

# Stories of San Francisco Species

The city of San Francisco harbors remarkable **biodiversity**, despite being the second most densely populated city in the United States. See below descriptions for a cross-section of the city's indigenous critters, including birds, butterflies, mammals, reptiles and amphibians.

## Monarch Butterfly (*Danaus plexippus*)

Green Connections Route: 1 (Presidio to Bay)

All hail the kings!

These regal butterflies fly into San Francisco beginning in the late summer and early fall when they are migrating southward. They seek out tall groves of trees, where they cluster together and spend the winter months in near dormancy. There is a historic Monarch overwintering roost at Fort Mason, in a eucalyptus grove near the community garden. During the rest of the year, this butterfly migrates into the Central Valley and northward to breed and lay eggs on milkweed, their larval food plant. This movement spans a summer, and four generations later, the butterflies return to the same trees onto which their descendants imprinted the previous winter. The Xerces Society has been compiling data on this phenomenon for the past 40 or so years.



Image Credit: Kenneth Dwain Harrelson

## Pygmy Nuthatch (*Sitta pygmaea*)

Green Connections Route: 2 (China Beach to Bay)

Let's play Hide and Seek!

Pygmy Nuthatches are a small bird with a sharp beak, which they use to feast on seeds and insects found in trees. They often hide seeds in tree bark for a snack later in the day or breakfast the next morning. Pygmy Nuthatches are also known for being little gymnasts, because they can walk down trees! These little birds survive cold winter nights by roosting with 50 to 100 or more other Pygmy Nuthatches in tree cavities. After breeding from mid-April to mid-August, offspring from previous years help their parents raise young. A group of nuthatches are collectively known as a "jar" of nuthatches.



Image Credit: Judd Patterson



**SF Environment**  
Our home. Our city. Our planet.  
A Department of the City and County of San Francisco

## Anna's Hummingbird (*Calypte anna*)

Green Connections Route: 3 (Market to Beach)

Speed demon!

Anna's Hummingbird wings beat about 40-50 times per second during flight. They zoom about 25mph in normal flight and up to 40mph in a courtship dive. The male Anna's Hummingbirds' courtship dive is quite a sight. They hurtle up to 130 feet in the air, plummet earthward, and swoop up in a 'J' formation; then at the bottom of the dive, use their tail feathers to make a loud chirp. Hummingbirds cannot walk or hop, though their feet can be used to scoot sideways while they are perched. They do not suck nectar through their long bills, but instead lick it up with fringed, forked tongues. They can consume up to 50% of their weight in nectar each day. The nest is slightly bigger than a walnut, and the egg contained therein is about the size of a small jellybean.



Image Credit: Alan Vernon

## Cedar Waxwing (*Bombycilla cedrorum*)

Green Connections Route: 4 (Bay to Beach)

So stylish!

Maybe you've noticed flocks of these social birds converging on the bay each year, around local orchards, woodlands, forests, even taking over your own backyard! Cedar Waxwings are a touch smaller than robins, but easy to spot with their chic style - a smooth, silky outfit of tan and gray, accessorized with a snazzy black mask, brilliant red drips on their wings, and yellow tail tips. They gather in large numbers to eat ripe berries from shrubs and trees each fall. In fact, these chatty fashionistas are capable of living on fruit alone for months at a time! You can find them just as easily around rivers in pursuit of flying insects, or eating worms, ants, beetles, and weevils.



Image Credit: Jason Quinn



## Anise Swallowtail (*Papilio zelicaon*)

Green Connections Route: 6 (Mission to Peaks 17th St.)

Flying giants!

The Anise Swallowtail is one of the three biggest San Francisco butterflies! The others, the Western Tiger Swallowtail and the Pipevine Swallowtail, can be identified with a simple trick. Anise Swallowtails have black 'shoulders', Western Tiger Swallowtails have black tiger stripes, and Pipevine Swallowtails can vary in color from slate grey brown to rich shiny blue black. Anise Swallowtail females lay eggs on plants in the carrot family (Apiaceae) which include Anise, Parsley, Fennel, and Dill. When the egg hatches, the 1st instar (first larval stage) turns around and eats its own eggshell! During later instars, caterpillars feeling threatened may react by deploying a bright red, antennae-like scent gland (osmeterium) that emanates a strong anise-flavored odor intended to scare off predators. In San Francisco, the Anise Swallowtail is plentiful! During San Francisco's 17th Annual Butterfly Count on July 3, 2011, observers counted a record number of Anise Swallowtails at 110 individuals counted. In his field notes, lepidopterist Liam O'Brien states: "New high [for the] count. With 44 hills and fennel in every vacant lot in this city, this record number makes perfect sense."



Image Credit: Vivian Reed

## Red-Winged Blackbird (*Agelaius phoeniceus*)

Green Connections Route: 10 (Yosemite Creek)

Splish splash!

Red-winged Blackbirds like it wet. They prefer both salt and freshwater wetlands and open grasslands, where the insects they eat (including dragonflies, damselflies, moths, and butterflies) are plentiful. They're not picky, however, and will eat other wetland inhabitants including frogs, eggs, carrion, mollusks, fruits, and berries. The male ostentatiously perches atop a tule reed, straining forward, puffing out brilliant red and yellow wing 'badges', bursting into a loud conk-la-ree! The streaky brown female skulks away searching for nest material among cattails, sedges, grasses, willows, and alders. She constructs an elaborate basket nest over about six days and binds it to surrounding grasses or branches.



Image Credit: Walter Siegmund



## Coast Live Oak / California Buckeye (*Quercus agrifolia*/*Aesculus californica*)

Green Connections Route: 11 (Ingleside)

Stop by for a Recharge!

What if there were a California Buckeye and Coast Live Oak on every city block? Coast Live Oaks support a vast array of insect life. More species of small moth larvae feed on Coast Live Oaks, for example, than any other plant species on the San Francisco peninsula. These mighty oaks and their associated insects are indispensable to many migratory songbird species that pass through San Francisco and rely on it for shelter and food. And our resident Western Scrub Jay can help with planting. Scrub jays hoard away several thousand acorns per season, and when they forget to recover their food stash, and oak tree is borne.



Buckeye, on the other hand have been called the 'gas station for butterflies'; pale pink, nectar-rich flowers bloom in thick upright spires from late May through July and feed adult butterflies of all sizes and colors. Also, buckeyes, among other SF wild trees and shrubs, are the larval food plant for spring azure butterflies!

Image Credit: ©2008 Keir Morse

## Coast Buckwheat (*Eriogonum latifolium*)

Green Connections Route: 14 (Presidio to Park Merced)

Pollinator bash!

Coast Buckwheat seems to bloom forever. Hundreds of flowers pack together to form tight, one inch in diameter balls at the end of long narrow stems. Native to California's Central Coast, Oregon, and southern Washington, coast buckwheat has made friends with many coastal pollinators. When nectar is ripe and pollen resources are plentiful, small insects such as predatory wasps, bees, and flies work over the blossoms alongside small blues and hairstreak butterflies - many of which, also feed on the plant as caterpillars. They are very drought tolerant and can tolerate many arid environments as well as coastal salt spray. The silvery grey leaves and stems are covered with tiny hairs that Wool Carder bees (*Anthidium palliventre*) gather for lining their nests. Look for bare patches where hairs have been removed; a nest almost certainly nearby! The flowers turn chocolate brown in late revealing seeds that feed small songbirds.



The flowers turn chocolate brown in late revealing seeds that feed small songbirds.

Image Credit: faroutflora.com



## Western Fence Lizard (*Sceloporus occidentalis*)

Green Connections Route: 12 (Lake Merced to Candlestick)

Showoff!

The showy "blue belly" Western Fence Lizard males do "push-ups" flashing their blue bellies to attract females. We also owe them thanks, as they are partly responsible for the low occurrence of Lyme disease on the West Coast! Ticks that adhere to the lizard's soft parts ingest a protein in the lizard's blood which kills the bacteria that causes Lyme disease. Western Fence Lizards need sparsely planted, open, sunny areas surrounded by rock walls or posts to perfect their mating displays. Their favorite foods include beetles, flies, caterpillars, ants, other insects, and spiders.



Image Credit: Walter Siegmund

## West Coast Painted Lady (*Petrochelidon pyrrhonota*)

Green Connections Route: 16 (Marina Green to Dolores Park)

The Ladies!

The West Coast Painted Lady belongs to the bushfoot family (Nymphalidae). This family of butterflies gets its name from its front legs, which are shorter than the other four legs. They don't use them for walking or standing in flowers. These front legs don't even have feet, but rather little brushes of hairs the butterflies use for smelling and tasting. Sometimes these front legs are too small to be seen. There are two other butterflies that closely resemble the West Coast Painted Lady: American Painted Lady (*Vanessa virginensis*) and the Painted Lady (*Vanessa cardui*). Each has slight variations that allow us to tell them apart. The Painted Lady is the most widespread butterfly species in the world,



occurring in all continents except Antarctica. It also undertakes epic migrations that can last over 6 different generations! For this reason, it has been called the "Cosmopolitan" butterfly. The West Coast Lady, on the other hand, is only found on the (you guessed it!) West Coast from British Columbia to Baja California. West Coast Painted ladies have several broods throughout the year, and populations fluctuate depending on rainfall for their larval food plants: cheeseweed, mallows, and stinging nettles. All three Painted Ladies spend the winter months as adult butterflies, hiding in dry nooks. West Coast Painted Ladies are often seen basking on bare ground, and fast movements or shadows will cause them to fly away. However, they will often return to the same spot. Males seek hilltops or territorial sites to look for mates, late in the afternoon.

Image Credit: Kathy Keatley Garvey



## Western Tiger Swallowtail (*Papilio rutulus*)

Green Connections Route: 18 (Tenderloin to Potrero)

City slickers!

Western Tiger Swallowtails are becoming quite the urban bug! Their natural habitat are river canyons lined by trees, interspersed with open, sunny glades. Remind you of anything? Market Street perhaps? Think a canyon of tall buildings, sunlight-filled intersections, and London Plane trees (which happen to be the Western Tiger Swallowtail caterpillar's food plant) planted on both sides of the street. This butterfly is built for protection in all life stages. When it first emerges from the egg, it is the spitting image of a bird dropping. In a later stage, the caterpillar grows to 2", is deep to light green in color, and has a swollen front that accentuates large yellow eyespots with black and blue pupils. All swallowtails have osmeterium, an orange, red, or yellow forked organ behind the head on the back. This foul-smelling organ can be turned inside out, and along with the eyespots, is thought to deter predators. The chrysalids look like streaked bits of wood, slung onto the trunk or a twig, overwintering. As adults, the black tails with nearby blue spots can look like a false head, to fool birds.



Image Credit: Calibas

## Black Tailed Jackrabbit (*Lepus californicus*)

Green Connections Route: 21 (Bayview to Bay Trail)

Life in the fast lane!

Black tailed jackrabbits can run up to 50mph. They are one of the largest hares in North America, typically about two feet long. They are herbivores that sit at the base of bushes or clumps of tall grasses. These areas offer cover from the Golden Eagles, hawks, and coyotes which hunt them. They have furry feet that help protect against the hot sand and gravel exposed to the blazing sun. They seem to love the food no other animals want. They eat a lot of shrubs, bushes, tough grasses, and even black greasewood. For a snack, they love to chew on twigs and leaves.



Image Credit: Jim Harper



## Nuttall's White-Crowned Sparrow (*Zonotrichia leucophrys nuttalli*)

Green Connections Route: 22 (Ridgetrail)

Loudmouths!

The song dialects of this resident songbird are so specialized that songs vary noticeably from one park to another. Once a common breeder in landscaped neighborhoods throughout much of San Francisco, its special song is now rarely heard in the city's neighborhoods. The non-migratory 'nuttalli' subspecies of White-crowned Sparrow, which occurs only near the coast, is increasingly restricted to parkland areas with restored coastal scrub.



Image Credit: Arthur Morris

## Coyote (*Canis latrans*)

Green Connections Route: 23 (Cross-town Trail)

Coyotes cruise the town!

Coyotes have found their way into many urban areas including San Francisco. Dens are well hidden in the more wild pockets of our City parks. Coyotes have a central den site which is used for rearing the pups and sleeping. They scent mark the area around the den and defend it from other coyotes. The den can be a burrow dug into the ground, or under a rock outcropping, a tree or a bush. If the area gets disturbed the mother will often move the pups to a safer location. Coyotes "sing" as a way to communicate with other coyote families and as a way to keep track of their own family members. They are



They are adaptable to many habitats, even populated neighborhoods, particularly because there is a lot for them to eat. Primarily Coyotes eat small mammals, such as voles, prairie dogs, ground squirrels, and mice, though they will eat birds, snakes, and lizards, as well as large insects. As such, coyotes have been known to eat human rubbish and domestic pets. Coyote will also target any species of bird that nests on the ground. Though they will consume large amounts of carrion, they tend to prefer fresh meat. Fruits and vegetables are a significant part of the coyote's diet in the autumn and winter months.

Image Credit: Janet Kessler



## California Slender Salamander (*Batrachoseps attenuatus*)

Slip and slide!

Slender salamander is commonly found coiled up under rocks and logs in backyards and is the city's most common amphibian and possibly the most sedentary as they rarely move more than 10 feet their whole lives. These salamanders do not breathe through lungs, but instead conduct respiration through their skin and their mouth tissues, which requires them to live in damp environments on land and to move about on the ground only during times of high humidity. It is often seen under surface objects, especially in moist and shaded areas, but it may also be found under cover in open areas including coastal chaparral. This is a small, thin salamander, which might look like a worm on first sight, before their tiny limbs are noticed. When disturbed, they may spring up and bounce around or writhe on the ground wagging their tail, which sometimes detaches and wiggles as a distraction. Many of these salamanders are found with a tail that hasn't completely grown back.



TODD PIERSON 2009

Image Credit: ©2010 Todd Pierson

## Yerba Buena (*Micromeria/Satureja douglasii*)

Tea time!

Yerba Buena is the namesake of San Francisco before the Gold Rush, when it was only a small community on the cove in the location of today's downtown. This little native mint was and still can be used for tea. Yerba Buena, or Hierba Buena, means "good herb". This mint family herb is a crawling groundcover found in woods near the coast from Los Angeles to British Columbia where it prefers shade and moisture, and so grows in the protection of healthy stands of coastal scrub as well as in shady backyards. Father Pedro Font famously wrote – while camping along the shores of Mountain Lake in 1776 – "there were so many Yerba Buena and lilies, that I nearly had them in my tent!" It has historically been known to have medicinal properties and culinary value, as herbal teas or seasonings, as well.



Image Credit: ©2009 Margo Bors

