

Map to Nature Trail

by Ben Pease

<http://www.peasepress.com/>



A Guide to the Half Moon Bay State Beach Nature Trail



Foreword

2018

The Half Moon Bay State Beach Nature Trail is located at Francis Beach north of the campground, just beyond the campfire center. It winds north, with the dunes and beach on the left. On the right is the flat coastal bluff that was once an agricultural field but is now being restored with native bluff scrub vegetation.



common California aster
Symphyotrichum chilense

The first guide to this trail was published in the 1990s, when restoration of the surrounding area was just beginning. This guide, first published in 2014, reflects the changes that have taken place since then—much larger areas completely restored with native plants and fewer invasive non-natives coming up each year.

The guide is dedicated to all those who have worked to make this progress, particularly the volunteers from all over the Bay Area who have labored so hard to restore this area and those who have toiled in the State Park Native Plant Nursery to raise the plants that are now growing here.

Special thanks is owed to the California State Park Foundation, for support it has given to the nursery and for the Park Champions program it created to harness the skills and enthusiasm of even more volunteers to help the parks.

Unless noted otherwise, with the exception of two of two drawings by Avis Boutell, illustrations in this guide came from the earlier trail guide or from Leroy Abrams' *Illustrated Flora of the Pacific States*.

* <i>Lysimachia arvensis</i>	scarlet pimpernel
<i>Marah</i> sp.	wild cucumber/man-root
* <i>Matricaria discoidea</i>	pineapple weed
* <i>Melilotus officinalis</i>	yellow sweetclover
<i>Oenothera elata</i> ssp. <i>hookeri</i>	Hooker's evening primrose
* <i>Oxalis pes-caprae</i>	Bermuda buttercup
<i>Phacelia californica</i>	California phacelia
<i>Polygonum paronychia</i>	dune knotweed
<i>Salix lasiolepis</i>	arroyo willow
<i>Sambucus racemosa</i> var. <i>racemosa</i>	red elderberry
<i>Scrophularia californica</i> ssp. <i>californica</i>	bee plant
<i>Sidalcea malvaeflora</i>	checker mallow/ checkerbloom
<i>Sisyrinchium bellum</i>	blue-eyed grass
<i>Symphyotrichum chilense</i>	common California aster

Resources to Learn More

The Visitor Center (see map) has information about Coastside plants and a demonstration native plant garden to help you identify plants.

The book *Plants and Plant Communities of the San Mateo Coast*, by Boutell, Corelli, and Frost, has photographs of over 100 of the plants seen along the coast. It is sold at the visitor centers at Half Moon Bay State Beach, Pigeon Point Lighthouse, and Año Nuevo State Park.

The Coastside State Park Association (coastsidestateparks.org) has information about the parks along the San Mateo coast.

This Nature Trail Guide was published for the first Coastal Wildflower Day—an annual community event in April to celebrate the natural beauty of the coast and the central role of State Parks in preserving it. The event is intended to inspire stewardship of the diverse, interconnected ecosystems that support thriving coastal wildflower habitats and celebrate the vital role of volunteer community restoration efforts at our State Parks.



Partial List of Plants Along the Trail

These are some of the plants you may see. Non-native plants are marked with an asterisk (*) and shaded.

<i>Abronia latifolia</i>	yellow sand verbena
<i>Achillea millefolium</i>	yarrow
<i>Ambrosia chamissonis</i>	beach bur
<i>Amsinckia intermedia</i>	common fiddleneck
<i>Angelica hendersonii</i>	coast angelica
<i>Armeria maritima</i> ssp. <i>californica</i>	sea-pink
<i>Artemisia californica</i>	California sagebrush
<i>Artemisia pycnocephala</i>	coastal sagewort
<i>Baccharis pilularis</i>	coyote brush
* <i>Cakile edentula</i>	sea rocket
<i>Calystegia soldanella</i>	beach morning glory
<i>Camissoniopsis cheiranthifolia</i> ssp. <i>cheiranthifolia</i>	beach evening primrose
<i>Chenopodium californicum</i>	California goosefoot
<i>Chlorogalum pomeridianum</i>	soap plant
<i>Claytonia perfoliata</i> ssp. <i>perfoliata</i>	miner's lettuce
* <i>Conium maculatum</i>	poison hemlock
* <i>Delairea odorata</i>	Cape/German ivy
<i>Erigeron glaucus</i>	seaside daisy
<i>Eriogonum latifolium</i>	seaside wild buckwheat
<i>Eschscholzia californica</i>	California poppy
<i>Erysimum franciscanum</i>	San Francisco wallflower
<i>Fragaria chiloensis</i>	beach strawberry
<i>Grindelia stricta</i>	coastal gumplant
* <i>Hirschfeldia incana</i>	Mediterranean mustard
<i>Iris douglasiana</i>	Douglas iris
<i>Lasthenia</i> sp.	goldfields
<i>Lathyrus littoralis</i>	silky beach pea
<i>Lonicera involucrata</i> var. <i>ledebourii</i>	twinberry
<i>Lupinus arboreus</i>	yellow bush lupine
<i>Lupinus variicolor</i>	Lindley's varied lupine

Introduction to the Nature Trail

The name "Francis Beach" came into usage long before there was a State Park. It was named after the family of Joseph Francis, who emigrated from the Azores in the mid-1800s and started a farm near the beach. By the early 1900s, the level marine terraces along Half Moon Bay beaches were converted from native coastal bluff scrub to agricultural fields.

The State of California acquired the local state beaches and some of the adjacent land in 1956. More land was added over the years to make what is now Half Moon Bay State Beach, including Francis, Venice, Dunes, and Roosevelt Beaches. The state beach now contains 170 acres with approximately two miles of ocean frontage.

After the park was created and the rich agricultural land was no longer cultivated, it became dominated by non-native grasses and weeds. Non-native ice plant and beach grass covered most of the dunes between the fields and the beaches. Without native plants there were fewer insects, birds, and other animals.

In 1979, a State Park General Plan for parks on the San Mateo coast directed that the dunes at Half Moon Bay State Beach be maintained and stabilized, the former cultivated agricultural lands restored with a natural ecosystem, and creek habitat protected.

When a major restoration project was launched in 1996, approximately 95 percent of the park's plants were non-native species.

The project removed the ice plant, which blanketed the dunes at Francis Beach, revealing underneath it coyote brush, beach strawberry, and other native plants. Seeds from native plants were spread over the dunes and they are now substantially restored.

Plowing had eliminated native plants from the agricultural fields, so native seedlings were planted there after the weeds were removed. Because of the seed bank left by the invasive weeds, new weeds grow there every year, though in diminishing numbers, and must be removed by volunteers. Now, 90 percent of the plants are native.

The nature trail was built as part of the restoration project. On either side you can see examples of the native plants that naturally grow on the beaches, dunes, and the coastal bluffs along the San Mateo coast.

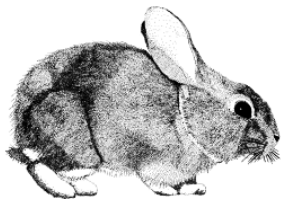
Coastal Bluff Scrub

As you enter the nature trail, on your left you will see dense green bushes of **coyote brush** (*Baccharis pilularis* ssp.), an evergreen, dioecious shrub—meaning it has separate male and female plants.

The male flowers are small and yellowish; the female flowers develop seeds with white, fluffy bristles—looking almost like snow, or as though the bush had brushed off the fur of a coyote, thus giving the plant its common name.

Coyote brush is able to easily colonize newly disturbed areas. It is said to cover more land in California than any other species.

During a drought, its large, fibrous root system and small, thick leaves help it to retain moisture and survive. It goes dormant in the summer, unless there is sufficient moisture to support growth, and then produces a heavy crop of seeds in time for the fall rains.



Brush rabbit by Wendy Stevens

The tangled thicket formed by the coyote brush creates perfect cover for brush rabbits and for birds like quail and California towhees that feed on the ground, as well as nesting sites for many birds. Look for brush rabbits along the edge of the trail near the bushes.

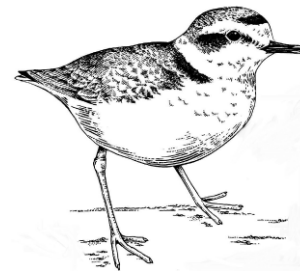
Two subspecies of coyote brush grow along the coast—the low-growing form (a foot or two high) grows only close to the ocean, the more widespread, taller form can be eight feet tall and is generally found further inland. Examples of both can be seen along the trail, though the taller form does not reach its full height where it is pruned by the salt-laden winds blowing off the ocean.

Some Native Americans used limbs of coyote brush for building houses and for making arrow shafts.



Silky beach pea (*Lathyrus littoralis*) is a delicate, low-growing perennial. Its multiple silver leaflets have small tendril bristles at the end. They are covered with tiny hairs—an adaptation of many dune plants to reflect the sun. Its typical pea-type blossoms are bi-colored—white and pinkish-purple. It is found only growing on sand in the dunes.

The **beach strawberry** (*Fragaria chiloensis*) has large, white, five-petaled flowers and glossy-green, three-part leaves. It spreads by stolons—horizontal stems that grow across the ground and root to start a new plant. The strawberry grows from a short thick rootstock anchored to the ground by tough wiry roots. It grows in the coastal bluff scrub as well as the dunes. Small rodents and birds eat its fruit. The cultivated strawberry originated in the 1700s from a cross between *Fragaria chiloensis* and another wild strawberry, *Fragaria virginiana*.



The nature trail ends at an open area leading down to the beach. Cable fences block off the upper part of the beach to the north and south, protecting the habitat of the Western Snowy Plover, a small, inconspicuous gray-brown and white shorebird listed as threatened under the Endangered Species Act. Many of these plovers spend the fall and winter here and they sometimes nest here in the summer. Look closely and you may see some.

Turn right here to reach the paved Coastside Trail. In front you will see the thick forest of willows that line Pilarcitos Creek. Most are arroyo willow (*Salix lasiolepis*). If you turn right, you can take the Coastside Trail back to your starting point

Coastal Dune and Beach

Ahead the trail begins to rise and turn toward the sand dunes, where you will see some of the plants unique to the harsh beach environment.

Before moving up the trail from the field, you might scan it for some of the creatures who hunt or make their homes there. Many raptors can often be seen there, including northern harriers, American kestrels, white-tailed kites, and red-tail hawks. Great blue herons and egrets sometimes stalk the field for small rodents and reptiles. There are sparrows and finches in abundance, and usually a black phoebe perched on a post or bush looking for flying insects. In the summer, barn swallows swoop over the field and nest under the eaves of the large maintenance building across the way.

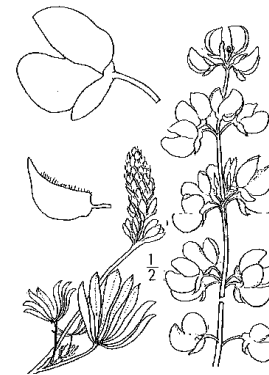
Yellow sand verbena (*Abronia latifolia*) is a prostrate perennial that spreads in large mats across the sand. The yellow, golf ball-size flower heads, made up of many individual flowers, bloom through most of the year. Its succulent, heart-shaped leaves are gummy and often have sand sticking to them. The plant's large fleshy roots store water and anchor it in the shifting sand. The roots are said to be sweet and were eaten by Native Americans.



Beach bur (*Ambrosia chamissonis*) is a pioneer plant in the sand dunes, with a long tap root that allows it to reach water and gray, hairy leaves that reflect the sun. The leaves vary—from slightly toothed to deeply lobed—and are strongly aromatic. It is called beach-bur because its female flowers are surrounded by spiny bracts that form burs with sharp thorns around its seeds. The male flowers develop in dense spikes at the end of stems; the female flowers form below them.



Intermingled with the coyote brush are **lizard tail** (*Eriophyllum staechadifolium*) sub-shrubs—a 3-foot high perennial with distinctive, deeply lobbed silver-green leaves. In the summer it is covered with clusters of small, bright yellow, daisy-like flowers. It is a good nectar plant for butterflies, bees, and other insects, and birds eat its seeds. Like coyote brush, lizard tail is a pioneer plant—with seeds that readily take root in any disturbed area. It can grow on dunes as well as on the coastal bluffs.



The large gray-green shrubs with palm-shaped leaves on either side of the trail are **yellow bush lupine** (*Lupinus arboreus*)—another coastal bluff plant that spreads rapidly in disturbed areas. Yellow bush lupine has tall spikes of yellow, pea-like flowers that are favorites of bumblebees. Its seeds form in pods that open explosively, shooting out the seeds. Like many members of the pea family, yellow bush lupine adds nitrogen to the soil.

The large yellow flowers of **Hooker's evening primrose** (*Oenothera elata* ssp. *hookeri*) might catch your eye in several spots in the field. It is a biennial that forms a rosette of leaves on the ground in its first year and the following year sends up a tall flowering stalk topped with many four-petaled flowers. In the fall the dry flower stalks bear pods that contain numerous tiny seeds. Finches can often be seen clasp the flower stalk and ripping open the pods to eat the seeds.





California sagebrush (*Artemisia californica*), more visible from the Coastside Trail, is a bush with silver, aromatic leaves. It is an important component of the coastal scrub. Many insects forage on its leaves and the bush provides cover for small birds. Although not a true sage, it can be used for seasoning. The local Ohlone people made a tea from its leaves to treat respiratory ailments.

As you walk further up the trail you will see some areas with smaller plants, where the shrubs do not dominate. These areas have more recently been cleared of weeds and planted with other kinds of native plants from the State Park Nursery at Francis Beach. Among the plants here are:

Douglas' iris (*Iris douglasiana*) is named for David Douglas, a 19th century Scottish botanist who collected plants along the west coast for the Horticultural Society of London. Native Americans harvested iris leaves in the fall and used a strong, flexible fiber found in the leaf margins to make cords for nets and snares.



The soft silver mounds along the trail and on the dunes are **coastal sagewort** (*Artemisia pycnocephala*). It resembles sagebrush, but is less aromatic. Its silver foliage, covered with tiny hairs, reflects the sun and helps it survive in the sand with little water. Its flowers are tiny, inconspicuous yellow blossoms on long stalks.

Seaside daisy (*Erigeron glaucus*) is a common, evergreen perennial, native to the California coast. It has soft, silver-green leaves and prolific blooms ranging in color from pink to bluish-lavender. It spreads readily, through creeping rhizomes and dandelion-like seeds. It is attractive to butterflies and makes a great garden plant.



Coast gumplant (*Grindelia stricta* var. *platyphylla*) is a low-growing, evergreen perennial that blooms for many months of the year. Its yellow, daisy-like flowers are attractive to bees and butterflies, and birds and small mammals eat its seeds. Its flower buds are topped with a gummy resin that may protect the blooms from predators and inspired the common name. The resin was used by the Ohlone to treat skin ailments, particularly rashes from poison oak, and is an ingredient in some skin medicines even today.



Common yarrow (*Achillea millefolium*) can be found in both the field and the sand dunes, where its spreading, underground rhizomes help hold the sand. It is easily identified by the pungent scent of its feathery leaves—widely used in herbal remedies to treat wounds, inflammation, and toothaches. Yarrow is common throughout the northern hemisphere—known as a “circumpolar” plant. The genus name, *Achillea*, honors Achilles, the legendary Greek hero of the Trojan Wars, who is said to have used yarrow to staunch his men's wounds. Millefolium means thousand-leaved.

Coast buckwheat (*Eriogonum latifolium*) has white or pinkish flowers that densely cluster to form a ball-shaped flower head. Its leaves are greenish-gray above and white underneath, with densely matted hairs that reflect the sun. There are at least 70 different species of buckwheat in California; many are vital to the survival of some butterflies and moths and its seeds are an important source of food for small animals. “Buckwheat” flour, commonly used in pancakes, comes from a plant (*Fagopyrum esculentum*) in a different genus, native to Eurasia.

