

GREEN CONNECTIONS ECOLOGY GUIDES

Connecting with nature in
your neighborhood.



ABOUT THE ECOLOGY GUIDES

Even in San Francisco's more densely urbanized neighborhoods, there are reminders of nature all around: front yard gardens provide refuge for bees and butterflies, street trees host flocks of birds, and many streets offer scenic vistas of the bay, ocean, and nearby hills and green spaces.

Green Connections seeks to connect people with nature – not only by making it easier for people to visit parks and open spaces, but also by encouraging street designs that enhance urban ecology with elements such as native landscaping, stormwater plantings, and street trees. In addition to providing ecological benefits, these features can cultivate ecoliteracy by providing visitors an opportunity to interact with local habitat and species, which can be augmented through educational signage, artwork, and programing.

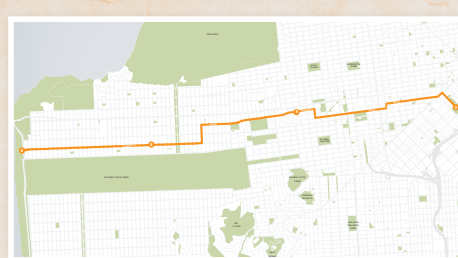
In support of this goal, a key product of the Green Connections project includes Ecology Guides, which provide information on local flora, fauna, and habitat that could be enhanced as part of the network. Each of the 24 routes is named after a Key Species or Key Habitat that serves an important ecological function and is particularly suited to that area. Routes can create a wildlife corridor, and in some cases correspond with flight, mobility, and nesting patterns. The Coastal Prairie Route (#7), for instance, suggests native plants that designers and residents could use to support this endemic habitat type.

The Ecology Guides are a tool for visitors who want to learn about nature along the routes and surrounding neighborhoods, as well as for neighbors, designers and gardeners who want to help support a vibrant urban ecosystem.

3

MARKET TO BEACH

SPECIES: ANNA'S HUMMINGBIRD



ROUTE HIGHLIGHTS

- Neighborhoods: Outer Richmond, Western Addition, Tenderloin, Downtown, Yerba Buena
- Parks: Jefferson Square Park, Margaret S. Hayward Playground, USF Lone Mountain Campus



ANNA'S HUMMINGBIRD – *Calypte anna*

Speed demon!

Anna's Hummingbird wings beat about 40-50 times per second in normal flight. They zoom about 25mph in normal flight and up to 40mph in a courtship dive. Male Anna's Hummingbirds courtship dive are quite a sight. They hurtle up to 100 feet in the air, plummet earthward and swoop up in a 'J' formation, and 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 scot sideways while they are perched. They do not suck nectar through their long bills, 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.

RESIDENT OR MIGRATORY

Resident

FUN FACTS

Smallest bird in the world, males climb up to 130 feet into the air and then swoop to the ground with a curious burst of noise that they produce through their tail feathers. Anna's Hummingbird makes a variety of buzzes, chips, and chatters. Males and females defend feeding territories, males defend them more diligently and for a longer period of time.

KEY HABITAT FEATURES

Open woods and chaparral traditional habitat.

DIET

Feeds on nectar from flowers, and consume small insects caught in flight or gleaned from tree trunks and branches.

ASSOCIATED PLANTS & ANIMALS

Hummingbird Sage – *Salvia spathacea*, *Salvia clevelandii*
– *Cleveland Sage*, *California Fuchsia* – *Epilobium canum*, *Red Flowering Currant* – *Ribes sanguineum* var. *glutinosum*.

NESTING INFORMATION

Females construct the nest, incubate the eggs, and feed the nestlings on their own. Nests are cup-shaped, made of plant fibers, spider webs, and feathers, sometimes with a lichen exterior.

ADDITIONAL HABITAT PLANTS

Tube-shaped plants flowers, most attracted to nectar with high-sugar content and red and brightly colored flowers, currant, sages, gooseberry, manzanita, penstemon, monkey-flower, and western columbine as well as many introduced species.

Each guide includes:

- » A description of places along the route, including parks, schools, and neighborhood commercial districts.
- » A description of the route's Key Species or Habitat, and the important role it plays as part of the larger urban ecosystem.
- » Design and habitat considerations – what the Key Species or Key Habitat needs to thrive, including recommended plants.
- » Nesting information for the Key Species, where applicable.

These species and habitats were selected in consultation with project partners (Nature in the City, San Francisco Parks Alliance, and Walk San Francisco), and with input from community members and experts in local ecology.

ROUTES



- | | | | |
|-----------|--|-----------|--|
| 1 | Presidio to Bay: Monarch | 13 | Lincoln Park to Zoo: American Dune Grass |
| 2 | China Beach to Bay: Pygmy Nuthatch | 14 | Presidio to Park Merced: Coast Buckwheat |
| 3 | Market to Beach: Anna's Hummingbird | 15 | West of Twin Peaks: Green Hairstreak |
| 4 | Page, Stanyan to Beach: Cedar Waxwing | 16 | Marina Green to Dolores Park: West Coast Painted Lady |
| 5 | Kirkham, Sutro to Beach: Coyote Bush | 17 | Excelsior: Cliff Swallow |
| 6 | Mission to Peaks: Anise Swallowtail | 18 | Tenderloin to Potrero: Western Tiger Swallowtail |
| 7 | Ortega, 14th to Beach: Coastal Prairie | 19 | Downtown to Mission Bay: Western Gull |
| 8 | Noe Valley to Central Waterfront: American Bushtit | 20 | Folsom, Mission Creek to McLaren: Pollinators |
| 9 | Vicente, 20th to Beach: Coastal Dune Scrub | 21 | Bayview to Bay Trail: Black-tailed Jackrabbit |
| 10 | Yosemite Creek: Red-winged Blackbird | 22 | Ridge Trail: Nuttall's White-crowned Sparrow |
| 11 | Ingleside: Coast Live Oak/California Buckeye | 23 | Crosstown Trail: Coyote |
| 12 | Lake Merced to Candlestick: Western Fence Lizard | 24 | Shoreline: Western Snowy Plover and Salt Marsh Harvest Mouse |

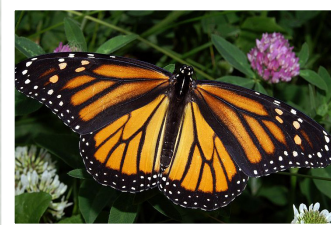
PRESIDIO TO BAY

SPECIES: MONARCH



ROUTE HIGHLIGHTS

- » The Presidio, access through the Lombard Gate, Fort Mason, Russian Hill Open Space, Telegraph Hill, Filbert Steps, Coit Tower



Credit: Wikimedia Commons

MONARCH – *Danaus Plexippus*

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.

RESIDENT OR MIGRATORY

Migratory

KEY HABITAT FEATURES

Fields, meadows, prairie remnants, urban and suburban parks, gardens, trees, and roadsides. Monarchs overwinter in eucalyptus and conifer groves.

DIET

Caterpillars feed on milkweed (mostly inland California), adults take nectar from a variety of flowers, including milkweed flowers, red clover, and goldenrod.

ASSOCIATED PLANTS & ANIMALS

California Goldenrod – *Solidago spathulata*
California Thistle – *Cirsium occidentale* var. *californicum*
Wild Aster – *Symphyotrichum chilense*
Narrowleaf Milkweed – *Asclepias fascicularis*

NESTING INFORMATION

Eggs are laid by the females during spring and summer breeding months onto the leaves of milkweed plants, which caterpillars feed on after hatching.

ADDITIONAL HABITAT PLANTS

"The larval food plants used by the monarch caterpillar include: *Asclepias* sp., *Calotropis procera* – apple of Sodom, *Cynanchum laeva* – sand vine, *Sarcostemma clausa* – white vine
Adult nectar flowers: *Buddleja davidii*. Butterfly Bush. *Carduus pycnocephalus*. Italian Thistle. *Cirsium vulgare*. Bull Thistle. *Cynara cardunculus*. Cardoon. *Daucus carota*. Carrot. *Dipsacus fullonum*. Wild Teasel. *Echium candicans*. Pride of Madiera. *Eucalyptus globulus*. Blue Gum. *Hedera helix*. English Ivy. *Marrubium vulgare*. Horehound. *Medicago sativa*. Alfalfa. *Melilotus alba*. White Sweetclover. *Pastinacea sativa*. Wild Parsnip. *Persicaria pennsylvanicum*. Pinkweed. *Raphanus sativus*. Radish. *Robinia pseudoacacia*. Black Locust. *Silybum marianum*. Milk Thistle. *Taraxacum officinale*. Dandelion. *Trifolium pratense*. Red Clover. *Trifolium repens*. White Clover. *Verbena bonariense*. Brazilian Verbena."

CHINA BEACH TO BAY

SPECIES: PYGMY NUTHATCH



ROUTE HIGHLIGHTS

- » Neighborhoods: Chinatown, Nob Hill, Pacific Heights, Presidio Heights, Seacliff
- » Parks and Open Spaces: Alta Vista Park & Lafayette Park, The Presidio, Lands End, Baker Beach, China Beach



Credit: Judd Patterson

PYGMY NUTHATCH – *Sitta pygmaea*

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, and offspring from previous years help their parents raise young. A group of nuthatches are collectively known as a "jar" of nuthatches.

RESIDENT OR MIGRATORY

Resident

KEY HABITAT FEATURES

Found in forests, especially mature stands of conifers.

DIET

Feeds on insects, spiders, and pine seeds, catches it seeds.

ASSOCIATED PLANTS & ANIMALS

Bishop Pine – *Pinus muricata*

Douglas Fir – *Pseudotsuga menziesii*

Sequoia sempervirens – Redwood

Shore Pine – *Pinus contorta* var. *contorta*

NESTING INFORMATION

Nests in cavities in snags or stumps and breeds from mid-April to mid-August.

ADDITIONAL HABITAT PLANTS

Provide exotic trees like some of the lower growing pines to bring the birds down to viewing level *Sitka Spruce* – *Picea sitchensis*, *White Fir* – *Abies concolor*. Pines that could work include but not limited to: *P. patula*, *P. oocarpa*, *P. monophylla*, *P. juarezensis*, *P. X quadrifolia* (pinyon pines), *P. contorta* ssp. *contorta*, *P. coulteri* (fairly large in habitat but slow in SF), *P. attenuata* & *P. muricata* (closest relatives to Monterey pine, *P. radiata* and vulnerable to pine-pitch canker).

Among the Douglas-firs, the low branching in youth poses a problem. There are two species in California: *Pseudotsuga menziesii* & *P. macrocarpa*, both proven successful in SF. In Asia are two species that might also work, a few occasionally available in the trade: *Pseudotsuga japonica* (Japan), with a flat crown, *P. sinensis* – with many varieties that are sometimes given species status: *P. sinensis* var. *brevifolia* (Guangxi & Guizhou, China), *P. s. var. forrestii* (Yunnan), *P. s. var. gaussenii* (Zhejiang, Anhui, Jiangxi, Fujian), *P. s. var. sinensis* (Yunnan, Shaanxi, Hubei), *P. s. var. wilsoniana* (Taiwan).

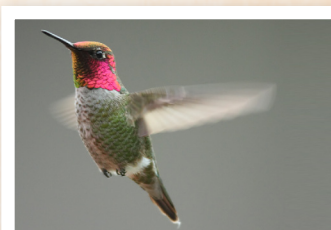
MARKET TO BEACH

SPECIES: ANNA'S HUMMINGBIRD



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Credit: Alan Vernon

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NESTING INFORMATION

Females construct the nest, incubate the eggs, and feed the nestlings on their own. Nests are cup-shaped, made of plant fibers, spider webs, and feathers, sometimes with a lichen exterior.

ADDITIONAL HABITAT PLANTS

Tube-shaped plants flowers, most attracted to nectar with high-sugar content and red and brightly colored flowers, *currant*, *sages*, *gooseberry*, *manzanita*, *penstemon*, *monkey-flower*, and *western columbine* as well as many introduced species.

PAGE, STANYAN TO MARKET

SPECIES: CEDAR WAXWING



ROUTE HIGHLIGHTS

- » Haight Ashbury, Hayes Valley, Buena Vista Park, Golden Gate Park, Page Street Community Garden, Koshland Community Park



Credit: Wikimedia Commons

CEDAR WAXWING – *Bombycilla cedrorum*

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.

RESIDENT OR MIGRATORY

Resident and Migratory

KEY HABITAT FEATURES

One of the only birds in North America that specializes in eating fruits.

DIET

Berries and sugary fruit year-round, especially in winter with insects becoming an important part of the diet in the breeding season.

ASSOCIATED PLANTS & ANIMALS

Toyon – *Heteromeles arbutifolia*, Twinberry Honeysuckle – *Lonicera involucrata*, Islais Cherry – *Prunus ilicifolia*, Red Elderberry – *Sambucus racemosa* var. *racemosa*.

NESTING INFORMATION

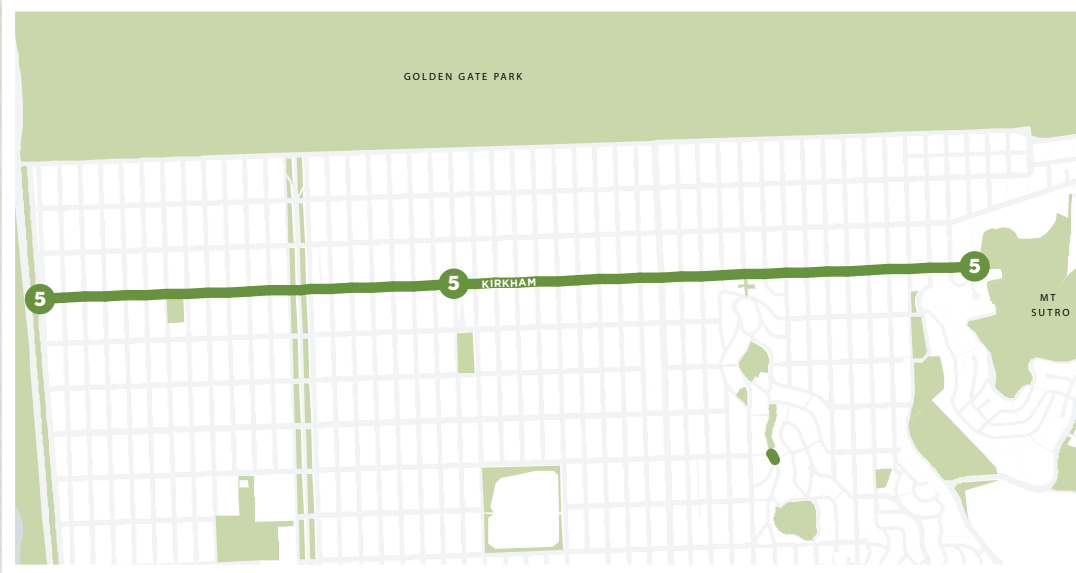
Summer to fall, nest is cup-shaped and made of bark, twigs, moss, and grass nests in mixed woodlands, nearby streams in deciduous trees including Maple – *Acer macrophyllum* and London Planetree – *Platanus × acerifolia*.

ADDITIONAL HABITAT PLANTS

Small Crabapples, wild grape, juniper berries, arctostaphylos species, honeysuckle, dogwood, Toyon, ceanothus, Islais Cherry, serviceberry.

KIRKHAM, SUTRO TO BEACH

SPECIES: COYOTE BUSH



ROUTE HIGHLIGHTS

- » The Sunset, UCSF Parnassus Campus, Mount Sutro Open Space Preserve, 15th Avenue Steps Park



Credit: Wikimedia Commons

COYOTE BUSH – *Baccharis pilularis*

The motherplant!

Common and widespread in various San Francisco locations, this plant supports no less than 29 species of spiders, 7 mites, and 221 species of insects (of these, 56 are only loosely associated, leaving 165 species as its true associates). The evergreen, insect haven coyote brush also provides shelter and insect forage for birds such as bushtits, hummingbirds, and white-crowned sparrows. With its late season and honey-sweet scented bloom, *coyote bush* is an indispensable source of nectar (August – December) for hundreds of insects. Flowers are not particularly showy, and it is dioecious, meaning that male and female flowers are borne on separate shrubs. The yellowish male flowers are stubbier, short, and flattish, with a creamy white color; and the female flowers are whitish green, fluffy, long, and glistening.

✓ FUN FACTS

The insect associates of *Baccharis pilularis* (*coyote bush*), a common plant of the dunes and other coastal shrub communities, are legion, supporting no less than 29 species of spiders, 7 mites, and 221 species of insects (of these, 56 are only loosely associated, leaving 165 species as its true associates). Several of these, including several abundant moth species that play a keystone role in the insect economy, are apparently specific to coyote bush. *Baccharis* is an excellent habitat plant offering food and cover to a wide variety of wildlife, including most of the predatory wasps, small butterflies and native flies. With its late bloom, it is an indispensable source of autumn nectar for hundreds of insects. It provides shelter for small animals and birds such as wrentits and white-crowned sparrows.

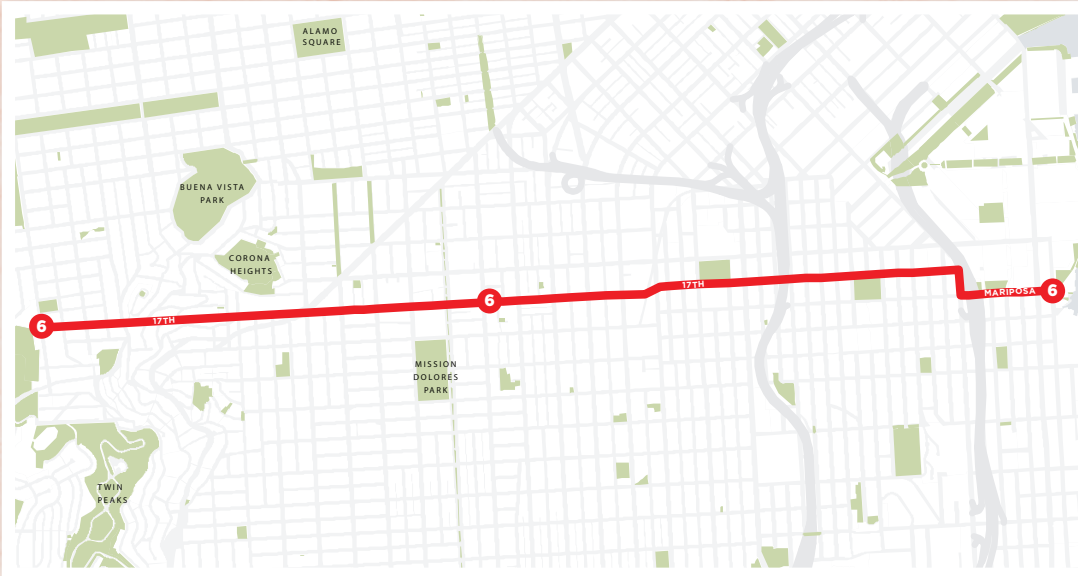
Flowers are not particularly showy and the male and female flowers are borne on separate shrubs, as *Baccharis* is a dioecious plant. Blooming between August and December, the white fluffy female and yellowish male flowers grow on separate shrubs. The male flowers are stubbier, short, flat, with a creamy white color. The female flowers are long, whitish green and glistening.

🌿 ASSOCIATED PLANTS & ANIMALS

Coast Strawberry – *Fragaria chiloensis*, *Coast Buckwheat* – *Eriogonum latifolium*, *Pink Sand Verbena* – *Abronia umbellata*, *Dune Tansy* – *Tanacetum bipinnatum*.

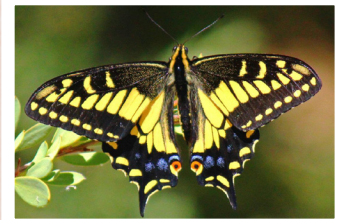
MISSION TO PEAKS

SPECIES: ANISE SWALLOWTAIL



ROUTE HIGHLIGHTS

- » The Castro, The Mission, Potrero Hill, Mission Bay, Jackson Playground, Franklin Square, Mount Sutro Open Space Preserve, The Blue Greenway



Credit: Vivian Reed

ANISE SWALLOWTAIL – *Papilio zelicaon*

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 notes: "New high [for the] count. With 44 hills and fennel in every vacant lot in this city, this record number makes perfect sense."

RESIDENT OR MIGRATORY

Resident

KEY HABITAT FEATURES

Fairly open country, and most likely to be seen on bare hills or mountains, in fields or at the roadside. It is often seen in towns, in gardens or vacant lots.

DIET

Nectar Plants: *Zinnia*, *Aster*, *Butterfly Bush*. Host Plants: *Dill*, *Fennel*, *Parsley*, *Queen Anne's Lace*.

ASSOCIATED PLANTS & ANIMALS

Wild Aster – *Symphyotrichum chilense*, *Holly leaf (Islais) Cherry* – *Prunus illicifolia*, *Yarrow* – *Achillea millefolium*, *Cow Parsnip* – *Heracleum maximum*.

NESTING INFORMATION

Eggs are laid singly, on the undersides of leaves.

ADDITIONAL HABITAT PLANTS

Anise, *Caraway*, *Carrot*, *Citrus*, *Dill*, *Fennel* family including *Common*, *Sweet*, *Lomatium*, *Yampah*, *Lovage*, *Parsley*, *Parsnip*, *Queen Anne's Lace*, *Rue*.

ORTEGA, 14TH TO BEACH

SPECIES: COASTAL PRAIRIE



ROUTE HIGHLIGHTS

- » Ocean Beach, Sunset Reservoir, A.P. Giannini Middle School, Rocky Outcrop Park, 16th Street Tiled Steps



Credit: Wikimedia Commons

COASTAL PRAIRIE

Make yourself at home! (There's no place like home!) California's Coastal Prairie is a combination of deep rooted, soil-stabilizing, perennial bunch grasses and wildflowers. Coastal Prairie is among the most diverse and most endangered ecosystems in the world. The grass thatch houses overwintering insects, composite flowers which provide for a variety of pollinators, and insect larvae that feed on herbaceous plants. It also is a haven for all birds – ground-nesters, insect-eaters, and seed foragers! A matrix of grasses is also necessary to support many rare and endangered wildflowers. Coastal Prairie can be considered the 'old growth at our feet', having accumulated organic matter from centuries to produce rich, dark soil (*molliso*). Coastal Prairie ecosystems are naturally kept in balance by wind and salt spray. However, due to the absence of grazing and regular fire, which once kept trees and shrubs to a minimum, neighboring coastal scrub is enveloping our Coastal Prairies. The former coastal prairie in this part of San Francisco was displaced by the housing boom in the 1920s.

🌿 ASSOCIATED PLANTS & ANIMALS

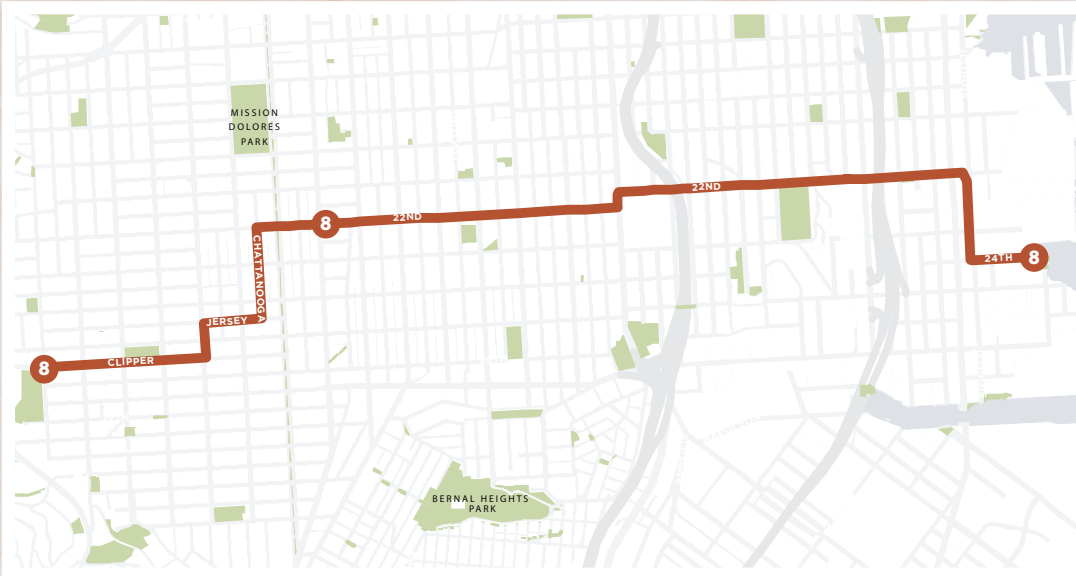
Yellow Sand Verbena – *Abronia latifolia*, American Dune Grass - *Elymus mollis ssp. mollis*, Idaho Fescue – *Festuca idahoensis*, Purple Needlegrass – *Stipa pulchra*

🌳 NESTING INFORMATION

Dodd listed original dominant species of the North Coast Bunchgrass Prairie as California oatgrass, tufted hairgrass, western fescue (*Festuca occidentalis*), Idaho fescue, and Pacific reedgrass (*Calamagrostis nutkaensis*). Heady et al. in Barbour and Major (1995, ps. 733-745) listed dominants of the Coastal California Prairie as Idaho fescue, red fescue (*Festuca rubra*), and California oatgrass with tufted hairgrass, Pacific reedgrass, and Junegrass among associated species.

NOE VALLEY TO CENTRAL WATERFRONT

SPECIES: BUSHTIT



ROUTE HIGHLIGHTS

- » Diamond Heights, Douglas Playground, James Lick Middle School, Edison Elementary School, SF General Hospital, Potrero Hill Recreation Center, Warm Water Cove Park



Credit: Greg Gillson

BUSHTIT – *Psaltirparus minimus*

It's a party! (or Party animals!)

Bushtits (*Psaltirparus minimus*) are busy, social birds that travel in flocks of 6 to 60. They are often spotted together with other small songbirds, including Chestnut-backed Chickadees and Warblers. In flight, Bushtits make contact with other birds with a light 'spit' noise. They fly in a home range of about 100-square City blocks, from tree to shrub, leapfrogging each other to feed on insects, spiders, scale insects, grubs, and caterpillars. Their nests are teardrop-shaped, hanging from branches, and tended by the mated pair and other birds in the flock. Often, adult males tend to fledgling birds. Nests are made of moss, spider webs, grasses and soft foliage; and sometimes they are disguised by plant material collected from the plant in which the nest is constructed. Bushtits roost in tight flocks to stay warm overnight.

RESIDENT OR MIGRATORY

Resident

KEY HABITAT FEATURES

The Bushtit inhabits mixed open woodlands, often containing oaks and a scrubby chaparral understory ; it also inhabits parks and gardens. It is a year-round resident of the western United States and highland parts of Mexico, ranging from Vancouver through the Great Basin and the lowlands and foothills of California to southern Mexico and Guatemala.

DIET

Bushtits eat mostly small insects and spiders, including the very tiny scale insects that adhere to leaves and twigs, as well as other plant-feeding bugs, beetles, caterpillars, wasps, and ants. They less frequently eat plant material, but have been seen eating olives and willow seeds.

ASSOCIATED PLANTS & ANIMALS

Coyote Bush – *Baccharis pilularis*, Coast Live Oak – *Quercus agrifolia*, Western Chokecherry – *Prunus virginiana* var. *demissa*, Red Elderberry – *Sambucus racemosa* var. *racemosa*

NESTING INFORMATION

Bushtits weave a very unusual hanging nest, shaped like a soft pouch or sock, from moss, spider webs, and grasses. built of a variety of materials including twigs, rootlets, lichens, moss, grass, blossoms of trees and shrubs, plant down, small dry leaves, spider cocoons, and thickly lined with feathers, fur, and down.

ADDITIONAL HABITAT PLANTS

Across their range, Bushtits live in open woods or scrubby areas, particularly pine-oak woodlands and chaparral, as well as suburbs and parks. They also live in scrub, sagebrush, streamside woods and thickets, and forests of pinyon pine, juniper, and other evergreens up to about 11,500 feet elevation.

VICENTE, 20TH TO BEACH

SPECIES: COASTAL DUNE SCRUB



ROUTE HIGHLIGHTS

- » Ocean Beach, San Francisco Zoo, Ulloa Elementary School, Stern Grove, Dianne Feinstein Elementary School



Credit: Robert Steers

COASTAL DUNE SCRUB

Keep it together!

Coastal Dune Scrub is a combination of grasses, herbaceous plants and shrubs that once covered about a third of San Francisco from Ocean Beach to Telegraph Hill. Coastal Dune Scrub plants have a system of deep taproots to reach for water, and fibrous roots to draw micro nutrients nearer to the surface. The surface crust beneath is thin layer of sand that is bound together by bacteria, fungi, mosses and lichens. Altogether these help to stabilize shifting dunes. Dune wildlife includes lizards, beetles, ground-nesting bees, white-crowned sparrows, hawks, mice, voles and more. Look for their tracks!

ASSOCIATED PLANTS & ANIMALS

Pacific Dune Sedge – *Carex pansa*, Coffeeberry – *Frangula californica*, Lizardtail – *Eriophyllum staechadifolium*, Mock Heather – *Ericameria ericoides*

ADDITIONAL HABITAT PLANTS

Lupinus arboreus, *Mimulus aurantiacus*, *Rhamnus californica*, *Lupinus chamissonis*, *Baccharis pilularis*, *Eriophyllum staechadifolium*, *Ericameria ericoides*, *Toxicodendron diversilobum*

YOSEMITE CREEK

SPECIES: RED-WINGED BLACKBIRD



ROUTE HIGHLIGHTS

- » McLaren Park, Martin Luther King Junior Pool, Candlestick Point State Recreation Area, Bay Trail



Credit: Wikimedia Commons

RED-WINGED BLACKBIRD – *Agelaius phoeniceus*

Splish splash!

Red-winged Blackbirds (*Agelaius phoeniceus*) like wet environments. They prefer both salt and freshwater wetlands and open grasslands, where the insects they eat – including dragonflies, damselflies, moths, and butterflies – are plentiful. They are not picky, however and will eat other wetland inhabitants including frogs, eggs, carrion, mollusks, fruits, and berries. Males ostentatiously perch atop tule reeds, straining forward, puffing out brilliant red and yellow wing ‘badges’, and then burst into a loud konk-la-ree! The streaky brown female skulks away searching for nest material among cattails, sedges, grasses, willows, and alders. It takes her about six days to construct an elaborate basket nest that she binds onto surrounding grass or branches.

RESIDENT OR MIGRATORY

Resident

KEY HABITAT FEATURES

Inhabits open grassy areas, generally preferring wetlands, and inhabits both freshwater and saltwater marshes, particularly if cattail is present. It is also found in dry upland areas, where it inhabits meadows, prairies, and old fields.

DIET

Prefers insects, such as dragonflies, damselflies, butterflies, moths, and flies, but also consumes snails, frogs, eggs, carrion, worms, spiders, mollusks, blueberries, blackberries, and other fruit.

ASSOCIATED PLANTS & ANIMALS

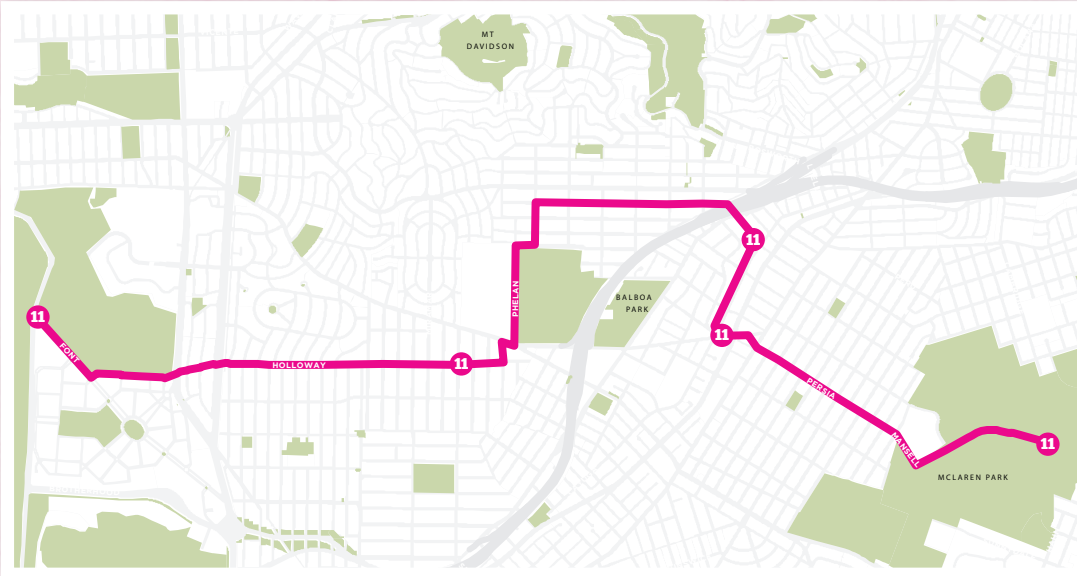
Broadleaf Cattail – *Typha latifolia* or *Southern Cattail* – *Typha domingensis*, *California Oatgrass* – *Danthonia californica*, *Bush Sunflower* – *Encelia californica*, *Arroyo Willow* – *Salix lasiolepis*

NESTING INFORMATION

Nests in loose colonies. The nest is built in cattails, rushes, grasses, sedge, or in alder or willow bushes; it is constructed entirely by the female over the course of three to six days. It is a basket of grasses, sedge, and mosses, lined with mud, and bound to surrounding grasses, or branches.

INGLESIDE

SPECIES: COAST LIVE OAK/ CALIFORNIA BUCKEYE



ROUTE HIGHLIGHTS

- » Lake Merced, San Francisco State University, Park Merced, City College San Francisco, Balboa Park, June Jordan School for Equity, McLaren Park



Credit: Wikimedia Commons

COAST LIVE OAK/CALIFORNIA BUCKEYE – *Quercus agrifolia*/*Aesculus californica*

Stop by for a Recharge!

What if there were a California Buckeye (*Aesculus californica*) and Coast Live Oak (*Quercus agrifolia*) 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. Our resident Western Scrub Jay (*Aphelocoma californica*) helps with planting new trees – scrub jays horde away several thousand acorns per season, and when they forget to recover their food stash, an oak tree is born. California Buckeye, on the other hand have been called the 'gas station for butterflies'. The 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 San Francisco wild trees and shrubs, are the larval food plant for Spring Azure (*Celastrina ladon*) butterflies!

RESIDENT OR MIGRATORY

Resident

KEY HABITAT FEATURES

Inhabits well drained soils of coastal hills and plains / Buckeyes grow in a range of conditions from crowded, moist, semi-shaded upper creek banks to canyon bottoms to south-facing slopes and hilltops – needs underground water source.

DIET

Coast live oaks host more species of small moths, for example, than any other plant species on the San Francisco peninsula. Buckeye pale pink flowers in June and July are a rich nectar source for many species of butterflies.

ASSOCIATED PLANTS & ANIMALS

Mountain Lilac – *Ceanothus 'Ray Hartman'*, California Wild Grape – *Vitis californica 'Roger's Red'*/California Dogwood – *Cornus sericea ssp. occidentalis*, Twinberry Honeysuckle – *Lonicera involucrata* "Chestnut-backed Chickadee.

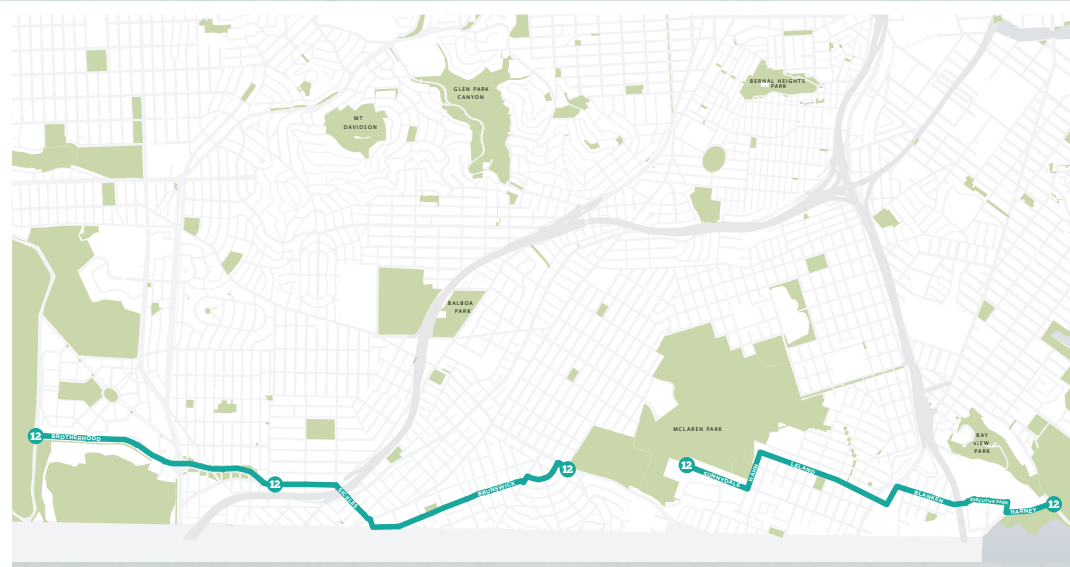
Butterflies of many varieties. Host plant for Spring Azure. Scrub jays may bury several thousand acorns in one season. By hiding and sometimes forgetting about their food stashes, Scrub Jays are planting future trees. Oak trees are especially valuable to the many species of migratory birds that are in San Francisco for only part of the year.

NESTING INFORMATION

The oak woodland community may also include toyons, pink flowering currant, oso berry, coffee berry and many other species. Buckeye grows intermingled with Valley Oak, Oregon Oak, Coast Live Oak and California Bay Laurel. Can be found standing alone in grassland at the lowest elevations, intermingled in Blue Oak woodlands at intermediate elevations, and in mixed evergreen forests of Black oak, Digger Pine, Ponderosa Pine and Interior Live Oak as it nears the limit of its range.

LAKE MERCED TO CANDLESTICK

SPECIES: WESTERN FENCE LIZARD



ROUTE HIGHLIGHTS

- » Lake Merced, Park Merced, Brotherhood Way Open Space, Lincoln Park, Longfellow Elementary School, McLaren Park, Crocker Amazon Playground, Visitacion Valley Greenway, Candlestick Point State Recreation Area



Credit: Wikimedia Commons

WESTERN FENCE LIZARD – *Sceloporus occidentalis*

Showoff!

The showy “blue belly” Western Fence Lizard (*Sceloporus occidentalis*) 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 skin ingest a protein in the lizard’s blood which kills the bacteria that cause Lyme disease. Western Fence Lizards need sparsely planted, open, sunny areas surrounded by rock walls or posts to perfect their mating display. Their favorite foods include beetles, flies, caterpillars, ants, other insects, and spiders.

RESIDENT OR MIGRATORY

Resident

KEY HABITAT FEATURES

Found in grassland, broken chaparral, sagebrush, woodland, coniferous forest, and farmland. Need open ground and have trouble when there are too many weeds. Vertical components, such as rocks, walls, fences and ledges are important!

DIET

Eats beetles, flies, caterpillars, ants, other insects, and spiders

ASSOCIATED PLANTS & ANIMALS

Coyote Bush – *Baccharis pilularis*, Coyote Mint – *Monardella villosa*, Hooker’s Evening Primrose – *Oenothera elata ssp. hookeri*, California Wild Grape – *Vitis californica* ‘Roger’s Red’

NESTING INFORMATION

Eggs are usually laid in damp, friable, well-aerated soil, in pits dug by the female.

LINCOLN PARK TO ZOO

SPECIES: AMERICAN DUNE GRASS



AMERICAN DUNE GRASS – *Elymus mollis* ssp.

Get tough! (When the going gets tough...)

American Dune Grass (*Elymus mollis* ssp.) belongs to the 'fordune grassland' ecosystem, forming a narrow margin right along the coast, where plants can withstand salt spray, salty sand, little to no fresh water, unstable soils, occasional inundation during storms, low nutrient levels, and abrasion by wind and water. This grass is native across coastlines in Asia, Russia, Iceland, Greenland as well as North America and Canada. Humans have found myriad uses for American Dune Grass. Thick bunches of roots were used to scrub the body while bathing; and leaves were woven into mats, baskets, hats, bags, ropes and were used for sewing and tying. The leaves were also used to prepare food: to line cooking pots or lay out under drying fruits.

RESIDENT OR MIGRATORY

Resident

KEY HABITAT FEATURES

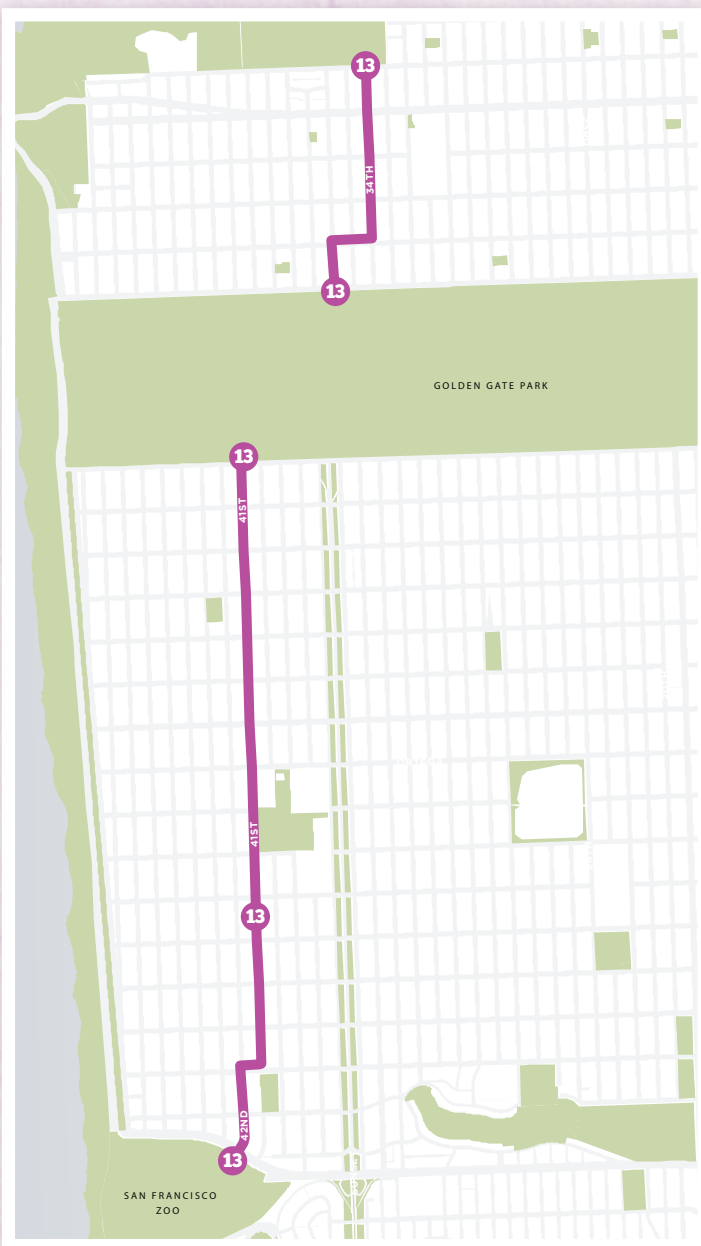
Found in "foredune grassland" that occurs only on dunes of the Pacific Coast of North America. Foredune grasslands are so called because *Elymus mollis* is generally confined to the upper beach and the first rise, or "foredune." Typically, foredune grassland is found on relatively high-energy sandy coastlines, on ocean beaches.

ASSOCIATED PLANTS & ANIMALS

Yellow Sand Verbena – *Abronia latifolia*, "*Coast Buckwheat* – *Eriogonum latifolium*," *Dune Tansy* – *Tanacetum camphoratum*, *Mock Heather* – *Ericameria ericoides*

NESTING INFORMATION

This grass has had a number of other human uses. The Makah, Nitinaht, and Quileute used bunches of the thick roots to rub the body during bathing. The Eskimo used the leaves to make mats, baskets, bags, and ropes for hanging fish to dry. The Hesquiat wove the leaves into handles for sacks. The Kwakiutl made baskets and hats from the leaves, and used them to line the boxes in which they cooked lupine roots. The Nitinaht used the pointed leaves to sew and tie. The Haisla and Hanaksiala used the grass to line pits in which they prepared the oil of the eulachon fish. The Quinault placed salal fruits on a bed of the leaves to dry.



ROUTE HIGHLIGHTS

» Lincoln Park, Golden Gate Park, Holy Name of Jesus School, Sunset Elementary School, Ulloa Elementary School, South Sunset Playground, San Francisco Zoo



Credit: Wikimedia Commons

PRESIDIO TO PARK MERCED

SPECIES: COAST BUCKWHEAT



COAST BUCKWHEAT – *Eriogonum latifolium*

Pollinator bash!

Coast Buckwheat (*Eriogonum latifolium*) 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 blue and hairstreak butterflies – many of which, also feed on the plant as caterpillars. The silvery grey leaves and stems are covered with tiny hairs that Wool Carder bees (*Anthidium palliventris*) gather for lining their nests. Look for bare patches where hairs have been removed; a nest is almost certainly nearby! The flowers turn chocolate brown in late summer revealing seeds that feed small songbirds.

RESIDENT OR MIGRATORY

Resident

DIET

Caterpillar host plant for Green Hairstreak, Grey Hairstreak & Acmon Blue butterflies – *Eriogonum latifolium* (coast buckwheat)

ASSOCIATED PLANTS & ANIMALS

Broadleaf Stonecrop - *Sedum spathulifolium*, Wild Cucumber / Manroot - *Marah fabaceus*, Pink Sand Verbena - *Abronia umbellata*
Seaside Daisy - *Erigeron glaucus*

NESTING INFORMATION

For example, a "wool-carder" bee (*Anthidium palliventris*), gathers plant hairs from beach buckwheat to line its nests.



ROUTE HIGHLIGHTS

» The Presidio, Golden Gate Park, Stern Grove, Alamo Elementary School, Clement Street Commercial District, Geary Street Commercial District, Morning Star Montessori School, Irving Street Commercial District, Judah Street Commercial District, Noriega Street Commercial District, French School-Lyceé Français, Sunset Reservoir, Abraham Lincoln High School, McCoppin Square, Taraval Street Commercial District



Credit: faroutflora.com

WEST OF TWIN PEAKS

SPECIES: GREEN HAIRSTREAK



GREEN HAIRSTREAK – *Callophrys viridis*

Emeralds in the sky!

If you are lucky enough to see the Green Hairstreak (*Callophrys viridis*) during its spring flight, February through May, you will never forget it! These iridescent green, nickel-sized butterflies dart madly about in search of mates and plants on which to lay their eggs. This butterfly once flew with the now extinct Xerces Blue (*Glaucopsyche xerces*) throughout the San Francisco dunes. Green Hairstreaks still fly in the Inner Sunset neighborhood the Presidio bluffs. Neighborhood residents and schoolchildren started planting upland dune habitat to support the butterfly, and since 2008, the population has increased exponentially!

RESIDENT OR MIGRATORY

Resident

DIET

Caterpillars hosts – *Eriogonum latifolium* (coast buckwheat) and occasionally deerweed (*Lotus scoparius*) and others. Adults feed on flower nectar.

ASSOCIATED PLANTS & ANIMALS

Coast Buckwheat – *Eriogonum latifolium*, Seaside Daisy – *Erigeron glaucus*, Sea Thrift – *Armeria maritima* var. *californica*, Coast Strawberry – *Fragaria chiloensis*

NESTING INFORMATION

Eggs are laid under leaves and on flower buds.

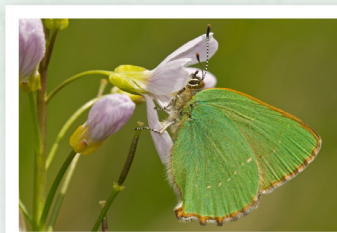
ADDITIONAL HABITAT PLANTS

http://natureinthecity.org/GH_Plants.pdf



ROUTE HIGHLIGHTS

- » The Presidio, Irving Street Commercial District, Judah Street Commercial District, UCSF, 15th Avenue Steps Park, Grand View Park, Rocky Outcrop Park, Golden Gate Heights Park, Hawk Hill Park, West Portal Commercial District



Credit: pcdn.500px.net

MARINA GREEN TO DOLORES PARK

SPECIES: WEST COAST PAINTED LADY



WEST COAST PAINTED LADY – *Vanessa annabella*

The Ladies!

The West Coast Painted Lady (*Vanessa annabella*) 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 on flowers. These front 'legs' are more like little brushes of hair the butterflies use for smelling and tasting. 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 six 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 burst into flight. However, they will often return to the same spot, so be patient. Males seek hilltops or territorial sites to look for mates, late in the afternoon.

RESIDENT OR MIGRATORY

Resident

KEY HABITAT FEATURES

Pacific Coast of North America

DIET

Cheeseweed (*Malva parviflora*) and Nettle (*Urtica holosericea*). Caterpillars feed primarily on *Asteraceae* and *Malvaceae*, especially Thistles, Burdock, and Hollyhocks. Many other plants are used occasionally, including Nettle, Alfalfa, Soy Bean, Beet, Borage, and Plantain. Adults feed on nectar from thistles, cosmos, asters, and other plants.

ASSOCIATED PLANTS & ANIMALS

Checkerbloom – *Sidalcea malviflora*, Wild Aster – *Symphyotrichum chilense*, Whitetip Clover – *Trifolium variegatum*, Hollyhock – *Alcea rosea*

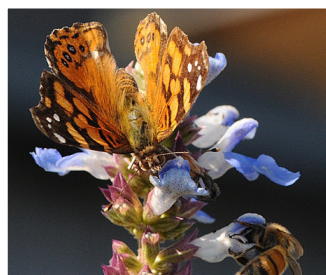
NESTING INFORMATION

Females lay eggs singly on host plants: herbaceous Mallows, including Cheeseweed (*Malva*), Alkali Mallow (*Malvella*), and Hollyhock (*Alcea*).



ROUTE HIGHLIGHTS

» Marina Green, Chesnut Street Commercial District, Lombard Street Commercial District, Alta Plaza, California Pacific Medical Center, Megan Furth Academy, Hamilton Recreation Center Playground and Pool, Raymond Kimbell Playground, Alamo Square Park, The Wiggle, Duboce Park, Sanchez Elementary School, Mission Dolores Park



Credit: ucanredu

EXCELSIOR

SPECIES: CLIFF SWALLOW



CLIFF SWALLOW – *Petrochelidon pyrrhonota*

Here's mud in your eye!

Cliff Swallows (*Petrochelidon pyrrhonota*) fly to and from their nests thousands of times in a single day. Each mud nest is made up of about one thousand small, mud pellets. Although the Cliff Swallow can nest solitarily, it usually nests in colonies. Colonies can number up to 3,700 nests in one spot. Cliff Swallows will occasionally lay their eggs in neighboring nests and have been observed actually moving eggs from their own nest into others. When a Cliff Swallow has had a hard time finding food, it will watch its neighbors in the nesting colony and follow one to food when it leaves. When young Cliff Swallows leave their nests they congregate in large groups called creches. A pair of swallows can find its own young in the creche primarily by voice. Cliff Swallows have one of the most variable juvenile plumages, and the distinctive facial markings may help the parents recognize their chicks by sight too. Cliff Swallows do not nest in the Excelsior but can be seen during migration in the spring and fall.

RESIDENT OR MIGRATORY

Migratory

KEY HABITAT FEATURES

Note about coastal Cliff Swallow colony in SF as one of the few. Erosion and predation by ravens are a concern in San Francisco.

DIET

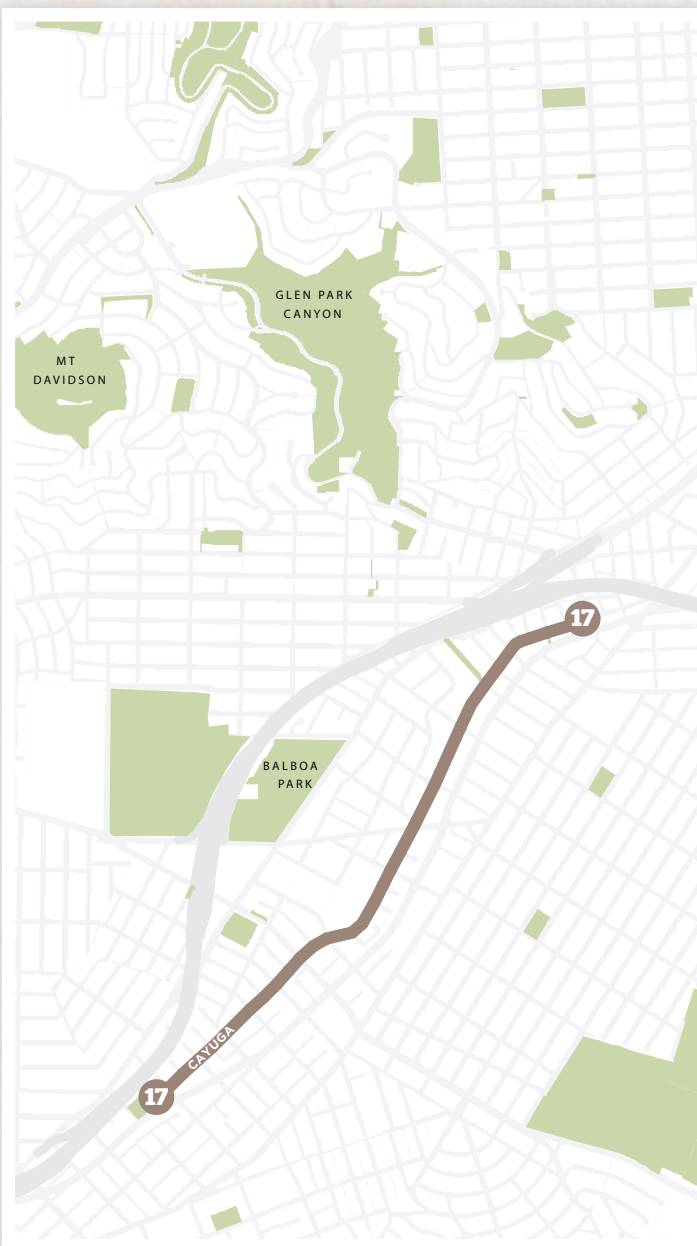
Subsist primarily on a diet of insects which are caught in flight.

ASSOCIATED PLANTS & ANIMALS

California Brome – *Bromus carinatus*, Coyote Bush – *Baccharis pilularis*, Mountain Lilac – *Ceanothus 'Ray Hartman'*, Western Service Berry – *Amelanchier alnifolia*

NESTING INFORMATION

Nests are tidy and well-constructed, formed from balls of mud that birds collect in their beaks. These nests are built on vertical walls, natural or man-made, frequently with some sort of sheltering overhang. Birds of both sexes build the jug-shaped nest. They do not add sticks or straw to the mud structure, but they do line the nest with grass and feathers. Both members of the pair incubate the four to five eggs for 14 to 16 days.



ROUTE HIGHLIGHTS

- » Crosstown Trail, Cayuga and Lamartine Mini Park, Balboa High School, Cayuga Playground



Credit: nathistoc.bio.ucledu

TENDERLOIN TO POTRERO

SPECIES: WESTERN TIGER SWALLOWTAIL



WESTERN TIGER SWALLOWTAIL – *Papilio rutulus*

City slickers!

Western Tiger Swallowtails (*Papilio rutulus*) 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 two inches, 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.

RESIDENT OR MIGRATORY

Resident

DIET

Caterpillars feed on a variety of trees including cottonwood, willow, quaking aspen, alder, maple, cherry, sycamore, hoptree, plum and ash. Adults feed on flower nectar from a wide variety of large flowers with landing platforms including thistles, tithonia, sage, zinnia, budleya, and coneflower.

ASSOCIATED PLANTS & ANIMALS

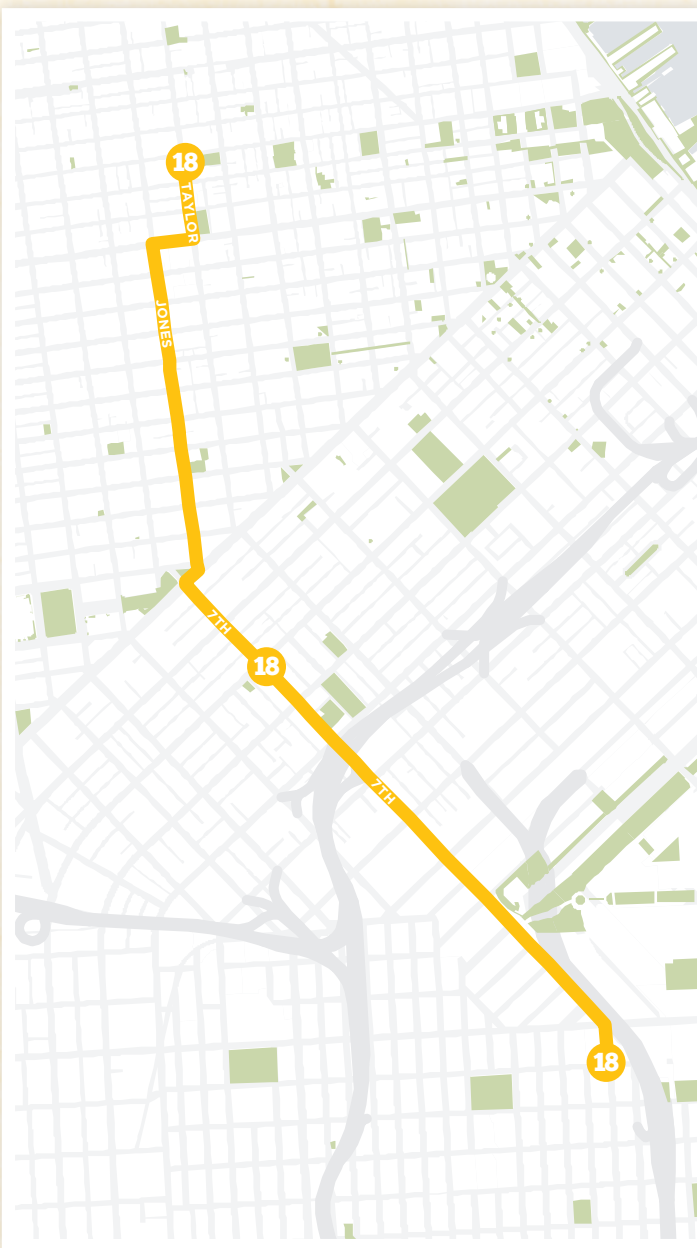
Bigleaf Maple – *Acer macrophyllum*, Shining Willow – *Salix lasiandra*, Holly leaf (Islais) Cherry – *Prunus illicifolia*, California Buckeye – *Aesculus californica*

NESTING INFORMATION

Eggs are laid singly, on the undersides of leaves.

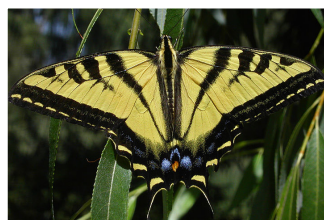
ADDITIONAL HABITAT PLANTS

Apple family; Ash family especially white, green, mountain; Aspen; Basswood family; Bay family especially Sweet; Birch family; Broadleaf; Cherry family especially Wild, Black, Choke; Cottonwood; HopTree; Lilac family; Magnolia family – NOT Magnolia Vine; Plum family; Poplar family especially Yellow; Rose family; Sassafras family; Sycamore family; Tulip family; Willow family



ROUTE FACTS

- » The Tenderloin, SOMA, Boeddeker Park, UN Plaza, Howard & Langton Mini Park, Mission Bay Creek Dog Park



Credit: Wikimedia Commons

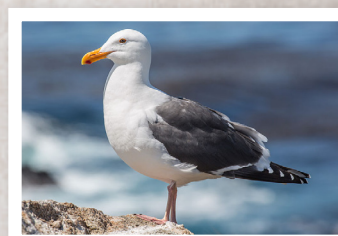
DOWNTOWN TO MISSION BAY

SPECIES: WESTERN GULL



ROUTE HIGHLIGHTS

- » South Park, South Beach Park, 303 Second Street Plaza, 611 Folsom Street Plaza, McKesson Plaza, AT&T Park.



Credit: Wikimedia Commons

WESTERN GULL – *Larus occidentalis*

Our Gull!

Western Gulls (*Larus occidentalis*) breed on Alcatraz Island and along the shoreline of San Francisco Bay. These are large gulls, with clear white and grey markings. They prefer to feed on marine invertebrates and fishes, eggs, and chicks of seabirds. Because humans have given them so much to eat, we have altered their behavior. One example of this is that the Western Gulls, being opportunistic feeders, congregate in large numbers during the seventh and eighth innings, awaiting food scraps left behind by Giants fans. This causes a big problem for ballpark staff, fans, and the birds. Western Gulls nest only on the West Coast in colonies. During breeding season, they are essentially the only gull species in San Francisco. They nest in a scrape in the ground filled with vegetation, feathers, and other natural items; sometimes they'll fill the nest with rope, plastic, or other items.

KEY HABITAT FEATURES

They are skillful hunters and scavengers and don't really depend specifically on other plants and animals. However, they do feed off the ocean's surface, so the proximity of water is helpful, but also it is not necessary, as they are seen inland too!

DIET

Eats marine invertebrates and fishes. Eggs and chicks of seabirds. Scavenges carrion and refuse.

NESTING INFORMATION

Nest is a scrape in the ground filled with vegetation, feathers, rope, plastic, or other items. Nests in colonies, often with other gull species.

FOLSOM, MISSION CREEK TO MCLAREN

SPECIES: POLLINATORS



POLLINATORS – Honeybees, moths, beetles, bats, wild bees, and others

They're working their tails off!
(They're doing the dirty work!) (All in a day's work!)

There are pollinators of all kinds, although bees are specially built for the job! Bees have tiny hairs on their bodies called scopa, and as they collect food in the form of pollen and nectar from flowers, they move from one to another transferring genetic material. Moths and bats also have hairy bodies and do the heavy lifting of pollinating at night, often visiting white or yellow flowers that open in the moonlight. Beetles, flies, and butterflies are also considered pollinators, as they visit flowers too, and move from one to the next, although their bodies aren't even made for it! Wild bees, unlike the very social honey bee, build a nest for their young - in the ground, holes in wood, or inside pithy stems - so they need patches of bare soil, or unmaintained landscapes to provide for future generations.

RESIDENT OR MIGRATORY

Resident

KEY HABITAT FEATURES

Found on relatively high-energy sandy.

DIET

Bees feed on many varieties of flowers rich in nectar (to keep 'em flying) and pollen (to provision their nests for larvae). Small flowers are visited by small bees. Flowering plants planted en-mass attract larger bee numbers.

ASSOCIATED PLANTS & ANIMALS

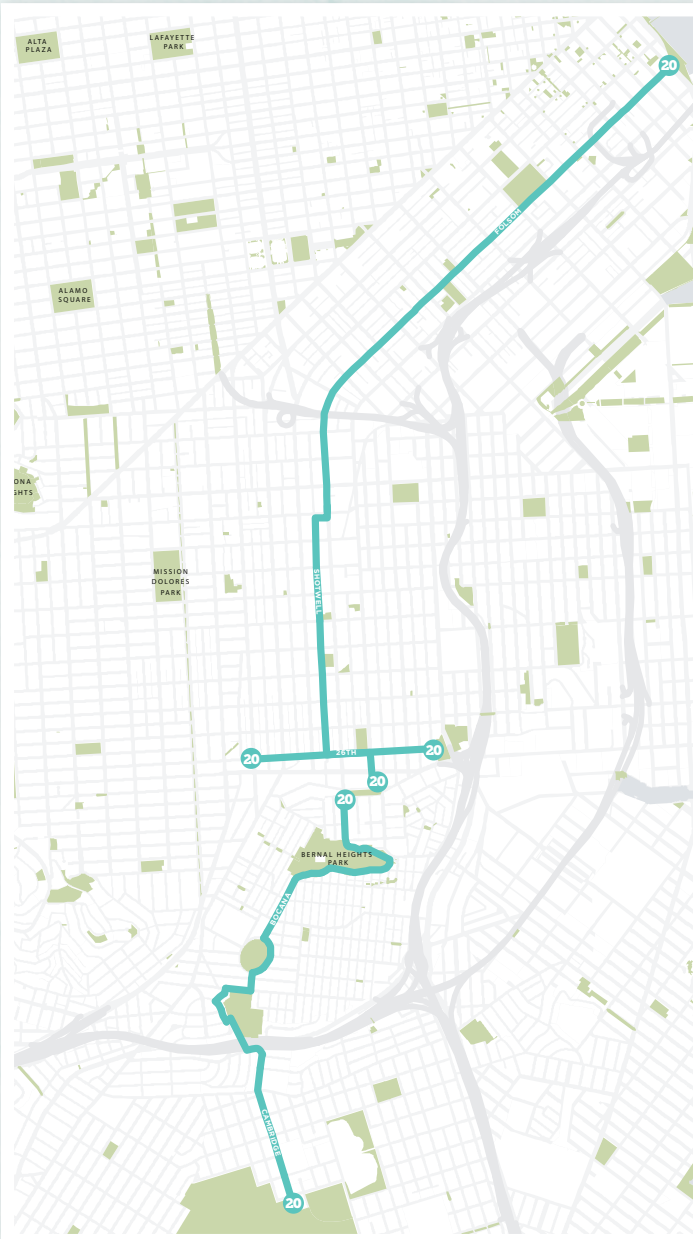
Hooker's Evening Primrose – *Oenothera elata* ssp. *hookeri*, *Mountain Lilac* – *Ceanothus* 'Ray Hartman', *Coast Buckwheat* – *Eriogonum latifolium*, *Coyote Mint* – *Monardella villosa*

NESTING INFORMATION

A single female will prepare her earthen nest, build a few cells, lay her eggs, and collect pollen for them. Although they nest alone, many females may lay in the same area.

ADDITIONAL HABITAT PLANTS

Arctostaphylos sp. California Manzanitas; *Ceanothus* sp. California Wild Lilacs; *Eriogonum* sp. California Buckwheats; *Penstemon* sp. California Penstemons; *Ribes* sp. California Currants and gooseberries; *Salvia* sp. California Sages; *Achillea* sp. Yarrow (any species); *Antirrhinum multiflorum*, Multiflowered Snapdragon; *Calystegia macrostegia*, Morning Glory; *Chilopsis linearis*, Desert Willow; *Chrysothamnus nauseosus*, Rabbit Brush; *Eriophyllum* sp., Golden Yarrow; *Lobelia dunni* serrata, Blue Lobelia; *Lotus scoparius*, Deerweed; *Mahonia nevadensis*.



ROUTE HIGHLIGHTS

- » St Mary's Playground, Holly Park, Bernal Heights Park, Percita Park, James Rolph Junior Playground, Potero del Sol, Garfield Park, Park Ninos Unidos, Jose Coronado Playground, Victoria Manalo Draves Park, Yuerba Buena Gardens, Rincon Hill Park



Credit: scienceblogs.com

BAY VIEW TO BAY TRAIL

SPECIES: BLACK-TAILED JACKRABBIT



BLACK-TAILED JACKRABBIT – *Lepus californicus*

The fast and the furious! (Life in the fast lane!) Black-tailed Jackrabbits (*Lepus californicus*) 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.

RESIDENT OR MIGRATORY

Resident

KEY HABITAT FEATURES

Coastlines, on ocean beaches.

DIET

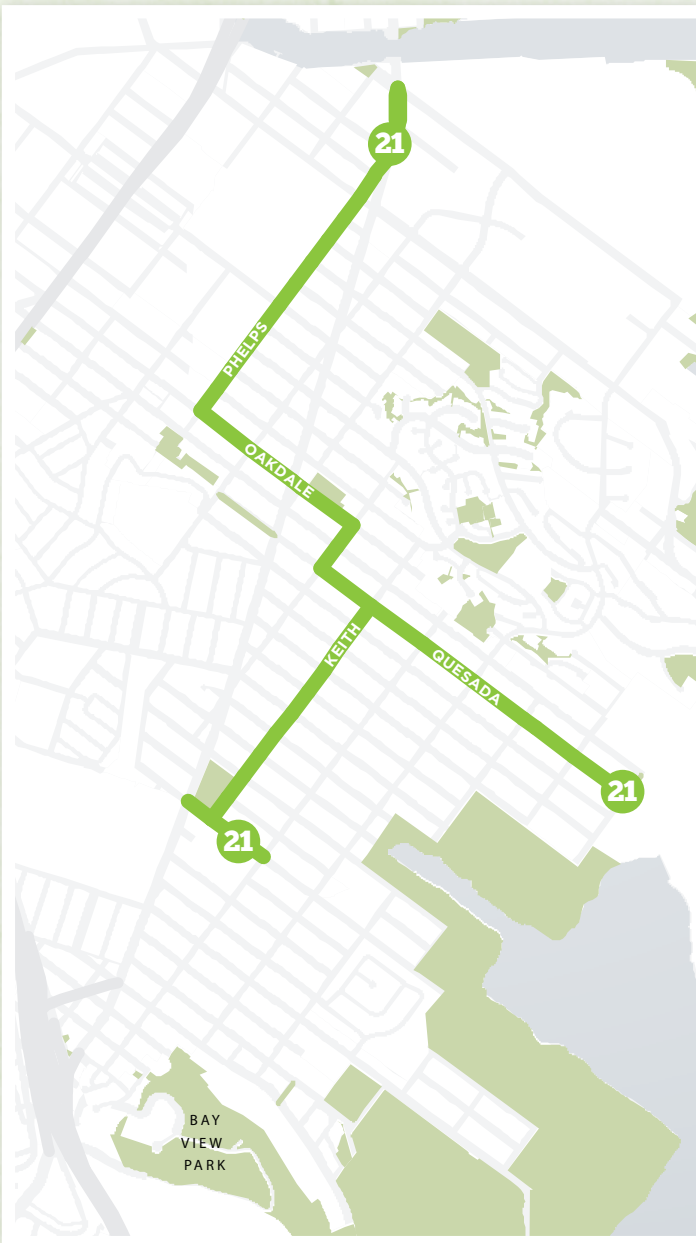
Diet is composed of shrubs and small trees (fall and winter), grasses and forbs (spring and summer). Forbs are herbaceous annuals, perennials or biennials that are not grasses.

ASSOCIATED PLANTS & ANIMALS

Deer Weed - *Acmispon glaber*, California Fescue - *Festuca californica*, Coyote Bush - *Baccharis pilularis*, Cobweb Thistle - *Cirsium occidentale* var. *occidentale*

NESTING INFORMATION

Do not prepare an elaborate nest. Do not dig burrows, instead use the high visibility of pasture lands to spot predators before they are spotted. Give birth in shallow excavations (called "forms") that are no more than a few centimeters deep. Females may line forms with hair prior to giving birth, but this is not always the case.



ROUTE HIGHLIGHTS

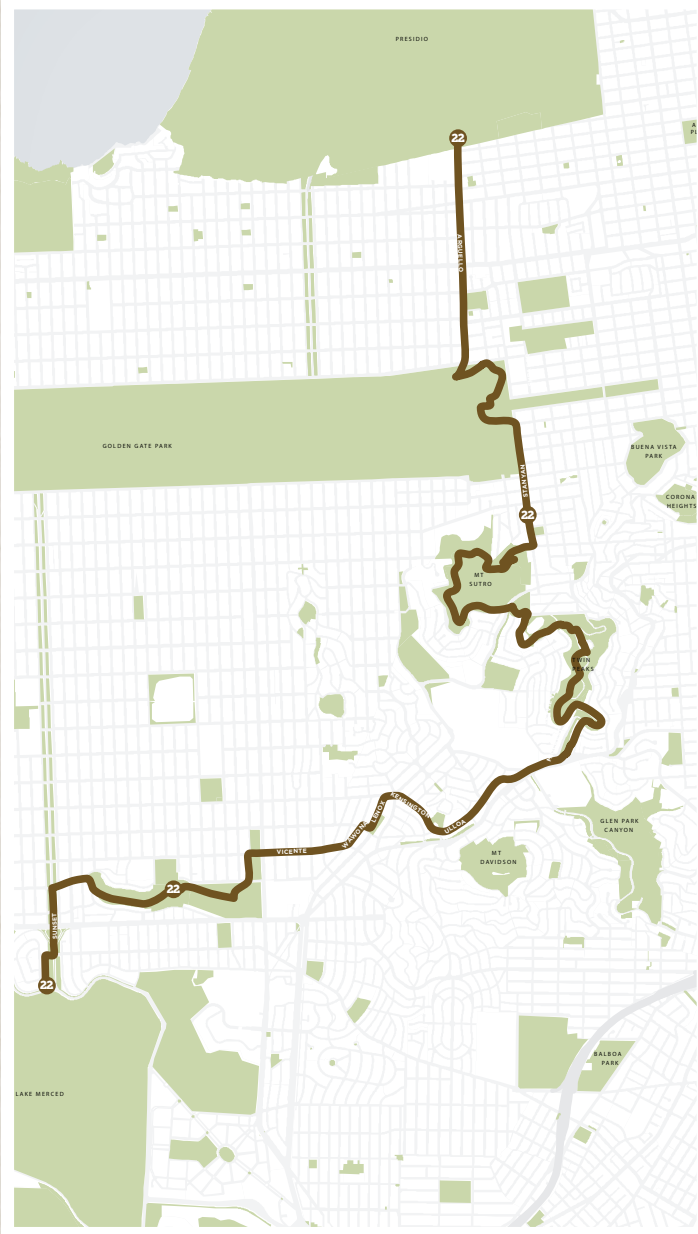
- » Islais Creek Park, Palou and Phelps Mini Park, Third Street Commercial District, Bayview Opera House, Joseph Lee Recreation Center, Bayview Playground, Martin Luther King Pool, Bay Trail



Credit: Wikimedia Commons

RIDGE TRAIL

SPECIES: NUTTALL'S WHITE-CROWNED SPARROW



ROUTE HIGHLIGHTS

- » Ridge Trail, Lake Merced, Stern Grove, Edgehill Mountain, Twin Peaks, Buena Vista Park, the Panhandle, Angelo J Rossi Playground, the Presidio



Credit: birdsasart.com

NUTTALL'S WHITE-CROWNED SPARROW – *Zonotrichia leucophrys nuttalli*

Sing a song to me! (Loudmouths!) (Sing your heart out!)
(Let's have a sing along!)

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.

RESIDENT OR MIGRATORY

Resident

KEY HABITAT FEATURES

Reside along the California coast, much of the breeding habitat, when not found in urban areas, is coastal chaparral. Features within a given territory include grass for rapid protective covering while foraging; bare ground for foraging; shrubbery to shelter a nest or provide a roost; and a source of water (salt or fresh). The combination of these elements works best when they are found in a patchy array so as to maximize territory suitability. Within a given territory, however, elements such as bare ground or water might not be immediately present, but may be found nearby.

DIET

Forages for seeds that can include weed seed or small grains like oats, wheat, barley or corn, and other plant material such as grass blades or fruit, including elderberries or blackberries. Along with the plant material consumed, Z.I. nuttalli also eat insects including Hymenoptera, Coleoptera, and especially larval Lepidoptera. Animal matter consumption increases by as much as 125% from April through August.

ASSOCIATED PLANTS & ANIMALS

Coyote Bush – *Baccharis pilularis*, California Sagebrush – *Artemisia californica*, California blackberry – *Rubus ursinus*, Sticky Monkeyflower – *Mimulus aurantiacus*

NESTING INFORMATION

Composed of small sticks, grasses, dead leaves, pine needles, and moss. The cup is lined with soft grasses, flower heads, hairs, duff, and leaves / place their nest in shrubbery in distances from the ground ranging from 41–335 cm / choose shrubs that are dense enough to provide effective concealment from above and below the nest.

CROSTOWN TRAIL

SPECIES: COYOTE



COYOTE – *Canis latrans*

Coyotes cruise the town!

Coyotes (*Canis latrans*) 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 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. Coyotes are carnivores, so please leave pet food and cats inside! Coyote will also feed on 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.

RESIDENT OR MIGRATORY

Resident

KEY HABITAT FEATURES

Adaptable to all habitats from desert scrub, grasslands, foothills as well as in populated neighborhoods.

DIET

Primarily eat small mammals, such as voles, prairie dogs, eastern cottontails, ground squirrels, and mice, though they will eat birds, snakes, lizards, deer, javelina, and livestock, as well as large insects and other large invertebrates. The 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. As such, coyotes have been known to eat human rubbish and domestic pets.

ASSOCIATED PLANTS & ANIMALS

California Blackberry – *Rubus ursinus*, Coyote Bush – *Baccharis pilularis*, Toyon – *Heteromeles arbutifolia*, Blue Wild Rye – *Elymus glaucus*

NESTING INFORMATION

Coyotes have a central den site dug under the ground which is used for rearing the pups and sleeping. They will scent mark the area around the den and defend it from other coyotes.



ROUTE HIGHLIGHTS

- » Crosstown Trail, Cayuga and Lamartine Mini Park, Balboa High School, Cayuga Playground



Credit: images.northrup.org

SHORELINE

SPECIES: WESTERN SNOWY PLOVER & SALT MARSH HARVEST MOUSE



WESTERN SNOWY PLOVER & SALT MARSH HARVEST MOUSE – *Charadrius alexandrinus nivosus* & *Reithrodontomys raviventris*

Let's play in the surf!

Western Snowy Plovers (*Charadrius alexandrinus nivosus*) scuttle along the water's edge, and in winter months, fly back and forth between Crissy Field and Ocean Beach. Snowy Plovers are here only during the winter to rest and increase their fat reserves, feeding on sandflies and other marine invertebrates, before moving on to safe nesting locations. They don't nest here in San Francisco, as they prefer to nest on quiet Pacific Coast beaches and mudflats, where the ocean meets fresh water. The nests are built out in the open with 3 to 5 camouflaged eggs inside. Nests are often lined with what they find on the beach. They have been nesting on Pacific Coast beaches for thousands of years and were listed with the federal government as a threatened species in 1993.

Hide and squeak!

Saltmarsh Harvest Mice (*Reithrodontomys raviventris*) are hard to find. They are the smallest rodents in the US, and aren't found anywhere else in the world but the Bay Area! They are nocturnal and especially active on moonlit nights, when their daytime predators are asleep. Their habitat is a dense thicket of saltmarsh herbs, grasses and reeds. They are resourceful, using the pathways of other rodents to navigate saltmarsh vegetation. They are also agile swimmers and adept climbers, and can even drink and survive purely on salt water. They eat pickleweed, glasswort, seeds, grasses, and a few insects. In winter, the mice may construct their nests in burrows and small crevices to keep them dry.

RESIDENT OR MIGRATORY

Migratory & Resident

KEY HABITAT FEATURES

Found on barren or sparsely vegetated sand beaches along the coast, and on alkaline flats and river bars farther inland. They winter primarily in coastal areas on beaches and tidal flats. Harvest Mice are heavily dependent on thick cover of plants that thrive in salt water, including salt marsh herbs, grasses and reeds.

DIET

Snowy Plovers eat insects and other invertebrates. Harvest Mice diet is composed of pickleweed and glasswort, seeds, grasses, and some insects.

ASSOCIATED PLANTS & ANIMALS

Coast Strawberry – *Fragaria chiloensis* / Pickleweed – *Sarcocornia pacifica*, Pink sand-verbena – *Abronia umbellata* / Saltgrass – *Distichlis spicata*, Mock Heather – *Ericameria ericoides* / Alkali-heath – *Frankenia salina*, Beach Evening Primrose – *Camissonia cheiranthifolia* / NA

NESTING INFORMATION

Snowy Plovers build a natural or scraped depression on dry ground usually lined with pebbles, shell fragments, fish bones, mud chips, vegetation fragments, or invertebrate skeletons. Breeds on sandy coasts and brackish inland lakes, uncommon on fresh water, and lay three to five eggs.

Harvest Mice build spherical nests of grass about 6–7" in diameter. The nests are usually built above ground in grass, low shrubs, or small trees. Some winter nests are constructed in burrows and small crevices. They do not have a high reproductive cycle as other species of mice would. They usually have around 4 offspring per litter and usually only once a year.

ADDITIONAL HABITAT PLANTS

Pink sand-verbena, Yellow sand-verbena, Beach saltbush and Beach evening primrose.

ROUTE HIGHLIGHTS

- » Candlestick Point State Recreation Area, India Basin Shoreline Park, Heron's Head Park, Warm Water Cove Park, Bay Front Park, Mission Bay Commons Park, China Basin Park, Giants Pomenade, South Beach Park, Rincon Park, Ferry Plaza, Sue Bierman Park, Levi's Plaza.

