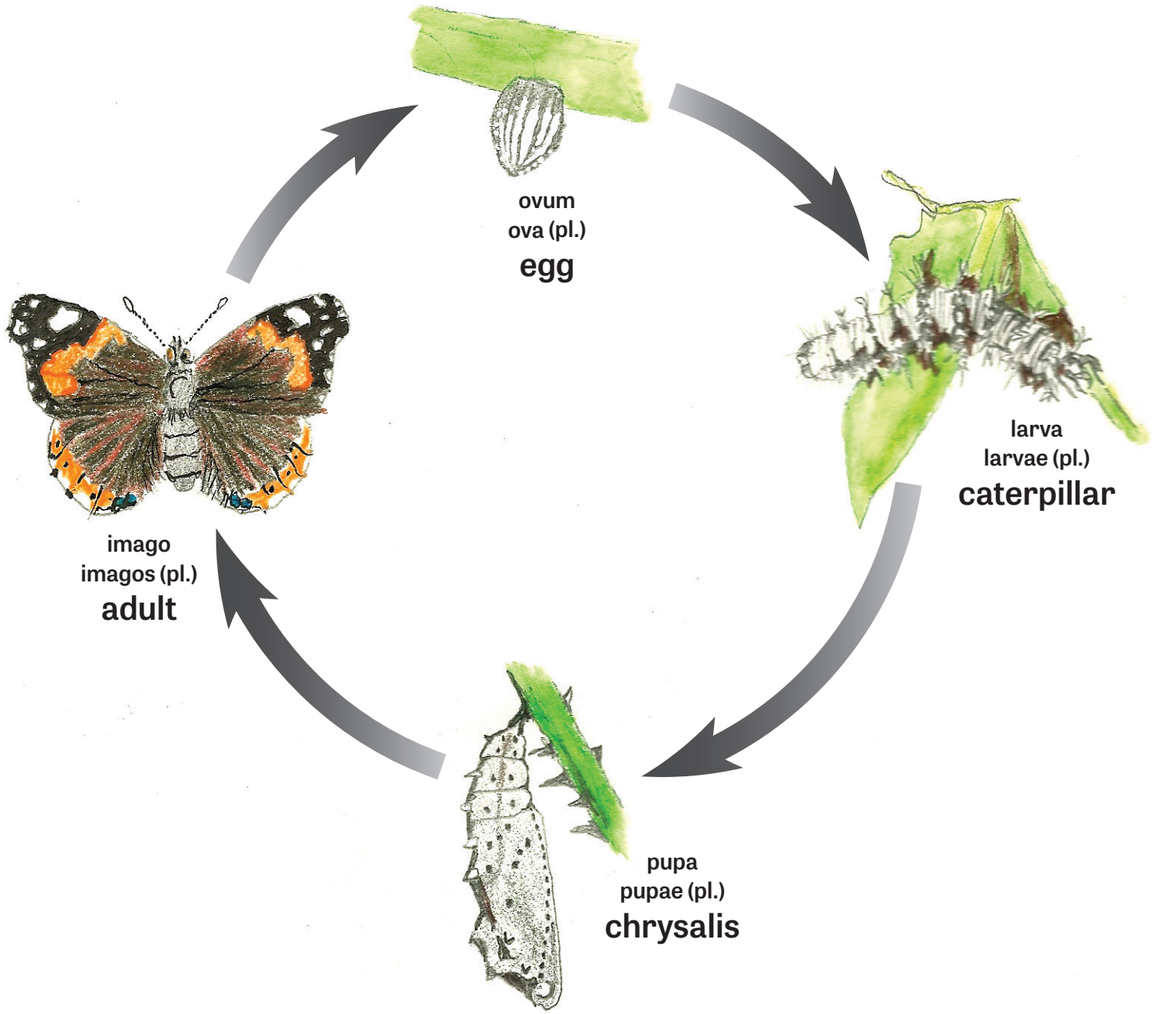
Butterflies
of the Presidio

PRESIDIO

AN ILLUSTRATED GUIDE

BY LIAM O'BRIEN AND MATTHEW ZLATUNICH

One Brood or One Generation



Checklist

(species seen within the Presidio in recent years)

- __ Pipevine Swallowtail
- __ Anise Swallowtail
- __ Western Tiger Swallowtail
- __ Cabbage White
- __ Sara Orangetip
- __ Orange Sulphur
- __ Green Hairstreak
- __ Gray Hairstreak
- __ Western Tailed Blue
- __ Western Pygmy Blue
- __ Echo Blue
- __ Acmon Blue
- __ Field Crescent
- __ Mylitta Crescent
- __ Satyr Anglewing
- __ California Tortoiseshell
- __ Mourning Cloak
- __ American Painted Lady
- __ Painted Lady
- __ West Coast Lady
- __ Red Admiral
- __ Buckeye
- __ California Sister
- __ California Ringlet
- __ Monarch
- __ Funereal Duskywing
- __ Common Checkered Skipper
- __ Fiery Skipper
- __ Sandhill Skipper
- __ Woodland Skipper
- __ Umber Skipper

■ = Common
■ = Uncommon
■ = Rare

Introduction

Of the many insect forms, butterflies are surely the most identifiable and appealing to humanity. As such, the study of butterflies, their life cycles, and their host plant relationships, can offer boundless opportunities to connect with the natural world around us and to develop an understanding of the communities of plants and animals to which they (and we) belong.

An urban national park, the Presidio harbors a variety of habitat types representative of the ecosystems that once covered much of the San Francisco peninsula. While some local species, like the Xerces Blue, have been lost to extinction, much of the Presidio's butterfly fauna still persists, each species occupying a particular niche, each with its own life story. This publication aims to introduce the reader to the butterflies of the Presidio and to the unique life story that each species has to tell. But these stories are by no means complete, and one will find, through exploration and enjoyment of the Presidio's natural areas, that there is still much to be discovered.

Green Hairstreak
Callophrys viridis

Xerces oviposting on
Yellow Bush Lupine

Preface

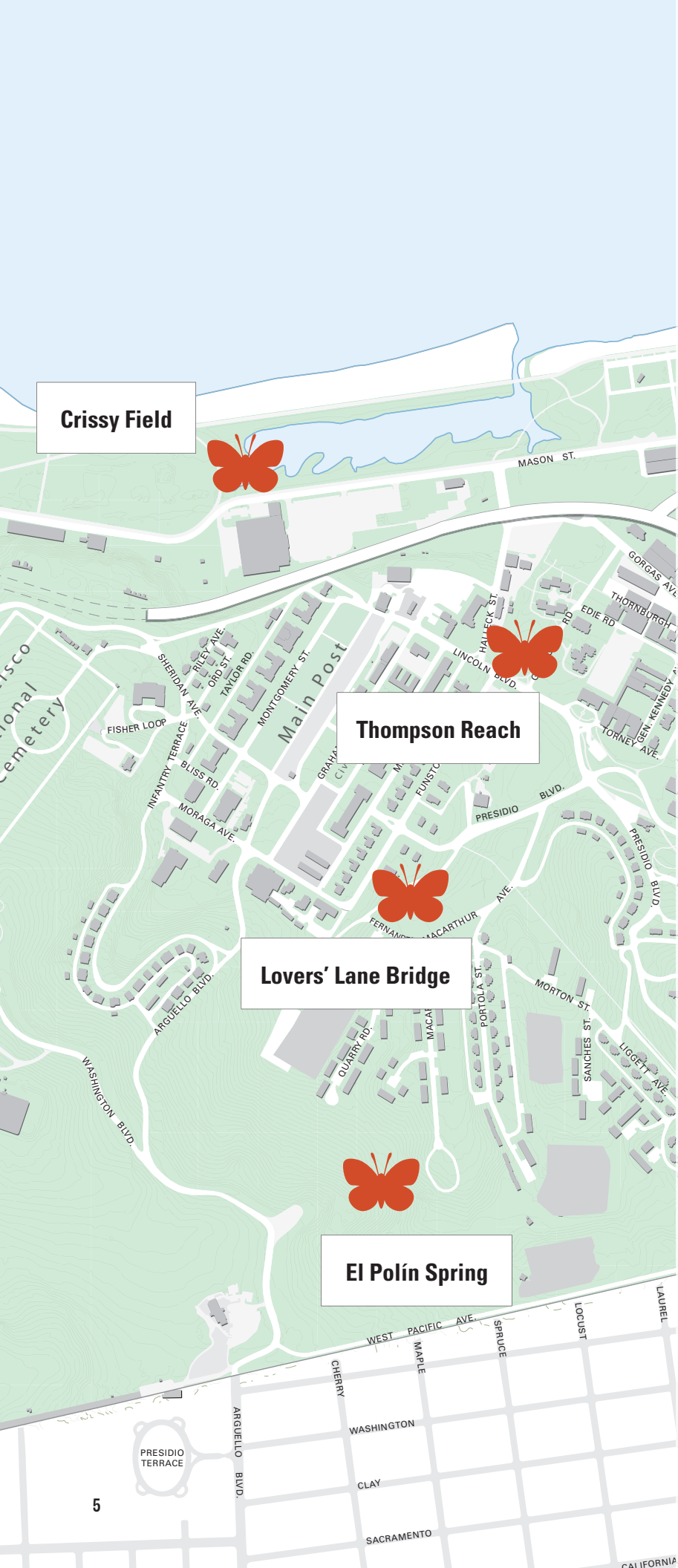
Some years ago, a tall, energetic Californian came along on one of my butterfly field seminars in Washington's southern Cascades. He skittered all over the place in his enthusiasm, moving like a fritillary quartering the countryside, coming up with a rubber boa snake here and an elegant day moth over there. Not long afterward, the most remarkable butterfly art I'd seen in ages began showing up in my mailbox, in the pages of the butterfly press, and in the sketchbooks of Liam O'Brien the next time he came north for an autumn monarch foray. I've been hooked on Liam's utterly individual butterflies ever since.

So when I heard that Liam was painting the butterflies of the Presidio for this book, I was thrilled. After all, the Presidio is not only the graveyard of the extinct Xerces Blue, namesake of the Xerces Society; but it is also the birthplace of one of the most impressive and promising "take back the land" restorations anywhere. How fitting that this vast tract of urban wildland, where Xerces flew its last flight during the military buildup prior to the u.s. entry into World War ii, should return to peaceful purposes on behalf of the people and other species of San Francisco. As a gesture of circular symmetry and completion, I have suggested a subversive act I've called "resurrection ecology" whereby Xerces' nearest living relative, the Silvery Blue of Marin, might be introduced to the restored dune habitat here. It could do no harm, and in time, micro-evolution might well select for something very like the original Xerces Blue. After all, largely through this artist-lepidopterist's efforts, the Green Hairstreak and the Mission Blue have already come back from the brink. Why not Xerces, from beyond? This dream may never happen; but the appearance of this grand little book gives me hope that it might.

I am personally delighted that Liam O'Brien's wonderful, quirky butterflies—with their idiosyncratic wing shapes that suggest flight and life far more than field-guide exactitude—all arrayed among his exquisite portraits of plants and habitats, have come together with the factual and graceful prose of Matthew Zlatunich's text, in Butterflies of the Presidio. This beautiful book is not only a truly fetching excursion for the eye of anyone thirsty for life and landscape, but also a fascinating and illuminating read for the foggy days indoors. Above all, it makes me feel certain that the butterfly fauna of this astonishing place will never again be taken for granted.

– Robert Michael Pyle
Founder, Xerces Society for Invertebrate Conservation


Log Cabin
Battery Crosby
Dragonfly Creek / Presidio Nursery
Rob Hill
Lobos Creek Valley
Mountain Lake
MARINE DRIVE
LONG AVE.
HOFFMAN ST.
MERCHANT RD.
LINCOLN BLVD.
CRISSY FIELD AVE.
STOREY AVE
LANGDON
RALSTON AVE.
Fort Winfield Scott
RUCKMAN
ROD RD.
MASON ST.
COWLES
MCDOWELL AVE.
PATTEN RD.
KINSEY
UPTON AVE.
KOBBE AVE.
GREENOUGH
HARRISON BLVD.
HITCHCOCK ST.
CENTRAL MAGAZINE
WRIGHT LOOP
NAUMAN RD.
PARK BLVD.
AMATURY LOOP
WASHINGTON BLVD.
COMPTON RD.
PERSHING DR.
STILLWELL
BATTERY CAULFIELD RD.
Public Health Service District
Presidio Golf Course
GIBSON RD.
LINCOLN BLVD.
Baker Beach Apartments
BELLES
BROWN
WYMAN AVE.
HIGHWAY 1 - VETERANS BLVD.
WEDEMEYER ST
CAMINO DEL MAR
25TH AVENUE
LAKE STREET



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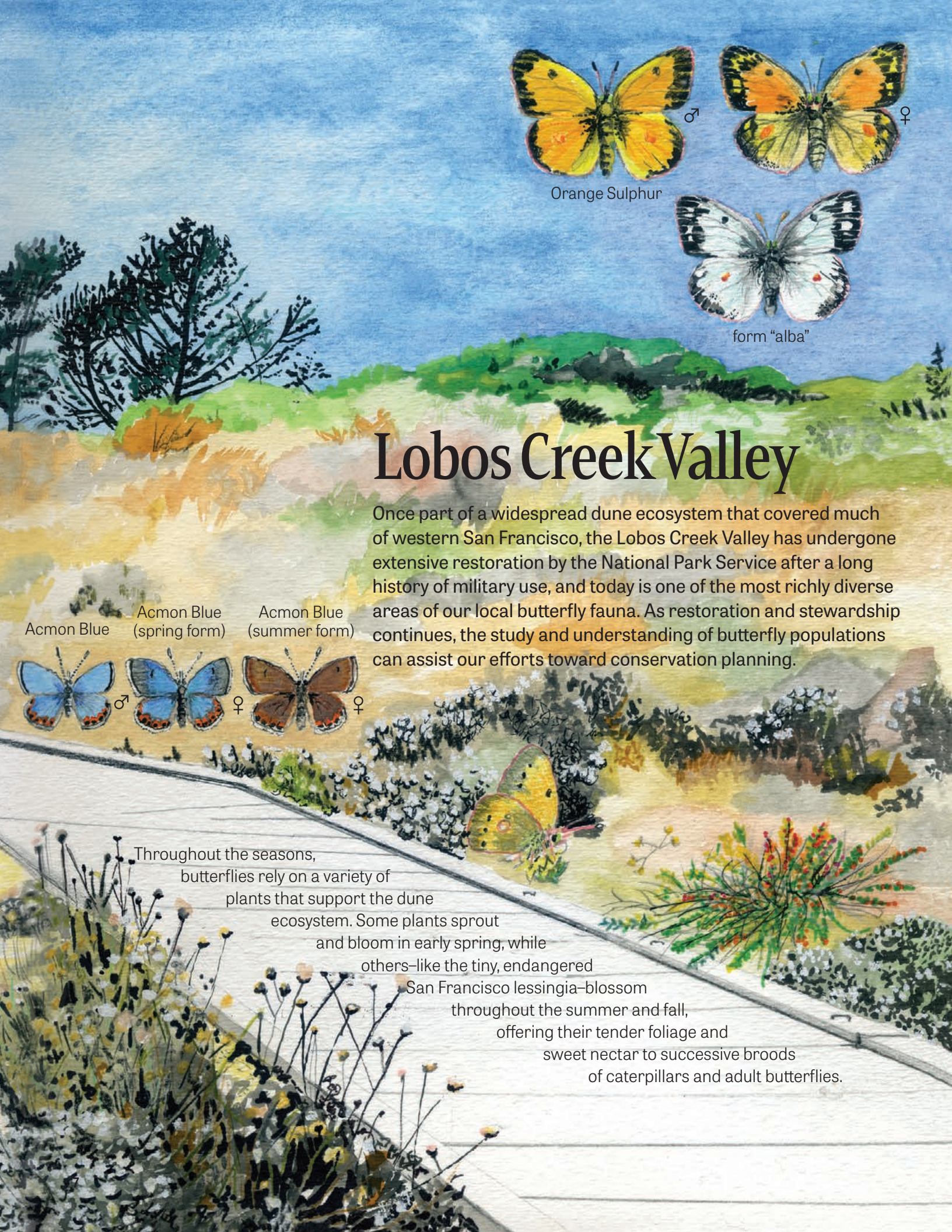
California Sister

Xerces Blue

Xerces Blue
(underside)

Acmon Blue

In the early spring, look for the coastal Green Hairstreak which has benefited from the planting of coast buckwheat, its larval host plant.

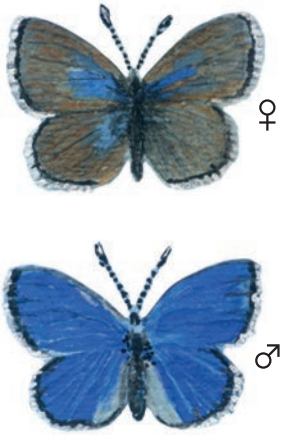


Lobos Creek Valley

Once part of a widespread dune ecosystem that covered much of western San Francisco, the Lobos Creek Valley has undergone extensive restoration by the National Park Service after a long history of military use, and today is one of the most richly diverse areas of our local butterfly fauna. As restoration and stewardship continues, the study and understanding of butterfly populations can assist our efforts toward conservation planning.

Throughout the seasons, butterflies rely on a variety of plants that support the dune ecosystem. Some plants sprout and bloom in early spring, while others–like the tiny, endangered San Francisco lessingia–blossom throughout the summer and fall, offering their tender foliage and sweet nectar to successive broods of caterpillars and adult butterflies.

California Sister on its host, Coast Live Oak

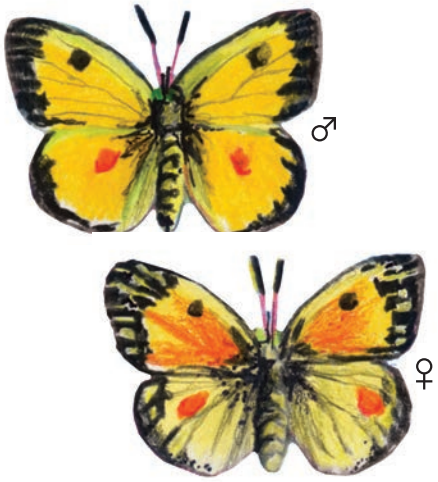


Xerces Blue

Glaucopsyche xerces

Endemic to the unique sand dune habitats of western San Francisco, the Xerces Blue is reputedly the first butterfly species in North America to have gone extinct as a result of human disturbance. Squeezed out of existence by the advance of urbanization, this species was last observed in the Lobos Creek Valley on March 23, 1941. This small butterfly was characterized by a bright blue upper side in males, brown in females, both having a pale gray underside with prominent white spotting. Adults typically flew from mid-March through May, and their larval host plants included deerweed and yellow bush lupine. As the demise of the Xerces Blue preceded the modern science of ecology, the complexities of its habitat relationships were never well studied and it is unclear exactly which urban impacts drove the species to extinction. Today, this lost species is memorialized as the namesake of the Xerces Society, an international organization dedicated to invertebrate conservation.

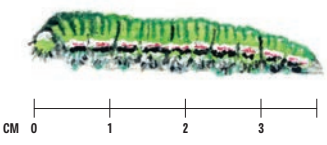
Coast Buckwheat is host for both the Green Hairstreak (pg. 25) and the Acmon Blue.



Orange Sulphur

Colias eurytheme

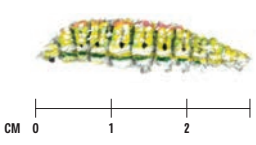
Often common across much of North America, the Orange Sulphur flies from early spring to late fall in the Presidio. Seasonally variable in size, shape and coloration, in flight, the bright and contrasting upper side is displayed, yet when perched, the wings are usually kept folded showing a more uniformly lemon yellow underside. Males will patrol near host plants awaiting females who, if non-receptive, must sometimes spiral skyward to evade an aggressive pursuit. Eggs are laid singly on vetches, clovers, lupines and other native and exotic plants of the pea family. As this species can often be seen by the hundreds flying over alfalfa fields, it is also referred to as the Alfalfa Butterfly, and is sometimes considered to be an agricultural pest.



Acmon Blue

Plebejus acmon

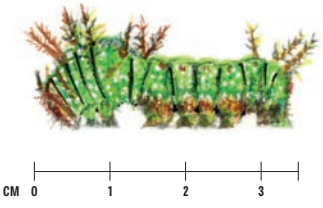
Occupying a variety of habitats throughout California and fairly common in San Francisco, the Acmon Blue can be found in the Presidio from early spring to late fall in open habitats where its larval host plants occur including buckwheat, deerweed, knotweed, and lupines. Males, with bright blue upper wings, patrol a territory for the earth-toned females who, after mating, will lay eggs singly on leaves and flowers of the host plants. Caterpillars of this species are symbiotically tended by ants who offer protection in exchange for a sweet secretion called honeydew. Adults sip flower nectar from a variety of native plants including the endangered San Francisco Lessingia.



California Sister

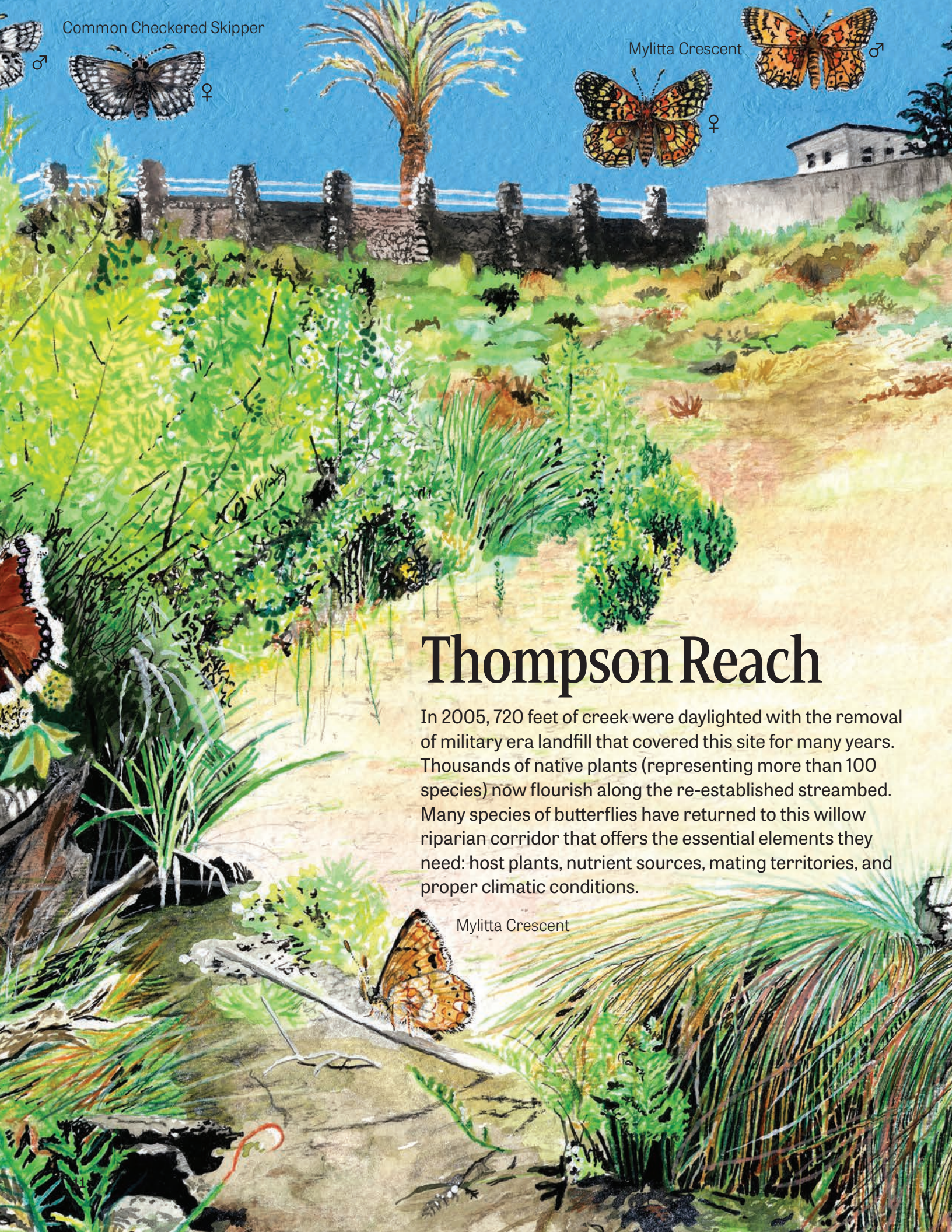
Adelpha californica

Though rare in San Francisco, the California Sister can be readily found from spring through fall across much of California and western Oregon where its host plant, oak trees, grow. The sexes are similarly patterned with orange patches near the wing tips and white wing bands across a chocolate brown upperside, though females are usually larger. Males will perch and patrol a territory in search of receptive females, often flying out from their perch to investigate almost any flying object. This species will sip nectar from a variety of plants including California buckeye and coyote brush, but prefers to get nutrients from mud puddles, rotting fruit, dung, sap and other such sources. Few Presidio records exist (mainly in October, which may correlate the peculiar habit of famales dispersing widely in the fall).



Butterflies are most active on warm, sunny days with little wind, but these conditions are not the norm in San Francisco. Though wind and fog can prevail throughout much of the Presidio, Thompson Reach is somewhat sheltered and often accommodating for butterflies.

Fiery Skippers host on the landscaped lawn above this natural area, but visit the flowers within for nectar.



Thompson Reach

In 2005, 720 feet of creek were daylighted with the removal of military era landfill that covered this site for many years. Thousands of native plants (representing more than 100 species) now flourish along the re-established streambed. Many species of butterflies have returned to this willow riparian corridor that offers the essential elements they need: host plants, nutrient sources, mating territories, and proper climatic conditions.

Mylitta Crescent

Checkerbloom is the host plant for both the Common Checkered-Skipper and the West Coast Lady (pg. 36).

Common Checkered-Skipper

Pyrgus communis

As its name indicates, this spread-wing skipper is common and widespread throughout much of North America, and is fairly common within the Presidio, flying in all but the winter months. Sexes are similarly patterned in brown, black and white, though males can be distinguished by the bluish sheen of their body hairs. Males perch and patrol in swales to seek females, who, after mating, lay their eggs singly on both native and exotic plants of the mallow family. Larvae live in rolled-leaf nests and hibernate during the winter.

Mylitta Crescent

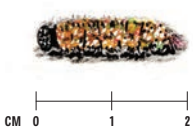
Phyciodes mylitta

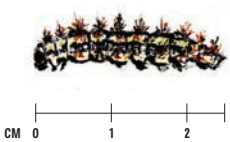
Common throughout the western states in both natural and disturbed areas, this dainty butterfly will perhaps become more common within the Presidio as riparian habitats are restored. Small and delicate, the sexes differ slightly, but both are mostly orange with fine black undulate markings. Multiple broods occur from spring through fall. Males are territorial and can be found patrolling stream banks or gullies in search of females, often alighting on a low perch with wings spread. Both the native and the exotic, weedy species of thistle are the larval host plants where the female will lay her eggs. Larvae hibernate during the winter and are known to sunbathe on the occasional mild winter day.

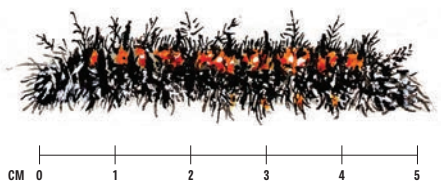
Mourning Cloak

Nymphalis antiopa

Widely distributed throughout the temperate northern hemisphere though seldom abundant, the Mourning Cloak can be found in a variety of habitats from mature forests to open fields. Among the longest lived of all imagos (10-11 months), adults hibernate during the winter months with breeding occurring the following spring. Males perch and patrol for females during the afternoon hours along stream courses, in forest clearings, and in valley bottoms. Eggs are laid in clusters, usually on the twigs of trees including willow, poplar and maple. Caterpillars, which live communally feeding on tender foliage, have been known to leave the host plant to pupate under the eaves of nearby buildings! Adults get nutrients from flower nectar, but seemingly prefer tree sap, rotting fruit and mud.







Adaptation has been a requisite for some life forms to withstand the pressures of urbanization upon the natural landscape. Some butterfly species have adapted to, and even become dependent upon, the exotic weedy plants that have naturalized to our local areas.

Buckeye

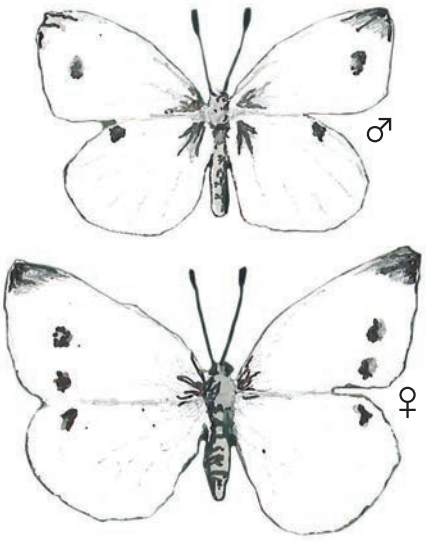
Cabbage White

Lovers' Lane Bridge

Lovers' Lane Bridge spans a creek in a meadow where Tennessee Hollow's three creek tributaries converge. A longtime crossroads of human activity, this meadow has been modified over the centuries into a hodgepodge of native and exotic herbaceous plants lining the channeled streambeds. Such a diverse mix of plants attracts and sustains a likewise diverse mix of butterfly species.

Cabbage White

Our native Buckeye (pg. 44) has found the exotic English plantain to be quite suitable as a host plant.



Cabbage White

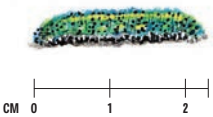
Pieris rapae

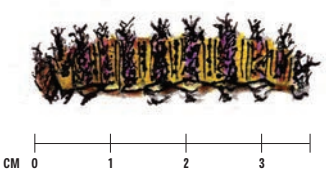
The only member of the Presidio's butterfly fauna of exotic origin, the Cabbage White is of European heritage and was introduced to the North American continent in the 1860's. Now widespread and common, this multi-brooded species—partial to weedy, disturbed habitats—can be found in the Presidio nearly year-round. Sexes can be distinguished by the spotting on the upper forewing; males with one dark spot in the center of each wing, females with two. Males patrol all day near host plants in search of females. A wide variety of mostly exotic plants are used as larval hosts including nasturtium, watercress, mustards, and European radish, which is, in fact, the Cabbage White's native host!

Painted Lady

Vanessa cardui

The most global of butterflies, occurring throughout much of the world, the Painted Lady is migratory, with successive generations moving northward in the spring and retreating southward in the fall. In boom years, the spring migration can be quite spectacular as millions of individuals wing their way north. Found in the Presidio in every season, including winter which some Painted Ladies survive as adults, and in most habitats. Usually larger than the American Painted Lady and the West Coast Lady which they closely resemble. Males will establish territories on hilltops or in areas with southwest exposures, and mating occurs in the afternoon. Females lay eggs singly on a wide variety of host plants including members of the thistle, borage and mallow families, and caterpillars are said to have the most varied larval diet in the world.





Butterflies are intimately tied to the plant kingdom for their very survival, some species having co-evolved with a wide variety of plants, while others use only one species as a larval food source.

No other butterfly lays her eggs on as many plant species within the park as the Gray Hairstreak.

Dragonfly Creek/ Presidio Nursery

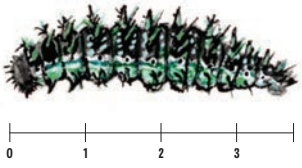
Riparian scrub and oak riparian forest once flourished along the banks of this north facing stream. Gradually infused over the years to become a wild tangle of indigenous and exotic vegetation, the Dragonfly Creek Valley is now a natural landscape restoration site and is also home to the Presidio Nursery, where native plants are propagated and used here and at many other sites.

Stinging Nettle is the host for the Satyr Anglewing and the Red Admiral (pg. 33).

Satyr Anglewing

Polygonia satyrus

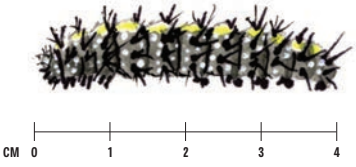
Found throughout the western states, though never commonly, in riparian habitats where its host plant, Stinging Nettle, occurs. Multi brooded; with a fall generation hibernating as adults and emerging on warm days of late winter, and subsequent generations in early and mid summer. Males patrol areas of dappled sunlight often perching in forest openings to await females who, after mating, will lay eggs in small clusters on the undersides of host leaves. After hatching, each caterpillar creates its own nest by drawing down leaf edges and fastening them with silk. Adults will sip flower nectar, but prefer such nutrient sources as rotting fruit and tree sap.

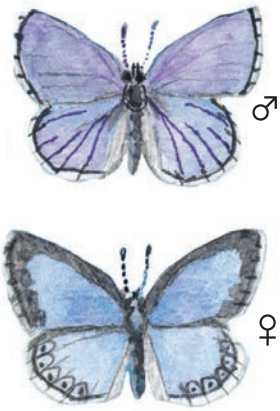


California Tortoiseshell

Nymphalis californica

A strong flyer, the California Tortoiseshell is seasonally abundant from the Coast Range to the Rockies, making an annual eastward flight that is synchronized with the seasonal growth of wild lilacs of the genus Ceanothus. This movement can be witnessed in the Presidio in early spring and again in fall, when, at its peak on a warm sunny day, California Tortoiseshells can be seen (in some years by the hundreds) flying throughout the park. Multi-brooded; fall adults overwinter at lower elevations and produce the spring brood of emigrants that repopulate eastward and upward. Males perch on hilltops in late afternoon to await females. Eggs are laid in clusters and, after hatching, the gregarious caterpillars feast on tender, new leaves. Adults will mud-puddle, but will also get nutrients from flower nectar and rotting fruit.

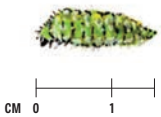




Echo Blue

Celastrina echo

This local representation of the continent-wide complex of butterflies known as the Spring Azure, is multi-brooded in our area; fairly common in early spring, again in mid-summer, and occasional in early fall. Lacking any orange coloration, both sexes are pale and delicately spotted below; above blue, with females having a broader dark border. A species known as a mud-puddler, but most often seen briskly flying high atop shrubs and trees. Females lay eggs singly and larvae eat buds, flowers and fruit of their many host plants, which locally include Ceanothus and California buckeye.



California Buckeye is a host for the Echo Blue.

Hilltops may serve the military as tactical vantage points, but to many butterfly species hilltops are social gathering places. An instinctual predisposition to seek out the highest local elevations, "hilltopping" is a beneficial, natural strategy to increase the chances for males and females to meet. Males typically "hang out" on the hilltops waiting for females to pass through.

Pipevine Swallowtail
on Cobweb Thistle

Battery Crosby

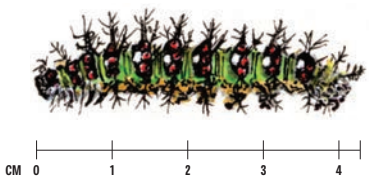
Battery Crosby is one of several relict coastal fortifications of bygone military eras located along the Presidio's coastal bluffs. Here, the coastal scrub plant community thrives, enhanced with moisture from the summertime fog, in turn providing larval hosts and nectar sources for a variety of butterfly species. An additional attractant to butterflies is the elevated topography.

Field Crescent (pg. 44) on Aster

American Painted Lady

Vanessa virginiensis

Widespread throughout much of North and Central America, the American Painted Lady can be found year-round in open areas of the Presidio, though never commonly. Two large eyespots on the underside of the hindwing easily distinguish this species from the other "ladies", while more subtle differences in the upper wing pattern also occur. Like their congeners, males are avid hilltoppers, seeking mates in the afternoon hours. Females lay their eggs on a variety of host plants, mostly everlastings and cudweeds, and the solitary larvae will construct nests by silking leaves together. Multiple broods are produced from early spring to late fall, the last brood overwintering as adults.



Anise Swallowtail

Papilio zelicaon

Occurring in a variety of habitat types throughout the western US, the Anise Swallowtail has benefitted in urban areas from the introduction of exotic plants of the carrot family, on which it hosts. Though not common, this attractive swallowtail can be found from March to September within the Presidio where both native and non-native host plants occur. Strong hill-toppers, males patrol and await females who, after mating, descend the hill to lay their eggs singly on leaves and flowers, both of which are eaten by the larvae. Sexes are similar, and easily distinguished from the Western Tiger Swallowtail by their solid black shoulders.

Green Hairstreak

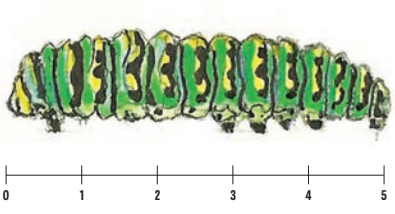
Callophrys viridis

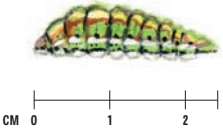
Only occurring along the Pacific coastal fog belt from Mendocino to Monterey, the Green Hairstreak was once common throughout western San Francisco but is now relegated to a few remnant local populations. In the Presidio this dazzling green butterfly is limited to the coastal bluff and dune scrub areas of the west side where its larval host plant, coast buckwheat, is prevalent. The single brood of adults can be seen from March to mid-May during which time they take nectar from a variety of spring blooming plants. Males perch in wait for females, who after mating lay their eggs singly on nearby hosts. Larvae consume flowers and leaves before hibernating as pupae. It is hoped that this intriguing member of our local fauna will benefit from habitat restoration efforts.

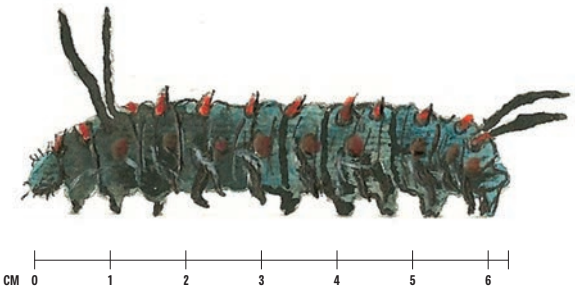
Pipevine Swallowtail

Battus philenor

A butterfly of tropical evolutionary history, this distinctly all-dark swallowtail ranges across the southern US south through Mexico. As its name indicates, this species will lay its eggs only on plants of the genus Aristolochia (commonly called Pipevine or Dutchman's pipe) on which the gregarious caterpillars actively feed. Producing several broods throughout the year but most common in the spring, the closest breeding populations are in the Marin Headlands and at Yerba Buena Island and wandering individuals are rare in the Presidio, where Aristolochia is absent. Toxic compounds accumulated from the host plant are an effective defense against vertebrate predation in all stages of this insect's life, including the winter hibernating pupae.







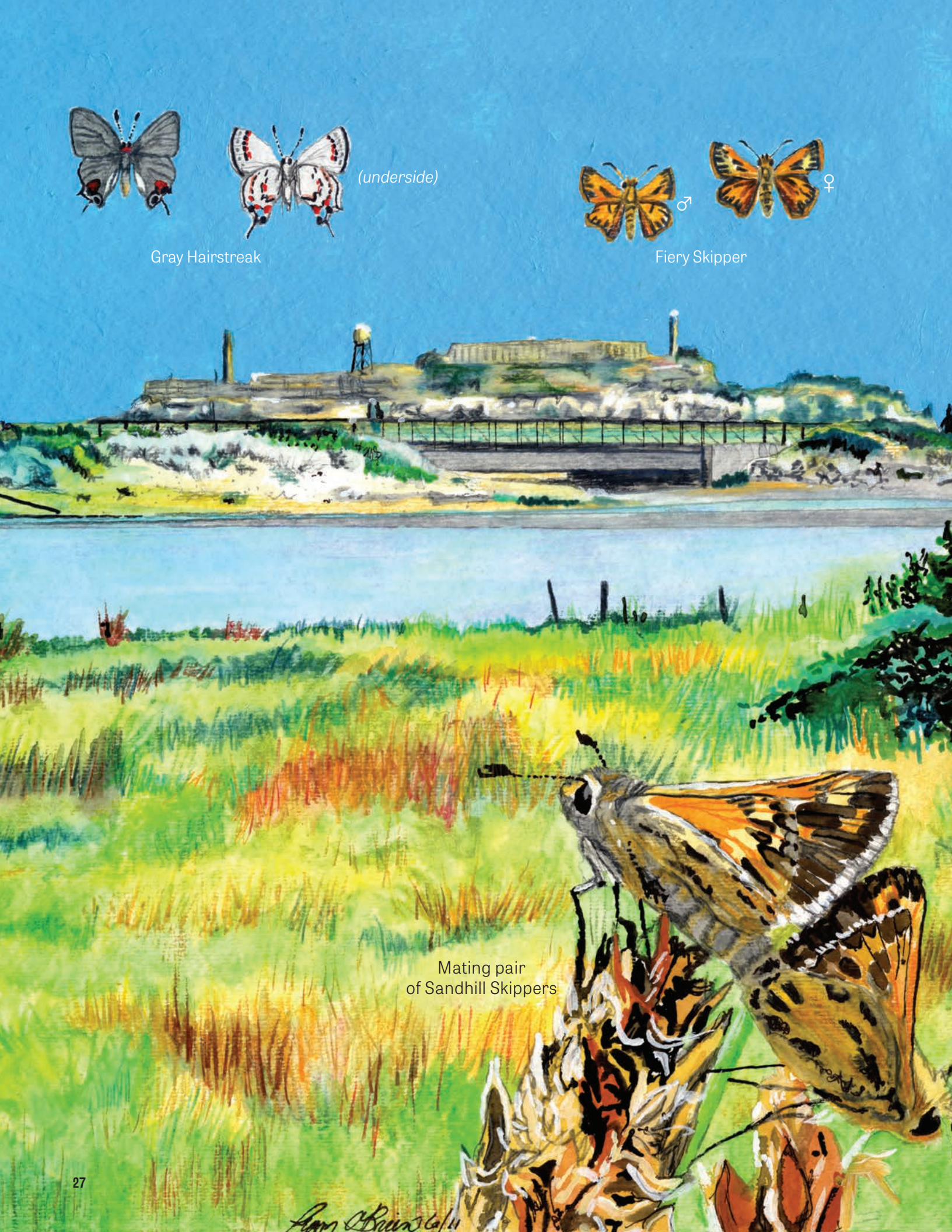
Western Pygmy Blue

Sandhill Skipper

Crissy Field

The extensive marshland complex that once occupied the northern reaches of the Presidio was filled during the early twentieth century for urban and military purposes. Now, restoration efforts have reestablished a portion of this system of inter-tidal lagoon and marsh, allowing natural processes to once again prevail.

Tidal marshes are comprised of flora and fauna specifically adapted to saline conditions. Here, a mix of low-lying herbaceous plants are the habitat of a unique variety of animals including several butterfly species.



Gray Hairstreak

Fiery Skipper

Mating pair
of Sandhill Skippers

Fiery Skipper

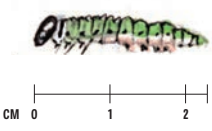
Hylephila phyleus

Found from the southern regions of North America southward to Argentina, the Fiery Skipper is familiar to urban lawns and gardens. Occurring from spring to fall, this multi-brooded butterfly becomes more common as the season progresses. Though males are paler than females, both sexes are adorned in tones of gold and brown with tiny dark speckles on the underwing. The aerobatic skippers can be found zipping about and perching near their host plants, Bermuda grass and other grasses, where courtship and mating occurs, and where females lay their eggs singly on the undersides of leaves.

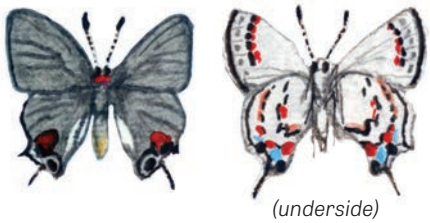
Sandhill Skipper

Polites sabuleti

Alkali grasslands throughout the western U.S. are the habitat for this small skipper which, in the Presidio, can be found along the margins of Crissy Lagoon. Variably colored in orange and black with a cobweb pattern on the underwing, males have a distinct stigma and females are darker overall. Males perch near the host plant, primarily saltgrass, to await females who lay their eggs singly on or near the host. Several broods are produced spring through fall, with the last seasonal brood of caterpillars pupating prior to hibernation and becoming the first adult butterflies to emerge the following spring.



Both Fiery and Sandhill Skippers host on Saltgrass.



(underside)

Pygmy Blues host on Pickleweed.

Gray Hairstreak

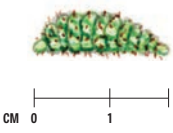
Strymon melinus

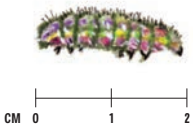
Widespread across much of North America and ranging south to Venezuela, this stylish little butterfly is also known as the Common Hairstreak. Males and females are similar in appearance, though seasonal variation occurs. Males may hilltop or perch on tall plants during the afternoon to await females who, after mating, lay their eggs singly on flowers and fruit of a wide variety of host plants. Several broods are produced annually and can be found in the Presidio from late winter through fall. The eyespots and whisker-like tails on the hind-wings are thought to deceive predators by resembling a head, thus diverting an attack toward them.

Western Pygmy Blue

Brephidium exile

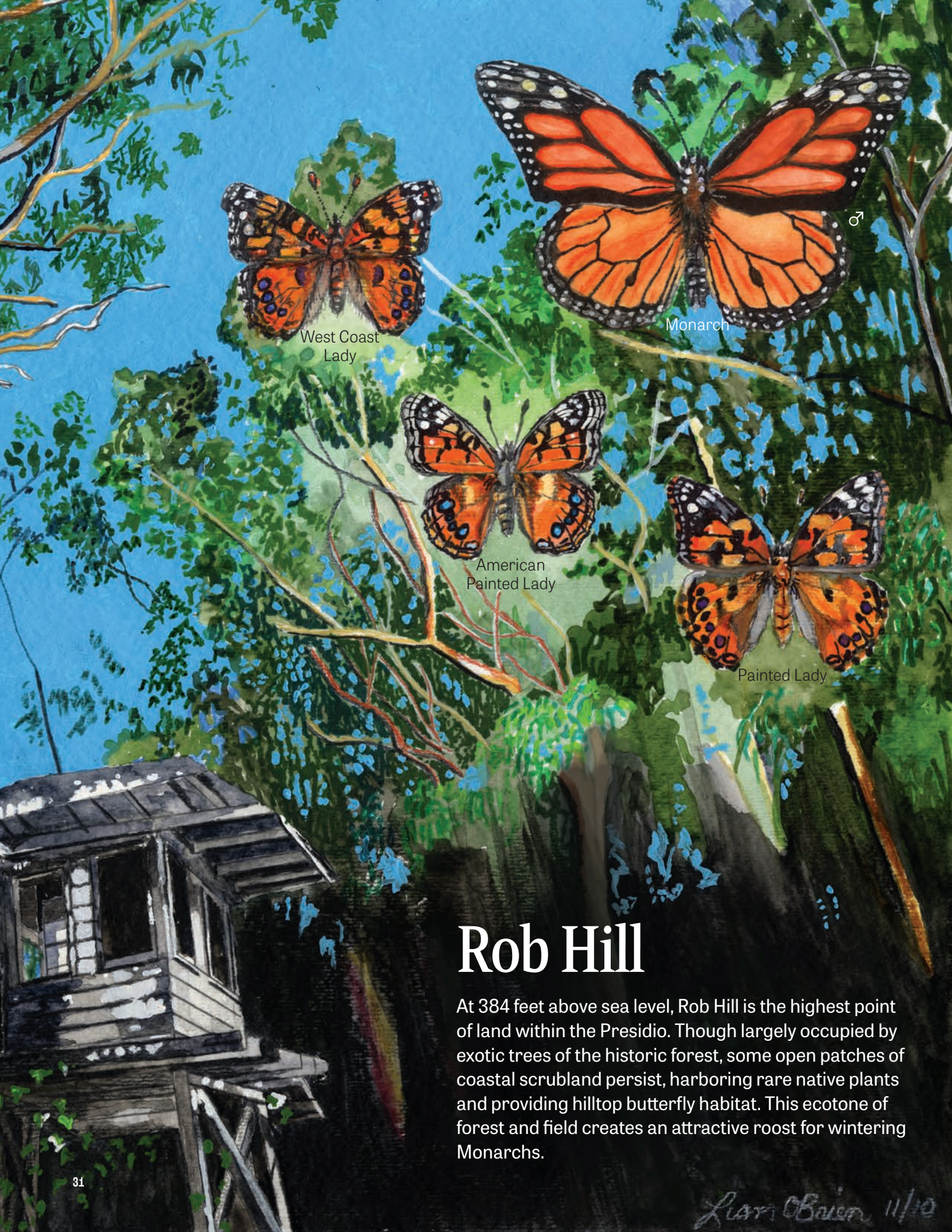
The smallest of North American butterflies, the Western Pygmy Blue inhabits low, open alkaline areas from the southwest US to Venezuela. Producing around three to five broods year-round, the range of this species expands throughout the dry summer months and retracts under harsher winter conditions. Sexes are similar, though females are generally larger. Males patrol near host plants of the goosefoot family including saltbush, pickleweed and the endangered California sea-blight, on which females lay eggs singly. Larvae eat flowers, fruits, leaves and stems of the succulent host plants and are known to interact symbiotically with ants. Rare in the Presidio, but may occur in late summer and fall along the fringes of Crissy Lagoon.





Red Admiral

All butterflies of the temperate zones must endure the harsh weather conditions and limited sunlight of the winter months. Overwintering can occur as egg, or caterpillar, or pupae, or in the adult form as with the species featured here.



Rob Hill

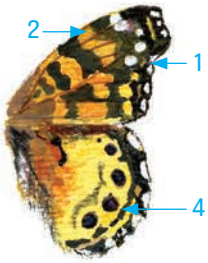
At 384 feet above sea level, Rob Hill is the highest point of land within the Presidio. Though largely occupied by exotic trees of the historic forest, some open patches of coastal scrubland persist, harboring rare native plants and providing hilltop butterfly habitat. This ecotone of forest and field creates an attractive roost for wintering Monarchs.

The Vanessas 101: How to key out Ladies in the field

Red Admiral

Vanessa atalanta

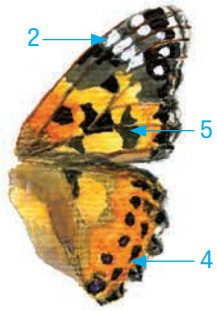
Though technically not a "Painted Lady" this butterfly is known to hybridize with the West Coast Painted Lady.



West Coast Lady

Vanessa annabella

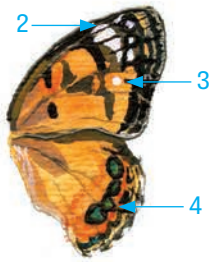
1. Forewing tip extended and squared off. Other two scalloped edge.
2. Costal bar: orange
4. Hindwing: spots separated and blue/purple centers



Painted Lady

Vanessa cardui

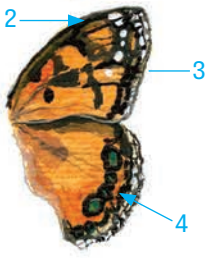
Usually the largest Lady in the field.
2. Costal bar: white
4. Hindwing: row of four small eyespots
5. Heavy black mark on inner forewing



American Painted Lady *(male)*

Vanessa virginiensis

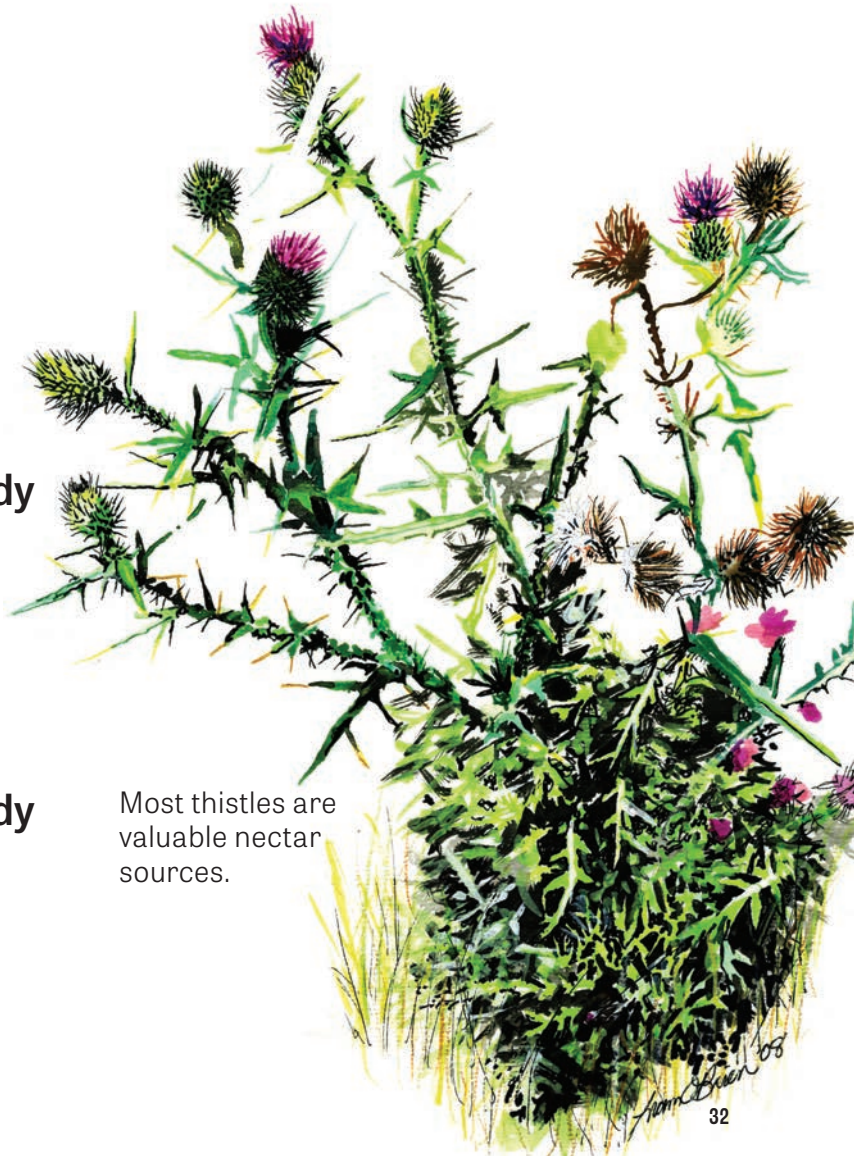
2. Costal bar: white
3. Forewing: white dot on orange
4. Hindwing: blue spots connected Giant eyespots on underside



American Painted Lady *(female)*

Vanessa virginiensis

2. Costal bar: orange
3. Forewing: white dot on orange
4. Hindwing: blue spots connected Giant eyespots on underside



Most thistles are valuable nectar sources.

Monarch

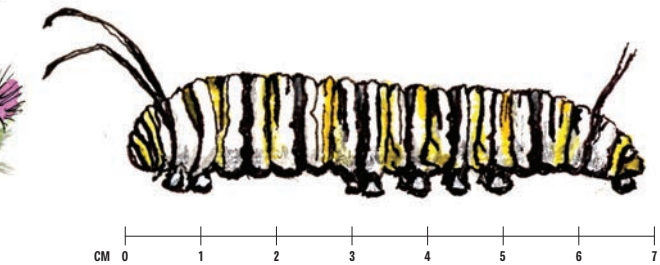
Danaus plexippus

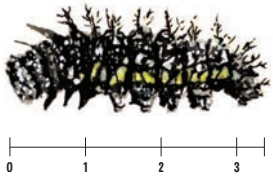
Occurring throughout the Americas, and sometimes beyond, this is perhaps the most popularly recognized butterfly. A multi-generational migrant, Monarchs move inland and northward throughout the spring and summer months in search of their larval host plant, milkweed. The last seasonal brood returns to locations in Mexico and along the California coast to overwinter in forested groves, including here at the Presidio, where Monarchs can be found on sunny days from October through April. Sexes are similar, though males can be distinguished by scent glands on the upperside of the hindwings. Compounds from the host plants are stored as caterpillars feed and are present in the adult butterflies, making them unpalatable to most predators. Other species have evolved to resemble the distasteful Monarchs as a means of avoiding predation, a trait known as "mimicry."

Red Admiral

Vanessa atalanta

Though its appearance differs markedly from the other species of the genus, this butterfly occurs throughout much of the northern hemisphere. One of our most common butterflies, it is well adapted to a variety of habitat conditions, including urban environments, often particular to areas of dappled sunlight. Sexes are similar and unmistakably patterned with red and white markings on a chocolate brown field above and mottled brown below. Adults take nutrients from sap, fruit and dung, as well as flower nectar. Males are strong afternoon hilltoppers. Females lay eggs singly on host leaves of both native and exotic plants of the nettle family, on which the larvae will construct a silken nest. Multiple broods are produced throughout the year, the late brood overwintering as adults.

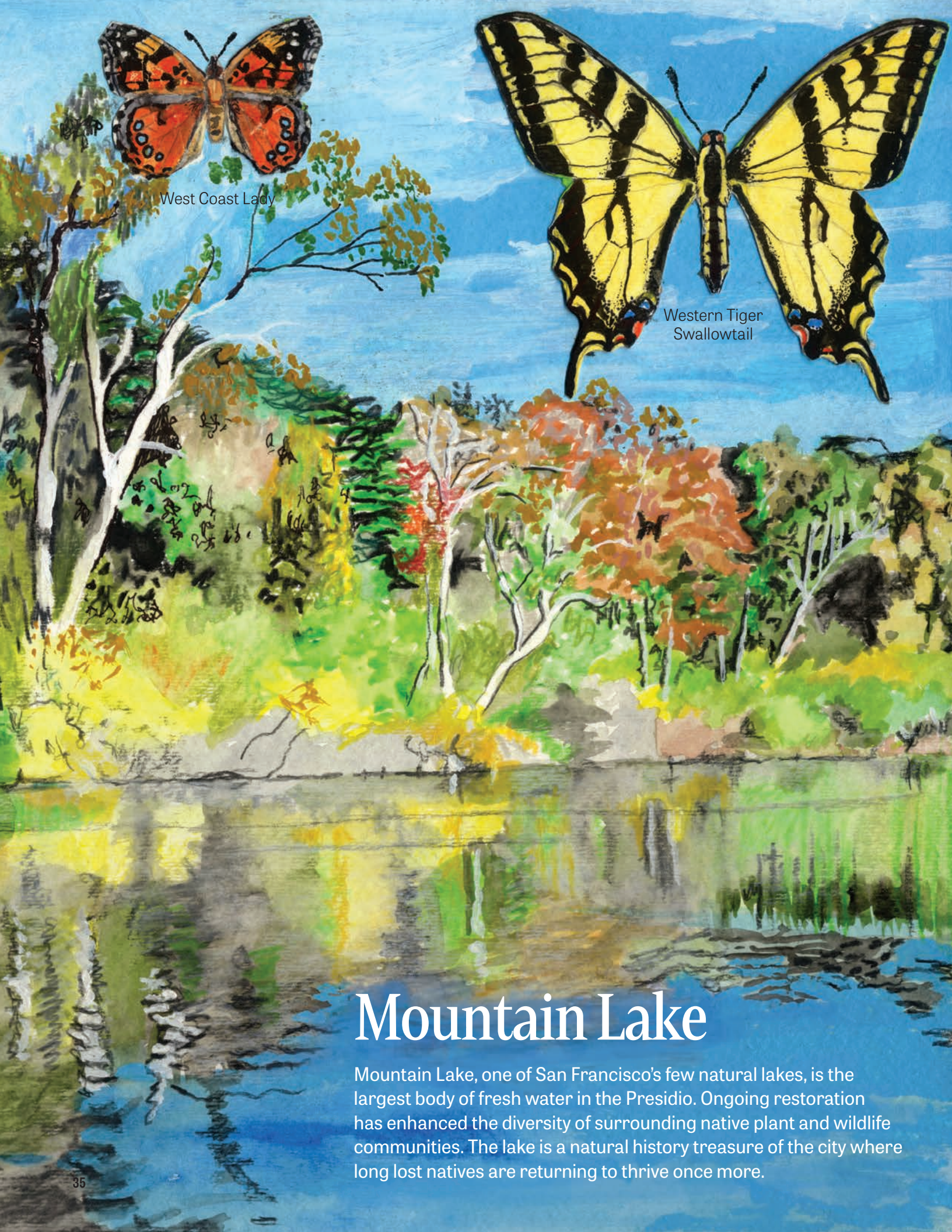




Some butterflies, like the Satyr Anglewing and Red Admiral, have cryptically patterned undersides which allow them to escape the eyes of predators simply by folding their wings.

While many species of butterflies prefer full sunlight, dappled sunlight, where the suns rays penetrate the shadows of riparian corridors and forested areas, is an attractive condition for some. The keen observer is often rewarded with a butterfly or two by examining dappled sunlit glades on a warm afternoon.

Satyr Anglewing



Mountain Lake

Mountain Lake, one of San Francisco's few natural lakes, is the largest body of fresh water in the Presidio. Ongoing restoration has enhanced the diversity of surrounding native plant and wildlife communities. The lake is a natural history treasure of the city where long lost natives are returning to thrive once more.

West Coast Lady

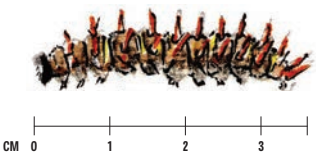
Vanessa annabella

Common in western North America and in the Presidio where the West Coast Lady can be found during all seasons in habitats both natural and weedy. Successive broods are produced throughout the year and late season adults will overwinter, often active on mild sunny days. While quite passive during the morning hours as individuals sip flower nectar, males become highly territorial during the afternoon perching in wait for females and defending prime hilltop locations. After mating, females lay their eggs singly on plant leaves of the mallow and nettle families where the larvae will construct silken nests among the leaves and dine on the tender foliage. Its similarity to the Painted Lady and the American Painted Lady can make identification challenging.

Umber Skipper

Poanes melane

Our darkest skipper, chocolate brown with yellow spotting, the Umber Skipper has two distinct ranges, inhabiting the lowlands of western California and also occurring in the highlands of Mexico and Central America. First recorded in San Francisco in 1960, it is now a common backyard butterfly of open sunny areas, perhaps having benefited from urban landscaping. Both sexes sip nectar from a variety of flower species and males perch near host plants, native and exotic grasses, to await receptive females. Caterpillars construct shelters of rolled or tied leaves where pupation usually occurs. Several broods are produced from April through November.

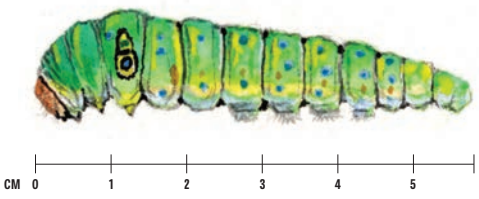


Uncommon in the Presidio, the Big-leaf Maple is a host for the Western Tiger Swallowtail.

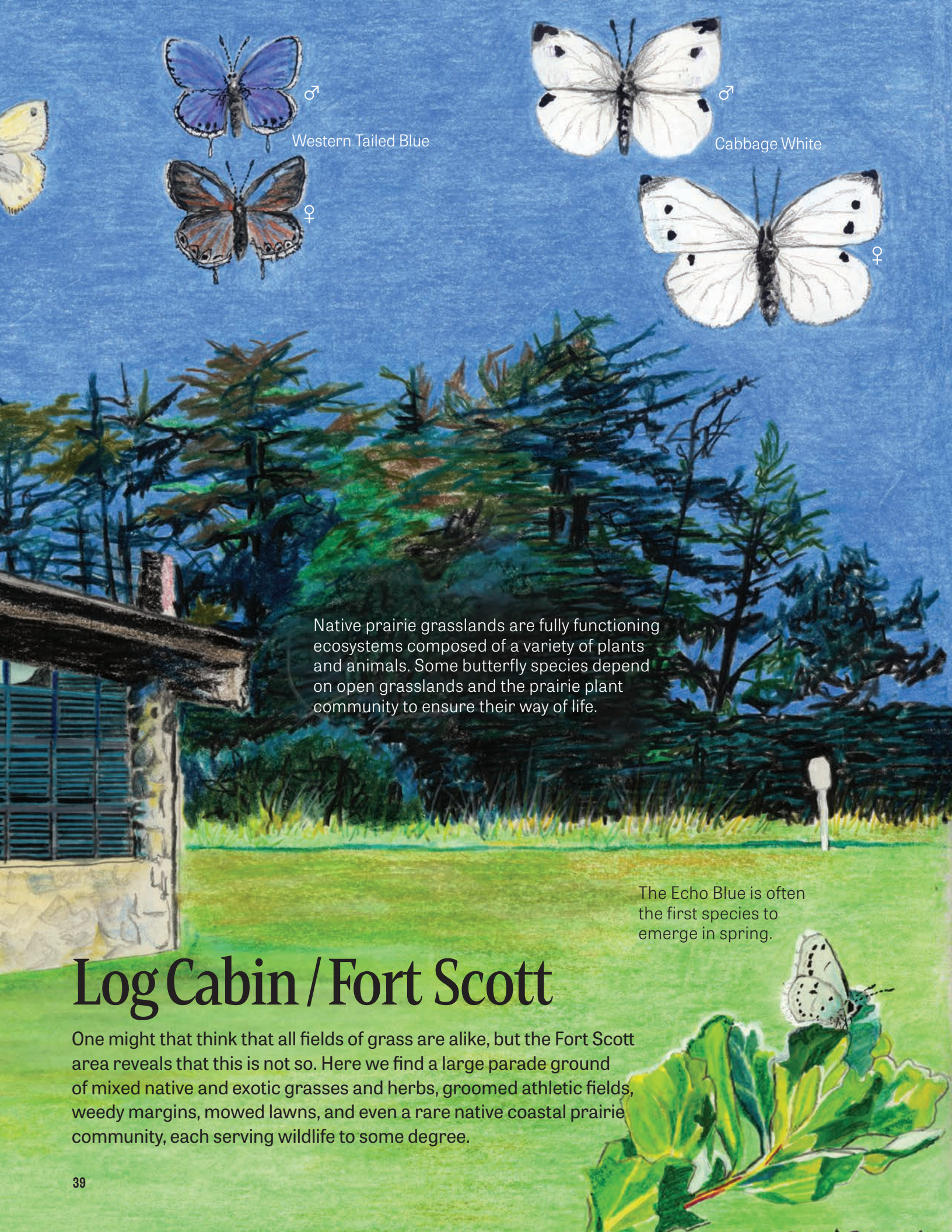
Western Tiger Swallowtail

Papilio rutulus

Common throughout the Western U.S. in many habitat types, often in association with deciduous trees, the Western Tiger Swallowtail can be seen flying in city parks, backyards, urban streets, and within the Presidio from May through September. Sexes are similar, a large butterfly of bright yellow with contrasting black stripes. Males patrol stream courses and other lanes in search of females, who lay their eggs on a variety of trees including willow and alder. The lime green larvae, which typically live high in the treetops, are adorned with impressive false eye spots, believed to be a deterrent to predators. Two to three broods are produced per year.




♂
♀
Orange Sulphur
summer
form
spring
form
California Ringlet
♀
form “alba”

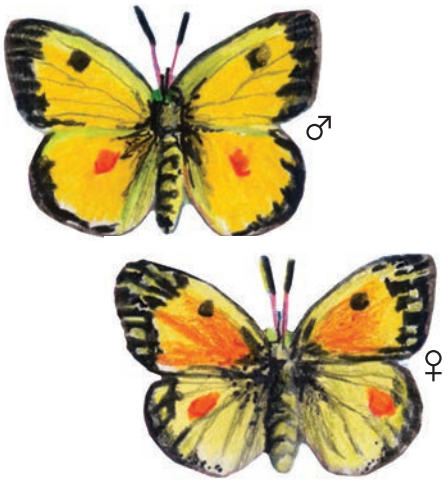


Native prairie grasslands are fully functioning ecosystems composed of a variety of plants and animals. Some butterfly species depend on open grasslands and the prairie plant community to ensure their way of life.

The Echo Blue is often the first species to emerge in spring.

Log Cabin / Fort Scott

One might that think that all fields of grass are alike, but the Fort Scott area reveals that this is not so. Here we find a large parade ground of mixed native and exotic grasses and herbs, groomed athletic fields, weedy margins, mowed lawns, and even a rare native coastal prairie community, each serving wildlife to some degree.



Orange Sulphur

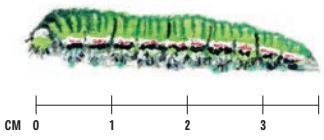
Colias eurytheme

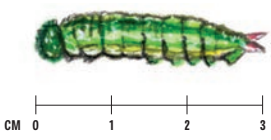
Often common across much of North America, the Orange Sulphur flies from early spring to late fall in the Presidio. Seasonally variable in size, shape and coloration, in flight, the bright and contrasting upper side is displayed, yet when perched, the wings are usually kept folded showing a more uniformly lemon yellow underside. Males will patrol near host plants awaiting females who, if non-receptive, must sometimes spiral skyward to evade an aggressive pursuit. Eggs are laid singly on vetches, clovers, lupines and other native and exotic plants of the pea family. As this species can often be seen by the hundreds flying over alfalfa fields, it is also referred to as the Alfalfa Butterfly, and is sometimes considered to be an agricultural pest.

California Ringlet

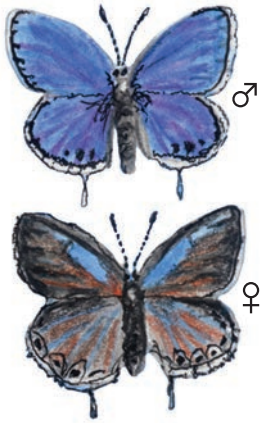
Coenonympha tullia californica

Inhabiting much of California west of the Sierra Nevada, our California Ringlet is a subspecies of the Common Ringlet, which is widespread throughout North America and Eurasia. Flight pattern and drab coloration give ringlets a moth like appearance as males patrol with floppy undulating flight, never more than a few feet above the ground, in search of females. Two broods are produced annually, the spring brood being olive and the summer brood a light tan to match the predominant color of the oak woodlands and grasslands where they live. The uppersides of both generations are the color of pale straw, unlike the ochre tones of ringlets farther north and east. Larvae feed on a variety of grass species and are known to hibernate during winter in thick mats of dead grass.





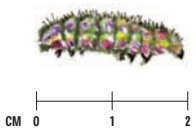
Western Tailed Blue larvae lay dormant for one full year in the dead seed pod of vetch.

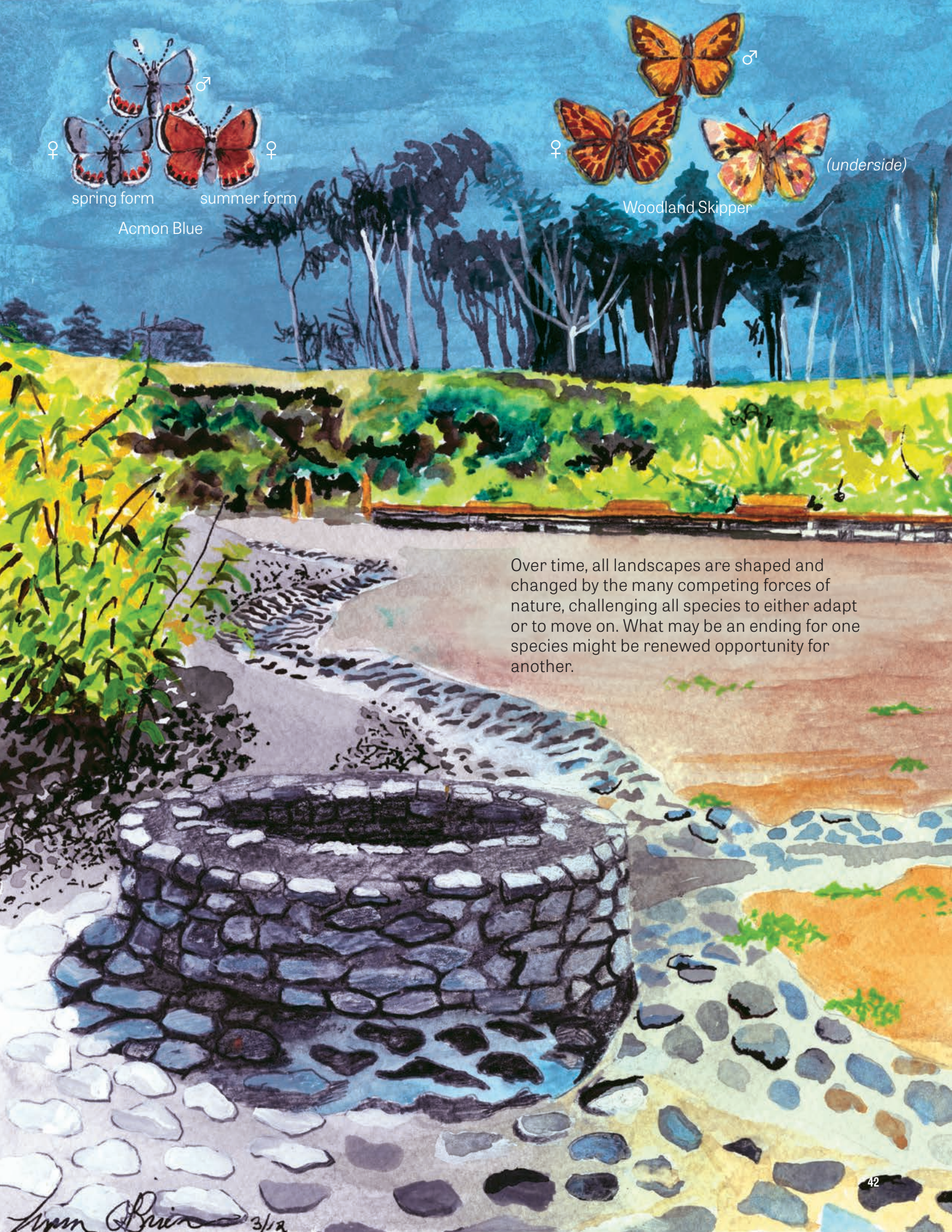


Western Tailed Blue

Cupido amyntula

Ranging throughout much of western North America the Western Tailed Blue, though not uncommon throughout the Bay Area, is a rarity within the Presidio. Partial to cool forest clearings and stream sides, this low flier can be found in spring and summer, usually near its host plants of the pea family—native perennial vetches, locoweeds and sweet peas. Both sexes are pale gray below with a small orange eyespot and an antenna-like tail on the hindwing, which is thought to confuse predators. Above, males are blue while females are more grayish. Males patrol and perch in valley bottoms awaiting females, who lay their eggs singly on host flowers and tender foliage. Larvae enter seedpods of host plants, sealing the entrance hole with silk, where they forage on seeds and overwinter.



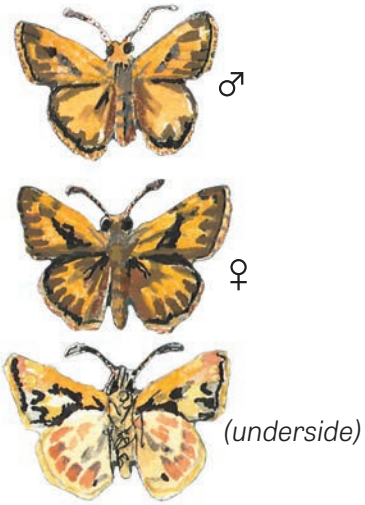


Over time, all landscapes are shaped and changed by the many competing forces of nature, challenging all species to either adapt or to move on. What may be an ending for one species might be renewed opportunity for another.

Of the thousands of eggs a female butterfly lays in her short life, most become food for other animals, leaving less than 1% to reach adulthood and produce eggs of their own.

El Polín Spring

El Polín, where groundwater springs from the hillside and begins its course to San Francisco Bay, has been reworked by the hand of man since the early Spanish era. Now newly restored to interpret a rich natural and cultural history, this bowl shaped valley attracts and nourishes a diversity of wildlife, providing prime viewing opportunities for the curious naturalist.



Woodland Skipper

Ochlodes sylvanoides

Common throughout much of the western states in a variety of habitats, the Woodland Skipper is uncommon locally, flying in late summer/early fall. A species of somewhat variable coloration and pattern, males have a distinct dark stigma where females have a diagonal brown patch. Males are passive while sipping nectar or mud-puddling, but will vigorously defend their territories while perched, awaiting females. Females lay cream colored eggs on or near perennial grasses, including Phalaris and Leymus, on which the larvae feed before and after their winter hibernation.

Buckeye

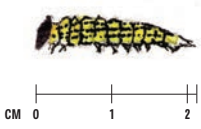
Junonia coenia

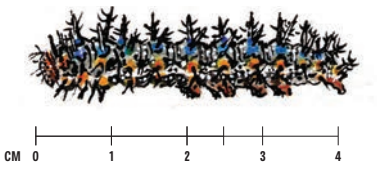
Occurring throughout much of the US—seasonal in the north and year-round in warmer, southern regions—this multi-brooded species is uncommon in the Presidio from spring through fall, though may be more common in boom years. Unmistakably identifiable, the unique eyespot pattern serves as an intimidating deterrent to predators such as birds. Adults sip nectar from a variety of flower species and will also mud-puddle. Males will perch territorially in full sunlight on the open ground to await passing females and will fly up to investigate most any possibility. Females lay eggs singly on herbaceous plants predominantly of the Plantain and Figwort families and are known to disperse widely in the fall. Both larvae and adults overwinter.

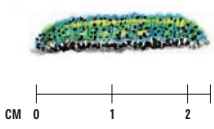
Field Crescent

Phyciodes campestris

A butterfly of the western states from Alaska to Mexico, the Field Crescent is not uncommon in the Presidio in moist open areas where its larval host plant, Aster chilensis, occurs. Strikingly patterned above with orange spotting on a dark field and more evenly pale below, this multi-brooded species is subtly variable with season and geographic location. Males patrol meadow areas in search of females who, after mating, lay their eggs on the undersides of host leaves. The fall brood of caterpillars hibernate as half-grown larvae, finishing their growth when new plant material emerges in the spring.







Variable Checkerspot (*Euphydras chalcedona*) on host plant Sticky Monkeyflower (*Mimulus aurantiacus*). Once abundant throughout much of San Francisco, but now rare...a victime of habitat fragmentation across the urbanized landscape. The revival of native habitats in the Presidio creates the potential for this strikingly beautiful creature to return.

Glossary

brood
One generation of a complete lifecycle to adulthood.

endemic
Only existing in a particular region.

host
V. to lay eggs on, to feed on.

host plant
The plant species on which the larvae will feed.

imago
The last stage an insect attains during its metamorphosis.

larva
Caterpillar, plural = larvae

larval host plant
The plant species on which the larvae will feed.

mud-puddling
Taking nutrients from moist areas of bare soil.

multi-brooded
Producing more than one generation per year.

riparian
The zone through which a natural course of water flows.

stigma
A pheromone gland on the wings of male butterflies.

weedy
Dominated by exotic vegetation.

willow riparian
A stream course dominantly vegetated by willows.

oak riparian
A stream course dominantly vegetated by oaks.

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Essig Museum of Entomology, UC Berkeley, http://essig.berkeley.edu/

North American Butterfly Association, http://naba.org/

The Xerces Society, http://www.xerces.org/

About the Artist & Author

Liam O'Brien's life changed forever in 1995 when a Western Tiger Swallowtail flew into his yard off the Duboce Triangle in San Francisco. He started painting and sketching that very day and, in his words, "something clicked." Today his illustrations can be seen throughout San Francisco on Rec & Park trail signs and in magazines like Bay Nature, American Butterfly and News of the Lepidopterists' Society. As a conservationist, he created the Green Hairstreak Project in the Sunset District and spearheaded efforts to relocate endangered Mission Blue Butterflies back to Twin Peaks in San Francisco. Since 2007 he has coordinated the Annual San Francisco Butterfly Count.

Matthew Zlatunich is a native San Franciscan and a San Francisco firefighter. With a lifelong interest in the natural world, Matt has pursued his avocation as a naturalist and conservationist observing and studying the remnant flora and fauna of our City and advocating for its preservation. He has volunteered with local organizations including the National Park Service, Presidio Trust, Golden Gate Audubon Society, San Francisco Nature Education and Wild Equity Institute. Matt co-authored A Field Guide to 100 Birds of Herons Head, and has developed and coordinates a Snowy Plover monitoring program at Crissy Field.