species, they have been a success story in biological control of vector species in Santa Clara County.



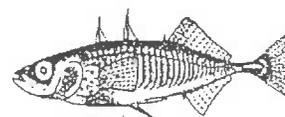
Threespine Stickleback (*Gasterosteus aculeatus*)

Diet: Small pelagic organisms (especially crustaceans), also small fish

Size: 4" in length

Description: Three isolated spines (2 large, 1 small) before the soft rayed dorsal fin. Olive or blackish above; silvery below. Breeding males have a reddish head and underparts.

Did you know? The male builds an elaborate nest of grass and sticks stuck together by a glue-like secretion. The nests may be located on the bottom or concealed in holes, cans, bottles, etc. Several females may deposit eggs in one nest. The male guards the nest until the eggs hatch and the young are on their own.



Insects

Western Pygmy Blue Butterfly (see upland insects)

Invertebrates

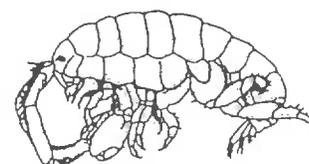
Amphipods (*Amphipoda*)

Diet: Detritus, decomposed plants and animals

Size: Microscopic

Description: A crustacean with laterally flattened body; 7 pairs of leg-like appendages.

Did you know? In order to protect themselves from predators amphipods are often found hiding in the mud under stones and detritus. They are found in the slough and mud in the salt marsh and mudflats.



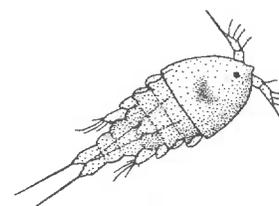
Copepod (*Copepoda*)

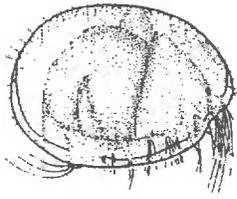
Diet: algae, bacteria, and detritus (decomposed plants and animals)

Size: Microscopic

Description: Crustacean; elongated body that lacks a carapace; 4 - 6 pairs of legs; females have two laterally located egg sacs near the posterior end of their body.

Did you know? Copepods are food for many larger animals such as fish and birds, thus, they play an active role in the food chain. They are found in shallow waters and mudflats of the slough.





Ostracod or Seed Shrimps (*Ostracoda spp.*)

Diet: They are scavengers which feed on detritus.

Size: Very small, about 1/25" in length

Description: Tiny crustacean which lives inside a bivalved shell. The shells are lined with short hairs, or cilia.

Did You Know? When the ostracod opens its valves, small appendages emerge, which propel it through the water.

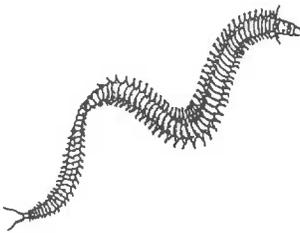
Polychaetes (*Polychaeta*)

Diet: Mud and sand digesting the organic material and passing the mineral sediments in a long coiled earth wormlike casting.

Size: Up to 9' length

Description: Segmented worms. All possess an array of bristles on their many leg-like parapodia. The name polychaete, in fact, means "many bristles".

Did you know? Polychaetes are one of the numerous species of worms living in the mud along the side of the slough and on the muddy Bay bottom. They are known by many names: lugworms, clam worms, bristle worms, and feather duster worms which reflect the wide variety of body forms found in this group, unlike the earthworms that have the same general appearance.



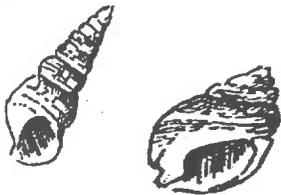
Snails (*Gastropod*)

Diet: Diatoms, algae, plant materials, and clams.

Size: Extremely variable in size 0.1" - 1" in length

Description: Has a single coiled shell and a distinct head and tentacles.

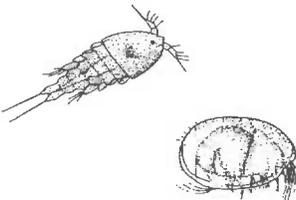
Did you know? Crawls slowly in the mud in shallow water feeding on diatoms scraped off the mud with its tongue.



Zooplankton (*various species*)

Description: Drifting animals primarily amphipods, copepods, ostracods, krill, and jellyfish.

Did you know? Zooplankton can be as small as 0.001" (ostracod) and larger than 6' (certain species of jellyfish).



Mammals

Salt Marsh Harvest Mouse (*Reithrodontomys raviventris*)

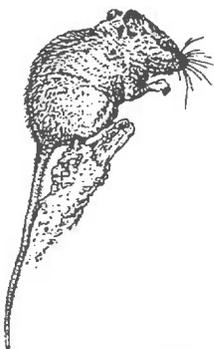
Federal Status: Endangered

Diet: Pickleweed

Size: 2 1/2" - 3 1/2" long

Description: Upperparts of mouse are a rich brown which contrasts with the lighter-colored fur of its belly. Salt marsh mouse closely resemble the more common western harvest mouse (*R. meglotis*)

Did you know? *Endangered species found only in the salt marshes of*



the Bay. Feeds exclusively on pickleweed. Land development, excessive freshwater discharge from sewage treatment plants, diking, and flooding have altered much of the salt marshes that the salt marsh harvest mouse depends on. (For more information see *Endangered Species of SFBNWR Complex* on p. 4)

TIDAL SLOUGH (FRESHWATER) ANIMALS

Birds

American Coot (*Fulica americana*)

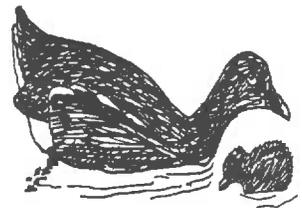
Migratory: Migrates South to Southern California or Mexico in the winter and spends its summers in the North.

Diet: Algae, small crustaceans, snails and insects.

Size: 13" - 16" in length

Description: Dark gray and black duck-like bird with a white bill.

Did you know? Before an American coot dives into the water to feed it jumps upward before submerging.



Black-crowned Night Heron (*Nycticorax nycticorax*)

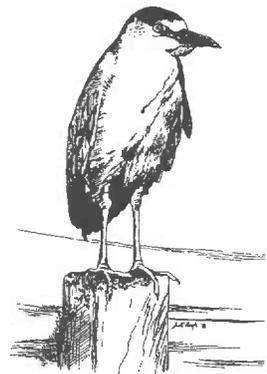
Migratory: Southern California in winter

Diet: Fish

Size: 23" - 28" in length

Description: The only heron with a black back and top of head, gray plumage. During breeding season, several white plumes extend back from its head and the eyes are red. Immature have plumage mottled grayish-brown.

Did you know? This bird roosts in trees during the day and forages for food at night.



California Clapper Rail (*Rallus longirostris obsoletus*)

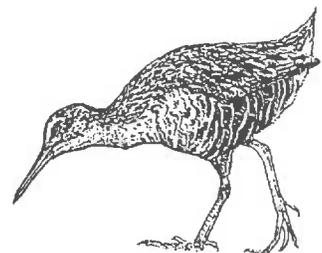
Federal Status: Endangered

Diet: Crustaceans, insects, frogs, worms, small mammals, and cordgrass

Size: 14" - 16 ½" in length

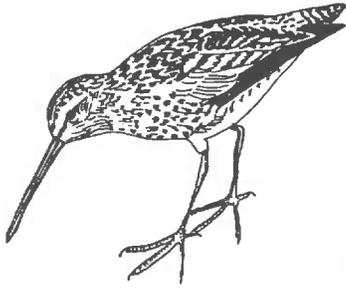
Description: Grayish edges on brown back feathers; olive wing tints; gray cheeks; cinnamon undersides.

Did you know? The California clapper rail has a very distinctive call that is a series of ten or more dry "kek kek kek" notes, which accelerate and then slow. They predominantly call at dusk and dawn. They live in the salt marsh and are often found feeding in the mudflats. (For more information see *Endangered Species of SFBNWR Complex* on p. 4)



Great Blue Heron (see salt marsh and nontidal slough birds)

Great Egret (see salt marsh and nontidal slough birds)



Long-billed Dowitcher (*Limnodromus scolopaceus*)

Migratory: Migrates south from the northern part of the west coast beginning in mid- July. Juveniles generally migrate in September when strong enough to travel.

Diet: Aquatic insects, mollusks, crustaceans, seeds, and plants

Size: 11" - 12" in length

Description: Winter plumage is gray; breeding adult is entirely reddish below; heavily spotted foreneck; both have a whitish rump patch; thin gray or red edges on wings with red tips.

Did you know? These birds have been nicknamed "the sewing machine" because, when they feed, their long beaks probe the mudflats in the same active motion as a sewing machine needle.

Mallard (see salt marsh and nontidal slough birds)

Marsh Wren (*Cistothorus palustris*)

Diet: Aquatic insects and snails

Size: 5" in length

Description: Brown crown, bold white eye line, black triangle on upper back, streaked with white, underparts mostly white.

Did you know? You can hear marsh wrens singing their distinctive song day and night, which is a series of loud, rapid, reedy notes, combined with liquid rattles. Call sounds like a lawn sprinkler (whish, whish).

Northern Harrier (see salt marsh and nontidal slough birds)

Northern Shoveler (see salt marsh and nontidal slough birds)

Red-winged Blackbird (*Agelaius phoeniceus*)

Migratory: Winters in southern two-thirds of the United States

Diet: During the breeding season, it forages primarily on insects and other invertebrates. During the winter it feeds primarily on grains.

Size: 7 1/2" - 9 1/2" in length

Description: Males are black with bright red shoulder patches; females have dusky brown streaks.

Did you know? The female weaves the nesting material, usually from grasses or reeds, into several upright cattails, reeds, or grasses for support. She then lays 3 - 4 greenish blue eggs with brown spot, which incubate for 11 months.



Ruddy Duck (*Oxyura jamaicensis*)

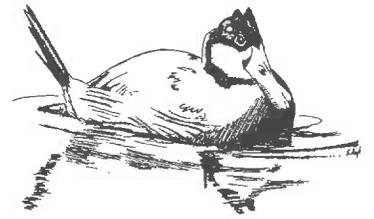
Migratory: Spends summers inland and north of its summer home located in coastal regions from Northern California and south, although, it may be seen in the San Francisco area all year long.

Diet: Aquatic insect larvae, snails, other invertebrates, aquatic vegetation.

Size: 15" in length

Description: Thick necked duck with a large head, broad brown bill, long stiff tail feathers, male has white cheeks, female has light brown cheeks with brown single stripe. Both male and female have a brown crown and brown mottled feathers. Breeding male has a blue bill, black crown, and rusty colored feathers.

Did you know? When alarmed these ducks tend to dive rather than fly. They can be found on salt ponds during the winter.



Snowy Egret (see salt marsh and nontidal slough birds)

Western Sandpiper (*Calidris mauri*)

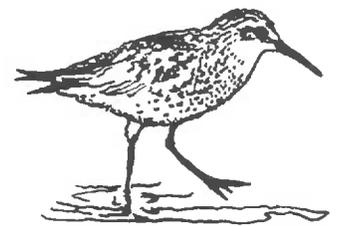
Migratory: Migrate throughout the west but winter primarily near the coast.

Diet: Insects and small aquatic life

Size: 6"-7" in length

Description: Black legs, drooped bill at tip. In summer, back and crown are rusty, in fall plumage is gray above.

Did you know? The parent western sandpiper will sometimes pretend it has a broken wing, and drag itself away from the nest to distract a predator from its young. They are found in large flocks feeding in the mudflats.



Willet (*Catoptrophorus semipalmatus*)

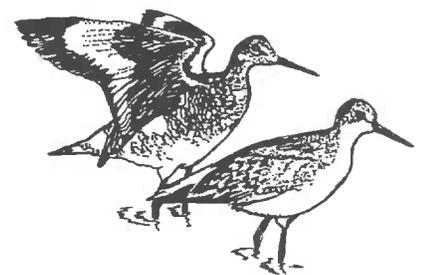
Migratory: Winters in southern US to Brazil

Diet: Crustaceans, worms, small mollusks, and insects probed from the sand or mud with the long beak.

Size: 14"-17" tall

Description: In flight striking black and white wing pattern. At rest, when the banded wings cannot be seen, this large wader is non-descript; gray above; legs bluish grey.

Did you know? The willet's call is derived from its loud ringing call of pill-will-willet.



Invertebrates

Amphipods (see salt marsh and nontidal slough invertebrate)

Mammals

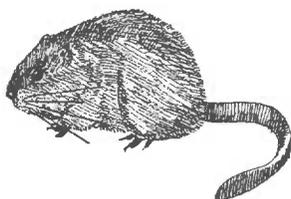
Muskrat (*Ondatra zibethica*)

Diet: Plants. Their digestive system is designed for green vegetation.

Size: 12 ½" in length

Description: Tail is flat and scaly and is 9 ½" in length. Muskrats have dense fur that traps air underneath for insulation and buoyancy. Their heads are very large and their ears are almost invisible underneath the fur. The whiskers are medium size. They have short legs and big feet. The back feet are slightly webbed for swimming. Adult muskrats have glossy upperparts that are dark brown - darker in winter and paler in the summer.

Did you know? Muskrats consume 1/3 of their weight in vegetation each day.



SALT POND ANIMALS

Birds

American Avocet (*Recurvirostra americana*)

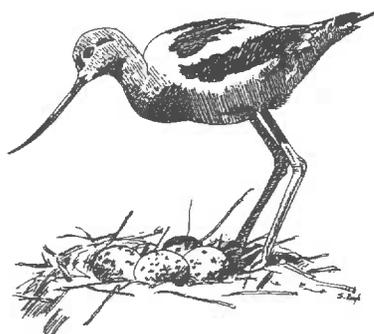
Migratory: Common summer resident to open wetlands of Western and North East sections of California; winter in southern San Francisco Bay.

Diet: Tiny crustaceans, insects, and even seeds from water.

Size: 16"-20" in length

Description: A large, slim shorebird with a very slender, upturned bill. The striking white-and-black pattern is unique. In breeding plumage, the head and neck are pinkish tan; in winter this is replaced with pale gray.

Did you know? This is one of the very few birds in the world with a long, upturned bill. They sweep their bill from side to side through shallow water when feeding on invertebrates. They nest on levees and islands in and around salt ponds.



American White Pelican (*Pelecanus erythrorhynchos*)

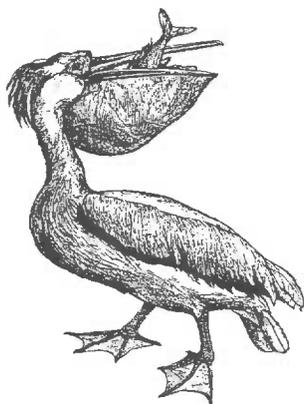
Migratory: Spends winters along the Pacific Coast from Northern California and South. Spends summers inland in region north of their winter home.

Diet: Fish, salamanders, crayfish

Size: 62" in length and 108" wing span

Description: White with black along the edges of the wing. Bright orange spoon shaped bill.

Did you know? White pelicans do not dive for food, they dip their bills into the water while swimming.



Black Necked Stilt (*Himantopus Mexicanus*)

Migratory: Mostly a summer resident throughout California but also winters in South San Francisco Bay.

Diet: Brine flies and shrimp, crayfish, snails, few fish, tadpoles, and some seeds

Size: 14" in length

Description: Male has a glossy black back and bill; white underparts; red or pink legs; female is similar but has a browner back.

Did you know? In hot environments, these birds transport water by soaking their ventral feathers in water and carrying it back to an incubating egg or chick in order to increase the nests humidity. This process is called "belly soaking," and in a single day over 100 trips can occur depending on necessity.

California Gull (*Larus californicus*)

Migratory: The population of California gulls in the South Bay are year round residents. In other areas of California the gull winters along the coast and summers inland.

Diet: Invertebrates and vertebrates, worms, mice, other birds, bird eggs, garbage, crabs, and fish.

Description: Adult has white head; heavily streaked with brown in winter; dark eye; yellow bill with red and black spots; greenish-yellow legs; dark grey wing tips.

Did you know? This gull takes four years to reach maturity. It begins its life with dark brown feathers and tanish-brown beaks and feet. As the gull matures into its second year, its feathers darken and feet are a light pink. By its third year its feathers are gray and brow, its beak is more yellow and feet are grey. By its fourth year it is considered an adult and does not undergo any further change of outward appearances.

Forster's Tern (*Sterna forsteri*)

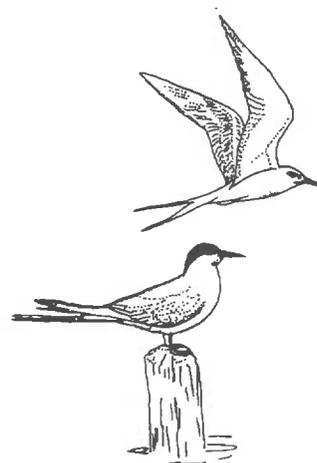
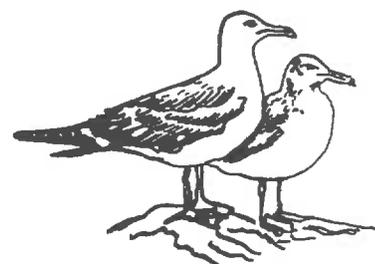
Migratory: Migrates along the coast of Southern California to South America in the winter season.

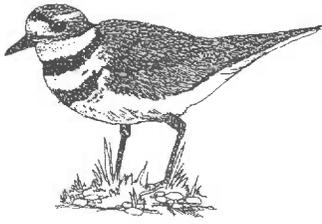
Diet: Aquatic invertebrates and insects

Size: 14 ½" in length and 31" wing span

Description: Gray bird with silvery primaries; black beak with black coloring at tip; orange legs and feet. Long, deeply forked gray tail with white outer edges; black eye patches not joined at nape.

Did you know? Forster's terns tend to be quarrelsome with birds of other species, sometimes attacking them viscously to protect its nest. They can be seen hovering and diving for fish in the salt ponds and sloughs.





Killdeer (*Charadrius vociferus*)

Migratory: Widespread California resident throughout summer, generally avoiding the most northern parts in winter.

Diet: Insects, small invertebrates, isopods, and copepods.

Size: 8"

Description: Two black bands on white chest; white ring around neck; white marks on dark wings; reddish-brown on rump and upper base of tail.

Did you know? Killdeer regularly feign injury when nest or young are threatened by limping away as if it has a broken wing to lure predators away from nest; nests on open gravelly soils, eggs blending into background.

Pied-billed Grebe (*Podilymbus podiceps*)

Diet: aquatic insects, snails, fish and frogs

Size: 13 ½" in length

Description: Small, stalky brown bird with a black ring around its stout whitish bill, black chin and throat, pale belly.

Did you know? Grebes spit up pellets of undigested materials, such as bones, like owls do. They are found feeding in the slough, mudflats, and salt marsh.

Ring Billed Gull (*Larus Delawensis*)

Migratory: Breeds inland and North in the Summer; moves South and to the coast in the Winter.

Size: 17 ½" in length and 48" in width.

Description: Adult has pale gray mantle; white head with brown speckles (depending on the season); white underparts; yellow bill with black subterminal ring; pale eyes; yellowish legs; black wingtips with a white spot on edges.

Did you know? The ring billed gull is a 3 year gull, who begins its life mostly brown with a black bill, dark eyes, and light brown feet. By its first year it is a combination of black, gray, and brown, with a light brown bill, lighter eyes, and brown legs. By its third year it is considered to maintain adult physical characteristics.

Western Sandpiper (see tidal slough birds)

Western Snowy Plover (*Charadrius alexandrinus*)

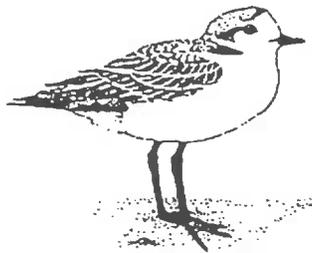
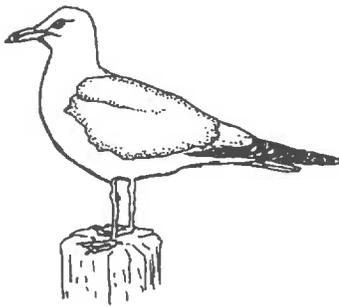
Federal status: Threatened

Diet: Insects, worms, crustaceans, mollusks, and fish

Size: 6 ¼ inches in length

Description: Pale tan above; thin dark bill; grayish legs; dark ear patch; white underparts.

Did you know? Female leaves her young in the first 6 days after they hatch with the male who stays with the young for 29 to 47 days. **(For more information see Endangered Species of SFBNWR Complex on p. 4)**



Insects

Amphipods (see salt marsh and nontidal slough animals)

Brine Flies (see salt marsh and non-tidal slough insects)

Copepods (see salt marsh and nontidal slough animals)

Midge Fly (*Chironomid midges*)

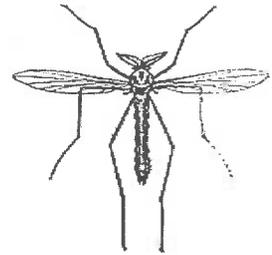
Diet: Larvae: algae, organic debris; Adults: do not eat

Size: 1/8" in length

Description: Opaque gray.

Did you know? The eggs are laid in masses in open water or are attached to vegetation, the eggs hatch in 72 hours and the larvae eat algae and other organic debris, the pupa stage generally lasts 2 days, and once they emerge as adult flies, their life span is about one week. Adult flies swarm together creating large masses that look like columns rising from the marsh. The species at the Environmental Education Center do not bite.

Clipart credit: Florida Center for Instructional Technology, <http://etc.usf.edu/clipart>



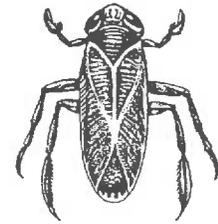
Water Boatman (*Corixidae spp.*)

Diet: Zooplankton and algae

Size: Less than 1"

Description: This small brown insect can be seen swimming underwater; its hindmost pair of legs look like the oars to a rowboat, which help it steer.

Did You Know? Water boatmen breathe air at the water's surface, but sometimes they carry an air bubble down with them so they can stay underwater longer.



Fish

Leopard Shark (see open bay fish)

Topsmelt (see open bay fish)

OPEN BAY ANIMALS

Birds

Brown Pelican (*Pelicanus occidentalis*)

Federal Status: Endangered

Diet: Anchovies and other fish

Size: 48" in length and 84" wing span

Description: Stocky bird; dark brown body; long flat bill; head whitish in adults; brown on hind neck during breeding season.

Did you know? They catch fish by diving bill first into the water. An endangered species, the brown pelican population declined due to DDT and DDE, pesticides that are now banned in the United States. **(For more information see Endangered Species of SFBNWR Complex on p. 4)**



California Gull (see salt pond birds)



Double-crested Cormorant (*Phalacrocorax auritus*)

Diet: Feed primarily on fish which they catch by swimming underwater to depths of up to 30 ft.

Size: 27" in length

Description: A large black water bird with an orange-yellow throat pouch. Breeding plumage has tufts of white feathers above and behind eyes.

Did you know? These birds are found feeding in the Open Bay and Ocean. They are also seen roosting on small islands and wooden posts in the salt pond.

Fish

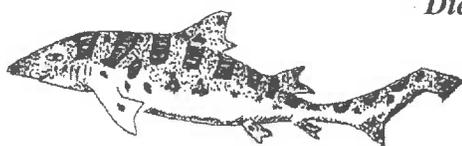
Leopard Shark (*Triakis semifasciata*)

Diet: A variety of fishes and invertebrates.

Size: Up to 7' in length

Description: Gray above with black spots and crossbars on back and sides, white below.

Did you know? The Leopard Shark prefers sandy and rock-strewn flat bottoms near rocky reefs.



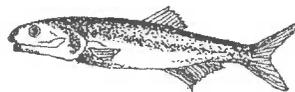
Northern Anchovy (*Engraulis mordax*)

Diet: Zooplankton and phytoplankton

Size: 7" in length

Description: Blue to greenish coloring above, silvery below. Adult has a silver side stripe.

Did you know? Travels in schools and lives near the shore. It is eaten by other fish, birds, and marine mammals. It is the most common species of anchovy in the Pacific Ocean.



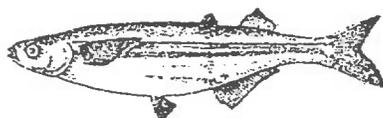
Topsmelt (*Atherinops affinis*)

Diet: Zooplankton and phytoplankton

Size: 14 1/2" in length

Description: Green from above, silver from below, with a bright silver side stripe.

Did you know? These fish swim in large schools.



Invertebrates

Ghost Shrimp (*Callinassa stimpsoni*)

Habitat: Burrows in mudflats.

Diet: Bacteria, diatoms, and detritus found in sand.

Size: 1/2" in length

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

