

SPECIES OF THE REFUGE

Learn (and test your knowledge of) the animal and plant species you might see at the Don Edwards San Francisco Bay National Wildlife Refuge!



San Francisco Bay
Wildlife Society



Santa Clara Valley *Urban Runoff*
Pollution Prevention Program

Click anywhere to continue

Choose a category to learn more about! You can always come back :)

BIRDS



PRODUCERS



MAMMALS



REPTILES



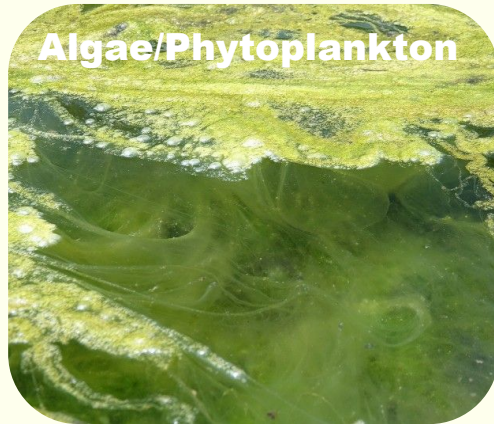
We can protect these species by preventing urban runoff pollution & keeping trash out of our storm drains.

I've finished learning

PRODUCERS

☆ **What is a producer?** Producers are green plants or organisms like phytoplankton that produce (make) their own food! Here are some that you'll see around the marsh and slough.

Click any of these to learn more!



BIRDS

Western Snowy Plover*



California Ridgway's Rail*



Great Horned Owl



Black-necked Stilt



American Avocet



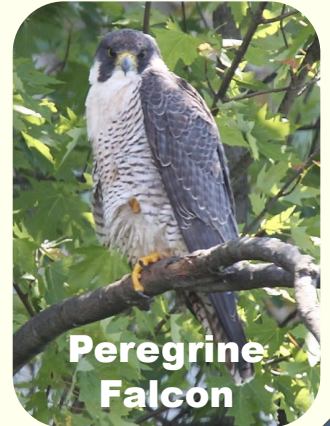
Great Egret



Red-Tailed Hawk

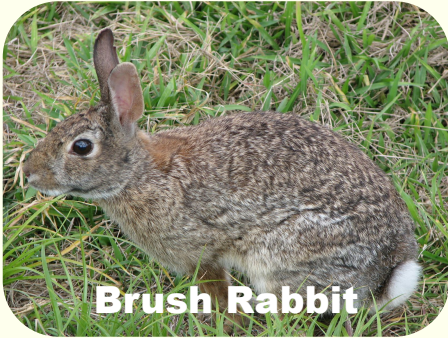


Peregrine Falcon



MAMMALS

☆ Mammals



REPTILES



Gopher Snake



Western Fence Lizard

WESTERN SNOWY PLOVER*



☆ This species is a **threatened** small shorebird, approximately the size of a sparrow.

Predators: Falcons, raccoons, coyotes, owls, crows, dogs.

Freshly hatched chicks



This small bird is at risk of becoming endangered because of habitat loss and human disturbances. Kites and drones look like predators to plovers, so when they fly away in fright, their babies become exposed to real predators.

[Click to watch a cute video](#)

WESTERN SNOWY PLOVER VIDEO



[Back to Slide](#)

CALIFORNIA RIDGWAY'S RAIL (CALI)



Cali is an endangered species that currently only appears in the San Francisco Bay Estuary. She is secretive and hard to observe, but if you're lucky, you might see her hiding in the marsh!

Diet: Crustaceans (crabs, crayfish), insects, fish.



BABY

Eggs: Usually 7-11, sometimes 5-12+. Incubation by both parents

Nest sites: In clump of grass or marsh vegetation, often with a ramp of plant material leading up from ground

Predators: Squirrels, rats, weasels, gray foxes, skunks



Bird call

GREAT HORNED OWL



Who's hooting? That might be the great horned owl- and there's a nest at the Fremont refuge right across from the Visitor's Center parking lot!

Diet: As apex predators, they eat small mammals (i.e. rodents), birds, reptiles, and even other owls and skunks.

Eggs: 2-3, sometimes 1-4. Chicks fledge (leave the nest) at 6-7 wks old.

Nesting: Known for reusing the nests of other birds such as hawks and crows. They build simple nests in trees, cliffs, and even on the ground.

Life span: 5-15 years



Bird call

BLACK-NECKED STILT

Kek kek kek! Do you hear that? That's our Black-necked stilt (*Himantopus mexicanus*). You can often find a stilt parent with their babies in the shallow waters of the marsh!



Diet: Insects (brine flies, beetles) and crustaceans (shrimp, crayfish), sometimes tadpoles or tiny fish

Eggs: 4, sometimes 3-5. Both parents incubate eggs. Young feed themselves & start flying at 4-5 wks old.

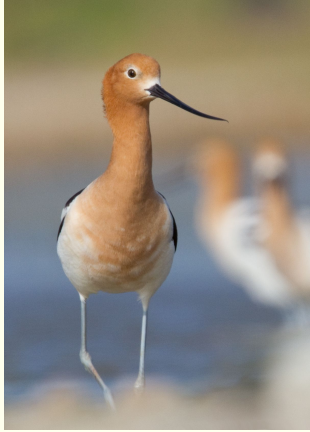
Nesting: Often form colonies in groups of 6-10 nests. If predators approach by foot, several adults may fly to a spot and perform a distraction display there.

Life span: 20 years

Play this short clip to hear the Black-necked Stilt's bird call!



AMERICAN AVOCET



Cheep, cheep! If you see a Black-necked Stilt (*Recurvirostra americana*), you might see American Avocets mixed in with them. These birds breed in the Great Plains and are found along the coasts of California and Texas.

Diet: Small crustaceans and insects, also seeds

Eggs: 4, sometimes 3-5. Female incubates at night, both sexes take turns during day. Both parents tend to young, who self-feed and start flight around 4-5 wks old.

Nesting: Often form colonies. Aggressively and loudly protect nests, sometimes flying straight at intruders.

Life span: 9-15 years



Bird call

GREAT EGRET

- ☆ Great egrets are one of our biggest birds on the marsh. Formerly endangered by hat plume hunters, these beautiful birds love to forage in the marsh, slough, and mudflats.
- ☆ Often mixed up with the Snowy Egret, which is smaller and has a black beak.



Diet: Mostly fish, also crustaceans, snakes

Eggs: 3-4, sometimes 1-6. Pale blue-green.
Both parents feed by regurgitation.

Nesting: Sometimes isolated, usually in colonies with other types of birds in trees, shrubs, or low in thicket or marsh.

Life span: 15 years

Watch this clip of the Great Egret self-grooming, socializing and flying!



RED-TAILED HAWK



Did you see that flash of orange-red in the sky? That was the red-tailed hawk! A top predator, this bird is known for its impressive soaring and diving while searching for prey or defending territory.

Diet: Rodents, rabbits, snakes, other birds

Eggs: 1-3, mostly 2. Both parents incubate eggs, with female spending more time.

Nesting: Known for reusing the nests of birds such as crows and ravens, or build their own in trees or on cliffs.

Life span: 10-15 years



Bird call



PEREGRINE FALCON

A fierce predator, the Peregrine Falcon can sometimes be spotted flying over the refuge, looking for its next meal. They can dive 200-240 miles per hour, making them one of the fastest animals on the planet.

Diet: Carnivorous; mostly other birds such as pigeons, doves, waterfowl

Eggs: 2-4. Both parents tend to eggs, and chicks fledge (leave the nest) at around 6-7 weeks old

Nesting: Typically nest on cliffs or other high rocks jutting out. They use sticks, grasses and other plant matter.

Life span: 8-10 years



Peregrine Falcon: The Fastest Bird on Earth video

ALGAE



- ☆ **What is algae?** Algae is not an actual species, but an informal term for a large and diverse group of photosynthetic organisms in water.
- ☆ **Phytoplankton** is a type of microscopic algae at the base of every water food chain. These “plants” get eaten by zooplankton and other small organisms, which in turn get eaten by fish, and so on.

PICKLEWEED

☆ Pickleweed (scientific name: *Salicornia*) is a common plant that grows on salt marshes and beaches. It is a very important part of the wetlands food chains because it gets eaten by many animals, including Salty, the Endangered Salt Marsh Harvest Mouse!



Click on Salty to visit
the Salt Marsh
Harvest Mouse page!



TULE

- ★ **Tule** (scientific name: *Schoenoplectus acutus*) is native to freshwater marshes all over North America.
- ★ **Ohlone people** use tule roots, pollen, and flowers as food. The spongy stems are used to make baskets and boats for fishing.



BRUSH RABBIT



☆ Not to be confused with the larger native species the Black-tailed jackrabbit, the California Brush Rabbit is a type of cottontail rabbit you might see bounding past the trails at the refuge or hear rustling in the brush.

Diet: Herbivores – grasses, leaves, and other plants

Predators: Hawks, owls, foxes, and coyotes

Reproduction: Females have multiple litters throughout the year, birthing 2-5 each time. Young rabbits become independent around 4-5 wks old.

Life span: 1-2 years



SALT MARSH HARVEST MOUSE*



☆ Salty is one of the most endangered mammals in the United States. Efforts are underway to protect and restore its habitat!

Diet: Omnivores- seeds, insects, snails

Habitat: ONLY the salt marshes of the San Francisco Bay Area!

Predators: Owls, hawks, snakes, and other small mammals

Reproduction: Females have multiple litters throughout the year, birthing 2-5 each time. Young mice become independent around 4-5 wks old.

Life span: 6-12 months

Fun Fact: Salty is only the size of your thumb!

RACCOON



☆ It's not uncommon to find raccoon tracks in the mud of the salt marsh. These foragers love the food they can find at the refuge!

Diet: Fruits, nuts, insects, small mammals, even fish

Predators: Coyotes, bobcats, other large mammals

Reproduction: Breed in late winter or early spring, litters of 3-5 young born blind and helpless, cared for for several months before becoming independent

Life span: 2-3 years, but some have lived 5+!





GOPHER SNAKE

☆ Gopher snakes are non venomous and usually harmless. If you see one, quietly step away and make sure not to disturb it!

Diet: Birds and their eggs, small mammals such as rodents. Gopher snakes are constrictors, wrapping their body around prey until they suffocate, then swallowing their prey whole.

Predators: Coyotes, foxes, bobcats, birds of prey, cars, humans who mistake them for dangerous snakes

Length: Up to 7 feet long

Fun Fact: They use dry leaves or the ground to imitate the rattling sound of rattlesnakes and ward off predators.





WESTERN FENCE LIZARD

☆ This is the most common lizard species of California! It is characterized by its blue belly and ability to escape predators by breaking off their tails.

Diet: Mostly insects

Predators: Snakes, foxes, coyotes, birds of prey

Life span: 5-8 years

Fun fact: When ticks carrying Lyme disease feed on western fence lizards' blood, a protein in the blood kills off the bacteria, stopping the spread of Lyme disease!

